Board of Directors Meeting Agenda

Date: October 19, 2023

Time: 6:00 p.m.

Location: SMUD Headquarters Building, Auditorium
6201 S Street, Sacramento, California



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AGENDA

SACRAMENTO MUNICIPAL UTILITY DISTRICT
BOARD OF DIRECTORS MEETING
SMUD HEADQUARTERS BUILDING
AUDITORIUM – 6201 S STREET
SACRAMENTO, CALIFORNIA

October 19, 2023 – 6:00 p.m.

Virtual Viewing or Attendance:
Live video streams (view-only) and indexed archives of meetings are available at:
http://smud.granicus.com/ViewPublisher.php?view_id=16

Zoom Webinar Link: Join SMUD Board of Directors Meeting Here
Webinar/Meeting ID: 160 294 3412
Passcode: 222747
Phone Dial-in Number: 1-669-254-5252 or 1-833-568-8864 (Toll Free)

Verbal Public Comment:
Members of the public may provide verbal public comment by:

- Registering in advance of a meeting by sending an email to PublicComment@smud.org, making sure to include the commenter's name, date of the meeting, and topic or agenda item for comment. Microphones will be enabled for virtual or telephonic attendees at the time public comment is called and when the commenter's name is announced.
- Completing a sign-up form at the table outside of the meeting room and giving it to SMUD Security.
- Using the "Raise Hand" feature in Zoom (or pressing *9 while dialed into the telephone/toll-free number) during the meeting at the time public comment is called. Microphones will be enabled for virtual or telephonic attendees when the commenter's name is announced.

Written Public Comment:
Members of the public may provide written public comment on a specific agenda item or on items not on the agenda (general public comment) by submitting comments via email to PublicComment@smud.org or by mailing or bringing physical copies to the meeting. Comments will not be read into the record but will be provided to the Board and placed into the record of the meeting if received within two hours after the meeting ends.

Call to Order.
a. Roll Call.

1. Approval of the Agenda.

2. Committee Chair Reports.

   a. Committee Chair report of October 10, 2023, Strategic Development Committee
   b. Committee Chair report of October 11, 2023, Policy Committee
   c. Committee Chair report of October 17, 2023, Finance and Audit Committee
   d. Committee Chair report of October 18, 2023, Energy Resources & Customer Services Committee

Item 5 was reviewed by the October 11, 2023, Policy Committee. Items 6 through 9 were reviewed by the October 17, 2023, Finance and Audit Committee. Items 10 through 12 were reviewed by the October 18, 2023, Energy Resources & Customer Services Committee.

Comments from the public are welcome when these agenda items are called.

Consent Calendar:

3. Approve Board member compensation for service rendered at the request of the Board (pursuant to Resolution 23-06-02) for the period of September 16, 2023, through October 15, 2023.

4. Approval of the minutes of the meeting of September 21, 2023.

5. Accept the monitoring report for **Strategic Direction SD-6, Safety Leadership**. **Policy Committee 10/11. (Frankie McDermott)**

6. Approve Contract Change No. 1 to Contract No. 4500140795 with **Mars Transformers LLC** to increase the contract not-to-exceed amount for power transformers by $5 million, from $1,847,848 to $6,847,848 plus applicable sales tax. **Finance and Audit Committee 10/17. (Jennifer Davidson)**

7. Approve Contract Change No. 2 to Contract No. 4500137959 with **Wood Mackenzie dba Power Advocate, Inc.** for consulting services to extend the contract expiration date from April 30, 2024, to March 31, 2026, and to increase the contract amount by $3 million, from $1.5 million to $4.5 million. **Finance and Audit Committee 10/17. (Jennifer Davidson)**

8. Approve Contract Change No. 7 to Contract No. 4500116379 with **Efficiency First California** for administrative services for SMUD's Electrification Programs to extend the expiration date by three years from April 30, 2024, to April 30, 2027, and to increase the contract not-to-exceed amount by $12 million with three optional one-year extensions to April 30, 2030, for $3 million each or $9 million in the aggregate, for a total contract not-to-exceed amount of $28.8 million. **Finance and Audit Committee 10/17. (Lora Anguay)**

9. Authorize SMUD's Accountant to defer, as a regulatory liability, recognition of $5 million in revenue from a donation received in connection with the sale of SMUD's real property in Solano County, and match revenue recognition to expenses related to SMUD's **Sustainable Communities Program** in the appropriate accounting period for rate-making purposes. **Finance and Audit Committee 10/17. (Jennifer Davidson)**

10. Adopt findings on two standards under the Public Utility Regulatory Policies Act of 1978 (PURPA), as amended by the Infrastructure Investment and Jobs Act of 2021 (IIJA):

    a. Demand-Response Practices (Section 111(d)(20)); and

    b. Electric Vehicle Charging Programs (Section 111(d)(21)).

    Energy Resources & Customer Services Committee 10/18. (Laura Lewis)

11. Accept the monitoring report for **Strategic Direction SD-10, Innovation**. **Energy Resources & Customer Services Committee 10/18. (Lora Anguay)**

12. Accept the monitoring report for **Strategic Direction SD-19, Diversified Business**. **Energy Resources & Customer Services Committee 10/18. (Lora Anguay)**

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Public Comment:

13. Items not on the agenda.

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Board and CEO Reports:

14. Directors' Reports.

15. President's Report.

16. CEO's Report.
    a. Board Video

Summary of Board Direction

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Board Committee Meetings and Special Meetings of the Board of Directors are held at the SMUD Headquarters Building, 6201 S Street, Sacramento

October 17, 2023	Finance and Audit Committee and Special SMUD Board of Directors Meeting	Auditorium*	6:00 p.m.
October 18, 2023	Energy Resources & Customer Services Committee and Special SMUD Board of Directors Meeting	Auditorium	6:00 p.m.
November 14, 2023	Finance and Audit Committee and Special SMUD Board of Directors Meeting	Auditorium	6:00 p.m.

November 14, 2023	Energy Resources & Customer Services Committee and Special SMUD Board of Directors Meeting	Auditorium	Immediately following the Finance and Audit Committee and Special SMUD Board of Directors Meeting scheduled to begin at 6:00 p.m.
November 15, 2023	Policy Committee and Special SMUD Board of Directors Meeting	Auditorium	6:00 p.m.

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2024 Budget Review held at the SMUD Headquarters Building, 6201 S Street, Sacramento

November 7, 2023	2024 Proposed SMUD Budget. a. SMUD 2024 Proposed Budget Overview, including Debt Service, Pay Schedule and Special Compensation, Corporate Services, Legal, Government Affairs & Reliability Compliance, Communications, Marketing & Community Relations, and Enterprise Strategy. b. Customer & Community Services 2024 Proposed Budget. c. Zero Carbon Energy Solutions 2024 Proposed Budget. 2024 Proposed Joint Power Authority Budgets. a. Northern California Energy Authority (NCEA) 2024 Proposed Budget. b. Northern California Gas Authority Number 1 (NCGA1) 2024 Proposed Budget. c. Sacramento Municipal Utility District Financing Authority (SFA) 2024 Proposed Budget.	Auditorium*	6:00 p.m.
November 8, 2023	2024 Proposed SMUD Budget. d. Energy Delivery & Operations 2024 Proposed Budget. e. Information Technology 2024 Proposed Budget. f. Workforce, Diversity & Inclusion 2024 Proposed Budget.	Auditorium	6:00 p.m.

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The Auditorium is located in the lobby of the SMUD Headquarters Building, 6201 S Street, Sacramento, California.

Regular Meetings of the Board of Directors are held at the SMUD Headquarters Building, 6201 S Street, Sacramento

November 16, 2023	Auditorium*	6:00 p.m.

The Auditorium is located in the lobby of the SMUD Headquarters Building, 6201 S Street, Sacramento, California.

Members of the public shall have up to three (3) minutes to provide public comment on items on the agenda or items not on the agenda, but within the jurisdiction of SMUD. The total time allotted to any individual speaker shall not exceed nine (9) minutes.

Members of the public wishing to inspect public documents related to agenda items may click on the Information Packet link for this meeting on the smud.org website or may call 1-916-732-7143 to arrange for inspection of the documents at the SMUD Headquarters Building, 6201 S Street, Sacramento, California.

ADA Accessibility Procedures: Upon request, SMUD will generally provide appropriate aids and services leading to effective communication for qualified persons with disabilities so that they can participate equally in this meeting. If you need a reasonable auxiliary aid or service for effective communication to participate, please email Toni.Stelling@smud.org, or contact by phone at 1-916-732-7143, no later than 48 hours before this meeting.

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DRAFT

RESOLUTION NO. _____

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

That this Board hereby approves Board member compensation for service rendered at the request of the Board (pursuant to Resolution 23-06-02) for the period of September 16, 2023, through October 15, 2023.

DRAFT

Sacramento, California

September 21, 2023

The Board of Directors of the Sacramento Municipal Utility District met in regular session simultaneously in the Auditorium of the SMUD Headquarters Building at 6201 S Street, Sacramento, telephonically at the Grand Hyatt Washington, 1000 H Street NW, Washington, DC, and via virtual meeting (online) at 6:04 p.m.

Roll Call:

Presiding:	President Sanborn
Present:	Directors Rose (6:05 p.m.), Fishman (telephonically), Herber, Kerth, and Tamayo
Absent:	Director Bui-Thompson

Present also were Paul Lau, Chief Executive Officer and General Manager; Laura Lewis, Chief Legal & Government Affairs Officer and General Counsel and Secretary, other members of SMUD's executive management; and SMUD employees and visitors.

Director Tamayo shared the 2030 Clean Energy tip.

President Sanborn called for approval of the agenda. Director Kerth moved for approval of the agenda, Vice President Herber seconded, and the agenda was approved by a vote of 6-0, with Director Bui-Thompson absent.

Vice President Herber, Member, presented the report on the Strategic Development Committee meeting held on September 12, 2023.

Director Tamayo, Chair, presented the report on the Policy Committee meeting held on September 13, 2023.

Director Kerth, Chair, presented the report on the Finance and Audit Committee meeting held on September 19, 2023.

Director Rose, Chair, presented the report on the Energy Resources & Customer Services Committee meeting held on September 20, 2023.

President Sanborn then called for public comment for items on the agenda, but none were forthcoming.

President Sanborn then addressed the consent calendar consisting of Items 3 through 8 and 10 through 12. Director Kerth moved for approval of the consent calendar, Director Tamayo seconded, and Resolution Nos. 23-09-01 through 23-09-08 were approved by a vote of 6-0, with Director Bui-Thompson absent.

RESOLUTION NO. 23-09-01

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

That this Board hereby approves Board member compensation for service rendered at the request of the Board (pursuant to Resolution 23-06-02) for the period of August 16, 2023, through September 15, 2023.

Approved: September 21, 2023

INTRODUCED: DIRECTOR KERTH				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

RESOLUTION NO. 23-09-02

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

This Board approves non-substantive revisions to update formatting and position titles where applicable in the following Board Policies:

i. Strategic Direction SD-1A, Purpose Statement;

ii. Strategic Direction SD-1B, Vision Statement;

iii. Strategic Direction SD-2, Competitive Rates;

iv. Strategic Direction SD-3, Access to Credit Markets;

v. Strategic Direction SD-4, Reliability;

vi. Strategic Direction SD-5, Customer Relations;

vii. Strategic Direction SD-6, Safety Leadership;

viii. Strategic Direction SD-7, Environmental Leadership;

ix. Strategic Direction SD-8, Employee Relations;

x. Strategic Direction SD-9, Resource Planning;

xi. Strategic Direction SD-10, Innovation;

xii. Strategic Direction SD-11, Public Power Business Model;

xiii. Strategic Direction SD-12, Ethics;

xiv. Strategic Direction SD-13, Economic Development Policy;

xv. Strategic Direction SD-14, System Enhancement;

xvi. Strategic Direction SD-15, Outreach and Communication;

xvii. Strategic Direction SD-16, Information Management and Security;

xviii. Strategic Direction SD-17, Enterprise Risk Management;

xix. Strategic Direction SD-19, Diversified Business;

xx. Board-Staff Linkage BL-1, Board-Chief Executive Officer and General Manager Relationship;

xxi. Board-Staff Linkage BL-2, Board-Chief Legal Officer and General Counsel Relationship;

xxii. Board-Staff Linkage BL-3, Board-Internal Auditor Relationship;

xxiii. Board-Staff Linkage BL-4, Board-Special Assistant Relationship;

xxiv. Board-Staff Linkage BL-5, Unity of Control;

xxv. Board-Staff Linkage BL-6, Evaluating the Chief Executive Officer and General Manager's Performance;

xxvi. Board-Staff Linkage BL-7, Delegation to the Chief Executive Officer and General Manager;

xxvii. Board-Staff Linkage BL-8, Delegation to the Chief Executive Officer and General Manager with Respect to Procurement;

xxviii. Board-Staff Linkage BL-9, Delegation to the General Manager with Respect to Local, State and Federal Legislation and Regulation;

xxix. Board-Staff Linkage BL-10, Delegation to the General Manager with Respect to Real and Personal Property;

xxx. Board-Staff Linkage BL-11, Delegation to the General Manager with Respect to the Settlement of Claims and Litigation;

xxxi. Board-Staff Linkage BL-12, Delegation to the Chief Executive Officer/General Manager with Respect to Transactions Involving Transmission and Wholesale Energy, Fuel, and Environmental Attributes

xxxii. Board-Staff Linkage BL-13, Delegation to the Chief Executive Officer and General Manager with Respect to Grants;

xxxiii. Board-Staff Linkage BL-14, Delegation to the Chief Executive Officer and General Manager with Respect to Products, Services and Programs;

xxxiv. Governance Process GP-1, Purpose of Board;

xxxv. Governance Process GP-2, Governance Focus;

xxxvi. Governance Process GP-3, Board Job Description;

xxxvii. Governance Process GP-4, Board/Committee Work Plan and Agenda Planning;

xxxviii. Governance Process GP-5, Election of Board President and Vice President;

xxxix. Governance Process GP-6, Role of the Board President;

xl. Governance Process GP-7, Guidelines for Board Member Behavior;

xli. Governance Process GP-8, Board Committee Principles;

xlii. Governance Process GP-9, Board Committee Chairs;

xliii. Governance Process GP-10, Board Training, Orientation;

xliv. Governance Process GP-11, Board Review of Internal Records;

xlv. Governance Process GP-12, Board Compensation and Benefits;

xlvi. Governance Process GP-13, Core and Key Values;

xlvii. Governance Process GP-14, External Auditor Relationship; and

xlviii. Governance Process GP-15, Board Travel and Training Reimbursement.

substantially in the form as set forth in **Attachment A** hereto and made a part hereof.

Approved: September 21, 2023

INTRODUCED: DIRECTOR KERTH				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-1A
Title: Purpose Statement

SMUD's purpose is to enhance the quality of life for our customers and community by providing reliable and affordable electricity, and leading the transition to a clean energy future.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

May 1, 2003	Resolution No. 03-05-09	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
November 15, 2007	Resolution No. 07-11-11	Date of Revision.
June 19, 2008	Resolution No. 08-06-11	Date of Revision.
August 20, 2015	Resolution No. 15-08-10	Date of Revision.
April 15, 2021	Resolution No. 21-04-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-1B
Title: Vision Statement

SMUD's vision is to be a trusted and powerful partner in achieving an inclusive, zero carbon economy. SMUD will leverage its relationships to accelerate innovation, ensure energy affordability and reliability, protect the environment, eliminate greenhouse gas emissions, catalyze economic and workforce development, promote environmental justice, and enhance community vitality for all.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 2, 2004	Resolution No. 04-12-12	Date of Adoption.
April 19, 2007	Resolution No. 07-04-12	Date of Revision.
November 15, 2007	Resolution No. 07-11-10	Date of Revision.
June 19, 2008	Resolution No. 08-06-10	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
November 7, 2013	Resolution No. 13-11-02	Date of Revision.
August 20, 2015	Resolution No. 15-08-11	Date of Revision.
April 15, 2021	Resolution No. 21-04-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-2
Title: Competitive Rates

Maintaining competitive rates is a core value of SMUD.

Therefore:

a) The Board establishes a rate target of 18 percent below Pacific Gas & Electric Company's published rates on a system average basis. In addition, the Board establishes a rate target of at least 10 percent below PG&E's published rates for each customer class.

b) SMUD's rates shall be competitive with other local utilities on a system average basis.

c) In addition, SMUD's rates shall be designed to balance and achieve the following goals:

   i) Reflect the cost of energy when it is used or exported to the SMUD grid;

   ii) Reduce consumption during periods of high system demand;

   iii) Encourage energy efficiency, conservation and carbon reduction;

   iv) Encourage cost effective and environmentally beneficial Distributed Energy Resources (DERs) (examples of DERS include but are not limited to rooftop solar, battery storage, and energy reduction applications);

   v) Minimize the rate of change in the transition from one rate design to another;

   vi) Provide customers flexibility and choices;

   vii) Be as simple and easy to understand as possible;

   viii) Address the needs of people with low incomes and severe medical conditions; and

   ix) Equitably allocate costs across and within customer classes.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

May 1, 2003	Resolution No. 03-05-08	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
February 21, 2008	Resolution No. 08-02-06	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
January 21, 2010	Resolution No. 10-01-09	Date of Revision.
February 18, 2021	Resolution No. 21-02-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-3
Title: Access to Credit Markets

Maintaining access to credit is a core value of SMUD.

Therefore:

a) For SMUD's annual budgets, the Board establishes a minimum target of cash coverage of all debt service payments (fixed charge ratio) of 1.5 times.

b) When making resource decisions, SMUD shall weigh the impacts on long-term revenue requirements, debt, financial risk and flexibility.

c) SMUD's goal is to maintain at least an "A" rating with credit rating agencies.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

May 1, 2003	Resolution No. 03-05-07	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
May 6, 2004	Resolution No. 04-05-06	Date of Revision.
February 3, 2005	Resolution No. 05-02-04	Date of Revision.
January 24, 2008	Resolution No. 08-01-08	Date of Revision.
August 7, 2008	Resolution No. 08-08-03	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
June 17, 2010	Resolution No. 10-06-09	Date of Revision.
February 6, 2014	Resolution No. 14-02-03	Date of Revision.
February 15, 2018	Resolution No. 18-02-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-4
Title: Reliability

Meeting customer energy requirements is a core value of SMUD.

Therefore:

a) SMUD will assure all customer energy requirements are met. This will be accomplished through the use of: (i) its generation resources and purchase power portfolio 100 percent of the time; and (ii) its transmission assets to assure an overall availability of at least 99.99 percent.

b) SMUD will achieve distribution system reliability by:

Limiting the average frequency of outage per customer per year to:

- With major event: 0.99 – 1.33
- Excluding major event: 0.85 – 1.14

Limiting the average duration of outages per customer per year to:

- With major event: 67.5 – 93.3 minutes
- Excluding major event: 49.7 – 68.7 minutes

Ensuring that no individual circuits exceed these targets for more than two consecutive years. For circuits that exceed these targets for two consecutive years, a remedial action plan will be issued and completed within 18 months.

c) SMUD will maintain the electric system in good repair and make the necessary upgrades to maintain load serving capability and meet regulatory standards.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

August 21, 2003	Resolution No. 03-08-10	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
May 6, 2004	Resolution No. 04-05-07	Date of Revision.
September 2, 2004	Resolution No. 04-09-08	Date of Revision.
December 18, 2008	Resolution No. 08-12-13	Date of Revision.
October 1, 2009	Resolution No. 09-10-13	Date of Revision.
June 4, 2015	Resolution No. 15-06-07	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: **Strategic Direction**
Policy No.: **SD-5**
Title: **Customer Relations**

Maintaining a high level of customer relations is a core value of SMUD. Additionally, the Board sets a customer satisfaction target of 95 percent with no individual component measured falling below 85 percent. In addition, the Board establishes an overall customer experience "value for what you pay" target of 70 percent by the end of 2025 and 80 percent by the end of 2030, with neither the average commercial customer score falling below 69 percent nor the average residential customer score falling below 65 percent in any year.

As part of this policy:

a) SMUD customers shall be treated in a respectful, dignified and civil manner.

b) SMUD shall communicate a procedure for customers who believe they have not received fair treatment from SMUD to be heard.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

August 21, 2003	Resolution No. 03-08-11	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
May 6, 2004	Resolution No. 04-05-08	Date of Revision.
February 3, 2005	Resolution No. 05-02-05	Date of Revision.
April 17, 2008	Resolution No. 08-04-12	Date of Revision. (Rescinded)
June 5, 2008	Resolution No. 08-06-04	Date of Revision.
August 7, 2008	Resolution No. 08-08-03	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
April 21, 2016	Resolution No. 16-04-08	Date of Revision.
April 6, 2017	Resolution No. 17-04-02	Date of Revision.
August 20, 2020	Resolution No. 20-08-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-6
Title: Safety Leadership

Creating a safe environment for employees and the public is a core value of SMUD.

Through best practice methods and continuous improvement, SMUD will be recognized as a leader in employee safety while also assuring the safety of the public related to SMUD operations and facilities. SMUD commits to a proactive approach, including the active involvement of SMUD leadership, employees, contractors, and the community, as well as comprehensive monitoring of organizational and public safety performance.

Therefore, SMUD will continue to improve safety results to:

a) Workplace Safety

   i) Reduce SMUD's injury severity incidents to 13 or less than by 2025, as measured by OSHA's Days Away Restricted Time (DART), a rate that demonstrates top quartile safety performance for similar size utilities using the Bureau of Labor Statistics (BLS) work-related safety data.

   ii) Provide timely, quality health care for injured employees that aids their recovery while maintaining positive financial performance of the workers' compensation program.

b) Contractor Safety

   i) Support contractors to reduce and eliminate potential hazards for Serious Injuries and/or Fatality (SIF) when conducting high risk work.

c) Public Safety

   i) Track and report injuries to the public related to SMUD operations or facilities.

   ii) Implement measures to protect the public from injuries related to SMUD operations or facilities.

Monitoring Method: CEO Report
Frequency: Semi-Annual
Versioning:

August 21, 2003	Resolution No. 03-08-12	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
February 3, 2005	Resolution No. 05-02-06	Date of Revision.
November 15, 2007	Resolution No. 07-11-12	Date of Revision.
December 20, 2012	Resolution No. 12-12-11	Date of Revision.
August 21, 2014	Resolution No. 14-08-05	Date of Revision.
April 15, 2021	Resolution No. 21-04-02	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-7
Title: Environmental Leadership

Environmental leadership is a core value of SMUD. In achieving this directive, SMUD will:

a) Conduct its business affairs and operations in a sustainable manner by continuously improving pollution prevention, minimizing environmental impacts, conserving resources, and promoting equity within SMUD's diverse communities.

b) Provide leadership and innovation to improve air quality and reduce greenhouse gas emissions.

c) Promote the efficient use of energy by our customers.

d) Advance the electrification of vehicles, buildings and equipment.

e) Attract and build partnerships with customers, communities, policy makers, the private sector and other stakeholders.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

August 21, 2003	Resolution No. 03-08-13	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
July 21, 2005	Resolution No. 05-07-10	Date of Revision.
December 18, 2008	Resolution No. 08-12-14	Date of Revision.
April 15, 2021	Resolution No. 21-04-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-8
Title: Employee Relations

Developing and maintaining a high quality, diverse and inclusive workplace that engages and inspires employees to commit to SMUD's purpose, vision and values is a core value of SMUD.

SMUD is committed to diversity and inclusion and will foster and support a workplace that values employees representing a variety of backgrounds, including but not limited to, race, ethnicity, gender, gender identification and/or expression, sexual orientation and identification, national origin, age, physical abilities, veteran status, socio-economic status, life experiences, talents, and thinking styles.

Therefore:

a) SMUD shall attract and retain a highly qualified and diverse workforce.

b) SMUD shall promote inclusion and diversity and engage its workforce in activities that demonstrate and support inclusion and diversity across the organization.

c) SMUD shall engage its workforce in personal and professional development.

d) SMUD's percentage of engaged employees as measured through the Engagement Index shall exceed 80%.

e) SMUD shall use a broad mix of communication and outreach channels to ensure its recruitment activities reflect the diversity of the communities it serves.

f) SMUD shall maintain and communicate written policies that define procedures and expectations for staff and provide for effective handling of grievances.

g) Annually, and consistent with State and Federal law, the Board shall receive a report detailing the demographics and trends of the SMUD workforce, the available workforce, and the Sacramento region. The report shall also provide information on veterans as a part of SMUD's workforce.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

May 6, 2004	Resolution No. 04-05-09	Date of Adoption.
February 5, 2009	Resolution No. 09-02-03	Date of Revision.
November 17, 2011	Resolution No. 11-11-08	Date of Revision.
August 15, 2013	Resolution No. 13-08-10	Date of Revision.
August 20, 2015	Resolution No. 15-08-05	Date of Revision.
October 6, 2016	Resolution No. 16-10-02	Date of Revision.
January 16, 2020	Resolution No. 20-01-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-9
Title: Resource Planning

It is a core value of SMUD to provide its customers and community with a sustainable power supply using an integrated resource planning process.

A sustainable power supply is one that reduces SMUD's greenhouse gas (GHG) emissions to serve retail customer load to Zero by 2030. Zero GHG emissions will be achieved through investments in energy efficiency, clean distributed energy resources, renewables portfolio standard (RPS) eligible renewables, energy storage, large hydroelectric generation, clean and emissions free fuels, and new technologies and business models. Additionally, SMUD will continue pursuing GHG savings through vehicle, building and equipment electrification.

SMUD shall assure reliability of the system, minimize environmental impacts on land, habitat, water and air quality, and maintain competitive rates relative to other California electricity providers.

To guide SMUD in its resource evaluation and investment, the Board sets the following energy supply goal:

Year	Greenhouse Gas Emissions (metric tons)
2020	2,318,000
2030 - beyond	0

In keeping with this policy, SMUD shall also achieve the following:

a) Pursue energy efficiency and electrification to reduce carbon emissions by 365,000 metric tons from buildings and 1,000,000 metric tons from transportation in 2030 (the equivalent of 112,000 single family homes and 288,000 passenger vehicles electrified).

b) Procure renewable resources to meet or exceed the state's mandate of 33% of SMUD's retail sales by 2020, 44% by 2024, 52% by 2027, and 60% of its retail sales by 2030 and thereafter, excluding additional renewable energy acquired for certain customer programs.

c) In meeting GHG reduction goals, SMUD shall:

   i) Emphasize local and regional benefits.
   ii) Improve equity for under-served communities.

d) Explore, develop, and demonstrate emerging GHG-free technologies and business models.

e) Promote cost effective, clean distributed generation through SMUD programs.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

May 6, 2004	Resolution No. 04-05-11	Date of Adoption.
May 6, 2004	Resolution No. 04-05-12	Date of Revision.
September 15, 2004	Resolution No. 04-09-11	Date of Revision.
May 17, 2007	Resolution No. 07-05-10	Date of Revision.
December 18, 2008	Resolution No. 08-12-15	Date of Revision.
December 19, 2009	Resolution No. 09-11-08	Date of Revision.
May 6, 2010	Resolution No. 10-05-03	Date of Revision.
May 19, 2011	Resolution No. 11-05-05	Date of Revision.
December 20, 2012	Resolution No. 12-12-12	Date of Revision.
October 3, 2013	Resolution No. 13-10-09	Date of Revision.
September 17, 2015	Resolution No. 15-09-11	Date of Revision.
October 20, 2016	Resolution No. 16-10-14	Date of Revision.
October 18, 2018	Resolution No. 18-10-11	Date of Revision.
January 16, 2020	Resolution No. 20-01-06	Date of Revision.
April 15, 2021	Resolution No. 21-04-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-10
Title: Innovation

Delivering innovative solutions, products and services to our customers is a core value. To assure our long-term competitiveness, SMUD shall invest in research and development projects that support its core and key values, and integrate emerging technologies and new business models into SMUD's customer offerings in a way that balances risk and opportunity and benefit our customers and community.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

September 2, 2004	Resolution No. 04-09-07	Date of Adoption.
September 20, 2018	Resolution No. 18-09-07	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-11
Title: Public Power Business Model

Supporting and strengthening the public power business model is a core value. Local decision making and flexibility are essential to effective and responsible local governance. Community-owned utilities are primarily accountable to their customers, not stockholders. Community citizens have a direct voice in public power decisions.

Preservation of this business model is vital to ensure public power systems continue to provide innovative solutions tailored to best meet the needs of their customers and communities.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

September 15, 2004	Resolution No. 04-09-12	Date of Adoption.
October 21, 2010	Resolution No. 10-10-16	Date of Revision.
February 20, 2014	Resolution No. 14-02-09	Date of Revision.
January 12, 2017	Resolution No. 17-01-02	Date of Revision.
February 15, 2018	Resolution No. 18-02-05	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-12
Title: Ethics

Maintaining the public trust and confidence in the integrity and ethical conduct of the Board and SMUD employees is a core value. Therefore, to ensure the public interest is paramount in all official conduct, the Board shall adopt and update, as necessary: a Conflict of Interest Code as required by State law. SMUD shall also maintain and enforce a code of conduct applicable to all employees.

Among other things the code of conduct shall:

a) Require high ethical standards in all aspects of official conduct;

b) Establish clear guidelines for ethical standards and conduct by setting forth those acts that may be incompatible with the best interests of SMUD and the public;

c) Require disclosure and reporting of potential conflicts of interest; and

d) Provide a process for (i) reporting suspected violations of the code of conduct and policies through multiple channels, including an anonymous hotline, and (ii) investigating suspected violations.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

November 18, 2004	Resolution No. 04-11-06	Date of Adoption.
December 20, 2007	Resolution No. 07-12-14	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
February 20, 2014	Resolution No. 14-02-08	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-13
Title: Economic Development

Promoting the economic vitality of our region and the growth of our customer base is a key value of SMUD. Therefore, SMUD shall exercise strategic leadership and actively participate in regional economic development.

Specifically:

a) SMUD shall promote innovation while maintaining rate affordability and balancing the other strategic directions.

b) SMUD shall align its economic development activities with regional economic development initiatives.

c) SMUD shall assist in retaining, recruiting and growing commercial and industrial rate-paying customers.

d) SMUD shall offer economic development rates and program incentives.

e) SMUD shall offer a contracting program for certified small businesses who are rate-paying customers.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

September 1, 2005	Resolution No. 05-09-09	Date of Adoption.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
June 20, 2013	Resolution No. 13-06-07	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-14
Title: System Enhancement

As a community-owned utility, SMUD recognizes that the relocation or underground placement of primary voltage power lines may be desirable to local jurisdictions to improve aesthetics, economic vitality, safety and disabled access. Therefore, it is a key value of SMUD to make selected distribution system enhancements, such as permanent relocation or underground placement of existing primary power lines below 69 kV.

a) SMUD will, at its expense and where technically feasible, permanently relocate or underground existing overhead distribution facilities provided the governing body of the city or county in which the electric facilities are and will be located has:

   i) Identified, after consultation with SMUD, a specific system enhancement project;

   ii) Determined the project is in the public interest;

   iii) Ensured all existing overhead communication facilities related to the project will also be permanently relocated or placed underground;

   iv) Obtained and provided SMUD with all easements necessary for the project.

b) After achievement of core financial targets, SMUD will annually commit up to one-half of one percent of its annual gross electric sales revenue to system enhancements. The proposed projects will be subject to SMUD's annual budget approval process, and uncommitted funds from any given year will not be carried over to future years. Funding will be assigned to projects brought forward by local cities or counties based on applying the following criteria (not in order of preference):

   i) Project scale and/or cost when measured against available SMUD resources.

   ii) Requesting entity has developed full scope, obtained all necessary easements, and development plan for customer service conversion from overhead to underground, as required.

   iii) Extent to which the costs are borne by others.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

November 3, 2005	Resolution No. 05-11-06	Date of Adoption.
August 7, 2008	Resolution No. 08-08-02	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
September 21, 2017	Resolution No. 17-09-06	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-15
Title: Outreach and Communication

Providing broad outreach and communication to SMUD's customers and the community is a key value of SMUD.

Specifically:

a) SMUD shall provide its customers the information, education and tools they need to best manage their energy use according to their needs.

b) SMUD will use an integrated and consistent communication strategy that recognizes the unique customer segments that SMUD serves.

c) SMUD's communication and community outreach activities shall reflect the diversity of the communities we serve. SMUD shall use a broad mix of communication channels to reach all customer segments. This communication shall be designed to ensure that all groups are aware of SMUD's major decisions and programs.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

February 16, 2006	Resolution No. 06-02-08	Date of Adoption.
April 17, 2008	Resolution No. 08-04-12	Date of Revision. (Rescinded)
June 5, 2008	Resolution No. 08-06-04	Date of Revision.
December 3, 2009	Resolution No. 09-12-03	Date of Revision.
April 6, 2017	Resolution No. 17-04-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-16
Title: Information Management and Security

Proper management of cyber and physical information, as well as physical security, is a core value. Robust information management and physical security practices are critical to effective risk management and to ensure regulatory compliance, business resiliency and customer satisfaction. SMUD shall take prudent and reasonable measures to accomplish the following:

a) **Information Security:** SMUD will protect customer, employee and third party information, and SMUD information systems are protected from unauthorized access, use, disclosure, disruption, modification, or destruction.

b) **Physical Security:** SMUD will safeguard its employees while at work as well as customers and visitors at SMUD facilities. SMUD will also protect its facilities and functions that support the reliability of the electric system and overall operation of the organization from unauthorized access or disruption of business operations.

c) **Customer Privacy:** SMUD will annually notify customers about the collection, use and dissemination of sensitive and confidential customer information. Except as provided by law or for a business purpose, SMUD will not disseminate sensitive and confidential customer information to a third party for non-SMUD business purposes unless the customer first consents to the release of the information. Where sensitive and confidential information is disseminated for a business purpose, SMUD will ensure: (i) the third party has robust information practices to protect the sensitive and confidential customer information, and (ii) use of the information by the third party is limited to SMUD's business purpose. SMUD will maintain a process that identifies the business purposes for which SMUD will collect, use and disseminate sensitive and confidential customer information.

d) **Records Management:** SMUD will maintain the efficient and systematic control of the creation, capture, identification, receipt, maintenance, use, disposition, and destruction of SMUD records, in accordance with legal requirements and Board policies.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

August 7, 2008	Resolution No. 08-08-03	Date of Adoption.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
March 20, 2014	Resolution No. 14-03-08	Date of Revision.
December 21, 2017	Resolution No. 17-12-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-17
Title: Enterprise Risk Management

Effectively balancing and managing risk to further SMUD's policies and business goals is a core value of SMUD.

Therefore:

SMUD will implement and maintain an integrated enterprise risk management process that identifies, assesses, prudently manages and mitigates a variety of risks facing SMUD, including financial, supply, operational, physical and cyber security, climate change, legal, legislative and regulatory, and reputational risk.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

February 18, 2020	Resolution No. 10-02-10	Date of Adoption.
October 17, 2013	Resolution No. 13-10-13	Date of Revision.
December 20, 2018	Resolution No. 18-12-05	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Strategic Direction
Policy No.: SD-19
Title: Diversified Business

Broadening and diversifying the products and services that SMUD offers is a key value. The desired results are to: a) generate new revenues that contribute to SMUD's long-term financial health; b) spur the creation of innovative products and services; c) capture the value of SMUD's brand and intellectual property; d) better leverage and optimize SMUD's assets; and e) enable SMUD to continue to attract and retain a talented workforce.

Therefore:

a) SMUD shall broaden and diversify its lines of business, which may include:

   i) Being an external service provider;

   ii) Expanding wholesale energy market opportunities;

   iii) Capitalizing on intellectual property and assets to develop products and services either solely or through strategic partnerships;

   iv) Selling products and services aligned with SMUD's purpose and Strategic Directions.

b) SMUD shall ensure any new lines of business:

   i) Benefit SMUD's customers and our community;

   ii) Achieve a balanced, diversified portfolio of rewards and risks;

   iii) Create economic value without compromising SMUD's financial health;

   iv) Do not pose unreasonable risk to SMUD's reputation;

   v) Align with, leverage, and optimize SMUD's strengths, assets and expertise;

   vi) Position SMUD for the future.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

December 21, 2017	Resolution No. 17-12-05	Date of Adoption.
March 21, 2019	Resolution No. 19-03-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: **Board-Staff Linkage**
Policy No.: **BL-1**
Title: **Board-CEO Relationship**

The Board of Directors governs the Sacramento Municipal Utility District and is the policy-making body of SMUD. The Board operates under the provisions of the Municipal Utility District Act of the State of California (the MUD Act) and all other applicable statutes and laws.

a) The Board of Directors is responsible for the following:

   i) Identify and define the purpose, values and vision of SMUD, along with the results that are acceptable and not acceptable for SMUD to achieve, and communicate them in the form of policy.

   ii) Make certain operational decisions as are designated by law.

   iii) Hire, evaluate, and terminate the Chief Executive Officer and General Manager (CEO).

b) The CEO is responsible for the following:

   i) Manage all operations and business affairs of SMUD.

   ii) Achieve the results established by the Board within the appropriate and ethical standards of business conduct set by the Board.

   iii) Prepare and submit to the Board for approval each year a budget to achieve the Board's strategic directives.

   iv) Enforce SMUD ordinances, administer the civil service system (including hiring and terminating of all officers and employees except the Chief Legal Officer and General Counsel and the Board Special Assistant), attend meetings of the Board and report on the general affairs of SMUD, and keep the Board advised as to the needs of SMUD.

   v) Establish and enforce a code of ethics applicable to all employees, which provides clear guidelines for ethical standards and conduct.

   vi) Implement and maintain an integrated enterprise risk management process that identifies, assesses, prudently manages and mitigates a variety of risks facing SMUD.

   vii) Ensure the smooth continuous operation of SMUD in the event of the planned or unplanned absence of the CEO.

viii) Interact with the public and other utilities and government agencies, pursuant to policies adopted by the Board. The CEO shall assure, in cooperation and consultation with the Board, that SMUD is appropriately represented in the community it serves.

ix) Perform other responsibilities as may be delegated by the Board either by resolution or through the CEO's contract of employment.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
May 6, 2004	Resolution No. 04-05-05	Date of Revision.
December 6, 2007	Resolution No. 07-12-02	Date of Revision.
December 20, 2007	Resolution No. 07-12-13	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
January 21, 2010	Resolution No. 10-01-07	Date of Revision.
February 18, 2010	Resolution No. 10-02-11	Date of Revision.
January 20, 2011	Resolution No. 11-01-09	Date of Revision.
July 16, 2015	Resolution No. 15-07-02	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: **Board-Staff Linkage**
Policy No.: **BL-2**
Title: **Board-Chief Legal Officer and General Counsel Relationship**

The Chief Legal Officer and General Counsel provides legal counsel to SMUD and to the Board. The Chief Legal Officer and General Counsel reports both to the Board and to the Chief Executive Officer and General Manager (CEO).

The Board of Directors is ultimately responsible for hiring and terminating the Chief Legal Officer and General Counsel. As a general practice, the Board and the CEO shall participate jointly in hiring and terminating the Chief Legal Officer and General Counsel.

The CEO is responsible for evaluating the Chief Legal Officer and General Counsel's performance. The CEO shall solicit the Board's input in evaluating the performance of the Chief Legal Officer and General Counsel, and the Board may, at its discretion, participate in that evaluation.

With respect to the Board, the Chief Legal Officer and General Counsel shall:

a) Serve as the Board Secretary.

b) Give his or her advice or opinion whenever he or she deems necessary or when required by the Board.

c) Inform the Board of material legal issues impacting SMUD or the Board.

d) When necessary, act independently of the CEO.

e) Provide counsel to the Board and individual Board members with regard to conflict-of-interest issues.

f) Provide counsel to the Board and individual Board members with regard to other ethical matters.

g) Assist the Board and Board members in complying with applicable statutes and laws.

The Chief Legal Officer and General Counsel shall not provide legal counsel to Board members except in their role as Board members.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
April 6, 2006	Resolution No. 06-04-08	Date of Revision.
July 16, 2015	Resolution No. 15-07-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-3
Title: Board-Internal Auditor Relationship

The Internal Auditor provides independent, objective assurance and consulting services to the Board and management designed to add value and improve SMUD's operations. The Internal Auditor's mission is to enhance and protect organizational value by providing risk-based and objective assurance, advice and insight.

The Internal Auditor will govern the internal audit department by adhering to the mandatory elements of The Institute of Internal Auditors' International Professional Practices Framework, including the Core Principles for the Professional Practice of Internal Auditing, the Code of Ethics, the International Standards for the Professional Practice of Internal Auditing, and the Definition of Internal Auditing.

The Internal Auditor reports to the Board of Directors. In addition, the Internal Auditor reports to the Chief Executive Officer and General Manager (CEO) for all administrative matters. The Board may provide input into the audit planning process and may require that special projects and reviews be conducted.

The CEO is responsible for hiring and terminating the Internal Auditor with the concurrence of the Board. As part of the hiring process, the CEO will recommend two qualified final candidates to the Board for its consideration. The CEO may rank the candidates in order of preference.

The CEO is responsible for the evaluation of the Internal Auditor's performance. The Board, at its discretion, may participate in the Internal Auditor's performance evaluation.

The Internal Auditor will assure that the internal audit department remains free from all conditions that threaten the ability of the auditors to carry out their responsibilities in an unbiased manner; including matters of audit selection, scope, procedures, frequency, timing, and report content.

The Internal Auditor shall conduct audit services as identified in the annual audit plan, investigations, and special projects requested by management, Chief Legal Officer and General Counsel, or the Board. The work of the Internal Auditor shall provide reasonable assurance regarding the achievement of objectives in the following areas:

a) Adherence to plans, policies and procedures.

b) Compliance with applicable laws and regulations.

c) Effectiveness and application of administrative and financial controls.

d) Effectiveness and efficiency of operations.

e) Reliability of data.

f) Safeguarding assets.

g) Accuracy of the Strategic Direction monitoring reports.

The Internal Auditor in the performance of his or her duties shall have access to the Board of Directors and unlimited access to all activities, records, property and personnel of SMUD.

The Internal Auditor will maintain a quality assurance and improvement program that covers all aspects of the internal audit department.

The Board shall receive the results of all audits it requests and all results from the annual audit plan. Audit reports from the annual audit plan will be placed on a Board committee agenda for discussion as an information item. In addition, the Internal Auditor shall inform the Board of the results of any other audit when he or she reasonably determines that the audit indicates a significant financial, operational, or reputational risk to SMUD. In all cases, reports will be sent to individuals, be it the Board or management, who are in positions to see that action is taken on audit findings and recommendations.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
April 20, 2006	Resolution No. 06-04-10	Date of Revision.
December 18, 2008	Resolution No. 08-12-10	Date of Revision.
November 1, 2012	Resolution No. 12-11-08	Date of Revision.
August 20, 2015	Resolution No. 15-08-02	Date of Revision.
April 19, 2018	Resolution No. 18-04-06	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-4
Title: Board-Special Assistant Relationship

The Special Assistant helps the Board fulfill its various responsibilities. The Special Assistant serves under the direction and control of the Board.

The Board is responsible for hiring, evaluating, and terminating the Special Assistant.

The Chief Executive Officer and General Manager (CEO) shall have input into the Special Assistant's performance evaluation.

The CEO determines the compensation of the Special Assistant, but the Board may, at its discretion, provide to the CEO its recommendation regarding the Special Assistant's compensation.

The Special Assistant shall:

a) Communicate Board members' requests to SMUD management and staff related to constituent affairs.

b) Coordinate with SMUD management and staff in responding to Board member requests related to constituent affairs.

c) Handle all other matters that are properly delegated to him or her by the Board.

d) Notwithstanding these activities, the Special Assistant is not empowered to instruct or direct SMUD management or staff.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-5
Title: Unity of Control

Only decisions of the Board acting as a body are binding on the Chief Executive Officer and General Manager (CEO), the Chief Legal Officer and General Counsel, and the Internal Auditor.

Specifically, in or out of the Board meeting:

a) Decisions or instructions of individual Board members, officers, or committees are not binding on the CEO, Chief Legal Officer and General Counsel or Internal Auditor except in instances when the Board has specifically authorized such exercise of authority.

b) In the case of Board members or committees requesting information or assistance without Board authorization, the CEO, Chief Legal Officer and General Counsel or Internal Auditor must refuse such requests that require, in their opinion, a material amount of staff time, or funds, or are disruptive.

c) Board members may communicate directly with SMUD employees or contractors. However, the Board as a body and the Board members will never give direction to persons who report directly or indirectly to the CEO, with the exception of the Chief Legal Officer and General Counsel, Internal Auditor and Special Assistant. If individual Board members are dissatisfied with the response they receive, they may seek a resolution by the Board.

d) Board Members will refrain from evaluating, either formally or informally, any staff. The Board as a body will refrain from evaluating, either formally or informally, any staff other than the CEO, the Chief Legal Officer and General Counsel, the Internal Auditor, and the Special Assistant.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
June 15, 2006	Resolution No. 06-06-05	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-6
Title: Evaluating the CEO's Performance

The CEO's job performance shall be evaluated by comparing the organization's results, operations and their personal performance to the policies established by the Board.

Specifically:

a) The Board shall evaluate the CEO's performance on an annual basis in December. In the same month, the CEO shall propose performance criteria for the following year that represent their reasonable interpretation of achieving the results defined by the Board.

b) The evaluation will be based on a review of the organization's performance and the CEO's personal performance against the performance criteria proposed under subsection a), as accepted by the Board.

c) Additional performance discussions and check-ins with the CEO should occur at mid-year.

d) The Board will use data to determine the degree to which Board policies are being met.

e) All policies that instruct the CEO shall be monitored at a frequency and by a method chosen by the Board.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
November 3, 2005	Resolution No. 05-11-03	Date of Revision.
December 18, 2008	Resolution No. 08-12-16	Date of Revision.
November 19, 2009	Resolution No. 09-11-07	Date of Revision.
December 10, 2020	Resolution No. 20-12-06	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-7
Title: Delegation to the CEO

The Board will instruct the Chief Executive Officer and General Manager (CEO) through written policies that define the results that the organization is to achieve, and which describe the delegation of authority to the CEO.

Specifically:

a) The Board shall identify and define those results or conditions of SMUD that are acceptable and not acceptable to the Board and communicate them in the form of policy.

b) The Board shall develop policies that define the delegation to the CEO with regard to the CEO's authority.

c) The CEO is authorized to establish all further policies, make all decisions, take all actions, establish all practices, and develop all activities related to the operations or business affairs of SMUD.

d) The CEO shall use prudent judgment in the exercise of the delegations and in a manner that is operationally and economically sound, serves the best interests of SMUD's customers and the community, comports with prudent business practices, balances the risks and benefits of the actions, and does not expose SMUD to unreasonable risk. If the CEO reasonably determines that an activity related to the delegations presents, regardless of the size of the financial commitment: (i) a unique and significant operational risk to SMUD; (ii) a significant impact to customers; (iii) a significant impact to community relations; (iv) a significant impact to SMUD's reputation; or (v) materially compromises the policies and goals established by the Board, the CEO shall timely inform the Board and may request the Board to take appropriate actions.

e) The Board may change its delegation to the CEO at any time, subject to the conditions of the Board's contract with the CEO, thereby expanding or limiting the authority of the CEO. But as long as any particular delegation is in place, the Board will abide by the CEO's decisions in those areas that are delegated to him or her.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
November 3, 2005	Resolution No. 05-11-02	Date of Revision.
December 6, 2007	Resolution No. 07-12-03	Date of Revision.
November 19, 2009	Resolution No. 09-11-06	Date of Revision.
August 21, 2014	Resolution No. 14-08-03	Date of Revision.
August 20, 2015	Resolution No. 15-08-06	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-8
Title: Delegation to the CEO with Respect to Procurement

The procurement of goods and services is an integral part of SMUD operations. SMUD's procurement activities shall take place in accordance with the following principles:

a) **Competition:** SMUD's procurement activities shall be competitive whenever practical.

b) **Direct Procurement:** Direct procurement may be utilized when it is in SMUD's best interest. Direct procurement is the purchase of goods or services without competition when multiple sources of supply are available.

c) **Sole Source Procurement:** Sole source procurement shall be performed only in the case of emergency or when a competitive process would be an idle act.

d) **Inclusiveness:** SMUD's procurement practices shall promote inclusiveness of the entire supplier community in its contracting opportunities.

e) **Economic Development:** SMUD's procurement practices shall promote the economic development of the community we serve.

f) **Environmental Procurement:** SMUD shall minimize the impact on the environment through its procurement practices. In making procurement decisions, staff shall consider the environmental impacts in assessing total cost and benefits.

g) **Responsible Bidder:** SMUD shall only do business with reputable and responsible suppliers. A Responsible Bidder demonstrates trustworthiness, quality, capacity, financial capability, fair labor practices, and experience to satisfactorily perform SMUD work through the bidding and evaluation process. In addition, SMUD will determine Responsible Bidders by considering a supplier's social, environmental ethical, and safety accountability where applicable.

h) **Supplier Code of Conduct:** SMUD shall set minimum expectations or standards for all suppliers to follow in the course of doing business with SMUD (in some cases by submitting data and reporting annually) including but not limited to, labor and human rights, environmental, social, governance (ESG), health and safety accountability, ethics and compliance, and diversity, equity, inclusion, and belonging practices.

i) **Best Value Procurement:** SMUD may procure goods and services by the best value at the lowest cost methodology, where cost and other factors are used to obtain the maximum value while ensuring a fair and equitable process.

j) **Leveraged Procurement Agreement (LPA):** SMUD may procure goods and services where another lead public agency or organization competitively procures the same goods or services under applicable state and federal laws to streamline procurement processes and leverage collective buying power of multiple agencies to achieve cost savings and other benefits to SMUD. Leveraged procurement agreements are generally referred to by other public agencies as "Cooperative Purchasing Agreements."

k) **Strategic Alliances:** SMUD may enter into strategic alliance contracts for the procurement of goods or services. A Strategic Alliance is a competitively bid multi-year contract for goods and/or services in which the Supplier and SMUD work collaboratively over the life of the contract to improve quality, and to explore design and process improvements to reduce the cost of production, service delivery, and the total cost of ownership. These benefits are shared both by SMUD and the Supplier.

l) **Supply Chain Risk:** SMUD's procurement activities shall identify, manage, and mitigate supply chain risks through a coordinated effort across the enterprise.

m) **Protest Policy:** SMUD shall ensure that suppliers are afforded the opportunity to have their grievances heard through a fair protest process.

n) **Delegation of Authority to the CEO:** The Chief Executive Officer and General Manager (CEO) is delegated authority to perform and approve the procurement activities in accordance with the below matrix. This delegation includes the authority to amend contracts for time extensions or other changes that create no additional cost to SMUD.

Category	**Amount***
Competitive Awards:	
Operational Inventory	$11 million
Non-inventory Materials	$11 million
Construction and Maintenance Services	$11 million
Information Technology	$11 million
Professional and Consulting Services	$3 million
Rents and Leases	$1 million
Sole Source:	
All types except Maintenance/Licensing Fees	$1.5 million
Maintenance/Licensing Fees	$3 million or original approved amount
Direct Procurement:	
Materials/Supplies/Services	$50k**
Government Entities	$1 million
Nonprofit Entities (services/goods)	$1 million

Category	Amount*
Emergency Procurements:	
All types	$2 million
Nonprofit Entities:	
Memberships/Project Participation Agreement	$3 million
Contingencies:	
Board Awarded Contracts	Up to 10% of Contract Award

***The amounts for all categories except Direct Procurement Materials/Supplies/Services shall be adjusted automatically on an annual basis beginning Jan 1, 2024, consistent with the U.S. Bureau of Labor Statistics (BLS) published national consumer price index (CPI) per the Federal Reserve Bank of Minneapolis Average Annual CPI calculator.**

****The amount shall be adjusted automatically on an annual basis pursuant to the implicit price deflator as set forth in California Public Utilities Code section 12751, using the base year of 1997.**

Monitoring Method: CEO Report
Frequency: Quarterly
Versioning:

August 21, 2003	Resolution No. 03-08-07	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
June 3, 2004	Resolution No. 04-06-04	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
October 1, 2009	Resolution No. 09-10-05	Date of Revision.
August 4, 2011	Resolution No. 11-08-04	Date of Revision.
November 17, 2011	Resolution No. 11-11-06	Date of Revision.
March 15, 2012	Resolution No. 12-03-13	Date of Revision.
August 21, 2014	Resolution No. 14-08-03	Date of Revision.
December 15, 2016	Resolution No. 16-12-18	Date of Revision.
July 16, 2020	Resolution No. 20-07-05	Date of Revision.
March 18, 2021	Resolution No. 21-03-04	Date of Revision.
June 15, 2023	Resolution No. 23-06-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-9
Title: Delegation to the CEO with Respect to Local, State and Federal Legislation and Regulation

This Board supports development of legislative and regulatory policies that further the Board's policies.

a) The Chief Executive Officer and General Manager (CEO) is authorized to develop local, state and federal legislative, regulatory and budget positions consistent with Board policies, and communicate them to the Congress, the Legislature, regulatory agencies, local agencies and relevant stakeholders.

b) When communicating a new position on local, state or federal legislation or budget proposals, the CEO will provide advance notice to the Board when feasible.

Monitoring Method: CEO Report
Frequency: Semi-Annual
Versioning:

October 21, 2004	Resolution No. 04-10-07	Date of Adoption.
December 18, 2008	Resolution No. 08-12-17	Date of Revision.
August 4, 2011	Resolution No. 11-08-04	Date of Revision.
October 6, 2011	Resolution No. 11-10-01	Date of Revision.
August 21, 2014	Resolution No. 14-08-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-10
Title: Delegation to the CEO with Respect to Real and Personal Property

Normal business operations require SMUD to engage in: (i) the acquisition, disposition, and lease of interests in real property; and (ii) the disposition and lease of surplus personal property.

a) **Delegation of Authority:** The Chief Executive Officer and General Manager (CEO) is delegated decision making and approval authority within the parameters that follow.

b) **Real Property:**

i) Purchase, Sale or Exchange of Real Property. The purchase price does not exceed $5 million and is within 115% of the appraised value of the property. The sale of real property shall be at fair market value and offered in accordance with California Government Code section 54220 et seq. and other applicable law. In an exchange of real property, SMUD shall remain financially whole or benefit from the transaction.

ii) Lease of SMUD Real Property. Leases shall be for fair market value and shall not adversely impact SMUD's current or anticipated future operations.

iii) Easements, Rights of Way, Licenses or Quitclaim Deeds. Easements, rights of way, licenses and quitclaim deeds may be granted to third parties where SMUD's current or anticipated future operations are not adversely impacted. Lease, easements, licenses and rights-of-way from third parties may be obtained within 125% of fair market value.

iv) Special Assessments, Governmental Fees and Property Taxes. Cast all ballots, negotiate, pay taxes, assessments, fees, levies or charges arising from or related to SMUD's ownership or other interests in real property.

c) **Personal Property:**

i) Disposal of Surplus, Scrap or Obsolete Personal Property. The disposal of surplus, scrap, or obsolete personal property shall be done in accordance with applicable law.

ii) Lease of SMUD Personal Property. Leases shall be for fair market value and shall not adversely impact SMUD's current or anticipated future operations.

Monitoring Method: CEO Report

Frequency: Annual

Versioning:

September 21, 2006	Resolution No. 06-09-11	Date of Adoption.
December 7, 2006	Resolution No. 06-12-03	Date of Revision.
December 18, 2008	Resolution No. 08-12-11	Date of Revision.
August 4, 2011	Resolution No. 11-08-04	Date of Revision.
August 21, 2014	Resolution No. 14-08-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-11
Title: Delegation to the CEO with Respect to the Settlement of Claims and Litigation

Normal business operations require SMUD to enter into settlements of: (i) claims and lawsuits filed against it and brought by SMUD against third parties; (ii) regulatory matters to which SMUD is a party; and (iii) other disputes with third parties ("Dispute" or "Disputes").

a) **Delegation of Authority:** The Chief Executive Officer and General Manager (CEO), upon the advice of the General Counsel, is delegated authority to enter into settlement agreements to resolve Disputes and is authorized to execute all necessary documents to finally resolve such matters in accordance with Board policy and within the parameters of the matrix below.

Category	Amount
Tort Claims/Other Claims Under Workers' Compensation Laws	Up to SMUD's self-insured retention levels[1]
Condemnations Filed by SMUD:	
Up to 115% of Appraised Value	$5 million
Greater than 115% of Appraised Value	$500k
Condemnations Filed Against SMUD:	
85% or greater of Appraised Value	$5 million
Less than 85% of Appraised Value	$500k
All Other Disputes	$500k

b) **Reporting:** The CEO shall timely provide the Board with a summary of any significant settlement of a Dispute.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

October 19, 2006	Resolution No. 06-10-04	Date of Adoption.
December 7, 2006	Resolution No. 06-12-04	Date of Revision.
January 24, 2008	Resolution No. 08-01-06	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
August 4, 2011	Resolution No. 11-08-04	Date of Revision.
August 21, 2014	Resolution No. 14-08-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

[1] Amounts in excess of the self-insured retention levels are paid under insurance policies.

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-12
Title: Delegation to the CEO with Respect to Transactions Involving Transmission and Wholesale Energy, Fuel, and Environmental Attributes

As part of prudently managing energy related risks, providing retail rate stability and serving customers, SMUD is required to enter into: (i) contracts to purchase and sell wholesale electricity, electric capacity and storage, natural gas and clean and emissions-free fuel, and environmental attributes; (ii) contracts for transmission, fuel transportation and fuel storage; and (iii) contracts to financially hedge or mitigate pricing, supply and market risks associated with the transactions above.

Delegation of Authority: The Chief Executive Officer and General Manager (CEO) is delegated decision making authority consistent with the Energy Risk Management and Energy Trading Standards adopted by this Board.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

February 18, 2010	Resolution No. 10-02-12	Date of Adoption.
August 4, 2011	Resolution No. 11-08-04	Date of Revision.
August 21, 2014	Resolution No. 14-08-03	Date of Revision.
June 17, 2021	Resolution No. 21-06-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-13
Title: Delegation to the CEO with Respect to Grants

SMUD's participation in state and federal grants as a prime-recipient or sub-recipient provides a unique opportunity for SMUD to leverage state and federal funds to advance SMUD's policies, conduct research and development projects, and provide benefits to the Sacramento community. SMUD's grant participation shall further SMUD's strategic directives, provide benefits to SMUD's customers and the community, and shall be consistent with the following principles.

a) **Competitive Advantage:** Because grants are typically competitively awarded, SMUD will select its grant partners or participate on a grant team where the partners provide a competitive advantage in the grant selection process. Time permitting and where practical, SMUD will select qualified grant partners through a formal or informal request for qualifications.

b) **Viable Grant Partners:** SMUD shall only contract with reputable and financially viable grant partners.

c) **Local Grant Partners:** All other things being equal, in selecting grant partners SMUD will generally prefer governmental entities, not-for profit organizations, and businesses located in the Sacramento region.

d) **Delegation of Authority to the CEO:** The Chief Executive Officer and General Manager (CEO) is delegated authority to select and enter into contracts with grant partners and file grant applications where SMUD's commitment of financial and in-kind resources to the grant does not exceed $3 million.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

November 18, 2010	Resolution No. 10-11-10	Date of Adoption.
August 4, 2011	Resolution No. 11-08-04	Date of Revision.
August 21, 2014	Resolution No. 14-08-03	Date of Revision.
November 19, 2020	Resolution No. 20-11-02	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Board-Staff Linkage
Policy No.: BL-14
Title: Delegation to the CEO with Respect to Products, Services and Programs

SMUD develops and provides innovative products, services and programs to benefit our customers, community and operations. These products, services and programs provide options to our customers, improve our operations, and further the purpose of Strategic Direction SD-19, Diversified Business.

a) **Delegation of Authority:** The Chief Executive Officer and General Manager (CEO) is delegated decision making and approval authority for the development and delivery of products, services and programs for SMUD customers.

In addition, the CEO is authorized to enter into strategic partnerships related to the development and delivery of innovative technologies, new business models, programs or services within and outside of the SMUD service area consistent with Strategic Direction SD-19.

The CEO shall seek prior Board approval for strategic partnerships that create a material financial, reputational, or operational risk.

b) **Reporting:** The CEO shall provide advance notice to the Board prior to entering into new strategic partnerships.

Monitoring Method: CEO Report
Frequency: Annual
Versioning:

March 1, 2012	Resolution No. 12-03-08	Date of Adoption.
December 19, 2013	Resolution No. 13-12-14	Date of Revision.
August 21, 2014	Resolution No. 14-08-03	Date of Revision.
December 21, 2017	Resolution No. 17-12-11	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-1
Title: Purpose of Board

The Board is the legislative body of the Sacramento Municipal Utility District. It operates under the provisions of the Municipal Utility District Act of the State of California (the MUD Act) and all other applicable statutes and laws.

The purpose of the Board of Directors is to:

a) Identify and define the purpose, values and vision of SMUD and communicate them in the form of policy.

b) Identify and define those quantitative and qualitative results or conditions of SMUD that are acceptable and not acceptable to the Board and communicate them in the form of policy.

c) Monitor the organization's performance against the results that the Board has established for SMUD.

d) Make certain operational decisions as designated by law.

e) Hire, evaluate and, when necessary, discharge the CEO.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
November 3, 2005	Resolution No. 05-11-04	Date of Revision.
July 15, 2021	Resolution No. 21-07-08	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-2
Title: Governance Focus

The Board will govern with an emphasis on: (i) outward vision rather than an internal preoccupation; (ii) encouragement of diversity in viewpoints; (iii) strategic leadership more than administrative detail; (iv) clear distinction of Board and CEO roles; (v) collaborative rather than individual decisions; (vi) the future rather than past or present; and (vii) proactive thinking.

Specifically:

a) The Board will cultivate a sense of group responsibility. It will be responsible for excellence in governing. The Board will be an initiator of policy and use the expertise of individual members to enhance the ability of the Board as a body.

b) The Board will direct, evaluate and inspire the organization through the establishment of written policies reflecting the Board's values. The Board's major policy focus will be on SMUD's intended impacts outside the organization, not on the administrative or programmatic means of achieving those effects.

c) Continual Board development will include orientation of new Board members in the Board's governance policies and processes, periodic re-orientation of existing Board members, and regular Board discussion of process improvement.

d) The Board will regularly discuss and evaluate its performance. Self-monitoring will include comparison of Board activities and discipline to policies adopted by the Board. It will be up to the Board president or committee chair to determine the appropriate manner of this feedback and evaluation.

Monitoring Method: Board Report
Frequency: Semi-Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
November 3, 2005	Resolution No. 05-11-05	Date of Revision.
December 21, 2006	Resolution No. 06-12-13	Date of Revision.
October 16, 2008	Resolution No. 08-10-08	Date of Revision.
May 17, 2012	Resolution No. 12-05-09	Date of Revision.
July 15, 2021	Resolution No. 21-07-09	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-3
Title: Board Job Description

The specific job duty of Board members as elected representatives is to ensure appropriate organizational performance.

Specifically, the Board shall:

a) Produce and maintain written policies that ensure high quality of governance and clear roles in decision-making between Board and staff.

b) Regularly monitor and evaluate the performance of the CEO.

c) Seek to understand the strategic viewpoints and values of our customers, owners, the community and other interested stakeholders.

d) Develop and adopt Strategic Direction policies for SMUD that define the outcomes the Board wants SMUD to achieve – and refine those Directions as conditions warrant while recognizing the importance of providing predictable policy direction to the CEO and staff.

e) Review the Strategic Directions regularly, on the timetable specified in each policy, and communicate to the CEO whether the Board finds SMUD to be in compliance. For the purpose of this policy, compliance is defined as substantially meeting the requirements of the Strategic Direction.

f) Adopt the SMUD budget on an annual basis.

g) Serve as ambassadors for SMUD and build relationships throughout SMUD's service territory and the region.

h) Contract with an external independent auditor to audit SMUD's finances and procedures; such audits are to be performed on an annual basis.

i) Set the rates, rules and regulations for services and commodities provided by SMUD.

j) Take such other actions as may be required by law.

Monitoring Method: Board Report
Frequency: Annual

Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
December 1, 2005	Resolution No. 05-12-11	Date of Revision.
March 5, 2009	Resolution No. 09-03-05	Date of Revision.
December 3, 2009	Resolution No. 09-12-04	Date of Revision.
January 20, 2010	Resolution No. 11-01-07	Date of Revision.
April 3, 2014	Resolution No. 14-04-03	Date of Revision.
June 19, 2014	Resolution No. 14-06-06	Date of Revision.
April 20, 2017	Resolution No. 17-04-08	Date of Revision.
July 15, 2021	Resolution No. 21-07-10	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-4
Title: Board/Committee Work Plan and Agenda Planning

To accomplish its strategic leadership consistent with Board policies, the Board will develop and follow an annual work plan that ensures the Board: (i) focuses on the results the Board wants the organization to achieve; (ii) defines the conditions of SMUD that it considers acceptable and unacceptable; (iii) meets its other obligations as stated by law or policy; and (iv) continually improves its performance through education, feedback, and deliberation. The Board work plan shall guide SMUD staff in preparing the agendas for regular board meetings and standing committee meetings.

Specifically:

a) **Board Work Plan**

i) The Board will develop each year a list of topics and issues that it wishes to explore in the coming years and maintain a work plan that will be regularly reviewed by the Board or a standing committee.

ii) The Board President shall ensure that the Board's agendas meet the goals of the annual work plan.

b) **Board Agendas**

i) Board agendas shall be posted on the SMUD website at www.smud.org least 72 hours prior to a regular Board meeting and at least 24 hours before a special Board meeting.

ii) Only members of the Board and the Chief Executive Officer and General Manager (CEO) and his or her designees may place items on the Board agenda.

iii) Items for placement on the agenda fall into the following categories:

- Items generated by SMUD management;
- Items placed on the agenda by a Board member;
- Presentations by outside persons or agencies that have received approval for placement on an agenda from the Board President (*see* Meeting Procedures of the SMUD Board of Directors for details).

iv) To the extent possible, when the Board conducts its regular review of the Board Work Plan, a Board member should notify the other Board members if the member intends to place an item on the agenda for discussion at a Board meeting.

v) When a Board member wishes to invite people to make a presentation at a Board meeting, the Board member should coordinate with the Board President and CEO. When a Board member invites people to speak at a Board meeting during the public comment period, the Board member should notify the Board President in advance of the meeting to ensure the efficient management of public comment.

vi) Items may be placed on the agenda on either the consent calendar or the discussion calendar. An item placed on the consent calendar may be moved from the consent calendar to the discussion calendar at the request of any Board member, prior to a motion and a second on the consent calendar.

vii) A Board member may propose at the beginning of the meeting to pull an item from the agenda. Upon a motion and a second, the Board may vote to approve the agenda as revised.

viii) Matters not on the agenda for a regular meeting will not be considered by the Board at that meeting except: (1) upon determination by a majority of the Board that an emergency situation exists, severely impairing public health and/or safety; or (2) upon a determination by a two-thirds vote of the Board or by a unanimous vote if less than two-thirds of the members are present, that the need to take action arose subsequent to the agenda being posted; or (3) as otherwise permitted under the Ralph M. Brown Act of the California Government Code.

ix) Whenever an item has been approved for consideration by the Board under paragraph b) viii) of this policy, the Board President will read, upon introducing the item for Board consideration, a brief summary which shall include the subject title, a short explanation of the subject matter, and, if any, the recommendation.

x) Matters on the agenda for regular meetings which have not been considered and acted upon at such meetings or continued to a subsequent meeting will be deemed continued to the following regular meeting until they can be relisted as a regular item.

xi) Whenever the Board fails to take action on an item on the Board's agenda, the Board will set a date for reconsideration of the item. If for any reason the Board fails to set such a date, the Board Secretary will list all such items as a "pending item" on the action item section of the next regular agenda for which the Board Secretary is accepting items.

c) **Committee Agendas**

i) Committee agendas shall be posted on the SMUD website at www.smud.org at least 72 hours prior to the committee meeting.

ii) Items may be placed on a committee agenda either by a decision by the full Board, the Board President, a Board member, or by the CEO and his or her designees.

iii) To the extent possible, when the Board conducts its regular review of the Board Work Plan, a Board member should notify the other Board members if the member intends to place an item on the agenda for discussion at a committee meeting.

iv) When a Board member wishes to invite people to make a presentation at a committee meeting, the Board member should coordinate with the committee chair and the CEO. When a Board member invites people to speak at a committee meeting during the public comment period, the Board member should notify the committee chair in advance of the meeting to ensure the efficient management of public comment.

v) Members of the public may request the opportunity to be listed on a committee agenda for purposes of making a presentation at a committee meeting on matters within SMUD's jurisdiction. The committee chair will review all complete presentation requests and may, at his or her discretion, direct the responsible staff to list the presentation on the committee's agenda. (*See* Meeting Procedures of the SMUD Board of Directors for details).

d) **Issuance of Agendas**

i) The Board Secretary's office, under the direction of the CEO and the Board President, shall prepare and issue an agenda for each regular meeting and special meeting of the Board.

ii) The Executive Management team, under the direction of the CEO and in coordination with the standing committee chairs, shall prepare and issue an agenda for each standing committee meeting.

iii) Proposed Board agendas will be reviewed by the Board President and proposed committee agendas will be reviewed by the committee chair prior to the development of the relevant public notices.

Monitoring Method: Board Report
Frequency: Annual

Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
June 3, 2004	Resolution No. 04-06-07	Date of Revision.
March 20, 2008	Resolution No. 08-03-07	Date of Revision.
October 16, 2008	Resolution No. 08-10-09	Date of Revision.
March 5, 2009	Resolution No. 09-03-06	Date of Revision.
February 3, 2011	Resolution No. 11-02-02	Date of Revision.
January 16, 2014	Resolution No. 14-01-05	Date of Revision.
July 17, 2014	Resolution No. 14-07-03	Date of Revision.
September 21, 2017	Resolution No. 17-09-10	Date of Revision.
February 18, 2021	Resolution No. 21-02-05	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-5
Title: Election of Board President and Vice President

The Board shall elect each year a president and vice president to preside over it, under the following terms and conditions:

a) The nominations for and selection of president and vice president for the ensuing year shall be accomplished by the Board no later than the first regularly scheduled meeting in January.

b) The president and vice president shall be elected upon a vote of four or more Board members voting in approval.

c) The terms of president and vice president shall be for a period of one year or until such time as a successor has been selected pursuant to these rules.

d) The president may serve no more than one term in succession.

e) During the absence of the president, the vice president will preside, and, in the event that both the president and vice president are absent, the members present shall select one of their members to act as president pro tem.

f) In the event that the office of either president or vice president becomes vacant, the board, within 30 days from the date of such vacancy, will select one of its members to fill the term of that office.

g) The president and/or vice president shall be recalled upon a vote of four or more Board members voting to recall. Nomination and election of a new president and/or vice president shall occur within 30 days from the date of the vote to recall.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-6
Title: Role of the Board President

The President of the Board shall assure the integrity of the Board's processes and assure Board representation to outside parties:

Specifically:

a) The President shall ensure that the Board behaves consistently within its own rules and policies, and those legitimately imposed on it from outside the organization.

b) The President shall preside over and facilitate Board meetings.

c) The President shall ensure that meeting discussion focuses on those issues which, according to Board policy, belong to the Board to decide.

d) The President shall ensure that deliberation is fair, open and thorough, but also timely, orderly and kept to the point.

e) The President shall appoint the chairs of standing committees.

f) The President shall schedule and coordinate the annual process of evaluating the Chief Executive Officer and General Manager (CEO).

g) The President shall ensure that the Board's agendas meet the goals of the annual work plan.

h) The President shall ensure a process is in place for regularly evaluating the Board's adherence to Board policies.

i) The President shall assure a Board meeting procedures manual is adopted.

j) The President shall ensure the Board is effectively represented to outside stakeholders, organizations, and other groups.

k) The President has no authority to supervise or direct the CEO, apart from authority expressly granted him or her by the Board.

l) The President may delegate his or her authority, but remains accountable for its use.

Monitoring Method: Board Report
Frequency: Annual

Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
June 3, 2004	Resolution No. 04-06-07	Date of Revision.
January 12, 2006	Resolution No. 06-01-04	Date of Revision.
December 21, 2006	Resolution No. 06-12-14	Date of Revision.
January 20, 2011	Resolution No. 11-01-08	Date of Revision.
February 20, 2014	Resolution No. 14-02-10	Date of Revision.
March 17, 2020	Resolution No. 20-03-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-7
Title: Guidelines for Board Member Behavior

The Board and its members should act in an ethical, businesslike, productive, and lawful manner. Board members should avoid even the appearance of impropriety to ensure and maintain public confidence in SMUD.

Specifically:

a) Board members shall conduct themselves in accordance with all laws.

b) Board members should conduct themselves with civility and respect at all times with one another, with staff, and with members of the public.

c) Board members are expected to demonstrate loyalty to the interests of SMUD owners and ratepayers. This supersedes any conflicting loyalty such as that to advocacy or interest groups and membership on other Boards or staffs. It also supersedes the personal interest of any Board member acting as a consumer of the organization's activities.

d) Board members may not attempt to exercise individual authority over the organization except as explicitly set forth in Board policies.

    i) Board members should recognize the lack of authority vested in them as individuals in their interactions with the CEO or with staff, except where explicitly Board authorized.

    ii) In their interactions with the public, press or other entities, Board members should recognize the same limitation and the inability of any Board member to speak for the Board or for other Board members except to repeat explicitly stated Board decisions.

e) Board members shall at all times endeavor to express their individual opinions in a responsible manner, without causing harm to SMUD, to SMUD's owners and customers, or to other Board members and staff.

    i) Each member of the Board is expected to support the Board's decision-making authority, irrespective of the member's personal position.

    ii) Board members retain the right to criticize the decisions of SMUD, but in doing so should make it clear that it is their opinion, and not the opinion of the Board or other Board members, and so long as it complies with the limitations set forth in these policies. Board members are encouraged to notify the CEO in advance when they plan to speak publicly in opposition to SMUD decisions and policies.

f) Members should prepare themselves for Board deliberations.

g) Board members shall discourage former Board members from attempting to influence the Board, individual Board members or staff, on behalf of any third party (other than a governmental entity) from whom the former Board member is receiving compensation, on any matter that the former Board member substantially participated in during his or her tenure with the Board. This provision shall not apply to: (i) communications by a former Board member acting in his or her capacity as an individual or customer and for which the Board member receives no compensation; or (ii) communications with a former Board member who has not been a Board member for more than two years.

Monitoring Method: Board Report
Frequency: Semi-Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
April 6, 2006	Resolution No. 06-04-06	Date of Revision.
March 20, 2008	Resolution No. 08-03-05	Date of Revision.
July 15, 2021	Resolution No. 21-07-11	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-8
Title: Board Committee Principles

The Board may establish standing committees and the president may establish ad hoc committees based on need and input from the Board members.

Standing committees shall assist the Board in its ongoing work and activities. Standing committees shall be composed of three Board members, including a chair and vice-chair, who shall be appointed by the Board President. Any other Board member may attend and participate in the deliberations of any standing committee. Each standing committee shall have a charter describing the committee's purpose. If a standing committee lacks a quorum of members for any meeting, the President, Vice-President, or Committee chair, in that order, may appoint a non-committee Board member to serve on the Committee for that meeting.

Ad hoc committees shall be created for a limited duration to address a specific topic of interest to the Board. Each ad hoc committee may be composed of two or three Board members, and shall include designation of a chair and a clear statement of purpose. Ad hoc committees are not required to provide public notice of their meetings under the Ralph M. Brown Act. Each ad hoc committee shall report back at a publicly noticed Board or standing committee meeting on its activities.

Specifically:

a) All committees will ordinarily assist the Board by gaining education, considering alternatives and implications, and preparing policy alternatives.

b) Board committees may not speak or act for the Board except when formally given such authority for specific and time-limited purposes.

c) Board committees cannot exercise authority over staff nor interfere with the delegation from the Board to the CEO. Because the CEO works for the full Board, he or she will not be required to obtain approval of a Board committee before an executive action.

d) As a general rule, items scheduled for Board action (including items requested by a Board member) shall first be presented to a standing committee for review.

e) Standing committees shall be reviewed at least annually by the Board to determine whether they should continue.

f) This policy applies to any group which is formed by Board action, whether or not it is called a committee and regardless of whether the group includes Board members. It does not apply to committees formed under the authority of the CEO.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
June 3, 2004	Resolution No. 04-06-07	Date of Revision.
January 12, 2006	Resolution No. 06-01-05	Date of Revision.
January 24, 2008	Resolution No. 08-01-07	Date of Revision.
March 20, 2008	Resolution No. 08-03-08	Date of Revision.
September 17, 2009	Resolution No. 09-09-10	Date of Revision. (Effective Date = January 1, 2010)
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-9
Title: Board Committee Chairs

The committee chairs shall preside over and facilitate committee meetings.

Specifically:

a) Standing committee chairs shall approve the annual calendar of committee meetings.

b) Standing committee meetings are generally scheduled monthly or as determined by the committee chair in consultation with the Board President and Board Office.

c) Committee chairs shall reschedule and cancel meetings, in consultation with the Board President and Board Office.

d) Committee chairs shall ensure that committee meetings focus on those issues which, according to Board policy, belong to the Board to decide.

e) Committee chairs shall ensure that discussion is fair, open and thorough, but also timely, orderly, and kept to the point.

f) Standing committee chairs shall present the committee results to the Board at the Board meeting following the committee meeting, as necessary.

g) Standing committee chairs shall review the committee agenda prior to circulation of the public notice of the meeting.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
June 3, 2004	Resolution No. 04-06-07	Date of Revision.
January 12, 2006	Resolution No. 06-01-06	Date of Revision.
February 18, 2021	Resolution No. 21-02-07	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-10
Title: Board Training, Orientation

The Board will invest in training, development and orientation to assure excellence in governance.

Specifically:

a) Board members shall be offered and encouraged to receive training in the skills of effective governance, communication and decision making.

b) The Board president and Board committee chairs shall be offered and encouraged to receive training in the facilitation of meetings.

c) At least every two years, Board members shall receive training on sexual harassment prevention and laws related to ethics (conflict of interest requirements, government transparency, open and fair government processes). Training shall be made available annually.

d) New Board members shall receive an orientation in the SMUD's governance policies.

e) Board members shall be offered and encouraged to receive regular training with respect to understanding trends and developments in public power and the energy industry.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
December 1, 2005	Resolution No. 05-12-09	Date of Revision.
April 6, 2006	Resolution No. 06-04-07	Date of Revision.
April 19, 2007	Resolution No. 07-04-13	Date of Revision.
April 17, 2008	Resolution No. 08-04-10	Date of Revision.
August 20, 2009	Resolution No. 09-08-14	Date of Revision.
July 18, 2013	Resolution No. 13-07-03	Date of Revision.
March 17, 2016	Resolution No. 16-03-10	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-11
Title: Board Review of Internal Records

Board members may review any record of SMUD at any time, so long as confidentiality requirements are followed.

Specifically:

a) Board member requests to inspect SMUD records shall be forwarded to the CEO, who will provide the requested files for review on SMUD premises.

b) No confidential or original documents shall be taken from SMUD premises except with the authorization of the CEO.

c) Board members shall follow the same confidentiality requirements applicable to SMUD employees dealing with such files. SMUD employee personnel files will not be subject to Board review except as permitted by law.

d) The Board Office shall maintain a log of all copies of documents requested by Board members. The log will be available for inspection by members of the public during working hours.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-12
Title: Board Compensation and Benefits

In keeping with the MUD Act, members of the Board of Directors are entitled to compensation for their service. Specifically:

a) Each Board member may receive for each attendance at the meetings of the full Board, Board committee meetings, ad hoc committee meetings, publicly noticed SMUD workshops or meetings, other publicly noticed meetings where the Board member is representing the Board, state or federal legislative briefings or meetings where the Board member is representing the Board, meetings with SMUD customers or staff relating to SMUD business, community meetings or events where the Board member is representing SMUD, events where SMUD is being recognized, conferences and organized educational activities, the sum of $317.00 per day of service. No director may receive compensation for more than ten (10) days in any one calendar month. Campaign and political meetings, events, and fundraisers are not compensable under this policy.

b) Each Board member may also be reimbursed for expenses related to travel, meals, lodging and other actual and necessary expenses incurred in the performance of his or her official duties as described in subsection a). Reimbursement shall be in accordance with Internal Revenue Service regulations as established in Publication 463, or any successor publication.

c) Each Board member may be reimbursed for computer and other technology purchases, rentals, and refurbishments that will aid them in the performance of their duties pursuant to reimbursement policies applicable to executive and senior leaders.

d) Compensation forms shall be completed by a Director and distributed by the Board office for review and approval prior to a Board meeting. The Board shall review and approve compensation and any request for technology reimbursement at each regular Board meeting. Board member compensation, along with any requests for technology reimbursement, shall be placed on the consent calendar at each regular Board meeting, unless a Board member requests that it be placed on the discussion calendar. Expense reimbursement forms and requests for expenditures for travel and training shall be completed by a Director and submitted to the Board President or Vice President for approval as appropriate.

e) SMUD shall provide and contribute payment for health care benefits, equivalent to the contribution made to SMUD employees in the PAS employee group, to any Board member who elects such benefit, and additionally make an annual contribution payment of $500 to a Flexible Spending Account.

f) Subject to the applicable tax codes and IRS rules and regulations, and to the extent possible, SMUD shall direct payment to a SMUD defined contribution plan (either a 457(b) plan or a 401(k) plan) for each Director who elects to have such a benefit in the amount of 30% of compensation based on days of service. Directors who elect to receive this benefit must (1) have a SMUD defined contribution plan and (2) direct payment to the defined contribution plan of their choice at initial enrollment and then during (and only during) SMUD's open enrollment period for employee benefits.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

December 19, 2002	Resolution No. 02-12-14	Date of Adoption.
October 16, 2003	Resolution No. 03-10-14	Date of Revision.
December 2, 2004	Resolution No. 04-12-03	Date of Revision.
December 1, 2005	Resolution No. 05-12-10	Date of Revision.
May 17, 2007	Resolution No. 07-05-08	Date of Revision.
July 16, 2009	Resolution No. 09-07-02	Date of Revision.
September 18, 2014	Resolution No. 14-09-07	Date of Revision.
December 20, 2018	Resolution No. 18-12-15	Date of Revision.
December 12, 2019	Resolution No. 19-12-05	Date of Revision.
June 15, 2023	Resolution No. 23-06-02	Date of Revision. (Effective Date = July 1, 2023)
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-13
Title: Core and Key Values

In articulating its values, the Board distinguishes between “core” values and “key” values. Core values are deemed essential for the success of SMUD and for serving SMUD’s customers. Key values provide added value to our customers. Key values are subordinate to the core values.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

May 6, 2004	Resolution No. 04-05-04	Date of Adoption.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-14
Title: External Auditor Relationship

The Board is responsible for hiring SMUD's external auditor to perform the annual independent audit.

Specifically:

a) The Board will make the choice of external auditor, based on input from staff and others it deems necessary to exercise prudent, independent judgment.

b) After consulting with Board members, the Chair of the Finance and Audit Committee shall meet with the external auditor after the audit is complete. The meeting will be independent of staff. The Board member(s) will report their findings to the Board on a timely basis.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

August 21, 2008	Resolution No. 08-08-14	Date of Adoption.
March 17, 2020	Resolution No. 20-03-04	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

SMUD BOARD POLICY

Category: Governance Process
Policy No.: GP-15
Title: Board Travel and Training Reimbursement

Board members shall have the opportunity to attend conferences, meetings, training, and various activities that are appropriate to their work as Directors and provide value to SMUD.

As part of this policy:

a) Each Board member shall have an annual budget for travel and training purposes of $15,000, adjusted annually for inflation based on the Travel Price Index (July-June) and rounded to the nearest hundred dollars. The training budget shall include attendance at community functions.

b) If a Board member exceeds his or her annual budget, then he or she shall be responsible for reimbursing SMUD within 30 days the difference between the member's annual budget and the actual expenditure.

c) The Board shall approve its travel and training budget annually.

d) Budgeted travel and training funds shall expire at the end of each calendar year with no rollover option.

e) The Board travel and training budget shall be managed by the Special Assistant to the Board as part of the Board Office budget.

f) Requests for travel, training and events in excess of $500 shall be accompanied by a written justification of the benefits to SMUD and consistency with Board policy and submitted to the Board Special Assistant 30 days prior to the event. Such justification will include the estimated costs, the percentage to be paid by SMUD, and whether the expenditure will span multiple years.

    i) If SMUD representation is requested with shorter than 30-day notice and travel is required, the Board Special Assistant shall notify Board members of the pending trip.

    ii) Written travel and training justifications shall be distributed to all Board members in the Board packet for purposes of transparency and oversight, along with a status report on the Board's travel and training budget and individual directors' expenditures.

g) Board members shall submit all relevant travel and training receipts to Board Office staff within two weeks for reconciliation.

h) Board members shall publicly report the results of their travel and training at a Board meeting.

i) New Board members shall receive an orientation in the Board's travel and training policy.

Monitoring Method: Board Report
Frequency: Annual
Versioning:

November 13, 2008	Resolution No. 08-11-07	Date of Adoption. (Effective Date = January 1, 2009)
August 20, 2009	Resolution No. 09-08-15	Date of Revision.
October 6, 2011	Resolution No. 11-10-02	Date of Revision.
December 1, 2016	Resolution No. 16-12-03	Date of Revision.
September 21, 2023	Resolution No. 23-09-02	Date of Revision. [Current Policy]

RESOLUTION NO. 23-09-03

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

That this Board hereby appoints Crystal Henderson to the position of Special Assistant to the Board of Directors effective September 25, 2023.

Approved: September 21, 2023

INTRODUCED: DIRECTOR KERTH				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

RESOLUTION NO. 23-09-04

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

This Board accepts the monitoring report for **Strategic Direction SD-7, Environmental Leadership**, substantially in the form set forth in **Attachment B** hereto and made a part hereof.

Approved: September 21, 2023

INTRODUCED: DIRECTOR KERTH				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

Attachment B
to Resolution No. 23-09-04

SACRAMENTO MUNICIPAL UTILITY DISTRICT

OFFICE MEMORANDUM

TO: Board of Directors **DATE:** August 30, 2023

FROM: Claire Rogers CR 8/30/23

SUBJECT: **Audit Report No. 28007609**
Board Monitoring Report; SD-7: Environmental Leadership

Internal Audit Services (IAS) received the SD-7 *Environmental Leadership* 2022 Annual Board Monitoring Report and performed the following:

- Selected a sample of statements and assertions in the report for review.
- Interviewed report contributors and verified the methodology used to prepare the statements in our sample.
- Validated the reasonableness of the statements in our sample based on the data or other support provided to us.

During the review, nothing came to IAS' attention that would suggest the items sampled within the SD Board Monitoring report did not fairly represent the source data available at the time of the review.

CC:

Paul Lau

Board Monitoring Report 2022
SD-7 Environmental Leadership

1. Background

Strategic Direction 7 (SD-7), Environmental Leadership states that:

Environmental leadership is a core value of SMUD. In achieving this directive, SMUD will:

a. Conduct its business affairs and operations in a sustainable manner by continuously improving pollution prevention, minimizing environmental impacts, conserving resources, and promoting equity within SMUD's diverse communities.
b. Provide leadership and innovation to improve air quality and reduce greenhouse gas emissions.
c. Promote the efficient use of energy by our customers.
d. Advance the electrification of vehicles, buildings, and equipment.
e. Attract and build partnerships with customers, communities, policy makers, the private sector, and other stakeholders.

2. Executive Summary

SMUD's focus on environmental leadership is clearly evident in our 2030 Clean Energy Vision and Zero Carbon Plan, but it also includes transparent reporting of greenhouse gas (GHG) emissions, natural resource stewardship and our concerted efforts to make all of our communities more sustainable. This report highlights some of the accomplishments SMUD achieved in 2022 to showcase our commitment to environmental leadership.

We are compliant with the five tenets of SD-7 and our successes include making CDP's (formerly known as the Carbon Disclosure Project) "A- List" for tackling climate change. Our efforts are highlighted in the following Appendices: Appendix A (Examples of SMUD Efforts Supporting SD-7), Appendix B (2015-2022 SMUD GHG Emissions Trends), Appendix C (Sustainable Communities Deliverables and Accomplishments To-Date), and Appendix D (List of Acronyms).

3. Additional Supporting Information

CDP 2030 Clean Energy Vision and Zero Carbon Plan

For decades, SMUD has been a leader in clean energy and carbon reduction. SMUD's goal to eliminate carbon emissions from our power supply is more ambitious than the already aggressive state mandates and is ahead of virtually all other utilities in the United States. Our 2030 Zero Carbon Plan is a flexible road map to achieve our zero carbon goal while ensuring all customers and communities we serve reap the benefits of decarbonization. Zero carbon emissions bring benefits not only globally, but also locally with reduced GHG emissions, improved local air quality, job creation opportunities, and leadership as we move away from the use of fossil fuels.

Greenhouse Gas (GHG) Emissions

SMUD is a leader in addressing global climate change and is an active member of The Climate Registry (TCR). SMUD reports its third-party verified GHG emissions to the California Air Resources Board (CARB), TCR and CDP. We also report sulfur hexafluoride (SF_6) emissions and GHG emissions from thermal power plants to the US Environmental Protection Agency (EPA).

For 2022, GHG emissions were approximately 2.082 million metric tons carbon dioxide equivalent (CO_2e)[1] . This is a decrease of just over 340 thousand metric tons from 2021 emissions; a trend going back to 2015 (which was an especially severe drought year) can be found in Appendix B. Fluctuations in total emissions year-to-year are primarily attributable to hydroelectricity production, availability of ACS (Asset Controlling Supplier) low-carbon power and natural gas contract rates.

As we continue to purchase greater quantities of zero and lower emissions-intensity power, we expect emissions to decrease. A breakdown of emissions by thermal power plant, and power purchases, with comparisons between 2021 and 2022 can be found in Appendix B.

SMUD adds biofuels to its thermal power plant fuel supply to reduce our carbon compliance obligation and we generated approximately 20 GWh of power from biofuels in 2022. Emissions from biofuels are typically considered “carbon-neutral” under several GHG reporting protocols including California’s Cap-and-Trade Program.

Sulfur Hexafluoride Phase-Out; Early Action Credits

In 2022, SMUD installed 8 69-kV vacuum circuit breakers at its Hedge and Hurley substations. The vacuum breakers replaced oil-circuit breakers that would have typically been replaced by SF_6 circuit breakers with a capacity of 33 lb. of SF_6 per breaker. As a result, SMUD was able to avoid adding an additional 264 lb. of SF_6 to its inventory. This is equivalent to reducing our potential to emit by about 2,800 metric tons of CO2 emissions. Additionally, the vacuum breakers were installed prior to CARB’s SF_6 phase-out date of January 1, 2025, for this equipment category. As a result, the project allows SMUD to claim the capacity of the breakers as “Early Action Credits” towards compliance with future CARB emission limits.

TCR Climate Registered™ Platinum Status

For the fourth year in a row, SMUD was awarded Climate Registered™ Platinum status by The Climate Registry (TCR), a non-profit organization which designs and operates voluntary and compliance GHG reporting programs. To date, SMUD has submitted over 12 years of verified inventories to TCR. Climate Registered™ Platinum level recognition is the second highest tier that can be achieved which SMUD earned by publicly reporting its third-party verified GHG emissions inventory for its operations in 2021, and by setting and disclosing its ambitious GHG reduction goals. GHG inventory data enables us to track the effectiveness of our climate initiatives and GHG reductions over time.

[1] The 2022 GHG emissions value represents emissions associated with delivering power to SMUD customers and does not include emissions associated with wholesales into the market. The 2022 emissions from wholesale power are approximately 0.074 million metric tons of CO2.

CDP

SMUD was recognized for our leadership in corporate sustainability by global environmental non-profit CDP, attaining leadership level for 3 straight years and securing an A- on our 2022 disclosure. SMUD was recognized for its actions to cut GHG emissions, mitigate climate risks, and develop the low-carbon economy based on reported data. CDP's annual environmental disclosure and scoring process is widely recognized as the gold standard of corporate environmental transparency.

Notices of Violation (NOVs)

SMUD and its contractors strive to be responsible environmental stewards that comply with all local, state, and federal rules and regulations. In 2022, SMUD received no NOVs or similar citations that include civil and/or criminal penalties.

Sustainable Communities

To promote environmental equity as well as inclusive economic and community development, SMUD continues to focus on community partnerships, programs, and neighborhood outreach activities in vulnerable and under-resourced communities through its Sustainable Communities program. SMUD has invested over $14.6 million into this program, which takes a boots-on-the-ground approach to tackle issues plaguing our community, while creating an inclusive, clean-energy economy for all communities, with a special emphasis on those in historically under-resourced areas. We rely on grassroots community partnerships and projects to ensure better social well-being, environmental, economic, and mobility outcomes. SMUD's Zero Carbon Plan committed to ensuring all communities in Sacramento share in the benefits of the clean energy transition, including health benefits from improved air quality, new jobs, and resilience to climate change. We ensure access to an inclusive clean energy future in the Sacramento Region regardless of zip code or socio-economic status by focusing on equitable access to mobility, a prosperous economy, a healthy environment, and social well-being as seen in Appendix C.

In 2022, as part of the Station H mitigation plan, SMUD coordinated with United Auburn Indian Community, Wilton Rancheria, Ione Band of Miwok Indians, and Shingle Springs Band of Miwok Indians, to develop a partnership with American River College's Native American Resource Center to benefit Native students in the region. This 3-year partnership includes support for the American Indian Summer Institute, an in-person summer bridge program for local Native youth and helped establish the Elder-in-Residence program which is designed to perpetuate the practices of traditional cultural and ecological knowledge.

Sacramento Tree Foundation (STF) Sacramento Shade Program

In 2022, the STF distributed 9,525 trees as part of its Sacramento Shade program serving 3,271 customers (1,445 or 44.18% in under-resourced communities). A total of 2,802 trees (29.4%) were planted in under-resourced communities. The total carbon (stored in biomass and avoided) for these trees is estimated at 37,539 metric tons. To better understand issues related to tree planting and care, STF community liaisons actively engage residents to help resolve tree planting impediments.

Power-in-Pollinators Initiative

SMUD is an active member of and co-chaired the Electric Power Research Institute's (EPRI) Power-in-Pollinators initiative, which exists to promote and expand pollinator conservation among energy utilities. The partnership shares the latest scientific findings, case studies and tools to assist with the integration of pollinator-friendly practices into utility vegetation, facilities, and land management. SMUD's efforts to support pollinator habitat span multiple departments including Environmental Services, Power Generation, Vegetation Management, Facilities, Real Estate, Customer & Grid Strategy and Advanced Energy Solutions which collaborate on both research and operational practices. Projects include Sacramento Shade which offers free flowering trees to customers, native plant giveaways at community events, a multi-year ecosystem research project at our Rancho Seco Solar facility, a collaborative transmission right-of-way research project and a Monarch Habitat Assessment for our service territory.

Wildfire Mitigation Plan (WMP)

SMUD's goal is to provide safe, reliable, environmentally sustainable, and economical electric service to its communities. SMUD constructs, maintains, and operates our electrical lines and equipment to minimize any risk of catastrophic wildfire. Our updated 2023-2025 WMP describes the range of activities we are doing to mitigate the threat of power-line ignited wildfires, including various programs, policies and procedures. The WMP meets or exceeds the requirements of Public Utility Commission (PUC) section 8387 for publicly owned electric utilities and customers can find additional information at Wildfire Safety. For implementation of the WMP, Vegetation Management has undertaken wildfire risk reduction/forest health work, covering all of SMUD's transmission and distribution lines in the UARP from the El Dorado County line to Loon Lake.

Workflow Integration Program (WIP)

The WIP processed 886 planned overhead and underground electrical infrastructure projects in 2022, which is a 106% increase from the number of projects reviewed in 2021. Avoidance and minimization measures (AMMs) were prescribed for 199 projects to reduce impacts on sensitive biological resources and the risk of NOVs. Field crews were given information on AMMs in their job packets, including descriptions of resources they could encounter, pre-construction survey requirements and the potential inclusion of biological and/or cultural monitors.

Equipment Electrification

Internally, SMUD has been replacing gas/diesel-powered equipment with equivalent electric/battery powered tools where they are available from the market, such as chain saws, trimmers, blowers, and generators. As technology has developed, these replacements have expanded since 2022, with 46% of the equipment now battery powered. Our goal is to convert 100% of the equipment to battery powered by 2025.

Resource Conservation

The Operational Excellence and Warehouse teams collaborated to improve the Warehouse's salvage program, resulting in extra income, cost savings and less waste sent to landfills. A process re-engineering effort was undertaken that is expected to increase the amount we receive from recycling parts and materials by $1.1 million over 5 years. In

addition, the process improvement effort in the Warehouse's parts and materials reuse area is expected to result in a cost savings of $895,000 over the next 5 years.

The Campbell Power Plant used a total of 99.6 million gallons of recycled water delivered from Regional Sans Echo Water Project system. Campbell's cooling tower used approximately 900,000 gallons per day at its peak, equal to about 1.4 Olympic-sized swimming pools worth of water.

A collaborative effort between Energy Trading & Contracts and Power Generation led to an estimated $1.2 million in savings and operational flexibility. These teams worked together to improve our operations, save money and most importantly during a drought – save water. This was accomplished through keeping water in our Upper American River Project (UARP) reservoirs after a rare instance earlier in the year, when projections showed we may have to spill (release) water due to an unusually early snowmelt. Among the impacts from this collaborative and quick-thinking action: about 663 acre-feet of water, or 1,607 MWhs of generation, was not spilled out of our hydroelectric system; about 14,721 acre-feet of water, or 46,163 MWhs of generation, was able to be stored for future use; and the total estimated value of the water that was saved was $1.2 million.

4. Challenges

In June 2022, SMUD's Cosumnes Power Plant (CPP) experienced an unplanned outage following planned maintenance. The outage continued, unplanned, though the rest of the year. While this unexpected outage of SMUD's most reliable and efficient plant had a significant impact on the generation resources available to serve customer load last year, fortunately it did not adversely impact SMUD's emissions.

CPP's forecast generation was replaced with a mixture of available market purchases and available SMUD generation resources. While California continued with drought conditions in 2022 that reduced expected hydro generation by 40% from SMUD's hydro resources (i.e. the Upper American River Project and SMUD's WAPA hydro contract), the Pacific northwest experienced normal hydro conditions which allowed us to procure a significant amount of low emissions ACS power (~85% is from hydro generation).

We continue to expend considerable resources on numerous, complicated environmental remediation projects (e.g., the Former Community Linen site, 59th Street Reuse, Thornton Substation, and the North City Landfill Cap Design and Construction). Some of these efforts were additionally challenging due to regulatory changes made at the national level that do not consider California-specific factors.

5. Recommendation

It is recommended that the Board accept the Monitoring Report for SD-7, Environmental Leadership.

6. Appendices

A. Examples of SMUD Efforts Supporting Strategic Direction 7 (SD-7)
B. 2015-2022 SMUD Greenhouse Gas Emissions Trends
C. Sustainable Communities Deliverables and Accomplishments To-Date
D. List of Acronyms

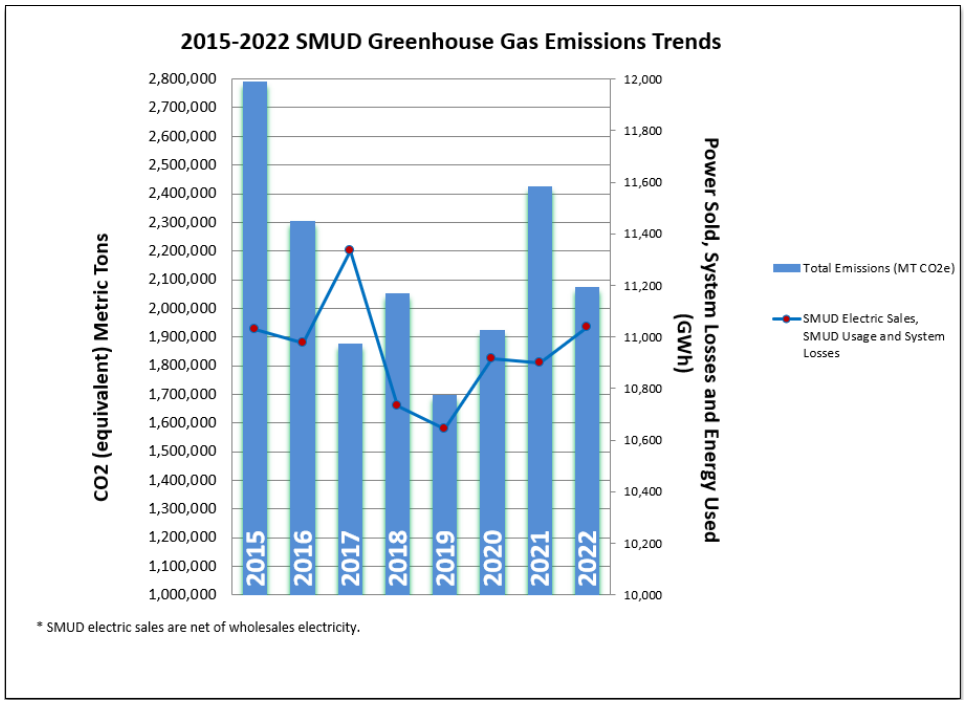
Appendix A

Examples of SMUD Efforts Supporting Strategic Direction 7 (SD-7)

SD-7 Requirement	Supporting Effort
A) SMUD will conduct its business affairs and operations in a sustainable manner by continuously improving pollution prevention, minimizing environmental impacts, conserving resources, and promoting equity within SMUD's diverse communities.	SMUD exceeds state and federal requirements for public outreach for the California Environmental Quality Act (CEQA);Country Acres Solar; 59th Street; Former Community Linen; North City landfill closure; Station H; Solano 4; Workflow Integration; Wildfire Mitigation Plan; Partnership with Sacramento Tree Foundation (9,525 trees distributed to customers in 2022 with 29.4% in under-resourced communities); SMUD Green Team; Environmentally Sustainable Purchasing Program (ESPP); Sustainable Communities; Pollinator Support; SD-5 (Customer Relations); SD-13 (Economic Development); SD-15 (Outreach and Communication); CA Clean Air Day; Waste diversion rate of 77.31%; Asset recovery program for wood reels, wood pallets, metals.
B) SMUD will provide leadership and innovation to improve air quality and reduce greenhouse gas emissions.	2030 Clean Energy Vision and Zero Carbon Plan; Third-party verified annual GHG reporting to the U.S. Environmental Protection Agency (EPA), California Air Resources Board (CARB), The Climate Registry (TCR) and CDP; GHG reduction efforts; Hydrogenation-Derived Renewable Diesel (HDRD); SF_6 database pilot; SD-9 (Resource Planning); Integrated Resource Plan (IRP); SD-10 (Research and Development); Solano 4; Environmental Sustainable Purchasing Program (ESPP); CA Clean Air Day.
C) SMUD will promote the efficient use of energy by our customers.	Greenergy®; SolarShares®; Energy Assistance Program Rate (EAPR); Commercial retrofit projects; Multifamily units retrofit projects; Energy efficiency weatherization; SMUD app; SD-5 (Customer Relations); SD-13 (Economic Development); SD-15 (Outreach and Communication); Sustainable Communities program.
D) SMUD will advance the electrification of vehicles, buildings, and equipment	California Mobility Center; Fleet and Equipment Electrification; Building Electrification (gas-to-electric conversions of water heating equipment, space heating equipment, and cooktops delivered through residential and commercial new construction and retrofit programs); Vehicle electrification (incentives for residential EV chargers and EV circuit installations, dealerships, commercial chargers and commercial vehicles); Sustainable Communities program.

E) SMUD will attract and build partnerships with customers, communities, policy makers, the private sector, and other stakeholders.	130 Sustainable Communities partnerships; Land Acknowledgement Statement, Electric Power Research Institute (EPRI); American Indian Summer Institute; Sustainable Supply Chain Alliance (SSCA); Partnership with Sacramento Tree Foundation (9,525 trees distributed to customers in 2022 with 29.4% in under-resourced communities).

Appendix B[1]



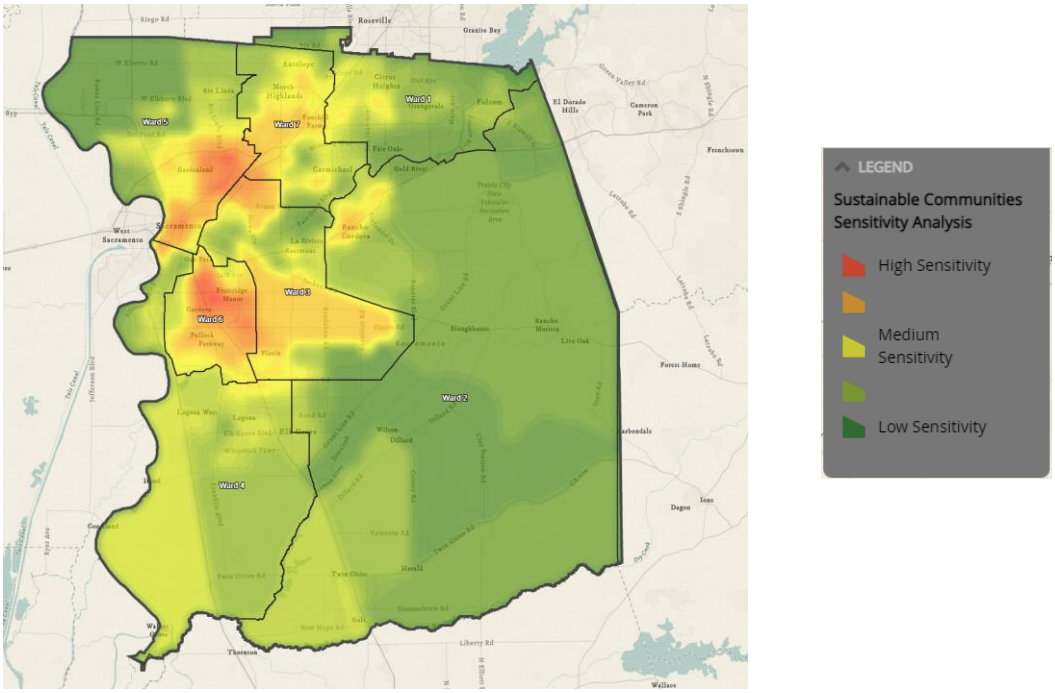
Thermal Power Plant Greenhouse Gas Emissions			
Source	**2021 MMT CO2e**	**2022 MMT CO2e**	**Percent Change**
Thermal Emissions less any Cogen Sales			
Cosumnes	1,473	375	-75%
Proctor & Gamble	299	324	8%
Campbell	282	414	47%
Carson	111	101	-9%
McClellan	2.75	2.55	-5%
Power Purchased and System Losses	495	815	63%
Net of Unspecified Market Purchases and Sales	-238	74	-131%
Total	2,425	2,082	-15%

[1] Unlike SD-9, the emissions data in SD-7 is not normalized.

Appendix C
Sustainable Communities Deliverables and Accomplishments To-Date



Sustainable Communities Resource Priorities Map



To answer the call for a just and equitable clean energy transition, SMUD created the Sustainable Communities Resource Priorities Map, which analyzes current data to identify

the local areas most likely to be under-resourced or in distress due to lack of community development, income, housing, employment opportunities, transportation, medical treatment, nutrition, education, and clean environment.

SMUD is continuing to analyze how various energy programs and projects can be enhanced or expanded to improve equity, incorporating what community members themselves feel is needed to achieve a more equitable energy future.

Appendix D
List of Acronyms

CARB	California Air Resources Board
CDP	Carbon Disclosure Project (formerly)
CEQA	California Environmental Quality Act
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
EAPR	Energy Assistance Program Rate
EJ	Environmental Justice
EPA	Environmental Protection Agency
EPRI	Electric Power Research Institute
ESPP	Environmentally Sustainable Purchasing Program
EVs	Electric Vehicles
GHG	Greenhouse Gas
GWh	Gigawatt Hour
HDRD	Hydrogenation Derived Renewable Diesel
IRP	Integrated Resource Plan
MT	Metric Tons
NEPA	National Environmental Policy Act
NOV	Notice of Violation
PUC	Public Utility Commission
SD	Strategic Direction
SEPA	Smart Electric Power Alliance
SF_6	Sulfur Hexafluoride
SMUD	Sacramento Municipal Utility District
SSCA	Sustainable Supply Chain Alliance
STF	Sacramento Tree Foundation
TCR	The Climate Registry
WIP	Workflow Integration Program
WMP	Wildfire Mitigation Plan

RESOLUTION NO. 23-09-05

WHEREAS, in 2021, SMUD released a competitive solicitation to develop the Country Acres project; and

WHEREAS, SMUD evaluated the offers received through that solicitation and determined that the **Clenera (parent company of Country Acres Clean Power, LLC)** offer provided superior value versus the alternatives; and

WHEREAS, SMUD and **Clenera** negotiated a mutually beneficial **Power Purchase Agreement (PPA)** under which SMUD will purchase the energy, capacity and environmental attributes, including Portfolio Content Category 1 Renewable Energy Credits (PCC1 RECs), for full dispatch rights to 344 MW of solar photovoltaic power (Solar PV) plus 172 MW/4-hour battery storage for an annual approximate cost of $59.7 million, with a combined maximum output of 344 MW at the Point of Interconnection to SMUD's transmission system; and

WHEREAS, the project's scheduled commercial operation date is December 15, 2026; and

WHEREAS, in addition to the **PPA**, SMUD is also negotiating a **Large Generator Interconnection Agreement**, **Lease Agreement**, **Station Service Agreement**, and a **Development Services Agreement (DSA)** that define the requirements for interconnection, land use, and certain project development responsibilities and terms; and

WHEREAS, the **DSA** terms include direct reimbursement or waiver of costs where this method is more beneficial to SMUD than **Clenera** paying and passing those costs back to SMUD through the **PPA** price; and

WHEREAS, two additional agreements with Placer County authorities apply to the project; and

WHEREAS, a **Memorandum of Understanding** between the **County of Placer (Placer County)** and SMUD **(MOU)** establishes a development fee that SMUD will pay to **Placer County** to provide funding for fire,

police, and public protection services as well as additional costs and requires an annual payment of $1,178,790 during the operational period of the project; and

WHEREAS, a **Mitigation Agreement** between **Placer Conservation Authority** and SMUD **(PCA Agreement)** establishes a mechanism to pay for the mitigation required by the **Environmental Impact Report** and **Conditional Use Permit** to be considered by **Placer County** and requires a one-time payment of approximately $25 million; and

WHEREAS, the price and other terms proposed in the **PPA** are commercially reasonable and benefit SMUD's ratepayers; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. The Chief Executive Officer and General Manager, or his delegate, is authorized to negotiate and execute the **Country Acres Clean Power, LLC (Country Acres) Power Purchase Agreement (PPA)** with a 30-year term for 344 MW of solar photovoltaic power (Solar PV) and a 20-year term for 172 MW of battery storage, substantially in the form of **Attachment C**, and all other agreements necessary to facilitate the **Country Acres** project.

Section 2. The Chief Executive Officer and General Manager, or his delegate, is authorized to make future changes to the terms and conditions of the contracts that, in his prudent judgment: (a) further the primary purpose of the contract(s); (b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract(s) amounts and applicable contingencies.

Approved: September 21, 2023

INTRODUCED: DIRECTOR KERTH				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

Attachment C
to Resolution No. 23-09-05

DRAFT POWER PURCHASE AGREEMENT

BETWEEN

SACRAMENTO MUNICIPAL UTILITY DISTRICT

AND

COUNTRY ACRES CLEAN POWER, LLC

DATED [___]

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This POWER PURCHASE AGREEMENT (the "Agreement") for an Eligible Renewable Energy Resource is made and entered into this _____day of _____, 2023, ("Effective Date"), by and between the Sacramento Municipal Utility District ("SMUD"), and Country Acres Clean Power, LLC ("Seller"). SMUD and Seller are sometimes referred to in this Agreement individually as a "Party" and collectively as the "Parties."

A. Seller desires to interconnect and operate a fully integrated solar photovoltaic generation plus battery storage facility (the "Project"), as described in Exhibit A, to be located on land identified by SMUD near SMUD's service territory and interconnected to SMUD's Elverta-Orangevale and Elverta-Foothill 230kV lines, in parallel with the SMUD Transmission System.

B. The Parties wish to enter into a power purchase agreement for the sale and purchase of all Energy, Capacity, Capacity Attributes, and Environmental Attributes from the Project directly to SMUD.

C. In conjunction with this Agreement, the Parties wish to execute a Large Generator Interconnection Agreement, Lease Agreement, Development Services Agreement and Station Service Agreement (together these four agreements are referred to as "Definitive Agreements"). This Agreement does not constitute an agreement by SMUD to interconnect the Project.

D. The Lease Agreement for the project site will, among other things, require Seller as Lessee to follow SMUD's Principles of Sustainable Development and Seller's Sustainable Development Plan.

E. This Agreement requires the Seller to be a retail customer and to obtain retail electrical service from SMUD to serve certain electrical loads at the premises identified in Exhibit A, except as otherwise permitted under SMUD's tariffs. This Agreement does not constitute an agreement by SMUD to provide retail electrical service to Seller. Such arrangements must be made separately between SMUD and Seller.

F. Developer will design, construct and operate a portion of the Project to accommodate SMUD's Agrivoltaics Farming and Orchard Project, as specified in the Land Lease ("Agrivoltaics FOP").

NOW THEREFORE, in consideration of the mutual covenants contained in this Agreement, and of other good and valuable considerations, the sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. DEFINITION OF TERMS; RULES OF INTERPRETATION

1.1 DEFINITION OF TERMS

12, 15 and 20-year Purchase Options: Has the meaning set forth in Section 19.1.

Accepted Capacity Attribute Compliance Expenditures: Has the meaning set forth in Section 4.5.3.

Accepted Compliance Expenditures: Has the meaning set forth in Section 3.4.3.

Affiliate: Has the meaning set forth in Section 17.1.2.

Agreement: Has the meaning set forth in the Preamble.

Agrivoltaics FOP: Has the meaning set forth in Recital F.

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Ancillary Services: Those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the Transmission Provider's transmission system in accordance with Good Utility Practice.

Annual Average PV Availability: The average of each monthly Availability Percentage for the Solar Project during a Contract Year.

Annual Average Battery Storage Availability: The average of each monthly Availability Percentage for the Battery Storage Project during a Contract Year.

Annual Battery Storage Capacity Test: Has the meaning given in Exhibit M.

Available Battery Storage Capacity: The total capacity of the Battery Storage Project, expressed in megawatts (AC), that is available to store Energy, as specified by Seller, from time to time, in accordance with the Outage Coordination Process.

Available PV Capacity: The power output from the Solar Project, expressed in megawatts (AC), that is available to generate Energy, as specified by Seller, from time to time, in accordance with the Outage Coordination Process.

Availability: The average percentage of time that the Project is available to generate, store, or discharge energy up to Pmax as corrected for ambient conditions. Availability shall be provided separately for the Solar Project and the Battery Storage Project and each shall be determined in accordance with Exhibit U.

Availability Percentage: The percentage determined in accordance with Exhibit U.

Availability System of Record: Seller's data historian or other automated tracking system that automatically tracks and reports all events affecting the availability of the Solar Project and Battery Storage Project, as validated by Seller's outage reporting into SMUD's iTOA system. The Availability System of Record shall be consistent with IEC 63019 record requirements, and Seller's SCADA system, and shall include a satisfactory description of each event affecting Availability.

Balancing Authority: Entity responsible for the reliable planning and operation of the bulk power system in a defined area.

Bank: Has the meaning set forth in Section 9.2.

Bankrupt: With respect to any entity, such entity that (a) files a petition or otherwise commences, authorizes or acquiesces in the commencement of a proceeding or cause of action under any bankruptcy, insolvency, reorganization or similar Law, (b) has any such petition filed or commenced against it which remains unstayed or undismissed for a period of ninety (90) days, (c) makes an assignment or any general arrangement for the benefit of creditors, (d) otherwise becomes bankrupt or insolvent (however evidenced), (e) has a liquidator, administrator, receiver, trustee, conservator or similar official appointed with respect to it or any substantial portion of its property or assets, or (f) is generally unable to pay its debts as they fall due.

Battery Storage Availability Requirement: Eighty-Five percent (85%).

Battery Storage Capacity Shortfall: The Initial Expected Battery Storage Capacity less the Expected Battery Storage Capacity that has been commissioned and is capable of reliably charging and discharging Energy.

Battery Storage Capacity Test: Any test or retest of the Capacity of the Battery Storage Project conducted in accordance with the testing procedures, requirements and protocols set forth in Exhibit M.

Battery Storage Commercial Operation Test: Has the meaning set forth in Section 2.3.10.

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Battery Storage Deficit Damages: Has the meaning set forth in Section 2.3.8(b).

Battery Storage Meter: The bi-directional revenue quality meter or meters, along with a compatible data processing gateway or remote intelligence gateway, telemetering equipment and data acquisition services sufficient for monitoring, recording and reporting, in real time, the amount of Charging Energy delivered to the Battery Storage Project and the amount of Discharging Energy discharged from the Battery Storage Project to the Delivery Points. For clarity, (i) the Project will contain multiple measurement devices that will make up the Battery Storage Meter, and, unless otherwise indicated, references to the Battery Storage Meter shall mean all such measurement devices and the aggregated data of all such measurement devices, taken together, and (ii) the Battery Storage Meter will be located, and the Energy will be measured, at the low voltage side of the main step up transformer and will be subject to adjustment in accordance with any meter requirements of SMUD and Prudent Utility Practices to account for applicable Electrical Losses to the Delivery Points.

Battery Storage Operating Restrictions: Those rules, requirements and procedures set forth in Exhibit J.

Battery Storage Price: Has the meaning set forth in Exhibit B.

Battery Storage Product: (a) Discharging Energy, (b) Capacity Attributes of the Battery Storage Project, if any, (c) Expected Battery Storage Capacity, and (d) Ancillary Services, if any, in each case arising from or relating to the Battery Storage Project.

Battery Storage Project: Seller's energy storage project described in Exhibit A, located at the Project site and including the mechanical equipment and associated facilities and equipment required to deliver Battery Storage Product, as such Battery Storage Project may be modified from time to time in accordance with the terms hereof.

Battery Storage Reliability Percentage: Has the meaning set forth in Exhibit S.

Bid: Has the meaning set forth in the CAISO Tariff.

Business Day: Any Monday through Friday, inclusive, but excluding days that are observed as business holidays by either Party or days that are NERC Holidays.

CAISO: The California Independent System Operator Corporation or its successor.

CAISO Balancing Authority Area: The system of transmission lines and associated facilities that is operated by the CAISO and for which the CAISO has operational control and responsibility for grid reliability.

CAISO Tariff: The California Independent System Operator Corporation Agreement and Tariff, Business Practice Manuals (BPMs), and Operating Restrictions, including the rules, protocols, procedures and standards attached thereto, as the same may be amended or modified from time-to-time and approved by FERC.

California Energy Commission (CEC): The agency responsible for certifying eligible renewable resources and tracking the procurement of such resources.

California Renewables Portfolio Standard (RPS): The standard, codified in Public Utilities Code (PUC) Sections 399.11 through 399.20, and Public Resources Code Sections 25740 through 25751, as may be amended from time to time.

Capacity: The instantaneous ability of a generator to produce Energy (real power) at a specified output or of a storage facility to charge or discharge Energy (real power) at a specified input or output. Capacity is measured in megawatts ("MW") AC or kilowatts ("kW") AC.

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Capacity Attributes: Any current or future defined characteristic, status, certificate, tag, credit, or ancillary service attribute, whether general in nature or specific as to the location or any other attribute of the Project, intended to value any aspect of the capacity of the Project to produce energy, charge and discharge energy or provide Ancillary Services, including, but not limited to, any accounting construct so that the full output of the Project may be counted toward a Resource Adequacy requirement or any other measure by an entity invested with the authority under federal or state law, to require SMUD to procure, or to procure at SMUD's expense, Resource Adequacy or other such products.

Capacity Attribute Compliance Expenditures: Has the meaning set forth in Section 4.5.1.

Capacity Attribute Compliance Expenditure Cap: Has the meaning set forth in Section 4.5.1.

Capacity Subtotal Payment: Has the meaning set forth in Section 2.4.7(a).

Change of Control: Any circumstance in which Ultimate Parent ceases (i) to retain the ability to control, directly or indirectly, the decision-making of Seller, or (ii) to own, directly or indirectly through one or more intermediate entities, more than fifty percent (50%) of the outstanding equity interests (measured by either voting power or economic interests) in Seller; provided that in calculating ownership percentages for all purposes of the foregoing:

a) any ownership interest in Seller held by Ultimate Parent indirectly through one or more intermediate entities shall not be counted towards Ultimate Parent's ownership interest in Seller unless Ultimate Parent directly or indirectly owns more than fifty percent (50%) of the outstanding equity interests (measured by either voting power or economic interests) in each such intermediate entity; and

b) ownership interests in Seller owned directly or indirectly by any lender (including any tax equity provider and any agent acting for or on behalf of such lender) shall be excluded from the total outstanding equity interests in Seller;

Provided that any Permitted Transfer shall not constitute or be deemed a "Change of Control." Furthermore, a foreclosure by any lender on the direct or indirect ownership interests in Seller (including a transfer in lieu of foreclosure or any transfer to a Permitted Transferee) shall not constitute or be deemed a "Change of Control".

Charging Energy: Energy delivered by SMUD, either from Transmission Provider's electrical system or from the Solar Project, for use in charging the Battery Storage Project and for discharge at a later time.

Charging Notice: The operating instruction, and any subsequent updates, given by SMUD to Seller, (i) directing the Battery Storage Project to charge at a specific MW rate to a specified Stored Energy Level and (ii) identifying the quantity of Charging Energy, provided that any such operating instruction or updates shall be in compliance with Section 5.4 and the Battery Storage Operating Restrictions. For the avoidance of doubt, any SMUD request to initiate a Battery Storage Capacity Test shall not be considered a Charging Notice. For the further avoidance of doubt, the Plant Controller shall automatically determine the amount of Charging Energy based on the MW setpoint for the combined total output of the Solar Project and Battery Storage Project given by SMUD.

Closing: Has the meaning set forth in Section 19.3.

Closing Date: Has the meaning set forth in Section 19.3.

COD Conditions: Has the meaning set forth in Section 2.3.4.

COD Notice: Has the meaning set forth in Section 2.3.4.

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Co-located Resource: Has the meaning as defined in the CAISO Tariff.

Commercial Operation: The period of operation of the Project once the Commercial Operation Date has occurred.

Commercial Operation Date (COD): The date specified in the Commercial Operation Date Confirmation Letter on which the Project satisfies the COD Conditions set forth in Section 2.3.4.

Commercial Operation Date Confirmation Letter: A letter that the Parties execute and exchange in accordance with this Agreement, the form of which is attached as Exhibit E.

Compliance Expenditure(s): Has the meaning set forth in Section 3.4.1.

Compliance Expenditure Cap: Has the meaning set forth in Section 3.4.1.

Contract Price: The prices ($/kW-month) paid by SMUD to Seller for each MW of Expected Battery Storage Capacity and Expected PV Capacity and for Product delivered to the Delivery Points. The Contract Price is shown in Exhibit B.

Contract Year: Any of the one-year periods during the Delivery Term, with the first Contract Year commencing on the COD and ending on the last day of the twelfth (12th) full month thereafter and each subsequent one-year period commencing on the applicable anniversary of such date.

Costs: Has the meaning set forth in Section 8.5.1(c).

Day-Ahead Market: Has the meaning set forth in the CAISO Tariff.

Defaulting Party: Has the meaning set forth in Section 8.2.1.

Deficit Damages: Has the meaning set forth in Section 2.3.8(b).

Definitive Agreements: Has the meaning set forth in the Preamble.

Delay Damages: The compensation paid by Seller to SMUD due to a failure of Seller to meet the Scheduled Commercial Operation Date in accordance with Section 2.3.7.

Delay LD Start Date: Has the meaning set forth in Section 2.3.7.

Delivered Energy: Energy delivered to the Delivery Points as measured by the Solar Meter and Battery Storage Meter(s).

Delivery Points: The interconnection locations of the Project on the high-side of the step-up transformer that interconnects to the SMUD Transmission System, where SMUD accepts title to the Product and associated attributes as described herein. The Delivery Points are identified in Exhibit A and are the same location as the Point(s) of Interconnection.

Delivery Term: Has the meaning set forth in Section 2.3.1.

Delivery Term Security: Has the meaning set forth in Section 9.2.

Development Security: Has the meaning set forth in Section 9.1.

Discharging Energy: All Energy delivered to the Delivery Points from the Battery Storage Project, net of the transformation and transmission losses, if any, as measured by the Battery Storage Meter. For the

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avoidance of doubt, all Discharging Energy will have originally been delivered to the Battery Storage Project as Charging Energy.

Discharging Notice: The operating instruction, and any subsequent updates, given by SMUD to Seller, directing the Battery Storage Project to discharge Discharging Energy at a specific MW rate to a specified Stored Energy Level; provided that (a) any such operating instruction or update shall be in accordance with Section 5.4 and the Battery Storage Operating Restrictions, and (b) if, during a period when the Battery Storage Project is instructed by SMUD to be discharging, the sum of PV Energy and Discharging Energy would exceed the Interconnection Capacity Limit, such "Discharging Notice" shall (for purposes of this Agreement) be deemed to be automatically adjusted to reduce the amount of Discharging Energy so that the sum of Discharging Energy and PV Energy does not exceed the Interconnection Capacity Limit, until such time as SMUD issues a further modified Discharging Notice. For the avoidance of doubt, the Plant Controller shall automatically determine the amount of Discharging Energy based on the SMUD Setpoint.

Dispatch; Dispatchability: The ability of a generating unit to increase or decrease generation or to be brought online or shut down at the request of a utility's system operator, or the ability of a storage facility to be charged or discharged or to be brought online or shut down at the request of a utility's system operator.

Dispatch Instruction: Any direction, instruction, or order by SMUD to increase, maintain, or decrease the generation or delivery of Energy consistent with the applicable SMUD Setpoint.

Dispatch Interval: Each of the twelve (12) five (5) minute time intervals beginning on any hour and ending on the next hour.

Distribution System: The relatively low voltage wires, transformers and related equipment generally used by an electric utility to deliver electric power to retail customers (as opposed to using it to move bulk quantities of power between different electric utilities or from large electric generators to a Distribution System).

Early Termination Date: Has the meaning set forth in Section 8.4.

Effective Date: Has the meaning set forth in the Preamble.

EIM: Shall mean the Western Energy Imbalance Market.

EIM Participating Resource: Has the meaning set forth in the CAISO Tariff.

Electric System: The integrated electric generation, transmission, and distribution facilities owned or controlled by an electric utility.

Electrical Losses: All transmission or transformation losses between the Project and the Delivery Points, including losses associated with (i) delivery of Energy to the Delivery Points, (ii) delivery of Charging Energy to the Battery Storage Project and (iii) delivery of Discharging Energy to the Delivery Points.

Eligible Renewable Energy Resource (ERR): An Eligible Renewable Energy Resource as defined in California Public Utilities Code Section 399.12 and California Public Resources Code Section 25471, as either code may be amended or supplemented from time to time, as defined in the CEC Renewables Portfolio Standard Eligibility Guidebook, as may be amended or supplemented from time to time.

Emergency Condition: A condition or situation: (1) that in the judgment of the Party making the claim is imminently likely to endanger life or property; or (2) that, in the case of a Transmission Provider, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, Transmission Provider's Transmission System, Transmission Provider's Interconnection Facilities or the electric systems of others to which the Transmission Provider's Transmission System is directly connected (including the conditions of System Operating Limit (SOL) (as

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defined in the LGIA) exceedance where the pre-contingency or post-contingency mitigation actions are required by NERC or WECC Reliability Standards); or (3) that, in the case of Seller, is imminently likely (as determined in a non-discriminatory manner) to cause a material adverse effect on the security of, or damage to, the Facility or Seller's Interconnection Facilities (as defined in the LGIA).

EMS or "Energy Management System": Has the meaning set forth in Section 5.5.

Energy: Electrical energy delivered with the voltage and quality required by SMUD in accordance with the LGIA, and measured in megawatt-hours (MWh) or kilowatt-hours (kWh).

Environmental Attributes: All Environmental Attributes, as that term is defined in D.08-08-028 of the California Public Utilities Commission, as may be amended, and all renewable energy credits as that term is defined under section 399.12 of the California Public Utilities Code, as may be amended, all Renewable and Environmental Attributes as defined by WREGIS, as well as any credits, carbon benefits, carbon emission reductions, carbon offsets or allowances, howsoever entitled, attributed to the Energy produced at the Solar Project and delivered to the Delivery Points recognized under Assembly Bill 32 Global Warming Solutions Act of 2006, as may be amended.

ETR: Has the meaning set forth in Section 7.6.

Event of Default: Has the meaning set forth in Section 8.2.1.

Excusable Delay: Any delay that is caused by one or more of the following: (i) an event of Force Majeure, (ii) breach of this Agreement or any other agreement between SMUD and Seller (or Seller's affiliates) by SMUD or any negligent act by SMUD that prevents the Seller from fulfilling its obligations, in whole or in part, under this Agreement, (iii) a delay in the receipt of a Permit or Approval listed in Appendix A Table 1 of the Country Acres Clean Power – Development Services Agreement beyond 3/15/24 that is not a result of any breach or delay by Seller, (iv) a delay in completion of network upgrades needed to reach COD not caused by the fault or negligence of Seller, or (v) a delay in the completion of the interconnection facilities needed to reach COD, to the extent caused by the negligent or wrongful acts or omissions of SMUD.

Expected Battery Storage Capacity: Has the meaning set forth in Section 2.4.9.

Expected PV Capacity: Has the meaning set forth in Section 2.4.9.

Fair Market Value: Has the meaning set forth in Section 19.6.

FERC: The Federal Energy Regulatory Commission or any successor government agency.

Force Majeure: An event or circumstance occurring after the Effective Date that prevents or delays the ability of one Party from performing obligations under this Agreement, and which is not in the reasonable control of, or the result of negligence of, the Party claiming Force Majeure, and which the claiming Party is unable to overcome or cause to be avoided by the exercise of due diligence. Force Majeure may include the following events, to the extent consistent with the prior sentence: (a) An act of nature, riot, insurrection, epidemic or pandemic (including new governmental restrictions that are first imposed related to COVID-19 after the Effective Date), supply chain disruptions that are not caused by Seller or Seller's contractors or suppliers at any level in the chain of supply, import tariffs, border controls, war, explosion, labor dispute, fire, flood, earthquake, volcanic eruption, storm, lightning, tsunami, backwater caused by flood, act of the public enemy, terrorism, civil disturbances, strike, labor disturbances, labor or material shortage, national emergency, court order or other action by a Governmental Authority that prevents a Party from fulfilling its obligations under this Agreement (excluding, with respect to any claim by SMUD, any action or inaction of the SMUD Board of Directors or any person with the authority to bind SMUD); (b) Interruption of transmission or generation services as a result of a physical Emergency Condition not caused by the fault or negligence of the Party claiming Force Majeure and reasonably relied upon and without a reasonable source of substitution to make or receive deliveries hereunder; (c) any event or circumstance caused by or

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associated with Buyer, Buyer's contractors, or any third party acting on behalf of Buyer or at Buyer's request or invitation, in each case in connection with the Agrivoltaics FOP that prevents, hinders, or delays Seller's performance under this Agreement. Under no circumstances shall either Party's financial incapacity, Seller's ability to sell Solar Products or Battery Storage Products at a more favorable price or under more favorable conditions or SMUD's ability to acquire Solar Products or Battery Storage Products at a more favorable price or under more favorable conditions or other economic reasons constitute an event of Force Majeure. The term "Force Majeure" does not include Forced Outages to the extent such are not caused or exacerbated by an event of Force Majeure as described above, nor does it include Seller's inability to obtain financing or other equipment and instruments necessary to plan for, construct, or operate the Project.

Forced Outage: An unplanned outage of one or more of the Project's components that results in a reduction of the ability of the Project to produce Energy, and specifically excludes any planned maintenance or Planned Outage.

Frequency Response: As defined by NERC, currently stated as "the ability of a system or elements of the system to react or respond to a change in system frequency."

Full Access: Has the meaning set forth in Section 19.2.

GHG: Greenhouse gas.

Governmental Authority: The federal government of the United States, and any state, county, municipal or local government or regulatory department, body, political subdivision, commission, agency, instrumentality, ministry, court, judicial or administrative body, taxing authority, or other authority thereof (including any corporation or other entity owned or controlled by any of the foregoing) having jurisdiction over any Party, the Project, the site of the Project, or the rights or obligations of any Party under this Agreement, whether acting under actual or assumed authority, provided, however, that SMUD and Seller shall not be considered a Governmental Authority hereunder. The CAISO and WREGIS shall be considered Governmental Authorities.

Green-e: The national independent certification and verification program for renewable energy. Green-e developed the Green-e Renewable Energy Standard of Canada and the United States, as may be amended from time to time, or replacement verification program.

Green-e Standard: The Green-e Energy Tracking Attestation Form for generators participating in a tracking system, currently available at https://www.tfaforms.com/4652008 as such form may be updated from time to time, with Seller electing WREGIS on such form.

Guaranteed Availability: Ninety-seven percent (97%).

Guaranteed Commercial Operation Date or Guaranteed COD: The date that is six (6) months after the Scheduled Commercial Operation Date, as specified in Exhibit A and subject to day-for-day extension to the extent the Scheduled Commercial Operation Date is extended for Excusable Delay and/or the payment of Delay Damages as provided in Section 2.3.7.

Guaranteed Round Trip Efficiency: Has the meaning set forth in Exhibit O.

Host Electric Utility: An electric utility that provides, at the general location of the Project, any of the following: electric transmission service, distribution service and/or retail electricity sales.

Hybrid Resource: Has the meaning as defined in the CAISO Tariff.

Initial Expected Battery Storage Capacity: Has the meaning set forth in Exhibit A.

Initial Expected PV Capacity: Has the meaning set forth in Exhibit A.

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Interconnection Agreement or LGIA: The Large Generator Interconnection Agreement (LGIA) between SMUD and Seller specific to the interconnection of the Project to the SMUD Transmission System.

Interconnection Capacity Limit: The maximum instantaneous amount of Energy that is permitted to be delivered to the Point(s) of Interconnection under the LGIA, in the amount of 344 MW.

Interest Rate: Shall be the lesser of (a) 2% plus the "prime rate" of interest as published on that date in the Wall Street Journal, and generally defined therein as "the base rate on corporate loans posted by at least 75% of the nation's 30 largest banks," or if the Wall Street Journal is not published on a date for which such interest rate must be determined, the "prime rate" published in the Wall Street Journal on the nearest-preceding date on which the Wall Street Journal was published, or if the Wall Street Journal is no longer in publication, such other similar interest rate reasonably agreed to by the Parties, and (b) the highest rate permitted under applicable law.

ITC or Investment Tax Credit: The investment tax credit established pursuant to Section 48 of the United States Internal Revenue Code of 1986, as it may be amended from time to time.

ITC Recapture Amount: The amount payable (determined on an after-tax basis) to the IRS by Seller (or its Affiliate or tax equity investor) under Code §50(a) due to Seller's ineligibility for all or a portion of ITC after such time as Seller or its Affiliate or tax equity investor has claimed the ITC.

J. Aron: Has the meaning set forth in Section 17.1.3.

Law: Any statute, law, treaty, rule, regulation, ordinance, code, enactment, injunction, order, writ, decision, authorization, judgment, decree or other written legal or regulatory determination or restriction by a court or Governmental Authority of competent jurisdiction.

Letter of Credit: One or more irrevocable, standby letters of credit issued by a Qualified Issuer in substantially the form set forth in Exhibit Q.

Loss: Has the meaning set forth in Section 8.5.1(a).

Maximum Hourly Energy Delivery: The Interconnection Service (as defined in the CAISO Tariff) provided under the LGIA.

Major Equipment Failure: A failure of the step-up transformer, high side switch, and high side breaker(s) that interconnects to the SMUD Transmission System.

Maximum power (Pmax): The maximum power in MW delivered to the Delivery Points.

Measurement Period: Any two consecutive Contract Year periods during the Delivery Term.

Monthly Operating Report: Has the meaning set forth in Section 2.4.10 and is similar to the form of report in Exhibit V.

Monthly Settlement Amount: Has the meaning set forth in Section 2.4.7(a).

Moody's: Moody's Investors Service, Inc., or any successor organization thereto.

MW: Megawatt(s) of alternating current.

MWh (Megawatt-hours): A unit of energy measurement corresponding to 1,000 kilowatt-hours.

NERC: The North American Electric Reliability Corporation, or any successor organization.

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NERC Holidays: Days that NERC establishes as holidays for electric energy trading.

Non-Defaulting Party: Has the meaning set forth in Section 8.2.2(a).

NP-15: The zone within the CAISO Balancing Authority area designated as North of Path 15 by the CAISO for congestion settlement purposes.

NP-15 EZ Gen Hub Price: The day-ahead hourly locational marginal price as published by the CAISO for generator transactions in the NP-15 zone of the CAISO.

Outage Coordination Process: Has the meaning set forth in Section 7.4.

Option Notice: Has the meaning set forth in Section 19.1.

Party/Parties: SMUD and Seller are referred to individually as a "Party" and collectively as "Parties."

PCC1 REC Price: Has the meaning set forth in Section 2.4.2(b).

Performance Metrics: The PV Reliability Percentage, Battery Storage Reliability Percentage, and Availability Percentage for each of the Solar Project and the Battery Storage Project, as applicable.

Permits: Permits, licenses, certificates, concessions, consents, waivers, exemptions, variances, franchises, orders, decrees, rights, registrations, submissions, determinations, authorizations, approvals, registrations, orders, and filings, in each case, as required by a Governmental Authority.

Permitted Transfer:

a) Foreclosure by any lender on the direct or indirect ownership interests in Seller (including a transfer in lieu of foreclosure or any transfer to a Qualified Transferee);

b) Any direct or indirect transfer of equity interests in Seller in connection with a financing (for purposes of clarity, this does not prohibit or otherwise restrict any transfer of interests in the Solar Project or the Battery Storage Project);

c) Any direct or indirect transfer of this Agreement or equity interests in Seller to an Affiliate of Seller (including any investment fund or partnership for which an Affiliate of Seller is the managing member), provided that in the case of a transfer of this Agreement only, such Affiliate's creditworthiness is equal to or better than that of Seller;

d) Any direct or indirect transfer of this Agreement or any equity interests in Seller to a person succeeding to all or substantially all of the assets of Seller; or

e) Any direct or indirect transfer of this Agreement or any equity interests in Seller to a Qualified Transferee.

Planned Outage: An outage that has been scheduled in advance pursuant to the Outage Coordination Process, of one or more of the Project's components that results in a reduction of 1 MWdc or more in the ability of the Project to produce Energy.

Plant Controller: A device or compilation of devices used to take inputs either directly or indirectly from the Transmission Provider, power system operator, or other affiliated group and provide outputs or feedback in the implementation of controls of the Solar Project and/or Battery Storage Project, and that has the ability to interface with the Supervisory Control and Data Acquisition (SCADA) System using industry standard protocol such as DNP3.0.

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Point(s) of Interconnection or "POI": The specific locations at the 230kV side of the disconnect switch inside the Country Acres Switching Station at which the Project interconnects with SMUD, as set forth in the LGIA.

Portfolio Content Category 1 (PCC1): Renewable energy comprised of Energy and Environmental Attributes meeting the criteria defined by the CEC Renewables Portfolio Standard Eligibility Guidebook, for Portfolio Content Category 1, as may be amended or supplemented from time to time, and meeting any applicable regulations promulgated by the CEC.

Pre-COD Index Price: The applicable hourly Locational Marginal Price "LMP" for the Project, or if the LMP has not been established for the Project, the applicable hourly NP-15 EZ Gen Hub Price.

Product: Solar Product and Battery Storage Product, inclusive of all energy and energy-related products and energy-related attributes currently defined as PV Energy, Discharging Energy, Capacity, Capacity Attributes, flexibility, Frequency Response, Ancillary Services, and Environmental Attributes. Any Solar Product or Battery Storage Product, or any similar product or feature that can be valued intrinsically or extrinsically is included in Product, with the exception of tax and other financial incentives associated with the Project.

Project: Has the meaning set forth in the Preamble and shall include the Solar Project and the Battery Storage Project.

Proposed Battery Storage Products Purchase Notice: Has the meaning provided in Section 2.3.2.1.

Proposed Battery Storage Products Sale Notice: Has the meaning provided in Section 2.3.2.1.

Proposed Solar Products Purchase Notice: Has the meaning provided in Section 2.3.2.2.

Proposed Solar Products Sale Notice: Has the meaning provided in Section 2.3.2.2.

Prudent Utility Practice: Those practices, methods and acts that would be implemented and followed by prudent operators of solar photovoltaic electric energy generating facilities and battery storage facilities in the Western United States, similar to the Project, during the relevant time period, which practices, methods and acts, in the exercise of prudent and responsible professional judgment in the light of the facts known at the time the decision was made, could reasonably have been expected to accomplish the desired result consistent with prudent business practices, reliability, and safety. Seller acknowledges that the use of Prudent Utility Practice by Seller does not exempt Seller from any obligations set forth in this Agreement.

Prudent Utility Practice includes, at a minimum, those professionally responsible practices, methods and acts described in the preceding paragraph that comply with manufacturers' warranties, restrictions in this Agreement, the LGIA, the requirements of Governmental Authorities, and WECC and NERC standards. Prudent Utility Practice is not required to be the optimum practice, method or act to the exclusion of all others.

Prudent Utility Practice also includes taking reasonable steps in accordance with the first sentence of this definition to ensure that:

a) Equipment, materials, resources, and supplies, including reasonable spare parts inventories, are available to meet the Project's needs;

b) Sufficient operating personnel are available at all times and are adequately experienced and trained and licensed as necessary to operate the Project properly and efficiently, and are capable of responding to reasonably foreseeable emergency conditions at the Project and emergencies whether caused by events on or off the Project site;

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c) Preventive, routine, and non-routine maintenance and repairs are performed on a basis that is designed to ensure reliable, long-term and safe operation of the Project, and are performed by knowledgeable, trained, and experienced personnel utilizing proper equipment and tools;

d) Appropriate monitoring and testing are performed for the purpose of ensuring equipment is functioning as designed;

e) Equipment is not operated in a reckless manner, in violation of manufacturer's guidelines, warranty requirements, or in a manner unsafe to workers, the general public, or the connecting utility's Electric System or contrary to environmental laws, permits or regulations or without regard to defined limitations such as, flood conditions, safety inspection requirements, operating voltage, current, volt ampere reactive (VAR) loading, frequency, rotational speed, polarity, synchronization, and control system limits; and

f) Equipment and components are designed and manufactured to meet or exceed the standard of durability that is generally used for hybrid solar photovoltaic electric energy generating plus battery storage facilities operating in the Western United States and to function properly over the full range of ambient temperature and weather conditions reasonably expected to occur at the Project site and under both normal and emergency conditions.

Purchase Option: Has the meaning set forth in Section 19.1.

Purchase Option Due Diligence Period: Has the meaning set forth in Section 19.2.

Purchase Price: Has the meaning set forth in Section 19.1.

PV: "Photovoltaic".

PV Availability Requirement: Eighty-Five percent (85%).

PV Capacity Shortfall: The Initial Expected PV Capacity less the Expected PV Capacity that has been commissioned and is capable of reliably delivering Energy and meeting minimum functionality requirements under Section 2.3.7.

PV Capacity Test: Any test or retest of the Expected PV Capacity conducted in accordance with the testing procedures, requirements and protocols set forth in Exhibit L.

PV Commercial Operation Test: Has the meaning set forth in Section 2.3.10.

PV Deficit Damages: Has the meaning set forth in Section 2.3.8(a).

PV Energy: That portion of Energy that is delivered directly from the Solar Project to the Delivery Points, as measured at the Solar Meter, and is not Discharging Energy.

PV Reliability Percentage: Has the meaning set forth in Exhibit S.

PV Price: Has the meaning set forth in Exhibit B.

Qualified Issuer: Has the meaning set forth in Section 9.2.

Qualified Transferee: A person that (a) for the three (3) preceding years, has owned or operated (or had access to the expertise required to operate through committed management agreements with its Affiliates

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or through a committed operations and maintenance agreement with any person) at least 500 MWs of renewable energy generation facilities and (b) either itself or its direct or indirect parent, has (i) a tangible net worth of at least $50,000,000 or (ii) a credit rating of "BBB-" or higher by S&P or "Baa3" or higher by Moody's.

Real-Time Market: Has the meaning as defined in the CAISO Tariff.

Renewable Energy Credit (REC): A certificate of proof issued by WREGIS that an Eligible Renewable Energy Resource (ERR) has generated one megawatt hour (MWh or 1,000 kWh) of electricity. A REC shall also have the same meaning as in California Public Utilities Code Section 399.12(h). Currently RECs are used to convey Environmental Attributes associated with electricity production by a renewable energy resource. For purposes of this Agreement, the term REC shall be synonymous with bundled or unbundled renewable energy credit, tradable renewable energy certificates, WREGIS certificate, or any other term used to describe the documentation that evidences the renewable and Environmental Attributes associated with electricity production by an Eligible Renewable Energy Resource.

Required Percentage: Ninety five percent (95%).

Resource Adequacy: A requirement by a Governmental Authority or in accordance with its FERC-approved tariff, or a policy approved by a local regulatory authority, that is binding upon either Party and that requires such Party procure a certain amount of electric generating Capacity.

Resource ID: Has the meaning set forth in the CAISO Tariff.

Round Trip Efficiency: Has the meaning set forth in Exhibit O.

Round Trip Efficiency Liquidated Damages: Has the meaning set forth in Exhibit O.

RPS Certification: A certification by the CEC that the Project is eligible for the purposes of the California Renewable Portfolio Standard, and that all Energy produced by the Project, qualifies as generation from an Eligible Renewable Energy Resource.

RPS Pre-Certification: A pre-certification by the CEC obtained by Seller that the Project is eligible for purposes of the California Renewables Portfolio Standard.

RTU: Has the meaning set forth in Section 6.5.1.

S&P: Standard & Poor's Ratings Group, or any successor organization thereto.

Scheduled Commercial Operation Date: The planned Commercial Operation Date of the Project set forth in Exhibit A, as such date may be extended as provided in Section 2.3.7.

Scheduled Energy: The applicable SMUD Setpoint for the Dispatch of Energy from the Solar Project for each Dispatch Interval, not to exceed the Available PV Capacity.

Scheduling: The act of producing, or relating to the production of, a schedule for the delivery, production or use of Energy, Capacity, and/or transmission that is in compliance with NERC Scheduling (NERC tagging) requirements.

Scheduling Coordinator: Has the meaning set forth in the CAISO Tariff.

Scheduled Battery Storage: The applicable SMUD Setpoint for Charging Energy and/or Discharging Energy for each Dispatch Interval, not to exceed the Available Battery Storage Capacity.

Seller: The Party so identified in the preamble of this Agreement, and its successors and permitted assigns.

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Settlement Period: Has the meaning set forth in Section 2.4.7(a).

SMUD: Sacramento Municipal Utility District.

SMUD Point(s) of Interconnection Meter (SMUD POI Meter): The bi-directional revenue quality meter(s) operated by SMUD, along with a compatible data processing gateway or remote intelligence gateway, telemetering equipment and data acquisition services sufficient for monitoring, recording and reporting, in real time, the amount of Energy measured at the Point(s) of Interconnection.

SMUD Service Territory: The geographical area in which SMUD is the provider of distribution service. This includes virtually all of Sacramento County and a small part of neighboring Placer and Yolo Counties.

SMUD Setpoint: SMUD's Dispatch Instruction to Seller communicated through the SMUD MW control signal to the Seller Plant Controller, or if SMUD's communication system is not operating properly, SMUD's Dispatch Instruction to Seller communicated through SMUD system operator's verbal instruction on a recorded phone line, followed up with a written log, clearly identifying the start time, end time, and MW value.

Solar Irradiance Data: Data used for measuring solar insolation comprising global horizontal irradiance (GHI, W/m^2) and plane of array (PoA), and as otherwise agreed upon by the Parties.

Solar Meter: The bi-directional revenue quality meter or meters, along with a compatible data processing gateway or remote intelligence gateway, telemetering equipment and data acquisition services sufficient for monitoring, recording and reporting, in real time, the amount of Energy produced by the Solar Project. For clarity, (i) the Project will contain multiple measurement devices that will make up the Solar Meter, and, unless otherwise indicated, references to the Solar Meter shall mean all such measurement devices and the aggregated data of all such measurement devices, taken together, and (ii) the Solar Meter will be located, and the Energy will be measured, at the low voltage side of the main step up transformer and will be subject to adjustment in accordance with any meter requirements of SMUD and Prudent Utility Practices to account for the applicable Electrical Losses to the Delivery Point.

Solar Product: All Energy, Environmental Attributes (including but not limited to Renewable Energy Certificates (RECs)), Expected PV Capacity, and Capacity Attributes of the Solar Project, in each case which are or can be produced by or associated with generation from the Solar Project. Solar Product must count in SMUD's Renewables Portfolio Standard (RPS) portfolio as a Portfolio Content Category One (PCC 1) resource, as defined by the CEC RPS Eligibility Guidebook, as may be amended or supplemented from time to time or otherwise consistent with applicable regulations promulgated by the CEC as generated by the Project and delivered to the Delivery Points under this Agreement; provided that Solar Product shall include (and Seller's payments shall not be reduced for) charging energy produced by the Solar Project and lost in the Battery Storage Project as efficiency losses, whether or not such charging energy counts in SMUD's RPS as PCC-1 energy and RECs.

Solar Project: The solar panels, buildings, collection lines, substation, and other improvements related thereto owned by Seller for the generation of Energy by Seller for delivery to SMUD hereunder and more particularly described on Exhibit A attached hereto.

State of Charge (SOC): The portion of Energy stored by the Battery Storage Project relative to the Available Battery Storage Capacity.

Station Service Load: The electric energy used by the Project to power the lights, motors, control systems and other auxiliary electrical loads that are necessary for operation of the Project. Station Service Load includes all power consumed on-site at the Solar Project, Battery Storage Project, and Project substation. Station Service Load does not include transformer losses, line losses, gen-tie losses, and does not include power consumed at a SMUD switching station. Examples of Station Service Load include: All inverter conversion systems for the Solar Project and the Battery Storage Project, control systems, power supplies,

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lighting, control building HVAC, SCADA, telecommunication equipment, enclosure cooling for the Battery Storage Project, and 120v outlets.

Station Service Load Letter of Agreement: That certain Station Service Load Letter of Agreement by and between Seller and SMUD, entered into after the Effective Date of this Agreement.

Stored Energy Level: At a particular time, the amount of electric energy stored in the Battery Storage Project, expressed in MWh.

Surety Bond: A surety bond issued for the benefit of the SMUD that (i) is provided by an issuer duly licensed or authorized in the State of California to issue bonds for the limits required and (ii) is substantially in the form of Exhibit T or in a form reasonably acceptable to Seller and Buyer.

Suspension Date: Has the meaning set forth in Section 8.2.2(b)(ii).

Term: Has the meaning set forth in Section 8.1.

Termination Event: Has the meaning set forth in Section 8.3.

Termination Payment: Has the meaning set forth in Section 8.5.

Test Energy: The Solar Product produced by the Solar Project, delivered to SMUD at the Delivery Points, and purchased by SMUD pursuant to Section 2.4.1 of this Agreement, prior to the Commercial Operation Date.

Third-Party SC: Has the meaning set forth in Section 7.2

Transfer: Has the meaning set forth in Section 17.1.

Transmission Provider: An entity that directs the operation of a Transmission System and provides transmission service.

Transmission System: The relatively high voltage wires, transformers and related equipment owned or controlled by a particular electric utility or grid operator, and generally used to move bulk quantities of power between different electric utilities or from large electric generators to a utility's Distribution System; as opposed to being used to make final delivery of electric power to retail customers.

Ultimate Parent: Enlight Renewable Energy Ltd.

WECC: The Western Electricity Coordinating Council, which is the regional entity responsible for coordinating and promoting bulk electric system reliability in the western United States and western Canada, or any successor organization.

WREGIS: Has the meaning set forth in Exhibit H.

WREGIS Certificate: Has the meaning set forth in Exhibit H.

WREGIS Operating Rules: Has the meaning set forth in Exhibit H.

WREGIS Shortfall: Has the meaning set forth in Section 2.4.2(b).

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[NTD: All Section references need to be checked.]

1.2 RULES OF INTERPRETATION

In this Agreement, except as expressly stated otherwise or unless the context otherwise requires:

1.2.1 headings and the rendering of text in bold and italics are for convenience and reference purposes only and do not affect the meaning or interpretation of this Agreement;

1.2.2 words importing the singular include the plural and vice versa and the masculine, feminine and neuter genders include all genders;

1.2.3 the words “hereof”, “herein”, and “hereunder” and words of similar import shall refer to this Agreement as a whole and not to any particular provision of this Agreement;

1.2.4 a reference to an Article, Section, paragraph, clause, Party, or Exhibit is a reference to that Section, paragraph, clause of, or that Party or Exhibit to, this Agreement unless otherwise specified;

1.2.5 a reference to a document or agreement, including this Agreement shall mean such document, agreement or this Agreement including any amendment or supplement to, or replacement, novation or modification of this Agreement, but disregarding any amendment, supplement, replacement, novation or modification made in breach of such document, agreement or this Agreement;

1.2.6 a reference to a person or entity includes that person’s or entity’s successors and permitted assigns;

1.2.7 the term “including” means “including without limitation” and any list of examples following such term shall in no way restrict or limit the generality of the word or provision in respect of which such examples are provided;

1.2.8 references to any statute, code or statutory provision are to be construed as a reference to the same as it may have been, or may from time to time be, amended, modified or reenacted, and include references to all bylaws, instruments, orders and regulations for the time being made thereunder or deriving validity therefrom, unless the context otherwise requires;

1.2.9 in the event of a conflict, a mathematical formula or other precise description of a concept or a term shall prevail over words providing a more general description of a concept or a term;

1.2.10 references to any amount of money shall mean a reference to the amount in United States Dollars;

1.2.11 a reference to a “day” is to a calendar day unless the context indicates otherwise;

1.2.12 the expression “and/or” when used as a conjunction shall connote “any or all of”;

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1.2.13 words, phrases or expressions not otherwise defined herein that (i) have a generally accepted meaning in Prudent Utility Practice shall have such meaning in this Agreement or (ii) do not have well known and generally accepted meaning in Prudent Utility Practice but that have well known and generally accepted technical or trade meanings, shall have such recognized meanings; and

1.2.14 each Party acknowledges that it was represented by counsel in connection with this Agreement and that it or its counsel reviewed this Agreement and that any rule of construction to the effect that ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement.

2. PROJECT; PURCHASE AND SALE OF PRODUCTS

2.1 Project and Expected PV Capacity

This Agreement governs SMUD's purchase of the Product from the Project as described in Exhibit A.

2.1.1 The Initial Expected PV Capacity and the Initial Expected Battery Storage Capacity are shown in Exhibit A. Seller shall be permitted to modify, augment and/or replace the Project and its equipment and components with other equipment and components, at any time prior to or following Commercial Operation, so long as the Initial Expected PV Capacity and the Initial Expected Battery Storage Capacity, in each case as measured at the Delivery Points, are not reduced. Notwithstanding the foregoing, at least ninety (90) days prior to the date on which Seller reasonably anticipates that Commercial Operation will occur, Seller will provide SMUD with a final version of Exhibit A, which shall identify any updates or changes to certain of the equipment and components set forth in Exhibit A as attached to this Agreement. During the Delivery Term, Seller may modify the Project and its equipment and components from time to time so long as Seller provides SMUD with reasonably prompt written notice setting forth any modifications to Exhibit A. Once provided by Seller, this Agreement shall be deemed amended to include such final or modified version of Exhibit A.

2.1.2 The Parties agree that the Project configuration will be initially Co-located Resources, consisting of separate CAISO Resource IDs for PV Generation and the Battery Energy Storage System. If requested by SMUD in writing not later than twelve (12) months prior to the Scheduled Commercial Operation Date, or during the Delivery Term following reasonable notice by SMUD to Seller, which notice shall be a minimum of three (3) months, and commensurate with the CAISO process for implementing the conversion from Co-located Resource to Hybrid Resource, or implement future conversions in accordance terms as specified herein. Seller shall exercise commercially reasonable efforts to convert the Project from a storage facility co-located with solar to a Hybrid Resource with a single CAISO Resource ID in accordance with the CAISO Tariff, provided that such efforts and conversion (a) do not require Seller to incur any additional actual or potential obligations, liabilities or expenses (other than de minimus internal administrative expenses, including staff time and overhead) above a cap of $10,000, unless SMUD agrees to compensate Seller for costs above $10,000, (b) do not reduce Seller's actual or expected compensation under this Agreement, unless SMUD agrees to compensate Seller for such reduction in actual or expected compensation, and (c) are subject to the Parties' mutual agreement on amendments to this Agreement that may be required to effectuate such conversion. Notwithstanding any of the above conversion conditions, Seller shall use commercially reasonable efforts to minimize costs and schedule duration associated with such conversion.

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2.2 Products Purchased

During the Delivery Term, Seller shall sell and deliver, or cause to be delivered, and SMUD shall purchase and receive, or cause to be received, (i) Solar Products, and (ii) Battery Storage Products in accordance with the terms of this Agreement. During the Delivery Term, all Products shall be supplied only from the Project and shall be supplied from the Project only to SMUD. Subject to Section 2.3.2 below, SMUD acknowledges that Seller shall have the right to supply Products from the Project to third parties upon the expiration or earlier termination of the Delivery Term.

As of the Effective Date and during the Delivery Term and except as otherwise provided in Section 3.4, Seller, and, if applicable, its successors, represents and warrants that throughout the Delivery Term of this Agreement that the Solar Project's output delivered to SMUD qualified under the requirements of California Public Utilities Code 399.16(b)(1) of the Public Utilities Code for a Portfolio Content Category 1 transaction.

2.3 Delivery Term, Delivery Points, and Commercial Operation

2.3.1 Delivery Term

The "**Delivery Term**" shall commence at the start of the hour ending 01:00 PST on the COD and shall expire at the completion of the hour ending 24:00 PST on the last day of the (i) thirtieth (30th) Contract Year for the Solar Project, and the (ii) twentieth (20th) Contract Year for the Battery Storage Project, unless either is terminated earlier as set forth herein, including for exercise of the Project Purchase Option. Notwithstanding anything herein to the contrary, all provisions of this Agreement related to the Battery Storage Project, including those set forth in Sections 2.3 and 5.4, shall expire and be of no force and effect after the twentieth (20th) Contract Year, except to the extent that such provisions relate to performance rendered prior to the end of the twentieth (20th) Contract Year. Upon expiration of the Delivery Term for the Battery Storage Project, the Parties will, upon request by either Party, amend this Agreement as necessary to remove the terms that are no longer applicable and take such other actions required to effectuate the expiration of the Delivery Term for the Battery Storage Project, including reducing or returning a portion of the Delivery Term Security. Prior to the expiration of the Delivery Term for the Battery Storage Project, and in accordance with applicable CAISO requirements, SMUD will provide notice that SMUD will no longer be the Scheduling Coordinator for the Battery Storage Project effective as of the expiration of the Delivery Term for the Battery Storage Project.

2.3.2 Right of First Refusal

2.3.2.1. Battery Storage Project. No later than twelve (12) months prior to the end of the twentieth (20th) Contract Year, if Seller chooses to sell Battery Storage Products from the Battery Storage Project to any third party, including but not limited to a market, after the expiration of the Delivery Term of the Battery Storage Project, Seller shall provide notice of such intended sale to SMUD ("**Proposed Battery Storage Products Sale Notice**"). Upon receipt of such Proposed Battery Products Storage Sale Notice, SMUD will have thirty (30) days in which to provide notice to Seller indicating SMUD's interest in negotiating with Seller to purchase Battery Storage Products from the Battery Storage Project, which notice shall include SMUD's proposed contract price for such continued purchase ("**Proposed Battery Storage Products Purchase Notice**"). If SMUD provides such Proposed Battery Storage Products Purchase Notice to Seller, then the Parties shall negotiate in good faith for a period of sixty (60) days from the date of SMUD's Proposed Battery Storage Products Purchase Notice to determine if they are able to reach mutual agreement on the terms and conditions of a sale to SMUD under a separate agreement after the end of the twentieth (20th) Contract Year for the sale of Battery Storage Products. If SMUD does not timely provide a Proposed Battery Storage Products Purchase Notice to Seller or if the Parties are unable to agree upon the terms and conditions of any sale of such Battery Storage Products to SMUD within such 60-day negotiation period set forth above (subject to extension by mutual agreement), then, subject to SMUD's option to purchase the Battery Storage Project as provided in Section 19, Seller shall be free to negotiate for the sale of such Battery

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Storage Products from the Battery Storage Project to any third party thereunder. For the avoidance of doubt, Seller is not obligated to provide such Proposed Battery Products Storage Sale Notice if Seller determines in its reasonable discretion that sales to SMUD after the twentieth (20th) Contract Year for Battery Storage Products would negatively impact its ability to qualify for the Investment Tax Credit, due to extension of the Delivery Term for the Battery Storage Project for more than eighty percent (80%) of the estimated useful life of the Battery Storage Project, or the estimated remaining residual value of the Battery Storage Project at the conclusion of the extended Delivery Term for the Battery Storage Project would be less than twenty percent (20%) of the original cost of the Battery Storage Project; and neither Party is obligated to enter into any agreement as a result of any negotiations after the Proposed Battery Storage Products Purchase Notice is provided; and this Section 2.3.2.1 shall be of no force and effect upon expiration of the applicable Delivery Term of the Battery Storage Project.

2.3.2.2. Solar Project. No later than twelve (12) months prior to the end of the thirtieth (30th) Contract Year, if Seller chooses to sell Solar Products from the Solar Project to any third party, including but not limited to a market, after the expiration of the Delivery Term of the Solar Project, Seller shall first provide notice of such intended sale to SMUD ("**Proposed Solar Products Sale Notice**"). Upon receipt of such Proposed Solar Products Sale Notice, SMUD will have thirty (30) days in which to provide notice to Seller indicating SMUD's interest in negotiating with Seller to purchase Solar Products from the Solar Project, which notice shall include SMUD's proposed contract price for such continued purchase ("**Proposed Solar Products Purchase Notice**"). If SMUD provides such Proposed Solar Products Purchase Notice to Seller, then the Parties shall undertake for a period of sixty (60) days from the date of SMUD's Proposed Solar Products Purchase Notice to determine if they are able to reach mutual agreement on the terms and conditions of a sale to SMUD under a separate agreement after the end of the thirtieth (30th) Contract Year for the sale of Solar Products. If SMUD does not timely provide a Proposed Solar Products Purchase Notice to Seller or if the Parties are unable to agree upon the terms and conditions of any sale of such Solar Products to SMUD within such 60-day negotiation period set forth above (subject to extension by mutual agreement), then Seller shall be free to negotiate for the sale of such Solar Products from the Solar Project to any third party thereafter. For the avoidance of doubt, Seller is not obligated to provide such Proposed Solar Products Sale Notice if it does not intend to make third party sales after the end of the Delivery Term or if Seller determines in its reasonable discretion that sales to SMUD after the thirtieth (30th) Contract Year for Solar Products would negatively impact its ability to qualify for the Investment Tax Credit, due to extension of the Delivery Term for the Solar Project for more than eighty percent (80%) of the estimated useful life of the Solar Project, or the estimated remaining residual value of the Solar Project at the conclusion of the extended Delivery Term for the Solar Project would be less than twenty percent (20%) of the original cost of the Solar Project; and neither Party is obligated to enter into any agreement as a result of any negotiations after the Proposed Solar Products Purchase Notice is provided; and this Section 2.3.2.2 shall be of no force and effect upon expiration of the applicable Delivery Term of the Solar Project.

2.3.3 Scheduled Commercial Operation Date

The Scheduled Commercial Operation Date of the Project is shown in Exhibit A.

2.3.4 Requirements for Commercial Operation

Commercial Operation shall have been achieved when each of the following conditions have been satisfied or waived by the Parties ("**COD Conditions**"):

a) The Required Percentage of (i) the Initial Expected PV Capacity of the Solar Project and (ii) the Initial Expected Battery Storage Capacity of the Battery Storage Project has each been installed, fully commissioned, and satisfactorily completed all startup testing;

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b) An independent, professional engineer that is actively registered in California, has provided a certificate with a PE stamp, certifying that (i) testing pursuant to ASTM E2848-13 (2018) (Standard Test Method for Reporting Photovoltaic Non-Concentrator System Performance), as further detailed in Exhibit L, has reported that the Solar Project is capable of delivering the Required Percentage of the Initial Expected PV Capacity at the Delivery Points, on a continuous basis, without operator intervention and with Availability no less than the Guaranteed Availability, with the exception of normal daily shut-down during hours of insufficient solar irradiation, as demonstrated through a 120 hour continuous operation test of the Solar Project, taking into account the photovoltaic nature of the Solar Project, (ii) the Required Percentage of the Initial Expected Battery Storage Capacity of the Battery Storage Project is installed and capable of charging and discharging Energy, and (iii) Seller has completed the Battery Storage Commercial Operation Test in accordance with Exhibit M;

c) Seller has provided for and SMUD has successfully completed Pre-Commercial Operation Date Testing and Modifications as specified in Section 6, Appendix G and Appendix H of the LGIA;

d) Meteorological and any other site data as specified in Appendix H of the LGIA are capable of being delivered to SMUD and/or a third party reasonably designated by SMUD for the purposes of creating a generation forecast;

e) The Plant Controller (as defined in the LGIA) required pursuant to the LGIA is operational;

f) Seller has provided documentation demonstrating a NERC Generator Owner (GO) registration and a NERC Generator Operator (GOP) registration are in progress or have completed for the Project, such as a screenshot of the registration request demonstrating that the pertinent NERC registration is in progress;

g) Seller has provided official contact information, including direct telephone numbers and email addresses for the Project GOP's Control Center personnel and the corresponding Supervisor/Manager/Director responsible for the Control Center operations;

h) A Permission To Operate (PTO) letter has been signed and executed by SMUD's Director of Grid Operations (consistent with Prudent Utility Practice and LGIA requirements), not to be unreasonably withheld, conditioned or delayed (it being understood and agreed that this condition shall be deemed to be achieved upon issuance of the permission to operate notice in accordance with Section 6 of the LGIA); and

i) Seller has issued the COD Notice.

Seller shall issue a notice of Commercial Operation to SMUD when Seller believes that the Project has satisfied all COD Conditions (a "**COD Notice**"). Solar Project and Battery Storage Project shall have the same COD. A COD Notice shall include all necessary supporting documentation of the satisfaction or occurrence of all COD Conditions. SMUD shall have ten (10) days to review the COD Notice and raise any reasonable objections to Seller's satisfaction of any COD Conditions; provided, however, that Seller's COD Notice shall be deemed accepted by SMUD if SMUD fails to object within such time period. The Commercial Operation Date will be the date upon which Seller submits its COD Notice to SMUD, unless SMUD timely objects to

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Seller's evidence of the COD Conditions, then the Commercial Operation Date will be either (i) the date upon which such evidence is provided to SMUD's reasonable satisfaction or is deemed to have been accepted by SMUD, or (ii) the date determined pursuant to Section 21 Dispute Resolution, as applicable.

2.3.5 Provision for Separate COD of Battery Storage

Buyer and Seller may mutually agree to a separate COD for the Battery Storage Project, for any reason, including if Solar Project is delayed, and appropriate Amendments to the agreement.

2.3.6 Commercial Operation Date Confirmation Letter

Upon satisfaction of the COD Conditions, SMUD shall execute and then provide to Seller for execution, the "Commercial Operation Date Confirmation Letter." The fully executed version shall be attached as Exhibit E to this Agreement.

2.3.7 Payment for Delay of Commercial Operation; Extension of Scheduled COD

If (a) the Solar Project fails to achieve Commercial Operation or (b) the Battery Storage Project fails to achieve Commercial Operation, in each case, on or before the Scheduled Commercial Operation Date (as such date may be extended as provided herein) (the "**Delay LD Start Date**"), then Seller shall pay SMUD Delay Damages of $100/MW/day for each day following the Delay LD Start Date for each MW or portion thereof by which (i) the Capacity of the Solar Project that has been commissioned and is capable of reliably delivering Energy and minimum functionality for such capacity consistent with Appendices G and H of the Interconnection Agreement (provided that SMUD's inability to receive data shall not be deemed the Project's inability to satisfy the minimum functionality requirement) to the Delivery Points is less than the Required Percentage of the Initial Expected PV Capacity of the Solar Project, to be adjusted daily as additional parts of the Solar Project are commissioned and become capable of reliably delivering Energy to the Delivery Points pursuant to Section 2.1.1, and (ii) the Capacity of the Battery Storage Project that has been commissioned and capable of charging and discharging Energy is less than the Required Percentage of the Initial Expected Battery Storage Capacity, until the earlier of (A) Commercial Operation, or (B) the Guaranteed Commercial Operation Date. The Parties agree that SMUD's receipt of Delay Damages shall be SMUD's sole and exclusive remedy for any default prior to the Commercial Operation Date, but shall not be construed as SMUD's notification that an Event of Default or Termination Event has occurred under any provision of Article 8.

The Scheduled Commercial Operation Date shall be extended on a day-for day basis and Seller shall not owe SMUD Delay Damages for any Excusable Delay, provided that the Parties shall exercise due diligence to overcome or mitigate the effects of any Excusable Delay.

2.3.8 Payment for PV Deficit Damages or Battery Storage Deficit Damages

a) If Seller achieves Commercial Operation with less than the Initial Expected PV Capacity, then Seller shall use commercially reasonable efforts following the Commercial Operation Date to cause the remaining portion of the Initial Expected PV Capacity to achieve Commercial Operation. If Seller has not caused the PV Capacity Shortfall to achieve Commercial Operation on or before one hundred eighty (180) days after the COD, then Seller shall pay SMUD damages equal to the PV Capacity Shortfall multiplied by $150,000/MW ("**PV Deficit Damages**"). However, if the reason for the PV Capacity Shortfall is the result of (i) delays with or restrictions to Permit(s) (unless and to the extent due to the fault or negligence of Seller), (ii) delays with or restrictions to transmission interconnection (unless and to the extent due to the fault or negligence of Seller), (iii) local fire jurisdiction delays or restrictions (e.g. reduced

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site size) (unless and to the extent due to the fault or negligence of Seller, (iv) the failure of SMUD to perform its performance obligations hereunder or under the Lease (unless and to the extent due to the fault or negligence of Seller), or (v) an event or circumstance described in Subsection (c) of the Force Majeure definition, then Seller shall not be obligated to pay any PV Deficit Damages associated directly with the portion of PV Capacity Shortfall not built because of such delays or restrictions. For the avoidance of doubt, the conditions above are the sole and exclusive reasons that Seller is not obligated to pay PV Deficit Damages in the event of a PV Capacity Shortfall, and any other reasons including, but not limited to Force Majeure events (except for Subsection (c) of the Force Majeure definition), do not excuse Seller from its obligation to pay PV Deficit Damages. Thereafter, the Expected PV Capacity will be equal to such final amount for all purposes under this Agreement and all requirements and deliverables hereunder that are determined based upon the Expected PV Capacity (including the Expected Energy Production set forth in Exhibit C and the required Delivery Term Security as set forth in Section 9.1) shall be reduced on a pro rata basis.

b) If Seller achieves Commercial Operation with less than the Expected Battery Storage Capacity, then Seller shall use commercially reasonable efforts following the Commercial Operation Date to cause the remaining portion of the Expected Battery Storage Capacity to achieve Commercial Operation. If Seller has not caused the delayed Capacity to achieve Commercial Operation on or before three hundred sixty five (365) days after the COD, then Seller shall pay SMUD damages equal to the Battery Storage Capacity Shortfall multiplied by $150,000/MW ("**Battery Storage Deficit Damages**" and together with the PV Deficit Damages, the "**Deficit Damages**"). However, if the reason for the Battery Storage Capacity Shortfall is the result of (i) delays with or restrictions to Permit(s) (unless and to the extent due to the fault or negligence of Seller), (ii) delays with or restrictions to transmission interconnection (unless and to the extent due to the fault or negligence of Seller), (iii) local fire jurisdiction delays or restrictions (e.g. reduced site size) (unless and to the extent due to the fault or negligence of Seller), or (iv) the failure of SMUD to perform its performance obligations hereunder or under the Lease (unless and to the extent due to the fault or negligence of Seller), then Seller shall not be obligated to pay any Battery Storage Deficit Damages associated directly with the portion of Battery Storage Capacity Shortfall not built because of such delays or restrictions. For the avoidance of doubt, the conditions above are the sole and exclusive reasons that Seller is not obligated to pay Battery Storage Deficit Damages, and any other reasons including, but not limited to Force Majeure events, do not excuse Seller from its obligation to pay Battery Storage Deficit Damages. Thereafter, the Expected Battery Storage Capacity will be reduced proportionately to account for the final Expected Battery Storage Capacity at the end of such three hundred sixty five (365)-day period for all purposes under this Agreement. Thereafter, the Expected Battery Storage Capacity will be equal to such final amount for all purposes under this Agreement and all requirements and deliverables hereunder that are determined based upon the Expected Battery Storage Capacity (including the required Delivery Term Security as set forth in Section 9.1) shall be reduced on a pro rata basis.

c) Parties agree that SMUD's receipt of Deficit Damages shall be SMUD's sole and exclusive remedy for failure to achieve Commercial Operation with less than the Initial Expected PV Capacity or Initial Expected Battery Storage Capacity, as applicable. Parties further agree that (i) payment of any PV Deficit Damages and any corresponding decrease in the Capacity of the Solar Project shall not in any way affect the Expected Battery Storage Capacity and (ii) payment of any Battery Storage Deficit Damages and any corresponding decrease in the Expected Battery Storage Capacity shall not in any way affect the Expected PV Capacity.

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2.3.9 Cap on Damages.

Notwithstanding anything in this Agreement to the contrary, Delay Damages owed by Seller to SMUD hereunder together with any Deficit Damages shall not exceed the Development Security provided by Seller pursuant to Section 9.1.

2.3.10 Project Testing.

Prior to the Commercial Operation Date, Seller shall schedule with SMUD and complete 1) a commercial operation test that establishes the Expected PV Capacity of the Solar Project, in accordance with Exhibit L ("**PV Commercial Operation Test**"), and 2) a commercial operation test that establishes the Expected Battery Storage Capacity of the Battery Storage Project, in accordance with Exhibit M ("**Battery Storage Commercial Operation Test**").

2.4 Payment for Products Purchased

2.4.1 Pre-Commercial Energy Price

Seller will sell Pre-COD energy and associated Environmental Attributes to SMUD. If the Pre-COD Index Price is greater than zero dollars ($0) prior to the Commercial Operation Date, SMUD will pay (a) for Test Energy produced by the Solar Project, by multiplying (i) fifty (50)% of the Pre-COD Index Price by (ii) the applicable hourly Energy quantity (in MWh) as measured by the Solar Meter and (b) ten dollars ($10) for each REC associated with the Test Energy that is confirmed to be a valid PCC-1 REC and is transferred into Buyer's WREGIS subaccount. If the Pre-COD Index Price is less than zero dollars ($0) prior to the Commercial Operation Date, SMUD will pay (A) for Test Energy produced by the Solar Project by multiplying (1) one hundred percent (100%) of the Pre-COD Index Price, but not less than negative ten dollars (-$10), by (2) the applicable hourly Energy quantity (in MWh) as measured by the Solar Meter, and (B) ten dollars ($10) for each REC associated with the Test Energy that is confirmed to be a valid PCC-1 REC and is transferred into Buyer's WREGIS subaccount. SMUD will have the right to schedule the Solar Project and Battery Storage Project prior to the Commercial Operation Date, and may curtail Energy therefrom, so long as such curtailment does not unreasonably interfere with Seller's testing and installation activities.

2.4.2 PV Price after Commercial Operation Date

a) Subject to Sections 2.4.2(b), once the Project has achieved Commercial Operation, SMUD shall pay Seller the Monthly Settlement Amount.

b) In the event that SMUD fails to receive WREGIS Certificates associated with the amount of PV Energy delivered to the Delivery Points within one hundred ten (110) days after the end of the month that the Energy was generated and delivered to SMUD at the Delivery Points and the cause of such failure is due to Seller's actions or inactions inconsistent with its obligations under this Agreement ("**WREGIS Shortfall**"), then the Monthly Settlement Amount will be discounted by an amount equal to the PCC1 REC Price for such Energy previously delivered at the Delivery Points. The "**PCC1 REC Price**" means the market value as reasonably determined by SMUD using commercially reasonable efforts for PCC1 RECs, based on the average of 3 broker quotes for NP-15 Solar PV CEC RPS PCC-1 RECs, if available, in the month following the month in which the WREGIS Shortfall occurs. SMUD will provide notice to Seller of any WREGIS Shortfall, including SMUD's calculation and supporting evidence for the PCC1 REC Price and volume of Energy for which Seller owes SMUD a refund. Any disputes with respect to the cause of a WREGIS Shortfall

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or the calculation of the PCC1 REC Price will be resolved pursuant to the provisions of Section 21. Seller shall provide a true-up payment to SMUD or SMUD may offset its payment to Seller in the next regular settlement for any amounts owed by Seller to SMUD pursuant to this Section 2.4.2(b). If Seller cures a WREGIS Shortfall after Seller has refunded the PCC 1 REC Price to SMUD, then SMUD shall refund all or part of the true-up amounts associated with such cure to Seller in the next invoice after such WREGIS shortfall is cured.

2.4.3 [Reserved]

2.4.4 Energy in Excess of LGIA Limitation

Seller may not deliver Energy in excess of any limitation set forth in the Large Generator Interconnection Agreement**.**

2.4.5 SMUD Meters

Energy produced by the Project, which is interconnected to the SMUD Transmission System, shall be measured at, or as of, the Point(s) of Interconnection as defined in the LGIA. Metering shall occur at the Solar Meter and Battery Storage Meter, which shall account for Electrical Losses between the meter location and the Point of Interconnection. SMUD shall have the right, but not the obligation, to read the Project's meters on a daily basis.

2.4.6 Title and Risk of Loss

Title to and risk of loss related to the Products produced from the Solar Project shall transfer from Seller to SMUD at the Delivery Points. Except as provided hereunder, Seller warrants that it will deliver to SMUD all Products from the Solar Project free and clear of all liens, security interests, claims and encumbrances, or any interest therein or thereto by any person arising prior to the Delivery Points.

2.4.7 Settlement Payments

a) Following the end of each calendar month ("**Settlement Period**"), Seller shall deliver to SMUD Seller's settlement calculations with respect to the Settlement Period within 25 days after the end of such Settlement Period. By the later of the 15th day of the second month after the Settlement Period, or 20 days after receipt of Seller's settlement calculation, SMUD shall deliver to Seller a settlement checkout statement which shall include a calculation of the Capacity Subtotal Payment (as defined below) as adjusted by the Performance Metrics for such Settlement Period. The sum total results of such calculation shall be referred to herein as the "**Monthly Settlement Amount**". The Capacity Subtotal Payment for the Solar Project and the Battery Storage Project, respectively, shall be equal to PV Price or Battery Storage Price multiplied by Expected PV Capacity or Expected Battery Storage Capacity (the "**Capacity Subtotal Payment**"); and such payment shall cover payment for the respective Solar Products and/or Battery Storage Product. The Monthly Settlement Amount shall be equal to the sum of 1) the Capacity Subtotal Payment for the Solar Project multiplied by PV Reliability Percentage multiplied by the Availability Percentage for the Solar Project, and 2) the Capacity Subtotal Payment for the Battery Storage Project multiplied by the Battery Storage Reliability Percentage

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multiplied by Availability Percentage for the Battery Storage Project, as demonstrated in the form below and with example calculations in Exhibit W.

Resource	Contract Price	X	Expected PV Capacity or Expected Battery Storage Capacity	=	Capacity Subtotal Payment	x	Availability Percentage	x	PV Reliability Percentage or Battery Storage Reliability Percentage	=	Total
Solar Project	$				$						$
Battery Storage Project	$				$						$
Monthly Settlement Amount											

b) For purposes of the calculation of the Capacity Subtotal Payment, the Expected PV Capacity shall reflect the most recent PV Capacity Test results. Further, for purposes of the calculation of the Capacity Subtotal Payment, the Expected Battery Storage Contract Capacity shall reflect the most recent Battery Storage Capacity Test results. SMUD shall pay the Monthly Settlement Amount with respect to such month on the 15th day of the second month following the relevant Settlement Period (or the next succeeding Business Day), subject to the provisions of Section 2.4.7. Changes to Expected PV Capacity or the Expected Battery Storage Capacity shall become effective at the beginning of the next Settlement Period following such PV Capacity Test or Battery Storage Capacity Test.

c) A Party may in good faith, dispute the correctness or absence of any settlement or adjustment to a settlement rendered under this Agreement or adjust any settlement for any arithmetic or computational error within twenty-four (24) months after the settlement is rendered or any specific adjustment to the settlement is made. In the event a settlement or portion thereof, or any other claim or adjustment arising hereunder is disputed, payment of the undisputed portion of the settlement shall be required to be made when due in accordance with this Section 2.4.7, with notice of the objection given to the Party issuing such settlement. Any billing dispute or billing adjustment shall be in writing and shall state the basis for such dispute or adjustment. Payment of the disputed amount shall not be required until the dispute is resolved, however the Party in receipt of the dispute notice is required to respond to such dispute notice with reasonable supporting documentation no later than ten (10) Business Days following delivery of such notice. If it is determined that an adjustment to the settlement is appropriate or an underpayment was made, then such payment shall be required to be made within ten (10) Business Days of such determination along with interest accrued at the Interest Rate from and including the due date to but excluding the date paid. Overpayments by a Party shall, at the option of the Party making such overpayment, be returned upon request or deducted by the Party receiving such overpayment from subsequent payments, with interest accrued at the Interest Rate from and including the date of such overpayment to but excluding the date repaid or deducted by the Party receiving such overpayment. Any dispute with respect to a settlement is waived unless the other Party is notified in accordance with this Section 2.4.7(c) within twenty-four (24) months after the settlement is rendered or any specific adjustment to the settlement is made.

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d) The final monthly settlement checkout statement shall set forth, as applicable, (1) the Monthly Settlement Amount; and (2) any other fees, charges or other amounts due and owing to Buyer pursuant to this Agreement.
e) Either Party may offset the payment due to the other Party under this Agreement against the amounts owing from such other Party to the offsetting Party pursuant to this Agreement.

2.4.8 Reserved

2.4.9 Capacity Testing

The Expected PV Capacity is the result of the most recent PV Capacity Test, which shall be performed as described in Exhibit L ("**Expected PV Capacity**"). The Expected Battery Storage Capacity is the result of the most recent Battery Storage Capacity Test, which shall be performed as described in Exhibit M ("**Expected Battery Storage Capacity**"). The PV Capacity Test and/or Battery Storage Capacity Test will be performed upon request by either Party, when SMUD system conditions can allow for such testing, as reasonably determined by SMUD, not less than one (1) test every Contract Year, and (i) with respect to the PV Capacity Test, not more than one (1) test per month to be conducted only during the months of February, May and August, and one test between October 14th – November 14th, or (ii) with respect to the Battery Storage Capacity Test, not more than one (1) test per calendar quarter, except for (a) a single retest of each original test within approximately seven (7) days of original test, or (b) not more than one (1) test per calendar month at the request of either Party if such Party reasonably determines that the Capacity of the Solar Project or the Battery Storage Project has failed to conform to at least 90% of the Expected PV Capacity or Expected Battery Storage Capacity, respectively, for more than five (5) days and continues to fail to conform, in each case when SMUD system conditions can allow for such testing. Upon the request of either Party, on or after the second (2nd) anniversary of the Commercial Operation Date, the Parties shall use good faith efforts to negotiate a replacement for the capacity testing methodology based on a continuous performance metric.

2.4.10 Availability Determination & Reporting

Seller shall generate a comprehensive operating report for each month, containing Seller's record of Availability for the Solar Project and the Battery Storage Project at the POI (measured separately), utilizing data originating from the Availability System of Record, and the monthly report generated by the operations & maintenance provider of the facility, unless Buyer agrees to utilize data from an alternate system ("**Monthly Operating Report**"). The Monthly Operating Report shall be substantially in the form attached herein as Exhibit V. The timing of the Monthly Operating Report shall be synchronized with the monthly settlement process, and due to Buyer by the 25th day following the end of the Settlement Period, in support of Section 2.4.7 Settlement Period payment. Buyer and Seller shall discuss and resolve any disputes involving the Monthly Operating Report by the 5th day of the second month following the end of the Settlement Period, in accordance with Section 2.4.b. The final Monthly Operating Report shall be used as part of the monthly settlement amount determination in Section 2.4.7.

a) PV Availability

Within forty-five (45) days after the end of each Contract Year, Seller shall submit its determination of the Annual Average PV Availability from the Availability System of Record.

b) Battery Storage Availability

Within forty-five (45) days after the end of each Contract Year, Seller shall submit its determination of the Annual Average Battery Storage Availability from the Availability System of Record.

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2.4.11 Round Trip Efficiency

Within forty-five (45) days after the end of each Contract Year, Seller shall submit its calculation of the Round Trip Efficiency in accordance with Exhibit O. During the Delivery Term, the Battery Storage Project shall maintain a Round Trip Efficiency of no less than the Guaranteed Round Trip Efficiency. If the Round Trip Efficiency following the Annual Battery Storage Capacity Test is less than the Guaranteed Round Trip Efficiency, then Seller shall pay Round Trip Efficiency Liquidated Damages, as defined and determined in accordance with Exhibit O. Such Round Trip Efficiency Liquidated Damages shall be SMUD's sole and exclusive remedy for Seller's failure to satisfy the Guaranteed Round Trip Efficiency. For the avoidance of doubt, Round Trip Efficiency Liquidated Damages shall only be calculated from data obtained during an Annual Battery Storage Capacity Test conducted within thirty (30) days after the end of each Contract Year.

3. CERTIFICATION AS AN ELIGIBLE RENEWABLE ENERGY RESOURCE

3.1 CEC RPS and Green-e Certifications

Subject to Section 3.4, SMUD requires that all renewable energy sold under this Agreement will meet the RPS requirements. At its own expense but subject to Section 3.4, Seller shall comply with the following:

a) Commensurate with the Commercial Operation Date or as soon as reasonably practicable thereafter, Seller shall also provide a completed Green-e generator registration and attestation form (under the Green-e Standard) to SMUD and the Center for Resource Solutions, and Seller shall provide evidence of Green-e eligibility.

b) Seller shall file an application with the CEC for RPS Pre-Certification within thirty (30) days after the Effective Date, and shall use commercially reasonable efforts to obtain the CEC Pre-Certification no later than the date on which the milestone regarding permission to energize for transmission and generation is achieved.
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c) In no event later than thirty (30) Business Days after the Commercial Operation Date (COD), Seller shall file for full RPS Certification of the Project with the CEC.

d) Seller shall use commercially reasonably efforts to ensure that Seller's RPS Certification applies, starting with the Commercial Operation Date as set forth in the Commercial Operation Date Confirmation Letter (see Exhibit E).

e) Seller shall respond to inquiries from the CEC related to its applications for CEC Pre-Certification and RPS Certification within five (5) Business Days of receipt of such inquiry.

f) Except as otherwise provided in Section 3.4, Seller shall maintain such RPS Certification throughout the Delivery Term at its own expense.

g) Subject to Section 3.4, Seller shall ensure that throughout the Delivery Term, Energy and Environmental Attributes from the Project delivered to the Delivery Points (not including Energy and Environmental Attributes associated with any Energy that is not PV Energy delivered to the Delivery Points) meet the criteria of California Public Utilities Code 399.16(b)(1); and ensure that the electricity and RECs from the Project are bundled according to the applicable CEC RPS Eligibility Guidebook.

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3.2 Environmental Attribute Delivery Obligation

Seller shall sell and deliver, and SMUD shall receive and purchase from Seller, all rights, title, and interest in all Environmental Attributes associated with Energy produced by the Project and delivered to SMUD at the Delivery Points whether now existing or that hereafter come into existence prior to and including the Delivery Term. Seller agrees to sell to SMUD all such Environmental Attributes to the fullest extent allowable by applicable Law, and convey the same to SMUD in accordance with the procedures in Exhibit H. Seller warrants that all Environmental Attributes provided to SMUD shall be free and clear of all liens, security interests, claims and encumbrances.

3.3 WREGIS Registration

Documentation of Environmental Attributes associated with the Energy produced under this Agreement shall be tracked through WREGIS. Seller shall assign rights to register the Project in WREGIS to SMUD, such that RECs are deposited directly into SMUD's WREGIS account. In accordance with Exhibit H and Section 3.4, SMUD shall be responsible for all WREGIS costs and fees associated with the issuance/creation of WREGIS RECs for the Project, and SMUD shall be responsible for any fees associated with the transfer and/or retirement of such WREGIS RECs to SMUD. WREGIS REC identification information shall support both CEC RPS and Green-e Standard REC retirements. At least forty-five (45) days before the end of the Term, or as soon as practicable before the date of any early termination of this Agreement before the end of the Term, SMUD shall take all actions necessary to terminate the assignment of registration rights in WREGIS associated with the Project as of the last day of the Term.

3.4 Change in Law

3.4.1 The Parties agree that expenditures to comply with the requirements of this Article 3 ("**Environmental Attribute Compliance Expenditures**") that Seller shall be required to bear during the Term of this Agreement shall be capped at a total of $150,000 per Contract Year and $2,000,000 in the aggregate over the Term ("**Environmental Attribute Compliance Expenditure Cap**"). Environmental Attribute Compliance Expenditures do not include costs up to the $10,000 cap associated with switching from a Co-located Resource to a Hybrid Resource under Section 2.1.2. The Environmental Attribute Compliance Expenditures and the Capacity Attribute Compliance Expenditures shall not, when summed together, exceed the cap of $150,000 per Contract Year or $2,000,000 in the aggregate. For the avoidance of doubt, there is combined dollar cap ($150,000 and $2,000,00, respectively) that applies to both Environmental Attribute Compliance Expenditures and Capacity Attribute Compliance Expenditures.

3.4.2 If a change in Law occurs after the Effective Date that affects Seller's compliance with its obligations under this Section 3, Seller shall not be in breach of such obligations if Seller has used commercially reasonable efforts to comply with such change in Law as it pertains to such obligations. For purposes of this Section 3.4.2, the term "commercially reasonable efforts" shall not require additional out-of-pocket expenditures in the aggregate in excess of the Environmental Attribute Compliance Expenditure Cap in complying with the changes in Law described in this Section 3.4 unless SMUD and Seller have agreed in writing for SMUD to reimburse Seller for or to pay directly such excess expenditures.

3.4.3 Within thirty (30) days after the end of each calendar quarter during the Term, Seller shall provide SMUD with a report describing the Environmental Attribute Compliance Expenditures that Seller incurred during that calendar quarter and the total Environmental Attribute Compliance Expenditures incurred during the Contract Year that includes such calendar quarter. Prior to incurring Environmental Attribute Compliance Expenditures that are

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anticipated to exceed $25,000, Seller shall notify SMUD of the expected Environmental Attribute Compliance Expenditures. Following such notice, the Parties shall attempt to agree to limit such Environmental Attribute Compliance Expenditures to the extent practicable; provided, however, that nothing herein limits Seller's right to incur Environmental Attribute Compliance Expenditures that Seller believes in good faith must be incurred for Seller to comply with its obligations under this Agreement, as long as the above notification provisions are met. If Seller determines that costs in excess of the Environmental Attribute Compliance Expenditure Cap will have to be incurred, then Seller shall notify SMUD and provide documentation and calculations to support the expected excess costs. SMUD may then: (1) approve the expected excess costs and notify Seller of such approval, and Seller shall comply upon receipt of notice of SMUD's approval and SMUD's payment for the expected excess costs (such costs, "**Accepted Compliance Expenditures**"); or (2) elect not to pay Seller for the expected excess costs and notify Seller of such decision, in which case this Agreement shall continue in full force and effect and Seller shall continue to be excused from performing any obligation that causes, or would cause, the incurrence of such Environmental Attribute Compliance Expenditures in excess of the Environmental Attribute Compliance Expenditure Cap. SMUD is not required to reimburse Seller for any Environmental Attribute Compliance Expenditures unless and until SMUD agrees to the expected Compliance Expenditures in excess of the Environmental Attribute Compliance Expenditure Cap. To the extent that SMUD has not agreed to reimburse, or has not reimbursed, Seller for any Accepted Compliance Expenditures, then SMUD is deemed to have waived Seller's obligation that causes, or would cause, the incurrence of such Environmental Attribute Compliance Expenditures in excess of the Environmental Attribute Compliance Expenditure Cap and (x) Seller will not be in default under this Agreement for failure to satisfy any such obligation and (y) payments to Seller under this Agreement during the entirety of the Delivery Term will not decrease as a result of such change in Law and will be maintained as if all such obligations were taken.

3.5 Additional Evidence of Environmental Attribute Conveyance

At SMUD's reasonable request, Seller shall provide additional reasonable evidence to SMUD or to third parties of SMUD's right, title, and interest in Environmental Attributes and information with respect to Environmental Attributes; provided that no such request may impose any material additional costs on the Seller.

3.6 Modification of Environmental Attribute Reporting and Conveyance Procedure

The Parties shall revise Exhibit H as appropriate and issue a new Exhibit H which shall then become part of this Agreement, subject to Seller acceptance of any changes impacting costs or revenues, in order to reflect changes necessary in the Environmental Attribute conveyance procedure for SMUD to be able to receive and report the Environmental Attributes purchased under this Agreement as belonging to SMUD, in the event that:

a) WREGIS changes the WREGIS Operating Rules after the Effective Date or applies the WREGIS Operating Rules in a manner inconsistent with Exhibit H after the Effective Date; or,

b) WREGIS is replaced as the primary method that SMUD uses for conveyance of Environmental Attributes, or additional methods to convey all Environmental Attributes are required.

In no event will such revised Exhibit H cause Seller to incur any category of cost for which it is not already otherwise responsible under this Agreement, without prior notice by SMUD and agreement of the Parties as to the appropriateness of such cost belonging with the Seller and subject to Section 3.4.

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3.7 Reporting of Ownership of Environmental Attributes

Seller shall not report to any person or entity that the Environmental Attributes sold and conveyed hereunder to SMUD belong to anyone other than SMUD, and SMUD may report under any such program that such Environmental Attributes purchased hereunder belong to SMUD.

3.8 Greenhouse Gas (GHG) Emissions

Seller shall bear all liability for reporting any and all GHG emissions from the Project, and for any compliance obligations under federal, state (including AB 32) and local laws for such emissions.

4. CONVEYANCE OF CAPACITY ATTRIBUTES

4.1 Conveyance of Capacity Attributes

Seller shall provide to SMUD any attestation SMUD reasonably requires in order for SMUD to show evidence that it has procured the Capacity Attributes associated with the Project in accordance with the procedure in Exhibit F. At SMUD's reasonable request, provided that no such request may impose any material additional costs on the Seller, Seller shall execute such documents and instruments as may be reasonably required to affect recognition and transfer of the Capacity Attributes.

4.2 Reporting of Ownership of Capacity Attributes

Seller shall not report to any person or entity that the Capacity Attributes sold and conveyed hereunder to SMUD belong to anyone other than SMUD, and SMUD may report under any such program that such Capacity Attributes purchased hereunder belong to it.

4.3 Modification of Capacity Attribute Conveyance Procedure

SMUD may revise Exhibit F as appropriate, give written notice to Seller regarding the revision, and issue a new Exhibit F which shall then become part of this Agreement, provided that no such modification may impose any material additional costs or obligations on the Seller, or reduce Seller's compensation hereunder, in order to reflect changes necessary in the Capacity Attribute conveyance procedure for SMUD to be able to receive and report the Capacity Attributes purchased under this Agreement as belonging to SMUD.

In no event will such revised Exhibit F cause Seller to incur any category of cost for which it is not already otherwise responsible under this Agreement without prior notice by SMUD and agreement of the Parties as to the appropriateness of such cost belonging with the Seller.

4.4 Energy Market Participation

The Parties acknowledge and agree that as of the date hereof, SMUD is participating in the EIM and/or other energy markets. The Parties have agreed to a structure in this Agreement to facilitate SMUD's use of the Project to participate in such markets. Notwithstanding anything herein to the contrary, SMUD's joining or continued participation in such markets shall not require Seller to perform any additional measures or incur any additional or increased cost, liability or obligation, in each case other than what Seller is already otherwise expressly obligated under this Agreement, unless compensated by SMUD. If in the future, market rules or policies change, then without limiting Seller's and SMUD's rights under Section 3.4, the Parties shall meet and confer to discuss the new market rules and whether updates to the scheduling, settlements, or other procedures are required and to preserve the economic "benefit of the bargain" to both Parties to this Agreement.

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4.5 Change in Law

4.5.1 The Parties agree that expenditures to comply with the obligations set forth in this Article 4 that Seller shall bear with respect to the conveyance of Capacity Attributes to SMUD ("**Capacity Attribute Compliance Expenditures**") shall be capped at a total of $150,000 per Contract Year and $2,000,000 in the aggregate over the Delivery Term of the Battery Storage Project ("**Capacity Attribute Compliance Expenditure Cap**"). The Capacity Attribute Compliance Expenditures and the Environmental Attribute Compliance Expenditures shall not, when summed together, exceed the cap of $150,000 per Contract Year or $2,000,000 in the aggregate. For the avoidance of doubt, there is combined dollar cap ($150,000 and $2,000,00, respectively) that applies to both Capacity Attribute Compliance Expenditures and Environmental Attribute Compliance Expenditures.

4.5.2 If a change in Law occurs after the Effective Date that affects Seller's compliance with its obligations under this Article 4, Seller shall not be in breach of such obligations if Seller has used commercially reasonable efforts to comply with such change in Law as it pertains to such obligations. For purposes of this Section 4.5.2, the term "commercially reasonable efforts" shall not require additional out-of-pocket expenditures in the aggregate in excess of the Capacity Attribute Compliance Expenditure Cap in complying with the changes in Law described in this Section 4.5 unless SMUD and Seller have agreed in writing for SMUD to reimburse Seller for or to pay directly such excess expenditures.

4.5.3 Within thirty (30) days after the end of each calendar quarter during the Delivery Term for the Battery Storage Project, Seller shall provide SMUD with a report describing the Capacity Attribute Compliance Expenditures that Seller incurred during that calendar quarter and the total Capacity Attribute Compliance Expenditures incurred during the Contract Year that includes such calendar quarter. Prior to incurring Capacity Attribute Compliance Expenditures that are anticipated to exceed $25,000, Seller shall notify SMUD of such expected Compliance Attribute Compliance Expenditures. Following such notice, the Parties shall attempt to agree to limit such Capacity Attribute Compliance Expenditures to the extent practicable; provided, however, that nothing herein limits Seller's right to incur Capacity Attribute Compliance Expenditures that Seller believes in good faith must be incurred for Seller to comply with its obligations under this Agreement, as long as the above notification provisions are met. If Seller determines that costs in excess of the Capacity Attribute Compliance Expenditure Cap will have to be incurred, then Seller shall notify SMUD and provide documentation and calculations to support the expected excess costs. SMUD may then: (1) approve the expected excess costs and notify Seller of such approval, and Seller shall comply upon receipt of notice of SMUD's approval and SMUD's payment for the expected excess costs (such costs, "**Accepted Capacity Attribute Compliance Expenditures**"); or (2) elect not to pay Seller for the expected excess costs and notify Seller of such decision, in which case this Agreement shall continue in full force and effect and Seller shall continue to be excused from performing any obligation that causes, or would cause, the incurrence of such Capacity Attribute Compliance Expenditures in excess of the Capacity Attribute Compliance Expenditure Cap. SMUD is not required to reimburse Seller for any Capacity Attribute Compliance Expenditures unless and until SMUD agrees to the expected Capacity Attribute Compliance Expenditures in excess of the Capacity Attribute Compliance Expenditure Cap. To the extent that SMUD has not agreed to reimburse, or has not reimbursed, Seller for any Accepted Capacity Attribute Compliance Expenditures, then SMUD is deemed to have waived Seller's obligation that causes, or would cause, the incurrence of such Capacity Attribute Compliance Expenditures in excess of the Capacity Attribute Compliance Expenditure Cap and (x) Seller will not be in default under this Agreement for failure to satisfy any such obligation and (y) payments to Seller under this

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Agreement during the entirety of the Delivery Term will not decrease as a result of such change in Law and will be maintained as if all such obligations were taken.

5. INTERCONNECTION; TELEMETERING; STORAGE DISPATCH

5.1 Interconnection Agreement

Seller shall execute a LGIA with SMUD at the same time as execution of this Agreement. The LGIA specifies the obligations of the parties thereto with respect to the construction, operation and maintenance of certain interconnection facilities.

5.2 Station Service Load

Station Service Load for the Project shall be governed by the Country Acres Clean Power, LLC – 230kV Retail Station Service Load, Letter of Agreement; provided, that Seller may service Station Service Load of the Battery Storage Project with output of the Solar Project. The use of Battery Storage Energy for Station Service Load is prohibited. The amount of metered Charging Energy delivered by SMUD and measured at the Battery Storage Meter and the amount of Discharging Energy delivered to SMUD and measured at the Battery Storage Meter shall not be separately adjusted to reflect Station Service Load.

5.3 No Additional Loads

Seller shall not connect any loads not associated with Station Service Loads at the location of the Project in a manner that would reduce the Energy provided from the Project to SMUD hereunder. Seller shall obtain separate retail electric service under existing tariffs for the service of any such additional loads. Retail electric service may be obtained from SMUD or other retail electric service provider for the project site, as applicable.

5.4 Charging Energy Management

5.4.1 Upon receipt of a valid Charging Notice, Seller shall take all actions necessary to allow Charging Energy to be delivered to the Battery Storage Project in accordance with the SMUD Setpoint. SMUD shall be responsible for arranging, managing, purchasing, scheduling and paying all costs and charges, including any CAISO market costs and charges, associated with all of the Charging Energy for the Battery Storage Project in accordance with the terms of this Section 5.4 and the Operating Restrictions. SMUD shall be responsible for delivery of, and shall be deemed in control of, Charging Energy to and at the Delivery Points, and Seller shall be responsible for accepting and transferring, and shall be deemed in control of, Charging Energy from the Delivery Points to the Battery Storage Project. Seller shall be responsible for delivering all Discharging Energy to the Delivery Points in accordance with the SMUD Setpoint. SMUD shall be responsible for accepting and transferring all Discharging Energy at and from the Delivery Points.

5.4.2 SMUD will have the right to charge the Battery Storage Project seven (7) days per week and twenty-four (24) hours per day (including holidays), by providing Charging Notices to Seller electronically, subject to the availability of the Battery Storage Project and the requirements and limitations set forth in this Agreement, including the Battery Storage Operating Restrictions and the provisions of Section 5.4.1. Each Charging Notice issued in accordance with this Agreement will be effective unless and until SMUD modifies such Charging Notice by providing Seller with an updated Charging Notice.

5.4.3 Seller shall not charge the Battery Storage Project during the Delivery Term other than (a) pursuant to a valid Charging Notice, (b) in connection with a Battery Storage Capacity

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Test or other test required in accordance with Prudent Utility Practices, or (c) pursuant to a notice from SMUD under the LGIA, or any Governmental Authority. If, during the Delivery Term, Seller (i) charges the Battery Storage Project to a Stored Energy Level greater than the Stored Energy Level provided for in the Charging Notice or (ii) charges the Battery Storage Project in violation of the first sentence of this Section 5.4.3, then (A) Seller shall be responsible for all energy costs associated with such charging of the Battery Storage Project, and (B) SMUD shall be entitled to discharge such energy and entitled to all of the benefits (including Battery Storage Product) associated with such discharge.

5.4.4 SMUD will have the right to discharge the Battery Storage Project seven (7) days per week and twenty-four (24) hours per day (including holidays), by providing Discharging Notices to Seller electronically, subject to the availability of the Battery Storage Project and the requirements and limitations set forth in this Agreement, including the Battery Storage Operating Restrictions. Each Discharging Notice issued in accordance with this Agreement will be effective unless and until SMUD modifies such Discharging Notice by providing Seller with an updated Discharging Notice.

5.4.5 The Plant Controller shall automatically determine the amount of Charging Energy or Discharging Energy based on the SMUD Setpoint.

Notwithstanding any other provision of this Agreement, **at any and all times** the Battery Storage Project may not be, and SMUD shall not issue any instruction, order, Charging Notice, Discharging Notice or other communication requesting or requiring the Battery Storage Project to be, charged, discharged or operated in any manner which results in, or gives rise to any inconsistency with the Battery Storage Operating Restrictions, or any inconsistency with or breach of the Interconnection Agreement; and in the event of any conflict or inconsistency between the Battery Storage Operating Restrictions or the other terms of this Agreement, the Battery Storage Operating Restrictions will prevail.

5.4.6 If requested by SMUD, Seller and SMUD shall enter into good faith discussions to amend this Agreement to modify the Battery Storage Operating Restrictions in Exhibit J and to make any related amendments. Each Party acknowledges and agrees that this Section 5.4.6 does not create any legally binding obligation on either Party to enter into such amendment.

5.5 Telemetering

The Project will require telemetering equipment connected to SMUD's energy management system ("**EMS**") including the CAISO automated Dispatch system (ADS) as provided in the Data Points List in Appendix H of the LGIA.

6. PERMITTING; STANDARD OF CARE; OPERATIONS; CURTAILMENT

6.1 Permitting

The Parties' respective obligations to secure Permits for the Project are specified in the Country Acres Lease and Development Services Agreement.

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6.2 Standard of Care

Seller shall pay and be responsible for designing, installing, operating, and maintaining the Project in accordance with all applicable Laws and Prudent Utility Practice.

Seller shall: (a) operate and maintain the Project in a safe manner in accordance with Prudent Utility Practice and (b) maintain any governmental authorizations and Permits required for the construction and operation thereof.

SMUD shall: (a) operate and maintain its Transmission System in a safe manner in accordance with Prudent Utility Practice and all applicable Laws, as such Laws may be amended from time to time; and (b) maintain any governmental authorizations and Permits required for the construction and operation thereof.

6.3 Project Cleaning

SMUD may request at any time that Seller clean the panels of the Solar Project, and Seller shall do so within a reasonable amount of time of receiving SMUD's request, at SMUD's cost, without Seller mark-up; provided that SMUD may only request panel cleaning up to twice in any Contract Year, with additional cleanings by mutual agreement. Seller shall provide to SMUD a good faith estimate of the cost of panel cleaning prior to each cleaning event.

6.4 Operational Modes

Upon request by SMUD from time to time during the Term, Seller will negotiate in good faith with SMUD to establish one or more commercially reasonable operational modes associated with the operation of the Project that would coordinate the automated Dispatch of the Battery Storage Project with the operations of the Solar Project and/or implement other desired functionality of the Battery Storage Project ("Operational Modes"). All agreed-upon Operational Modes will be documented in writing, executed by authorized representatives of each Party and govern the operations of the Project by the Parties, but will not be considered a modification of this Agreement and will be subject at all times to the terms of this Agreement, including the Operating Restrictions, except to the extent expressly indicated in such writing. Seller shall not be required to agree upon an Operational Mode that would require a modification to the Project, this Agreement, including the Operating Restrictions, the LGIA or any other agreement between Seller and SMUD, or that will expose Seller, in its reasonable judgment, to financial or operational risk. Any disagreements regarding the adoption or implementation of an Operational Mode will be resolved in accordance with the dispute resolution provisions in Section 21 hereof.

6.5 Dispatchability

Subject to the terms of this Agreement, the available insolation, the Availability of the Solar Project and the Battery Storage Project as specified in accordance with the Outage Coordination Process, Seller shall at all times follow the SMUD Setpoint and respond to Dispatch Instructions from SMUD, as provided for in Section 5.4 and this Section 6.5.

6.5.1 Subject to the foregoing, Seller grants SMUD the authority to Dispatch the output of the Solar Project and to curtail the Solar Project in full or in part from 0% to 100% of nominal capability up to the Expected PV Capacity and, subject to the Battery Storage Operating Restrictions, the ability to Dispatch the charging or discharging of the Battery Storage Project from 0% to 100% of nominal capability up to the Expected Battery Storage Capacity, by sending a control signal to the Project's Plant Controller for a specific level of power generation (MW), at any time as reflected in the SMUD Setpoint. The MW control signal can be separate outputs for the Solar Project and the Battery Storage Project. Seller shall install

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a Plant Controller with the ability to accept a control signal from SMUD's Energy Management System (EMS) through a local SMUD remote terminal unit (RTU) to curtail the Project. The Plant Controller must be able to control both the solar generation and battery storage as one integrated system with requisite metering and controls necessary to bifurcate energy delivered from each subsystem (panels and battery storage). The Plant Controller shall run in mutually exclusive local or remote control modes. In local control mode, controller modes and setpoints can be selected by an operator from the plant SCADA. In remote control mode, controller modes and setpoints are selected via the SMUD remote terminal unit. Transition between local and remote modes shall be initiated by the SMUD operator via SMUD's EMS. In remote control mode the controller shall track remote setpoints and provide seamless transitioning from remote to local control mode.

6.5.2 The Plant Controller shall have a "No Grid Charging" control flag.

c) When this "No Grid Charging" flag is turned "On", the Plant Controller shall take automatic action to immediately stop charging the Battery Storage Project upon detecting that the Charging Energy of the Battery Storage Project is from the Transmission Provider's transmission grid, not from the Solar Project.

d) When this "No Grid Charging" flag is turned "Off", the Plant Controller shall take no action regarding grid charging.

6.5.3 The Plant Controller shall have the capability to limit the total combined instantaneous energy delivered to the Point(s) of Interconnection by the Solar Project and Battery Storage Project to not higher than the Interconnection Capacity Limit. When the Plant Controller detects that the instantaneous total combined energy delivered to the Point(s) of Interconnection is higher than the Interconnection Capacity Limit, the Plant Controller shall take automatic action to either immediately reduce the Discharging Energy from the Battery Storage Project such that the total combined instantaneous energy delivered to the Point(s) of Interconnection is no more than the Interconnection Capacity Limit, or charge the Battery Storage Project, as the case may be.

6.5.4 Active power ramp rate control shall provide for the transition between generation levels at a controlled ramp rate. The controller shall support a power generation ramp rate in compliance with LGIA requirements.

6.5.5 PV Dispatchability control accuracy shall be better than a +/- 2 MW average over a five (5) minute interval. Battery Dispatchability control accuracy shall be better than a +/- 2 MW average over a five (5) minute interval. Seller shall provide SMUD evidence of this accuracy upon SMUD's request.

6.5.6 Notwithstanding any other provision of this Agreement, the Battery Storage Project shall not be required to comply with any instructions, requests or directions for the Battery Storage Project to perform or operate in a manner inconsistent with the Battery Storage Operating Restrictions.

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7. SCHEDULING AND FORECASTING; OUTAGES; ACCESS RIGHTS

7.1 Scheduling and Forecasting

The Project is interconnected to the SMUD Service Territory, and SMUD will make its own forecast, or contract with a third party for forecasting, of Project Energy production for use in its Scheduling process. SMUD shall (1) be responsible for all costs, charges and penalties associated with SMUD's bidding and scheduling rights under this Agreement for scheduling of the Project's Products, and all imbalance energy costs, charges and penalties and (2) be entitled to all revenues assessed or provided associated with SMUD's bidding and scheduling of the Project's Products.

Seller shall comply with SMUD's Outage Coordination Process.

7.2 Scheduling Coordinator; CAISO Settlements

SMUD shall be the Scheduling Coordinator for scheduling services for the Project, and for both the delivery and receipt of the Product at the Delivery Points, or contract with a third party for Scheduling Coordinator responsibilities (any such third party, a "**Third-Party SC**"). The Scheduling Coordinator requirements include, but are not limited to SMUD's participation in the CASIO's EIM and day-ahead market or other energy markets. As between Seller and SMUD, SMUD is responsible for all acts and omissions of any Third-Party SC and for all cost, charges and liabilities incurred by Third-Party SC to the same extent that SMUD would be responsible under this Agreement for such acts, omissions, costs, charges and liabilities if taken, omitted or incurred by SMUD directly. Seller shall have no liability to a Third-Party SC for any reason under this Agreement. SMUD (as the Scheduling Coordinator) shall be responsible for all settlement functions with the CAISO related to the Project, and shall submit bids to the CAISO in accordance with this Agreement, the applicable CAISO Tariff, protocols and scheduling practices for Product on a day-ahead, hour-ahead, fifteen-minute market, real-time or other market basis that may develop after the Effective Date, as determined by Buyer consistent with the CAISO Tariff.

7.2.1 Scheduling Coordinator Fee

As consideration for Buyer's services as Scheduling Coordinator, Seller shall pay Buyer a fee for Scheduling Coordination equal to One Hundred Thousand Dollars ($100,000) per Contract Year ("**Scheduling Coordination Fee**"). This fee shall escalate at an annual rate of two percent (2.0%), as shown in Exhibit G, commencing on the first day of the second Contract Year and continuing throughout the Delivery Term or until the earlier termination of this Agreement. The pro rata share of the Scheduling Coordination Fee will be included with each monthly settlement statement. The amount owed by Seller to Buyer under this section for services rendered may be set-off from amounts owed by Buyer to Seller as provided in Section 16 of this Agreement. For the time period beginning with the first day that the Seller is producing pre-COD Energy as detailed in Section 2.4.1 through the day before the official COD as provided in Section 2.3.4, the Seller shall pay Buyer a pro-rated Scheduling Coordination Fee of $273.97 per day for each day during this time period.

7.3 Energy Imbalance Market – EIM or other

SMUD participates in the EIM, and the Parties acknowledge that the Project will be an EIM Participating Resource and such participation will incur imbalance deviation charges. Extensions of the EIM into the Day-Ahead Market may result in additional imbalance deviations, the responsibility for which shall be governed by Section 7.1.

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7.4 Outage Coordination

All electrical or mechanical testing of the Solar Project and Battery Storage Project, or related facilities that may have an impact on generation or could result in a change to the normal state of the facility shall be coordinated with SMUD in accordance with current, as of the Effective Date (subject to Section 7.7), version of "SMUD Transmission Generation Outage Coordination Process" or ("**Outage Coordination Process**") posted to the smud.org website, under Interconnection Information, to ensure Bulk Electrical System reliability in accordance with Federal standards.

7.5 Planned Outages

Planned Outages may only be taken upon thirty (30) days written notice to SMUD and SMUD approval. Seller shall use commercially reasonable efforts to not schedule or take any Planned Outages from 6:00 a.m. through 10:00 p.m. Pacific Prevailing Time during the months of May through September unless required by Prudent Utility Practice or applicable Law. Seller shall use commercially reasonable efforts in accordance with Prudent Utility Practice to minimize the frequency and actual duration of Planned Outages and optimize the availability of Energy from the Project. Seller shall provide Planned Outage notifications in accordance with the Outage Coordination Process.

7.6 Forced Outages

Seller shall provide Forced Outage notifications in accordance with the Outage Coordination Process. When Seller desires to return the Project to service, Seller shall notify SMUD of the same. SMUD shall use commercially reasonable efforts to accommodate the return to service as soon as practicable after such request; provided that SMUD shall permit the Project to return to service no later than the estimated time of return. SMUD may require Seller to interrupt or reduce deliveries of Energy pursuant to a Dispatch Instruction due to an event or circumstance at or following the estimated time of return. When Seller provides notice to SMUD that Seller desires to return the Project to service and the Project is actually capable of returning to service, the Project shall be deemed to be available for all purposes under this Agreement, notwithstanding any delay caused by SMUD.

7.7 Modification of Outage Coordination Process

SMUD may, from time to time, revise the Outage Coordination Process by providing reasonable notice to Seller, in accordance with Prudent Utility Practice, prior to the effectuation of such change, provided that no change to the Outage Coordination Process shall require Seller to incur costs or suffer liabilities other than de minimis administrative internal costs.

7.8 Access Rights

SMUD, its authorized agents, employees and inspectors, upon advance notice to Seller and at their own cost and expense and subject to Section 12.2, shall have the right to reasonably, periodically visit the Project site and inspect the Project in accordance with the Definitive Agreements.

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8. TERM, TERMINATION EVENT AND TERMINATION

8.1 Term

The term of this Agreement (the "**Term**") shall commence upon the last execution by the duly authorized representatives of each of SMUD and Seller, and shall remain in effect until the conclusion of the Delivery Term, unless terminated sooner pursuant to the terms of this Agreement. All indemnity rights shall survive the termination of this Agreement for twelve (12) months.

8.2 Events of Default; Remedies

8.2.1 An "**Event of Default**" shall mean, with respect to a Party (a "**Defaulting Party**"), the occurrence of any of the following:

a) the Defaulting Party fails to make, when due, any payment required under this Agreement if such failure is not remedied within ten (10) days after receipt of notice from the Non-Defaulting Party;

b) any representation or warranty made by such Defaulting Party herein is false or misleading in any material respect when made, and such failure is not cured within thirty (30) days after receipt of notice from the Non-Defaulting Party, or such longer period not to exceed sixty (60) days if the failure is not capable of being cured within such thirty (30) days with the exercise of reasonable diligence, so long as the Defaulting Party has commenced and is diligently pursuing a cure during such initial thirty (30)-day period;

c) the Defaulting Party fails to perform any material covenant or obligation set forth in this Agreement (except to the extent constituting a separate default under this Section 8.2.1 or otherwise has a specific remedy provided in this Agreement), if such failure is not remedied within thirty (30) days of receipt of notice from the Non-Defaulting Party, or such longer period not to exceed ninety (90) days if the failure is not capable of being cured within such thirty (30) days with the exercise of reasonable diligence, so long as the Defaulting Party has commenced and is diligently pursuing a cure during such initial thirty (30)-day period; and/or

d) the Defaulting Party becomes Bankrupt.

8.2.2 Remedies

a) Termination for Default. Except as otherwise expressly provided in this Agreement, an Event of Default by a Defaulting Party, the other Party (the "**Non-Defaulting Party**") shall have the right to (a) terminate this Agreement by providing notice of such termination to the Defaulting Party, which termination shall be effective on a day no earlier than five (5) days after such notice is deemed to be received (as provided in Section 15) and no later than twenty (20) days after such notice is deemed to be received (as provided in Section 15) and, except as provided in Section 8.3 to the contrary, the Defaulting Party shall pay the Non-Defaulting Party a Termination Payment calculated in accordance with Section 8.5, or (b) pursue any other remedies available at law or in equity, including where appropriate, specific performance or injunctive relief, except to the extent such remedies are expressly limited under this Agreement. If the Non-Defaulting Party fails to terminate this Agreement under clause (a) of this paragraph by notice to the Defaulting Party within six (6) months

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following the Non-Defaulting Party's notice of an Event of Default, then the Non-Defaulting Party shall be deemed to have waived its rights to terminate this Agreement pursuant to clause (a) of this paragraph with respect to such Event of Default. If the Non-Defaulting Party elects to terminate this Agreement under clause (a) of this paragraph, then the sole and exclusive remedy available to the Non-Defaulting Party shall be the Termination Payment calculated in accordance with Section 8.5. Notwithstanding any provision herein to the contrary, if Seller commits an Event of Default under this Agreement prior to the Commercial Operation Date, SMUD's sole and exclusive remedy in respect of such Event of Default shall be to terminate this Agreement and retain the Development Security then-held by SMUD pursuant to Section 9.1 of this Agreement (less any Delay Damages already paid by Seller).

For the avoidance of doubt, the Non-Defaulting Party shall not be entitled to multiple monetary remedies for the same damages caused by an event of default under the Definitive Agreements.

b) Suspension.

i) Duty to Mitigate Damages. In addition to (and without limiting) the remedies for an Event of Default otherwise available at law or in equity, during the existence of an Event of Default, the Non-Defaulting Party shall use commercially reasonable efforts to mitigate the damages incurred as a result of such Event of Default.

ii) Right to Suspend. In addition, during the existence of an Event of Default, the Non-Defaulting Party may, by notice to the Defaulting Party, suspend (the date of such notice, the "**Suspension Date**") in whole or in part its payment (excluding accrued payment obligations prior to such Suspension Date) or performance under this Agreement, in either case, not to exceed thirty (30) days.

iii) Responsibility for damages during Suspension. Such suspension shall not relieve the Defaulting Party of its obligations to pay damages arising out of such Event of Default.

iv) Resumption of Performance Following Suspension. After the Defaulting Party's cure of such Event of Default, and provided there is no other Event of Default by such Defaulting Party then occurring and this Agreement has not been terminated, the Non-Defaulting Party will resume performance of its obligations under this Agreement.

c) Termination or Suspension without Cause. Except for the rights to terminate and suspend expressly set forth in this Agreement, neither Party shall have any right to terminate this Agreement or suspend its performance for any reason.

8.3 Termination Rights

SMUD shall have the right but not the obligation to terminate this Agreement, in whole or in part, if any of the following occur, each of which is a "**Termination Event**":

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8.3.1 Failure to achieve Commercial Operation

If the Project does not achieve Commercial Operation by the Guaranteed COD for a reason other than an Excusable Delay, Buyer has the right but not the obligation to terminate this Agreement and Seller liability is capped at the sum of the Project Development Security minus the amount of any Delay Damages that have been paid.

If the Project does not achieve Commercial Operation by the Guaranteed COD as a result of an Excusable Delay and the delay in Commercial Operation exceeds two (2) years, either Party may terminate this Agreement, SMUD and Seller shall have no further liability under this Agreement, and SMUD shall return any security provided by Seller; provided that the foregoing does not excuse SMUD from any liability under this Agreement associated with an Excusable Delay that is a default under this Agreement or that is caused by the negligence of SMUD.

If an Excusable Delay results in Seller' failure to meet the commercial operation date milestone under the Interconnection Agreement, and as a result the Interconnection Agreement is terminated, either Party may terminate this Agreement, SMUD and Seller shall have no further liability under this Agreement and SMUD shall return any security provided by Seller; provided that the foregoing does not excuse SMUD from any liability under this Agreement associated with an Excusable Delay that is a SMUD default under this Agreement or that is caused by the negligence of SMUD.

To exercise the right to terminate, the terminating Party shall provide the other Party with a ten (10) day advance written notice. If Seller achieves the Commercial Operation Date prior to the end of the ten (10) day notice period, SMUD shall not exercise its right to terminate the Agreement.

8.3.2 Failure to sell or deliver Energy

If, after the Commercial Operation Date, Seller has not sold or delivered Products from the Project to SMUD for a period of twelve (12) consecutive months, except due to Force Majeure events and/or SMUD breaches that prevent or excuse Seller from delivering Products, then SMUD shall have the right to terminate this Agreement. If the reason for such failure in deliveries is due to any Major Equipment Failure and Seller is working diligently to overcome the effect of such failure, Seller shall have an additional twelve (12) month period to cure any such failure.

8.3.3 Availability below Requirements

Beginning on the first day of the second full Contract Year of this Agreement, and annually thereafter, if the Annual Average Battery Storage Availability or the Annual Average PV Availability during any Measurement Period is less than the respective Battery Storage Availability Requirement or the PV Availability Requirement, then SMUD shall have the right to terminate this Agreement.

Notice of such termination for this Event of Default shall be given in writing a minimum of sixty (60) days prior to the effectiveness of such termination and within one hundred twenty (120) days following the end of the second of the applicable two (2) Contract Years.

SMUD's ability to exercise such termination right in respect of any Measurement Period shall be deferred for up to one year (or deferred up to two years if caused by a Major Equipment Failure) if Seller has reasonably demonstrated to SMUD, and is actively implementing in good faith, a cure plan for any such failure as described below.

A cure plan may include, but is not limited to, the addition of solar modules or batteries to the system at Seller's sole expense. A cure plan that reasonably shows the Project's ability to achieve the applicable PV or Battery

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Storage Availability Requirement in that current Measurement Period must be submitted to SMUD within 60 days of Seller's receipt of SMUD's notice of termination. SMUD shall then have 30 days after receipt of the cure plan to inform Seller in writing of any reasonable objections to the cure plan. SMUD's non-objection to, or requested modifications to, Seller's cure plan does not waive SMUD's termination rights in the event that Seller does not remedy the Annual Average Battery Storage Availability or Annual Average PV Availability, respectively, by either 1) the end of the following Contract Year for non-Major Equipment Failures, or 2) the end of the following second Contract Year for Major Equipment Failures. Any disagreements regarding the cure plan will be resolved in accordance with the dispute resolution provisions in Section 21 hereof.

To the extent that a Major Equipment Failure causes the Annual Average PV Availability to be less than the Solar Availability Requirement, or the Annual Average Battery Storage Availability to be less than the Battery Storage Availability Requirement, such failure can be excluded from the Annual Availability determination only as it relates to this Section 8, but cannot be excluded by Seller from the monthly payment and commercial settlements process described in Section 2.4.9. For the avoidance of doubt, loss of availability due to a Major Equipment Failure would impact the monthly Availability Percentage but could be excluded from the determination of the Annual Average PV Availability.

8.3.4 Failure to Comply with RPS Requirements

Except as otherwise provided in Section 3.4, in which case, for the avoidance of doubt there will be no termination right if the cause of such non-compliance is SMUD's choice to not pay costs in excess of the Compliance Expenditure Cap:

a) Seller fails to obtain RPS Certification for the Solar Project within six (6) months after COD, except if failure to obtain RPS Certification within this six (6) month period is not due to Seller's action or inaction, then Seller shall be provided a day-for-day delay right to obtain RPS Certification up to an additional of six (6) months for a total of no more that twelve (12) months after COD as long as such day-for-day delay is not due to Seller's action or inaction. Seller shall present to SMUD a reasonable plan of action laying out those steps that Seller shall take in order to obtain such certification as quickly as possible, for acceptance by SMUD, which acceptance shall not be unreasonably withheld; or

b) Subject to Section 3.4, Seller's failure to maintain RPS Certification for the Solar Project, if such failure is not cured within thirty (30) days after written notice; provided that during any period where Seller has not maintained RPS Certification for the Solar Project, whether before or after written notice, SMUD shall not be obligated to purchase any Energy or other Products from Seller hereunder, but Seller may sell such Energy and other Products to third parties.

8.3.5 Termination of Land Lease or LGIA

If the Lease is terminated for a Tenant default pursuant to the terms of such agreement, or if Seller elects to terminate the LGIA and/or Lease under the terms of those agreements, this Agreement shall terminate automatically without any further action of the Parties, effective upon the date of the subject agreement termination.

8.4 Notice of Termination Event

If a Termination Event has occurred, SMUD shall have the right to: (a) send notice, designating a day, no earlier than five (5) days after such notice is deemed to be received (as provided in Section 15) and no later than twenty (20) days after such notice is deemed to be received (as provided in Section 15) (unless, in each

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case, a longer notice period is set forth in Section 8.3), as an early termination date of this Agreement ("**Early Termination Date**") unless the Parties have agreed to resolve the circumstances giving rise to the Termination Event; (b) except for a termination pursuant to Section 8.3.1 or as elsewhere provided in this Agreement to the contrary, calculate the Termination Payment in accordance with Section 8.5 owed in connection with such Termination Event; and (c) terminate this Agreement and end the Delivery Term effective as of the Early Termination Date. With respect to any Termination Event prior to the Commercial Operation Date, including pursuant to Section 8.3.1, Seller's sole and exclusive liability and SMUD's sole and exclusive remedy aside from terminating this Agreement shall be the forfeiture of Seller's Development Security to SMUD less any Delay Damages already paid by Seller.

8.5 Termination Payment Calculation

If a Termination Event occurs or if this Agreement is terminated following a breach or default as provided in Section 8.2 of this Agreement, in each case ultimately resulting in termination of this Agreement, a "**Termination Payment**" shall be determined in accordance with this Section 8.5. Notwithstanding any provision herein to the contrary, prior to the Commercial Operation Date, the Termination Payment associated with a Termination Event or breach or default caused by Seller shall be zero dollars ($0.00).

8.5.1 The Termination Payment payable by the Defaulting Party to the Non-Defaulting Party shall equal: (i) Non-Defaulting Party's Loss as calculated under Section 8.5.1(a) below and discounted to present value as set forth under Section 8.5.1(b) below; plus (ii) Non-Defaulting Party's Cost as calculated under Section 8.5.1(c) below; which will then be aggregated with any amounts owed to the Non-Defaulting Party as of the Early Termination Date. If the Termination Payment as so calculated would be less than zero, it shall be deemed to be zero, provided that notwithstanding anything herein to the contrary, each Party shall compensate the other Party for amounts due in respect of prior performance rendered under this Agreement.

a) The Parties intend that Non-Defaulting Party's "**Loss**" shall be the net economic loss (exclusive of Costs), if any, resulting from the termination of this Agreement, determined in a commercially reasonable manner as calculated in accordance with this Section 8.5. The Loss, if any, suffered by Non-Defaulting Party shall be determined by:

    i) Comparing the value of the remaining Term, applying the Expected PV Capacity or Expected Battery Storage Capacity, as the case may be, multiplied by twelve (12), minus capacity reduction for degradation in future years (assumed to be 0.5% per year for both the Solar Project and the Battery Storage Project), and the PV Price or Battery Storage Price (loss is computed separately for the Solar Project and the Battery Storage Project) for each year of the remaining Term under this Agreement had it not been terminated to the equivalent quantity with each party obtaining, in good faith and from non-affiliated market participants in the relevant market, two quotes for prices of CA RPS PCC 1 RECs for the affected period of a similar quality and quantity in the geographical location closest in proximity to the Delivery Points and averaging the four quotes.

b) REC volume will be a prorated amount based on Exhibit C Expected Energy Production. If either Party fails to provide two quotes, then the average of the other Party's two quotes shall determine the replacement price. For clarity, if SMUD is the Non-Defaulting Party, the Non-Defaulting Party's Loss equals the amount by which the market price of replacement Products exceeds the Contract Price therefor, and if

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the Seller is the Non-Defaulting Party, the Non-Defaulting Party's Loss equals the amount by which the Contract Price hereunder exceeds the market price of such replacement Products, less the expenses saved by Seller due to SMUD's default (if any), which includes, but is not limited to, the cost of production of the Products. To ascertain the market price of a replacement contract, Non-Defaulting Party may consider, among other valuations, quotations from leading dealers in ERR capacity contracts, and other bona fide third party offers, all adjusted for the length of the remaining Term and differences in transmission. It is expressly agreed that Non-Defaulting Party shall not be required to enter into replacement transactions in order to determine the Termination Payment. For the avoidance of doubt, if this Agreement is terminated as a result of a SMUD Event of Default and the Interconnection Agreement is also terminated, then the Parties agree it shall be reasonable for Seller to assume no replacement sales will occur in calculating the Termination Payment and therefore, in calculating Seller's Loss, the "market price of replacement Products" shall be deemed to be zero.

c) The Loss calculated under paragraph (a) shall be discounted to present value using a discount rate of four and one-half percent (4.5%) or appropriate for the Non-Defaulting Party as of the time of termination (to take into account the period between the time notice of termination was effective and when such amount would have otherwise been due pursuant to this Agreement).

d) Non-Defaulting Party's "**Costs**" shall be calculated as the sum of the brokerage fees, commissions and other similar transaction costs and expenses reasonably incurred in terminating and replacing this Agreement, including, reasonable transmission costs associated with any replacement contract, if any, incurred in connection with Non-Defaulting Party enforcing its rights with regard to this Agreement. Non-Defaulting shall use reasonable efforts to mitigate or eliminate Costs. Consistent with Section 21.2, each Party shall pay and be responsible for their own attorney fees.

e) The Non-Defaulting Party shall add any amounts owed by the Defaulting Party to the Non-Defaulting Party as of the Early Termination Date as part of the Termination Payment calculation. The Non-Defaulting Party may set-off any amounts owing by the Non-Defaulting Party to the Defaulting Party as of the Early Termination Date against the Termination Payment so that all such amounts are aggregated and/or netted to a single amount. The net amount due to or from the Non-Defaulting Party shall be paid within thirty (30) Business Days following the effective date of termination, or, if the Parties disagree regarding the calculation of the Termination Payment, the date that the calculation of the Termination Payment is resolved pursuant to Section 8.5.2 below.

f) In no event, however, shall the calculation of Loss or Costs include any penalties or similar charges imposed by the Non-Defaulting Party.

8.5.2 If the Defaulting Party reasonably disagrees with the calculation of the Termination Payment and the Parties cannot otherwise resolve their differences, the calculation issue shall be resolved in accordance with Section 21 of this Agreement.

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9. CREDITWORTHINESS

9.1 Project Development and Delivery Term Security

Within thirty (30) days of the Effective Date, Seller shall provide project development security in the amount equal to the product of (i) $40/kW$_{AC}$ multiplied by (ii) the sum of the Initial Expected PV Capacity and the Initial Expected Battery Storage Capacity (for example, 516 MW$_{AC}$ which is equal to the sum of 344 MW$_{AC}$ PV plus 172 MW$_{AC}$ Battery Storage), to be maintained until the start of the Delivery Term ("**Development Security**").

Prior to commencement of the Delivery Term, Seller shall provide Delivery Term Security in the amount equal to the product of (a) $75/kW$_{AC}$ multiplied by (b) the sum of the Expected PV Capacity plus the Expected Battery Storage Capacity at COD, in the form of cash or Letter of Credit from a Qualified Issuer for the initial 3 years of operations, and SMUD shall return the Development Security provided pursuant to this Section 9.1 to Seller. If after Contract Year 3 the project meets all material contract requirements, the Seller may replace cash or Letter of Credit with a Exhibit T Surety Bond or guaranty in a form and from a provider reasonably acceptable to SMUD, including provisions for prompt payment of amounts owed for the duration of the Delivery Term ("**Delivery Term Security**"). Seller shall maintain the Delivery Term Security from a Qualified Issuer for the duration of the Delivery Term.

No lien or other security will be required and SMUD's recourse against Seller shall be limited to the security provided.

"**Qualified Issuer**" is (A) with respect to a Letter of Credit, a major U.S. commercial bank or a U.S. branch of a foreign bank ("**Bank**") that, at the time of delivery of a letter of credit, (i) has a combined capital surplus of $10,000,000,000 and (ii) has a senior unsecured long-term credit rating of at least "A-" by S&P or "A3" by Moody's. If Qualified Issuer fails to meet the foregoing capital surplus and unsecured long-term credit rating requirements, Seller must replace credit support with another Bank, and (B) with respect to a Surety Bond, an insurance company or companies rated not lower than A-/IX by the A.M. Best Company.

10. WAIVER OF SOVEREIGN IMMUNITY

SMUD will solely be responsible for all debts, obligations and liabilities accruing and arising out of this Agreement. SMUD warrants and covenants, to the extent of its legal authority, it will not claim immunity on the grounds of sovereignty or similar grounds with respect to the enforcement of its obligations under this Agreement.

11. FORCE MAJEURE

11.1 Effect of Force Majeure

Buyer or Seller, as the case may be, shall be excused from performance under this Agreement to the extent, but only to the extent, that performance hereunder is prevented or delayed by an act or event of Force Majeure. The Party invoking Force Majeure shall exercise due diligence to overcome or mitigate the effects of such an act or event of Force Majeure; *provided,* however, that nothing in this Agreement shall be deemed to obligate the Party invoking Force Majeure (a) to forestall or settle any strike, lock-out or other labor dispute against its will; or (b) for Force Majeure affecting Seller only, to purchase electric power to cure the event of Force Majeure.

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11.2 Notice of Force Majeure

In the event of any delay or nonperformance resulting from an event of Force Majeure, the Party invoking Force Majeure shall, as soon as practicable under the circumstances, notify the other Party in writing of the nature, cause, date of commencement thereof and the anticipated extent of any delay or interruption in performance.

11.3 Termination Due to Force Majeure Event

If a Party is prevented from performing its material obligations under this Agreement for a period of twelve (12) consecutive months or longer due to Force Majeure, the unaffected Party may terminate this Agreement, without liability of either Party to the other, upon thirty (30) days written notice at any time during the Force Majeure event.

12. INDEMNITY

12.1 Indemnity by Seller

Seller shall defend, release, indemnify and hold harmless SMUD, its directors, officers, employees, agents, and representatives against and from any and all losses, claims, demands, liabilities and expenses, actions or suits, including reasonable costs and attorney's fees, resulting from, or arising out of or in any way connected with claims by third parties associated with the acts or omissions of Seller, its directors, officers, employees, contractors, agents and representatives relating to: (i) the Energy delivered at the Delivery Points; (ii) Seller's operation and/or maintenance of the Project; or (iii) this Agreement; excepting only such loss, claim, action or suit to the extent caused by the willful misconduct or gross negligence of SMUD, its agents, employees, directors or officers.

12.2 Indemnity by SMUD

SMUD shall defend, release, indemnify and hold harmless Seller, its directors, officers, employees, agents, and representatives against and from any and all losses, claims, demands, liabilities and expenses, actions or suits, including reasonable costs and attorney's fees resulting from, or arising out of or in any way connected with claims by third parties associated with acts or omissions of SMUD, its directors, officers, employees, contractors, agents, invitees and representatives, relating to: (i) the Energy delivered by Seller under this Agreement after the Delivery Points, (ii) SMUD's operation and/or maintenance of its Electric System; (iii) the Agrivoltaics FOP; or (iv) this Agreement; excepting only such loss, claim, action or suit to the extent caused by the willful misconduct or gross negligence of Seller, its agents, employees, directors or officers.

13. LIMITATION OF DAMAGES

EXCEPT AS OTHERWISE PROVIDED IN THIS AGREEMENT THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND ANY AND ALL IMPLIED WARRANTIES ARE DISCLAIMED. LIABILITY SHALL BE LIMITED TO DIRECT ACTUAL DAMAGES ONLY; SUCH DIRECT ACTUAL DAMAGES SHALL BE THE SOLE AND EXCLUSIVE REMEDY AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY ARE WAIVED UNLESS EXPRESSLY HEREIN PROVIDED. EXCEPT WITH REGARD TO INDEMNIFICATION OF THIRD PARTY CLAIMS IN ACCORDANCE WITH SECTION 12, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES, LOST PROFITS OR OTHER BUSINESS INTERRUPTION DAMAGES, BY STATUTE, IN TORT OR CONTRACT, OR OTHERWISE. UNLESS EXPRESSLY HEREIN PROVIDED, AND SUBJECT TO THE PROVISIONS OF SECTION 12, IT IS THE INTENT OF THE PARTIES THAT THE LIMITATIONS HEREIN IMPOSED ON REMEDIES AND THE MEASURE OF DAMAGES BE WITHOUT REGARD TO THE CAUSE OR CAUSES

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RELATED THERETO, INCLUDING THE NEGLIGENCE OF ANY PARTY, WHETHER SUCH NEGLIGENCE BE SOLE, JOINT OR CONCURRENT, OR ACTIVE OR PASSIVE. THE TERMINATION PAYMENT UNDER SECTION 8.5.1 IS NOT SUBJECT TO THE LIMITATION OF DAMAGES PROVISION SET FORTH IN THIS SECTION 13. THE PARTIES EXPRESSLY ACKNOWLEDGE AND AGREE THAT THE LIMITATION OF DAMAGES PROVISIONS CONTAINED IN THIS SECTION 13 WILL NOT LIMIT THE RECOVERY BY SELLER OF DAMAGES BASED ON THE VALUE OF ANY ITC (AS DEFINED IN DEFINITIONS) OR OTHER TAX BENEFITS THAT ARE LOST, UNAVAILABLE, DISALLOWED, REDUCED OR RECAPTURED AND ITC RECAPTURE AMOUNTS (AS DEFINED IN DEFINITIONS) THAT ARE REQUIRED TO BE REPAID, DETERMINED ON AN AFTER-TAX BASIS, BY SELLER, SELLER'S DIRECT OR INDIRECT OWNERS, A LENDER, A TAX EQUITY INVESTOR OR ANY OF THEIR AFFILIATES DUE TO AN EVENT OF DEFAULT BY SMUD THAT SELLER HAS NOT BEEN ABLE TO MITIGATE AFTER USE OF COMMERCIALLY REASONABLE EFFORTS (WHICH SUCH AMOUNTS WILL BE DEEMED TO BE DIRECT DAMAGES RECOVERABLE BY SELLER).

14. REPRESENTATION AND WARRANTIES; COVENANTS

14.1 Representations and Warranties

On the Effective Date, each Party represents and warrants to the other Party that:

14.1.1 It is duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation;

14.1.2 The execution, delivery and performance of this Agreement is within its powers, have been duly authorized by all necessary action and do not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any law, rule, regulation, order or the like applicable to it;

14.1.3 This Agreement and each other document executed and delivered in accordance with this Agreement constitutes its legally valid and binding obligation enforceable against it in accordance with its terms;

14.1.4 It is not Bankrupt and there are no proceedings pending or being contemplated by it or, to its actual knowledge, threatened against it which would result in it being or becoming Bankrupt;

14.1.5 There are not pending or to its actual knowledge threatened legal proceedings against it or any of its affiliates that could materially adversely affect its ability to perform its obligations under this Agreement; and

14.1.6 It is acting for its own account, has made its own independent decision to enter into this Agreement and as to whether this Agreement is appropriate or proper for it based upon its own judgment, is not relying upon the advice or recommendations of the other Party in so doing, and is capable of assessing the merits of, and understands and accepts, the terms, conditions and risks of this Agreement**.**

14.2 General Covenants

Each Party covenants that throughout the Term of this Agreement:

14.2.1 It shall continue to be duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation;

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14.2.2 It shall maintain (or obtain from time to time as required, including through renewal, as applicable) all regulatory authorizations necessary for it to legally perform its obligations under this Agreement; and

14.2.3 It shall perform its obligations under this Agreement in a manner that does not violate any of the terms and conditions in its governing documents, any contracts to which it is a party or any law, rule, regulation, order or the like applicable to it.

14.3 SMUD Representations and Warranties

14.3.1 As of the Effective Date and throughout the Delivery Term, SMUD represents and warrants to Seller that:

14.3.2 SMUD is subject to claims and to suit for damages in connection with its obligations under this Agreement pursuant to and in accordance with the laws of the State of California applicable to municipal utility districts;

14.3.3 SMUD is a "local public entity" as defined in Section 900.4 of the Government Code of the State of California.

15. NOTICES

Notices shall, unless otherwise specified herein, be in writing and may be delivered by hand delivery, United States mail, overnight courier service, facsimile or electronic messaging (e-mail). Whenever this Agreement requires or permits delivery of a "notice" (or requires a Party to "notify"), the Party with such right or obligation shall provide a written communication in the manner specified below. A notice sent by facsimile transmission or email will be recognized and shall be deemed received on the Business Day on which such notice was transmitted if received before 5 p.m. Pacific prevailing time (and if received after 5 p.m., on the next Business Day) and a notice by overnight mail or courier shall be deemed to have been received two (2) Business Days after it was sent or such earlier time as is confirmed by the receiving Party unless it confirms a prior oral communication, in which case any such notice shall be deemed received on the day sent. A Party may change its addresses by providing notice of same in accordance with this provision. All written notices shall be directed as shown in Exhibit I. Either Party may request a change to Exhibit I as necessary to keep the Exhibit I information current without amendment to this Agreement.

16. SET OFF

Each Party shall be entitled to offset amounts owed by the other Party under this Agreement from the amounts owed to it under this Agreement.

17. ASSIGNMENT

17.1 There shall be no Change of Control of any interest in the Project or sale, transfer or assignment of this Agreement (collectively, a "**Transfer**") without the prior written consent of the other Party, which consent shall not be unreasonably withheld; provided, however;

17.1.1 A Transfer of (i) this Agreement or (ii) any direct or indirect ownership interests in Seller, in each case to any lender or its designee as collateral for any financing or refinancing of the Project, shall not constitute an assignment, Change of Control or Transfer requiring the consent of SMUD under this Agreement. Any such Transfer shall not relieve Seller of its obligations under this Agreement arising prior to the effective date of such Transfer. To facilitate Seller's obtaining of financing in connection with the Project, SMUD shall provide

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such consents to assignments, certifications, estoppels, opinions, representations, information or other documents as may be reasonably requested by Seller or the lenders in connection with the debt or tax equity financing of the Project, as applicable; provided that in responding to any such request, SMUD shall have no obligation to (a) provide any consent, certification, representation, information or other document, or enter into any agreement, that materially and adversely affects, or that could reasonably be expected to have or result in a material adverse effect on, any of SMUD's rights, benefits, risks and/or obligations under this Agreement (other than terms customary in connection with the applicable financing) or (b) incur any unreimbursed third-party expense. Seller shall reimburse, or shall cause the lender(s) to reimburse, SMUD for the incremental direct third party expenses (including the reasonably documented fees and expenses of SMUD's counsel) incurred by SMUD in the preparation, negotiation, execution and/or delivery of any documents requested by Seller or the lenders, and provided by SMUD, pursuant to this Section 17.1.1. Upon written request of Seller, SMUD will negotiate a Consent and Agreement between Seller and Seller's lender and/or tax equity investor substantially in the form attached herein as Exhibit K, as such form may be modified to reflect reasonable changes requested by Seller, Seller's lender and/or tax equity investor.

17.1.2 Without limitation as to other reasonable grounds for withholding consent, the Parties hereby agree that it shall be reasonable under this Agreement and under any applicable Law for SMUD to withhold consent to any proposed Transfer, where at the time of the Assignment, the assignee is not concurrently assuming all of the future obligations under the LGIA as well as the future obligations under this Agreement; provided that if the Seller is not in default under the this Agreement and notwithstanding the foregoing, no consent shall be required for any Permitted Transfer. Any such Transfer shall not relieve Seller of its obligations under this Agreement arising prior to the effective date of such Transfer. Notwithstanding the foregoing, to the extent not prohibited by applicable Law, Seller shall, within thirty (30) days prior to such Transfer, provide SMUD with written notice of any Transfer permitted under this Section, which notice shall identify the transferee and contain evidence that the transferee has assumed or will assume all of the obligations under this Agreement arising after the date of the Transfer, and reasonable proof that the Transfer qualifies as an exempt transfer under this Section. The term "Affiliate" as used herein means, with respect to Seller, any corporation or limited liability company that directly or indirectly controls, is controlled by, or is under common control with, Seller.

17.1.3 SMUD may request that Seller enter negotiations to permit SMUD's limited assignment of a portion of SMUD's rights and obligations under this Agreement to J. Aron and Company, LLC ("**J. Aron**") or other third party at any time upon not less than 30 days' notice by delivering a written request for such assignment. Following any such request by SMUD, (a) Seller, SMUD and J. Aron (or other third party) shall negotiate in good faith the execution of a limited assignment agreement based on the form attached hereto as Exhibit R, and (b) if requested by Seller, Seller and SMUD shall negotiate in good faith an indemnity and/or a legal opinion, to be provided by SMUD for the benefit of Seller, in form and substance satisfactory to Seller. SMUD shall reimburse, or shall cause J. Aron (or other third party) to reimburse, Seller for the reasonable, documented, incremental and direct third-party expenses (including the fees and expenses of Seller's counsel) incurred by Seller in the preparation, negotiation, execution and/or delivery of any documents requested by SMUD or the lenders, and provided by Seller, pursuant to this Section 17.1.

18. [Reserved]

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19. PROJECT PURCHASE OPTION

Seller hereby grants to SMUD the right and option to purchase all of Seller's right, title and interest in and to the Project and Products pursuant to the terms set forth herein.

19.1 SMUD shall have the option (the "**Purchase Option**") to terminate this Agreement and purchase from Seller: (A) upon the twelfth (12th) anniversary of the Commercial Operation Date, the Solar Project and the Battery Storage Project, together, for a price equal to the greater of (i) the Fair Market Value of the Solar Project plus the Fair Market Value of the Battery Storage Project, and (ii) $[redacted]; (B) upon the fifteenth (15th) anniversary of the Commercial Operation Date, the Solar Project and the Battery Storage Project, together, for a price equal to the greater of (i) the Fair Market Value of the Solar Project plus the Fair Market Value of the Battery Storage Project, and (ii) $[redacted]; (C) at the end of the twentieth (20th) Contract Year, the Battery Storage Project, on a stand-alone basis, for a price equal to the greater of (i) the Fair Market Value of the Battery Storage Project, and (ii) $[redacted]. For the avoidance of doubt, in the event that SMUD exercises the Purchase Option pursuant to the terms of this Section 19.1, then the price associated with the option that SMUD has selected in the foregoing sentence shall be the "**Purchase Price**".

SMUD may exercise the Purchase Option upon (i) the twelfth (12th), fifteenth (15th), or twentieth (20th) anniversary of the Commercial Operation Date, respectively. In the event that SMUD desires to exercise the Purchase Option, SMUD shall deliver to Seller a notice indicating SMUD's intent to exercise the Purchase Option (an "**Option Notice**") on or before the date which is no less than six (6) months prior to the twelfth (12th), fifteenth (15th) or twentieth (20th) anniversary of the Commercial Operation Date (the "**12, 15 and 20-year Purchase Options**"), respectively.

19.2 For a period of six (6) months following delivery of the Option Notice with respect to the 12, 15 and 20-year Purchase Options (the "**Purchase Option Due Diligence Period**"), SMUD and its representatives shall have the right to conduct any and all due diligence which SMUD may reasonably deem necessary with respect to the Project and Products. Seller shall, during the Purchase Option Due Diligence Period, make available to SMUD and its representatives full access to the Project, related title work, surveys, contracts, data and records and operating personnel ("**Full Access**"). The Purchase Option Due Diligence Period will be extended day-for-day to the extent that, due to Seller's default, Force Majeure or any other reason not attributable to Seller, Full Access cannot be provided.

19.3 SMUD and Seller shall execute a SMUD Purchase and Sale Agreement under which Seller will sell and SMUD, or its assignee, will purchase the Solar Project and/or Battery Storage Project at a closing for the purchase and sale of the Solar Project and/or Battery Storage Project (the "**Closing**") to be held on a date which is within six (6) months following the 12, 15 or 20-year Purchase Option, as applicable, (the "**Closing Date**") at a location selected by SMUD.

19.4 Between the date of the Option Notice and the Closing Date, Seller may not take any actions that would materially adversely affect the Project site, the Project and Products or SMUD's interest in purchasing the Project and Products. Under this Agreement, among other standard provisions, effective as of the Closing:

19.4.1 Seller shall transfer the purchased Solar Project and/or Battery Storage Project and any related Products to SMUD on an as-is, where-is basis, and Seller shall not be required to make any representations or warranties with regard to such Solar Project and/or Battery Storage Project and Products; *provided*, *however*, that Seller shall remove any encumbrances placed on the purchased Solar Project and/or Battery Storage Project and Products by Seller at Seller's expense. No such transfer shall relieve Seller of any liability whatsoever arising from the violation, breach or default by Seller of this Agreement, any

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transferred contract, transferred permit, transferred intellectual property or other transferred asset, or resulting from any act or omission by Seller that occurred prior to the Closing Date.

19.4.2 Seller shall transfer the purchased Solar Project and/or Battery Storage Project and any related Products to SMUD, free and clear of all liens and encumbrances. Seller shall assign and transfer to SMUD all of its right, title and interest in the following: (a) all raw materials, consumables and spare parts, in each case, to the extent relating to the purchased Solar Project and/or Battery Storage Project and related Products; (b) all tangible personal property to the extent relating to the purchased Solar Project and/or Battery Storage Project and related Products; (c) all intangible personal property, including permits, patents, patent licenses, patent applications, trade names, trademarks, trademark registrations and applications therefore, trade secrets, copyrights, know-how, secret formulae and any other intellectual property rights, in each case, to the extent exclusively used by Seller in the operation of the purchased Solar Project and/or Battery Storage Project and related Products; (d) all buildings and fixtures to the extent relating to the purchased Solar Project and/or Battery Storage Project and related Products; (e) computerized and non-computerized records, reports, data, files, and information, in each case, to the extent exclusively used by Seller in the operation of the purchased Solar Project and/or Battery Storage Project and related Products; (f) all design, construction and equipment warranties and guarantees related to the purchased Solar Project and/or Battery Storage Project and related Products in which Seller has any remaining rights against engineers, contractors, suppliers, equipment manufacturers or other persons; and (g) all permits and entitlements;(h) any and all interests in real property associated with the purchased Solar Project and/or Battery Storage Project. Notwithstanding this Section 19.4.2, Seller shall have the right to retain copies of, and shall have the right to use, any and all records, reports, data, files and information assigned and transferred by Seller to SMUD pursuant to Section 19.4.2(e) for its internal business use, which may include by way of illustration and not be way of limitation: (i) use in accordance with Seller's standard document retention policies; (ii) responding to or otherwise complying with regulatory audits or requests; (iii) responding to third party due diligence requests; (iv) complying with applicable Laws; (v) responding to or defending third party claims or allegations; or (vi) enforcing, defending or interpreting Seller's rights, claims or remedies under this Agreement. SMUD is specifically prohibited from purchasing the LLC, necessitating the descriptions in Section 19.

19.4.3 All items relating to the ownership and operation of the purchased Solar Project and/or Battery Storage Project and related Products, which are customarily prorated, shall be prorated as of the Closing Date. Seller shall be liable with respect to items or obligations that relate to any time period prior to the Closing Date and SMUD shall be liable with respect to items or obligations relating to time periods after the Closing Date, and to the extent practicable, shall be credited to Seller's settlement account.

19.5 This Agreement shall terminate upon the Closing Date, other than the Closing Date in connection with SMUD's exercise of the Purchase Option available at the end of the twentieth (20^{th}) Contract Year, and (a) the payment in full to Seller of the Purchase Price and (b) the satisfaction or payment of all other obligations due to either Party under this Agreement. Note that the LGIA and Lease have specified agreement terms that extend past the term of the PPA.

19.6 The "**Fair Market Value**" of the Solar Project and/or Battery Storage Project and related Products shall be the value determined by the mutual agreement of SMUD and Seller after receipt by Seller of SMUD's Option Notice requesting a determination of the Fair Market Value by obtaining an appraisal (the "Appraisal") from a mutually acceptable qualified licensed appraiser (the "Initial Appraiser"). In the event that Seller does not approve the value provided by the Appraisal, Seller shall select a second third-party appraiser (the "**Second Appraiser**") to provide a second appraisal

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to determine the fair market value of the Solar Project and/or Battery Storage Project sought to be purchased and any related Products (the "**Alternative Appraisal**"). In the event that Seller selects the Second Appraiser, the fair market value of the Solar Project and/or Battery Storage Project and related Products shall be the average of the Appraisal and the Alternative Appraisal. Notwithstanding the foregoing, if two appraisals have been provided and one of the appraisals so rendered reflects fair market value of the Solar Project and/or Battery Storage Project and related Products that is more than 10% greater or more than 10% less than the fair market value of the Solar Project and/or Battery Storage Project and related Products reflected in the other appraisal, the Initial Appraiser and Second Appraiser shall promptly select a third appraiser (or, if such appraisers cannot agree on the selection of a third appraiser, the third appraiser shall be selected by the American Arbitration Association or any successor organization upon application by either Member), which appraiser shall make its own determination and then establish the fair market value of the Solar Project and/or Battery Storage Project and related Products for purposes of this Agreement by taking the arithmetic average of the three appraisals; provided that if any one appraisal is more or less than 15% of the average, such appraisal shall be discarded and the average shall be calculated on the remaining two appraisals. Or if there is no such agreement, the value determined by an independent appraiser as provided under this Section 19.6. Within ten (10) days of Seller's receipt of an Option Notice, SMUD and Seller shall jointly select three recognized independent appraisers, with experience and expertise in the solar photovoltaic and energy storage industry to value such Solar Project and/or Battery Storage Project and related Products with whom the Parties will discuss methods and assumptions. Such appraisers shall act reasonably and in good faith to determine the Fair Market Value and shall set forth such determination in a written opinion delivered to the Parties within a timeframe established upon appointment of the appraiser, aspirationally no later than thirty (30) days after the date of appointment. The valuation made by the appraiser shall be the Fair Market Value in the absence of fraud or manifest error. The costs of the appraisals shall be borne equally by both Parties. The appraiser shall determine the Fair Market Value as the amount a willing buyer would pay for the Project and Products and all rights and interests associated therewith, in an arm's-length transaction, to a willing seller under no compulsion to sell, assuming that this Agreement remains in full force and effect, and that the Solar Project and/or Battery Storage Project is able to generate revenue for the then-remaining Term at the prices set forth in this Agreement, assuming that thereafter the Solar Project and/or Battery Storage Project is able to generate revenue at a rate equal to the then fair market rates for the associated Products and any other products and services associated with and/or produced by the Solar Project and/or Battery Storage Project, and assuming that the Solar Project and/or Battery Storage Project will remain in place on the site for the remaining useful life of the Solar Project and/or Battery Storage Project.

20. APPLICABLE LAW

THIS AGREEMENT AND THE RIGHTS AND DUTIES OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY AND CONSTRUED, ENFORCED AND PERFORMED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA, WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW.

21. DISPUTE RESOLUTION

21.1 Trial; Venue

The Parties agree that any suit, action or other legal proceeding by or against any party (or its affiliates or designees) with respect to or arising out of this Agreement shall be brought in the federal courts of the United States sitting in the County of Sacramento, California.

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21.2 Dispute Resolution

If the Parties are unable to resolve a dispute with respect to this Agreement, either Party shall send a notice to the other requesting a meeting at which senior officers or officials of the Parties shall attempt to resolve the dispute. If the Parties are unable to resolve the dispute within ten (10) days after the meeting notice is received by the Party to whom it is directed, or such longer period as the Parties may agree, then either Party may elect to resolve such dispute in the federal courts of the United States sitting in the County of Sacramento, California. Each Party shall pay and be responsible for their own attorney fees.

22. SEVERABILITY

If any provision in this Agreement is determined to be invalid, void or unenforceable by any court or arbitration panel having jurisdiction, such determination shall not invalidate, void, or make unenforceable any other provision, agreement or covenant of this Agreement and the Parties shall use commercially reasonable efforts to modify this Agreement to give effect to the original intention of the Parties.

23. COUNTERPARTS

This Agreement may be executed in one or more counterparts each of which shall be deemed an original and all of which shall be deemed one and the same Agreement. Delivery of an executed counterpart of this Agreement by facsimile, PDF, or electronic transmission will be deemed as effective as delivery of an originally executed counterpart. Each Party delivering an executed counterpart of this Agreement by facsimile, PDF, or electronic transmission will also deliver an originally executed counterpart, but the failure of any Party to deliver an originally executed counterpart of this Agreement will not affect the validity or effectiveness of this Agreement. The preceding does not apply in the case of electronically signed documents.

24. GENERAL

No amendment to, modification of, or waiver under this Agreement shall be enforceable unless reduced to writing and executed by both Parties. This Agreement shall not impart any rights enforceable by any third party other than a permitted successor or assignee bound to this Agreement. Waiver by a Party of any default by the other Party shall not be construed as a waiver of any other default. The term "including" when used in this Agreement shall be by way of example only and shall not be considered in any way to be in limitation. The headings used herein are for convenience and reference purposes only.

25. MOBILE SIERRA

Notwithstanding any provision of this Agreement, neither Party shall seek, nor shall they support any third party in seeking, to prospectively or retroactively revise the rates, terms or conditions of service of this Agreement through application or complaint to FERC pursuant to the provisions of Section 205, 206 or 306 of the Federal Power Act, or any other provisions of the Federal Power Act, absent prior written agreement of the Parties. Further, absent the prior agreement in writing by both Parties, the standard of review for changes to the rates, terms or conditions of service of this Agreement proposed by a Party, a non-Party or the FERC acting *sua sponte* shall be the "public interest" application of the "just and reasonable" standard of review set forth in *United Gas Pipe Line Co. v. Mobile Gas Service Corp.*, 350 US 332 (1956) and *Federal Power Commission v. Sierra Pacific Power Co.*, 350 US 348 (1956) and clarified by *Morgan Stanley Capital Group, Inc. v. Pub. Util. Dist. No. 1 of Snohomish*, 554 U.S. 527, 128 S. Ct. 2733 (2008) and *NRG Power Mktg., LLC v. Maine Pub. Util. Comm'n*, 130 S. Ct. 503 (2010).

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26. SERVICE CONTRACT; FORWARD AGREEMENT

The Parties intend that this Agreement will be treated as a service contract pursuant to Section 7701(e)(3) of the Internal Revenue Code for the sale to SMUD of energy produced at an alternative energy Project, and the Parties shall not file any tax returns inconsistent with such treatment. The Parties agree that this Agreement constitutes a 'forward contract' as defined in the United States Bankruptcy Code and that each Party is a "Forward Contract Merchant" within the meaning of the United States Bankruptcy Code.

27. ENTIRE AGREEMENT

This Agreement, together with the LGIA, the Development Services Agreement, the Lease, and the Station Service Load Letter of Agreement constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter hereof and thereof. Other than the LGIA, the Development Services Agreement, the Lease, and the Station Service Load Letter of Agreement, there are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, either Party's compliance with its obligations under this Agreement.

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IN WITNESS WHEREOF, each Party has caused this Agreement to be duly executed by its authorized representative as of the date of last signature provided below.

SACRAMENTO MUNICIPAL UTILITY DISTRICT	**COUNTRY ACRES CLEAN POWER, LLC**
By: _____	**By:** _____
Name: **Title:**	**Name:** **Title:**
Date: _____	**Date:** _____

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EXHIBITS

Exhibit A – Description and Location of Project

Exhibit B – Contract Price

Exhibit C – Expected Energy Production

Exhibit D - Reserved

Exhibit E – Commercial Operation Date Confirmation Letter

Exhibit F – Capacity Attribute Reporting and Conveyance Procedure

Exhibit G – Scheduling Coordination Fee

Exhibit H – Environmental Attribute Reporting and Conveyance Procedure

Exhibit I – Notices

Exhibit J – Battery Storage Operating Restrictions

Exhibit K – Form of Consent and Agreement to Collateral Assignment

Exhibit L – PV Capacity Testing

Exhibit M – Battery Storage Capacity Testing

Exhibit N – Project Milestone Schedule

Exhibit O – Battery Storage Guarantees

Exhibit P – Metering Diagram

Exhibit Q – Form of Letter of Credit

Exhibit R – Form of Limited Assignment Agreement

Exhibit S – PV Reliability Percentage and Battery Storage Reliability Percentage

Exhibit T – Form of Surety

Exhibit U – PV Availability and Battery Storage Availability Calculations

Exhibit V – Monthly Operating Report

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Exhibit A

DESCRIPTION AND LOCATION OF PROJECT

A.1 The Project is described as a fully integrated PV system plus battery storage facility, comprised of PV arrays, inverters, battery cells, and associated facilities and equipment. Final inverter count to be provided after commissioning testing.

A.2 The Project is in Placer County approximately near the following coordinates 38°46'11.96"N, 121°24'58.42"W.

A.3 The Project's primary fuel is solar.

A.4 The Initial Expected PV Capacity is 344 MW_{AC} at the Delivery Points.

The Initial Expected Battery Storage Capacity is 172 MW_{AC} at the Delivery Points. The duration of the battery shall be four (4) hours of continuous discharge at 172 MW_{AC}.

A.5 The Project will be designed and constructed to accommodate the Agrivoltaics FOP.

A.6 Reserved.

A.7 The Delivery Points are the locations of the interconnection of the Project on the high-side of the step-up transformers that interconnect to the SMUD Transmission System, as shown in Exhibit C to the LGIA.

A.8 The Scheduled Commercial Operation Date is December 15, 2026, as may be extended for Excusable Delays.

A.9 The Guaranteed COD for Commercial Operation is six (6) months after the Scheduled COD; i.e., June 13, 2027, subject to day-for-day extension to the extent the Scheduled COD is extended.

A.10 The Operating Characteristics and Operating Restrictions of Battery Storage Project are as described in Exhibit J Battery Storage Operating Restrictions.

A.11 Meters are as described in Exhibit P Meter Diagram.

A.12 Design Standards
Electrical subsystems, including but not limited to the solar array equipment, medium voltage collection system, and solar 230kV substation, shall comply with relevant IEEE, NESC, NEC, ANSI, NFPA, ASCE, IBC, ASTM, CPUC General Orders, and SMUD specific design standards set forth in **the Country Acres Large Generator Interconnect Agreement (LGIA) and Country Acres Lease, including Lease Section 2.5 and Lease Appendix J "Design Guidelines"**. Operator shall operate the Project as required by its registration as NERC Generator Owner and Generator Operator under the NERC Functional Model or successor models.

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Exhibit B

Contract Price

The "PV Price" with respect to each Contract Year is set forth in the table immediately below:

Contract Year	PV Price
1 – 30	**$[redacted]/kW-mo. (flat) with no escalation**

The "Battery Storage Price" with respect to each Contract Year is set forth in the table immediately below:

Contract Year	Battery Storage Price
1 – 20	**$[redacted]/kW-mo. (flat) with no escalation**

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Exhibit C

EXPECTED ENERGY PRODUCTION

No later than (a) three (3) months prior to the Commercial Operation Date, and (b) on or before July 1 for each calendar year thereafter for every subsequent Contract Year during the Delivery Term, Seller shall provide to SMUD a non-binding, illustrative schedule of the hourly expected energy production for each day in each month of the following calendar year in a form reasonably acceptable to SMUD.

This Exhibit C is non-binding and illustrative, except it is binding with respect to Sections 2.3.8 and 8.5.

Year of Term	Expected Energy Production (MWh)
1	657,754
2	654,465
3	651,177
4	647,888
5	644,599
6	641,310
7	638,021
8	634,733
9	631,444
10	628,155
11	624,866
12	621,578
13	618,289
14	615,000
15	611,711
16	608,423
17	605,134
18	601,845
19	598,556
20	595,267
21	591,979
22	588,690
23	585,401
24	582,112
25	578,824
26	575,535
27	572,246
28	568,957
29	565,668
30	562,380

The Expected Monthly Energy Production (EMEP) assumes an annual degradation rate of 0.5%.

The Expected Monthly Energy Production will be updated by Seller to account for the final equipment selection of the Project and the Parties will revise this Exhibit to update such values and issue a new Exhibit which shall

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then become part of the Agreement. No formal amendment of the Agreement is required to update this Exhibit.

Upon mutual agreement of both Parties, a new Exhibit C may be issued. When updated, the Parties will insert a new effective date for this Exhibit C, which will replace the prior Exhibit C.

Effective Date: Month, Day, Year

_____
Signature of Seller

_____
Signature of SMUD

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Exhibit E

COMMERCIAL OPERATION DATE CONFIRMATION LETTER

In accordance with the terms of that certain Power Purchase Agreement dated _____("Agreement") by and between the Sacramento Municipal Utility District ("SMUD") and Country Acres Clean Power, LLC ("Seller"), this letter serves to document the parties further agreement that (i) the COD Conditions for the occurrence of the Commercial Operation Date have been satisfied, and (ii) the Commercial Operation Date occurred on ___.

This letter shall confirm the Commercial Operation Date, as defined in the Agreement, as the date referenced in the preceding sentence.

IN WITNESS WHEREOF, each Party has caused this Agreement to be duly executed by its authorized representative as of the date of last signature provided below:

Country Acres Clean Power, LLC	Sacramento Municipal Utility District
By: _____	By: _____
Name:	Name:
Title:	Title: Director, Energy Trading & Contracts
Date: _____	Date: _____

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Exhibit F

CAPACITY ATTRIBUTE REPORTING AND CONVEYANCE PROCEDURE

F.1 Additional Definitions for the Conveyance of Capacity:

None.

F.2 Reporting of Capacity Attributes. SMUD will report the Capacity Attributes acquired herein in any regulatory filing that SMUD is required to make in order to declare or determine the Capacity of the Solar Project (or any portion thereof) and the Capacity of the Battery Storage Project (or any portion thereof) as meeting SMUD's Capacity planning requirement (also known as Resource Adequacy).

F.3 Changes in Capacity Attribute Conveyance Procedure. Subject to Section 4.3, SMUD may revise this Exhibit F as appropriate, give written notice to Seller regarding the revision, and issue a new Exhibit F, which shall then become part of the Agreement in the event that the method for reporting and conveying Capacity Attributes changes from the process described herein provided that no update to this Exhibit F shall be permitted to impose any material additional costs on Seller.

Upon mutual agreement of both Parties, a new Exhibit F may be issued. When updated, the Parties will insert a new effective date for this Exhibit F, which will replace the prior Exhibit F.

Effective Date: [Month, Day, Year]

_____
Signature of Seller

_____
Signature of SMUD

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Exhibit G

SCHEDULING COORDINATION FEE

Year of Term	Coordination Fee ($)
1	100,000
2	102,000
3	104,040
4	106,121
5	108,243
6	110,408
7	112,616
8	114,869
9	117,166
10	119,509
11	121,899
12	124,337
13	126,824
14	129,361
15	131,948
16	134,587
17	137,279
18	140,024
19	142,825
20	145,681
21	148,595
22	151,567
23	154,598
24	157,690
25	160,844
26	164,061
27	167,342
28	170,689
29	174,102
30	177,584

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Exhibit H

ENVIRONMENTAL ATTRIBUTE REPORTING AND CONVEYANCE PROCEDURE

H.1 Additional Definitions for the Conveyance of Environmental Attributes:

"Certificate Transfers" means the process, as described in the WREGIS Operating Rules whereby a WREGIS account holder may request that WREGIS Certificates from a specific generating unit be directly deposited into another WREGIS account.

"WREGIS" means the Western Renewable Energy Generation Information System, sponsored by the WECC and utilized by the CEC and Green-e for tracking the generation and transfer of RECs. The URL for WREGIS is www.WREGIS.org.

"WREGIS Certificates" means a certificate created within the WREGIS system that represents all Renewable and Environmental Attributes from one MWh of electricity generation from an Eligible Renewable Energy Resource that is registered with WREGIS.

"WREGIS Operating Rules" means the document published by WREGIS that govern the operation of the WREGIS system for registering, tracking, conveying, etc. Renewable Energy Credits produced from Eligible Renewable Energy Resources that are registered with WREGIS.

H.2 Renewable Energy Credits. Environmental Attributes shall be conveyed by Seller to SMUD through Renewable Energy Credits ("RECs") which shall be registered, tracked, and conveyed to SMUD using WREGIS.

H.3 WREGIS Registration. Prior to the Commercial Operation Date, SMUD will initiate registration of the Project in SMUD's WREGIS account on behalf of Seller. Final acceptance by WREGIS requires submittal by SMUD of Exhibit E, "Commercial Operation Date Confirmation Letter."

H.4 SMUD's WREGIS Account. SMUD shall, at its sole expense, establish and maintain SMUD's WREGIS account sufficient to accommodate the WREGIS Certificates produced by the output of the Project. SMUD shall be responsible for all expenses associated with (A) establishing and maintaining SMUD's WREGIS Account, and (B) subsequently transferring or retiring WREGIS Certificates.

H.5 Qualified Reporting Entity. SMUD shall be the Qualified Reporting Entity for Project, and shall be responsible for providing metered Project output data to WREGIS in accordance with WREGIS reporting guidelines.

H.6 Reporting of Environmental Attributes. In lieu of Seller transferring the WREGIS Certificates using Certificate Transfers from Seller's WREGIS account to the WREGIS account of SMUD, SMUD shall report the Project as being directly in its WREGIS account, which will preclude Seller from reporting the Project in its own WREGIS account.

H.6.1 By avoiding the use of Certificate Transfers, there will be no transaction costs to Seller or SMUD for the Certificate Transfers that would otherwise be used.

H.6.2 WREGIS Certificates for the Project will be created on a calendar month basis in accordance with the certification procedure established by the WREGIS Operating Rules in an amount equal to the Energy generated by the Project and delivered to SMUD in the same calendar

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month.

H.6.3 WREGIS Certificates will only be created for whole MWh amounts of energy generated. Any fractional MWh amounts (*i.e.,* kWh) will be carried forward until sufficient generation is accumulated for the creation of a WREGIS Certificate and all such accumulated MWh of Environmental Attributes will then be available to SMUD.

H.6.4 Should a WREGIS Certificate Modification be required to reflect any errors or omissions regarding the Environmental Attributes from the Project SMUD will manage the submission of the WREGIS Certificate Modification.

H.6.5 Due to the expected delay in the creation of WREGIS Certificates relative to the timing of settlement payments under Section 2.4, SMUD shall make a settlement payment for a given month in accordance with Section 2.4 before the WREGIS Certificates for such month may be created in SMUD's WREGIS account. Notwithstanding this delay, SMUD shall have all right and title to all such WREGIS Certificates upon payment to Seller in accordance with Section 2.4.

H.7 Changes in Environmental Attributes Reporting and Conveyance Procedure. Subject to Sections 3.4 and 3.6, **SMUD may revise this Exhibit H as appropriate, give written notice to Seller regarding the revision, and issue a new Exhibit H which shall then become part of the Agreement, in order to reflect changes necessary in the Environmental Attribute conveyance procedure for SMUD to be able to receive and report the Environmental Attributes purchased under this Agreement as belonging to SMUD provided that no such updated Exhibit H may impose new material (non-administrative) additional costs on Seller.**

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Exhibit I

NOTICES

All notices shall be directed as follows:

I.1 For Contract Administration

To SMUD:
Sacramento Municipal Utility District
Power Contracts Administration

6301 S Street
Sacramento, CA 95817-1899

Or,

P.O. Box 15830
Sacramento, CA 95852-1830

Phone: (916) 732-6244
Email: PowerContractsAdministration@smud.org

To Seller:
Country Acres Clean Power LLC
c/o Clenera, LLC
Attn: Admin. Dept.
P.O. Box 2576
Boise, ID 83701
Phone: (208) 639-3232
Email: clenera.notices@clenera.com

With a copy to:

General Counsel,
Clenera, LLC
P.O. Box 2576
Boise, ID 83701
Phone: (208) 639-3232

I.2 For Billing and Settlements

To SMUD:
Energy Settlements

Phone: (916) 732-6751
Email: EnergySettlements@smud.org

To Seller:

Country Acres Clean Power LLC
c/o Clenera, LLC

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Attn: Jeff Kohler
P.O. Box 2576
Boise, ID 83701
Phone: (208) 639-3232
Email: jeff.kohler@clenera.com

I.3 For Scheduling

To SMUD:
Day Ahead Trading Desk

Phone: (916) 732-5669
Email: dayaheadtrading@smud.org

To Seller:

Country Acres Clean Power LLC
c/o Clenera, LLC
Attn: Asset Management Dept.
P.O. Box 2576
Boise, ID 83701
Phone: (208) 639-3232
Email: clenera.notices@clenera.com

I.4 For Planned Outages

To SMUD:
Day Ahead Trading Desk
Phone: (916) 732-5669
Real Time Trading Desk
(916)732-5177
Email: psooc@smud.org, rtt1@smud.org, rtt2@smud.org, dayaheadtrading@smud.org

Power System Operations Outage Coordination
Phone: (916) 732-5242

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To Seller:

Country Acres Clean Power LLC
c/o Clenera, LLC
Attn: Asset Management Dept.
P.O. Box 2576
Boise, ID 83701
Phone: (208) 639-3232
Email: clenera.notices@clenera.com

I.5 For Forced Outages

To SMUD:
Real Time Scheduling Desks
Phone: (916) 732-5177

And

Power System Grid Operations
916-732-6225 (Generation Desk), or 916-732-6730 (Shift Senior Power System Operator)

Email: psooc@smud.org, rtt1@smud.org, rtt2@smud.org, dayaheadtrading@smud.org

To Seller:

Country Acres Clean Power LLC
c/o Clenera, LLC
Attn: Asset Management Dept.
P.O. Box 2576
Boise, ID 83701
Phone: (208) 639-3232
Email: clenera.notices@clenera.com

I.6 Same-day Phone Notification of Outages
To SMUD:
Power System Grid Operations
916-732-6225 (Generation Desk), or 916-732-6730 (Shift Senior Power System Operator)

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To Seller:

Country Acres Clean Power LLC
c/o Clenera, LLC
Attn: Asset Management Dept.
P.O. Box 2576
Boise, ID 83701
Phone: (208) 639-3232
Email: clenera.notices@clenera.com

I.7 Notification Requirements for Start/Completion of Planned Outages & Normal Start-up/Shutdown

Prior to starting, and at the completion of, a Planned Outage, contact the Power System Operator to report and coordinate the start or completion time of the Planned Outage.

Prior to paralleling or after disconnection from the SMUD transmission system, always contact the Power System Operator with the following as applicable:

- Intent to parallel before any start-up,
- After the unit has paralleled, report the parallel time and intended unit output,
- After any separation, report the separation time as well as the date and time estimated for return to service.

Power System Operations
916-732-6225 (Generation Desk) or 916-732-6730 (Shift Senior Power System Operator)

I.8 Changes to Exhibit I

Either Party may request a change to Exhibit I as necessary to keep the information current. The Parties shall update Exhibit I prior to COD to ensure consistency with other notice provisions in this Agreement, subject to mutual agreement of the Parties.

Upon mutual agreement of both Parties, a new Exhibit I may be issued. When updated, the Parties will insert a new effective date for this Exhibit I, which will replace the prior Exhibit I.

Effective Date: Month, Day, Year

_____
Signature of Seller

_____
Signature of SMUD

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Exhibit J
Battery Storage Operating Restrictions

The Battery Storage Operating Restrictions include the limitations, conditions and restrictions set forth in this Exhibit J. Prior to the Commercial Operation Date and from time to time during the Delivery Term, by mutual written agreement the Parties may amend these Battery Storage Operating Restrictions.

The operation of the Battery Storage Project shall be subject to the following limitations:

a. If the year-to-date average State of Charge exceeds 50% at any time during the second half of a Contract Year, then the maximum allowed State of Charge shall be limited to the State of Charge that, if held for the rest of the Contract Year, would equal an annual average State of Charge of 50%. If the allowable State of Charge has been limited, the State of Charge limitation will be released once the year-to-date State of Charge is less than 49%. Seller shall be permitted to reject or deviate from any Dispatch Instruction and may operate the Battery Storage Project as reasonably necessary, to ensure that the annual average State of Charge in any Contract Year does not exceed 50%.
b. The limitations set forth in the table below.

#	OPERATING PARAMETER	VALUES	OPERATING RESTRICTIONS
1	Charging method	Constant Power (CP), Constant Voltage (CV)	
2	Discharging method	Constant Power (CP)	
3	Maximum CP-rate for Charging and Discharging the Battery Storage Facility	172 MWac discharge, with 172 MWac maximum for grid-charging only, which can be adjusted accordingly, as reasonably agreed upon by the Parties, based up on the final design of the Battery Storage Project	Battery shall charge and discharge at the maximum capacity available for the Battery Storage Project while not exceeding the maximum project electrical facility rating for the Battery Storage Project.
4	Operational State of Charge limits	0%-100%	As reflected in the Energy Management System. The 100% State of Charge represents the amount of Expected Battery Storage Capacity available to SMUD.
5	Maximum State of Charge during Charging	100%	In the event State of Charge during charging exceeds the Maximum State of Charge, then the battery system is out of compliance.
6	Minimum State of Charge during Discharging	0%	Minimum State of Charge to obtain contractual energy capacity. In the event State of Charge during charging is less than the Minimum State of Charge, then the battery system is out of compliance. Value of State of Charge shall not violate operating parameters established by the manufacturer for the Battery Storage Project.
7	Maximum number of Cycles per Contract Year	365	Notwithstanding any other provision of this Agreement, SMUD will not be

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			permitted to utilize more than 365 Cycles per Contract Year. Seller will make commercially reasonable efforts to provide the maximum cycle limit flexibility available from the OEM.
8	Daily Dispatch Limits	Maximum of Two Cycles per operating day	This limit applies to each Battery Storage Project container, individually and collectively.
9	Charge/Discharge Hold Period	To be determined (TBD) by Battery Original Equipment Manufacturer (OEM)	TBD by Battery OEM
10	Maximum charging capacity (MW)	172 MWac	Battery Storage Project shall charge at the maximum capacity available for the Battery Storage Project while not exceeding the maximum project electrical facility rating for the Battery Storage Project.
11	Minimum Charging Capacity	0 MW	
12	Maximum discharging capacity (MW)	172 MWac	Battery Storage Project shall discharge at the maximum capacity available for the Battery Storage Project while not exceeding the maximum project electrical facility rating for the Battery Storage Project.
13	Maximum Discharge Energy per Cycle (MWh)	688 MWhac / Cycle	As measured at the Delivery Points and equal to the Expected Battery Storage Capacity.
14	Minimum Discharging Capacity	0 MW	
15	Minimum Stored Energy Level	0 MWh	
16	Ramp Rate Limitation	5-20% of rated capacity/min	Default to be 10%/min.
17	Maximum ambient operating temperature with de-rate	Battery Storage Project de-rate ambient temperature is 45˚ C and shut-down ambient temperature is 55˚ C	The rated power of the Battery Storage Project will be reduced linearly from the derate to the shutdown ambient temperature; the Battery Storage Project may shut down in Seller's discretion.

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18	Minimum ambient operating temperature with de-rate	De-rate below -30˚ C	Below – 0 C˚, the Battery Storage Project may shut down in Seller's discretion.
19	Maximum Annual Average State of Charge	50%	The Battery Storage Project shall be operated to maintain an annual average State of Charge equal to 50%.
20	Maximum Throughput	Maximum Daily Throughput: 1,376 MWh-ac Maximum Annual Throughput: 251,120 MWh-ac	Throughput is based on battery discharge energy (MWh) only and not charge energy (MWh) and therefore equivalent to the cycles in item #7 above.

As used in this Exhibit J, "Cycle" means a change or changes in State of Charge that total(s) to 200%, irrespective of the initial State of Charge and the number of discrete charging or discharging increments.

Upon mutual agreement of both Parties, a new Exhibit J may be issued. When updated, the Parties will insert a new effective date for this Exhibit J, which will replace the prior Exhibit J.

Effective Date: [Month, Day, Year]

_____
Signature of Seller

_____
Signature of SMUD

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Exhibit K

FORM OF CONSENT AND AGREEMENT TO COLLATERAL ASSIGNMENT

This CONSENT AND AGREEMENT (this "Consent"), dated as of [___], is entered into by and among the Sacramento Municipal Utility District, a California Municipal Utility District formed and existing under the laws of the State of California (together with its successors and permitted assigns, "SMUD" or "Purchaser"), [Financial Institution] (together with its successors, designees and assigns in its capacity as [Collateral Agent], (the "Collateral Agent") for the Secured Parties, as defined in the hereinafter defined Financing Agreement, and Country Acres Clean Power LLC, a limited liability company formed and existing under the laws of the State of [__] (together with its successors and permitted assigns, "Seller"). Purchaser, Seller and the Collateral Agent shall be referred to hereunder as the "Parties" and, individually, as a "Party". Unless otherwise defined, all capitalized terms have the meaning given in the Power Purchase Agreement (as hereinafter defined).

RECITALS

Purchaser and Seller have entered into that certain Power Purchase Agreement, dated as of [___] (as the same may be amended, modified or supplemented from time to time in accordance with the terms hereof, the "PPA" or the "Assigned Agreement").

[Seller]/[__, an Affiliate of Seller ("Borrower")] has entered into that certain [Financing Agreement] (as the same may be amended, modified or supplemented from time to time, the "Financing Agreement") relating to the financing for the construction, [operation and maintenance] of the fully integrated solar photovoltaic generation plus battery storage facility located in Placer County, California (the "Project"), dated as of [___] involving [Seller]/[Borrower], the financial institutions from time to time party thereto (collectively, the "Lenders"). [Provide further description of Financing Agreement].

AGREEMENT

1. Definitions.

Capitalized terms used but not defined in this Consent shall have the meanings given to them in the PPA, or if not defined therein, in the Financing Agreement. In addition, the following terms shall have the meanings set forth below with respect to each term:

"Person" shall mean any individual, sole proprietorship, corporation, limited liability company, limited or general partnership, joint venture, association, joint-stock company, trust, incorporated organization, institution, public benefit corporation, unincorporated organization, government entity or other entity.

"Qualified Operator" shall mean any entity that at the time it becomes a Transferee (i) has the financial means to operate and maintain the Project and perform its obligations under the Assigned Agreement, (ii) either itself or its direct or indirect parent, has a tangible net worth of at least

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$50,000,000 or a credit rating of "BBB-" or higher by S&P or "Baa3" or higher by Moody's, (iii) has, or has entered into contracts for operation of the Project with a Person or Persons that has or have, for the three (3) preceding years, has owned or operated (or had access to the expertise required to operate through committed management agreement with affiliates or through a committed operations and maintenance agreement with any Person) fully integrated solar photovoltaic generation plus battery storage facilities in the California region, and (iv) has met all applicable requirements for operating the Project in accordance with Good Utility Practices, including, without limitation, the requirements of the Transmission Provider.

"Security Agreement" shall mean that certain [Security Agreement], dated as of [__], between the Collateral Agent and [Seller]/[Borrower], granting to the Collateral Agent a security interest in the Assigned Agreement.

"Secured Obligations" shall mean, collectively: all obligations and liabilities of Seller in respect of: (a) the principal of and interest on all loans made under the Financing Agreement; (b) all other amounts due and to become due to the Collateral Agent, the Lenders or any other financing parties under the Financing Agreement or any other document contemplated thereby, including, without limitation, the expenses, indemnities and interest which would accrue on any of the foregoing but for the commencement of a case by or against [Seller]/[Borrower] under any applicable bankruptcy laws; and (c) the performance and observance of all of the covenants and agreements made by [Seller]/[Borrower] under and in connection with the Financing Agreement.

"Transferee" is defined in Section 5(e) herein.

2. Scope of Obligations.

Nothing in this Consent shall make Purchaser liable for any obligations, damages or other amounts under the Financing Agreement or for any other damages for which it would not otherwise be liable to Seller under the Assigned Agreement.

3. Consent to Assignment. Purchaser hereby:

(a) acknowledges and irrevocably consents to the assignment pursuant to the Security Agreement[1] by Seller to the Collateral Agent for the benefit of the Secured Parties of the Assigned Agreement as security for the performance of the Secured Obligations;

(b) acknowledges and irrevocably agrees that the Collateral Agent (and the other Secured Parties) shall not be or become liable for the performance or observance of any of the obligations or duties of Seller under the Assigned Agreement, nor shall the Collateral Agent (nor the other Secured Parties) be or become liable to perform or observe any obligations or duties owing to Purchaser, in either case solely by reason of the assignment of the Assigned Agreement to the Collateral Agent hereunder, except as otherwise expressly provided in this Consent;

[1] Subject to SMUD's review of the Security Agreement.

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(c) acknowledges that, upon Purchaser's receipt of a notice from the Collateral Agent of an Event of Default, the Collateral Agent has the right to make all demands, give all notices, take all actions and exercise all rights of, Seller under the Assigned Agreement; and

(d) acknowledges and agrees, subject in all respects to the conditions and limitations contained in this Consent, that none of the following shall constitute, as between Purchaser and the Secured Parties, an Event of Default by Seller under the Assigned Agreement or shall result in a suspension or termination thereof: (i) the assignment by Seller to the Collateral Agent for the benefit of the Secured Parties of a first-priority lien on and security interest in the Project (including, without limitation, the Assigned Agreement); (ii) the operation of the Project by any Transferee that is a Qualified Operator upon the exercise of the Collateral Agent's and the Secured Parties' rights with respect to an [Event of Default][2] under, as defined in and in accordance with, the Financing Agreement[3]; (iii) the commencement of a foreclosure or similar proceeding to enforce the lien of the Secured Parties against the Project (including, without limitation, the Assigned Agreement); (iv) the acquisition of the rights of Seller in the Project (including, without limitation, the Assigned Agreement) in foreclosure by the Collateral Agent or any Secured Party in connection with such party's exercise of its rights and remedies, at law, in equity or otherwise (or acceptance of an absolute assignment of the Project in lieu of foreclosure); or (v) the subsequent sale, assignment, and/or conveyance of the Project (including, without limitation, the Assigned Agreement) by the Collateral Agent or any other Secured Party after acquisition of the rights of Seller in the Project following any foreclosure or assignment in lieu of foreclosure.

4. Representations and Warranties. As of the date of this Consent,

(a) Purchaser hereby represents and warrants to the Collateral Agent, for the benefit of the Secured Parties, that: (i) Purchaser has the full power and authority to execute, deliver and perform this Consent and to carry out the transactions contemplated hereby; (ii) the execution and delivery of this Consent by Purchaser and the carrying out by Purchaser of the transactions contemplated hereby have been duly authorized by all requisite corporate action, and this Consent has been duly executed and delivered by Purchaser and constitutes the legal, valid and binding obligation of Purchaser, enforceable against it in accordance with the terms hereof and thereof, subject, as to enforceability, to bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting the enforcement of creditors' rights generally and to general principles of equity; (iii) all authorizations, consents, approvals or orders of, notices to, or registrations, qualifications, declarations or filings with, any Governmental Authority, required for the execution, delivery and performance by Purchaser of this Consent or the carrying out by Purchaser of the transactions contemplated hereby, have been obtained and are in full force and effect; and (iv) none of the execution, delivery, and performance by Purchaser of this Consent, the compliance with the terms and provisions hereof, and the carrying out of the transactions contemplated hereby, conflicts or will conflict with or result in a breach or violation of any of the terms, conditions, or provisions of any law, governmental rule or regulation or the charter documents, as amended, or by-laws, as amended, of Purchaser or any applicable order, writ, injunction, judgment or decree of any court or Governmental Authority against Purchaser or by which it or any of its properties is bound, or any material loan agreement, indenture, mortgage, bond, note, resolution, contract or other agreement or instrument to which Purchaser is a party or by which it or any of its properties is bound.

[2] Applicable defined term in Financing Agreement to be confirmed.
[3] Subject to SMUD's review of the Financing Agreement.

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(b) Purchaser further represents and warrants to the Collateral Agent, for the benefit of the Secured Parties that: (i) neither an Event of Default by Purchaser, nor any event or circumstance that with the passage of time or giving of notice or both would result in an Event of Default by Purchaser, nor, to its actual knowledge after due inquiry, an Event of Default by Seller nor any event or circumstance that with the passage of time or giving of notice or both would result in an Event of Default by Seller exists and is continuing under the Assigned Agreement; (ii) to its actual knowledge Purchaser has no existing counterclaims, offsets or defenses against Seller in respect of the Assigned Agreement; (iii) to its actual knowledge after giving effect to Purchaser's consent to the assignment consented to by Purchaser under Section 3(a) herein, and recognizing that Seller has continuing and additional obligations to perform after the date of this Consent, there exists no present event or condition, except those expressly contained in the Assigned Agreement, which enable either Purchaser or Seller to terminate or suspend its obligations under the Assigned Agreement; (iv) except for the assignment to the Collateral Agent for the benefit of the Secured Parties, Purchaser has no notice of any assignment relative to any right, title and interest of Seller in, to and under the Assigned Agreement; (v) the Assigned Agreement and the instruments and documents referred to therein constitute the only agreements between Purchaser and Seller with respect to the matters and interests described therein; and (vi) there are no proceedings pending or, to its actual knowledge without inquiry, threatened against or affecting Purchaser in any court or by or before any Governmental Authority or arbitration board or tribunal which could reasonably be expected to have a material adverse effect on the ability of Purchaser to perform its obligations under the Assigned Agreement or this Consent.

5. Rights of the Secured Parties. Purchaser agrees that the Secured Parties, so long as any Secured Obligations shall remain outstanding, shall have the following rights with respect to the Assigned Agreement:

(a) Assignment, Amendments, Etc.

(i) No assignment by Purchaser of its obligations under the Assigned Agreement shall be effective unless (A) such assignment complies with the Assigned Agreement, and (B) Purchaser contemporaneously delivers to the Collateral Agent a copy of all notices due to Seller with respect to such assignment.

(ii) no waiver, amendment, or other modification of the Assigned Agreement by Seller shall be effective without the prior written consent (such consent not to be unreasonably withheld) of the Collateral Agent (except for any waiver, amendment, and/or modification which is of a routine, ministerial or administrative nature or which is required by law or by any Governmental Authority).

(b) Performance of Seller's Obligations. If the Collateral Agent shall provide Purchaser with notice of an [Event of Default] by [Seller]/[Borrower] under the Financing Agreement, then following Purchaser's receipt of such notice the Collateral Agent or any of the other Secured Parties may, but shall have no obligation to, perform one or more of the obligations of Seller under the Assigned Agreement and Purchaser will accept such performance, if otherwise in accordance with the terms of the Assigned Agreement and this Consent, in lieu of performance by Seller and in satisfaction of the obligations of Seller under the Assigned Agreement. In the event that the Secured Parties or the Collateral Agent exercise any right under the Financing Agreement to assume possession and control of the Project, the Secured Parties or the Collateral Agent shall obtain the appointment of a Qualified Operator to assume possession and control of the Project prior to or pending a foreclosure, and the Secured Parties or the Collateral Agent shall cause the Project to be

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operated by such Qualified Operator.

(c) Copies of Notices. Purchaser acknowledges that it is obligated to send the Collateral Agent copies of any notice furnished to Seller of the existence of an Event of Default under the Assigned Agreement or the termination of the Assigned Agreement, and certain other notices as expressly set forth in the Assigned Agreement concurrently with or within one (1) Business Day following delivery of such notices to Seller; provided that any failure of Purchaser to send such notice shall not give rise to any liability to any Person on the part of Purchaser hereunder.

(d) Cure Rights.

(i) Subject to the terms of this Consent, each of the Collateral Agent, the Secured Parties and a Transferee shall have the right, but not the obligation, to cure any Event of Default under the Assigned Agreement which is capable of being cured; provided that during the applicable cure period the Collateral Agent, the Secured Parties, and/or a Transferee continue to perform each of Seller's other obligations under the Assigned Agreement.

(ii) The Assigned Agreement shall not be suspended or terminated automatically or terminated by Purchaser if the Collateral Agent, the Secured Parties or a Transferee cures, within the applicable cure period, each Event of Default thereunder that is capable of being cured as set forth in clause (iii), below.

(iii) Each of the Collateral Agent, the Secured Parties and a Transferee shall be entitled to cure an Event of Default of Seller under the Assigned Agreement within the following cure periods: (A) if such Event of Default is a monetary Event of Default or an Event of Default arising due to a failure to comply with obligations under Section 11.1 of the Assigned Agreement, fifteen (15) Days after the receipt by the Collateral Agent of such notice to cure a monetary Event of Default or Event of Default arising due to a failure to comply with obligations under Section 11.1 of the Assigned Agreement; and (B) if such Event of Default is a non-monetary Event of Default, thirty (30) Days after the receipt by the Collateral Agent of such notice to cure a non-monetary Event of Default; Solely with respect to any Events of Default by Seller under the Assigned Agreement that cannot be cured by any Person other than Seller or its designated operator, as the owner or designated operator of the Project, if the Secured Parties or an agent representing the Secured Parties declare an [Event of Default] under and in accordance with the Financing Agreement and promptly commence foreclosure proceedings, and subsequently notify Purchaser, then, so long as the Secured Parties or the Collateral Agent are diligently pursuing such foreclosure proceedings, the Secured Parties, the Collateral Agent and a Transferee will be allowed such additional period, not to exceed one hundred eighty (180) Days from the date of commencement of such proceedings, as is necessary to complete such proceedings in which to cure the existing Event(s) of Default under the Assigned Agreement. For the avoidance of doubt, the Collateral Agent and the other Secured Parties shall have cured all Events of Default which are capable of being cured on or prior to the completion of such proceedings (not to exceed one hundred eighty (180) Days).

(iv) Once an Event of Default under the Assigned Agreement is timely cured by the Collateral Agent or the Secured Parties, such event or condition shall no longer be

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deemed to be an Event of Default under the Assigned Agreement.

(e) Consent to Transfer; Continuation of Agreement. Purchaser consents to the transfer of Seller's interest in the Project to the Collateral Agent or any other Secured Party, or their designee or to any other Person provided that (i) the Collateral Agent or the other Secured Parties or has retained a Qualified Operator to act as operator of the Project in lieu of Seller (collectively, a "Transferee"), (ii) the Collateral Agent or the other Secured Parties shall have caused the Assigned Agreement to be conveyed and transferred to the Transferee at the time of the transfer of the Project and shall have caused the Transferee to assume and to agree to be bound by all the terms and provisions of the Assigned Agreement, which has and continues to remain in full force and effect in accordance with its terms and (iii) the Collateral Agent or the other Secured Parties shall identify the Transferee in a written notice to Purchaser on or before the effective date of the transfer and shall furnish Purchaser with Transferee's written agreement to assume and to agree to be bound by all the terms and provisions of the Assigned Agreement, and Purchaser shall recognize such a Transferee as the "Seller" under the Assigned Agreement, if the Transferee shall or shall have:

(i) cure or cured within the relevant cure period established in the Assigned Agreement, as modified by subsection 6(d)(iii) above, all Events of Default of Seller which are then existing under the Assigned Agreement and which are capable of being cured at the time of such transfer; and

(ii) assume or assumed and perform all other obligations of Seller under the Assigned Agreement arising on or after the date of such transfer to the Transferee.

6. Replacement Agreements. If the Assigned Agreement is rejected or terminated as a result of any bankruptcy or insolvency proceeding involving Seller, and Purchaser has been reimbursed by any Person for all amounts which would be due and payable by Seller to Purchaser under the Assigned Agreement but for such bankruptcy or insolvency proceeding, the Collateral Agent may, within thirty (30) Days after such rejection or termination, certify in writing to Purchaser that the Transferee intends to perform and is capable of performing the obligations of Seller arising after the date of such certification as and to the extent required under the Assigned Agreement. In such case, Purchaser, [subject to approval by SMUD's Board of Directors,] shall execute and deliver to the Transferee a new agreement (a "Replacement Agreement") which shall be for the balance of the remaining term under such rejected Assigned Agreement and, in such case, for purposes of Section 19.3 of the Assigned Agreement, the Delivery Period under the Assigned Agreement shall not be deemed to have expired. The Replacement Agreement shall contain the same conditions, agreements, terms, provisions and limitations as the original Assigned Agreement, except that the Transferee will be substituted where the Seller appears in Assigned Agreement.

7. Purchaser's Reliance on Written Notices by Agent. Seller agrees that Purchaser is entitled to rely on the written instructions of an employee, authorized representative or other agent of the Collateral Agent as permitted herein, including without limitation, any such notice concerning the existence and continuation of an [Event of Default] under the Financing Agreement, the destination of payments to be made under the Assigned Agreement or whether the Secured Obligations have been fully paid or not, and that Purchaser may make payments that are due to Seller as directed by any such Person upon the written instructions of any such Person to do so. Seller waives any claims that it has or may have against Purchaser based upon the good faith reliance by it on such written instructions.

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8. Notices. Any communications between the Parties hereto or notices provided herein to be given may be given to the addresses set forth in the table below. All notices to be given under this Consent shall be in writing and shall be
(i) delivered personally, (ii) sent by certified or registered first-class mail, postage prepaid, return receipt requested, or (iii) sent by a recognized courier service, with delivery receipt requested, , unless the recipient has given notice of another address for receipt of notices; provided that in the case of notices to the Collateral Agent and Seller, a copy each notice shall be sent by email to the email address set forth in the table below. All notices sent hereunder shall be deemed to have been given when transmitted by email (with the receipt confirmation) or personally delivered or in the case of a notice mailed or sent by courier, upon receipt, at the address provided for herein; provided, however, if such notice is given after the close of business on a Business Day of the receiving party, or on a Day on which the receiving party is not open for business, such notice shall be deemed to have been given on the next following Business Day.

If to Purchaser:

_____
_____.
_____
_____

Attention: _____
Telephone: _____
Email:_____

With a copy to:

_____
_____
_____
_____

Attention: _____
Telephone: _____
Email:_____

If to Collateral _____ Agent:
_____

_____
Attn: _____
Telephone: _____
Email:_____

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If to Seller:

_____

_____.

_____

_____

Attention: _____
Telephone: _____

Email:_____

With a copy to:

_____

_____

_____

_____

Attention: _____
Telephone: _____
Email:_____

9. Arrangements Regarding Payments. Commencing on the date of this Consent and so long as the Financing Agreement remains in effect, Purchaser hereby agrees to make all payments required to be made by it under the Assigned Agreements in U.S. dollars, directly to the Collateral Agent, acting for the benefit of the Secured Parties for deposit into the account described immediately below, or, if Purchaser has been notified that an [Event of Default] under the Financing Agreement has occurred and is continuing, to such other Person and/or at such other address or account as the Collateral Agent may from time to time specify in writing to Purchaser. Seller hereby instructs Purchaser, and Purchaser accepts such instructions, to make all payments due and payable to the Collateral Assignor under the Assigned Agreement as set forth in the immediately preceding sentence.

Account # [__]
[*wiring instructions to be added*

10. ACKNOWLEDGMENTS BY SELLER. Seller, by its execution hereof, acknowledges and agrees that neither the execution of this Consent, the performance by Purchaser of any of the obligations of Purchaser hereunder, the exercise of any of the rights of Purchaser hereunder, or the acceptance by Purchaser of performance of the Assigned Agreement by any party other than Seller shall (1) release Seller from any obligation of Seller under the Assigned Agreement, (2) constitute a consent by Purchaser to, or impute knowledge to Purchaser of, any specific terms or conditions of the Financing Agreement or Security Agreement, or (3) except as expressly set forth in this Consent, constitute a waiver by Purchaser of any of its rights under the Assigned Agreement. Seller and Lender

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acknowledge hereby for the benefit of Purchaser that this Consent does not alter, amend, modify or impair (or purport to alter, amend, modify or impair) any provisions of the Assigned Agreement except as provided herein.

11. Miscellaneous.

(a) Separate Counterparts; Amendments; Waiver. This Consent may be executed in separate counterparts, each of which when so executed and delivered shall be an original but all such counterparts shall constitute one and the same instrument. Until termination as to the respective party, neither this Consent nor any of the terms hereof may be terminated, amended, supplemented, waived or modified except by an instrument in writing signed by each of Purchaser, Seller and the Collateral Agent.

(b) Severability of Provisions. Any provision of this Consent which is prohibited or unenforceable shall be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof.

(c) Successors and Assigns. This Consent shall be binding upon and shall inure to the benefit of Purchaser and its successors and permitted assigns, Seller and its successors and permitted assigns, the Collateral Agent and the other Secured Parties and its or their successors and permitted assigns.

(d) Governing Law; Venue.

(i) This Consent shall be governed by, and construed in accordance with, the laws of the State of California applicable to contracts made and to be performed in such state.

(ii) Each of Purchaser, Seller and the Collateral Agent irrevocably waives, to the fullest extent permitted by law, any objection which it may now or hereafter have to the laying of the venue of any such proceeding brought in such a court and any claim that any such proceeding brought in such a court has been brought in an inconvenient forum.

(e) Each of the Parties hereto agrees to execute and deliver all such instruments and take all such action as may be reasonably necessary to effectuate the purposes of this Consent.

(f) No failure on the part of any Party to exercise and no delay in exercising, any right under this Consent shall operate as a waiver of such right nor shall any single or partial exercise of any right under this Consent preclude any further exercise of such right or the exercise of any other right.

(g) Upon the reasonable request of Seller and the Collateral Agent, including immediately prior to permanent equity financing of the Project, Purchaser agrees to provide Seller with a certificate stating that as of the date of such certificate, the representations and warranties of Purchaser set forth in Sections 4(a) and 4(b) of this Consent are true and correct (and to the extent any such representation or warranty is not true and correct, providing appropriate modifications describing the events or circumstances rendering such representation or warranty

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untrue or incorrect). Nothing in any such certificate shall make Purchaser liable for any damages or other amounts under the Financing Agreement or for any other damages for which it would not otherwise be liable to Seller under the Assigned Agreement.

[Signature Pages Follow]

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IN WITNESS WHEREOF, the parties hereto by their officers thereunto duly authorized, have duly executed this Consent as of the date first set forth above.

SACRAMENTO MUNICIPAL UTILITY DISTRICT

By: _____

Name: _____

Title: _____,

a _____

[COLLATERAL AGENT]

By: _____

Name: _____

Title: _____, as Collateral Agent

Country Acres Clean Power, LLC

By: _____

Name: _____

Title: _____

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Exhibit L

PV Capacity Testing

1 PURPOSE

The objective of the PV Capacity Test is to establish the Expected PV Capacity for the Solar Project. The guidance for this PV Capacity Test is based on ASTM 2848-13 and ASTM 2939-13.

Seller shall provide to SMUD a proposed test procedure for the PV Capacity Test compliant with this Exhibit L for SMUD's approval. The proposed test procedure shall be provided six (6) months prior to testing, and in accordance with LGIA Exhibit G requirements. SMUD shall review and comment within 30 days and SMUD's approval shall not be unreasonably withheld or delayed. The approved test procedure shall be referred to herein as the "Test Procedure."

The Test Procedure shall apply to both the PV Commercial Operation Test, as well as to subsequent PV Capacity Tests conducted pursuant to the Agreement. For the subsequent PV Capacity Tests, the previously approved Test Procedure shall be utilized unless Seller or SMUD requests a revised Test Procedure 60 days prior to the beginning of such test, or such timeframe mutually agreed between the Parties.

2 ADDITIONAL DEFINITIONS

PVsyst Model shall mean the PVsyst base energy model agreed upon by the Seller and SMUD. The initial PVsyst Model assumptions will be submitted as Appendix 1 to this Exhibit L. The PAN file, OND file, and MET file used for the PVsyst model (v 7.x) will also be provided.

PV Capacity Test Period shall mean the period comprising a minimum of five (5) consecutive days and a maximum of twenty-eight (28) days of consecutive or (with SMUD's approval) non-consecutive testing. A minimum of 150 valid data points must be collected over a minimum of three (3) separate days during this period. The PV Capacity Test Period shall utilize 5-minute averaged data derived from ≤ 1-minute SCADA data samples.

3 CONDITIONS

1. The PV Commercial Operation Test report shall be certified by an independent, professional engineer.
2. PV Capacity Tests, other than the PV Commercial Operation Test, will not need to be certified by an independent, professional engineer. Any dispute regarding test results that cannot be resolved between SMUD and Seller are to be resolved by an agreed upon independent, professional engineer in accordance with Section 8 of this Exhibit L.
3. Plane-of-array (POA) irradiance sensors (pyranometers and albedometers) must be clean, calibrated, and operational. Greater than 60% of pyranometers must be available.
4. Solar Meter must be operational.
5. SCADA system must be operational.
6. The PVsyst Model's assumed metering location and gen-tie losses shall match the actual metering location and any gen-tie losses.

4 PROCEDURE

Seller shall inform SMUD of intent to begin PV Capacity Test in accordance with requirements of the Outage Coordination Process. SMUD shall confirm the dates in writing prior to the first date of the test.

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The ASTM 2848-13 test employs a multiple linear regression of AC power (*P*) to total irradiance (E_{Tot}), ambient temperature (*Ta*), and wind speed (*υ*) through the following equation ("Equation 1"):

$$P = E_{Tot}\,(a_1 + a_2 * E_{Tot} + a_3 * T_a + a_4 * v)$$
$$E_{Tot} = E_{POA} + E_{Rear} * \Psi$$

Where:

E_{POA} = Front side POA irradiance (W/m^2)

E_{Rear} = Rear side POA irradiance (W/m^2)

Ψ = Module bifaciality factor

Module bifaciality factor shall be based on module PAN file.

Modeled PV Capacity shall utilize the PVsyst Model 8760 dataset centered around thirty (30) days relative to the PV Capacity Test Period, filtered based on the Test Procedure. For example, if the Test Period is June 20 – June 28, the 30 day window for the PVsyst Model 8760 dataset will utilize the data from June 9 through July 9. The Pvsyst Model power readings shall be fitted against the Pvsyst Model total irradiance (E_{Tot}), ambient temperature (Ta), and wind speed (υ) to obtain regression coefficients as per Equation (1).

Measured PV Capacity shall utilize the data collected during the PV Capacity Test period, filtered according to the Test Procedure. The measured power readings shall be fitted against the measured total irradiance (E_{Tot}), ambient temperature (Ta), and wind speed (υ) to obtain regression coefficients as per Equation (1). The resulting regression analysis shall demonstrate R2 ≥ 0.95 unless otherwise agreed by Seller and SMUD.

Reporting Conditions (RC) for total irradiance (E_{Tot}), ambient temperature (Ta), and wind speed (υ) will be determined in accordance with the Test Procedure and will follow the general guidance established in ASTM 2848-13 and ASTM 2939-13.

$$\text{PV Capacity Test Percentage} = P_{measured} / (P_{modeled} * Adj_{Soil} * Adj_{Avail})$$

Where:

$P_{measured}$ is evaluated at RC in Equation 1 with the measured regression coefficients.

$P_{modeled}$ is evaluated at RC in Equation 1 with the modeled regression coefficients.

Adj_{Soil} is calculated using the method described in Section 7 of this Exhibit L, and only to be used during the PV Commercial Operation Test and not the subsequent PV Capacity Tests.

Adj_{Avail} is calculated utilizing the availability calculation as established in Appendix U, inclusive of the Agrivoltaics FOP. Data points used in this availability calculation will match the time periods used for the Measured PV Capacity calculation.

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Expected PV Capacity = PV Capacity Test Percentage * Initial Expected PV Capacity

The table below demonstrates example RC and model regression coefficients if the 30-day dataset were discrete months. Final RC, model regression coefficients, and $P_{modeled}$ will be determined based on the actual 30-day window selected for filtering the PVsyst Model 8760 and any final filtering guidance agreed upon in the Test Procedure.

	Example RC			Example model regression coefficients				Example $P_{modeled}$
	E_{Tot} (W/m2)	Ta (degC)	v (m/s)	a1	a2	a3	a4	P (MW)
Jan	661.99	8.15	2.39	384,745.30	-27.56	-1,249.54	-12.37	235.86
Feb	727.03	16.44	2.10	387,478.09	-31.72	-1,271.79	-63.46	249.65
Mar	711.01	15.43	2.45	384,490.55	-27.76	-1,314.71	20.12	244.95
Apr	779.74	20.63	2.12	385,911.11	-30.88	-1,288.87	46.31	261.48
May	759.89	23.75	2.26	383,302.41	-30.20	-1,309.89	-45.98	250.11
Jun	809.17	28.15	2.70	374,739.63	-29.87	-1,274.02	17.34	254.68
Jul	805.32	29.56	2.31	364,430.37	-27.09	-1,243.01	-0.50	246.33
Aug	793.66	28.46	2.00	351,814.91	-23.51	-1,205.11	-29.39	237.15
Sep	780.90	28.31	1.75	347,745.55	-23.59	-1,204.91	-36.19	230.48
Oct	715.57	21.90	2.73	352,534.68	-21.39	-1,219.25	-32.60	222.14
Nov	693.31	16.47	1.87	380,484.15	-27.74	-1,269.30	-6.93	235.96
Dec	631.08	10.24	2.06	280,676.50	105.90	-1,299.30	-441.55	210.34
Annual	768.35	24.27	2.27	394,909.53	-34.18	-2,122.52	110.96	243.86

5 DATA QUALITY

- Inverter clipping shall be excluded from the dataset (clipping undermines linearity between POA irradiance and power).
- Irradiance (E_{Tot}) not within ± 25 percent of RC irradiance shall be excluded. A minimum irradiance threshold of 400 W/m^2 will also be applied.
- Rear side POA (RPOA) sensors will be used for the measured data.
- Any deviations from expected performance shall be noted in the PV Capacity Test report.
- The 5-minute interval data shall be averaged together from duplicate sensors and analyzed such that any nuisance data points and bad data that exhibit a high degree of error (such as errors caused by faulty instrumentation) shall be removed from the data set and noted in the PV Capacity Test report.
- The Seller shall document all data removed and provide a justification describing why it was removed for SMUD review.
- The PV Capacity Test may be performed on non-consecutive days on SMUD's approval if weather delays or schedule does not permit consecutive day testing.
- Data points collected while the whole plant or greater than 20% of inverters are off-line shall be eliminated and noted in the PV Capacity Test Report.

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- Obstructions or external shading that is believed to impact the results of the PV Capacity Test, and data collected for periods during which the array experiences shading from objects unrelated to the Solar Project, such as trees, buildings, etc., may be eliminated for purposes of the regression analysis. The Seller shall document all data eliminated and identify the source(s) of shading.

6 REPORTING

The Seller shall submit to SMUD a detailed PV Capacity Test report and supporting calculations within ten (10) Business Days of completion of a PV Capacity Test. The report shall include raw primary and secondary (if applicable) test instrument data, PVsyst Model 8760, and full Excel-based formulas and calculations. Raw testing data shall be submitted to SMUD with the test report.

7 SOILING ADJUSTMENTS

Soiling degradation shall be calculated immediately before the PV Commercial Operation Test and not the subsequent PV Capacity Tests, by the following procedure and conditions:

Conditions

- No more than one week before beginning the Capacity Test
- Measurements shall be taken during cloudless periods, between 10 am and 2 pm.
- Procedure shall be completed for at least half of the met station locations.
- For the avoidance of doubt, monthly soiling values in the PVSyst Model, as provided by the independent engineer, Luminate, shall be used for subsequent PV Capacity Tests.

Procedure

1. Record the first I-V curve for two modules, including plane-of-array irradiance and module temperature data. Record calculated P_{mp1} (corrected to STC) from the I-V curve measurement provided by the I-V curve trace device. Measurements for the two modules should be taken at approximately the same time.
2. Clean front and back of one of the two modules with water.
3. Let the cleaned module stabilize to the module temperature observed before cleaning – use the unwashed module as another point of temperature stabilization comparison. It is important that the modules reach a stable temperature, and not continue to increase through the second measurement.
4. Record the second I-V curve for the two modules, including plane-of-array irradiance and module temperature. Record calculated P_{mp2} (corrected to STC) from I-V curve measurement provided by I-V curve trace device. Measurements for the two modules should be taken at approximately the same time.
5. Calculate measured soiling loss for the cleaned module: $Soil_{Measured_n} = 1 - P_{mp1} / P_{mp2}$, where n represents the met station location for the measurement.
6. Calculate the ratio of P_{mp1}/P_{mp2} for the unwashed module. If this ratio is not near 1, it is an indication that the conditions between the two measurement periods were not sufficiently close and the Soiling Loss value calculated for the washed module at that particular met station location is subject to error and may be excluded.
7. $Soil_{Measured}$ equals the average of viable $Soil_{Measured_n}$ measurements.
8. $Adj_{Soil} = 1\text{-}Soil_{Measured}$

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Documentation

- I-V curve trace reports for P_{mp1} and P_{mp2}

8 DISPUTE RESOLUTION

At the request of either Party, an independent, professional engineer shall be retained by the Parties to resolve any dispute under this Exhibit L. The requesting Party may select an expert from the following pre-approved independent, professional engineers: Leidos, Luminate, DNV, and Black & Veatch. An expert not on this this pre-approved list will need to be agreed to by both Parties. Each Party shall cooperate reasonably with the other and with the selected expert to resolve the dispute expeditiously and efficiently. Each Party shall, within 30 days of the selection of the expert, provide to the expert in writing its position on the dispute and any back-up material supporting its position. The expert must agree with the position of one Party and may not implement a resolution to the dispute that differs from the proposal of a Party. The expert shall, within 30 days of the submission of Parties' positions, choose the Party position that, in the expert's determination, best reflects the appropriate resolution of the dispute. The Party whose position is not accepted by the expert shall pay all of the costs for the expert.

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Appendix 1 to Exhibit L

Included in following file:to_SMUD_20230809.zip

- **PV-Syst pdf output file**
    - **country_acres_tilt_Project.VDG-Report.pdf**
- **PV-Syst raw output file**
    - **Country_acres_tilt_Project.VDG_HourlyRes_0.csv**
- **8760 Energy model inclusive of losses to point of interconnection**
    - **Energy_model_forward_facing.xlsx**
- **Equipment and site modeling files including**
    - **Solar Anywhere 3.6 TMY met file**
        - **CA_SMUD_SA6_TMY3_SA_TMY.MET**
    - **Site shading scene**
        - **Clenera Country Acres – Analysis.SHD**
    - **Hyperion HY-DH144P8 545W module .PAN file**
        - **HY-DH144P8-545.PAN**
    - **Sungrow SG350HX .OND file**
        - **Sungrow_SG350HX-US_16MPPT_V1_PVsyst686.OND**

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Version 7.3.4

PVsyst - Simulation report

Grid-Connected System

Project: country_acres_tilt_Project

Variant: ppa_reference_392MWdc_344MWac_1198inverters_no_wash

Sheds, single array

System power: 392.0 MWp

CA_SMUD_SA6 - United States

Author

Clenera, LLC (United States)

Project summary

Geographical Site
CA_SMUD_SA6
United States

Situation

Latitude	38.75 °N
Longitude	-121.45 °W
Altitude	18 m
Time zone	UTC-8

Meteo data
CA_SMUD_SA6
Solar Anywhere, satellite data, SUNY model - TMY

Monthly albedo values

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Albedo	0.17	0.16	0.17	0.19	0.20	0.21	0.23	0.24	0.24	0.23	0.19	0.17

System summary

Grid-Connected System
Sheds, single array

PV Field Orientation
Fixed plane
Tilt/Azimuth 15 / 0 °

Near Shadings
According to strings
Electrical effect 100 %

User's needs
Unlimited load (grid)

System information

PV Array		Inverters	
Nb. of modules	719287 units	Nb. of units	1198 units
Pnom total	392.0 MWp	Pnom total	383.4 MWac
		Pnom ratio	1.023

Results summary

Produced Energy	678645122 kWh/year	Specific production	1731 kWh/kWp/year	Perf. Ratio PR	83.40 %

Table of contents

Project and results summary 2
General parameters, PV Array Characteristics, System losses 3
Near shading definition - Iso-shadings diagram 5
Main results 6
Loss diagram 7
Predef. graphs 8
Single-line diagram 9

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General parameters

Grid-Connected System

Sheds, single array

PV Field Orientation

Orientation		Sheds configuration		Models used	
Fixed plane		Nb. of sheds	320 units	Transposition	Perez
Tilt/Azimuth	15 / 0 °	Single array		Diffuse	Imported
		Sizes		Circumsolar	separate
		Sheds spacing	6.52 m		
		Collector width	4.56 m		
		Ground Cov. Ratio (GCR)	70.0 %		
		Top inactive band	0.02 m		
		Bottom inactive band	0.02 m		
		Shading limit angle			
		Limit profile angle	29.6 °		

Horizon	Near Shadings	User's needs
Free Horizon	According to strings	Unlimited load (grid)
	Electrical effect 100 %	

Bifacial system

Model: 2D Calculation unlimited sheds

Bifacial model geometry		Bifacial model definitions	
Sheds spacing	6.52 m	Ground albedo average	0.20
Sheds width	4.60 m	Bifaciality factor	70 %
Limit profile angle	29.6 °	Rear shading factor	10.0 %
GCR	70.6 %	Rear mismatch loss	10.0 %
Height above ground	0.46 m	Shed transparent fraction	0.0 %

Monthly ground albedo values

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
0.17	0.16	0.17	0.19	0.20	0.21	0.23	0.24	0.24	0.23	0.19	0.17	0.20

PV Array Characteristics

PV module

Manufacturer	Runergy
Model	HY-DH144P8-545
(Custom parameters definition)	
Unit Nom. Power	545 Wp
Number of PV modules	719287 units
Nominal (STC)	392.0 MWp
Modules	24803 Strings x 29 In series
At operating cond. (50°C)	
Pmpp	357.6 MWp
U mpp	1080 V
I mpp	330959 A

Inverter

Manufacturer	Sungrow
Model	SG350HX-US
(Custom parameters definition)	
Unit Nom. Power	320 kWac
Number of inverters	1198 units
Total power	383360 kWac
Operating voltage	500-1500 V
Max. power (=>30°C)	352 kWac
Pnom ratio (DC:AC)	1.02
Power sharing within this inverter	

Total PV power

Nominal (STC)	392011 kWp
Total	719287 modules
Module area	1858100 m²

Total inverter power

Total power	383360 kWac
Max. power	421696 kWac
Number of inverters	1198 units
Pnom ratio	1.02

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Array losses

Array Soiling Losses

Average loss Fraction 4.8 %

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1.5%	1.5%	1.5%	1.5%	2.5%	5.0%	7.5%	10.5%	12.0%	10.0%	3.0%	1.5%

Thermal Loss factor

Module temperature according to irradiance
Uc (const) 29.0 W/m²K
Uv (wind) 0.0 W/m²K/m/s

DC wiring losses

Global array res. 0.031 mΩ
Loss Fraction 0.9 % at STC

LID - Light Induced Degradation

Loss Fraction 1.5 %

Module Quality Loss

Loss Fraction -0.1 %

Module mismatch losses

Loss Fraction 1.0 % at MPP

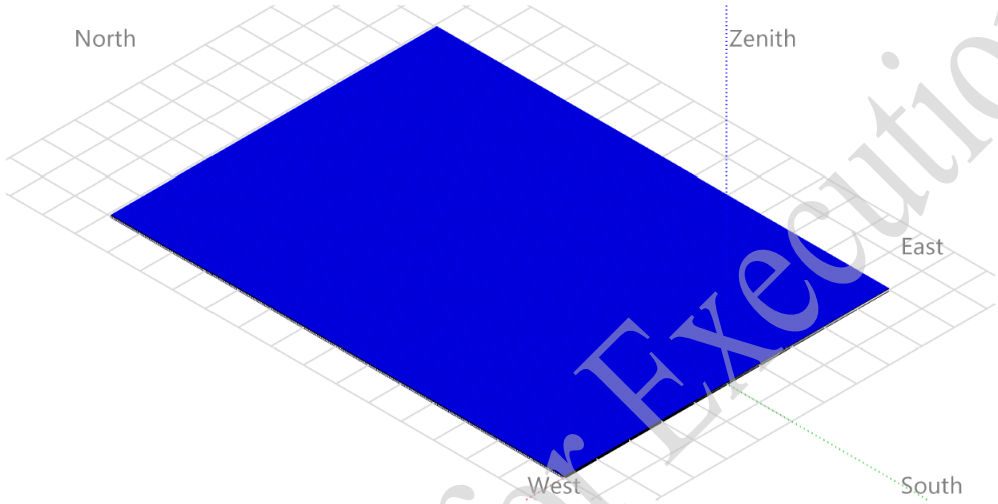
IAM loss factor

ASHRAE Param.: IAM = 1 - bo (1/cosi -1)
bo Param. 0.04

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Near shadings parameter

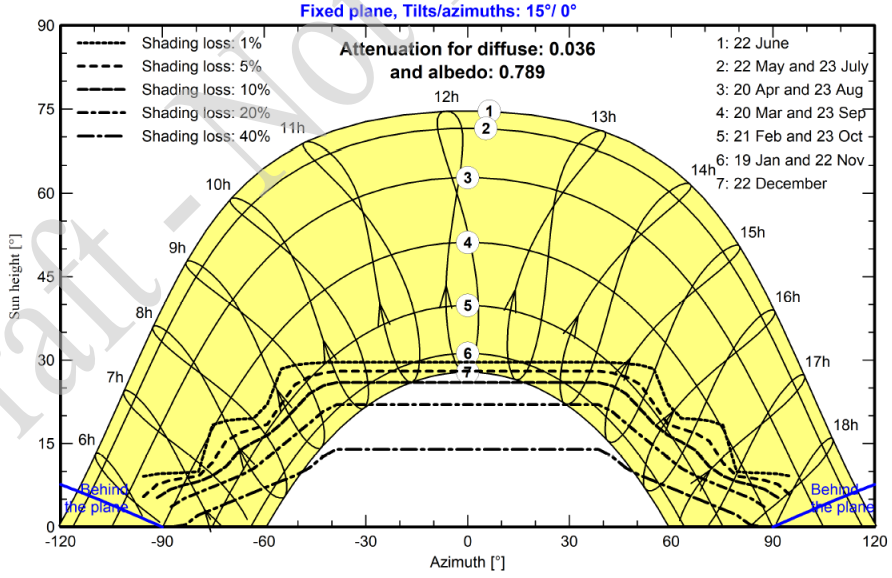
Perspective of the PV-field and surrounding shading scene



Iso-shadings diagram

Orientation #1

Fixed plane, Tilts/azimuths: 15°/ 0°



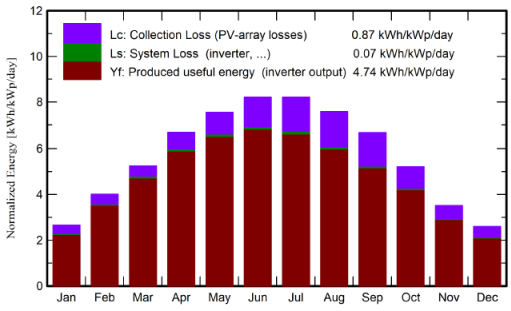
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Main results

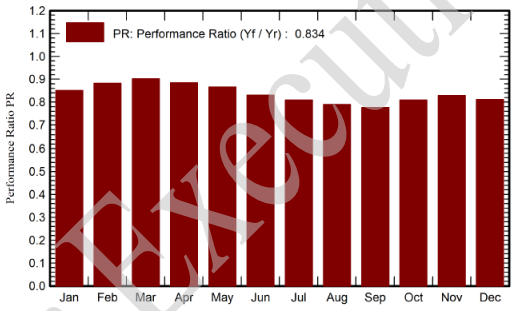
System Production

Produced Energy	678645122 kWh/year	Specific production	1731 kWh/kWp/year
		Perf. Ratio PR	83.40 %

Normalized productions (per installed kWp)



Performance Ratio PR



Balances and main results

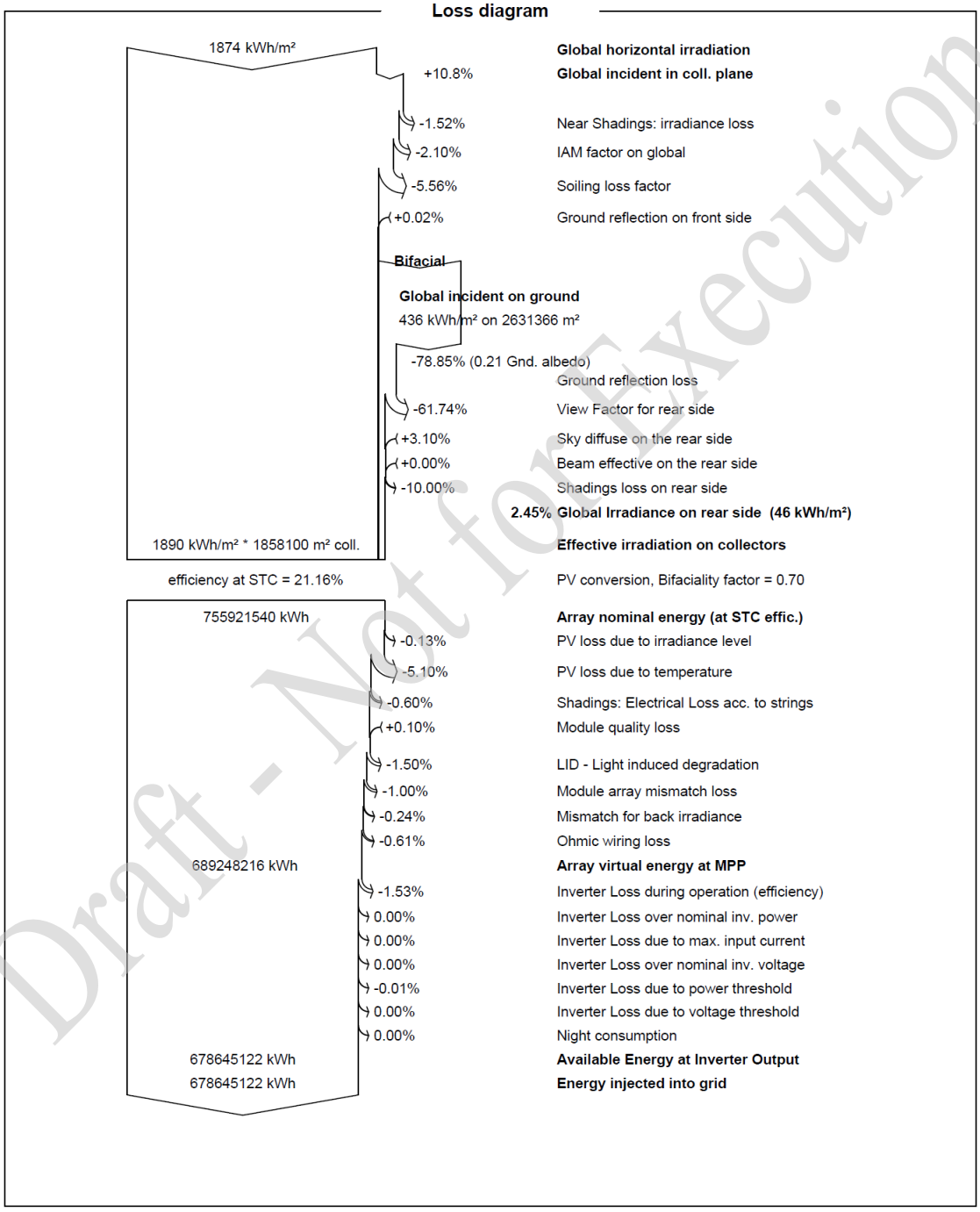
	GlobHor kWh/m²	DiffHor kWh/m²	T_Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray kWh	E_Grid kWh	PR ratio
January	62.7	27.75	8.05	82.2	74.5	27897043	27413598	0.851
February	89.9	31.42	12.94	112.3	105.5	39435261	38834702	0.882
March	142.0	56.03	12.49	162.5	154.9	58354494	57490290	0.902
April	186.2	58.38	16.35	200.4	192.0	70584126	69481945	0.884
May	229.3	62.87	19.47	234.1	222.2	80742897	79504577	0.866
June	246.7	53.53	24.53	246.5	228.2	81565310	80283148	0.831
July	252.2	50.48	25.28	254.8	229.8	82087546	80812407	0.809
August	221.8	50.20	24.62	235.2	205.2	73925533	72803440	0.790
September	175.6	36.93	24.40	200.0	171.2	61766226	60864285	0.776
October	130.4	32.97	18.23	161.7	140.3	51992506	51239783	0.809
November	78.7	25.83	13.31	105.5	95.2	34807666	34278147	0.829
December	58.8	23.46	8.33	80.6	71.2	26089605	25638799	0.811
Year	1874.3	509.85	17.34	2075.8	1890.4	689248216	678645122	0.834

Legends

GlobHor	Global horizontal irradiation	EArray	Effective energy at the output of the array
DiffHor	Horizontal diffuse irradiation	E_Grid	Energy injected into grid
T_Amb	Ambient Temperature	PR	Performance Ratio
GlobInc	Global incident in coll. plane		
GlobEff	Effective Global, corr. for IAM and shadings		

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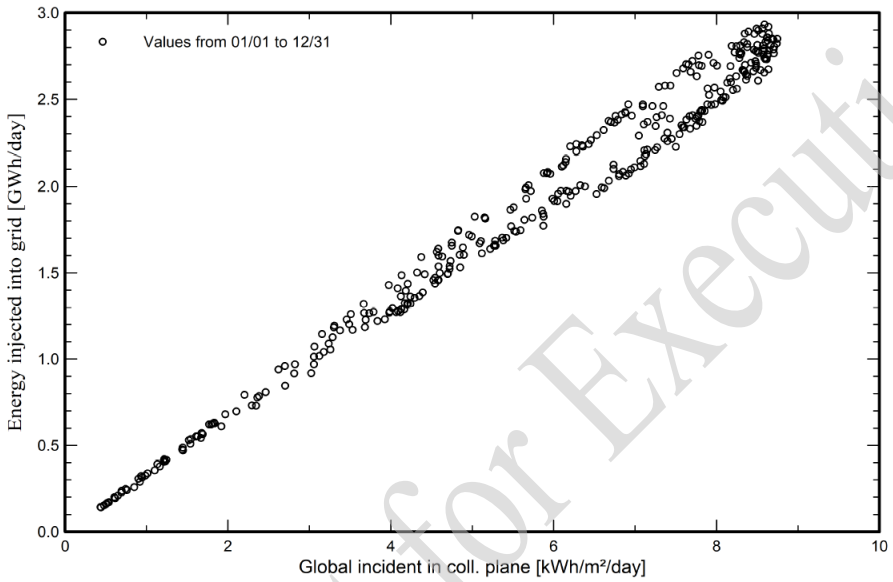
Loss diagram



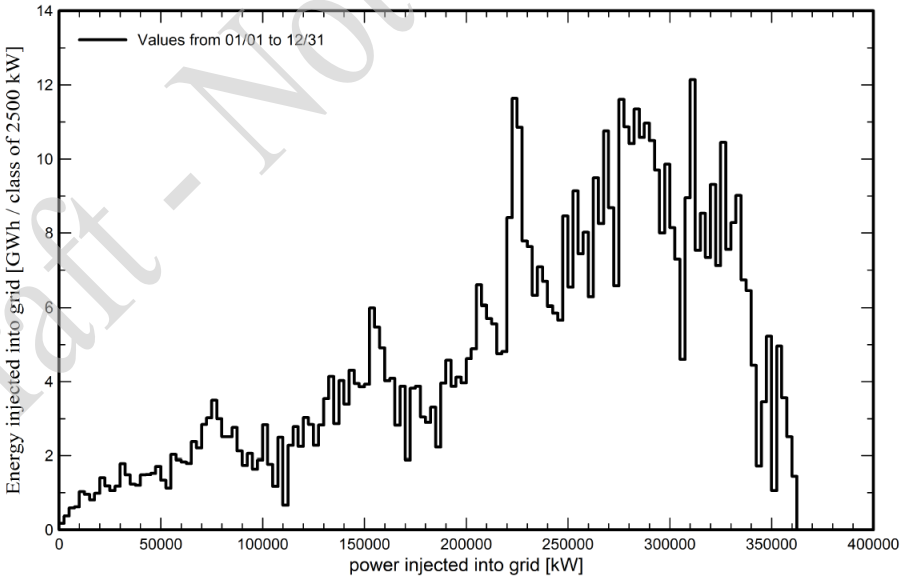
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Predef. graphs

Daily Input/Output diagram



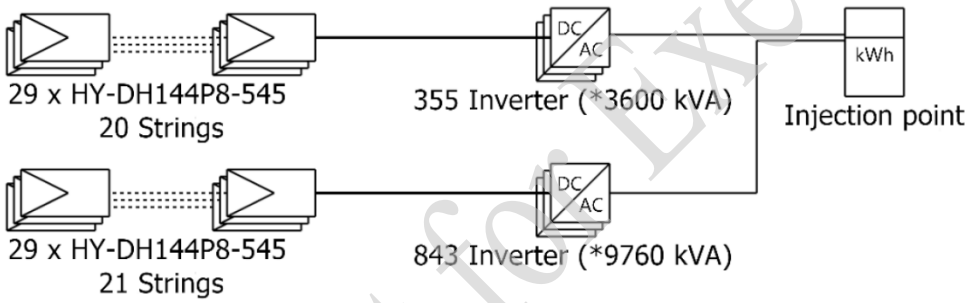
System Output Power Distribution



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Single-line diagram

PVsyst V7.3.4
VDG, Simulation date:
08/08/23 17:12
with v7.3.4



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PV module	HY-DH144P8-545
Inverter	SG350HX-US
String	29 x HY-DH144P8-545

	country_acres_tilt_Project	Clenera, LLC (United States)
	VDG : ppa_reference_392MWdc_344MWac_1198inverters_no_wash	08/08/23

Exhibit M
Battery Storage Testing

I. GENERAL

a. Overview

The purpose of this Exhibit M is to describe the requirements for each of the following tests, collectively the "Battery Storage Tests":

- Battery Storage Commercial Operation Test
- Annual Battery Storage Capacity Test
- Battery Storage Capacity Test
- Battery Storage Operational Mode Test
- Battery Storage AGC Discharge Test
- Battery Storage AGC Charge Test
- Battery Storage Response Time and Ramp Rate Test
- Battery Storage Reactive Power Capability Test

All Battery Storage Tests described in this Exhibit M shall conform to the requirements herein as may be superseded by the approved Test Procedure (as defined below) for each test. All Battery Storage Tests shall be performed using Prudent Utility Practice.

b. Test Procedures

Seller shall submit a Test Procedure for each Battery Storage Test. As used in this Exhibit M, a "Test Procedure" is a detailed test procedure document and shall at a minimum describe, for each Battery Storage Test, the purpose, starting state, measured variables, step by step test procedure, conditions for pausing or restarting, ending state, calculation of results, and reporting requirements. Seller shall submit Test Procedures to SMUD for approval no later six (6) months prior to initial testing, in accordance with LGIA Exhibit G requirements. than thirty (30) days prior to the beginning of any Battery Storage Test and SMUD's approval shall not be unreasonably withheld or delayed. For any recurring Battery Storage Test and after the first occurrence of any such test, the previously approved Test Procedure shall be utilized unless Seller or SMUD requests a revised Test Procedure 60 days prior to the beginning of such test, or such timeframe mutually agreed between the Parties.

c. Witnessing of Tests

SMUD or its representative shall be provided the opportunity to be present for any Battery Storage Test and may, for information only, separately utilize its own metering equipment so long as such use does not interfere with the test or Seller's operation of the Battery Storage Project. SMUD shall be responsible for any incremental costs associated with SMUD's witnessing of Battery Storage Tests including the use of SMUD's own metering equipment.

d. Test Reports

Seller shall provide to SMUD a written report ("Test Report") of the results of any completed Battery Storage Test no later than five (5) Business Days after the completion of the test or such other timeframe as may be defined in the approved Test Procedure. Each Test Report shall include the following, in addition to any additional requirement of a specific test as described in the applicable

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Test Procedure:

1. A record of the personnel present during the test that served in an operating, testing, monitoring, or other such participatory role.
2. The measured data for the test as well as each parameter set forth in the relevant Test Procedure.
3. Copies of the raw data taken during the test and plant log sheets verifying the operating conditions shall be provided.
4. Summary of relevant final results of the test, including the results described in the sections below, as applicable.
5. Any anomalous observations made during the test.
6. Test uncertainty.
7. Seller's statement of acceptance or rejection of the test results and reasons therefore.

e. Retests

Retesting is allowable in accordance with Section 2.4.9 of the Agreement.

f. Cessation of Tests

Seller may at its sole discretion immediately cease any Battery Storage Test if Seller determines that continuation of the test would pose risk of damage or adverse effect to equipment or becomes aware of any circumstance for which continuing the test would violate Prudent Utility Practice.

g. Incomplete Tests

If any Battery Storage Test is not completed in accordance with this Exhibit M, SMUD may in its sole discretion: (i) accept the results up to the time the Battery Storage Test was stopped without any modification to the results; (ii) require that the incomplete portion of the Battery Storage Test be completed within a reasonable and specified time period; or (iii) require that the Battery Storage Test be entirely repeated within a reasonable and specified time period. Notwithstanding the above, if Seller is unable to complete a Battery Storage Test due to a Force Majeure event or the actions or inactions of SMUD or the CAISO or the Transmission Provider, Seller shall be permitted to retest in accordance with the requirements of this Exhibit M and on an expedited timeframe as may be agreed by both Seller and SMUD.

h. Data Capture

All measurements necessary to calculate the results for each Battery Storage Test described in this Exhibit M shall be collected at a rate of one (1) minute resolution or less unless higher resolution measurements are specified in the applicable approved Test Procedure.

Battery Storage Test measurements shall be made using instrumentation provided by Seller and, where appropriate, using instruments present at the Battery Storage Project during normal operation. All instruments providing measurements for a Battery Storage Test shall be calibrated according to the instrument manufacturer's recommendations and certificates provided with the applicable Test Report if required by the Test Procedure.

Ambient conditions including temperature and relative humidity shall be recorded during the test.

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i. Responsibilities

Seller is responsible for executing all Battery Storage Tests. SMUD shall provide reasonable operational support during any Battery Storage Test. All Energy for Battery Storage Tests shall be provided by SMUD.

j. Test Uncertainty

Uncertainties shall be addressed by a test tolerance of 0.5% applied to the results of any Battery Storage Test with respect to any guarantee in this Agreement.

k. Dispute Resolution

At the request of either Party, an independent, professional engineer shall be retained by the Parties to resolve any dispute under this Exhibit M. The requesting Party may select an expert from the following pre-approved independent, professional engineers: Leidos, Luminate, DNV, and Black & Veatch. An expert not on this this pre-approved list will need to be agreed to by both Parties. Each Party shall cooperate reasonably with the other and with the selected expert to resolve the dispute expeditiously and efficiently. Each Party shall, within 30 days of the selection of the expert, provide to the expert in writing its position on the dispute and any back-up material supporting its position. The expert must agree with the position of one Party and may not implement a resolution to the dispute that differs from the proposal of a Party. The expert shall, within 30 days of the submission of Parties' positions, choose the Party position that, in the expert's determination, best reflects the appropriate resolution of the dispute. The Party whose position is not accepted by the expert shall pay all of the costs for the expert.

II. BATTERY STORAGE CAPACITY TEST

a. Purpose

The Battery Storage Capacity Test is designed to establish the Expected Battery Storage Capacity and Round Trip Efficiency prior to COD and to provide annual updates and supplemental updates to the Expected Battery Storage Capacity and Round Trip Efficiency. The Battery Storage Capacity Test conducted prior to COD is referred to as the "Battery Storage Commercial Operation Test".

b. Scheduling

Battery Storage Capacity Tests shall be scheduled at the following times:

i. As required to meet the conditions for Commercial Operation of Section 2.3.4 of the Agreement.

ii. Within thirty (30) days of the end of each Contract Year unless waived or delayed by mutual agreement between Seller and SMUD. The Battery Storage Capacity Test conducted per this Section II.2.B shall be the "Annual Battery Storage Capacity Test".

iii. Within ten (10) Business Days of either Party's request for additional Battery Storage Capacity Test, but not more than one (1) such additional test per calendar quarter, except as described in Section 2.4.9 of the Agreement.

iv. As otherwise provided in the Agreement.

Seller shall provide Notice to SMUD of intent to conduct a Battery Storage Capacity Test no less

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than ten (10) Business Days prior to the planned test date, and in accordance with requirements of the Outage Coordination Process. SMUD shall confirm the dates in writing prior to commencement of the test. All Battery Storage Capacity Tests shall be conducted when SMUD system conditions can allow for such testing, as reasonably determined by SMUD.

c. Procedure

i. Starting state:

Any scheduled Battery Storage Capacity Test shall be rescheduled and any in-progress Battery Storage Capacity Test restarted, if ambient temperature is expected to be below 10°C or above 50°C during any portion of the test.

The Battery Storage Project SOC shall be 0% and shall have rested for at least 10 minutes since the last instruction to charge or discharge prior to the start of any Battery Storage Capacity Test.

ii. Charging: Instruct the Battery Storage Project to charge from 0% SOC to 100% SOC at the Expected Battery Storage Capacity. The energy in MWh metered at the Battery Storage Meter during this step is the "Capacity Test Charging Energy". Record the time required to complete this charging step. The "Capacity Test Average Charging Power" is the Capacity Test Charging Energy divided by the number of hours required to complete this charging step, expressed as a decimal". Record the time required to complete this charging step.

iii. Resting: Allow the Battery Storage Project

to remain at 100% SOC for a duration of time specified by battery manufacturer and confirm the Battery Storage Project remains grid-connected during the rest period.

iv. Discharging: Instruct the Battery Storage Project to discharge from 100% SOC to 0% SOC at the Expected Battery Storage Capacity for a maximum of four (4) hours. The energy in MWh metered at the Battery Storage Meter during this step is the "Capacity Test Discharging Energy". The "Capacity Test Average Discharging Power" is the Capacity Test Discharging Energy divided by the number of hours required to complete this discharging step, expressed as a decimal.

v. Resting: Allow the Battery Storage Project to remain at 0% SOC for a duration of time specified by the battery manufacturer and confirm the Battery Storage Project remains grid-connected during the rest period.

vi. Ending state: The Battery Storage Project is reconfigured to normal operation.

d. Results

Seller shall include the following key results among the other information in the Test Report.

i. Expected Battery Storage Capacity equals:

Total amount of discharged energy from the Battery Storage Meter divided by four (4) hours

ii. Round Trip Efficiency

The Round Trip Efficiency shall be calculated as follows:

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$$100\% \times \frac{Capacity\ Test\ Discharging\ Energy}{Capacity\ Test\ Charging\ Energy}$$

e. Additional Requirements

i. Both real and reactive power shall be measured and reported as measured by the Battery Storage Meter for any Battery Storage Capacity Test.

III. BATTERY STORAGE AGC DISCHARGE TEST

a. Purpose

This test will demonstrate the ability of the facility to receive, acknowledge, and begin responding to AGC commands in less than 4 seconds.

b. Scheduling

i. As required to meet the conditions for Commercial Operation of Section 2.3.4 of the Agreement.

ii. As otherwise provided in the Agreement.

c. Procedure

System starting state: The facility will be in the on-line state at 50% SOC and at an initial active power level of 0 MW and reactive power level of 0 MVAR. The EMS will be configured to follow a predefined agreed-upon active power profile.

i. Record the facility active power level at the Battery Storage Meter.

ii. Command the facility to follow a simulated control signal of PMAX at .95 power factor for ten (10) minutes.

iii. Record and store the facility active power response (in seconds).

System end state: The facility will be in the on-line state and at a commanded active power level of 0 MW.

IV. BATTERY STORAGE AGC CHARGE TEST

a. Purpose

This test will demonstrate the ability of the facility to receive, acknowledge, and begin responding to AGC commands in less than 4 seconds.

b. Scheduling

i. As required to meet the conditions for Commercial Operation of Section 2.3.4 of the Agreement.

ii. As otherwise provided in the Agreement.

c. Procedure

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System starting state: The facility will be in the on-line state at 50% SOC and at an initial active power level of 0 MW and reactive power level of 0 MVAR. The facility control system will be configured to follow a predefined agreed-upon active power profile.

i. Record the facility active power level at the Battery Storage Meter.

ii. Command the facility to follow a simulated control signal of PMAX at .95 power factor for ten (10) minutes.

iii. Record and store the facility active power response (in seconds).

System end state: The facility will be in the on-line state and at a commanded active power level of 0 MW.

V. BATTERY STORAGE RESPONSE TIME AND RAMP RATE TEST

a. Purpose

This test measures time for the Battery Storage Project to responds to dispatch setpoints.

b. Scheduling

i. As required to meet the conditions for Commercial Operation of Section 2.3.4 of the Agreement.

ii. As otherwise provided in the Agreement.

c. Procedure

i. The Battery Storage Project will be placed into Idle Mode.

ii. The Battery Storage Project shall be placed into Manual Mode and dispatched at full power rating.

iii. Overall Response Time consists of two parts, as follows:

d. The time from when the command is written to the Seller's controller, according to the Seller's EMS, until the Battery Storage Project starts to move power setpoint as witnessed on the Battery Storage Meter; and

e. The Ramp Rate from when the Battery Storage Project starts to move power setpoint as witnessed on Battery Storage Meter to the time when the dispatch power point is reached.

i. The communication latency time period is considered ended as soon as the meter registers a power value that is 100% +/-2.0% (of nameplate) different from the value it was at the start of the Response Time test.

ii. The ramping time period is considered ended as soon as the meter registers a power value that is within 100% +/- 2.0% (of nameplate) of the dispatch power value.

f. Results

i. Trend from EMS showing dispatch signal and power throughout the testing period.

ii. Results matrix (data download from EMS).

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g. Pass Criteria

The Battery Storage Project must satisfy the Response Time as well as the Ramp Rate, expressed in MW/min, and according to Prudent Electrical Practices.

VI. BATTERY STORAGE REACTIVE POWER CAPABILITY TEST

a. Purpose

This test will demonstrate the reactive power production capability of the facility.

b. Scheduling

i. As required to meet the conditions for Commercial Operation of Section 2.3.4 of the Agreement.

ii. As otherwise provided in the Agreement.

c. Procedure

System starting state: The facility will be in the on-line state at 50% SOC and at an initial active power level of 0 MW and reactive power level of 0 MVAR. The EMS will be configured to follow an agreed-upon predefined reactive power profile.

i. Record the facility reactive power level at the Battery Storage Meter.

ii. Command the facility to follow 15 MW for ten (10) minutes.

iii. Record and store the facility reactive power response.

System end state: The facility will be in the on-line state and at a commanded reactive power level of 0 MVAR.

VII. BATTERY STORAGE REACTIVE POWER CONSUMPTION TEST

a. Purpose

This test will demonstrate the reactive power consumption capability of the facility.

b. Scheduling

i. As required to meet the conditions for Commercial Operation of Section 2.3.4 of the Agreement.

ii. As otherwise provided in the Agreement.

c. Procedure

System starting state: The facility will be in the on-line state at 50% SOC and at an initial active power level of 0 MW and reactive power level of 0 MVAR. The facility control system will be configured to follow an agreed-upon predefined reactive power profile.

i. Record the facility reactive power level at the Battery Storage Meter.

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ii. Command the facility to follow 15 MW for ten (10) minutes.

iii. Record and store the facility reactive power response.

System end state: The facility will be in the on-line state and at a commanded reactive power level of 0 MVAR.

In addition to the Battery Storage Tests described in this Exhibit M, Seller shall update the Test Procedure to include Operational Mode tests after each such Operational Mode is defined. Operational Mode testing shall be completed after the development of any new Operational Mode and also upon request where requests are limited to two per Contract Year. Testing shall demonstrate that the Operational Mode performs as intended.

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Exhibit N

PROJECT MILESTONE SCHEDULE

Below is a list of key project milestones and the targeted completion date for each.

In the case that a milestone is not achieved by the listed completion date the following actions will be required:

1. An updated project schedule which shows the recovery needed to make COD and GCOD
2. Report provided to Buyer detailing the cause for delay, its impact to the project overall and the plan moving forward
3. An updated Exhibit N submitted and signed by Seller

Upon mutual agreement of both Parties, a new Exhibit N may be issued. When updated, the Parties will insert a new effective date for this Exhibit N, which will replace the prior Exhibit N.

Effective Date: [Month, Day, Year] _____

_____
Signature of Seller

_____
Signature of SMUD

Milestone	**Responsible Party**	**Date**	**Contract**
Pre-Energization Testing—indoor/outdoor Equipment Testing (energy source is station service)	SMUD/Seller	3/1/2026	LGIA Section 6.1
Permission to energize for transmission and generation (energy source is 230kV to allow for back feed)	SMUD	3/9//2026	LGIA Section 6.1
Start Pre-commercial Energy & Operation Testing	SMUD/Seller	6/1/2026	LGIA Section 6.2
Development Security Submittal	Seller	Within 30 days of Effective Date	PPA Section 9.1
Delivery Term Security Submittal	Seller	12/15/2026	PPA Section 9.1
Scheduled COD	Seller	12/15/2026	PPA Exhibit A
Guaranteed COD	Seller	6/13/2027	PPA Exhibit A

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Exhibit O
BATTERY STORAGE PROJECT ROUND TRIP EFFICIENCY GUARANTY

For purposes of the Agreement and this Exhibit O, the term "Guaranteed Round Trip Efficiency" means, for each Contract Year, the corresponding value set forth in the Round Trip Efficiency Guaranty Table set forth below.

Round Trip Efficiency Guaranty Table

Contract Year	Guaranteed Round Trip Efficiency (%)
1	84.500%
2	84.375%
3	84.250%
4	84.125%
5	84.000%
6	83.875%
7	83.750%
8	83.625%
9	83.500%
10	83.375%
11	83.250%
12	83.125%
13	83.000%
14	82.875%
15	82.750%
16	82.625%
17	82.500%
18	82.375%
19	82.250%
20	82.000%

For purposes of the Agreement and this Exhibit O, the term "Round Trip Efficiency" is the amount set forth in the following formula, as determined in the Battery Storage Capacity Test performed under Exhibit M.

$$\text{Round Trip Efficiency} = \frac{Discharging\ Energy}{Charging\ Enregy}$$

Round Trip Efficiency Liquidated Damages

If, for any Contract Year, the Round Trip Efficiency determined by the Annual Battery Storage Capacity Test (or any retest conducted within seven days of the initial Battery Storage Capacity Test) conducted for such Contract Year is less than the corresponding Guaranteed Round Trip Efficiency for such Contract Year, the following Round Trip Efficiency Liquidated Damages will apply on an annual basis:

RTELD = LMP x RTES x CE

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Where:

RTELD = Round Trip Efficiency Liquidated Damages

LMP = the simple average of the Locational Marginal Price (as defined in the CAISO Tariff) at the Battery Storage Project pNode (as defined in the CAISO Tariff) in the Day-Ahead Market for the hours that the Battery Storage Project is either charging or discharging in response to a Dispatch Instruction during the Contract Year

RTES = Guaranteed Round-Trip Efficiency minus the Round Trip Efficiency determined by the relevant annual Battery Storage Capacity Test (or, if a retest is taken within seven days of the initial Battery Storage Capacity Test conducted for such Contract Year, then such retest)

CE = the amount of Charging Energy used to charge the Battery Storage Project during the Contract Year

Upon mutual agreement of both Parties, a new Exhibit O may be issued. When updated, the Parties will insert a new effective date for this Exhibit O, which will replace the prior Exhibit O.

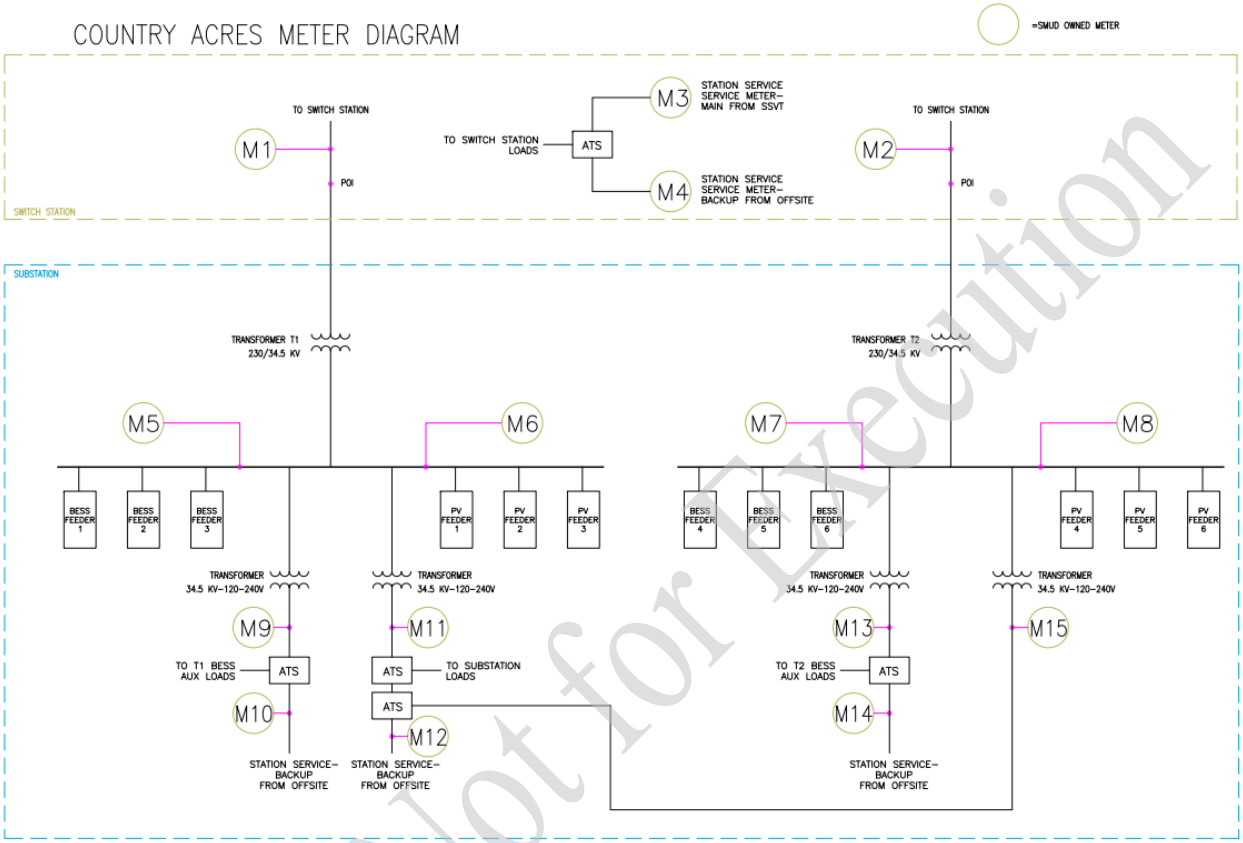
Effective Date: [Month, Day, Year] _____

_____
Signature of Seller

_____
Signature of SMUD

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EXHIBIT P
METERING DIAGRAM



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Upon mutual agreement of both Parties, a new Exhibit P may be issued. When updated, the Parties will insert a new effective date for this Exhibit P, which will replace the prior Exhibit P.

Effective Date: [Month, Day, Year] _____

_____
Signature of Seller

_____
Signature of SMUD

EXHIBIT Q
FORM OF LETTER OF CREDIT

LETTER OF CREDIT

To: Sacramento Municipal Utility District
Energy Contracts Administration
6301 S Street, MS A404
Sacramento, CA 95817-1899

Re: Our Irrevocable Standby Letter of Credit No. [_____]
In the Amount of US$ [____] ([_____] and [ ]/100 U.S. Dollars) for [Development/Delivery Term] Security

Gentlemen:

We hereby open our irrevocable standby Letter of Credit Number No.[____] in favor of the Sacramento Municipal Utility District ("Beneficiary"), by order and for account of Country Acres Clean Power, LLC ("Account Party"), available at sight upon demand at our counters, at [_____], for an amount of US$ [____] ([_____] and [ ]/100 U.S. Dollars) and against presentation one of the following documents:

1- Statement signed by a person purported to be an authorized representative of Beneficiary stating that: Country Acres Clean Power, LLC (the "Seller") is in default under the Agreement between Beneficiary and Seller, dated [_____], or under any transaction contemplated thereby (whether by failure to perform or pay any obligation thereunder or by occurrence of a "default", "event of default" or similar term as defined in such agreement, any other agreement between Beneficiary and Seller, or otherwise). The amount due to Beneficiary is US $[_____]."

Or

2. Statement signed by a person purported to be an authorized representative of Beneficiary stating that: "Country Acres Clean Power, LLC ("Seller") has terminated the Agreement between Beneficiary and Seller dated [_____] pursuant to such agreement. The amount due to Beneficiary is US $[_____]."

Or

3. Statement signed by a person purported to be an authorized representative of Beneficiary stating that: "as of the close of business on [_____] [insert date, which is less than forty-five (45) days prior to the expiration date of the Letter of Credit] you have provided written notice to us indicating your election not to permit extension of this Letter of Credit beyond its current expiry date. The amount due to Beneficiary, whether or not a default has occurred, is U.S. $[_____]."

Special Conditions:

- All costs and banking charges pertaining to this Letter of Credit are for the account of Account Party.

- Partial and multiple drawings are permitted.

- Presentation of the Letter of Credit and Documents 1, 2 or 3 above may be made (i) in person, (ii) by first class certified and registered U.S. mail, or by (iii) overnight mail on or before the expiration date.

This Letter of Credit expires on [one year anniversary of date of issuance] at our counters.

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We hereby engage with Beneficiary that upon presentation or facsimile transmission of a document as specified under and in compliance with the terms of this Letter of Credit, this Letter of Credit will be duly honored in the amount stated in Document 1, 2 or 3 above. If a document is so presented by 1:00 pm New York time on any banking day, we will honor the same in full in immediately available funds on the next banking day and, if so presented after 1:00 pm New York time on a banking day, we will honor the same in full in immediately available funds by noon on the second succeeding banking day.

It is a condition of this Letter of Credit that it shall be deemed automatically extended without an amendment for a one year period beginning on the present expiry date hereof and upon each anniversary of such date, unless at least ninety (90) days prior to any such expiry date we have sent you written notice by registered mail or overnight courier service that we elect not to permit this Letter of Credit to be so extended beyond the then current expiry date, and it will expire on its then current expiry date. No presentation made under this Letter of Credit after such expiry date will be honored.

Except as stated herein, this letter of credit is not subject to any condition or qualification and is our individual obligation which is in no way contingent upon reimbursement or any right of subrogation. We irrevocably waive any and all rights of subrogation, whether as provided by statute or otherwise, now or hereafter that might, but for such waiver exist, in respect to this letter of credit or any payment we make under it, as to the Applicant, Beneficiary, or the transaction between Beneficiary and Country Acres Clean Power, LLC. We further give irrevocable notice that we are not now and will not be the secondary obligor or co-obligor of Country Acres Clean Power, LLC's obligation and liabilities to Beneficiary for any purpose. Our obligations to Beneficiary under this letter of credit are our primary obligations and are strictly as stated herein

We agree that if this Letter of Credit would otherwise expire during, or within 30 days after, an interruption of our business caused by an act of god, riot, civil commotion, insurrection, act of terrorism, war or any other cause beyond our control or by any strike or lockout, then this Letter of Credit shall expire on the 30th day following the day on which we resume our business after the cause of such interruption has been removed or eliminated and any drawing on this Letter of Credit which could properly have been made but for such interruption shall be permitted during such extended period.

This Letter of Credit shall be governed by the International Standby Practices 1998, International Chamber of Commerce Publication No. 590 ("ISP98"), except to the extent that the terms hereof are inconsistent with the provisions of the ISP98, in which case the terms of this Letter of Credit shall govern.

[_____], a [_____]

_____
Authorized Signature(s)

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EXHIBIT R
FORM OF LIMITED ASSIGNMENT AGREEMENT

This Limited Assignment Agreement (this "**Assignment Agreement**" or "**Agreement**") is entered into as of [____], 20__ by and among [____], a [____] ("**PPA Seller**"), [Participant], a [____] ("**PPA Buyer**"), and [Assignee], and relates to that certain power purchase agreement (the "**PPA**") between PPA Buyer and PPA Seller as described on Appendix 1. Unless the context otherwise specifies or requires, capitalized terms used but not defined in this Agreement have the meanings set forth in the PPA.

In consideration of the premises above and the mutual covenants and agreements herein set forth, PPA Seller, PPA Buyer and [Assignee] (the "**Parties**" hereto; each is a "**Party**") agree as follows:

1. Limited Assignment and Delegation.

(a) PPA Buyer hereby assigns, transfers and conveys to [Assignee] all right, title and interest in and to the rights of the delivered Products under the PPA described on Appendix 1 (the "**Assigned Products**") during the Assignment Period (as defined in Appendix 1), as such rights may be limited or further described in the "Further Information" section on Appendix 1 (the "**Assigned Product Rights**"). All Assigned Products shall be delivered pursuant to the terms and conditions of this Agreement during the Assignment Period as provided in Appendix 1. All other rights of PPA Buyer under the PPA are expressly reserved for PPA Buyer.

(b) PPA Buyer hereby delegates to [Assignee] the obligation to pay for all Assigned Products that are actually delivered to [Assignee] pursuant to the Assigned Product Rights during the Assignment Period (the "**Delivered Product Payment Obligation**" and together with the Assigned Product Rights, collectively the "**Assigned Rights and Obligations**"). All other obligations of PPA Buyer under the PPA are expressly retained by PPA Buyer. To the extent [Assignee] fails to pay for any Assigned Products by the due date for payment set forth in the PPA, PPA Buyer agrees that it will remain jointly and severally responsible as a primary obligor (and not as a surety) for such payment within five (5) Business Days (as defined in the PPA) of receiving notice of such non-payment from PPA Seller and that, regardless of receiving notice, it will indemnify and hold PPA Seller harmless from and against all losses, costs, damages, liabilities and expenses of any kind as a result of or arising from assignment, transfer, conveyance and delegation described in clauses (a) and (b) of paragraph 1 above, the failure of [Assignee] to make any such payment in respect of Delivered Product Payment Obligation as and when due under the PPA (and disregarding the effects of any stay or other suspension rights, including without limitation under sections 362 or 365 of the Bankruptcy Code or similar laws), whether due to bankruptcy, insolvency or any other cause.

(c) [Assignee] hereby accepts and PPA Seller hereby consents and agrees to the assignment, transfer, conveyance and delegation described in clauses (a) and (b) above.

(d) All scheduling of Assigned Products and other communications related to the PPA shall take place between PPA Buyer and PPA Seller pursuant to the terms of the PPA; provided that (i) title to Assigned Product will pass from PPA Seller to [Assignee] upon delivery by PPA Seller of Assigned Product in accordance with the PPA; (ii) PPA Buyer is hereby authorized by [Assignee] and shall act as [Assignee]'s agent with regard to scheduling Assigned Product; (iii) PPA Buyer will provide copies to [Assignee] of any Notice (as defined in the PPA) of a Force Majeure Event or Event of Default or default, breach or other occurrence that, if not cured within the applicable grace period, could result in an Event of Default contemporaneously upon delivery thereof to PPA Seller and promptly after receipt thereof from PPA Seller; (iv) PPA Buyer will provide copies to [Assignee] of annual and monthly forecasts received from PPA Seller as contemplated under Sections [___] of the PPA; (v) PPA Buyer will provide copies to [Assignee] of all invoices and supporting data received from PPA Seller pursuant to Section [__] of the PPA, provided that any payment adjustments or subsequent reconciliations occurring after the date that is 10 days prior to the payment due date for a monthly invoice will be resolved solely between PPA Buyer and PPA Seller

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and therefore PPA Buyer will not be obligated to deliver copies of any communications relating thereto to [Assignee]; and (vi) PPA Buyer will provide copies to [Assignee] of any other information reasonably requested by [Assignee] relating to Assigned Products.

(e) PPA Seller acknowledges that (i) [Assignee] intends to immediately transfer title to any Assigned Products received from PPA Seller through one or more intermediaries such that all Assigned Products will be re-delivered to PPA Buyer, and (ii) [Assignee] owns or has the right to purchase receivables due from PPA Buyer for any such Assigned Products. To the extent [Assignee] owns or purchases any valid, lien-free receivables due from PPA Buyer for Assigned Product, [Assignee] may transfer good, marketable and lien-free title to such receivables to PPA Seller and PPA Buyer waives all rights to dispute or claim any defense in respect of such receivables other than a defense that would have arisen under the PPA if this Assignment Agreement were not in effect. Upon such transfer, [Assignee] may apply the face amount thereof as a reduction to any Delivered Product Payment Obligation owed by [Assignee] to PPA Seller; provided that no such transfer or application shall reduce or limit PPA Buyer's obligations under Section 1(b) above.

(f) In the event the PPA described on Appendix 1 or the Assigned Product Rights are either or both rejected or terminated in or as a result of any bankruptcy, insolvency, reorganization or similar proceeding affecting [Assignee], PPA Buyer shall, at the option of PPA Seller exercised within 30 days after such rejection or termination, enter into a new agreement with PPA Seller having identical terms as the PPA described on Appendix 1 (subject to any conforming changes necessitated by the substitution of parties and other changes as the parties may mutually agree), provided that the term under such new agreement shall be no longer than the remaining balance of the term specified in the PPA described on Appendix 1.

2. Assignment Early Termination.

(a) The Assignment Period may be terminated early upon the occurrence of any of the following:

(1) delivery of a written notice of termination by either [Assignee] or PPA Buyer to each of the other Parties hereto;

(2) delivery of a written notice of termination by PPA Seller to each of [Assignee] and PPA Buyer following [Assignee]'s failure to pay when due any amounts owed to PPA Seller in respect of any Delivered Product Payment Obligation and such failure continues for one business day following receipt by [Assignee] of written notice thereof;

(3) delivery of a written notice by PPA Seller to the other Parties hereto if any of the events described in Section [__] [Bankruptcy] of the PPA occurs with respect to [Assignee]; or

(4) delivery of a written notice by [Assignee] if any of the events described in Section [__] [Bankruptcy] of the PPA occurs with respect to PPA Seller.

(b) The Assignment Period will end at the end of last delivery hour on the date specified in the termination notice provided pursuant to Section 2(a), which date shall not be earlier than the end of the last day of the calendar month in which such notice is delivered if termination is pursuant to clause (a)(1) or (a)(2) above. All Assigned Rights and Obligations shall revert from [Assignee] to PPA Buyer upon the early termination of the Assignment Period, provided that (i) [Assignee] shall remain responsible for the Delivered Product Payment Obligation with respect to any Assigned Product delivered to [Assignee] prior to the end of the Assignment Period, and (ii) any legal restrictions on the effectiveness of such reversion (whether arising under bankruptcy law or otherwise) shall not affect the expiration or early termination of the Assignment Period in respect of the Parties not subject inter se to such restrictions, provided that [Assignee] will not have any further obligations hereunder following an early termination of the Assignment Period regardless of any such legal restrictions on the effectiveness of such reversion.

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(c) The Assignment Period will automatically terminate upon the expiration or early termination of the PPA. All Assigned Rights and Obligations shall revert from [Assignee] to PPA Buyer upon the expiration of or early termination of the PPA, provided that (i) [Assignee] shall remain responsible for the Delivered Product Payment Obligation with respect to any Assigned Product delivered to [Assignee] prior to the end of the Assignment Period, and (ii) any legal restrictions on the effectiveness of such reversion (whether arising under bankruptcy law or otherwise) shall not affect the expiration or early termination of the Assignment Period in respect of the Parties not subject inter se to such restrictions, provided that [Assignee] will not have any further obligations hereunder following an early termination of the Assignment Period regardless of any such legal restrictions on the effectiveness of such reversion.

3. Representations and Warranties. The PPA Seller and the PPA Buyer represent and warrant to [Assignee], each with respect to itself only, that as of the date hereof (a) the PPA is in full force and effect; (b) to the best of its knowledge, no event or circumstance exists (or would exist with the passage of time or the giving of notice) that would give either of them the right to terminate the PPA or suspend performance thereunder; and (c) all of its obligations under the PPA required to be performed on or before the date hereof have been fulfilled.

4. Notices. Any notice, demand, or request required or authorized by this Assignment Agreement to be given by one Party to another Party shall be delivered in accordance with Section [__] and the Cover Sheet of the PPA and to the addresses of each of PPA Seller and PPA Buyer specified in the PPA. PPA Buyer agrees to notify [Assignee] of any updates to such notice information, including any updates provided by PPA Seller to PPA Buyer. Notices to [Assignee] shall be provided to the following address, as such address may be updated by [Assignee] from time to time by notice to the other Parties:

[_____
_____
_____
_____]

5. Miscellaneous. Sections [__] (Buyer's Representations and Warranties), [__] (Confidential Information), Sections [__] (Severability), [__] (Counterparts), [__] (Amendments), [__] (No Agency), [__] (Mobile-Sierra), [__] (Counterparts), [__] (Facsimile or Electronic Delivery), Section [__] (Binding Effect) and [__] (No Recourse to Members of Buyer) of the PPA are incorporated by reference into this Agreement, *mutatis mutandis*, as if fully set forth herein.

6. **U.S. Resolution Stay Provisions***.*

(a) In the event that [Assignee] becomes subject to a proceeding under (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder or (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder (a "U.S. Special Resolution Regime") the transfer from [Assignee] of this Agreement, and any interest and obligation in or under, and any property securing, this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any interest and obligation in or under, and any property securing, this Agreement were governed by the laws of the United States or a state of the United States.

(b) In the event that [Assignee] or an Affiliate becomes subject to a proceeding under a U.S. Special Resolution Regime, any Default Rights (as defined in 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable ("Default Right")) under this Agreement that may be exercised against [Assignee] are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

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(1) Limitation on Exercise of Certain Default Rights Related to an Affiliate's Entry Into Insolvency Proceedings. Notwithstanding anything to the contrary in this Agreement, the Parties expressly acknowledge and agree that:

i. PPA Buyer and PPA Seller shall not be permitted to exercise any Default Right with respect to this Agreement or any Affiliate Credit Enhancement that is related, directly or indirectly, to an Affiliate of [Assignee] becoming subject to receivership, insolvency, liquidation, resolution, or similar proceeding (an "Insolvency Proceeding"), except to the extent that the exercise of such Default Right would be permitted under the provisions of 12 C.F.R. 252.84, 12 C.F.R. 47.5 or 12 C.F.R. 382.4, as applicable; and

ii. Nothing in this Agreement shall prohibit the transfer of any Affiliate Credit Enhancement, any interest or obligation in or under such Affiliate Credit Enhancement, or any property securing such Affiliate Credit Enhancement, to a transferee upon or following an Affiliate of [Assignee] becoming subject to an Insolvency Proceeding, unless the transfer would result in PPA Buyer or PPA Seller being the beneficiary of such Affiliate Credit Enhancement in violation of any law applicable to PPA Buyer or PPA Seller, as applicable.

(2) U.S. Protocol. To the extent that PPA Buyer and PPA Seller each adhere to the ISDA 2018 U.S. Resolution Stay Protocol, as published by the International Swaps and Derivatives Association, Inc. as of July 31, 2018 (the "ISDA U.S. Protocol"), after the date of this Agreement, the terms of the ISDA U.S. Protocol will supersede and replace the terms of this Section 6.

(3) For purposes of this Section 6:

"Affiliate" is defined in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k).

"Credit Enhancement" means any credit enhancement or credit support arrangement in support of the obligations of [Assignee] under or with respect to this Agreement, including any guarantee, collateral arrangement (including any pledge, charge, mortgage or other security interest in collateral or title transfer arrangement), trust or similar arrangement, letter of credit, transfer of margin or any similar arrangement.

7. Governing Law, Jurisdiction.

(a) **Governing Law.**

THIS ASSIGNMENT AGREEMENT AND THE RIGHTS AND DUTIES OF THE PARTIES UNDER THIS ASSIGNMENT AGREEMENT WILL BE GOVERNED BY AND CONSTRUED, ENFORCED AND PERFORMED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, WITHOUT REFERENCE TO ANY CONFLICTS OF LAWS PROVISIONS THAT WOULD DIRECT THE APPLICATION OF ANOTHER JURISDICTION'S LAWS; PROVIDED, HOWEVER, THAT THE AUTHORITY OF THE PPA BUYER TO ENTER INTO AND PERFORM ITS OBLIGATIONS UNDER THIS ASSIGNMENT AGREEMENT SHALL BE DETERMINED IN ACCORDANCE WITH THE LAWS OF THE STATE OF CALIFORNIA.

(b) **[Reserved].**[4]

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[4] NOTE: Parties to negotiate and agree upon jurisdiction provision, if any, at the time of execution.

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Appendix 1

Assigned Rights and Obligations

"**PPA**" means [____].

"**Assignment Period**" means the period beginning on [_____] and extending until [_____], provided that in no event shall the Assignment Period extend past the earlier of (i) the termination of the Assignment Period pursuant to Section 2 of the Assignment Agreement and (ii) the end of the delivery period under the PPA; provided that applicable provisions of this Agreement shall continue in effect after termination of the Assignment Period to the extent necessary to enforce or complete, duties, obligations or responsibilities of the Parties arising prior to the termination.
"Assigned Products: include [____].

Further Information:

Subject to all of PPA Seller's rights under the PPA and the Assignment Agreement, PPA Seller shall continue to comply with its obligations associated with all Renewable Energy Credits corresponding to all Delivered Energy under the PPA pursuant to Section [__] of the PPA. All Assigned Product delivered by PPA Seller to [Assignee] shall be a sale made at wholesale, with [Assignee] reselling all such Assigned Product.

1. In connection with the assignment of the Assigned Products, PPA Buyer hereby assigns, transfers and conveys to [Assignee] its right to any amounts payable by PPA Seller to PPA Buyer pursuant to [Section __ (Guaranteed Energy Production)] of the PPA, and any such amount will be set forth in the consolidated invoice described in Section 1(b) of this Agreement.

2. The Assigned Prepay Quantity is set forth in Appendix 2; provided that (i) all Assigned Products shall be delivered pursuant to this Agreement during the Assignment Period and (ii) the Assigned Prepay Quantity is defined for the convenience of PPA Buyer and [Assignee] and shall have no impact on the obligations of the Parties under this Agreement or the PPA.

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Appendix 2

Assigned Prepay Quantity

[NOTE: To be set forth in a monthly volume schedule.]

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EXHIBIT S
PV RELIABILITY PERCENTAGE AND BATTERY STORAGE RELIABILITY PERCENTAGE

1. **General**

a. **Introduction and Purpose**

The purpose of the PV Reliability Percentage and Battery Storage Reliability Percentage calculations are to quantify the extent to which each project is shown to reliably follow the SMUD setpoint during a given Settlement Period.

It is the intent of the PV Reliability Percentage and Battery Storage Reliability Percentage calculations of this Exhibit S to avoid double counting the same event as contributing both to a reduced Availability Percentage and a reduced PV Reliability Percentage or Battery Storage Reliability Percentage. The Availability Percentage calculations of Exhibit U must be calculated prior to beginning the PV Reliability Percentage or Battery Storage Reliability Percentage calculations of this Exhibit S. The PV Reliability Percentage or Battery Storage Reliability Percentage calculations of this Exhibit S shall be adjusted to avoid counting as a reduction to the PV Reliability Percentage or Battery Storage Reliability Percentage, any interval for which a reduced PV Availability Percentage or Battery Storage Availability Percentage has already been calculated. For the avoidance of doubt, a time interval may be assessed both to reduce the Availability Percentage and the PV Reliability Percentage or Battery Storage Reliability Percentage, respectively, if it can be reasonably shown that each type of underperformance has been adjusted to avoid double counting.

b. Technical Disputes

At the request of either Party, an independent, professional engineer shall be retained by the Parties to resolve any dispute under this Exhibit S. The requesting Party may select an expert from the following pre-approved independent, professional engineers: Leidos, Luminate, DNV, and Black & Veatch. An expert not on this this pre-approved list will need to be agreed to by both Parties. Each Party shall cooperate reasonably with the other and with the selected expert to resolve the dispute expeditiously and efficiently. Each Party shall, within 30 days of the selection of the expert, provide to the expert in writing its position on the dispute and any back-up material supporting its position. The expert must agree with the position of one Party and may not implement a resolution to the dispute that differs from the proposal of a Party. The expert shall, within 30 days of the submission of Parties' positions, choose the Party position that, in the expert's determination, best reflects the appropriate resolution of the dispute. The Party whose position is not accepted by the expert shall pay all of the costs for the expert. For avoidance of doubt, the resolution of the dispute shall not apply to aspects of settlement that are included in other sections or exhibits of this PPA beyond this Exhibit S.

2. PV Reliability Percentage

a. Prerequisite Conditions for Reliability Percentage Intervals

The following conditions are required for any time interval to be included in the PV Reliability Percentage calculation:

(i) Solar Meter is operational and properly calibrated
(ii) SCADA system for Solar Project is operational and providing valid data

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(iii) Scheduled Energy is valid and in accordance with this Agreement

b. Calculation

PV Reliability Percentage is calculated using the following equation, averaged over all valid 5-minute intervals within a given Settlement Period.

$$\text{PVRP} = 100\% \times \left(1 - \frac{\text{SE} - \text{MTR}}{\text{X}}\right)$$

When SE >25% of CP, X = SE, otherwise X = 25% of CP

Where:

PVRP = PV Reliability Percentage
SE = Scheduled Energy
MTR = Solar Project output measured at Solar Meter
CP = Available PV Capacity

Any interval where MTR is greater than SE and the difference is less than 500 kW shall be adjusted to set MTR equal to the SE.

Any interval where MTR is less than SE shall be adjusted to set MTR equal to SE, except for any such deviation between MTR and SE where (x) the cause is attributable to mis-operation of Solar Project's power plant controller and (y) to the extent such deviation exceeds 1 MW. Such mis-operation of the power plant controller shall be prorated based on the extent to which the deviation was caused by controller mis-operation and adjusted to not include any deviation caused by lack of solar irradiance. Mis-operation of the power plant controller shall be evidenced by SCADA data showing that inverters are curtailed to a value below their maximum output in time intervals where they would otherwise be able to produce more power. In such intervals, the SE shall be replaced by an estimate of the expected power generation of the Solar Project for the ambient conditions for any intervals where the SE exceeds this estimate.

3. Battery Storage Reliability Percentage

a. Prerequisite Conditions for Reliability Percentage Intervals

The following conditions are required for any time interval to be included in the Battery Storage Reliability Percentage calculation:

(iv) Battery Storage Meter is operational and properly calibrated
(v) SCADA system for Battery Storage Project is operational and providing valid data
(vi) Scheduled Battery Storage is valid and in accordance with this Agreement

b. Calculation

Battery Storage Reliability Percentage is calculated using the following equation, averaged over all valid 5-minute intervals within a given Settlement Period.

$$\text{BSRP} = 100\% \times \left(1 - \frac{\text{SBS} - \text{MTR}}{\text{X}}\right)$$

When SBS >25% of CP, X = SBS, otherwise X = 25% of CP

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Where:

BSRP = Battery Storage Reliability Percentage
SBS = Scheduled Battery Storage
MTR = Charging Energy or Discharging Energy, as applicable, recorded at the Battery Storage Meter
CP = Available Storage Capacity

Any interval where MTR deviates from SBS by less than 500 kW shall be adjusted to set MTR equal to SBS.
The Battery Storage Reliability Percentage calculation shall account for deviations from SBS caused by failure to control ramp rate in accordance with Exhibit J.

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Exhibit T
Form of Surety

EXHIBIT __

FORM OF SURETY BOND

BOND NUMBER: _____
_____

FINANCIAL AND PERFORMANCE GUARANTEE BOND

KNOW ALL MEN BY THESE PRESENTS: That we, _____, a _____ limited liability company (hereinafter called the Principal), and _____ with its principal office at _____ located in the Continental United States, a corporation duly organized under the laws of the State of _____ (hereinafter called the Surety) as Surety, are held and firmly bound unto _____, a _____ (hereinafter called the Obligee), as Obligee, in the sum of _____ Dollars ($_____) for the payment of which sum well and truly to be made, we the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

This Financial and Performance Guarantee Bond (the "Bond") is being issued in connection with an Power Purchase and Sale Agreement between Principal and Obligee dated _____ (referred to as the "Agreement").

Now therefore, the condition of this obligation is such that if the Principal shall well and truly keep all the terms and conditions as outlined in the Agreement, then this obligation shall be null and void; otherwise to remain in full force and effect, until terminated or expired as set forth below.

Provided, however, this Bond is executed by the Surety and accepted by the Obligee subject to the following conditions:

1. No assignment of this Bond shall be effective without the written consent of the Surety.

2. This Bond shall be effective for a period of one (1) year with an effective date of _____and shall have an expiration date of _____, except that if the Surety has not provided written notice to the Obligee at least sixty (60) days prior to such expiration date that this Bond will terminate on such expiration date, this Bond shall automatically renew for an additional one-year period. Any notice by the Surety to the Obligor shall be sent by registered mail to the address below.

[insert address]

3. Such expiration shall not affect any liability incurred or accrued under this Bond prior to the effective date of such expiration. It is understood and agreed that the Obligee may recover the full amount of the Bond (less any previous amounts paid to the Obligee under the Bond) if Surety notifies Obligee that the Surety will not renew the Bond and, within thirty (30) days prior to the effective date of nonrenewal, the Obligee has not received replacement Performance Security (as defined in the Agreement).

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4. Provided, however, it shall be a condition precedent to any right of recovery herein that, in the event of any breach of any payment or performance obligation of Principal under the Agreement, a written notice of such breach shall be given by the Obligee to the Surety and the Surety will pay the amount set forth in the Obligee's notice within ten (10) Business Days (as defined below) after the Surety's receipt of such notice, subject to Section 7 below. "Business Days" means any day except a Saturday, Sunday, or a Federal Reserve Bank holiday in California.

5. This Bond is a primary obligation of the Surety, and such obligation shall not be affected by:

a. any modification, amplification, amendment, supplement, renewal or waiver of the Agreement or any of the terms or conditions of the Agreement;

b. any postponement or extension of the date on which any payment must be made by the Obligee pursuant to the Agreement and mutually agreed to by the Obligee and the Principal or postponement or extension of the date on which any payment must be made, or act must be performed, by the Principal thereunder;

c. any failure, omission, delay, waiver or refusal by the Obligee to exercise, in whole or in part, any right or remedy held by the Obligee with respect to the Agreement, except as to applicable statutes of limitation;

d. any legal disability of the Principal or the Surety;

e. any rights of subrogation, reimbursement, indemnity or contribution that the Surety or the Obligee may have against the Principal;

f. any lack of knowledge by the Surety as to the condition (including financial) of the Principal, since the Surety shall be responsible for obtaining its own knowledge of such condition;

g. any rights or defenses that are or may become available to the Surety by reason of Sections 2819 or 2845 of the California Civil Code; or

h. any termination of or change in corporate existence, structure or ownership of the Principal or the Surety, or any insolvency, bankruptcy, reorganization or other similar proceeding affecting the Principal or its assets.

6. No action, suit or proceeding shall be had or maintained against the Surety on this unless the same be brought or instituted within six (6) months after the termination or expiration of this Bond.

7. Regardless of the number of years this Bond is in force, the aggregate liability of the Surety shall not be cumulative in amounts from period to period and shall in no event exceed the amount set forth above, or as amended by rider.

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In witness whereof, said Principal and said Surety have caused this Bond to be duly signed and their seals affixed this ____ day of _____, ___.

_____

Principal

BY:_____

_____

Surety

BY:_____
Attorney-in-Fact

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EXHIBIT U
AVAILABILITY PERCENTAGE CALCULATIONS

1. General

a. Introduction and Purpose

The purpose of the Availability Percentage calculation is to measure the Availability of the equipment associated with the Solar Project and Battery Storage Project, respectively, and to allow the Availability for each facility to be compared with the Guaranteed Availability. Such Availability Percentage calculations are carried out with respect to a "Reporting Period" which is equal to the Settlement Period according to the requirements of the Agreement.

The Solar Project Availability Percentage calculation and the Battery Storage Project Availability Percentage calculation generally follows the International Electrotechnical Commission (IEC) Technical Specification 63019 (Edition 1.0 2019-05) titled "Photovoltaic power systems (PVPS) – Information model for availability".

Notwithstanding anything herein to the contrary, in the event that the calculated Availability Percentage is equal to or greater than the Guaranteed Availability, the Availability Percentage shall be deemed to be one hundred percent (100%) for all purposes hereunder.

b. Methods and Updates

For PV only, if inverters with capacity of 500 kW or less are utilized, the associated Solar Project Availability Percentage or Battery Storage Project Availability Percentage calculation, as applicable, shall assess the component Availability based upon the measured AC power for each inverter. If inverters with capacity greater than 500 kW are utilized, the associated Solar Project Availability Percentage calculation, shall assess the component Availability based upon the DC internal parallel bussed distribution (e.g. combiners by way of current measurement).

2. Solar Project Availability Percentage Calculation

a. Prerequisite Conditions for Availability Intervals

The following conditions are required for any time interval to be included in the Solar Project Availability Percentage Calculation:

(a) The average plane-of-array pyranometer readings report irradiance above 70 W/m2
(b) SMUD Setpoint is above 5 MWac, unless Solar Project is derated at or below 5 MWac not due to an Excused Event, in which case this condition is not required

b. Valid Availability Data Conditions

The following conditions are required for any time interval to be valid with respect to the Solar Project Availability Percentage calculation. Any time interval lacking any one of these

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requirements shall be considered an “Solar Invalid Data Time Interval”:

(a) Plane-of-array irradiance sensors (pyranometers and albedometers) are clean, calibrated, and operational per manufacturer recommendations
(b) Solar Meter is operational and properly calibrated
(c) SCADA system is operational and providing valid data

Solar Invalid Data Time Intervals shall be excluded from the Solar Project Availability Percentage calculation, provided that if more than 15% of potential time intervals meeting the requirements of Section 2(a) of this Exhibit U fail to meet the requirements of this Section 2(b) and if Seller is unable to provide an estimate of Availability from the available data, Buyer may, at its reasonable discretion, require Seller to include all Solar Invalid Data Time Intervals and assume 90% Availability or no change to the prior Availability determined in all such intervals. For non-communicating inverters, or inverters providing invalid data, such inverters shall be treated on a pro-rated basis for the purpose of determining the percent of time intervals qualifying as Solar Invalid Data Time Intervals.

c. Calculation

For each Reporting Period the Solar Project Availability Percentage is expressed as the average “Inverter Availability” of all inverters, where the Inverter Availability for each inverter is calculated as:

$$\text{SAP} = 100\% \times \left(1 - \frac{\text{TOH} - \text{EEH}}{\text{PH}}\right)$$

Where:

SAP = Availability Percentage for the Solar Project.

PH = total period hours in the relevant Reporting Period meeting the conditions of Sections 2(a) and 2(b) of this Exhibit U.

EEH = hours that the relevant inverter was unavailable due to an Excused PV Event

TOH = hours that the relevant inverter was unavailable due to any cause (inclusive of EEH)

All calculations shall utilize up to 60-minute averaged data derived from raw data collected at one-minute or smaller time increments where the conditions of Section 2(a) of this Exhibit U are satisfied.

For purposes of this Solar Project Availability Percentage calculation, “Excused PV Event” shall mean the total number of hours or partial hours that the relevant inverter was unavailable due to a Planned Outage, a Force Majeure event not already reflected in the Expected PV Capacity calculation, any test scheduled in accordance with the requirements of the Agreement, any circumstances at the high voltage-side of the Delivery Point or beyond that may limit Seller’s delivery of Product, any failure by Buyer to perform its obligations under this Agreement, any event or circumstance affecting the availability of the Solar Project associated with the Agrivoltaics FOP, except to the extend resulting from the fault or negligence of Seller.

For the purpose of identifying unavailable hours among EEH and TOH an inverter is unavailable when it is generating below 0.2% of its nameplate and when the Solar Meter reports generation that is more than 150kW below the Scheduled Energy.

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3. Battery Storage Project Availability Percentage Calculation

a. Prerequisite Conditions for Availability Intervals

The following condition is required for any time interval to be included in the Battery Storage Project Availability Percentage calculation:

(a) Notwithstanding Excused Battery Events, the Battery Storage Project is able, in whole or in part, to provide Battery Storage Product as a result of the Battery Storage Operating Restrictions.

b. Valid Availability Data Conditions

The following conditions are required for any time interval to be valid with respect to the Battery Storage Project Availability Percentage calculation and therefore included in the resulting calculations to determine the Battery Project Availability Percentage. Any time interval lacking any one of these requirements shall be considered a "Storage Invalid Data Time Interval" and therefore not included in the calculation to determine the Battery Storage Project Availability:

(a) The Battery Storage Meter is operational and properly calibrated

(b) SCADA system is operational and providing valid data

Storage Invalid Data Time Intervals shall be excluded from the Battery Storage Project Availability Percentage calculation provided, however, that if more than 10% of potential time intervals meeting the requirements of Section 3(a) of this Exhibit U fail to meet the requirements of this Section 3(b), and if Seller is unable to provide an estimate of Availability from the available data, Buyer may at its reasonable discretion require Seller to include all Storage Invalid Data Time Intervals and assume 90% Availability in all such intervals. For non-communicating inverters and batteries, or inverters and batteries providing invalid data, such inverters and batteries shall be treated on a pro-rated basis for the purpose of determining the percent of time intervals qualifying as Storage Invalid Data Time Intervals.

c. Calculation

For each Reporting Period the Battery Storage Project Availability Percentage is calculated as:

$$\text{BSAP} = 100\% \times \left(1 - \frac{\text{TOH} - \text{EBH}}{\text{PH}}\right)$$

Where:

BSAP = Availability Percentage for the Battery Storage Project

PH = total period hours in the relevant Reporting Period meeting the conditions of Sections 3(a) and 3(b) of this Exhibit U.

EBH = equivalent hours of battery unavailability due to an Excused Battery Event

TOH = equivalent hours of battery unavailability due to any cause (inclusive of EBH)

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All calculations shall utilize up to 60-minute averaged data derived from raw data collected at one-minute or smaller time increments where the conditions of Section 3(a) of this Exhibit U are satisfied.

For the purposes of this Battery Storage Project Availability Percentage calculation, "Excused Battery Event (EBH)" shall mean the total number of hours or partial hours in the Reporting Period (PH) that are not included as available hours due to a Planned Outage, a Force Majeure event, any Buyer dispatched tests scheduled in accordance with the Agreement, any circumstances at the high voltage-side of the Delivery Point or beyond that may limit Seller's delivery of Battery Storage Product, or any failure of Buyer to perform its obligations under this Agreement, any approved maintenance hours, Operating Restrictions in Exhibit J, Buyer breach or default.

For the purpose of identifying equivalent unavailable hours among EBH and TOH, the fractional Availability shall be calculated for each time interval as the average of the ratio of available Capacity in MW to Expected Battery Storage Capacity.

Example calculation:

Duration: a full hour consisting of 1-minute time intervals

Derated power and energy:

- 0.6 MW power derate due to offline PCS inverters in all intervals (not excused)
- 8.0 MWh energy derate due to Planned Outage in 30 1-minute intervals (excused)

TOH = $\frac{1}{2}\left[\left(\frac{60}{60}\text{minutes} \wedge \frac{0.6}{172}\text{MW}\right) + \left(\frac{30}{60}\text{minutes} \wedge \frac{8.0}{800}\text{MWh}\right)\right]$ = 0.004651 hours

EBH = $\frac{1}{2}\left[\left(\frac{60}{60}\text{minutes} \wedge \frac{0.6}{172}\text{MW}\right) + \left(\frac{30}{60}\text{minutes} \wedge \frac{8.0}{800}\text{MWh}\right)\right]$ = 0.002907 hours

PH = 1 hours

The Battery Storage Availability for this hour is:

$$100\% \times \left(1 - \frac{0.004651 - 0.002907}{1}\right) = 99.83\%$$

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EXHIBIT V
MONTHLY OPERATING REPORT

The monthly operating report shall include the following content, to the extent applicable and as may be revised by the Parties by mutual agreement.

1. Summary
    a. Safety & Environmental Summary
    b. Maintenance Summary
    c. Performance Summary
2. Plant Performance
    a. Energy and Insolation (Insolation is PV Only)
    b. Performance Metrics
    c. Performance Summary
    d. Equivalent full cycles per day, per month (BESS only)
    e. Average Battery SOC (BESS only)
    f. Total Energy throughput (all energy in and out) for Battery (BESS only)
    g. Capacity for Period
        i. Last Capacity test date
        ii. Actual Capacity v Budget Capacity
3. Lost Energy and Outage Events
    a. Forced Outage Events
        i. Summary and Planned Resolution
    b. Planned Outage Events
    c. Planned Outage(s) Next Month
    d. Top 10 Historic Outage & Downtime Events
4. Inverter & Battery PCS Availability
    a. Actual v Budget for reporting period
    b. Total hours for reporting period
    c. Excused Event Hours for reporting period
5. Health, Safety, & Environmental
    a. Safety Statistics
    b. Health, Safety, & Environmental Notes
    c. Environmental Incidents
6. Maintenance
    a. Reactive Maintenance Log
    b. Preventative Maintenance Log
    c. Preventative Maintenance Inspection Schedule
    d. Work Orders
    e. BESS thermal management downtime including HVAC system, air flow obstruction(s), etc. (BESS only)
7. Inventory
    a. Owners Inventory, Consumed & On-Order
8. Warranties
    a. PV Module Supply Agreement Warranty Claims (PV Only)
    b. Battery Supply Agreement Warranty Claims (BESS Only)
    c. Inverter & PCS Warranty Claims
    d. EPC Warranty Claims
    e. Warranty Work Orders
9. Visitors Log
10. Alarms & Maintenance Updates
    a. Top Five Inverter & Battery Alarms

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b. Top Ten SCADA Alarms
c. Annual Maintenance Plan Updates

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EXHIBIT W
MONTHLY SETTLEMENT AMOUNT EXAMPLE CALCULATIONS

The following are provided as example calculations for the purposes of determining the Monthly Settlement Amount:

Example Month A

Resource	Contract Price	X	Expected PV Capacity or Expected Battery Storage Capacity	=	Capacity Subtotal Payment	x	Availability Percentage	x	PV Reliability Percentage or Battery Storage Reliability Percentage	=	Total
Solar Project	$[redacted]		343,000		$[redacted]		96.0%		100%		$[redacted]
Battery Storage Project	$[redacted]		172,000		$[redacted]		99.0% (100%)		99.0%		$[redacted]
Monthly Settlement Amount											**$[redacted]**

Example Month B

Resource	Contract Price	X	Expected PV Capacity or Expected Battery Storage Capacity	=	Capacity Subtotal Payment	x	Availability Percentage	x	PV Reliability Percentage or Battery Storage Reliability Percentage	=	Total
Solar Project	$[redacted]		345,000		$[redacted]		96.0%		100%		$[redacted]
Battery Storage Project	$[redacted]		172,000		$[redacted]		99.0% (100%)		98.5%		$[redacted]
Monthly Settlement Amount											**$[redacted]**

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RESOLUTION NO. 23-09-06

WHEREAS, SMUD has an agreement for 1 Bcf of storage inventory with a storage provider in Northern California that expires on March 31, 2024; and

WHEREAS, a Request for Proposals (RFP) was issued to replace this agreement upon its expiration; and

WHEREAS, **Wild Goose Storage LLC (WGS)** provided "traditional" and "ratchet" bids in response to the RFP and was the successful bidder for a five-year term; and

WHEREAS, the new transaction with **WGS** will increase SMUD's storage capacity from 1 Bcf to 2 Bcf of inventory with ratcheted injection rate of 12,500-14,000 Dth/day and a withdrawal rate of 10,000-24,000 Dth/day; and

WHEREAS, reservation charges are $5 million per year and variable costs are expected to average $90,000 per year; and

WHEREAS, the increased costs of natural gas storage services are higher than the expiring contracts is due to unprecedented high energy prices and low storage events from last winter across the entire state of California; and

WHEREAS, this transaction will represent two-thirds of SMUD's total natural gas storage services and ensure the ability to provide reliability and flexibility during summer peaks and winter weather events and potential arbitrage opportunities; and

WHEREAS, SMUD has also contracted for early injection service as part of the five-year storage deal that will allow SMUD to begin injecting gas into the **WGS** facility as early as December 1, 2023; and

WHEREAS, the early injection service will allow SMUD the flexibility to move gas from the existing expiring contract into the new agreement; **NOW, THEREFORE**,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. This Board authorizes the Chief Executive Officer and General Manager, or his designee, to execute a five-year Firm Storage Service

(FSS) agreement for 2 Bcf of natural gas storage services with **Wild Goose Storage LLC (WGS)** for the period April 1, 2024, through March 31, 2029, substantially in the form of **Attachment D**.

Section 2. This Board further authorizes the Chief Executive Officer and General Manager, or his designee, to execute an FSS agreement for natural gas injection services with **WGS** for the period December 1, 2023, through March 31, 2024, substantially in the form of **Attachment E**.

Section 3. The Chief Executive Officer and General Manager, or his designee, is authorized to make future changes to the terms and conditions of the contract that, in his prudent judgment: (a) further the primary purpose of the contract; (b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract amounts and applicable contingencies.

Approved: September 21, 2023

INTRODUCED: DIRECTOR KERTH				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

FIRM STORAGE SERVICE

APPENDIX FSS

Wild Goose Storage LLC ("Wild Goose") and Sacramento Municipal Utility District ("Customer") hereby adopt Service Schedule FSS and MyHUBAccount Customer Access Procedures, along with their previously executed Storage Services Agreement dated April 01, 1999, and agree to the additional provisions contained in this Appendix FSS:

1. Term: April 1, 2024 to March 31, 2029, subject to the provisions of Service Schedule FSS.
   Inventory Account: 0940HUB009
   Inventory Capacity: 2,000,000 Dth
   Monthly Storage Demand Charge: $416,666.67

2. INVENTORY PROFILE:
   Maximum Customer Inventory: 2,000,000 DTH
   Maximum Daily Injection Quantity:

From Inventory (Dth)	To Inventory (Dth)	Inventory Percent Range	WILD GOOSE POOL WG	Total Maximum Daily Injection (Dth)
0	840,000	0.0% to 42.0%	14,000	14,000
840,001	2,000,000	42.0% to 100.0%	12,500	12,500

   Maximum Daily Withdrawal Quantity:

From Inventory (Dth)	To Inventory (Dth)	Inventory Percent Range	WILD GOOSE POOL WG	Total Maximum Daily Withdrawal (Dth)
2,000,000	1,280,000	100.0% to 64.0%	24,000	24,000
1,279,999	620,000	64.0% to 31.0%	22,000	22,000
619,999	0	31.0% to 0.0%	10,000	10,000

   Monthly Storage Demand Charge: $416,666.67 USD
   Total Storage Demand Charge: $25,000,000.00 USD

3. Service Commencement Point: WGSF
   Connecting Pipeline at WGSF: PGE
   Service Commencement Point Price Index: CITYGATE
   Designated Transportation Account at WGSF: WG0940N

4. Service Termination Point: WGSF
   Connecting Pipeline at WGSF: PGE
   ServiceTermination Point Price Index: CITYGATE
   Designated Transportation Account at WGSF: WG0940N

5. Injection Commodity Rate: $0.02 /Dth
Withdrawal Commodity Rate: $0.02 /Dth

6. Customer Injection Fuel Charge Election is fixed % of 0.50%
Customer Withdrawal Fuel Charge Election is fixed % of 0.50%

7. Wild Goose has agreed to waive section 5.3 of Schedule FSS - Firm Storage Service.

This storage transaction is pending approval of SMUD's Board of Directors on or before September 22, 2023. If the transaction is not approved on or before September 22, 2023 both parties agree that either party may cancel this transaction via written notice to the other. The parties agree to work in good faith to approve this transaction as stated.

The parties have entered into this Appendix FSS effective August 31, 2023.

Important Note:

This Appendix FSS will be final and binding in accordance with Article 2 of Service Schedule FSS unless Customer objects by notice in writing by 07:00 hours Pacific Clock Time on the next Business Day following the day of the fax transmission or electonic submission of this Appendix. Signatures are not required to effect the binding nature of the Transaction set forth in this Appendix FSS.The agreement of the Parties, as evidenced by this Appendix FSS, shall at all times be subject to such changes or modifications by the Public Utilities Commission of the State of California as said Commission may from time to time direct in the exercise of its jurisdiction.

Sacramento Municipal Utility District

PER: _____

NAME: _____

TITLE: _____

Wild Goose Storage LLC

PER: _____

NAME: Sheri Doell

TITLE: VP, Origination & Renewable

FAX: (403) 266-0636

FIRM STORAGE SERVICE

APPENDIX FSS

Wild Goose Storage LLC ("Wild Goose") and Sacramento Municipal Utility District ("Customer") hereby adopt Service Schedule FSS and MyHUBAccount Customer Access Procedures, along with their previously executed Storage Services Agreement dated April 01, 1999, and agree to the additional provisions contained in this Appendix FSS:

1. Term: December 1, 2023 to March 31, 2024, subject to the provisions of Service Schedule FSS.
   Inventory Account: 0940HUB009
   Inventory Capacity: 2,000,000 Dth
   Monthly Storage Demand Charge: $0.00

2. INVENTORY PROFILE:
   Maximum Customer Inventory: 2,000,000 DTH
   Maximum Daily Injection Quantity:

From Inventory (Dth)	To Inventory (Dth)	Inventory Percent Range	WILD GOOSE POOL WG	Total Maximum Daily Injection (Dth)
0	2,000,000	0.0% to 100.0%	20,000	20,000

   Maximum Daily Withdrawal Quantity:

From Inventory (Dth)	To Inventory (Dth)	Inventory Percent Range	WILD GOOSE POOL WG	Total Maximum Daily Withdrawal (Dth)
2,000,000	0	100.0% to 0.0%	0	0

   Monthly Storage Demand Charge: $0.00 USD
   Total Storage Demand Charge: $0.00 USD

3. Service Commencement Point: WGSF — Connecting Pipeline at WGSF: PGE
   Service Commencement Point Price Index: CITYGATE — Designated Transportation Account at WGSF: WG0940N

4. Service Termination Point: WGSF — Connecting Pipeline at WGSF: PGE
   ServiceTermination Point Price Index: CITYGATE — Designated Transportation Account at WGSF: WG0940N

5. Injection Commodity Rate: $0.02 /Dth
Withdrawal Commodity Rate: $0.00 /Dth

6. Customer Injection Fuel Charge Election is fixed % of 0.50%
Customer Withdrawal Fuel Charge Election is fixed % of 0.00%

7. Wild Goose has agreed to waive section 5.3 of Schedule FSS - Firm Storage Service.

This contract was created for EARLY INJECTION rights only. NO Withdrawal. On April 1, 2024 any inventory injected into this transaction #0940FSS014 shall be transferred to transferred into transaction #0940FSS015.

Commodity and fuel will be charged on injection.

The parties have entered into this Appendix FSS effective August 31, 2023.

Important Note:

This Appendix FSS will be final and binding in accordance with Article 2 of Service Schedule FSS unless Customer objects by notice in writing by 07:00 hours Pacific Clock Time on the next Business Day following the day of the fax transmission or electonic submission of this Appendix. Signatures are not required to effect the binding nature of the Transaction set forth in this Appendix FSS.The agreement of the Parties, as evidenced by this Appendix FSS, shall at all times be subject to such changes or modifications by the Public Utilities Commission of the State of California as said Commission may from time to time direct in the exercise of its jurisdiction.

Sacramento Municipal Utility District

PER: _____

NAME: _____

TITLE: _____

Wild Goose Storage LLC

PER: _____

NAME: Sheri Doell

TITLE: VP, Origination & Renewable

FAX: (403) 266-0636

WHEREAS, by Resolution No. 18-07-03, adopted July 19, 2018, this Board authorized a contract with **United Health Care Insurance Company (United HealthCare)** to provide administration of SMUD's medical benefits for an initial three-year period from January 1, 2019, to December 31, 2021, to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 19-10-06, adopted October 17, 2019, this Board approved 2020 premiums through December 31, 2020; and

WHEREAS, by Resolution No. 20-09-05, adopted September 17, 2020, this Board approved 2021 premiums through December 31, 2021; and

WHEREAS, by Resolution No. 21-10-06, adopted October 21, 2021, this Board authorized an extension to the **United HealthCare** contract to provide medical benefits for the year 2022 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 22-10-13, adopted October 20, 2022, this Board authorized an extension to the **United HealthCare** contract to provide medical benefits for the year 2023 to SMUD employees, retirees and eligible dependents; and

WHEREAS, it would be in SMUD's best interest to extend the medical benefit contract with **United HealthCare** and approve the 2024 premiums through December 31, 2024, because of their distinctive services and relatively lower cost compared to other health plans; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. The Chief Executive Officer and General Manager, or his designee, is authorized, on behalf of the SMUD, to approve 2024 medical insurance rates and extend Contract No. 4500110473 with **United Health Care Insurance Company** by one year, for the period January 1, 2024, through December 31, 2024; 2024 cost estimated at $39.1 million pursuant to the premiums set forth in **Attachment F** hereto and made a part hereof.

Section 2. The Chief Executive Officer and General Manager, or his designee, is authorized to make future changes to the terms and conditions of

the contract that, in his prudent judgment: (a) further the primary purpose of the contract; (b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract amounts and applicable contingencies.

Approved: September 21, 2023

INTRODUCED: DIRECTOR KERTH				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

Attachment F
to Resolution No. 23-09-07

2024 Active Employees Medical Rates

Active Employees	Basic		
Carrier	Employee Only	Employee + 1	Employee + Family
Kaiser HMO – High Plan	$745.70	$1,491.40	$2,237.10
Kaiser HMO – Low Plan	$706.58	$1,413.16	$2,119.74
United Healthcare Signature Value HMO – High Plan	$1,256.07	$2,650.30	$3,793.32
United Healthcare Signature Value HMO – Low Plan	$1,129.11	$2,382.41	$3,409.95
United Healthcare Signature Alliance HMO – High Plan	$1,111.76	$2,345.81	$3,357.51
United Healthcare Signature Alliance HMO – Low Plan	$999.39	$2,108.70	$3,018.19
United Healthcare High Deductible Health Plan	$982.76	$2,073.63	$2,967.93
United Healthcare PPO Plan	$1,899.89	$4,008.77	$5,737.67

2024 Retiree Medical Rates

Retiree	Basic			Medicare	
Carrier	Retiree Only	Retiree + 1	Retiree + Family	Retiree	Retiree + 1
Kaiser HMO	$745.70	$1,491.40	$2,237.10	$283.87	$567.74
Kaiser Medicare Unassigned*	N/A	N/A	N/A	$1,834.82	$3,669.64
Kaiser Medicare Part A only**	N/A	N/A	N/A	$1,424.17	$2,848.34
United Healthcare Signature Value HMO	$1,256.07	$2,650.30	$3,793.32	N/A	N/A
United Healthcare Signature Alliance HMO	$1,111.76	$2,345.81	$3,357.51	N/A	N/A
United Healthcare PPO – In CA	$1,899.89	$4,008.77	$5,737.67	N/A	N/A
United Healthcare PPO – Out Of CA	$1,899.89	$4,008.77	$5,737.67	N/A	N/A
United Healthcare Medicare Advantage	N/A	N/A	N/A	$428.88	$857.76

* Age 65+ retiree – not enrolled in Medicare – transitional plan
** Have Medicare Part A due to disability but not enrolled in Medicare Part B due to age (under 65)

WHEREAS, by Resolution No. 11-09-03, adopted September 1, 2011, this Board authorized a contract with **Kaiser Permanente (Kaiser)** to provide medical benefits for the year 2012 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 12-09-03, adopted September 6, 2012, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2013 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 13-09-04, adopted September 5, 2013, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2014 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 14-08-09, adopted August 21, 2014, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2015 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 15-09-04, adopted September 3, 2015, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2016 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 16-10-03, adopted October 6, 2016, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2017 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 17-09-04, adopted September 21, 2017, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2018 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 18-07-04, adopted July 19, 2018, this Board authorized an extension of the **Kaiser** contract to provide medical

benefits for the year 2019 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 19-10-07, adopted October 17, 2019, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2020 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 20-09-06, adopted September 17, 2020, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2021 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 21-10-07, adopted October 21, 2021, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2022 to SMUD employees, retirees and eligible dependents; and

WHEREAS, by Resolution No. 22-10-14, adopted October 20, 2022, this Board authorized an extension of the **Kaiser** contract to provide medical benefits for the year 2023 to SMUD employees, retirees and eligible dependents; and

WHEREAS, it would be in SMUD's best interest to extend the medical benefit contract with **Kaiser** and approve the 2024 premiums through December 31, 2024, because of their distinctive services and relatively lower cost compared to other health plans; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. The Chief Executive Officer and General Manager, or his designee, is authorized, on behalf of the SMUD, to approve 2024 medical insurance rates and extend Contract No. 4500043215 with **Kaiser Permanente** by one year, for the period January 1, 2024, through December 31, 2024; 2024 cost estimated at $30.7 million pursuant to the premiums set forth in **Attachment G** hereto and made a part hereof.

Section 2. The Chief Executive Officer and General Manager, or his designee, is authorized to make future changes to the terms and conditions of

the contract that, in his prudent judgment: (a) further the primary purpose of the contract; (b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract amounts and applicable contingencies.

Approved: September 21, 2023

INTRODUCED: DIRECTOR KERTH				
SECONDED: DIRECTOR TAMAYO				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

Attachment G
to Resolution No. 23-09-08

2024 Active Employees Medical Rates

Active Employees	Basic		
Carrier	Employee Only	Employee + 1	Employee + Family
Kaiser HMO – High Plan	$745.70	$1,491.40	$2,237.10
Kaiser HMO – Low Plan	$706.58	$1,413.16	$2,119.74
United Healthcare Signature Value HMO – High Plan	$1,256.07	$2,650.30	$3,793.32
United Healthcare Signature Value HMO – Low Plan	$1,129.11	$2,382.41	$3,409.95
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United Healthcare PPO Plan	$1,899.89	$4,008.77	$5,737.67

2024 Retiree Medical Rates

Retiree	Basic			Medicare	
Carrier	Retiree Only	Retiree + 1	Retiree + Family	Retiree	Retiree + 1
Kaiser HMO	$745.70	$1,491.40	$2,237.10	$283.87	$567.74
Kaiser Medicare Unassigned*	N/A	N/A	N/A	$1,834.82	$3,669.64
Kaiser Medicare Part A only**	N/A	N/A	N/A	$1,424.17	$2,848.34
United Healthcare Signature Value HMO	$1,256.07	$2,650.30	$3,793.32	N/A	N/A
United Healthcare Signature Alliance HMO	$1,111.76	$2,345.81	$3,357.51	N/A	N/A
United Healthcare PPO – In CA	$1,899.89	$4,008.77	$5,737.67	N/A	N/A
United Healthcare PPO – Out Of CA	$1,899.89	$4,008.77	$5,737.67	N/A	N/A
United Healthcare Medicare Advantage	N/A	N/A	N/A	$428.88	$857.76

* Age 65+ retiree – not enrolled in Medicare – transitional plan
** Have Medicare Part A due to disability but not enrolled in Medicare Part B due to age (under 65)

President Sanborn then turned to Discussion Calendar Item 13, to adopt a resolution to make changes to SMUD's Rates, Rules and Regulations proposed by the Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services (Volumes 1 & 2) dated June 15, 2023 ("CEO & GM Report").

Alcides Hernandez, Manager of Revenue Strategy, gave a presentation on Item 13. A copy of the slides used in his presentation is attached to these minutes.

Mark Graham, a member of the public from Elk Grove, spoke about the question of whether electric rates are imposed. He expressed his opinion that they are. He then spoke of cost justification and asked the Board to read the 2022 Rate Costing Study. He stated he believed total marginal cost must be shown in terms of dollars per kilowatt hours. He asked the Board to direct staff to comment on Alternative Recommendation Two. He provided excerpts from the PG&E Annual Report, a copy of which is attached to these minutes.

Public comment on Agenda Item 13, copies of which are attached to these minutes, was received from the following members of the public:

- Kyle White
- Tamara Eugene-Raja
- John

After some discussion, Director Tamayo moved for approval of Discussion Calendar Item 13, Director Kerth seconded, and Resolution No. 23-09-09 was approved by a vote of 6-0, with Director Bui-Thompson absent.

RESOLUTION NO. 23-09-09

WHEREAS, on June 15, 2023, the Chief Executive Officer and General Manager released the "Chief Executive Officer & General Manager's Report and Recommendation on Rates and Services, *Volumes 1 and 2*" (the CEO & GM Report), which is incorporated by reference herein; and

WHEREAS, by Resolution 23-06-06, adopted June 15, 2023, a public hearing on the CEO & GM Report was scheduled for August 30, 2023, at 6:00 p.m.; and

WHEREAS, notices of the hearing were duly published in the *Sacramento Bee* on June 22, June 28 and July 3, 2023; and

WHEREAS, pursuant to SMUD Ordinance No. 15-1, SMUD conducted the two required public workshops on July 13, 2023, and August 3, 2023, to receive and respond to customer comments and questions; and

WHEREAS, in compliance with Government Code Section 54999, SMUD sent 168 written notifications by certified mail on June 28, 2023, and June 29, 2023, describing the rate proposal to local school districts, county offices of education, community college districts, California State University, the University of California, and state agencies; and

WHEREAS, SMUD held two qualifying public workshops, contacted over 1,200 community organizations and neighborhood associations leaders via email, letter or phone call invitations to offer an in-person presentation, sent emails to over 276,000 customers and organizations, conducted over 30 individual presentations to community neighborhood and business organizations, over 300 community and business partners were provided content and were asked to share information regarding the rate proposal with their members and networks, and an additional 55 local agency elected officials were sent information packets with an offer of in-person presentations, which resulted in no meetings being held; and

WHEREAS, SMUD provided all customers information about the rate proposal via email, mail newsletters, and through the rate change proposal

website on www.smud.org/RateInfo, which received approximately 1,333-page views; and

WHEREAS, SMUD received from members of the public written questions, as well as comments and alternative recommendations to the rate changes proposed; and

WHEREAS, the public hearing was held on August 30, 2023, and was conducted in a hybrid format; on ZoomGov/Granicus and at SMUD Headquarters. All interested persons were given an opportunity to comment and submit testimony; and

WHEREAS, pursuant to SMUD Ordinance No. 15-1, this resolution was introduced on August 30, 2023 by this Board to be circulated for a minimum of ten calendar days for public review, input, and comment; and

WHEREAS, the CEO & GM Report set forth in detail the factors necessitating the proposed rate action, including the need to meet SMUD's financial targets in years 2024 and 2025, consisting of:

- Increased capital spending of approximately $370 million toward key projects such as the Solano 4 Wind Turbine Project, several solar and storage projects, our long-duration energy storage projects, substation and line capacity projects to ensure our grid stays reliable, and reliability projects for our hydro facilities and thermal generation plants; and
- Commodity costs are increasing by approximately $85 million annually to meet new state Renewable Portfolio Standards requirements. SMUD is investing in clean energy resources like more wind, solar, geothermal, hydropower, battery storage and biogas to meet updated state requirements; and
- Increased spending of approximately $10 million to prevent and mitigate wildfires. We're also investing to improve our reliability and visibility into outage responses to severe winter storms; and

- Increased spending of about $15M in electric vehicles, rooftop solar and battery storage, and electrification of homes & businesses; and
- Inflationary impacts, including higher cost of labor, materials, services, and equipment are increasing our operating costs by approximately $25 million annually; and
- Global supply chain impacts that have disproportionately impacted costs for certain key items, for example, a 72% increase in costs for distribution substation transformers, a 40% increase in costs for line transformers and station equipment, and a 24% increase in costs for wood and steel; and

WHEREAS, SMUD continues to use a risk-based approach to prioritize spending while looking to find ways to offset higher costs and ensure that the required rate increases stay within general inflation; and

WHEREAS, SMUD launched an Operational Excellence process to identify ways to deliver significant, sustainable savings and create permanent cost reductions and operational efficiencies, which has resulted in savings of approximately $60 million through a combination of one time and ongoing savings that reduced the amount of the proposed rate increases; and

WHEREAS, SMUD developed an integrated Grant Strategy Framework, which will best position us to secure alternative sources of funding to help offset or reduce costs for new infrastructure, electricity supply resources and help meet customer needs; and

WHEREAS, it is necessary for SMUD to increase all rate components of its retail rates by two and three quarters percent (2.75%) for all customers effective January 1, 2024, and two and three quarters percent (2.75%) for all customers effective May 1, 2024, and two and three quarters percent (2.75%) for all customers effective January 1, 2025, and two and three quarters percent (2.75%) for all customers effective May 1, 2025, in order to continue to meet the objectives and metrics set forth in this Board's Strategic Directions; and

WHEREAS, the recommendations in the CEO & GM Report include minor language amendments in Rate Schedules R and R-TOD to remove legacy residential rates that are no longer applicable; consolidate holidays into one section; remove an unused Critical Peak Pricing (CPP) rate category; and clarify that the CPP rate is required only for customers participating in certain Solar and Storage Rate (SSR) incentive programs; and

WHEREAS, the recommendations in the CEO & GM Report include modifications to the language related to the residential three-phase rate option to allow for flexibility for multi-family residential buildings that have been converted from commercial facilities; and

WHEREAS, the recommendations in the CEO & GM Report include modifying Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4 to remove all sections, references, tables and rates related to the Legacy Commercial Rates and the transition to the restructured rates, and to reflect that the rates in the tariffs are standard rates as opposed to mandatory; and

WHEREAS, SMUD's Energy Assistance Program Rate (EAPR) provides discounts based on customers' Federal Poverty Level (FPL). SMUD recognizes that EAPR customers will be impacted the most by the rate increases, especially those customers in the 0-50% FPL category, whose incomes are some of the lowest in Sacramento. To help these customers, SMUD will create a new EAPR Stabilization Fund (ESF) to provide an additional monthly discount of up to $35 funded by discretionary non-retail rates revenue; and

WHEREAS, the Hydro Generation Adjustment (HGA) tariff specifies that precipitation will be measured at Pacific House, however, that measuring station may not be able to continue reporting precipitation data in the future; and

WHEREAS, the recommendations in the CEO & GM Report include modifying Rate Schedule HGA to change the precipitation measuring station from Pacific House to Fresh Pond and updating the generation adjustment to account for the change in geographical location; and

WHEREAS, the Western Area Power Administration (WAPA) produces hydro generation power through its Central Valley Project (CVP), and SMUD has a contract to purchase some of the power. SMUD currently has a WAPA Rate Stabilization Fund (WRSF) that is used to balance variances in energy received – in years with more hydro generation than is forecasted funds are added into the WRSF, and in years with less hydro generation than forecast, funds are transferred out of the WRSF to reduce the impact of having to purchase power and/or fuel on the open market; and

WHEREAS, the recommendations in the CEO & GM Report include adding the WAPA hydro generation mechanism to Rate Schedule HGA, which will help stabilize commodity costs by balancing years of higher precipitation and WAPA energy deliveries with years of lower precipitation and WAPA energy deliveries; and

WHEREAS, the recommendations in the CEO & GM Report include updating the language in Rate Schedule Campus Billing (CB) to improve clarity and reflect current practices, including removing all references to the Data Service Meter Rental fee; updating the "Transmission – 69 kV or higher" service voltage to "Subtransmission – 69 kV or higher"; replacing the term "grandfathered" with "legacy"; and updating outdated references to staff titles; and

WHEREAS, the recommendations in the CEO & GM Report include adding language to Rate Schedule DWS clarifying that SMUD has the right to use available distribution capacity to serve its own customer load before providing capacity to third parties to wheel power across SMUD's distribution system; and

WHEREAS, the recommendations in the CEO & GM Report include adding language in Rate Schedules AG, CI-TOD1, CI-TOD2, CI-TOD3, CI-TOD4, R, and R-TOD clarifying that customers installing, interconnecting and operating equipment to self-supply all of their power needs and use SMUD to only supply backup power will be subject to the Generator Standby Service Charge. The recommendations also include updating the name of the charge to

the Standby Service Charge to accommodate the different types of technology that may be used by to reflect current practices; and

WHEREAS, the recommendations in the CEO & GM Report include aligning SMUD rate holidays with the current holidays established by the federal government. This change will remove Lincoln's Birthday, add Juneteenth National Independence Day as a rate holiday, and rename Columbus Day to Indigenous Peoples' Day/Columbus Day. The recommendations also include modifying the text prior to the list of holidays in the rate schedules to improve clarity in Rate Schedules AG, CI-TOD1, CI-TOD2, CI-TOD3, CI-TOD4, GS-TDP and R-TOD; and

WHEREAS, the recommendations in the CEO & GM Report include adding language to Rule and Regulation 10 to establish the method to bill for unauthorized use of non-residential service, simplifying the current process, moving the language regarding unauthorized use of residential electrical service from Rate Schedule R to Rule and Regulation 10, and modifying the language slightly to allow time-of-day rates to be used if meter data is available; and

WHEREAS, the recommendations in the CEO & GM Report include adding a definition for distribution system to clearly identify what is considered part of SMUD's distribution system in Rule and Regulation 1; and

WHEREAS, the recommendations in the CEO & GM Report include updating Rule and Regulation 18 to clarify existing practice that tenants of mobile home parks that use submetering are charged the Master-Metered Multifamily Accommodation and Mobile Home Park (RSMM) rate; and

WHEREAS, the recommendations in the CEO & GM Report, on balance, meet the competitive rate targets and the rate design metrics in Strategic Direction 2, Competitive Rates, including:

- The Board establishes a rate target of 18 percent below Pacific Gas & Electric Company's published rates on a system average basis. In addition, the Board establishes a rate target of at least 10 percent below PG&E's published rates for each customer class;

- SMUD's rates shall be competitive with other local utilities on a system average basis;
- In addition, SMUD's rates shall be designed to balance and achieve the following goals:
  - Reflect the cost of energy when it is used or exported to the SMUD grid;
  - Reduce consumption during periods of high system demand;
  - Encourage energy efficiency, conservation and carbon reduction;
  - Encourage cost effective and environmentally beneficial Distributed Energy Resources (DERs) (examples of DERs include but are not limited to rooftop solar, battery storage and energy reduction applications);
  - Minimize the rate of change in the transition from one rate design to another;
  - Provide customers flexibility and choices;
  - Be as simple and easy to understand as possible;
  - Address the needs of people with low incomes and severe medical conditions; and
  - Equitably allocate costs across and within customer classes; and

WHEREAS, the recommendations in the CEO & GM Report will ensure SMUD meets or exceeds the financial targets in Strategic Direction 3, Access to Credit Markets, and continues to meet the metrics and targets in the other Strategic Direction adopted by this Board, including those addressing reliability, customer relations, environmental leadership, and resource planning; and

WHEREAS, in light of the adoption of Proposition 26 on November 2, 2010, which precludes certain new fees, levies or charges but is not retroactive as to local governments, this Board desires to maintain certain pre-Proposition 26 rates. This Board understands that Proposition 26 does not vitiate

legislation adopted prior to November 3, 2010, and any changes in rates since this date are cost-justified under the analysis in the respective Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services that supported the adoption of the rates; and

WHEREAS, the recommendations to increase all rate components of SMUD retail rates 2.75% on January 1, 2024, 2.75% on May 1, 2024, 2.75% on January 1, 2025 and 2.75% on May 1, 2025 for all customer classes are made on an across-the-board basis to reflect SMUD's cost increases of proportionate impact on all customer classes on average and therefore does not require an examination of the allocation of costs among customer classes or of class definitions; and

WHEREAS, the recommendation to establish a WAPA hydro generation mechanism to Rate Schedule HGA will mitigate the financial impact of variations in the amount of energy delivered by WAPA. Because the cost of service includes the cost of maintaining sufficient reserves, the proposed rate change does not violate Proposition 26; and

WHEREAS, the recommendation to apply the Generator Standby Service Charge to microgrids that self-supply their own power and rely on SMUD only for back-up service as needed, recovers the cost of this standby service and therefore does not violate Proposition 26; and

WHEREAS, the recommendation to establish and maintain an ESF that provides an additional discount to customers with income below 50% of the FPL will be funded by available sources of discretionary revenue. The additional discount will be determined on an annual basis and will depend on the amount of available discretionary, non-rate revenue from proceeds of late fees, wholesale charges, transmission sales, or any other discretionary source of revenue. While Proposition 26 restricts the use of retail rate revenue to subsidize low-income discounts that were not in place when the measure was adopted, it does not restrict the use of discretionary revenue and therefore this additional discount is not subject to Proposition 26; and

WHEREAS, this Board has carefully considered the CEO & GM Report public comment, input, and alternatives from community meetings, public rate workshops, the noticed public hearing, and comments received by mail, telephone and email; and

WHEREAS, this Board finds that the proposed action is reasonable and in the best interests of the public and SMUD's customers; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF SACRAMENTO MUNICIPAL UTILITY DISTRICT:

RATE INCREASE FOR RESIDENTIAL RATES:

a. Effective January 1, 2024, adopt an increase in residential service rates by two and three quarters percent (2.75%). The increases will apply to all residential rates. The increases apply to the System Infrastructure Fixed Charge (SIFC), as well as the electricity usage charges and miscellaneous charges on customer bills.

b. Effective May 1, 2024, adopt an increase in residential service rates by two and three quarters percent (2.75%). The increases will apply to all residential rates. The increases apply to the SIFC, as well as the electricity usage charges and miscellaneous charges on customer bills.

c. Effective January 1, 2025, adopt an increase in residential service rates by two and three quarters percent (2.75%). The increases will apply to all residential rates. The increases apply to the SIFC, as well as the electricity usage charges and miscellaneous charges on customer bills.

d. Effective May 1, 2025, adopt an increase in residential service rates by two and three quarters percent (2.75%). The increases will apply to all residential rates. The increases apply to the SIFC, as well as the electricity usage charges and miscellaneous charges on customer bills.

Prices in the tariffs may reflect minor rounding differences.

Revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS TO RATE SCHEDULES R AND R-TOD:

e. Effective September 22, 2023, remove Section I, Subsection B of Rate Schedule R.

f. Effective September 22, 2023, remove Section II, Subsection B of Rate Schedule R.

g. Effective September 22, 2023, remove Section I, Subsection A, Subsection 2 of Rate Schedule R-TOD.

h. Effective September 22, 2023, modify Section I, Subsection A, Subsection 3 of Rate Schedule R-TOD as follows:

> *This rate has five kilowatt-hour (kWh) prices, depending on the time-of-day and season as shown ~~below. Holidays are detailed~~ in Section V. Conditions of Service* ***along with the holidays.***

i. Effective September 22, 2023, consolidate and move the time-of-day tables from Section I, Subsection A, Subsection 3 and Section I, Subsection C, Subsection 5 to Section V, Subsection A in Rate Schedule R-TOD.

j. Effective September 22, 2023, remove Section I, Subsection B of Rate Schedule R-TOD.

k. Effective September 22, 2023, modify Section I, Subsection C, of Rate Schedule R-TOD as follows:

> *Optional Critical Peak Pricing (CPP) Rate (rate category~~ies~~ RTC1 ~~and RTC2~~)*

l. Effective September 22, 2023, modify the language in Section I, Subsection C, Subsection 1 of Rate Schedule R-TOD as follows:

> *The CPP rate is available as of June 1, 2022 for customers who are participating in a qualifying program. Customers that have accepted a storage incentive under ~~the~~* ***certain*** *Solar and Storage Rate incentive program~~s~~ are required to enroll in this rate for a duration as determined by SMUD program rules posted on* www.smud.org.

m. Effective September 22, 2023, modify Section I, Subsection C, Subsection 5 of Rate Schedule R-TOD as follows:

> *This rate has five kilowatt-hour (kWh) prices, depending on the time-of-day and season as shown ~~below. Holidays are detailed~~ in Section V. Conditions of Service* ***along with the holidays.***

n. Effective September 22, 2023, remove Section II, Subsection B of Rate Schedule R-TOD.

o. Effective September 22, 2023, modify Section II, Subsection D of Rate Schedule R-TOD as follows:

> *Plug-In Electric Vehicle Credit (rate categories RT02~~, RT01~~* ***and~~,~~*** *RTC1 ~~and RTC2~~)*

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS TO THE THREE-PHASE CHARGE:

p. Effective September 22, 2023, modify Section IV, Subsection J of Rate Schedule R as follows:

> *This option is open to customers located in areas where three-phase service is available. A Special Facilities fee ~~is~~* ***may be*** *charged to cover the additional costs for providing this service. This charge is in addition to the SIFC.*

q. Effective September 22, 2023, modify Section IV, Subsection H of Rate Schedule R-TOD as follows:

> *This option applies to customers located in areas where three-phase service is available. A Special Facilities fee ~~is~~* ***may be*** *charged to cover the additional costs for providing this service. This charge is in addition to the System Infrastructure Fixed Charge.*

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

RATE INCREASE FOR AGRICULTURAL AND COMMERCIAL & INDUSTRIAL RATES:

a. Effective January 1, 2024, Commercial & Industrial Time-of-Day, General Service Temperature Dependent, Agricultural Service, Distribution Wheeling Services, and Combined Heat & Power Distributed Generation rates (Rate Schedules AG, CHP, CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4, DWS and GS-TDP) shall be increased by two and three quarters percent (2.75%) through the following components:

- Electricity Usage Charges;
- System Infrastructure Fixed Charges;
- Summer Peak Demand Charges;
- Site Infrastructure Charges;

- Maximum Demand Charges;
- Standby Service Charges;
- Power Factor and other miscellaneous charges;
- Distribution Wheeling Charges;
- Reserved Capacity Charges/Rates.

b. Effective May 1, 2024, Commercial & Industrial Time-of-Day, General Service Temperature Dependent, Agricultural Service, Distribution Wheeling Service, and Combined Heat & Power Distributed Generation rates, (Rate Schedules AG, CHP, CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4, DWS and GS-TDP) shall be increased by two and three quarters percent (2.75%) through the following components:

- Electricity Usage Charges;
- System Infrastructure Fixed Charges;
- Summer Peak Demand Charges;
- Site Infrastructure Charges;
- Maximum Demand Charges;
- Standby Service Charges;
- Power Factor and other miscellaneous charges;
- Distribution Wheeling Charges;
- Reserved Capacity Charges/Rates.

c. Effective January 1, 2025, Commercial & Industrial Time-of-Day, General Service Temperature Dependent, Agricultural Service, Distribution Wheeling Services, and Combined Heat & Power Distributed Generation rates (Rate Schedules AG, CHP, CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4, DWS and GS-TDP) shall be increased by two and three quarters percent (2.75%) through the following components:

- Electricity Usage Charges;
- System Infrastructure Fixed Charges;
- Summer Peak Demand Charges;
- Site Infrastructure Charges;
- Maximum Demand Charges;

- Standby Service Charges;
- Power Factor and other miscellaneous charges;
- Distribution Wheeling Charges;
- Reserved Capacity Charges/Rates.

d. Effective May 1, 2025, Commercial & Industrial Time-of-Day, General Service Temperature Dependent, Agricultural Service, Distribution Wheeling Service, and Combined Heat & Power Distributed Generation rates, (Rate Schedules AG, CHP, CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4, DWS and GS-TDP) shall be increased by two and three quarters percent (2.75%) through the following components:

- Electricity Usage Charges;
- System Infrastructure Fixed Charges;
- Summer Peak Demand Charges;
- Site Infrastructure Charges;
- Maximum Demand Charges;
- Standby Service Charges;
- Power Factor and other miscellaneous charges;
- Distribution Wheeling Charges;
- Reserved Capacity Charges/Rates.

Prices in the tariffs may reflect minor rounding differences.

Revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS TO RATE SCHEDULES CI-TOD1, CI-TOD2, CI-TOD3 AND CI-TOD4

a. Effective September 22, 2023, remove all sections, references to and prices for the metered Legacy Commercial Rates, and the transition to the new time-of-day rates in Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4.

b. Effective September 22, 2023, remove all sections and references to the term “restructured” in Rate Schedules CI-TOD1, CI-TOD2, CI-

TOD3 and

CI-TOD4.

c. Effective September 22, 2023, replace the term “mandatory” with the phrase, “includes the standard rates” in Section I of Rate Schedules CI-TOD1,

CI-TOD2, CI-TOD3, and CI-TOD4.

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

RATE INCREASE FOR STREET/TRAFFIC/LIGHTING RATES

a. Effective January 1, 2024, Lighting Services (Rate Schedules SLS, TSS, TC ILS and NLGT) billing components shall be increased by two and three quarters percent (2.75%). The rate increases do not apply to monthly leasing and maintenance charges for street lighting lamps and fixtures, which are reviewed annually.

b. Effective May 1, 2024, Lighting Services (Rate Schedules SLS, TSS, TC ILS and NLGT) billing components shall be increased by two and three quarters percent (2.75%). The rate increases do not apply to monthly leasing and maintenance charges for street lighting lamps and fixtures, which are reviewed annually.

c. Effective January 1, 2025, Lighting Services (Rate Schedules SLS, TSS, TC ILS and NLGT) billing components shall be increased by two and three quarters percent (2.75%). The rate increases do not apply to monthly leasing and maintenance charges for street lighting lamps and fixtures, which are reviewed annually.

d. Effective May 1, 2025, Lighting Services (Rate Schedules SLS, TSS, TC ILS and NLGT) billing components shall be increased by two and three quarters percent (2.75%). The rate increases do not apply to monthly leasing and maintenance charges for street lighting lamps and fixtures, which are reviewed annually.

The prices in the tariff may reflect minor rounding differences.

Revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS TO RATE SCHEDULE ENERGY ASSISTANCE PROGRAM RATE (EAPR)

a. Effective September 22, 2023, modify Section III of Rate Schedule EAPR as follows:

Eligible residential customers will receive a discount based on qualifying federal poverty level income guidelines. The EAPR discount will include ~~two components~~:
1. A $10 System Infrastructure Fixed Charge discount per month; and
2. An additional discount is applied as a 100% reduction in the electricity usage cost per kilowatt hour up to the maximum discount according to the following income guidelines:

Federal Poverty Level	*Maximum Electricity Usage Discount*
0-50%	*$60*
>50 to 100%	*$32*
>100 to 150%	*$10*
>150 to 200%	*$0*

3. For certain eligible residential EAPR customers per the table below, an EAPR Stabilization Fund (ESF) will be established and maintained to provide an additional discount applied as a reduction in the electricity usage cost per kilowatt hour up to the maximum discount. On an annual basis the Accountant will determine if available sources of discretionary non-retail rate revenue exist and apply those funds to cover up to the maximum ESF additional discount. The additional monthly discount amount will begin January 1, 2024 and will be determined prior to the year the value is in effect.

Federal Poverty Level	***ESF Additional Discount***
0-50%	***$0-$35***

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

EAPR REGULATORY ACCOUNTING

Authorize SMUD's Accountant to defer recognition of revenue from discretionary non-retail rates revenue as regulatory liabilities and then match revenue recognition to the subsidy bill credits for EAPR customers. This authorization will allow the Accountant to defer and recognize discretionary non-retail rates revenue in the appropriate accounting period for rate making purposes.

MODIFICATIONS TO RATE SCHEDULE HYDRO GENERATION ADJUSTMENT

a. Effective September 22, 2023, modify the measuring station and other related changes in the HGA tariff to continue reporting reliable and consistent precipitation data into the future as described in the following table:

Item	Current	Proposed
Measuring Station	The National Weather Service Pacific House Cooperative Observer	Fresh Pond Measuring Station
Measuring Station Replacement	Suitable replacement	Suitable replacement representative of the UARP watershed.
Precipitation Variance	N/A	If the measuring station changes, the number of years used to determine the median precipitation may vary depending on the volume of historical data available.
Generation Conversion Value	30,000 MWh/inch	28,000 MWh/inch
Generation Conversion Note	N/A	If the measuring station changes, the MWh per inch may vary.
AP Historical Data Comparison	50-year median	Median of up to a maximum of 50 years of data.
Calculation of Budget Effects	Simple average of actual NP15 prices as of April 1, and the second, third and fourth monthly forecast NP15 prices.	The monthly average of actual NP15 prices through April 1 and the monthly forecasted NP15 prices for the balance of the year.

b. Effective September 22, 2023, modify the current defined terms in the HGA tariff to indicate when they apply specifically to the SMUD hydro generation as described in the following table:

Item	Current	Proposed
Budget Impact Definition	Budget Impact (BI)	SMUD Budget Impact (SBI)
HGA Definition	HGA	SMUD HGA

c. Effective September 22, 2023, add WAPA's CVP hydro generation to the HGA tariff and start evaluating energy delivery variances for the Water Year beginning April 1, 2023, as described the in following table:

Item	Proposed
Water Year	April 1 through March 31.

Forecasted Delivery	As provided by WAPA.
Actual Delivery	As identified by SMUD.
Market Cost of Energy	The average NP15 price for each month of the Water Year.
Energy Delivery Variance (EDV)	Forecasted delivery minus the actual delivery.
WAPA Budget Impact (WBI)	Energy Delivery Variance multiplied by the Market Cost of Energy, not to exceed 2% of budgeted annual gross retail revenue.
WAPA Rate Stabilization Fund (WRSF)	Reserve fund used to balance the budget impact of deliveries from WAPA, with money transferred into the fund in years with higher than forecast deliveries, and money transferred out of the fund in years with lower than forecast deliveries.
Maximum allowed balance of WAPA Rate Stabilization Fund	4% of budgeted annual gross retail revenue.
Calculated WRSF	WAPA Rate Stabilization Fund minus the WAPA Budget Impact.
If Calculated WRSF <0	The Accountant will transfer the remaining balance of the WRSF to Operating Revenues and the WAPA HGA will be set at: $-\frac{Calculated\ WRSF}{Budgeted\ annual\ retail\ kWh\ sales}$ Any funds collected through the WAPA HGA will be deposited into the WRSF.
If Calculated WRSF is ≥ 0 and ≤ 4% of budgeted annual gross retail revenue	The Accountant will transfer the positive WBI out of the WRSF and into Operating Revenues and transfer the negative WBI into the WRSF from Operating Revenues.
If Calculated WRSF is > 4% of budgeted annual gross retail revenue	The Accountant will transfer the negative WBI into the WRSF from Operating Revenues up to 4% of budgeted annual gross retail revenue. The Board may authorize the WAPA HGA or direct the funds for another purpose. At the Board's discretion, the WAPA HGA will be set at: $-\frac{(Calculated\ WRSF - 4\%\ of\ budgeted\ annual\ gross\ retail\ revenue)}{Budgeted\ annual\ retail\ kWh\ sales}$
HGA	The HGA will be comprised of the SMUD HGA and the WAPA HGA, to show one line item on the bill. HGA = SMUD HGA + WAPA HGA

d. Effective September 22, 2023, modify Section VII of Rate Schedule HGA as follows:

> ~~*The HGA became effective July 1, 2008.*~~ *The HGA is recalculated for each Water Year and will be applied to* ***all*** ~~*the*~~ *rate schedules May 1 until April 30 of the following year.*

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

WAPA REGULATORY ACCOUNTING

Authorize SMUD's Accountant to defer recognition of operating revenue from the WAPA hydro generation as regulatory liabilities and then match revenue recognition to offset replacement energy costs for below average hydro

generation. This authorization will allow the Accountant to defer and recognize the WAPA hydro generation revenue in the appropriate accounting period for rate making purposes.

MODIFICATIONS TO RATE SCHEDULE CAMPUS BILLING (CB)

a. Effective September 22, 2023, modify Section II, Subsection B of Rate Schedule CB as follows:

> *The customer must pay a Campus Meters Charge for all but the first meter. The Campus Meters Charge recovers costs for the meters, Current Transformer (CT), Potential Transformer (PT), meter testing, ~~data management services,~~ auxiliary metering equipment and additional billing services. The Campus Meters Charges vary by service voltage level. Information on the associated monthly charges is available on SMUD's website, www.smud.org, or will be furnished upon request. SMUD will review this information at least once per year and update as necessary for additional approved equipment, technology improvements and pricing changes.*

b. Effective September 22, 2023, delete Section II, Subsection C of Rate Schedule CB.

c. Effective September 22, 2023, modify Section II, Subsection D of Rate Schedule CB as follows:

> *Campus billing prices will be subject to any applicable changes to the Commercial & Industrial Time-of-Day rates* ***and*** *~~,~~ the Campus Meter Charges~~, and the Data Services Meter Rental Charge~~.*

d. Effective September 22, 2023, modify Section IV, Subsection E of Rate Schedule CB as follows:

> *1. ~~Transmission~~* ***Subtransmission*** *– 69 kV or higher*
> *2. Primary – 12 kV or 21 kV*
> *3. Secondary – all voltages lower than 12 kV*

e. Effective September 22, 2023, modify the last paragraph in Section IV of Rate Schedule CB as follows:

> *Campus accounts created before January 1, 2014,* ***are considered legacy accounts*** *~~grandfathered~~ under the prior rate option with regard to subsection K, and subsection L. If a ~~grandfathered~~* ***legacy*** *account requests that additional meters be added to the campus, the addition will be allowed if the service is fed from a substation already part of the campus account.*

f. Effective September 22, 2023, modify Section V of Rate

Schedule CB as follows:

> *A customer can request campus billing from a **SMUD Representative** ~~Energy Advisor~~. The **SMUD Representative** ~~Energy Advisor~~ will verify the customer's accounts meet the requirements and the eligibility for campus billing. If the **SMUD Representative** ~~Energy Advisor~~ determines the accounts are eligible the **SMUD Representative** ~~Energy Advisor~~ will provide a Request for Campus Billing Option form for the customer detailing the startup costs and the ongoing monthly costs. Once the Request form is returned with the customer's signature acknowledging the costs the **SMUD Representative** ~~Energy Advisor~~ will submit the request to Billing. Campus billing will start on the bill after all accounts have been **approved and** prepared for campus billing.*

g. Effective September 22, 2023, modify Section VII of Rate

Schedule CB as follows:

> *The customer can elect to revert back to individual accounts at any time by contacting ~~Billing or~~ ~~an~~ **SMUD Representative** ~~Energy Advisor~~. All meters will be converted to single accounts and the corresponding current rates will be assigned based on usage and demand. It may take more than one billing cycle to change the campus account back to individual accounts.*

Additions and revisions described above are detailed in the attached Rates,

Rules and Regulations.

MODIFICATIONS TO RATE SCHEDULE DISTRIBUTION

WHEELING SERVICE (DWS):

a. Effective September 22, 2023, update Section I of Rate

Schedule DWS as follows:

> *This Rate Schedule DWS is optional for customers requesting Distribution Wheeling Service. SMUD may, at its sole discretion, provide Distribution Wheeling Service to Independent Power Producers and Cogenerators, also referred to as Merchant Generators, within SMUD territory, who establish a need for this service. Wheeling service requests will be evaluated on a case by case basis and may be limited by availability of distribution system capacity**. SMUD, as the incumbent utility with native load service obligations, will determine the amount of excess distribution system capacity based on SMUD's forecasted customer loads. Any available distribution capacity in excess of SMUD's native load needs may be available to third parties requesting service under this Rate Schedule DWS.** This rate has been developed for wholesale*

power transactions and SMUD will not wheel non-SMUD power to its retail customers under this rate.

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS TO GENERATION STANDBY CHARGE:

a. Effective September 22, 2023, update Section V, Subsection D of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4 by removing the term "Generator" from all references to "Generator Standby Service".

b. Effective September 22, 2023, update Section V, Subsection D of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4 by adding the following sentence to the last paragraph:

The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

c. Effective September 22, 2023, update Section IV, Subsection E of Rate Schedule R and Section IV, Subsection D of Rate Schedule R-TOD by removing the term "Generator" from all references to "Generator Standby Service".

d. Effective September 22, 2023, update Section IV, Subsection E of Rate Schedule R and Section IV, Subsection D of Rate Schedule R-TOD by adding the following sentence to the last paragraph:

The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

e. Effective September 22, 2023, update Section IV, Subsection A of Rate Schedule AG by removing the term “Generator” from all references to “Generator Standby Service”.

f. Effective September 22, 2023, update Section IV, Subsection A of Rate Schedule AG by adding the following sentence to the last paragraph:

The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

Revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS TO RATE HOLIDAYS:

a. Update the holiday list in rate schedules AG Section V, Subsection D, CI-TOD1 Section VII, Subsection B, CI-TOD2 Section VII, Subsection B, CI-TOD3 Section VII, Subsection B, CI-TOD4 Section VII, Subsection B, GS-TDP Section V, Subsection D and R-TOD Section V, Subsection A to the following:

Holiday	***Month***	***Date***
New Year’s Day	*January*	*1*
Martin Luther King Jr. Day	*January*	*Third Monday*
~~Lincoln’s Birthday~~	*~~February~~*	*~~12~~*
Presidents Day	*February*	*Third Monday*
Memorial Day	*May*	*Last Monday*
Juneteenth National Independence Day	***June***	***19***
Independence Day	*July*	*4*
Labor Day	*September*	*First Monday*
Indigenous Peoples’ Day*/Columbus Day*	*October*	*Second Monday*
Veterans Day	*November*	*11*
Thanksgiving Day	*November*	*Fourth Thursday*
Christmas Day	*December*	*25*

b. Effective September 22, 2023, update Section VII, Subsection B of Rate Schedules CI-TOD1, CI-TOD2, CI-TOD3 and CI-TOD4 as follows:

The holidays recognized for the Time-of-Day *Billing* ***P****~~p~~eriods* ***are as follows****: ~~shall apply during the following holidays:~~*

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS RELATED TO UNAUTHORIZED USE:

a. Effective September 22, 2023, remove Section I, Subsection A, Subsection 8 of Rate Schedule R.

b. Effective September 22, 2023, modify Section IV of Rule 10 as follows:

Where SMUD determines that there has been unauthorized use of electrical service, SMUD may bill the customer for SMUD's estimate of such unauthorized use. ~~*for the substantiated period of the infraction.*~~

a. Residential Customers
The Fixed Rate (see Rate Schedule R) may be used for the collection of revenue associated with unauthorized use of residential electrical service regardless of the date(s) or time(s) in which the use occurred.

b. Non-Residential Customers
The applicable rate, including revenue associated with demand charges, electricity usage charges and power factor adjustment or waiver charges, will be used for the collection of revenue associated with unauthorized use of non-residential electrical service, in addition to the applicable System Infrastructure Fixed Charge as appropriate, regardless of the date(s) or time(s) in which the use occurred.

Nothing in this rule shall be interpreted as limiting SMUD's right under any provisions of any applicable law.

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS TO RULE AND REGULATION 1:

a. Effective September 22, 2023, add the following language to Rule and Regulation 1 in alphabetical order:

Distribution System

The Distribution System consists of the three voltage classes available to customers, where SMUD provides service below 100 kV. This includes subtransmission service at a voltage level of 69 kV or as otherwise defined by SMUD, primary service at a voltage level of 12 kV or 21 kV, as well as secondary service at a voltage level below 12

kV or at a level not otherwise defined as "primary" or "subtransmission".

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

MODIFICATIONS TO RULE AND REGULATION 18:

a. Effective September 22, 2023, modify Section IV of Rule and Regulation 18 as follows:

1. Mobile home parks for which submetering was permitted prior to August 1, 1971, and for which electric service is included in the facilities furnished to their tenants, may employ submetering equipment as a means of reselling SMUD electricity by retroactively adjusting rental charges for energy consumption, provided that the portion of such charges allocable to electricity ***will be charged the RSMM rate*** ~~*may not exceed the rates SMUD would charge if it served the tenants directly*~~*. Specifically, the mobile home park master-meter customer may resell electricity to their submetered tenants provided the following conditions are met:*
a. The tenants shall ~~*not pay more than what SMUD would charge if the tenant is served directly by SMUD*~~ ***be charged the RSMM rate****.*

Additions and revisions described above are detailed in the attached Rates, Rules and Regulations.

ALTERNATIVE RECOMMENDATION 1: SMUD received a recommendation to use kilo volt ampere hour (kVAh) as the unit of measure for energy charges, as well as utilizing power factor (PF) to determine the amount of waste occurring when a customer uses electricity. This new rate structure would be called FlexEquity.

FlexEquity would offer tiered rates in every hour. The hour's first tier exists to ensure a reasonable amount of energy for basic needs would be affordable. The second tier would be market rate for that hour. The FlexEquity System Infrastructure Fixed Charge (FlexEquity SIFC) would add a reasonable amount of energy usage for basic needs charged at the rate for the first tier. If a customer were to be charged 400 kVAh at $0.10 per kVAh per billing period, the bill would be $40.00 of electricity plus $23.50 fixed charge, for a total of $63.50.

The recommendation includes the possibility of waiving taxes by the local jurisdictions, and potentially offering a discount to customers for prepaying annually in full on one bill to reduce billing costs.

The Board has considered this alternative recommendation 1 and has determined not to adopt the alternative recommendation for the following reasons:

- The concept of potentially replacing SMUD's current rate structures with a FlexEquity rate is very creative, as it includes a tiered structure with hourly baseline price for basic needs and a second hourly price based on market rates. While it is described as flexible, it would be a significant change in rate structure and extremely complex for a regular customer. It also brings a lot of risk since before the adoption of any new rate structure, SMUD's policy is usually to test or conduct a pilot to explore the concept, evaluate rate performance, customer experience, and acceptance of the rate. For example, before the adoption and implementation of the standard residential TOD rate, SMUD conducted a comprehensive pilot known as the Smart Pricing Options study. SMUD has not done any tests or studies with the alternate rate recommendation.
- The goal of SD-2 is to maintain competitive rates, and states SMUD's rates shall be designed to balance and achieve nine goals, including be as simple and easy to understand as possible. The widely accepted industry standard among electric utilities is using kWh as a measurement of electricity sales. Since kVAh is not typically used as a measurement to bill electricity usage, customers are unfamiliar with that measurement. The alternative recommendation is complex and would be difficult to explain the proposed unit of measure. As such, it would not meet the goal of being as simple and easy to understand as possible.
- The recommendation would be difficult to implement. It would require SMUD to spend a significant amount of resources to upgrade, set up systems, modify, and test our current systems to accommodate the new FlexEquity tiered hourly structure. There would need to be a significant

amount of customer outreach to educate customers on the new rate structure and units of measure. Customers are used to seeing kilowatt hour (kWh) as the billing measure for energy consumption.

- Our commercial rate customers are already being assessed and charged a PF adjustment or waiver for the energy loss due to inefficiencies in their energy use. The PF charge is not standard for residential rate customers. It would require a significant amount of customer outreach to educate residential customers on the PF charge.
- The FlexEquity SIFC would create significant bill impacts for customers that do not use much electricity. The monthly fixed charge would include 400 kVAh, which could be more electricity than a low user customer consumes on a monthly basis. SMUD is exploring other concepts to redesign the SIFC in the future.
- SMUD does not have the authority to waive taxes.
- Prepaying annually would not reduce costs since a bill/statement would still need to be produced monthly informing the customer how much energy was used and the cost associated with the usage.

ALTERNATIVE RECOMMENDATION 2: SMUD received a recommendation to back out the "9.2% scalar" built into the original time of day (TOD) rates adopted in 2017, plus all of the across the board rate increases since 2017 that have increased that scalar before applying the proposed rate increases.

This Board has considered this alternative recommendation 2 and has determined not to adopt the alternative recommendation for the following reasons:

- This rate action does not address the current or prior residential rates, which were approved by the Board in prior rate actions.
- The use of a scalar is described in the 2017 CEO & GM Report, under Appendix I. The scalar was used to reconcile marginal cost to achieve a revenue neutral restructured TOD rate design prior to adjusting the rates with the proposed 2018 rate increase adopted in 2017.

- Increasing marginal cost rates by a scalar (or equal percentage of marginal cost) is an accepted practice by the industry and is used to ensure sufficient collection of revenue to meet costs.
- Reducing rates by the scalar would result in inadequate revenues for 2024 and 2025 to meet financial obligations, and also negatively impact SMUD's financial position. Rating agencies could downgrade SMUD's credit rating, which would increase costs of borrowing that is needed to fund capital projects, and the increased borrowing cost would make future rate increases higher.

ALTERNATIVE RECOMMENDATION 3: SMUD received a recommendation to publicize the smart meter opt out program and the analog meter option.

This Board considered this alternative recommendation 3 and has determined it is not relevant to the 2023 CEO & GM Report.

ALTERNATIVE RECOMMENDATION 4: SMUD received a recommendation to begin the rate process all over again and complete it, with added expense data to comply with the Public Utilities Code, section 14404.3 (e).

This Board has considered this alternative recommendation 4 and has determined not to adopt the alternative recommendation for the following reason:

- The 2023 CEO & GM Report provides information in sufficient detail to permit an assessment of the need for any proposed changes, including a statement of each category of expense for the preceding two years, and estimates of each category of expense for the two years following. Table 14 – Pro Forma Consolidation Income Statement shows the two years following and the Audited Financial Statements show the preceding two years.

ALTERNATIVE RECOMMENDATION 5: SMUD received a recommendation to provide cost justification for the proposed rates and start the rate process all over again. The alternative recommendation includes doing a new rate design study or a new rate costing study, which would show the

reasonable costs of providing electricity service, as the original rate design study for RT02 showed in 2017-2018.

This Board has considered this alternative recommendation 5 and has determined not to adopt the alternative recommendation for the following reasons:

- A rate design study is used when designing a new rate structure and SMUD is not proposing any new rate structures in this rate action. The CEO & GM Report proposes rate increases across the board on all components of the existing rates.
- The cost-of-service analysis in the SMUD Rate Costing Study (2022 Rate Study)demonstrates that cost components increased and reasonably justifies the proposed rates.

ALTERNATIVE RECOMMENDATION 6: SMUD received multiple comments to not increase rates.

This Board has considered this alternative recommendation 6 and has determined not to adopt the alternative recommendation for the following reasons:

- The Board of Directors supports maintaining a strong financial plan for years 2024 and 2025 and in the future. If we did not increase rates as proposed, it would result in inadequate revenues for 2024 and 2025 to meet financial obligations.
- Among other things, this would reduce the ability to meet California's Renewables Portfolio Standard requirements, and add risk to SMUD's system reliability, which are key drives of the rate increase.
- Not increasing rates, or even postponing the implementation of the proposed rate increases, would negatively impact SMUD's financial position. Rating agencies could downgrade SMUD's credit rating, which would increase costs of borrowing which is needed to fund capital projects, and the increased borrowing costs would make future rate increases higher. The alternative recommendation would negatively impact future rate increases, as avoiding rate increases now would result

in a larger rate increase in the future. This would create significant bill impacts to all customers in the future.

MODIFICATIONS: The Chief Executive Officer and General Manager, or his or her designee, is authorized to make non-substantive revisions to the Rates, Rules and Regulations.

ENVIRONMENTAL COMPLIANCE:

1.0 Section 21080(b)(8) of the California Public Resources Code and Section 15273 of the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations, Title 14, Sections 15000, et seq.) provide that CEQA does not apply to the establishment, modification, structuring, restructuring, or approval of rates, tolls, fares, and other charges by public agencies which the public agency finds are for the purpose of:

(1) Meeting operating expenses, including employee wage rates and fringe benefits;

(2) Purchasing or leasing supplies, equipment, or materials;

(3) Meeting financial reserve needs and requirements;

(4) Obtaining funds for capital projects necessary to maintain service within existing service areas; or

(5) Obtaining funds that are necessary to maintain such intra-city transfers as are authorized by city charter.

2.0 Section 15061(b) (3) of the CEQA Guidelines provides that where it can be said with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

3.0 The proposed actions to increase the residential, agricultural, commercial, and street/traffic/lighting rates, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

4.0 The proposed action to make modifications to Rate Schedules R and R-TOD, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

5.0 The proposed action to modify the three-phase charge application, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

6.0 The proposed action to remove references to legacy rates and other modifications to CI-TOD1, CI-TOD2, CI-TOD3, and CI-TOD4, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

7.0 The proposed action to modify Rate Schedule Hydro Generation Adjustment, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

8.0 The proposed action to modify Rate Schedule Campus Billing, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

9.0 The proposed action to modify Rate Schedule Distribution Wheeling Service, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

10.0 The proposed action to adopt an ESF Additional Discount for the 0-50% FPL low-income customers, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

11.0 The proposed action to update the applicability of the Generator Standby Charge (or Standby Service Charge), is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

12.0 The proposed action to update the Rate Holidays, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

13.0 The proposed action to modify Rule 10 to address unauthorized use of electrical service, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

14.0 The proposed action to modify Rule 1, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

15.0 The proposed action to modify Rule 18, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

The new and revised Rate Schedules and Rules and Regulations referenced in this Resolution are attached and incorporated herein as **Attachment H.**

To the extent there is a discrepancy between this Resolution and the new and revised Rate Schedules and Rules and Regulations attached hereto,

the new and revised Rate Schedules and Rules and Regulations shall control.

Approved: September 21, 2023

INTRODUCED: DIRECTOR TAMAYO				
SECONDED: DIRECTOR KERTH				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE	X			
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO	X			

Attachment H
to Resolution No. 23-09-09

Rates, Rules and Regulations Effective in 2023

Table of Contents

The following listed sheets contain all effective rates, rules and regulations affecting rates and service, and information relating thereto, in effect on and after the date indicated. All rates are applicable to the territory served by SMUD.

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CI-TOD1 Commercial & Industrial Time-of-Day	Sept 22, 2023	CI-TOD1-1-7	13
CI-TOD2 Commercial & Industrial Time-of-Day	Sept 22, 2023	CI-TOD2-1-6	20
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Territory Served by SMUD

SMUD supplies electric service in most of Sacramento County and in a portion of Placer County.

Description of Service

A description of service available is contained in SMUD's Rule and Regulation 2.
The service available at any particular location should be ascertained by inquiry at SMUD's Customer Services Department office at 6301 S Street, Sacramento.

Procedure to Obtain Service

Any person or corporation whose premises are within the outer boundaries of SMUD may obtain service by applying for service at the Customer Services Department office establishing credit as hereinafter set forth and complying with SMUD's rules and regulations. Where an extension of SMUD's lines is necessary or whenever unusual service requirements are determined, applicant will be informed as to the conditions under which service will be supplied.

Establishment of Credit and Deposits

After making proper application for electric service, it will be necessary for applicant to establish his credit in accordance with Rule and Regulation 6.

General

l. MEASUREMENT OF ELECTRIC ENERGY
All electric energy supplied by SMUD to its customers shall be measured by means of suitable standard electric meters, except as otherwise specifically provided in SMUD's Rules and Regulations.

2. DISCOUNTS
All rates hereinafter listed are net rates and are not subject to discount unless specifically stated in the Rates.

Agricultural Service
Rate Schedule AG

I. Applicability

This Rate Schedule AG applies to single- or three-phase nonresidential agricultural service, delivered at standard voltages designated by SMUD as available at the customer's premises. The electricity must be for pumping loads where a preponderance of the load is devoted to agricultural purposes such as farm lighting, feed choppers, milking machines, heating for incubators, brooders, and other farm uses; drainage pumping loads where a preponderance of the area drained is agricultural; and irrigation pumping loads for nonagricultural purposes where the entire loads, except for minor incidental uses, are devoted to such pumping.

This schedule is mandatory for agricultural accounts with monthly maximum demand that does not exceed 499 kW for three or more consecutive months. The demand for any month will be the maximum 15-minute kW delivery during the month.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

II. Firm Service Rate

A. Small Agricultural Service, Nondemand Rates – ASN

This rate applies to agricultural accounts having a monthly maximum demand of 30 kW or less. If the account does not have a meter that registers demand, and monthly usage is at least 12,000 kWh for three consecutive months, a demand meter will be installed. Whenever monthly maximum demand exceeds 30 kW for three consecutive months, the customer will be billed on the applicable demand rate. To return to the nondemand rate, the account's monthly maximum demand must fall below 31 kW and usage must be below 12,000 kWh for 12 consecutive months.

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
ASN					
Winter Season (November - April)					
System Infrastructure Fixed Charge *per month per meter*	$12.85	$13.20	$13.55	$13.95	$14.30
Electricity Usage Charge					
All day *$/kWh*	$0.1428	$0.1467	$0.1508	$0.1549	$0.1592
Summer Season (May - October)					
System Infrastructure Fixed Charge *per month per meter*	$12.85	$13.20	$13.55	$13.95	$14.30
Electricity Usage Charge					
All day *$/kWh*	$0.1564	$0.1607	$0.1651	$0.1696	$0.1743

B. Large Agricultural Service, Demand Rates – ASD

This rate applies to agricultural accounts having a monthly maximum demand greater than 30 kW but less than 499 kW for three consecutive months. The demand for any month will be the maximum 15-minute kW delivery during the month. The customer will be billed on the demand-metered rate until the demand falls below 31 kW and energy is less than 12,000 kWh for 12 consecutive months before being returned to the ASN Rate.

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
ASD					
Winter Season (November - April)					
System Infrastructure Fixed Charge *per month per meter*	$29.80	$30.60	$31.45	$32.30	$33.20
Site Infrastructure Charge *per 12 months max kW or contract capacity*					
First 30kW	No Charge	No Charge	No Charge	No Charge	No Charge
Additional kW per month	$2.951	$3.032	$3.116	$3.201	$3.289
Electricity Usage Charge					
Base Usage *8,750 kWh per month*	$0.1580	$0.1623	$0.1667	$0.1714	$0.1761
Base Usage Plus *kWh over 8,750 per month*	$0.1240	$0.1275	$0.1310	$0.1346	$0.1382
Summer Season (May - October)					
System Infrastructure Fixed Charge *per month per meter*	$29.80	$30.60	$31.45	$32.30	$33.20
Site Infrastructure Charge *per 12 months max kW or contract capacity*					
First 30kW	No Charge	No Charge	No Charge	No Charge	No Charge
Additional kW per month	$2.951	$3.032	$3.116	$3.201	$3.289
Electricity Usage Charge					
Base Usage *8,750 kWh per month*	$0.1514	$0.1556	$0.1599	$0.1643	$0.1688
Base Usage Plus *kWh over 8,750 per month*	$0.1095	$0.1125	$0.1156	$0.1188	$0.1221

C. Small Agricultural Optional Time-of-Day – AON

This optional rate is for small agricultural accounts having a monthly maximum demand of 30 kW or less. Customers transferring to the small agricultural Time-of-Day Rate must remain on the rate for a minimum of four months. Customers electing to move off this optional rate cannot return to service under this schedule for 12 months.

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
AON					
Winter Season (November - April)					
System Infrastructure Fixed Charge *per month per meter*	$17.25	$17.75	$18.25	$18.75	$19.25
Electricity Usage Charge					
On-peak *$/kWh*	$0.1641	$0.1686	$0.1732	$0.1780	$0.1829
Off-peak *$/kWh*	$0.1399	$0.1437	$0.1477	$0.1518	$0.1560
Summer Season (May - October)					
System Infrastructure Fixed Charge *per month per meter*	$17.25	$17.75	$18.25	$18.75	$19.25
Electricity Usage Charge					
On-peak *$/kWh*	$0.2379	$0.2444	$0.2512	$0.2581	$0.2652
Off-peak *$/kWh*	$0.1279	$0.1314	$0.1350	$0.1387	$0.1425

D. Large Agricultural Optional Time-of-Day – AOD

This optional rate is for large agricultural accounts with demand greater than 30 kW and less than 499 kW. Customers transferring to the agricultural Time-of-Day Rate must remain on the rate for a minimum of four months. Customers electing to move off this optional rate cannot return to service under this schedule for 12 months.

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
AOD					
Winter Season (November - April)					
System Infrastructure Fixed Charge *per month per meter*	$103.80	$106.65	$109.60	$112.60	$115.70
Maximum Demand Charge *$ per monthly max kW*	$2.940	$3.021	$3.104	$3.189	$3.277
Electricity Usage Charge					
On-peak *$/kWh*	$0.1634	$0.1679	$0.1725	$0.1773	$0.1821
Off-peak *$/kWh*	$0.1388	$0.1426	$0.1465	$0.1506	$0.1547
Summer Season (May - October)					
System Infrastructure Fixed Charge *per month per meter*	$103.80	$106.65	$109.60	$112.60	$115.70
Maximum Demand Charge *$ per monthly max kW*	$4.110	$4.223	$4.339	$4.458	$4.581
Electricity Usage Charge					
On-peak *$/kWh*	$0.2528	$0.2598	$0.2669	$0.2742	$0.2818
Off-peak *$/kWh*	$0.1348	$0.1385	$0.1423	$0.1462	$0.1502

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on these surcharges:

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Rate Option Menu

A. Standby Service Option

Standby Service applies when all of the following conditions are met:

1. The customer has generation, sited on the customer's premises, that serves all or part of the customer's load; and
2. The generator(s) are connected to SMUD's electrical system; and
3. SMUD is required to have resources available to provide supplemental service, backup electricity and/or to supply electricity during generator(s) maintenance service.

Standby Service Charge by Voltage Level ($/kW of Contract Capacity per month)	Secondary	Primary	Subtransmission
Effective January 1, 2023	$7.713	$6.129	$3.096
Effective January 1, 2024	$7.925	$6.298	$3.181
Effective May 1, 2024	$8.143	$6.471	$3.269
Effective January 1, 2025	$8.367	$6.649	$3.359
Effective May 1, 2025	$8.597	$6.832	$3.451

In addition to the Standby Service Charge, SMUD will continue to bill for all applicable charges under this rate schedule. These charges include System Infrastructure Fixed Charges and Site Infrastructure Charges, as well as Electricity Usage and Maximum Demand Charges for SMUD-provided power.

The Standby Service Charge will be waived only for qualifying renewable generation under Rate Schedules NEM1 and SSR. The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

B. Customer Energy Generation Options. Refer to Rate Schedules NEM1 and SSR.

C. SMUD Renewable Energy Option

SMUD offers optional programs that allow customers to receive renewable energy for an additional charge, detailed on www.smud.org.

D. Special Metering Charge

For customers who purchase and install additional equipment and software identified by SMUD meter specialists as necessary for load data collection and transfer to electronic media outside SMUD, SMUD will charge a monthly service fee to cover maintenance, software support and licensing fees. Payment for this nonstandard equipment and service will be made through provisions in Rule and Regulation 2, Section IV. Special Facilities. The fee schedule is available at SMUD's website, www.smud.org.

V. Conditions of Service

A. Type of Electric Service

SMUD will provide customers on this rate schedule standard, firm service consisting of a continuous and sufficient supply of electricity.

B. Distribution Service Voltage Definition

The following defines the three voltage classes available. The rate shall be determined by the voltage level at which service is taken according to the following:

1. *Secondary Service Voltage*
   This service class provides power at voltage levels below 12 kilo-Volts (kV), or at a level not otherwise defined as "Primary" or "Subtransmission."

2. *Primary Service Voltage*
   This service class provides power at a voltage level of 12 kV or 21 kV. To be eligible for Primary Service Voltage, the customer's monthly demand must exceed 299 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

3. *Subtransmission Service Voltage*
   This subtransmission service class provides power at a voltage level of 69 kV or as otherwise defined by SMUD. To be eligible for voltage service at this level, the customer's monthly demand must exceed 499 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

C. Power Factor Adjustment

1. Adjustment (charge per month varies)

Accounts on a demand rate may be subject to a power factor (PF) adjustment charge. When a customer's monthly power factor falls below 95 percent leading or lagging, the following billing adjustment will apply:

Electricity Usage x [(95% ÷ Power Factor) - 1] x Power Factor Adjustment Rate

Electricity Usage: *the total monthly kWh for the account*

Power Factor: *the lesser of the customer's monthly power factor or 95 percent*

Power Factor Adjustment Rate

Effective January 1, 2023	$0.0127
Effective January 1, 2024	$0.0130
Effective May 1, 2024	$0.0134
Effective January 1, 2025	$0.0138
Effective May 1, 2025	$0.0142

2. Waiver Contract (charge per month is set for the term of the waiver)

Customers may apply for a power factor waiver contract that compensates SMUD for the power factor correction for the portion that is covered under the contract. The power factor waiver is not available to customers taking service at the subtransmission service voltage level. The waiver amount per month is calculated:

Excess KVAR x Waiver Rate

Excess KVAR: Maximum 12-month KVAR in excess of 32.868 percent of kW

Waiver Rate per excess KVAR

Effective January 1, 2023	$0.3372
Effective January 1, 2024	$0.3465
Effective May 1, 2024	$0.3560
Effective January 1, 2025	$0.3658
Effective May 1, 2025	$0.3759

D. Time-of-Day Billing Periods

Winter season is from November 1 through April 30. Summer season is from May 1 through October 31.

Winter On-Peak	Weekdays between 7:00 a.m. and 10:00 a.m. and 5:00 p.m. and 8:00 p.m.
Summer On-Peak	Weekdays between 2:00 p.m. and 8:00 p.m.
Off-Peak	All other hours, including holidays shown below.

Off-peak pricing shall apply during the following holidays:

Holiday	Month	Date
New Year's Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Juneteenth National Independence Day	June	19
Independence Day	July	4
Labor Day	September	First Monday
Indigenous Peoples' Day/Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

VI. Billing

A. Meter Data

Meter data for service rendered in accordance with this rate will not be combined for billing purposes unless SMUD determines it is necessary or convenient to do so.

B. Proration of Charges

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The Electricity Usage allowances, System Infrastructure Fixed Charge, Maximum Demand Charge and Site Infrastructure Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days.
Bill period is longer than 34 days	
Price changes within bill period	Relationship between the length of the billing period and the number of days that fall within the respective pricing periods.

C. Contract Capacity

Use of Contract Capacity for billing is at SMUD's sole discretion. Refer to Rule and Regulation 1 and Rule and Regulation 6.

D. Discontinuance of Service

Any customer resuming service at the same premises within 12 months after discontinuing service will be required to pay the System Infrastructure Fixed Charges and Site Infrastructure Charges that would have been billed if service had not been discontinued, except when service has been disconnected. The System Infrastructure Fixed Charge and Site Infrastructure Charge will be waived during each of those months. Retroactive billing shall be at SMUD's sole discretion.

(End)

Commercial & Industrial Campus Billing
Rate Schedule CB

I. Applicability

This Rate Schedule CB is optional for Commercial & Industrial customers served at a common address or industrial campus that have several accounts or service entrances on the same contiguous campus. Campus Billing provides for either hardwire or post-metering of a combination of these accounts to a single load shape for billing purposes. Under this option the customer receives one bill for the entire campus and the aggregated monthly maximum kW is used to determine the applicable rate schedule under which the campus account will be billed. Campus billing is available to customers where at least one existing account to be included in the campus account is on Rate Schedules CI-TOD2, CI-TOD3, or CI-TOD4.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

II. Pricing Structure

A. System Infrastructure Fixed Charge

The customer pays a single System Infrastructure Fixed Charge to recover the cost of maintaining or replacing one meter and the overhead costs for billing and customer service.

B. Campus Meters Charge

The customer must pay a Campus Meters Charge for all but the first meter. The Campus Meters Charge recovers costs for the meters, Current Transformer (CT), Potential Transformer (PT), meter testing, auxiliary metering equipment and additional billing services. The Campus Meters Charges vary by service voltage level. Information on the associated monthly charges is available on SMUD's website, www.smud.org, or will be furnished upon request. SMUD will review this information at least once per year and update as necessary for additional approved equipment, technology improvements and pricing changes.

C. Rate Changes

Campus billing prices will be subject to any applicable changes to the Commercial & Industrial Time-of-Day rates and the Campus Meter Charges.

III. Site Infrastructure Charge

When the accounts are aggregated through Campus Billing, SMUD creates a new account with no billing history. As a result, the 12-months maximum kW basis for the Site Infrastructure Charge is initially set by the first month's maximum kW on the campus account.

IV. Conditions of Service

The following criteria define the conditions under which campus rates would be permitted. Failure to comply with any of these conditions will revoke the option for campus billing and the campus will be returned to individual accounts on their applicable rate.

A. All accounts are under the same legal entity buying and consuming the power at the site.

B. The term "legal entity" means the name on each account must be the same company/organization.

C. All meters are on a contiguous site. The parcels of land are physically adjacent; the parcels may be separated by public streets or railways.

D. No meter provides sub-metering on campus to third parties.

E. All meters are served at the same service voltage. SMUD recognizes the following three voltage classes:

1. Subtransmission – 69 kV or higher
2. Primary – 12 kV or 21 kV
3. Secondary – all voltages lower than 12 kV

F. Each meter is capable of interval metering on each service entrance.
If a meter is not capable of interval metering the customer will be charged for the cost of installing such a meter.

G. Agricultural Service and CI-TOD1 accounts.

AG and CI-TOD1 can be included in a campus account, however, a campus account cannot consist of solely accounts on Agricultural service or solely on CI-TOD1 or a combination of Agricultural and CI-TOD1 cannot combine into a campus account.

H. The campus account maintains or exceeds CI-TOD2 eligibility.

I. No use of parallel systems for shifting load between different rate offerings.

Should this occur, SMUD shall have the right to corrective billing on a single rate and full reimbursement of waived System Infrastructure Fixed Charges.

J. The customer provides SMUD with a single point of contact for billing and service questions.

K. At least one of the proposed campus accounts is on rate schedule CI-TOD2, CI-TOD3 or CI-TOD4 as defined in the applicable rate schedules at the time campus billing is requested.

L. All the meters must feed off the same substation as determined by SMUD. For subtransmission customers, all meters must be fed off the same bank at the substation as determined by SMUD.

Campus accounts created before January 1, 2014, are considered legacy accounts under the prior rate option with regard to subsection K, and subsection L. If a legacy account requests that additional meters be added to the campus, the addition will be allowed if the service is fed from a substation already part of the campus account.

V. Setting Up a Campus Account

A customer can request campus billing from a SMUD Representative. The SMUD Representative will verify the customer's accounts meet the requirements and the eligibility for campus billing. If the SMUD Representative determines the accounts are eligible the SMUD Representative will provide a Request for Campus Billing Option form for the customer detailing the startup costs and the ongoing monthly costs. Once the Request form is returned with the customer's signature acknowledging the costs, the SMUD Representative will submit the request to Billing. Campus billing will start on the bill after all accounts have been approved and prepared for campus billing.

VI. Billing

A. Service Rendered

Service rendered in accordance with this rate is at SMUD's sole discretion.

B. Proration of Charges

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The System Infrastructure Fixed Charge, Summer Peak Demand Charge and Site Infrastructure Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is less than 27 days	Relationship between the length of the billing period and 30 days.
Bill period is more than 34 days	
Price changes within billing period	Relationship between the length of the billing period and the number of days that fall within the respective pricing periods.

C. Contract Capacity

Use of Contract Capacity for billing is at SMUD's sole discretion. Refer to Rule and Regulation 1 and Rule and Regulation 6.

VII. Terminating a Campus Billing Account

If after a rolling twelve-month period the demand for the campus account falls below the minimum demand for a CI-TOD2 rate, the campus account will be terminated. All meters will revert to individual accounts. The accounts will not be eligible to return to a campus account for twelve months thereafter and only if they meet all the criteria for the Campus Billing Option listed in Section IV Conditions of Service. This rule applies to all Campus accounts regardless of the date they were created.

The customer can elect to revert back to individual accounts at any time by contacting a SMUD Representative. All meters will be converted to single accounts and the corresponding current rates will be assigned based on usage and demand. It may take more than one billing cycle to change the campus account back to individual accounts.

VIII. Reinstating a Campus Billing Account

After terminating the Campus Billing Option, the campus account, or dropping one or more meters from the campus account, the customer cannot have any of the meters that comprised the campus account reinstated on an existing or new campus account for 12 months from the date of removal from the option.

After 12 months, the meters can be used to create a new campus account or be added to an existing campus.

If the original campus account no longer exists, the procedure for setting up a Campus Account must be followed. See section V.

(End)

Combined Heat and Power (CHP) Distributed Generation
Rate Schedule CHP

I. Applicability

This Rate Schedule CHP is optional for customers who wish to sell all excess generation to SMUD from an eligible Combined Heat and Power (CHP) generation facility with a capacity of 3 MW or less operating in parallel with SMUD's distribution system, or with a capacity of 20 MW or less operating in parallel with SMUD's subtransmission system. The facility must continuously meet the qualifications in Section IV General Conditions. This schedule applies solely to the excess generation delivered to SMUD.

II. Pricing Structure

Under this schedule, SMUD will pay the customer the applicable price for metered energy delivered by the eligible CHP facility during the time periods specified in this schedule.

A. Excess Generation Prices

The CHP excess generation prices will be posted at SMUD's website, www.smud.org. Prices will be differentiated by delivery voltage, season and time-of-day. CHP excess generation prices will be reset each January 1 and apply for that calendar year to all CHP excess generation delivered to SMUD, regardless of the date of the CHP commissioning and interconnection to SMUD's system, or the effective date of the Power Purchase Agreement (PPA) and Interconnection Agreement.

The CHP excess generation prices reflect SMUD's underlying avoided costs for procurement and delivery of comparable power during the specified terms and time periods. The avoided cost is made up of the following components:

- Market Energy Price
- Losses by voltage level
- Transmission and Distribution

SMUD will typically pay for CHP excess generation based on the voltage at the point of delivery to the SMUD system. However, to the extent that SMUD must step up the excess generation to a higher voltage level in order to serve its customers, the pricing for the excess CHP generation will be based on the higher voltage level.

B. Time-of-Delivery Periods

Season	Months	Super Peak	On Peak	Off Peak
Summer	June - Sept	2:00 to 8:00 p.m. Mon – Sat except holidays	6:00 a.m. to 2:00 p.m. & 8:00 p.m. to 10:00 p.m. Mon - Sat except holidays	All other hours
Fall & Winter	Oct - Feb			
Spring	Mar - May			

Off-peak pricing shall apply during the following holidays:

Holiday	Month	Date
New Year's Day	January	1
Memorial Day	May	Last Monday
Independence Day	July	4
Labor Day	September	First Monday
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

III. Charges

A. Reserved Capacity Charge

The customer shall pay a monthly Reserved Capacity Charge to compensate SMUD for standing ready to supply supplemental service, backup electricity, and other services/electricity during interruptions in the CHP facility's operation. The Reserved Capacity Charge is based on the greater of the following:

- The customer's Maximum Anticipated Demand or actual monthly demand, if higher, multiplied by the Reserved Capacity Rate per kW shown below; or
- The Generator Installed Capacity of the CHP facility multiplied by the Reserved Capacity Rate per kW shown below.

Reserved Capacity Rate *per kW*	**Secondary**	**Primary**	**Subtransmission**
Effective January 1, 2023	$7.423	$7.423	$7.133
Effective January 1, 2024	$7.627	$7.627	$7.329
Effective May 1, 2024	$7.837	$7.837	$7.531
Effective January 1, 2025	$8.052	$8.052	$7.738
Effective May 1, 2025	$8.274	$8.274	$7.951

1. Maximum Anticipated Demand
The initial maximum anticipated demand will be the customer's maximum monthly demand in the prior 18 months at the time the PPA is executed.

2. Generator Installed Capacity
The Generator Installed Capacity of the facility will be set forth in the PPA.

3. Reset of Reserved Capacity Basis
If, at any time, the customer's actual monthly demand exceeds the Generator Installed Capacity of the CHP facility, the demand used to calculate the Reserved Capacity Charge will be reset to use the newly established demand as the basis for the charge.

B. Data Communications Charges

The customer shall be responsible for procuring and maintaining any communication link required by SMUD for retrieving meter data. Ongoing data communication charges paid by SMUD on behalf of the customer will be passed through to the customer and will appear on the customer's monthly SMUD bill.

C. Other Charges

SMUD will continue to bill for all appropriate charges under the applicable rate schedule for SMUD supplied power to the customer. These charges include without limitation System Infrastructure Fixed Charge, Electricity Usage charges, surcharges, and taxes. Site Infrastructure Charges and Summer Peak Demand Charges are applicable if the sum of these two charges is greater than the Reserved Capacity Charge. Each month, the Reserved Capacity Charge will be compared to the sum of the Site Infrastructure Charge plus any Summer Peak Demand Charge. On the monthly bill, the customer will be charged the greater of the two calculations, but not both. The monthly bill will also include applicable metering and data communications charges.

IV. Conditions of Service

A. Eligible CHP Facility

To be eligible for this schedule, the CHP facility shall maintain without interruption certification by the California Energy Commission (CEC) as outlined in the CEC's "Guidelines for Certification of Combined Heat and Power Systems Pursuant to the Waste Heat and Carbon Emissions Reduction Act - Public Utilities Code, Section 2840 *Et Seq*." CHP systems placed into operation before January 1, 2008 are not eligible for this schedule.

B. Territory

The CHP facility must be located entirely within SMUD's service territory.

C. Required Contract

An eligible CHP facility operating under this schedule shall execute a Power Purchase Agreement (PPA) with SMUD. The PPA shall be offered for contract durations of up to 10 years at the option of the customer.

D. Participation in Other SMUD Programs

An eligible CHP facility operating under this schedule may not also obtain benefits for the same facility from any of the following:

1. A separate contract with SMUD for deliveries from the same facility; or
2. Incentives from SMUD under customer programs implemented in compliance with SB1 requirements or similar program; or
3. The net metering option for energy deliveries from the same facility.

E. Electrical Interconnection

An eligible CHP facility under this schedule shall be interconnected within SMUD's service territory and shall be required to comply with SMUD's Rule and Regulation 21 process for interconnection and execute an Interconnection Agreement with SMUD. Facilities not meeting the Rule and Regulation 21 requirements will ***not*** be eligible for service. Any costs for system upgrades and facilities required for interconnection are the responsibility of the customer.

F. Metering Requirements

The eligible CHP facility operating under this schedule shall comply with all applicable rules in installing, at the customer's expense, a bi-directional time-of-use meter appropriate for excess sale agreements, that can be read daily by electronic means acceptable to SMUD. SMUD will pay for and install a gross output meter to measure the generator output and provide for SMUD data requirements. The customer shall provide and pay for the meter socket and cabinet, and all required current transformers and potential transformers.

G. Energy and Green Attributes

The customer shall, in accordance with the terms and conditions of the PPA, provide and convey to SMUD excess energy produced by the eligible CHP facility net of all station use and any and all site host load. Such conveyance shall include all related Green Attributes.

(End)

Commercial & Industrial Time-of-Day
Rate Schedule CI-TOD1

I. Applicability

This Rate Schedule CI-TOD1 applies to single- or three-phase service delivered at standard voltages designated by SMUD as available at the customer's premises. This schedule includes the standard rates for all commercial and industrial (C&I) accounts with monthly maximum demand that does not exceed 299 kW for three or more consecutive months. Commercial & Industrial Time-of-Day customers include commercial and nonagricultural irrigation pumping accounts. This schedule also applies to Commercial & Industrial Time-of-Day accounts with contract capacity of 299 kW or less. The demand for any month shall be the maximum 15-minute kW delivery during the month.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

A. C&I Secondary 0-20 kW (rate category CITS-0)

These rates apply to Commercial & Industrial Time-of-Day accounts with a monthly maximum demand of 20 kW or less. Whenever the monthly maximum demand exceeds 20 kW for *any* three consecutive months and the monthly energy usage is at least 7,300 kWh for *any* three consecutive months within a 12-month period, the account will be billed on the applicable rate. To return to the CITS-0 rate, the monthly maximum demand must be 20 kW or less for 12-consecutive months or the usage must be less than 7,300 kWh for 12 consecutive months.

B. Small Nondemand, Nonmetered Service (rate category GFN)

This rate applies to Commercial & Industrial accounts where an account's monthly consumption of electricity is consistently small or can be predetermined with reasonable accuracy by reference to the capacity of equipment served and the hours of operation, SMUD, at its discretion, and with the customer's consent, will calculate electricity consumed in lieu of providing metering equipment.

C. C&I Secondary 21-299 kW (rate category CITS-1)

These rates apply to Commercial & Industrial Time-of-Day accounts with a monthly maximum demand of at least 21 kW but does not exceed 299 kW for *any* three consecutive months **and** monthly energy usage of at least 7,300 kWh for *any* three consecutive months within a 12-month period. The customer will be billed on this rate unless the monthly usage is less than 7,300 kWh for 12 consecutive months; or the maximum demand falls below 21 kW for 12 consecutive months; or the monthly maximum demand exceeds 299 kW for three consecutive months.

II. Firm Service Rates

A. Commercial & Industrial Time-of-Day Rates

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
CITS-0: C&I Secondary 0-20 kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$35.15	$36.65	$37.65	$39.20	$40.30
Maximum Demand Charge *$ per monthly max kW*	$0.000	$0.713	$0.733	$1.505	$1.546
Electricity Usage Charge					
Peak *$/kWh*	$0.1440	$0.1446	$0.1485	$0.1491	$0.1532
Off-Peak *$/kWh*	$0.1364	$0.1335	$0.1371	$0.1341	$0.1377
Off-Peak Saver *$/kWh*	$0.1323	$0.1276	$0.1311	$0.1261	$0.1295
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$35.15	$36.65	$37.65	$39.20	$40.30
Maximum Demand Charge *$ per monthly max kW*	$0.000	$0.713	$0.733	$1.505	$1.546
Electricity Usage Charge					
Peak *$/kWh*	$0.2554	$0.2718	$0.2792	$0.2968	$0.3049
Off-Peak *$/kWh*	$0.1349	$0.1359	$0.1396	$0.1410	$0.1448
CITS-1: C&I Secondary 21-299 kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$158.30	$231.60	$237.95	$317.30	$326.05
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$7.568	$7.106	$7.302	$6.806	$6.993
Electricity Usage Charge					
Peak *$/kWh*	$0.1230	$0.1283	$0.1319	$0.1374	$0.1412
Off-Peak *$/kWh*	$0.1158	$0.1170	$0.1202	$0.1214	$0.1248
Off-Peak Saver *$/kWh*	$0.1030	$0.0971	$0.0998	$0.0932	$0.0958
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$158.30	$231.60	$237.95	$317.30	$326.05
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$7.568	$7.106	$7.302	$6.806	$6.993
Summer Peak Demand Charge *$ per monthly Peak max kW*	$3.468	$5.351	$5.498	$7.525	$7.732
Electricity Usage Charge					
Peak *$/kWh*	$0.1983	$0.2056	$0.2113	$0.2192	$0.2252
Off-Peak *$/kWh*	$0.1119	$0.1129	$0.1160	$0.1171	$0.1203

Commercial rates beyond 2025 are effective as shown in Section VIII. Transition Schedule.

B. GFN Rates

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
GFN					
All Year					
System Infrastructure Fixed Charge *per month per meter*	$10.50	$10.80	$11.10	$11.40	$11.70
Electricity Usage Charge					
All day *$/kWh*	$0.1539	$0.1581	$0.1624	$0.1669	$0.1715

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on these surcharges:

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Rate Option Menu

A. Energy Assistance Program Rate for Nonprofit Agencies. Refer to Rate Schedule EAPR.

B. Campus Billing. Refer to Rate Schedule CB.

C. Implementation of Energy Efficiency Program or Installation of New Solar/Photovoltaic or Storage Systems

Customers who implement a SMUD-sponsored Energy Efficiency program or who install a SMUD-approved solar/photovoltaic or storage system to offset their on-site energy usage may request, in writing, within 30 days of the project completion and commissioning, an adjustment to their twelve month maximum demand based on the anticipated reduction in kW from the Energy Efficiency Project Worksheet. The adjusted twelve month maximum demand is valid for 12 months or until it is exceeded by actual maximum demand.

D. Standby Service Option

Standby Service applies when the following conditions are met:

1. The customer has generation, sited on the customer's premises, that serves all or part of the customer's load; and
2. The generator(s) are connected to SMUD's electrical system; and
3. SMUD is required to have resources available to provide supplemental service, backup electricity and/or to supply electricity during generator(s) maintenance service.

Standby Service Charge by Voltage Level ($/kW of Contract Capacity per month)	Secondary	Primary	Subtransmission
Effective January 1, 2023	$7.713	$6.129	$3.096
Effective January 1, 2024	$7.925	$6.298	$3.181
Effective May 1, 2024	$8.143	$6.471	$3.269
Effective January 1, 2025	$8.367	$6.649	$3.359
Effective May 1, 2025	$8.597	$6.832	$3.451

In addition to the Standby Service Charge, SMUD will continue to bill for all applicable charges under this rate schedule, including, but not limited to, System Infrastructure Fixed Charges, Site Infrastructure Charges, Maximum Demand Charge, Summer Peak Demand Charges and electricity usage charges for SMUD-provided power.

The Standby Service Charge will be waived only for qualifying renewable generation under Rate Schedules NEM1 and SSR. The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

E. Customer Energy Generation Options. Refer to Rate Schedules NEM1 and SSR.

F. SMUD Renewable Energy Options

SMUD offers optional programs that allow customers to receive renewable energy for an additional charge, detailed on www.smud.org.

G. Special Metering Charge

For customers who purchase and install additional equipment and software identified by SMUD meter specialists as necessary for load data collection and transfer to electronic media outside SMUD, SMUD will charge a monthly service fee to cover maintenance, software support and licensing fees. Payment for this nonstandard equipment and service will be made through

provisions in Rule and Regulation 2, Section IV. Special Facilities. The fee schedule is available at SMUD's website, www.smud.org.

V. Conditions of Service

A. Type of Electric Service

SMUD will provide customers on this rate schedule standard, firm service consisting of a continuous and sufficient supply of electricity.

B. Distribution Service Voltage Definition

The following defines the three voltage classes available. The rate will be determined by the voltage level at which service is provided according to the following:

1. *Secondary Service Voltage*
   This service class provides power at voltage levels below 12 kilo-Volts (kV), or at a level not otherwise defined as "Primary" or "Subtransmission."

2. *Primary Service Voltage*
   This service class provides power at a voltage level of 12 kV or 21 kV. To be eligible for Primary Service Voltage, the customer's monthly demand must exceed 299 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

3. *Subtransmission Service Voltage*
   This subtransmission service class provides power at a voltage level of 69 kV or as otherwise defined by SMUD. To be eligible for voltage service at this level, the customer's monthly demand must exceed 499 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

C. Power Factor Adjustment or Waiver

1. Adjustment (charge per month varies)

Accounts on a demand rate may be subject to a power factor (PF) adjustment charge. When a customer's monthly power factor falls below 95 percent leading or lagging, the following billing adjustment will apply:

Electricity Usage x [(95% ÷ Power Factor) - 1] x Power Factor Adjustment Rate

Electricity Usage: *the total monthly kWh for the account*

Power Factor: *the lesser of the customer's monthly power factor or 95 percent*

Power Factor Adjustment Rate per excess KVAR

Effective January 1, 2023	$0.0127
Effective January 1, 2024	$0.0130
Effective May 1, 2024	$0.0134
Effective January 1, 2025	$0.0138
Effective May 1, 2025	$0.0142

2. Waiver Contract (charge per month is set for the term of the waiver)

Customers may apply for a power factor waiver contract that compensates SMUD for the power factor correction for the portion that is covered under the contract. The power factor waiver is not available to customers taking service at the subtransmission service voltage level. The waiver amount per month is calculated:

Excess KVAR x Waiver Rate

Excess KVAR: Maximum 12-month KVAR in excess of 32.868 percent of kW

Waiver Rate per excess KVAR

Effective January 1, 2023	$0.3372
Effective January 1, 2024	$0.3465
Effective May 1, 2024	$0.3560
Effective January 1, 2025	$0.3658
Effective May 1, 2025	$0.3759

VI. Billing Periods

A. Time-of-Day Billing Periods

1. Time-of-Day Billing Periods

Non-Summer October 1 -May 31	Peak	Weekdays between 4:00 p.m. and 9:00 p.m., excluding holidays
	Off-Peak Saver	Every day between 9:00 a.m. and 4:00 p.m., including holidays
	Off-Peak	All other hours, including holidays
Summer June 1 -September 30	Peak	Weekdays between 4:00 p.m. and 9:00 p.m., excluding holidays
	Off-Peak	All other hours, including holidays

The holidays recognized for the Time-of-Day Billing Periods are as follows:

Holiday	Month	Date
New Year's Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Juneteenth National Independence Day	June	19
Independence Day	July	4
Labor Day	September	First Monday
Indigenous Peoples' Day/Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

VII. Billing

A. Meter Data

Meter data for service rendered in accordance with this Rate Schedule will not be combined for billing purposes unless SMUD determines it is necessary or convenient to do so.

B. Proration of Charges

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The System Infrastructure Fixed Charge, Summer Peak Demand Charge, Maximum Demand Charge, and Site Infrastructure Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days.
Bill period is longer than 34 days	
Price changes within bill period	Relationship between the length of the billing period and the number of days that fall within the respective pricing periods.

C. Contract Capacity

Use of Contract Capacity for billing is at SMUD's sole discretion. Refer to Rule and Regulation 1 and Rule and Regulation 6.

D. Discontinuance of Service

Any customer resuming service at the same premises within 12 months after discontinuing service will be required to pay the System Infrastructure Fixed Charges and Site Infrastructure Charges that would have been billed if service had not been discontinued, except when service has been disconnected. The System Infrastructure Fixed Charge and Site Infrastructure Charge will be waived during each of those months. Retroactive billing shall be at SMUD's sole discretion.

(End)

VIII. Transition Schedule

Season and Charge Component**	Unit	2026*	2027*	2028*
CITS-0: C&I Secondary 0-20 kW				
System Infrastructure Fixed Charge	per month	$40.80	$41.35	$41.90
Maximum Demand Charge	per kW	$2.320	$3.093	$3.866
Non-Summer Peak	per kWh	$0.1495	$0.1457	$0.1420
Non-Summer Off-Peak	per kWh	$0.1307	$0.1237	$0.1166
Non-Summer Off-Peak Saver	per kWh	$0.1208	$0.1118	$0.1029
Summer Peak	per kWh	$0.3151	$0.3251	$0.3354
Summer Off-Peak	per kWh	$0.1423	$0.1397	$0.1370
CITS-1: C&I Secondary 21-299 kW				
System Infrastructure Fixed Charge	per month	$400.85	$474.00	$474.00
Site Infrastructure Charge	per kW	$6.266	$5.539	$5.539
Summer Peak Demand Charge	per kW	$9.670	$11.609	$11.609
Non-Summer Peak	per kWh	$0.1435	$0.1456	$0.1456
Non-Summer Off-Peak	per kWh	$0.1227	$0.1206	$0.1206
Non-Summer Off-Peak Saver	per kWh	$0.0862	$0.0770	$0.0770
Summer Peak	per kWh	$0.2273	$0.2293	$0.2293
Summer Off-Peak	per kWh	$0.1179	$0.1157	$0.1157

*Subject to future rate increases.

**Time-of-Day periods apply as described in Section VII.

Commercial & Industrial Time-of-Day
Rate Schedule CI-TOD2

I. Applicability

This Rate Schedule CI-TOD2 applies to single- or three-phase service, delivered at standard voltages designated by SMUD as available at the customer's premises. This schedule includes the standard rates for all commercial and industrial (C&I) accounts with monthly maximum demand of at least 300 kW for three consecutive months, but not greater than 499 kW for three consecutive months during the preceding 12 months. Accounts served at the secondary service voltage level will remain on the CI-TOD2 rate schedule unless monthly maximum demand falls below 300 kW for 12 consecutive months or exceeds 499 kW for three consecutive months. Accounts served at the primary service voltage level will remain on the CI-TOD2 rate schedule unless monthly maximum demand exceeds 499 kW for three consecutive months. This schedule also includes the standard rates for accounts with contract capacity of at least 300 kW, but not greater than 499 kW. The demand for any month shall be the maximum 15-minute kW delivery during the month.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

II. Firm Service Rates

A. Commercial & Industrial Time-of-Day Rates

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
CITS-2: C&I Secondary 300-499 kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$428.35	$667.50	$685.85	$954.30	$980.55
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$4.597	$4.797	$4.929	$5.144	$5.286
Electricity Usage Charge					
Peak *$/kWh*	$0.1236	$0.1286	$0.1321	$0.1373	$0.1410
Off-Peak *$/kWh*	$0.1000	$0.1043	$0.1072	$0.1117	$0.1148
Off-Peak Saver *$/kWh*	$0.0990	$0.0959	$0.0985	$0.0947	$0.0973
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$428.35	$667.50	$685.85	$954.30	$980.55
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$4.597	$4.797	$4.929	$5.144	$5.286
Summer Peak Demand Charge *$ per monthly Peak max kW*	$9.877	$10.254	$10.536	$10.950	$11.251
Electricity Usage Charge					
Peak *$/kWh*	$0.2195	$0.2246	$0.2308	$0.2362	$0.2427
Off-Peak *$/kWh*	$0.1333	$0.1312	$0.1348	$0.1322	$0.1359
CITP-2: C&I Primary 300-499 kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$204.95	$256.80	$263.90	$322.50	$331.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$3.551	$3.436	$3.530	$3.392	$3.485
Electricity Usage Charge					
Peak *$/kWh*	$0.1249	$0.1370	$0.1407	$0.1556	$0.1598
Off-Peak *$/kWh*	$0.1033	$0.1156	$0.1188	$0.1340	$0.1377
Off-Peak Saver *$/kWh*	$0.0939	$0.0893	$0.0917	$0.0850	$0.0873
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$204.95	$256.80	$263.90	$322.50	$331.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$3.551	$3.436	$3.530	$3.392	$3.485
Summer Peak Demand Charge *$ per monthly Peak max kW*	$9.401	$10.074	$10.351	$11.084	$11.389
Electricity Usage Charge					
Peak *$/kWh*	$0.2016	$0.1971	$0.2025	$0.1958	$0.2012
Off-Peak *$/kWh*	$0.1277	$0.1233	$0.1267	$0.1207	$0.1240

Commercial rates beyond 2025 are effective as shown in Section VIII. Transition Schedule.

III. Electricity Usage Surcharges

Refer the following rate schedules for details on electricity surcharges that apply to all kWh usage.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Rate Option Menu

A. Energy Assistance Program Rate for Nonprofit Agencies. Refer to Rate Schedule EAPR.

B. Campus Billing. Refer to Rate Schedule CB.

C. Implementation of Energy Efficiency Program or Installation of New Solar Photovoltaic or Storage Systems

Customers who implement a SMUD-sponsored Energy Efficiency program or who install a SMUD-approved solar/photovoltaic or storage system to offset their on-site energy usage may request, in writing, within 30 days of the project completion and commissioning, an adjustment to their twelve month maximum demand based on the anticipated reduction in kW from the Energy Efficiency Project Worksheet. The adjusted twelve month maximum demand is valid for 12 months or until it is exceeded by actual maximum demand.

D. Standby Service Option

Standby Service applies when all of the following conditions are met:

1. The customer has generation, sited on the customer's premises, that serves all or part of the customer's load; and
2. The generator(s) are connected to SMUD's electrical system; and
3. SMUD is required to have resources available to provide supplemental service, backup electricity and, or to supply electricity during generator(s) maintenance service.

Standby Service Charge by Voltage Level ($/kW of Contract Capacity per month)	Secondary	Primary	Subtransmission
Effective January 1, 2023	$7.713	$6.129	$3.096
Effective January 1, 2024	$7.925	$6.298	$3.181
Effective May 1, 2024	$8.143	$6.471	$3.269
Effective January 1, 2025	$8.367	$6.649	$3.359
Effective May 1, 2025	$8.597	$6.832	$3.451

In addition to the Standby Service Charge, SMUD will continue to bill for all applicable charges under this rate schedule. These charges include System Infrastructure Fixed Charges, Site Infrastructure Charges, Summer Peak Demand Charges, as well as electricity usage charges for SMUD-provided power.

The Standby Service Charge will be waived only for qualifying renewable generation under Rate Schedules NEM1 and SSR. The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as amicrogrid service, where SMUD provides only backup electricity.

E. Customer Energy Generation Options. Refer to Rate Schedules NEM1 and SSR.

F. SMUD Renewable Energy Option

SMUD offers optional programs that allow customers to receive renewable energy for an additional charge, detailed on www.smud.org.

G. Special Metering Charge

The customer shall pay for additional equipment and software identified by SMUD meter specialists as necessary for load data collection and upload to the customer electronic system. Payment for this nonstandard equipment and service will be made through provisions in Rule and Regulation 2, Section IV. Special Facilities. The fee schedule is available at SMUD's website, www.smud.org

V. Conditions of Service

A. Type of Electric Service

SMUD will provide customers on this rate schedule standard, firm service consisting of a continuous and sufficient supply of electricity.

B. Distribution Service Voltage Definition

The following defines the three voltage classes available. The rate will be determined by the voltage level at which service is provided according to the following:

1. *Secondary Service Voltage*
   This service class provides power at voltage levels below 12 kilo-Volts (kV), or at a level not otherwise defined as "Primary" or "Subtransmission."

2. *Primary Service Voltage*
   This service class provides power at a voltage level of 12 kV or 21 kV. To be eligible for Primary Service Voltage, the customer's monthly demand must exceed 299 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

3. *Subtransmission Service Voltage*
   This subtransmission service class provides power at a voltage level of 69 kV or as otherwise defined by SMUD. To be eligible for voltage service at this level, the customer's monthly demand must exceed 499 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

C. Power Factor Adjustment or Waiver

1. **Adjustment (charge per month varies)**
   Accounts on a demand rate are subject to a power factor (PF) adjustment charge. When a customer's monthly power factor falls below 95 percent leading or lagging, the following billing adjustment will apply:

Electricity Usage x [(95% ÷ Power Factor) - 1] x Power Factor Adjustment Rate

Electricity Usage: the *total monthly kWh for the account*

Power Factor: *the lesser of the customer's monthly power factor or 95 percent*

Power Factor Adjustment Rate

Effective January 1, 2023	$0.0127
Effective January 1, 2024	$0.0130
Effective May 1, 2024	$0.0134
Effective January 1, 2025	$0.0138
Effective May 1, 2025	$0.0142

2. **Waiver Contract (charge per month is set for term of waiver)**
Customers may apply for a power factor waiver contract that compensates SMUD for the power factor correction for the portion that is covered under the contract. The power factor waiver is not available to customers taking service at the subtransmission service voltage level. The waiver amount per month is calculated:

Excess KVAR x Waiver Rate

Excess KVAR: Maximum 12-month KVAR in excess of 32.868 percent of kW

Waiver Rate per excess KVAR

Effective January 1, 2023	$0.3372
Effective January 1, 2024	$0.3465
Effective May 1, 2024	$0.3560
Effective January 1, 2025	$0.3658
Effective May 1, 2025	$0.3759

VI. Commercial & Industrial Time-of-Day Billing Periods

A. Time-of-Day Billing Periods

Non-Summer October 1 -May 31	Peak	Weekdays between 4:00 p.m. and 9:00 p.m., excluding holidays
	Off-Peak Saver	Every day between 9:00 a.m. and 4:00 p.m., including holidays
	Off-Peak	All other hours, including holidays
Summer June 1 -September 30	Peak	Weekdays between 4:00 p.m. and 9:00 p.m., excluding holidays
	Off-Peak	All other hours, including holidays

The holidays recognized for the Time-of-Day Billing Periods are as follows:

Holiday	Month	Date
New Year's Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Juneteenth National Independence Day	June	19
Independence Day	July	4
Labor Day	September	First Monday
Indigenous Peoples' Day/Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

VII. Billing

A. Meter Data

Meter data for service rendered in accordance with this rate will not be combined for billing purposes unless SMUD determines it is necessary or convenient to do so.

B. Proration of Charges

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The System Infrastructure Fixed Charge, Summer Peak Demand Charge and Site Infrastructure Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days.
Bill period is longer than 34 days	
Price changes within bill period	Relationship between the length of the billing period and the number of days that falls within the respective pricing periods.

C. Contract Capacity

Use of Contract Capacity for billing is at SMUD's sole discretion. Refer to Rule and Regulation 1 and Rule and Regulation 6.

D. Discontinuance of Service

Any customer resuming service at the same premises within 12 months after discontinuing service may be required to pay the System Infrastructure Fixed Charges and Site Infrastructure Charges that would have been billed if service had not been discontinued, except when service has been disconnected. The System Infrastructure Fixed Charge and Site Infrastructure Charge will be waived during each of those months. Retroactive billing shall be at SMUD's sole discretion.

(End)

VIII. Transition Schedule

Season and Charge Component**	Unit	2026*	2027*	2028*
CITS-2: C&I Secondary 300-499 kW				
System Infrastructure Fixed Charge	per month	$1,244.60	$1,508.75	$1,770.90
Site Infrastructure Charge	per kW	$5.377	$5.458	$5.539
Summer Peak Demand Charge	per kW	$11.367	$11.482	$11.609
Non-Summer Peak	per kWh	$0.1428	$0.1443	$0.1461
Non-Summer Off-Peak	per kWh	$0.1164	$0.1180	$0.1197
Non-Summer Off-Peak Saver	per kWh	$0.0905	$0.0838	$0.0770
Summer Peak	per kWh	$0.2416	$0.2405	$0.2394
Summer Off-Peak	per kWh	$0.1293	$0.1227	$0.1163
CITP-2: C&I Primary 300-499 kW				
System Infrastructure Fixed Charge	per month	$331.40	$331.40	$331.40
Site Infrastructure Charge	per kW	$3.485	$3.485	$3.485
Summer Peak Demand Charge	per kW	$11.389	$11.389	$11.389
Non-Summer Peak	per kWh	$0.1598	$0.1598	$0.1598
Non-Summer Off-Peak	per kWh	$0.1377	$0.1377	$0.1377
Non-Summer Off-Peak Saver	per kWh	$0.0873	$0.0873	$0.0873
Summer Peak	per kWh	$0.2012	$0.2012	$0.2012
Summer Off-Peak	per kWh	$0.1240	$0.1240	$0.1240

*Subject to future rate increases.

**Time-of-Day periods apply as described in Section VI.

Commercial & Industrial Time-of-Day
Rate Schedule CI-TOD3

I. Applicability

This Rate Schedule CI-TOD3 applies to single- or three-phase service, delivered at standard voltages designated by SMUD as available at the customer's premises. This schedule includes the standard rates for all agricultural, commercial and industrial (C&I) accounts with monthly maximum demand of at least 500 kW for three consecutive months, but not greater than 999 kW for three consecutive months during the preceding 12 months. Accounts will remain on this schedule unless monthly maximum demand falls below 500 kW for 12 consecutive months or exceeds 999 kW for three consecutive months. This schedule also includes the standard rates for accounts with contract capacity of at least 500 kW, but not greater than 999 kW. The demand for any month will be the maximum 15-minute kW delivery during the month.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

II. Firm Service Rates

A. Commercial Industrial Time-of-Day Rates

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
CITS-3: C&I Secondary 500-999 kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$781.65	$1,479.90	$1,520.60	$2,276.85	$2,339.50
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$4.152	$4.692	$4.821	$5.391	$5.539
Electricity Usage Charge					
Peak *$/kWh*	$0.1225	$0.1275	$0.1310	$0.1367	$0.1405
Off-Peak *$/kWh*	$0.0992	$0.1045	$0.1074	$0.1129	$0.1160
Off-Peak Saver *$/kWh*	$0.0906	$0.0811	$0.0832	$0.0730	$0.0750
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$781.65	$1,479.90	$1,520.60	$2,276.85	$2,339.50
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$4.152	$4.692	$4.821	$5.391	$5.539
Summer Peak Demand Charge *$ per monthly Peak max kW*	$9.732	$10.350	$10.635	$11.298	$11.609
Electricity Usage Charge					
Peak *$/kWh*	$0.2111	$0.2141	$0.2200	$0.2232	$0.2294
Off-Peak *$/kWh*	$0.1212	$0.1138	$0.1170	$0.1088	$0.1118
CITP-3: C&I Primary 500-999 kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$297.30	$305.50	$313.90	$322.50	$331.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$3.127	$3.213	$3.301	$3.392	$3.485
Electricity Usage Charge					
Peak *$/kWh*	$0.1314	$0.1350	$0.1387	$0.1425	$0.1465
Off-Peak *$/kWh*	$0.1141	$0.1172	$0.1205	$0.1238	$0.1272
Off-Peak Saver *$/kWh*	$0.0727	$0.0747	$0.0768	$0.0789	$0.0811
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$297.30	$305.50	$313.90	$322.50	$331.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$3.127	$3.213	$3.301	$3.392	$3.485
Summer Peak Demand Charge *$ per monthly Peak max kW*	$10.218	$10.499	$10.788	$11.084	$11.389
Electricity Usage Charge					
Peak *$/kWh*	$0.2131	$0.2190	$0.2250	$0.2312	$0.2375
Off-Peak *$/kWh*	$0.1084	$0.1114	$0.1144	$0.1176	$0.1208
CITT-3: C&I Subtransmission 500-999 kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$1,237.65	$1,271.70	$1,306.65	$1,342.60	$1,379.50
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$3.427	$3.521	$3.618	$3.718	$3.820
Electricity Usage Charge					
Peak *$/kWh*	$0.1138	$0.1169	$0.1201	$0.1234	$0.1268
Off-Peak *$/kWh*	$0.0950	$0.0976	$0.1003	$0.1031	$0.1059
Off-Peak Saver *$/kWh*	$0.0618	$0.0635	$0.0652	$0.0670	$0.0689
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$1,237.65	$1,271.70	$1,306.65	$1,342.60	$1,379.50
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$3.427	$3.521	$3.618	$3.718	$3.820
Summer Peak Demand Charge *$ per monthly Peak max kW*	$9.960	$10.234	$10.515	$10.805	$11.102
Electricity Usage Charge					
Peak *$/kWh*	$0.1913	$0.1966	$0.2020	$0.2075	$0.2132
Off-Peak *$/kWh*	$0.0922	$0.0946	$0.0972	$0.0999	$0.1027

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on electricity usage surcharges that apply to all kWh.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Rate Option Menu

A. Energy Assistance Program Rate for Nonprofit Agencies. Refer to Rate Schedule EAPR.

B. Campus Billing. Refer to Rate Schedule CB.

C. Implementation of Energy Efficiency Program or Installation of New Solar Photovoltaic or Storage Systems

Customers who implement a SMUD-sponsored Energy Efficiency program or who install a SMUD-approved solar/photovoltaic or storage system to offset their on-site energy usage may request, in writing, within 30 days of the project completion and commissioning, an adjustment to their twelve month maximum demand based on the anticipated reduction in kW from the Energy Efficiency Project Worksheet. The adjusted twelve month maximum demand is valid for 12 months or until it is exceeded by actual maximum demand.

D. Standby Service Option

Standby Service applies when all of the following conditions are met:

1. The customer has generation, sited on the customer's premises, that serves all or part of the customer's load; and
2. The generator(s) are connected to SMUD's electrical system; and
3. SMUD is required to have resources available to provide supplemental service, backup electricity and, or to supply electricity during generator(s) maintenance service.

Standby Service Charge by Voltage Level ($/kW of Contract Capacity per month)	Secondary	Primary	Subtransmission
Effective January 1, 2023	$7.713	$6.129	$3.096
Effective January 1, 2024	$7.925	$6.298	$3.181
Effective May 1, 2024	$8.143	$6.471	$3.269
Effective January 1, 2025	$8.367	$6.649	$3.359
Effective May 1, 2025	$8.597	$6.832	$3.451

In addition to the Standby Service Charge, SMUD will continue to bill for all applicable charges under this rate schedule, including, but not limited to, System Infrastructure Fixed Charges, Site Infrastructure Charges, Summer Peak Demand Charges, and electricity usage charges for SMUD-provided power.

The Standby Service Charge will be waived only for qualifying renewable generation under Rate Schedules NEM1 and SSR. The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

E. Customer Energy Generation Options. Refer to Rate Schedules NEM1 and SSR.

F. SMUD Renewable Energy Option

SMUD offers optional programs that allow customers to receive renewable energy for an additional charge, detailed on www.smud.org.

G. Special Metering Charge

The customer shall pay for additional equipment and software identified by SMUD meter specialists as necessary for load data collection and upload to the customer electronic system. Payment for this nonstandard equipment and service will be made through provisions in Rule and Regulation 2, Section IV. Special Facilities. The fee schedule is available at SMUD's website, www.smud.org.

V. Conditions of Service

A. Type of Electric Service

SMUD will provide customers on this rate schedule standard, firm service consisting of a continuous and sufficient supply of electricity.

B. Distribution Service Voltage Definition

The following defines the three voltage classes available. The rate will be determined by the voltage level at which service is provided according to the following:

1. *Secondary Service Voltage*
   This service class provides power at voltage levels below 12 kilo-Volts (kV), or at a level not otherwise defined as "Primary" or "Subtransmission."

2. *Primary Service Voltage*
   This service class provides power at a voltage level of 12 kV or 21 kV. To be eligible for Primary Service Voltage, the customer's monthly demand must exceed 299 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

3. *Subtransmission Service Voltage*
   This subtransmission service class provides power at a voltage level of 69 kV or as otherwise defined by SMUD. To be eligible for voltage service at this level, the customer's monthly demand must exceed 499 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

C. Power Factor Adjustment or Waiver

1. Adjustment (charge per month varies)
Accounts on a demand rate are subject to a power factor (PF) adjustment charge. When a customer's monthly power factor falls below 95 percent leading or lagging, the following billing adjustment will apply:

Electricity Usage x [(95% ÷ Power Factor) - 1] x Power Factor Adjustment Rate

Electricity Usage: the total monthly kWh for the account

Power Factor: the lesser of the customer's monthly power factor or 95 percent

Power Factor Adjustment Rate

Effective January 1, 2023	$0.0127
Effective January 1, 2024	$0.0130
Effective May 1, 2024	$0.0134
Effective January 1, 2025	$0.0138
Effective May 1, 2025	$0.0142

2. Waiver Contract (charge per month is set for term of waiver)

Customers may apply for a power factor waiver contract that compensates SMUD for the power factor correction for the portion that is covered under the contract. The power factor waiver is not available to customers taking service at the subtransmission service voltage level. The waiver amount per month is calculated:

Excess KVAR x Waiver Rate

Excess KVAR: Maximum 12-month KVAR in excess of 32.868 percent of kW

Waiver Rate per excess KVAR

Effective January 1, 2023	$0.3372
Effective January 1, 2024	$0.3465
Effective May 1, 2024	$0.3560
Effective January 1, 2025	$0.3658
Effective May 1, 2025	$0.3759

VI. Commercial Industrial Time-of-Day Billing Periods

A. Time-of-Day Billing Periods

Non-Summer October 1 -May 31	Peak	Weekdays between 4:00 p.m. and 9:00 p.m., excluding holidays
	Off-Peak Saver	Every day between 9:00 a.m. and 4:00 p.m., including holidays
	Off-Peak	All other hours, including holidays
Summer June 1 -September 30	Peak	Weekdays between 4:00 p.m. and 9:00 p.m., excluding holidays
	Off-Peak	All other hours, including holidays

The holidays recognized for the Time-of-Day Billing Periods are as follows:

Holiday	Month	Date
New Year's Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Juneteenth National Independence Day	June	19
Independence Day	July	4
Labor Day	September	First Monday
Indigenous Peoples' Day/Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

VII. Billing

A. Meter Data

Meter data for service rendered in accordance with this rate will not be combined for billing purposes unless SMUD determines it is necessary or convenient to do so.

B. Proration of Charges

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The System Infrastructure Fixed Charge, Summer Peak Demand Charge and Site Infrastructure Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days.
Bill period is longer than 34 days	
Price changes within bill period	Relationship between the length of the billing period and the number of days that fall within the respective pricing periods.

C. Contract Capacity

Use of Contract Capacity for billing is at SMUD's sole discretion. Refer to Rule and Regulation 1 and Rule and Regulation 6.

D. Discontinuance of Service

Any customer resuming service at the same premises within 12 months after discontinuing service may be required to pay the System Infrastructure Fixed Charges and Site Infrastructure Charges that would have been billed if service had not been discontinued, except when service has been disconnected. The System Infrastructure Fixed Charge and Site Infrastructure Charge will be waived during each of those months. Retroactive billing shall be at SMUD's sole discretion.

(End)

Commercial & Industrial Time-of-Day
Rate Schedule CI-TOD4

I. Applicability

This Rate Schedule CI-TOD4 applies to single- or three-phase service, delivered at standard voltages designated by SMUD as available at the customer's premises. This schedule includes the standard rates for all agricultural, commercial and industrial (C&I) accounts with monthly maximum demand of 1,000 kW or greater for three consecutive months during the preceding 12 months. Accounts will remain on this rate schedule unless monthly maximum demand falls below 1,000 kW for 12 consecutive months. The demand for any month will be the maximum 15-minute kW delivery during the month. This schedule also includes the standard rates for accounts with contract capacity of 1,000 kW or greater.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

II. Firm Service Rates

A. Commercial Industrial Time-of-Day Rates

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
CITS-4: C&I Secondary 1000+ kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$2,319.35	$3,592.75	$3,691.55	$3,793.10	$3,897.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$4.876	$5.106	$5.246	$5.390	$5.539
Electricity Usage Charge					
Peak *$/kWh*	$0.1284	$0.1330	$0.1367	$0.1404	$0.1442
Off-Peak *$/kWh*	$0.1048	$0.1094	$0.1124	$0.1154	$0.1186
Off-Peak Saver *$/kWh*	$0.0833	$0.0705	$0.0724	$0.0744	$0.0765
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$2,319.35	$3,592.75	$3,691.55	$3,793.10	$3,897.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$4.876	$5.106	$5.246	$5.390	$5.539
Summer Peak Demand Charge *$ per monthly Peak max kW*	$6.937	$10.701	$10.996	$11.298	$11.609
Electricity Usage Charge					
Peak *$/kWh*	$0.2048	$0.2182	$0.2242	$0.2304	$0.2367
Off-Peak *$/kWh*	$0.1143	$0.1061	$0.1090	$0.1121	$0.1151
CITP-4: C&I Primary 1000+ kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$297.30	$305.50	$313.90	$322.50	$331.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$4.400	$4.521	$4.645	$4.773	$4.904
Electricity Usage Charge					
Peak *$/kWh*	$0.1295	$0.1331	$0.1367	$0.1405	$0.1444
Off-Peak *$/kWh*	$0.1051	$0.1080	$0.1110	$0.1140	$0.1172
Off-Peak Saver *$/kWh*	$0.0679	$0.0697	$0.0716	$0.0737	$0.0757
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$297.30	$305.50	$313.90	$322.50	$331.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$4.400	$4.521	$4.645	$4.773	$4.904
Summer Peak Demand Charge *$ per monthly Peak max kW*	$10.218	$10.499	$10.788	$11.084	$11.389
Electricity Usage Charge					
Peak *$/kWh*	$0.1997	$0.2052	$0.2108	$0.2166	$0.2226
Off-Peak *$/kWh*	$0.1014	$0.1042	$0.1071	$0.1100	$0.1130
CITT-4: C&I Subtransmission 1000+ kW					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$1,178.85	$1,271.70	$1,306.65	$1,342.60	$1,379.50
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$3.479	$3.521	$3.618	$3.718	$3.820
Electricity Usage Charge					
Peak *$/kWh*	$0.1228	$0.1295	$0.1330	$0.1367	$0.1404
Off-Peak *$/kWh*	$0.0998	$0.1058	$0.1087	$0.1117	$0.1148
Off-Peak Saver *$/kWh*	$0.0774	$0.0684	$0.0703	$0.0722	$0.0742
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$1,178.85	$1,271.70	$1,306.65	$1,342.60	$1,379.50
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$3.479	$3.521	$3.618	$3.718	$3.820
Summer Peak Demand Charge *$ per monthly Peak max kW*	$6.636	$10.234	$10.515	$10.805	$11.102
Electricity Usage Charge					
Peak *$/kWh*	$0.1699	$0.1824	$0.1874	$0.1926	$0.1978
Off-Peak *$/kWh*	$0.1050	$0.1014	$0.1042	$0.1071	$0.1100

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on electricity usage surcharges that apply to all kWh.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Rate Option Menu

A. Energy Assistance Program Rate for Nonprofit Agencies. Refer to Rate Schedule EAPR.

B. Campus Billing. Refer to Rate Schedule CB.

C. Implementation of Energy Efficiency Program or Installation of New Solar/Photovoltaic or Storage Systems

Customers who implement a SMUD-sponsored Energy Efficiency program or who install a SMUD-approved solar/photovoltaic or storage system to offset their on-site energy usage may request, in writing, within 30 days of the project completion and commissioning, an adjustment to their twelve month maximum demand based on the anticipated reduction in kW from the Energy Efficiency Project Worksheet. The adjusted twelve month maximum demand is valid for 12 months or until it is exceeded by actual maximum demand.

D. Standby Service Option

Standby Service applies when all of the following conditions are met:

1. The customer has generation, sited on the customer's premises, that serves all or part of the customer's load; and
2. The generator(s) are connected to SMUD's electrical system; and
3. SMUD is required to have resources available to provide supplemental service, backup electricity and, or to supply electricity during generator(s) maintenance service.

Standby Service Charge by Voltage Level ($/kW of Contract Capacity per month)	Secondary	Primary	Subtransmission
Effective January 1, 2023	$7.713	$6.129	$3.096
Effective January 1, 2024	$7.925	$6.298	$3.181
Effective May 1, 2024	$8.143	$6.471	$3.269
Effective January 1, 2025	$8.367	$6.649	$3.359
Effective May 1, 2025	$8.597	$6.832	$3.451

In addition to the Standby Service Charge, SMUD will continue to bill for all applicable charges under this rate schedule, including, but not limited to, System Infrastructure Fixed Charges, Site Infrastructure Charges, Summer Peak Demand Charges, and electricity usage charges for SMUD-provided power.

The Standby Service Charge will be waived only for qualifying renewable generation under Rate Schedules NEM1 and SSR. The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

E. Customer Energy Generation Options. Refer to Rate Schedules NEM1 and SSR.

F. SMUD Renewable Energy Option

SMUD offers optional programs that allow customers to receive renewable energy for an additional charge, detailed on www.smud.org.

G. Special Metering Charge

For customers who purchase and install additional equipment and software identified by SMUD meter specialists as necessary for load data collection and transfer to electronic media outside SMUD, SMUD will charge a monthly service fee to cover maintenance, software support and licensing fees. Payment for this nonstandard equipment and service will be made through provisions in Rule and Regulation 2, Section IV. Special Facilities. The fee schedule is available at SMUD's website, www.smud.org.

V. Conditions of Service

A. Type of Electric Service

SMUD will provide customers on this rate schedule standard, firm service consisting of a continuous and sufficient supply of electricity.

B. Distribution Service Voltage Definition

The following defines the three voltage classes available. The rate shall be determined by the voltage level at which service is provided according to the following:

1. *Secondary Service Voltage*
   This service class provides power at voltage levels below 12 kilo-Volts (kV), or at a level not otherwise defined as "Primary" or "Subtransmission."

2. *Primary Service Voltage*
   This service class provides power at a voltage level of 12 kV or 21 kV. To be eligible for Primary Service Voltage, the customer's monthly demand must exceed 299 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

3. *Subtransmission Service Voltage*
   This subtransmission service class provides power at a voltage level of 69 kV or as otherwise defined by SMUD. To be eligible for voltage service at this level, the customer's monthly demand must exceed 499 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

C. Power Factor Adjustment or Waiver

1. Adjustment (charge per month varies)

Accounts on a demand rate are subject to a power factor (PF) adjustment charge. When a customer's monthly power factor falls below 95 percent leading or lagging, the following billing adjustment will apply:

Electricity Usage x [(95% ÷ Power Factor) - 1] x Power Factor Adjustment Rate

Electricity Usage: the total monthly kWh for the account

Power Factor: the lesser of the customer's monthly power factor or 95 percent

Power Factor Adjustment Rate

Effective January 1, 2023	$0.0127
Effective January 1, 2024	$0.0130
Effective May 1, 2024	$0.0134
Effective January 1, 2025	$0.0138
Effective May 1, 2025	$0.0142

2. Waiver Contract (charge per month is set for the term of the waiver)

Customers may apply for a power factor waiver contract that compensates SMUD for the power factor correction for the portion that is covered under the contract. The power factor waiver is not available to customers taking service at the subtransmission service voltage level. The waiver amount per month is calculated:

Excess KVAR x Waiver Rate

Excess KVAR: Maximum 12-month KVAR in excess of 32.868 percent of kW

Waiver Rate per excess KVAR

Effective January 1, 2023	$0.3372
Effective January 1, 2024	$0.3465
Effective May 1, 2024	$0.3560
Effective January 1, 2025	$0.3658
Effective May 1, 2025	$0.3759

VI. Commercial Industrial Time-of-Day Billing Periods

A. Time-of-Day Billing Periods

Non-Summer October 1 -May 31	Peak	Weekdays between 4:00 p.m. and 9:00 p.m., excluding holidays
	Off-Peak Saver	Every day between 9:00 a.m. and 4:00 p.m., including holidays
	Off-Peak	All other hours, including holidays
Summer June 1 -September 30	Peak	Weekdays between 4:00 p.m. and 9:00 p.m., excluding holidays
	Off-Peak	All other hours, including holidays

The holidays recognized for the Time-of-Day Billing Periods are as follows:

Holiday	Month	Date
New Year's Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Juneteenth National Independence Day	June	19
Independence Day	July	4
Labor Day	September	First Monday
Indigenous Peoples' Day/Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

VII. Billing

A. Meter Data

Meter data for service rendered in accordance with this rate will not be combined for billing purposes unless SMUD determines it is necessary or convenient to do so.

B. Proration of Charges

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The System Infrastructure Fixed Charge, Summer Peak Demand Charge and Site Infrastructure Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is less than 27 days	Relationship between the length of the billing period and 30 days.
Bill period is more than 34 days	
Price changes within billing period	Relationship between the length of the billing period and the number of days that fall within the respective pricing periods.

C. Contract Capacity

Use of Contract Capacity for billing is at SMUD's sole discretion. Refer to Rule and Regulation 1 and Rule and Regulation 6.

D. Discontinuance of Service

Any customer resuming service at the same premises within 12 months after discontinuing service will be required to pay the System Infrastructure Fixed Charges and Site Infrastructure Charges that would have been billed if service had not been discontinued, except when service has been disconnected. The System Infrastructure Fixed Charge and Site Infrastructure Charge will be waived during each of those months. Retroactive billing shall be at SMUD's sole discretion.

(End)

Distribution Wheeling Service
Rate Schedule DWS

I. Applicability

This Rate Schedule DWS is optional for customers requesting Distribution Wheeling Service. SMUD may, at its sole discretion, provide Distribution Wheeling Service to Independent Power Producers and Cogenerators, also referred to as Merchant Generators, within SMUD territory, who establish a need for this service. Wheeling service requests will be evaluated on a case by case basis and may be limited by availability of distribution system capacity. SMUD, as the incumbent utility with native load service obligations, will determine the amount of excess distribution system capacity based on SMUD's forecasted customer loads. Any available distribution capacity in excess of SMUD's native load needs may be available to third parties requesting service under this Rate Schedule DWS. This rate has been developed for wholesale power transactions and SMUD will not wheel non-SMUD power to its retail customers under this rate.

This Rate Schedule DWS is available to entities owning generating facilities that meet the following conditions:

- The entity's generating facility is connected to SMUD's distribution system; and
- The entity has a power purchase (offtake) agreement for the output of the generating facility with an entity other than SMUD; and
- Power delivery under the power purchase agreement occurs at a location outside of the SMUD system.

Under this service, the power from the associated generating facility will be wheeled (transferred) across SMUD's distribution system from the point of interconnection to SMUD's distribution system (Interconnection Point) to SMUD's bulk power system. Entities taking service under this rate schedule will also be required to take Transmission Wheeling Service from SMUD under the SMUD Open Access Transmission Tariff (OATT).

Service under this schedule is on a first-come, first-served basis and is available unless the usage of these wheeling facilities would be detrimental to SMUD. This schedule is available for interconnection of the qualified generating facility to the SMUD distribution system, wherever that may occur within the SMUD service territory.

II. Rates

Distribution Wheeling Charge

$/kilowatt-month	12/21 kV*	69 kV*
Effective January 1, 2023	$11.152	$1.737
Effective January 1, 2024	$11.459	$1.785
Effective May 1, 2024	$11.774	$1.834
Effective January 1, 2025	$12.098	$1.884
Effective May 1, 2025	$12.430	$1.936

* includes all path charges to SMUD's bulk power system

III. Conditions of Service

A. Application for Service

Any entity requesting service under this rate schedule must submit an application for Distribution Wheeling Service. Application for such service is available at the SMUD website, www.smud.org.

B. Required Service Contract

The entity taking wheeling service under the rate schedule shall execute a Distribution Wheeling Agreement (DWA) in accordance with SMUD Policy and Procedure 8-05.

C. Reservation Deposit

The entity requesting service under this rate schedule will be required to submit a deposit equal to one month of service under this rate. The deposit will be refundable up until the time that the entity commits to service by execution of the DWA. Once the DWA is executed, the reservation deposit becomes a nonrefundable payment for the first month of service under the rate schedule.

D. Term

Applicant must specify, at the time of application, the start date for the requested service. Applicant must also specify the duration that is requested for service. SMUD will accept applications for service up to 20 years.

E. Application Under SMUD'S OATT

Applicants must also make application for Transmission Service under SMUD's Open Access Transmission Tariff.

F. Definitions

The following definitions apply to this schedule:

1. Applicant: The entity requesting service under this rate schedule.
2. Distribution Wheeling: The transfer of Merchant Generator power at 12 kV, 21 kV, or 69 kV for delivery to a third party outside SMUD service territory.

G. Electrical Interconnection

Applicant must also make a request for interconnection that complies with SMUD's Rule and Regulation 21 process for interconnection and must meet the requirements of Rule and Regulation 21, which include executing an Interconnection Agreement with SMUD. Any resources ***not*** meeting the Rule and Regulation 21 requirements will not be eligible for service under this schedule.

H. Metering Requirements

Distributed generation resources receiving service under this schedule shall comply with all applicable rules in installing metering equipment appropriate for full output monitoring agreements, and which can be read daily by electronic means acceptable to SMUD. The customer shall be responsible for procuring and maintaining any communication link required by SMUD for retrieving meter data.

IV. Line Losses

Merchant Generators taking service under this rate schedule will be assessed a line loss factor. Line losses will be applied as the electricity transitions from one voltage level to another. The line losses by voltage level are as follows:

Voltage Level	Loss Factor
12/21kV	4.06%
69kV	1.53%

SMUD reserves the right to update the line loss factor annually on January 1.

Line losses will be applied to the amount of generated electricity that is measured at the point of interconnection between the Merchant Generator's facility and SMUD's electrical system.

(End)

Residential and Commercial & Industrial
Energy Assistance Program
Rate Schedule EAPR

I. Applicability

This Rate Schedule EAPR applies to customers receiving service under residential or Commercial & Industrial rates who meet specific eligibility requirements.

II. Eligibility for Residential Customers

Eligibility for the Energy Assistance Program (EAPR) is determined by the following:

A. The total gross household income must conform to the Income Guidelines as specified on the application;

B. The customer must not be claimed as a dependent on another person's income tax return; and

C. The service address on the application must be the customer's primary residence.

III. Discount for Residential Customers

Eligible residential customers will receive a discount based on qualifying federal poverty level income guidelines. The EAPR discount will include:

1. A $10 System Infrastructure Fixed Charge discount per month; and
2. An additional discount is applied as a 100% reduction in the electricity usage cost per kilowatt hour up to the maximum discount according to the following income guidelines:

Federal Poverty Level	Maximum Electricity Usage Discount
0-50%	$60
>50 to 100%	$32
>100 to 150%	$10
>150 to 200%	$0

3. For certain eligible residential EAPR customers per the table below, an EAPR Stabilization Fund (ESF) will be established and maintained to provide an additional discount applied as a reduction in the electricity usage cost per kilowatt hour up to the maximum discount. On an annual basis the Accountant will determine if available sources of discretionary non-retail rate revenue exist and apply those funds to cover up to the maximum ESF additional discount. The additional monthly discount amount will begin January 1, 2024 and will be determined prior to the year the value is in effect.

Federal Poverty Level	ESF Additional Monthly Discount
0-50%	$0 - $35

IV. Eligibility for Nonprofit Organizations

To be eligible for EAPR the nonprofit organization must meet the following requirements:

A. The organization's qualifying site takes service directly from SMUD; and

B. The organization meets the qualifications for a nonprofit public or private organization, as specified on the application; and

C. The organization operates the qualifying site as residential unit(s) whose residents meet the EAPR income guidelines.

1. The primary function of the site shall be to provide a home (sleeping quarters) for low-income residents who would otherwise meet the residential EAPR guidelines defining low-income if permanently residing in a residence.

2. In support of the primary function that is provided by the nonprofit organization, associated facilities that provide daytime services for the homeless (such as personal hygiene facilities, laundry facilities, kitchen and/or dining facilities, etc.) may also qualify for the discount. At least 75 percent of the facility's square footage must be directly related to meeting these functions.

An energy survey of the residential unit(s) is recommended at the time of being placed on this program and implementation of recommended cost-effective energy efficiency measures is encouraged.

V. Discount for Nonprofit Organization

All eligible non-profit organization accounts on a residential rate will receive the maximum residential discount.

Eligible Commercial & Industrial customers will receive discounts as follows:

A. All eligible Commercial & Industrial customers will receive a discount of 15 percent of the Electricity Usage Charge (kWh), Maximum Demand Charge (kW), Site Infrastructure Charge (kW), and Summer Peak Demand Charge (kW) each billing period.

B. The Commercial & Industrial rate schedule CI-TOD1 System Infrastructure Fixed Charge will receive a discount of 35 percent each billing period.

C. The Commercial & Industrial rate schedules CI-TOD2, CI-TOD3 and CI-TOD4 System Infrastructure Fixed Charge will receive a 15 percent discount applied each billing period.

VI. Electricity Usage Surcharges

Refer to the following rate schedules for details on electricity usage surcharges that apply to all kWh.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

VII. Conditions of Service

A. Application

To qualify for EAPR, the customer must complete a SMUD application and submit requested supporting documents. Applications are processed by SMUD or SMUD's designated agent.

Residential applications are available at SMUD's website, www.smud.org, or by calling SMUD customer service at 1-888-742-7683.

Nonprofit organizations must provide a copy of a valid determination or ruling letter from the Internal Revenue Service attesting to their charitable nonprofit status. Nonprofit Organization applications are available by calling SMUD customer service at 1-888-742-7683.

B. Verification

Upon request, applicants shall provide proof, satisfactory to SMUD or its designated agent, that they meet the eligibility requirements. Failure to provide proof as requested will be considered just cause for denial to enroll in EAPR. It is the customer's responsibility to immediately notify SMUD or its designated agent when eligibility requirements change to the extent that the applicant no longer qualifies for this program. Applicants served under this program may be subject to annual review and/or verification. Any intent to defraud SMUD will result in rebilling of the applicant's bill and removal from EAPR. SMUD reserves the right to take appropriate legal action as warranted.

VIII. Billing

The effective date of EAPR will be the beginning of the billing period in which the request is approved. If participation is terminated, the effective termination date will be the beginning of the billing period in which the request is received or the cancellation date. The maximum electricity usage discount will not be prorated, regardless of the number of days in the billing period or the spanning of multiple seasons. The discount may be reflected on the customer's bill with a rate-based identifier code or line item description. The monthly System Infrastructure Fixed Charge discount will be prorated for bill periods shorter than 27 days as shown in the table below.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days.

(End)

General Service
Temperature-Dependent Pricing/Economic Retention
Rate Schedule GS-TDP *(Closed to new customers)*

I. Applicability

This Rate Schedule GS-TDP applies to single- or three-phase service, delivered at the subtransmission voltage level. The rate charged the customer shall vary depending on the maximum forecasted temperature during the summer season (June through September). SMUD is utilizing temperature-dependent pricing as an additional rate option for economic retention.

This rate schedule was closed to new participants effective January 1, 1998.

To be eligible for this schedule, customers must have met the following requirements:

1. Certify to SMUD that serving their load has become competitive as shown through evidence of viable competitive energy sources from relocation, self-generation, cogeneration, etc.;
2. Verify that electricity costs are at least 10 percent of their variable production costs; and
3. Agree to remain a full-requirements SMUD customer for a minimum period of five years. If the customer chooses to bypass SMUD before the five year period has expired, the customer shall reimburse SMUD for all cumulative savings received under the temperature-dependent pricing rate compared to the standard rate. The customer may elect to terminate SMUD service after four years, with a one-year advance notification, without penalty.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

II. Firm Service Rate

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
GS-TDP					
Winter Season (January - May)					
System Infrastructure Fixed Charge *per month per meter*	$334.10	$343.30	$352.75	$362.45	$372.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$0.652	$0.670	$0.688	$0.707	$0.726
Electricity Usage Charge					
On-peak *$/kWh*	$0.1156	$0.1188	$0.1221	$0.1254	$0.1288
Off-peak *$/kWh*	$0.0826	$0.0849	$0.0872	$0.0896	$0.0921
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$334.10	$343.30	$352.75	$362.45	$372.40
Site Infrastructure Charge *per 12 months max kW or contract capacity*	$0.652	$0.670	$0.688	$0.707	$0.726
TDP Summer Super-Peak Demand Charge *($/kW)*					
Per kW of maximum demand during Super-Peak Period per day if forecasted daily maximum temperature (T) for the following day is:					
"Heat Storm" if T ≥ 100° for 2 or more consecutive days; or	$6.709	$6.893	$7.083	$7.278	$7.478
"Extremely Hot if T ≥ 100° for a single day; or	$6.305	$6.478	$6.657	$6.840	$7.028
"Very Hot" if 100° > T > 95° for a single day; or	$1.170	$1.202	$1.235	$1.269	$1.304
"Mild to Hot" if 95° ≥ T	No Charge	No Charge	No Charge	No Charge	No Charge
Electricity Usage Charge					
Super-peak *$/kWh*	$0.1572	$0.1615	$0.1660	$0.1705	$0.1752
On-peak *$/kWh*	$0.1382	$0.1420	$0.1459	$0.1499	$0.1540
Off-peak *$/kWh*	$0.1039	$0.1068	$0.1097	$0.1127	$0.1158

The TDP Summer Super Peak Maximum Demand Charge varies depending on the forecasted maximum temperature, based on a mutually agreed upon weather forecast source for the Sacramento area, for the following day.

Minimum Demand Charge Day

A "Minimum Demand Charge Day" may be declared on days when the forecast maximum daily temperature is greater than 95°F and less than 50 percent of SMUD's available peaking resources are being utilized. On a "Minimum Demand Charge Day" there is no charge for super-peak TDP maximum demand.

Notification of Minimum Demand Charge Day

It is the responsibility of the customer to communicate with SMUD to determine whether the SMUD system operator has declared a "Minimum Demand Charge Day." SMUD reserves the right to cancel a "Minimum Demand Charge Day" if necessary. Any such update will be provided to the customer no later than one hour prior to application of the TDP super-peak maximum demand charge.

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on electricity usage surcharges.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Rate Option Menu

A. SMUD Renewable Energy Option

SMUD offers optional programs that allow customers to receive renewable energy for an additional charge, detailed on www.smud.org

B. Special Metering Charge

For customers who purchase and install additional equipment and software identified by SMUD meter specialists as necessary for load data collection and transfer to electronic media outside SMUD, SMUD will charge a monthly service fee to cover maintenance, software support and licensing fees. Payment for this nonstandard equipment and service will be made through provisions in Rule and Regulation 2, Section IV. Special Facilities. The fee schedule is available at SMUD's website, www.smud.org.

V. Conditions of Service

A. Type of Electric Service

SMUD will provide customers on this rate schedule standard, firm service consisting of a continuous and sufficient supply of electricity.

B. Service Voltage Definition

1. *Secondary Service Voltage*
   This service class provides power at voltage levels below 12 kilo-Volts (kV), or at a level not otherwise defined as "Primary" or "Subtransmission."

2. *Primary Service Voltage*
   This service class provides power at a voltage level of 12 kV or 21 kV. To be eligible for Primary Service Voltage, the customer's monthly demand must exceed 299 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

3. *Subtransmission Service Voltage*
   This subtransmission service class provides power at a voltage level of 69 kV or as otherwise defined by SMUD. To be eligible for voltage service at this level, the customer's monthly demand must exceed 499 kW, the voltage must be available in the area being served, and SMUD must approve the arrangement for power provision.

C. Power Factor Adjustment or Waiver

1. Adjustment (charge per month varies)

Accounts on a demand rate may be subject to a power factor (PF) adjustment charge. When a customer's monthly power factor falls below 95 percent leading or lagging, the following billing adjustment will apply:

Electricity Usage x [(95% ÷ Power Factor) - 1] x Power Factor Adjustment Rate

Electricity Usage: the total monthly kWh for the account

Power Factor: *the lesser of the customer's monthly power factor or 95 percent*

Power Factor Adjustment Rate

Effective January 1, 2023	$0.0127
Effective January 1, 2024	$0.0130
Effective May 1, 2024	$0.0134
Effective January 1, 2025	$0.0138
Effective May 1, 2025	$0.0142

2. Waiver Contract (charge per month is set for the term of the waiver)

Customers may apply for a power factor waiver contract that compensates SMUD for the power factor correction for the portion that is covered under the contract. The power factor waiver is not available to customers taking service at the subtransmission service voltage level. The waiver amount per month is calculated:

Excess KVAR x Waiver Rate

Excess KVAR: Maximum 12-month KVAR in excess of 32.868 percent of kW

Waiver Rate per excess KVAR

Effective January 1, 2023	$0.3372
Effective January 1, 2024	$0.3465
Effective May 1, 2024	$0.3560
Effective January 1, 2025	$0.3658
Effective May 1, 2025	$0.3759

D. Large General Service Time-of-Use Billing Periods

Winter On-Peak: October 1 - May 31	Weekdays between noon and 10:00 p.m.
Summer On-Peak: June 1 - September 30	Weekdays between noon and 2:00 p.m. and between 8:00 p.m. and 10:00 p.m.
Summer Super-Peak: June 1 - September 30	Weekdays between 2:00 p.m. and 8:00 p.m.
Off-Peak	All other hours, including holidays shown below.

Off-peak pricing shall apply during the following holidays:

Holiday	Month	Date
New Year's Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Juneteenth National Independence Day	June	19
Independence Day	July	4
Labor Day	September	First Monday
Indigenous Peoples' Day/Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

VI. Billing

A. Meter Data

Meter data for service rendered in accordance with this rate will not be combined for billing purposes unless SMUD determines it is necessary or convenient to do so.

B. Proration of Charges

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The System Infrastructure Fixed Charge and Site Infrastructure Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days.
Bill period is longer than 34 days	
Price changes within bill period	Relationship between the length of the billing period and the number of days that fall within the respective pricing periods.

C. Contract Capacity

Use of Contract Capacity for billing is at SMUD's sole discretion. Refer to Rule and Regulation 1 and Rule and Regulation 6.

D. Discontinuance of Service

Any customer resuming service at the same premises within 12 months after discontinuing service will be required to pay the System Infrastructure Fixed Charges and Site Infrastructure Charges that would have been billed if service had not been discontinued, except when service has been disconnected. The System Infrastructure Fixed Charge and Site Infrastructure Charge will be waived during each of those months. Retroactive billing shall be at SMUD's sole discretion.

(End)

Hydro Generation Adjustment
Rate Schedule HGA

I. Applicability

This Rate Schedule HGA applies to all customers receiving retail electric service from SMUD. Annually, SMUD will calculate how the yearly variation of precipitation affects hydro generation from SMUD's Upper American River Project (UARP) and impacts the SMUD budget. As of April 1, 2024, SMUD will also calculate how the annual hydro generation delivery variances from the Western Area Power Administration's (WAPA) Central Valley Project (CVP) impact the SMUD budget.

II. Conditions

A. General Conditions

1. The Hydro Generation Adjustment (HGA) precipitation period begins April 1 of the previous year and ends on March 31 of the current year (Water Year).
2. The price of power delivered into the area designated as North Path 15 (NP15) will be used to determine the dollar impact of any excess or shortfall of energy. If NP15 is no longer available, then a suitable replacement will be used.

B. SMUD Conditions

1. The actual inches of precipitation (AP) for each period shall be measured at the Fresh Pond measuring station or suitable replacement representative of the UARP watershed.
2. The AP will be compared to the median (midpoint) of inches of precipitation (MP), with the most recent years of data available at the established measuring station, up to a maximum of 50 years.
3. SMUD estimates that each inch of precipitation at Fresh Pond results in 28,000 megawatt hours (MWh) of generation in the UARP.
4. The AP will be capped at a maximum of 80 inches per Water Year to accommodate for spill at the hydroelectric facilities in the UARP.

C. WAPA Conditions

1. The monthly Forecasted Delivery (FD) is provided by WAPA.
2. The FD will be compared to the Actual Delivery (AD) as identified by SMUD.

III. Budget Impact Determination

A. SMUD Budget Impact Determination

The following calculations will be used to determine the SMUD budget impact (SBI) from precipitation variances:

1. **Precipitation Variance**

   Inches of Precipitation Variance (± IPV) = MP – AP

   The variance of precipitation equals the difference between the 50-year median and the actual inches of precipitation. If the measuring station changes, the number of years used to determine the median precipitation may vary depending on the volume of historical data available.

2. **Generation Conversion**
   ± IPV x 28,000 MWh/inch = ± MWh

   The variance of hydro generation, in megawatt hours, equals the inches of precipitation variance x 28,000 MWh/inch at Fresh Pond. If the measuring station changes, the MWh per inch may vary.

3. **Calculation of Budget Effects**
   The market cost of energy is the monthly average of the actual NP15 prices through April 1 and the monthly forecasted NP15 prices for the balance of the year. If NP15 is no longer available, then a suitable replacement will be used.

   ± MWh x market cost of energy ($/MWh) = ± SMUD budget impact ($)

B. WAPA Budget Impact Determination

The following calculations will be used to determine the WAPA budget impact (WBI) from energy delivery variances on a monthly basis:

1. **Energy Delivery Variance**

MWh Energy Delivery Variance (± EDV) = FD – AD

The energy delivery variance equals the difference between the monthly forecasted energy delivery and the monthly actual energy delivery.

2. **Calculation of Budget Effects**
The market cost of energy is the average NP15 price.

IV. Rate Stabilization Funds

A. Hydro Rate Stabilization Fund

The SBI will first be compared to the Hydro Rate Stabilization Fund (HRSF). In Water Years with above median precipitation, funds shall be deposited to the HRSF from Operating Revenues until the HRSF reaches a maximum of 6% of budgeted annual gross retail revenue, at which time subsequent excesses may be returned to the customer through the SMUD HGA. In Water Years with below median precipitation, funds will be withdrawn from the HRSF and applied to Operating Revenues until the HRSF balance reaches zero, at which time the SMUD HGA will be levied as a surcharge on electricity usage.

The SBI will not exceed ± 4 percent of budgeted annual gross retail revenue.

B. WAPA Rate Stabilization Fund

The WBI will first be compared to the WAPA Rate Stabilization Fund (WRSF). In Water Years where actual energy deliveries exceed the forecasted energy deliveries, funds shall be deposited to the WRSF from Operating Revenues until the WRSF reaches a maximum of 4% of budgeted annual gross retail revenue, at which time subsequent excesses may be returned to the customer through the WAPA HGA. In Water Years where actual energy deliveries are below the forecasted energy deliveries, funds will be withdrawn from the WRSF and applied to Operating Revenues until the WRSF balance reaches zero, at which time the WAPA HGA will be levied as a surcharge on electricity usage.

The WBI will not exceed ± 2 percent of budgeted annual gross retail revenue.

V. Rate Charges

A. SMUD Rate Charges

The SMUD HGA deposits into or transfers out of the Hydro Rate Stabilization Fund will be calculated as follows:

HRSF – SBI = Calculated HRSF

A. If Calculated HRSF is < 0

The Accountant
will transfer the remaining balance of the HRSF to Operating Revenues and the SMUD HGA will be set at:

$$-\frac{\text{Calculated HRSF}}{\text{Budgeted annual retail kWh sales}} = \text{SMUD HGA}$$

B. If Calculated HRSF is ≥ 0 and **≤ *6 percent of budgeted annual gross retail revenue***:

The Accountant will transfer the positive SBI out of the HRSF and into Operating Revenues and transfer the negative SBI into the HRSF from Operating Revenues.

C. If the Calculated HRSF is **> *6 percent of budgeted annual gross retail revenue***:

The Accountant will transfer the negative SBI into the HRSF from Operating Revenues up to 6 percent of budgeted annual gross retail revenue. The Board may authorize the SMUD HGA or direct the funds for another purpose. At the Board's direction, the SMUD HGA will be set at:

– $\frac{\text{(Calculated HRSF – } \textit{6\% of budgeted annual gross retail revenue}\text{)}}{\text{Budgeted annual retail kWh sales}}$ = SMUD HGA

B. WAPA Rate Charges

The WAPA HGA deposits into or transfers out of the WAPA Rate Stabilization Fund will be calculated as follows:

WRSF – WBI = Calculated WRSF

A. If Calculated WRSF is < 0

The Accountant will transfer the remaining balance of the WRSF to Operating Revenues and the WAPA HGA will be set at:

– $\frac{\text{Calculated WRSF}}{\text{Budgeted annual retail kWh sales}}$ = WAPA HGA

Any funds collected through the WAPA HGA will be deposited into the WRSF.

B. If Calculated WRSF is ≥ 0 and **≤ 4 *percent of budgeted annual gross retail revenue***:

The Accountant will transfer the positive WBI out of the WRSF and into Operating Revenues and transfer the negative WBI into the WRSF from Operating Revenues.

C. If the Calculated WRSF is **> 4 *percent of budgeted annual gross retail revenue***:

The Accountant will transfer the negative WBI into the WRSF from Operating Revenues up to 4 percent of budgeted annual gross retail revenue. The Board may authorize the WAPA HGA or direct the funds for another purpose. At the Board's direction, the WAPA HGA will be set at:

– $\frac{\text{(Calculated WRSF – 4}\textit{\% of budgeted annual gross retail revenue}\text{)}}{\text{Budgeted annual retail kWh sales}}$ = WAPA HGA

C. Rate Charges

The HGA will be comprised of the SMUD HGA and the WAPA HGA.

HGA = SMUD HGA + WAPA HGA

VI. Application

The HGA is recalculated for each Water Year and will be applied to all rate schedules May 1 until April 30 of the following year.

(End)

Outdoor Night Lighting Service
Rate Schedule NLGT

I. Applicability

This Rate Schedule NLGT applies to SMUD-owned and maintained outdoor overhead lighting service where Street Lighting Service Rate Schedule SLS does not apply. Service furnished under this schedule may be discontinued at any location where SMUD's overhead distribution facilities are relocated or converted to underground distribution facilities.

Lamps shall be supported on SMUD-owned poles that are used to carry distribution system circuits used for other SMUD purposes and shall be at locations approved by SMUD.

II. Rate

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
NLGT					
Electricity and Switching Charge *$ per watt of connected load*	$0.0308	$0.0316	$0.0325	$0.0334	$0.0343

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There will be a separate monthly charge for installation and maintenance of each fixture (including lamps, refractors, ballasts, photocells and other typical support equipment). These charges are based upon the installation of street lighting fixtures of a design specified by SMUD and mounted by means of varying length brackets affixed to existing wood poles that are used to carry distribution system circuits.

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on electricity surcharges that apply to all kWh usage.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Lamp Servicing and Relocations

A. Upon receipt of notice from the customer that light fails to operate as scheduled, SMUD will, within a reasonable period of time, make the necessary repairs.

B. SMUD will, at the customer's request, relocate existing outdoor lighting service equipment, provided the customer reimburses SMUD for the relocation cost.

V. Conditions of Service

A. Service shall be alternating current at a frequency of approximately 60 hertz, single phase.

B. Where new facilities are required in order to provide service for an applicant under this rate, SMUD may require a contract for service for a period not to exceed three years.

C. Information on equipment that qualifies for this rate schedule and the associated monthly charge is available on the SMUD website, www.smud.org, or will be furnished upon request. SMUD will review this information at least annually and update as appropriate. SMUD retains the right to modify the listing of approved fixtures and lamps to accommodate changing technology or other business needs criteria.

VI. Billing

A. Connected Load

The manufacturer's rating in watts (including all auxiliary equipment) will be used as connected load.

B. Proration of Charges

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The Electricity Usage Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days
Bill period is longer than 34 days	
Price changes within bill period	Relationship between the length of the billing period and the number of days that fall within the respective pricing periods.

(End)

I. Applicability

This Rate Schedule R applies to single- and three-phase service for the following types of residential premises:

1. Individually metered residences including single-family homes, duplexes, apartments, and condominiums; and
2. General farm service where the meter also serves the residence or additional meters on a farm where the electricity consumed is solely for domestic purposes; and
3. Master-metered service to a qualifying multifamily accommodation or mobile home park that is submetered to all single-family units or individual mobile homes.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

A. Fixed Rate (rate category RF01)

1. The Fixed Rate is the alternative rate to SMUD's Time-of-Day (TOD) (5-8 p.m.) Rate (rate category RT02) under Rate Schedule R-TOD.

2. The Fixed Rate is required for customers serviced with analog meters and digital non-communicating meters.

3. Customers who qualify for Rate Schedule NEM1 and have an eligible renewable electrical generation facility that was approved for installation prior to January 1, 2018 are eligible to enroll in the Fixed Rate and may remain on the Fixed Rate after December 31, 2022.

4. Customers who have an eligible renewable electrical generation facility under Rate Schedule NEM1 that was approved for installation on or after January 1, 2018 are not eligible to enroll in the Fixed Rate.

5. Customers who have an eligible renewable electrical generation facility under Rate Schedule SSR are not eligible to enroll in the Fixed Rate.

6. Customers who have a storage facility without an associated eligible generating facility are not eligible to enroll in the Fixed Rate.

7. Customers who have master meters, including those enrolled on the RSMM rate category, are not eligible to enroll in the Fixed Rate.

C. Master-Metered Multifamily Accommodation and Mobile Home Park Billing (Rate Category RSMM)

1. This rate is closed to new customers unless SMUD determines that it is not reasonable or feasible to provide service and meter the individual units directly.

2. The master-metered customer's electricity consumption will be billed using the total kWh usage of the master-meter divided by the number of occupied single-family accommodations. The billing calculation will include applicable discounts to all kWh Usage Charges and System Infrastructure Fixed Charge (SIFC) for qualifying energy assistance and medical equipment discount program participants. The customer must advise SMUD within 15 days following any change in the number of occupied single-family accommodations wired for electric service.

II. Firm Service Rates

A. Fixed Rate Customers (rate category RF01)

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
Fixed Rate (RF01)					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$23.50	$24.15	$24.80	$25.50	$26.20
Electricity Usage Charge					
All kWh usage per month *$/kWh*	$0.1194	$0.1227	$0.1261	$0.1295	$0.1331
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$23.50	$24.15	$24.80	$25.50	$26.20
Electricity Usage Charge					
All kWh usage per month *$/kWh*	$0.1907	$0.1959	$0.2013	$0.2069	$0.2126

B. Master-Metered Multifamily Accommodation and Mobile Home Park Billing (Rate Category RSMM) Closed

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
Master Metered Multifamily and Mobile Home Park Billing (Closed)					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per unit*	$23.50	$24.15	$24.80	$25.50	$26.20
Electricity Usage Charge					
All kWh usage per month *$/kWh*	$0.1324	$0.1360	$0.1398	$0.1436	$0.1476
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per unit*	$23.50	$24.15	$24.80	$25.50	$26.20
Electricity Usage Charge					
All kWh usage per month *$/kWh*	$0.1516	$0.1558	$0.1601	$0.1645	$0.1690

III. Electricity Usage Surcharges

Refer to the following rate schedule for details on electricity usage surcharges that apply to all kWh.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Rate Option Menu

A. Energy Assistance Program Rate. Refer to Rate Schedule EAPR.

B. Medical Equipment Discount Program. Refer to Rate Schedule MED.

C. Joint Participation in Medical Equipment Discount and Energy Assistance Programs. Refer to Rate Schedule MED.

D. Time-of-Day Rate. Refer to Rate Schedule R-TOD.

E. Standby Service Option

Standby Service applies when all of the following conditions are met:

1. The customer has generation, sited on the customer's premises, that serves all or part of the customer's load; and
2. The generator(s) have a combined nameplate rating of less than 100 kW; and
3. The generator(s) are connected to SMUD's electrical system; and

4. SMUD is required to have resources available to provide supplemental service, backup electricity and/or to supply electricity during generator(s) maintenance service.

Standby Charge January 1 through December 31

$/kW of Contract Capacity per month

Effective January 1, 2023	$7.713
Effective January 1, 2024	$7.925
Effective May 1, 2024	$8.143
Effective January 1, 2025	$8.367
Effective May 1, 2025	$8.597

In addition to the Standby Charge, SMUD will continue to bill for all applicable charges under this rate. These charges include SIFC and electricity usage charges for SMUD-provided power.

The Standby Charge will be waived only for qualifying renewable generation under Rate Schedules NEM1 and SSR. The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

F. Customer Energy Generation Option. Refer to Rate Schedule NEM1.

G. SMUD Renewable Energy Option

SMUD offers optional programs that allow customers to receive renewable energy for an additional charge, detailed on www.smud.org.

H. Special Metering Charge

For customers who purchase and install additional equipment and software identified by SMUD meter specialists as necessary for load data collection and transfer to electronic media outside SMUD, SMUD will charge a monthly service fee to cover maintenance, software support and licensing fees. Payment for this nonstandard equipment and service will be made through provisions in Rule and Regulation 2, Section IV. Special Facilities. The fee schedule is available at SMUD's website, www.smud.org.

I. Plug-In Electric Vehicle (PEV) Option. Refer to Rate Schedule R-TOD.

J. Residential Three-Phase Service Option

This option is open to customers located in areas where three-phase service is available. A Special Facilities fee may be charged to cover the additional costs for providing this service. This charge is in addition to the SIFC.

Three-Phase Service – January 1 through December 31

Special Facilities fee per month

Effective January 1, 2023	$50.45
Effective January 1, 2024	$51.85
Effective May 1, 2024	$53.25
Effective January 1, 2025	$54.75
Effective May 1, 2025	$56.25

V. Billing

KWh usage may be prorated for nonstandard billing periods, when billing period spans a price change, and/or when the billing period spans more than one season. The monthly SIFC will be prorated when the bill period is shorter than 27 days. The following table shows the basis for the proration in these circumstances. The monthly System Infrastructure Fixed Charge is determined by the billing period end date.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days (SIFC and kWh)	Relationship between the length of the billing period and 30 days.
Bill period is longer than 34 days (kWh)	
Seasons overlap and price changes within bill period	Relationship between the length of the billing period and the number of days that fall within the respective season or pricing periods.

(End)

Residential Time-of-Day Service
Rate Schedule R-TOD

I. Applicability

This Rate Schedule R-TOD applies to single- and three-phase service for the following types of residential premises:

1. Individual or dual metered residences with digital communicating meter installed, including single-family homes, duplexes, apartments, and condominiums; and
2. General farm service where the meter also serves the residence or additional meters on a farm where the electricity consumed is solely for domestic purposes.
3. Customers who have an eligible renewable electrical generation facility under Rate Schedules NEM1 or SSR that was approved for installation by SMUD on or after January 1, 2018, or who establish service at a premises that has an electrical generation facility that is fueled by a renewable fuel source on or after January 1, 2018 must be on this Rate Schedule R-TOD.

Master-metered service to a qualifying multifamily accommodation or mobile home parks are not eligible for Time-of-Day rates under rate schedule R-TOD.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

A. Time-of-Day (5-8 p.m.) Rate (rate category RT02)

1. The TOD (5-8 p.m.) Rate is the standard rate for SMUD's residential customers. Eligible customers can elect the Fixed Rate under Rate Schedule R as an alternative rate.

2. This rate has five kilowatt-hour (kWh) prices, depending on the time-of-day and season as shown in Section V. Conditions of Service along with the holidays.

B. Optional Critical Peak Pricing (CPP) Rate (rate category RTC1)

1. The CPP rate is available as of June 1, 2022 for customers who are participating in a qualifying program. Customers that have accepted a storage incentive under certain Solar and Storage Rate incentive programs are required to enroll in this rate for a duration as determined by SMUD program rules posted on www.smud.org.

2. A maximum of 30,000 customers may be enrolled in this rate at any given time.

3. CPP Events may range from one to four hours, but not more than once per day. CPP Events may be called during any hour of the day during summer months, including holidays and weekends, up to 50 hours per summer. CPP Events may span multiple time-of-day periods.

4. CPP Events will be announced by SMUD a day in advance. However, in the event of a system emergency, announcements may occur the same day as the event.

5. This rate has five kilowatt-hour (kWh) prices, depending on the time-of-day and season as shown in Section V. Conditions of Service along with the holidays.

II. Firm Service Rates

A. Time-of-Day (5-8 p.m.) Rate

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
Time-of-Day (5-8 p.m.) Rate (RT02)					
Non-Summer Season (October - May)					
System Infrastructure Fixed Charge *per month per meter*	$23.50	$24.15	$24.80	$25.50	$26.20
Electricity Usage Charge					
Peak *$/kWh*	$0.1547	$0.1590	$0.1633	$0.1678	$0.1724
Off-Peak *$/kWh*	$0.1120	$0.1151	$0.1183	$0.1215	$0.1248
Summer Season (June - September)					
System Infrastructure Fixed Charge *per month per meter*	$23.50	$24.15	$24.80	$25.50	$26.20
Electricity Usage Charge					
Peak *$/kWh*	$0.3279	$0.3369	$0.3462	$0.3557	$0.3655
Mid-Peak *$/kWh*	$0.1864	$0.1914	$0.1967	$0.2021	$0.2077
Off-Peak *$/kWh*	$0.1350	$0.1387	$0.1425	$0.1464	$0.1505

B. Optional Critical Peak Pricing Rate

1. The CPP Rate base prices per time-of-day period are the same as the prices per time-of-day period for TOD (5-8 p.m.).
2. The CPP Rate provides a discount per kWh on the Mid-Peak and Off-Peak prices during summer months.
3. During CPP Events, customers will be charged for energy used at the applicable time-of-day period rate plus the CPP Rate Event Price per kWh as shown on www.smud.org.
4. During CPP Events, energy exported to the grid will be compensated at the CPP Rate Event Price per kWh as shown on www.smud.org.
5. The CPP Rate Event Price and discount will be updated annually at SMUD's discretion and posted on www.smud.org.

C. Plug-In Electric Vehicle Credit (rate categories RT02 and RTC1)

This credit is for residential customers who have a licensed passenger battery electric plug-in or plug-in hybrid electric vehicle.

Credit applies to all electricity usage charges from midnight to 6:00 a.m. daily

Electric Vehicle Credit…… -$0.0150/kWh

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on these surcharges.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA**.**

IV. Rate Option Menu

A. Energy Assistance Program Rate. Refer to Rate Schedule EAPR.

B. Medical Equipment Discount Program. Refer to Rate Schedule MED.

C. Joint Participation in Medical Equipment Discount and Energy Assistance Program Rate. Refer to Rate Schedule MED.

D. Standby Service Option

Standby Service applies when all of the following conditions are met:

1. The customer has generation, sited on the customer's premises, that serves all or part of the customer's load; and
2. The generator(s) have a combined nameplate rating less than 100 kW; and
3. The generator(s) are connected to SMUD's electrical system; and
4. SMUD is required to have resources available to provide supplemental service, backup electricity and/ or to supply electricity during generator(s) maintenance service.

Standby Service – January 1 through December 31
$/kW of Contract Capacity per month

Effective January 1, 2023	$7.713
Effective January 1, 2024	$7.925
Effective May 1, 2024	$8.143
Effective January 1, 2025	$8.367
Effective May 1, 2025	$8.597

In addition to the Standby Service Charge, SMUD will continue to bill for all applicable charges under the selected residential TOD rate. These charges include System Infrastructure Fixed Charges and electricity usage charges for SMUD-provided power. All energy provided to the customer by SMUD will be billed at the applicable residential TOD rates.

The Standby Service Charge will be waived only for qualifying renewable generation under Rate Schedules NEM1 and SSR. The Standby Service Charge applies to customers who install, interconnect, and operate their own electrical generation facility and equipment to self-supply all their own power needs as a microgrid service, where SMUD provides only backup electricity.

E. Customer Energy Generation Options. Refer to Rate Schedules NEM1 and SSR.

F. SMUD Renewable Energy Option

SMUD offers optional programs that allow customers to receive renewable energy for an additional charge, detailed on www.smud.org

G. Special Metering Charge

For customers who purchase and install additional equipment and software identified by SMUD meter specialists as necessary for load data collection and transfer to electronic media outside SMUD, SMUD will charge a monthly service fee to cover maintenance, software support and licensing fees. Payment for this nonstandard equipment and service will be made through provisions in Rule and Regulation 2, Section IV. Special Facilities. The fee schedule is available at SMUD's website, www.smud.org.

H. Residential Three-Phase Service Option

This option applies to customers located in areas where three-phase service is available. A Special Facilities fee may be charged to cover the additional costs for providing this service. This charge is in addition to the System Infrastructure Fixed Charge.

Three-Phase Service – January 1 through December 31

Special Facilities fee per month

Effective January 1, 2023	$50.45
Effective January 1, 2024	$51.85
Effective May 1, 2024	$53.25
Effective January 1, 2025	$54.75
Effective May 1, 2025	$56.25

V. Conditions of Service

A. Time-of-Day Billing Periods

Summer (Jun 1 - Sept 30)	**Peak**	Weekdays between 5:00 p.m. and 8:00 p.m.
	Mid-Peak	Weekdays between noon and midnight except during the Peak hours.
	Off-Peak	All other hours, including weekends and holidays[1].
Non-Summer (Oct 1 - May 31)	**Peak**	Weekdays between 5:00 p.m. and 8:00 p.m.
	Off-Peak	All other hours, including weekends and holidays[1].

[1] See Section V. Conditions of Service

Off-Peak pricing shall apply during the following holidays:

Holiday	Month	Date
New Year's Day	January	1
Martin Luther King Jr. Day	January	Third Monday
Presidents Day	February	Third Monday
Memorial Day	May	Last Monday
Juneteenth National Independence Day	June	19
Independence Day	July	4
Labor Day	September	First Monday
Indigenous Peoples' Day/Columbus Day	October	Second Monday
Veterans Day	November	11
Thanksgiving Day	November	Fourth Thursday
Christmas Day	December	25

VI. Billing

A. Proration of Charges

The electricity usage charge will not be prorated, regardless of the number of days in the billing period or the spanning of multiple seasons. The monthly System Infrastructure Fixed Charge will be prorated when the bill period is shorter than 27 days as shown in the following table. The monthly System Infrastructure Fixed Charge is determined by the billing period end date.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days.

(End)

I. Applicability

This Rate Schedule SLS applies to outdoor lighting service facilities for:

1. Streets; and
2. Highways, and bridges; and
3. Public parks; and
4. Elementary schools, secondary schools, and colleges.

This schedule covers the following service categories:

- **Customer-Owned and Maintained — Rate Category SL_COM**
- **Customer-Owned and Maintained, Metered — Rate Category SL_COM_M**
- **Customer-Owned, SMUD (District)-Maintained — Rate Category SL_CODM**
- **SMUD (District)-Owned and Maintained — Rate Category SL_DOM**

For the purposes of the following prices a "month" is considered to be a single billing period of 27 to 34 days.

II. Customer-Owned and Maintained — Rate Category SL_COM

Where the customer owns and maintains the street lighting equipment, SMUD will furnish electricity and switching. This rate is available to customers that are not eligible for the default SL_COM_M metered rate or as determined by SMUD. Effective the first full billing cycle after the following date(s), the charge will be as follows:

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
SL_COM					
Electricity and Switching Charge *$ per watt of connected load*	$0.0308	$0.0316	$0.0325	$0.0334	$0.0343

III. Customer-Owned and Maintained, Metered — Rate Category SL_COM_M

Eligible street lighting customers requesting new installations of lamps or additions of new lamps to existing accounts will default to the metered SL_COM_M rate. Eligible street lighting customers will be served under the default rate or as determined by SMUD.

Where the customer owns and maintains street lighting equipment, that is controlled to **operate solely during dusk to dawn hours**, SMUD will furnish electricity, the meter, and switching. The charges will be as follows:

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
SL_COM_M					
System Infrastructure Fixed Charge *per month per meter*	$10.70	$11.00	$11.30	$11.60	$11.95
Electricity Usage Charge All day *$/kWh*	$0.0925	$0.0950	$0.0976	$0.1003	$0.1031

IV. Customer-Owned, SMUD (District)-Maintained — Rate Category SL_CODM (Closed to new customers and installations)

This rate is closed to new customers and installations effective January 23, 2014. Where the customer owns the street lighting equipment and SMUD supplies electricity, switching and, lamp servicing and maintenance, such service will be rendered for lamps and fixtures of sizes and types as SMUD has approved. Effective the first full billing cycle after the following date(s), the charge will be as follows:

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
SL_CODM (closed)					
Electricity and Switching Charge *$ per watt of connected load*	$0.0308	$0.0316	$0.0325	$0.0334	$0.0343

There is a separate monthly charge for maintaining each fixture and/or lamp. SMUD maintains a list of acceptable lamps and fixture types with standard ratings and the corresponding monthly maintenance charge.

This service is restricted to SMUD-approved locations.

V. SMUD (District)-Owned and Maintained — Rate Category SL_DOM

Where the customer requests that SMUD own, install, operate, and maintain the entire street lighting system, such service will be provided with fixtures and lamps of sizes and types as approved by SMUD. This rate is restricted to streets that are defined as right-of-way held in public trust, and maintained by the applicable governmental jurisdiction. At SMUD's sole discretion, streets not readily accessible to the general public will be served under the customer owned and maintained rates only.

There will be a separate monthly charge for installation and maintenance of each fixture (including lamps, refractors, ballasts, photocells and other typical support equipment). These charges are based on the installation of street lighting fixtures of a design specified by SMUD and mounted by means of varying length brackets affixed to poles that are used to carry distribution system circuits.

When additional or alternative facilities are installed at the customer's request, monthly charges will be assessed according to SMUD's published charge schedule.

A. Pricing

Effective the first full billing cycle after the following date(s), the charge will be as follows:

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
SL_DOM					
Electricity and Switching Charge *$ per watt of connected load*	$0.0308	$0.0316	$0.0325	$0.0334	$0.0343

B. Relocations and Changes

At the customer's request, SMUD may, at its sole discretion, relocate existing equipment provided the customer reimburses net expense to SMUD incurred in connection therewith, including appropriate engineering and general expense.

At the customer's request, SMUD may, at its sole discretion, replace existing equipment with new equipment prior to expiration of the existing equipment's service life, provided the customer pays to SMUD an amount equal to the unrecovered cost, less salvage value, of the existing equipment to be retired and executes a fifteen-year contract for service effective with installation of the new equipment.

C. New Service

New service will require an initial contract term of 15 years effective with installation of the service. If service is terminated before the contract term, the customer will be responsible for an amount equal to the unrecovered cost, less salvage value, of the equipment installed.

VI. Electricity Usage Surcharges

Refer to the following rate schedules for details on electricity usage surcharges that apply to all kWh.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

VII. Conditions of Service

A. Service will be alternating current at a frequency of approximately 60 hertz, single phase, at voltages specified by SMUD. Lamps shall be controlled to operate from dusk to dawn each night so as to give approximately 4,000 hours of lighting service annually.

B. When a customer requests that SMUD finance as well as install customer-owned street lighting equipment, provisions of Rule and Regulation 2 apply.

C. Information on equipment that qualifies for rates on this schedule and the associated monthly charges is available, on SMUD's website, www.smud.org, or will be furnished upon request. SMUD will review this information at least once per year and update as necessary for additional approved equipment, technology improvements and pricing changes.

D. SMUD will furnish a meter to provide service under the metered rate categories.

VIII. Billing

A. The manufacturer's rating in watts (including all auxiliary equipment) will be used as connected load**.**

B. Proration of Charges (SL_DOM, SL_COM, and SL_CODM)

Billing periods for nonstandard lengths will be billed as follows:

1. Service connected for 15 or more days during a billing period will be billed for a full month's service.
2. Service connected for 1-14 days during a billing period will not be billed for such partial month's service.
3. Service discontinued for 15 or more days during a billing period will not be billed for such partial month's service.
4. Service discontinued for 1-14 days during a billing period will be billed for a full month's service.

C. Proration of Charges (SL_COM_M)

Charges are prorated when the billing period is less than 27 days, more than 34 days or spans more than one price. The System Infrastructure Fixed Charge will be prorated as shown in the following table.

Billing Circumstance	Basis for Proration
Bill period is shorter than 27 days	Relationship between the length of the billing period and 30 days.
Bill period is longer than 34 days	
Price changes within bill period	Relationship between the length of the billing period and the number of days that fall within the respective pricing periods.

(End)

Traffic Control
Intersection Lighting Service
Rate Schedule TC ILS

I. Applicability

This Rate Schedule TC ILS applies to electric service for the benefit of cities, counties, and other public agencies for pedestrian and vehicular traffic signal units, together with related control devices for the purpose of traffic safety and management and associated intersection lighting where the mounting, standards, control supports, signal equipment, and luminaires are owned and maintained by the customer.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

II. Rates (Rate Categories TS_F, TS)

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
TS_F, TS					
System Infrastructure Fixed Charge *for metering point per month or portion thereof*	$6.36	$6.53	$6.71	$6.90	$7.09
Electricity Usage Charge All day *$/kWh*	$0.1161	$0.1194	$0.1226	$0.1259	$0.1294

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on electricity surcharges that apply to all kWh usage.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Conditions of Service

1. Service shall be alternating current, at a frequency of approximately 60 hertz, single phase, at secondary voltages specified by SMUD, and at service points mutually agreed upon between the customer and SMUD.

2. Lamps for intersection lighting shall be controlled to operate from dusk to dawn each night so as to give approximately 4,000 hours of lighting service annually.

3. Where the monthly consumption of electricity is consistently small or can be predetermined with reasonable accuracy by reference to the capacity of equipment served and the hours of operation, SMUD may, with customer's consent, calculate electricity consumed in lieu of providing metering equipment (TS_F).

V. Billing

For billing periods of less than 27 days or more than 34 days, System Infrastructure Fixed Charges will be prorated on the basis of the relationship between the length of the billing period and 30 days. No proration will be made on first-time billing when the total period of service is less than 30 days.

(End)

Traffic Signal Service
Rate Schedule TSS *(Closed to new customers)*

I. Applicability

This Rate Schedule TSS applies to electric service for pedestrian and vehicular traffic signal units, together with related control devices where the mounting standards, control supports, and signal equipment are owned and maintained by the customer.

For the purposes of this schedule a "month" is considered to be a single billing period of 27 to 34 days.

II. Rate (Rate Category SL_TSF)

Monthly Charges

	Effective as of January 1, 2023	Effective as of January 1, 2024	Effective as of May 1, 2024	Effective as of January 1, 2025	Effective as of May 1, 2025
SL_TSF					
For units not larger than 70 watts or connected load and not exceeding three lamps per unit, the monthly charge **per unit** per month	$4.61	$4.74	$4.87	$5.00	$5.14
For units larger than 70 watts or connected load and not exceeding three lamps per unit, the monthly charge **per lamp per watt**	$0.0323	$0.0332	$0.0341	$0.0350	$0.0360
Total charge per month being not less than	$4.61	$4.74	$4.87	$5.00	$5.14

III. Electricity Usage Surcharges

Refer to the following rate schedules for details on electricity surcharges that apply to all kWh usage.

A. Hydro Generation Adjustment (HGA). Refer to Rate Schedule HGA.

IV. Conditions of Service

1. Service shall be alternating current, at a frequency of approximately 60 hertz, single phase, at secondary voltages specified by SMUD.

2. No additional service will be provided by SMUD under Rate Schedule TSS. Upon notification by SMUD and installation of metering facilities, individual accounts will be transferred from Rate Schedule TSS to Rate Schedule TC ILS.

V. Billing

A. Connected Load

"Connected load" as used in this rate schedule shall be the sum of the capacities of all of the customer's equipment that may be operated from SMUD's lines at the same time.

B. Billing Periods of Nonstandard Length

Billing periods of nonstandard length will be billed as follows:

1. Service connected for 15 or more days during a billing period will be billed for a full month's service.
2. Service connected for 1-14 days during a billing period will not be billed for such partial month's service.
3. Service discontinued for 15 or more days during a billing period will not be billed for such partial month's service.
4. Service discontinued for 1-14 days during a billing period will be billed for a full month's service.

(End)

Applicant
A person, corporation, or agency in whose name service is rendered for a particular account as evidenced by the signature on the application, by contract or by verbal request for service. In the absence of a signed instrument, a customer will be identified by the receipt and payment of bills regularly issued in the name of the person, corporation, or agency, regardless of the identity of the actual user(s) of the service.

Connected Load
The sum of the rated capacities of all of the customer's equipment that can be simultaneously served by electricity supplied by SMUD.

Contract Capacity
A nonvariable maximum kW to be used for customer billing purposes. At SMUD's sole discretion the nonvariable maximum kW may be based on either 1) a customer-tailored rate agreement, or 2) the maximum load a customer can receive based on the following applicable options:

1. Capacity rating of an interconnected, customer-owned generator (Generator Installed Capacity); or
2. Capacity rating of a customer-requested or customer-dedicated transformer (Transformer Installed Capacity); or
3. SMUD sizing of customer-related equipment based on customer's application for service or actual service; or
4. The customer's connected load metered or aggregated at a single point.

Customer
The person, corporation or agency in whose name service is rendered for a particular account as evidenced by the signature on the application, contract or verbal request for service. In the absence of a signed instrument, a customer shall be identified by the receipt of bills regularly issued in the name of the person, corporation or agency or the actual user(s) of the service.

Customer-owned Generation
An electric generator, owned by the customer, interconnected with, and operated in parallel with, SMUD's facilities.

Demand
The delivery of power to the customer at defined point in time and measured in kW.

Distribution System
The Distribution System consists of the three voltage classes available to customers, where SMUD provides service below 100 kV. This includes subtransmission service at a voltage level of 69 kV or as otherwise defined by SMUD, primary service at a voltage level of 12 kV or 21 kV, as well as secondary service at a voltage level below 12 kV or at a level not otherwise defined as "primary" or "subtransmission".

Energy
The measure of power (kW) over a period of time (hour), referred to as kilowatt-hour or kWh.

Generator Installed Capacity
The nameplate rating of a customer-owned generator. For photovoltaic generation facilities, generation capacity is measured using the California Energy Commission Alternating Current (CEC AC) rating. For all other electrical generation facilities, the nameplate Alternating Current (AC) rating will be used to measure generation capacity.

Heat Pump
A unit for space conditioning which is capable of heating by refrigeration and which may or may not include the capability for cooling. Heat pumps may utilize auxiliary resistance heating to the extent required by standard design techniques.

Interval Data
The meter measures and stores the amount of energy delivered to the customer or the customer's energy usage for fixed intervals of time. The meter records the date and time period of each interval as well.

Multiplier
A meter multiplier is applied for locations which have electrical load that is too large for a meter to measure its total usage. In these situations, current and potential transformers are installed allowing a portion of the total usage to be measured. The measured usage is then multiplied by the appropriate amount (the multiplier) to determine the actual kWh used for billing purposes.

Nonagricultural Irrigation
The irrigations of areas such as highway landscaping and golf courses.

Peak Demand
The maximum 15-minute delivery of power to the customer during the defined period, measured in kW.

Pole Attachment

Equipment owned by an external party and attached to a SMUD distribution pole that distributes electricity at less than 50 kilovolts. SMUD approval is required and the external party must pay the actual costs incurred by SMUD to facilitate the Pole Attachment plus ongoing attachment fees. If a Pole Attachment draws energy from SMUD, the applicable rate charges and energy rate shall also apply.

Power Factor
The percent of total power delivery (KVA) which does useful work. For billing purposes, power factor is defined as the ratio of active power (KW) to apparent power (KVA). The formula to determine power factor is:

$$\text{Power Factor} = \frac{KW}{KVA}$$

where: $KVA^2 = KVAR^2 + KW^2$ KW= maximum monthly billing demand KVAR = maximum monthly billing KVAR demand

Power Theft

Energy Theft – The use or receipt of the direct benefit of all or a portion of electrical service with knowledge of, or reason to believe that, a diversion, tampering, or unauthorized connection existed at the time of the use or that the use or receipt was without the authorization or consent of SMUD.

Diversion – To change the intended course of electricity without the authorization or consent of SMUD.

Tampering – To rearrange, injure, alter, interfere with, or otherwise prevent from performing normal or customary function, any property owned by SMUD for the purpose of providing utility services.

Unauthorized Connection – To make, or cause to be made, any connection or reconnection with property owned or used by SMUD to provide utility service without the authorization or consent of SMUD.

Unauthorized Use – Unauthorized use is defined as the use of electricity in noncompliance with SMUD's normal billing practices or applicable law. It includes, but is not limited to meter tampering, unauthorized connection or reconnection, theft, fraud, and intentional use of electricity whereby SMUD is denied full compensation for electric service provided.

Ratcheted Demand
The highest kW recorded over the past twelve months.

Rate Charges

Charges that may include the following:

System Infrastructure Fixed Charge – That portion of the charge for service which is a fixed amount without regard to connected load, maximum demand, or electricity usage in accordance with the rate.

Site Infrastructure Charge – That portion of the charge which applies to site-related distribution facilities.

Maximum Demand Charge – That portion of the charge which varies with the billing demand in accordance with the rate.

Summer Peak Demand Charge – That portion of the charge which varies with the billing demand in accordance with the rate.

Electricity Usage Charge – That portion of the charge for service which varies with the quantity of electricity consumed in accordance with the rate.

Standby Charge – That portion of the charge for standby service which is a fixed amount based on the maximum load SMUD stands ready to supply in accordance with the rate.

Rating of Installations

The ratings that are established by the higher of the manufacturer's name-plate rating or actual test, at the option of SMUD.

Reserved Capacity Charge

The charge assessed when a customer operates a combined heat and power facility interconnected to SMUD's system and SMUD is required to have resources available to provide supplemental service, backup electricity and, or to supply electricity during generator maintenance service.

Resistance Heating

Any apparatus employing the resistance of conductors to transform electric energy into heat.

Site Infrastructure Charge

A component of SMUD's monthly billing for most commercial customers which is presently based on the twelve months maximum demand. This charge is levied to cover the fixed cost of capacity related facilities such as transmission and distribution facilities.

Subordination

The process by which a creditor is placed in a lower priority for the collection of its debt from its debtor's assets than the priority the creditor previously had.

Summer Peak Demand Charge

A component of some of the time-of-use (TOU) rate bills to recover, levied during the summers months of June through September based on summer peak hours that are specified in the Commercial Industrial rate schedules.

System Infrastructure Fixed Charge

The monthly flat rate charge that covers a small portion of the shared fixed costs necessary to run SMUD operations, including service drops, transformers, trucks, and the customer call center. All SMUD customers contribute and benefit from the upkeep of these services and resources.

Transformer Installed Capacity

The power handling capability of a customer-requested or customer-dedicated transformer with an assumed unity power factor; expressed in kVa.

(End)

Adjustment for Errors in Electric Bills
Rule and Regulation 10

I. Investigation of Billing Error

Whenever the correctness of any bill for electric service is questioned, SMUD will cause an investigation to be made. Where the bill is questioned by the customer, SMUD may require such customer to deposit the amount of such disputed bill as evidence of good faith. Bills that do not reflect the correct charges for electric service actually rendered to the customer in accordance with applicable SMUD electric rates shall be adjusted to a correct basis as determined by SMUD's investigation.

II. Adjustment of Bills for Billing Error

A billing error is a bill that does not reflect the correct charges for electric service rendered to the customer, which may include but is not limited to incorrect meter reads or clerical errors such as applying the wrong rate and/or rate option, wrong billing factor or an incorrect calculation. Billing error does **not** include a meter error or unauthorized use; switch or mismarked meters by other than SMUD; improper customer wiring; inaccessible meter; failure of the customer to notify SMUD of changes in the customer's equipment or operation; or failure of the customer to take advantage of a rate or condition of service for which the customer is eligible and has been given notification through a bill insert.

Where SMUD overcharges or undercharges a customer as a result of a billing error, SMUD may render an adjusted bill for the amount of the undercharge, without interest, and shall issue a refund or credit to the customer for the amount of the overcharge, without interest, for the period of the billing error, but not to exceed three years from the date of discovery in the case of an undercharge or overcharge.

III. Adjustment of Bills for Meter Error

Adjustments to bills for meter error shall be made in accordance with the provisions of Rule and Regulation 17.

IV. Adjustment of Bills for Unauthorized Use

Where SMUD determines that there has been unauthorized use of electrical service, SMUD may bill the customer for SMUD's estimate of such unauthorized use.

a. Residential Customers

The Fixed Rate (see Rate Schedule R) may be used for the collection of revenue associated with unauthorized use of residential electrical service regardless of the date(s) or time(s) in which the use occurred.

b. Non-Residential Customers

The applicable rate, including revenue associated with demand charges, electricity usage charges and power factor adjustment or waiver charges will be used for the collection of revenue associated with unauthorized use of non-residential electrical service, in addition to the applicable System Infrastructure Fixed Charge as appropriate, regardless of the date(s) or time(s) in which the use occurred.

Nothing in this rule shall be interpreted as limiting SMUD's right under any provisions of any applicable law.

V. Limitation on Adjustment of Bills for Energy Use

For any error in billing not defined as a billing error, meter error, or unauthorized use, SMUD is not required to adjust the bill. However, any billing adjustment not specifically covered in the rules and regulations for an undercharge or overcharge shall not exceed three years from the date of discovery.

Where information required for correct billing is not subject to exact determination or is questioned, SMUD shall make such estimates as may be necessary by means of tests, analysis, or inquiry in a manner and to the extent SMUD considers appropriate in the circumstances.

(End)

Service to Premises and Use of Energy
Rule and Regulation 18

I. General Statement of Rule

SMUD's rates are based upon supplying service in the manner described below. In order to render electric service to all customers at standard rates and under equitable and nondiscriminatory service conditions SMUD will:

1. Meter directly all premises that have separate street or mall entrances and/or exits.
2. Not permit customers to resell electricity that SMUD supplies.
3. Require ready access to all meters and service equipment.

II. Definitions

Premises means all structures, apparatus, or portions thereof occupied or operated by an individual, a family, or a business enterprise, and situated on an integral parcel of land undivided by a public highway, street, or railway.

Resell electricity is the resale of electricity for profit.

Central system is defined as, but not limited to, air conditioning, heating, domestic hot water, compressed air, fire or security alarms, or an energy management system.

III. Exceptions to Requirement That SMUD Serve All Premises Directly

1. A customer may obtain nonresidential service at a single point of delivery for two or more premises operating as a single enterprise, adjacent to each other but separated only by streets, railways, or highways if the customer provides and maintains the necessary electrical facilities between SMUD's point of delivery and the electrical apparatus in accordance with the applicable statutes, ordinances, or regulations of the governmental agencies having jurisdiction thereof, and in such a manner that the convenience of SMUD and the safety of its personnel are not adversely affected.
2. Customers for which master metering was authorized prior to August 1, 1978, may continue to obtain service at a single point of delivery through a single metering installation for two or more single-family dwelling units in the same building or for two or more multifamily dwelling buildings, provided such buildings are adjacent to each other on an integral parcel of land undivided by a public highway, street, or railway. After August 1, 1978, all multifamily residential premises will be metered individually.
3. A building, a portion of a building, a group of buildings, or an automobile trailer camp containing more than one premises will receive service through a single point of delivery if SMUD determines that it is not reasonable or feasible to serve each premises directly.
4. A separate single meter may be used for a building's central system that serves more than one premises. When exceptions as described above are granted, the cost of electric service may be included in the rent.
5. Submetering for nonbilling purposes will be allowed for use in production measurement or budget allocation, with the prior approval of SMUD.

IV. Exceptions to Prohibition on Resale of Electricity

1. Mobile home parks for which submetering was permitted prior to August 1, 1971, and for which electric service is included in the facilities furnished to their tenants, may employ submetering equipment as a means of reselling SMUD electricity by retroactively adjusting rental charges for energy consumption, provided that the portion of such charges allocable to electricity will be charged the RSMM rate. Specifically, the mobile home park master-meter customer may resell electricity to their submetered tenants provided the following conditions are met:
    a. The tenants shall be charged the RSMM rate.
    b. The mobile home park shall bill each tenant for electricity use based on the tenant's submeter. The tenant's bill shall be generally in accordance with the form and content of SMUD bills, and include the amount of usage metered for the billing period, include the beginning and ending meter readings, and the amount of the bill.
    c. Discounts for low income and medical equipment shall be passed through to the qualifying tenant; net metering discounts under Rate Schedule NEM shall be passed through to tenants.

d. The mobile home park shall post SMUD's applicable rate schedule(s) in a conspicuous place on the mobile home park's premises.

2. Electric utilities and governmental agencies may submeter and resell electricity supplied to them by SMUD.

V. Enforcement

SMUD reserves the right to verify any submetering program, associated records and submetering bills for the purposes of determining compliance with SMUD's Rates, Rules and Regulations.

Customers who are receiving service in conflict with this rule and who fail to bring themselves into conformity within a reasonable time after receiving written notice from SMUD shall have their service discontinued.

(End)

President Sanborn then turned to Discussion Calendar Item 14, to cast vote on Sacramento Local Agency Formation Commission (LAFCo) ballot regarding i) the election of a Special District Representative; ii) distribution of ballots by email; and iii) submission of completed ballots by email.

Laura Lewis, Chief Legal & Government Affairs Officer, gave a presentation on Item 14. A copy of the slides used in her presentation is attached to these minutes.

No public comment was forthcoming for Discussion Calendar Agenda Item 14.

After some discussion, Vice President Herber moved to cast SMUD's vote for Michael Seaman, to vote yes on the ballot option approving LAFCo to distribute electronic ballots to districts that wish to receive them, and to vote yes on the ballot option for SMUD to receive its ballot via email and submit its vote electronically. Director Fishman seconded, and Resolution No. 23-09-10 was approved by a vote of 4-0, with Directors Rose and Kerth abstaining and Director Bui-Thompson absent.

RESOLUTION NO. 23-09-10

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. This Board casts its vote for Michael Seaman as Special District Representative [Regular Seat #7] to the **Sacramento Local Agency Formation Commission (LAFCo)**.

Section 2. This Board casts a yes vote to approve **LAFCo** distributing electronic ballots to districts that wish to receive them in the future.

Section 3. This Board casts a yes vote to receive its ballots via e-mail and submit its vote electronically (via fax, e-mail or scanned ballot).

Approved: September 21, 2023

INTRODUCED: DIRECTOR HERBER				
SECONDED: DIRECTOR FISHMAN				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
SANBORN	X			
ROSE			X	
BUI-THOMPSON				X
FISHMAN	X			
HERBER	X			
KERTH			X	
TAMAYO	X			

Attachment I
to Resolution No. 23-09-10

SACRAMENTO LOCAL AGENCY FORMATION COMMISSION
1112 I Street, Suite 100 • Sacramento, CA 95814 • (916) 874-6458
www.saclafco.org

Mail to: LAFCO
1112 I Street, Suite 100
Sacramento, CA 95814

ELECTION BALLOT

Special District Representative to LAFCo
Regular Seat #7

The election ends on September 30, 2023 at 5:00 p.m. or until a quorum of Special District ballots is received, whichever occurs later.

Candidate & District	Select one (1)
Lindsey Carter, Herald Fire Protection District	
Brian Danzl, Cordova Recreation & Park District	
Paul Lindsay, Florin Resource Conservation District	
Joanna McVay, North Highlands Recreation & Park District	
Edwin Perez, Reclamation District #1000	
Michael Seaman, Fulton-El Camino Recreation & Park District	✓
Robert "Bob" Wicher, Sacramento Suburban Water District	

LAFCo and Special Districts have the option of completing the election of special district representatives via e-mail. Does your district approve of LAFCo distributing electronic ballots to districts that wish to receive them in the future?

☒ Yes ☐ No

If so, in the future does your district prefer to receive its ballot via e-mail and submit its vote electronically (via fax, e-mail or scanned ballot)?

☒ Yes ☐ No

if Yes, ballots should be sent to e-mail address: TONI.STELLING@SMUD.ORG

BALLOT CONTINUES ON THE NEXT PAGE

Commissioners
Sue Frost, Rich Desmond, County Members ▪ Patrick Hume, Alternate
Iva Walton, Sean Loloee, City Members ▪ Jay Vandenburg, Katie Valenzuela, Alternates
Chris Little, Public Member ▪ Timothy Murphy, Alternate
Lindsey Liebig, Gay Jones, Special District Members ▪ Charlea Moore, Alternate
Staff
José C. Henríquez, Executive Officer ▪ Desirae Fox, Policy Analyst
Nancy Miller, DeeAnne Gillick, Commission Counsel

***SIGNATURE OF PRESIDING OFFICER** (Original Signature Required):*

SEE BELOW

***Note:** Presiding Officer is the Chair/President. Any other signature invalidates this ballot, unless accompanied by Meeting Minutes designating an alternate.*

***PRINTED NAME OF PRESIDING OFFICER** (Required):*

Heidi Sanborn

AGENDA ATTACHED** (Optional):* ***Yes ✓ ***No*** ____

Attest:

District Secretary, Clerk or General Manager

•AMENDED AGENDA

•Agenda Item 9 has been removed.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
BOARD OF DIRECTORS MEETING
SMUD HEADQUARTERS BUILDING
AUDITORIUM – 6201 S STREET
SACRAMENTO, CALIFORNIA

Remote Telephonic Location:
Grand Hyatt Washington
1000 H Street NW
Washington, DC 20001

September 21, 2023 – 6:00 p.m.

Virtual Viewing or Attendance:
Live video streams (view-only) and indexed archives of meetings are available at:
http://smud.granicus.com/ViewPublisher.php?view_id=16

Zoom Webinar Link: Join SMUD Board of Directors Meeting Here
Webinar/Meeting ID: 160 208 1532
Passcode: 732878
Phone Dial-in Number: 1-669-254-5252 or 1-833-568-8864 (Toll Free)

Verbal Public Comment:
Members of the public may provide verbal public comment by:

- Registering in advance of a meeting by sending an email to PublicComment@smud.org, making sure to include the commenter's name, date of the meeting, and topic or agenda item for comment. Microphones will be enabled for virtual or telephonic attendees at the time public comment is called and when the commenter's name is announced.
- Completing a sign-up form at the table outside of the meeting room and giving it to SMUD Security.
- Using the "Raise Hand" feature in Zoom (or pressing *9 while dialed into the telephone/toll-free number) during the meeting at the time public comment is called. Microphones will be enabled for virtual or telephonic attendees when the commenter's name is announced.

Written Public Comment:
Members of the public may provide written public comment on a specific agenda item or on items not on the agenda (general public comment) by submitting comments via email to PublicComment@smud.org or by mailing or bringing physical copies to the meeting. Comments will not be read into the record but will be provided to the Board and placed into the record of the meeting if received within two hours after the meeting ends.

Call to Order.
a. Roll Call.

1. Approval of the Agenda.

2. Committee Chair Reports.

   a. Committee Chair report of September 12, 2023, Strategic Development Committee
   b. Committee Chair report of September 13, 2023, Policy Committee
   c. Committee Chair report of September 19, 2023, Finance and Audit Committee
   d. Committee Chair report of September 20, 2023, Energy Resources & Customer Services Committee

- **Items ~~8, 9~~ and 14 were reviewed by the September 13, 2023, Policy Committee. Items 10 through 12 were reviewed by the September 19, 2023, Finance and Audit Committee.**

Comments from the public are welcome when these agenda items are called.

Consent Calendar:

3. Approve Board member compensation for service rendered at the request of the Board (pursuant to Resolution 23-06-02) for the period of August 16, 2023, through September 15, 2023.

4. Approval of the minutes of the regular meeting of August 17, 2023.

5. Approval of the minutes of the special meeting of August 30, 2023.

6. Approve non-substantive revisions to all **SMUD Board Policies (Strategic Directions SD-1A through SD-17 and SD-19, Board-Staff Linkages BL-1 through BL-14, and Governance Processes GP-1 through GP-15)** update formatting and position titles where applicable. **Board Workshop 2/22 & Board Workshop 8/21. (President Sanborn)**

7. Appoint Crystal Henderson to the position of **Special Assistant to the Board** effective September 25, 2023. **Closed Session 8/9. (President Sanborn)**

8. Accept the monitoring report for **Strategic Direction SD-7, Environmental Leadership**. **Policy Committee 9/13. (Frankie McDermott)**

- ~~9. Approve proposed revisions to **Strategic Direction SD-7, Environmental Leadership**. **Policy Committee 9/13. (President Sanborn)**~~

10. Authorize the Chief Executive Officer and General Manager to negotiate and execute the **Country Acres Clean Power, LLC Power Purchase Agreement (PPA)** with a 30-year term for 344 MW of solar photovoltaic power and a 20-year term for 172 MW of battery storage, substantially in form attached, as well as all other agreements necessary to facilitate the Country Acres project. **Finance and Audit Committee 9/19. (Lora Anguay)**

11. Authorize the Chief Executive Officer and General Manager to execute **Appendix Firm Storage Service** documents with **Wild Goose Storage LLC** for:

    a. Five-year Firm Storage Agreement for 2 Bcf of natural gas storage for the period April 1, 2024, through March 31, 2029; and

    b. Natural gas injection services for the period December 1, 2023, through March 31, 2024.

    Finance and Audit Committee 9/19. (Lora Anguay)

12. a. Approve contract change to Contract No. 4500110473 with **United Health Care Insurance Company** approving 2024 medical insurance premium rates and extending the contract by one year for the period January 1, 2024, through December 31, 2024; 2024 cost estimated at $39.1 million; and

    b. Approve contract change to Contract No. 4500043215 with **Kaiser Permanente** approving 2024 medical insurance premium rates and extending the contract by one year for the period January 1, 2024, through December 31, 2024; 2024 cost estimated at $30.7 million.

    Finance and Audit Committee 9/19. (Jose Bodipo-Memba)

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Discussion Calendar:

13. Adopt resolution to make changes to SMUD's Rates, Rules and Regulations proposed by the Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services (Volumes 1 & 2) dated June 15, 2023 ("CEO & GM Report").

    Presenter: Alcides Hernandez

14. Cast vote on **Sacramento Local Agency Formation Commission (LAFCo)** ballot regarding i) the election of a Special District Representative; ii) distribution of ballots by email; and iii) submission of completed ballots by email. **Policy Committee 9/13. (Laura Lewis)**

    Presenter: President Sanborn

* * * * * * *

Public Comment:

15. Items not on the agenda.

* * * * * * *

Board and CEO Reports:

16. Directors' Reports.

17. President's Report.

18. CEO's Report.
    a. Board Video

Summary of Board Direction

* * * * * * *

Board Committee Meetings and Special Meetings of the Board of Directors are held at the SMUD Headquarters Building, 6201 S Street, Sacramento

September 19, 2023	Finance and Audit Committee and Special SMUD Board of Directors Meeting	Auditorium*	6:00 p.m.
September 20, 2023	Energy Resources & Customer Services Committee and Special SMUD Board of Directors Meeting	Auditorium	6:00 p.m.
October 10, 2023	Strategic Development Committee and Special SMUD Board of Directors Meeting	Auditorium	6:00 p.m.
October 11, 2023	Policy Committee and Special SMUD Board of Directors Meeting	Auditorium	6:00 p.m.
October 17, 2023	Finance and Audit Committee and Special SMUD Board of Directors Meeting	Auditorium	6:00 p.m.
October 18, 2023	Energy Resources & Customer Services Committee and Special SMUD Board of Directors Meeting	Auditorium	6:00 p.m.

* * * * * * *

The Auditorium is located in the lobby of the SMUD Headquarters Building, 6201 S Street, Sacramento, California.

Regular Meetings of the Board of Directors are held at the SMUD Headquarters Building, 6201 S Street, Sacramento

October 19, 2023	Auditorium*	6:00 p.m.

**The Auditorium is located in the lobby of the SMUD Headquarters Building, 6201 S Street, Sacramento, California.*

Members of the public shall have up to three (3) minutes to provide public comment on items on the agenda or items not on the agenda, but within the jurisdiction of SMUD. The total time allotted to any individual speaker shall not exceed nine (9) minutes.

Members of the public wishing to inspect public documents related to agenda items may click on the Information Packet link for this meeting on the smud.org website or may call 1-916-732-7143 to arrange for inspection of the documents at the SMUD Headquarters Building, 6201 S Street, Sacramento, California.

ADA Accessibility Procedures: Upon request, SMUD will generally provide appropriate aids and services leading to effective communication for qualified persons with disabilities so that they can participate equally in this meeting. If you need a reasonable auxiliary aid or service for effective communication to participate, please email Toni.Stelling@smud.org, or contact by phone at 1-916-732-7143, no later than 48 hours before this meeting.

President Sanborn then called for statements from the public regarding items not on the agenda.

Annette Deglow, President of the College/Glen Neighborhood Association, asked the Board to help the group to get the City of Sacramento, SMUD, and the Western Area Power Administration (WAPA) to enforce regulations that are posted in the Oki South Easement Area for no trespassing, no dumping, and no camping. Materials she provided are attached to these minutes.

Mark Graham spoke about the SMUD publication regarding Understanding Electric and Magnetic Fields (EMF). He stated that information regarding smart meters was missing from the publication. He spoke of the adverse health effects from EMF and cell phones. He asked the Board to publicize the opt out program, wherein customers may request an analog meter.

Peter Mackin, President of the Sacramento Electric Vehicle Association, stated that his comments were his personal comments. He spoke of the presentation of the previous evening regarding the 2030 Zero Carbon Plan Update and asked the Board and staff to look into ways to increase charging opportunities in multi-unit dwellings in order to make rates charged to those residents equal to what people in single family homes pay. He noted he did not have a solution but wanted to raise the issue and was available to help on the issue.

Public comment on Agenda Item 15, copies of which are attached to these minutes, was received from the following members of the public:

- James Potter

President Sanborn then turned to Directors' Reports.

Director Rose noted it had been a busy month and thanked staff for their work on several big projects in the recent past. He thanked People Services & Strategies (PS&S) for their assistance in the process of onboarding a new Special Assistant to the Board, and he thanked the Board Office for their hard work. He reported on a walk he had conducted in Ward 1 based out of Rush Park where he and SMUD staff visited the local neighborhood to provide

information on SMUD's programs. He then reported on his attendance at the Sacramento Hispanic Chamber of Commerce's State of Hispanics event.

Director Fishman reported on his attendance at the California Independent System Operator (CAISO) Conference on the Extended Day-Ahead Market (EDAM) as well as the Metro Chamber Study Mission to Toronto.

Vice President Herber thanked the Board Office staff for their hard work as well as PS&S and Chief Diversity Officer Jose Bodipo-Memba for their assistance in the onboarding process for the new Special Assistant to the Board. She then reported on her attendance at a tree planting organized by Joe Flores at the Anne Rudin Peace Pond. She also reported on her participation, along with Councilmember Rick Jennings, at a tree planting at Sojourner Park. She reported on her attendance at the Cesar Chavez Revitalization ribbon cutting and thanked Chief Customer Officer Brandy Bolden and her staff for their work on the event.

Director Kerth reported on his attendance at the Center for Energy Efficiency and Renewable Technology (CEERT) Clean Power Awards and thanked V. John White for organizing it. He reported on his attendance at the Natomas Jibe Electric Vehicle event. He concluded by reporting on his attendance at the Station G ribbon cutting event.

Director Tamayo reported on his attendance at the Station G ribbon cutting event as well as the Metro Chamber Study Mission to Toronto. He concluded by reporting on his participation in the Mack Road Partnership Business Walk.

President Sanborn thanked the Board Office for their work and noted they had been doing an amazing job. She reported on her attendance at the Apple Hill Growers Farm to Fork Dinner event as well as the Station G ribbon cutting. She reported on her attendance at the Jake's Journey Home event in Folsom as well as a Mow Better meeting. She reported on her attendance at the Juma Ventures event as well as the T&D World Conference. She spoke about the "We Can Do It" event at the Aerospace Museum and noted the turnout had been great. She concluded by reporting on her attendance at the Habitat for

Humanity Gala, which was co-emceed by Sustainable Community Partnership Manager and Habitat for Humanity Board President Shiloh Costello and which raised over $500,000 in donations.

Paul Lau, Chief Executive Officer and General Manager, reported on the following items:

1) **Hispanic Heritage Month.** I would like to start by recognizing Hispanic Heritage Month, which kicked off on September 15th. It is a perfect time to honor the many contributions of Americans whose ancestors came from Spain, Mexico, the Caribbean, Central America and South America. In honor of the month, SMUD is sponsoring several events in the area. And this week, our Latinos Unity Network for Action (LUNA) Employee Resource Group hosted a virtual event with guest speaker Dr. Maria Elena Vargas, an associate professor of the Department of Ethnic Studies at Sac State.
2) **SMUD Events.** This week has been a busy one at SMUD! Yesterday, we held our annual Meet the Buyers event, where we network with local vendors and offer information and tips on how to be more competitive at securing contracts with SMUD. Then this morning, we hosted our inaugural Connecting our Communities Resource Expo! This event connected our residential customers in need with services like our Energy Assistance Program Rate, Medical Discount Rate and Energy Saver Bundles. To join us, we brought in 25 community partners who specialize in healthcare, housing, legal services, childcare and so much more. I am so proud of all who made these two events possible. Your work exemplifies SMUD's purpose: to improve the quality of life of our customers and community. Thank you!
3) **SMUD Cares Giving Campaign.** Our SMUD Cares employee giving campaign is now in full swing. Last year, we raised

nearly $400,000, and we are hoping to do even more this year! I am constantly in awe of our employees and how generous they are with their time and resources.

4) **2023 T&D World Live Conference.** Last week, SMUD was excited to be the host utility for the 2023 T&D World Live conference. As President Sanborn mentioned, she and Chief Operating Officer Frankie McDermott kicked things off with a fantastic keynote that showcased the great work we are doing here at SMUD. Chief Diversity Officer Jose Bodipo-Memba and Chief Zero Carbon Officer Lora Anguay spoke on expert panels, and several other key staff participated on industry panels and discussions.

5) **Electric Vehicles (EV).** Now, as you know, we host many EV ride and drive events for customers to learn more about the latest in EV technologies. We put a new spin on one of our events last month in Natomas where we teamed up with the nonprofit Jibe to give our customers a chance to not only test multiple models of EV's, but also e-bikes! Speaking of EVs, we are expanding our Managed Electric Vehicle Smart Charging Pilot to be available to Tesla drivers. Now, with our partner Optiwatt, BMW, Ford, General Motors and Tesla drivers have an opportunity to help us meet increased energy demand as more Californians adopt EVs.

6) **Awards.** Finally, SMUD has collected quite a few awards lately. A big congratulations to our Chief Customer Officer Brandy Bolden who was honored with a U2030 Women Who Spark Award. This award recognizes exceptional women in utilities from across the nation who are shaping the industry, influencing responsible business practices and inspiring other women. Congratulations as well to our Director of Diversity, Equity, Inclusion & Belonging Dr. Markisha Webster who won a

Sacramento Cultural Hub's Exceptional Woman of Color Award for her tremendous DEIB work that's driving SMUD's culture of belonging. Our My Energy Optimizer program was recognized for innovation with a 2023 Cloud for Utilities' ICON award. And, Oracle recognized SMUD with its Earthfirst Award for Excellence in Sustainability.

7) **Board Video.** For this month's video, we are looking at the Sacramento Power Academy, where SMUD's been training some of the best utility workers in the country for the last 50 years. This video highlights the various apprenticeships available through our Power Academy, how apprentices move through their program, and how we are leveraging our efforts to ensure all communities have the opportunity to work at SMUD.

President Sanborn requested the Summary of Board Direction, but there were no items.

No further business appearing, President Sanborn adjourned the meeting at 8:09 p.m.

Approved:

_____ _____

President Secretary

Exhibit to Agenda Item #13

Adopt resolution to make changes to SMUD's Rates, Rules and Regulations proposed by Chief Executive Officer and General Manager's Report and Recommendations on Rates and Services (Volumes 1 & 2) dated June 15, 2023 ("CEO & GM Report").

Board of Directors Meeting

Thursday, September 21, 2023, scheduled to begin at 6:00 p.m.

SMUD Headquarters Building, Auditorium

Proposed changes to SMUD rates

Rate Proposal	Rate Increase & Effective Date	Customer Groups Impacted
2024 – 2025 rate increases	• 2.75% effective on 1/1/2024 • 2.75% effective on 5/1/2024 • 2.75% effective on 1/1/2025 • 2.75% effective on 5/1/2025	All Customers
Additional discount for our most vulnerable Energy Assistance Program Rate (EAPR) customers	Increase benefit from $70/month up to $105/month. $2M/year funded with non-rates revenue.	EAPR customers with income within 0 – 50% of the Federal Poverty Level (FPL)

Miscellaneous changes:

- **Rate Holidays:** Align SMUD rate holidays to federal holidays. Remove Lincoln's Birthday and add Juneteenth.
- **Generator Standby Charge:** Clarify application to facilities that use SMUD as backup service.
- **Hydro Generation Adjustment:** Add WAPA* hydro generation to the HGA tariff and change measurement station.
- **Commercial Power Theft:** Simplify estimation of unrecovered commercial revenue with simple $/kWh rate.
- **Clean-up items:** Remove residential and commercial legacy rate and general clean up of tariffs.

* Western Area Power Administration

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2023 Rate Process Summary

Apr 18

Board Committee Meeting @ 6 p.m.
Overview of the 2023 rate process

Public outreach process contacts:

- 30+ direct presentations
- 1,200+ community & business leaders
- 55 local elected officials
- 125 community & business partners
- 300+ commercial customers

Jun 15

Released the CEO & GM Reports and Recommendations on Rates and Services

Jul 13 & Aug 3

Hosted public rates workshops

Aug 30

- Public rates hearing @ 6 p.m.
- Draft rate resolution introduced

Sep 21

Final decision on rate resolution at SMUD Board meeting



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Public outreach process: direct engagement

276,000+

Emails to customers, local organizations and to our Listserv subscribers.

Community & business leaders received emails, letters and/or phone calls to offer meetings & information.



1,200+



300+

Community & business partners were provided information and fact sheets to share with their constituents, members and networks.

Local elected officials were mailed info packets and offered to meet.



55



~125

Community organizations or neighborhood associations received presentations, attended a roundtable or received a recorded presentation.

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Summary of alternative recommendations

- **Alternative recommendation 1**: Implement new "FlexEquity" rate with tiered rates in every hour, using kilo volt-amp-hour (kVAh) as the unit of measure for energy charges to capture Power Factor (PF).
  - **Response**: This rate would be a significant change from current rates and would be extremely complex for customers to understand and follow.
- **Alternative recommendation 2**: Proposal to reduce existing residential rates revenue due to a scalar.
  - **Response**: SMUD follows widely accepted rate making methods, the change would reduce retail revenue and impact SMUD's ability to meet minimum financial metrics.
- **Alternative recommendation 3**: Publicize the smart meter opt out program and the analog meter option.
  - **Response**: This recommendation is not relevant to the 2023 rate process.

Summary of alternative recommendations

- **Alternative recommendation 4**: Begin rate process over again with added expense data to comply with Public Utilities Code, section 14404.3(e).
  - **Response**: The 2023 CEO & GM Report provides information in sufficient detail to permit an assessment of the need for any proposed changes.
- **Alternative recommendation 5**: Provide cost justification for the proposed rates and start the rate process over again.
  - **Response**: The 2022 Rate Study demonstrates that cost components increased and reasonably justifies the proposed rates.
- **Alternative recommendation 6**: Do not increase rates.
  - **Response**: Not increasing rates would result in inadequate revenue for 2024 and 2025 to meet minimum financial metrics.

Requested Action

Adopt resolution to make changes to SMUD's Rates, Rules and Regulations by Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services (Volumes 1 & 2) dated June 15, 2023 ("CEO & GM Report").

From: Mark <Mark@freewayblogging.com>
Sent: Tuesday, September 19, 2023 5:28 PM
To: Brandon Rose-Contact <brandondrose@hotmail.com>; Nancy Bui-Thompson <Nancy.Bui-Thompson@smud.org>; gbfishman@gmail.com; Rosanna J. Herber <Rosanna.Herber@smud.org>; Rob Kerth External <rob@kerth.us>; davetamayo2@gmail.com; Heidi Sanborn <Heidi.Sanborn@smud.org>
Cc: Jenna Lesch <Jenna.Lesch@smud.org>
Subject: [EXTERNAL] Public comments on the draft rate resolution dated September 19, 2023

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

September 19, 2023

Esteemed SMUD Directors and staff,

Please acknowledge your receipt of this message.

This email contains my second public review, input and comments on draft resolution 23-08-07, which the Board approved on August 30, 2023. I may have more to follow.

Summary

SMUD acknowledged, on unnumbered page 32 of Attachment A to the draft rate resolution, my alternative recommendation regarding the continuation to this date and the proposed continuation and increase of the scalar, originally of 9.2%, which has been built into the time of day rates since the start and was originally presented in the RT02 rate design study performed in connection with the original time of day rates, which SMUD referred to in Appendix I of the 2017 CEO and GM Report.

SMUD's response to this alternative recommendation consisted of four statements or claims but each of these is flawed and incorrect. SMUD's response taken as a whole is flawed and incorrect. For these reasons SMUD should approve my alternative recommendation regarding the scalar. This email and the attached pdf file will explain why.

Requests

#1 The Board should read and review the attached file of my current set of public comments, discuss them during the September 21, 2023 Board of Directors meeting, and reconsider approving and actually approve my alternative recommendation regarding the scalar from the original, RT02, rate design study.

#2 Each Director should also read, in full, if he or she has not already read it, my revised report and recommendations on alternatives to the rate increases proposed by the CEO and General Manager. I sent you my original report and recommendations on August 23 and a revised version, which superseded the original, on August 28. Please read the revised report.

Discussion

The discussion is contained in the attached pdf file titled "SMUD public comments on 2023 rate resolution.pdf"

Thank you very much.

Sincerely,

Mark Graham

SMUD public comments on 2023 rate resolution

September 19, 2023

Dear SMUD Board of Directors and staff,

This message contains my 2nd set of comments on your resolution approved at the Board meeting after the rate hearing on August 30, 2023. I may or may not have more comments to follow. Please consider these prior to your vote on the new proposed rates for 2024 and 2025.

The transcript of the August 30, 2023 rate hearing and my revised report and recommendations on alternatives to the rate proposals by the General Manager, dated and delivered to you on August 28, 2023, are hereby incorporated into this public comment by this reference.

According to your draft resolution 23-08-07

Section 19. ALTERNATIVE RECOMMENDATION 2: SMUD received a recommendation to back out the "9.2% scalar" built into the original time of day (TOD) rates adopted in 2017, plus all of the across the board rate increases since 2017 that have increased that scalar before applying the proposed rate increases.
This Board has considered this alternative recommendation 2 and has determined not to adopt the alternative recommendation for the following reasons:

- This rate action does not address the current or prior residential rates, which were approved by the Board in prior rate actions.

- The use of a scalar is described in the 2017 CEO & GM Report, under Appendix I. The scalar was used to reconcile marginal cost to achieve a revenue neutral restructured TOD rate design prior to adjusting the rates with the proposed 2018 rate increase adopted in 2017.

- Increasing marginal cost rates by a scalar (or equal percentage of marginal cost) is an accepted practice by the industry and is used to ensure sufficient collection of revenue to meet costs.

- Reducing rates by the scalar would result in inadequate revenues for 2024 and 2025 to meet financial obligations, and also negatively impact SMUD's financial position. Rating agencies could downgrade SMUD's credit rating, which would increase costs of borrowing that is needed to fund capital projects, and the increased borrowing cost would make future rate increases higher.

I will address these objections one at a time.

• This rate action does not address the current or prior residential rates, which were approved by the Board in prior rate actions.

This rate action proposes to increase rates across the board by 2.75% on 4 different dates, as you know. Therefore it is increasing the existing rates with all the mistakes they contain. The scalar has already been increased in previous rate actions up to approximately 10.5%. When you increase the current rates you will also increase the scalar. So your statement here is false. Your proposed rate increases DO implicitly address current and prior residential rates. Just because you did not do a new rate design study and you did not cost justify your rates, as required, doesn't mean you have removed the scalar. You haven't removed the scalar. Staff has said so in response to my written questions. Anything which is in the current rates which you are about to increase will also be increased.

I also addressed this at the rate hearing.

3 All of the mistakes which will made in the
4 original time-of-day rates remain in the current and
5 proposed rates because every rate action since then
6 has increased the rates and has not changed the
7 structure.

Transcript, page 37

I also addressed this in my revised report and recommendations on alternatives to the rate proposals by the General Manager, dated August 28, 2023.

From the answer to questions 19 and 20 SMUD has admitted it is keeping and increase the 9.2% scalar, plus all the increases to it and the rates since then. Therefore all of the mistakes in the original TOD rates are also present in the proposed rates.

(page 22. Also scroll down for the questions and answers.)

• The use of a scalar is described in the 2017 CEO & GM Report, under Appendix I. The scalar was used to reconcile marginal cost to achieve a revenue neutral restructured TOD rate design prior to adjusting the rates with the proposed 2018 rate increase adopted in 2017.

The first sentence is false. You are close though. As I have described in my revised report and recommendations on alternatives to the rate changes proposed by the General Manager, which I sent you on August 28, 2023, and in my presentation at the rate hearing on August 30, the 2017 CEO and GM Report, Appendix I, referred to the RT02 rate design study for the original time of day rates, which was dated 2017 and 2018.

It was the "2017 (sic) Residential Time-of-Use Rate (RT02) Design Study," dated November 30, 2016. (page 109 of 2017 CEO and GM Report). (It should have said 2018, per SMUD staff.)

The fact that you say, "The scalar was used to reconcile marginal cost to achieve a revenue neutral restructured TOD rate design . . . ." proves you are basing your rates on predetermined budgets. Per the California Constitution, Article XIII C, you cannot do this.

> "6. On page 27, delete the first sentence of the first complete paragraph, and substitute this paragraph in its stead: 'The way Proposition 218 operates, water rates that exceed the cost of service operate as a tax, similar to the way a 'carbon tax' might be imposed on use of energy. But, we should emphasize: Just because such above-cost rates are a tax does not mean they cannot be imposed – they just have to be submitted to the relevant electorate and approved by the people in a vote. There is no reason, for example, why a water district or local government cannot, consistent with Proposition 218, seek the approval of the voters to impose a tax on water over a given level of usage – as we indicated earlier, that might be a good idea. However, if a local government body chooses to impose tiered rates unilaterally without a vote, those tiers must be based on cost of service for the incremental level of usage, not pre-determined budgets. (For the moment, of course, we need not decide whether such a proposed tax would constitute a general tax or special tax.)'"

(*CAPISTRANO TAXPAYERS ASSOCIATION, INC., v. CITY OF SAN JUAN CAPISTRANO*, G048969, COURT OF APPEAL OF THE STATE OF CALIFORNIA, FOURTH APPELLATE DISTRICT, DIVISION THREE, (Super. Ct. No. 30-2012-00594579), Order modifying opinion; no change in judgment, dated May 19, 2015.) pages 2 and 3.

This is from my Report and recommendations on alternatives to the rate changes proposed by the general manager for 2024 and 2025, revised on August 28, 2023, Page 18.

The Rates Team has told me you are basing your rates on predetermined budgets. Staff also said you are basing your rate proposal on predetermined budgets at the August 3 public workshop and the August 30 rate hearing. See the full transcript.

- Increasing marginal cost rates by a scalar (or equal percentage of marginal cost) is an accepted practice by the industry and is used to ensure sufficient collection of revenue to meet costs.

This response assumes that SMUD is a part of a homogeneous "industry" and therefore it is allowed to follow accepted practices by the industry. I addressed this in my revised report and recommendations on alternatives, pages 21 – 22.

> **SMUD cannot set its rates based on the standard industry practice of CPUC regulated utilities or utilities in other states**
>
> The Rates Team has been evasive about the origins of the proposed rates. I sent them a set of questions on July 11, which they finally answered on July 26. Here are some of the

questions and answers.

Questions:

#19 What is the factual and historical basis for SMUD including the 9.2% scalar from its original TOD rates in the proposed rates for 2024 and 2025?

#20 Is SMUD relying on "standard industry practice" as its justification for including the 9.2% scalar from its original TOD rates in the proposed rates for 2024 and 2025?

#21 Is SMUD relying on practices of regulated utilities in California (regulated by the CPUC) as its justification for including the 9.2% scalar from its original TOD rates in the proposed rates for 2024 and 2025?

#22 Is SMUD relying on practices of electric utilities in other states as its justification for including the 9.2% scalar from its original TOD rates in the proposed rates for 2024 and 2025?

Answers:

19. The scalar was included in developing the TOD energy charges in 2017, and the rate increases proposed for 2024-2025 apply to all components of the rate adopted by the Board in
prior rate actions.

20. The TOD rate was adopted in 2017 following industry standard practice regarding marginal
costing principles and the proposed rates for 2024 and 2025 are simply increasing and not changing the TOD rate structure.

21. The TOD rate was adopted in 2017 following industry standard practice which may or may not include CPUC regulated utilities.

22. The TOD rate was adopted in 2017 following industry standard practice which may or may not include utilities from other states.

From the answers to questions 21 and 22 SMUD has admitted that it may have followed standard industry practice from CPUC regulated utilities and utilities in other states. But neither CPUC regulated utilities nor utilities in other states are subject to Article XIII C of the California Constitution,
From the answer to questions 19 and 20 SMUD has admitted it is keeping and increase the 9.2% scalar, plus all the increases to it and the rates since then. Therefore all of the mistakes in the original TOD rates are also present in the proposed rates.

To elaborate further on this point, although I think my meaning was already clear, utilities in other states do not have to comply with Article XIII C. They may charge rates which exceed their reasonable cost of providing electricity. SMUD does have to comply, notwithstanding your statements about compliance on page 76 of the CEO and GM Report, and may not charge rates which exceed its reasonable cost of providing electricity.

The same holds true for CPUC regulated utilities.

I also addressed this during the rate hearing. This is on page 38 of the transcript.

17 The SMUD rates team has admitted that the
18 proposed rates may include industry-standard
19 practice which may or may not include utilities from
20 other states and CPUC regulated utilities, but both
21 of those play by different rules, and neither one is
22 bound by Article XIII C.

I am surprised and disappointed that SMUD continues to disregard this distinction.

- Reducing rates by the scalar would result in inadequate revenues for 2024 and 2025 to meet financial obligations, and also negatively impact SMUD's financial position. Rating agencies could downgrade SMUD's credit rating, which would increase costs of borrowing that is needed to fund capital projects, and the increased borrowing cost would make future rate increases higher.

Again, rates must be based on SMUD's reasonable cost of providing electric service. Not on predetermined budgets. See my discussion of this point earlier.

SMUD continues to claim, implicitly, that it needs every dollar it is current taking in and proposes to take in. During the rate hearing and public workshop, and probably in the CEO and GM Report, SMUD claims it is not a for profit corporation and is not earning profit. While technically and legally this is true it is a meaningless distinction. Like any for profit corporation SMUD has revenues and expenses. These are presented in your financial reports. Unlike a for profit corporation SMUD does not report "profits". Rather, it reports "change in net position" or "increase in net position" where net position is analogous to a for profit company's equity.

Behind the differences in accounting terms between a municipal utility district and a for profit corporation lie the same basic things: an organization with employees providing a service for which its customers pay. The basic question is the same: what is the difference between revenues and expenses, both in net dollars and as a percentage of revenues?

Here is where the numbers give SMUD away.

During the pandemic SMUD ran large monthly and annual surpluses from its operations. See your own budget documents for specific amounts. Furthermore for years SMUD has had large surpluses in terms of its number of days of cash on hand and its debt service ratio.

This data is from old SMUD records but the same situation, the same ratio for debt coverage, probably holds true today. SMUD should provide current or more recent data from a comparable document to update the information I am providing here.

SMUD financial documents have identified and quantified several financial indicators showing this surplus, i.e., viz and to wit:

#1 Large monthly and annual increases in SMUD's net position, which is the equivalent for a not for profit organization of net income for an investor owned utility ("IOU").

#2 The accumulation of an unnecessarily large rainy day fund of several hundred million dollars.

#3 Debt coverage ratio of around 2.00, which is 33% higher than the debt coverage ration of 1.50 SMUD policy Strategic Direction (SD-3) requires.

#4 The accumulation of an unnecessarily large number of days of cash on hand (that is, cash needed for operations).

#1 Regarding the increases in SMUD's net position and a comparison to net income for PG&E, this public comment will not include such a comparison but will describe it. One can compare SMUD's increase in net position let's say each year for the last five (5) years to PG&E's net income for the same period, and also look at the last 3 years and 5 years, each taken as a single number from both SMUD and PG&E. If memory serves the percentage of SMUD's increase in net position divided by its gross revenues is comparable to, and may exceed, PG&E's net income as a percentage of its gross revenues. So SMUD is, despite its lower than PG&E rate, running a large surplus by this measure. This belies SMUD's claim that it is barely getting by or would struggle financially without the proposed rate increases.

#2 Regarding SMUD's accumulation of a large rainy day fund of several hundred million dollars again this public comment will not present the data for such a comparison but will describe it. In the SMUD financial statements, probably in its statement of its assets, there are 2 or more categories of assets which are available cash on hand or marketable securities, anything which can be quickly turned into cash. Realizing the necessity of maintaining a rainy day fund in case of financial emergencies, the argument here is the size of what I am calling SMUD's rainy day fund relative to its overall annual revenues and to SMUD's historical expenses on such financial emergencies. I cannot quote a number for my review of SMUD's budget data on this point, probably in 2020 or 2021, showed it to be high. Unnecessarily high, in my opinion. What is the benchmark SMUD uses to determine the appropriate amount of its rainy day fund? I am using the term rainy day fund here to refer to cash and marketable securities and anything which can be quickly turned into cash which SMUD keeps on hand.

This is evidentiary support for items #3 and #4 above.

According to a SMUD financial document:

> "SMUD's Board policy sets a minimum fixed charge coverage ratio of 1.50 times for annual budgets, though it generally plans to meet a minimum fixed charge coverage ratio of 1.70 times. Over the past ten years, the actual fixed charge coverage ratio has averaged 2.07 times on a consolidated basis.
>
> SMUD also manages its liquidity position by planning for a minimum of 150 days cash on hand. Over the past ten years, the days cash on hand has averaged 193."

(Appendix A, INFORMATION REGARDING SACRAMENTO MUNICIPAL UTILITY DISTRICT, to the draft preliminary official statement for the ELECTRIC REVENUE BONDS, 2020 SERIES H and the ELECTRIC REVENUE REFUNDING BONDS, 2020 SERIES I (FEDERALLY TAXABLE), page A-5, which is page 249 of the Board information packet for the April 16, 2020 meeting. 4124-3007-7731.6)

SMUD's commitment to the fixed charge coverage ratio of 1.50 times is in a Board Policy called Strategic Direction 3 ("SD-3"). It says in relevant part: "For SMUD's annual budgets, the Board establishes a minimum target of cash coverage of all debt service payments (fixed charge ratio) of 1.5 times."

https://www.smud.org/-/media/Documents/Corporate/About-Us/Directives/Policy-SD-3.ashx

2.00% divided by 1.50% is 33% higher than SMUD's SD-3 calls for. This is one measure of SMUD's unnecessary large surpluses.

Similarly, 193 divided by 150 is 28.7% higher than SMUD's stated goal. This is another measure of SMUD's unnecessary large surpluses.

SMUD has failed to provide any numbers, any data, to support this claim:

• Reducing rates by the scalar would . . . and also negatively impact SMUD's financial position. Rating agencies could downgrade SMUD's credit rating, which would increase costs of borrowing that is needed to fund capital projects, and the increased borrowing cost would make future rate increases higher.

Without any numbers or data this claim remains purely speculative SMUD has engaged in this game before and continues to do so during the current rate action. Although it is true that at some amount of lower revenues the scenario described above could occur, the question is where? How much less in revenues would SMUD have to take in in order for this scenario to occur?

$10 is less than $100 which is less than $1,000. SMUD puts numbers on every single bill or

invoice or statement it sends to a customer. SMUD knows that numbers matter, dollar amounts matter. Why wouldn't SMUD put in numbers to back up this claim? Probably because SMUD knows that this is a chicken little prediction, intended to scare the Board of Directors into approving the CEO and GM's proposed rate increases without carefully examining the actual need for said increases. How far away, in terms of dollars, is SMUD from a downgrade in its credit rating? SMUD should answer this question with NUMBERS, not with a qualitative answer. In the absence of such an answer this claim remains speculative.

This is the end of this set of public comments. I may have more.

Directors I would appreciate your substantive response in writing or at the very least during the September 21, 2023 Board meeting, during your discussion of the proposed rates and prior to your vote on it.

Thank you very much,

Mark Graham

P.S. On the relationship between these public comments and your draft rate resolution.

According to resolution 23-08-07:

WHEREAS, pursuant to SMUD Ordinance No. 15-1, this resolution was introduced on August 30, 2023 by this Board to be circulated for a minimum of ten calendar days for public review, input, and comment; and

(unnumbered 2nd page of the draft resolution)

The period of "a minimum of ten calendar days" is not capped. Today is September 19 and it is the 20th calendar day following August 30. Two days from now the Board plans to vote on a resolution approving electric rates for 2024 and 2025. Today is an appropriate and allowed time for me to send you, and for the Board to consider, my review, input, and comments on resolution 23-08-07 and the proposed rates.

From: Mark <Mark@freewayblogging.com>
Sent: Wednesday, September 20, 2023 7:31 PM
To: Brandon Rose-Contact <brandondrose@hotmail.com>; Nancy Bui-Thompson <Nancy.Bui-Thompson@smud.org>; gbfishman@gmail.com; Rosanna J. Herber <Rosanna.Herber@smud.org>; Rob Kerth External <rob@kerth.us>; davetamayo2@gmail.com; Heidi Sanborn <Heidi.Sanborn@smud.org>
Cc: Jenna Lesch <Jenna.Lesch@smud.org>
Subject: [EXTERNAL] Re: Public comments on the draft rate resolution dated September 20, 2023

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

September 20, 2023

Esteemed SMUD Directors and staff,

Please acknowledge your receipt of this message and its 2 attachments.

For the purpose of comparison with PG&E, your nemesis, I am sending as attachments to this email SMUD's 2020 and 2022 audited financial statements.

The 2021 audited financial statement is not currently available on the SMUD website and is incorporated into this public comment by this reference. I have asked staff to make it available. As I mentioned to your staff earlier today the "view financial statements" hyperlink at the bottom right on this page actually leads to the 2022 audited financial statements, not the 2021.

https://www.smud.org/en/Corporate/About-us/Company-Information/Reports-and-Statements/2021-Annual-Report

Thank you and best wishes,

Mark Graham

Financial Statements

Report of Independent Auditors

December 31, 2020 and 2019



SMUD®

SACRAMENTO MUNICIPAL UTILITY DISTRICT
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Independent Auditors' Report

To the Board of Directors of
Sacramento Municipal Utility District

Report on the Financial Statements

We have audited the accompanying financial statements of Sacramento Municipal Utility District, as of and for the years ended December 31, 2020 and 2019, and the related notes to the financial statements, which collectively comprise Sacramento Municipal Utility District's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control over financial reporting relevant to Sacramento Municipal Utility District's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of Sacramento Municipal Utility District's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Sacramento Municipal Utility District as of December 31, 2020 and 2019, and the respective changes in financial position and cash flows thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Baker Tilly US, LLP, trading as Baker Tilly, is a member of the global network of Baker Tilly International Ltd., the members of which are separate and independent legal entities.

Other Matter

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the required supplemental information as listed in the table of contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have issued our report dated February 19, 2021, on our consideration of Sacramento Municipal Utility District's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Sacramento Municipal Utility District's internal control over financial reporting and compliance.

Baker Tilly US, LLP

Madison, Wisconsin
February 19, 2021

Sacramento Municipal Utility District
Management's Discussion and Analysis - Unaudited
For the Years Ended December 31, 2020 and 2019

Using this Financial Report

This annual financial report for Sacramento Municipal Utility District (SMUD) consists of management's discussion and analysis and the financial statements, including notes to financial statements. The Financial Statements consist of the Statements of Net Position, the Statements of Revenue, Expenses and Changes in Net Position and the Statements of Cash Flows.

SMUD maintains its accounting records in accordance with Generally Accepted Accounting Principles for proprietary funds as prescribed by the Governmental Accounting Standards Board (GASB). SMUD's accounting records generally follow the Uniform System of Accounts for Public Utilities and Licensees prescribed by the Federal Energy Regulatory Commission (FERC), except as it relates to accounting for contributions of utility property in aid of construction.

Overview of the Financial Statements

The following discussion and analysis of the financial performance of SMUD provides an overview of the financial activities for the years ended December 31, 2020 and 2019. This discussion and analysis should be read in conjunction with the financial statements and accompanying notes, which follow this section.

The Statements of Net Position provide information about the nature and amount of resources and obligations at a specific point in time.

The Statements of Revenues, Expenses and Changes in Net Position report all SMUD's revenues and expenses for the periods shown.

The Statements of Cash Flows report the cash provided and used by operating activities, as well as other cash sources, such as investment income and debt financing, and other cash uses such as payments for debt service and capital additions.

The Notes to Financial Statements provide additional detailed information to support the financial statements.

Nature of Operations

Under provisions of California's Municipal Utility District Act, the citizens of Sacramento voted in 1923 to form their own electric utility – SMUD. The independently run community-owned utility began operations on December 31, 1946 and is not subject to regulation or oversight by the California Public Utilities Commission. It is now the sixth largest community-owned electric utility in the nation.

Governed by an elected board of directors (Board), SMUD has the rights and powers to fix rates and charges for commodities and services it furnishes, incur indebtedness, and issue bonds or other obligations. SMUD is responsible for the acquisition, generation, transmission, and distribution of electric power to its service area with a population of approximately 1.5 million – most of Sacramento County and small adjoining portions of Placer and Yolo Counties. Its purpose is to enhance the quality of life for its customers and community through creative energy solutions. The Board has independent authority to set SMUD's rates and charges. Changes in rates require a public hearing and formal action by the Board.

In 2018, SMUD began rolling out the transition to Time-of-Day (TOD) rates to better align with the cost of providing electricity, send more accurate price signals to customers, and give customers the opportunity to better manage their electricity bills by shifting usage to lower-cost time periods. In 2020, after the first full year of TOD, SMUD showed a lower energy consumption and a 130 MW reduction in peak load, surpassing our environmental, peak load reduction and financial goals set for TOD. In June 2019, the Board approved a 3.75 percent rate increase effective January 2020, 3.0 percent rate increase effective October 1, 2020, a 2.50 percent rate increase effective January 1, 2021 and a 2.0 percent rate increase effective October 1, 2021, for all customer classes. Additionally, the Board approved a restructuring of the commercial rates and increases in the fixed bill components, such as the System Infrastructure Fixed Charge and demand charges along with a decrease in energy charges. Due to COVID-19, the Board delayed the implementation of the Commercial Rate Restructure for one year to be effective not later than May 31, 2022. Even with these increases, SMUD's rates continue to remain amongst the lowest in the state. In 2020, the average system rate was 35.0 percent below the average rate of the nearest investor-owned utility.

SMUD's vision is to be the trusted partner with its customers and the community, providing innovative solutions to ensure energy affordability and reliability, improve the environment, reduce the region's carbon footprint, and enhance the vitality of the community. SMUD's business strategy focuses on serving its customers in a progressive, forward looking manner, addressing current regulatory and legislative issues and potential competitive forces. This includes ensuring financial stability by establishing rates that provide acceptable cash coverage of all fixed charges, taking into consideration the impact of capital expenditures and other factors on cash flow.

COVID-19 Global Pandemic

In response to national, state, and local mandates, in mid-March SMUD ordered its non-essential employees to work remotely and reduced critical workforce onsite. SMUD continues to support its customers during the COVID-19 pandemic. SMUD provided its electric customers with suspension of disconnections and stopped collections, late fee, and security deposit processes for all customers to support them during this difficult time through April 2021. SMUD is working proactively with electric customers to create payment arrangements for those who need them. The effects of the pandemic have resulted in an increase in the number of past due customer accounts. As a result, SMUD increased its uncollectable reserve for account write-offs to $45.0 million as of December 31, 2020. Other financial and operational impacts to SMUD associated with COVID-19 are noted throughout this report.

Financial & Operational Highlights

In July 2020, the Board adopted a Climate Emergency Declaration to work toward an ambitious goal of delivering carbon neutral electricity by 2030 and indicating a strong commitment to finding additional opportunities to accelerate decarbonization in our energy supply. Building on the Board's Climate Emergency Declaration, our 2030 Clean Energy Vision calls for absolute zero carbon emission in our power supply by 2030. It's an aggressive and nation-leading goal and a dedicated team is now developing our 2030 Zero Carbon Plan, which will be presented to the Board in March 2021. To achieve zero carbon by 2030, we must address our reliability needs, and we see much promise in technologies such as long duration energy storage, flexible load, and renewable power-to-gas technologies.

Due to our strong credit rating and financial strength, SMUD was one of the first utilities able to issue debt after the debt markets froze due to COVID-19. This shows the importance of maintaining our strong credit rating of AA by two of the three major rating agencies and continuing to monitor our financial metrics by exceeding the Board's policy for a minimum fixed charge coverage ratio of 1.50 times of annual budgets. Our successful issuance of $400.0 million of new debt in May was used to reimburse SMUD for 2018 and 2019 capital projects and paid off all the outstanding commercial paper notes. This included the issuance of $25.2 million of Green Bonds, which reimbursed SMUD for capital expenditures tied to South Fork Powerhouse, Jones Powerhouse, and the Rancho Seco II Solar interconnection. This was SMUD's second green bond

issuance. Paying off our commercial paper notes frees up additional capacity for future capital expenditures, provides reserves for any unforeseen circumstances and creates flexibility in choosing when to issue new debt. SMUD ended the year strong with more than 150 days cash on hand and over $168.0 million in the rate stabilization funds.

In 2020, SMUD was recognized by its residential and commercial customers as the top California utility by J.D. Power, receiving its highest scores ever. SMUD also received recognition for its efforts in innovations and environmental stewardship. SMUD developed and released the Sustainable Communities Resource Priorities Map to drive community support to under resourced neighborhoods. The map has logged over 3,500 unique hits since launch and has gained adoption by over 10 local jurisdictions. In addition, approximately 24.0 percent of contract dollars were awarded to small, local businesses.

SMUD has continued to grow its Greenergy® program and is now one of the largest of its kind in the nation. The program was redesigned in 2020 to now focus on carbon savings in addition to renewable energy to provide consistency and alignment with our 2040 Carbon Plan. In February 2020, the California Energy Commission approved SMUD to offer the Neighborhood SolarShares® program as an alternative to the 2019 solar mandate for new low-rise, residential homes.

In 2014, FERC issued a fifty-year license for the Upper American River Project (UARP) which consists of three relatively large storage reservoirs and eight powerhouses containing eleven turbines. The UARP is one of SMUD's lowest cost power sources. In addition to providing clean hydroelectric power and operational flexibility, it provides habitat for fish and wildlife and a variety of recreational opportunities, including camping, fishing, boating, hiking, horseback riding, mountain biking, and cross-country skiing. The combined capacity of the UARP is approximately 673 MW and represents about 15.0 percent of SMUD's average annual retail energy requirements. SMUD's other power generation facilities include a 3 MW of solar photovoltaic installations, 230 MW Solano Wind Project (Phase 1-3), and five local gas-fired power plants with total capacity of approximately 1,103 MW. In addition, SMUD has entered into several power purchase agreements to help meet its remaining power requirements.

As part of the hydro relicensing process, SMUD entered into long-term contracts to provide certain services to four different government agencies – U.S. Department of Interior Bureau of Land Management, U.S. Department of Agriculture Forest Service, El Dorado County, and the California Department of Parks and Recreation. At December 31, 2020, the liability for these contract payments was $64.8 million.

As of December 2020, SMUD's total reservoir storage in the UARP was about 51.0 percent of capacity, approximately 8.0 percent below the historical average for this date. SMUD manages its reservoirs to maximize water storage going into the summer season and thereby preserving generating capacity during SMUD's high load months. Although reservoir levels in the UARP are only slightly below historical averages, there remains the potential for wide swings in precipitation from year to year and dry conditions could return again in any year. In years with below average rainfall, SMUD may have to generate or purchase replacement energy at additional cost. A Hydro Rate Stabilization Fund (HRSF) was established to help absorb higher energy costs when hydroelectric production is down and to serve as a buffer against unexpected financial developments. In April 2020, $7.7 million was transferred from the HRSF due to below average precipitation. The balance in the HRSF at December 31, 2020 was $74.7 million.

SMUD also has a long-term agreement with the Western Area Power Administration (WAPA) to purchase power generated by the Central Valley Project, a series of federal hydroelectric facilities operated by the U.S. Bureau of Reclamation. SMUD uses a Rate Stabilization Fund (RSF) to offset any excess or deficits in WAPA energy deliveries. Due to excess deliveries by WAPA, $1.6 million was transferred to the RSF in 2020. SMUD also participates in carbon allowance auctions under California Assembly Bill 32 (AB-32), the Global Warming Solutions Act. Proceeds from these auctions are recognized with related expenses. When proceeds from these auctions exceed related expenses the difference is deferred into future years. SMUD participates in the Low Carbon Fuel Standards (LCFS) program under AB-32, which is designed to reduce greenhouse gas emissions associated with the lifecycle of transportation fuels used in California.

SMUD receives credit from this program which are then sold. Revenue from these sales are recognized with related expenses. When proceeds from these sales exceed related expenses the difference is deferred into future years. In 2020, amounts transferred from the RSF to revenue for related expenses for AB-32 and LCFS sales amounted to $4.1 million. In 2020, the Board authorized SMUD to transfer $35.0 million from revenue to the RSF to offset future one-time specific expenses which may have a significant financial impact on SMUD. This will provide reserves to cover large contingencies while limiting or leveling out the impact of cost increases to ratepayers. At December 31, 2020, the balance of the RSF was $94.0 million.

Decommissioning

SMUD has made significant progress toward completing the Decommissioning Plan for its Rancho Seco nuclear facility, which was shut down in 1989. The plan consists of two phases that allow SMUD to terminate its possession-only license. Phase I of the decommissioning was completed at the end of 2008. Phase II consists of a storage period for the Class B and Class C radioactive waste overseen by the existing facility staff, followed by shipment of the waste for disposal, and then complete termination of the possession-only license. SMUD also established and funded an external decommissioning trust fund as part of its assurance to the Nuclear Regulatory Commission (NRC) to pay for the cost of decommissioning. Shipment of the previously stored Class B and Class C radioactive waste was completed in November 2014 to a low-level radioactive waste facility located in Andrews, Texas. The remaining Phase II decommissioning activities required for termination of the possession-only license commenced in 2015. In September 2017, SMUD formally requested the termination of the possession-only license and termination of the possession-only license was completed in 2018.

As part of the Decommissioning Plan, the nuclear fuel and Greater Than Class C (GTCC) radioactive waste is being stored in a dry storage facility constructed by SMUD and licensed separately by the NRC. The U.S. Department of Energy (DOE), under the Nuclear Waste Policy Act of 1982, was responsible for permanent disposal of used nuclear fuel and GTCC radioactive waste and SMUD contracted with the DOE for removal and disposal of that waste. The DOE has yet to fulfill its contractual obligation to provide a permanent waste disposal site. SMUD has filed a series of successful lawsuits against the federal government for recovery of the past spent fuel costs, with recoveries to date in excess of $104.0 million. SMUD will continue to pursue cost recovery claims until the DOE fulfills its obligation.

The total Accrued Decommissioning balance in the Statements of Net Position, including Rancho Seco and other ARO's, amounted to $99.5 million as of December 31, 2020.

Employee Relations and Benefits

SMUD has a four-year memorandum of understanding (MOU) with both of its collective bargaining units, the International Brotherhood of Electrical Workers Local Union 1245, and the Organization of SMUD Employees that is effective through 2021. Both contracts contain a no-strike/no-lockout clause effective during the life of the agreements. In October 2019 SMUD began operating under an MOU for the Public Safety Officers' Association that is effective through 2021. This contract also contains a no-strike/no-lockout clause effective during the life of the agreement.

SMUD participates in the California Public Employees' Retirement System (PERS), an agent multiple-employer public employee defined benefit pension plan. SMUD reports the Net Pension Liability (NPL), which is the difference between the actuarial present value of projected pension benefit payments attributable to employees' past service and the pension plan's fiduciary net position, in its Statements of Net Position. At December 31, 2020, the NPL was $469.8 million. SMUD elected to follow accounting for regulated operations under GASB SGAS No. 62, ***"Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements,"*** (GASB No. 62) and as of December 31, 2020, the balance of the regulatory asset for pension amounted to $374.6 million. Amortization of the regulatory asset began in 2018 over a period of 25 years. In 2020, as part of a ten-year funding strategy for the unfunded liability, SMUD made an additional $99.0 million in supplemental contributions to the plan as part of this strategy.

SMUD provides other postemployment benefits (OPEB) to all employees who retire from SMUD and their dependents, in accordance with SMUD policy and MOUs. These benefits are funded through the PERS California Employer's Retiree Benefit Trust, an agent multiple-employer plan. In 2018, SMUD implemented SGAS No. 75 ***"Accounting and Financial Reporting for Postemployment Benefits Other than Pensions"*** (GASB No. 75). The primary objective of GASB No. 75 is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions. SMUD is required to report the Net OPEB Liability (NOL) or Net OPEB Asset (NOA), which is the difference between the actuarial present value of projected OPEB benefit payments attributable to employees' past service and the OPEB plan's fiduciary net position, in its Statements of Net Position. At December 31, 2020, the NOA was $1.0 million. SMUD elected to follow accounting for regulated operations under GASB No. 62 and recorded a regulatory asset and as of December 31, 2020, the balance of the regulatory asset for OPEB amounted to $306.6 million. Amortization of the regulatory asset began in 2020 over a period of 25 years.

Developments in the Energy Market

New developments in the energy market at both the federal and state level kept SMUD on high alert as it continued to monitor and address the potential impacts on the organization. Legislation at the federal level include policies on cyber security, regulations related to transmission access, the North American Electric Reliability Corporation reliability standards, anti-market manipulation rules, advance refunding or refinancing municipal bonds and GHG emissions. Legislation at the state level includes bills that provide for GHG standards and greater investment in energy efficiency, mandate rooftop solar, renewable portfolio standards, wildfire mitigation and ongoing regulatory proceedings related to Sacramento - San Joaquin River Bay - Delta processes.

Significant Accounting Policies

In accordance with GASB No. 62, the Board has taken regulatory actions for ratemaking that result in the deferral of expense and revenue recognition. These actions result in regulatory assets and liabilities. SMUD has regulatory assets that cover costs related to decommissioning, derivative financial instruments, debt issuance costs, pension costs, and OPEB costs. As of December 31, 2020, total regulatory assets were $742.6 million. SMUD also has regulatory credits that cover costs related to contributions in aid of construction, the RSF and HRSF, EAPR reserves, SB-1, grant revenues, and Transmission Agency of Northern California operations costs. As of December 31, 2020, total regulatory credits were $516.2 million.

Requests for Information

For more information about SMUD, visit our website at www.smud.org or contact us at customerservices@smud.org

FINANCIAL POSITION

CONDENSED STATEMENTS OF NET POSITION

	December 31,		
	2020	2019	2018 (restated)*
	(millions of dollars)		
Assets			
Electric Utility Plant - net	$ 3,747	$ 3,626	$ 3,517
Restricted and Designated Assets	187	173	120
Current Assets	1,239	933	960
Noncurrent Assets	1,516	1,606	1,620
Total Assets	6,689	6,338	6,217
Deferred Outflows of Resources	271	238	229
Total Assets and Deferred Outflows of Resources	$ 6,960	$ 6,576	$ 6,446
Liabilities			
Long-Term Debt - net	$ 3,259	$ 2,944	$ 2,639
Current Liabilities	437	491	766
Noncurrent Liabilities	694	731	730
Total Liabilities	4,390	4,166	4,135
Deferred Inflows of Resources	613	606	586
Net Position	1,957	1,804	1,725
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 6,960	$ 6,576	$ 6,446

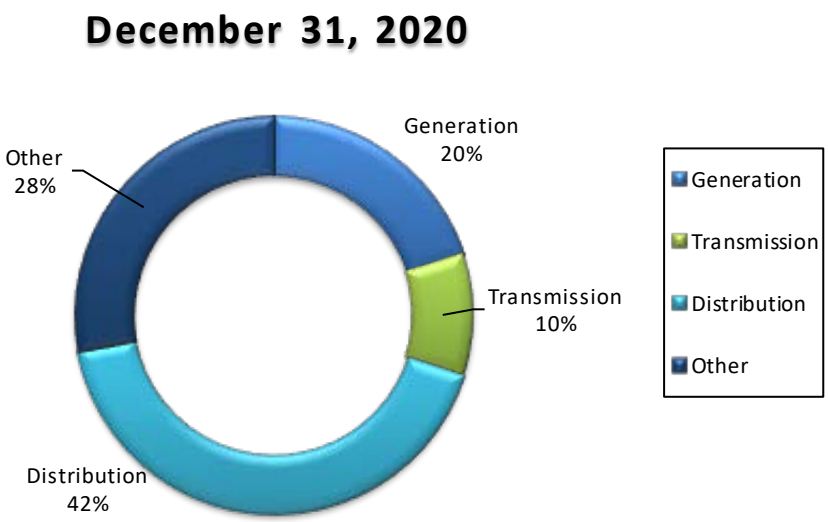
*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2018 Statement of Net Position.

ASSETS AND DEFERRED OUTFLOWS OF RESOURCES

2020 Compared to 2019

- As of December 31, 2020, SMUD has invested approximately $3,747.0 million in electric utility plant assets and construction work in progress (CWIP) net of accumulated depreciation. Electric Utility Plant - net makes up about 54 percent of SMUD's Total Assets and Deferred Outflows of Resources, which is similar to 2019. In 2020, SMUD capitalized approximately $201.0 million of additions to electric utility plant in the Statements of Net Position. The additions were primarily due to the completion of Slab Creek, distribution line work, purchases related to the replacement of bulk substations. These additions were offset by the retirement of distribution assets, fleet equipment and communication equipment.

The following charts show the breakdown of Electric Utility Plant - net by major plant category:



- SMUD's restricted and designated assets are comprised of debt service reserves, nuclear decommissioning trust funds, rate stabilization fund, and other third-party agreements or Board actions, less the current portion. These assets increased $14.1 million during 2020. The increase was due to transfers of $25.0 million to the RSF (including the HRSF), as a result of $35.0 million deferral of 2020 operating revenues for recognition in future years to offset one-time expenditures not identified in the annual budget, offset by HRSF transfer to revenue for below average precipitation, and funds used for low carbon and electric vehicle programs. In addition, there was a decrease of third-party agreements of $6.7 million and decrease of $4.3 million in revenue bond, debt service and construction reserves and the current portion.

- Total current assets increased $305.6 million in 2020. Unrestricted cash and cash equivalents and unrestricted investments increased $263.4 million primarily as a result of the issuance of $400.0 million of new debt, receivables from retail customers – net increased $23.5 million due to suspension of disconnections and collection activities amidst COVID-19 in March 2020, and inventory increased by $12.3 million.

- Total noncurrent assets decreased $89.7 million primarily due to decreases in unrestricted investments, regulatory costs for future recovery and prepaid gas.

- Total deferred outflows of resources increased by $32.7 million primarily due to an increase in deferred pension and OPEB outflows of $70.0 million offset by a decrease in accumulated decrease in fair value of hedging derivatives of 33.6 million.

2019 compared to 2018

- As of December 31, 2019, SMUD has invested approximately $3,625.9 million in electric utility plant assets and construction work in progress (CWIP) net of accumulated depreciation. Electric Utility Plant - net makes up about 55 percent of SMUD's Total Assets and Deferred Outflows of Resources, which is unchanged compared to 2018. In 2019, SMUD capitalized approximately $420.4 million of additions to electric utility plant in the Statements of Net Position. The additions were primarily due to the renovation of the Headquarters building, distribution line work, purchases related to the replacement of bulk substations, investments in software and hardware and major overhauls in the Joint

Power Authorities (JPAs). These additions were offset by the divestment of the Rosa gas reserves, retirement of distribution assets, fleet equipment and communication equipment.

- SMUD's restricted and designated assets increased $53.0 million during 2019. The increase was due to transfers of $47.0 million to the RSF (including the HRSF), as a result of above average precipitation, higher energy deliveries from WAPA and excess AB-32 auction and LCFS credit sales. In addition, there was an increase of third-party agreements of $16.4 million, offset by a decrease of $10.6 million in revenue bond, debt service and construction reserves and the current portion.

- Total current assets increased $55.9 million in 2019. Unrestricted cash and cash equivalents increased $44.3 million, regulatory costs to be recovered within one year increased by $12.8 million, unrestricted investments increased by 11.5 million, and prepayments and other increased by $7.7 million. These increases were offset by a decrease in prepaid gas of $22.2 million.

- Total noncurrent assets decreased $97.9 million primarily due to decreases in unrestricted investments, regulatory costs for future recovery and prepaid gas.

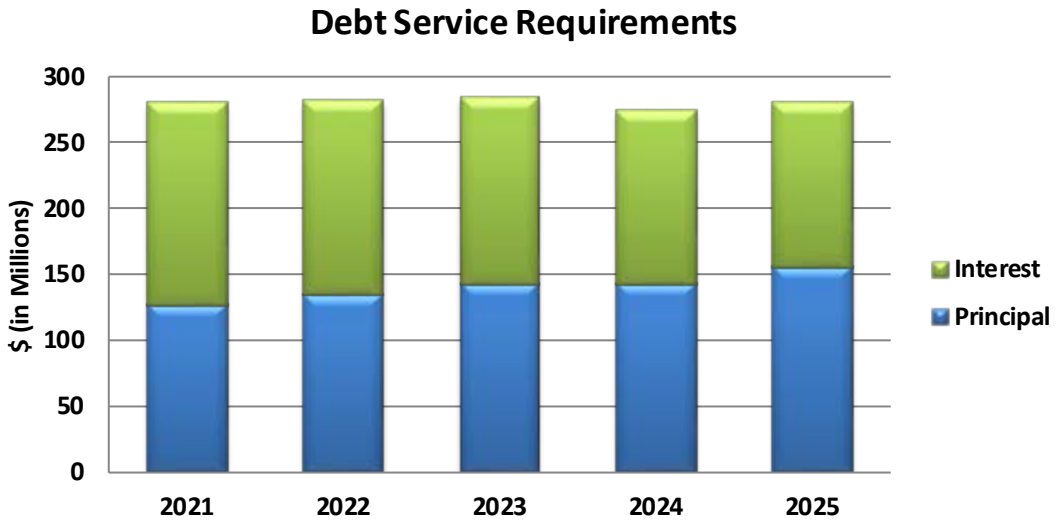
- Total deferred outflows of resources increased by $9.4 million due to an increase in deferred pension and OPEB outflows of $14.2 million offset by a decrease in unamortized bond losses of $4.2 million.

LIABILITIES AND DEFERRED INFLOWS OF RESOURCES

2020 compared to 2019

- In May 2020, SMUD issued $400.0 million of 2020 Series H Revenue Bonds. Proceeds from the 2020 Series H Bonds were used to pay off all the outstanding commercial paper notes and reimburse SMUD for 2018 and 2019 capital projects. The 2020 Series H Bonds have a fixed coupon rate of 4.0 percent to 5.0 percent and amortize from 2029 to 2050.

The following table shows SMUD's future debt service requirements through 2025 as of December 31, 2020:



As of December 31, 2020, SMUD's bonds had an underlying rating of "AA" from Standard & Poor's, "AA" from Fitch, and "Aa3" from Moody's. Some of SMUD's bonds are insured and are rated by the rating agencies at the higher of the insurer's rating or SMUD's underlying rating.

- Total current liabilities decreased $54.7 million during 2020. The decrease was primarily due to pay off of commercial paper notes of $50.0 million and decrease in hedging derivative instruments maturing within one year of $19.1 million. This decrease was offset by an increase in purchased power payable, interest payable and long-term debt due within one year of $18.5 million.

- Total noncurrent liabilities decreased $36.8 million during 2020. The decrease was mainly due to a $32.2 million decrease in the net OPEB liability and hedging derivative investments of $14.5 million, offset by an increase in net pension liability and accrued decommissioning of $8.8 million.

- Total deferred inflows of resources increased $6.6 million. The increase was primarily due to regulatory credits increased by $26.7 million and OPEB inflows increased by $16.0 million, offset by a decrease in deferred pension inflows of $31.8 million.

2019 compared to 2018

- In July 2019, SMUD issued $191.9 million of 2019 Series G Revenue Bonds, $100.0 million of 2019 Series A Subordinate Revenue Bonds, and $100.0 million of 2019 Series B Subordinate Revenue Bonds. The 2019 Series G Bonds have a fixed coupon rate of 2.375 percent to 5.0 percent and amortize from 2029 to 2041. The 2019 Series A has a fixed interest coupon rate of 5.0 percent, amortized from 2041 to 2049, with a mandatory remarketing purchase in April 2023. The 2019 Series B has a fixed coupon interest rate of 5.0 percent, amortized from 2041 to 2049, with a mandatory remarketing purchase in April 2025. Proceeds from 2019 Series G Bonds, the 2019 Series A Bonds and the 2019 Series B Bonds were used to refund outstanding commercial paper.

  In September 2019, CVFA defeased $5.4 million of 2009 Series Bonds maturing in July 2020, along with the accrued interest using CVFA's available funds. The corresponding amount was placed in an irrevocable trust which has a balance of $5.6 million at December 31, 2019. In addition, SCA defeased $12.9 million of 2009 Series Bonds maturing July 2020 and July 2021, along with the accrued interest using SCA's available funds and $7.9 million from SMUD. The corresponding amount was placed in an irrevocable trust which has a balance of $13.7 million as of December 31, 2019. The defeasances resulted in a current accounting loss of $0.8 million which is included in Interest on Debt in the Statements of Revenues, Expenses, and Changes in Net Position.

- Total current liabilities decreased $274.4 million during 2019. The decrease was mainly due to decreases in commercial paper, accounts payables, and long-term debt due within one year of $308.3 million, offset by increases in interest payable, and hedging derivative instruments maturing within one year of $26.3 million.

- Total noncurrent liabilities increased $1.0 million during 2020. The increase was mainly due to a $13.6 million increase in the net pension liability and a $10.1 million increase in the net OPEB liability, offset by a decrease in investment and hedging derivative investments of $19.4 million and a decrease in accrued decommissioning of $4.5 million.

- Total deferred inflows of resources increased $19.6 million. Regulatory credits increased by $46.8 million. This increase was offset by a decrease in deferred pension inflows of $16.8 million and OPEB inflows of $12.2 million.

RESULTS OF OPERATIONS

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	December 31,		
	2020	2019	2018 (restated)*
	(millions of dollars)		
Operating revenues	$ 1,588	$ 1,559	$ 1,595
Operating expenses	(1,389)	(1,363)	(1,353)
Operating income	199	196	242
Other revenues/(expenses)	63	(19)	57
Interest charges	(109)	(98)	(90)
Change in net position	153	79	209
Net position - beginning of year	1,804	1,725	1,516
Net position - end of year	$ 1,957	$ 1,804	$ 1,725

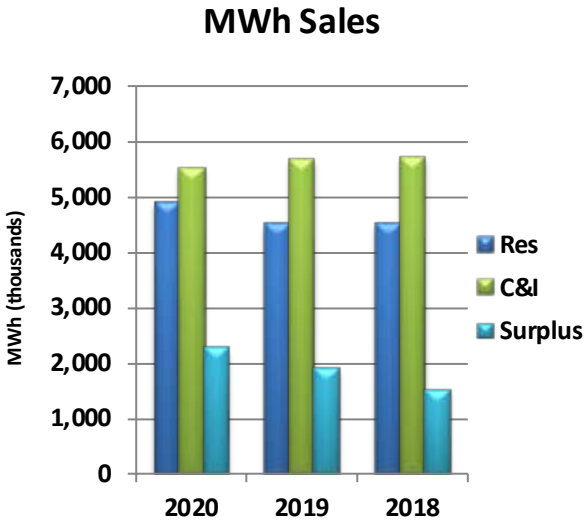
*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2018 Statement of Revenue, Expenses and Changes in Net Position.

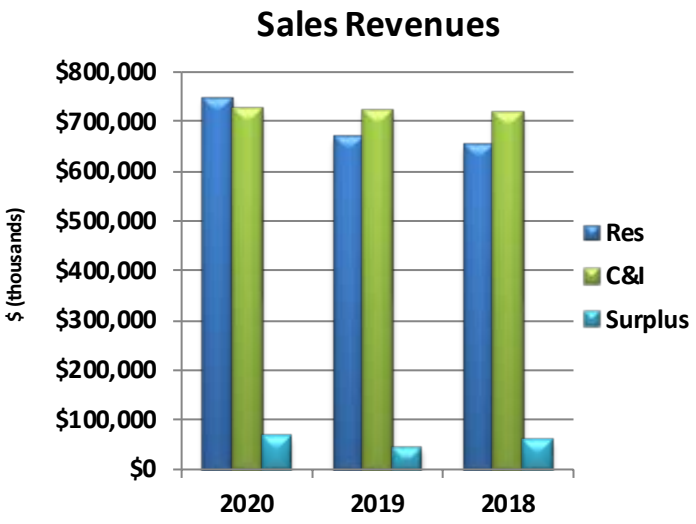
2020 compared to 2019

OPERATING REVENUES

Total operating revenues were $1,588 million for 2020, an increase of $28.7 million or 1.8 percent over 2019 operating revenues. In 2020, the impacts of COVID-19 led to residential MWh sales increase of 9.2 percent and sales revenues increase of 11.9 percent compared to 2019, primarily due to increased remote work from home and the unseasonably hot summer. The commercial & industrial MWh sales decreased 2.9 percent and sales revenues increased 0.6 percent compared to 2019, primarily due to the California mandated shut down and limited re-openings of commercial businesses for majority of year.

The following charts show the megawatt hour (MWh) sales, and sales revenue for the past three years by surplus energy sales (Surplus), commercial, industrial, and other (C&I) and residential (Res) customers:





The net rate stabilization transfers (including the HRSF) increased by $21.9 million. In 2020, SMUD transferred $48.2 million to the RSF primarily due to a $35.0 million deferral of 2020 operating revenues for recognition in future years to offset one-time expenditures not identified in the annual budget and $9.8 million LCFS sales. SMUD also transferred $15.4 million from the RSF to be used for low carbon and electric vehicle programs and $7.7 million from the HRSF as a result of a below average precipitation.

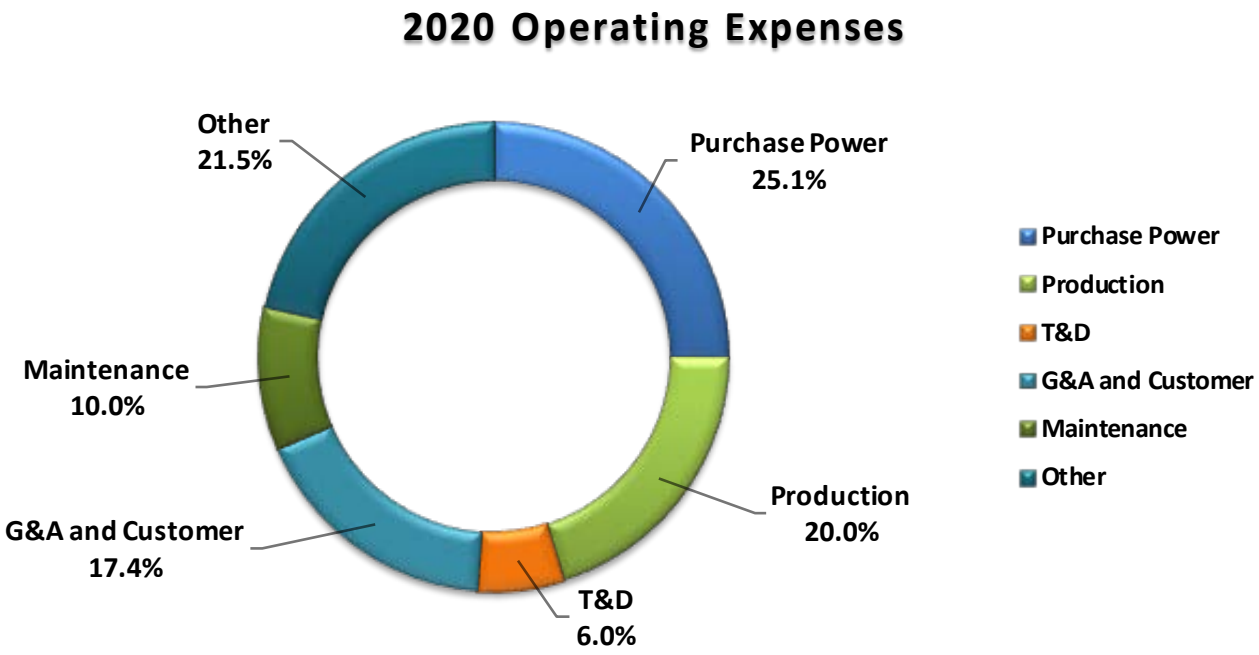
Wholesale revenues are comprised of both surplus gas and energy sales which are part of the operational strategy in managing fuel and energy costs. In 2020, energy sales were higher by $22.3 million as compared to 2019 due to higher energy prices and energy sales. Surplus gas sales were lower than 2019 by $32.7 million due to lower gas prices and volume of gas sold.

OPERATING EXPENSES

Total operating expenses were $1,389 million for 2020, an increase of $25.6 million or 1.9 percent over 2019.

- Purchased power increased by $44.5 million or 14.6 percent due to higher energy purchases offset by lower prices.
- Production expense decreased by $18.4 million or 6.2 percent due to reduction of hydro generation and fuel costs.
- General, administrative and customer decreased by $15.9 million or 6.2 percent due to reduction in administrative and labor costs related to employees working remotely and reduction in customer programs during COVID.
- Maintenance expense increased by $3.3 million or 2.4 percent primarily due to $19.3 million increase in outside service costs related to wild-fire tree trimming offset by $10.3 million decrease in thermal plant maintenance compared to 2019.
- Other expenses increased by $15.0 million or 5.3 percent primarily due to increase of depreciation expense of $17.0 million as a result of $402.4 million of additions to electric utility plant in 2019.

The following chart show the breakdown of operating expenses for 2020:



OTHER REVENUES

Total other revenues (net) were $63.0 million for 2020, an increase of $82.7 million over 2019. In 2020, SMUD received $10.9 million related to an early termination of a gas prepay contract and $5.5 million insurance proceeds on the 2017 winter storm claim. The remaining increase is primarily due to a $52.1 million loss on the divestment of SMUD's interest in the Rosa gas properties in 2019.

2019 compared to 2018

RESULTS OF OPERATIONS

- Total operating revenues decreased $36.2 million in 2019. Rate stabilization transfers decreased by $50.2 million. In 2019, SMUD transferred $28.6 million to the RSF as a result of higher energy deliveries from WAPA and excess proceeds from AB-32 auctions and LCFS sales. SMUD also transferred $18.4 million to the HRSF as a result of above average precipitation.

- In 2019, energy sales were lower by $15.1 million as compared to 2018 due to lower energy prices offset by higher energy sales. Surplus gas sales were higher than 2018 by $8.2 million due to higher gas prices and an increase in the volume of gas sold.

- Residential, commercial, and industrial revenues increased by $26.2 million compared to 2018 due to the rate increase that took place in 2019.

- Total operating expenses increased $10.0 million compared to 2018. Administrative, general and customer and maintenance expenses increased by $32.6 million. These expenses were offset by decreases of purchased power, production and transmission and distribution expenses of $24.1 million mainly due to lower fuel costs.

- Total other revenues were $77.0 million lower in 2019. The decrease in other revenue as compared to 2018 is due to the divestment of SMUD's interest in the Rosa gas properties resulting in a loss of $52.1 million. Additionally, in 2018 other revenue included a gain of $46.7 million from the repurchase of the Solano Wind Phase 3 plant. These decreases in other revenue were offset by lower arbitration payments of $17.0 million.

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SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION

	December 31, 2020	December 31, 2019
	(thousands of dollars)	
ASSETS		
ELECTRIC UTILITY PLANT		
Plant in service	$ 6,425,366	$ 6,227,374
Less accumulated depreciation and depletion	(3,139,526)	(2,955,316)
Plant in service - net	3,285,840	3,272,058
Construction work in progress	461,319	353,802
Total electric utility plant - net	3,747,159	3,625,860
RESTRICTED AND DESIGNATED ASSETS		
Revenue bond and debt service reserves	121,845	116,527
Nuclear decommissioning trust fund	8,873	8,798
Rate stabilization fund	168,726	143,669
Other funds	23,246	29,953
Less current portion	(135,550)	(125,870)
Total restricted and designated assets	187,140	173,077
CURRENT ASSETS		
Unrestricted cash and cash equivalents	680,618	255,578
Unrestricted investments	33,798	195,435
Restricted and designated cash and cash equivalents	44,014	41,717
Restricted and designated investments	91,536	84,153
Receivables - net:		
Retail customers	175,777	152,264
Wholesale and other	38,863	44,271
Regulatory costs to be recovered within one year	38,162	37,622
Investment derivative instruments maturing within one year	-0-	488
Hedging derivative instruments maturing within one year	4,913	8,732
Inventories	84,037	71,719
Prepaid gas to be delivered within one year	23,261	20,866
Prepayments and other	23,915	20,453
Total current assets	1,238,894	933,298
NONCURRENT ASSETS		
Unrestricted investments	-0-	43,962
Regulatory costs for future recovery	742,588	766,808
Prepaid gas	692,511	715,772
Prepaid power and capacity	588	795
Investment derivative instruments	33	-0-
Hedging derivative instruments	8,606	7,986
Energy efficiency loans - net	18,503	23,262
Credit support collateral deposits	5,650	4,400
Due from affiliated entity	28,370	28,858
Prepayments and other	19,038	13,703
Total noncurrent assets	1,515,887	1,605,546
TOTAL ASSETS	6,689,080	6,337,781
DEFERRED OUTFLOWS OF RESOURCES		
Accumulated decrease in fair value of hedging derivative instruments	51,580	85,194
Deferred pension outflows	176,340	105,868
Deferred other postemployment benefits outflows	26,136	26,658
Deferred asset retirement obligations outflows	1,734	1,956
Unamortized bond losses	15,216	18,802
TOTAL DEFERRED OUTFLOWS OF RESOURCES	271,006	238,478
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	$ 6,960,086	$ 6,576,259

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION

	December 31, 2020	December 31, 2019
	(thousands of dollars)	
LIABILITIES		
LONG-TERM DEBT - net	$ 3,259,312	$ 2,943,795
CURRENT LIABILITIES		
Commercial paper notes	-0-	50,000
Accounts payable	101,396	103,829
Purchased power payable	33,335	26,997
Credit support collateral obligation	4,413	3,235
Long-term debt due within one year	127,390	118,305
Accrued decommissioning	6,751	5,649
Interest payable	52,940	49,832
Accrued salaries and compensated absences	44,703	45,403
Investment derivative instruments maturing within one year	1,401	2,235
Hedging derivative instruments maturing within one year	22,284	41,374
Customer deposits and other	41,887	44,379
Total current liabilities	436,500	491,238
NONCURRENT LIABILITIES		
Net pension liability	469,820	467,647
Net other postemployment benefits liability	-0-	32,211
Accrued decommissioning	92,723	86,054
Investment derivative instruments	7,903	8,769
Hedging derivative instruments	29,296	43,820
Self insurance and other	94,238	92,304
Total noncurrent liabilities	693,980	730,805
TOTAL LIABILITIES	4,389,792	4,165,838
DEFERRED INFLOWS OF RESOURCES		
Accumulated increase in fair value of hedging derivative instruments	13,519	16,718
Regulatory credits	516,209	489,486
Deferred pension inflows	14,212	45,996
Deferred other postemployment benefits inflows	58,854	42,859
Unamortized bond gains	6,504	7,516
Unearned revenue	3,484	3,569
TOTAL DEFERRED INFLOWS OF RESOURCES	612,782	606,144
NET POSITION		
Net investment in capital assets	1,112,982	1,284,694
Restricted:		
Revenue bond and debt service	63,351	60,744
Other funds	18,833	26,828
Unrestricted	762,346	432,011
TOTAL NET POSITION	1,957,512	1,804,277
COMMITMENTS, CLAIMS AND CONTINGENCIES (Notes 17 and 18)		
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION	$ 6,960,086	$ 6,576,259

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	Year Ended December 31,	
	2020	2019
	(thousands of dollars)	
OPERATING REVENUES		
Residential	$ 710,912	$ 666,477
Commercial and industrial	712,495	714,001
Street lighting and other	38,493	43,321
Wholesale	135,522	145,915
Senate Bill - 1 revenue deferral	2,276	2,765
AB-32 revenue	-0-	26,936
LCFS revenue	9,762	3,825
Public good deferral	3,501	2,959
Rate stabilization fund transfers	(25,056)	(46,975)
Total operating revenues	1,587,905	1,559,224
OPERATING EXPENSES		
Operations:		
Purchased power	348,040	303,566
Production	278,236	296,612
Transmission and distribution	83,236	86,230
Administrative, general and customer	241,581	257,464
Public good	57,198	63,572
Maintenance	138,734	135,420
Depreciation	206,452	189,469
Depletion	-0-	4,103
Regulatory amounts collected in rates	34,915	26,389
Total operating expenses	1,388,392	1,362,825
OPERATING INCOME	199,513	196,399
NON-OPERATING REVENUES AND EXPENSES		
Other revenues and (expenses):		
Interest income	14,291	16,639
Investment expense	(3,455)	(3,700)
Other income (expense) - net	52,186	(32,573)
Total other revenues and (expenses)	63,022	(19,634)
Interest charges:		
Interest on debt	109,300	104,960
Allowance for funds used during construction	-0-	(7,110)
Total interest charges	109,300	97,850
Total non-operating revenues and (expenses)	(46,278)	(117,484)
CHANGE IN NET POSITION	153,235	78,915
NET POSITION - BEGINNING OF YEAR	1,804,277	1,725,362
NET POSITION - END OF YEAR	$ 1,957,512	$ 1,804,277

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF CASH FLOWS

	Year Ended December 31,	
	2020	2019
	(thousands of dollars)	
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts from customers	$ 1,426,267	$ 1,423,897
Receipts from surplus power and gas sales	134,080	153,216
Other receipts	23,660	32,305
Payments to employees - payroll and other	(406,810)	(366,815)
Payments for wholesale power and gas purchases	(491,480)	(476,205)
Payments to vendors/others	(315,982)	(350,465)
Net cash provided by operating activities	369,735	415,933
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Repayment of debt	(16,675)	(34,560)
Receipts from federal and state grants	10,214	10,333
Proceeds from insurance settlements	5,500	-0-
Interest on debt	(30,122)	(21,223)
Net cash used in noncapital financing activities	(31,083)	(45,450)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Construction expenditures	(357,897)	(330,412)
Proceeds from land sales	479	878
Payments for gas fields divestment	(232)	(8,521)
Contributions in aid of construction	19,551	15,959
Net proceeds from bond issues	483,456	475,623
Repayments and refundings of debt	(101,630)	(128,685)
Issuance of commercial paper	-0-	161,250
Repayments of commercial paper	(50,000)	(400,000)
Interest on debt	(113,864)	(99,822)
Net cash used in capital and related financing activities	(120,137)	(313,730)
CASH FLOWS FROM INVESTING ACTIVITIES		
Sales and maturities of securities	386,898	686,547
Purchases of securities	(197,811)	(703,118)
Proceeds from termination of prepaid gas contracts	10,915	-0-
Interest and dividends received	15,406	16,105
Investment revenue/expenses - net	(3,420)	(3,682)
Net cash provided by (used in) investing activities	211,988	(4,148)
Net increase in cash and cash equivalents	430,503	52,605
Cash and cash equivalents at the beginning of the year	308,108	255,503
Cash and cash equivalents at the end of the year	$ 738,611	$ 308,108
Cash and cash equivalents included in:		
Unrestricted cash and cash equivalents	$ 680,618	$ 255,578
Restricted and designated cash and cash equivalents	44,014	41,717
Restricted and designated assets (a component of the total of $187,140 and $173,077 at December 31, 2020 and 2019, respectively)	13,979	10,813
Cash and cash equivalents at the end of the year	$ 738,611	$ 308,108

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
SUPPLEMENTAL CASH FLOW INFORMATION

A reconciliation of the statements of cash flows operating activities to operating income as follows:

	Year Ended December 31,	
	2020	2019
	(thousands of dollars)	
Operating income	$ 199,513	$ 196,399
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation	206,452	189,469
Depletion	-0-	4,103
Regulatory amortization	34,915	26,389
Other Amortizations	24,307	31,110
Revenue deferred to (recognized from) regulatory credits - net	19,279	41,251
Other (receipts) payments - net	(3,549)	(6,729)
Changes in operating assets, deferred outflows, liabilities and deferred inflows:		
Receivables - retail customers, wholesale and other	(16,631)	14,211
Inventories, prepayments and other	(14,190)	(7,852)
Credit support collateral deposits	(1,250)	1,500
Deferred pension outflows	(70,472)	(2,837)
Deferred other postemployment benefits outflows	522	(11,328)
Payables and accruals	40,322	(51,429)
Credit support collateral obligation	1,178	747
Decommissioning	(4,814)	(5,179)
Net pension liability	2,173	13,603
Net other postemployment benefits liability	(32,211)	10,145
Deferred pension inflows	(31,784)	(16,770)
Deferred other postemployment benefits inflows	15,995	(12,165)
Deferred unearned revenue	(20)	1,295
Net cash provided by operating activities	$ 369,735	$ 415,933

The supplemental disclosure of noncash financing and investing activities is as follows:

	Year Ended December 31,	
	2020	2019
	(thousands of dollars)	
Amortization of debt related (expenses) and premiums - net	$ 37,939	$ 30,797
(Loss) Gain on debt extinguishment and refundings	-0-	(731)
Unrealized holding gain (loss)	1,768	4,165
Change in valuation of derivative financial instruments	31,661	8,824
Amortization of revenue for assets contributed in aid of construction	14,250	16,904
Allowance for funds used during construction	-0-	7,110
Construction expenditures included in accounts payable	39,196	81,902
Losses on sale and asset retirements	(287)	(845)
Loss on gas fields divestment	-0-	(43,609)
Write-off capital projects and preliminary surveys	(1,329)	(13,614)

The accompanying notes are an integral part of these financial statements.

Sacramento Municipal Utility District
Notes to Financial Statements
As of and for the Years Ended December 31, 2020 and 2019

NOTE 1. ORGANIZATION

The Sacramento Municipal Utility District (SMUD) was formed and operates under the State of California Municipal Utility District Act (Act). The Act gives SMUD the rights and powers to fix rates and charges for commodities or services it furnishes, and to incur indebtedness and issue bonds or other obligations. As a community-owned utility, SMUD is not subject to regulation or oversight by the California Public Utilities Commission.

SMUD is responsible for the acquisition, generation, transmission, and distribution of electric power to its service area, which includes most of Sacramento County and small adjoining portions of Placer and Yolo Counties. The Board of Directors (Board) determines SMUD's rates.

SMUD is exempt from payment of federal and state income taxes and, under most circumstances, real and personal property taxes. SMUD is not exempt from real and personal property taxes on assets it holds outside of its service territory. In addition, SMUD is responsible for the payment of a portion of the property taxes associated with its real property in California that lies outside of its service area.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Method of Accounting. SMUD's accounting records are maintained in accordance with Generally Accepted Accounting Principles for proprietary funds as prescribed by the Governmental Accounting Standards Board (GASB). SMUD's accounting records generally follow the Uniform System of Accounts for Public Utilities and Licensees prescribed by the Federal Energy Regulatory Commission (FERC), except as it relates to the accounting for contributions of utility property in aid of construction. SMUD's Financial Statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of the related cash flows. Electric revenues and costs that are directly related to the acquisition, generation, transmission, and distribution of electricity are reported as operating revenues and expenses. All other revenues and expenses are reported as non-operating revenues and expenses.

Use of Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (U.S.) requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, and deferred inflows of resources and disclosures of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

The Financial Reporting Entity. These Financial Statements include SMUD and its component units. Although the component units are legally separate from SMUD, they are blended into and reported as part of SMUD because of the extent of their operational and financial relationships with SMUD. All significant inter-component transactions have been eliminated in consolidation.

Component Units. The component units include the Central Valley Financing Authority (CVFA), the Sacramento Cogeneration Authority (SCA), the Sacramento Municipal Utility District Financing Authority (SFA), the Sacramento Power Authority (SPA), the Northern California Gas Authority No. 1 (NCGA), and the Northern California Energy Authority (NCEA). The primary purpose of CVFA, SCA, SFA and SPA is to own and operate electric utility plants that supply power to SMUD. The primary purpose of NCGA is to prepay for natural gas to sell to SMUD. The primary purpose of NCEA is to

prepay for commodities in the form of natural gas and electricity to sell to SMUD. SMUD's Board comprises the Commissions that govern these entities (see Note 6).

Plant in Service. Capital assets are generally defined by SMUD as tangible assets with an initial, individual cost of more than five thousand dollars and an estimated useful life in excess of two years. The cost of additions to Plant in Service and replacement property units is capitalized. Repair and maintenance costs are charged to expense when incurred. When SMUD retires portions of its Electric Utility Plant, retirements are recorded against Accumulated Depreciation and the retired portion of Electric Utility Plant is removed from Plant in Service. The costs of removal and the related salvage value, if any, are charged or credited as appropriate to Accumulated Depreciation. SMUD generally computes depreciation on Plant in Service on a straight-line, service-life basis. The average annual composite depreciation rates for 2020 and 2019 were 3.3 percent and 3.1 percent, respectively. Depreciation is calculated using the following estimated lives:

Generation	8 to 80 years
Transmission and Distribution	7 to 50 years
Gas Pipeline	10 to 90 years
General	5 to 90 years

Investment in Joint Powers Authority (JPA). SMUD's investment in the Transmission Agency of Northern California (TANC) is accounted for under the equity method of accounting and is reported as a component of Plant in Service. SMUD's share of the TANC debt service costs and operations and maintenance expense, inclusive of depreciation, is included in Transmission and Distribution expense in the Statements of Revenues, Expenses and Changes in Net Position (see Note 5).

SMUD's investment in the Balancing Authority of Northern California (BANC) is accounted for under the equity method of accounting. SMUD's share of the BANC operations and maintenance expense is included in Transmission and Distribution expense in the Statements of Revenues, Expenses and Changes in Net Position (see Note 5).

Investment in Gas Properties. In 2019, SMUD sold its approximate 21 percent non-operating ownership interest in the Rosa Unit gas properties in New Mexico, of which SMUD's portion of the extracted gas was transported to use in its component unit natural gas fired power plants. The loss on sale was $52.1 million and included as Other income (expense) – net in the Statements of Revenues, Expenses and Changes in Net Position.

Restricted and Designated Assets. Cash, cash equivalents, and investments, which are restricted by regulation or under terms of certain agreements for payments to third parties are included as restricted assets. Restricted assets include Revenue bond and debt service reserves, Nuclear decommissioning trust fund, and $22.6 million and $29.3 million of Other funds as of December 31, 2020 and 2019, respectively. Board actions limiting the use of such funds are included as designated assets. Designated assets include the Rate stabilization fund and $0.6 million of Other funds as of December 31, 2020 and 2019. When SMUD restricts or designates funds for a specific purpose, and restricted and designated and unrestricted resources are available for use, it is SMUD's policy to use restricted and designated resources first, then unrestricted resources as they are needed.

Restricted Bond Funds. SMUD's Indenture Agreements (Indenture) requires the maintenance of minimum levels of reserves for debt service on the 1997 Series K Bonds.

Nuclear Decommissioning Trust Fund. SMUD made annual contributions to its Nuclear Decommissioning Trust Fund (Trust Fund) through 2008 to cover the cost of its primary decommissioning activities associated with the Rancho Seco facility. Primary decommissioning excludes activities associated with the spent fuel storage facility after 2008 and most non-radiological decommissioning tasks. Interest earnings on the Trust Fund assets are recorded as Interest Income and are accumulated in the Trust Fund.

Asset Retirement Obligations (ARO). SMUD implemented Statement of Governmental Accounting Standards (SGAS) No. 83, ***"Certain Asset Retirement Obligations"*** in 2019. SMUD records asset retirement obligations (ARO) for tangible capital assets when an obligation to decommission facilities is legally required. SMUD recognizes AROs for its Rancho Seco nuclear power plant and for the CVFA power plant facility (see Note 13). The Rancho Seco ARO is recorded as Accrued Decommissioning and the unfunded portion of the ARO is recorded as current and noncurrent Regulatory Costs for Future Recovery (see Note 8) in the Statements of Net Position. Other AROs are recorded as Accrued Decommissioning and a corresponding Deferred Asset Retirement Obligation Outflows in the Statements of Net Position.

SMUD has identified potential retirement obligations related to certain generation, distribution and transmission facilities. SMUD's non-perpetual leased land rights generally are renewed continuously because SMUD intends to utilize these facilities indefinitely. GASB No. 83 requires the measurement of the ARO to be based on the probability weighting of potential outcomes. Due to the low probability that these leases will be terminated, a liability has not been recorded.

Cash and Cash Equivalents. Cash and cash equivalents include all debt instruments purchased with an original maturity of 90 days or less, deposits held at financial institutions, all investments in the Local Agency Investment Fund (LAIF), and money market funds. LAIF has an equity interest in the State of California (State) Pooled Money Investment Account (PMIA). PMIA funds are on deposit with the State's Centralized Treasury System and are managed in compliance with the California Government Code according to a statement of investment policy which sets forth permitted investment vehicles, liquidity parameters, and maximum maturity of investments.

Investments. SMUD's investments are reported at fair value in accordance with SGAS No. 72, ***"Fair Value Measurement and Application"*** (see Note 12). Realized and unrealized gains and losses are included in Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. Premiums and discounts on zero coupon bonds are amortized using the effective interest method. Premiums and discounts on other securities are amortized using the straight-line method, which approximates the effective interest method.

Electric Operating Revenues. Electric revenues are billed on the basis of monthly cycle bills and are recorded as revenue when the electricity is delivered. SMUD records an estimate for unbilled revenues earned from the dates its retail customers were last billed to the end of the month. At December 31, 2020 and 2019, unbilled revenues were $68.8 and $69.4 million, respectively.

Purchased Power Expenses. A portion of SMUD's power needs are provided through power purchase agreements (PPA). Expenses from such agreements, along with associated transmission costs paid to other utilities, are charged to Purchased Power expense in the Statements of Revenues, Expenses and Changes in Net Position in the period the power is received. The costs or credits, associated with energy swap agreements (gas and electric) or other arrangements that affect the net cost of Purchased Power are recognized in the period in which the underlying power delivery occurs. Contract termination payments and adjustments to prior billings are included in Purchased Power expense once the payments or adjustments can be reasonably estimated.

Advanced Capacity Payments. Some long-term agreements to purchase energy or capacity from other providers call for up-front payments. Such costs are generally recorded as an asset and amortized over the length of the contract in Operations - Production expense on the Statements of Revenues, Expenses and Changes in Net Position.

Credit and Market Risk. SMUD enters into forward purchase and sales commitments for physical delivery of gas and electricity with utilities and power marketers. SMUD is exposed to credit risk related to nonperformance by its wholesale counterparties under the terms of these contractual agreements. In order to limit the risk of counterparty default, SMUD has a wholesale counterparty risk policy which includes using the credit agency ratings of SMUD's counterparties and other credit services, credit enhancements for counterparties that do not meet an acceptable risk level, and the use of standardized agreements that allow for the netting of positive and negative exposures associated with a single counterparty. SMUD is also

subject to similar requirements for many of its gas and power purchase agreements. SMUD uses a combination of cash and securities to satisfy its collateral requirements to counterparties.

SMUD's component units, NCGA and NCEA, entered into guaranteed investment contracts and are exposed to credit risk related to nonperformance by its investment provider. For NCGA, the investment provider provides collateral if their credit ratings fall below agreed upon levels. SMUD holds deposits by counterparties and an investment provider and records the amounts as Credit Support Collateral Obligation in the Statements of Net Position.

Collateral deposits that SMUD has with counterparties are recorded as Credit Support Collateral Deposits in the Statements of Net Position.

Accounts Receivable and Allowance for Doubtful Accounts. Accounts Receivable is recorded at the invoiced amount and does not bear interest, except for accounts related to energy efficiency loans. SMUD recognizes an estimate of uncollectible accounts for its receivables related to electric service, energy efficiency loans, and other non-electric billings, based upon its historical experience with collections and current energy market conditions. For large wholesale receivable balances, SMUD determines its bad debt reserves based on the specific credit issues for each account. Due to COVID-19, SMUD suspended disconnections for non-payment beginning in March 2020 through April 2021. At December 31, 2020, SMUD estimated its uncollectible retail customer accounts at $45.0 million based on non-payment behaviors by aging category. SMUD records bad debts for its estimated uncollectible accounts related to electric service as a reduction to the related operating revenues in the Statements of Revenues, Expenses and Changes in Net Position. SMUD records bad debts for its estimated uncollectible accounts related to energy efficiency loans and other non-electric billings in Administrative, General and Customer expense in the Statements of Revenues, Expenses and Changes in Net Position.

The summarized activity of the changes in the allowance for doubtful accounts during 2020 and 2019 is presented below:

	Balance at beginning of Year	Additions	(Write-offs) and Recoveries	Balance at end of Year
		(thousands of dollars)		
Other Non-Electric:				
December 31, 2020	$ 2,790	$ 802	$ 37	$ 3,629
December 31, 2019	$ 1,509	$ 2,188	$ (907)	$ 2,790
Retail Customers:				
December 31, 2020	$ 3,044	$ 43,966	$ (2,010)	$ 45,000
December 31, 2019	$ 6,005	$ 3,137	$ (6,098)	$ 3,044
Energy Efficiency Loans:				
December 31, 2020	$ 680	$ (194)	$ 183	$ 669
December 31, 2019	$ 637	$ (483)	$ 526	$ 680

Regulatory Deferrals. The Board has the authority to establish the level of rates charged for all SMUD services. As a regulated entity, SMUD's financial statements are prepared in accordance with SGAS Statement No. 62, ***"Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 Financial Accounting Standards Board (FASB) and American Institute of Certified Public Accountants Pronouncements,"*** which requires that the effects of the ratemaking process be recorded in the financial statements. Accordingly, certain expenses and credits, normally reflected in Change in Net Position as incurred, are recognized when included in rates and recovered from or refunded to customers. SMUD records various regulatory assets and credits to reflect ratemaking actions of the Board (see Note 8).

Materials and Supplies. Materials and supplies are stated at average cost, which approximates the first-in, first-out method.

Compensated Absences. SMUD accrues vacation leave and compensatory time when employees earn the rights to the benefits. SMUD does not record sick leave as a liability until it is taken by the employee, since there are no cash payments made for sick leave when employees terminate or retire. Compensated absences are recorded as Accrued Salaries and Compensated Absences in the Statements of Net Position. At December 31, 2020 and 2019, the total estimated liability for vacation and other compensated absences was $37.7 million and $31.3 million, respectively.

Public Good. Public Good expenses consist of non-capital expenditures for energy efficiency programs, low income subsidies, renewable energy resources and technologies, and research and development.

Gains/Losses on Bond Refundings. Gains and losses resulting from bond refundings are included as a component of Deferred Inflows of Resources or Deferred Outflows of Resources in the Statements of Net Position and amortized as a component of Interest on Debt in the Statements of Revenues, Expenses and Changes in Net Position over the shorter of the life of the refunded debt or the new debt using the effective interest method.

Gains/Losses on Bond Defeasances or Extinguishments. Gains and losses resulting from bond defeasances or extinguishments that were not financed with the issuance of new debt are included as a component of Interest on Debt in the Statements of Revenues, Expenses and Changes in Net Position.

Allowance for Funds Used During Construction (AFUDC). SMUD capitalizes, as an additional cost of Construction Work In Progress (CWIP), AFUDC, which represents the cost of borrowed funds used for such purposes. The amount capitalized is determined by a formula prescribed by FERC. The AFUDC rate for 2019 was 2.4 percent of eligible CWIP. In 2020, SMUD implemented GASB 89 ***"Accounting for Interest Cost Incurred before the End of a Construction Period"*** and has discontinued including the cost of borrowed funds as an additional cost of CWIP (see Note 3).

Derivative Financial Instruments. SMUD records derivative financial instruments (interest rate swap and gas price swap agreements, certain wholesale sales agreements, certain power purchase agreements and option agreements) at fair value in its Statements of Net Position. SMUD does not enter into agreements for speculative purposes. Fair value is estimated by comparing contract prices to forward market prices quoted by third party market participants and/or provided in relevant industry publications. SMUD is exposed to risk of nonperformance if the counterparties default or if the swap agreements are terminated. SMUD reports derivative financial instruments with remaining maturities of one year or less and the portion of long-term contracts with scheduled transactions over the next twelve months as current in the Statements of Net Position (see Note 9).

Interest Rate Swap Agreements. SMUD enters into interest rate swap agreements to modify the effective interest rates on outstanding debt (see Notes 9 and 10).

Gas and Electricity Price Swap and Option Agreements. SMUD uses forward contracts to hedge the impact of market volatility on gas commodity prices for its natural gas-fueled power plants and for energy prices on purchased power for SMUD's retail load (see Note 9).

Precipitation Hedge Agreements. SMUD enters into non-exchange traded precipitation hedge agreements to hedge the cost of replacement power caused by low precipitation years (Precipitation Agreements). SMUD records the intrinsic value of the Precipitation Agreements as Prepayments and Other under Current Assets in the Statements of Net Position. Settlement of the Precipitation Agreements is not performed until the end of the period covered (water year ended September 30). The intrinsic value of a Precipitation Agreement is the difference between the expected results from a monthly allocation of the cumulative rainfall amounts, in an average rainfall year, and the actual rainfall during the same period.

Insurance Programs. SMUD records liabilities for unpaid claims at their present value when they are probable in occurrence and the amount can be reasonably estimated. SMUD records a liability for unpaid claims associated with general, auto, workers' compensation, and short-term and long-term disability based upon estimates derived by SMUD's claims administrator or SMUD staff. The liability comprises the present value of the claims outstanding and includes an amount for claim events incurred but not reported based upon SMUD's experience (see Note 16).

Pollution Remediation. SGAS No. 49, ***"Accounting and Financial Reporting for Pollution Remediation Obligations,"*** (GASB No. 49) requires that a liability be recognized for expected outlays for remediating existing pollution when certain triggering events occur. SMUD recorded a pollution remediation obligation for its North City substation, which was built on a former landfill, for the former Community Linen Rental Services Property, and obligations for several land sites, including one where it will be building a substation (see Note 18). At December 31, 2020 and 2019, the total pollution remediation liability was $19.3 million and $17.8 million, respectively, and recorded as either Current Liabilities, Customer Deposits and Other or Noncurrent Liabilities, Self Insurance and Other in the Statements of Net Position. Costs were estimated using the expected cash flow technique prescribed under GASB No. 49, including only amounts that are reasonably estimable.

Hydro License. SMUD owns and operates the Upper American River Hydroelectric Project (UARP). The original license to construct and operate the UARP was issued in 1957 by FERC. Effective July 1, 2014, SMUD received a 50-year hydro license. As part of the hydro licensing process, SMUD entered into four contracts with government agencies whereby SMUD makes annual payments to them for various services for the term of the license. At December 31, 2020 and 2019, the liability for these contract payments was $64.8 million and $63.4 million, respectively, and recorded as either Current Liabilities, Customer Deposits and Other or Noncurrent Liabilities, Self Insurance and Other in the Statements of Net Position (see Note 17).

Assembly Bill 32. California Assembly Bill (AB) 32 was an effort by the State of California to set a greenhouse gas (GHG) emissions reduction goal into law, and initially was set through 2020. In 2015, the state established a 2030 goal for GHG emissions at 40 percent below 1990 levels, and in July of 2017 AB-398 was approved by the Governor. Central to these initiatives is the Cap and Trade program, which covers major sources of GHG emissions in the State including power plants. AB-398 extended Cap and Trade through 2030. The Cap and Trade program includes an enforceable emissions cap that will decline over time. The State distributes allowances, which are tradable permits, equal to the emissions allowed under the cap. Sources under the cap are required to surrender allowances and offsets equal to their emissions at the end of each compliance period. SMUD is subject to AB-32 and has participated in California Air Resources Board (CARB) administered quarterly auctions in the past. In a normal water year, SMUD expects its free allocation of allowances from the CARB to cover its compliance costs associated with electricity delivered to its retail customers. SMUD expects to recover compliance costs associated with wholesale power sales costs through its wholesale power sales revenues. SMUD continues to monitor new legislation and proposed programs that could impact AB-32 and its subsequent extensions.

In addition, Low Carbon Fuel Standards (LCFS) was enacted through AB-32. The CARB is responsible for the adoption and implementation of LCFS and has established a program for LCFS credits. The LCFS program is designed to reduce greenhouse gas emissions associated with the lifecycle of transportation fuels used in California. SMUD participates in the program and receives LCFS credits from CARB. The LCFS credits are sold to parties that have a compliance obligation. CARB requires that LCFS credit sales proceeds be spent in a way to benefit current or future Electric Vehicle drivers in California, for both commercial and residential vehicles.

Net Pension Liability (NPL). The NPL is the difference between the actuarial present value of projected pension benefit payments attributable to employees' past service and the pension plan's fiduciary net position (see Note 14).

Net Other Postemployment Benefit (OPEB) Asset (NOA) or Liability (NOL). SMUD implemented SGAS No. 75, ***"Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions,"*** (GASB No. 75) in 2018. The NOA or NOL is the difference between the actuarial present value of projected OPEB benefit payments attributable to employee's past service and the OPEB plan's fiduciary net position. At December 31, 2020, SMUD's NOA is $0.8 million and is recorded in Prepayments and other under Noncurrent Assets on the Statements of Net Position. At December 31, 2019, SMUD's NOL is $32.2 million and is recorded under Noncurrent Liabilities on the Statements of Net Position (see Note 15).

Net Position. SMUD classifies its net position into three components as follows:

- Net investment in capital assets – This component of net position consists of capital assets, net of accumulated depreciation, reduced by the outstanding debt balances, net of unamortized debt expenses. Deferred inflows and outflows of resources that are attributable to the acquisition, construction or improvement of those assets or related debt are also included.
- Restricted – This component of net position consists of assets with constraints placed on their use, either externally or internally. Constraints include those imposed by debt indentures (excluding amounts considered in Net investment in capital assets, above), grants or laws and regulations of other governments, or by law through constitutional provisions or enabling legislation or by the Board. These restricted assets are reduced by liabilities and deferred inflows of resources related to those assets.
- Unrestricted – This component of net position consists of net amount of the assets, deferred outflows of resources, liabilities, and deferred inflows of resources that do not meet the definition of "Net investment in capital assets" or "Restricted."

Contributions in Aid of Construction (CIAC). SMUD records CIAC from customer contributions, primarily relating to expansions to SMUD's distribution facilities, as Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. Contributions of capital are valued at acquisition value. For ratemaking purposes, the Board does not recognize such revenues when received; rather, CIAC is included in revenues as such costs are amortized over the estimated useful lives of the related distribution facilities.

Revenues and Expenses. SMUD distinguishes operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with SMUD's principal ongoing operations. The principal operating revenues of SMUD are charges to customers for sales and services. Operating expenses include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as Non-Operating Revenues and Expenses in the Statements of Revenues, Expenses and Changes in Net Position.

Grants. SMUD receives grant proceeds from federal and state assisted programs for its projects which include, but are not limited to, advanced and renewable technologies, electric transportation, and energy efficiency. SMUD also periodically receives grant proceeds from federal or state assistance programs as partial reimbursements for costs it has incurred as a result of natural disasters, such as storm or fire damages. When applicable, these programs may be subject to financial and compliance audits pursuant to regulatory requirements. SMUD considers the possibility of any material disallowances to be remote. SMUD records grant proceeds related to capital projects as a Regulatory Credit (see Note 8).

SMUD has taxable Build America Bonds in which it receives an interest subsidy from the federal government equal to 35 percent of the interest paid (see Note 10). SMUD received reduced subsidy payments in 2020 and 2019 due to budget sequestration by the federal government. SMUD recognized $9.3 million and $9.2 million in revenues in 2020 and 2019, respectively for its Build America Bonds, as a component of Other income (expense) - net, in the Statements of Revenues, Expenses and Changes in Net Position.

Customer Sales and Excise Taxes. SMUD is required by various governmental authorities, including states and municipalities, to collect and remit taxes on certain customer sales. Such taxes are presented on a net basis and excluded from revenues and expenses in the Statements of Revenues, Expenses and Changes in Net Position.

Subsequent Events. Subsequent events for SMUD have been evaluated through February 19, 2021, which is the date that the financial statements were available to be issued.

Reclassifications. Certain amounts in the 2019 Financial Statements have been reclassified in order to conform to the 2020 presentation.

Recent Accounting Pronouncements, adopted. In January 2020, GASB issued SGAS No. 92, ***"Omnibus 2020"*** (GASB No. 92). This statement addresses a variety of topics and includes specific provisions to clarify issues related to leases, intra-entity transfers, pension and postemployment benefits, asset retirement obligations, risk pools, fair value measurements, and derivative instruments. This statement is effective for SMUD in 2020 or 2022 depending on the topic. SMUD has assessed the note disclosure impact of adopting the derivative instruments topic of this statement and has updated the terminology used to refer to derivative or derivatives to derivative instrument or derivative instruments, respectively (see Note 9). No other topics in this statement apply to SMUD.

In May 2020, GASB issued SGAS No. 95, ***"Postponement of the Effective Dates of Certain Authoritative Guidance"*** (GASB No. 95). The primary objective of this statement is to provide temporary relief to governments and other stakeholders as a result of the COVID-19 pandemic. GASB No. 95 postpones the effective dates of certain provisions in statements and implementation guides that first became effective or are scheduled to become effective for periods beginning after June 15, 2018, and later. This statement is effective for SMUD in 2020. SMUD has postponed the implementation of GASB No. 87, ***"Leases"*** and GASB No. 93, ***"Replacement of Interbank Offered Rates."***

Recent Accounting Pronouncements, not yet adopted. In June 2017, GASB issued SGAS No. 87, ***"Leases"*** (GASB No. 87). The objective of this statement is to better meet the information needs of financial statement users by improving accounting and financial reporting for leases by governments. The statement requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. GASB No. 87 establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under GASB No. 87, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. This statement is effective for SMUD in 2022. SMUD is currently assessing the financial statement impact of adopting this statement.

In March 2020, GASB issued SGAS No. 93, ***"Replacement of Interbank Offered Rates"*** (GASB No. 93). The objective of this statement is to address accounting and financial reporting implications that result from the replacement of an interbank offered rate (IBOR), most notably, the London Interbank Offered Rate (LIBOR), which is expected to cease to exist in its current form at the end of 2021. This statement provides exceptions for certain hedging derivative instruments to the hedge accounting termination provisions when an IBOR is replaced as the reference rate of the hedging derivative instrument's variable payment. By removing LIBOR as an appropriate benchmark interest rate for the qualitative evaluation of the effectiveness of an interest rate swap, GASB No. 93 identifies the Secured Overnight Financing Rate and the Effective Federal Funds Rate as appropriate benchmark interest rates to replace LIBOR. This statement is effective for SMUD in 2022. SMUD is currently assessing the financial statement impact of adopting this statement but does not expect it to be material.

In March 2020, GASB issued SGAS No. 94, ***"Public-Private and Public-Public Partnerships and Availability Payment Arrangements"*** (GASB No. 94). The primary objective of this Statement is to provide guidance for accounting and financial reporting related to public-private and public-public partnership arrangements (PPPs) and availability payment arrangements (APAs). A PPP is an arrangement in which a government (the transferor) contracts with an operator (a governmental or

nongovernmental entity) to provide public services by conveying control of the right to operate or use a nonfinancial asset, such as infrastructure or other capital asset (the underlying PPP asset), for a period of time in an exchange or exchange-like transaction. An APA is an arrangement in which a government compensates an operator for services that may include designing, constructing, financing, maintaining, or operating an underlying nonfinancial asset for a period of time in an exchange or exchange-like transaction. This statement is effective for SMUD in 2023. SMUD is currently assessing the financial impact of adopting this statement but does not expect it to be material.

In May 2020, GASB issued SGAS No. 96, ***"Subscription-Based Information Technology Arrangements"*** (GASB No. 96). This statement provides guidance on the accounting and financial reporting for subscription-based information technology arrangements (SBITAs) for governments. The statement (1) defines a SBITA as a contract that conveys control of the right to use another party's information technology software, alone or in combination with tangible capital assets, as specified in the contract for a period of time in an exchange or exchange-like transaction; (2) establishes that a SBITA results in a right-to-use subscription asset and a corresponding subscription liability; (3) provides the capitalization criteria for outlays other than subscription payments, including implementation costs of a SBITA; and (4) requires note disclosures regarding a SBITA. To the extent relevant, the standards for SBITAs are based on the standards established in GASB No. 87, *Leases*, as amended. This statement is effective for SMUD in 2023. SMUD is currently assessing the financial statement impact of adopting this statement.

In June 2020, GASB issued SGAS No. 97, ***"Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans"*** (GASB No. 97). The primary objectives of this statement are to (1) increase consistency and comparability related to the reporting of fiduciary component units in circumstances in which a potential component unit does not have a governing board and the primary government performs the duties that a governing board typically would perform; (2) mitigate costs associated with the reporting of certain defined contribution pension plans, defined contribution other postemployment benefit (OPEB) plans, and employee benefit plans other than pension plans or OPEB plans as fiduciary component units in fiduciary fund financial statements; and (3) enhance the relevance, consistency, and comparability of the accounting and financial reporting for Internal Revenue Code Section 457 deferred compensation plans that meet the definition of a pension plan and for benefits provided through those plans. This statement is effective for SMUD in 2022. SMUD is currently assessing the financial statement impact of adopting this statement but does not expect it to be material.

NOTE 3. ACCOUNTING CHANGE

In June 2018, GASB issued SGAS No. 89, ***"Accounting for Interest Cost Incurred before the End of a Construction Period"*** (GASB No. 89). The objectives of this statement are (1) to enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and (2) to simplify accounting for interest cost incurred before the end of a construction period. GASB No. 89 requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital asset reported in a business-type activity. SMUD has assessed the financial statement impact of adopting the new statement and its impact is not material. Although GASB No. 95 postponed this statement for one year to 2021, SMUD had already implemented this statement before GASB No. 95 was issued.

Beginning January 1, 2020, SMUD recognizes interest costs incurred before the end of a construction period as an expense in the period in which the costs are incurred and no longer includes these interest costs as part of the historical cost of a capital asset. This standard is to be applied prospectively, so the interest costs already included in construction work in progress (CWIP) on December 31, 2019 will still be included as part of the historical cost of the capital asset.

NOTE 4. ELECTRIC UTILITY PLANT

The summarized activity of SMUD's Electric Utility Plant during 2020 is presented below:

	Balance January 1, 2020	Additions	Transfers and Disposals	Balance December 31, 2020
		(thousands of dollars)		
Nondepreciable Electric Utility Plant:				
Land and land rights	$ 142,291	$ 17,471	$ (247)	$ 159,515
CWIP	353,802	318,354	(210,837)	461,319
Total nondepreciable electric utility plant	496,093	335,825	(211,084)	620,834
Depreciable Electric Utility Plant:				
Generation	1,670,224	43,017	(2,821)	1,710,420
Transmission	390,296	21,255	(984)	410,567
Distribution	2,427,408	76,335	(5,217)	2,498,526
Investment in JPAs	22,844	7,168	-0-	30,012
Intangibles	495,651	21,764	-0-	517,415
General	1,078,660	31,463	(11,212)	1,098,911
	6,085,083	201,002	(20,234)	6,265,851
Less: accumulated depreciation and depletion	(2,948,350)	(204,088)	20,191	(3,132,247)
Less: accumulated amortization on JPAs	(6,966)	(313)	-0-	(7,279)
	(2,955,316)	(204,401)	20,191	(3,139,526)
Total depreciable plant	3,129,767	(3,399)	(43)	3,126,325
Total Electric Utility Plant - net	$ 3,625,860	$ 332,426	$ (211,127)	$ 3,747,159

The summarized activity of SMUD's Electric Utility Plant during 2019 is presented below:

	Balance January 1, 2019	Additions	Transfers and Disposals	Balance December 31, 2019
	(thousands of dollars)			
Nondepreciable Electric Utility Plant:				
Land and land rights	$ 139,625	$ 3,418	$ (752)	$ 142,291
CWIP	428,249	342,545	(416,992)	353,802
Total nondepreciable electric utility plant	567,874	345,963	(417,744)	496,093
Depreciable Electric Utility Plant:				
Generation	1,632,081	38,956	(813)	1,670,224
Transmission	336,407	54,637	(748)	390,296
Distribution	2,337,484	96,264	(6,340)	2,427,408
Investment in gas properties	206,624	36	(206,660)	-0-
Investment in JPAs	19,012	3,832	-0-	22,844
Intangibles	426,267	69,836	(452)	495,651
General	929,701	156,812	(7,853)	1,078,660
	5,887,576	420,373	(222,866)	6,085,083
Less: accumulated depreciation and depletion	(2,932,724)	(192,524)	176,898	(2,948,350)
Less: accumulated amortization on JPAs	(6,653)	(313)	-0-	(6,966)
	(2,939,377)	(192,837)	176,898	(2,955,316)
Total depreciable plant	2,948,199	227,536	(45,968)	3,129,767
Total Electric Utility Plant - net	$ 3,516,073	$ 573,499	$ (463,712)	$ 3,625,860

NOTE 5. INVESTMENT IN JOINT POWERS AUTHORITY

TANC. SMUD and fourteen other California municipal utilities are members of TANC, a JPA. TANC, along with the other California municipal utilities, own and operate the California-Oregon Transmission Project (COTP), a 500-kilovolt transmission line between central California and southern Oregon. SMUD is obligated to pay approximately 39 percent of TANC's COTP debt service and operations costs in exchange for entitlement to approximately 536 megawatts (MW) of TANC's 1,390 MW transfer capability. Additionally, SMUD has a 48 MW share of TANC's 300 MW firm, bi-directional transmission over Pacific Gas and Electric Company's (PG&E) system between PG&E's Tesla and Midway substations (SOT). The total entitlement shares for the COTP and SOT described above include the long-term agreements listed below.

In 2009, SMUD entered into a 15-year long-term layoff agreement with TANC and certain members, expiring January 31, 2024. This agreement provides for the assignment of all rights and obligations of the City of Palo Alto and the City of Roseville related to their COTP and SOT entitlements. This agreement increased SMUD's COTP entitlement by 36 MW and SOT entitlement by 2 MW. On July 1, 2014, an amendment returned to the City of Roseville all rights and obligations related to the COTP entitlements, which decreased SMUD's COTP entitlement by 13 MW.

Effective July 1, 2014, SMUD entered into a 25-year long-term layoff agreement with TANC and certain members that provides for the assignment of all rights and obligations of Northern California Power Agency and partial rights and

obligations of the City of Santa Clara related to their COTP entitlements. This agreement increased SMUD's COTP entitlements by 130 MW.

The long-term debt of TANC, which totals $172.0 million (unaudited) at December 31, 2020, is collateralized by a pledge and assignment of net revenues of TANC supported by take or pay commitments of SMUD and other members. Should other members default on their obligations to TANC, SMUD would be required to make additional payments to cover a portion of such defaulted payments, up to 25 percent of its current obligation. SMUD recorded transmission expenses related to TANC of $17.5 million and $17.9 million in 2020 and 2019, respectively.

Summary financial information for TANC is presented below:

	December 31,	
	2020 (Unaudited)	2019 (Unaudited)
	(thousands of dollars)	
Total Assets	$ 356,807	$ 345,739
Total Deferred Outflows of Resources	731	1,240
Total Assets and Deferred Outflows of Resources	$ 357,538	$ 346,979
Total Liabilities	$ 305,096	$ 312,470
Total Net Position	52,442	34,509
Total Liabilities and Net Position	$ 357,538	$ 346,979
Changes in Net Position for the Six Months Ended December 31	$ (564)	$ (413)

Copies of the TANC annual financial reports may be obtained from SMUD at P.O. Box 15830, Sacramento, California 95852 or online at www.tanc.us.

BANC. SMUD, City of Redding, City of Roseville, Modesto Irrigation District (MID), City of Shasta Lake, and Trinity Public Utilities District are members of BANC, a JPA formed in 2009. In 2011, operational control of Balancing Authority Area (BAA) operations was transferred from SMUD to BANC. BANC performs FERC approved BAA reliability functions that are managed by North American Electric Reliability Corporation (NERC), nationally, and by Western Electricity Coordinating Council functions in the west. SMUD recorded expenses related to BANC of $1.7 million in 2020 and $2.1 million in 2019.

Summary financial information for BANC is presented below:

	December 31,	
	2020 (Audited)	2019 (Audited)
	(thousands of dollars)	
Total Assets	$ 8,125	$ 6,184
Total Liabilities	$ 8,125	$ 6,184
Total Net Position	-0-	-0-
Total Liabilities and Net Position	$ 8,125	$ 6,184
Changes in Net Position for the Year Ended December 31	$ -0-	$ -0-

Copies of the BANC annual financial reports may be obtained from SMUD at P.O. Box 15830, Sacramento, California 95852.

NOTE 6. COMPONENT UNITS

CVFA Carson Cogeneration Project. CVFA is a JPA formed by SMUD and the Sacramento Regional County Sanitation District. CVFA operates the Carson Project, a 65 MW (net) natural gas-fired cogeneration facility and a 42 MW (net) natural gas-fired simple cycle peaking plant.

SCA Procter & Gamble Cogeneration Project. SCA is a JPA formed by SMUD and the SFA. SCA operates the Procter & Gamble Project, a 136 MW (net) natural gas-fired cogeneration facility and a 50 MW (net) natural gas-fired simple cycle peaking plant.

SFA Cosumnes Power Plant Project. SFA is a JPA formed by SMUD and MID. SFA operates the Cosumnes Power Plant Project, a 602 MW (net) natural gas-fired, combined cycle facility. The revenue stream to pay the SFA bonds' debt service is provided by a "take-or-pay" power purchase agreement between SMUD and SFA.

SPA Campbell Soup Cogeneration Project. SPA is a JPA formed by SMUD and the SFA. SPA operates the Campbell Soup Project, a 160 MW (net) natural gas-fired cogeneration facility, and the McClellan Project, a 72 MW (net) natural gas-fired simple cycle peaking plant.

NCGA. NCGA is a JPA formed by SMUD and the SFA. NCGA has a prepaid gas contract with Morgan Stanley Capital Group (MSCG) expiring in 2027, which is financed primarily by NCGA revenue bonds. SMUD has contracted with NCGA to purchase all the gas delivered by MSCG to NCGA, based on market prices. NCGA is obligated to pay the principal and interest on the bonds. Neither SMUD nor SFA is obligated to make debt service payments on the bonds. NCGA can terminate the prepaid gas contract under certain circumstances, including a failure by MSCG to meet its gas delivery obligation to NCGA or a drop in MSCG's credit rating below a specified level. If this occurs, MSCG will be required to make a termination payment to NCGA based on the unamortized prepayment proceeds received by MSCG.

NCEA. NCEA is a JPA formed by SMUD and the SFA. NCEA has a prepaid natural gas and electricity (commodity) contract with J. Aron & Company LLC (J. Aron) expiring in 2049, which is financed primarily by NCEA revenue bonds. SMUD has contracted with NCEA to purchase all the commodity delivered by J. Aron to NCEA, based on market prices. NCEA is obligated to pay the principal and interest on the bonds. Neither SMUD nor SFA is obligated to make debt service payments on the bonds. NCEA can terminate the prepaid commodity contract under certain circumstances, including a failure by J. Aron to meet its commodity delivery obligation to NCEA. If this occurs, J. Aron will be required to make a termination payment to NCEA based on the unamortized prepayment proceeds received by J. Aron.

The summarized activity of SMUD's component units for 2020 is presented below:

CONDENSED STATEMENTS OF NET POSITION
December 31, 2020
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Assets						
Electric Utility Plant - net	$ 31,264	$ 48,502	$ 207,058	$ 48,351	$ -0-	$ -0-
Restricted Assets	-0-	-0-	-0-	-0-	-0-	90
Current Assets	12,373	31,823	60,107	21,285	37,271	27,857
Noncurrent Assets	2	1	892	1	160,648	532,525
Total Assets	43,639	80,326	268,057	69,637	197,919	560,472
Deferred Outflows of Resources	1,733	-0-	1,829	-0-	-0-	-0-
Total Assets and Deferred Outflows of Resources	$ 45,372	$ 80,326	$ 269,886	$ 69,637	$ 197,919	$ 560,472
Liabilities						
Long-Term Debt - net	$ -0-	$ -0-	$ 113,152	$ -0-	$ 163,485	$ 556,794
Current Liabilities	3,441	5,515	36,819	5,190	24,288	10,876
Noncurrent Liabilities	8,633	-0-	-0-	-0-	-0-	121
Total Liabilities	12,074	5,515	149,971	5,190	187,773	567,791
Net Position	33,298	74,811	119,915	64,447	10,146	(7,319)
Total Liabilities and Net Position	$ 45,372	$ 80,326	$ 269,886	$ 69,637	$ 197,919	$ 560,472

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
December 31, 2020
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Operating Revenues	$ 16,599	$ 35,932	$ 141,874	$ 26,818	$ 25,935	$ 20,053
Operating Expenses	22,073	39,624	137,415	32,545	17,810	3,366
Operating Income (Loss)	(5,474)	(3,692)	4,459	(5,727)	8,125	16,687
Non-Operating Revenues and Expenses						
Other Revenues	48	205	179	113	533	-0-
Interest Charges and Other	-0-	-0-	(3,670)	-0-	(8,205)	(16,197)
Change in Net Position Before Distributions and Contributions	(5,426)	(3,487)	968	(5,614)	453	490
Distribution to Member	-0-	-0-	-0-	-0-	(507)	(1,090)
Member Contributions and Adjustments	-0-	-0-	-0-	-0-	86	127
Change in Net Position	(5,426)	(3,487)	968	(5,614)	32	(473)
Net Position – Beginning of Year	38,724	78,298	118,947	70,061	10,114	(6,846)
Net Position – End of Year	$ 33,298	$ 74,811	$ 119,915	$ 64,447	$ 10,146	$ (7,319)

CONDENSED STATEMENTS OF CASH FLOWS
December 31, 2020
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Net Cash Provided by Operating Activities	$ 1,232	$ 4,462	$ 19,673	$ 1,929	$ 26,597	$ 20,053
Net Cash Used in Noncapital Financing Activities	-0-	-0-	-0-	-0-	(25,550)	(22,843)
Net Cash Used in Capital Financing Activities	(500)	(54)	(16,683)	(748)	-0-	-0-
Net Cash Provided by Investing Activities	46	242	226	138	450	2,714
Net Increase in Cash and Cash Equivalents	778	4,650	3,216	1,319	1,497	(76)
Cash and Cash Equivalents at the Beginning of the Year	4,311	16,003	20,650	9,586	13,315	10,953
Cash and Cash Equivalents at the End of the Year	$ 5,089	$ 20,653	$ 23,866	$ 10,905	$ 14,812	$ 10,877

The summarized activity of SMUD's component units for 2019 is presented below:

CONDENSED STATEMENTS OF NET POSITION
December 31, 2019
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Assets						
Electric Utility Plant - net	$ 37,248	$ 56,309	$ 220,676	$ 55,074	$ -0-	$ -0-
Restricted Assets	-0-	-0-	-0-	-0-	-0-	2,840
Current Assets	11,418	26,939	54,906	20,487	33,422	27,096
Noncurrent Assets	2	2	998	2	180,564	535,991
Total Assets	48,668	83,250	276,580	75,563	213,986	565,927
Deferred Outflows of Resources	1,955	-0-	2,195	-0-	-0-	-0-
Total Assets and Deferred Outflows of Resources	$ 50,623	$ 83,250	$ 278,775	$ 75,563	$ 213,986	$ 565,927
Liabilities						
Long-Term Debt - net	$ -0-	$ -0-	$ 126,571	$ -0-	$ 181,935	$ 561,820
Current Liabilities	3,370	4,952	33,257	5,502	21,937	10,876
Noncurrent Liabilities	8,529	-0-	-0-	-0-	-0-	77
Total Liabilities	11,899	4,952	159,828	5,502	203,872	572,773
Net Position	38,724	78,298	118,947	70,061	10,114	(6,846)
Total Liabilities and Net Position	$ 50,623	$ 83,250	$ 278,775	$ 75,563	$ 213,986	$ 565,927

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
December 31, 2019
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Operating Revenues	$ 23,858	$ 36,208	$ 157,200	$ 27,732	$ 33,472	$ 16,438
Operating Expenses	26,046	33,947	120,562	31,106	25,133	2,682
Operating Income (Loss)	(2,188)	2,261	36,638	(3,374)	8,339	13,756
Non-Operating Revenues and Expenses						
Other Revenues	114	363	376	142	850	-0-
Interest Charges and Other	(534)	(1,211)	(3,962)	-0-	(9,280)	(16,091)
Change in Net Position Before Distributions and Contributions	(2,608)	1,413	33,052	(3,232)	(91)	(2,335)
Distribution to Member	-0-	-0-	-0-	-0-	(953)	-0-
Member Contributions and Adjustments	-0-	7,902	-0-	-0-	80	88
Change in Net Position	(2,608)	9,315	33,052	(3,232)	(964)	(2,247)
Net Position – Beginning of Year	41,332	68,983	85,895	73,293	11,078	(4,599)
Net Position – End of Year	$ 38,724	$ 78,298	$ 118,947	$ 70,061	$ 10,114	$ (6,846)

CONDENSED STATEMENTS OF CASH FLOWS
December 31, 2019
(thousands of dollars)

	CVFA	SCA	SFA	SPA	NCGA	NCEA
Net Cash Provided by Operating Activities	$ 6,382	$ 10,855	$ 42,686	$ 3,295	$ 35,948	$ 13,135
Net Cash Provided by (Used in) Noncapital Financing Activities	-0-	7,902	-0-	-0-	(45,135)	(11,601)
Net Cash Used in Capital Financing Activities	(11,345)	(20,698)	(46,462)	(2,774)	-0-	-0-
Net Cash Provided by Investing Activities	135	351	389	134	787	8,656
Net Increase (Decrease) in Cash and Cash Equivalents	(4,828)	(1,590)	(3,387)	655	(8,400)	10,190
Cash and Cash Equivalents at the Beginning of the Year	9,139	17,593	24,037	8,931	21,715	763
Cash and Cash Equivalents at the End of the Year	$ 4,311	$ 16,003	$ 20,650	$ 9,586	$ 13,315	$ 10,953

As described in Note 2, all of the activities and balances of the component units are blended into and reported as part of SMUD because of the extent of their operational and financial relationships with SMUD. Copies of CVFA's, SCA's, SFA's, SPA's, NCGA's and NCEA's annual financial reports may be obtained from their Executive Office at P.O. Box 15830, Sacramento, California 95852 or online at www.smud.org.

NOTE 7. CASH, CASH EQUIVALENTS, AND INVESTMENTS

Cash Equivalents and Investments. SMUD's investment policy is governed by the California State and Municipal Codes and its Indenture, which allow SMUD's investments to include: obligations which are unconditionally guaranteed by the U.S. Government or its agencies or instrumentalities; direct and general obligations of the State or any local agency within the State; bankers' acceptances; commercial paper; certificates of deposit; repurchase and reverse repurchase agreements; medium term corporate notes; LAIF; and money market funds. SMUD's investment policy includes restrictions for investments relating to maximum amounts invested as a percentage of total portfolio and with a single issuer, maximum maturities, and minimum credit ratings.

Credit Risk. This is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. To mitigate this risk, SMUD limits investments to those rated, at a minimum, "A-1" or equivalent for short-term investments and "A" or equivalent for medium-term corporate notes by a nationally recognized rating agency, with the exception of the Guaranteed Investment Contracts (GICs) held by NCEA. NCEA GICs are rated at the credit rating of the commodity supplier, or, if not rated, the guarantor of the commodity supplier which is currently Goldman Sachs rated as "BBB+".

Custodial Credit Risk. This is the risk that, in the event of the failure of a depository financial institution or counterparty to a transaction, SMUD's deposits and investments may not be returned or SMUD will not be able to recover the value of its deposits, investments or collateral securities that are in the possession of another party. SMUD does not have a deposit or investment policy for custodial credit risk.

As of December 31, 2020 and 2019, $12.2 million and $5.5 million in deposits were uninsured, respectively. The bank balance is also, per a depository pledge agreement between SMUD and SMUD's bank, collateralized at 134 percent and 131 percent of the collective funds on deposit (increased by the amount of accrued but uncredited interest, reduced by deposits covered by Federal Deposit Insurance Corporation) at December 31, 2020 and 2019, respectively. SMUD had money market funds of $128.4 million and $103.4 million which were uninsured at December 31, 2020 and 2019, respectively. SMUD's investments and money market funds are held in SMUD's name.

Concentration of Credit Risk. This is the risk of loss attributed to the magnitude of an entity's investment in a single issuer. SMUD places no limit on the amounts invested in any one issuer for repurchase agreements and federal agency securities.

The following are the concentrations of risk greater than five percent in either year:

	December 31,	
	2020	2019
Investment Type:		
Federal Home Loan Banks	17%	27%
Freddie Mac	7%	12%
Commercial Paper – Toyota Motor Credit Corp	N/A	10%
Municipal Bond – CA Department of Water Resources	10%	6%
Municipal Bond – State of Florida	9%	N/A
Municipal Bond – State of California	4%	6%
Corporate Note – Tennessee Valley Authority	7%	5%
Corporate Note – Wells Fargo Bank	7%	5%
Corporate Note – Microsoft Corporation	9%	3%
Corporate Note – Apple Inc	11%	9%

Interest Rate Risk. This is the risk of loss due to the fair value of an investment declining due to interest rates rising. Though SMUD has restrictions as to the maturities of some of the investments, it does not have a formal policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates. SMUD is exposed to interest rate risk on its interest rate swaps (see Note 9).

The following schedules indicate the credit and interest rate risk at December 31, 2020 and 2019. The credit ratings listed are from Standard & Poor's (S&P) or Moody's. (N/A is defined as not applicable to the rating disclosure requirements.)

At December 31, 2020, SMUD's cash, cash equivalents, and investments consist of the following:

		Remaining Maturities (in years)			
Description	Credit Rating	Less Than 1	1-5	More Than 5	Total Fair Value
		(thousands of dollars)			
Cash and Cash Equivalents:					
Cash	N/A	$ 8,607	$ -0-	$ -0-	$ 8,607
LAIF	Not Rated	512,682	-0-	-0-	512,682
Money Market Funds	AAAm	128,406	-0-	-0-	128,406
Deposit at Notice	N/A	80,062	-0-	-0-	80,062
Commercial Paper	A-1+/A-1	8,854	-0-	-0-	8,854
Total cash and cash equivalents		738,611	-0-	-0-	738,611
Investments:					
Federal Farm Credit Bank	AA+	15,188	-0-	-0-	15,188
Federal Home Loan Bank	AA+	49,986	-0-	-0-	49,986
Freddie Mac	AA+	-0-	20,462	-0-	20,462
U.S. Treasury Obligations	AAA	20,248	-0-	-0-	20,248
Corporate Notes	AAA/AA+/A+/A-/A	113,980	4,035	-0-	118,015
Municipal Bonds	AAA/AA+/AA-	-0-	63,647	-0-	63,647
Guaranteed Investment Contracts	BBB+	10,859	90	-0-	10,949
Total investments		210,261	88,234	-0-	298,495
Total cash, cash equivalents, and investments		$ 948,872	$ 88,234	$ -0-	$ 1,037,106

At December 31, 2019, SMUD's cash, cash equivalents, and investments consist of the following:

Description	Credit Rating	Remaining Maturities (in years) Less Than 1	1-5	More Than 5	Total Fair Value
			(thousands of dollars)		
Cash and Cash Equivalents:					
Cash	N/A	$ 1,093	$ -0-	$ -0-	$ 1,093
LAIF	Not Rated	104,742	-0-	-0-	104,742
Money Market Funds	AAAm	103,367	-0-	-0-	103,367
Deposit at Notice	N/A	51,432	-0-	-0-	51,432
Commercial Paper	A-1+/A-1	47,474	-0-	-0-	47,474
Total cash and cash equivalents		308,108	-0-	-0-	308,108
Investments:					
Fannie Mae	AA+	3,030	-0-	-0-	3,030
Federal Farm Credit Bank	AA+	-0-	15,001	-0-	15,001
Federal Home Loan Bank	AA+	111,844	-0-	-0-	111,844
Freddie Mac	AA+	27,984	20,308	-0-	48,292
U.S. Treasury Obligations	AAA	105,116	20,167	-0-	125,283
Corporate Notes	AAA/AA+/AA-/A+/A	6,302	114,897	-0-	121,199
Municipal Bonds	AA/AA-	15,063	33,013	-0-	48,076
Guaranteed Investment Contracts	BBB+	10,249	2,840	-0-	13,089
Total investments		279,588	206,226	-0-	485,814
Total cash, cash equivalents, and investments		$ 587,696	$ 206,226	$ -0-	$ 793,922

SMUD's cash, cash equivalents, and investments are classified in the Statements of Net Position as follows:

	December 31, 2020	2019
	(thousands of dollars)	
Cash, Cash Equivalents, and Investments:		
Revenue bond reserve and debt service funds:		
Revenue bond reserve fund	$ 3,813	$ 4,748
Debt service fund	80,022	73,250
Component unit bond reserve and debt service funds	38,010	38,529
Total revenue bond reserve and debt service funds	121,845	116,527
Nuclear decommissioning trust fund	8,873	8,798
Rate stabilization fund	168,726	143,669
Component unit other restricted funds	7,413	8,707
Escrow fund	15,179	20,592
Other restricted funds	654	654
Unrestricted funds	714,416	494,975
Total cash, cash equivalents, and investments	$ 1,037,106	$ 793,922

NOTE 8. REGULATORY DEFERRALS

The Board has taken various regulatory actions that result in differences between the recognition of revenues and expenses for ratemaking purposes and their treatment under generally accepted accounting principles for non-regulated entities (see Note

2). These actions result in regulatory assets and deferred inflow of resources, which are summarized in the tables below. Changes to these balances, and their inclusion in rates, occur only at the direction of the Board.

Regulatory Assets (Costs)

Decommissioning. SMUD's regulatory asset relating to the unfunded portion of its decommissioning liability for the Rancho Seco nuclear power plant is being collected through interest earnings on the Trust Fund. Nuclear fuel storage costs and non-radiological decommissioning costs have been collected in rates since 2009.

Derivative Financial Instruments. SMUD's regulatory costs and/or credits relating to investment derivative instruments are intended to defer the net difference between the fair value of derivative instruments and their cost basis, if any. Investment derivative instruments are reflected in rates at contract cost and as such, the balance is charged or credited into rates as the related asset or deferred inflow of resource is utilized (see Note 9).

Debt Issuance Costs. SMUD established a regulatory asset for costs incurred in connection with the issuance of debt obligations, principally underwriter fees and legal costs. The regulatory asset is amortized through 2020 for the portion related to SMUD's debt issuance costs and over the life of the bonds for the portion related to the component units' debt issuance costs. Debt issuance costs after December 31, 2013 are expensed.

Pension. SMUD established a regulatory asset for pension costs related to the implementation of GASB No. 68 which requires SMUD to record a net pension liability. The regulatory asset is being amortized over a period of 25 years starting in 2018.

OPEB. SMUD established a regulatory asset for OPEB costs related to the implementation of GASB No. 75 which requires SMUD to record a net OPEB liability. The regulatory asset will be amortized over a period of 25 years starting in 2020. SMUD's total regulatory costs for future recovery are presented below:

	December 31,	
	2020	2019
	(thousands of dollars)	
Regulatory Costs:		
Decommissioning	$ 88,652	$ 81,076
Derivative financial instruments	9,270	10,517
Debt issuance costs	1,673	1,882
Pension	374,599	391,626
OPEB	306,556	319,329
Total regulatory costs	780,750	804,430
Less: regulatory costs to be recovered within one year	(38,162)	(37,622)
Total regulatory costs for future recovery - net	$ 742,588	$ 766,808

Regulatory Credits

CIAC. In 2020 and 2019, SMUD added CIAC totaling $25.1 million and $18.8 million, respectively, to Regulatory Credits in the Statements of Net Position and recorded $13.3 million and $12.8 million of amortization, respectively, to Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. SMUD's regulatory credit relating to CIAC is intended to offset the revenue and expense associated with this accounting treatment. Thus, this regulatory credit is being amortized into rates over the depreciable lives of the related assets in order to offset the earnings effect of these non-exchange transactions.

Rate Stabilization. SMUD's regulatory credit relating to Rate Stabilization is intended to defer the need for future rate increases when costs exceed existing rates. At the direction of the Board, amounts may be either transferred into this fund

(which reduces revenues), or amounts are transferred out of this fund (which increases revenues). The Board authorizes Rate Stabilization Fund (RSF) transfers on an event driven basis.

In 2020 and 2019, $1.6 million and $10.7 million, respectively, was transferred from revenue to the RSF as a result of higher than budgeted energy deliveries from the Western Area Power Administration.

SMUD participates in the carbon allowance auctions under AB-32, the Global Warming Solutions Act (see Note 2). The Board authorized deferral of AB-32 auction proceeds to match the revenue recognition with the related expenses. The difference between the auction proceeds received and the funds spent on AB-32 programs are deferred into future years. In 2020, the Board authorized transferring the difference out of the RSF and $4.1 million was transferred from the RSF to revenue. In 2019, the Board authorized transferring the difference into the RSF and $15.6 million was transferred from revenue to the RSF.

SMUD sells LCFS credits under AB-32, the Global Warming Solutions Act (see Note 2). In 2019, the Board authorized deferral of LCFS credit sales to match the revenue recognition with the related expenses. The difference between the LCFS credit sales and the funds spent on LCFS programs are deferred into future years. In 2020 and 2019, the Board authorized transferring the difference into the RSF and $0.3 million and $2.3 million, respectively, was transferred from revenue to the RSF.

In 2020, the Board authorized SMUD to transfer $35.0 million from revenue to the RSF to offset future one-time specific expenses which may have a significant financial impact on SMUD. This will provide reserves to cover large contingencies while limiting or leveling out the impact of cost increases to ratepayers.

Hydro Rate Stabilization. The Hydro Rate Stabilization Fund (HRSF) was established through the Hydro Generation Adjustment (HGA) mechanism, which helps manage volatility in energy costs. The HGA mechanism applies a formula based on precipitation and wholesale electricity prices to calculate needed withdrawals from or deposits to the HRSF. The maximum balance of the HRSF is 6 percent of the budgeted retail revenue and the maximum annual transfer in or out of the HRSF is 4 percent of budgeted retail revenue. If the HRSF is depleted, SMUD will apply a hydro rate surcharge to customers' bills up to 4 percent. When the HRSF reaches the 6 percent cap, the Board may authorize a hydro rebate to customers or direct the funds for another purpose. In 2020, $7.7 million was transferred from the HRSF to revenue as a result of low precipitation. In 2019, $18.4 million was transferred from revenue to the HRSF as a result of high precipitation.

Energy Assistance Program Rate (EAPR). In 2016, the Board authorized SMUD to transfer $10.0 million of revenue to a regulatory credit related to EAPR. This regulatory credit is intended to offset future expenditures for energy efficiency programs for EAPR customers from the period 2018-2020. In 2020 and 2019, $3.5 million and $3.0 million was spent on energy efficiency programs for EAPR customers, respectively.

Senate Bill 1. SMUD implemented a per kilowatt hour solar surcharge, effective January 1, 2008 in order to fund investments in solar required by Senate Bill 1 (SB-1). The difference between the surcharge revenues received and the funds spent on solar initiatives will be recognized or deferred into future years. SMUD has spent less than it collected in SB-1 revenues and has recorded a regulatory credit. Collection of the solar surcharge ended in December 2017 when total collections reached $130.0 million. In 2020 and 2019, $2.3 million and $2.8 million was spent for SB-1 programs, respectively.

Grant Revenues. In 2009, SMUD was awarded several large grants under the American Recovery and Reinvestment Act, which provided significant reimbursements for capital expenditures. In 2010, the Board authorized the deferral of grant income for capital expenditures as regulatory liabilities. Thus, this regulatory credit was deferred to match the depreciable lives of the related capital assets in order to offset the earnings effect of these non-exchange transactions.

TANC Operations Costs. SMUD's cash payments to TANC exceeded TANC's accrual-based costs and SMUD has recorded a regulatory credit.

SMUD's total regulatory credits for future revenue recognition are presented below:

	December 31,	
	2020	2019
	(thousands of dollars)	
Regulatory Credits:		
CIAC	$278,791	$ 267,041
Rate stabilization	94,006	61,231
Hydro rate stabilization	74,720	82,438
EAPR	-0-	3,501
Senate Bill 1	4,254	6,529
Grant revenues	36,068	39,888
TANC operations costs	28,370	28,858
Total regulatory credits	$ 516,209	$ 489,486

NOTE 9. DERIVATIVE FINANCIAL INSTRUMENTS

To help provide stable electric rates and to meet the forecasted power needs of its retail customers reliably, SMUD enters into various physical and financial fixed price purchase contracts for electricity and natural gas. These fixed price contracts and swap agreements are intended to hedge the exposure due to highly volatile commodity prices. SMUD also enters into interest rate swap agreements to reduce interest rate risk. SMUD utilizes these derivative financial instruments to mitigate its exposure to certain market risks associated with ongoing operations. SMUD has established policies set by an executive committee for the use of derivative financial instruments for trading purposes. These contracts are evaluated pursuant to SGAS No. 53, ***"Accounting and Financial Reporting for Derivative Instruments,"*** (GASB No. 53) to determine whether they meet the definition of derivative instruments, and if so, whether they effectively hedge the expected cash flows associated with interest rate and commodity price risk exposures.

SMUD applies hedge accounting for derivative instruments that are deemed effective hedges. Under hedge accounting, the increase or (decrease) in the fair value of a hedge is reported as a Deferred Inflow or Deferred Outflow in the Statements of Net Position. Accumulated gains and losses from derivative instruments that do not meet the effectiveness tests are deferred for ratemaking purposes as regulatory assets on the Statements of Net Position (see Note 8).

During 2020 and 2019, SMUD executed numerous new gas and power related purchase agreements, some of which are recorded as hedging or investment derivative instruments and are therefore included in the following table. All hedging or investment derivative instruments are recorded at fair value in the Statements of Net Position.

For electricity and gas derivative instruments, fair values are estimated by comparing contract prices to forward market prices quoted by an independent external pricing service. When external quoted market prices are not available for derivative instrument contracts, SMUD uses an internally developed valuation model utilizing short term observable inputs. For interest rate derivative instruments, SMUD calculates the fair value by discounting the expected cash flows at their corresponding zero coupon rate.

The following is a summary of the fair value, changes in fair value and notional amounts of derivative instruments, grouped by trading strategy, outstanding at December 31, 2020 (amounts in thousands; gains shown as positive amounts, losses as negative):

	2020 Changes in Fair Value		Fair Value at December 31, 2020		
	Current Amount	Noncurrent Amount	Current Amount	Noncurrent Amount	Notional
Cash Flow Hedges:					
(thousands of dollars)					
(thousands of Dekatherms (Dth))					
Asset: Investment Derivative Instruments					
Gas – Commodity	$ (69)	$ 33	$ -0-	$ 33	305 Dth
Gas – Storage	(141)	-0-	-0-	-0-	
Gas – Transportation	(278)	-0-	-0-	-0-	
Total Investment Derivative Instruments	$ (488)	$ 33	$ -0-	$ 33	
Asset: Hedging Derivative Instruments					
Gas – Commodity	$ (189)	$ 2,311	$ 1,329	$ 2,325	39,730 Dth
Gas – Storage	(90)	-0-	301	-0-	900 Dth
Gas – Transportation	(3,836)	-0-	1,490	-0-	11,958 Dth
Interest Rate	295	(1,692)	1,793	6,281	$280,320
Total Hedging Derivative Instruments	$ (3,820)	$ 619	$ 4,913	$ 8,606	
Liability: Investment Derivative Instruments					
Gas – Commodity	$ 1,164	$ 1,402	$ 9	$ 263	1,675 Dth
Gas – Storage	191	-0-	-0-	-0-	
Gas – Transportation	93	-0-	-0-	-0-	
Interest Rate	(614)	(536)	1,392	7,640	$80,100
Total Investment Derivative Instruments	$ 834	$ 866	$ 1,401	$ 7,903	
Liability: Hedging Derivative Instruments					
Gas – Commodity	$ 20,193	$ 23,002	$ 20,666	$ 18,698	47,778 Dth
Gas – Storage	(583)	-0-	1,097	-0-	1,210 Dth
Gas – Transportation	-0-	-0-	-0-	-0-	
Interest Rate	(521)	(8,478)	521	10,598	$284,815
Total Hedging Derivative Instruments	$ 19,089	$ 14,524	$ 22,284	$ 29,296	

The following is a summary of the fair value, changes in fair value and notional amounts of derivative instruments, grouped by trading strategy, outstanding at December 31, 2019 (amounts in thousands; gains shown as positive amounts, losses as negative):

	2019 Changes in Fair Value		Fair Value at December 31, 2019		
	Current Amount	Noncurrent Amount	Current Amount	Noncurrent Amount	Notional
Cash Flow Hedges:					
(thousands of dollars)					
(thousands of Dekatherms (Dth))					
Asset: Investment Derivative Instruments					
Gas – Commodity	$ 49	$ -0-	$ 69	$ -0-	150 Dth
Gas – Storage	141	-0-	141	-0-	295 Dth
Gas – Transportation	278	-0-	278	-0-	310 Dth
Total Investment Derivative Instruments	$ 468	$ -0-	$ 488	$ -0-	
Asset: Hedging Derivative Instruments					
Gas – Commodity	$ 1,055	$ 13	$ 1,517	$ 13	2,835 Dth
Gas – Storage	154	-0-	391	-0-	687 Dth
Gas – Transportation	2,729	-0-	5,326	-0-	14,320 Dth
Interest Rate	270	(2,507)	1,498	7,973	$215,500
Total Hedging Derivative Instruments	$ 4,208	$ (2,494)	$ 8,732	$ 7,986	
Liability: Investment Derivative Instruments					
Gas – Commodity	$ 195	$ 6,938	$ 1,173	$ 1,665	2,433 Dth
Gas – Storage	(191)	-0-	191	-0-	295 Dth
Gas – Transportation	(93)	-0-	93	-0-	310 Dth
Interest Rate	(403)	(379)	778	7,104	$85,625
Total Investment Derivative Instruments	$ (492)	$ 6,559	$ 2,235	$ 8,769	
Liability: Hedging Derivative Instruments					
Gas – Basis	$ 3,651	$ -0-	$ -0-	$ -0-	
Gas – Commodity	(15,857)	14,984	40,859	41,700	61,957 Dth
Gas – Storage	(124)	-0-	515	-0-	688 Dth
Gas – Transportation	41	-0-	-0-	-0-	
Interest Rate	-0-	(2,120)	-0-	2,120	$157,785
Total Hedging Derivative Instruments	$ (12,289)	$ 12,864	$ 41,374	$ 43,820	

Objectives and Terms of Hedging Derivative Instruments. The objectives and terms of SMUD's hedging derivative instruments that were outstanding at December 31, 2020 are summarized in the table below. The table is aggregated by the trading strategy. Credit ratings of SMUD's counterparties can be found in the table under Credit Risk. Details of SMUD's interest rate derivative instruments can be found in Note 10.

	Notional Amount Dth	Beginning Date	Ending Date	Minimum Price/Dth	Maximum Price/Dth
Gas – Commodity	89,565	01/01/08	12/31/24	$ .89	$ 7.17
Gas – Storage	2,110	01/01/21	03/31/21	.26	3.13
Gas – Transportation	11,958	01/01/21	12/31/21	(0.82)	.43

The objectives and terms of SMUD's hedging derivative instruments that were outstanding at December 31, 2019 are summarized in the table below. The table is aggregated by the trading strategy.

	Notional Amount Dth	Beginning Date	Ending Date	Minimum Price/Dth	Maximum Price/Dth
Gas – Commodity	67,375	01/01/08	12/31/22	$ .43	$ 7.17
Gas – Storage	1,965	01/01/20	10/31/20	.24	3.02
Gas – Transportation	14,940	01/01/20	12/31/20	(1.51)	.69

SMUD hedges its interest rate exposure with swaps. One swap is used to convert some of the interest expense associated with fixed rate bonds to a variable rate interest expense. SMUD has four forward starting swaps that are designed to synthetically fix the interest expense associated with refunding bonds that are expected to be issued to refund the 2011 Series X, 2012 Series Y, 2013 Series A and 2013 Series B bonds in 2021, 2022 and 2023, respectively (see Note 10). SMUD also has a swap that is designed to fix the interest expense associated with commercial paper (see Note 11).

SMUD hedges its power and natural gas costs so that it can offer predictable rates to its retail electric customers and support its credit rating. SMUD maintains a risk management program to control the price, credit, and operational risks arising from its power and natural gas market activities. Under the program, authorized SMUD employees assemble a portfolio of swaps, futures, and forward contracts over time with the goal of making SMUD's purchased power and fuel budget more predictable.

The hedged risks include those related to interest rate and commodity price fluctuations associated with certain forecasted transactions, including interest rate risk on long-term debt, and forward purchases of gas and electricity to meet load.

Derivative Instruments Not Designated as Hedging Derivative Instruments

Gas and Electric Contracts. SMUD utilizes certain gas swap and electric swap agreements under GASB No. 53 not designated as hedging derivative instruments to mitigate exposure to changes in the market price of natural gas and electricity. The fair value of each agreement, excluding the actual settlements to be paid or received as of the end of the period, is recorded in the Statements of Net Position in either Current or Noncurrent Assets, Investment Derivative Instruments if in an asset position or Current or Noncurrent Liabilities, Investment Derivative Instruments if in a liability position. An offsetting amount is included in Current or Noncurrent Regulatory Costs or Regulatory Credits for future recovery in the Statements of Net Position. The actual settlement payable is recorded in Accounts Payable in the Statements of Net Position, and the actual settlement receivable is recorded in Receivables - net: Wholesale and Other in the Statements of Net Position. The payments and receipts of the actual settlement are recorded as Investment Expense in the Statements of Revenues, Expenses and Changes in Net Position.

Interest Rate Contracts. SMUD utilizes certain interest rate swap agreements not designated as hedging derivative instruments under GASB No. 53 to mitigate exposure to fluctuations in interest rates. The fair value of each agreement, excluding the balance of interest to be paid or received as of the end of the period, is recorded in the Statements of Net

Position in either Current or Noncurrent Assets, Investment Derivative Instruments if in an asset position or Current or Noncurrent Liabilities, Investment Derivative Instruments if in a liability position. An offsetting amount is included in Current or Noncurrent Regulatory Costs or Deferred Outflows or Inflows of Resources in the Statements of Net Position. The interest receivable is recorded in Receivables - net: Wholesale and Other in the Statements of Net Position and the accrued interest is recorded in Interest Payable in the Statements of Net Position. The payments or receipts of the actual settlement are recorded as Investment Expense in the Statements of Revenues, Expenses and Changes in Net Position.

The Board has deferred recognition of the effects of reporting the fair value of Investment Derivative Instruments for ratemaking purposes, and maintains regulatory accounts to defer the accounting impact of these accounting adjustments (see Note 8). Fair values may have changed significantly since December 31, 2020.

Basis Risk. This is the risk that arises when a hedged item and a derivative instrument that is attempting to hedge that item are based on different indices. SMUD is exposed to basis risk when it hedges its natural gas purchases, which are priced at various locations, and with NYMEX futures contracts, which settle based on the price at Henry Hub, Louisiana. SMUD enters into basis swaps to hedge against this risk.

Termination Risk. This is the risk that a derivative instrument will terminate prior to its scheduled maturity due to a contractual event. Contractual events include bankruptcy, illegality, default, credit events upon merger, and other events. One aspect of termination risk is that SMUD would lose the hedging benefit of a derivative instrument that becomes subject to a termination event. Another aspect of termination risk is that, if at the time of termination the mark to market value of the derivative instrument was a liability to SMUD, SMUD could be required to pay that amount to the counterparty. Termination risk is associated with all of SMUD's derivative instruments up to the fair value amounts.

Counterparty Credit Risk. This is the risk of loss resulting when the counterparty is unable or unwilling to fulfill its present and future financial obligations. SMUD can be exposed to significant counterparty credit risk on all derivative instruments. SMUD seeks to minimize credit risk by transacting with creditworthy counterparties. SMUD has established and maintained strict counterparty credit guidelines. SMUD continuously monitors counterparty credit risk and utilizes numerous counterparties to diversify the exposure to potential defaults. Under certain conditions as outlined in SMUD's credit risk management policy, SMUD may require additional credit support under its trading agreements.

Some of SMUD's derivative instrument master agreements contain credit contingent provisions that enable SMUD to maintain unsecured credit as a result of positive investment quality credit ratings from each of the major credit rating agencies. If SMUD's credit rating was to be downgraded, there could be a step-down in SMUD's unsecured credit thresholds, and SMUD's counterparties would require additional collateral. If SMUD's credit rating was to decrease below investment grade, SMUD's unsecured credit thresholds would be reduced to zero, and counterparties to the derivative instruments would demand ongoing full collateralization on derivative instruments in net out of the money positions (see Note 2).

The counterparties' credit ratings at December 31, 2020 and 2019 are shown in the table below. The credit ratings listed are from S&P or Moody's.

	December 31, 2020	December 31, 2019
Counterparty Gas Contracts:		
Bank of Montreal	A+	A+
Barclays Bank PLC	A	A
Citigroup Inc.	BBB+	BBB+
EDF Trading Group	Baa2	Baa2
J.P. Morgan Ventures Energy Corp.	A-	A-
Merrill Lynch	A2	A3
Mitsui Bussan	A	N/A
Morgan Stanley Capital Group, Inc.	A+	BBB+
Nextera	A-	N/A
Royal Bank of Canada	AA-	N/A
Shell Trading Market Risk	A+	A
Interest Rate Contracts:		
Barclays Bank PLC	A	A
Goldman Sachs Capital Markets, L.P. (J. Aron)	BBB+	BBB+
Morgan Stanley Capital Services, Inc.	A+	A+

NOTE 10. LONG-TERM DEBT

SMUD's total long-term debt is presented below:

	December 31, 2020	December 31, 2019
	(thousands of dollars)	
Electric revenue bonds, 2.0%-6.32%, 2021-2050	$ 2,085,120	$ 1,778,040
Subordinated electric revenue bonds, 5.0%, 2021-2049	200,000	200,000
Total electric revenue bonds	2,285,120	1,978,040
Component unit project revenue bonds, 5.0%, 2021-2030	112,085	120,795
Gas and Commodity supply revenue bonds, index rates and 4.0%-5.0%, 2021-2049	721,550	738,225
Total long-term debt outstanding	3,118,755	2,837,060
Bond premiums - net	267,947	225,040
Total long-term debt	3,386,702	3,062,100
Less: amounts due within one year	(127,390)	(118,305)
Total long-term debt - net	$ 3,259,312	$ 2,943,795

The summarized activity of SMUD's long-term debt during 2020 is presented below:

	January 1, 2020	Additions	Defeasance Payments or Amortization	December 31, 2020	Amounts Due Within One Year
			(thousands of dollars)		
Electric revenue bonds	$ 1,778,040	$ 400,000	$ (92,920)	$ 2,085,120	$ 98,040
Subordinate electric revenue bonds	200,000	-0-	-0-	200,000	-0-
Component unit project revenue bonds	120,795	-0-	(8,710)	112,085	10,900
Gas and Commodity supply revenue bonds	738,225	-0-	(16,675)	721,550	18,450
Total	2,837,060	400,000	(118,305)	3,118,755	$ 127,390
Unamortized premiums - net	225,040	83,457	(40,550)	267,947	
Total long-term debt	$ 3,062,100	$ 483,457	$ (158,855)	$ 3,386,702	

The summarized activity of SMUD's long-term debt during 2019 is presented below:

	January 1, 2019	Additions	Defeasance Payments or Amortization	December 31, 2019	Amounts Due Within One Year
			(thousands of dollars)		
Electric revenue bonds	$ 1,673,590	$ 191,875	$ (87,425)	$ 1,778,040	$ 92,920
Subordinate electric revenue bonds	-0-	200,000	-0-	200,000	-0-
Component unit project revenue bonds	162,055	-0-	(41,260)	120,795	8,710
Gas and Commodity supply revenue bonds	772,785	-0-	(34,560)	738,225	16,675
Total	2,608,430	391,875	(163,245)	2,837,060	$ 118,305
Unamortized premiums - net	175,187	83,748	(33,895)	225,040	
Total long-term debt	$ 2,783,617	$ 475,623	$ (197,140)	$ 3,062,100	

At December 31, 2020 scheduled annual principal maturities and interest are as follows:

	Principal	Interest	Total
		(thousands of dollars)	
2021	$ 127,390	$ 152,881	$ 280,271
2022	135,115	146,723	281,838
2023	143,515	140,929	284,444
2024	143,310	130,519	273,829
2025	155,900	124,813	280,713
2026 – 2030 (combined)	677,550	498,136	1,175,686
2031 – 2035 (combined)	559,375	342,033	901,408
2036 – 2040 (combined)	466,645	198,044	664,689
2041 – 2045 (combined)	379,530	107,541	487,071
2046 – 2050 (combined)	330,425	36,830	367,255
Total requirements	$ 3,118,755	$ 1,878,449	$ 4,997,204

Interest in the preceding table includes interest requirements for fixed rate debt at their stated rates, variable rate debt covered by interest rate swaps at their fixed rate, and variable rate debt not covered by interest rate swaps using the debt interest rate of 70.0 percent of 1 month London Interbank Offered Rate (LIBOR) plus a fixed fee. The LIBOR rate is based on the rate in effect at December 31, 2020 for the issues. The 2019 Series A and 2019 Series B Put Bonds assume a 3.0 percent fixed rate coupon after mandatory remarketing. The 2018 NCEA Put Bonds assume a 4.0 percent fixed rate coupon after mandatory remarketing. Principal in the preceding table includes known principal payments and the amortization schedule for mandatory remarketing bonds.

The following bonds have been issued and are outstanding at December 31, 2020:

Date	Issue	Final Maturity	Interest Rate	Original Amount	Outstanding Amount
				(thousands of dollars)	
Electric Revenue Bonds					
06/15/1997	1997 Series K Bonds	07/01/2024	5.25% - 5.9%	$ 131,030	$ 72,620
05/15/2009	2009 Series V Bonds	05/15/2036	6.322%	200,000	200,000
07/29/2010	2010 Series W Bonds	05/15/2036	6.156%	250,000	250,000
10/04/2011	2011 Series X Bonds	08/15/2028	1.5% - 5.0%	325,550	156,770
05/31/2012	2012 Series Y Bonds	08/15/2033	3.0% - 5.0%	196,945	169,530
05/21/2013	2013 Series A Bonds	08/15/2041	3.75% - 5.0%	132,020	132,020
05/21/2013	2013 Series B Bonds	08/15/2033	3.0% - 5.0%	118,615	84,905
07/14/2016	2016 Series D Bonds	08/15/2028	2.0% - 5.0%	149,890	133,360
12/14/2017	2017 Series E Bonds	08/15/2028	5.0%	202,500	152,560
07/12/2018	2018 Series F Bonds	08/15/2028	5.0%	165,515	141,480
07/25/2019	2019 Series G Bonds	08/15/2041	2.375% - 5.0%	191,875	191,875
05/07/2020	2020 Series H Bonds	08/15/2050	4.0% - 5.0%	400,000	400,000
Subordinated Electric Revenue Bonds					
07/25/2019	2019 Series A Bonds	08/15/2049	5.0%	100,000	100,000
07/25/2019	2019 Series B Bonds	08/15/2049	5.0%	100,000	100,000
JPA Revenue Bonds					
06/03/2015	2015 SFA Bonds	07/01/2030	2.0% - 5.0%	193,335	112,085
05/31/2007	2007B NCGA#1 Bonds	07/01/2027	Index Rate	668,470	181,935
12/19/2018	2018 NCEA Bonds	07/01/2049	4.0% - 5.0%	539,615	539,615

2020 Bond Issuances. In May 2020, SMUD issued $400.0 million of 2020 Series H Revenue Bonds. The 2020 Series H Bonds have a fixed coupon rate of 4.0 percent to 5.0 percent and amortize from 2029 to 2050. Proceeds from the 2020 Series H Bonds were used to refund all outstanding commercial paper and reimburse SMUD for capital projects in 2018, 2019 and through February 2020.

2019 Bond Issuances. In July 2019, SMUD issued $191.9 million of 2019 Series G Revenue Bonds, $100.0 million of 2019 Series A Subordinated Revenue Bonds, and $100.0 million of 2019 Series B Subordinated Revenue Bonds. The 2019 Series G Bonds have a fixed coupon rate of 2.375 percent to 5.0 percent and amortize from 2029 to 2041. The 2019 Series A Bonds have a fixed interest coupon rate of 5.0 percent, amortized from 2041 to 2049, with a mandatory remarketing purchase in April 2023. The 2019 Series B Bonds have a fixed coupon interest rate of 5.0 percent, amortized from 2041 to 2049, with a mandatory remarketing purchase in April 2025. Proceeds from 2019 Series G Bonds, the 2019 Series A Bonds and the 2019 Series B Bonds were used to refund outstanding commercial paper.

Component Unit Bond Defeasances. In September 2019, CVFA defeased $5.4 million of 2009 Series Bonds maturing on July 2020, along with the accrued interest using CVFA's available funds. The corresponding amount was placed in an irrevocable trust which had a balance of $5.6 million at December 31, 2019. In addition, SCA defeased $12.9 million of 2009 Series Bonds maturing July 2020 and July 2021, along with the accrued interest using SCA's available funds and $7.9 million from SMUD. The corresponding amount was placed in an irrevocable trust which has a remaining balance of $6.9 million and $13.7 million as of December 31, 2020 and 2019, respectively. The defeasances resulted in an accounting loss of $0.8 million which is included in Interest on Debt in the Statements of Revenues, Expenses and Changes in Net Position.

Terms of Debt Indentures. Debt indentures contain a provision that in an event of default, the holders of the majority of the debt outstanding are entitled to declare the outstanding amounts due immediately.

Interest Rate Swap Agreements. A summary of SMUD's six interest rate swap agreements as of December 31, 2020 are as follows. The credit ratings listed are from S&P.

Notional Amount (thousands)	SMUD Pays	Fixed Rate	Floating Rate	Termination Date	Counterparty Credit Rating
$ 72,620	Variable	5.166%	SIFMA	07/01/24	BBB+
80,100	Fixed	2.894%	63% of 1 M LIBOR	08/15/28	A+
127,030	Fixed	1.099%	67% of 1M LIBOR	08/15/28	BBB+
157,785	Fixed	1.607%	SIFMA	08/15/33	A+
132,020	Fixed	0.7179%	70% of 1M LIBOR	08/15/41	A
75,680	Fixed	0.5543%	70% of 1M LIBOR	08/15/33	A

A summary of SMUD's four interest rate swap agreements as of December 31, 2019 are as follows:

Notional Amount (thousands)	SMUD Pays	Fixed Rate	Floating Rate	Termination Date	Counterparty Credit Rating
$ 88,470	Variable	5.166%	SIFMA	07/01/24	BBB+
85,625	Fixed	2.894%	63% of 1M LIBOR	08/15/28	A+
127,030	Fixed	1.099%	67% of 1M LIBOR	08/15/28	BBB+
157,785	Fixed	1.607%	SIFMA	08/15/33	A+

At December 31, 2020 and 2019, SMUD had a fixed-to-variable interest rate swap agreement with a notional amount of $72.6 million and $88.5 million, respectively, which is equivalent to the principal amount of SMUD's 1997 Series K Electric Revenue Bonds. Under this swap agreement, SMUD pays a variable rate equivalent to the Securities Industry and Financial Markets Association (SIFMA) Index (.09 percent and 1.61 percent at December 31, 2020 and 2019, respectively) and receives fixed rate payments of 5.166 percent as of December 31, 2020 and 2019. In connection with the swap agreement, SMUD has a put option agreement, also with a notional amount of $72.6 million and $88.5 million as of December 31, 2020 and 2019, respectively, which gives the counterparty the right to sell to SMUD, at par, either the 1997 Series K Bonds, or a portfolio of securities sufficient to defease the 1997 Series K Bonds. SMUD receives fixed rate payments of 0.01 percent and 0.162 percent as of December 31, 2020 and 2019, respectively, in connection with the put option agreement. The exercise of the option terminates the swap at no cost to SMUD. The term of both the swap and the put is equal to the maturity of the 1997 Series K Bonds.

At December 31, 2020 and 2019, SMUD had one variable-to-fixed interest rate swap agreement with a notional amount of $80.1 million and $85.6 million, respectively. This swap was originally entered into for the purpose of fixing the effective interest rate associated with certain of its subordinated bonds that were refunded during 2008. The notional value of the swap is amortized over the life of the swap agreement. SMUD can terminate the swap agreement at any time, with payment or receipt of the fair market value of the swap as of the date of termination. The obligations of SMUD under the swap agreement are not secured by a pledge of revenues of SMUD's electric system or any other property of SMUD.

Additionally, in June 2020, SMUD executed a variable-to-fixed interest rate swap agreement with Barclays Bank PLC with a notional amount of $132.0 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2013 Series A Bonds. The Barclays 2013 Series A swap becomes effective in July 2023. Also, in June 2020, SMUD

executed a variable-to-fixed interest rate swap agreement with Barclays Bank PLC with a notional amount of $75.7 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2013 Series B Bonds. The Barclays 2013 Series B swap becomes effective in July 2023. The notional values of the two swaps are amortized over the life of their respective swap agreements. SMUD can terminate both swap agreements at any time, with payment or receipt of the fair market value of the swaps as of the date of termination. The obligations of SMUD under the swap agreements are not secured by a pledge of revenues of SMUD's electric system or any other property of SMUD.

In December 2019, SMUD executed a variable-to-fixed interest rate swap agreement with J. Aron with a notional amount of $127.0 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2011 Series X Bonds. The J. Aron swap becomes effective in July 2021. Also, in December 2019, SMUD executed a variable-to-fixed interest rate swap agreement with Morgan Stanley Capital Services with a notional amount of $157.8 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2012 Series Y Bonds. The Morgan Stanley Capital Services swap becomes effective in July 2022. The notional values of the two swaps are amortized over the life of their respective swap agreements. SMUD can terminate both swap agreements at any time, with payment or receipt of the fair market value of the swaps as of the date of termination. Additionally, on August 15, 2026 and for the remaining life of the Morgan Stanley Capital Services swap associated with 2012 Series Y Bonds, the swap can be terminated at no cost to SMUD. The obligations of SMUD under the swap agreements are not secured by a pledge of revenues of SMUD's electric system or any other property of SMUD.

Component Unit Interest Rate Swap Agreements. NCGA had one interest rate swap agreement as of December 31, 2020, which is summarized as follows. The credit ratings listed are from S&P.

Notional Amount (thousands)	NCGA Pays	Fixed Rate	Floating Rate	Termination Date	Credit Support Provider Credit Rating
$ 181,935	Fixed	4.304%	67% of LIBOR + .72%	07/01/27	A+

NCGA had one interest rate swap agreement as of December 31, 2019, which are summarized as follows:

Notional Amount (thousands)	NCGA Pays	Fixed Rate	Floating Rate	Termination Date	Credit Support Provider Credit Rating
$ 198,610	Fixed	4.304%	67% of LIBOR + .72%	07/01/27	A+

At December 31, 2020 and 2019, NCGA had a variable-to-fixed interest rate swap agreement with a counterparty for the purpose of fixing the effective interest rate associated with the 2007 Series B Bonds. NCGA pays the counterparty a fixed rate on the notional amount and receives a floating rate equal to 67 percent of the three month LIBOR (0.23 percent and 1.91 percent at December 31, 2020 and 2019, respectively) plus an interest rate spread, as specified in the swap agreement. The total notional amount of the swap at December 31, 2020 and 2019 was $181.9 million and $198.6 million, respectively, and was equivalent to the outstanding principal balance on the NCGA Bonds. The swap is amortized over the life of the swap agreement in a manner corresponding to the principal repayment schedule of the NCGA Bonds. Early termination of the swap would occur upon termination of the prepaid agreement for any reason. Upon early termination, the swap would have no value to either party.

Subordinated Electric Revenue Bonds. Payment of and interest on the Subordinated Electric Revenue Bonds is subordinate to the payment of the principal and interest on SMUD's Electric Revenue Bonds.

Component Unit Bonds. The component units of SMUD have each issued bonds to finance their respective projects. The revenue stream to pay SFA bonds' debt service is provided by a "take-or-pay" power purchase agreement, and is therefore not dependent on the successful operation of the project. SMUD guarantees to make payments sufficient to pay principal and

interest and all other payments required to be made under SFA's indenture of trust. SFA is not required to repay SMUD for any amounts paid under this guarantee. The revenue stream to pay NCGA and NCEA bonds' debt service is provided by "take-and-pay" purchase agreements. Therefore, principal and interest associated with these bonds are paid solely from the revenues and receipts collected in connection with the operation of the project. Most operating revenues earned by NCGA and NCEA are collected from SMUD in connection with the sale of gas or electricity to SMUD. The ability for NCGA and NCEA to service debt is dependent on various parties (particularly MSCG, as gas supplier for NCGA and J. Aron, as commodity supplier for NCEA) meeting their contractual obligations.

Callable Bonds. SMUD has $488.8 million of Electric Revenue Bonds that are currently callable, all of which are fixed rate Build America Bonds debt. SMUD also has $492.5 million of bonds that become callable from 2021 through 2026, and these bonds can be called until maturity. SMUD also has a four month call period on the 2019 Series A and 2019 Series B Bonds in advance of their mandatory remarketing purchase date in 2023 and 2025, respectively.

Collateral. The principal and interest on SMUD's bonds are payable exclusively from, and are collateralized by a pledge of, the net revenues of SMUD's electric system. Neither the credit nor the taxing power of SMUD is pledged to the payment of the bonds and the general fund of SMUD is not liable for the payment thereof.

Covenants. SMUD's bond resolutions contain various covenants that include requirements to maintain minimum debt service coverage ratios, certain other financial ratios, stipulated minimum funding of revenue bond reserves, and various other requirements including a rate covenant to raise rates to maintain minimum debt service coverage.

SMUD has pledged future net electric revenues, component unit net project revenues, and net gas supply prepayment revenues to repay, in electric revenue, component unit project revenue, and gas supply prepayment revenue bonds issued from 1997 through 2020. Proceeds from the bonds provided financing for various capital improvement projects, component unit capital projects, and the prepayments of a twenty-year supply of natural gas and a thirty-year supply of commodity. The bonds are payable solely from the net revenues generated by SMUD's electrical sales, component unit project revenues, and gas supply prepayment revenues and are payable through 2050 at December 31, 2020.

GASB Statement No. 48, ***"Sales and Pledges of Receivables and Future Revenues and Intra-Entity Transfers of Assets and Future Revenues,"*** disclosures for pledged revenues are as follows:

	December 31,	
	2020	2019
	(thousands of dollars)	
Pledged future revenues	$ 3,118,755	$ 2,837,060
Principal and interest payments for the year ended	$ 262,291	$ 265,930
Total net revenues for the year ended	$ 632,572	$ 586,514
Total remaining principal and interest to be paid	$ 4,997,204	$ 4,469,891
Annual principal and interest payments as a percent of net revenues for the year ended	41%	45%

NOTE 11. COMMERCIAL PAPER NOTES

SMUD issues Commercial Paper Notes (Notes) to finance or reimburse capital expenditures. In February 2019, SMUD expanded its commercial paper program from $288.8 million to $400.0 million. At December 31, 2020, there were no Notes outstanding. At December 31, 2019, Notes outstanding totaled $50.0 million. The average interest rate for the Notes outstanding at December 31, 2019 was 1.02 percent and the average term was 90 days. SMUD's commercial paper program is backed by $409.9 million in letter of credit agreements (LOCs) with three separate banks. The LOCs are calculated as the sum of the maximum principal amount of the Notes plus interest thereon at a maximum rate of ten percent per annum for a period of 90 days calculated on the basis of a year of 365 days and the actual number of days elapsed. There have not been any term

advances under the LOCs. The LOCs contain a provision that in an event of default, the outstanding amounts may become immediately due.

The summarized activity of SMUD's Notes during 2020 and 2019 is presented below:

	Balance at Beginning of Year	Additions	Reductions	Balance at End of Year
	(thousands of dollars)			
December 31, 2020	$ 50,000	$ -0-	$ (50,000)	$ -0-
December 31, 2019	$ 288,750	$ 161,250	$ (400,000)	$ 50,000

NOTE 12. FAIR VALUE MEASUREMENT

GASB No. 72 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). SMUD utilizes market data or assumptions that market participants would use in pricing the asset or liability, including assumptions about risk and the risks inherent in the inputs to the valuation technique.

GASB No. 72 establishes a fair value hierarchy that prioritizes the inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy defined by GASB No. 72 are as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 inputs are inputs other than quoted prices included in Level 1 that are observable for an asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs that reflect SMUD's own assumptions about factors that market participants would use in pricing the asset or liability.

The valuation methods of the fair value measurements are as follows:

- LAIF – uses the fair value of the pool's share price multiplied by the number of shares held. This pool can include a variety of investments such as U.S. government securities, federal agency securities, negotiable certificates of deposit, bankers' acceptances, commercial paper, corporate bonds, bank notes, and other investments. The fair values of the securities are generally based on quoted and/or observable market prices.
- U.S. Government Agency Obligations – uses a market based approach which considers yield, price of comparable securities, coupon rate, maturity, credit quality and dealer-provided prices.
- U.S. Treasury Obligations – uses a market approach based on institutional bond quotes. Evaluations are based on various market and industry inputs.
- Corporate Notes – uses a market based approach. Evaluations are based on various market and industry inputs.
- Municipal Bonds – uses a market approach based on institutional bond quotes. Evaluations are based on various market and industry inputs.
- Investment Derivative Instruments:
  - Interest rate swap agreements – uses the present value technique. The fair value of the interest rate swap agreements are calculated by discounting the expected cash flows. The cash flows and discount rates are estimated based on a 1-month LIBOR forward curve from Bloomberg, and assuming SIFMA is equal to 70.0 percent of 1-month LIBOR.

- Gas related agreements – uses the market approach based on monthly quoted prices from an independent external pricing service. The fair values for natural gas and electricity derivative financial instruments are calculated based on prevailing market quotes in active markets (i.e. Henry Hub and So Cal) where identical contracts are available.

The following tables identify the level within the fair value hierarchy that SMUD's financial assets and liabilities were accounted for on a recurring basis as of December 31, 2020 and 2019, respectively. As required by GASB No. 72, financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. SMUD's assessment of the significance of a particular input to the fair value measurement requires judgment, and may affect the valuation of the fair value of liabilities and their placement within the fair value hierarchy levels.

Recurring Fair Value Measures	At fair value as of December 31, 2020		
	Level 1	Level 2	Total
	(thousands of dollars)		
Investments, including cash and cash equivalents:			
LAIF	$ -0-	$ 512,682	$ 512,682
U.S. Government Agency Obligations	-0-	85,636	85,636
U.S. Treasury Obligations	20,248	-0-	20,248
Corporate Notes	-0-	118,015	118,015
Municipal Bonds	-0-	63,647	63,647
Total Investments, including cash and cash equivalents	$ 20,248	$ 779,980	$ 800,228
Investment Derivative Instrument Assets:			
Gas related agreements	$ 33	$ -0-	$ 33
Total Investment Derivative Instrument Assets	$ 33	$ -0-	$ 33
Hedging Derivative Instrument Assets:			
Gas related agreements	$ 5,445	$ -0-	$ 5,445
Interest rate swap agreements	-0-	8,074	8,074
Total Hedging Derivative Instrument Assets	$ 5,445	$ 8,074	$ 13,519
Investment Derivative Instrument Liabilities:			
Gas related agreements	$ 272	$ -0-	$ 272
Interest rate swap agreements	-0-	9,032	9,032
Total Investment Derivative Instrument Liabilities	$ 272	$ 9,032	$ 9,304
Hedging Derivative Instrument Liabilities:			
Gas related agreements	$ 40,461	$ -0-	$ 40,461
Interest rate swap agreements	-0-	11,119	11,119
Total Hedging Derivative Instrument Liabilities	$ 40,461	$ 11,119	$ 51,580

Recurring Fair Value Measures	At fair value as of December 31, 2019		
	Level 1	Level 2	Total
	(thousands of dollars)		
Investments, including cash and cash equivalents:			
LAIF	$ -0-	$ 104,742	$ 104,742
U.S. Government Agency Obligations	-0-	178,167	178,167
U.S. Treasury Obligations	125,283	-0-	125,283
Corporate Notes	-0-	121,199	121,199
Municipal Bonds	-0-	48,076	48,076
Total Investments, including cash and cash equivalents	$ 125,283	$ 452,184	$ 577,467
Investment Derivative Instrument Assets:			
Gas related agreements	$ 488	$ -0-	$ 488
Total Investment Derivative Instrument Assets	$ 488	$ -0-	$ 488
Hedging Derivative Instrument Assets:			
Gas related agreements	$ 7,247	$ -0-	$ 7,247
Interest rate swap agreements	-0-	9,471	9,471
Total Hedging Derivative Instrument Assets	$ 7,247	$ 9,471	$ 16,718
Investment Derivative Instrument Liabilities:			
Gas related agreements	$ 3,122	$ -0-	$ 3,122
Interest rate swap agreements	-0-	7,882	7,882
Total Investment Derivative Instrument Liabilities	$ 3,122	$ 7,882	$ 11,004
Hedging Derivative Instrument Liabilities:			
Gas related agreements	$ 83,074	$ -0-	$ 83,074
Interest rate swap agreements	-0-	2,120	2,120
Total Hedging Derivative Instrument Liabilities	$ 83,074	$ 2,120	$ 85,194

NOTE 13. ACCRUED DECOMMISSIONING LIABILITY

Asset Retirement Obligations (ARO). SMUD implemented GASB No. 83 in 2019. SMUD recognizes AROs for its Rancho Seco nuclear power plant facility and the CVFA power plant facility. This statement requires measurement of the ARO be based on the best estimate of the current value of outlays expected to be incurred. The best estimate should be determined using all available evidence and requires probability weighting of potential outcomes when sufficient evidence is available. This statement also requires the current value be adjusted for the effects of the general inflation or deflation and an evaluation of relevant factors that may significantly change the estimated asset retirement outlays at least annually.

Rancho Seco Nuclear Power Plant. With the completion of nuclear decommissioning of the former 913 MW nuclear power plant, and the subsequent termination of the 10 Code of Federal Regulations (CFR) 50 license by the Nuclear Regulatory Commission (NRC) effective August 31, 2018, all remaining Rancho Seco decommissioning liability relates to the Independent Spent Fuel Storage Installation (ISFSI) licensed under 10 CFR Part 72. Nuclear decommissioning is the process of safely removing nuclear facilities from service and reducing residual radioactivity to a level that permits termination of the NRC licenses and release of the property for unrestricted use. Final decommissioning of the ISFSI will occur after the spent nuclear fuel (SNF) and Greater Than Class C (GTCC) radioactive waste are removed from the site and SMUD demonstrates that the site is suitable for release in accordance with release criteria specified in 10 CFR 20, Subpart E and an approved License Termination Plan.

The Department of Energy (DOE), under the Nuclear Waste Policy Act (NWPA) of 1982 as amended, is responsible for permanent disposal of spent nuclear fuel and GTCC radioactive waste, which are currently stored in the Part 72 licensed ISFSI. SMUD has a contract with the DOE for the removal and disposal of SNF and GTCC waste. All SMUD's SNF and GTCC waste are currently stored in sealed canisters in the ISFSI. However, the date when DOE will remove the fuel and GTCC waste is uncertain. In 2010, the DOE formally withdrew the application for licensing of Yucca Mountain as a high-

level waste repository. While the court- ordered reinstatement of NRC license review activities of Yucca Mountain have yielded generally positive results, Yucca Mountain remains speculative as a disposal option for SMUD's used nuclear fuel. The DOE also announced in January 2010 the creation of a Blue-Ribbon Commission to study alternatives for developing a repository for the nation's used nuclear fuel. The Commission provided a final report on alternatives in January 2012. The DOE evaluated the recommendations and published the report "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste" in January 2013.

The next phase of the process will be for Congress and the President of the United States to consider the recommendations and enact legislation to implement the recommendations. At this time, two license applications have been submitted to the NRC for the construction and operation of Consolidated Interim Storage Facility(s) that would store SNF and GTCC waste on an interim basis. These applications are currently under review by the NRC. Should the NRC license one or both facilities, Congress will have to modify the NWPA to allow for its use. In May 2018, the U.S. House of Representatives passed H.R. 3053 – the Nuclear Waste Policy Amendments Act, which was co-sponsored by Representative Doris Matsui and 109 other members of Congress. This bill includes a provision to allow a Consolidated Interim Storage Facility to store fuel from permanently shut down sites like Rancho Seco. The U.S. Senate did not act on the bill. Until legislation is passed which includes a significant step towards removal of the used nuclear fuel at the Rancho Seco facility, SMUD is committed to the safe and secure storage of its SNF and GTCC waste under its Part 72 license until DOE fulfills its obligation to dispose of this material in accordance with NWPA. In support of this commitment, SMUD submitted its ISFSI license renewal application to the NRC in March of 2018. The NRC issued Renewed Licensee No. SNM-2510 on March 9, 2020. This renewed license authorizes the continued storage of SMUD's SNF and GTCC until June 30, 2060.

The Rancho Seco decommissioning liability is based on an internal study of the remaining decommissioning costs, which consist of: 1) annual spent fuel management costs, 2) transportation of the canisters in the ISFSI and 3) termination of the Part 72 license. The largest part of the decommissioning estimate is the annual spent fuel management costs; next year's annual budget is used for the estimate. The other costs were estimated based on prior experience and studies and prepared by management representatives of the nuclear power plant. The costs in the estimate were in 2019 dollars. An employment cost index was used to adjust the other costs portion of the obligation for inflation in 2020. Probability weighting was assigned for two scenarios: 1) spent nuclear fuel will be removed from the site by 2028 and 2) spent nuclear fuel will be removed from the site by 2035. SMUD uses its Trust Fund (see Note 2) to demonstrate financial assurance to the NRC that there are enough funds to complete the termination of the Part 72 license; the balance of the Trust Fund at December 31, 2020 is $8.9 million.

CVFA Power Plant. CVFA's ground lease agreement with the Sacramento Regional County Sanitation District requires CVFA to restore the premises to its original condition upon termination of the contract. A new study to determine the current value of the asset retirement obligation was conducted by an external contractor who specializes in decommissioning studies. The expected costs and scope of work were based on the most recent cost estimate and assumes a contractor will be responsible for the work and that decommissioning would take place between 2025 and 2027. The estimated costs were in 2018 dollars. The result of this study was used to determine the new balance of the ARO and the deferred outflows at January 1, 2018, in order to account for the 2018 activity. CVFA used the annual All Urban Consumer Price Index to adjust this obligation for inflation in 2020. The remaining useful life of the Agency's assets is five years at December 31, 2020.

The current portion of the Accrued Decommissioning liability represents SMUD's estimate of actual expenditures for Rancho Seco in the next year, as set forth in the annual budget.

At December 31, 2020 and 2019, SMUD's Accrued Decommissioning balance in the Statements of Net Position was $99.5 million and $91.7 million, respectively.

NOTE 14. PENSION PLANS

Summary of Significant Accounting Policies. For purposes of measuring net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the pension plans and additions to/deductions from the fiduciary net position have been determined on the same basis as they are reported by the California Public Employees' Retirement System (PERS) Financial Office. For this purpose, benefit payments (including refunds of employee contributions) are recognized when currently due and payable in accordance with the benefit terms. Investments are reported at fair value.

Plan Description and Benefits Provided. SMUD participates in PERS, an agent multiple-employer public employee defined benefit pension plan (PERS Plan). PERS provides retirement and disability benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries. PERS acts as a common investment and administrative agent for participating public entities within the State. Benefit provisions and all other requirements are established by State statute and SMUD policies. The pension plan provides retirement benefits, survivor benefits, and death and disability benefits based upon employee's years of credited service, age, and final compensation. A full description of the pension plan regarding number of employees covered, benefit provision, assumptions (for funding, but not accounting purposes), and membership information are included in the annual actuarial valuation reports as of June 30, 2019 and June 30, 2018.

During 2019, SMUD also provided a supplemental benefit in lieu of PERS' Single Highest Year (SHY) for certain represented employees hired before January 1, 2013. For these employees, if the present value of pension allowance under the PERS Plan with the employer paid member contributions (EPMC) benefit enhancement program is less than the present value of what the employee would have received under the PERS Plan benefit with SHY earnings but no EPMC, SMUD pays a lump sum equivalent to the difference. There are no assets accumulated in a trust for SHY. At December 31, 2020 SMUD no longer had an obligation to provide the supplemental benefit in lieu of PERS' SHY.

GASB No. 68 and GASB No. 73 require that the reported results must pertain to liability and asset information within certain defined timeframes. The following timeframes are used for the year ended:

PERS Plan	December 31,	
	2020	2019
Valuation date	June 30, 2019	June 30, 2018
Measurement date	June 30, 2020	June 30, 2019

SHY	December 31,	
	2020	2019
Valuation date and Measurement date	N/A	June 30, 2019

Employees Covered by Benefit Terms. The following employees were covered by the benefit terms for the year ended:

PERS Plan	December 31,	
	2020	2019
Inactive employees or beneficiaries currently receiving benefit payments	3,003	2,936
Inactive employees entitled to but not yet receiving benefit payments	979	946
Active employees	2,265	2,260
Total employees covered by benefit terms	6,247	6,142

SHY	December 31, 2020	December 31, 2019
Inactive employees or beneficiaries currently receiving benefit payments	-0-	-0-
Inactive employees entitled to but not yet receiving benefit payments	-0-	-0-
Active employees	-0-	215
Total employees covered by benefit terms	-0-	215

Contributions. Section 20814(c) of the California Public Employees' Retirement Law requires that the employer contribution rates for all public employers be determined on an annual basis by the actuary and shall be effective on the July 1 following notice of a change in the rate. The total plan contributions are determined through PERS' annual actuarial valuation process. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. The employer is required to contribute the difference between the actuarially determined rate and the contribution rate of employees. For the PERS fiscal years ended June 30, 2020 and 2019, the average active employee contribution rate is 6.6 percent and 6.7 percent of annual pay, respectively. For the PERS fiscal year ended June 30, 2020, the employer's contribution rate is 8.7 percent of annual payroll plus $31.1 million for the unfunded accrued liability contribution. For the PERS fiscal year ended June 30, 2019, the employer's contribution rate is 8.2 percent of annual payroll plus $29.4 million for the unfunded accrued liability contribution. Employer contribution rates may change if plan contracts are amended. For the fiscal years ended June 30, 2020 and 2019, SMUD made contributions recognized by the PERS Plan in the amount of $98.3 million and $69.1 million, respectively.

Net Pension Liability (NPL). SMUD's NPL at December 31, 2020 and 2019 was measured at June 30, 2020 and 2019, respectively. The total pension liability used to calculate the NPL was determined by actuarial valuations as of June 30, 2019 and 2018 rolled forward using generally accepted actuarial procedures to the June 30, 2020 and 2019 measurement dates for the PERS Plan and actuarial valuations as of June 30, 2019 for SHY.

Actuarial Methods and Assumptions. The actuarial methods and assumptions used for the December 31, 2020 and December 31, 2019 total pension liabilities are as follows for the PERS Plan:

Actuarial Cost Method	Entry age normal
Discount Rate	7.15%
Inflation	2.5%
Salary Increases	Varies by entry age and service
Mortality Rate Table	The mortality table used was developed based on PERS' specific data. The probabilities of mortality are based on the 2017 PERS' Experience Study for the period from 1997 to 2015. Pre-retirement and Post-retirement mortality rates include 15 years of projected mortality improvement using the Society of Actuaries Scale 90% of scale MP-2016.
Post Retirement Benefit Increase	For 2020 and 2019, the lesser of contract COLA or 2.5% until Purchasing Power Protection Allowance floor on purchasing power applies, 2.5% thereafter

The actuarial methods and assumptions used for the December 31, 2019 total pension liabilities are as follows for SHY:

Actuarial Cost Method	Entry age normal
Discount Rate	Bond Buyer 20 Index - 3.50% (2019)
Inflation	2.5% (2019)
Salary Increases	Aggregate – 2.75% (2019); merit - PERS 1997-2015 Experience Study
Mortality, Retirement, Disability, Termination	PERS 1997-2015 Experience Study
Mortality Improvement	Mortality projected 15 years with 90% of Scale MP-2016

Discount Rates. For the PERS Plan, the discount rate used to measure the total pension liability for the years ended December 31, 2020 and 2019 was 7.15 percent for both years. For the year ended December 31, 2020, the projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current member contribution rates and that contributions from employers will be made at statutorily required rates, actuarially determined. Based on those assumptions, the PERS Plan was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. Using historical returns of all the funds' asset classes, expected compound (geometric) returns were calculated over the short-term (first 10 years) and the long-term (11-60 years) using a building-block approach.

The expected real rates of return by asset class used for December 31, 2020 are as follows:

Asset Class	Current Target Allocation	Real Return Years 1-10	Real Return Years 11+
Global Equity	50.0%	4.80%	5.98%
Global Fixed Income	28.0%	1.00%	2.62%
Inflation Assets	0%	0.77%	1.81%
Private Equity	8.0%	6.30%	7.23%
Real Estate	13.0%	3.75%	4.93%
Liquidity	1.0%	0%	(0.92%)

The expected real rates of return by asset class used for December 31, 2019 are as follows:

Asset Class	Current Target Allocation	Real Return Years 1-10	Real Return Years 11+
Global Equity	50.0%	4.80%	5.98%
Global Fixed Income	28.0%	1.00%	2.62%
Inflation Assets	0%	0.77%	1.81%
Private Equity	8.0%	6.30%	7.23%
Real Estate	13.0%	3.75%	4.93%
Liquidity	1.0%	0%	(0.92%)

Changes in the NPL. The following table shows the changes in NPL recognized over the year ended December 31, 2020:

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2020	$ 2,332,097	$ 1,864,450	$ 467,647
Changes recognized for the measurement period:			
Service cost	38,901	-0-	38,901
Interest	164,044	-0-	164,044
Changes in assumptions	-0-	-0-	-0-
Differences between expected and actual experience	9,981	-0-	9,981
Contributions - employer	-0-	98,344	(98,344)
Contributions - employee	-0-	18,095	(18,095)
Net investment income	-0-	92,534	(92,534)
Benefit payments	(125,581)	(125,581)	-0-
Administrative expense	-0-	(2,628)	2,628
Other – GASB 73 pension liability write off	(4,408)	-0-	(4,408)
Net changes	82,937	80,764	2,173
Balances at December 31, 2020	$ 2,415,034	$ 1,945,214	$ 469,820

The following table shows the changes in NPL recognized over the year ended December 31, 2019:

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2019	$ 2,234,911	$ 1,780,867	$ 454,044
Changes recognized for the measurement period:			
Service cost	38,264	-0-	38,264
Interest	158,160	-0-	158,160
Changes in assumptions	(194)	-0-	(194)
Differences between expected and actual experience	18,561	-0-	18,561
Contributions - employer	-0-	69,119	(69,119)
Contributions - employee	-0-	17,411	(17,411)
Net investment income	-0-	115,867	(115,867)
Benefit payments	(117,605)	(117,548)	(57)
Administrative expense	-0-	(1,270)	1,270
Other	-0-	4	(4)
Net changes	97,186	83,583	13,603
Balances at December 31, 2019	$ 2,332,097	$ 1,864,450	$ 467,647

Sensitivity of the NPL to Changes in the Discount Rate. The following presents the NPL of the Plan as of the measurement date, calculated using the current discount rate, as well as what the net pension liability would be if it were calculated using a discount rate that is 1 percentage-point lower or 1 percentage-point higher than the current discount rate:

PERS Plan	1% Decrease (6.15%)	Current Discount Rate (7.15%)	1% Increase (8.15%)
		(thousands of dollars)	
Plan's NPL, December 31, 2020	$ 777,072	$ 469,820	$ 214,331
Plan's NPL, December 31, 2019	761,785	463,239	215,186

SHY	1% Decrease (2.50%)	Current Discount Rate (3.50%)	1% Increase (4.50%)
		(thousands of dollars)	
Plan's NPL, December 31, 2019	$ 5,375	$ 4,408	$ 3,642

Pension Plan Fiduciary Net Position. Detailed information about the PERS Plan's fiduciary net position is available in the separately issued PERS Plan financial statements. This report, the audited financial statements, and other reports can be obtained at the PERS' website at www.calpers.ca.gov.

Pension Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions. For the years ended December 31, 2020 and 2019, SMUD recognized pension expense of $79.7 million and $91.8 million, respectively.

At December 31, 2020 and 2019, SMUD reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	December 31, 2020	2019
	(thousands of dollars)	
Deferred outflows of resources:		
Changes of assumptions	$ -0-	$ 23,961
Differences between expected and actual experience	17,222	14,788
Differences between projected and actual earnings on pension plan investments	16,985	-0-
Employer's contributions to the Plan subsequent to the measurement of total pension liability	142,133	67,119
Total deferred outflows of resources	$ 176,340	$ 105,868
Deferred inflows of resources:		
Changes of assumptions	$ 14,212	$ 30,825
Differences between expected and actual experience	-0-	7,239
Differences between projected and actual earnings on pension plan investments	-0-	7,932
Total deferred inflows of resources	$ 14,212	$ 45,996

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended December 31:	
2021	$ (13,622)
2022	13,040
2023	12,545
2024	8,032
2025	-0-
Thereafter	-0-

Other Plans. SMUD provides its employees with two cash deferred compensation plans: one pursuant to Internal Revenue Code (IRC) Section 401(k) (401(k) Plan) and one pursuant to IRC Section 457 (457 Plan) (collectively, the Plans). The Plans are contributory plans in which SMUD's employees contribute the funds. Each of SMUD's eligible full-time or permanent part-time employees may participate in either or both Plans, and amounts contributed are vested immediately. Such funds are held by a Trustee in trust for the employees upon retirement from SMUD service and, accordingly, are not subject to the general claims of SMUD's creditors. SMUD is responsible for ensuring compliance with IRC requirements concerning the Plans and has the fiduciary duty of reasonable care in the selection of investment alternatives, but neither SMUD, nor its Board or officers have any liability for market variations in the Plans' asset values. SMUD employees are responsible for determining how their funds are to be invested and pay all ongoing fees related to the Plans. The Plans are currently not subject to discrimination testing, nor the requirements of the Employee Retirement Income Security Act of 1974. SMUD employees participating in the Plans are allowed to contribute a portion of their gross income not to exceed the annual dollar limits prescribed by the IRC.

SMUD makes annual contributions to the 401(k) Plan on behalf of certain employees pursuant to a memorandum of understanding with both of its collective bargaining units. SMUD also matches non-represented employee contributions to the 401(k) Plan up to a set amount. SMUD made contributions into the 401(k) Plan of $5.8 million in 2020 and $5.4 million in 2019. SMUD does not match employee contributions, nor make contributions on behalf of its employees to the 457 Plan. Participating employees made contributions into both Plans totaling $28.8 million in 2020 and $24.8 million in 2019.

NOTE 15. OTHER POSTEMPLOYMENT BENEFITS

Summary of Significant Accounting Policies. For purposes of measuring the net OPEB asset or liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the OPEB plan and additions to/deductions from the OPEB plan's fiduciary net position have been determined on the same basis as they are reported by the California Employers' Retiree Benefit Trust (CERBT). For this purpose, SMUD recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Plan Description and Benefits Provided. SMUD is a member of CERBT. The CERBT Fund is an IRC Section 115 Trust set up for the purpose of receiving employer contributions to prefund OPEB for retirees and their beneficiaries. CERBT is an agent multiple-employer defined benefit OPEB plan (OPEB Plan) administered by PERS. The OPEB Plan provides medical, dental and long-term disability benefits for retirees and their beneficiaries, in accordance with SMUD policy and negotiated agreements with employee representation groups. The benefit, benefit levels, retiree contributions and employer contributions are governed by SMUD and can be amended by SMUD through its personnel manual and union contracts. Any changes to these benefits would be approved by SMUD's Board and unions.

Employees Covered by Benefit Terms. The following employees were covered by the benefit terms:

	December 31,	
	2020	2019
Inactive employees or beneficiaries currently receiving benefit payments	2,286	2,244
Inactive employees entitled to but not yet receiving benefit payments	46	44
Active employees	2,136	2,186
Total employees covered by benefit terms	4,468	4,474

Contributions. OPEB contributions are elective and not required. In December 2018, SMUD split its CERBT assets across two asset strategies to better align trust assets with liabilities (Strategy 1 for active employees and retirements after June 30, 2018 and Strategy 3 for retirements before July 1, 2018). SMUD contributes the normal cost to the CERBT, but annually receives reimbursement for cash benefit payments from the CERBT. SMUD may also elect to put additional contributions into the OPEB Plan. For the OPEB Plan's fiscal years ended June 30, 2020 and 2019, SMUD made contributions recognized by the OPEB Plan in the amounts of $13.3 million and $14.0 million, respectively.

Net OPEB Asset (NOA) or Liability (NOL). SMUD's NOA at December 31, 2020 and NOL at December 31, 2019 was measured as of June 30, 2020 and 2019, respectively, and the total OPEB liability used to calculate the NOA and NOL was determined by actuarial valuations as of those dates.

Actuarial Methods and Assumptions. The actuarial methods and assumptions used for the December 31, 2020 and December 31, 2019 total OPEB liabilities are as follows:

Discount Rate	6.37% (2020). Blended discount rate based on projected benefit streams expected to be paid from each Strategy. 6.40% (2019)
Inflation	2.75%
Salary Increases	Aggregate - 3.0%; merit - PERS 1997-2015 Experience Study
Mortality, Retirement, Disability, Termination	PERS 1997-2015 Experience Study
Mortality Improvement	Mortality projected fully generational with Scale MP-19 (2020), MP-18 (2019)
Healthcare Cost Trend Rates	Non-medicare: 7.0% for 2022, decreasing to an ultimate rate of 4.0% in 2076 (2020); 7.25% for 2021, decreasing to an ultimate rate of 4.0% in 2076 (2019) Kaiser Medicare: 5.0% for 2022, decreasing to an ultimate rate of 4.0% in 2076 (2020) Medicare: 6.1% for 2022, decreasing to an ultimate rate of 4.0% in 2076 (2020); 6.3% for 2021, decreasing to an ultimate rate of 4.0% in 2076 (2019)

Discount Rates. For the OPEB Plan, the discount rate used to measure the total OPEB liability was 6.37 percent and 6.40 percent for the years ended December 31, 2020 and 2019, respectively. This rate is a blended discount rate based on projected benefit streams expected to be paid from Strategies 1 and 3. The projection of cash flows used to determine the discount rate assumed that SMUD contributes the full normal cost to the trust and only takes reimbursement from the trust of the cash benefit payments. Because the implied subsidy benefit payments have a larger present value than the payments toward the unfunded accrued liability, there should be sufficient plan assets to pay all benefits from the trust. Based on those assumptions, the OPEB Plan's fiduciary net position was projected to be available to make all projected OPEB payments for current active and inactive employees. The long-term expected rate of return of 6.75 percent for Strategy 1 and 5.50 percent for Strategy 3 was applied to all periods of projected benefit payments to determine the total OPEB liability for the years ended December 31, 2020 and 2019.

The expected real rates of return by asset class used and presented as geometric means for December 31, 2020 are as follows:

Asset Class	Target Allocation CERBT Strategy 1	Expected Real Rate of Return
Global Equity	59%	4.82%
Fixed Income	25%	1.47%
TIPS	5%	1.29%
Commodities	3%	0.84%
REITS	8%	3.76%

Asset Class	Target Allocation CERBT Strategy 3	Expected Real Rate of Return
Global Equity	22%	4.82%
Fixed Income	49%	1.47%
TIPS	16%	1.29%
Commodities	5%	0.84%
REITS	8%	3.76%

The expected real rates of return by asset class used and presented as geometric means for December 31, 2019 are as follows:

Asset Class	Target Allocation CERBT Strategy 1	Expected Real Rate of Return
Global Equity	59%	4.82%
Fixed Income	25%	1.47%
TIPS	5%	1.29%
Commodities	3%	0.84%
REITS	8%	3.76%

Asset Class	Target Allocation CERBT Strategy 3	Expected Real Rate of Return
Global Equity	22%	4.82%
Fixed Income	49%	1.47%
TIPS	16%	1.29%
Commodities	5%	0.84%
REITS	8%	3.76%

Changes in the NOA/NOL. The following table shows the changes in NOA/NOL recognized over the year ended December 31, 2020:

	Total OPEB Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net OPEB (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2020	$ 419,483	$ 387,272	$ 32,211
Changes recognized for the measurement period:			
Service cost	8,903	-0-	8,903
Interest	26,653	-0-	26,653
Changes in assumptions	(11,453)	-0-	(11,453)
Differences between expected and actual experience	(23,529)	-0-	(23,529)
Contributions - employer	-0-	13,299	(13,299)
Net investment income	-0-	20,447	(20,447)
Benefit payments	(23,848)	(23,848)	-0-
Administrative expense	-0-	(191)	191
Net changes	(23,274)	9,707	(32,981)
Balances at December 31, 2020	$ 396,209	$ 396,979	$ (770)

The following table shows the changes in NPL recognized over the year ended December 31, 2019:

	Total OPEB Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net OPEB Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2019	$ 399,845	$ 377,779	$ 22,066
Changes recognized for the measurement period:			
Service cost	8,946	-0-	8,946
Interest	26,766	-0-	26,766
Changes in assumptions	15,332	-0-	15,332
Differences between expected and actual experience	(6,885)	-0-	(6,885)
Contributions - employer	-0-	13,963	(13,963)
Net investment income	-0-	20,132	(20,132)
Benefit payments	(24,521)	(24,521)	-0-
Administrative expense	-0-	(81)	81
Net changes	19,638	9,493	10,145
Balances at December 31, 2019	$ 419,483	$ 387,272	$ 32,211

Sensitivity of the NOA/NOL to Changes in the Discount Rate. The following presents the NOA/NOL of SMUD as of the measurement date, calculated using the current discount rate, as well as what the NOA/NOL would be if it were calculated using a discount rate that is 1 percentage-point lower or 1 percentage-point higher than the current discount rate:

	1% Decrease (5.37%)	Current Discount Rate (6.37%)	1% Increase (7.37%)
		(thousands of dollars)	
NOL/(NOA), December 31, 2020	$ 48,397	$ (770)	$ (41,660)

	1% Decrease (5.40%)	Current Discount Rate (6.40%)	1% Increase (7.40%)
		(thousands of dollars)	
NOL/(NOA), December 31, 2019	$ 85,866	$ 32,211	$ (12,249)

Sensitivity of the NOA/NOL to Changes in the Healthcare Cost Trend Rates. The following presents the NOA/NOL of SMUD as of the measurement date, calculated using the current healthcare cost trend rate, as well as what the NOA/NOL would be if it were calculated using a healthcare cost trend rate that is 1 percentage-point lower or 1 percentage-point higher than the current healthcare trend rate (see assumptions above for healthcare trend rate):

	1% Decrease	Current Healthcare Trend Rate	1% Increase
		(thousands of dollars)	
NOL/(NOA), December 31, 2020	$ (45,574)	$ (770)	$ 54,091
NOL/(NOA), December 31, 2019	$ (16,289)	$ 32,211	$ 91,772

OPEB Plan Fiduciary Net Position. Detailed information about the OPEB Plan's fiduciary net position is available in the separately issued OPEB Plan's report. This report can be obtained at the PERS' website at www.calpers.ca.gov.

OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB. For the years ended December 31, 2020 and 2019, SMUD recognized OPEB expense of ($3.2) million and ($0.2) million, respectively.

At December 31, 2020 and 2019, SMUD reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	December 31, 2020	December 31, 2019
	(thousands of dollars)	
Deferred outflows of resources:		
Changes of assumptions	$ 11,448	$ 14,644
Differences between projected and actual earnings on OPEB plan investments	2,741	-0-
Employer's contributions to the OPEB Plan subsequent to the measurement of total OPEB liability	11,947	12,014
Total deferred outflows of resources	$ 26,136	$ 26,658
Deferred inflows of resources:		
Changes of assumptions	$ 9,479	$ -0-
Differences between expected and actual experience	49,375	42,593
Differences between projected and actual earnings on OPEB plan investments	-0-	266
Total deferred inflows of resources	$ 58,854	$ 42,859

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year ended December 31:	
2021	$ (15,828)
2022	(14,669)
2023	(5,141)
2024	(4,202)
2025	(4,825)
Thereafter	-0-

NOTE 16. INSURANCE PROGRAMS AND CLAIMS

SMUD is exposed to various risks of loss related to torts, theft of and destruction to assets, errors and omissions, cyber activities, natural disasters, employee injuries and illnesses, and others. SMUD carries commercial insurance coverage to cover most claims in excess of specific dollar thresholds, which range from $5.0 thousand to $2.5 million per claim. General liability limits are $140.0 million, excess of a $5.0 million self-insured retention. As of December 31, 2020, wildfire liability limits are $250.0 million ($173.0 million commercial insurance plus $77.0 million self-insured retention). As of December 31, 2019, SMUD had $186.5 million commercial coverage plus $63.5 million self-insured retention within a $250.0 million total program value (i.e. this year's program has the same commercial coverage protection but a higher self-insured portion due to the continuing decrease in commercial capacity within the wildfire market). SMUD's property insurance coverage is based on the replacement value of the asset. There have been no significant reductions in insurance coverage, and in some cases, certain coverages increased. In 2020, 2019 and 2018, the insurance policies in effect have adequately covered all settlements of the claims against SMUD. No claims have exceeded the limits of property or liability insurance in any of the past three years.

The claims liability is included as a component of Self Insurance and Other in the Statements of Net Position.

SMUD's total claims liability, comprising claims received and claims incurred but not reported, at December 31, 2020, 2019 and 2018 is presented below:

	2020	2019	2018
		(thousands of dollars)	
Workers' compensation claims	$ 9,166	$ 10,005	$ 10,993
General and auto claims	3,766	3,867	3,523
Short and long-term disability claims	92	201	153
Claims liability	$ 13,024	$ 14,073	$ 14,669

Changes in SMUD's total claims liability during 2020, 2019 and 2018 are presented below:

	2020	2019	2018
		(thousands of dollars)	
Claims liability, beginning of year	$ 14,073	$ 14,669	$ 11,877
Add: provision for claims, current year	1,419	1,789	2,601
(Decrease) increase in provision for claims in prior years	(8)	11,434	10,450
Less: payments on claims attributable to current and prior years	(2,460)	(13,819)	(10,259)
Claims liability, end of year	$ 13,024	$ 14,073	$ 14,669

NOTE 17. COMMITMENTS

Electric Power and Gas Supply Purchase Agreements. SMUD has numerous power purchase agreements with other power producers to purchase capacity, transmission, and associated energy to supply a portion of its load requirements. SMUD has minimum take-or-pay commitments for energy on some contracts. SMUD has numerous long-term natural gas supply, gas transportation and gas storage agreements with Canadian and U.S. companies to supply a portion of the consumption needs of SMUD's natural gas-fired power plants.

At December 31, 2020, the approximate minimum obligations for the "take-or-pay" contracts over the next five years are as follows:

	Electric	Gas
	(thousands of dollars)	
2021	$ 99,746	$ 7,841
2022	99,917	7,395
2023	98,651	7,336
2024	33,039	6,592
2025	12,188	6,666

At December 31, 2020, the approximate minimum obligations for the remaining contracts, assuming the energy or gas is delivered over the next five years, are as follows:

	Electric	Gas
	(thousands of dollars)	
2021	$ 216,060	$ 131,197
2022	198,545	110,329
2023	194,677	115,194
2024	157,778	90,224
2025	156,955	66,848

Contractual Commitments beyond 2025 - Electricity. Several of SMUD's purchase power and transmission contracts extend beyond the five-year summary presented above. These contracts expire between 2026 and 2050 and provide for power under various terms and conditions. SMUD estimates its annual minimum commitments under the take-or-pay contracts ranges between $12.2 million in 2026 and $0.3 million in 2033. SMUD estimates its annual minimum commitments under the remaining contracts, assuming the energy is delivered, ranges between $146.1 million in 2026 and $9.9 million in 2050. SMUD's largest purchase power source (in volume) is the Calpine Sutter contract, where SMUD has contracted ownership of 258 MW's of thermal generation capacity. The Calpine Sutter contract expires on December 31, 2023.

Contractual Commitments beyond 2025 - Gas. Several of SMUD's natural gas supply, gas transportation and gas storage contracts extend beyond the five-year summary presented above. These contracts expire between 2026 and 2049 and provide for transportation and storage under various terms and conditions. SMUD estimates its annual minimum commitments under the take-or-pay contracts ranges between $6.7 million in 2026 and $3.4 million in 2049. SMUD estimates its annual minimum commitments under the remaining contracts, assuming the gas is delivered, ranges between $21.4 million in 2026 and $5.4 million in 2049.

Gas Price Swap Agreements. SMUD has entered into numerous variable to fixed rate swaps with notional amounts totaling 99,702,500 Dths for the purpose of fixing the rate on SMUD's natural gas purchases for its gas-fueled power plants and gas indexed electric contracts. These gas price swap agreements result in SMUD paying fixed rates ranging from $2.22 to $7.17 per Dth. The swap agreements expire periodically from January 2021 through December 2024.

Gas Transport Capacity Agreements. SMUD has numerous long-term natural gas transport capacity agreements with Canadian and U.S. companies to transport natural gas to SMUD's natural gas-fired power plants from the supply basins in Alberta to the California-Oregon border and from supply basins in the southwest and Rocky Mountains to the Southern California border. These gas transport capacity agreements provide for the delivery of gas into SMUD-owned pipeline capacity within California. The gas transport capacity agreements provide SMUD with 58,300 Dth per day (Dth/d) of natural gas pipeline capacity from the North, including the Canadian Basins through 2021 and 41,200 Dth/d from the Southwest or Rocky Mountain Basins through at least 2021.

Gas Storage Agreements. SMUD also has an agreement for the storage of up to 2.0 million Dth of natural gas at regional facilities through March 2022, dropping to 1.0 million Dth through March 2023.

Hydro License Agreements. SMUD has a hydro license for a term of 50 years effective July 1, 2014 (see Note 2). SMUD entered into four contracts with government agencies whereby SMUD makes annual payments to them for various services for the term of the license. Each contract is adjusted annually by an inflation index. The present value of the sum of the annual payments is $64.8 million at December 31, 2020.

Construction Contracts. SMUD has entered into various construction contracts for the construction of a new substation and improvements to the White Rock Powerhouse in the UARP. As of December 31, 2020, the not-to-exceed price for these contracts totaled $90.8 million. The remaining contract obligations for these contracts as of December 31, 2020 was $30.7 million.

NOTE 18. CLAIMS AND CONTINGENCIES

FERC Administrative Proceedings. SMUD is involved in a number of FERC administrative proceedings related to the operation of wholesale energy markets, regional transmission planning, gas transportation, and the development of NERC reliability standards. While these proceedings are complex and numerous, they generally fall into the following categories: (i) filings initiated by the California Independent System Operator Corporation (CAISO) (or other market participants) to adopt/modify the CAISO Tariff and/or establish market design and behavior rules; (ii) filings initiated by existing transmission owners (i.e. PG&E and the other Investor Owned Utilities) to pass through costs to their existing wholesale transmission customers; (iii) filings initiated by FERC on market participants to establish market design and behavior rules or to complain about or investigate market behavior by certain market participants; (iv) filings initiated by transmission owners under their transmission owner tariffs for the purpose of establishing a regional transmission planning process; (v) filings initiated by providers of firm gas transportation services under the Natural Gas Act; and (vi) filings initiated by NERC to develop reliability standards applicable to owners, users, and operators of the bulk electric system. In addition, SMUD is an active participant in other FERC administrative proceedings, including those related to reliability and cybersecurity standards, variable resource integration, and transmission planning and cost allocation. SMUD's management believes that the ultimate resolution of these matters will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Construction Matters. SMUD contracts with various firms to design and construct facilities for SMUD. Currently, SMUD is party to various claims, legal actions and complaints relating to such construction projects. SMUD's management believes that the ultimate resolution of these matters will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Environmental Matters. SMUD was one of many potentially responsible parties that had been named in a number of actions relating to environmental claims and/or complaints. SMUD has resolved these environmental claims and/or complaints and entered into settlement agreements and/or consent orders. These settlement agreements and consent orders have statutory reopener provisions which allow regulatory agencies to seek additional funds for environmental remediation under certain limited circumstances. While SMUD believes it is unlikely that any of the prior settlements or consent orders will be

reopened, the possibility exists. If any of the settlements or consent orders were to be reopened, SMUD management does not believe that the outcome will have a material adverse effect on SMUD's financial position, liquidity or results of operations.

North City Environmental Remediation. In 1950, SMUD purchased property (North City Site) from the City of Sacramento and the Western Railroad Company. Portions of the North City Site prior to the sale had been operated as a municipal landfill by the City of Sacramento and some of the property continued to be so after the sale. SMUD currently operates a bulk substation on the North City Site and plans to decommission the facility in the next few years. SMUD intends to assure compliance with State standards at closed landfill sites and is in the process of determining the appropriate remediation for the North City Site. In 2009, SMUD established a regulatory asset to defer recognition of the expense related to the investigation, design and remediation necessary for the North City Site, and recorded a liability for the full $12.0 million estimated for the project. In 2012, the regulatory asset was fully amortized. As the owner of the North City Site, SMUD will play the principal role in the remediation selection and activities. SMUD has estimated the total exposure for closing the site at as high as $12.0 million based on initial tests and studies of the site and approved and implemented cap designs for nearby former landfill areas. Costs could exceed that amount based on the need to design around transmission-related infrastructure improvements. SMUD's management does not, however, believe this will occur. Even if remediation costs associated with the North City Site were to increase, SMUD management believes that any increased costs will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Patua Acquisition Company, LLC. On April 16, 2010, SMUD entered into a 23-year PPA with Patua Project, LLC. The fifth amendment to the PPA was signed on November 30, 2016, with the new project owner, Patua Acquisition Company, LLC (Patua). The PPA requires Patua to provide a warranty for the annual amount of energy and green attributes produced and delivered to SMUD, referred to as the Annual Delivery Warranty Amount (ADWA). If Patua fails to meet the ADWA for two consecutive years, it triggers SMUD's right to reduce the Guaranteed Capacity and Transmission Capacity Requirement as defined in the PPA.

On February 16, 2017, SMUD sent Patua a Notice of Failure to Meet Annual Performance Guarantee or the ADWA, Reduction of Phase 1 Guaranteed Capacity Resizing, and Reduction of Transmission Capacity Requirement pursuant to the terms of the PPA. Patua disagreed with the reductions and on June 9, 2017, after meetings with SMUD staff, sent a letter requesting a meeting with a senior officer to work towards a resolution in accordance with the dispute resolution provisions of the PPA. A meeting of the senior officers occurred. Staff continued to work through the issue with Patua to resolve the matter. On January 19, 2021, Patua provided SMUD a written confirmation that it considers the dispute to be resolved and releases and waives any claims against SMUD related to the 2017 ADWA and associated reduction in Guaranteed Capacity and Transmission Capacity. SMUD management does not believe that this outcome will have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Other Matters. Currently, SMUD is party to various claims, legal actions and complaints relating to its operations, including but not limited to: property damage and personal injury, contract disputes, torts, and employment matters. SMUD's management believes that the ultimate resolution of these matters will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

NOTE 19. SUBSEQUENT EVENTS

SMUD evaluated subsequent events through February 19, 2021, the date that the financial statements were available to be issued, for events requiring recording or disclosure in the financial statements.

Required Supplementary Information – Unaudited
For the Years Ended December 31, 2020 and 2019

Schedule of Changes in Net Pension Liability and Related Ratios During the Measurement Period - PERS Plan

	December 31,						
	2020	2019	2018	2017	2016	2015	2014
	(thousands of dollars)						
Total pension liability:							
Service cost	$ 38,901	$ 38,061	$ 36,029	$ 35,040	$ 29,044	$ 27,991	$ 28,170
Interest	164,044	157,976	151,354	150,119	147,497	142,468	137,546
Changes of assumptions	-0-	-0-	(61,585)	123,043	-0-	(34,228)	-0-
Differences between expected and actual experience	9,981	18,877	1,293	(29,276)	(8,357)	(10,613)	-0-
Benefit payments, including refunds of employee contributions	(125,581)	(117,548)	(111,763)	(104,428)	(99,155)	(94,636)	(90,175)
Net change in total pension liability	87,345	97,366	15,328	174,498	69,029	30,982	75,541
Total pension liability, beginning of year	2,327,689	2,230,323	2,214,995	2,040,497	1,971,468	1,940,486	1,864,945
Total pension liability, end of year (a)	$ 2,415,034	$ 2,327,689	$ 2,230,323	$ 2,214,995	$ 2,040,497	$ 1,971,468	$ 1,940,486
Plan fiduciary net position:							
Contributions - employer	$ 98,344	$ 69,119	$ 90,141	$ 32,389	$ 27,645	$ 22,499	$ 21,511
Contributions - employee	18,095	17,411	16,832	15,845	15,271	14,503	15,346
Net investment income	92,534	115,867	138,739	171,596	8,316	35,797	245,659
Benefit payments, including refunds of employee contributions	(125,581)	(117,548)	(111,763)	(104,428)	(99,155)	(94,636)	(90,175)
Administrative expense	(2,628)	(1,270)	(7,474)	(2,275)	(969)	(1,795)	(2,028)
Other	-0-	4	(4)	-0-	34	(25)	-0-
Net change in plan fiduciary net position	80,764	83,583	126,471	113,127	(48,858)	(23,657)	190,313
Plan fiduciary net position, beginning of year	1,864,450	1,780,867	1,654,396	1,541,269	1,590,127	1,613,784	1,423,471
Plan fiduciary net position, end of year (b)	$ 1,945,214	$ 1,864,450	$ 1,780,867	$ 1,654,396	$ 1,541,269	$ 1,590,127	$ 1,613,784
Net pension liability, ending (a) - (b)	$ 469,820	$ 463,239	$ 449,456	$ 560,599	$ 499,228	$ 381,341	$ 326,702
Plan fiduciary net position as a percentage of the total pension liability	80.5%	80.1%	79.8%	74.7%	75.5%	80.7%	83.2%
Covered payroll	$ 254,756	$ 247,759	$ 235,902	$ 223,685	$ 207,119	$ 197,481	$ 191,439
Net pension liability as a percentage of covered payroll	184.4%	187.0%	190.5%	250.6%	241.0%	193.1%	170.7%

PERS Plan. The schedule of changes in NPL and related ratios is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

Notes to Schedule:

Benefit Changes: The figures above do not include any liability impact that may have resulted from plan changes which occurred after the June 30, 2019 valuation date. This applies for voluntary benefit changes as well as any offers of two years additional service credit.

Changes in Assumptions: No changes in 2020. In 2018, demographic assumptions and inflation rate were changed in accordance to the PERS Experience and Study and Review of Actuarial Assumptions December 2017. There were no changes in the discount rate. In 2017, the accounting discount rate reduced from 7.65 percent to 7.15 percent. In 2016, there were no changes. In 2015, amounts reported reflect an adjustment of the discount rate from 7.5 percent (net of administrative expense) to 7.65 percent (without a reduction for pension plan administrative expense). In 2014, amounts reported were based on the 7.5 percent discount rate.

Schedule of Changes in Net Pension Liability and Related Ratios During the Measurement Period - SHY

	December 31,				
	2020	2019	2018	2017	2016
			(thousands of dollars)		
Total pension liability:					
Service cost	$ -0-	$ 203	$ 216	$ 300	$ 218
Interest	-0-	184	194	193	195
Changes of assumptions	-0-	(194)	(76)	(827)	1,118
Differences between expected and actual experience	-0-	(316)	(947)	(914)	-0-
Benefit payments	-0-	(57)	-0-	-0-	-0-
Other - Write off Pension Liability	(4,408)	-0-	-0-	-0-	-0-
Net change in total pension liability	(4,408)	(180)	(613)	(1,248)	1,531
Total pension liability, beginning of year	4,408	4,588	5,201	6,449	4,918
Total pension liability, end of year	$ -	$ 4,408	$ 4,588	$ 5,201	$ 6,449
Covered payroll	N/A	$ 18,695	$ 20,466	$ 21,743	$ 21,748
Net pension liability as a percentage of covered payroll	N/A	23.6%	22.4%	23.9%	29.7%

SHY. The schedule of changes in NPL and related ratios is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

Notes to Schedule:

Benefit changes: There are no longer any benefits to active members.

Changes in Assumptions: In 2019, the discount rate was updated based on the municipal bond rate as of the measurement date and was updated from 3.87 percent to 3.5 percent. Inflation was updated from 2.75 percent to 2.50 percent and the aggregate salary increase was updated from 3.00 percent to 2.75 percent. In 2018, the discount rate was updated from 3.58 percent to 3.87 percent. Demographic assumptions were updated to the PERS 1997-2015 experience study. In 2017, the discount rate was updated from 2.85 percent to 3.58 percent.

Schedule of Plan Contributions for Pension – PERS Plan

	December 31,						
	2020	2019	2018	2017	2016	2015	2014
	(thousands of dollars)						
Actuarially determined contribution	$ 52,276	$ 49,119	$ 40,142	$ 32,389	$ 27,645	$ 22,499	$ 21,511
Contributions in relation to the actuarially determined contribution	(98,344)	(69,119)	(90,142)	(32,389)	(27,645)	(22,499)	(21,511)
Contribution excess	$ (46,068)	$ (20,000)	$ (50,000)	$ -0-	$ -0-	$ -0-	$ -0-
Covered payroll	$ 254,756	$ 247,759	$ 235,902	$ 223,685	$ 207,119	$ 197,481	$ 191,439
Contributions as a percentage of covered payroll	38.6%	27.9%	38.2%	14.5%	13.4%	11.4%	11.2%

PERS Plan. The schedule of pension contributions is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

Notes to Schedule

The actuarial methods and assumptions used to set the actuarially determined contributions for the year ended December 31, 2020 was derived from the June 30, 2017 funding valuation report.

Actuarial cost method	Entry age normal
Amortization method/period	For details, see June 30, 2017 Funding Valuation Report
Asset valuation method	Fair value of assets. For details, see June 30, 2017 Funding Valuation Report
Inflation	2.625%
Salary increases	Varies by entry age and service
Payroll growth	2.875%
Investment rate of return	7.25% Net of pension plan investment and administrative expenses; includes inflation
Retirement age	The probabilities of retirement are based on the 2017 PERS Experience Study for the period from 1997 to 2015
Mortality	The probabilities of mortality are based on the 2017 PERS Experience Study for the period from 1997 to 2015. Pre-retirement and post-retirement mortality rates include 15 years of projected mortality improvement using Scale BB published by the Society of Actuaries.

In 2019, the investment rate of return was 7.375%. Prior to 2020, the probabilities of mortality are based on the 2014 PERS Experience Study for the period from 1997 to 2011. Pre-retirement and post-retirement mortality rates include 20 years of projected mortality improvement using Scale BB published by the Society of Actuaries. Prior to 2017, the retirement age and mortality assumptions were based on the 2010 PERS Experience Study for the period from 1997 to 2007. In addition, the mortality assumption for pre-retirement and post-retirement rates included 5 years of projected mortality improvement using Scale AA published by the Society of Actuaries.

Schedule of Changes in Net OPEB Asset or Liability and Related Ratios During the Measurement Period

	December 31,			
	2020	2019	2018	2017
	(thousands of dollars)			
Total OPEB liability:				
Service cost	$ 8,903	$ 8,946	$ 9,263	$ 8,993
Interest on total OPEB liability	26,653	26,766	29,656	28,676
Changes of assumptions	(11,453)	15,332	3,105	-0-
Differences between expected and actual experience	(23,529)	(6,885)	(59,921)	-0-
Benefit payments, including refunds of employee contributions	(23,848)	(24,521)	(24,672)	(22,192)
Net change in total OPEB liability	(23,274)	19,638	(42,569)	15,477
Total OPEB liability, beginning of year	419,483	399,845	442,414	426,937
Total OPEB liability, end of year (a)	$ 396,209	$ 419,483	$ 399,845	$ 442,414
Plan fiduciary net position:				
Contributions - employer	$ 13,299	$ 13,963	$ 34,243	$ 114,573
Net investment income	20,447	20,132	27,295	24,104
Benefit payments, including refunds of employee contributions	(23,848)	(24,521)	(24,672)	(22,192)
Administrative expense	(191)	(81)	(635)	(123)
Net change in plan fiduciary net position	9,707	9,493	36,231	116,362
Plan fiduciary net position, beginning of year	387,272	377,779	341,548	225,186
Plan fiduciary net position, end of year (b)	$ 396,979	$ 387,272	$ 377,779	$ 341,548
Net OPEB liability/(asset), ending (a) - (b)	$ (770)	$ 32,211	$ 22,066	$ 100,866
Plan fiduciary net position as a percentage of the total OPEB liability	100.2%	92.3%	94.5%	77.2%
Covered payroll	$ 287,001	$ 282,993	$ 269,753	$ 252,211
Net OPEB liability/(asset) as a percentage of covered payrol	-0.3%	11.4%	8.2%	40.0%

OPEB. The schedule of changes in NOA/NOL and related ratios is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

Notes to Schedule

Benefit Changes: There were no changes to benefits.

Changes in Assumptions: In 2020, the discount rate reflected the split of assets between Strategy 1 and Strategy 3, the mortality improvement scale was updated to Scale MP-2019, and the Kaiser Medicare trend rates were updated. In 2019, the discount rate was updated to reflect the split of assets between Strategy 1 and Strategy 3, and the mortality improvement scale was updated to Scale MP-2018.

Schedule of Plan Contributions for OPEB

OPEB Plan. The schedule of OPEB contributions is presented below for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

	December 31,			
	2020	2019	2018	2017
	(thousands of dollars)			
Actuarially determined contribution	$ 12,201	$ 10,710	$ 15,366	$ 16,472
Contributions in relation to the actuarially determined contribution	(13,233)	(13,155)	(35,128)	(116,181)
Contribution excess	$ (1,032)	$ (2,445)	$ (19,762)	$ (99,709)
Covered payroll	$ 289,552	$ 286,835	$ 277,193	$ 260,210
Contributions as a percentage of covered payroll	4.6%	4.6%	12.7%	44.6%

Notes to Schedule

The actuarial methods and assumptions used to set the actuarially determined contributions for the year ended December 31, 2020 were derived from the June 30, 2019 funding valuation report.

Actuarial cost method	Entry age normal
Amortization method	Level percent of pay
Amortization period	26-year fixed period for 2020
Asset valuation method	Market value of assets
Discount rate	6.75% for all actives and retirements after 6/30/2018, 5.50% for all retirements before 6/30/2018
Inflation	2.75%
Medical trend	Non-Medicare: 7.25% for 2021, decreasing to an ultimate rate of 4.0% in 2076 Medicare: 6.3% for 2021, decreasing to an ultimate rate of 4.0% in 2076
Mortality	PERS 1997-2015 experience study
Mortality improvement	Post-retirement mortality projected fully generational with Scale MP-18

In 2020, the amortization period was for a 26-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-18. In 2019, the amortization period was for a 27-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-17. In 2018, the amortization period was for a 28-year fixed period. Mortality assumption used PERS 1997-2011 experience study. The mortality improvement projected fully generational with Scale MP-16. In 2017, the amortization period was for a 29-year fixed period. The inflation rate was 3.0% and the discount rate was 7.25%. The mortality projected fully generational with Scale MP-14, modified to converge in 2022.

Financial Statements

Report of Independent Auditors

December 31, 2022 and 2021



SMUD®

SACRAMENTO MUNICIPAL UTILITY DISTRICT
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Independent Auditors' Report

To the Board of Directors of
Sacramento Municipal Utility District

Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying financial statements of the Sacramento Municipal Utility District, as of and for the years ended December 31, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the Sacramento Municipal Utility District's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Sacramento Municipal Utility District as of December 31, 2022 and 2021, and the changes in financial position and cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States (GAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Sacramento Municipal Utility District and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis of Matter

As discussed in Note 3, the Sacramento Municipal Utility District adopted the provisions of GASB Statement No. 87, *Leases*, effective January 1, 2022. Accordingly, the accounting changes have been retroactively applied to the prior period presented. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America; and for the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Sacramento Municipal Utility District's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

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Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and GAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and GAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Sacramento Municipal Utility District's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Sacramento Municipal Utility District's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the required supplementary information, as listed in the table of contents be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated February 24, 2023 on our consideration of the Sacramento Municipal Utility District's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Sacramento Municipal Utility District's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Sacramento Municipal Utility District's internal control over financial reporting and compliance.

Baker Tilly US, LLP

Madison, Wisconsin
February 24, 2023

Sacramento Municipal Utility District
Management's Discussion and Analysis - Unaudited
For the Years Ended December 31, 2022 and 2021

Using this Financial Report

This annual financial report for Sacramento Municipal Utility District (SMUD) consists of management's discussion and analysis and the financial statements, including notes to financial statements. The Financial Statements consist of the Statements of Net Position, the Statements of Revenue, Expenses and Changes in Net Position and the Statements of Cash Flows.

SMUD maintains its accounting records in accordance with Generally Accepted Accounting Principles for proprietary funds as prescribed by the Governmental Accounting Standards Board (GASB). SMUD's accounting records generally follow the Uniform System of Accounts for Public Utilities and Licensees prescribed by the Federal Energy Regulatory Commission (FERC), except as it relates to accounting for contributions of utility property in aid of construction.

Overview of the Financial Statements

The following discussion and analysis of the financial performance of SMUD provides an overview of the financial activities for the years ended December 31, 2022 and 2021. This discussion and analysis should be read in conjunction with the financial statements, required supplementary information and accompanying notes, which follow this section.

The Statements of Net Position provide information about the nature and amount of resources and obligations at a specific point in time.

The Statements of Revenues, Expenses and Changes in Net Position report all SMUD's revenues and expenses for the periods shown.

The Statements of Cash Flows report the cash provided and used by operating activities, as well as other cash sources, such as investment income and debt financing, and other cash uses such as payments for debt service and capital additions.

The Notes to Financial Statements provide additional detailed information to support the financial statements.

Required Supplementary Information provides additional detailed disclosures as required by the GASB.

Organization and Nature of Operations

SMUD was formed and operates under the State of California Municipal Utility District Act (Act). The Act gives SMUD the rights and powers to fix rates and charges for commodities or services it furnishes, and to incur indebtedness and issue bonds or other obligations. As a community-owned utility, SMUD is not subject to regulation or oversight by the California Public Utilities Commission.

SMUD is responsible for the acquisition, generation, transmission, and distribution of electric power to its service area, with a population of approximately 1.5 million – most of Sacramento County and small adjoining portions of Placer and Yolo Counties. The Board of Directors (Board) determines SMUD's rates.

SMUD's vision is to be the trusted partner with its customers and the community, providing innovative solutions to ensure energy affordability and reliability, improve the environment, reduce the region's carbon footprint, and enhance the vitality of the community. SMUD's business strategy focuses on serving its customers in a progressive, forward-looking manner, addressing current regulatory and legislative issues and potential competitive forces. This includes ensuring financial stability by

establishing rates that provide acceptable cash coverage of all fixed charges, taking into consideration the impact of capital expenditures and other factors on cash flow.

2030 Zero Carbon Plan

In July 2020, the Board adopted a Climate Emergency Declaration to work toward an ambitious goal of delivering carbon neutral electricity by 2030 and indicating a strong commitment to finding additional opportunities to accelerate decarbonization in our energy supply. Building on the Board's Climate Emergency Declaration, SMUD's 2030 Clean Energy Vision calls for absolute zero carbon emission in its power supply by 2030.

In 2021, SMUD's 2030 Clean Energy Vision was translated into the 2030 Zero Carbon Plan, the flexible road map to achieve a zero-carbon power supply by 2030. The plan guides elimination of GHG emissions from SMUD's power plants, development of new distributed energy resource business models, research of emerging grid-scale carbon-free technologies, and expansion of investments in proven clean technologies while ensuring all communities benefit from the plan.

COVID-19 Global Pandemic

In 2022, SMUD continued to support its customers during the COVID-19 pandemic. At the start of the pandemic in March 2020, SMUD provided its electric customers with suspension of disconnections and stopped collections, late fee, and security deposit processes for all customers to support them during this difficult time. In February 2022, normal payment, late fees, and disconnection policies resumed with disconnections occurring in mid-April 2022. SMUD is working proactively with electric customers to create payment arrangements for those who need them. The effects of the pandemic have resulted in an increase in the number of past due customer accounts.

In 2022 and 2021, SMUD received $9.9 million and $41.4 million, respectively, in California Arrearage Payment Program (CAPP) funding that was applied to customers' bills, to support customers amid the ongoing challenges of the COVID-19 pandemic. The CAPP offers financial assistance for California energy utility customers to help reduce past due energy bill balances that increased during the COVID-19 pandemic. As of December 31, 2022 and 2021, the uncollectible reserve for account write-offs was $38 million and $69 million, respectively. Other financial and operational impacts to SMUD associated with COVID-19 are noted throughout this report.

Requests for Information

For more information about SMUD, visit our website at www.smud.org or contact us at customerservices@smud.org**.**

FINANCIAL POSITION

The following table summarizes the financial position as of December 31 (in millions).

CONDENSED STATEMENTS OF NET POSITION

	2022	2021 (restated)*	2020
Assets			
Electric Utility Plant - net	$ 4,001	$ 3,891	$ 3,747
Restricted and Designated Assets	183	289	188
Current Assets	1,426	1,244	1,239
Noncurrent Assets	1,581	1,492	1,515
Total Assets	7,191	6,916	6,689
Deferred Outflows of Resources	268	143	271
Total Assets and Deferred Outflows of Resources	$ 7,459	$ 7,059	$ 6,960
Liabilities			
Long-Term Debt - net	$ 2,886	$ 3,081	$ 3,259
Current Liabilities	802	494	437
Noncurrent Liabilities	428	216	694
Total Liabilities	4,116	3,791	4,390
Deferred Inflows of Resources	976	972	613
Net Position	2,367	2,296	1,957
Total Liabilities, Deferred Inflows of Resources, and Net Position	$ 7,459	$ 7,059	$ 6,960

*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2021 Statements of Net Position.

TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES

2022 Compared to 2021

Total assets in 2022 increased $275 million or 4.0% over 2021, primarily due to the following:

- An increase of $110 million in electric utility plant – net. See Capital Program below for further information.
- A $106 million decrease in restricted and designated assets primarily due to a $28 million decrease in a net pension asset and a $57 million decrease in net Other Postemployment Benefits (OPEB) asset based on the most recent actuarial results, a $30 million Rate Stabilization Fund transfer to revenue as a result of lower than budgeted energy deliveries from the Western Area Power Administration (Western), and a $25 million Hydro Rate Stabilization Fund (HRSF) transfer to revenue for below average precipitation, offset by $22 million Rate Stabilization Fund transfer from revenues for net auction proceeds received and funds spent on Assembly Bill (AB) 32 programs.
- A $182 million increase in current assets is primarily due to $115 million increase in hedging derivative instruments due to the gas hedging program and $44 million increase in wholesale and other receivables due to larger sales of power and gas sales in December.
- A $89 million increase in noncurrent assets primarily due to a $61 million increase in regulatory costs for future recovery due to recognition of those costs, a $48 million increase in hedging derivative instruments due to the gas hedging program, offset by a $30 million decrease in prepaid gas supply due to gas delivered.

Deferred outflows of resources in 2022 increased $125 million or 87.4% from 2021, primarily due to increases in the unrealized pension and OPEB gains.

2021 Compared to 2020

Total assets in 2021 increased $227 million or 3.4% over 2020, primarily due to the following:

- An increase of $144 million in electric utility plant – net. See Capital Program below for further information.
- A $101 million increase in restricted and designated assets primarily due to a $28 million increase in a net pension asset and a $57 million increase in net Other Postemployment Benefits (OPEB) asset based on the most recent actuarial results, and the $35 million deferral of 2021 operating revenues for recognition in future years to offset one-time expenditures not identified in the annual budget, offset by a $19 million Hydro Rate Stabilization Fund (HRSF) transfer to revenue for below average precipitation.
- A $23 million decrease in noncurrent assets primarily due to a $39 million decrease in regulatory costs for future recovery due to recognition of those costs, a $26 million decrease in prepaid gas supply due to gas delivered, offset by a $29 million increase in hedging derivative instruments due to the gas hedging program.

Deferred outflows of resources in 2021 decreased $128 million or 47.2% from 2020, primarily due to decreases in the unrealized pension and OPEB losses.

TOTAL LIABILITIES AND DEFERRED INFLOWS OF RESOURCES

2022 Compared to 2021

Total liabilities in 2022 increased $325 million or 8.6% over 2021, primarily due to an increase in current liabilities of $308 million due to $150 million issuance of commercial paper and $106 million increase in purchased power payable due to high purchased power prices in December. Non-current liabilities increased due to a $235 million increase in net pension liability based on the most recent actuarial results. This is offset by a decrease in long-term debt- net of $195 million.

Net position in 2022 increased $71 million or 3.1% over 2021 based on results of operations.

2021 Compared to 2020

Total liabilities in 2021 decreased $599 million or 13.6% over 2020, primarily due to a decrease in long-term debt-net of $178 million and a decrease in noncurrent liabilities of $478 million, primarily due a $470 million reduction in net pension liability based on the most recent actuarial results.

Deferred inflows of resources in 2021 increased $359 million or 58.6% from 2020, primarily due to increases in the unrealized pension and OPEB gains.

Net position in 2021 increased $339 million or 17.3% over 2020 based on results of operations.

RESULTS OF OPERATIONS

The following table summarizes the operating results for the years ended December 31 (in millions).

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	2022	2021 (restated)*	2020
Operating revenues	$ 2,147	$ 1,790	$ 1,588
Operating expenses	(2,065)	(1,450)	(1,389)
Operating income	82	340	199
Other revenues/(expenses)	90	108	63
Interest charges	(101)	(109)	(109)
Change in net position	71	339	153
Net position - beginning of year	2,296	1,957	1,804
Net position - end of year	$ 2,367	$ 2,296	$ 1,957

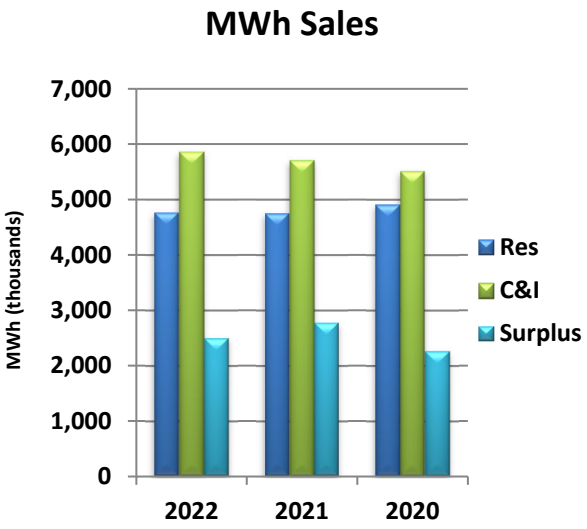
*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2021 Statements of Net Position.

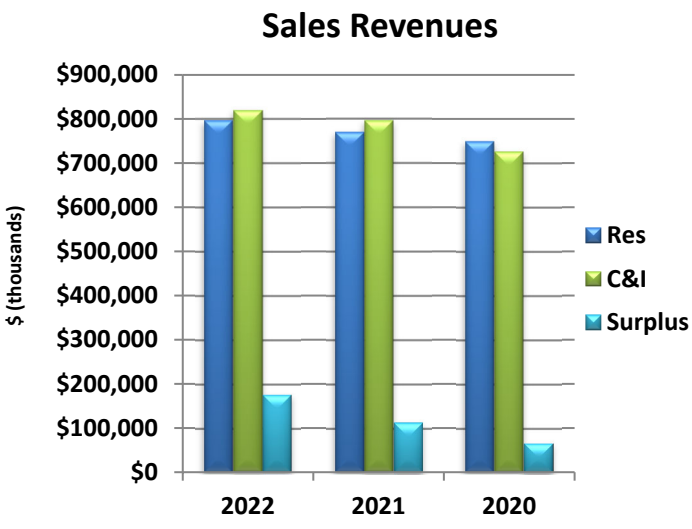
2022 Compared to 2021

OPERATING REVENUES

Total operating revenues were $2,147 million for 2022, an increase of $357 million or 19.9 percent over 2021 operating revenues. The residential MWh sales increased 0.3 percent and sales revenues increased 3.6 percent compared to 2021, although usage is flat, the increase is related to the shift in the customer load shape. The commercial & industrial MWh sales increased 2.7 percent and sales revenues increased 2.9 percent compared to 2021, primarily due to more commercial businesses and schools returning to in-person 2022.

The following charts show the megawatt hour (MWh) sales, and sales revenue for the past three years by surplus energy sales (Surplus), commercial, industrial, and other (C&I), and residential (Res) customers:





Wholesale revenues are comprised of both surplus gas and energy sales which are part of the operational strategy in managing fuel and energy costs. In 2022, energy sales were higher by $62 million as compared to 2021 due to higher energy prices and energy sales. Surplus gas sales were higher than 2021 by $96 million primarily due the unplanned outage of CPP and selling at higher gas prices in 2022.

OPERATING EXPENSES

Total operating expenses were $2,066 million for 2022, an increase of $615 million or 42.4 percent over 2021.

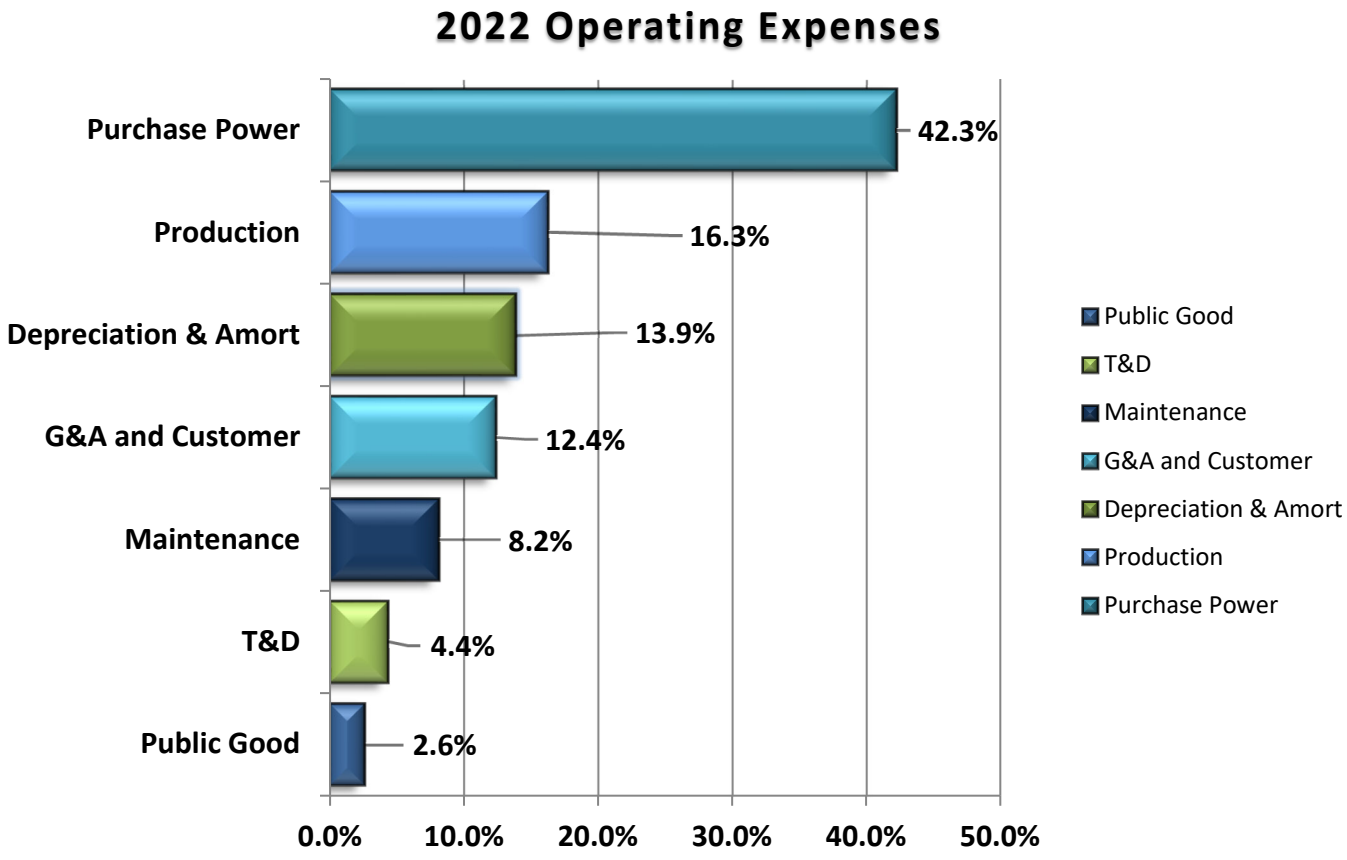
- Purchased power increased by $478 million or 120.8 percent primarily due to the unplanned outage of Cosumnes Power Plant (CPP), increased load, reduced hydro, and record high heat wave in September that led to increase procurement of power.

- Production expense decreased by $21 million or 6.0 percent primarily due to unplanned CPP outage for majority of the year.

- General, administrative and customer increased by $102 million or 66.6 percent primarily due to SMUD establishing regulatory accounting in 2022 for pension and OPEB regulatory costs and/or credits to defer recognition of certain expenses related to the amortization of pension and OPEB deferred outflows and deferred inflows of resources compared to 2021 there were large credit adjustments related to pension and OPEB based on the most recent actuarial results.

- Maintenance increased by $32 million or 23.1 percent primarily due to increased costs related to tree trimming and JPA thermal plant maintenance.

The following chart illustrates 2022 operating expenses by expense classification and percentage of the total:



OTHER REVENUES

Total other revenues (net) were $90 million for 2022, a decrease of $18 million or 16.7 percent over 2021. The decrease is due to receiving $41 million in grant revenues from CAPP funding in 2021, offset by the increase in investment revenue related to gas swaps.

2021 Compared to 2020

RESULTS OF OPERATIONS

- Total operating revenues were $1,790 million for 2021, an increase of $202 million or 12.7 percent over 2020 operating revenues. The residential MWh sales decreased 3.2 percent and sales revenues increased 2.7 percent compared to 2020, primarily due to employees returning to work and children returning to school which reduced usage and shifted the customer load shape. The commercial & industrial MWh sales increased 3.5 percent and sales revenues increased 9.6 percent compared to 2020, primarily due to commercial businesses and schools re-opening in 2021 compared to the California mandated shut down and limited re-openings of commercial businesses in 2020.

- In 2021, energy sales were higher by $47 million as compared to 2020 due to higher energy prices and energy sales. Surplus gas sales were higher than 2020 by $65 million primarily due to higher gas prices in 2021.

- Total operating expenses were $1,450 million for 2021, an increase of $61 million or 4.4 percent over 2020.
    - Purchased power increased by $48 million or 13.7 percent due to higher load due to warmer than anticipated weather and lower hydro generation due to lower precipitation levels.
    - Production expense increased by $80 million or 28.7 percent due to lower hydro generation due to lower precipitation levels led to increased thermal plant generation.
    - General, administrative and customer decreased by $88 million or 36.3 percent due to lower costs related to reduced customer call volumes due to COVID and the continued moratorium on electric shut offs, reduction in customer programs due to COVID and reduction in administrative and labor costs related to employees working remotely. In addition, large adjustments related to GASB 75 OPEB and GASB 68 Pension based on the most recent actuarial results.
    - Public Good decreased by $11 million or 18.7 percent due to lower expenditure for research and development programs and energy efficiency program incentives.

- Total other revenues (net) were $108 million for 2021, an increase of $45 million or 71.3 percent over 2020. In 2021, SMUD recorded $41 million as grant revenues from CAPP funding received for delinquent customer balances and a $15 million settlement related to Rancho Seco.

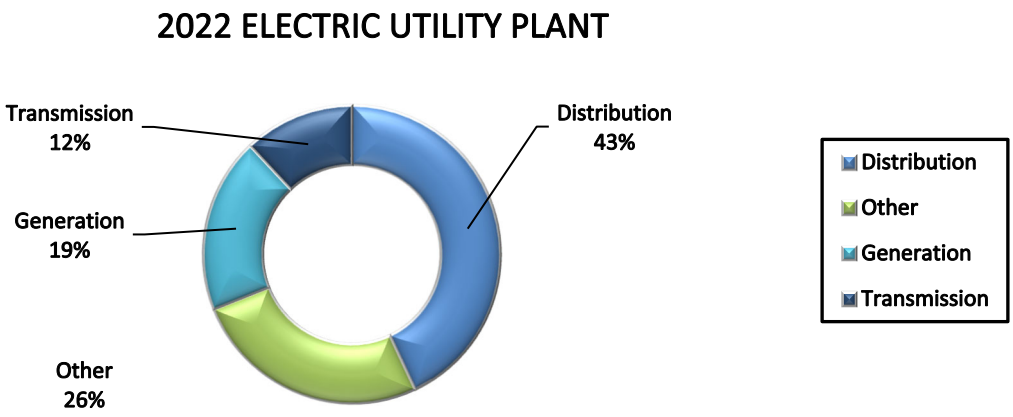
CAPITAL PROGRAM

SMUD's electric utility plant includes production, transmission and distribution, and general plant facilities. The following table summarizes the balance of the electric utility plant as of December 31 (in millions).

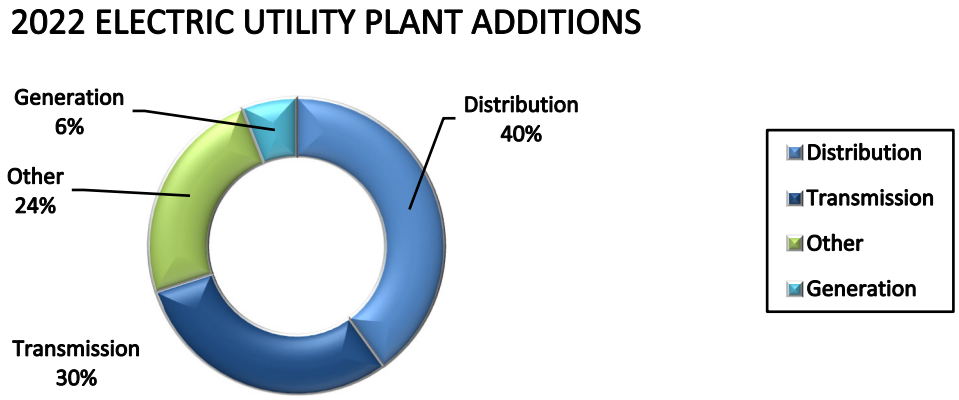
	2022	2021(restated)*	2020
Electric Utility Plant	$ 7,549	$ 7,232	$ 6,886
Accumulated Depreciation and Amortization	(3,548)	(3,341)	(3,139)
Electric Utility Plant - Net	$ 4,001	$ 3,891	$ 3,747

*See Note 3 of the financial statements for discussion on the restatement of the December 31, 2021 Statements of Net Position.

The following chart shows the breakdown of 2022 Electric Utility Plant - net by major plant category:



The following chart shows the breakdown of 2022 Electric Utility Plant capitalized additions by major plant category:



Details of SMUD's electric utility plant asset balances and activity are included in Note 4 in the Notes to Financial Statements. SMUD's capital program includes investment in generation, transmission, distribution, buildings, vehicles, technology, and other assets critical to meeting the energy needs of our customers. Capital investments are financed with revenues from operations, bond proceeds, investment income and cash on hand.

The following table shows actual capital program expenditures for the last two years and budgeted capital expenditures for 2022 (in millions).

	Budget 2023	Actual 2022	Actual 2021
Capital Program:			
Transmission & Distribution	$ 180	$ 154	$ 183
Generation	336	124	52
Other	108	70	49
Total	$ 624	$ 348	$ 284

In 2022 and 2021, SMUD actual expenditures included work for Substation E & G, Advanced Distribution Management System, White Rock Tunnel Bolt Replacement, the purchase and operationalization of Chili Bar Hydroelectric facility, Substation J land purchase, distribution line work and continued work on UARP relicensing projects.

Major capital expenditures planned in 2023 include completing work for Station G, additions to our wind farm with Solano Phase IV, the Country Acres solar project, and ongoing improvements in our Upper American River Project (UARP) area as part of our hydro relicensing. Programmatic capital planned in 2023 includes cable and pole replacement programs, installing new meters, and new fleet purchases. Technology investments included in the 2023 Budget are to complete the Advanced Distribution Management System & Outage Management System (ADMS-OMS) and improvements to HR systems and network communications systems with our Talent Technology Transformation (T3) project.

LIQUIDITY AND CAPITAL RESOURCES

SMUD maintains a strong liquidity position by setting a minimum number of days cash on hand and managing a $400 million commercial paper program. Our current days cash threshold is 150 days, the minimum amount of cash on hand before triggering a new debt or commercial paper issuance to replenish cash balances. On December 31, 2022, the days cash on hand was 214 days. The commercial paper program allows for short-term borrowing when needed in lieu of issuing long-term debt, similar to a credit card or line of credit. On December 31, 2022, SMUD had $150 million of commercial paper notes outstanding. A strong liquidity position is important in demonstrating to investors and rating agencies that SMUD can withstand various financial stresses.

In addition, SMUD targets strong financial metrics in cash flow coverage with its fixed charge ratio. The Board sets a minimum fixed charge of 1.50 times operating cash flow; however, we aim for a minimum of 1.70 as a standard. On December 31, 2022, the fixed charge ratio was 1.65 which decreased below our standard but above our Board set minimum due to the higher commodity costs incurred from the CPP unplanned outage, record heat wave in September and higher commodity prices.

FINANCING ACTIVITIES

In June 2022, SMUD issued $132.7 million of 2022 Series J Revenue Refunding Bonds. The purpose of this transaction was to refund the fixed rate debt associated with 2012 Series Y bonds and terminated the associated interest rate swap entered into in 2019. This locked in the refunding's interest rates, generating $28.6 million in Net Present Value savings, or annual cash flow savings of $3.1 million through 2033.

DEBT SERVICE COVERAGE

Debt service coverage for long-term debt was 1.87 times and 2.50 times in 2022 and 2021, respectively. SMUD's bond resolutions contain various covenants that include requirements to maintain minimum debt service coverage ratios of at least 1.40 times, certain other financial ratios, stipulated minimum funding of revenue bond reserves, and various other requirements including a rate covenant to raise rates to maintain minimum debt service coverage. SMUD is in compliance with all debt covenants.

CREDIT RATINGS

We proactively manage our strong financial position to maintain high credit ratings. These strong credit ratings improve access to credit markets and result in a lower cost of borrowing. Both quantitative (financial strength) and qualitative (business and operating characteristics) factors are considered by the credit rating agencies in establishing a company's credit rating. As of December 31, 2022, SMUD's bonds had an underlying rating of "AA" from Standard & Poor's, "AA" from Fitch, and "Aa3" from Moody's. Some of SMUD's bonds are insured and are rated by the rating agencies at the higher of the insurer's rating or SMUD's underlying rating.

COMPETITIVE RATES

The Board has independent authority to set SMUD's rates and charges. Changes in rates require a public hearing and formal action by the Board. SMUD has committed to our customers in keeping rates low while continuing to deliver safe, reliable, and environmentally responsible power and the products and services they value.

In June 2019, the Board approved the 2020 and 2021 rate proposals including a 2.50 percent rate increase effective January 1, 2021, and a 2.0 percent rate increase effective October 1, 2021, for all customer classes. In October 2021, SMUD started transitioning commercial customers to the new restructured rates. While the restructure is revenue neutral, it will improve SMUD's revenue stability and better align electric charges with costs.

In 2021, the Board approved the Solar and Storage Rate (SSR), which will reduce the cost shift from Net Energy Metering (NEM) and will incentivize customers to invest in solar paired with storage, providing greater benefits to SMUD and our customers. In 2021, the Board approved the 2022 and 2023 rate proposals including rate increases of 1.5% in 2022 and 2% in 2023, which is well below the estimated rate of inflation. This ensures the necessary revenue to meet SMUD's financial obligations, key financial metrics, and delivery of our 2030 Zero Carbon Plan.

Progress on several key rates and programs, including the Virtual Solar (VS) program and our optional residential Critical Peak Pricing (CPP) rate, both of which will be available in June 2022. The VS program will provide the benefits of solar to our under-resourced customers living in multi-family housing, and our residential CPP rate will provide customers the opportunity to reduce their bills and help the environment while contributing to the 2030 Zero Carbon Plan.

Even with these increases, SMUD's rates continue to remain amongst the lowest in the state. In 2022, the average system rate was 45 percent below the average rate of the nearest investor-owned utility.

ENERGY RISK MANAGEMENT

SMUD's commodity costs have prices locked in for most of our expected energy requirements to ensure cost and rate stability for customers. Only a small portion of budgeted energy purchases are exposed to short-term market price fluctuations – a beneficial practice, especially during the price volatility currently reflected in California power and energy prices.

SMUD has mitigation measures in place for higher commodity costs due to reduced hydroelectric production that will lead to higher purchased power. In April 2022, $25.1 million was transferred from the HRSF to revenue as a result of low precipitation. At December 31, 2022, the HRSF was $31.0 million and $56.6 million in the Rate Stabilization Fund (RSF), net of Low Carbon Fuel Standard and Cap and Trade funds. These reserve funds help absorb higher energy costs when hydroelectric production is down and serve as a buffer against unexpected financial developments.

RESOURCE PLANNING AND GENERATION UPDATE

In March 2021, the Board adopted the 2030 Zero Carbon Plan, a flexible road map to achieving its zero carbon goal while ensuring all customers and communities that are served share in the benefits of decarbonization. While SMUD has always had an Integrated Resource Plan target to meet or exceed goals established by the State for renewable energy and the reduction of carbon emissions, the 2030 Zero Carbon Plan greatly accelerates these efforts, working toward eliminating carbon emissions from SMUD's power supply by 2030.

The Board formally approved the 2022 Integrated Resource Plan (IRP) update in June 2022 and filed this update with the California Energy Commission (CEC) in September. Implementation of the plan has SMUD embarking on new pathways to completely decarbonize energy supply, including eliminating GHG emissions from the thermal power plants, developing new distributed energy resource business models, researching emerging grid-scale and carbon-free technologies and expanding investments in proven clean technologies.

DECOMMISSIONING

SMUD has made significant progress toward completing the Decommissioning Plan for its Rancho Seco nuclear facility, which was shut down in 1989. The plan consists of two phases that allow SMUD to terminate its possession-only license. Phase I of the decommissioning was completed at the end of 2008. Phase II consists of a storage period for the Class B and Class C radioactive waste overseen by the existing facility staff, followed by shipment of the waste for disposal, and then complete termination of the possession-only license. SMUD also established and funded an external decommissioning trust fund as part of its assurance to the Nuclear Regulatory Commission (NRC) to pay for the cost of decommissioning. Shipment of the previously stored Class B and Class C radioactive waste was completed in November 2014 to a low-level radioactive waste facility located in Andrews, Texas. The remaining Phase II decommissioning activities required for termination of the possession-only license commenced in 2015. In September 2017, SMUD formally requested the termination of the possession-only license and termination of the possession-only license was completed in 2018.

As part of the Decommissioning Plan, the nuclear fuel and Greater Than Class C (GTCC) radioactive waste is being stored in a dry storage facility constructed by SMUD and licensed separately by the NRC. The U.S. Department of Energy (DOE), under the Nuclear Waste Policy Act of 1982, was responsible for permanent disposal of used nuclear fuel and GTCC radioactive waste and SMUD contracted with the DOE for removal and disposal of that waste. The DOE has yet to fulfill its contractual obligation to provide a permanent waste disposal site. SMUD has filed a series of successful lawsuits against the federal government for recovery of the past spent fuel costs, with recoveries to date in excess of $123.1 million. SMUD will continue to pursue cost recovery claims until the DOE fulfills its obligation.

The total Accrued Decommissioning balance in the Statements of Net Position, including Rancho Seco and other ARO's, amounted to $95.9 million as of December 31, 2022.

SIGNIFICANT ACCOUNTING POLICIES

In accordance with GASB No. 62, the Board has taken regulatory actions for ratemaking that result in the deferral of expense and revenue recognition. These actions result in regulatory assets and liabilities. SMUD has regulatory assets that cover costs related to decommissioning, derivative financial instruments, debt issuance costs, pension costs, and OPEB costs. As of December 31, 2022, total regulatory assets were $813.6 million. SMUD also has regulatory credits that cover costs related to contributions in aid of construction, the RSF and HRSF, EAPR reserves, SB-1, grant revenues, and Transmission Agency of Northern California operations costs. As of December 31, 2022, total regulatory credits were $620.4 million.

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SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION

	December 31, 2022	December 31, 2021 (restated)
	(thousands of dollars)	
ASSETS		
ELECTRIC UTILITY PLANT		
Plant in service	$ 7,201,276	$ 6,864,040
Less accumulated depreciation and amortization	(3,547,995)	(3,340,797)
Plant in service - net	3,653,281	3,523,243
Construction work in progress	347,758	367,297
Total electric utility plant - net	4,001,039	3,890,540
RESTRICTED AND DESIGNATED ASSETS		
Revenue bond and debt service reserves	119,385	120,024
Nuclear decommissioning trust fund	8,980	8,874
Rate stabilization fund	156,016	188,992
Net pension asset	-0-	27,738
Net other postemployment benefits asset	-0-	57,532
Other funds	30,424	22,411
Less current portion	(131,852)	(136,663)
Total restricted and designated assets	182,953	288,908
CURRENT ASSETS		
Unrestricted cash and cash equivalents	268,653	584,998
Unrestricted investments	359,211	45,378
Restricted and designated cash and cash equivalents	30,583	46,828
Restricted and designated investments	101,269	89,835
Receivables - net:		
Retail customers	181,606	190,987
Wholesale and other	102,305	58,628
Regulatory costs to be recovered within one year	49,312	38,303
Investment derivative instruments maturing within one year	5,870	1,354
Hedging derivative instruments maturing within one year	151,349	36,620
Inventories	113,120	99,941
Prepaid gas to be delivered within one year	29,452	26,059
Prepayments and other	32,881	25,330
Total current assets	1,425,611	1,244,261
NONCURRENT ASSETS		
Regulatory costs for future recovery	764,246	703,748
Prepaid gas	637,000	666,452
Prepaid power and capacity	173	380
Investment derivative instruments	329	803
Hedging derivative instruments	85,675	37,753
Energy efficiency loans - net	732	1,298
Credit support collateral deposits	11,650	11,650
Due from affiliated entity	31,149	29,674
Prepayments and other	50,506	40,738
Total noncurrent assets	1,581,460	1,492,496
TOTAL ASSETS	7,191,063	6,916,205
DEFERRED OUTFLOWS OF RESOURCES		
Accumulated decrease in fair value of hedging derivative instruments	28,438	22,600
Deferred pension outflows	175,478	81,334
Deferred other postemployment benefits outflows	53,674	25,113
Deferred asset retirement obligations outflows	2,066	1,775
Unamortized bond losses	8,389	12,261
TOTAL DEFERRED OUTFLOWS OF RESOURCES	268,045	143,083
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	$ 7,459,108	$ 7,059,288

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF NET POSITION

	December 31, 2022	December 31, 2021 (restated)
	(thousands of dollars)	
LIABILITIES		
LONG-TERM DEBT - net	$ 2,885,844	$ 3,081,707
CURRENT LIABILITIES		
Commercial paper notes	150,000	-0-
Accounts payable	159,463	121,925
Purchased power payable	135,570	30,103
Credit support collateral obligation	534	3,575
Long-term debt due within one year	138,195	132,150
Accrued decommissioning	7,549	6,889
Interest payable	49,784	50,739
Accrued salaries and compensated absences	60,209	60,433
Investment derivative instruments maturing within one year	3,103	2,757
Hedging derivative instruments maturing within one year	21,636	18,232
Customer deposits and other	75,911	67,064
Total current liabilities	801,954	493,867
NONCURRENT LIABILITIES		
Net pension liability	235,451	-0-
Net other postemployment benefits liability	6,753	-0-
Accrued decommissioning	88,385	88,168
Investment derivative instruments	1,424	4,786
Hedging derivative instruments	6,802	4,368
Self insurance and other	89,910	118,146
Total noncurrent liabilities	428,725	215,468
TOTAL LIABILITIES	4,116,523	3,791,042
DEFERRED INFLOWS OF RESOURCES		
Accumulated increase in fair value of hedging derivative instruments	237,025	74,374
Regulatory credits	620,373	543,014
Deferred pension inflows	26,656	229,707
Deferred other postemployment benefits inflows	49,838	94,902
Deferred lease inflows	18,187	17,373
Unamortized bond gains	20,473	9,246
Unearned revenue	3,230	3,369
TOTAL DEFERRED INFLOWS OF RESOURCES	975,782	971,985
NET POSITION		
Net investment in capital assets	1,491,548	1,349,688
Restricted:		
Revenue bond and debt service	60,048	64,793
Net pension asset	-0-	27,738
Net other postemployment benefits asset	-0-	57,532
Other funds	29,890	18,836
Unrestricted	785,317	777,674
TOTAL NET POSITION	2,366,803	2,296,261
COMMITMENTS, CLAIMS AND CONTINGENCIES (Notes 17 and 18)		
TOTAL LIABILITIES, DEFERRED INFLOWS OF RESOURCES, AND NET POSITION	$ 7,459,108	$ 7,059,288

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION

	Year Ended December 31,	
	2022	2021 (restated)
	(thousands of dollars)	
OPERATING REVENUES		
Residential	$ 808,906	$ 721,228
Commercial and industrial	814,584	773,311
Street lighting and other	52,122	41,739
Wholesale	406,171	248,001
Senate Bill - 1 revenue deferral	40	784
AB-32 revenue	22,760	17,880
LCFS revenue	9,775	7,599
Rate stabilization fund transfers	32,976	(20,266)
Total operating revenues	2,147,334	1,790,276
OPERATING EXPENSES		
Operations:		
Purchased power	873,436	395,572
Production	336,406	357,832
Transmission and distribution	90,242	81,484
Administrative, general and customer	256,288	153,799
Public good	54,170	46,519
Maintenance	168,500	136,849
Depreciation and amortization	249,922	242,917
Regulatory amounts collected in rates	36,688	35,369
Total operating expenses	2,065,652	1,450,341
OPERATING INCOME	81,682	339,935
NON-OPERATING REVENUES AND EXPENSES		
Other revenues and (expenses):		
Interest income	14,265	6,777
Investment income - net	27,702	8,035
Other income - net	48,077	93,302
Total other revenues and (expenses)	90,044	108,114
Interest charges:		
Interest on debt	101,184	109,300
Total interest charges	101,184	109,300
Total non-operating revenues and (expenses)	(11,140)	(1,186)
CHANGE IN NET POSITION	70,542	338,749
NET POSITION - BEGINNING OF YEAR	2,296,261	1,957,512
NET POSITION - END OF YEAR	$ 2,366,803	$ 2,296,261

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
STATEMENTS OF CASH FLOWS

	Year Ended December 31,	
	2022	2021 (restated)
	(thousands of dollars)	
CASH FLOWS FROM OPERATING ACTIVITIES		
Receipts from customers	$ 1,673,495	$ 1,498,124
Receipts from surplus power and gas sales	369,878	242,767
Other receipts	216,564	35,173
Payments to employees - payroll and other	(379,423)	(417,475)
Payments for wholesale power and gas purchases	(1,021,810)	(599,268)
Payments to vendors/others	(458,111)	(320,201)
Net cash provided by operating activities	400,593	439,120
CASH FLOWS FROM NONCAPITAL FINANCING ACTIVITIES		
Repayment of debt	(20,550)	(18,450)
Receipts from federal and state grants	1,647	41,601
Proceeds from insurance settlements	-0-	3,135
Interest on debt	(28,568)	(29,385)
Net cash used in noncapital financing activities	(47,471)	(3,099)
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES		
Construction expenditures	(336,576)	(297,179)
Contributions in aid of construction	21,602	24,414
Net proceeds from bond issues	150,711	130,248
Repayments and refundings of debt	(269,385)	(235,970)
Issuance of commercial paper	150,000	-0-
Other receipts	16,413	9,253
Interest on debt	(120,222)	(120,874)
Lease and other payments	(26,407)	(23,185)
Cash received from leases	1,000	858
Net cash used in capital and related financing activities	(412,864)	(512,435)
CASH FLOWS FROM INVESTING ACTIVITIES		
Sales and maturities of securities	436,129	215,153
Purchases of securities	(812,821)	(106,889)
Proceeds from termination of prepaid gas contracts	-0-	2,000
Interest and dividends received	10,005	8,151
Investment revenue/expenses - net	27,619	8,036
Net cash provided by investing activities	(339,068)	126,451
Net increase in cash and cash equivalents	(398,810)	50,037
Cash and cash equivalents at the beginning of the year	788,648	738,611
Cash and cash equivalents at the end of the year	$ 389,838	$ 788,648
Cash and cash equivalents included in:		
Unrestricted cash and cash equivalents	$ 268,653	$ 584,998
Restricted and designated cash and cash equivalents	30,583	46,828
Restricted and designated assets (a component of the total of $182,953 and $288,908 at December 31, 2022 and 2021, respectively)	90,602	156,822
Cash and cash equivalents at the end of the year	$ 389,838	$ 788,648

The accompanying notes are an integral part of these financial statements.

SACRAMENTO MUNICIPAL UTILITY DISTRICT
SUPPLEMENTAL CASH FLOW INFORMATION

A reconciliation of the statements of cash flows operating activities to operating income as follows:

	Year Ended December 31,	
	2022	2021 (restated)
	(thousands of dollars)	
Operating income	$ 81,682	$ 339,935
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation	249,922	242,917
Regulatory amortization	36,688	35,369
Other Amortizations	22,909	20,278
Revenue deferred to (recognized from) regulatory credits - net	(33,016)	19,483
Other (receipts) payments - net	19,777	13,283
Changes in operating assets, deferred outflows, liabilities and deferred inflows:		
Receivables - retail customers, wholesale and other	(25,719)	(15,543)
Inventories, prepayments and other	(29,479)	(27,140)
Net pension and other postemployment benefits assets	85,270	(84,499)
Deferred outflows of recources	(122,706)	96,029
Payables and accruals	127,299	22,693
Decommissioning	(6,049)	(5,358)
Net pension liability	235,451	(469,820)
Net other postemployment benefits liability	6,753	-0-
Deferred inflows of resources	(248,189)	251,493
Net cash provided by operating activities	$ 400,593	$ 439,120

The supplemental disclosure of noncash financing and investing activities is as follows:

	Year Ended December 31,	
	2022	2021 (restated)
	(thousands of dollars)	
Amortization of debt related (expenses) and premiums - net	$ 34,145	$ 34,969
Write-off unamortized premium and loss	7,576	4,465
(Loss) Gain on debt extinguishment and refundings	6,677	3,925
Unrealized holding gain (loss)	(5,890)	(2,201)
Change in valuation of derivative financial instruments	163,871	93,719
Amortization of revenue for assets contributed in aid of construction	19,226	18,208
Construction expenditures included in accounts payable	55,787	43,470
(Loss) Gain on sale and retirement of assets - net	(2,036)	(439)
Write-off capital projects and preliminary surveys	(3,720)	(2,057)

The accompanying notes are an integral part of these financial statements.

Sacramento Municipal Utility District
Notes to Financial Statements
As of and for the Years Ended December 31, 2022 and 2021

NOTE 1. ORGANIZATION

The Sacramento Municipal Utility District (SMUD) was formed and operates under the State of California Municipal Utility District Act (Act). The Act gives SMUD the rights and powers to fix rates and charges for commodities or services it furnishes, and to incur indebtedness and issue bonds or other obligations. As a community-owned utility, SMUD is not subject to regulation or oversight by the California Public Utilities Commission.

SMUD is responsible for the acquisition, generation, transmission, and distribution of electric power to its service area, which includes most of Sacramento County and small adjoining portions of Placer and Yolo Counties. The Board of Directors (Board) determines SMUD's rates.

SMUD is exempt from payment of federal and state income taxes and, under most circumstances, real and personal property taxes. SMUD is not exempt from real and personal property taxes on assets it holds outside of its service territory. In addition, SMUD is responsible for the payment of a portion of the property taxes associated with its real property in California that lies outside of its service area.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Method of Accounting. SMUD's accounting records are maintained in accordance with Generally Accepted Accounting Principles for proprietary funds as prescribed by the Governmental Accounting Standards Board (GASB). SMUD's accounting records generally follow the Uniform System of Accounts for Public Utilities and Licensees prescribed by the Federal Energy Regulatory Commission (FERC), except as it relates to the accounting for contributions of utility property in aid of construction. SMUD's Financial Statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of the related cash flows. Electric revenues and costs that are directly related to the acquisition, generation, transmission, and distribution of electricity are reported as operating revenues and expenses. All other revenues and expenses are reported as non-operating revenues and expenses.

Use of Estimates. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (U.S.) requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, and deferred inflows of resources and disclosures of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

The Financial Reporting Entity. These Financial Statements include SMUD and its component units. Although the component units are legally separate from SMUD, they are blended into and reported as part of SMUD because of the extent of their operational and financial relationships with SMUD. All significant inter-component transactions have been eliminated in consolidation.

Component Units. The component units include the Central Valley Financing Authority (CVFA), the Sacramento Cogeneration Authority (SCA), the Sacramento Municipal Utility District Financing Authority (SFA), the Sacramento Power Authority (SPA), the Northern California Gas Authority No. 1 (NCGA), and the Northern California Energy Authority (NCEA). The primary purpose of CVFA, SCA, SFA and SPA is to own and operate electric utility plants that supply power to SMUD. On October 26, 2021, SFA entered into Assignment and Assumption Agreements (the Agreements) with CVFA, SCA, and SPA. The Agreements transfer the assets and obligations, including ownership of the Carson Power Plant, Procter and Gamble Power Plant, Campbell Power Plant, and McClellan Power Plant (assigned Power Plants) to SFA as of

November 1, 2021. The primary purpose of NCGA is to prepay for natural gas to sell to SMUD. The primary purpose of NCEA is to prepay for commodities in the form of natural gas and electricity to sell to SMUD. SMUD's Board comprises the Commissions that govern these entities (see Note 6).

Plant in Service. Capital assets are generally defined by SMUD as tangible assets with an initial, individual cost of more than five thousand dollars and an estimated useful life in excess of two years. The cost of additions to Plant in Service and replacement property units is capitalized. Repair and maintenance costs are charged to expense when incurred. When SMUD retires portions of its Electric Utility Plant, retirements are recorded against Accumulated Depreciation and the retired portion of Electric Utility Plant is removed from Plant in Service. The costs of removal and the related salvage value, if any, are charged or credited as appropriate to Accumulated Depreciation. SMUD generally computes depreciation on Plant in Service on a straight-line, service-life basis. The average annual composite depreciation rates for 2022 and 2021 was 3.2 percent and 3.3 percent, respectively. Depreciation is calculated using the following estimated lives:

Generation	8 to 80 years
Transmission and Distribution	7 to 50 years
Gas Pipeline	10 to 90 years
General	3 to 60 years

Investment in Joint Powers Authority (JPA). SMUD's investment in the Transmission Agency of Northern California (TANC) is accounted for under the equity method of accounting and is reported as a component of Plant in Service. SMUD's share of the TANC debt service costs and operations and maintenance expense, inclusive of depreciation, is included in Transmission and Distribution expense in the Statements of Revenues, Expenses and Changes in Net Position (see Note 5).

SMUD's investment in the Balancing Authority of Northern California (BANC) is accounted for under the equity method of accounting. SMUD's share of the BANC operations and maintenance expense is included in Transmission and Distribution expense in the Statements of Revenues, Expenses and Changes in Net Position (see Note 5).

Leases. SMUD implemented Statement of Governmental Accounting Standards (SGAS) No. 87, ***"Leases"*** in 2022 (see Note 3). Leases are contracts that convey control of the right to use another entity's nonfinancial asset as specified for a period of time in an exchange or exchange-like transaction without the transfer of ownership of the asset. The lease term is the period of time where there is a noncancellable right to use the underlying asset (see Note 4).

For lessor contracts, lease receivables and deferred inflows of resources are reported at present value using SMUD's incremental borrowing rate on the Statements of Net Position. The amortization of the discount for lessor contracts is recorded as Lease receivable for SMUD on the Statements of Net Position with the offset to interest income in Interest and other income on the Statements of Revenue, Expenses and Change in Net Position (see Note 4).

For lessee contracts, lease assets and liabilities are reported at present value using SMUD's incremental borrowing rate on the Statements of Net Position. The lease assets are amortized over the shorter of the lease term or the useful life of the underlying asset. The amortization of the discount for lessee contracts is recorded as Interest payable on the Statement of Net Position with the offset to Lease interest expense for SMUD on the Statement of Revenue, Expenses and Change in Net Position (see Note 4).

Restricted and Designated Assets. Cash, cash equivalents, and investments, which are restricted by regulation or under terms of certain agreements for payments to third parties are included as restricted assets. Restricted assets include Revenue bond and debt service reserves, Nuclear decommissioning trust fund, and Other funds. Board actions limiting the use of such funds are included as designated assets. Designated assets include the Rate stabilization fund and $0.6 million of Other funds as of December 31, 2022 and 2021. When SMUD restricts or designates funds for a specific purpose, and restricted and designated and unrestricted resources are available for use, it is SMUD's policy to use restricted and designated resources first, then unrestricted resources as they are needed.

Restricted Bond Funds. SMUD's Indenture Agreements (Indenture) requires the maintenance of minimum levels of reserves for debt service on the 1997 Series K Bonds.

Nuclear Decommissioning Trust Fund. SMUD made annual contributions to its Nuclear Decommissioning Trust Fund (Trust Fund) through 2008 to cover the cost of its primary decommissioning activities associated with the Rancho Seco facility. Primary decommissioning excludes activities associated with the spent fuel storage facility after 2008 and most non-radiological decommissioning tasks. Interest earnings on the Trust Fund assets are recorded as Interest Income and are accumulated in the Trust Fund.

Asset Retirement Obligations (ARO). SMUD records asset retirement obligations (ARO) for tangible capital assets when an obligation to decommission facilities is legally required. SMUD recognizes AROs for its Rancho Seco nuclear power plant and for the CVFA power plant facility (see Note 13). The Rancho Seco ARO is recorded as Accrued Decommissioning and the unfunded portion of the ARO is recorded as current and noncurrent Regulatory Costs for Future Recovery (see Note 8) in the Statements of Net Position. Other AROs are recorded as Accrued Decommissioning and a corresponding Deferred Asset Retirement Obligation Outflows in the Statements of Net Position.

SMUD has identified potential retirement obligations related to certain generation, distribution and transmission facilities. SMUD's non-perpetual leased land rights generally are renewed continuously because SMUD intends to utilize these facilities indefinitely. GASB No. 83 requires the measurement of the ARO to be based on the probability weighting of potential outcomes. Due to the low probability that these leases will be terminated, a liability has not been recorded.

Cash and Cash Equivalents. Cash and cash equivalents include all debt instruments purchased with an original maturity of 90 days or less, deposits held at financial institutions, all investments in the Local Agency Investment Fund (LAIF), and money market funds. LAIF has an equity interest in the State of California (State) Pooled Money Investment Account (PMIA). PMIA funds are on deposit with the State's Centralized Treasury System and are managed in compliance with the California Government Code according to a statement of investment policy which sets forth permitted investment vehicles, liquidity parameters, and maximum maturity of investments.

Investments. SMUD's investments are reported at fair value in accordance with SGAS No. 72, ***"Fair Value Measurement and Application"*** (see Note 12). Realized and unrealized gains and losses are included in Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. Premiums and discounts on zero coupon bonds are amortized using the effective interest method. Premiums and discounts on other securities are amortized using the straight-line method, which approximates the effective interest method.

Electric Operating Revenues. Electric revenues are billed on the basis of monthly cycle bills and are recorded as revenue when the electricity is delivered. SMUD records an estimate for unbilled revenues earned from the dates its retail customers were last billed to the end of the month. At December 31, 2022 and 2021, unbilled revenues were $80.5 and $93.6 million, respectively.

Purchased Power Expenses. A portion of SMUD's power needs are provided through power purchase agreements (PPA). Expenses from such agreements, along with associated transmission costs paid to other utilities, are charged to Purchased Power expense in the Statements of Revenues, Expenses and Changes in Net Position in the period the power is received. The costs or credits associated with energy swap agreements (gas and electric) or other arrangements that affect the net cost of Purchased Power are recognized in the period in which the underlying power delivery occurs. Contract termination payments and adjustments to prior billings are included in Purchased Power expense once the payments or adjustments can be reasonably estimated.

Advanced Capacity Payments. Some long-term agreements to purchase energy or capacity from other providers call for up-front payments. Such costs are generally recorded as an asset and amortized over the length of the contract in Operations - Production expense on the Statements of Revenues, Expenses and Changes in Net Position.

Credit and Market Risk. SMUD enters into forward purchase and sales commitments for physical delivery of gas and electricity with utilities and power marketers. SMUD is exposed to credit risk related to nonperformance by its wholesale counterparties under the terms of these contractual agreements. In order to limit the risk of counterparty default, SMUD has a wholesale counterparty risk policy which includes using the credit agency ratings of SMUD's counterparties and other credit services, credit enhancements for counterparties that do not meet an acceptable risk level, and the use of standardized agreements that allow for the netting of positive and negative exposures associated with a single counterparty. SMUD is also subject to similar requirements for many of its gas and power purchase agreements. SMUD uses a combination of cash and securities to satisfy its collateral requirements to counterparties.

SMUD's component units, NCGA and NCEA, entered into guaranteed investment contracts and are exposed to credit risk related to nonperformance by its investment provider. For NCGA, the investment provider provides collateral if their credit ratings fall below agreed upon levels. SMUD holds deposits by counterparties and an investment provider and records the amounts as Credit Support Collateral Obligation in the Statements of Net Position.

Collateral deposits that SMUD has with counterparties are recorded as Credit Support Collateral Deposits in the Statements of Net Position.

Accounts Receivable, Allowance for Doubtful Accounts and Energy Efficiency Loans. Accounts receivable is recorded at the invoiced amount and does not bear interest, except for accounts related to energy efficiency loans. SMUD recognizes an estimate of uncollectible accounts for its receivables related to electric service, energy efficiency loans, and other non-electric billings, based upon its historical experience with collections and current energy market conditions. For large wholesale receivable balances, SMUD determines its bad debt reserves based on the specific credit issues for each account. In the Statements of Net Position, SMUD reports its receivables net of the allowance for uncollectible as current assets, and its energy efficiency loans net of the allowance for uncollectible as noncurrent assets. Due to COVID-19, SMUD suspended disconnections for non-payment beginning in March 2020 and reinstated disconnections in April 2022. At December 31, 2022 and 2021, SMUD estimated its uncollectible retail customer accounts at $38.0 million and $69.0 million, respectively, based on non-payment behaviors by aging category. SMUD records bad debts for its estimated uncollectible accounts related to electric service as a reduction to the related operating revenues in the Statements of Revenues, Expenses and Changes in Net Position. SMUD records bad debts for its estimated uncollectible accounts related to energy efficiency loans and other non-electric billings in Administrative, General and Customer expense in the Statements of Revenues, Expenses and Changes in Net Position.

SMUD's receivables, allowances for uncollectible and energy efficiency loans are presented below:

	December 31,	
	2022	2021 (restated)
	(thousands of dollars)	
Retail customers:		
Receivables	$ 219,606	$ 259,987
Less: Allowance for uncollectible	(38,000)	(69,000)
Receivables - net	$ 181,606	$ 190,987
Wholesale and other (includes lease receivables, see Note 4):		
Receivables	$ 105,083	$ 60,883
Less: Allowance for uncollectible	(2,778)	(2,255)
Receivables - net	$ 102,305	$ 58,628
Energy efficiency loans:		
Receivables	$ 869	$ 1,517
Less: Allowance for uncollectible	(137)	(219)
Energy efficiency loans - net	$ 732	$ 1,298

Regulatory Deferrals. The Board has the authority to establish the level of rates charged for all SMUD services. As a regulated entity, SMUD's financial statements are prepared in accordance with SGAS Statement No. 62, ***"Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 Financial Accounting Standards Board (FASB) and American Institute of Certified Public Accountants Pronouncements,"*** which requires that the effects of the ratemaking process be recorded in the financial statements. Accordingly, certain expenses and credits, normally reflected in Change in Net Position as incurred, are recognized when included in rates and recovered from or refunded to customers. SMUD records various regulatory assets and credits to reflect ratemaking actions of the Board (see Note 8).

Materials and Supplies. Materials and supplies are stated at average cost, which approximates the first-in, first-out method.

Compensated Absences. SMUD accrues vacation leave and compensatory time when employees earn the rights to the benefits. SMUD does not record sick leave as a liability until it is taken by the employee, since there are no cash payments made for sick leave when employees terminate or retire. Compensated absences are recorded as Accrued Salaries and Compensated Absences in the Statements of Net Position. At December 31, 2022 and 2021, the total estimated liability for vacation and other compensated absences was $43.7 million and $41.9 million, respectively.

Public Good. Public Good expenses consist of non-capital expenditures for energy efficiency programs, low income subsidies, renewable energy resources and technologies, and research and development.

Gains/Losses on Bond Refundings. Gains and losses resulting from bond refundings are included as a component of Deferred Inflows of Resources or Deferred Outflows of Resources in the Statements of Net Position and amortized as a component of Interest on Debt in the Statements of Revenues, Expenses and Changes in Net Position over the shorter of the life of the refunded debt or the new debt using the effective interest method.

Gains/Losses on Bond Defeasances or Extinguishments. Gains and losses resulting from bond defeasances or extinguishments that were not financed with the issuance of new debt are included as a component of Interest on Debt in the Statements of Revenues, Expenses and Changes in Net Position.

Deferred Outflow of Resources. A deferred outflow of resources represents a consumption of net position that applies to a future period and will not be recognized as an outflow of resources (expense) until that future time.

Deferred Inflows of Resources. A deferred inflow of resources represents an acquisition of net position that applies to a future period and therefore will not be recognized as an inflow of resources (revenue) until that future time.

Derivative Financial Instruments. SMUD records derivative financial instruments (interest rate swap and gas price swap agreements, certain wholesale sales agreements, certain power purchase agreements and option agreements) at fair value in its Statements of Net Position. SMUD does not enter into agreements for speculative purposes. Fair value is estimated by comparing contract prices to forward market prices quoted by third party market participants and/or provided in relevant industry publications. SMUD is exposed to risk of nonperformance if the counterparties default or if the swap agreements are terminated. SMUD reports derivative financial instruments with remaining maturities of one year or less and the portion of long-term contracts with scheduled transactions over the next twelve months as current in the Statements of Net Position (see Note 9).

Interest Rate Swap Agreements. SMUD enters into interest rate swap agreements to modify the effective interest rates on outstanding debt (see Notes 9 and 10).

Gas and Electricity Price Swap and Option Agreements. SMUD uses forward contracts to hedge the impact of market volatility on gas commodity prices for its natural gas-fueled power plants and for energy prices on purchased power for SMUD's retail load (see Note 9).

Precipitation Hedge Agreements. SMUD enters into non-exchange traded precipitation hedge agreements to hedge the cost of replacement power caused by low precipitation years (Precipitation Agreements). SMUD records the intrinsic value of the Precipitation Agreements as Prepayments and Other under Current Assets in the Statements of Net Position. Settlement of the Precipitation Agreements is not performed until the end of the period covered (water year ended September 30). The intrinsic value of a Precipitation Agreement is the difference between the expected results from a monthly allocation of the cumulative rainfall amounts, in an average rainfall year, and the actual rainfall during the same period.

Insurance Programs. SMUD records liabilities for unpaid claims at their present value when they are probable in occurrence and the amount can be reasonably estimated. SMUD records a liability for unpaid claims associated with general, auto, workers' compensation, and short-term and long-term disability based upon estimates derived by SMUD's claims administrator or SMUD staff. The liability comprises the present value of the claims outstanding and includes an amount for claim events incurred but not reported based upon SMUD's experience (see Note 16).

Pollution Remediation. SGAS No. 49, ***"Accounting and Financial Reporting for Pollution Remediation Obligations,"*** (GASB No. 49) requires that a liability be recognized for expected outlays for remediating existing pollution when certain triggering events occur. SMUD recorded a pollution remediation obligation for its North City substation, which was built on a former landfill, for the former Community Linen Rental Services Property, and for obligations for several land sites, including a few sites where it will be building a substation. At December 31, 2022 and 2021, the total pollution remediation liability was $24.3 million and $20.4 million, respectively, and recorded as either Current Liabilities, Customer Deposits and Other or Noncurrent Liabilities, Self Insurance and Other in the Statements of Net Position. Costs were estimated using the expected cash flow technique prescribed under GASB No. 49, including only amounts that are reasonably estimable.

Hydro License. SMUD owns and operates the Upper American River Hydroelectric Project (UARP). The original license to construct and operate the UARP was issued in 1957 by FERC. Effective July 1, 2014, SMUD received a 50-year hydro license. As part of the hydro licensing process, SMUD entered into four contracts with government agencies whereby SMUD makes annual payments to them for various services for the term of the license. At December 31, 2022 and 2021, the liability for these contract payments was $58.5 million and $65.1 million, respectively, and recorded as either Current Liabilities, Customer Deposits and Other or Noncurrent Liabilities, Self-Insurance and Other in the Statements of Net Position (see Note 17).

Assembly Bill 32. California Assembly Bill (AB) 32 was an effort by the State of California to set a greenhouse gas (GHG) emissions reduction goal into law, and initially was set through 2020. In 2015, the state established a 2030 goal for GHG emissions at 40 percent below 1990 levels, and in July of 2017 AB-398 was approved by the Governor. Central to these initiatives is the Cap and Trade program, which covers major sources of GHG emissions in the State including power plants. AB-398 extended Cap and Trade through 2030. The Cap and Trade program includes an enforceable emissions cap that will decline over time. The State distributes allowances, which are tradable permits, equal to the emissions allowed under the cap. Sources under the cap are required to surrender allowances and offsets equal to their emissions at the end of each compliance period. SMUD is subject to AB-32 and has participated in California Air Resources Board (CARB) administered quarterly auctions in the past. In a normal water year, SMUD expects its free allocation of allowances from the CARB to cover its compliance costs associated with electricity delivered to its retail customers. SMUD expects to recover compliance costs associated with wholesale power sales costs through its wholesale power sales revenues. SMUD continues to monitor new legislation and proposed programs that could impact AB-32 and its subsequent extensions.

In addition, the Low Carbon Fuel Standards (LCFS) was enacted through AB-32. CARB is responsible for the implementation of LCFS and has established a program for LCFS credits. The LCFS program is designed to reduce greenhouse gas emissions associated with the lifecycle of transportation fuels used in California. SMUD participates in the program and receives LCFS credits from CARB for the electricity used to power electric vehicles. The LCFS credits are sold to parties (oil companies) that have a compliance obligation. CARB requires that electricity LCFS credit sales proceeds be spent in a way to benefit current or future Electric Vehicle drivers in California, for both commercial and residential vehicles.

Net Pension Asset (NPA) or Liability (NPL). The NPA or NPL is the difference between the actuarial present value of projected pension benefit payments attributable to employees' past service and the pension plan's fiduciary net position (see Note 14).

Net Other Postemployment Benefit (OPEB) Asset (NOA) or Liability (NOL). The NOA or NOL is the difference between the actuarial present value of projected OPEB benefit payments attributable to employee's past service and the OPEB plan's fiduciary net position (see Note 15).

Net Position. SMUD classifies its net position into three components as follows:

- Net investment in capital assets – This component of net position consists of capital assets, net of accumulated depreciation, reduced by the outstanding debt balances, net of unamortized debt expenses. Deferred inflows and outflows of resources that are attributable to the acquisition, construction or improvement of those assets or related debt are also included.
- Restricted – This component of net position consists of assets with constraints placed on their use, either externally or internally. Constraints include those imposed by debt indentures (excluding amounts considered in Net investment in capital assets, above), grants or laws and regulations of other governments, or by law through constitutional provisions or enabling legislation or by the Board. These restricted assets are reduced by liabilities and deferred inflows of resources related to those assets.
- Unrestricted – This component of net position consists of net amount of the assets, deferred outflows of resources, liabilities, and deferred inflows of resources that do not meet the definition of "Net investment in capital assets" or "Restricted."

Contributions in Aid of Construction (CIAC). SMUD records CIAC from customer contributions, primarily relating to expansions to SMUD's distribution facilities, as Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. Contributions of capital are valued at acquisition value. For ratemaking purposes, the Board does not recognize such revenues when received; rather, CIAC is included in revenues as such costs are amortized over the estimated useful lives of the related distribution facilities.

Revenues and Expenses. SMUD distinguishes operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with SMUD's principal ongoing operations. The principal operating revenues of SMUD are charges to customers for sales and services. Operating expenses include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as Non-Operating Revenues and Expenses in the Statements of Revenues, Expenses and Changes in Net Position.

Grants. SMUD receives grant proceeds from federal and state assisted programs for its projects which include, but are not limited to, advanced and renewable technologies, electric transportation, and energy efficiency. SMUD also periodically receives grant proceeds from federal or state assistance programs as partial reimbursements for costs it has incurred as a result of natural disasters, such as storm or fire damages. During 2021, SMUD received $41.4 million from the California Arrearage Payment Program (CAPP), which offers financial assistance to help reduce past due energy balances accrued during the COVID-19 pandemic. The State Budget Act of 2021 appropriated $1.0 billion from the federal American Rescue Plan Act of 2021 to support the establishment of CAPP. When applicable, these programs may be subject to financial and compliance audits pursuant to regulatory requirements. SMUD records grant proceeds related to capital projects as a Regulatory Credit (see Note 8).

SMUD has taxable Build America Bonds in which it receives an interest subsidy from the federal government equal to 35 percent of the interest paid (see Note 10). SMUD received reduced subsidy payments in 2022 and 2021 due to budget sequestration by the federal government. SMUD recognized $9.3 million in revenues in 2022 and 2021 for its Build America Bonds, as a component of Other income (expense) - net, in the Statements of Revenues, Expenses and Changes in Net Position.

Customer Sales and Excise Taxes. SMUD is required by various governmental authorities, including states and municipalities, to collect and remit taxes on certain customer sales. Such taxes are presented on a net basis and excluded from revenues and expenses in the Statements of Revenues, Expenses and Changes in Net Position.

Subsequent Events. Subsequent events for SMUD have been evaluated through February 24, 2023 (see Note 19).

Reclassifications. Certain amounts in the 2021 Financial Statements have been reclassified in order to conform to the 2022 presentation.

Recent Accounting Pronouncements, adopted. In March 2020, GASB issued SGAS No. 93, ***"Replacement of Interbank Offered Rates"*** (GASB No. 93). The objective of this statement is to address accounting and financial reporting implications that result from the replacement of an interbank offered rate (IBOR), most notably, the London Interbank Offered Rate (LIBOR), which is expected to cease to exist in its current form at the end of 2021. This statement provides exceptions for certain hedging derivative instruments to the hedge accounting termination provisions when an IBOR is replaced as the reference rate of the hedging derivative instrument's variable payment. By removing LIBOR as an appropriate benchmark interest rate for the qualitative evaluation of the effectiveness of an interest rate swap, GASB No. 93 identifies the Secured Overnight Financing Rate and the Effective Federal Funds Rate as appropriate benchmark interest rates to replace LIBOR. This statement is effective for SMUD in 2022. GASB No. 99 (see below) further states that the LIBOR is no longer an appropriate benchmark interest rate for a derivative instrument that hedges the interest rate risk of taxable debt when LIBOR ceases to be determined by the ICE Benchmark Administration using the methodology in place as of December 31, 2021. SMUD utilizes the 1-month LIBOR for its interest rate swap agreements. According to the ICE Benchmark Administration, the 1-month US dollar settings will be determined and published under the methodology until the end of June 2023. At this time, SMUD will determine an appropriate benchmark interest rate.

In April 2022, GASB issued SGAS No. 99, ***"Omnibus 2022"*** (GASB No. 99). This statement addresses a variety of topics and is effective for SMUD in 2022, 2023, or 2024 depending on the requirement. The only topic effective for SMUD in 2022 is the replacement of IBOR discussed above. SMUD chose to adopt provisions related to leases and the implementation of GASB No. 87 that were effective in 2023 early. SMUD incorporated the clarifications related to leases contained in GASB No. 99 during its implementation of GASB No. 87. SMUD is currently assessing the financial impact of adopting the remaining topics in this statement that are effective in 2023 and 2024.

Recent Accounting Pronouncements, not yet adopted. In March 2020, GASB issued SGAS No. 94, ***"Public-Private and Public-Public Partnerships and Availability Payment Arrangements"*** (GASB No. 94). The primary objective of this Statement is to provide guidance for accounting and financial reporting related to public-private and public-public partnership arrangements (PPPs) and availability payment arrangements (APAs). A PPP is an arrangement in which a government (the transferor) contracts with an operator (a governmental or nongovernmental entity) to provide public services by conveying control of the right to operate or use a nonfinancial asset, such as infrastructure or other capital asset (the underlying PPP asset), for a period of time in an exchange or exchange-like transaction. An APA is an arrangement in which a government compensates an operator for services that may include designing, constructing, financing, maintaining, or operating an underlying nonfinancial asset for a period of time in an exchange or exchange-like transaction. This statement is effective for SMUD in 2023. SMUD is currently assessing the financial impact of adopting this statement but does not expect it to be material.

In May 2020, GASB issued SGAS No. 96, ***"Subscription-Based Information Technology Arrangements"*** (GASB No. 96). This statement provides guidance on the accounting and financial reporting for subscription-based information technology arrangements (SBITAs) for governments. The statement (1) defines a SBITA as a contract that conveys control of the right to use another party's information technology software, alone or in combination with tangible capital assets, as specified in the contract for a period of time in an exchange or exchange-like transaction; (2) establishes that a SBITA results in a right-to-use subscription asset and a corresponding subscription liability; (3) provides the capitalization criteria for outlays other than subscription payments, including implementation costs of a SBITA; and (4) requires note disclosures regarding a SBITA. To the

extent relevant, the standards for SBITAs are based on the standards established in GASB No. 87, *Leases*, as amended. This statement is effective for SMUD in 2023. SMUD is currently assessing the financial statement impact of adopting this statement.

In June 2022, GASB issued SGAS No. 100, "***Accounting Changes and Error Corrections – an amendment of GASB Statement No. 62***" (GASB No. 100), to enhance accounting and financial reporting requirements for accounting changes and error corrections. The statement defines accounting changes and sets forth requirements for reporting changes and error corrections in the financial statements. In addition, the statement contains requirements for disclosure in notes to financial statements of information about accounting changes and error corrections. Furthermore, for periods that are earlier than those included in the financial statements, information presented in required supplementary information and supplementary information should be restated for error corrections, but not for changes in accounting principles. This statement is effective for SMUD in fiscal year 2024. SMUD is currently assessing the financial statement impact of adopting this statement.

In June 2022, GASB issued SGAS No. 101, "***Compensated Absences***" (GASB No. 101), to better meet the information needs of financial statement users by updating the recognition and measurement guidance for compensated absences. The unified recognition and measurement model in this Statement will result in a liability for compensated absences that more appropriately reflects when a government incurs an obligation. This statement is effective for SMUD in fiscal year 2024. SMUD is currently assessing the financial statement impact of adopting this statement.

NOTE 3. ACCOUNTING CHANGE

In June 2017, GASB issued SGAS No. 87, "Leases" (GASB No. 87), to better meet the information needs of financial statement users by improving accounting and financial reporting for leases by governments. The statement requires recognition of certain lease assets and liabilities for leases that previously were classified as operating leases and recognized as inflows of resources or outflows of resources based on the payment provisions of the contract. GASB No. 87 establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under GASB No. 87, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. SMUD implemented GASB No. 87 in fiscal year 2022, retroactive to the beginning of fiscal year 2021. SMUD has assessed whether its leases meet the requirements of GASB No. 87. The implementation impacted the Statements of Net Position when the lease assets, receivables, liabilities and deferred inflow of resources were recorded. The implementation also impacted the Statements of Revenues, Expenses and Changes in Net Position as lease revenue, amortization expense, interest income, and interest expense were also recorded. Net Position was reduced by $0.8 million for 2021 due to the restatement (see Note 4).

SMUD has restated amounts of the affected balances within the financial statements for the period ended December 31, 2021, as follows:

STATEMENTS OF NET POSITION

	December 31,	
	2021 (restated)	2021
Assets		
Electric Utility Plant		
Plant in service	$ 6,864,040	$ 6,782,493
Less accumulated depreciation and depletion	(3,340,797)	(3,314,820)
Current Assets		
Receivables – net:		
Wholesale and other	58,628	58,202
Noncurrent Assets		
Due from affiliated entity	29,674	29,687
Prepayments and other	40,738	23,576
Current Liabilities		
Interest payable	50,739	50,709
Customer deposits and other	67,064	41,003
Noncurrent Liabilities		
Self insurance and other	118,146	87,617
Deferred Inflows of Resources		
Regulatory credits	543,014	543,027
Deferred lease inflows	17,373	-0-
Net Position		
Net investment in capital assets	1,349,688	1,350,709
Revenue bond and debt service	64,793	64,823
Unrestricted	777,674	777,459

STATEMENTS OF REVENUE, EXPENSES AND CHANGES IN NET POSITION

	December 31,	
	2021 (restated)	2021
Operating Revenues		
Street lighting and other	$ 41,739	$ 42,031
Operating Expenses		
Purchased power	395,572	420,350
Production	357,832	358,162
Administrative, general and customer	153,799	153,978
Depreciation and amortization	242,917	216,940
Non-operating revenues (expenses)		
Interest income	6,777	6,501
Other income - net	93,302	93,432
Change in Net Position	338,749	339,585
Net Position – End of Year	2,296,261	2,297,097

STATEMENTS OF CASH FLOWS

	December 31, 2021 (restated)	December 31, 2021
Cash flows from operating activities		
Receipts from customers	$ 1,498,124	$ 1,498,982
Payments for wholesale power and gas purchases	(599,268)	(621,944)
Payments to vendors/others	(320,201)	(320,710)
Cash flows from capital and related financing activities		
Lease and other payments	(23,185)	-0-
Cash received from leases	858	-0-
Reconciliation of operating income to net cash provided by operating activities:		
Operating income	339,935	340,917
Adjustments to reconcile operating income to net cash provided by operating activities:		
Depreciation	242,917	216,940
Other (receipts) payments – net	13,283	15,951

NOTE 4. ELECTRIC UTILITY PLANT

The summarized activity of SMUD's Electric Utility Plant during 2022 is presented below:

	Balance January 1, 2022	Additions	Transfers and Disposals	Balance December 31, 2022
	(thousands of dollars)			
Nondepreciable Electric Utility Plant:				
Land and land rights	$ 169,544	$ 1,072	$ -0-	$ 170,616
CWIP	367,297	353,439	(372,978)	347,758
Total nondepreciable electric utility plant	536,841	354,511	(372,978)	518,374
Depreciable Electric Utility Plant:				
Generation	1,751,920	21,801	(7,324)	1,766,397
Transmission	522,765	112,301	(341)	634,725
Distribution	2,651,039	147,235	(12,699)	2,785,575
Investment in JPAs	34,761	5,947	-0-	40,708
Intangibles	526,923	44,394	-0-	571,317
General	1,125,541	45,634	(23,361)	1,147,814
	6,612,949	377,312	(43,725)	6,946,536
Lease Assets:				
Land	1,764	-0-	-0-	1,764
Generation	76,804	-0-	-0-	76,804
General	2,979	2,577	-0-	5,556
	81,547	2,577	-0-	84,124
Less: accumulated depreciation and amortization	(3,333,205)	(248,672)	41,787	(3,540,090)
Less: accumulated amortization on JPAs	(7,592)	(313)	-0-	(7,905)
	(3,340,797)	(248,985)	41,787	(3,547,995)
Total depreciable plant	3,353,699	130,904	(1,938)	3,482,665
Total Electric Utility Plant - net	$ 3,890,540	$ 485,415	$ (374,916)	$ 4,001,039

The summarized activity of SMUD's Electric Utility Plant during 2021 is presented below:

	Balance January 1, 2021	Additions	Transfers and Disposals	Balance December 31, 2021 (Restated)
		(thousands of dollars)		
Nondepreciable Electric Utility Plant:				
Land and land rights	$ 159,515	$ 10,835	$ (806)	$ 169,544
CWIP	461,319	298,426	(392,448)	367,297
Total nondepreciable electric utility plant	620,834	309,261	(393,254)	536,841
Depreciable Electric Utility Plant:				
Generation	1,710,420	49,594	(8,094)	1,751,920
Transmission	410,567	113,776	(1,578)	522,765
Distribution	2,498,526	162,177	(9,664)	2,651,039
Investment in JPAs	30,012	4,749	-0-	34,761
Intangibles	517,415	18,016	(8,508)	526,923
General	1,098,911	39,861	(13,231)	1,125,541
	6,265,851	388,173	(41,075)	6,612,949
Lease Assets:				
Land	-0-	1,764	-0-	1,764
Generation	-0-	76,804	-0-	76,804
General	-0-	2,979	-0-	2,979
	-0-	81,547	-0-	81,547
Less: accumulated depreciation and amortization	(3,132,247)	(242,313)	41,355	(3,333,205)
Less: accumulated amortization on JPAs	(7,279)	(313)	-0-	(7,592)
	(3,139,526)	(242,626)	41,355	(3,340,797)
Total depreciable plant	3,126,325	171,524	280	3,353,699
Total Electric Utility Plant - net	$ 3,747,159	$ 536,355	$ (392,974)	$ 3,890,540

Leases. SMUD engages in lease contracts for land, communication sites, buildings, and a power plant. SMUD leases land to SFA, a component unit, and as described in Note 2, all of the activities and balances of the component units are blended into and reported as part of SMUD because of the extent of their operational and financial relationships with SMUD.

Lessor. Lease agreements include land, communication sites, and a building. Lease terms range from 19 to 35 years including options to extend the lease term after completion of the initial contracted term. The likelihood that the renewal options will be exercised has been evaluated and it has been determined that Lessees will exercise the renewal options with reasonable certainty. The agreements allow for periodic increases to the lease payments. The interest rates range between 0.7 percent to 4.2 percent based on the AAA Muni Curve with the number of years to maturity that corresponds to the lease term, plus an additional credit spread to account for a different credit rating and other factors. At December 31, 2022 and 2021, lease receivables included in current assets, Receivables – Wholesale and other (see Note 2), were $0.8 million and $0.4 million, respectively, and lease receivables included in noncurrent assets, Prepayments and other, were $17.8 million and $17.2 million, respectively. As of December 31, 2022 and 2021, deferred lease inflows were $18.2 million and $17.4 million, respectively. SMUD recognized lease revenue of $0.7 million and $0.6 million in 2022 and 2021, respectively, which is reported in Street lighting and other on

the Statements of Revenues, Expenses and Changes in Net Position. SMUD recognized interest income of $0.03 million in 2022 and 2021. There were no variable lease payments received in 2022 or 2021.

Lessee. Lessee agreements include land, buildings, and a power plant. Lease terms range from 3 to 25 years including options to extend the lease term after completion of the initial contracted term. The likelihood that the renewal options will be exercised has been evaluated and it has been determined that the lease agreements will be renewed with reasonable certainty. The agreements allow for periodic increases to the lease payments. The interest rates range between 0.1 percent to 4.2 percent based on the AAA Muni Curve with the number of years to maturity that corresponds to the lease term, plus an additional credit spread to account for a different credit rating and other factors. As of December 31, 2022 and 2021, assets recorded under leases were $84.1 million and $81.5 million, respectively, and accumulated amortization associated with lease assets was $52.0 million and $26.0 million, respectively. SMUD recognized amortization expense of $26.0 million in 2022 and 2021 which is reported as Depreciation and amortization on the Statements of Revenues, Expenses and Changes in Net Position. As of December 31, 2022 and 2021, lease obligations included in current liabilities, Customer deposits and other, were $26.8 million and $26.1 million, respectively, and lease obligations included in noncurrent liabilities, Self insurance and other, were $6.3 million and $30.5 million, respectively. There were no lease impairments in 2022 or 2021. There were no payments recorded in the current period that were not included in the measurement of the lease liability. There is one lease commitment for which the lease term begins in 2024 and will be recorded as a lease asset and lease liability upon commencement of the lease term.

The following table summarizes the future lease principal and interest payments as of December 31, 2022:

	Principal	Interest	Total
2023	$ 26,767	$ 174	$ 26,941
2024	402	142	544
2025	419	137	556
2026	429	132	561
2027	438	127	565
2028-2032 (combined)	1,816	548	2,364
2033-2037 (combined)	939	422	1,361
2038-2042 (combined)	979	273	1,252
2043-2046 (combined)	919	99	1,018
Total	$ 33,108	$ 2,054	$ 35,162

NOTE 5. INVESTMENT IN JOINT POWERS AUTHORITY

TANC. SMUD and fourteen other California municipal utilities are members of TANC, a JPA. TANC, along with the other California municipal utilities, own and operate the California-Oregon Transmission Project (COTP), a 500-kilovolt transmission line between central California and southern Oregon. SMUD is obligated to pay approximately 39 percent of TANC's COTP debt service and operations costs in exchange for entitlement to approximately 536 megawatts (MW) of TANC's 1,390 MW transfer capability. Additionally, SMUD has a 48 MW share of TANC's 300 MW firm, bi-directional transmission over Pacific Gas and Electric Company's (PG&E) system between PG&E's Tesla and Midway substations (SOT). The total entitlement shares for the COTP and SOT described above include the long-term agreements listed below.

In 2009, SMUD entered into a 15-year long-term layoff agreement with TANC and certain members, expiring January 31, 2024. This agreement provides for the assignment of all rights and obligations of the City of Palo Alto and the City of Roseville related to their COTP and SOT entitlements. This agreement increased SMUD's COTP entitlement by 36 MW and SOT entitlement by 2 MW. On July 1, 2014, an amendment returned to the City of Roseville all rights and obligations related to the COTP entitlements, which decreased SMUD's COTP entitlement by 13 MW.

Effective July 1, 2014, SMUD entered into a 25-year long-term layoff agreement with TANC and certain members that provides for the assignment of all rights and obligations of Northern California Power Agency and partial rights and obligations of the City of Santa Clara related to their COTP entitlements. This agreement increased SMUD's COTP entitlements by 130 MW.

The long-term debt of TANC, which totals $167.8 million (unaudited) at December 31, 2022, is collateralized by a pledge and assignment of net revenues of TANC supported by take or pay commitments of SMUD and other members. Should other members default on their obligations to TANC, SMUD would be required to make additional payments to cover a portion of such defaulted payments, up to 25 percent of its current obligation. SMUD recorded transmission expenses related to TANC of $16.9 million and $16.5 million in 2022 and 2021, respectively.

Summary financial information for TANC is presented below:

	December 31,	
	2022 (Unaudited)	2021(restated) (Unaudited)
	(thousands of dollars)	
Total Assets	$ 389,258	$ 372,434
Total Deferred Outflows of Resources	106	349
Total Assets and Deferred Outflows of Resources	$ 389,364	$ 372,783
Total Liabilities	$ 309,291	$ 307,554
Total Deferred Inflows of Resources	995	1,079
Total Net Position	79,078	64,150
Total Liabilities and Net Position	$ 389,364	$ 372,783
Changes in Net Position for the Six Months Ended December 31	$ 7	$ -0-

Copies of the TANC annual financial reports may be obtained from SMUD at P.O. Box 15830, Sacramento, California 95852 or online at www.tanc.us.

BANC. SMUD, City of Redding, City of Roseville, Modesto Irrigation District (MID), City of Shasta Lake, and Trinity Public Utilities District are members of BANC, a JPA formed in 2009. In 2011, operational control of Balancing Authority Area (BAA) operations was transferred from SMUD to BANC. BANC performs FERC approved BAA reliability functions that are managed by North American Electric Reliability Corporation (NERC), nationally, and by Western Electricity Coordinating Council functions in the west. SMUD recorded expenses related to BANC of $3.9 million and $3.7 million in 2022 and 2021, respectively.

Summary financial information for BANC is presented below:

	December 31,	
	2022 (Audited)	2021 (Audited)
	(thousands of dollars)	
Total Assets	$ 15,028	$ 7,097
Total Liabilities	$ 15028	$ 7,097
Total Net Position	-0-	-0-
Total Liabilities and Net Position	$ 15,028	$ 7,097
Changes in Net Position for the Year Ended December 31	$ -0-	$ -0-

Copies of the BANC annual financial reports may be obtained from SMUD at P.O. Box 15830, Sacramento, California 95852.

NOTE 6. COMPONENT UNITS

CVFA Carson Power Plant Cogeneration Project. CVFA is a JPA formed by SMUD and the Sacramento Regional County Sanitation District. CVFA operates the Carson Power Plant Project, a 65 MW (net) natural gas-fired cogeneration facility and a 42 MW (net) natural gas-fired simple cycle peaking plant. On November 1, 2021, CVFA transferred the assets and obligations, including the ownership of the Carson Power Plant to SFA (see Note 2).

SCA Procter & Gamble Power Plant Cogeneration Project. SCA is a JPA formed by SMUD and the SFA. SCA operates the Procter & Gamble Power Plant Project, a 136 MW (net) natural gas-fired cogeneration facility and a 50 MW (net) natural gas-fired simple cycle peaking plant. On November 1, 2021, SCA transferred the assets and obligations, including the ownership of the Procter & Gamble Power Plant to SFA (see Note 2).

SFA Cosumnes Power Plant Project. SFA is a JPA formed by SMUD and MID. SFA operates the Cosumnes Power Plant Project, a 602 MW (net) natural gas-fired, combined cycle facility. The revenue stream to pay the SFA bonds' debt service is provided by a "take-or-pay" power purchase agreement between SMUD and SFA. On November 1, 2021, CVFA, SCA and SPA assets and obligations, including ownership of the assigned Power Plants, were transferred to SFA (see Note 2).

SPA Campbell Soup Power Plant Cogeneration Project. SPA is a JPA formed by SMUD and the SFA. SPA operates the Campbell Soup Power Plant Project, a 160 MW (net) natural gas-fired cogeneration facility, and the McClellan Power Plant Project, a 72 MW (net) natural gas-fired simple cycle peaking plant. On November 1, 2021, SPA transferred the assets and obligations, including the ownership of the Campbell and McClellan Power Plants to SFA (see Note2).

NCGA. NCGA is a JPA formed by SMUD and the SFA. NCGA has a prepaid gas contract with Morgan Stanley Capital Group (MSCG) expiring in 2027, which is financed primarily by NCGA revenue bonds. SMUD has contracted with NCGA to purchase all the gas delivered by MSCG to NCGA, based on market prices. NCGA is obligated to pay the principal and interest on the bonds. Neither SMUD nor SFA is obligated to make debt service payments on the bonds. NCGA can terminate the prepaid gas contract under certain circumstances, including a failure by MSCG to meet its gas delivery obligation to NCGA or a drop in MSCG's credit rating below a specified level. If this occurs, MSCG will be required to make a termination payment to NCGA based on the unamortized prepayment proceeds received by MSCG.

NCEA. NCEA is a JPA formed by SMUD and the SFA. NCEA has a prepaid natural gas and electricity (commodity) contract with J. Aron & Company LLC (J. Aron) expiring in 2049, which is financed primarily by NCEA revenue bonds. SMUD has contracted with NCEA to purchase all the commodity delivered by J. Aron to NCEA, based on market prices. NCEA is obligated to pay the principal and interest on the bonds. Neither SMUD nor SFA is obligated to make debt service payments on the bonds. NCEA can terminate the prepaid commodity contract under certain circumstances, including a failure by J. Aron to meet its commodity delivery obligation to NCEA. If this occurs, J. Aron will be required to make a termination payment to NCEA based on the unamortized prepayment proceeds received by J. Aron.

The summarized activity of SMUD's component units for 2022 is presented below:

CONDENSED STATEMENTS OF NET POSITION
December 31, 2022
(thousands of dollars)

	SFA	NCGA	NCEA
Assets			
Electric Utility Plant - net	$ 309,606	$ -0-	$ -0-
Current Assets	109,011	40,591	36,148
Noncurrent Assets	682	112,872	524,549
Total Assets	419,299	153,463	560,697
Deferred Outflows of Resources	3,258	-0-	-0-
Total Assets and Deferred Outflows of Resources	$ 422,557	$ 153,463	$ 560,697
Liabilities			
Long-Term Debt - net	$ 95,553	$ 120,070	$ 544,562
Current Liabilities	44,332	24,404	20,537
Noncurrent Liabilities	15,215	-0-	208
Total Liabilities	155,100	144,474	565,307
Net Position	267,457	8,989	(4,610)
Total Liabilities and Net Position	$ 422,557	$ 153,463	$ 560,697

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
December 31, 2022
(thousands of dollars)

	SFA	NCGA	NCEA
Operating Revenues	$ 115,247	$ 28,472	$ 22,955
Operating Expenses	94,435	22,520	3,845
Operating Income	20,812	5,952	19,110
Non-Operating Revenues and Expenses			
Other Revenues	1,155	326	-0-
Interest Charges and Other	(3,126)	(6,610)	(16,354)
Change in Net Position Before Distributions and Contributions	18,841	(332)	2,756
Distribution to Member	(35,000)	(590)	(941)
Member Contributions	-0-	73	140
Change in Net Position	(16,159)	(849)	1,955
Net Position – Beginning of Year	283,616	9,838	(6,565)
Net Position – End of Year	$ 267,457	$ 8,989	$ (4,610)

CONDENSED STATEMENTS OF CASH FLOWS
December 31, 2022
(thousands of dollars)

	SFA	NCGA	NCEA
Net Cash Provided by Operating Activities	$ 47,786	$ 25,312	$ 22,955
Net Cash Provided by (Used in) Noncapital Financing Activities	(35,000)	(27,955)	(22,694)
Net Cash Used in Capital Financing Activities	(41,839)	-0-	-0-
Net Cash Provided by (Used in) Investing Activities	384	536	(8,579)
Net Decrease in Cash and Cash Equivalents	(28,669)	(2,107)	(8,318)
Cash and Cash Equivalents at the Beginning of the Year	69,630	14,823	10,877
Cash and Cash Equivalents at the End of the Year	$ 40,961	$ 12,716	$ 2,559

The summarized activity of SMUD's component units for 2021 is presented below:

CONDENSED STATEMENTS OF NET POSITION
December 31, 2021
(thousands of dollars)

	SFA (Restated)	NCGA	NCEA
Assets			
Electric Utility Plant - net	$ 309,574	$ -0-	$ -0-
Current Assets	133,673	39,938	28,879
Noncurrent Assets	790	138,186	528,808
Total Assets	444,037	178,124	557,687
Deferred Outflows of Resources	3,267	-0-	-0-
Total Assets and Deferred Outflows of Resources	$ 447,304	$ 178,124	$ 557,687
Liabilities			
Long-Term Debt - net	$ 99,421	$ 142,935	$ 551,815
Current Liabilities	49,507	25,351	12,277
Noncurrent Liabilities	14,760	-0-	160
Total Liabilities	163,688	168,286	564,252
Net Position	283,616	9,838	(6,565)
Total Liabilities and Net Position	$ 447,304	$ 178,124	$ 557,687

CONDENSED STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
December 31, 2021
(thousands of dollars)

	SFA (Restated)	NCGA	NCEA
Operating Revenues	$ 143,050	$ 27,092	$ 21,406
Operating Expenses	137,234	19,980	3,573
Operating Income	5,816	7,112	17,833
Non-Operating Revenues and Expenses			
Other Revenues	51	492	459
Interest Charges and Other	(3,464)	(7,449)	(16,774)
Change in Net Position Before Distributions, Contributions and Special Item	(3,413)	155	1,518
Distribution to Member	-0-	(544)	(843)
Member Contributions	-0-	81	79
Special Item	161,298	-0-	-0-
Change in Net Position	163,701	(308)	754
Net Position – Beginning of Year	119,915	10,146	(7,319)
Net Position – End of Year	$ 283,616	$ 9,838	$ (6,565)

CONDENSED STATEMENTS OF CASH FLOWS
December 31, 2021
(thousands of dollars)

	SFA (Restated)	NCGA	NCEA
Net Cash Provided by Operating Activities	$ 25,536	$ 26,145	$ 21,405
Net Cash Provided by (Used in) Noncapital Financing Activities	37,999	(26,626)	(22,595)
Net Cash Used in Capital Financing Activities	(17,827)	-0-	-0-
Net Cash Provided by Investing Activities	56	492	1,190
Net Increase in Cash and Cash Equivalents	45,764	11	-0-
Cash and Cash Equivalents at the Beginning of the Year	23,866	14,812	10,877
Cash and Cash Equivalents at the End of the Year	$ 69,630	$ 14,823	$ 10,877

As described in Note 2, all of the activities and balances of the component units are blended into and reported as part of SMUD because of the extent of their operational and financial relationships with SMUD. Copies of SFA's, NCGA's and NCEA's annual financial reports may be obtained from their Executive Office at P.O. Box 15830, Sacramento, California 95852 or online at www.smud.org.

NOTE 7. CASH, CASH EQUIVALENTS, AND INVESTMENTS

Cash Equivalents and Investments. SMUD's investment policy is governed by the California State and Municipal Codes and its Indenture, which allow SMUD's investments to include: obligations which are unconditionally guaranteed by the U.S. Government or its agencies or instrumentalities; direct and general obligations of the State or any local agency within the State; bankers' acceptances; commercial paper; certificates of deposit; repurchase and reverse repurchase agreements; medium term corporate notes; LAIF; and money market funds. SMUD's investment policy includes restrictions for investments relating to maximum amounts invested as a percentage of total portfolio and with a single issuer, maximum maturities, and minimum credit ratings.

Credit Risk. This is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. To mitigate this risk, SMUD limits investments to those rated, at a minimum, "A-1" or equivalent for short-term investments and "A" or equivalent for medium-term corporate notes by a nationally recognized rating agency, with the exception of the Guaranteed Investment Contracts (GICs) held by NCEA. NCEA's GICs are rated at the credit rating of the commodity supplier, or, if not rated, the guarantor of the commodity supplier which is currently Goldman Sachs rated as "BBB+".

Custodial Credit Risk. This is the risk that, in the event of the failure of a depository financial institution or counterparty to a transaction, SMUD's deposits and investments may not be returned or SMUD will not be able to recover the value of its deposits, investments or collateral securities that are in the possession of another party. SMUD does not have a deposit or investment policy for custodial credit risk.

As of December 31, 2022 and 2021, $9.7 million and $21.9 million in deposits were uninsured, respectively. The bank balance is also, per a depository pledge agreement between SMUD and SMUD's bank, collateralized at 128 percent and 129 percent of the collective funds on deposit (increased by the amount of accrued but uncredited interest, reduced by deposits covered by Federal Deposit Insurance Corporation) at December 31, 2022 and 2021, respectively. SMUD had money market funds of $185.7 million and $141.6 million which were uninsured at December 31, 2022 and 2021, respectively. SMUD's investments and money market funds are held in SMUD's name.

Concentration of Credit Risk. This is the risk of loss attributed to the magnitude of an entity's investment in a single issuer. SMUD places no limit on the amounts invested in any one issuer for repurchase agreements, US Treasuries, federal agency, and state and municipal securities.

The following are the concentrations of risk greater than five percent in either year:

	December 31,	
	2022	2021
Investment Type:		
Federal Home Loan Banks	68%	30%
Freddie Mac	N/A	13%
Corporate Note – Toyota Motor Credit Corp	5%	N/A
Municipal Bond – CA Department of Water Resources	N/A	18%
Municipal Bond – State of Florida	5%	16%
Municipal Bond – State of California	N/A	7%
Federal Farm Credit Bank	6%	N/A
Ebury	N/A	7%
Guaranteed Investment Contracts	4%	7%

Interest Rate Risk. This is the risk of loss due to the fair value of an investment declining due to interest rates rising. Though SMUD has restrictions as to the maturities of some of the investments, it does not have a formal policy that limits

investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates. SMUD is exposed to interest rate risk on its interest rate swaps (see Note 9).

The following schedules indicate the credit and interest rate risk at December 31, 2022 and 2021. The credit ratings listed are from Standard & Poor's (S&P) or Moody's. (N/A is defined as not applicable to the rating disclosure requirements.)

At December 31, 2022, SMUD's cash, cash equivalents, and investments consist of the following:

		Remaining Maturities (in years)			
Description	Credit Rating	Less Than 1	1-5	More Than 5	Total Fair Value
		(thousands of dollars)			
Cash and Cash Equivalents:					
Cash	N/A	$ 2,453	$ -0-	$ -0-	$ 2,453
LAIF	Not Rated	85,502	-0-	-0-	85,502
Money Market Funds	AAAm	185,709	-0-	-0-	185,709
Deposit at Notice	N/A	103,597	-0-	-0-	103,597
Commercial Paper	A-1	12,577	-0-	-0-	12,577
Total cash and cash equivalents		389,838	-0-	-0-	389,838
Investments:					
Federal Home Loan Bank	AA+	218,532	123,332	-0-	341,864
Federal Farm Credit Bank	AA+	-0-	29,377	-0-	29,377
U.S. Treasury Obligations	Aaa	39,569	24,272	-0-	63,841
Corporate Notes	AAA/AA+/A-/A+/A	-0-	48,490	-0-	48,490
Municipal Bonds	AAA/AA+/AA-	24,582	25,327	-0-	49,909
Guaranteed Investment Contracts	BBB+	-0-	19,350	-0-	19,350
Total investments		282,683	270,148	-0-	552,831
Total cash, cash equivalents, and investments		$ 672,521	$ 270,148	$ -0-	$ 942,669

At December 31, 2021, SMUD's cash, cash equivalents, and investments consist of the following:

		Remaining Maturities (in years)			
Description	Credit Rating	Less Than 1	1-5	More Than 5	Total Fair Value
		(thousands of dollars)			
Cash and Cash Equivalents:					
Cash	N/A	$ 4,931	$ -0-	$ -0-	$ 4,931
LAIF	Not Rated	526,297	-0-	-0-	526,297
Money Market Funds	AAAm	141,605	-0-	-0-	141,605
Deposit at Notice	N/A	105,922	-0-	-0-	105,922
Commercial Paper	A-1	9,893	-0-	-0-	9,893
Total cash and cash equivalents		788,648	-0-	-0-	788,648
Investments:					
Federal Home Loan Bank	AA+	44,992	-0-	-0-	44,992
Freddie Mac	AA+	20,013	-0-	-0-	20,013
U.S. Treasury Obligations	AA+	39,993	-0-	-0-	39,993
Corporate Notes	AA+	3,975	-0-	-0-	3,975
Municipal Bonds	AAA/AA+/AA-	37,947	24,851	-0-	62,798
Guaranteed Investment Contracts	BBB+	-0-	10,258	-0-	10,258
Total investments		146,920	35,109	-0-	182,029
Total cash, cash equivalents, and investments		$ 935,568	$ 35,109	$ -0-	$ 970,677

SMUD's cash, cash equivalents, and investments are classified in the Statements of Net Position as follows:

	December 31, 2022	December 31, 2021
	(thousands of dollars)	
Cash, Cash Equivalents, and Investments:		
Revenue bond reserve and debt service funds:		
Revenue bond reserve fund	$ 2,004	$ 2,931
Debt service fund	81,263	78,922
Component unit bond reserve and debt service funds	36,118	38,171
Total revenue bond reserve and debt service funds	119,385	120,024
Nuclear decommissioning trust fund	8,980	8,874
Rate stabilization fund	156,016	188,992
Component unit other restricted funds	3,015	6,575
Escrow fund	12,484	15,182
Other restricted funds	14,925	654
Unrestricted funds	627,864	630,376
Total cash, cash equivalents, and investments	$ 942,669	$ 970,677

NOTE 8. REGULATORY DEFERRALS

The Board has taken various regulatory actions that result in differences between the recognition of revenues and expenses for ratemaking purposes and their treatment under generally accepted accounting principles for non-regulated entities (see Note 2). These actions result in regulatory assets and deferred inflow of resources, which are summarized in the tables below. Changes to these balances, and their inclusion in rates, occur only at the direction of the Board.

Regulatory Assets (Costs)

Decommissioning. SMUD's regulatory asset relating to the unfunded portion of its decommissioning liability for the Rancho Seco nuclear power plant is being collected through interest earnings on the Trust Fund. Nuclear fuel storage costs and non-radiological decommissioning costs have been collected in rates since 2009.

Derivative Financial Instruments. SMUD's regulatory costs and/or credits relating to investment derivative instruments are intended to defer the net difference between the fair value of derivative instruments and their cost basis, if any. Investment derivative instruments are reflected in rates at contract cost and as such, the balance is charged or credited into rates as the related asset or deferred inflow of resource is utilized (see Note 9).

Debt Issuance Costs. SMUD established a regulatory asset for costs incurred in connection with the issuance of debt obligations, principally underwriter fees and legal costs. The regulatory asset is amortized through 2022 for the portion related to SMUD's debt issuance costs and over the life of the bonds for the portion related to the component units' debt issuance costs. Debt issuance costs after December 31, 2013 are expensed.

Pension. SMUD established a regulatory asset for pension costs related to the implementation of GASB No. 68 which requires SMUD to record a net pension asset or a net pension liability. The regulatory asset is being amortized over a period of 25 years starting in 2018.

OPEB. SMUD established a regulatory asset for OPEB costs related to the implementation of GASB No. 75 which requires SMUD to record a net OPEB asset or net OPEB liability. The regulatory asset will be amortized over a period of 25 years starting in 2020.

Pension/OPEB. In 2022, SMUD established regulatory accounting for pension and OPEB regulatory costs and/or credits to defer recognition of certain expenses related to the amortization of the pension and OPEB deferred outflows and deferred inflows of resources to match such costs in the appropriate accounting period for rate-making purposes.

SMUD's total regulatory costs for future recovery are presented below:

	December 31,	
	2022	2021
	(thousands of dollars)	
Regulatory Costs:		
Decommissioning	$ 83,882	$ 83,846
Derivative financial instruments	1,095	5,387
Debt issuance costs	1,255	1,464
Pension – implementation costs	340,544	357,571
Pension – deferred outflows	86,574	-0-
OPEB – implementation costs	281,010	293,783
OPEB – deferred outflows	19,198	-0-
Total regulatory costs	813,558	742,051
Less: regulatory costs to be recovered within one year	(49,312)	(38,303)
Total regulatory costs for future recovery - net	$ 764,246	$ 703,748

Regulatory Credits

CIAC. In 2022 and 2021, SMUD added CIAC totaling $23.9 million and $24.2 million, respectively, to Regulatory Credits in the Statements of Net Position and recorded $14.8 million and $14.2 million of amortization, respectively, to Other income (expense) - net in the Statements of Revenues, Expenses and Changes in Net Position. SMUD's regulatory credit relating to CIAC is intended to offset the revenue and expense associated with this accounting treatment. Thus, this regulatory credit is being amortized into rates over the depreciable lives of the related assets in order to offset the earnings effect of these non-exchange transactions.

Rate Stabilization. SMUD's regulatory credit relating to Rate Stabilization is intended to defer the need for future rate increases when costs exceed existing rates. At the direction of the Board, amounts may be either deferred into this fund (which reduces revenues), or amounts are recognized out of this fund (which increases revenues). The Board authorizes Rate Stabilization Fund (RSF) deferrals on an event driven basis.

In 2022 and 2021, $30.0 million and $11.4 million, respectively, was recognized as revenue from the RSF as a result of lower than budgeted energy deliveries from the Western Area Power Administration.

SMUD participates in the carbon allowance auctions under AB-32, the Global Warming Solutions Act (see Note 2). The Board authorized deferral of AB-32 auction proceeds to match the revenue recognition with the related expenses. The difference between the auction proceeds received and the funds spent on AB-32 programs are deferred into future years. In 2022 and 2021, the Board authorized deferring the difference into the RSF and $23.0 million and $16.2 million, respectively, was deferred from revenue to the RSF.

SMUD sells LCFS credits under AB-32, the Global Warming Solutions Act (see Note 2). In 2019, the Board authorized deferral of LCFS credit sales to match the revenue recognition with the related expenses. The difference between the LCFS credit sales and the funds spent on LCFS programs are deferred into future years. In 2022, the Board authorized deferring the difference and $0.7 million was deferred from revenue to the RSF. In 2021, the Board authorized recognizing the difference and $0.9 million was recognized from the RSF to revenue.

In 2021, the Board authorized SMUD to defer $35.0 million from revenue to the RSF to offset future one-time specific expenses which may have a significant financial impact on SMUD. In 2022, the Board authorized the use of $41.0 million of

deferred operating revenue to offset future Community Impact Plan expenditures from 2022 through 2025, and $1.5 million was recognized from the RSF to revenue.

Hydro Rate Stabilization. The Hydro Rate Stabilization Fund (HRSF) was established through the Hydro Generation Adjustment (HGA) mechanism, which helps manage volatility in energy costs. The HGA mechanism applies a formula based on precipitation and wholesale electricity prices to calculate needed withdrawals from or deposits to the HRSF. The maximum balance of the HRSF is 6 percent of the budgeted retail revenue and the maximum annual transfer in or out of the HRSF is 4 percent of budgeted retail revenue. If the HRSF is depleted, SMUD will apply a hydro rate surcharge to customers' bills up to 4 percent. When the HRSF reaches the 6 percent cap, the Board may authorize a hydro rebate to customers or direct the funds for another purpose. In 2022 and 2021, $25.1 million and $18.6 million, respectively, was recognized from the HRSF to revenue as a result of low precipitation.

Senate Bill 1. SMUD implemented a per kilowatt hour solar surcharge, effective January 1, 2008 in order to fund investments in solar required by Senate Bill 1 (SB-1). The difference between the surcharge revenues received and the funds spent on solar initiatives will be recognized or deferred into future years. SMUD has spent less than it collected in SB-1 revenues and has recorded a regulatory credit. Collection of the solar surcharge ended in December 2017 when total collections reached $130.0 million. In 2022 and 2021, $0.04 million and $0.8 million was spent for SB-1 programs, respectively.

Grant Revenues. In 2009, SMUD was awarded several large grants under the American Recovery and Reinvestment Act, which provided significant reimbursements for capital expenditures. In 2010, the Board authorized the deferral of grant income for capital expenditures as regulatory liabilities. Thus, this regulatory credit was deferred to match the depreciable lives of the related capital assets in order to offset the earnings effect of these non-exchange transactions.

TANC Operations Costs. SMUD's cash payments to TANC exceeded TANC's accrual-based costs and SMUD has recorded a regulatory credit.

SMUD's total regulatory credits for future revenue recognition are presented below:

	December 31,	
	2022	2021 Restated
	(thousands of dollars)	
Regulatory Credits:		
CIAC	$ 298,026	$ 288,856
Derivative Financial Instruments	2,767	-0-
Rate stabilization	125,032	132,876
Hydro rate stabilization	30,984	56,117
Senate Bill 1	3,430	3,470
Pension – deferred inflows	68,082	-0-
OPEB – deferred inflows	32,983	-0-
Grant revenues	27,920	32,021
TANC operations costs	31,149	29,674
Total regulatory credits	$ 620,373	$ 543,014

NOTE 9. DERIVATIVE FINANCIAL INSTRUMENTS

To help provide stable electric rates and to meet the forecasted power needs of its retail customers reliably, SMUD enters into various physical and financial fixed price purchase contracts for electricity and natural gas. These fixed price contracts and swap agreements are intended to hedge the exposure due to highly volatile commodity prices. SMUD also enters into interest rate swap agreements to reduce interest rate risk. SMUD utilizes these derivative financial instruments to mitigate its exposure to certain market risks associated with ongoing operations. SMUD has established policies set by an executive committee for the use of derivative financial instruments for trading purposes. These contracts are evaluated pursuant to SGAS No. 53,

"Accounting and Financial Reporting for Derivative Instruments," (GASB No. 53) to determine whether they meet the definition of derivative instruments, and if so, whether they effectively hedge the expected cash flows associated with interest rate and commodity price risk exposures.

SMUD applies hedge accounting for derivative instruments that are deemed effective hedges. Under hedge accounting, the increase or (decrease) in the fair value of a hedge is reported as a Deferred Inflow or Deferred Outflow in the Statements of Net Position. Accumulated gains and losses from derivative instruments that do not meet the effectiveness tests are deferred for ratemaking purposes as regulatory assets on the Statements of Net Position (see Note 8).

SMUD executed numerous new gas and power related purchase agreements, some of which are recorded as hedging or investment derivative instruments and are therefore included in the following table. All hedging or investment derivative instruments are recorded at fair value in the Statements of Net Position (see Note 12).

The following is a summary of the fair value, changes in fair value and notional amounts of derivative instruments, grouped by trading strategy, outstanding at December 31, 2022 (amounts in thousands; gains shown as positive amounts, losses as negative):

	2022 Changes in Fair Value		Fair Value at December 31, 2022		
	Current Amount	Noncurrent Amount	Current Amount	Noncurrent Amount	Notional
Cash Flow Hedges:					
(thousands of dollars)					
(thousands of Dekatherms (Dth))					
Asset: Investment Derivative Instruments					
Gas – Commodity	$ 1,936	$ (474)	$ 3,110	$ 329	688 Dth
Gas – Storage	87	-0-	87	-0-	77 Dth
Gas – Transportation	2,493	-0-	2,673	-0-	155 Dth
Total Investment Derivative Instruments	$ 4,516	$ (474)	$ 5,870	$ 329	
Asset: Hedging Derivative Instruments					
Gas – Commodity	$ 64,093	$ 19,348	$ 95,386	$ 52,029	57,997 Dth
Gas – Storage	11	-0-	502	-0-	303 Dth
Gas – Transportation	49,472	-0-	53,024	-0-	10,102 Dth
Interest Rate	1,153	28,574	2,437	33,646	$245,865
Total Hedging Derivative Instruments	$ 114,729	$ 47,922	$ 151,349	$ 85,675	
Liability: Investment Derivative Instruments					
Gas – Commodity	$ (2,071)	$ 169	$ 2,076	$ 70	927 Dth
Gas – Storage	(90)	-0-	90	-0-	78 Dth
Gas – Transportation	-0-	-0-	-0-	-0-	
Interest Rate	1,815	3,193	937	1,354	$68,450
Total Investment Derivative Instruments	$ (346)	$ 3,362	$ 3,103	$ 1,424	
Liability: Hedging Derivative Instruments					
Gas – Commodity	$ 2,493	$ (5,314)	$ 12,859	$ 6,802	30,655 Dth
Gas – Storage	(7,637)	-0-	8,255	-0-	302 Dth
Gas – Transportation	1,040	-0-	522	-0-	4,188 Dth
Interest Rate	700	2,880	-0-	-0-	$0
Total Hedging Derivative Instruments	$ (3,404)	$ (2,434)	$ 21,636	$ 6,802	

The following is a summary of the fair value, changes in fair value and notional amounts of derivative instruments, grouped by trading strategy, outstanding at December 31, 2021 (amounts in thousands; gains shown as positive amounts, losses as negative):

	2021 Changes in Fair Value		Fair Value at December 31, 2021		
	Current Amount	Noncurrent Amount	Current Amount	Noncurrent Amount	Notional
Cash Flow Hedges:					
(thousands of dollars)					
(thousands of Dekatherms (Dth))					
Asset: Investment Derivative Instruments					
Gas – Commodity	$ 1,174	$ 770	$ 1,174	$ 803	2,445 Dth
Gas – Storage	-0-	-0-	-0-	-0-	
Gas – Transportation	180	-0-	180	-0-	78 Dth
Total Investment Derivative Instruments	$ 1,354	$ 770	$ 1,354	$ 803	
Asset: Hedging Derivative Instruments					
Gas – Commodity	$ 29,964	$ 30,356	$ 31,293	$ 32,681	76,850 Dth
Gas – Storage	190	-0-	491	-0-	380 Dth
Gas – Transportation	2,062	-0-	3,552	-0-	9,395 Dth
Interest Rate	(509)	(1,209)	1,284	5,072	$263,535
Total Hedging Derivative Instruments	$ 31,707	$ 29,147	$ 36,620	$ 37,753	
Liability: Investment Derivative Instruments					
Gas – Commodity	$ 4	$ 24	$ 5	$ 239	1,223 Dth
Gas – Storage	-0-	-0-	-0-	-0-	
Gas – Transportation	-0-	-0-	-0-	-0-	
Interest Rate	(1,360)	3,093	2,752	4,547	$74,375
Total Investment Derivative Instruments	$ (1,356)	$ 3,117	$ 2,757	$ 4,786	
Liability: Hedging Derivative Instruments					
Gas – Commodity	$ 5,314	$ 17,210	$ 15,352	$ 1,488	12,983 Dth
Gas – Storage	479	-0-	618	-0-	380 Dth
Gas – Transportation	(1,562)	-0-	1,562	-0-	3,805 Dth
Interest Rate	(179)	7,718	700	2,880	$157,785
Total Hedging Derivative Instruments	$ 4,052	$ 24,928	$ 18,232	$ 4,368	

Objectives and Terms of Hedging Derivative Instruments. The objectives and terms of SMUD's hedging derivative instruments that were outstanding at December 31, 2022 are summarized in the table below. The table is aggregated by the trading strategy. Credit ratings of SMUD's counterparties can be found in the table under Credit Risk. Details of SMUD's interest rate derivative instruments can be found in Note 10.

	Notional Amount Dth	Beginning Date	Ending Date	Minimum Price/Dth	Maximum Price/Dth
Gas – Commodity	90,267	01/01/23	12/31/25	$ 1.18	$ 50.38
Gas – Storage	760	01/01/23	02/28/23	1.19	20.50
Gas – Transportation	14,445	01/01/23	12/31/23	(2.86)	16.00

The objectives and terms of SMUD's hedging derivative instruments that were outstanding at December 31, 2021 are summarized in the table below. The table is aggregated by the trading strategy.

	Notional Amount Dth	Beginning Date	Ending Date	Minimum Price/Dth	Maximum Price/Dth
Gas – Commodity	95,478	01/01/08	12/31/25	$ 1.00	$ 7.80
Gas – Storage	760	01/01/22	02/28/22	.85	6.20
Gas – Transportation	13,278	01/01/22	12/31/22	(1.30)	1.35

SMUD hedges its interest rate exposure with swaps. One swap is used to convert some of the interest expense associated with the 1997 Series K fixed rate bonds to a variable rate interest expense (see note 10). SMUD also has a swap that is designed to fix the interest expense associated with commercial paper (see Note 11). SMUD has two forward starting swaps that are designed to synthetically fix the interest expense associated with refunding bonds that are expected to be issued to refund the 2013 Series A and 2013 Series B bonds in 2023 (see Note 10).

SMUD hedges its power and natural gas costs so that it can offer predictable rates to its retail electric customers and support its credit rating. SMUD maintains a risk management program to control the price, credit, and operational risks arising from its power and natural gas market activities. Under the program, authorized SMUD employees assemble a portfolio of swaps, futures, and forward contracts over time with the goal of making SMUD's purchased power and fuel budget more predictable.

The hedged risks include those related to interest rate and commodity price fluctuations associated with certain forecasted transactions, including interest rate risk on long-term debt, and forward purchases of gas and electricity to meet load.

Derivative Instruments Not Designated as Hedging Derivative Instruments

Gas and Electric Contracts. SMUD utilizes certain gas swap and electric swap agreements under GASB No. 53 not designated as hedging derivative instruments to mitigate exposure to changes in the market price of natural gas and electricity. The fair value of each agreement, excluding the actual settlements to be paid or received as of the end of the period, is recorded in the Statements of Net Position in either Current or Noncurrent Assets, Investment Derivative Instruments if in an asset position or Current or Noncurrent Liabilities, Investment Derivative Instruments if in a liability position. An offsetting amount is included in Current or Noncurrent Regulatory Costs or Regulatory Credits for future recovery in the Statements of Net Position. The actual settlement payable is recorded in Accounts Payable in the Statements of Net Position, and the actual settlement receivable is recorded in Receivables - net: Wholesale and Other in the Statements of Net Position. The payments and receipts of the actual settlement are recorded as Investment Expense in the Statements of Revenues, Expenses and Changes in Net Position.

Interest Rate Contracts. SMUD utilizes certain interest rate swap agreements not designated as hedging derivative instruments under GASB No. 53 to mitigate exposure to fluctuations in interest rates. The fair value of each agreement, excluding the balance of interest to be paid or received as of the end of the period, is recorded in the Statements of Net Position in either Current or Noncurrent Assets, Investment Derivative Instruments if in an asset position or Current or

Noncurrent Liabilities, Investment Derivative Instruments if in a liability position. An offsetting amount is included in Current or Noncurrent Regulatory Costs or Deferred Outflows or Inflows of Resources in the Statements of Net Position. The interest receivable is recorded in Receivables - net: Wholesale and Other in the Statements of Net Position and the accrued interest is recorded in Interest Payable in the Statements of Net Position. The payments or receipts of the actual settlement are recorded as Investment Expense in the Statements of Revenues, Expenses and Changes in Net Position.

The Board has deferred recognition of the effects of reporting the fair value of Investment Derivative Instruments for ratemaking purposes and maintains regulatory accounts to defer the accounting impact of these accounting adjustments (see Note 8). Fair values may have changed significantly since December 31, 2022.

Basis Risk. This is the risk that arises when a hedged item and a derivative instrument that is attempting to hedge that item are based on different indices. SMUD is exposed to basis risk when it hedges its natural gas purchases, which are priced at various locations, and with NYMEX futures contracts, which settle based on the price at Henry Hub, Louisiana. SMUD enters into basis swaps to hedge against this risk.

Termination Risk. This is the risk that a derivative instrument will terminate prior to its scheduled maturity due to a contractual event. Contractual events include bankruptcy, illegality, default, credit events upon merger, and other events. One aspect of termination risk is that SMUD would lose the hedging benefit of a derivative instrument that becomes subject to a termination event. Another aspect of termination risk is that, if at the time of termination, the mark to market value of the derivative instrument was a liability to SMUD, SMUD could be required to pay that amount to the counterparty. Termination risk is associated with all of SMUD's derivative instruments up to the fair value amounts.

Counterparty Credit Risk. This is the risk of loss resulting when the counterparty is unable or unwilling to fulfill its present and future financial obligations. SMUD can be exposed to significant counterparty credit risk on all derivative instruments. SMUD seeks to minimize credit risk by transacting with creditworthy counterparties. SMUD has established and maintained strict counterparty credit guidelines. SMUD continuously monitors counterparty credit risk and utilizes numerous counterparties to diversify the exposure to potential defaults. Under certain conditions as outlined in SMUD's credit risk management policy, SMUD may require additional credit support under its trading agreements.

Some of SMUD's derivative instrument master agreements contain credit contingent provisions that enable SMUD to maintain unsecured credit as a result of positive investment quality credit ratings from each of the major credit rating agencies. If SMUD's credit rating was to be downgraded, there could be a step-down in SMUD's unsecured credit thresholds, and SMUD's counterparties would require additional collateral. If SMUD's credit rating was to decrease below investment grade, SMUD's unsecured credit thresholds would be reduced to zero, and counterparties to the derivative instruments would demand ongoing full collateralization on derivative instruments in net out of the money positions (see Note 2).

The counterparties' credit ratings at December 31, 2022 and 2021 are shown in the table below. The credit ratings listed are from S&P or Moody's.

	December 31, 2022	December 31, 2021
Counterparty Gas Contracts:		
Bank of Montreal	A+	A+
Barclays Bank PLC	A	A
Citigroup Inc.	BBB+	BBB+
EDF Trading Group	Baa2	Baa2
J.P. Morgan Ventures Energy Corp.	A-	A-
Merrill Lynch	A2	A2
Mitsui Bussan	A	A
Morgan Stanley Capital Group, Inc.	BBB+	BBB+
Nextera	A-	A-
Royal Bank of Canada	AA-	AA-
Shell Trading Market Risk	A	A
Interest Rate Contracts:		
Barclays Bank PLC	A	A
Goldman Sachs Capital Markets, L.P. (J. Aron)	BBB+	BBB+
Morgan Stanley Capital Services, Inc.	A+	A+

NOTE 10. LONG-TERM DEBT

SMUD's total long-term debt is presented below:

	December 31, 2022	December 31, 2021
	(thousands of dollars)	
Electric revenue bonds, 2.13%-6.32%, 2023-2050	$ 1,841,715	$ 1,966,925
Subordinated electric revenue bonds, 5.0%, 2023-2049	200,000	200,000
Total electric revenue bonds	2,041,715	2,166,925
Component unit project revenue bonds, 5.0%, 2023-2030	89,735	101,185
Gas and Commodity supply revenue bonds, index rates and 4.0%-5.0%, 2023-2049	682,550	703,100
Total long-term debt outstanding	2,814,000	2,971,210
Bond premiums - net	210,039	242,647
Total long-term debt	3,024,039	3,213,857
Less: amounts due within one year	(138,195)	(132,150)
Total long-term debt - net	$ 2,885,844	$ 3,081,707

The summarized activity of SMUD's long-term debt during 2022 is presented below:

	January 1, 2022	Additions	Defeasance Payments or Amortization	December 31, 2022	Amounts Due Within One Year
			(thousands of dollars)		
Electric revenue bonds	$ 1,966,925	$ 132,725	$ (257,935)	$ 1,841,715	$ 111,165
Subordinate electric revenue bonds	200,000	-0-	-0-	200,000	-0-
Component unit project revenue bonds	101,185	-0-	(11,450)	89,735	1,845
Gas and Commodity supply revenue bonds	703,100	-0-	(20,550)	682,550	25,185
Total	2,971,210	132,725	(289,935)	2,814,000	$ 138,195
Unamortized premiums - net	242,647	17,986	(50,594)	210,039	
Total long-term debt	$ 3,213,857	$ 150,711	$ (340,529)	$ 3,024,039	

The summarized activity of SMUD's long-term debt during 2021 is presented below:

	January 1, 2021	Additions	Defeasance Payments or Amortization	December 31, 2021	Amounts Due Within One Year
			(thousands of dollars)		
Electric revenue bonds	$ 2,085,120	$ 106,875	$ (225,070)	$ 1,966,925	$ 100,150
Subordinate electric revenue bonds	200,000	-0-	-0-	200,000	-0-
Component unit project revenue bonds	112,085	-0-	(10,900)	101,185	11,450
Gas and Commodity supply revenue bonds	721,550	-0-	(18,450)	703,100	20,550
Total	3,118,755	106,875	(254,420)	2,971,210	$ 132,150
Unamortized premiums - net	267,947	23,373	(48,673)	242,647	
Total long-term debt	$ 3,386,702	$ 130,248	$ (303,093)	$ 3,213,857	

At December 31, 2022 scheduled annual principal maturities and interest are as follows:

	Principal	Interest	Total
		(thousands of dollars)	
2023	$ 138,195	$ 139,057	$ 277,252
2024	139,330	129,638	268,968
2025	151,115	122,436	273,551
2026	157,575	113,645	271,220
2027	166,245	105,782	272,027
2028 – 2032 (combined)	536,515	429,877	966,392
2033 – 2037 (combined)	575,125	278,362	853,487
2038 – 2042 (combined)	403,785	158,167	561,952
2043 – 2047 (combined)	362,275	79,450	441,725
2048 – 2050 (combined)	183,840	13,131	196,971
Total requirements	$ 2,814,000	$ 1,569,545	$ 4,383,545

Interest in the preceding table includes interest requirements for fixed rate debt at their stated rates, variable rate debt covered by interest rate swaps at their fixed rate, and variable rate debt not covered by interest rate swaps using the debt interest rate of 70.0 percent of 1 month London Interbank Offered Rate (LIBOR) plus a fixed fee. The LIBOR rate is based on the rate in effect at December 31, 2022 for the issues. The 2019 Series A and 2019 Series B Put Bonds assume a 3.0 percent fixed rate coupon after mandatory remarketing. The 2018 NCEA Put Bonds assume a 4.0 percent fixed rate coupon after mandatory remarketing. Principal in the preceding table includes known principal payments and the amortization schedule for mandatory remarketing bonds.

The following bonds have been issued and are outstanding at December 31, 2022:

Date	Issue	Final Maturity	Interest Rate	Original Amount	Outstanding Amount
				(thousands of dollars)	
Electric Revenue Bonds					
06/15/1997	1997 Series K Bonds	07/01/2024	5.25%	$ 131,030	$ 38,165
05/15/2009	2009 Series V Bonds	05/15/2036	6.322%	200,000	200,000
07/29/2010	2010 Series W Bonds	05/15/2036	6.156%	250,000	250,000
05/21/2013	2013 Series A Bonds	08/15/2041	3.75% - 5.0%	132,020	132,020
05/21/2013	2013 Series B Bonds	08/15/2033	3.0% - 5.0%	118,615	81,820
07/14/2016	2016 Series D Bonds	08/15/2028	2.125% - 5.0%	149,890	104,060
12/14/2017	2017 Series E Bonds	08/15/2028	5.0%	202,500	111,585
07/12/2018	2018 Series F Bonds	08/15/2028	5.0%	165,515	103,245
07/25/2019	2019 Series G Bonds	08/15/2041	2.375% - 5.0%	191,875	191,875
05/07/2020	2020 Series H Bonds	08/15/2050	4.0% - 5.0%	400,000	400,000
07/14/2021	2021 Series I Bonds	08/15/2028	5.0%	106,875	96,220
06/23/2022	2022 Series J Bonds	08/15/2033	5.0%	132,725	132,725
Subordinated Electric Revenue Bonds					
07/25/2019	2019 Series A Bonds	08/15/2049	5.0%	100,000	100,000
07/25/2019	2019 Series B Bonds	08/15/2049	5.0%	100,000	100,000
JPA Revenue Bonds					
06/03/2015	2015 SFA Bonds	07/01/2030	5.0%	193,335	89,735
05/31/2007	2007B NCGA#1 Bonds	07/01/2027	Index Rate	668,470	142,935
12/19/2018	2018 NCEA Bonds	07/01/2049	4.0% - 5.0%	539,615	539,615

2022 Bond Issuances. In June 2022, SMUD issued $132.7 million of 2022 Series J Revenue Refunding Bonds. The purpose of this transaction was to refund the fixed rate debt associated with 2012 Series Y bonds. Proceeds from the 2022 Series J bonds combined with swap termination receipt defeased all the outstanding Series 2012 Series Y bonds. A total of $157.8 million of bonds were defeased through a legal defeasance, and accordingly, the liability for the defeased bonds has been removed from Long-Term Debt - net in the Statements of Net Position. The refunding resulted in the recognition of a deferred accounting gain of $6.7 million, which is being amortized over the life of the refunding issue. The 2022 refunding reduced future aggregate debt service payments by $30.9 million and resulted in a total economic gain of $28.6 million, which is the difference between the present value of the old and new debt service payments.

2021 Bond Issuances. In July 2021, SMUD issued $106.9 million of 2021 Series I Revenue Refunding Bonds. The purpose of this transaction was to refund the fixed rate debt associated with 2011 Series X bonds. Proceeds from the 2021 Series I bonds defeased all the outstanding Series 2011 Series X bonds and funded the associated swap termination payment. A total of $127.0 million of bonds were defeased through a legal defeasance, and accordingly, the liability for the defeased bonds has been removed from Long-Term Debt - net in the Consolidated Statements of Net Position. The refunding resulted in the recognition of a deferred accounting gain of $3.9 million, which is being amortized over the life of the refunding issue. The termination payments of the interest rate swaps are being amortized over the life of the refunding issue. The 2021 refunding reduced future aggregate debt service payments by $23.8 million and resulted in a total economic gain of $22.5 million, which is the difference between the present value of the old and new debt service payments.

Component Unit Bond Defeasances. In September 2019, SCA defeased $12.9 million of 2009 Series Bonds maturing July 2020 and July 2021, along with the accrued interest using SCA's available funds and $7.9 million from SMUD. The corresponding amount was placed in an irrevocable trust which had a remaining balance of $6.9 million as of December 31, 2020. In July 2021, the remaining balance was paid down to zero.

Terms of Debt Indentures. Debt indentures contain a provision that in an event of default, the holders of the majority of the debt outstanding are entitled to declare the outstanding amounts due immediately.

Interest Rate Swap Agreements. A summary of SMUD's four interest rate swap agreements as of December 31, 2022 are as follows. The credit ratings listed are from S&P.

Notional Amount (thousands)	SMUD Pays	Fixed Rate	Floating Rate	Termination Date	Counterparty Credit Rating
$ 38,165	Variable	5.166%	SIFMA	07/01/24	BBB+
68,450	Fixed	2.894%	63% of 1 M LIBOR	08/15/28	A+
132,020	Fixed	0.7179%	70% of 1M LIBOR	08/15/41	A
75,680	Fixed	0.5543%	70% of 1M LIBOR	08/15/33	A

A summary of SMUD's five interest rate swap agreements as of December 31, 2021 are as follows:

Notional Amount (thousands)	SMUD Pays	Fixed Rate	Floating Rate	Termination Date	Counterparty Credit Rating
$ 55,835	Variable	5.166%	SIFMA	07/01/24	BBB+
74,375	Fixed	2.894%	63% of 1 M LIBOR	08/15/28	A+
157,785	Fixed	1.607%	SIFMA	08/15/33	A+
132,020	Fixed	0.7179%	70% of 1M LIBOR	08/15/41	A
75,680	Fixed	0.5543%	70% of 1M LIBOR	08/15/33	A

At December 31, 2022 and 2021, SMUD had a fixed-to-variable interest rate swap agreement with a notional amount of $38.2 million and $55.8 million, respectively, which is equivalent to the principal amount of SMUD's 1997 Series K Electric Revenue Bonds. Under this swap agreement, SMUD pays a variable rate equivalent to the Securities Industry and Financial Markets Association (SIFMA) Index (3.66 percent and .10 percent at December 31, 2022 and 2021, respectively) and receives fixed rate payments of 5.166 percent as of December 31, 2022 and 2021. In connection with the swap agreement, SMUD has a put option agreement, also with a notional amount of $38.2 million and $55.8 million as of December 31, 2022 and 2021, respectively, which gives the counterparty the right to sell to SMUD, at par, either the 1997 Series K Bonds, or a portfolio of securities sufficient to defease the 1997 Series K Bonds. SMUD receives fixed rate payments of 0.01 percent as of December 31, 2022 and 2021, in connection with the put option agreement. The exercise of the option terminates the swap at no cost to SMUD. The term of both the swap and the put is equal to the maturity of the 1997 Series K Bonds.

At December 31, 2022 and 2021, SMUD had one variable-to-fixed interest rate swap agreement with a notional amount of $68.5 million and $74.4 million, respectively. This swap was originally entered into for the purpose of fixing the effective interest rate associated with certain of its subordinated bonds that were refunded during 2008. The notional value of the swap is amortized over the life of the swap agreement. SMUD can terminate the swap agreement at any time, with payment or receipt of the fair market value of the swap as of the date of termination. The obligations of SMUD under the swap agreement are not secured by a pledge of revenues of SMUD's electric system or any other property of SMUD.

Additionally, in June 2020, SMUD executed a variable-to-fixed interest rate swap agreement with Barclays Bank PLC with a notional amount of $132.0 million for the purpose of fixing the effective interest rate associated with the potential refunding of

the 2013 Series A Bonds. The Barclays 2013 Series A swap becomes effective in July 2023. Also, in June 2020, SMUD executed a variable-to-fixed interest rate swap agreement with Barclays Bank PLC with a notional amount of $75.7 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2013 Series B Bonds. The Barclays 2013 Series B swap becomes effective in July 2023. The notional values of the two swaps are amortized over the life of their respective swap agreements. SMUD can terminate both swap agreements at any time, with payment or receipt of the fair market value of the swaps as of the date of termination. The obligations of SMUD under the swap agreements are not secured by a pledge of revenues of SMUD's electric system or any other property of SMUD.

In December 2019, SMUD executed a variable-to-fixed interest rate swap agreement with J. Aron with a notional amount of $127.0 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2011 Series X Bonds. The J. Aron swap became effective in July 2021. The J. Aron swap was terminated in July 2021. As part of the termination, SMUD made a termination payment to J. Aron in the amount of $3.0 million. Also, in December 2019, SMUD executed a variable-to-fixed interest rate swap agreement with Morgan Stanley Capital Services with a notional amount of $157.8 million for the purpose of fixing the effective interest rate associated with the potential refunding of the 2012 Series Y Bonds. The Morgan Stanley Capital Services swap was due to become effective in July 2022 but was terminated in June 2022.

Component Unit Interest Rate Swap Agreements. NCGA had one interest rate swap agreement as of December 31, 2022, which is summarized as follows. The credit ratings listed are from S&P.

Notional Amount (thousands)	NCGA Pays	Fixed Rate	Floating Rate	Termination Date	Credit Support Provider Credit Rating
$ 142,935	Fixed	4.304%	67% of LIBOR + .72%	07/01/27	A+

NCGA had one interest rate swap agreement as of December 31, 2021, which are summarized as follows:

Notional Amount (thousands)	NCGA Pays	Fixed Rate	Floating Rate	Termination Date	Credit Support Provider Credit Rating
$ 163,485	Fixed	4.304%	67% of LIBOR + .72%	07/01/27	A+

At December 31, 2022 and 2021, NCGA had a variable-to-fixed interest rate swap agreement with a counterparty for the purpose of fixing the effective interest rate associated with the 2007 Series B Bonds. NCGA pays the counterparty a fixed rate on the notional amount and receives a floating rate equal to 67 percent of the three-month LIBOR (4.77 percent and 0.10 percent at December 31, 2022 and 2021, respectively) plus an interest rate spread, as specified in the swap agreement. The total notional amount of the swap at December 31, 2022 and 2021 was $142.9 million and $163.5 million, respectively, and was equivalent to the outstanding principal balance on the NCGA Bonds. The swap is amortized over the life of the swap agreement in a manner corresponding to the principal repayment schedule of the NCGA Bonds. Early termination of the swap would occur upon termination of the prepaid agreement for any reason. Upon early termination, the swap would have no value to either party.

Subordinated Electric Revenue Bonds. Payment of and interest on the Subordinated Electric Revenue Bonds is subordinate to the payment of the principal and interest on SMUD's Electric Revenue Bonds.

Component Unit Bonds. The component units of SMUD have each issued bonds to finance their respective projects. The revenue stream to pay SFA bonds' debt service is provided by a "take-or-pay" power purchase agreement and is therefore not dependent on the successful operation of the project. SMUD guarantees to make payments sufficient to pay principal and interest and all other payments required to be made under SFA's indenture of trust. SFA is not required to repay SMUD for any amounts paid under this guarantee. The revenue stream to pay NCGA and NCEA bonds' debt service is provided by "take-and-pay" purchase agreements. Therefore, principal and interest associated with these bonds are paid solely from the

revenues and receipts collected in connection with the operation of the project. Most operating revenues earned by NCGA and NCEA are collected from SMUD in connection with the sale of gas or electricity to SMUD. The ability for NCGA and NCEA to service debt is dependent on various parties (particularly MSCG, as gas supplier for NCGA and J. Aron, as commodity supplier for NCEA) meeting their contractual obligations.

Callable Bonds. SMUD has $488.8 million of Electric Revenue Bonds that are currently callable, $450.0 million of which are fixed rate Build America Bonds debt and $38.8 million of 2016 Series D Bonds. SMUD also has $207.7 million of bonds that become callable from 2023 through 2027, and these bonds can be called until maturity. SMUD also has a four-month call period on the 2019 Series A and 2019 Series B Bonds in advance of their mandatory remarketing purchase date in 2023 and 2025, respectively.

Collateral. The principal and interest on SMUD's bonds are payable exclusively from, and are collateralized by, a pledge of the net revenues of SMUD's electric system. Neither the credit nor the taxing power of SMUD is pledged to the payment of the bonds and the general fund of SMUD is not liable for the payment thereof.

Covenants. SMUD's bond resolutions contain various covenants that include requirements to maintain minimum debt service coverage ratios, certain other financial ratios, stipulated minimum funding of revenue bond reserves, and various other requirements including a rate covenant to raise rates to maintain minimum debt service coverage.

SMUD has pledged future net electric revenues, component unit net project revenues, and net gas supply prepayment revenues to repay, in electric revenue, component unit project revenue, and gas supply prepayment revenue bonds issued from 1997 through 2022. Proceeds from the bonds provided financing for various capital improvement projects, component unit capital projects, and the prepayments of a twenty-year supply of natural gas and a thirty-year supply of commodity. The bonds are payable solely from the net revenues generated by SMUD's electrical sales, component unit project revenues, and gas supply prepayment revenues and are payable through 2050 at December 31, 2022.

GASB Statement No. 48, ***"Sales and Pledges of Receivables and Future Revenues and Intra-Entity Transfers of Assets and Future Revenues,"*** disclosures for pledged revenues are as follows:

	December 31,	
	2022	2021
	(thousands of dollars)	
Pledged future revenues	$ 2,814,000	$ 2,971,210
Principal and interest payments for the year ended	$ 438,725	$ 404,679
Total net revenues for the year ended	$ 574,300	$ 720,414
Total remaining principal and interest to be paid	$ 4,383,545	$ 4,693,100
Annual principal and interest payments as a percent of net revenues for the year ended	76%	56%

NOTE 11. COMMERCIAL PAPER NOTES

SMUD issues Commercial Paper Notes (Notes) to finance or reimburse capital expenditures. SMUD's commercial paper program is $400.0 million. At December 31, 2022, there were $150.0 million Notes outstanding and at December 31, 2021, there were no Notes outstanding. SMUD's commercial paper program is backed by $407.4 million in letter of credit agreements (LOCs) and a revolving credit agreement with three separate banks. The LOCs are calculated as the sum of the maximum principal amount of the Notes plus interest thereon at a maximum rate of ten percent per annum for a period of 90 days calculated on the basis of a year of 365 days and the actual number of days elapsed. There have not been any term advances under the LOCs or the revolving credit agreement. The LOCs and revolving credit agreement contain a provision that in an event of default, the outstanding amounts may become immediately due.

The summarized activity of SMUD's Notes during 2022 and 2021 is presented below:

	Balance at Beginning of Year	Additions	Reductions	Balance at End of Year
		(thousands of dollars)		
December 31, 2022	$ -0-	$ 150,000	$ -0-	$ 150,000
December 31, 2021	$ -0-	$ -0-	$ -0-	$ -0-

NOTE 12. FAIR VALUE MEASUREMENT

GASB No. 72 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). SMUD utilizes market data or assumptions that market participants would use in pricing the asset or liability, including assumptions about risk and the risks inherent in the inputs to the valuation technique.

GASB No. 72 establishes a fair value hierarchy that prioritizes the inputs used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy defined by GASB No. 72 are as follows:

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 inputs are inputs other than quoted prices included in Level 1 that are observable for an asset or liability, either directly or indirectly.
- Level 3 inputs are unobservable inputs that reflect SMUD's own assumptions about factors that market participants would use in pricing the asset or liability.

The valuation methods of the fair value measurements are as follows:

- LAIF – uses the fair value of the pool's share price multiplied by the number of shares held. This pool can include a variety of investments such as U.S. government securities, federal agency securities, negotiable certificates of deposit, bankers' acceptances, commercial paper, corporate bonds, bank notes, and other investments. The fair values of the securities are generally based on quoted and/or observable market prices.
- U.S. Government Agency Obligations – uses a market based approach which considers yield, price of comparable securities, coupon rate, maturity, credit quality and dealer-provided prices.
- U.S. Treasury Obligations – uses a market approach based on institutional bond quotes. Evaluations are based on various market and industry inputs.
- Corporate Notes – uses a market based approach. Evaluations are based on various market and industry inputs.
- Municipal Bonds – uses a market approach based on institutional bond quotes. Evaluations are based on various market and industry inputs.
- Investment and Hedging Derivative Instruments (see Note 9):
  - Interest rate swap agreements – uses the present value technique. The fair value of the interest rate swap agreements are calculated by discounting the expected cash flows at their corresponding zero coupon rate. The cash flows and discount rates are estimated based on a 1-month LIBOR forward curve from Bloomberg and assuming SIFMA is equal to 70.0 percent of 1-month LIBOR.
  - Electricity and Gas related agreements – uses the market approach based on monthly quoted prices from an independent external pricing service. The fair values for natural gas and electricity derivative financial instruments are estimated by comparing contract prices to prevailing market quotes in active markets (i.e., Henry Hub and So Cal) where identical contracts are available. When external quoted market prices are not available, SMUD uses an internally developed valuation model utilizing short-term observable inputs.

The following tables identify the level within the fair value hierarchy that SMUD's financial assets and liabilities were accounted for on a recurring basis as of December 31, 2022 and 2021, respectively. As required by GASB No. 72, financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. SMUD's assessment of the significance of a particular input to the fair value measurement requires judgment and may affect the valuation of the fair value of liabilities and their placement within the fair value hierarchy levels.

Recurring Fair Value Measures	At fair value as of December 31, 2022		
	Level 1	Level 2	Total
	(thousands of dollars)		
Investments, including cash and cash equivalents:			
LAIF	$ -0-	$ 85,502	$ 85,502
U.S. Government Agency Obligations	-0-	371,241	371,241
U.S. Treasury Obligations	63,841	-0-	63,841
Corporate Notes	-0-	48,490	48,490
Municipal Bonds	-0-	49,909	49,909
Total Investments, including cash and cash equivalents	$ 63,841	$ 555,142	$ 618,983
Investment Derivative Instrument Assets:			
Gas related agreements	$ 6,199	$ -0-	$ 6,199
Total Investment Derivative Instrument Assets	$ 6,199	$ -0-	$ 6,199
Hedging Derivative Instrument Assets:			
Gas related agreements	$ 200,941	$ -0-	$ 200,941
Interest rate swap agreements	-0-	36,083	36,083
Total Hedging Derivative Instrument Assets	$ 200,941	$ 36,083	$ 237,024
Investment Derivative Instrument Liabilities:			
Gas related agreements	$ 2,236	$ -0-	$ 2,236
Interest rate swap agreements	-0-	2,291	2,291
Total Investment Derivative Instrument Liabilities	$ 2,236	$ 2,291	$ 4,527
Hedging Derivative Instrument Liabilities:			
Gas related agreements	$ 28,438	$ -0-	$ 28,438
Interest rate swap agreements	-0-	-0-	-0-
Total Hedging Derivative Instrument Liabilities	$ 28,438	$ -0-	$ 28,438

Recurring Fair Value Measures	At fair value as of December 31, 2021		
	Level 1	Level 2	Total
	(thousands of dollars)		
Investments, including cash and cash equivalents:			
LAIF	$ -0-	$ 526,297	$ 526,297
U.S. Government Agency Obligations	-0-	65,005	65,005
U.S. Treasury Obligations	39,993	-0-	39,993
Corporate Notes	-0-	3,975	3,975
Municipal Bonds	-0-	62,798	62,798
Total Investments, including cash and cash equivalents	$ 39,993	$ 658,075	$ 698,068
Investment Derivative Instrument Assets:			
Gas related agreements	$ 2,157	$ -0-	$ 2,157
Total Investment Derivative Instrument Assets	$ 2,157	$ -0-	$ 2,157
Hedging Derivative Instrument Assets:			
Gas related agreements	$ 68,017	$ -0-	$ 68,017
Interest rate swap agreements	-0-	6,356	6,356
Total Hedging Derivative Instrument Assets	$ 68,017	$ 6,356	$ 74,373
Investment Derivative Instrument Liabilities:			
Gas related agreements	$ 245	$ -0-	$ 245
Interest rate swap agreements	-0-	7,298	7,298
Total Investment Derivative Instrument Liabilities	$ 245	$ 7,298	$ 7,543
Hedging Derivative Instrument Liabilities:			
Gas related agreements	$ 19,020	$ -0-	$ 19,020
Interest rate swap agreements	-0-	3,580	3,580
Total Hedging Derivative Instrument Liabilities	$ 19,020	$ 3,580	$ 22,600

NOTE 13. ACCRUED DECOMMISSIONING LIABILITY

Asset Retirement Obligations (ARO). SMUD recognizes AROs for its Rancho Seco nuclear power plant facility and the CVFA power plant facility. This statement requires measurement of the ARO be based on the best estimate of the current value of outlays expected to be incurred. The best estimate should be determined using all available evidence and requires probability weighting of potential outcomes when sufficient evidence is available. This statement also requires the current value be adjusted for the effects of the general inflation or deflation and an evaluation of relevant factors that may significantly change the estimated asset retirement outlays at least annually.

Rancho Seco Nuclear Power Plant. With the completion of nuclear decommissioning of the former 913 MW nuclear power plant, and the subsequent termination of the 10 Code of Federal Regulations (CFR) 50 license by the Nuclear Regulatory Commission (NRC) effective August 31, 2018, all remaining Rancho Seco decommissioning liability relates to the Independent Spent Fuel Storage Installation (ISFSI) licensed under 10 CFR Part 72. Nuclear decommissioning is the process of safely removing nuclear facilities from service and reducing residual radioactivity to a level that permits termination of the NRC licenses and release of the property for unrestricted use. Final decommissioning of the ISFSI will occur after the spent nuclear fuel (SNF) and Greater Than Class C (GTCC) radioactive waste are removed from the site and SMUD demonstrates that the site is suitable for release in accordance with release criteria specified in 10 CFR 20, Subpart E and an approved License Termination Plan.

The Department of Energy (DOE), under the Nuclear Waste Policy Act (NWPA) of 1982 as amended, is responsible for permanent disposal of spent nuclear fuel and GTCC radioactive waste, which are currently stored in the Part 72 licensed ISFSI. SMUD has a contract with the DOE for the removal and disposal of SNF and GTCC waste. All SMUD's SNF and GTCC waste are currently stored in sealed canisters in the ISFSI. However, the date when DOE will remove the fuel and GTCC waste is uncertain. In 2010, the DOE formally withdrew the application for licensing of Yucca Mountain as a

high-level waste repository. While the court-ordered reinstatement of NRC license review activities of Yucca Mountain have yielded generally positive results, Yucca Mountain remains speculative as a disposal option for SMUD's used nuclear fuel. The DOE also announced in January 2010 the creation of a Blue-Ribbon Commission to study alternatives for developing a repository for the nation's used nuclear fuel. The Commission provided a final report on alternatives in January 2012. The DOE evaluated the recommendations and published the report "Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste" in January 2013.

The next phase of the process will be for Congress and the President of the United States to consider the recommendations and enact legislation to implement the recommendations. At this time, two license applications have been submitted to the NRC for the construction and operation of Consolidated Interim Storage Facility(s) that would store SNF and GTCC waste on an interim basis. One of these applications has been approved (and a license issued) and one application is currently under review by the NRC. Should the NRC license one or both facilities, Congress will have to modify the NWPA to allow for its use. In May 2018, the U.S. House of Representatives passed H.R. 3053 – the Nuclear Waste Policy Amendments Act, which was co-sponsored by Representative Doris Matsui and 109 other members of Congress. This bill includes a provision to allow a Consolidated Interim Storage Facility to store fuel from permanently shut down sites like Rancho Seco. The U.S. Senate did not act on the bill. Until legislation is passed which includes a significant step towards removal of the used nuclear fuel at the Rancho Seco facility, SMUD is committed to the safe and secure storage of its SNF and GTCC waste under its Part 72 license until DOE fulfills its obligation to dispose of this material in accordance with NWPA. In support of this commitment, SMUD submitted its ISFSI license renewal application to the NRC in March of 2018. The NRC issued Renewed Licensee No. SNM-2510 on March 9, 2020. This renewed license authorizes the continued storage of SMUD's SNF and GTCC until June 30, 2060.

The Rancho Seco decommissioning liability is based on an internal study of the remaining decommissioning costs, which consist of: 1) annual spent fuel management costs, 2) transportation of the canisters in the ISFSI and 3) termination of the Part 72 license. The largest part of the decommissioning estimate is the annual spent fuel management costs; next year's annual budget is used for the estimate. The other costs were estimated based on prior experience and studies and prepared by management representatives of the nuclear power plant facility. The costs in the estimate were in 2019 dollars. An employment cost index was used to adjust the other costs portion of the obligation for inflation in 2022. Probability weighting was assigned for two scenarios: 1) spent nuclear fuel will be removed from the site by 2028 and 2) spent nuclear fuel will be removed from the site by 2035. SMUD uses its Trust Fund (see Note 2) to demonstrate financial assurance to the NRC that there are enough funds to complete the termination of the Part 72 license; the balance of the Trust Fund at December 31, 2022 is $9.0 million.

SFA's Carson Power Plant (Carson). SFA's ground lease agreement with the Sacramento Regional County Sanitation District for Carson requires SFA to restore the premises to its original condition upon termination of the contract. A new study to determine the current value of the asset retirement obligation was conducted by an external contractor who specializes in decommissioning studies. The expected costs and scope of work were based on the most recent cost estimate and assumes a contractor will be responsible for the work and that decommissioning would take place between 2025 and 2027. The estimated costs were in 2018 dollars. The result of this study was used to determine the new balance of the ARO and the deferred outflows at January 1, 2018, in order to account for the 2018 activity. The annual All Urban Consumer Price Index was used to adjust this obligation for inflation in 2022. The remaining useful life of Carson's assets is three years at December 31, 2022.

The current portion of the Accrued Decommissioning liability represents SMUD's estimate of actual expenditures for Rancho Seco in the next year, as set forth in the annual budget.

At December 31, 2022 and 2021, SMUD's Accrued Decommissioning balance in the Statements of Net Position was $95.9 million and $95.1 million, respectively.

NOTE 14. PENSION PLANS

Summary of Significant Accounting Policies. For purposes of measuring net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the pension plans and additions to/deductions from the fiduciary net position have been determined on the same basis as they are reported by the California Public Employees' Retirement System (PERS) Financial Office. For this purpose, benefit payments (including refunds of employee contributions) are recognized when currently due and payable in accordance with the benefit terms. Investments are reported at fair value.

Plan Description and Benefits Provided. SMUD participates in PERS, an agent multiple-employer public employee defined benefit pension plan (PERS Plan). PERS provides retirement and disability benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries. PERS acts as a common investment and administrative agent for participating public entities within the State. Benefit provisions and all other requirements are established by State statute and SMUD policies. The pension plan provides retirement benefits, survivor benefits, and death and disability benefits based upon employee's years of credited service, age, and final compensation. A full description of the pension plan regarding number of employees covered, benefit provision, assumptions (for funding, but not accounting purposes), and membership information are included in the annual actuarial valuation reports as of June 30, 2021 and June 30, 2020.

GASB No. 68 requires that the reported results must pertain to liability and asset information within certain defined timeframes. The following timeframes are used for the year ended:

PERS Plan	December 31,	
	2022	2021
Valuation date	June 30, 2021	June 30, 2020
Measurement date	June 30, 2022	June 30, 2021

Employees Covered by Benefit Terms. The following employees were covered by the benefit terms for the year ended:

PERS Plan	December 31,	
	2022	2021
Inactive employees or beneficiaries currently receiving benefit payments	3,116	3,068
Inactive employees entitled to but not yet receiving benefit payments	987	974
Active employees	2,168	2,214
Total employees covered by benefit terms	6,271	6,256

Contributions. Section 20814(c) of the California Public Employees' Retirement Law requires that the employer contribution rates for all public employers be determined on an annual basis by the actuary and shall be effective on the July 1 following notice of a change in the rate. The total plan contributions are determined through PERS' annual actuarial valuation process. The actuarially determined rate is the estimated amount necessary to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. The employer is required to contribute the difference between the actuarially determined rate and the contribution rate of employees. For the PERS fiscal years ended June 30, 2022 and 2021, the average active employee contribution rate is 6.8 percent of annual pay. For the PERS fiscal year ended June 30, 2022, the employer's contribution rate is 9.0 percent of annual payroll plus $36.3 million for the unfunded accrued liability contribution. For the PERS fiscal year ended June 30, 2021, the employer's contribution rate is 9.1 percent of annual payroll plus $33.5 million for the unfunded accrued liability contribution. Employer contribution rates may change if plan contracts are amended. For the fiscal years ended June 30, 2022 and 2021, SMUD made contributions recognized by the PERS Plan in the amount of $114.5 million and $229.4 million, respectively.

Net Pension Asset (NPA) or Liability (NPL). SMUD's NPA or NPL at December 31, 2022 and 2021 was measured at June 30, 2022 and 2021, respectively. The total pension liability used to calculate the NPA or NPL was determined by actuarial valuations as of June 30, 2021 and 2020 rolled forward using generally accepted actuarial procedures to the June 30, 2022 and 2021 measurement dates for the PERS Plan.

Actuarial Methods and Assumptions. The actuarial methods and assumptions used for the December 31, 2022 and December 31, 2021 total pension liabilities are as follows for the PERS Plan:

December 31, 2022:

Actuarial Cost Method	Entry age actuarial cost method
Discount Rate	6.90%
Inflation	2.30%
Salary Increases	Varies by entry age and service
Mortality Rate Table	The mortality table used was developed based on PERS' specific data. The probabilities of mortality are based on the 2021 PERS' Experience Study for the period from 2001 to 2019. Pre-retirement and Post-retirement mortality rates include generational mortality improvement using the Society of Actuaries Scale 80% of scale MP-2020.
Post Retirement Benefit Increase	For 2022 and 2021, the lesser of contract COLA or 2.30% until Purchasing Power Protection Allowance floor on purchasing power applies, 2.30% thereafter

December 31, 2021:

Actuarial Cost Method	Entry age normal
Discount Rate	7.15%
Inflation	2.50%
Salary Increases	Varies by entry age and service
Mortality Rate Table	The mortality table used was developed based on PERS' specific data. The probabilities of mortality are based on the 2017 PERS' Experience Study for the period from 1997 to 2015. Pre-retirement and Post-retirement mortality rates include 15 years of projected mortality improvement using the Society of Actuaries Scale 90% of scale MP-2016.
Post Retirement Benefit Increase	For 2021 and 2020, the lesser of contract COLA or 2.50% until Purchasing Power Protection Allowance floor on purchasing power applies, 2.50% thereafter

Discount Rates. For the PERS Plan, the discount rate used to measure the total pension liability for the years ended December 31, 2022 and 2021 was 6.90 percent and 7.15 percent, respectively. For the year ended December 31, 2022, the projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current member contribution rates and that contributions from employers will be made at statutorily required rates, actuarially determined. Based on those assumptions, the PERS Plan was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. Using historical returns of all the funds' asset classes, expected compound (geometric) returns were calculated over the next 20 years using a building-block approach. The expected rate of return was then adjusted to account for assumed administrative expenses of 10 Basis points.

The expected real rates of return by asset class used for December 31, 2022 are as follows:

Asset Class	Assumed Asset Allocation	Real Return
Global Equity – Cap-weighted	30.0%	4.54%
Global Equity – Non-Cap-weighted	12.0%	3.84%
Private Equity	13.0%	7.28%
Treasury	5.0%	0.27%
Mortgage-backed Securities	5.0%	0.50%
Investment Grade Corporates	10.0%	1.56%
High Yield	5.0%	2.27%
Emerging Market Debt	5.0%	2.48%
Private Debt	5.0%	3.57%
Real Estate	15.0%	3.21%
Leverage	(5.0%)	(0.59%)

The expected real rates of return by asset class used for December 31, 2021 are as follows:

Asset Class	Current Target Allocation	Real Return Years 1-10	Real Return Years 11+
Global Equity	50.0%	4.80%	5.98%
Global Fixed Income	28.0%	1.00%	2.62%
Inflation Assets	0%	0.77%	1.81%
Private Equity	8.0%	6.30%	7.23%
Real Estate	13.0%	3.75%	4.93%
Liquidity	1.0%	0%	(0.92%)

Changes in the NPA or NPL. The following table shows the changes in NPA or NPL recognized over the year ended December 31, 2022:

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2022	$ 2,486,667	$ 2,514,405	$ (27,738)
Changes recognized for the measurement period:			
Service cost	41,885	-0-	41,885
Interest	167,926	-0-	167,926
Changes in assumptions	26,275	-0-	26,275
Differences between expected and actual experience	(31,370)	-0-	(31,370)
Contributions - employer	-0-	114,476	(114,476)
Contributions - employee	-0-	18,096	(18,096)
Net investment income	-0-	(189,479)	189,479
Benefit payments	(137,603)	(137,603)	-0-
Administrative expense	-0-	(1,566)	1,566
Net changes	67,133	(196,076)	263,189
Balances at December 31, 2022	$ 2,553,780	$ 2,318,329	$ 235,451

The following table shows the changes in NPA or NPL recognized over the year ended December 31, 2021:

	Total Pension Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net Pension (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2021	$ 2,415,034	$ 1,945,214	$ 469,820
Changes recognized for the measurement period:			
Service cost	38,900	-0-	38,900
Interest	168,984	-0-	168,984
Changes in assumptions	-0-	-0-	-0-
Differences between expected and actual experience	(5,875)	-0-	(5,875)
Contributions - employer	-0-	229,440	(229,440)
Contributions - employee	-0-	17,552	(17,552)
Net investment income	-0-	454,518	(454,518)
Benefit payments	(130,376)	(130,376)	-0-
Administrative expense	-0-	(1,943)	1,943
Net changes	71,633	569,191	(497,558)
Balances at December 31, 2021	$ 2,486,667	$ 2,514,405	$ (27,738)

Sensitivity of the NPA or NPL to Changes in the Discount Rate. The following presents the NPA or NPL of the Plan as of the measurement date, calculated using the current discount rate, as well as what the NPA or NPL would be if it were calculated using a discount rate that is 1 percentage-point lower or 1 percentage-point higher than the current discount rate:

PERS Plan	1% Decrease (5.90%)	Current Discount Rate (6.90%)	1% Increase (7.90%)
		(thousands of dollars)	
Plan's NPL (NPA), December 31, 2022	$ 562,974	$ 235,451	$ (36,397)

	1% Decrease (6.15%)	Current Discount Rate (7.15%)	1% Increase (8.15%)
Plan's NPL (NPA), December 31, 2021	286,474	(27,738)	(289,153)

Pension Plan Fiduciary Net Position. Detailed information about the PERS Plan's fiduciary net position is available in the separately issued PERS Plan financial statements. This report, the audited financial statements, and other reports can be obtained at the PERS' website at www.calpers.ca.gov.

Pension Expense or Income and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions. For the year ended December 31, 2022 SMUD recognized pension expense of $41.0 million and for the year ended December 31, 2021, SMUD recognized a credit to pension expense of $27.9 million.

At December 31, 2022 and 2021, SMUD reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	December 31, 2022	December 31, 2021
	(thousands of dollars)	
Deferred outflows of resources:		
Changes of assumptions	19,866	-0-
Differences between expected and actual experience	2,495	9,710
Differences between projected and actual earnings on pension plan investments	121,257	-0-
Employer's contributions to the Plan subsequent to the measurement of total pension liability	31,860	71,624
Total deferred outflows of resources	$ 175,478	$ 81,334
Deferred inflows of resources:		
Changes of assumptions	$ -0-	$ -0-
Differences between expected and actual experience	26,656	4,406
Differences between projected and actual earnings on pension plan investments	-0-	225,301
Total deferred inflows of resources	$ 26,656	$ 229,707

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be subject to regulatory accounting as follows (see Note 8):

Year ended December 31:	
2023	$ 20,052
2024	15,538
2025	8,976
2026	72,396
2027	-0-
Thereafter	-0-

Other Plans. SMUD provides its employees with two cash deferred compensation plans: one pursuant to Internal Revenue Code (IRC) Section 401(k) (401(k) Plan) and one pursuant to IRC Section 457 (457 Plan) (collectively, the Plans). The Plans are contributory plans in which SMUD's employees contribute the funds. Each of SMUD's eligible full-time or permanent part-time employees may participate in either or both Plans, and amounts contributed are vested immediately. Such funds are held by a Trustee in trust for the employees upon retirement from SMUD service and, accordingly, are not subject to the general claims of SMUD's creditors. SMUD is responsible for ensuring compliance with IRC requirements concerning the Plans and has the fiduciary duty of reasonable care in the selection of investment alternatives, but neither SMUD, nor its Board or officers have any liability for market variations in the Plans' asset values. SMUD employees are responsible for determining how their funds are to be invested and pay all ongoing fees related to the Plans. The Plans are currently not subject to discrimination testing, nor the requirements of the Employee Retirement Income Security Act of 1974. SMUD employees participating in the Plans are allowed to contribute a portion of their gross income not to exceed the annual dollar limits prescribed by the IRC.

SMUD makes annual contributions to the 401(k) Plan on behalf of certain employees pursuant to a memorandum of understanding with both of its collective bargaining units. SMUD also matches non-represented employee contributions to the 401(k) Plan up to a set amount. SMUD made contributions into the 401(k) Plan of $7.0 million in 2022 and $6.1 million in 2021. SMUD does not match employee contributions, nor make contributions on behalf of its employees to the 457 Plan. Participating employees made contributions into both Plans totaling $32.4 million in 2022 and $30.6 million in 2021.

NOTE 15. OTHER POSTEMPLOYMENT BENEFITS

Summary of Significant Accounting Policies. For purposes of measuring the net OPEB asset or liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the OPEB plan and additions to/deductions from the OPEB plan's fiduciary net position have been determined on the same basis as they are reported by the California Employers' Retiree Benefit Trust (CERBT). For this purpose, SMUD recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Plan Description and Benefits Provided. SMUD is a member of CERBT. The CERBT Fund is an IRC Section 115 Trust set up for the purpose of receiving employer contributions to prefund OPEB for retirees and their beneficiaries. CERBT is an agent multiple-employer defined benefit OPEB plan (OPEB Plan) administered by PERS. The OPEB Plan provides medical, dental and long-term disability benefits for retirees and their beneficiaries, in accordance with SMUD policy and negotiated agreements with employee representation groups. The benefit, benefit levels, retiree contributions and employer contributions are governed by SMUD and can be amended by SMUD through its personnel manual and union contracts. Any changes to these benefits would be approved by SMUD's Board and unions.

Employees Covered by Benefit Terms. The following employees were covered by the benefit terms:

	December 31,	
	2022	2021
Inactive employees or beneficiaries currently receiving benefit payments	2,349	2,302
Inactive employees entitled to but not yet receiving benefit payments	46	42
Active employees	2,144	2,114
Total employees covered by benefit terms	4,539	4,458

Contributions. OPEB contributions are elective and not required. In December 2018, SMUD split its CERBT assets across two asset strategies to better align trust assets with liabilities (Strategy 1 for active employees and retirements after June 30, 2018 and Strategy 3 for retirements before July 1, 2018). SMUD contributes the normal cost to the CERBT, but annually receives reimbursement for cash benefit payments from the CERBT. SMUD may also elect to put additional contributions into the OPEB Plan. For the OPEB Plan's fiscal years ended June 30, 2022 and 2021, SMUD made contributions recognized by the OPEB Plan in the amounts of $0.9 million and $0.8 million, respectively.

Net OPEB Asset (NOA) or Liability (NOL). SMUD's NOL at December 31, 2022 and NOA at December 31, 2021 were measured as of June 30, 2022 and 2021, respectively, and the total OPEB liability used to calculate the NOA/NOL was determined by actuarial valuations as of those dates.

Actuarial Methods and Assumptions. The actuarial methods and assumptions used for the December 31, 2022 and December 31, 2021 total OPEB liabilities are as follows:

Discount Rate	5.88% (2022). Blended discount rate based on projected benefit streams expected to be paid from each Strategy. 5.84% (2021)
Inflation	2.50% (2022 and 2021)
Salary Increases	Aggregate – 2.75%; Merit - PERS 2000-2019 Experience Study (2022); PERS 1997-2015 Experience Study (2021)
Mortality, Retirement, Disability, Termination	PERS 2000-2019 Experience Study (2022); PERS 1997-2015 Experience Study (2021)
Mortality Improvement	Mortality projected fully generational with Scale MP-21 (2022), MP-20 (2021)
Healthcare Cost Trend Rates	Non-Medicare: 6.25% for 2024, decreasing to an ultimate rate of 3.75% in 2076 (2022); 6.5% for 2022, decreasing to an ultimate rate of 3.75% in 2076 (2021) Medicare: 5.45% for 2024, decreasing to an ultimate rate of 3.75% in 2076 (2022); 5.65% for 2022, decreasing to an ultimate rate of 3.75% in 2076 (2021) Kaiser Medicare: 4.45% for 2024, decreasing to an ultimate rate of 3.75% in 2076 (2022); 4.6% for 2022, decreasing to an ultimate rate of 3.75% in 2076 (2021)

Discount Rates. For the OPEB Plan, the discount rate used to measure the total OPEB liability was 5.88 percent and 5.84 percent for the years ended December 31, 2022 and 2021, respectively. This rate is a blended discount rate based on projected benefit streams expected to be paid from Strategies 1 and 3. The projection of cash flows used to determine the discount rate assumed that SMUD contributes the full normal cost to the trust and only takes reimbursement from the trust of the cash benefit payments. Because the implied subsidy benefit payments have a larger present value than the payments toward the unfunded accrued liability, there should be sufficient plan assets to pay all benefits from the trust. Based on those assumptions, the OPEB Plan's fiduciary net position was projected to be available to make all projected OPEB payments for current active and inactive employees. The long-term expected rate of return of 6.25percent for Strategy 1 and 5.25 and 4.75 percent for Strategy 3 was applied to all periods of projected benefit payments to determine the total OPEB liability for the years ended December 31, 2022 and 2021, respectively.

The expected real rates of return by asset class used and presented as geometric means for December 31, 2022 are as follows:

Asset Class	Target Allocation CERBT Strategy 1	Expected Real Rate of Return
Global Equity	49.0%	4.56%
Long US Treasuries	5.1%	0.29%
Mortgage-Backed Securities	5.1%	0.49%
Investment Grade Corporates	3.9%	1.56%
High Yield	3.9%	3.00%
Sovereigns	5.1%	2.76%
TIPS	5.0%	(0.08%)
Commodities	3.0%	1.22%
REITS	20.0%	4.06%

Asset Class	Target Allocation CERBT Strategy 3	Expected Real Rate of Return
Global Equity	23.0%	4.56%
Long US Treasuries	11.2%	0.29%
Mortgage-Backed Securities	11.2%	0.49%
Investment Grade Corporates	8.7%	1.56%
High Yield	8.7%	3.00%
Sovereigns	11.2%	2.76%
TIPS	9.0%	(0.08%)
Commodities	3.0%	1.22%
REITS	14.0%	4.06%

The expected real rates of return by asset class used and presented as geometric means for December 31, 2021 are as follows:

Asset Class	Target Allocation CERBT Strategy 1	Expected Real Rate of Return
Global Equity	59%	4.56%
Fixed Income	25%	0.78%
TIPS	5%	(0.08%)
Commodities	3%	1.22%
REITS	8%	4.06%

Asset Class	Target Allocation CERBT Strategy 3	Expected Real Rate of Return
Global Equity	22%	4.56%
Fixed Income	49%	0.78%
TIPS	16%	(0.08%)
Commodities	5%	1.22%
REITS	8%	4.06%

Changes in the NOA or NOL. The following table shows the changes in NOA or NOL recognized over the year ended December 31, 2022:

	Total OPEB Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net OPEB (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2022	$ 392,519	$ 450,051	$ (57,532)
Changes recognized for the measurement period:			
Service cost	8,744	-0-	8,744
Interest	22,728	-0-	22,728
Changes in assumptions	(7,127)	-0-	(7,127)
Differences between expected and actual experience	(12,231)	-0-	(12,231)
Contributions - employer	-0-	860	(860)
Net investment income	-0-	(52,917)	52,917
Benefit payments	(24,169)	(24,169)	-0-
Administrative expense	-0-	(114)	114
Net changes	(12,055)	(76,340)	64,285
Balances at December 31, 2022	$ 380,464	$ 373,711	$ 6,753

The following table shows the changes in in NOA or NOL recognized over the year ended December 31, 2021:

	Total OPEB Liability (a)	Increase (Decrease) Plan Fiduciary Net Position (b)	Net OPEB (Asset) Liability (a) – (b)
		(thousands of dollars)	
Balances at January 1, 2021	$ 396,209	$ 396,979	$ (770)
Changes recognized for the measurement period:			
Service cost	8,426	-0-	8,426
Interest	25,008	-0-	25,008
Changes in assumptions	5,895	-0-	5,895
Differences between expected and actual experience	(18,938)	-0-	(18,938)
Contributions - employer	-0-	818	(818)
Net investment income	-0-	76,479	(76,479)
Benefit payments	(24,081)	(24,081)	-0-
Administrative expense	-0-	(144)	144
Net changes	(3,690)	53,072	(56,762)
Balances at December 31, 2021	$ 392,519	$ 450,051	$ (57,532)

Sensitivity of the NOA or NOL to Changes in the Discount Rate. The following presents the NOA or NOL of SMUD as of the measurement date, calculated using the current discount rate, as well as what the NOA or NOL would be if it were calculated using a discount rate that is 1 percentage-point lower or 1 percentage-point higher than the current discount rate:

	1% Decrease (4.88%)	Current Discount Rate (5.88%)	1% Increase (6.88%)
		(thousands of dollars)	
NOL/(NOA), December 31, 2022	$ 52,612	$ 6,753	$ (31,557)

	1% Decrease (4.84%)	Current Discount Rate (5.84%)	1% Increase (6.84%)
		(thousands of dollars)	
(NOA), December 31, 2021	$ (9,249)	$ (57,532)	$ (97,772)

Sensitivity of the NOA or NOL to Changes in the Healthcare Cost Trend Rates. The following presents the NOA or NOL of SMUD as of the measurement date, calculated using the current healthcare cost trend rate, as well as what the NOA or NOL would be if it were calculated using a healthcare cost trend rate that is 1 percentage-point lower or 1 percentage-point higher than the current healthcare trend rate (see assumptions above for healthcare trend rate):

	1% Decrease	Current Healthcare Trend Rate	1% Increase
		(thousands of dollars)	
(NOA)/ NOL, December 31, 2022	$ (35,780)	$ 6,753	$ 58,812
(NOA), December 31, 2021	$ (102,004)	$ (57,532)	$ (3,060)

OPEB Plan Fiduciary Net Position. Detailed information about the OPEB Plan's fiduciary net position is available in the separately issued OPEB Plan's report. This report can be obtained at the PERS' website at www.calpers.ca.gov.

OPEB Expense and Deferred Outflows of Resources and Deferred Inflows of Resources Related to OPEB. For the years ended December 31, 2022 and 2021, SMUD recognized a credit to OPEB expense of $8.2 million and $18.8 million, respectively.

At December 31, 2022 and 2021, SMUD reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

	December 31, 2022	December 31, 2021
	(thousands of dollars)	
Deferred outflows of resources:		
Changes of assumptions	$ 8,919	$ 13,132
Differences between projected and actual earnings on OPEB plan investments	32,477	-0-
Employer's contributions to the OPEB Plan subsequent to the measurement of total OPEB liability	12,278	11,981
Total deferred outflows of resources	$ 53,674	$ 25,113
Deferred inflows of resources:		
Changes of assumptions	$ 11,428	$ 7,504
Differences between expected and actual experience	38,410	48,300
Differences between projected and actual earnings on OPEB plan investments	-0-	39,098
Total deferred inflows of resources	$ 49,838	$ 94,902

Amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be subject to regulatory accounting as follows (see Note 8):

Year ended December 31:	
2023	$ (5,788)
2024	(4,849)
2025	(5,472)
2026	10,337
2027	(2,670)
Thereafter	-0-

NOTE 16. INSURANCE PROGRAMS AND CLAIMS

SMUD is exposed to various risks of loss related to torts, theft of and destruction to assets, errors and omissions, cyber activities, natural disasters, employee injuries and illnesses, and other exposures. SMUD carries commercial insurance coverage to cover most claims in excess of specific dollar thresholds, ranging from $5.0 thousand to $5.0 million per claim. General liability limits are $140.0 million, excess of a $5.0 million self-insured retention. As of December 31, 2022, wildfire liability limits are $255.0 million ($192.5 million commercial insurance plus $62.5 million self-insured retention). As of December 31, 2021, SMUD had $176.0 million commercial coverage plus $74.0 million self-insured retention within a $250.0 million total program value. SMUD's property insurance coverage is based on the replacement value of the asset. There have been no significant reductions in insurance coverage. In 2022, 2021, and 2020, the insurance policies in effect have adequately covered all settlements of the claims against SMUD. No claims have exceeded the limits of property or liability insurance in any of the past three years. In 2022, SMUD filed a partial claim under business interruption insurance for the Cosumnes Power Plant outage and received a $50.0 million advance on that claim in 2022.

The claims liability is included as a component of Self Insurance and Other in the Statements of Net Position.

SMUD's total claims liability, comprising claims received and claims incurred but not reported, at December 31, 2022, 2021 and 2020 is presented below:

	2022	2021	2020
		(thousands of dollars)	
Workers' compensation claims	$ 7,554	$ 8,666	$ 9,166
General and auto claims	3,178	3,596	3,766
Short and long-term disability claims	58	47	92
Claims liability	$ 10,790	$ 12,309	$ 13,024

Changes in SMUD's total claims liability during 2022, 2021 and 2020 are presented below:

	2022	2021	2020
		(thousands of dollars)	
Claims liability, beginning of year	$ 12,309	$ 13,024	$ 14,073
Add: provision for claims, current year	1,556	1,450	1,419
(Decrease) increase in provision for claims in prior years	1,826	(122)	(8)
Less: payments on claims attributable to current and prior years	(4,901)	(2,043)	(2,460)
Claims liability, end of year	$ 10,790	$ 12,309	$ 13,024

NOTE 17. COMMITMENTS

Electric Power and Gas Supply Purchase Agreements. SMUD has numerous power purchase agreements with other power producers to purchase capacity, transmission, and associated energy to supply a portion of its load requirements. SMUD has minimum take-or-pay commitments for energy on some contracts. SMUD has numerous long-term natural gas supply, gas transportation and gas storage agreements with Canadian and U.S. companies to supply a portion of the consumption needs of SMUD's natural gas-fired power plants.

At December 31, 2022, the approximate minimum obligations for the "take-or-pay" contracts over the next five years are as follows:

	Electric	Gas
	(thousands of dollars)	
2023	$ 71,863	$ 10,238
2024	58,905	7,588
2025	46,634	5,633
2026	47,111	4,234
2027	47,489	4,273

At December 31, 2022, the approximate minimum obligations for the remaining contracts, assuming the energy or gas is delivered over the next five years, are as follows:

	Electric	Gas
	(thousands of dollars)	
2023	$ 289,097	$ 215,951
2024	306,551	135,011
2025	294,714	108,226
2026	277,785	48,798
2027	219,986	44,590

Contractual Commitments beyond 2027 - Electricity. Several of SMUD's purchase power and transmission contracts extend beyond the five-year summary presented above. These contracts expire between 2028 and 2054 and provide for power under various terms and conditions. SMUD estimates its annual minimum commitments under the take-or-pay contracts ranges between $48.0 million in 2028 and $21.0 million in 2054. SMUD estimates its annual minimum commitments under the remaining contracts, assuming the energy is delivered, ranges between $221.3 million in 2028 and $29.0 million in 2050. SMUD's largest purchase power source (in volume) is the Calpine Sutter contract, where SMUD has contracted ownership of 258 MW's of thermal generation capacity. The Calpine Sutter contract expires on December 31, 2026.

Contractual Commitments beyond 2027 - Gas. Several of SMUD's natural gas supply, gas transportation and gas storage contracts extend beyond the five-year summary presented above. These contracts expire between 2028 and 2049 and provide for transportation and storage under various terms and conditions. SMUD estimates its annual minimum commitments under the take-or-pay contracts ranges between $4.3 million in 2028 and $2.7 million in 2049. SMUD estimates its annual minimum commitments under the remaining contracts, assuming the gas is delivered, ranges between $40.7 million in 2028 and $11.7 million in 2049.

Gas Price Swap Agreements. SMUD has entered into numerous variable-to-fixed rate swaps with notional amounts totaling 99,222,500 Dths for the purpose of fixing the rate on SMUD's natural gas purchases for its gas-fueled power plants and gas indexed electric contracts. These gas price swap agreements result in SMUD paying fixed rates ranging from $2.319 to $4.161 per Dth. The swap agreements expire periodically from January 2023 through December 2026.

Gas Transport Capacity Agreements. SMUD has numerous long-term natural gas transport capacity agreements with Canadian and U.S. companies to transport natural gas to SMUD's natural gas-fired power plants from the supply basins in

Alberta to the California-Oregon border and from supply basins in the southwest and Rocky Mountains to the Southern California border. These gas transport capacity agreements provide for the delivery of gas into SMUD-owned pipeline capacity within California. The gas transport capacity agreements provide SMUD with 53,265 Dth per day (Dth/d) of natural gas pipeline capacity from the North, including the Canadian Basins through 2023 and 39,710 Dth/d from the Southwest or Rocky Mountain Basins through at least 2023.

Gas Storage Agreements. SMUD also has an agreement for the storage of up to 2.0 million Dth of natural gas at regional facilities through March 2023, dropping to 1.0 million Dth through March 2026.

Hydro License Agreements. SMUD has a hydro license for a term of 50 years effective July 1, 2014 (see Note 2). SMUD entered into four contracts with government agencies whereby SMUD makes annual payments to them for various services for the term of the license. Each contract is adjusted annually by an inflation index. The present value of the sum of the annual payments is $58.5 million at December 31, 2022.

Construction Contracts. SMUD has entered into various construction contracts for the construction of a new substation, control building, and improvements to the Union Valley bike trail in the UARP. As of December 31, 2022, the not-to-exceed price for these contracts totaled $235.8 million. The remaining contract obligations for these contracts as of December 31, 2022 was $191.1 million.

NOTE 18. CLAIMS AND CONTINGENCIES

FERC Administrative Proceedings. SMUD is involved in a number of FERC administrative proceedings related to the operation of wholesale energy markets, regional transmission planning, gas transportation, and the development of NERC reliability standards. While these proceedings are complex and numerous, they generally fall into the following categories: (i) filings initiated by the California Independent System Operator Corporation (CAISO) (or other market participants) to adopt/modify the CAISO Tariff and/or establish market design and behavior rules; (ii) filings initiated by existing transmission owners (i.e., PG&E and the other Investor Owned Utilities) to pass through costs to their existing wholesale transmission customers; (iii) filings initiated by FERC on market participants to establish market design and behavior rules or to complain about or investigate market behavior by certain market participants; (iv) filings initiated by transmission owners under their transmission owner tariffs for the purpose of establishing a regional transmission planning process; (v) filings initiated by providers of firm gas transportation services under the Natural Gas Act; and (vi) filings initiated by NERC to develop reliability standards applicable to owners, users, and operators of the bulk electric system. In addition, SMUD is an active participant in other FERC administrative proceedings, including those related to reliability and cybersecurity standards, variable resource integration, and transmission planning and cost allocation. SMUD's management believes that the ultimate resolution of these matters will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Environmental Matters. SMUD was one of many potentially responsible parties that had been named in a number of actions relating to environmental claims and/or complaints. SMUD has resolved these environmental claims and/or complaints and entered into settlement agreements and/or consent orders. These settlement agreements and consent orders have statutory reopener provisions which allow regulatory agencies to seek additional funds for environmental remediation under certain limited circumstances. While SMUD believes it is unlikely that any of the prior settlements or consent orders will be reopened, the possibility exists. If any of the settlements or consent orders were to be reopened, SMUD management does not believe that the outcome will have a material adverse effect on SMUD's financial position, liquidity or results of operations.

Other Matters. Currently, SMUD is party to various claims, legal actions and complaints relating to its operations, including but not limited to: property damage and personal injury, contract disputes, torts, and employment matters. SMUD's management believes that the ultimate resolution of these matters will not have a material adverse effect on SMUD's financial position, liquidity or results of operations.

NOTE 19. SUBSEQUENT EVENTS

SMUD evaluated subsequent events through February 24, 2023, the date that the financial statements were available to be issued, for events requiring recording or disclosure in the financial statements. In January 2023, SMUD experienced a series of winter storms that brought heavy rains and high winds causing significant damage to SMUD's grid and widespread outages for SMUD's customers. By the time the storm response was complete, SMUD had experienced the largest mobilization of personnel and restoration crews in its history. SMUD incurred costs related to removing downed trees, restoring power from downed poles and broken lines, replenishing inventory, communicating with and providing assistance to customers, maintaining IT systems, and coordinating with local emergency agencies. SMUD is pursuing claims with Federal and State agencies.

Required Supplementary Information – Unaudited
For the Years Ended December 31, 2022 and 2021

Schedule of Changes in Net Pension Liability and Related Ratios During the Measurement Period - PERS Plan

	December 31,								
	2022	2021	2020	2019	2018	2017	2016	2015	2014
	(thousands of dollars)								
Total pension liability:									
Service cost	$ 41,885	$ 38,900	$ 38,901	$ 38,061	$ 36,029	$ 35,040	$ 29,044	$ 27,991	$ 28,170
Interest	167,926	168,984	164,044	157,976	151,354	150,119	147,497	142,468	137,546
Changes of assumptions	26,275	-0-	-0-	-0-	(61,585)	123,043	-0-	(34,228)	-0-
Differences between expected and actual experience	(31,370)	(5,875)	9,981	18,877	1,293	(29,276)	(8,357)	(10,613)	-0-
Benefit payments, including refunds of employee contributions	(137,603)	(130,376)	(125,581)	(117,548)	(111,763)	(104,428)	(99,155)	(94,636)	(90,175)
Net change in total pension liability	67,113	71,633	87,345	97,366	15,328	174,498	69,029	30,982	75,541
Total pension liability, beginning of year	2,486,667	2,415,034	2,327,689	2,230,323	2,214,995	2,040,497	1,971,468	1,940,486	1,864,945
Total pension liability, end of year (a)	$ 2,553,780	$ 2,486,667	$ 2,415,034	$ 2,327,689	$ 2,230,323	$ 2,214,995	$ 2,040,497	$ 1,971,468	$ 1,940,486
Plan fiduciary net position:									
Contributions - employer	$ 114,476	$ 229,440	$ 98,344	$ 69,119	$ 90,141	$ 32,389	$ 27,645	$ 22,499	$ 21,511
Contributions - employee	18,096	17,552	18,095	17,411	16,832	15,845	15,271	14,503	15,346
Net investment income	(189,479)	454,518	92,534	115,867	138,739	171,596	8,316	35,797	245,659
Benefit payments, including refunds of employee contributions	(137,603)	(130,376)	(125,581)	(117,548)	(111,763)	(104,428)	(99,155)	(94,636)	(90,175)
Administrative expense	(1,566)	(1,943)	(2,628)	(1,270)	(7,474)	(2,275)	(969)	(1,795)	(2,028)
Other miscellaneous income/(expense)	-0-	-0-	-0-	4	(4)	-0-	34	(25)	-0-
Net change in plan fiduciary net position	(196,076)	569,191	80,764	83,583	126,471	113,127	(48,858)	(23,657)	190,313
Plan fiduciary net position, beginning of year	2,514,405	1,945,214	1,864,450	1,780,867	1,654,396	1,541,269	1,590,127	1,613,784	1,423,471
Plan fiduciary net position, end of year (b)	$ 2,318,329	$ 2,514,405	$ 1,945,214	$ 1,864,450	$ 1,780,867	$ 1,654,396	$ 1,541,269	$ 1,590,127	$ 1,613,784
Net pension liability/(asset), ending (a) - (b)	$ 235,451	$ (27,738)	$ 469,820	$ 463,239	$ 449,456	$ 560,599	$ 499,228	$ 381,341	$ 326,702
Plan fiduciary net position as a percentage of the total pension liability	90.8%	101.1%	80.5%	80.1%	79.8%	74.7%	75.5%	80.7%	83.2%
Covered payroll	$ 256,965	$ 257,613	$ 254,756	$ 247,759	$ 235,902	$ 223,685	$ 207,119	$ 197,481	$ 191,439
Net pension liability/(asset) as a percentage of covered payroll	91.6%	-10.8%	184.4%	187.0%	190.5%	250.6%	241.0%	193.1%	170.7%

PERS Plan. The schedule of changes in NPL/NPA and related ratios is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

Notes to Schedule:

Benefit Changes: The figures above do not include any liability impact that may have resulted from plan changes which occurred after the June 30, 2021 valuation date. This applies for voluntary benefit changes as well as any offers of two years additional service credit.

Changes in Assumptions: Effective with the June 30, 2021 valuation date (2022 measurement date), the accounting discount rate was reduced from 7.15% to 6.90%. In determining the long-term expected rate of return, CalPERS took into account long-term market return expectations as well as the expected pension fund cash flows. Projected returns for all asset classes are estimated, combined with risk estimates, and are used to project compound (geometric) returns over the long term. The discount rate used to discount liabilities was informed by the long-term projected portfolio return. In addition, demographic assumptions and the inflation rate assumption were changed in accordance with the 2021 CalPERS Experience Study and Review of Actuarial Assumptions. The accounting discount rate was 7.15% for measurement dates 2017 through 2021, 7.65% for measurement dates 2015 through 2016, and 7.50% for measurement date 2014.

Schedule of Plan Contributions for Pension – PERS Plan

	December 31,								
	2022	2021	2020	2019	2018	2017	2016	2015	2014
	(thousands of dollars)								
Actuarially determined contribution	$ 44,599	$ 54,315	$ 52,276	$ 49,119	$ 40,142	$ 32,389	$ 27,645	$ 22,499	$ 21,511
Contributions in relation to the actuarially determined contribution	(114,476)	(229,440)	(98,344)	(69,119)	(90,142)	(32,389)	(27,645)	(22,499)	(21,511)
Contribution excess	$ (69,877)	$ (175,125)	$ (46,068)	$ (20,000)	$ (50,000)	$ -0-	$ -0-	$ -0-	$ -0-
Covered payroll	$ 256,965	$ 257,613	$ 254,756	$ 247,759	$ 235,902	$ 223,685	$ 207,119	$ 197,481	$ 191,439
Contributions as a percentage of covered payroll	44.5%	89.1%	38.6%	27.9%	38.2%	14.5%	13.4%	11.4%	11.2%

PERS Plan. The schedule of pension contributions is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

Notes to Schedule

The actuarial methods and assumptions used to set the actuarially determined contributions for the year ended December 31, 2022 was derived from the June 30, 2019 funding valuation report.

Actuarial cost method	Entry age Actuarial Cost Method
Amortization method/period	For details, see June 30, 2019 Funding Valuation Report
Asset valuation method	Fair value of assets. For details, see June 30, 2019 Funding Valuation Report
Inflation	2. 5%
Salary increases	Varies by entry age and service
Payroll growth	2.75%
Investment rate of return	7.00% Net of pension plan investment and administrative expenses; includes inflation
Retirement age	The probabilities of retirement are based on the 2017 PERS Experience Study for the period from 1997 to 2015
Mortality	The probabilities of mortality are based on the 2017 PERS Experience Study for the period from 1997 to 2015. Pre-retirement and post-retirement mortality rates include 15 years of projected mortality improvement using Scale MP-2016 published by the Society of Actuaries.

In 2021, the investment rate of return was 7.00%. In 2020, the investment rate of return was 7.25%. Prior to 2020, the probabilities of mortality are based on the 2014 PERS Experience Study for the period from 1997 to 2011. Pre-retirement and post-retirement mortality rates include 20 years of projected mortality improvement using Scale BB published by the Society of Actuaries. Prior to 2017, the retirement age and mortality assumptions were based on the 2010 PERS Experience Study for the period from 1997 to 2007. In addition, the mortality assumption for pre-retirement and post-retirement rates included 5 years of projected mortality improvement using Scale AA published by the Society of Actuaries.

Schedule of Changes in Net OPEB Asset or Liability and Related Ratios During the Measurement Period

OPEB. The schedule of changes in NOA or NOL and related ratios is presented above for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

	December 31,					
	2022	2021	2020	2019	2018	2017
	(thousands of dollars)					
Total OPEB liability:						
Service cost	$ 8,744	$ 8,426	$ 8,903	$ 8,946	$ 9,263	$ 8,993
Interest on total OPEB liability	22,728	25,008	26,653	26,766	29,656	28,676
Changes of assumptions	(7,127)	5,895	(11,453)	15,332	3,105	-0-
Differences between expected and actual experience	(12,231)	(18,938)	(23,529)	(6,885)	(59,921)	-0-
Benefit payments	(24,169)	(24,081)	(23,848)	(24,521)	(24,672)	(22,192)
Net change in total OPEB liability	(12,055)	(3,690)	(23,274)	19,638	(42,569)	15,477
Total OPEB liability, beginning of year	392,519	396,209	419,483	399,845	442,414	426,937
Total OPEB liability, end of year (a)	$ 380,464	$ 392,519	$ 396,209	$ 419,483	$ 399,845	$ 442,414
Plan fiduciary net position:						
Contributions - employer	$ 860	$ 818	$ 13,299	$ 13,963	$ 34,243	$ 114,573
Net investment income	(52,917)	76,479	20,447	20,132	27,295	24,104
Benefit payments	(24,169)	(24,081)	(23,848)	(24,521)	(24,672)	(22,192)
Administrative expense	(114)	(144)	(191)	(81)	(635)	(123)
Net change in plan fiduciary net position	(76,340)	53,072	9,707	9,493	36,231	116,362
Plan fiduciary net position, beginning of year	450,051	396,979	387,272	377,779	341,548	225,186
Plan fiduciary net position, end of year (b)	$ 373,711	$ 450,051	$ 396,979	$ 387,272	$ 377,779	$ 341,548
Net OPEB (asset) or liability, ending (a) - (b)	$ 6,753	$ (57,532)	$ (770)	$ 32,211	$ 22,066	$ 100,866
Plan fiduciary net position as a percentage of the total OPEB liability	98.2%	114.7%	100.2%	92.3%	94.5%	77.2%
Covered payroll	$ 301,746	$ 289,014	$ 287,001	$ 282,993	$ 269,753	$ 252,211
Net OPEB (asset) or liability as a percentage of covered payroll	2.2%	-19.9%	-0.3%	11.4%	8.2%	40.0%

Notes to Schedule

Benefit Changes: There were no changes to benefits.

Changes in Assumptions: In 2022, the long-term rate of return for Strategy 3 was updated based on newer target asset allocation, the discount rate was updated based on crossover test, the demographic assumptions were updated to CalPERS 2000-2019 Experience Study, and the mortality improvement scale was updated to Scale MP-2021. In 2021, the discount rate was updated due to weighting of Strategy 1 and Strategy 3 and updated capital market assumptions, the mortality improvement scale was updated to Scale MP-2020, the inflation rate was changed to 2.5% and the implied subsidy was removed for Medicare Advantage Plans. In 2020, the discount rate reflected the split of assets between Strategy 1 and Strategy 3, the mortality improvement scale was updated to Scale MP-2019, and the Kaiser Medicare trend rates were updated.

Schedule of Plan Contributions for OPEB

OPEB Plan. The schedule of OPEB contributions is presented below for the years for which SMUD has available data. SMUD will add to this schedule each year and when it reaches 10 years it will contain the last 10 years data which will then be updated each year going forward.

	December 31,					
	2022	2021	2020	2019	2018	2017
	(thousands of dollars)					
Actuarially determined contribution	$ 5,425	$ 8,661	$ 12,201	$ 10,710	$ 15,366	$ 16,472
Contributions in relation to the actuarially determined contribution	(1,157)	(853)	(13,233)	(13,155)	(35,128)	(116,181)
Contribution deficiency (excess)	$ 4,268	$ 7,808	$ (1,032)	$ (2,445)	$ (19,762)	$ (99,709)
Covered payroll	$ 318,094	$ 285,425	$ 289,552	$ 286,835	$ 277,193	$ 260,210
Contributions as a percentage of covered payroll	0.4%	0.3%	4.6%	4.6%	12.7%	44.6%

Notes to Schedule

The actuarial methods and assumptions used to set the actuarially determined contributions for the year ended December 31, 2022 were derived from the June 30, 2021 funding valuation report.

Actuarial cost method	Entry age normal
Amortization method	Level percent of pay
Amortization period	24-year fixed period for 2022
Asset valuation method	Market value of assets
Discount rate	6.25% for all actives and retirements after 6/30/2018, 5.0% for all retirements before 6/30/2018
Inflation	2.5%
Medical trend	Non-Medicare: 6.5% for 2023, decreasing to an ultimate rate of 3.75% in 2076 Medicare (Non-Kaiser): 5.65% for 2023, decreasing to an ultimate rate of 3.75% in 2076 Medicare (Kaiser): 4.6% for 2023, decreasing to an ultimate rate of 3.75% in 2076
Mortality	PERS 1997-2015 experience study
Mortality improvement	Post-retirement mortality projected fully generational with Scale MP-20

In 2022, the amortization period was for a 24-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-20. In 2021, the amortization period was for a 25-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-19. In 2020, the amortization period was for a 26-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-18. In 2019, the amortization period was for a 27-year fixed period. Mortality assumption used PERS 1997-2015 experience study. The mortality improvement projected fully generational with Scale MP-17. In 2018, the amortization period was for a 28-year fixed period. Mortality assumption used PERS 1997-2011 experience study. The mortality improvement projected fully generational with Scale MP-16. In 2017, the amortization period was for a 29-year fixed period. The inflation rate was 3.0% and the discount rate was 7.25%. The mortality projected fully generational with Scale MP-14, modified to converge in 2022.

From: Mark <Mark@freewayblogging.com>
Sent: Wednesday, September 20, 2023 7:19 PM
To: Brandon Rose-Contact <brandondrose@hotmail.com>; Nancy Bui-Thompson <Nancy.Bui-Thompson@smud.org>; gbfishman@gmail.com; Rosanna J. Herber <Rosanna.Herber@smud.org>; Rob Kerth External <rob@kerth.us>; davetamayo2@gmail.com; Heidi Sanborn <Heidi.Sanborn@smud.org>
Cc: Jenna Lesch <Jenna.Lesch@smud.org>
Subject: [EXTERNAL] Re: Public comments on the draft rate resolution dated September 20, 2023

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

September 20, 2023

Esteemed SMUD Directors and staff,

Please acknowledge your receipt of this message.

The PG&E audited financial statements are large files. They are part of my public comment on the draft rate resolution, 3rd set, and I want you to see them. I'm sending them to you separately so as not to exceed the maximum email size including attachments.

https://www.pge.com/pge_global/common/pdfs/about-pge/company-information/regulation/FERCForm2-2021.pdf

https://www.pge.com/pge_global/common/pdfs/about-pge/company-information/regulation/FERCForm2-2022.pdf

The 2021 and 2022 financial statement and several SMUD budget documents are attached. I think they will all fit. They are both smaller than PG&E's 2020 financial statement, which I sent you earlier today.

Even if you do not receive them, and I hope you do, I incorporate the 2021 and 2022 PG&E audited financial statements into this public comment by this reference. In my previous email I sent you the PG&E financial statement for 2020.

For the purpose of comparison with PG&E, your nemesis, I will also send in a separate email SMUD's 2020 and 2022 audited financial statements. They would make the overall size of this email greater than 10 MB and it might not go through to you.

The 2021 audited financial statement is not currently available on the SMUD website and is incorporated into this public comment by this reference. I have asked staff to make it available.

I am also attaching SMUD's budget documents for 2020 through 2023. Please acknowledge your receipt of all these attachments.

Thank you,

Mark Graham

Attachments:

PG&E financial statement for 2021
PG&E financial statement for 2022
In my previous email I sent you the PG&E financial statement for 2020.

SMUD 2023 approved budget
Budget letter re: 2022 SMUD proposed budget
SMUD 2022 budget (slides)
Budget letter re: 2021 SMUD budget proposal
SMUD 2021 budget (slides)
Budget letter re: 2020 SMUD budget
SMUD 2020 budget (slides)

2021
ANNUAL REPORT

of

Pacific Gas and Electric Company
77 Beale Street
P.O. Box 770000, B7C
San Francisco, CA 94177

to the

Public Utilities Commission
of the
State of California
For the Year Ended December 31, 2021

Volume No. 2 (Form 2)

FERC FORM NO. 2:
ANNUAL REPORT OF MAJOR NATURAL GAS COMPANIES

IDENTIFICATION

01 Exact Legal Name of Respondent	02 Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	Dec. 31, 2021

03 Previous Name and Date of Change *(If name changed during year)*

04 Address of Principal Office at End of Year *(Street, City, State, Zip Code)*

77 Beale Street, P.O. Box 770000, San Francisco, CA 94177

05 Name of Contact Person	06 Title of Contact Person
Jennifer Garboden	Director, Corporate Accounting

07 Address of Contact Person *(Street, City, State, Zip Code)*

77 Beale Street, Mail Code B7A, P.O. Box 770000, San Francisco, CA 94177

08 Telephone of Contact Person, *Including Area Code*	09 This Report is	10 Date of Report *(Mo, Da, Yr)*
(415)-973-5456	(1) *An Original X (2) A Resubmission	April 11, 2022

ATTESTATION

The undersigned officer certifies that he/she has examined the accompanying report; that to the best of his/her knowledge, information, and belief, all statements of fact contained in the accompanying report are true and the accompanying report is a correct statement of the business and affairs of the above named respondent in respect to each and every matter set forth therein during the period from and including January1 to and including December 31 of the year of the report.

01 Name	02 Title
DAVID THOMASON	Vice President, CFO, and Controller, Pacific Gas and Electric Company

03 Signature	04 Date *Signed (Mo, Day, Yr)*
David Thomason	April 11, 2022

Title 18, U.S.C. 1001, makes it a crime for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction.

Name of Respondent	This Report is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 04/11/2022	2021/Q4

LIST OF SCHEDULES (Natural Gas Company)

Enter in column (d) the terms "none," "not applicable," or "NA," as appropriate, where no information or amounts have been reported for certain pages. Omit pages where the response are "none," "not applicable," or "NA."

Title of Schedule (a)	Reference Page No. (b)	Date Revised (c)	Remarks (d)
GENERAL CORPORATE INFORMATION AND FINANCIAL STATEMENTS			
General Information	101	Ed. 12-87	*
Control Over Respondent	102	Ed. 12-87	*
Corporations Controlled by Respondent	103	Ed. 12-87	*
Security Holders and Voting Powers	107	Ed. 12-87	*
Important Changes During the Year	108	Ed. 12-87	*
Comparative Balance Sheet	110-113	Rev.12-93	
Statement of Income for the Year	114-117	Rev.12-93	
Statement of Retained Earnings for the Year	118-119	Ed. 12-88	
Statement of Cash Flows	120-121	Rev.12-93	
Notes to Financial Statements	122	Ed. 12-88	*
Statement of Accumulated Comprehensive Income and Hedging Activities	122(a)(b)	Ed. 12-88	
BALANCE SHEET SUPPORTING SCHEDULES (Assets and Other Debits)			
Summary of Utility Plant and Accumulated Provisions for Depreciation, Amortization, and Depletion	200-201	Ed. 12-89	
Gas Plant in Service	204-209	Ed. 12-89	
Gas Property and Capacity Leased from Others	212	Ed. 12-88	NONE
Gas Property and Capacity Leased to Others	213	Ed. 12-88	NONE
Gas Plant Held for Future Use	214	Ed. 12-89	NONE
Constrution Work in Progress - Gas	216	Ed. 12-87	
Non-Traditional Rate Treatment Afforded New Projects	217	Ed. 12-87	NA
General Description of Construction Overhead Procedure	218	Ed. 12-88	NA
Accumulated Provision for Depreciation of Gas Utility Plant	219	Ed. 12-87	
Gas Stored	220	Ed. 12-87	
Investments	222-223	Ed. 12-86	
Investments in Subsidiary Companies	224-225	Ed. 12-89	*
Prepayments	230	Ed. 12-88	
Extraordinary Property Losses	230	Ed. 12-88	NONE
Unrecovered Plant and Regulatory Study Costs	230	Ed. 12-88	NONE
Other Regulatory Assets	232	New 12-93	*
Miscellaneous Deferred Debits	233	Ed. 12-89	*
Accumulated Deferred Income Taxes	234-235	Ed. 12-89	
BALANCE SHEET SUPPORTING SCHEDULES (Liabilities and Other Credits)			
Capital Stock	250-251	Ed. 12-89	*
Capital Stock Subscribed, Capital Stock Liability for Conversion, Premium on Capital Stock, and Installments Received on Capital Stock	252	Ed. 12-86	NA
Other Paid-in Capital	253	Ed. 12-86	*
Discount on Capital Stock	254	Ed. 12-86	*
Capital Stock Expense	254	Ed. 12-86	*
Securities Issued or Assumed and Securities Refunded or Retired During the Year	255	Ed. 12-86	
Long-Term Debt	256-257	Ed. 12-89	
Unamortized Debt Expense, Premium and Discount on Long-Term Debt	258-259	Ed. 12-88	

Name of Respondent	This Report is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

LIST OF SCHEDULES (Natural Gas Company) (Continued)

Title of Schedule (a)	Reference Page No. (b)	Date Revised (c)	Remarks (d)
BALANCE SHEET SUPPORTING SCHEDULES (Liabilities and Other Credits) (Continued)			
Unamortized Loss and Gain on Reaquired Debt	260	Ed. 12-86	
Reconciliation of Reported Net Income with Taxable Income for Federal Income Taxes	261	Ed. 12-88	*
Taxes Accrued, Prepaid and Charged During Year	262-263	Ed. 12-88	*
Miscellaneous Current and Accrued Liabilities	268	Ed. 12-86	
Other Deferred Credits	269	Ed. 12-88	*
Accumulated Deferred Income Taxes - Other Property	274-275	Ed. 12-89	*
Accumulated Deferred Income Taxes - Other	276-277	Ed. 12-93	*
Other Regulatory Liabilities	278	New 12-93	*
INCOME ACCOUNT SUPPORTING SCHEDULES			
Gas Operating Revenues	300-301	Ed. 12-89	
Revenues from Transportation of Gas of Others Through Gathering Facilities	302-303	Ed. 12-88	NONE
Revenues from Transportation of Gas of Others Through Transmission Facilities	304-305	Ed. 12-88	
Revenues from Storage of Gas of Others	306-307	Ed. 12-89	NONE
Other Gas Revenues	308	Ed. 12-88	
Discounted Rate Services and Negotiated Rate Services	313	Rev. 12-88	
Gas Operation and Maintenance Expenses	317-325	Ed. 12-89	
Exchange and Imbalance Transactions	328	Rev. 12-88	NA
Gas Used in Utility Operations	331	Ed. 12-88	
Transmission and Compression of Gas by Others	332	Ed. 12-86	NA
Other Gas Supply Expenses	334	Ed. 12-87	NONE
Miscellaneous General Expenses - Gas	335	Ed. 12-86	
Depreciation, Depletion, and Amortization of Gas Plant	336-338	Ed. 12-88	
Particulars Concerning Certain Income Deduction and Interest Charges Accounts	340	Ed. 12-86	NA
COMMON SECTION			
Regulatory Commission Expenses	350-351	Ed. 12-89	*
Employee Pensions and Benefits (Account 926)	352	Ed. 12-89	
Distribution of Salaries and Wages	354-355	Ed. 12-88	*
Charges for Outside Professional and Other Consultative Services	357	Ed. 12-87	
Transactions with Affiliated Companies	358	Ed. 12-87	
GAS PLANT STATISTICAL DATA			
Compressor Stations	508-509	Ed. 12-86	
Gas Storage Projects	512-513	Ed. 12-91	
Transmission Lines	514	Ed. 12-87	
Transmission System Peak Deliveries	518	Ed. 12-88	
Auxiliary Peaking Facilities	519	Ed. 12-86	
Gas Account - Natural Gas	520	Ed. 12-91	
System Map	522	Ed. 12-86	
Footnote Reference	551	Ed. 12-86	NONE
Footnote Text	552	Ed. 12-86	NONE
Stockholder's Reports (check appropriate box)			
(X) Four copies will be submitted.			
SUPPLEMENTAL FINANCIAL DATA			
Selected Financial Data	600-601		
* Refer to the Annual Report of the Electric Department			

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

COMPARATIVE BALANCE SHEET (ASSETS AND OTHER DEBITS)

Line No.	Title of Account (a)	Ref. Page No. (b)	Current Year End of Quarter/Yr Balance (c)	Prior Year End Balance 12/31 (d)
1	**UTILITY PLANT**			
2	Utility Plant (101 -106, 114)	200-201	103,173,291,727	99,319,294,639
3	Construction Work in Progress (107)	200-201	3,547,642,238	2,758,242,099
4	TOTAL Utility Plant (Lines 2 and 3)		106,720,933,965	102,077,536,738
5	(Less) Accum. Prov. for Depr. Amort. Depl. (108, 111, 115)	200-201	43,122,819,469	41,313,895,992
6	NET Utility Plant (Lines 4 less 5)		63,598,114,496	60,763,640,746
7	Nuclear Fuel in Process (120.1)	202-203	182,496,431	178,852,456
8	Nuclear Fuel Materials and Assembles-Stock (120.2)		3,274,391	-
9	Nuclear Fuel Assemblies in Reactor (120.3)		329,412,017	359,475,767
10	Spent Nuclear Fuel (120.4)		2,787,380,149	2,681,225,483
11	Nuclear Fuel Under Capital Leases (120.6)		-	-
12	(Less) Accum. Prov. For Amort. of Nuclear Fuel (120.5)	202-203	2,973,964,630	2,853,008,174
13	NET Nuclear Fuel (Lines 7-11 less 12)		328,598,358	366,545,532
14	NET Utility Plant (Lines 6 and 13)		63,926,712,854	61,130,186,278
15	Utility Plant Adjustments (116)		-	-
16	Gas Stored Underground - Noncurrent (117)		119,592,211	55,907,325
17	**OTHER PROPERTY AND INVESTMENTS**			
18	Nonutility Property (121)		23,290,645	30,315,734
19	(Less) Accum. Prov. for Depr. and Amort. (122)		-	-
20	Investments in Associated Companies (123)		-	-
21	Investment in Subsidiary Companies (123.1)	224-225	522,176,417	134,313,797
22	(For cost of Account 123.1, See Footnote Page 224, Line 42)			
23	Noncurrent Portion of Allowances	228-229	342,526,592	104,757,860
24	Other Investments (124)		-	-
25	Sinking Funds (125)		-	-
26	Depreciation Fund (126)		-	-
27	Amortization Fund-Federal (127)		-	-
28	Other Special Funds (128)		3,837,927,554	3,577,735,621
29	Special Funds-Nonmajor Only (129)		1,340,505,591	1,153,128,788
30	Long-Term Portion of Derivatives Assets (175)		169,204,338	135,917,617
31	Long-Term Portion of Derivative Assets - Hedges (176)		-	-
32	TOTAL Other Property and Investments (Lines 18-21 and 23-31)		6,235,631,137	5,136,169,417
33	**CURRENT AND ACCRUED ASSETS**			
34	Cash and Working Funds (Nonmajor Only) (130)			
35	Cash (131)		48,120,166	59,291,720
36	Special Deposits (132-134)		11,166,837	143,144,862
37	Working Funds (135)		-	18,975
38	Temporary Cash Investments (136)		112,750,000	196,000,000
39	Notes Receivable (141)		-	-
40	Customer Accounts Receivable (142)		414,302,245	341,025,012
41	Other Accounts Receivable (143)		2,319,071,623	1,624,531,567
42	(Less) Accum. Prov. for Uncollectible Acct.-Credit (144)		23,527,669	27,986,632
43	Notes Receivable from Associated Companies (145)		1,901,422,841	1,504,095,027
44	Accounts Receivable from Associated Companies (146)		180,328,821	46,819,315
45	Fuel Stock (151)	227	1,459,242	1,378,183
46	Fuel Stock Expense Undistributed (152)	227	-	-
47	Residuals (Elec) and Extracted Products (153)	227	-	-
48	Plant Materials and Operating Supplies (154)	227	552,298,302	533,278,843
49	Merchandise (155)	227	-	-
50	Other Materials and Supplies (156)	227	-	-
51	Nuclear Materials Held for Sale (157)	202-203/307	-	-
52	Allowances (158.1 and 158.2)	228-229	425,535,572	512,269,640

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

COMPARATIVE BALANCE SHEET (ASSETS AND OTHER DEBITS) (Continued)

Line No.	Title of Account (a)	Ref. Page No. (b)	Current Year End of Quarter/Yr Balance (c)	Prior Year End Balance 12/31 (d)
53	(Less) Noncurrent Portion of Allowances		342,526,592	104,757,860
54	Stores Expense Undistributed (163)	227	-	0
55	Gas Stored Underground - Current (164.1)		43,030,451	93,819,226
56	LNG Stored and Held for Processing (164.2-164.3)		-	-
57	Prepayments (165)		520,256,195	698,753,381
58	Advances for Gas (166-167)		-	-
59	Interest and Dividends Receivable (171)		-	3,420
60	Rents Receivable (172)		-	-
61	Accrued Utility Revenues (173)		119,873,851	123,798,662
62	Miscellaneous Current and Accrued Assets (174)		650,892,528	613,965,320
63	Derivative Instrument Assets (175)		218,389,698	167,726,528
64	(Less) Long-Term Portion of Derivative Instrument		169,204,338	135,917,617
65	Derivative Instrument Assets - Hedges (176)		-	0
66	(Less) Long-Term Portion of Derivative Instrument		-	0
67	TOTAL Current and Accrued Assets (Lines 34-66)		6,983,684,432	6,391,257,572
68	**DEFERRED DEBITS**			
69	Unamortized Debt Expenses (181)		197,064,626	198,238,360
70	Extraordinary Property Losses (182.1)	230a	-	-
71	Unrecovered Plant and Regulatory Study Costs (182.2)	230b	39,584,283	51,795,210
72	Other Regulatory Assets (182.3)	232	17,165,967,732	16,056,902,402
73	Preliminary Survey and Investigation Charges (183)		(558)	(558)
74	Preliminary Natural Gas Survey and Investigation Charges (183.1)		-	-
75	Other Preliminary Survey and Investigation Charges (183.2)		-	-
76	Clearing Accounts (184)		2,932,638	3,056,319
77	Temporary Facilities (185)		-	0
78	Miscellaneous Deferred Debits (186)	233	5,304,229,611	5,832,130,624
79	Deferred Losses from Disposition of Utility Plant (187)		-	-
80	Research, Development and Demonstration Expenditures (188)	352-353	-	-
81	Unamortized Loss on Reacquired Debt (189)		49,489,664	62,997,566
82	Accumulated Deferred Income Taxes (190) [F]	234	8,700,298,466	9,318,986,643
83	Unrecovered Purchased Gas Costs (191)		-	-
84	TOTAL Deferred Debits (Lines 73-95)		31,459,566,462	31,524,106,566
85	TOTAL ASSETS (Lines 14-16, 32, 67 and 84)		108,725,187,096	104,237,627,158

Name of Respondent PACIFIC GAS AND ELECTRIC COMPANY	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr) 4/11/2022	Year/Period of Report 2021/Q4

COMPARATIVE BALANCE SHEET (LIABILITIES AND OTHER DEBITS)

Line. No.	Title of Account (a)	Ref. Page No. (b)	Current Year End of Quarter/Yr Balance (c)	Prior Year End Balance 12/31 (d)
1	**PROPRIETARY CAPITAL**			
2	Common Stock Issued (201)	250-251	1,321,874,045	1,321,874,045
3	Preferred Stock Issued (204)	250-251	257,994,575	257,994,575
4	Capital Stock Subscribed (202,205)		-	-
5	Stock Liability for Conversion (203,206)		-	-
6	Premium on Capital Stock (207)		1,805,194,230	1,805,194,230
7	Other Paid-In Capital (208-211)	253	26,516,580,090	26,516,580,090
8	Installments Received on Capital Stock (212)		-	-
9	(Less) Discount on Capital Stock (213)	254	6,916,899	6,916,899
10	(Less) Capital Stock Expense (214)	254b	28,951,886	28,951,886
11	Retained Earnings (215, 215.1, 216)	118-119	(4,591,909,590)	(4,351,842,483)
12	Unappropriated Undistributed Subsidiary Earnings (216.1)	118-119	344,832,855	(32,541,627)
13	(Less) Reaquired Capital Stock (217)	250-251	-	-
14	Noncorporate Proprietorship (Nonmajor only)(218)		-	0
15	Accumulated Other Comprehensive Income (219)	122a&b	(7,526,997)	(4,621,218)
16	Total Proprietary Capital (lines 2 through 15)		25,611,170,423	25,476,768,827
17	**LONG-TERM DEBT**			
18	Bonds (221)	256-257	36,443,675,751	31,852,940,000
19	(Less) Reaquired Bonds (222)	256-257	-	0
20	Advances from Associated Companies (223)	256-257	806,847,383	0
21	Other Long-Term Debt (224)	256-257	-	0
22	Unamortized Premium on Long-Term Debt (225)		5,486,058	0
23	(Less) Unamortized Discount on Long-Term Debt - Debit (226)		26,193,407	20,595,301
24	Total Long-Term Debt (lines 18 through 23)		37,229,815,785	31,832,344,699
25	**OTHER NONCURRENT LIABILITIES**			
26	Obligations Under Capital Leases - Noncurrent (227)		813,002,476	1,211,735,102
27	Accumulated Provision for Property Insurance (228.1)		-	-
28	Accumulated Provision for Injuries and Damages (228.2)		3,179,506,735	2,769,431,843
29	Accumulated Provision for Pensions and Benefits (228.3)		780,037,409	2,342,629,053
30	Accumulated Miscellaneous Operating Provisions (228.4		1,481,283,646	1,338,475,830
31	Accumulated Provision for Rate Refunds (229)		-	0
32	Long-Term Portion of Derivative Instrument Liabilities		215,988,093	194,661,444
33	Long-Term Portion of Derivative Instrument Liabilities- Hedges		-	-
34	Asset Retirement Obligations (230)		5,297,821,486	6,412,100,889
35	Total Other Noncurrent Liabilities (lines 26 through 34)		11,767,639,845	14,269,034,161
36	**CURRENT AND ACCRUED LIABILITIES**			
37	Notes Payable (231)		2,185,000,000	3,555,000,000
38	Accounts Payable (232)		3,482,574,166	3,185,186,054
39	Notes Payable to Associated Companies (233)		-	-
40	Accounts Payables to Associated Companies (234)		76,772,484	46,554,806
41	Customer Deposits (235)		85,699,175	113,023,366
42	Taxes Accrued (236)	262-263	508,618,405	453,585,015
43	Interest Accrued (237)		432,788,163	451,126,305
44	Dividends Declared (238) *		-	0
45	Matured Long-Term Debt (239)		-	0

Name of Respondent PACIFIC GAS AND ELECTRIC COMPANY	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr) 4/11/2022	Year/Period of Report 2021/Q4

COMPARATIVE BALANCE SHEET (LIABILITIES AND OTHER DEBITS) (Continued)

Line No.	Title of Account (a)	Ref. Page No. (b)	Current Year End of Quarter/Yr Balance (c)	Prior Year End Balance 12/31 (d)
46	Matured Interest (240)		-	0
47	Tax Collections Payable (241)		38,056,452	36,799,544
48	Miscellaneous Current and Accrued Liabilities (242		1,330,741,077	1,378,666,788
49	Obligations Under Capital Leases-Current (243)		469,014,820	531,682,197
50	Derivative Instrument Liabilities (244)		242,244,653	217,016,272
51	(Less) Long-Term Portion of Derivative Instrument Liab.		215,988,093	194,661,444
52	Derivative Instrument Liabilities-Hedges (245)		-	0
53	(Less) Long-Term Portion of Derivative Instrument Liab.-Hedges		-	-
54	Total Current and Accrued Liabilities (lines 37 through 53		8,635,565,961	9,773,978,903
55	**DEFERRED CREDITS**			
56	Customer Advances for Construction (252)		255,873,824	326,181,304
57	Accumulated Deferred Investment Tax Credits (255)	266-267	96,542,098	95,893,290
58	Deferred Gains from Disposition of Utility Plant (256)		-	-
59	Other Deferred Credits (253)	269	1,840,485,385	1,573,140,970
60	Other Regulatory Liabilities (254) [E]	278	11,064,558,229	9,886,546,578
61	Unamortized Gain on Reacquired Debt (257)		290,227	429,928
62	Accum. Deferred Income Taxes-Accel. Amort.(281)	272-273	-	0
63	Accum. Deferred Income Taxes-Other Property (282) [F]	274-275	9,813,115,334	8,980,592,464
64	Accum. Deferred Income Taxes-Other (283) [F]	276-277	2,410,129,985	2,022,716,034
65	Total Deferred Credits (lines 56 through 64)		25,480,995,082	22,885,500,568
66	TOTAL LIABILITIES AND STOCKHOLDERS EQUITY (lines 16, 24, 35, 54 and 65)		108,725,187,096	104,237,627,158

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr.) 4/11/2022	2021/Q4

STATEMENT OF INCOME

1. Enter in column (e) operations for the reporting quarter and in column (f) the balance for the same three-month period for the prior year.
2. Report in column (g) the year to date amounts for electric utility function; in column (i) the year to date amounts for gas utility, and in (k) the year to date amounts for other utility function for the current year.

Line No.	Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)
1	UTILITY OPERATING INCOME				
2	OPERATING REVENUES (400)	300-301	23,642,511,758	20,627,134,250	
3	OPERATING EXPENSES				
4	Operation Expenses (401)	320-323	14,695,627,408	12,450,954,263	
5	Maintenance Expenses (402)	320-323	3,546,958,150	3,289,692,994	
6	Depreciation Expense (403)	336-337	3,146,069,757	3,152,310,569	
7	Depreciation Exp. for Asset Retirement Costs (403.1)	336-337			
8	Amort. & Depl. of Utility Plant (404-405)	336-337	241,392,639	268,182,440	
9	Amort. of Utility Plant Acq. Adj. (406)	336-337			
10	Amort. of Property Losses, Unrecovered Plant and Regulatory Study Costs (407)		13,397,111	44,858,959	
11	Amort. of Conversion Expenses (407.2)				
12	Regulatory Debit (407.3)		12,060,000	12,060,000	
13	(Less) Regulatory Credits (407.4)		1,229,192,672	1,232,030,318	
14	Taxes Other Than Income Taxes (408.1)	262-263	758,468,798	687,990,525	
15	Income Taxes - Federal (409.1)	262-263	(2)	(18,742,076)	
16	Income Taxes -Other (409.1)	262-263	1,367,558	15,226,597	
17	Provision for Deferred Inc. Taxes (410.1)	234-272-277	18,591,272,382	987,062,652	
18	(Less) Provision for Deferred Inc. Taxes-Cr.(411.1)	234-272-277	17,544,480,671	352,833,793	
19	Investment Tax Credit Adj.- Net (411.4)	266			
20	(Less) Gains from Disp. of Utility Plant (411.6)		2,735,190	1,930,139	
21	Losses from Utility Plant (411.7)		19,695	1,764,604	
22	(Less) Gains from Disposition of Allowance (411.8)				
23	Losses from Disposition of Allowances (411.9)				
24	Accretion Expense (411.10)				
25	TOTAL OPERATING EXPENSES (Lines 4-24)		22,230,224,963	19,304,567,277	
26	NET UTILITY OPERATING INCOME (Line 2 minus line 25)		1,412,286,795	1,322,566,973	

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
	(1) * An Original	(Mo, Da, Yr.)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmissio	4/11/2022	2021/Q4

STATEMENT OF INCOME

3. Report in column (h) the year to date amounts for electric utility function; in column (j) the year to date amounts for gas utility, and in (l) the year to date amounts for other utility function for the previous year. '4. If additional columns are needed, place them in a footnote.

ELECTRIC UTILITY		GAS UTILITY		OTHER UTILITY		
Current Year to Date	Prior Year to Date	Current Year to Date	Prior Year to Date	Current Year to Date	Prior Year to Date	Line No.
(g)	(h)	(i)	(j)	(k)	(l)	
						1
17,897,673,680	15,790,806,398	5,744,838,078	4,836,327,852			2
						3
11,393,769,310	9,856,775,900	3,301,858,098	2,594,178,363			4
3,008,519,641	2,673,921,209	538,438,509	615,771,785			5
2,406,187,594	2,461,733,443	739,882,163	690,577,126			6
						7
176,191,357	192,418,079	65,201,282	75,764,361			8
						9
						10
13,397,111	44,858,959					
						11
12,060,000	12,060,000					12
1,080,179,342	1,014,812,993	149,013,330	217,217,325			13
535,652,340	497,930,437	222,816,458	190,060,088			14
8,254,589	(18,788,436)	(8,254,591)	46,360			15
5,179,331	(43,266,945)	(3,811,773)	58,493,542			16
16,950,182,115	465,052,214	1,641,090,267	522,010,438			17
15,773,589,633	24,320,202	1,770,891,038	328,513,591			18
						19
2,653,727	1,930,127	81,463	12			20
19,695	1,764,604					21
						22
						23
						24
17,652,990,381	15,103,396,142	4,577,234,582	4,201,171,135			25
244,683,299	687,410,256	1,167,603,496	635,156,717			26

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr.) 4/11/2022	2021/Q4

STATEMENT OF INCOME

Line No.	Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)	Prior 3 Months Ended Quarterly Only No 4th Quarter (f)
27	NET UTILITY OPERATING INCOME		1,412,286,795	1,322,566,973		
28	OTHER INCOME AND DEDUCTIONS					
29	OTHER INCOME					
30	NONUTILITY OPERATING INCOME					
31	Revenues from Contract Work (415)					
32	(Less) Costs and Exp. of Contract Work (416)					
33	Rev. from Nonutility Operations (417)		30,684,974	6,120,577		
34	(Less) Exp. of Nonutility Operations (417.1)					
35	Nonoperating Rental Income (418)					
36	Equity in Earnings of Subs. (418.1)	119	379,208,249	29,086,863		
37	Interest and Dividend Income (419)		48,753,487	56,861,975		
38	AFUDC-Other (419.1)		132,828,736	140,080,186		
39	Miscellaneous Nonoperating Income (421)		14,493,970	21,522,402		
40	Gain on Disposition of Property (421.1)		4,103,575	81,540		
41	TOTAL OTHER INCOME (lines 30-39)		610,072,991	253,753,543		
42	OTHER INCOME DEDUCTIONS					
43	Loss on Disposition of Property (421.2)		444,082,199	43,530,137		
44	Miscellaneous Amortization (425)					
45	Donations (426.1)		16,896,203	8,172,778		
46	Life Insurance (426.2)					
47	Penalties (426.3)		8,902,382	25,533,353		
48	Civic, Political and Related Activities (426.4)		7,431,664	7,796,638		
49	Other Deductions (426.5)		196,886,058	189,124,167		
50	TOTAL OTHER INC. DED. (lines 42-48)		674,198,506	274,157,073		
51	TAXES APPLICABLE TO OTHER INC. & DED.					
52	Taxes Other Than Income Taxes (408.2)	262-263				
53	Income Taxes-Federal (409.2)	262-263		651,449		
54	Income Taxes-Other (409.2)	262-263	1	(1,770,469)		
55	Provision for Deferred Income Taxes (410.2)	234, 272-277	134,204,589	(121,916,110)		
56	(Less) Prov .for Deferred Inc. Taxes-Cr. (411.2)	234, 272-277	277,858,179	90,390,785		
57	Investment Tax Credit Adj.- Net (411.5)		(3,917,491)	(6,991,812)		
58	(Less) Investment Tax Credits (420)					
59	TOTAL TAXES ON OTHER INC/DED. (lines 51-57)		(147,571,080)	(220,417,727)		
60	NET OTHER INC/DED. (lines 41, 50, 59)		83,445,565	200,014,197		
61	INTEREST CHARGES					
62	Interest on Long Term Debt (427)		1,200,006,997	909,242,062		
63	Amortization of Debt Disc. and Expense (428)		68,983,271	49,782,057		
64	Amort. of Loss on Reacquired Debt (428.1)		13,507,902	14,024,025		
65	(Less) Amort. of Premium on Debt-Cr (429)		817,992	743,550		
66	(Less) Amort. of Gain on Reacquired Debt-Cr (429.1)		139,701	142,323		
67	Interest on Debt to Assoc. Cos. (430)		3,724,234			
68	Other Interest Expense (431)		129,144,156	174,148,932		
69	(Less) AFUDC-Borrowed Funds-Cr (432)		55,983,881	34,688,521		
70	NET INTEREST CHARGES (lines 61-68)		1,358,424,986	1,111,622,682		
71	INCOME BEFORE EXTRAORDINARY ITEMS (lines 27, 60, and 70)		137,307,374	410,958,488		
72	EXTRAORDINARY ITEMS					
73	Extraordinary Income (434)					
74	(Less) Extraordinary Deductions (435)					
75	Net Extraordinary Items (Line 73 less 74)					
76	Income Taxes-Federal and Other (409.3)	262-263				
77	Extraordinary Items After Taxes (Line 75 Less Line 76)					
78	NET INCOME (Lines 71 and 77)		137,307,374	410,958,488		

FOOTNOTE DATA

Schedule Page: 114 Line No.: 2 Column: c

Includes interdepartmental operating revenues in Line 2 and operations expenses in Line 4 for the year ended December 31:

	2021		2020	
	Revenues	Expenses	Revenues	Expenses
Electric	45,542,788	82,177,529	51,081,618	79,249,535
Gas	243,093,777	206,459,035	230,448,154	202,280,236
Total	288,636,565	288,636,564	281,529,772	281,529,771

Schedule Page: 114 Line No.: 4 Column: c

See footnote in row 2, column c

Name of Respondent	This Report Is:	Date of Report	Year/Period
	(1) * An Original	(Mo, Da, Yr.)	of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

STATEMENT OF RETAINED EARNINGS

1. Do not report Lines 49-53 on the quarterly version.
2. Report all changes in appropriated retained earnings, unapropriated retained earnings, year to date, and unappropriated undistributed subsidiary earnings for the year.
3. Each credit and debit during the year should be identified as to the retained earnings account in which recorded (accounts 433, 436-439 inclusive). Show the contra primary account affected in column (b).
4. State the purpose and amount for each reservation or appropriation of retained earnings.
5. List first Account 439, Adjustments to Retained Earnings, reflecting adjustments to the opening balance of retained earnings. Follow by credit, then debit items, in that order.
6. Show dividends for each class and series of capital stock.
7. Show separately the State and Federal income tax effect of items shown in Account 439, Adjustments to Retained Earnings.
8. Explain in a footnote the basis for determining the amount reserved or appropriated. If such reservation or appropriation is to be recurrent, state the number and annual amounts to be reserved or appropriated as well as the totals eventually to be accumulated.
9. If any notes appearing in the report to stockholders are applicable to this statement, include them on pages 122-123.

Line No.	Item (a)	Contra Primary Account Affected (b)	Current Quarter/Year Year to Date Balance (c)	Previous Quarter/Year Year to Date Balance (d)
	UNAPPROPRIATED RETAINED EARNINGS (Account 216)			
1	Balance - Beginning of Year		(4,635,588,904)	(5,021,494,322)
2	Changes (identify by prescribed retained earnings accounts)			
3	Adjustments to Retained Earnings (Account 439)			
4				
5	Reclassify stranded tax effects			
6				
7				
8				
9	TOTAL Credits to Retained Earnings (Account 439) (Lines 4-8)			
10				
11	Common Stock Cancellation			
12				
13				
14				
15	TOTAL Debits to Retained Earnings (Account 439) (Lines 10-14)			
16	Balance Transferred from Income (Account 433 less Account 418.1)		(241,900,875)	381,871,625
17	Appropriations of Retained Earnings (Account 436)			
18	Reserves for excess earnings on FERC hydroelectric			
19	project licenses pursuant to Federal Power Act Section 10 (d)	215	1,146,674	2,274,513
20				
21				
22	TOTAL Appropriations of Retained Earnings (Account 436)		1,146,674	2,274,513
23	Dividends Declared - Preferred Stock (Account 437)			
24	Preferred Dividends Declared	238		
25				
26	Accrued Preferred Dividends Requirement	238		
27				
28				
29	TOTAL Dividends Declared - Preferred Stock (Account 437) (lines 25-28)			
30	Dividends Declared - Common Stock (Account 438)			
31	Common Stock Dividends Declared	234		
32				
33	There were no common stock dividends declared in 2018			
34				
35				
36	TOTAL Dividends Declared - Common Stock (Account 438) (Total of Lines 31 thru 35)			
37	Transfers to Acct. 216.1, Unappropriated Undistributed Subsidiary Earnings		1,833,767	1,759,280
38	Balance - End of Period (Enter Total of lines 1,9,15,16,22,29,36,and 37)		(4,874,509,338)	(4,635,588,904)

Name of Respondent PACIFIC GAS AND ELECTRIC COMPANY	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr.) 4/11/2022	Year/Period of Report 2021/Q4

STATEMENT OF RETAINED EARNINGS

Line No.	Item (a)	Contra Primary Account Affected (b)	Current Quarter/Year Year to Date Balance (c)	Previous Quarter/Year Year to Date Balance (d)
	State balance and purpose of each appropriated retained earnings amount at end of year and give accounting entries for any applications of appropriated retained earnings during the year.			
39 40 41 42 43 44	Reserves for excess earnings on FERC hydroelectric project licenses pursuant to Federal Power Act Section 10 (d)	216	(1,146,674)	(2,274,513)
45	TOTAL Appropriated Retained Earnings (Account 215)		(1,146,674)	(2,274,513)
	APPROPRIATED RETAINED EARNINGS-AMORT. RESERVE, FEDERAL (Account 215.1) State below the total amount set aside through appropriations of retained earnings, as of the end of the year, in compliance with the provision of Federally granted hydroelectric project licenses held by the respondent. If any reductions or changes other than the normal annual credits hereto have been made during the year, explain such items in a footnote			
46	TOTAL Appropriated Retained Earnings - Amort., Federal (Account 215.1)		283,746,422	286,020,935
47	TOTAL Appropriated Retained Earnings (Accounts 215, 215.1) (Enter Total of lines 45 and 46)		282,599,748	283,746,422
48	TOTAL Retained Earnings (Accounts 215, 215.1, 216) (Enter Total of lines 38 and 47)		(4,591,909,590)	(4,351,842,483)
	UNAPPROPRIATED UNDISTRIBUTED SUBSIDIARY EARNINGS (Account 216.1) **Report only on an Annual Basis, No Quarterly**			
49	Balance - Beginning of Year (Debit or Credit)		(32,541,627)	(59,869,210)
50	Equity in Earnings for Year (Credit) (Account 418.1)		379,208,249	29,086,863
51	(Less) Dividends Received (Debit)			
52	Other: Stanpac and PEFCO earnings reflected in M&O accounts Other: Dissolution		(1,833,767)	(1,759,280)
53	Balance - End of Year (Total of lines 49-52)		344,832,855	(32,541,627)

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

STATEMENT OF CASH FLOWS

(1) Codes to be used: (a) Net Proceeds or Payments; (b) Bonds, debentures and other long-term debt; (c) Include commercial paper; and (d) Identify separately such items as investments, fixed assets, intangibles, etc.
(2) Information about noncash investing and financing activities must be provided in the Notes to the Financial statements. Also provide a reconciliation between "Cash and Cash Equivalents at End of Period" with related amounts on the Balance Sheet.
(3) Operating Activities - Other: Include gains and losses pertaining to operating activities only. Gains and losses pertaining to investing and financing activities should be reported in those activities. Show in the Notes to the Financials the amounts of interest paid (net of amount capitalized) and income taxes paid.
(4) Investing Activities: Include at Other (line 31) net cash outflow to acquire other companies. Provide a reconciliation of assets acquired with liabilities assumed in the Notes to the Financial Statements. Do not include on this statement the dollar amount of leases capitalized per the USofA General

Line No.	Description (See Instruction No. 1 for Explanation of Codes)	Current Year to Date Quarter/Year	Previous Year to Date Quarter/Year
	(a)	December 31, 2021	December 31, 2020
		(b)	(c)
1	Net Cash Flow from Operating Activities:		
2	Net Income (Line 78(c) on page 117)	137,307,374	410,958,488
3	Noncash Charges (Credits) to Income:		
4	Depreciation and Depletion	3,400,859,507	3,465,351,968
5	Disallowed Capital Expenditures		17,075,000
6	Amortization of Unamortized Loss or Gain on Reacquired Debt	13,368,201	13,881,702
7	Amortization of Expenses, Discount and Premium - Long Term Debt	62,342,624	42,542,882
8	Deferred Income Taxes (Net)	1,849,933,849	1,088,231,805
9	Investment Tax Credit Adjustment (Net)	(3,917,491)	(6,991,812)
10	Net (Increase) Decrease in Receivables	(1,117,742,060)	1,686,127,869
11	Net (Increase) Decrease in Inventory	(31,996,628)	5,575,918
12	Net (Increase) Decrease in Allowances Inventory		
13	Net Increase (Decrease) in Payables and Accrued Expenses	(142,336,454)	(742,272,258)
14	Net (Increase) Decrease in Other Regulatory Assets	(2,618,280,425)	(8,410,713,378)
15	Net Increase (Decrease) in Other Regulatory Liabilities	502,585,401	6,353,639,907
16	(Less) Allowance for Other Funds Used During Construction	132,828,736	140,080,186
17	(Less) Undistributed Earnings from Subsidiary Companies	383,560,625	36,097,456
18	Other (provide details in footnote):	891,118,220	(21,747,716,028)
19			
20			
21			
22	Net Cash Provided by (Used in) Operating Activities (Total 2 thru 21)	2,426,852,758	(18,000,485,579)
23			
24	Cash Flows from Investment Activities:		
25	Construction and Acquisition of Plant (including land):		
26	Gross Additions to Utility Plant (less nuclear fuel)	(7,738,814,982)	(7,709,459,133)
27	Gross Additions to Nuclear Fuel	(83,009,282)	(120,482,321)
28	Gross Additions to Common Utility Plant		
29	Gross Additions to Nonutility Plant		
30	(Less) Allowance for Other Funds Used During Construction	(132,828,736)	(140,080,186)
31	Other (provide details in footnote):		
32			
33			
34	Cash Outflows for Plant (Total of lines 26 thru 33)	(7,688,995,528)	(7,689,861,268)
35			
36	Acquisition of Other Noncurrent Assets (d)		
37	Proceeds from Disposal of Noncurrent Assets (d)	808,636,297	14,055,510
38			
39	Investments in and Advances to Assoc. and Subsidiary Companies	(4,301,995)	(51,407,722)
40	Contributions and Advances from Assoc. and Subsidiary Companies		
41	Disposition of Investments in (and Advances to)		
42	Associated and Subsidiary Companies		
43	Payments to Advances by Assoc. and Subsidiary Companies	(6,318,082)	
44	Purchase of Investment Securities (a)		
45	Proceeds from Sales of Investment Securities (a)		

Name of Respondent PACIFIC GAS AND ELECTRIC COMPANY		This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr) 4/11/2022	Year of Report 2021/Q4
46	Loans Made or Purchased		(145,000,000)	
47	Collections on Loans			
48				
49	Net (Increase) Decrease in Receivables			
50	Net (Increase) Decrease in Inventory			
51	Net (Increase) Decrease in Allowances Held for Speculation			
52	Net Increase (Decrease) in Payables and Accrued Expenses			
53	Other (provide details in footnote):			
54	Proceeds from nuclear decommissioning trust investments		1,678,137,456	1,517,679,122
55	Purhcases of nuclear decommissioning trust investments and other		(1,702,381,818)	(1,589,720,889)
56	Net Cash Provided by (Used in) Investing Activities			
57	Total of lines 34 thru 55)		(7,060,223,670)	(7,799,255,247)
58				
59	Cash Flows from Financing Activities:			
60	Proceeds from Issuance of:			
61	Long-Term Debt (b)		5,474,468,232	10,335,736,841
62	Preferred Stock			
63	Common Stock			
64	Other (provide details in footnote):			
65				
66	Net Increase in Short-Term Debt (c)		(1,370,000,000)	2,055,000,000
67	Other (provide details in footnote):		369,967,797	
68	Equity contribution from PG&E Corporation			12,986,032,164
69				
70	Cash Provided by Outside Sources (Total 61 thru 69)		4,474,436,029	25,376,769,005
71				
72	Payments for Retirement of:			
73	Long-term Debt (b)		(59,264,103)	(100,000,000)
74	Preferred Stock			-
75	Common Stock			
76	Other (provide details in footnote):			
77	Customer Advances for Construction		40,660,074	60,348,682
78	Net Decrease in Short-Term Debt (c)			
79	Other		(48,879,642)	(265,198,830)
80	Dividends on Preferred Stock			
81	Dividends on Common Stock			
82	Net Cash Provided by (Used in) Financing Activities			
83	(Total of lines 70 thru 81)		4,406,952,358	25,071,918,857
84				
85	Net Increase (Decrease) in Cash and Cash Equivalents			
86	(Total of lines 22,57 and 83)		(226,418,554)	(727,821,969)
87				
88	Cash and Cash Equivalents at Beginning of Period		398,455,557	1,126,277,526
89				
90	Cash and Cash Equivalents at End of period		172,037,003	398,455,557

FOOTNOTE DATA

Schedule Page: 120 Line No.: 18 Column: b

This consists of the following:

	2021	2020
Reorganization items, net	$ (40,602,973)	$ (90,022,642)
(Increase) Decrease in Other Working Capital	(182,030,669)	(4,917,289,575)
Increase (Decrease) - Other Noncurrent Liabilities	379,853,421	(16,850,824,242)
Others		
Nuclear Fuel Lease Amortization	120,956,456	109,539,888
Payment on capital lease obligation	(1,909,701)	(1,793,542)
Collateral Adjustment	6,764,780	(22,326,176)
Bad Debt Expense	153,917,843	150,027,701
Tax benefit on stock option exercises (shortfall)	(7,571,800)	(15,508,918)
Other-net	457,740,863	(109,518,522)
Total	$ 887,118,220	$ (21,747,716,028)

Schedule Page: 120 Line No.: 18 Column: c

See footnote in column (b), Line 18.

Schedule Page: 120 Line No.: 67 Column: b

Other consists of the following:

	2021	2020
Proceeds from sale of future revenue from transmission tower license sales, net of fees	$ 369,967,797	$ —
Total	$ 369,967,797	$ —

Schedule Page: 120 Line No.: 67 Column: c

See footnote in column (b), Line 67.

Schedule Page: 120 Line No.: 79 Column: b

This consists of the following:

	2021	2020
Increase (Decrease) in customer deposits	$ (33,489,420)	$ (63,665,256)
Employee taxes paid for withheld shares	(3,814,131)	(6,243,287)
Affiliate Letter of Credit draw	—	—
Bridge facility financing fees	—	(33,260,990)
Other debt issuance and exchange fees	(11,576,091)	(162,029,297)
Total	$ (48,879,642)	$ (265,198,830)

FOOTNOTE DATA

Schedule Page: 120 Line No.: 79 Column: c

See footnote in column (b), Line 79.

Schedule Page: 120 Line No.: 90 Column: b

This consists of the following:

	2021	2020
Cash (131)	$ 48,120,166	$ 59,291,720
Special Deposits (132-134)	11,166,837	143,144,862
Working Funds (135)	—	18,975
Temporary Cash Investment (136)	112,750,000	196,000,000
Total	$ 172,037,003	$ 398,455,557

Supplemental disclosure of cash flow information (in millions):

Cash paid for:		
Interest (net of amounts capitalized	$ (1,198)	$ (1,458)
Income taxes, net	$ 99	$ —

Supplemental disclosures of noncash investing and financing activities:

Capital expenditures financed through accounts payable	1,311	515
Operating lease liabilities arising from obtaining ROU assets	100	13
Common stock equity infusion from PG&E Corporation used to satisfy liabilities	—	6,750
Transfer of accounts receivable to a subsidiary company	397	1,504

Schedule Page: 120 Line No.: 90 Column: c

See footnote in column (b), Line 90.

Name of Respondent	This Report is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

STATEMENTS OF ACCUMULATED COMPREHENSIVE INCOME, COMPREHENSIVE INCOME, AND HEDGING ACTIVITIES

Line No	Item	Unrealized Gains and Losses on Available-for-Sale Securities	Minumum Pension Liability Adjustment (net Amount)	Foreign Current Hedges	Other Adjustments
	(a)	(b)	(c)	(d)	(e)
1	Balance of account 219 at beginning of preceding year				1,017,789
2	Preceding Qtr/Yr to date reclassifications from acct 219 to net income				698,516
3	Preceding Qtr/Yr to date change in fair value				(6,337,523)
4	Total (lines 2 and 3)				(5,639,007)
5	Balance of account 219 at end of preceding Quarter/year				(4,621,218)
6	Balance of account 219 at beginning of current year				(4,621,218)
7	Current Qtr/Yr to date reclassifications from acct 219 to net income				1,115,726
8	Current Qtr/Yr to date change in fair value				(4,021,505)
9	Total (lines 7 and 8)				(2,905,779)
10	Balance of account 219 at end of current Quarter/year				(7,526,997)

	Name of Respondent	This Report is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year of Report
	PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

STATEMENTS OF ACCUMULATED COMPREHENSIVE INCOME, COMPREHENSIVE INCOME, AND HEDGING ACTIVITIES

Line No	other cash flow hedges interest rate swaps	Other cash flow hedges [insert footnote at line 1 to specify)	Totals for each category of items recorded in account 219	Net income (carrried forward from page 117, line 78)	Total comprehensive income
	(f)	(g)	(h)	(i)	(j)
1			1,017,789		
2			698,516		
3			(6,337,523)		
4			(5,639,007)	410,958,488	405,319,481
5			(4,621,218)		
6			(4,621,218)		
7			1,115,726		
8			(4,021,505)		
9			(2,905,779)	137,307,374	134,401,595
10			(7,526,997)		

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
	(1) *An Original	(Mo, Da, Yr.)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

SUMMARY OF UTILITY PLANT AND ACCUMULATED PROVISIONS FOR
DEPRECIATION, AMORTIZATION, AND DEPLETION

Report in column (c) the amount for electric function, in column (d) the amount for gas function,
in column (e), (f), and (g) report other (specify) and in column (h) common function.

Line No.	Classification (a)	Total Company for the Current Year/Quarter Ended (b)
1	UTILITY PLANT	
2	In Service	
3	Plant in Service (Classified)	82,044,582,954
4	Property Under Capital Lease	1,250,400,614
5	Plant Purchased or Sold	(613,265)
6	Completed Construction Not Classified	19,878,921,424
7	Experimental Plant Unclassified	
8	TOTAL Utility Plant In Service (lines 3-7)	103,173,291,727
9	Leased to Others	
10	Held for Future Use	
11	Construction Work in Progress	3,547,642,238
12	Acquisition Adjustments	-
13	TOTAL Utility Plant (lines 8-12)	106,720,933,965
14	Accum. Prov. for Depreciation, Amortization & Depletion	43,122,819,469
15	Net Utility Plant (lines 13 and 14)	63,598,114,496
16	DETAIL OF ACCUM. PROV. FOR DEPRE., AMORT. AND DEPLETION	
17	In Service	
18	Depreciation	42,353,544,807
19	Amort. and Depl. of Producing Natural Gas Land, Rights	-
20	Amort. of Underground Storage Land and Land Rights	8,584,534
21	Amortization of Other Utility Plant	760,690,128
22	TOTAL IN Service (lines 18 through 21)	43,122,819,469
23	Leased to Others	
24	Depreciation and Depletion	-
25	Amortization and Depletion	-
26	TOTAL Leased to Others (lines 24 and 25)	-
27	Held for Future Use	
28	Depreciation	-
29	Amortization	-
30	TOTAL Held for Future Use (lines 28 and 29)	-
31	Abandonment of leases (Natural Gas)	-
32	Amortization of Plant Acquisition Adjustment	-
33	TOTAL Accum. Prov (lines 22, 26, 30, 31, and 32)	43,122,819,469

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
	(1) *An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

SUMMARY OF UTILITY PLANT AND ACCUMULATED PROVISIONS FOR DEPRECIATION, AMORTIZATION, AND DEPLETION

Report in column (b) the total amount for the item shown in column (a). Report in Column (c) the amount for electric function, in column (d) the amount for gas function, in column (e) other (specify), and in column (f) common function.

Line No.	Electric (c)	Gas (d)	Other (e)	Common (f)
1				
2				
3	59,931,598,038	16,351,560,492		5,761,424,424
4	1,082,330,544	-		168,070,070
5	(345,946)	198,242		(465,561)
6	11,896,228,535	7,214,443,834		768,249,055
7	-	-		0
8	72,909,811,171	23,566,202,568	-	6,697,277,988
9				
10				
11	2,414,805,903	368,707,502		764,128,833
12	-			
13	75,324,617,074	23,934,910,070	-	7,461,406,821
14	31,551,945,712	8,930,467,821	-	2,640,405,936
15	43,772,671,362	15,004,442,249	-	4,821,000,885
16				
17				
18	31,471,077,207	8,924,441,920		1,958,025,680
19	-	-		0
20	-	8,584,534		0
21	80,868,505	(2,558,633)		682,380,256
22	31,551,945,712	8,930,467,821	-	2,640,405,936
23				
24				
25				
26	-	-	-	-
27				
28				
29				
30	-	-	-	-
31				
32	-	-		0
33	31,551,945,712	8,930,467,821	-	2,640,405,936

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106)

1. Report below the original cost of gas plant in service according to the prescribed accounts.
2. In addition to Account 101, Gas Plant in Service (Classified), this page and the next include Account 102, Gas Plant Purchased or Sold; Account 103, Experimental Gas Plant Unclassified; and Account 106, Completed Construction Not Classified-Gas.
3. Include in column (c) or (d), as appropriate, corrections of additions and retirements for the current or preceding year.
4. Enclose in parentheses credit adjustments of plant accounts to indicate the negative effect of such accounts.
5. Classify Account 106 according to prescribed accounts on an estimated basis if necessary, and include the entries in column (c). Also to be included in column (c) are entries for reversals of tentative distributions of prior year reported in column (b). Likewise, if the respondent has a significant amount of plant retirements which have not been classified to primary accounts at the end of the year, include in column (d) a tentative distribution of such retirements, on an estimated basis, with appropriate contra entry to the account for accumulated depreciation provision. Include also in column (d) reversals of tentative distributions of prior year of unclassified retirements. Attach supplemental statement showing the account distributions of these tentative classifications in columns (c) and (d), in-

Line No.	Account (a)	Balance at Beg. of Year (b)	Additions (c)
1	1. Intangible Plant		
2	301 Organization	0	0
3	302 Franchises and Consents	674,445	0
4	303 Miscellaneous Intangible Plant	2,527,906	0
5	TOTAL Intangible Plant	3,202,351	0
6	2. Production Plant		
7	Natural Gas Production and Gathering Plant		
8	325.1 Producing Lands	0	0
9	325.2 Producing Leaseholds	0	0
10	325.3 Gas Rights	0	0
11	325.4 Rights-of-Way	0	0
12	325.5 Other Land and Land Rights	0	0
13	326 Gas Well Structures	0	0
14	327 Field Compressor Station Structures	0	0
15	328 Field Measuring and Regulating Station Structures	0	0
16	329 Other Structures	0	0
17	330 Producing Gas Wells-Well Construction	0	0
18	33l Producing Gas Wells-Well Equipment	0	0
19	332 Field Lines	0	0
20	333 Field Compressor Station Equipment	0	0
21	334 Field Measuring and Regulating Station Equipment	0	0
22	335 Drilling and Cleaning Equipment	0	0
23	336 Purification Equipment	0	0
24	337 Other Equipment	0	0
25	338 Unsuccessful Exploration & Devel. Costs	0	0
26	TOTAL Production and Gathering Plant	0	0
27	Products Extraction Plant		
28	340 Land and Land Rights	0	0
29	34l Structures and Improvements	0	0
30	342 Extraction and Refining Equipment	0	0
31	343 Pipe Lines	0	0
32	344 Extracted Products Storage Equipment	0	0
33	345 Compressor Equipment	0	0
34	346 Gas Measuring and Regulating Equipment	0	0
35	347 Other Equipment	0	0
36	TOTAL Products Extraction Plant	0	0
37	TOTAL Nat. Gas Production Plant	0	0
38	Mfd. Gas Prod. Plant(Submit Suppl.Statement)	508,971	0
39	TOTAL Production Plant	508,971	0

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

cluding the reversals of the prior years tentative account distributions of these amounts. Careful observance of the above instructions and the texts of Accounts 101 and 106 will avoid serious omissions of the reported amount of respondent's plant actually in service at end of year.

6. Show in column (f) reclassifications or transfers within utility plant accounts. Include also in column (f) the additions or reductions of primary account classifications arising from distribution of amounts initially recorded in Account 102. In showing the clearance of Account 102, include in column (e) the amounts with respect to accumulated provision for depreciation acquisition adjustments, etc., and show in column (f) only the offset to the debits or credits distributed in column (f) to primary account classifications.

7. For Account 399, state the nature and use of plant included in this account and if substantial in amount submit a supplementary statement showing subaccount classification of such plant conforming to the requirements of these pages.

8. For each amount comprising the reported balance and changes in Account 102, state the property purchased or sold, name of vendor or purchaser, and date of transaction. If proposed journal entries have been filed with the Commission as required by the Uniform System of Accounts, give also date of such filing.

9. For revisions to the amount of initial asset retirement costs capitalized, included by primary plant account, increases in column (c) additions and reductions in column (e) adjustments.

Retirements (d)	Adjustments (e)	Transfers (f)	Balance at End of Year (g)		Line No.
					1
0	0	0	0	301	2
0	0	0	674,445	302	3
3,386,576	0	0	(858,670)	303	4
3,386,576	0	0	(184,225)		5
					6
					7
0	0	0	0	325.1	8
0	0	0	0	325.2	9
0	0	0	0	325.3	10
0	0	0	0	325.4	11
0	0	0	0	325.5	12
0	0	0	0	326	13
0	0	0	0	327	14
0	0	0	0	328	15
0	0	0	0	329	16
0	0	0	0	330	17
0	0	0	0	331	18
0	0	0	0	332	19
0	0	0	0	333	20
0	0	0	0	334	21
0	0	0	0	335	22
0	0	0	0	336	23
0	0	0	0	336	24
0	0	0	0	338	25
0	0	0	0		26
					27
0	0	0	0	340	28
0	0	0	0	341	29
0	0	0	0	342	30
0	0	0	0	343	31
0	0	0	0	344	32
0	0	0	0	345	33
0	0	0	0	346	34
0	0	0	0	347	35
0	0	0	0		36
0	0	0	0		37
0	0	0	508,971		38
0	0	0	508,971		39

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

Line No.	Account (a)	Balance at Beg. of Year (b)	Additions (c)
40	3. Natural Gas Storage and Processing Plant		
41	Underground Storage Plant		
42	350.1 Land	6,616,420	33
43	350.2 Rights-of-Way	1,796,338	0
44	351 Structures and Improvements	85,956,323	4,913,785
45	352 Wells	356,304,686	43,331,886
46	352.1 Storage Leaseholds and Rights	7,220,346	0
47	352.2 Resevoirs	0	0
48	352.3 Non-recoverable Natural Gas	0	0
49	353 Lines	132,553,199	28,559,119
50	354 Compressor Station Equipment	161,133,976	6,133,919
51	355 Measuring and Reg. Equipment	113,302,654	4,721,805
52	356 Purification Equipment	71,101,414	344,803
53	357 Other Equipment	15,165,785	211,753
54	358 Asset Retirement Costs for Underground Storage Plant	870,727	0
55	TOTAL Underground Storage Plant	952,021,868	88,217,103
56	Other Storage Plant		
57	360 Land and Land Rights	1,071,432	0
58	361 Structures and Improvements	1,556,229	0
59	362 Gas Holders	6,842,208	335,581
60	363 Purification Equipment	0	0
61	363.1 Liquefaction Equipment	0	0
62	363.2 Vaporizing Equipment	0	0
63	363.3 Compressor Equipment	666,595	86,915
64	363.4 Meas. and Reg. Equipment	1,720,637	0
65	363.5 Other Equipment	6,581,528	0
66	363.6 Asset Retirement Costs for Other Storage Plant	2,332,166	0
67	TOTAL Other Storage Equipment	20,770,795	422,496
68	Base Load Liquified Natural Gas Terminating and Processing Plant		
69	364.1 Land and Land Rights	0	0
70	364.2 Structures and Improvements	0	0
71	364.3 LNG Processing Terminal Equipment	0	0
72	364.4 LNG Transportation Equipment	0	0
73	364.5 Measuring and Regulation Equipment	0	0
74	364.6 Compressor Station Equipment	0	0
75	364.7 Communications Equipment	0	0
76	364.8 Other Equipment	0	0
77	TOTAL Base Load Liquified Natural		
78	Gas, Terminating and Processing Plant	0	0
79	TOTAL Nat. Gas Storage and Proc. Plant	972,792,663	88,639,599
80	4. Transmission Plant		
81	365.1 Land and Land Rights	20,910,881	376,180
82	365.2 Rights-of-Way	77,698,483	(20,283)
83	366 Structures and Improvements	222,327,733	40,033,057
84	367 Mains	4,521,389,792	401,238,371
85	368 Compressor Station Equipment	816,879,726	31,966,418
86	369 Measuring and Reg. Sta. Equipment	744,624,762	64,376,151
87	370 Communication Equipment	0	0
88	371 Other Equipment	590,592,215	92,926,473
89	372 Asset retirement costs for transmission plant	228,356,861	43,612,151
90	TOTAL Transmission Plant	7,222,780,453	674,508,518

Name of Respondent	This Report Is: (1) * An Original	Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

Retirements (d)	Adjustments (e)	Transfers (f)	Balance at End of Year (g)		Line No.
					40
					41
0	0	0	6,616,453	350.1	42
0	0	0	1,796,338	350.2	43
0	0	0	90,870,108	351	44
1,510,793	0	0	398,125,779	352	45
0	0	0	7,220,346	352.1	46
0	0	0	0	352.2	47
0	0	0	0	352.3	48
2,959,685	0	0	158,152,633	353	49
3,560,630	0	3,066,675	166,773,940	354	50
159,147	0	0	117,865,312	355	51
42,723	0	0	71,403,494	356	52
0	0	0	15,377,538	357	53
0	0	0	870,727	358	54
8,232,978	0	3,066,675	1,035,072,668		55
					56
0	0	(115,667)	955,765	360	57
0	0	0	1,556,229	361	58
276,631	0	0	6,901,158	362	59
0	0	0	0	363	60
0	0	0	0	363.1	61
0	0	0	0	363.2	62
0	0	(86,915)	666,595	363.3	63
0	0	0	1,720,637	363.4	64
9,125	0	0	6,572,403	363.5	65
0	0	0	2,332,166	363.6	66
285,756	0	(202,582)	20,704,953		67
					68
0	0	0	0	364.1	69
0	0	0	0	364.2	70
0	0	0	0	364.3	71
0	0	0	0	364.4	72
0	0	0	0	364.5	73
0	0	0	0	364.6	74
0	0	0	0	364.7	75
0	0	0	0	364.8	76
					77
0	0	0	0		78
8,518,734	0	2,864,093	1,055,777,621		79
					80
1,693	0	(9,067)	21,276,301	365.1	81
0	0	0	77,678,200	365.2	82
1,870,459	0	(14,813,241)	245,677,090	366	83
13,885,671	0	0	4,908,742,492	367	84
8,446,179	0	11,337,143	851,737,108	368	85
11,699,817	0	0	797,301,096	369	86
0	0	0	0	370	87
8,081,340	0	0	675,437,348	371	88
0	0	0	271,969,012	372	89
43,985,159	0	(3,485,165)	7,849,818,647		90

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

Line No.	Account (a)	Balance at Beg. of Year (b)	Additions (c)
91	5. Distribution Plant		
92	374 Land and Land Rights	35,186,660	(32,390)
93	375 Structures and Improvements	16,260,923	175,768
94	376 Mains	5,464,569,368	559,580,737
95	377 Compressor Station Equipment	28,987,437	31,847
96	378 Meas. and Reg. Sta. Equip.-General	569,141,230	107,820,104
97	379 Meas. and Reg. Sta. Equip.-City Gate	0	0
98	380 Services	5,130,582,938	427,858,193
99	381 Meters	1,256,803,650	65,139,433
100	382 Meter Installations	0	0
101	383 House Regulators	237,016,627	27,900,004
102	384 House Reg. Installations	0	0
103	385 Industrial Meas. and Reg. Sta. Equipment	92,891,127	8,875,614
104	386 Other Prop. on Customer's Premises	534,526	1,136
105	387 Other Equipment	81,610,617	1,742,504
106	388 Asset retirement costs for distribution plant	24,927,675	0
107	TOTAL Distribution Plant	12,938,512,778	1,199,092,950
108	6. General Plant		
109	389 Land and Land Rights	349,811	0
110	390 Structures and Improvements	154,215,836	(32,578)
111	391 Office Furniture and Equipment	7,633,766	0
112	392 Transportation Equipment	0	0
113	393 Stores Equipment	0	0
114	394 Tools, Shop and Garage Equipment	96,702,280	16,211,385
115	395 Laboratory Equipment	4,697,429	0
116	396 Power Operated Equipment	0	0
117	397 Communication Equipment	216,710,933	75,860,657
118	398 Miscellaneous Equipment	10,177,256	0
119	399.1 Asset Retirement for General Plant	1,244,955	624,457
120	Subtotal	491,732,266	92,663,921
121	399 Other Tangible Property	0	0
122	TOTAL General Plant	491,732,266	92,663,921
123	TOTAL (Accounts 101 and 106)	21,629,529,482	2,054,904,988
124	Gas Plant Purchased (See Instr. 8)	(239,370)	0
125	(Less) Gas Plant Sold (See Instr. 8)	(343,395)	0
126	Experimental Gas Plant Unclassified	0	0
127	TOTAL Gas Plant in Service	21,629,633,507	2,054,904,988

SUPPLEMENTAL STATEMENT FOR MANUFACTURED GAS PRODUCTION PLANT, PAGE 204-205, LINE 38

	304 Land and Land Rights	49,569	-
	305 Structures and Improvements	129,821	-
	311 Liquified Petroleum Gas Equipment	329,581	-
	320 Other Equipment	-	-
	TOTAL Manufactured Gas Production Plant	508,971	-

Schedule Page: 206 Line No.: 81, 82 Column: b
In 2021, $9,869,198 was reclassified from Account 365.2 to 365.1 to properly reflect the beginning balance.

Schedule Page: 208 Line No.: 124, 125
Plant Purchased and Plant Sold are a holding place for pending transactions related to asset sales and will be cleared once sales transac

Name of Respondent	This Report Is: (1) * An Original	Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

Retirements (d)	Adjustments (e)	Transfers (f)	Balance at End of Year (g)		Line No.
					91
0	0	0	35,154,270	374	92
187,582	0	1,634,316	17,883,425	375	93
8,790,136	0	0	6,015,359,969	376	94
0	0	0	29,019,284	377	95
3,194,039	0	0	673,767,295	378	96
0	0	0	0	379	97
16,319,942	0	0	5,542,121,189	380	98
15,349,211	0	0	1,306,593,872	381	99
0	0	0	0	382	100
3,292,216	0	0	261,624,415	383	101
0	0	0	0	384	102
0	0	0	101,766,741	385	103
0	0	0	535,662	386	104
0	0	0	83,353,121	387	105
0	(12,927,293)	0	12,000,382	388	106
47,133,126	(12,927,293)	1,634,316	14,079,179,625		107
					108
0	0	0	349,811	389	109
258,589	0	0	153,924,669	390	110
474,217	(161,879)	0	6,997,670	391	111
0	0	0	0	392	112
0	0	0	0	393	113
1,373,473	0	0	111,540,192	394	114
0	0	0	4,697,429	395	115
0	0	0	0	396	116
0	0	(1,137,978)	291,433,612	397	117
86,364	0	0	10,090,892	398	118
0	0	0	1,869,412	399	119
2,192,643	(161,879)	(1,137,978)	580,903,687		120
0	0	0	0	399	121
2,192,643	(161,879)	(1,137,978)	580,903,687		122
105,216,238	(13,089,172)	(124,734)	23,566,004,326		123
0	0	0	(239,370)		124
0	(94,217)	0	(437,612)		125
0	0	0	0		126
105,216,238	(12,994,955)	(124,734)	23,566,202,568		127

A3	As per FERC Page 200-201	23,566,202,568	
	Difference	0.0	

SUPPLEMENTAL STATEMENT FOR MANUFACTURED GAS PRODUCTION PLANT, PAGES 204-205, LINE 38

-	0	0	49,569	304	
-	0	0	129,821	305	
-	0	0	329,581	311	
-	0	0	0	320	
-	-	-	508,971		

tions have closed.

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 04/11/2022	2021/Q4

GAS PROPERTY AND CAPACITY LEASED FROM OTHERS (Account 101.1)

Line No.	Name of Lessor (a)	* (b)	Description of Lease (c)	Lease Payments for Current Year (d)
1	NONE			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
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30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45	TOTAL			

Name of Respondent PACIFIC GAS AND ELECTRIC COMPANY	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr) 04/11/2022	Year of Report 2021/Q4

GAS PLANT LEASED TO OTHERS (Account 104)

Line No.	Name of Lessee (Designate associated companies with a double asterisk) (a)	Description of Property Leased (b)	Commission Authorization (c)	Expiration Date of Lease (d)	Balance at End of Year (e)
1	NONE				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
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32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48	TOTAL				

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 04/11/2022	2021/Q4

GAS PLANT HELD FOR FUTURE USE (Account 105)

1. Report separately each property held for future use at end of the year having an original cost of $250,000 or more. Group other items of property held for future use.
2. For property having an original cost of $250,000 or more previously used in utility operations, now held for future use, give in column (a), in addition to other required information, the date that utility use of such property was discontinued, and the date the original cost was transferred to Account 105.

Line No.	Description and Location of Property (a)	Date Originally Included in This Account (b)	Date Expected to be Used in Utility Service (c)	Balance at End of Year (d)
1	Land and Rights:			
2	NONE			
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21	Other Property:			
22	NONE			
23				
24				
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
41				
42				
43				
44				
45	TOTAL			0

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

CONSTRUCTION WORK IN PROGRESS -- GAS (Account 107)

1. Report below descriptions and balances at end of year of projects in process of construction (107).
2. Show items relating to "research, development, and demonstration" projects last, under a caption Research, Development, and Demonstration (see Account 107 of the Uniform System of Accounts).
3. Minor projects (5% of the Balance End of the Year for Account 107 or $1,000,000, whichever is less) may be grouped.

Line No.	Description of Project (a)		Amount (b)
1	30960798	L. 153 CAPITAL COSTS	25,737,918
2	74000719	TOPOCK CS CONTROL UPGRADE	14,802,246
3	74013545	TOPOCK CS REPLACE ELECTRICAL MCC & CNDR	10,961,310
4	74012792	BUCKEYE CREEK STATION UPGRADE CONVERSION	7,838,845
5	31101992	R-1018 DFM 0405-01, MP 23.95 - 25.84 REP	7,653,357
6	74024170	DFM 0405-01 MP 22.21 - 23.59 REPL PIPE	7,325,728
7	74025109	DFM 2408-05 MP 4.9 - 5.95 ILI UPGRADE	7,082,784
8	74012907	MILPITAS METERS REPL OUTGOINGCONV	6,891,131
9	74022034	TBD MCDONALD ISLAND COMPRESSR PURCHASE	6,374,260
10	31315365	LEVELCON CAMERA INSTALLS AT CNG STATION	6,340,113
11	31556286	ODORIZING AND COMBUSTION PROGRAM	5,907,738
12	74000282	MILPITAS L-132 SEPARATE REGULATION	3,256,519
13	74020982	WELL MCD 9 REWORKS	3,116,310
14	31212919	SALINAS CNG COMPRESSOR REPLACEMENT	3,048,633
15	74013548	S-238 HINKLEY ELECTRICAL UPGRADESCONV	2,824,100
16	31325262	MANTECA CNG STATION - PHASE 2 UPGRADES	2,759,894
17	74029410	DFM 0405-01 MP 23.26-23.44 INST 8" PIPE	2,675,755
18	74022845	L-118B MP 1.03 ILI UPGRADE HERNDON JUNCT	2,552,137
19	74004062	R-409 L-400 0.47MI MP 141.7-141.9 REPLAC	2,551,578
20	74018261	R-1027 L-147 MP 1.79 MITIGATE EXPOSED PI	2,489,727
21	74024342	L-400 MP 193.55 BIOMETHANE INTERCONNECT	2,387,265
22	74012901	BRENTWOOD TERMINAL REBUILD PHASE 1 - 12	2,320,910
23	31312365	SAN RAFAEL CNG DISPENER RELOCATION	2,273,887
24	31137062	L-123 & L-173 BLUE OAKS STA VALVE AUTO	2,241,698
25	30861963	MCDI TCS & WSS REBUILD FIRE WATER SYSTEM	2,211,404
26	74037002	LM-16D REWORK 2021	2,154,162
27	74001643	R-708-L-021G,MP2.46–2.66,REPL1003” 0F12"	2,081,019
28	31363175	STOCKTON CNG COMPRESSOR REPLACEMENT	2,077,666
29	74015659	L-210A MP 21.88 - 22.83 REPLACE 0.95MI	2,051,803
30	74004061	L-118A MP 13.0 REPL 8" & 12" STEEL PIPE	2,042,057
31	74029587	HINKLEY CS REPL & RETRFT VALVE & ACTRS	2,036,146
32	74023961	L-131Y L-131Z - DRIP 17058 REMOVAL	2,016,208
33	74036601	LM 17D REWORK 2021	2,013,886
34	31212287	SANTA ROSA CNG COMPRESSOR REPLACEMENT	1,972,607
35	TOTAL		368,707,502

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

CONSTRUCTION WORK IN PROGRESS -- GAS (Account 107)

1. Report below descriptions and balances at end of year of projects in process of construction (107).
2. Show items relating to "research, development, and demonstration" projects last, under a caption Research, Development, and Demonstration (see Account 107 of the Uniform System of Accounts).
3. Minor projects (5% of the Balance End of the Year for Account 107 or $1,000,000, whichever is less) may be grouped.

Line No.	Description of Project (a)	Amount (b)
36	74035883 STRAIN FARMING LVCR INSTALL NEW BUSINESS	1,959,999
37	74016608 R-1143 L-300B MP 462.986 - 463.185 CALAV	1,959,410
38	74037004 MCDI TC-6S REWORK 2021	1,957,078
39	74037403 DFM 2402-01 MP 0.0 REPL VLVS X-18 & X-19	1,946,640
40	31475900 GTTM VILLAGE OF THE FOUR SEASONS	1,920,203
41	74008389 R-893 L-131 MP 32.51-32.65 REPLACE 24IN	1,870,109
42	1013456 Casings (Unrecoverable)-Monthly CA Only	1,743,676
43	74024166 L-021C MP 35.05 ILI UPGRADE RECEIVER	1,684,030
44	74024169 L-021A MP 12.05 - 16.16 NAPA ILI UPGRADE	1,681,403
45	74044698 DE21-300 CAPITAL	1,671,149
46	74041460 DE21-215 L-215 MP 20 DIRECT EXAM	1,669,377
47	74013673 L-118A MP 73.24 VALVE AUTOMATION	1,595,159
48	31475752 GTTM EDGEWOOD MOBILE HOME VILLAGE	1,589,278
49	31312364 RICHMOND CNG DISPENSER RELOCATION	1,561,866
50	74007019 DFM 7206-01 MP 0.00 - 3.42 ILI UPGRADE	1,529,072
51	31486232 2020 GILL RANCH CAPITAL	1,464,681
52	74027223 L-400 & L-401 MP 217-238 AC MITIGATION	1,437,559
53	74025107 DFM 2408-11 MP3.57 REC OLD RANCH ILI UPG	1,429,617
54	74024802 L-021E MP 70.16 - 70.48 PIPE REPLACEMENT	1,389,078
55	74024406 DFM7223-01 MP5.93-6.16 HDD 10" PIPE	1,385,108
56	74029147 L-130 MP 0 - 0.5 REPLACE PIPE	1,298,038
57	31100007 EDGEWOOD RD STA -ACCESS RD & LIGHTING	1,291,640
58	74037720 MCDI WS-1E REDRILL	1,272,266
59	74029104 DFM 0630-01 MP 10.64-10.85 REPLACE PIPE	1,268,577
60	31475791 GTTM LINDALE GREENS MOBILE HOME PARK	1,242,277
61	35278858 GTTM EL DORADO MOBILE ESTATES	1,228,727
62	74012855 BIXLER ROAD LIMITORQUE ACTUATOCONV	1,220,903
63	31166112 HAYWARD STATION COMPRESSOR REPLACEMENT	1,216,808
64	31099033 SPRECKELS SUGAR METER	1,194,968
65	74026844 L-114 MP 16.58 BRENTWOOD ILI UPGRADE REC	1,192,249
66	31228216 OCW HAWTHORNE-BIRCH-MULLBERRY-CARDOZA	1,182,440
67	74022026 TOPOCK INSTALL P-UNIT FUEL GAS BB VALVES	1,168,614
68	74029599 MARTIN REG STA ADD & BUILD PHYS SECURITY	1,163,168
69	31475746 GTTM CHATEAU MOBILE HOME PARK	1,150,695
70	TOTAL	368,707,502

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

CONSTRUCTION WORK IN PROGRESS -- GAS (Account 107)

1. Report below descriptions and balances at end of year of projects in process of construction (107).
2. Show items relating to "research, development, and demonstration" projects last, under a caption Research, Development, and Demonstration (see Account 107 of the Uniform System of Accounts).
3. Minor projects (5% of the Balance End of the Year for Account 107 or $1,000,000, whichever is less) may be grouped.

Line No.	Description of Project (a)	Amount (b)
71	31387144 GP TREASURE ISLAND & YERBA BUENA ISLAND	1,077,731
72	74004320 R-766 L-400 0.15MI MP 139.14-139.26 REPL	1,075,812
73	74009420 R-297 L-303 MP 35.34 REPL EXPOSED PIPE	1,067,676
74	1014508 ECA-1-BA (offsetting 3T4)	1,064,866
75	74025106 DFM 2408-05 MP 4.9 SANTA RITA STA LAUNCH	1,064,476
76	35111877 #OCW BALBOA & 10TH AVE, SAN FRANCIS	1,039,777
77	74025162 DFM 2408-05 MP 4.9 SANTA RITA STA REC	1,035,611
78	74008781 DIANA AVE GT REG STATION REBUILD	1,004,135
79		
80		
81		
82		
83		
84		
85		
86		
87		
88		
89		
90		
91		
92		
93		
94		
95		
96		
97		
98		
99		
100	Aggregate total of projects with less than $1,000,000 in actual costs in Construction Work	
101	in Progress, including credits representing preliminary billings.	147,670,755
102		
103		
104		
105	TOTAL	368,707,502

Name of Respondent	This Report is:	Date of Report	Year of Report:
	(1) * An Original	(Mo. Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	End of 2021/Q4

ACCUMULATED PROVISION FOR DEPRECIATION OF GAS UTILITY PLANT (Account 108)

1. Explain in a footnote any important adjustments during year
2. Explain in a footnote any difference between the amount for book cost of plant retired, line 11, column (c), and that reported for gas plant in service, pages 204-209, column (d), excluding retirements of non-depreciable property
3. The provisions of Account 108 in the Uniform System of Accounts require that retirements of depreciable plant be recorded when such plant is removed from service. If the respondent has a significant amount of plant retired at year end which has not been recorded and/or classified to the various reserve functional classifications, make preliminary closing entries to tentatively functionalize the book cost of the plant retired. In addition, include all costs included in retirement work in progress at year end in the appropriate functional classifications.
4. Show separately interest credits under a sinking fund or similar method of depreciation accounting.

Section A. Balances and Changes During Year

Line No.	Item (a)	Total (c+d+e) (b)	Gas Plant in Service (c)	Gas Plant Held for Future Use (d)	Gas Plant Leased to Others (e)
1	Balance Beginning of Year	8,573,219,359	8,573,219,359		
2	Depreciation Provisions for Year, Charged to				
3	(403) Depreciation Expense	739,882,163	739,882,163		
4	(413) Exp. of Gas Plt. Leas. to Others				
5	Transportation Expenses-Clearing				
6	Other Clearing Accounts				
7	Reverse Common Allocation	(89,562,280)	(89,562,280)		
8					
9	TOTAL Deprec. Prov. for Year (Total of lines 3 through 7)	650,319,883	650,319,883		
10	Net Charges for Plant Retired:				
11	Book Cost of Plant Retired	101,829,662	101,829,664		
12	Cost of Removal	187,986,994	187,986,994		
13	Salvage (Credit)	26,931,462	26,931,462		
14	TOTAL Net Chrgs. for Plant Ret. (Total of lines 10 through 12, less 13)	262,885,194	262,885,196		
15	Other Debit or Cr. Items (Describe):				
16	FIN 47 Asset Depreciation	(17,993,240)	(17,993,240)		
17	Decommissioning accrual for LM/PC	17,762,400	17,762,400		
18	Miscellaneous	(456,486)	(456,486)		
19	Balance End of Year (Enter Total of lines 1, 9, and 16, less 14)	8,924,441,920	8,924,441,920		

Section B. Balances at End of Year According to Functional Classifications

20	Production-Manufactured Gas	225,491	225,491		
21	Production and Gathering-Natural Gas	0	-		
22	Products Extraction-Natural Gas	0	-		
23	Underground Gas Storage	357,290,120	357,290,120		
24	Other Storage Plant	5,062,475	5,062,475		
25	Base Load LNG Terminaling & Processing Plt	0	-		
26	Transmission	2,324,587,344	2,324,587,344		
27	Distribution	6,144,103,578	6,144,103,578		
28	General	93,172,912	93,172,912		
29	TOTAL (Enter Total of lines 208 through 2	8,924,441,920	8,924,441,920		

Name of Respondent	This Report is:	Date of Report	Year of Report:
	(1) * An Original	(Mo. Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	End of 2021/Q4

ACCUMULATED PROVISION FOR DEPRECIATION OF GAS UTILITY PLANT (Account 108)

1. Explain in a footnote any important adjustments during year
2. Explain in a footnote any difference between the amount for book cost of plant retired, line 11, column (c), and that reported for gas plant in service, pages 204-209, column (d), excluding retirements of non-depreciable property
3. The provisions of Account 108 in the Uniform System of Accounts require that retirements of depreciable plant be recorded when such plant is removed from service. If the respondent has a significant amount of plant retired at year end which has not been recorded and/or classified to the various reserve functional classifications, make preliminary closing entries to tentatively functionalize the book cost of the plant retired In addition, include all costs included in retirement work in progress at year end in the appropriate functional classifications.
4. Show separately interest credits under a sinking fund or similar method of depreciation accounting.

NOTES:

LINE 11, PAGE 219:	
Book cost of plant retired, line 11, column c	101,829,662
Intangible Retirements	3,386,576
Book cost of plant retired, pages 204-209, column (d)	105,216,238

LINE 17, PAGE 219:

Reclass to Reg Liability for Decommissioning Accrual associated with Los Medanos/Pleasant Creek Gas Underground Storage Facilities as approved by the 2019 GT&S Rate Case

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS STORED (Account 117, 164.1, 164.2 and 164.3)

1. If during the year adjustment was made to the stored gas inventory in columns (d), (f), (g), and (h), such as to correct cumulative inaccuracies of gas measurements), explain in a footnote the reason for the adjustments, the Dth and dollar amount of adjustment and account charged or credited.

2. Report in column (e) all encroachments during the year upon the volumes designated as gas base, column (b), and system balancing gas, column (c), and gas property recordable in the plant accounts.

3. State in a footnote the basis of segregation of inventory between current and noncurrent portions. Also, state in a footnote the method used to report storage (i.e., fixed asset method or inventory method).

Line No.	Description	(Account 117.1)	(Account 117.2)	Noncurrent (Account 117.3)	(Account 117.4)	Current (Account 164.1)	LNG (Account 164.2)	LNG (Account 164.3)	Total
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Balance at Beginning of Year	$ 55,907,325				$ 93,819,226			$ 151,558,221
2	Gas Delivered to Storage (contra Account)					54,765,751			$54,765,751
3	Gas Withdrawn From Storage (contra Account)					(41,879,471)			($41,879,471)
4	Other Debits or Credits (Net) (Note 1,2)	63,684,885				(63,675,055)			9,830
5	Balance at End of Year	$ 119,592,211				$ 43,030,451			$ 164,454,330
6	Dth	128,767,761				16,080,575			144,848,336
7	Amount Per Dth	0.9287				2.6759			1.1354

8 State basis of segregation of inventory between current and noncurrent portions:

McDonald Island Storage:	Above 900 psi
Los Medanos Storage:	Above 600 psi
Pleasant Creek Storage:	Above 750 psi

Note:

1) $63.7M in account 117.1 represents the transfer of working gas to cushion gas to support the Natural Gas Storage Strategy implementation as approved in the 2019 GT&S case.

2) Including in the current account is $9,830 true up related to a correction of prior year adjustment

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

INVESTMENTS (Accounts 123, 124, 136)

1. Report below Investments in Accounts 123, Investments in Associated Companies, 124, Other Investments and 136, Temporary Cash Investments.
2. Provide a subheading for each account and list thereunder the information called for:
(a) Investment in Securities - List and describe each security owned, giving name of issuer, date acquired and date of maturity. For bonds, also give principal amount, date of issue, maturity, and interest rate. For capital stock (including capital stock of respondent reacquired under a definite plan for resale pursuant to authorization by the Board of Directors and included in Account 124, Other Investments), state number of shares, class, and series of stock. Minor investments may be grouped by classes. Investment included in Account 136, Temporary Cash Investments, also may be grouped by classes.
(b) Investment Advances - Report separately for each person or company the amount of loans or investment advances which are properly includable in Account 123. Advances subject to current repayment should be included in Accounts 145 and 146. With respect to each advance, show whether the advance is a note or open account. Each note should be listed giving the date of issuance, maturity date, and specifying whether

Line No.	Description of Investment (a)	Book Cost at Beginning of Year (If book cost is different from cost to respondent, give cost to respondent in a footnote and explain difference.) (b)	Purchases or Additions During Year (c)
1	INVESTMENTS IN ASSOC. COMPANIES (ACCOUNT 123)		-
2			
3	OTHER INVESTMENTS (ACCOUNT 124)		
4			
5	Miscellaneous	-	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30	TOTAL OTHER INVESTMENTS (ACCOUNT 124)	-	-
31			
32	TEMPORARY CASH INVESTMENTS (ACCOUNT 136)	196,000,000	10,805,600,000

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 04/11/2022	2021/Q4

INVESTMENTS (Accounts 123, 124, 136) (Continued)

note is a renewal. Designate any advances due from officers, directors, stockholders, or employees. Exclude amounts reported on page 229.

3. For any securities, notes or accounts that were pledged designate with an asterisk such securities, notes, or accounts and in a footnote state the name of pledgee and purpose of the pledge.

4. If Commission approval was required for any advance made or security acquired, designate such fact in a footnote and give name of Commission, date of authorization, and case or docket number.

5. Report in column (g) interest and dividend revenues from investments including such revenues from securities disposed of during the year.

6. In column (h) report for each investment disposed of during the year the gain or loss represented by the difference between cost of the investment (or the other amount at which carried in the books of account if different from cost) and the selling price thereof, not including any dividend or interest adjustment includible in column (g).

Sales or Other Dispositions During Year (d)	Principal Amount or No. of Shares at End of Year (e)	Book Cost at End of Year (If book cost is different from cost to respondent, give cost to respondent in a footnote and explain difference.) (f)	Revenues for Year (g)	Gain or Loss from Investment Disposed of (h)	Line No.
					1
					2
					3
					4
-		-			5
					6
					7
					8
					9
					10
					11
					12
					13
					14
					15
					16
					17
					18
					19
					20
					21
					22
					23
					24
					25
					26
					27
					28
-		-	-	-	29 30
(10,888,850,000)		112,750,000	46,382		31 32

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Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 04/11/2022	2021/Q4

PREPAYMENTS (Account 165)

1. Report below the particulars (details) on each prepayment.
2. Report all payments for undelivered gas on line 5 and complete pages 226 to 227 showing particulars (details) for gas prepayments.

Line No.	Nature of Prepayment (a)	Balance at End of Year (In Dollars) (b)
1	Prepaid Insurance	358,170,170
2	Prepaid Rents	0
3	Prepaid Taxes	0
4	Prepaid Retirement Benefits Other than Pensions (PBOP)	0
5	Gas Prepayments	0
6	Miscellaneous Prepayments	162,086,025
7	TOTAL	520,256,195

EXTRAORDINARY PROPERTY LOSSES (Account 182.1)

Line No.	Description of Extraordinary Loss [Include in the description the date of loss, the date of Commission authorization to use Account 182.1 and period of amortization (mo, yr, to mo, yr).] (a)	Total Amount of Loss (b)	Losses Recognized During Year (c)	WRITTEN OFF DURING YEAR		Balance at End of Year (f)
				Account Charged (d)	Amount (e)	
1	NONE					
2						
3						
4						
5						
6	TOTAL	0	0		0	0

UNRECOVERED PLANT AND REGULATORY STUDY COSTS (182.2)

Line No.	Description of Unrecovered Plant and Regulatory Study Costs [Include in the description the date of loss, the date of Commission authorization to use Account 182.2 and period of amortization (mo, yr, to mo, yr).] (a)	Total Amount of Charges (b)	Costs Recognized During Year (c)	WRITTEN OFF DURING YEAR		Balance at End of Year (f)
				Account Charged (d)	Amount (e)	
1	NONE					
2						
3						
4						
5						
6	TOTAL	0	0		0	0

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Name of Respondent:	This Report Is:	Date of Report:	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 4/11/2022	Dec. 31, 2021

ACCUMULATED DEFERRED INCOME TAXES (Account 190)

1. Report the information called for below concerning the respondent's accounting for deferred income taxes.

2. At Other (Specify), include deferrals relating to other income and deductions.

Line No.	Account (a)	Balance at Beginning of Year (b)	Changes During Year Amounts Debited (Account 410.1) (c)	Changes During Year Amounts Credited (Account 411.1) (d)
1	Electric			
2	Environmental	(43,933,700)	0	0
3	Compensation	35,955,459	152,814,176	148,011,227
4	CIAC	(116,370,208)	14,953,707	17,563,634
5	Injuries and Damages	470,135,340	5,829,802,754	6,999,317,022
6	California Corporation Franchise Tax	(350,949,450)	243,504,167	405,073,768
7	Other **(1)**	7,024,504,297	6,685,370,849	4,565,387,760
8	TOTAL ELECTRIC (Lines 2 thru 6)	7,019,341,738	12,926,445,653	12,135,353,411
9	Gas			
10	Environmental	(136,652,000)	41,063,350	2,554,625
11	Compensation	36,967,438	61,855,735	61,719,626
12	CIAC	169,477,749	4,002,461	5,579,841
13	Injuries and Damages	(42,370,119)	40,830,322	3,072,676
14	California Corporation Franchise Tax	(22,303,313)	31,972,148	28,920,993
15	Other **(2)**	1,282,950,103	616,115,899	636,272,660
16	TOTAL GAS (Lines 10 thru 13)	1,288,069,858	795,839,915	738,120,421
17	Other **(3)**	1,011,575,047	0	0
18	TOTAL Account 190 (Lines 7, 14 and 15)	9,318,986,643	13,722,285,568	12,873,473,832

NOTES:

(1)	Electric - Other			
	Vacation Paid	28,675,072	38,762,362	42,763,833
	Severance costs	11,452,351	1,118,273	206,044
	Medical and Group Life Insurance	(35,507,347)	5,089,833	3,608,586
	Short Term Incentive Plan	232,958	32,040,060	32,040,059
	Net Operating Loss	6,055,672,829	6,163,231,814	3,798,805,278
	Property Tax	(43,659,350)	131,465,837	121,689,042
	Other	1,007,637,784	313,662,672	566,274,917
	Subtotal	7,024,504,297	6,685,370,849	4,565,387,760
(2)	Gas - Other			
	Vacation Paid	11,978,813	16,612,441	18,327,357
	Severance costs	5,132,283	479,260	88,305
	Medical and Group Life Insurance	(13,209,905)	2,181,357	1,546,537
	Short Term Incentive Plan	(323,736)	13,731,454	13,731,454
	Net Operating Loss	1,001,134,629	442,363,958	343,800,003
	Property Tax	(15,703,703)	48,171,568	44,676,322
	Other	293,941,722	92,575,861	214,102,682
	Subtotal	1,282,950,103	616,115,899	636,272,660
(3)	Other			
	California Corporation Franchise Tax	(19,340,059)		
	Compensation	2,302,576		
	Net Operating Loss	891,068,935		
	Property Tax	391,945		
	Other	137,151,651		
	Subtotal	1,011,575,047		

Name of Respondent:	This Report Is: (1) * An Original (2) A Resubmission	Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY		4/11/2022	Dec. 31, 2021

ACCUMULDTED DEFERRED INCOME TAXES (Account 190) (Continued)

Changes During Year		Adjustments					
		Debits		Credits			
Amounts Debited (Account 410.2) (e)	Amounts Credited (Account 411.2) (f)	Dcct. No. (g)	Amount (h)	Acct. No. (i)	Amount (j)	Balance at End of Year (k)	Line No.
							1
						(43,933,700)	2
				(A)	1,129,154	32,281,664	3
						(113,760,281)	4
						1,639,649,608	5
						(189,379,849)	6
0	0		0	(B)	(13,256,714)	4,891,264,494	7
0	0		0		(12,127,560)	6,216,121,936	8
							9
						(175,160,725)	10
						36,831,329	11
						171,055,129	12
						(80,127,765)	13
						(25,354,468)	14
0	0			(C)	39,305,087	1,342,411,951	15
0	0		0		39,305,087	1,269,655,451	16
61,846,471	265,888,759		0	(D)	(1,096,256)	1,214,521,079	17
61,846,471	265,888,759		0		26,081,271	8,700,298,466	18

					32,676,543
					10,540,122
					(36,988,593)
					232,958
					3,691,246,293
					(53,436,145)
				(13,256,714)	1,246,993,315
		0	(B)	(13,256,714)	4,891,264,494

					13,693,729
					4,741,328
					(13,844,725)
					(323,736)
					902,570,674
					(19,198,949)
				39,305,089	454,773,632
		0	(C)	39,305,089	1,342,411,953

16,308,206	5,534,387				(30,113,877)
10,962,753	11,602,955				2,942,778
34,239,578	244,346,938				1,101,176,295
41,059	659,985				1,010,870
294,875	3,744,494			(1,096,255)	139,505,014
61,846,471	265,888,759	0	(D)	(1,096,255)	1,214,521,080

Name of Respondent	This Report Is: (1) * An Original	Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021

SECURITIES ISSUED OR ASSUMED AND
SECURITIES REFUNDED OR RETIRED DURING THE YEAR

1. Furnish a supplemental statement giving a brief description of security financing and refinancing transactions during the year and the accounting for the securities, discounts, premiums, expenses, and related gains or losses. Identify as to Commission authorization numbers and dates.
2. Furnish particulars (details) showing fully the accounting for the total principal amount, par value, or stated value of each class and series of security issued, assumed, retired, or refunded and the accounting for premiums, discounts, expenses, and gains or losses relating to the securities. Set forth the facts of the accounting clearly with regard to redemption premiums, unamortized discounts, expenses, and gains or losses relating to securities retired or refunded, including the accounting for such amounts carried in the respondent's accounts at the date of the refunding or refinancing transactions with respect to securities previously refunded or retired.
3. Include in the identification of each class and series of security, as appropriate, the interest or dividend rate, nominal date of issuance, maturity date, aggregate principal amount, par value or stated value, and number of shares. Give also the issuance or redemption price and name of the principal underwriting firm through which the security transactions were consummated.
4. Where the accounting for amounts relating to securities refunded or retired is other than that specified in General Instruction 17 of the Uniform System of Accounts, give references to the Commission authorization for the different accounting and state the accounting method.
5. For securities assumed, give the name of the company for which the liability of the securities was assumed as well as particulars (details) of the transactions whereby the respondent undertook to pay obligations of another company. If any unamortized discount, premiums, expenses, and gains or losses were taken over onto the respondent's books, furnish details of these amounts with amounts relating to refunded securities clearly earmarked.

Debt Matured and Retired During 2021

Description:		Principal
Variable Rate $1.5B Term Loan, issued 7/1/2020, due 6/30/2021	(A) $	1,500,000,000
Variable Rate $1.45B Floating Rate First Mortgage Bonds, issued 11/16/2020, due 11/15/2021		1,450,000,000
Variable Rate $1.5B Term Loan, issued 7/1/2020, due 10/1/2022	(B)	59,264,103
	$	3,009,264,103

Name of Respondent	This Report Is: (1) * An Original	Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021

SECURITIES ISSUED OR ASSUMED AND
SECURITIES REFUNDED OR RETIRED DURING THE YEAR

Debt Issued During 2021

Description:	Principal
1.367% $1.5B First Mortgage Bonds, issued 3/11/2021, due 3/10/2023	$ 1,500,000,000
3.25% $450M First Mortgage Bonds, issued 3/11/2021, due 6/1/2031	450,000,000
4.20% $450M First Mortgage Bonds, issued 3/11/2021, due 6/1/2041	450,000,000
3.00% $800M First Mortgage Bonds, issued 6/3/2021, due 6/15/2028	800,000,000
1.70% $900M First Mortgage Bonds, issued 11/15/2021, due 11/15/2023	900,000,000
3.25% $550M First Mortgage Bonds, issued 11/15/2021, due 6/1/2031	550,000,000
Variable Rate $300M Floating Rate First Mortgage Bonds, issued 11/15/2021, due 11/14/2022	300,000,000
	$ 4,950,000,000

Note:
(A) PG&E repaid $1.5 billion of Term Loan in full on March 11, 2021.

(B) On October 29, 2021 and on December 31, 2021, PG&E amended the Term Loan Credit Agreement to extend the maturity date of the $1.5 billion Term Loan to October 1, 2022. The Term Loan had an initial maturity date of January 1, 2022. PG&E repaid $59 million of the loan on December 31, 2021.

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

LONG TERM DEBT (Accounts 221, 222, 223, and 224)

1. Report by Balance Sheet Account the details concerning long-term debt included in Account 221 Bonds, 222 Reacquired Bonds, 223 Advances from Associated Companies, and 224 Other Long-Term Debt.
2. For bonds assumed by the respondent, include in column (a) the name of the issuing company as well as a description of the bonds.
3. For Advances from Associated Companies, report separately advances on notes and advances on open accounts. Designate demand notes as such. Include in column (a) names of associated companies from which advances were received.
4. For receivers' certificates, show in column (a) the name of the court and date of court order under which such certificates were issued.

Line No.	Class and Series of Obligation and Name of Stock Exchange (a)	Nominal Date of Issue (b)	Date of Maturity (c)	Outstanding (Total amount outstanding without reduction for amounts held by respondent)
1	Account 221:			
2	Senior Notes 3.25% due 2023	6/14/2013	6/15/2023	375,000,000
3	Senior Notes 4.25% due 2023	8/6/2018	8/1/2023	500,000,000
4	Senior Notes 3.85% due 2023	11/12/2013	11/15/2023	300,000,000
5	Senior Notes 3.75% due 2024	2/21/2014	2/15/2024	450,000,000
6	Senior Notes 3.40% due 2024	8/18/2014	8/15/2024	350,000,000
7	Senior Notes 3.50% due 2025	6/12/2015	6/15/2025	400,000,000
8	Senior Notes 3.50% due 2025	11/5/2015	6/15/2025	200,000,000
9	Senior Notes 3.45% due 2025	7/1/2020	7/1/2025	875,000,000
10	Senior Notes 2.95% due 2026	3/1/2016	3/1/2026	600,000,000
11	Senior Notes 3.15% due 2026	7/1/2020	1/1/2026	1,951,469,927
12	Senior Notes 3.30% due 2027	3/10/2017	3/15/2027	400,000,000
13	Senior Notes 3.30% due 2027	11/29/2017	12/1/2027	1,150,000,000
14	Senior Notes 3.75% due 2028	7/1/2020	7/1/2028	875,000,000
15	Senior Notes 4.65% due 2028	8/6/2018	8/1/2028	300,000,000
16	Senior Notes 4.55% due 2030	7/1/2020	7/1/2030	3,100,000,000
17	Senior Notes 4.50% due 2040	7/1/2020	7/1/2040	1,951,469,927
18	Senior Notes 4.50% due 2041	12/1/2011	12/15/2041	250,000,000
19	Senior Notes 4.45% due 2042	4/16/2012	4/15/2042	400,000,000
20	Senior Notes 3.75% due 2042	8/16/2012	8/15/2042	350,000,000
21	Senior Notes 4.60% due 2043	6/14/2013	6/15/2043	375,000,000
22	Senior Notes 4.75% due 2044	2/21/2014	2/15/2044	450,000,000
23	Senior Notes 4.75% due 2044	8/18/2014	2/15/2044	225,000,000
24	Senior Notes 4.30% due 2045	11/6/2014	3/15/2045	500,000,000
25	Senior Notes 4.30% due 2045	6/12/2015	3/15/2045	100,000,000
26	Senior Notes 4.25% due 2046	11/5/2015	3/15/2046	450,000,000
27	Senior Notes 4.00% due 2046	12/1/2016	12/1/2046	400,000,000
28	Senior Notes 4.00% due 2046	3/10/2017	12/1/2046	200,000,000
29	Senior Notes 3.95% due 2047	11/29/2017	12/1/2047	850,000,000
30	Senior Notes 4.95% due 2050	7/1/2020	7/1/2050	3,100,000,000
31	Floating Rate First Mortgage Bond due 2022	6/19/2020	6/16/2022	500,000,000
32	First Mortgage Bonds 1.75% due 2022	6/19/2020	6/16/2022	2,500,000,000
33	First Mortgage Bonds 1.367% due 2023	3/11/2021	3/10/2023	1,500,000,000
34	First Mortgage Bonds 1.70% due 2023	11/15/2021	11/15/2023	900,000,000
35	First Mortgage Bonds 2.10% due 2027	6/19/2020	8/1/2027	1,000,000,000
36	First Mortgage Bonds 3.00% due 2028	6/3/2021	6/15/2028	800,000,000
37	First Mortgage Bonds 2.50% due 2031	6/19/2020	2/1/2031	2,000,000,000
38	First Mortgage Bonds 3.25% due 2031	3/11/2021	6/1/2031	450,000,000
39	First Mortgage Bonds 3.25% due 2031	11/15/2021	6/1/2031	550,000,000
40	First Mortgage Bonds 3.30% due 2040	6/19/2020	8/1/2040	1,000,000,000
41	First Mortgage Bonds 4.20% due 2041	3/11/2021	6/1/2041	450,000,000
42	First Mortgage Bonds 3.50% due 2050	6/19/2020	8/1/2050	1,925,000,000
43	Term Loan 18 Months	7/1/2020	10/1/2022	1,440,735,897
44				
45	TOTAL ACCOUNT 221			36,443,675,751
46				
47	Account 223:			
48	PG&E Recovery Funding LLC (B)			806,847,383
49				
50	TOTAL ACCOUNT 223			806,847,383
51				
52	TOTAL			37,250,523,134

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

LONG TERM DEBT (Accounts 221, 222, 223, and 224) (Continued)

5. In a supplemental statement, give explanatory details for Accounts 223 and 224 of net changes during the year.
With respect to long-term advances, show for each company: (a) principal advanced during year (b) interest added to principal amount, and (c) principal repaid during year. Give Commission authorization numbers and dates.
6. If the respondent has pledged any of its long-term debt securities, give particulars (details) in a footnote, including name of the pledgee and purpose of the pledge.
7. If the respondent has any long-term securities that have been nominally issued and are nominally outstanding at end of year, describe such securities in a footnote.
8. If interest expense was incurred during the year on any obligations retired or reacquired before end of year, include such interest expense in column (f). Explain in a footnote any difference between the total of column (f) and the total Account 427, Interest on Long-Term Debt and Account 430, Interest on Debt to Associated Companies.
9. Give details concerning any long-term debt authorized by a regulatory commission but not yet issued.

INTEREST FOR YEAR		HELD BY RESPONDENT		Redemption Price Per $100 at End of Year	Line No.
Rate (in %) (e)	Amount (f)	Reacquired Bonds (Acct. 222) (g)	Sinking and Other Funds (h)	(i)	
					1
3.25%	12,187,500				2
4.25%	21,250,000				3
3.85%	11,550,000				4
3.75%	16,875,000				5
3.40%	11,900,000				6
3.50%	14,000,000				7
3.50%	7,000,000				8
3.45%	30,187,500				9
2.95%	17,700,000				10
3.15%	61,639,063				11
3.30%	13,200,000				12
3.30%	37,950,000				13
3.75%	32,812,500				14
4.65%	13,950,000				15
4.55%	141,050,000				16
4.50%	88,055,836				17
4.50%	11,250,000				18
4.45%	17,800,000				19
3.75%	13,125,000				20
4.60%	17,250,000				21
4.75%	21,375,000				22
4.75%	10,687,500				23
4.30%	21,500,000				24
4.30%	4,300,000				25
4.25%	19,125,000				26
4.00%	16,000,000				27
4.00%	8,000,000				28
3.95%	33,575,000				29
4.95%	153,450,000				30
variable	8,292,396				31
1.75%	43,750,000				32
1.37%	16,517,917				33
1.70%	1,955,000				34
2.10%	21,000,000				35
3.00%	13,866,667				36
2.50%	50,000,000				37
3.25%	11,781,250				38
3.25%	2,284,028				39
3.30%	33,000,000				40
4.20%	15,225,000				41
3.50%	67,375,000				42
variable	36,214,840				43
					44
	1,200,006,997	-	-	-	45
					46
					47
	3,724,234				48
					49
	3,724,234				50
					51
	1,203,731,231				52

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

UNAMORTIZED DEBT EXPENSE, PREMIUM AND DISCOUNT ON LONG-TERM DEBT (Accounts 181,225,226)

1. Report under separate subheadings for Unamortized Debt Expense, Unamortized Premium on Long-Term Debt and Unamortized Discount on Long-Term Debt, particulars (details) of expense, premium or discount applicable to each class and series of long-term debt.
2. Show premium amounts by enclosing the figures in parentheses.
3. In column (b) show the principal amount of bonds or other long-term debt originally issued.
4. In column (c) show the expense, premium or discount with respect to the amount of bonds or other long-term debt originally issued.

Line No.	Designation of Long-Term Debt (a)		Principal Amount of Debt Issued (b)	Total Expense, Premium or Discount (c)	AMORTIZATION PERIOD Date From (d)	Date To (e)
1	**ACCOUNT 181 - UNAMORTIZED ISSUANCE COSTS**					
2	3M-LIBOR + 1.48% Floating Rate Mortgage Bond due 2022		500,000,000	3,190,751	6/19/2020	6/16/2022
3	First Mortgage Bonds 1.75% due 2022		2,500,000,000	15,953,736	6/19/2020	6/16/2022
4	First Mortgage Bonds 1.367% due 2023		1,500,000,000	7,755,768	3/11/2021	3/10/2023
5	First Mortgage Bonds 1.70% due 2023		900,000,000	5,054,520	11/15/2021	11/15/2023
6	First Mortgage Bonds 2.10% due 2027		1,000,000,000	7,631,260	6/19/2020	8/1/2027
7	First Mortgage Bonds 3.00% due 2028		800,000,000	6,413,132	6/3/2021	6/15/2028
8	First Mortgage Bonds 2.50% due 2031		2,000,000,000	15,762,734	6/19/2020	2/1/2031
9	First Mortgage Bonds 3.25% due 2031		450,000,000	3,676,626	3/11/2021	6/1/2031
10	First Mortgage Bonds 3.25% due 2031		550,000,000	4,739,457	11/15/2021	6/1/2031
11	First Mortgage Bonds 3.30% due 2040		1,000,000,000	10,130,854	6/19/2020	8/1/2040
12	First Mortgage Bonds 4.20% due 2041		450,000,000	4,689,087	3/11/2021	6/1/2041
13	First Mortgage Bonds 3.50% due 2050		1,925,000,000	19,501,564	6/19/2020	8/1/2050
14	Senior Notes 3.45% due 2025		875,000,000	3,645,283	7/1/2020	7/1/2025
15	Senior Notes 3.75% due 2028		875,000,000	3,645,283	7/1/2020	7/1/2028
16	Senior Notes 4.55% due 2030		3,100,000,000	44,414,717	7/1/2020	7/1/2030
17	Senior Notes 4.50% due 2040		1,951,469,927	3,199,727	7/1/2020	7/1/2040
18	Senior Notes 4.95% due 2050		3,100,000,000	44,414,717	7/1/2020	7/1/2050
19	Senior Notes 3.15% due 2026		1,951,469,927	3,199,727	7/1/2020	1/1/2026
20	LIBOR + 2.25% Term Loan due 2022	(A)	1,500,000,000	8,500,174	07/01/2020	10/1/2022
21						
22	**Short-Term Debt**					
23	Floating Rate First Mortgage Bonds $300 Million		300,000,000	1,085,840	11/15/2021	11/14/2022
24	LIBOR + 2.25% Term Loan due 2021		1,500,000,000	10,375,174	7/1/2020	6/30/2021
25	3M-LIBOR + 1.48% Floating Rate First Mortgage Bonds due 2021		1,450,000,000	3,546,802	11/16/2020	11/15/2021
26	Revolving Credit Facility $4B due June 2026	(B)	-	25,533,475	7/1/2021	6/30/2026
27	Others					
28	Unapplied CPUC Fees		-	NA	NA	NA
29	Unapplied SEC Fees		-	NA	NA	NA
30	TOTAL ACCOUNT 181		30,177,939,854	256,060,409		
31				(F)		
32						
33	**ACCOUNT 225 - UNAMORTIZED PREMIUM**					
34	First Mortgage Bonds 3.25% due 2031		550,000,000	(5,560,500)	11/15/2021	06/01/2031
35	TOTAL ACCOUNT 225		550,000,000	(5,560,500)		
36				(F)		
37	**ACCOUNT 226 - UNAMORTIZED DISCOUNT**					
38	First Mortgage Bonds 1.75% due 2022		2,500,000,000	150,000	6/19/2020	6/16/2022
39	First Mortgage Bonds 1.70% due 2023		900,000,000	1,107,000	11/15/2021	11/15/2023
40	First Mortgage Bonds 2.10% due 2027		1,000,000,000	1,860,000	6/19/2020	8/1/2027
41	First Mortgage Bonds 3.00% due 2028		800,000,000	3,928,000	6/3/2021	6/15/2028
42	First Mortgage Bonds 2.50% due 2031		2,000,000,000	2,080,000	6/19/2020	2/1/2031
43	First Mortgage Bonds 3.25% due 2031		450,000,000	954,000	3/11/2021	6/1/2031
44	First Mortgage Bonds 3.30% due 2040		1,000,000,000	4,990,000	6/19/2020	8/1/2040
45	First Mortgage Bonds 4.20% due 2041		450,000,000	1,314,000	3/11/2021	6/1/2041
46	First Mortgage Bonds 3.50% due 2050		1,925,000,000	12,146,750	6/19/2020	8/1/2050
47	TOTAL ACCOUNT 226		11,025,000,000	28,529,750		
48				(F)		

NOTES:

(A) On October 29, 2021 and on December 31, 2021, PG&E amended the Term Loan Credit Agreement to extend the maturity date of the $1.5 billion Term Loan to October 1, 2022. The Term Loan had an initial maturity date of January 1, 2022.

(B) The revolving credit facility was amended on 6/22/2021. The capacity was increased to $4 billion and the amortization period was adjusted. As of 12/31/2021, the Utility had $1.885 billion outstanding draws.

(C) The following table recaps charges made to Account 428, Amortization of Debt Discounts and Expense on the Statement of Income for Year of Form 1.

Amortization of FERC 181/226 (Debt Expense & Discount)	48,671,915
Amortization of prepetition debt expense reclassified to regulatory assets in FERC 182.3	17,965,808
Amortization of financing related regulatory assets in FERC 182.3	2,200,038
Various fees (incl legal & SEC fees)	145,510
	68,983,271

(D) The following table recaps charges made to Account 429, Amortization of Premium on Debt of the Statement of Income for the Year of the Form 1.

Amortization of FERC 225 (Premium)	(74,442)
Amortization of prepetition debt premium reclassified to regulatory assets in FERC 182.3	(743,550)
	(817,992)

(E) Items included under column (g) represent original issuance expense, discount or premium on issuance related to outstanding debt and issuance expense true-up/down.

(F) Items included under column (c) represent original issuance expense, premium or discount on issuance related to outstanding debt which are recoverable through the cost of capital mechanism. Other financing related costs and prepetition debt expense which are also recoverable are reflected on page 232, Other Regulatory Assets (Account 182.3) in the Form 1.

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY		4/11/2022	2021/Q4

UNAMORTIZED DEBT EXPENSE, PREMIUM AND DISCOUNT ON LONG-TERM DEBT (Accounts 181,225,226) (Continued)

5. Furnish in a footnote particulars (details) regarding the treatment of unamortized debt expense, premium or discount associated with issues redeemed during the year. Also, give in a footnote the date of the Commission's authorization of treatment other than as specified by the Uniform System of Accounts.
6. Identify separately undisposed amounts applicable to issues which were redeemed in prior years.
7. Explain any debits and credits other than amortization debited to Account 428, Amortization of Debt Discount and Expense, or credited to Account 429, Amortization of Premium on Debt - Credit.

Balance at Beginning of Year (f)	Debits During Year (g)	Credits During Year (h)	Balance at End of Year (i)	Line No.
				1
2,312,314	37,596	1,605,401	744,509	2
11,499,836	253,960	8,070,405	3,683,391	3
-	7,755,768	3,128,196	4,627,572	4
-	5,054,520	322,928	4,731,592	5
6,974,766	91,450	1,079,162	5,987,055	6
-	6,413,132	526,829	5,886,303	7
14,781,300	199,613	1,494,744	13,486,170	8
-	3,676,626	289,734	3,386,892	9
-	4,739,457	63,450	4,676,007	10
9,773,634	91,044	506,019	9,358,659	11
-	4,689,087	186,791	4,502,296	12
18,969,389	190,192	650,902	18,508,679	13
3,280,755	-	729,057	2,551,698	14
3,417,453	-	455,660	2,961,793	15
42,193,981	-	4,441,472	37,752,509	16
3,152,520	(33,626)	159,146	2,959,748	17
43,674,472	-	1,480,491	42,193,981	18
2,963,907	(33,626)	603,207	2,327,074	19
5,666,782	69,717	5,666,783	69,715	20
				21
				22
-	1,085,840	90,487	995,353	23
5,187,587	-	5,187,587	-	24
2,722,104	600,629	3,322,733	-	25
21,246,323	8,879,204	6,905,840	23,219,687	26
				27
128,000	5,226,698	2,916,977	2,437,721	28
293,238	1,082,019	1,359,035	16,222	29
198,238,360	50,069,300	51,243,032	197,064,626	30
	(E)	(C)		31
				32
				33
-	(5,560,500)	(74,442)	(5,486,058)	34
-	(5,560,500)	(74,442)	(5,486,058)	35
	(E)	(D)		36
				37
109,833	-	75,314	34,519	38
-	1,107,000	70,726	1,036,274	39
1,720,609	-	261,358	1,459,251	40
-	3,928,000	322,680	3,605,320	41
1,975,510	-	195,918	1,779,592	42
-	954,000	75,179	878,821	43
4,857,705	-	248,053	4,609,652	44
-	1,314,000	52,343	1,261,657	45
11,931,644	-	403,323	11,528,321	46
20,595,301	7,303,000	1,704,894	26,193,407	47
	(E)	(C)		48
				49
				50
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Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

UNAMORTIZED LOSS AND GAIN ON REACQUIRED DEBT (Accounts 189, 257)

1. Report under separate subheadings for Unamortized Loss and Unamortized Gain on Reacquired Debt, particulars (details) of gain and loss, including maturity date, on reacquisition applicable to each class and series of long-term debt. If gain or loss resulted from a refunding transaction, include also the maturity date of the new debt
2. In column (c) show the principal amount of bonds or other long-term debt reacquired.
3. In column (d) show the net gain or net loss realized on each debt reacquisition as computed in accordance with General Instruction 17 of the Uniform Systems of Accounts.
4. Show loss amounts by enclosing the figures in parentheses.
5. Explain in a footnote any debits and credits other than amortization debited to Account 428.1, Amortization of Loss on Reacquired Debt, or credited to Account 429.1, Amortization of Gain on Reacquired Debt-Credit.

Line No.	Designation of Long-Term Debt		Date Reacquired	Principal Amount of Debt Reacquired	Net Gain or Net Loss	Balance at Beginning of Year	Balance at End of Year
	(a)		(b)	(c)	(d)	(e)	(f)
1	ACCOUNT 189 - UNAMORTIZED LOSS ON REACQUIRED DEBT:						
2	First and Refunding Mortgage Bonds:						
3	Series	Maturity Date					
4	89A	2/1/2022	91-93	200,000,000	(17,094,272)	631,212	48,555
5	90A	7/1/2023	93,94,95	150,000,000	(20,305,785)	1,632,248	979,349
6	91A	5/1/2024	95,96,98,99	93,199,000	(22,715,440)	2,988,770	2,092,139
7	91B	7/1/2024	93,94,96	199,993,000	(30,357,846)	3,235,251	2,310,893
8	92B	5/1/2025	95,97	37,000,000	(3,637,963)	536,150	412,423
9	92C	10/1/2025	94	1,000,000	(16,240,343)	2,787,078	2,200,325
10	92D	11/1/2022	95,96,97,98	113,305,000	(9,348,661)	681,153	309,615
11	93A	3/1/2026	96,97,98	43,984,000	(2,173,037)	398,146	321,086
12	93D	8/1/2026	96,97,98	54,470,000	(1,058,635)	209,171	171,708
13	93F	10/1/2023	98,99	45,234,000	(1,074,516)	118,356	75,318
14	93H	3/1/2024	95,98	27,500,000	(148,230)	17,624	12,058
15	California Pollution Control Financing Authority						
16	Series	Maturity Date					
17	PC 82A	6/1/2022	87	45,000,000	(2,570,850)	61,416	18,064
18	PC 93A	6/1/2023	4/12/2004	60,000,000	(2,404,021)	303,546	177,941
19	PC 93B	12/1/2023	4/12/2004	200,000,000	(7,424,469)	1,102,800	724,697
20	PC 96D	11/1/2026	2001	100,000,000	(798,861)	183,385	151,948
21	PC 97C	11/1/2026	2001	148,550,000	(1,021,888)	233,765	193,691
22	First and Refunding Mortgage Bonds:						
23	Series	Maturity Date					
24	91A	5/1/2024	4/12/2004	106,801,000	(1,588,899)	264,092	184,864
25	92B	5/1/2025	4/12/2004	163,000,000	(6,726,521)	1,384,359	1,064,892
26	92D	11/1/2022	4/12/2004	286,695,000	(13,185,640)	1,302,778	592,172
27	93A	3/1/2026	4/12/2004	251,016,000	(12,044,623)	2,842,952	2,292,703
28	93D	8/1/2026	4/12/2004	379,930,000	(18,334,682)	4,589,666	3,767,636
29	93F	10/1/2023	4/12/2004	285,641,000	(11,917,361)	1,683,291	1,071,185
30	93H	3/1/2024	4/12/2004	271,200,000	(4,405,932)	701,601	480,043
31	QUIDS-Quarterly Income Deferred Securities (Retired 4/12/2004):						
32	Series	Maturity Date					
33	QUIDS	12/31/2025	4/12/2004	300,000,000	(7,532,920)	1,734,142	1,387,313
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

UNAMORTIZED LOSS AND GAIN ON REACQUIRED DEBT (Accounts 189, 257)

1. Report under separate subheadings for Unamortized Loss and Unamortized Gain on Reacquired Debt, particulars (details) of gain and loss, including maturity date, on reacquisition applicable to each class and series of long-term debt. If gain or loss resulted from a refunding transaction, include also the maturity date of the new debt
2. In column (c) show the principal amount of bonds or other long-term debt reacquired.
3. In column (d) show the net gain or net loss realized on each debt reacquisition as computed in accordance with General Instruction 17 of the Uniform Systems of Accounts.
4. Show loss amounts by enclosing the figures in parentheses.
5. Explain in a footnote any debits and credits other than amortization debited to Account 428.1, Amortization of Loss on Reacquired Debt, or credited to Account 429.1, Amortization of Gain on Reacquired Debt-Credit.

Line No.	Designation of Long-Term Debt (a)	Maturity Date		Date Reacquired (b)	Principal Amount of Debt Reacquired (c)	Net Gain or Net Loss (d)	Balance at Beginning of Year (e)	Balance at End of Year (f)
1	Series	Maturity Date						
2	PC 2004 Series A-D:							
3	PC 2004 Series A-D	12/1/2023	(A)	6/1/2007	345,000,000	(2,502,290)	442,324	290,670
4	PC 2004 Series A-D	12/1/2023	(A)	6/1/2017	345,000,000	(716,522)	321,476	211,230
5								
6	PC 2005 Series A,B,E,F	11/1/2026	(B)	Various	248,550,000	(4,059,164)	456,157	377,958
7								
8	PC 2008 Series A,B	11/1/2026	(B)	9/1/2009	148,550,000	(817,918)	277,933	230,288
9								
10	PC 2008 Series F	11/1/2026	(B)	9/20/2010	50,000,000	(238,595)	86,373	71,566
11								
12	PC 2010 Series E	11/1/2026	(B)	4/2/2012	50,000,000	(454,967)	182,022	150,818
13								
14	Partial Reacquisition of $1B 4.80% Senior Notes							
15		6/15/2023		6/14/2013	461,441,000	(7,502,984)	1,841,713	1,091,694
16		6/15/2043		6/14/2013		(7,502,984)	5,615,555	5,365,481
17								
18	Reacquisition of $800M 8.25% Senior Notes							
19		(C) 10/15/2018		Various	800,000,000	(16,930,630)	24,151,060	20,659,341
20								
21	TOTAL ACCOUNT 189				6,012,059,000	(254,837,449)	62,997,565	49,489,664
22								
23	NOTES:							
24	(A) The 2004 A-D bonds were reacquired on June 1, 2007 and were remarketed with a maturity date of December 1, 2023.							
25	The bonds were reacquired on June 1, 2017.							
26								
27	(B) The 2005 A-G PC bonds were reacquired in March and April 2008. The 2008 A-D and 2008 F-G bonds were reissued on October							
28	29, 2008 and September 22, 2008, respectively. Upon issuance, the corresponding 2005 A-D and 2005 F-G bonds were cancelled.							
29	On September 1, 2009, the 2009 A-D bonds were issued. Upon issuance, the corresponding 2008 A-D PC bonds were cancelled.							
30	On September 20, 2010, the 2008 F-G PC bonds were reacquired and held in treasury. On April 8, 2010, the 2010 E bonds were reissued.							
31	Upon issuance, the corresponding 2005 E bonds were cancelled. On April 2, 2012, the 2010 E PC bonds were reacquired and held in treasury.							
32	On June 15, 2017, 2008F-G and 2010E PC bonds were reissued. On December 1, 2018, the 2008 PC bond matured and was repaid.							
33								
34	Series	Maturity Date		Series	Maturity Date			
35	2005A	11/1/2026		2008A	11/1/2026			
36	2005B	11/1/2026		2008B	11/1/2026			
37	2005E	11/1/2026		2008F	11/1/2026			
38	2005F	11/1/2026		2010E	11/1/2026			
39								
40	(C) $400M of the $800M Senior Notes due October 15, 2018 was redeemed on November 30, 2017 and the remaining $400M was							
41	redeemed on January 31, 2018.							
42								
43	ACCOUNT 257 - UNAMORTIZED GAIN ON REACQUIRED DEBT:							
44	First and Refunding Mortgage Bonds:							
45	Series	Maturity Date						
46	93A	3/1/2026		97	5,000,000	30,636	5,426	4,376
47	93D	8/1/2026		97	15,600,000	308,462	58,217	47,790
48	93F	10/1/2023		96,97	45,775,000	2,554,600	262,396	166,979
49	93H	3/1/2024		95,96,99	51,300,000	913,250	103,889	71,082
50								
51	TOTAL ACCOUNT 257				117,675,000	3,806,948	429,927	290,227
52								
53								
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57								
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Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	04/11/2022	2021/Q4

Miscellaneous Current and Accrued Liabilities (Account 242)

1. Describe and report the amount of other current and accrued liabilities at the end of year.

2. Minor items (less than $250,000) may be grouped under appropriate title.

Line No.	Item (a)	Balance at End of Year (b)
1	Performance Incentive	316,257,158
2	Third Party Energy Service Providers	313,874,685
3	Wildfire Fund	192,600,000
4	Accrued Franchise Requirement	177,356,846
5	Customer Credits	102,672,509
6	Emission Liability - Gas	68,992,263
7	Legal Accruals	42,998,000
8	CPUC Reuimbursement and Quarterly Fees	32,320,295
9	Refunds Due to Customers	17,988,702
11	Diablo Canyon power plant Retention Bonuses	15,288,932
12	Self Generation Initiative	12,877,816
13	Emission Liability - Electric	12,521,304
14	Diablo Canyon power plant Community Impact Mitigation Program	9,375,000
15	Residential Uncollectible Balancing Account	5,301,082
16	Deferred Revenues	5,246,438
17	Transmission Owner Forfeitures	1,769,050
18	Severance Liability Accrual	1,083,248
19	Mission Substation Settlement	988,730
20	California Solar Incentive	656,750
21	Valley Elderberry Longhorn Beetle	501,925
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38	Miscellaneous items (individual items < than $250,000)	70,344
39		
40		
41		
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46		
47		
48		
49		
50	TOTAL	1,330,741,077

Name of Respondent	This Report Is:		Date of Report	Year / Period of Report
	(1) * An Original		(Mo, Da, Yr)	End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission		**04/11/2022**	**2021/Q4**

GAS OPERATING REVENUES

1. Report below natural gas operating revenues for each prescribed account total. The amounts must be consistent with the detailed data on succeeding pages.

2. Revenues in columns (b) and (c) include transition costs from upstream pipelines.

3. Other Revenues in columns (f) and (g) include reservation charges received by the pipeline plus usage charges, less revenues reflected in columns (b) through (e). Include in columns (f) and (g) revenues for Accounts 480-495.

Line No.	Title of Account (a)	Revenues for Transition Costs and Take-or-Pay Amount for Current Year (b)	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year (c)	Revenues for GRI and ACA Amount for Current Year (d)	Revenues for GRI and ACA Amount for Previous Year (e)
1	(480) Residential Sales				
2	(481) Commercial & Industrial Sales				
3	(482) Other Sales to Public Authorities				
4	(483) Sales for Resale				
5	(484) Interdepartmental Sales - (Note 1)				
	Total Sales (Lines 1-5):	0	0	0	0
6	(485) Intracompany Transfers				
7	(487) Forfeited Discounts				
8	(488) Misc. Service Revenues				
9	(489.1) Revenues from Transportation of Gas of Others Through Gathering Facilities - (Note 3)				
10	(489.2) Revenues From Transportation of Gas of Others Through Transmission Facilities	4,444,439	2,949,270		
11	(489.3) Revenues From Transportation of Gas of Others Through Distribution Facilities				
12	(489.4) Revenues From Storing of Gas of Others - (Note 4)				
13	(490) Sales of Prod. Ext. from Natural Gas				
14	(491) Rev. from Nat. Gas Proc. by Others				
15	(492) Incidental Gasoline and Oil Sales				
16	(493) Rent from Gas Property				
17	(494) Interdepartmental Rents				
18	(495) Other Gas Revenues - (Note 2)				
19	(400) Balancing Accounts				
20	Subtotal (Lines 1-19)	4,444,439	2,949,270	0	0
21	(496) (Less) Provision for Rate Refunds				
22	TOTAL:	4,444,439	2,949,270	0	0

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year / Period of Report End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	**04/11/2022**	**2021/Q4**

GAS OPERATING REVENUES

4. If increases or decreases from previous year are not derived from previously reported figures, explain any inconsistencies in a footnote.

5. On Page 108, include information on major changes during the year, new service, and important rate increases or decreases.

6. Report the revenue from transportation services that are bundled with storage services as transportation service revenue

Line No.	Other Revenues Amount for Current Year (f)	Other Revenues Amount for Previous Year (g)	Total Operating Revenues Amount for Current Year (h)	Total Operating Revenues Amount for Previous Year (i)	Dekatherm of Natural Gas Amount for Current Year (j)	Dekatherm of Natural Gas Amount for Previous Year (k)
1	2,759,103,423	2,516,653,767	2,759,103,423	2,516,653,767	168,314,554	168,877,916
2	713,072,607	597,288,554	713,072,607	597,288,554	56,256,526	51,658,602
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	243,093,777	230,448,154	243,093,777	230,448,154	45,816,134	47,472,472
	3,715,269,807	3,344,390,475	3,715,269,807	3,344,390,475	270,387,214	268,008,990
6	0	0	0	0		
7	0	1,960	0	1,960		
8	4,188,873	4,348,977	4,188,873	4,348,977		
9	0	0	0	0	0	0
10	449,413,938	409,135,139	453,858,377	412,084,409	115,545,139	90,786,477
11	897,797,022	799,044,345	897,797,022	799,044,345	538,820,177	518,926,926
12	0	0	0	0	0	0
13	0	0	0	0		
14	0	0	0	0		
15	0	0	0	0		
16	1,939,144	3,792,189	1,939,144	3,792,189		
17	0	0	0	0		
18	97,182,438	65,255,383	97,182,438	65,255,383		
19	552,598,137	229,599,290	552,598,137	229,599,290		
20	5,718,389,359	4,855,567,758	5,722,833,798	4,858,517,028		
21	22,004,280	(22,189,176)	22,004,280	(22,189,176)		
22	5,740,393,639	4,833,378,582	5,744,838,078	4,836,327,852		

Note 1: Interdepartmental sales reported in column (j) and (k) exclude MCFs of natural gas purchased by Company's electric department from third party suppliers.

Note 2: Line 18, cols (h) and (i) include net unbilled revenues of $88,595,270 and $43,740,484 respectively.

Note 3: PG&E has some gathering facilities for ratemaking purposes. However, these are bundled together with our backbone transmission rates and could not be split out.

Note 4: PG&E has some storage for gas of others. However, these are bundled together with other gas in storage and could not be split out.

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) **04/11/2022**	End of **2021/Q4**

Revenues from Transportation of Gas of Others Through Gathering Facilities (Account 489.1)

1. Report revenues and Dth of gas delivered through gathering facilities by zone of receipt (i.e. state in which gas enters respondent's system
2. Revenues for penalties including penalties for unauthorized overruns must be reported on page 308.

Line No.	Rate Schedule and Zone of Receipt (a)	Revenues for Transition Costs and Take-or-Pay Amount for Current Year (b)	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year (c)	Revenues for GRI and ACA Amount for Current Year (d)	Revenues for GRI and ACA Amount for Previous Year (e)
1	N O N E - (Note 1)				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25	TOTAL			0	0

(Note 1) - PG&E has some gathering facilities for ratemaking purposes. However, these are bundled together with our backbone transmission rates and could not be split out.

Name of Respondent	This Report Is:	Date of Report		Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) **04/11/2022**		**2021/Q4**

Revenues from Transportation of Gas of Others Through Gathering Facilities (Account 489.1)

3. Other Revenues in columns (f) and (g) include reservation charges received by the pipeline plus usage charges, less revenues reflected in columns (b) through (e).
4. Delivered Dth of gas must not be adjusted for discounting.

Line No.	Other Revenues Amount for Current Year (f)	Other Revenues Amount for Previous Year (g)	Total Operating Revenues Amount for Current Year (h)	Total Operating Revenues Amount for Previous Year (i)	Dekatherm of Natural Gas Amount for Current Year (j)	Dekatherm of Natural Gas Amount for Previous Year (k)
1						
2						
3						
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23						
24						
25						

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
	(1) * An Original	(Mo, Da, Yr)	End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	**04/11/2022**	**2021/Q4**

Revenues from Transportation of Gas of Others Through Transmission Facilities (Account 489.2)

1. Report revenues and Dth of gas delivered by Zone of Delivery by Rate Schedule. Total by Zone of Delivery and for all zones. If respondent does not have separate zones, provide totals by rate schedule.
2. Revenues for penalties including penalties for unauthorized overruns must be reported on page 308.
3. Other Revenues in columns (f) and (g) include reservation charges received by the pipeline plus usage charges for transportation and hub services, less revenues reflected in columns (b) through (e).

Line No.	Rate Schedule and Zone of Receipt	Revenues for Transition Costs and Take-or-Pay Amount for Current Year	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year	Revenues for GRI and ACA Amount for Current Year	Revenues for GRI and ACA Amount for Previous Year
	(a)	(b)	(c)	(d)	(e)
1	GXF				
2	GXFO				
3	GAA				
4	GAFT				
5	GAFTBC				
6	GBALN				
7	GBALP				
8	GNAA				
9	GNAAO	21			
10	GNFT	4,600	193,982		
11	GNFTO	4,439,818	2,755,287		
12	GSFT				
13	GSFTC				
14	GTPGTHR				
15	GTPIUT				
16					
17					
18					
19					
20					
21					
22					
23					
24					
25	TOTAL	4,444,439	2,949,270	0	0

Name of Respondent	This Report Is:	Date of Report		Year of Report
	(1) * An Original	(Mo, Da, Yr)		
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	**04/11/2022**		**2021/Q4**

Revenues from Transportation of Gas of Others Through Transmission Facilities (Account 489.2)

4. Delivered Dth of gas must not be adjusted for discounting.
5. Each incremental rate schedule and each individually certified rate schedule must be separately reported
6. Where transportation services are bundled with storage services, report total revenues but only transportation Dth.

Line No.	Other Revenues	Other Revenues	Total Operating Revenues	Total Operating Revenues	Dekatherm of Natural Gas	Dekatherm of Natural Gas
	Amount for Current Year	Amount for Previous Year	Amount for Current Year	Amount for Previous Year	Amount for Current Year	Amount for Previous Year
	(f)	(g)	(h)	(i)	(j)	(k)
1	(5,411,502)	(5,242,196)	(5,411,502)	(5,242,196)	-	-
2	5,411,500	5,242,193	5,411,500	5,242,193	24,017,130	23,264,466
3	21,350,096	34,932,045	21,350,096	34,932,045	-	-
4	247,377,513	210,578,482	247,377,513	210,578,482	-	-
5	27,192,605	7,268,998	27,192,605	7,268,998	-	-
6	78,598	69,694	78,598	69,694	-	-
7	(12,635)	(5,341)	(12,635)	(5,341)	-	-
8	62,890,907	47,315,409	62,890,907	47,315,409	-	-
9	2,932,115	1,933,573	2,932,137	1,933,573	5,941,575	2,764,192
10	23,436,323	36,246,245	23,440,923	36,440,228	-	-
11	19,211,121	13,276,368	23,650,939	16,031,656	85,586,434	64,757,819
12	24,899,824	47,734,666	24,899,824	47,734,666	-	-
13	9,094,084	4,190,173	9,094,084	4,190,173	-	-
14	5,775,516	5,594,829	5,775,516	5,594,829	-	-
15	5,187,871	-	5,187,871	-	-	-
16						
17						
18						
19						
20						
21						
22						
23						
24						
25	449,413,938	409,135,139	453,858,377	412,084,409	115,545,139	90,786,477

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmissio	(Mo, Da, Yr) **4/11/2022**	End of **2021/Q4**

Revenues from Storing of Gas of Others (Account 489.4)

1. Report revenues and Dth of gas withdrawn from storage by Rate Schedule and in total.
2. Revenues for penalties including penalties for unauthorized overruns must be reported on page 308.
3. Other Revenues in columns (f) and (g) include reservation charges, deliverability charges, injection and withdrawal charges, less revenues reflected in columns (b) through (e).

Line No.	Rate Schedule (a)	Revenues for Transition Costs and Take-or-Pay Amount for Current Year (b)	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year (c)	Revenues for GRI and ACA Amount for Current Year (d)	Revenues for GRI and ACA Amount for Previous Year (e)
1	N O N E - (Note 1)				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25	TOTAL			0	0

Note 1: PG&E has some storage for gas of others. However, these are bundled together with other gas in storage and could not be split out.

Name of Respondent	This Report Is:	Date of Report		Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) **4/11/2022**		**2021/Q4**

Revenues from Storing of Gas of Others (Account 489.4)

4. Dth of gas withdrawn from storage must not be adjusted for discounting.
5. Where transportation services are bundled with storage services, report only Dth withdrawn from storage.

Line No.	Other Revenues Amount for Current Year (f)	Other Revenues Amount for Previous Year (g)	Total Operating Revenues Amount for Current Year (h)	Total Operating Revenues Amount for Previous Year (i)	Dekatherm of Natural Gas Amount for Current Year (j)	Dekatherm of Natural Gas Amount for Previous Year (k)
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25						

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
	(1) * An Original	(Mo, Da, Yr)	End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	**4/11/2022**	**2021/Q4**

Other Gas Revenues (Account 495)

Report below transactions of $250,000 or more included in Account 495, Other Gas Revenues. Group all transactions below $250,000 in one amount and provide the number of items.

Line No.	Description of Transaction (a)	Amount (in dollars) (b)
1	Compensation for Minor or Incidental Services Provided for Others	5,977,328
2	Revenues for Right and/or Benefits Received from Others which are Realized Through Research, Development, and Demonstratio	-
3	Gains on Settlements of Imbalance Receivables and Payables	-
4	Revenues from Penalties earned Pursuant to Tariff Provisions, including Penalties Associated with Cash-out Settlements	(28,813,629)
5	Unbilled Revenues	88,595,270
6	Damage Claim, Gas lost to Atmosphere, Labor and materials to repair gas facilities and other costs associated with repair of gas fa	7,285,620
7	Revenues from customers using the Utility's gas storing facilities, CAC (Customer Advance for Construction) and CIAC (Contributio	24,104,086
8	Miscellaneous below $250k - 1 items	33,763
	Total	97,182,438

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)		Year/Period of Report End of
PACIFIC GAS AND ELECTRIC COMPANY		**4/11/2022**		**2021/Q4**

Discounted Rate Services and Negotiated Rate Services

1. In column b, report the revenues from discounted rate services.
2. In column c, report the volumes of discounted rate services.
3. In column d, report the revenues from negotiated rate services.
4. In column e, report the volumes of negotiated rate services.

Line No.	Account	Discounted Rate Services Revenue	Discounted Rate Services Volumes	Negotiated Rate Services Revenue	Negotiated Rate Services Volumes
	(a)	(b)	(c)	(d)	(e)
1	(481) Commercial & Industrial Sales				
2	(489.2) Revenues From Transportation of Gas of Others Through Transmission Facilities			42,661,919	111,929,119
3	(495) Other Gas Revenues			10,291,798	37,932,732
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14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24	TOTAL	0	0	52,953,717	149,861,851

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES

If the amount for previous year is not derived from previously reported figures, explain in footnotes

Line No.	Account (a)	Amount for Current Year (b)	Amount for Previous Year (c)
1	1. PRODUCTION EXPENSES		
2	A. Manufactured Gas Production		
3	Manufactured Gas Production (Submit Supplemental Statement) Page 325-1	72,024,802	44,713,526
4	B. Natural Gas Production		
5	B1. Natural Gas Production and Gathering		
6	Operation		
7	(750) Operation Supervision and Engineering	-	-
8	(751) Production Maps and Records	-	-
9	(752) Gas Wells Expense	-	-
10	(753) Field Line Expenses	-	-
11	(754) Field Compressor Station Expenses	-	-
12	(755) Field Compressor Station and Power	-	-
13	(756) Field Measuring and Regulating Station Expenses	-	-
14	(757) Purification Expenses	346	270
15	(758) Gas Well Royalties	-	-
16	(759) Other Expenses	1,385,071	1,206,464
17	(760) Rents	-	-
18	TOTAL Operation (Total of lines 7 thru 17)	1,385,418	1,206,734
19	Maintenance		
20	(761) Maintenance Supervision and Engineering	-	-
21	(762) Maintenance of Structures and Improvements	-	-
22	(763) Maintenance of Producing Gas Wells	-	-
23	(764) Maintenance of Field Lines	-	-
24	(765) Maintenance of Field Compressor Station Equipment	-	-
25	(766) Maintenance of Field Meas. and Reg. Sta. Equipment	12,862	205,844
26	(767) Maintenance of Purification Equipment	-	-
27	(768) Maintenance of Drilling and Cleaning Equipment	-	-
28	(769) Maintenance of Other Equipment	210,789	160,658
29	TOTAL Maintenance (Total of lines 20 thru 28)	223,652	366,502
30	TOTAL Natural Gas Production and Gathering (Total of lines 18 and 29)	1,609,069	1,573,236

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
31	B2. Production Extraction		
32	Operation		
33	(770) Operation Supervision and Engineering	-	-
34	(771) Operation Labor	-	-
35	(772) Gas Shrinkage	-	-
36	(773) Fuel	-	-
37	(774) Power	-	-
38	(775) Materials	-	-
39	(776) Operation Supplies and Expenses	-	-
40	(777) Gas Processed by Others	-	-
41	(778) Royalties on Products Extracted	-	-
42	(779) Marketing Expenses	-	-
43	(780) Products Purchased for Resale	-	-
44	(781) Variation in Products Inventory	-	-
45	Less: (782) Extracted Products Used by the Utility-Credit	-	-
46	(783) Rents	-	-
47	TOTAL Operation (Total of lines 33 thru 46)	-	-
48	Maintenance		
49	(784) Maintenance Supervision and Engineering	-	-
50	(785) Maintenance of Structures and Improvements	-	-
51	(786) Maintenance of Extraction and Refining Equipment	-	-
52	(787) Maintenance of Pipe Lines	-	-
53	(788) Maintenance of Extracted Products Storage Equipment	-	-
54	(789) Maintenance of Compressor Equipment	-	-
55	(790) Maintenance of Gas Measuring and Reg. Equipment	-	-
56	(791) Maintenance of Other Equipment	-	-
57	TOTAL Maintenance (Total of lines 49 thru 56)	-	-
58	TOTAL Products Extraction (Total of Lines 47 and 57)	-	-

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
59	C. Exploration and Development		
60	Operation		
61	(795) Delay Rentals	-	-
62	(796) Nonproductive Well Drilling	-	-
63	(797) Abandoned Projects	-	-
64	(798) Other Exploration	-	-
65	TOTAL Exploration and Development (Total of line 61 thru 64)	-	-
	D. Other Gas Supply Expenses		
66	Operation		
67	(800) Natural Gas Well Head Purchases	-	-
68	(800.1) Natural Gas Well Head Purchases, Intracompany Transfers	-	-
69	(801) Natural Gas Field Line Purchases	502,737,986	308,492,799
70	(802) Natural Gas Gasoline Plant Outlet Purchases	-	-
71	(803) Natural Gas Transmission Line Purchases	251,876,127	157,149,748
72	(804) Natural Gas City Gate Purchases	(22,385,400)	(7,745,892)
73	(804.1) Liquified Natural Gas Purchases	-	-
74	(805) Other Gas Purchases - **Note 1**	250,667,526	165,542,948
75	Less (805.1) Purchased Gas Cost Adjustments	-	-
76	(805.2) Incremental Gas Cost Adjustments	-	-
77	TOTAL Purchased Gas (Total of lines 67 to 76)	982,896,239	623,439,603
78	(806) Exchange Gas	-	-
79	Purchased Gas Expense		
80	(807.1) Well Expenses-Purchased Gas	8,648,563	9,601,587
81	(807.2) Operation of Purchased Gas Measuring Stations	-	-
82	(807.3) Maintenance of Purchased Gas Measuring Stations	-	-
83	(807.4) Purchased Gas Calculations Expenses	-	-
84	(807.5) Other Purchased Gas Expenses	34,908,280	14,599,481
85	TOTAL Purchased Gas Expenses (Total of lines 80 thru 84)	43,556,843	24,201,067

Note 1 - Represents Emission Expenses

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
86	(808.1) Gas Withdrawn from Storage-Debit	31,721,079	25,519,321
87	Less (808.2) Gas Deliverd to Storage-Credit	(43,347,703)	(22,535,971)
88	(809.1) Withdrawls of Liquefied Natural Gas for Processing-Credit	-	-
89	Less (809.2) Deliveries of Natural Gas for Processing-Credit	-	-
90	Less Gas Used in Utility Operations-Credit	-	-
91	(810) Gas Used for Compressor Station Fuel-Credit	(4,047,220)	(2,638,490)
92	(811) Gas Used for Products Extraction-Credit	-	-
93	(812) Gas Used for Other Utility Operations-Credit	(900,232)	(462,279)
94	TOTAL Gas Used in Utility Operations-Credit (Total of lines 91 thru 93)	(4,947,452)	(3,100,769)
95	(813) Other Gas Supply Expenses	-	-
96	TOTAL Other Gas Supply Exp.(Total of lines 77,78,85,86 thru 89,94,95)	1,009,879,007	647,523,253
97	TOTAL Production Expenses (Total of lines 3,30,58,65,and 96)	1,083,512,878	693,810,015
98	2. NATURAL GAS STORAGE, TERMINALING AND PROCESSING EXPENSE		
99	A. Underground Storage Expenses		
100	Operation		
101	(814) Operation Supervision and Engineering	-	-
102	(815) Maps and Records	-	-
103	(816) Wells Expenses	2,336	(154,442)
104	(817) Lines Expenses	-	-
105	(818) Compressor Station Expenses	485,139	550,355
106	(819) Compressor Station Fuel and Power	2,658,902	2,827,069
107	(820) Measuring and Regulating Station Expenses	896,347	836,462
108	(821) Purification Expenses	223,227	111,522
109	(822) Exploration and Development	-	-
110	(823) Gas Losses	-	-
111	(824) Other Expenses	22,266,925	18,816,496
112	(825) Storage Well Royalties	-	-
113	(826) Rents	-	-
114	TOTAL Operation (Total of lines 101 thru 113)	26,532,876	22,987,462

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
115	Maintenance		
116	(830) Maintenance Supervision and Engineering	89	9,720
117	(831) Maintenance of Structures and Improvements	-	-
118	(832) Maintenance of Reservoirs and Wells	129,417	1,612,778
119	(833) Maintenance of Lines	-	-
120	(834) Maintenance of Compressor Station Equipment	1,064,695	1,429,042
121	(835) Maintenance of Measuring and Regulating Station Equipment	113,767	3,599
122	(836) Maintenance of Purification Equipment	-	-
123	(837) Maintenance of Other	307,112	580
124	TOTAL Maintenance (Total of lines 116 thru 123)	1,615,079	3,100,013
125	TOTAL Underground Storage Expenses (Total of lines 114 and 124)	28,147,956	26,087,475
126	B. Other Storage Expenses		
127	Operation		
128	(840) Operation Supervision and Engineering	-	-
129	(841) Operation Labor and Expenses	-	-
130	(842) Rents	-	-
131	(842.1) Fuel	-	-
132	(842.2) Power	-	-
133	(842.3) Gas Losses	-	-
134	TOTAL Operation (Total of lines 128 thru 133)	-	-
135	Maintenance		
136	(843.1) Maintenance Supervision and Engineering	-	-
137	(843.2) Maintenance of Structures and Improvements	-	-
138	(843.3) Maintenance of Gas Holders	-	83
139	(843.4) Maintenance of Purification Equipment	-	-
140	(843.5) Maintenance of Liquification Equipment	-	-
141	(843.6) Maintenance of Vaporizing Equipment	-	-
142	(843.7) Maintenance of Compressor Equipment	862,128	740,893
143	(843.8) Maintenance of Measuring and Regulating Equipment	-	-
144	(843.9) Maintenance of Other Equipment	-	-
145	TOTAL Maintenance (Total of line 136 thru 144)	862,128	740,976
146	TOTAL Other Storage Expenses (Total of line 134 and 145)	862,128	740,976

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
147	C. Liquefied Natural Gas Terminating and Processing Expenses		
148	Operation		
149	(844.1) Operation Supervision and Engineering	-	-
150	(844.2) LNG Processing Terminal Labor and Expenses	-	-
151	(844.3) Liquefication Processing Labor and Expenses	-	-
152	(844.4) Liquefication Transportation Labor and Expenses	-	-
153	(844.5) Measuring and Regulating Labor and Expenses	-	-
154	(844.6) Compressor Station Labor and Expenses	-	-
155	(844.7) Communication System Expenses	-	-
156	(844.8) System Control and Load Dispatching	-	-
157	(845.1) Fuel	-	-
158	(845.2) Power	-	-
159	(845.3) Rents	-	-
160	(845.4) Demurrage Charges	-	-
161	(845.5) Wharfage Receipts-Credit	-	-
162	(845.6) Processing Liquefied or Vaporized Gas by Others	-	-
163	(846.1) Gas Losses	-	-
164	(846.2) Other Expenses	-	-
165	TOTAL Operation (Total of lines 149 thru 164)	-	-
166	Maintenance		
167	(847.1) Maintenance Supervision and Engineering	-	-
168	(847.2) Maintenance of Structures and Improvements	-	-
169	(847.3) Maintenance of LNG Processing Terminal Equipment	-	-
170	(847.4) Maintenance of LNG Transportation Equipment	-	-
171	(847.5) Maintenance of Measuring and Regulating Equipment	-	-
172	(847.6) Maintenance of Compressor Station Equipment	-	-
173	(847.7) Maintenance of Communication Equipment	-	-
174	(847.8) Maintenance of Other Equipment	-	-
175	TOTAL Maintenance (Total of lines 167 thru 174)	-	-
176	TOTAL Liquefied Nat Gas Terminating and Processing Exp.(Lines 165 and 175)	-	-
177	TOTAL Natural Gas Storage (Total of lines 125,146, and 176)	29,010,084	26,828,451

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
178	3. TRANSMISSION EXPENSES		
179	Operation		
180	(850) Operation Supervision and Engineering	3,382,022	6,186,897
181	(851) System Control and Load Dispatching	9,070,168	9,049,644
182	(852) Communication System Expenses	-	-
183	(853) Compressor Station Labor and Expenses	15,081	13,782
184	(854) Gas for Compressor Station Fuel	4,323,619	2,708,640
185	(855) Other Fuel and Power for Compressor Stations	21,928,350	24,498,712
186	(856) Mains Expenses	139,766,335	30,403,820
187	(857) Measuring and Regulating Station Expenses	2,459,366	2,483,507
188	(858) Transmission and Compression of Gas by Others	336,381,116	326,884,714
189	(859) Other Expenses	168,615,355	149,955,587
190	(860) Rents	-	-
191	TOTAL Operation (Total of lines 180 thru 190)	685,941,413	552,185,303
	3. TRANSMISSION EXPENSES (Continued)		
192	Maintenance		
193	(861) Maintenance Supervision and Engineering	3,475,182	2,825,612
194	(862) Maintenance of Structures and Improvements	1,171	1,066,938
195	(863) Maintenance of Mains	291,844,443	369,198,193
196	(864) Maintenance of Compressor Station Equipment	6,319,241	9,453,818
197	(865) Maintenance of Measuring and Reg. Station Equipment	16,225,474	16,394,072
198	(866) Maintenance of Communication Equipment	(3,718)	5,650
199	(867) Maintenance of Other	3,595,282	3,248,705
200	TOTAL Maintenance (Total of lines 193 thru 199)	321,457,074	402,192,988
201	TOTAL Transmission Expenses (Total of lines 191 and 200)	1,007,398,487	954,378,291
202	4. DISTRIBUTION EXPENSE		
203	Operation		
204	(870) Operation Supervision and Engineering	10,472,672	8,674,134
205	(871) Distribution Load Dispatchng	-	-
206	(872) Compressor Station Labor and Expenses	-	-
207	(873) Compressor Station Fuel and Power	-	-

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
208	(874) Mains and Services Expenses	55,835,574	55,196,601
209	(875) Measuring and Regulating Station Expenses-General	4,159,193	4,116,918
210	(876) Measuring and Regulating Station Expenses-Industrial	-	-
211	(877) Measuring and Regulating Station Expenses-City Gate Check Station	-	-
212	(878) Meter and House Regulator Expenses	910,033	887,791
213	(879) Customer Installations Expenses	48,572,479	50,482,730
214	(880) Other Expenses	209,811,065	179,897,791
215	(881) Rents	-	-
216	TOTAL Operation (Total of lines 204 thru 215)	329,761,015	299,300,259
217	Maintenance		
218	(885) Maintenance Supervision and Engineering	5,673,100	5,590,467
219	(886) Maintenance of Structures and Improvements	2,489,986	8,047,988
220	(887) Maintenance of Mains	68,305,939	78,857,821
221	(888) Maintenance of Compressor Station Equipment	-	-
222	(889) Maintenance of Meas. and Reg. Sta. Equip.-General	12,276,968	12,408,062
223	(890) Maintenance of Meas. and Reg. Sta. Equip.-Industrial	15,859,871	15,191,346
224	(891) Maintenance of Meas. and Reg. Sta. Equip.-City Gate Check Station	-	-
225	(892) Maintenance of Services	20,740,273	22,119,115
226	(893) Maintenance of Meters and House Regulators	14,559,569	21,111,223
227	(894) Maintenance of Other Equipment	924,987	(307,787)
228	TOTAL Maintenance (Total of lines 218 thru 227)	140,830,692	163,018,236
229	TOTAL Distribution Expenses (Total of lines 216 and 228)	470,591,707	462,318,496
230	5. CUSTOMER ACCOUNTS EXPENSES		
231	Operation		
232	(901) Supervision	582,469	2,563,412
233	(902) Meter Reading Expenses	4,490,305	4,812,467
234	(903) Customer Records and Collection Expenses	106,033,451	105,386,275

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
235	(904) Uncollectible Accounts	37,868,352	36,015,389
236	(905) Miscellaneous Customer Accounts Expenses	1,334,692	708,131
237	TOTAL Customer Accounts Expenses (Total of lines 232 thru 236)	150,309,269	149,529,967
238	6. CUSTOMER SERVICE AND INFORMATIONAL EXPENSES		
239	Operation		
240	(907) Supervision	-	-
241	(908) Customer Assistance Expenses	122,562,779	131,515,109
242	(909) Informational and Instructional Expenses	-	-
243	(910) Miscellaneous Customer Service and Informational Expenses	(29,144)	216,349
244	TOTAL Customer Service and Informational Expenses (Lines 240 thru 243)	122,533,635	131,731,458
245	7. SALES EXPENSES		
246	Operation		
247	(911) Supervision	-	-
248	(912) Demonstration and Selling Expenses	1,443,815	1,312,511
249	(913) Advertising Expenses	-	-
250	(916) Miscellaneous Sales Expenses	-	-
251	TOTAL Sales Expenses (Total of lines 247 thru 250)	1,443,815	1,312,511
252	8. ADMINISTRATIVE AND GENERAL EXPENSES		
253	Operation		
254	(920) Administrative and General Salaries	191,940,723	146,302,176
255	(921) Office Supplies and Expenses	28,827,748	43,223,865
256	(922) Administrative Expense Transferred-Credit	(70,566,851)	(40,607,955)
257	(923) Outside Service Employed	162,200,263	241,011,453
258	(924) Property Insurance	7,140,661	3,845,284
259	(925) Injuries and Damages	417,756,470	177,165,694
260	(926) Employee Pensions and Benefits	183,552,769	163,050,759
261	(927) Franchise Requirements	47,245,173	43,141,077
262	(928) Regulatory Commission Expense	-	-
263	(929) Duplicate Charges	-	-
264	(930.1) General Advertising Expenses	274,968	-
265	(930.2) Miscellaneous General Expenses	5,699,727	11,357,649
266	(931) Rents	-	-
267	TOTAL Operation (Total of lines 254 thru 266)	974,071,651	788,490,003
268	Maintenance		
269	(935) Maintenance of General Plant	1,425,082	1,683,839
270	TOTAL Administrative and General Exp. (Total of lines 267 and 269)	975,496,733	790,173,842
271	TOTAL Gas O. and M. Exp. (Lines 97, 177, 201, 229, 237, 244, 251, and 270)	3,840,296,607	3,210,083,030

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS USED IN UTILITY OPERATIONS -- CREDIT (Account 810, 811, 812)

1. Report below particulars (details) of credits during the year to Accounts 810, 811 and 812 which offset charges to operating expenses or other accounts for the cost of gas from the respondent's own supply.

2. If any natural gas was used by the respondent for which a change was not made to the appropriate operating expense or other account, list separately in column (c) the Mcf of gas used, omitting entries in columns (d).

Line No.	(a)	Account Charged (b)	Natural Gas: Dth of Gas Used NOTE (A) (c)	Natural Gas: Amount of Credit (d)
1	810 Gas used for Compressor Station Fuel -- Cr	550	1,433,801	4,047,220
2	811 Gas used for Products Extraction -- Cr			
3	Gas Shrinkage and Other Usage in Respdnt's Own Proc.			
4	Gas Shrinkage, Etc. for Respdnt's Gas Processed by Others			
5	812 Gas used for Other Util. Operations -- Cr (Rpt sep. for each prin. use. Group minor uses):			
6	Various Dehydrators and			
7	Station Heaters	550	91,496	258,268
8	Other Company Usage	550	227,427	641,964
9				
10				
11				
12				
13				
14	**NOTE (A):**			
15	Column (c) is an estimated quantity and derived by total Mcf of gas used / total amount of credit * amount of credit			
16	charged to each account			
17				
18				
19				
20				
21	TOTAL		1,752,724	4,947,452

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 4/11/2022	2021/Q4

OTHER GAS SUPPLY EXPENSES (Account 813)

Report other gas supply expenses by descriptive titles which clearly indicate the nature of such expenses. Show maintenance expenses separately. Indicate the functional classification and purpose of property to which any expenses relate.

Line No.	Description (a)	Amount (in dollars) (b)
1	Miscellaneous items	0
2		
3		
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43		
44	TOTAL	0

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 4/11/22	2021/Q4

MISCELLANEOUS GENERAL EXPENSES (Account 930.2) (Gas)

Line No.	Description	Amount
1	Industry Association Dues	9
2	Nuclear Power Research Expenses	0
3	Other Experimental and General Research Expenses	0
4	Publishing and Distributing Information and Reports to Stockholders; Trustee, Registrar, and Transfer Agent Fees and Expenses, and Other Expenses of Servicing Outstanding Securities of the Respondent.	0
5	Other expenses (List items of $5,000 or more in this column showing the (1) purpose, (2) recipient and (3) amount of such items. Group amounts of less than $5,000 may be grouped by classes if the number of items so grouped is shown)	
6	Clearing Account Adjustments	(1,557,851)
7	Intercompany Billing	(44,269)
8	Bank Service Fees	6,997,122
9	Consulting Services, Outside Attorney Fees, and Contracts	329,583
10	Union Negotiation Adjustment	0
11	Non-PO Credit Memo's	(143,046)
12	Reimburseable Expense	948,738
13	Miscellaneous cash receipt (recovery of unclaimed funds)	(481)
14	Write off from miscellaneous reconciliations	(681,087)
15	Disposition of Assets	(153,587)
16	Other miscellaneous adjustments	4,596
	TOTAL	5,699,727

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	End of 2021/Q4

DEPRECIATION, DEPLETION, AND AMORTIZATION OF GAS PLANT (Accounts 403, 404.1, 404.2, 404.3, 405)
(Except Amortization of Acquisition Adjustments)

1. Report in Section A the amounts of depreciation expense, depletion and amortization for the accounts indicated and classified according to the plant functional groups shown.
2. Report all available information called for in Section B for the report year 1971, 1974 and every fifth year thereafter. Report only annual changes in the intervals between the report years (1971, 1974 and every fifth year thereafter).
Report in column (b) all depreciable plant balances to which rates are applied and show a composite total.
(If more desirable, report by plant account, subaccount or functional classifications other than those pre-printed in column (a). Indicate at the bottom of Sec-

Section A. Summary of Depreciation, Depletion, and Amortization Charges

Line No.	Functional Classification (a)	Depreciation Expense (Account 403) (b)	Amortization and Depletion of Producing Natural Gas Land and Land Rights (Account 404.1) (c)	Amortization of Underground Storage Land and Land Rights (Account 404.2) (d)
1	Intangible plant			26,256
2	Production plant, manufactured gas	7,317		
3	Production and gathering plant, natural gas			
4	Products extraction plant			
5	Undergound gas storage plant	54,542,319		
6	Other storage plant	457,353		
7	Base load LNG terminating and processing plant			
8	Transmission plant	169,895,507		
9	Distribution plant	402,304,927		
10	General plant	23,112,460		
11	Common plant-gas	89,562,280		
12				
13				
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22				
23				
24				
25	TOTAL	739,882,163		26,256

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	End of 2021/Q4

DEPRECIATION AND AMORTIZATION OF GAS PLANT (Accounts 403, 404.1, 404.2, 404.3, 405)
(Except amortization of acquisition adjustments)

tion B the manner in which column (b) balances are obtained. If average balances, state the method of averaging used. For column (c) report available information for each plant functional classification listed in column (a). If composite depreciation accounting is used, report available information called for in columns (b) and (c) on this basis. Where the unit-of-production method is used to determine depreciation charges, show at the bottom of Section B any revisions made to estimated gas reserves.
3. If provisions for depreciation were made during the year in addition to depreciation provided by application of reported rates, state at the bottom of Section B the amounts and nature of the provisions and the plant items to which related.

Section A. Summary of Depreciation, Depletion, and Amortization Charges

Amortization of Other Limited-term Gas Plant (Account 404.3) (e)	Amortization of Other Gas Plant (Account 405) (f)	Total (b to f) (g)	Functional Classification (a)	Line No.
510,408		536,664	Intangible plant	1
		7,317	Production plant, manufactured gas	2
		0	Production and gathering plant, natural gas	3
		0	Products extraction plant	4
		54,542,319	Undergound gas storage plant	5
		457,353	Other storage plant	6
		0	Base load LNG terminating and	7
		0	processing plant	
		169,895,507	Transmission Plant	8
		402,304,927	Distribution Plant	9
		23,112,460	General Plant	10
64,664,618		154,226,898	Common Plant-Gas	11
				12
				13
				14
				15
				16
				17
				18
				19
				20
				21
				22
				23
				24
65,175,026	0	805,083,445	TOTAL	25

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 4/11/2022	2021/Q4

EMPLOYEE PENSIONS AND BENEFITS (Account 926)

1. Report below the items contained in Account 926, Employee Pensions and Benefits.

Line No.	Expense (a)	Amount (b)
1	Pensions - defined benefit plans	83,575,942
2	Post-retirement benefits other than pensions (PBOP)	10,601,555
3	Long-term disability plan	3,244,566
4	Retirement Savings Plan (401K)	16,414,218
5	Active Health Cares	58,474,999
6	Short-Term Disability & Paid Family Leave	2,087,235
7	Others (consulting, workers comp, employee recruting and relocation, etc.)	9,154,254
8		
9		
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24		
25		
26		
	TOTAL	183,552,769

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 4/11/2022	2021/Q4

CHARGES FOR OUTSIDE PROFESSIONAL AND OTHER CONSULTATIVE SERVICES

1. Report the information specified below for all charges made during the year included in any account (including plant accounts) for outside consultative and other professional services. (These services include rate, management, construction, engineering, research, financial, valuation, legal, accounting, purchasing, advertising, labor relations, and public relations, rendered the respondent under written or oral arrangement for which aggregate payments were made during the year to any corporation, partnership, organization of any kind, or individual [other than for services as an employee or for payments made for medical and related services] amounting to more than $250,000, including payments for legislative services, except those which should be reported in Account 426.4 Expenditures for Certain Civic, Political and Related Activities

(a) Name and address of person or organization rendering services.

(b) total charges for the year

2. Sum under a description "Other", all of the aforementioned services amounting to $250,000 or less.

3. Total under a description "Total", the total of all the aforementioned services.

4. Charges for outside professional and other consultative services provided by associated (affiliated) companies should be excluded from this schedule and reported on Page 358, according to the instructions for that schedule.

Details of this page have been filed with the California Public Utilities Commission.

Name of Respondent STANDARD PACIFIC GAS LINE INC	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr) 4/11/2022	Year of Report 2021/Q4

TRANSACTIONS WITH ASSOCIATED (AFFILIATED) COMPANIES

1. Report below the information called for concerning all goods or services received from or provided to associated (affiliated) companies amounting to more than $250,000.
2. Sum under a description "Other", all of the aforementioned goods and services amounting to $250,000 or less.
3. Total under a description "Total", the total of all of the aforementioned goods and services.
4. Where amounts billed to or received from the associated (affiliated) company are based on an allocation process, explain in a footnote the basis of the allocation.

Line No.	Description of the Good or Service (a)	Name of Associated/Affiliated Company (b)	Accounts Charged or Credited (c)	Amount Charged or Credited (d)
1	**Goods or Services Provided by Affiliated Company**			
2				
3	Gas Transmission Support	Pacific Gas & Electric Company	863, 865, 857, 408.1, 107,108	3,743,752
4				
5				
6				
7			-	-
8			-	-
9			-	-
10			-	-
11			-	-
12			-	-
13			-	-
14			-	-
15			-	-
16			-	-
17			-	-
18			-	-
19			-	-
20	**Goods or Services Provided for Affiliated Company**			
21				
22	Gas Transmission Expense	Pacific Gas & Electric Company	489	6,187,381
23			-	-
24	Gas Tranmission Expense	Chevron	489	1,031,230
25			-	-
26			-	-
27			-	-
28			-	-
29			-	-
30			-	-
31			-	-
32			-	-
33			-	-
34			-	-
35			-	-
36			-	-
37			-	-
38			-	-
39			-	-
40			-	-

Name of Respondent	This Report is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 4/11/2022	2021/Q4

SOR STATIONS

1. Report below particulars (details) concerning compressor stations. Use the following subheadings: field compressor stations, products extraction compressor stations, underground storage compressor stations, transmission compressor stations, distribution compressor stations, and other compressor stations.
2. For column (a), indicate the production areas where such stations are used. Relatively small field compressor stations may be grouped by production areas. Show the number of stations grouped. Designate any station held under a title other than full ownership. State in a footnote the name of owner or co-owner, the nature of respondent's

Line No.	Station and Location (a)	Number of Units at Station (b)	Plant Cost (c)
1	UNDERGROUND STORAGE COMPRESSORS		
2			
3	Los Medanos, K-1	1	40,011,590
4			
5	Gill Ranch Storage Field, 5 electric compressor **(A)**		12,958,949
6			
7	McDonald Island, K-1		
8	McDonald Island, K-2		
9	McDonald Island, K-7 (Rental)		
10	McDonald Island, K-8 (Rental)		
11	McDonald Island, K-9 (Rental)		
12	Total McDonald Island	5	116,574,656
13			
14	Pleasant Creek, K-8	1	6,406,319
15			
16	TOTAL UNDERGROUND STORAGE COMPRESSORS	7	175,951,515
17			
18	TRANSMISSION LINE COMPRESSORS		
19			
20	Topock (9 Units)	9	147,996,993
21	Hinkley (12 Units)	12	215,187,443
22	Kettleman, K-1, K-2, & K-3	3	96,362,357
23	Tionesta, K-1	1	32,455,815
24	Burney, K-2	1	126,201,088
25	Gerber, K-1	1	57,916,881
26	Delevan, K-1, K-2, & K-3	3	160,370,648
27	Bethany, K-1 & K-2	2	67,324,577
28	Santa Rosa, K-1 & K-2	2	17,719,902
29			
30	TOTAL TRANSMISSION LINE COMPRESSORS	34	921,535,705
31			
32	GRAND TOTAL	41	1,097,487,220
33			
34	**NOTES:**		
35	**(A)** The Utility owns 25% of Gill Ranch Storage Field, while		
36	the Gill Ranch Storage, LLC is the operator of the facility.		
37			

Name of Respondent	This Report is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 4/11/2022	2021/Q4

COMPRESSOR STATIONS

title, and percent of ownership, if jointly owned. Designate any station that was not operated during the past year. State in a footnote whether the book cost of such station has been retired in the books of account, or what disposition of the station and its book cost are contemplated. Designate any compressor units in transmission compressor stations installed and put into operation during the year and show in a footnote the size of each such unit, and the date each such unit was placed in operation.
3. For column (d), include the type of fuel or power if other than natural gas. If two types of fuel or power are used, show separate entries for natural gas and other fuel or power.

Expenses (Except deprec.& taxes)			Operation Data			
Fuel or Power (d)	Other (e)	Gas for Compressor Fuel Mcf (14.73 psia at 60 F) (f)	Total Compressor Hours of Operation During Year (g)	No. of Compressors Operated at Time of Station Peak (h)	Date of Station Peak (i)	Line No.
						1
						2
948,723	213,276	47,004	1,655	1	4/8/2021	3
						4
		(ELECTRIC)				5
						6
		(ELECTRIC)	1,438	1	5/22/2021	7
		(ELECTRIC)	1,751	1	5/22/2021	8
			2,445	1	5/22/2021	9
			2,359	1	5/22/2021	10
			2,379	1	5/22/2021	11
1,710,180	1,336,558	84,730	10,370	5	5/22/2022	12
						13
0	0	0	0	0	N/A	14
						15
2,658,902	1,549,834	131,734	12,025	6		16
						17
						18
						19
496,482	1,484,255	591,380	26,040	7	12/27/2021	20
864,186	1,943,093	1,029,368	34,090	8	12/26/2021	21
268,228	314,803	319,497	5,523	2	5/18/2021	22
531,598	290,464	633,209	5,096	1	9/26/2021	23
880,317	436,266	1,048,582	7,654	1	10/24/2021	24
785,148	398,590	935,222	6,993	1	3/20/2021	25
497,661	1,260,408	592,785	22,113	3	5/26/2021	26
21,219,987	199,774	(ELECTRIC)	3,505	1	12/29/2021	27
708,362	6,669	(ELECTRIC)	117	0	1/26/2021	28
						29
26,251,969	6,334,323	5,150,043	111,131	24		30
						31
28,910,871	7,884,157	5,281,777	123,156	30		32
						33
						34
						35
						36
						37

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY		4/11/2022	2021/Q4

GAS STORAGE PROJECTS

1. Report injections and withdrawals of gas for all storage projects used by respondent.

Line No.	Item	Gas Belonging to Respondent **(Dth)**	Gas Belonging to Others **(Dth)**	Total Amount **(Dth)**
	(a)	(b)	(c)	(d)
	STORAGE OPERATIONS (In Dth)			
1	Gas Delivered to Storage			
2	January	165,503	1,454,303	1,619,806
3	February	218,203	737,475	955,678
4	March	279,356	987,198	1,266,554
5	April	573,561	3,500,976	4,074,537
6	May	682,162	5,026,732	5,708,894
7	June	1,135,989	2,432,615	3,568,604
8	July	245,115	825,194	1,070,309
9	August	100,724	2,103,409	2,204,133
10	September	184,464	2,280,843	2,465,307
11	October	85,374	502,626	588,000
12	November	-	2,660,792	2,660,792
13	December	313,280	1,139,206	1,452,486
14	TOTAL (Total of lines 2 thru 13)	3,983,731	23,651,369	27,635,100
15	Gas Withdrawn from Storage			
16	January	-	4,413,285	4,413,285
17	February	2,701,000	5,792,193	8,493,193
18	March	432,000	3,225,638	3,657,638
19	April	-	746,773	746,773
20	May	-	427,832	427,832
21	June	-	1,820,283	1,820,283
22	July	-	4,048,239	4,048,239
23	August	-	3,693,777	3,693,777
24	September	-	3,046,650	3,046,650
25	October	-	4,412,316	4,412,316
26	November	-	2,196,424	2,196,424
27	December	1,319,000	5,715,742	7,034,742
28	TOTAL (Total of lines 16 thru 27)	4,452,000	39,539,152	43,991,152

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GAS STORAGE PROJECTS (Continued)

1. On line 4, enter the total storage capacity certificated by FERC.
2. Report total amount in Dth or other unit, as applicable on lines 2, 3, 4, 7. If quantity is converted from Mcf to Dth, provide conversion factor in a footnote.

Line No.	Item (a)	Total Amount (b)
	STORAGE OPERATIONS (In **Mcf**)	
1	Top or Working Gas End of Year	9,236,887
2	Cushion Gas (Including Native Gas)	122,823,094
3	Total Gas in Reservoir (Total of line 1 and 2)	132,059,981
4	Certificated Storage Capacity *	56,098,233
5	Number of Injection -- Withdrawal Wells	101
6	Number of Observation Wells	12
7	Maximum Day's Withdrawal from Storage	973,750
8	Date of Maximum Day's Withdrawal	02/15/2021
9	LNG Terminal Companies (in Dth)	
10	Number of Tanks	
11	Capacity of Tanks	
12	LNG Volumes	
13	a) Received at "Ship Rail"	
14	b) Transferred to Tanks	
15	c) Withdrawn from Tanks	
16	d) "Boil Off" Vaporization Loss	
17	e) Converted to Mcf at Tailgate of Terminal	

* Certificated Working Storage Capacity

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	TRANSMISSION LINES OPERATED BY RESPONDENT:	
1	2	124.4
2	021A	20.3
3	021B	19.8
4	021C	22.5
5	021D	14.4
6	021E	86.5
7	021F	22.2
8	021G	22.1
9	021H	14.1
10	050A	47.4
11	050B	7.8
12	100	14.3
13	101	50.4
14	103	26.9
15	105A	13.6
16	105B	15.3
17	105C	2.1
18	105N	32.5
19	107	15.5
20	108	83.7
21	109	58.7
22	111A	35.9
23	111B	7.1
24	112	0.4
25	114	35.8
26	116	10.3
27	118	0
28	118A	69.5
29	118B	39.8
30	118D	6.1
31	118E	0.7
32	118F	1

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	TRANSMISSION LINES OPERATED BY RESPONDENT (CONTINUED):	
33	118G	6.3
34	119A	17.9
35	119B	12.3
36	119C	8
37	119D	3.9
38	120	0.4
39	121	12.5
40	123	15.1
41	124A	27.5
42	124B	4.9
43	124C	3.9
44	125	1.3
45	125A	0
46	125B	0
47	126A	12.8
48	126B	9
49	126C	0.4
50	126D	3.7
51	128	15.5
52	130	0.5
53	131	39.3
54	131Y	0.2
55	131Z	0.7
56	132	57
57	132A	1.8
58	132B	0.5
59	134A	35.1
60	134B	5.5
61	136	7.9
62	137A	3.7
63	137B	7.5
64	137C	8.7

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	TRANSMISSION LINES OPERATED BY RESPONDENT (CONTINUED):	
65	137D	3.3
66	138	36.6
67	138A	16.3
68	138B	15.1
69	138C	6.6
70	138D	2
71	138E	1.6
72	142N	15.4
73	142S	11.9
74	143	0
75	147	4.2
76	148	19.9
77	150	12
78	151	13.6
79	153	31.9
80	156	4.6
81	158	2.6
82	159	4.1
83	162A	9.4
84	162B	0
85	164	5
86	167	43.6
87	168	2.9
88	169	10.6
89	169A	11.9
90	169B	13.6
91	172A	81.4
92	172B	0.6
93	172C	0.3
94	172D	3.2
95	173	24.7
96	173B	0

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	TRANSMISSION LINES OPERATED BY RESPONDENT (CONTINUED):	
97	174	4.7
98	176	1.2
99	177	0
100	177A	195.6
101	177B	7.6
102	177E	1.2
103	181A	10.8
104	181B	11.9
105	182	13.8
106	182B	6
107	186	27.5
108	187	67
109	189	1.8
110	190	16.3
111	191	38.6
112	191A	4.9
113	191B	1.6
114	193	16.1
115	194	0
116	195	5.3
117	195A	1.7
118	195B	0.5
119	195Y	0.5
120	195Z	0.5
121	196	0
122	196A	13.9
123	196B	4.4
124	197A	41.6
125	197B	5.6
126	197C	28.9
127	200	1.8
128	200A	16.7

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Line No.	Designation (Identification) of Line or Group of Lines (a)		Total Miles of Pipe (b)
	TRANSMISSION LINES OPERATED BY RESPONDENT (CONTINUED):		
129	200B		5.4
130	200C		10.6
131	202		23.6
132	206		0.7
133	207		0
134	209		4.1
135	210		0
136	210A		27.3
137	210B		29.4
138	210C		18.2
139	210D		1.5
140	213		0
141	214		0
142	215		27.9
143	220		36.3
144	222		2.3
145	300		0.5
146	300A	See Note A	512.9
147	300B	See Note A	522.9
148	301A		25.3
149	301B		14.2
150	301C		3.2
151	301D		1.8
152	301E		1
153	301F		8.8
154	301G		26.7
155	301H		1.8
156	302		56.1
157	302E		37.7
158	302W		5.8
159	303		45.5
160	304		11.2

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)		Total Miles of Pipe (b)
	TRANSMISSION LINES OPERATED BY RESPONDENT (CONTINUED):		
161	306		2.1
162	307A		16.5
163	307B		5
164	310		38.8
165	311		61.2
166	312		7.9
167	313		34.7
168	314		43.9
169	314A		0.3
170	314B		0.1
171	316N		0.3
172	318		1.3
173	319	See Note A	2.3
174	320		0.6
175	331A		8.6
176	331B		7.7
177	331C		1.8
178	337		0
179	340		0
180	351		14.7
181	352		15.2
182	372		3.8
183	375		17.9
184	375A		3
185	375B		0.7
186	375C		0.4
187	375D		0.3
188	376		1.6
189	379		3.6
190	400		310.8
191	401	See Note A	433.1
192	402		43.4

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)		Total Miles of Pipe (b)
	TRANSMISSION LINES OPERATED BY RESPONDENT (CONTINUED):		
193	402B		3.2
194	403		1.4
195	404		3.4
196	405		0
197	406		14.1
198	407		26.8
199	408		0.1
200	RYER	See Note A	0.6
201	Stanpac 3	See Note A	33.9
202	Stanpac 4	See Note A	12.2
203	Stanpac 5	See Note A	6
204	LosMedanos		1.9
205	McDonald		39.2
206	PleasantCrk		2.1
207			
208			
209			
210			
211			
212			
213			
214			
215			
216			
217			
218			
219			
220	SUBTOTAL		4,892.00
221			
222			
223			
224			

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS	
225	0103-01	0.1
226	0107-02	0.8
227	0109-01	1.8
228	0111-02	5.2
229	0111-08	0.2
230	0111-17	0.1
231	0112-01	0.6
232	0112-03	0.1
233	0112-04	0
234	0112-05	0.1
235	0112-06	0
236	0112-08	0.7
237	0115-01	0
238	0116-01	0
239	0117-01	1.3
240	0117-03	0
241	0117-04	0.1
242	0117-05	0.1
243	0117-07	0.2
244	0117-08	0.1
245	0118-01	0
246	0126-01	1.9
247	0126-03	0.7
248	0126-04	0
249	0128-01	1.9
250	0131-01	1.1
251	0131-02	0.2
252	0132-01	0.9
253	0133-01	0.3
254	0133-03	0.7
255	0133-04	0
256	0133-05	0.6

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
257	0133-06	0.1
258	0133-07	0.1
259	0135-01	0.5
260	0135-02	0
261	0136-01	1.7
262	0136-02	0
263	0136-04	0.2
264	0136-05	0.1
265	0136-10	0.3
266	0136-11	0
267	0137-01	0.1
268	0139-01	0.2
269	0140-01	1
270	0140-03	0.2
271	0201-01	0.7
272	0203-01	1
273	0203-05	0.1
274	0203-08	0
275	0204-01	1.8
276	0205-01	1
277	0206-01	0.8
278	0207-01	1.2
279	0208-01	2.5
280	0209-01	0.8
281	0210-01	6.5
282	0211-01	0.7
283	0213-02	4.3
284	0214-01	1.7
285	0215-01	1
286	0217-01	2.6
287	0220-01	0.6
288	0224-01	0.1

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
289	0401-01	9.8
290	0401-13	1.9
291	0401-15	0
292	0402-01	6.1
293	0402-05	2.5
294	0403-01	3.9
295	0403-09	0
296	0403-11	0
297	0403-13	0
298	0404-01	3.6
299	0404-02	0.1
300	0404-03	0
301	0404-04	2.7
302	0404-07	0.2
303	0404-08	0.6
304	0404-11	0.1
305	0404-13	1.3
306	0405-01	28.7
307	0405-02	2
308	0405-12	0.1
309	0406-01	6
310	0406-03	2
311	0406-08	0.6
312	0407-01	12.1
313	0408-01	3
314	0408-02	1.5
315	0408-03	0.2
316	0409-01	2.4
317	0410-01	0.4
318	0413-03	0
319	0600-01	2.4
320	0600-05	2.8

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
321	0600-06	0
322	0601-01	3.3
323	0601-05	0.9
324	0602-01	5.2
325	0603-02	2.9
326	0604-01	6.6
327	0604-03	1.5
328	0604-04	1.8
329	0604-06	2.9
330	0604-07	6.2
331	0604-08	0
332	0604-16	0.2
333	0604-17	0.2
334	0604-19	0.1
335	0604-23	0
336	0605-01	7.1
337	0605-03	2.8
338	0606-01	9.4
339	0606-02	1.9
340	0606-03	0.2
341	0606-06	0
342	0607-01	8.2
343	0607-02	0.9
344	0607-03	0.7
345	0608-01	5.7
346	0608-04	0.2
347	0609-02	2.5
348	0609-03	0.4
349	0611-01	1.1
350	0611-02	4.7
351	0611-05	0.1
352	0611-06	0.1

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	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
353	0611-07	0.4
354	0611-08	0.1
355	0611-09	23.9
356	0611-15	1
357	0611-16	3
358	0611-17	1.7
359	0611-18	7.5
360	0611-22	0
361	0611-29	0
362	0611-39	0
363	0613-01	5.3
364	0613-02	0.4
365	0613-09	0.6
366	0614-03	1.4
367	0614-04	4.9
368	0614-05	0.9
369	0614-06	0
370	0614-08	7.3
371	0614-09	0.2
372	0614-10	0.1
373	0614-11	0.2
374	0614-13	2.3
375	0614-14	0
376	0614-15	0
377	0614-16	0
378	0614-17	1.8
379	0614-18	0
380	0614-20	6.7
381	0614-24	1.1
382	0614-25	0.6
383	0615-01	6.2
384	0615-02	0.5

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

TRANSMISSION LINES

1. Report below by States the total miles of transmission lines of each transmission system operated by respondent at end of year.
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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
385	0616-01	1.5
386	0616-02	0.3
387	0616-04	0
388	0617-01	1.2
389	0617-03	1.7
390	0617-06	22.3
391	0617-07	1.3
392	0617-08	3.4
393	0617-09	0.5
394	0617-10	6
395	0617-14	3.6
396	0617-15	1
397	0617-16	1.1
398	0618-02	0
399	0618-03	3.5
400	0618-05	1.4
401	0618-10	1.5
402	0619-01	0
403	0619-04	0.4
404	0619-05	3.2
405	0621-01	1.1
406	0626-01	3.4
407	0626-06	0.2
408	0627-01	0.9
409	0630-01	17
410	0630-06	0.1
411	0632-01	3.7
412	0634-01	6.1
413	0635-01	1.2
414	0637-01	1.3
415	0638-02	3.5
416	0639-01	5.1

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PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
417	0639-02	0.2
418	0643-01	0.9
419	0644-01	0.5
420	0645-01	2.4
421	0646-01	1.1
422	0647-01	3.2
423	0648-01	0.1
424	0650-01	1.4
425	0651-01	1.9
426	0801-01	0.5
427	0804-01	1.2
428	0804-03	3.6
429	0804-05	0.7
430	0804-08	0.4
431	0804-10	0.3
432	0804-11	0.3
433	0804-12	0
434	0804-14	0.9
435	0804-16	0.2
436	0805-01	1.8
437	0806-01	3
438	0807-01	0.5
439	0809-01	2.2
440	0812-01	1.2
441	0813-01	1.4
442	0813-02	0.5
443	0813-07	0.3
444	0813-08	4.1
445	0813-09	1.1
446	0813-13	3.8
447	0814-04	0
448	0814-05	0.4

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
449	0817-01	3.2
450	0820-01	1.2
451	0821-01	11.8
452	0821-02	13.6
453	0822-01	0.9
454	0824-01	1.1
455	0824-02	3.8
456	0826-01	1
457	0829-01	0.8
458	0832-01	2.4
459	0832-02	0.4
460	0833-01	7
461	0833-02	0.1
462	0833-03	0
463	0833-04	2
464	0834-01	0.4
465	0837-01	1.6
466	0840-01	3
467	1001-01	3.6
468	1002-01	0.6
469	1004-01	4.8
470	1004-03	3
471	1004-05	0
472	1004-11	0.2
473	1009-01	1.9
474	1012-01	3.5
475	1016-01	2
476	1017-01	1
477	1019-01	2.6
478	1020-01	0
479	1022-01	3
480	1023-01	3

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
481	1024-01	2.2
482	1024-02	0
483	1025-01	0.4
484	1026-01	4.4
485	1026-03	0
486	1027-01	8.7
487	1027-02	0.2
488	1027-03	0.2
489	1027-04	1.6
490	1027-08	1.3
491	1027-09	1.7
492	1027-12	1
493	1027-15	1.7
494	1027-17	0.6
495	1029-01	1.4
496	1030-01	1.1
497	1030-02	0.8
498	1033-01	2
499	1035-05	6.7
500	1039-01	3.3
501	1041-02	0.1
502	1042-01	7.5
503	1043-01	0.1
504	1201-02	2
505	1202-01	3.1
506	1202-02	2.4
507	1202-03	0.9
508	1202-04	2.4
509	1202-05	3.3
510	1202-06	3.7
511	1202-08	2.7
512	1202-09	3.6

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
513	1202-11	4.7
514	1202-12	2.2
515	1202-14	0.1
516	1202-16	4.7
517	1202-17	2.8
518	1202-18	4.1
519	1202-19	4.2
520	1202-21	0.1
521	1202-22	0.3
522	1203-01	3.4
523	1204-01	3.5
524	1205-02	4.1
525	1205-03	0
526	1207-01	5.8
527	1207-02	1.5
528	1209-01	10.1
529	1209-02	7.9
530	1209-05	5.2
531	1209-06	5.8
532	1210-01	0
533	1211-01	7
534	1211-02	2.6
535	1211-03	6
536	1211-04	4.7
537	1212-01	6.5
538	1213-01	3.6
539	1217-01	4.1
540	1218-01	7.5
541	1219-01	7.1
542	1220-01	0.9
543	1221-01	0.2
544	1222-01	1.1

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
545	1223-01	1.8
546	1301-01	4.9
547	1302-01	1.8
548	1302-02	12.9
549	1302-03	0
550	1302-05	0.1
551	1302-07	0.3
552	1303-01	9.3
553	1303-02	0.1
554	1303-03	0.9
555	1303-05	2.7
556	1303-06	0.1
557	1304-01	2
558	1305-01	28.7
559	1305-02	0.7
560	1305-07	0.3
561	1305-37	0.2
562	1305-45	1.9
563	1306-01	4.2
564	1307-01	10
565	1307-02	1.3
566	1307-06	0.1
567	1307-08	0.2
568	1309-01	3.6
569	1310-01	1.4
570	1311-01	2.2
571	1312-01	1
572	1312-02	0.7
573	1313-01	0.5
574	1401-01	0.2
575	1402-01	0.3
576	1405-01	0.5

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
577	1405-02	0
578	1501-01	10
579	1501-02	5.8
580	1501-13	0.4
581	1502-01	0
582	1502-02	5
583	1502-06	0
584	1502-08	0.3
585	1502-09	1.6
586	1502-11	7
587	1502-12	0.1
588	1504-01	0.8
589	1504-02	1.3
590	1504-03	0.7
591	1504-04	0
592	1508-01	3.6
593	1509-01	1.8
594	1509-02	0
595	1509-03	0.3
596	1509-04	1.8
597	1509-05	6.6
598	1509-06	0
599	1510-01	2.3
600	1511-01	10.7
601	1512-01	1
602	1512-02	0
603	1512-03	0.2
604	1512-04	0.6
605	1512-05	0.3
606	1513-01	0.3
607	1513-02	0.5
608	1514-01	2.1

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
609	1514-02	0
610	1516-01	0.7
611	1518-01	1.7
612	1518-02	1.8
613	1518-03	4
614	1519-01	4.4
615	1519-04	1
616	1520-01	1.2
617	1521-01	2.6
618	1522-01	0.4
619	1523-01	2.6
620	1601-01	0.1
621	1601-03	6.8
622	1601-04	0.6
623	1601-09	0.6
624	1602-01	3.4
625	1603-01	4.2
626	1603-03	0.4
627	1606-01	2.2
628	1607-01	2.2
629	1608-01	3.2
630	1608-03	1.4
631	1609-01	5.1
632	1611-01	1.7
633	1611-03	4.2
634	1611-04	0.7
635	1613-01	2.7
636	1613-05	2.1
637	1613-06	2
638	1614-01	4
639	1614-02	2.6
640	1614-04	0.7

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
641	1614-08	1
642	1614-09	0.3
643	1614-13	3.5
644	1614-20	0
645	1615-01	19.2
646	1615-04	7.8
647	1615-07	0.3
648	1616-01	2.7
649	1616-02	1.6
650	1617-01	1.1
651	1619-01	1.7
652	1621-01	2
653	1622-01	1
654	1624-01	1.4
655	1626-01	3.9
656	1630-01	2.1
657	1640-01	0.8
658	1641-01	0.7
659	1642-01	0.1
660	1805-01	3.5
661	1805-02	0.4
662	1812-13	2.1
663	1813-02	15.8
664	1813-06	0
665	1815-02	15.4
666	1815-15	4.9
667	1816-01	21.2
668	1816-05	1.2
669	1816-15	6.3
670	1816-20	1
671	1816-50	1.1
672	1817-01	9.4

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
673	1817-03	6.2
674	1818-01	14.7
675	1818-50	0
676	1819-01	3.6
677	1822-01	3.7
678	1823-01	1.7
679	1869-01	0.2
680	1880-02	1.3
681	1880-08	0
682	1881-01	2.7
683	2402-01	4.7
684	2403-01	4.9
685	2403-02	2.7
686	2403-12	3
687	2403-13	0.8
688	2404-01	0
689	2405-01	0.6
690	2406-01	0.6
691	2407-01	4
692	2408-01	5.7
693	2408-03	0.3
694	2408-04	3.1
695	2408-05	10.7
696	2408-08	0
697	2408-11	8.7
698	2408-12	2.2
699	2408-17	3.5
700	2408-18	0.1
701	2410-01	1
702	2412-01	0
703	3001-01	3.2
704	3001-05	1.1

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
705	3002-01	6.1
706	3003-02	0.5
707	3003-03	0.3
708	3004-01	1.3
709	3006-01	6.2
710	3007-02	0.3
711	3008-01	8.3
712	3009-01	0
713	3010-01	1.4
714	3012-01	1.9
715	3012-03	0.1
716	3012-04	0
717	3014-01	1.4
718	3015-01	1.1
719	3017-01	7.6
720	3017-11	0
721	3019-01	0.5
722	3019-02	1.2
723	3021-01	0.2
724	3022-01	1
725	3022-04	0.2
726	6601-01	0.7
727	6602-01	5.5
728	6603-01	11.4
729	6605-01	9.1
730	6606-01	2
731	6607-01	0.4
732	6612-01	2.5
733	6614-01	1.3
734	6614-02	0.5
735	6614-03	0.8
736	6624-01	0.8

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	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
737	6625-01	4.9
738	6635-02	0.3
739	6635-03	0.4
740	7201-01	1.6
741	7202-01	5.4
742	7202-02	0.9
743	7203-01	6.3
744	7203-02	1.3
745	7204-01	3
746	7205-01	5.8
747	7206-01	3.5
748	7207-01	1.5
749	7208-01	4.5
750	7209-01	9.7
751	7209-02	0.7
752	7209-03	2.8
753	7209-04	0.3
754	7210-01	8.2
755	7211-01	4
756	7211-02	0.8
757	7212-01	6.6
758	7212-03	0.7
759	7214-01	0.8
760	7215-01	3.7
761	7215-02	0.5
762	7216-01	3.2
763	7216-02	3.6
764	7216-03	11.7
765	7217-01	2.9
766	7217-04	0.8
767	7218-01	1.5
768	7219-01	3.8

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY		4/11/2022	2021/Q4

TRANSMISSION LINES

1. Report below by States the total miles of transmission lines of each transmission system operated by respondent at end of year.
2. Report separately any lines held under a title other than full ownership. Designate such lines with an asterisk and in a footnote state the name of owner or co-owner, nature of respondent's title, and percent ownership if jointly owned.
3. Report separately any line that was not operated during the past year. Enter in a footnote the particulars (details) and state whether the book cost of such a line, or any portion thereof, has been retired in the books of account, or what disposition of the line and its book cost are contemplated.
4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
769	7220-01	16.1
770	7221-10	8.9
771	7221-15	3.9
772	7221-16	2.7
773	7222-01	24.7
774	7223-01	0.2
775	7224-01	6.3
776	7224-06	0
777	7224-07	2.4
778	7224-09	2.4
779	7224-12	1
780	7224-15	0.8
781	7224-16	0
782	7224-17	0.2
783	7224-19	1.8
784	7225-01	1.6
785	7226-01	5.6
786	7226-02	4.7
787	7226-13	0.3
788	7227-01	5.1
789	7227-05	1.3
790	7228-01	10.5
791	7228-04	0.1
792	7228-09	2.3
793	7228-13	3.1
794	7228-16	6
795	7228-17	5
796	7228-19	0.8
797	7228-20	5.4
798	7228-25	0.3
799	7228-28	0.1
800	7228-29	1

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

TRANSMISSION LINES

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2. Report separately any lines held under a title other than full ownership. Designate such lines with an asterisk and in a footnote state the name of owner or co-owner, nature of respondent's title, and percent ownership if jointly owned.
3. Report separately any line that was not operated during the past year. Enter in a footnote the particulars (details) and state whether the book cost of such a line, or any portion thereof, has been retired in the books of account, or what disposition of the line and its book cost are contemplated.
4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
801	7228-35	0.4
802	7228-36	1.4
803	7228-50	0.4
804	7229-01	4
805	7231-01	1.8
806	8802-01	4.1
807	8805-03	6.3
808	8805-04	4.6
809	8805-23	1.1
810	8806-01	5.9
811	8807-01	8.5
812	8807-02	0
813	8809-04	0.9
814	8832-01	0
815	Other Services	2.1
816	UTREG	0.7
817		
818		
819		
820		
821		
822		
823		
824		
825		
826		
827		
828		
829		
830		
831		
832		

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

TRANSMISSION LINES

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3. Report separately any line that was not operated during the past year. Enter in a footnote the particulars (details) and state whether the book cost of such a line, or any portion thereof, has been retired in the books of account, or what disposition of the line and its book cost are contemplated.
4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
	Distributor Feeder Mains (DFM) Operating over 20% SMYS (Continued)	
833		
834		
835		
836		
837		
838		
839		
840		
841		
842		
843		
844		
845		
846		
847		
848		
849		
850		
851		
852		
853		
854		
855		
856		
857		
858		
859	SUBTOTAL DFM	1,524.80
860		
861		
862	TOTAL TRANSMISSION LINES OPERATED BY RESPONDENT	6,416.80
863		
864		

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

TRANSMISSION LINES

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2. Report separately any lines held under a title other than full ownership. Designate such lines with an asterisk and in a footnote state the name of owner or co-owner, nature of respondent's title, and percent ownership if jointly owned.
3. Report separately any line that was not operated during the past year. Enter in a footnote the particulars (details) and state whether the book cost of such a line, or any portion thereof, has been retired in the books of account, or what disposition of the line and its book cost are contemplated.
4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)			Total Miles of Pipe (b)
865	**NOTE (A): LINES HELD UNDER A TITLE OTHER THAN FULL OWNERSHIP:**			
866			PGE %	
867	Line Designation	Co-Owner	Ownership	
868	300A	SMUD (1)	96.43	399
869	300B	SMUD (2)	96.43	396.9
870	319	So. Cal. Gas	50	11.3
871	401	SMUD (3)	95.75	428.7
872	RYER	Chevron USA (4)	85.71	0.6
873	SP3	Chevron USA (4)	85.71	33.9
874	SP4	Chevron USA (4)	85.71	12.2
875	SP5	Chevron USA (4)	85.71	6
876				
877				
878				
879	TOTAL LINES HELD UNDER A TITLE OTHER THAN FULL OWNERSHIP			1,288.60
880				
881				
882	TRANSMISSION LINES NOT OPERATED LAST YEAR:			NONE
883				
884				
885	NOTES:			
886	(1) Total length of Line 300A is 512.9 of which only 399.0 miles are held			
887	under a title other than full ownership.			
888	(2) Total length of Line 300B is 522.9 of which only 396.9 miles are held			
889	under a title other than full ownership.			
890	(3) Total length of Line 401 is 433.1 of which only 428.7 miles are held			
891	under a title other than full ownership.			
892	(4) Standard Pacific Gas Line Incorporated, the owner of these lines, is a corporation			
893	owned jointly by Pacific Gas and Electric Company and Chevron USA.			
894				
895				
896				

Name of Respondent	This Report Is:	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) [X] An Original (2) [ ] A Resubmission	4/11/2022	2021/Q4

Transmission System Peak Deliveries

1. Report below the total transmission system deliveries of gas (in Dth), excluding delivieries to storage, for the period of system peak deliveries indicated below, during the 12 months embracing the heating system overlapping the year's end for which this report is submitted. The season's peak normally will be reached before the due date of this report, April 30, which permits inclusion of the peak information required on this page. Add rows as necessary to report all data. Number additional rows 6.01, 6.02, etc.

Line No.	Description	Dth of Gas Delivered to Interstate Pipelines (b)	Dth of Gas Delivered to Others (c)	Total (b) + (c) (d)
	SECTION A: SINGLE DAY PEAK DELIVERIES			
1				
2	Volumes of Gas Transported			
3	No-Notice Transportation			
4	Other Firm Transportation (2)		2,294,501	2,294,501
5	Interruptible Transportation (2)		1,171,863	1,171,863
6				
7	TOTAL		3,466,364	3,466,364
8	Volumes of gas Withdrawn from Storage under Storage Contract			
9	No-Notice Storage			
10	Other Firm Storage		6,356	6,356
11	Interruptible Storage (1)		258,496	258,496
12				
13	TOTAL		264,852	264,852
14	Other Operational Activities			
15	Gas Withdrawn from Storage for System Operations		333,540	333,540
16	Reduction in Line Pack		50,000	50,000
17				
18	TOTAL		4,114,756	4,114,756
19	SECTION B: CONSECUTIVE THREE-DAY PEAK DELIVERIES			
20				
21	Volumes of Gas Transported			
22	No-Notice Transportation			
23	Other Firm Transportation (2)		6,799,587	6,799,587
24	Interruptible Transportation (2)		3,640,807	3,640,807
25				
26	TOTAL		10,440,394	10,440,394
27	Volumes of gas Withdrawn from Storage under Storage Contract			
28	No-Notice Storage			
29	Other Firm Storage		18,506	18,506
30	Interruptible Storage (1)		598,534	598,534
31				
32	TOTAL		617,040	617,040
33	Other Operational Activities			
34	Gas Withdrawn from Storage for System Operations		942,480	942,480
35	Reduction in Line Pack		(113,000)	(113,000)
36				
37	TOTAL		11,886,914	11,886,914

(1) PG&E's Park/Lend Service

(2) Includes gas withdrawn from Independent Storage Providers in PG&E's service territory

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY		4/11/2022	2021/Q4

AUXILIARY PEAKING FACILITIES

1. Report below auxiliary facilities of the respondent for meeting seasonal peak demands on the respondent`s system, such as underground storage projects, liquefied petroleum gas installations, gas liquefaction plants, oil gas sets, etc.
2. For column (c), for underground storage projects, report the delivery capacity on February 1 of the heating season overlapping the year-end for which this report is submitted. For other facilities, report the rated maximum daily delivery capacities.
3. For column (d), include or exclude (as appropriate) the cost of any plant used jointly with another facility on the basis of predominant use, unless the auxiliary peaking facility is a separate plant as contemplated by general instruction 12 of the Uniform System of Accounts.

Line No.	Location of Facility	Type of Facility	Maximum Daily Delivery Capacity of Facility, Mcf at 14.73 psia at 60 degrees F	Cost of Facility (In dollars)	Was Facility Operated on Day of Highest Transmission Peak Delivery?	
					Yes	No
	(a)	(b)	(c) **(A)**	(d)	(e)	(f)
1	Gill Ranch **(B)**	Underground Storage	70,173	79,189,015		X
2						
3	McDonald Island	Underground Storage	1,129,394	791,148,609	X	
4						
5	Los Medanos	Underground Storage	228,135	144,658,889	X	
6						
7	Pleasant Creek	Underground Storage	0	19,205,434		X
8						
9						
10	TOTAL			1,034,201,947		
11						
12	**(A) Figures reflect well deliverability capacities discounted for**					
13	**operational limitations and based on full field pressures.**					
14						
15	**(B) PG&E owns 25% of Gill Ranch Storage Field - GRS LLC is the operator of the facility**					
16	**PG&E's share of the 650,000 Mcf maximum delivery capacity is 162,500 Mcf**					
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Name of Respondent:	This Report Is:	Date of Report	Year of Report:
	(1) *An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

GAS ACCOUNT -- NATURAL GAS

1. The purpose of this schedule is to account for the quantity of natural gas received and delivered by the respondent.
2. Natural gas means either natural gas unmixed or any mixture of natural and manufactured gas.
3. Enter in column (c) the year to date Dth as reported in the schedules indicated for the items of receipts and deliveries.
4. Enter in column (d) the respective quarter's Dth as reported in the schedules indicated for the items of receipts and deliveries.
5. Indicate in a footnote the quantities of bundled sales and transportation gas and specify the line on which such quantities are listed.
6. If the respondent operates two or more systems which are not interconnected, submit separate pages for this purpose.
7. Indicate by footnote the quantities of gas not subject to Commission regulation which did not incur FERC regulatory costs by showing (1) the local distribution volumes another jurisdictional pipeline delivered to the local distribution company portion of the reporting pipeline (2) the quantities that the reporting pipeline transported or sold through its local distribution facilities or intrastate facilities and which the reporting pipeline received through gathering facilities or intrastate facilities, but not through any of the interstate portion of the reporting pipeline, and (3) the gathering line quantities that were not destined for interstate market or that were not transported through any interstate portion of the reporting pipeline.
8. Indicate in a footnote the specific gas purchase expense account(s) and related to which the aggregate volumes reported on line No. 3 relate.
9. Indicate in a footnote (1) the system supply quantities of gas that are stored by the reporting pipeline, during the reporting year and also reported as sales,transportation and compression volumes by the reporting pipeline during the same reporting year, (2) the system supply quantities of gas that are stored by the reporting pipeline during the reporting year which the reporting pipeline intends to sell or transport in a future reporting year, and (3) contract storage quantities.
10. Also indicate the volumes of pipeline production field sales that are included in both the company's total sales figure and the company's total transportation figure. Add additional information as necessary to the footnotes.

Line No.	Item (a)	Ref. Page No. (b)	Total Amount of Dth Year to Date (c)
1			
2	GAS RECEIVED		
3	Gas Purchases (Accounts 800-805)		235,428,104
4	Gas of Others Received for Gathering (Account 489.1)	303	-
5	Gas of Others Received for Transmission (Account 489.2) - Note 1		117,893,405
6	Gas of Others Received for Distribution (Account 489.3) - Note 1		549,770,814
7	Gas of Others Received for Contract Storage (Account 489.4)	307	-
8	Gas of Others Received for Production/Extraction/Processing (Account 490 and 491)		-
9	Exchanged Gas Received from Others (Account 806)	328	-
10	Gas Received as Imbalances (Account 806)	328	-
11	Receipts of Respondent's Gas Transported by Others (Account 858)	332	-
12	Other Gas Withdrawn from Storage (Explain) - Note 2		43,991,152
13	Gas Received from Shippers as Compressor Station Fuel		-
14	Gas Received from Shippers as Lost and Unaccounted for		5,304,155
15			
16	TOTAL Receipts (Enter Total of lines 3 thru 15)		952,387,630
17	GAS DELIVERED		
18	Gas Sales (Accounts 480-484)	300	270,387,214
19	Deliveries of Gas Gathered for Others (Account 489.1) 303	300	-
20	Deliveries of Gas Transported for Others (Account 489.2)	305	115,545,139
21	Deliveries of Gas Distributed for Others (Account 489.3)	301	538,820,177
22	Deliveries of Contract Storage Gas (Account 489.4) - Note 3	307	-
23	Gas of Others Delivered for Production/Extraction/Processing (Account 490 and 491)		-
24	Exchange Gas Delivered to Others (Account 806)	328	-
25	Gas Delivered as Imbalances (Account 806)	328	-
26	Deliveries of Gas to Others for Transportation (Account 858)	332	-
27	Other Gas Delivered to Storage (Explain)		27,635,100.00
28	Gas Used for Compressor Station Fuel	509	-
29			
30	Total Deliveries (Total of lines 18 thru 29)		952,387,630
31	GAS LOSSES AND GAS UNACCOUNTED FOR		
32	Gas Losses and Gas Unaccounted For		
33	TOTALS		
34	Total Deliveries, Gas Losses & Unaccounted For (Total of lines 30 and 32)		952,387,630

NOTES:

(1) Does not include gas received and delivered to the Utility's Electric Department for electric generation in the amount of 46,365,927 Dth and 45,816,134 Dth, respectively.

(2) Gas Withdrawn from Storage includes 3rd party gas. Ref pg 512

(3) PG&E has some storage for gas of others. However, these are bundled together with other gas in storage and could not be split out.

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	4/11/2022	2021/Q4

SYSTEM MAP

1. Furnish 5 copies of a system map (one with each filed copy of this report) of the facilities operated by the respondent for the production, gathering, transportation, and sale of natural gas. New maps need not be furnished if no important change has occurred in the facilities operated by the respondent since the date of the maps furnished with a previous year's annual report. If, however, maps are not furnished for this reason, reference should be made in the space below to the years' annual report with which the maps were furnished.

2. Indicate the following information on the maps:
   (a) Transmission lines-colored in red, if they are not otherwise clearly indicated.
   (b) Principal pipeline arteries of gathering systems.
   (c) Sizes of pipe in principal pipelines shown on map.
   (d) Normal directions of gas flow-indicated by arrows.
   (e) Location of natural gas fields or pools in which the respondent produces or purchases natural gas.
   (f) Locations of compressor stations, products extraction plants, stabilization plants important purification plants, underground storage areas, recycling areas, etc.
   (g) Important main line interconnections with other natural gas companies, indicating in each case whether gas is received or delivered and the name of connecting company.
   (h) Principal communities in which respondent renders local distribution service.

3. In addition, show on each map: graphic scale to which map is drawn; date as of which the map represents the facts it purports to show; a legend giving all symbols and abbreviations used; designations of facilities leased to or from another company, giving name of such other company.

4. Maps not larger than 24 inches square are desired. If necessary, however, submit larger maps to show essential information. Fold the maps to a size not larger than this report. Bind the maps to the report.

The 2021 gas system map of Pacific Gas and Electric Company has been filed with the California Public Utilities Commission.

SELECTED FINANCIAL DATA - CLASS A, B, C, AND D ELECTRIC UTILITIES
PACIFIC GAS AND ELECTRIC COMPANY
PERSON RESPONSIBLE FOR THIS REPORT: David Thomason, Vice President, CFO and Controller
(PREPARED FROM INFORMATION IN THE 2021 FERC ANNUAL REPORTS)

	December 31		
	2020	2021	Annual Average
NET GAS PLANT INVESTMENT (a)			
Gas Utility Plant (California Only)			
1. Intangible Plant	$ 452,464,204	$ 422,910,992	$ 437,687,598
2. Land and Land Rights	198,567,826	195,416,486	196,992,156
3. Depreciable Plant	23,403,487,931	25,236,327,402	24,319,907,667
4. Gross Gas Utility Plant	24,054,519,961	25,854,654,880	24,954,587,421
5. Gas Plant Held for Future Use - Net	0	0	0
6. Construction Work in Progress - Gas	537,344,932	636,534,658	586,939,795
7. Accumulated Deferred Income Taxes	1,288,069,857	1,269,655,451	1,278,862,654
8. Gas Stored Underground	55,907,325	119,592,211	87,749,768
9. Less: Reserves for Depreciation - Gas Utility Plant	9,302,221,876	9,615,624,985	9,458,923,430
10. Less: Amortization and Depletion Reserves	263,271,218	246,906,132	255,088,675
11. Less: Customer Advances and Contribution in Aid of Construction	115,158,005	89,683,775	102,420,890
12. Less: Accumulated Deferred Income and Investment Tax Credits	3,136,939,620	3,404,691,698	3,270,815,659
13. Material and Supplies - Gas Only	244,180,922	313,172,766	278,676,844
14. Net Gas Plant Investment	$ 13,362,432,278	$ 14,836,703,376	$ 14,099,567,828
CAPITALIZATION (Total Company)			
15. Common Stock	$ 1,321,874,045	$ 1,321,874,045	$ 1,321,874,045
16. Capital Stock (Premium, Discount and Expense)-Net	1,769,325,445	1,769,325,445	1,769,325,445
17. Other Paid in Capital	26,516,580,090	26,516,580,090	26,516,580,090
18. Retained Earnings	(4,389,005,328)	(4,254,603,732)	(4,321,804,530)
19. Other Miscellaneous Capital Accounts	0	0	0
20. Common Stock and Equity (Lines 15 through 19)	25,218,774,252	25,353,175,848	25,285,975,050
21. Preferred Stock	257,994,575	257,994,575	257,994,575
22. Long-Term Debt	31,832,344,699	37,229,815,785	34,531,080,242
23. Notes Payable and Current Portion of Long-Term Debt	3,555,000,000	2,185,000,000	2,870,000,000
24. Total Capitalization (Lines 20 through 23)	$ 60,864,113,526	$ 65,025,986,208	$ 62,945,049,867

(a) Includes Common Plant Allocations.

PACIFIC GAS AND ELECTRIC COMPANY
INCOME STATEMENT DATA
FOR CALIFORNIA INTRASTATE GAS OPERATIONS ONLY (b)

	Annual Amount
25. Operating Revenues	$ 5,744,838,078
26. Operating and Maintenance Expense	3,840,296,607
27. Depreciation	739,882,163
28. Amortization and Depletion Expenses and Property Losses	65,201,282
29. Property Taxes (Ad Valorem)	151,041,665
30. Taxes Other than Income and Property Taxes	71,774,793
31. Operating Revenue Deductions (Before Federal and California Income Taxes)	4,868,196,510
32. Federal and California Income Taxes - Net	(141,867,135)
33. Gains and Losses from Disposition of Gas Plant - Net	(81,463)
34. Total Utility Operating Expenses	4,726,247,912
35. Net Operating Income (California Intrastate Gas Operations Only)	1,018,590,166
OTHER INCOME AND EXPENSE (Total Company)	
36. Net Operating Income from Other Utility Operations (Total)	393,696,629
37. Net Other Income and Deductions	83,445,565
38. Income Before Interest Charges	1,495,732,360
39. Interest Charges	1,358,424,986
40. Income Before Extraordinary Items	137,307,374
41. Extraordinary Items - Net of Income Tax	0
42. Net Income	137,307,374
43. Preferred Stock Dividends and Redemption Premium	0
44. Income Available for Common Stock	$ 137,307,374
45. Common Stock Dividends	$ -
OTHER DATA (CALIFORNIA INTRASTATE GAS OPERATIONS ONLY) (b)	
46. Payroll Charged to Operating and Maintenance Expense	$ 741,362,473
47. Payroll Capitalized to Utility Plant - Gas	521,851,417
48. Total Payroll	$ 1,263,213,890
49. Total Exploration & Development Expense (A/Cs 795 through 798)	$ -
50. Purchased Gas Expense (A/Cs 807.1 through 807.5)	$ 43,556,843
51. Interdepartmental Revenues	$ 243,093,777
52. Interdepartmental Expenses	$ 206,459,035
53. Allowance for Funds Used During Construction	$ 33,877,648
54. Revenue from Sales to Residential Customers	$ 2,759,103,423
55. Residential Sales in Dths	168,314,554
56. Therms Sold Residential Customers	1,683,145,540
57. Total Revenue Sales to Ultimate Consumers	$ 3,715,269,807
58. Dths Sold to Ultimate Consumers	270,387,214
59. Therms Sold to Ultimate Consumers	2,703,872,141
60. Average Number of Residential Customers	4,332,652
61. Average Number of Ultimate Customers	4,564,044

(b) Assumes CPUC Jurisdictional Portion of Gas Operations.

2022
ANNUAL REPORT

of

Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, CA 94612

to the

Public Utilities Commission
of the
State of California
For the Year Ended December 31, 2022



Volume No. 2 (Form 2)

FERC FORM NO. 2:
ANNUAL REPORT OF MAJOR NATURAL GAS COMPANIES

IDENTIFICATION

01 Exact Legal Name of Respondent	02 Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	Dec. 31, 2022

03 Previous Name and Date of Change *(If name changed during year)*

04 Address of Principal Office at End of Year *(Street, City, State, Zip Code)*
300 LAKESIDE DRIVE, OAKLAND, CA 94612

05 Name of Contact Person	06 Title of Contact Person
Jennifer Garboden	Director, Corporate Accounting

07 Address of Contact Person *(Street, City, State, Zip Code)*
300 LAKESIDE DRIVE, OAKLAND, CA 94612

08 Telephone of Contact Person, *Including Area Code*	09 This Report is	10 Date of Report *(Mo, Da, Yr)*
(415)-973-5456	(1) *An Original X (2) A Resubmission	May 5, 2023

ATTESTATION

The undersigned officer certifies that he/she has examined the accompanying report; that to the best of his/her knowledge, information, and belief, all statements of fact contained in the accompanying report are true and the accompanying report is a correct statement of the business and affairs of the above named respondent in respect to each and every matter set forth therein during the period from and including January1 to and including December 31 of the year of the report.

01 Name	02 Title
STEPHANIE WILLIAMS	Vice President, CFO, and Controller, Pacific Gas and Electric Company

03 Signature	04 Date *Signed (Mo, Day, Yr)*
	May 5, 2023

Title 18, U.S.C. 1001, makes it a crime for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious or fraudulent statements as to any matter within its jurisdiction.

Name of Respondent	This Report is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	05/05/2023	2022/Q4

LIST OF SCHEDULES (Natural Gas Company)

Enter in column (d) the terms "none," "not applicable," or "NA," as appropriate, where no information or amounts have been reported for certain pages. Omit pages where the response are "none," "not applicable," or "NA."

Title of Schedule (a)	Reference Page No. (b)	Date Revised (c)	Remarks (d)
GENERAL CORPORATE INFORMATION AND FINANCIAL STATEMENTS			
General Information	101	Ed. 12-87	*
Control Over Respondent	102	Ed. 12-87	*
Corporations Controlled by Respondent	103	Ed. 12-87	*
Security Holders and Voting Powers	107	Ed. 12-87	*
Important Changes During the Year	108	Ed. 12-87	*
Comparative Balance Sheet	110-113	Rev.12-93	
Statement of Income for the Year	114-117	Rev.12-93	
Statement of Retained Earnings for the Year	118-119	Ed. 12-88	
Statement of Cash Flows	120-121	Rev.12-93	
Notes to Financial Statements	122	Ed. 12-88	*
Statement of Accumulated Comprehensive Income and Hedging Activities	122(a)(b)	Ed. 12-88	
BALANCE SHEET SUPPORTING SCHEDULES (Assets and Other Debits)			
Summary of Utility Plant and Accumulated Provisions for Depreciation, Amortization, and Depletion	200-201	Ed. 12-89	
Gas Plant in Service	204-209	Ed. 12-89	
Gas Property and Capacity Leased from Others	212	Ed. 12-88	NONE
Gas Property and Capacity Leased to Others	213	Ed. 12-88	NONE
Gas Plant Held for Future Use	214	Ed. 12-89	NONE
Constrution Work in Progress - Gas	216	Ed. 12-87	
Non-Traditional Rate Treatment Afforded New Projects	217	Ed. 12-87	NA
General Description of Construction Overhead Procedure	218	Ed. 12-88	NA
Accumulated Provision for Depreciation of Gas Utility Plant	219	Ed. 12-87	
Gas Stored	220	Ed. 12-87	
Investments	222-223	Ed. 12-86	
Investments in Subsidiary Companies	224-225	Ed. 12-89	*
Prepayments	230	Ed. 12-88	
Extraordinary Property Losses	230	Ed. 12-88	NONE
Unrecovered Plant and Regulatory Study Costs	230	Ed. 12-88	NONE
Other Regulatory Assets	232	New 12-93	*
Miscellaneous Deferred Debits	233	Ed. 12-89	*
Accumulated Deferred Income Taxes	234-235	Ed. 12-89	
BALANCE SHEET SUPPORTING SCHEDULES (Liabilities and Other Credits)			
Capital Stock	250-251	Ed. 12-89	*
Capital Stock Subscribed, Capital Stock Liability for Conversion, Premium on Capital Stock, and Installments Received on Capital Stock	252	Ed. 12-86	NA
Other Paid-in Capital	253	Ed. 12-86	*
Discount on Capital Stock	254	Ed. 12-86	*
Capital Stock Expense	254	Ed. 12-86	*
Securities Issued or Assumed and Securities Refunded or Retired During the Year	255	Ed. 12-86	
Long-Term Debt	256-257	Ed. 12-89	
Unamortized Debt Expense, Premium and Discount on Long-Term Debt	258-259	Ed. 12-88	

Name of Respondent	This Report is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	05/05/2023	2022/Q4

LIST OF SCHEDULES (Natural Gas Company) (Continued)

Title of Schedule (a)	Reference Page No. (b)	Date Revised (c)	Remarks (d)
BALANCE SHEET SUPPORTING SCHEDULES (Liabilities and Other Credits) (Continued)			
Unamortized Loss and Gain on Reaquired Debt	260	Ed. 12-86	
Reconciliation of Reported Net Income with Taxable Income for Federal Income Taxes	261	Ed. 12-88	*
Taxes Accrued, Prepaid and Charged During Year	262-263	Ed. 12-88	*
Miscellaneous Current and Accrued Liabilities	268	Ed. 12-86	
Other Deferred Credits	269	Ed. 12-88	*
Accumulated Deferred Income Taxes - Other Property	274-275	Ed. 12-89	*
Accumulated Deferred Income Taxes - Other	276-277	Ed. 12-93	*
Other Regulatory Liabilities	278	New 12-93	*
INCOME ACCOUNT SUPPORTING SCHEDULES			
Gas Operating Revenues	300-301	Ed. 12-89	
Revenues from Transportation of Gas of Others Through Gathering Facilities	302-303	Ed. 12-88	NONE
Revenues from Transportation of Gas of Others Through Transmission Facilities	304-305	Ed. 12-88	
Revenues from Storage of Gas of Others	306-307	Ed. 12-89	NONE
Other Gas Revenues	308	Ed. 12-88	
Discounted Rate Services and Negotiated Rate Services	313	Rev. 12-88	
Gas Operation and Maintenance Expenses	317-325	Ed. 12-89	
Exchange and Imbalance Transactions	328	Rev. 12-88	NA
Gas Used in Utility Operations	331	Ed. 12-88	
Transmission and Compression of Gas by Others	332	Ed. 12-86	NA
Other Gas Supply Expenses	334	Ed. 12-87	NONE
Miscellaneous General Expenses - Gas	335	Ed. 12-86	
Depreciation, Depletion, and Amortization of Gas Plant	336-338	Ed. 12-88	
Particulars Concerning Certain Income Deduction and Interest Charges Accounts	340	Ed. 12-86	NA
COMMON SECTION			
Regulatory Commission Expenses	350-351	Ed. 12-89	*
Employee Pensions and Benefits (Account 926)	352	Ed. 12-89	
Distribution of Salaries and Wages	354-355	Ed. 12-88	*
Charges for Outside Professional and Other Consultative Services	357	Ed. 12-87	
Transactions with Affiliated Companies	358	Ed. 12-87	
GAS PLANT STATISTICAL DATA			
Compressor Stations	508-509	Ed. 12-86	
Gas Storage Projects	512-513	Ed. 12-91	
Transmission Lines	514	Ed. 12-87	
Transmission System Peak Deliveries	518	Ed. 12-88	
Auxiliary Peaking Facilities	519	Ed. 12-86	
Gas Account - Natural Gas	520	Ed. 12-91	
System Map	522	Ed. 12-86	
Footnote Reference	551	Ed. 12-86	NONE
Footnote Text	552	Ed. 12-86	NONE
Stockholder's Reports (check appropriate box)			
(X) Four copies will be submitted.			
SUPPLEMENTAL FINANCIAL DATA			
Selected Financial Data	600-601		
* Refer to the Annual Report of the Electric Department			

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	End of 2022/Q4

COMPARATIVE BALANCE SHEET (ASSETS AND OTHER DEBITS)

Line No.	Title of Account (a)	Ref. Page No. (b)	Current Year End of Quarter/Yr Balance (c)	Prior Year End Balance 12/31 (d)
1	**UTILITY PLANT**			
2	Utility Plant (101 -106, 114)	200-201	110,969,024,721	103,173,291,727
3	Construction Work in Progress (107)	200-201	4,278,662,042	3,547,642,238
4	TOTAL Utility Plant (Lines 2 and 3)		115,247,686,763	106,720,933,965
5	(Less) Accum. Prov. for Depr. Amort. Depl. (108, 111, 115)	200-201	45,440,205,751	43,122,819,469
6	NET Utility Plant (Lines 4 less 5)		69,807,481,012	63,598,114,496
7	Nuclear Fuel in Process (120.1)	202-203	86,475,206	182,496,431
8	Nuclear Fuel Materials and Assembles-Stock (120.2)		-	3,274,391
9	Nuclear Fuel Assemblies in Reactor (120.3)		301,949,278	329,412,017
10	Spent Nuclear Fuel (120.4)		2,964,394,529	2,787,380,149
11	Nuclear Fuel Under Capital Leases (120.6)		-	-
12	(Less) Accum. Prov. For Amort. of Nuclear Fuel (120.5)	202-203	3,080,422,971	2,973,964,630
13	NET Nuclear Fuel (Lines 7-11 less 12)		272,396,042	328,598,358
14	NET Utility Plant (Lines 6 and 13)		70,079,877,054	63,926,712,854
15	Utility Plant Adjustments (116)			
16	Gas Stored Underground - Noncurrent (117)		119,592,211	119,592,211
17	**OTHER PROPERTY AND INVESTMENTS**			
18	Nonutility Property (121)		29,571,217	23,290,645
19	(Less) Accum. Prov. for Depr. and Amort. (122)		-	-
20	Investments in Associated Companies (123)		3,245,150,000	-
21	Investment in Subsidiary Companies (123.1)	224-225	1,021,724,910	522,176,417
22	(For cost of Account 123.1, See Footnote Page 224, Line 42)		-	-
23	Noncurrent Portion of Allowances	228-229	646,415,350	342,526,592
24	Other Investments (124)		-	-
25	Sinking Funds (125)		-	-
26	Depreciation Fund (126)		-	-
27	Amortization Fund-Federal (127)		-	-
28	Other Special Funds (128)		4,081,176,046	3,837,927,554
29	Special Funds-Nonmajor Only (129)		997,257,827	1,340,505,591
30	Long-Term Portion of Derivatives Assets (175)		305,301,298	169,204,338
31	Long-Term Portion of Derivative Assets - Hedges (176)		-	-
32	TOTAL Other Property and Investments (Lines 18-21 and 23-31)		10,326,596,648	6,235,631,137
33	**CURRENT AND ACCRUED ASSETS**			
34	Cash and Working Funds (Nonmajor Only) (130)			
35	Cash (131)		72,198,551	48,120,166
36	Special Deposits (132-134)		11,780,009	11,166,837
37	Working Funds (135)		-	-
38	Temporary Cash Investments (136)		533,122,157	112,750,000
39	Notes Receivable (141)		-	-
40	Customer Accounts Receivable (142)		287,627,561	414,302,245
41	Other Accounts Receivable (143)		2,192,892,372	2,319,071,623
42	(Less) Accum. Prov. for Uncollectible Acct.-Credit (144)		18,324,417	23,527,669
43	Notes Receivable from Associated Companies (145)		1,526,615,253	1,901,422,841
44	Accounts Receivable from Associated Companies (146)		43,966,385	180,328,821
45	Fuel Stock (151)	227	1,586,736	1,459,242
46	Fuel Stock Expense Undistributed (152)	227	-	-
47	Residuals (Elec) and Extracted Products (153)	227	-	-
48	Plant Materials and Operating Supplies (154	227	751,427,249	552,298,302
49	Merchandise (155)	227	-	-
50	Other Materials and Supplies (156)	227	-	-
51	Nuclear Materials Held for Sale (157)	202-203/307	-	-
52	Allowances (158.1 and 158.2)	228-229	747,270,576	425,535,572

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	End of 2022/Q4

COMPARATIVE BALANCE SHEET (ASSETS AND OTHER DEBITS) (Continued)

Line No.	Title of Account (a)	Ref. Page No. (b)	Current Year End of Quarter/Yr Balance (c)	Prior Year End Balance 12/31 (d)
53	(Less) Noncurrent Portion of Allowances		646,415,350	342,526,592
54	Stores Expense Undistributed (163)	227	-	0
55	Gas Stored Underground - Current (164.1)		89,676,327	43,030,451
56	LNG Stored and Held for Processing (164.2-164.3)		-	-
57	Prepayments (165)		570,965,644	520,256,195
58	Advances for Gas (166-167)		-	-
59	Interest and Dividends Receivable (171)		-	0
60	Rents Receivable (172)		-	-
61	Accrued Utility Revenues (173)		148,663,404	119,873,851
62	Miscellaneous Current and Accrued Assets (174)		549,054,533	650,892,528
63	Derivative Instrument Assets (175)		959,205,737	218,389,698
64	(Less) Long-Term Portion of Derivative Instrument		305,301,298	169,204,338
65	Derivative Instrument Assets - Hedges (176)		-	0
66	(Less) Long-Term Portion of Derivative Instrument		-	0
67	TOTAL Current and Accrued Assets (Lines 34-66)		7,516,011,429	6,983,639,773
68	**DEFERRED DEBITS**			
69	Unamortized Debt Expenses (181)		193,762,955	197,064,626
70	Extraordinary Property Losses (182.1)	230a	-	-
71	Unrecovered Plant and Regulatory Study Costs (182.2	230b	27,373,357	39,584,283
72	Other Regulatory Assets (182.3)	232	23,721,433,967	17,165,967,732
73	Preliminary Survey and Investigation Charges (183		(558)	(558)
74	Preliminary Natural Gas Survey and Investigation Charges (183.1		-	-
75	Other Preliminary Survey and Investigation Charges (183.2		-	-
76	Clearing Accounts (184)		2,475,764	2,932,638
77	Temporary Facilities (185)		-	0
78	Miscellaneous Deferred Debits (186)	233	4,862,754,112	5,304,229,611
79	Deferred Losses from Disposition of Utility Plant (187)		-	-
80	Research, Development and Demonstration Expenditures (188	352-353	-	-
81	Unamortized Loss on Reacquired Debt (189)		36,721,574	49,489,664
82	Accumulated Deferred Income Taxes (190) [F]	234	10,203,179,212	8,700,298,466
83	Unrecovered Purchased Gas Costs (191)		-	-
84	TOTAL Deferred Debits (Lines 73-95)		39,047,700,383	31,459,566,462
85	TOTAL ASSETS (Lines 14-16, 32, 67 and 84)		127,089,777,725	108,725,142,437

Name of Respondent	This Report Is:	Date of Report	Year/Period of
	(1) * An Original	(Mo, Da, Yr)	Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022 Q4

COMPARATIVE BALANCE SHEET (LIABILITIES AND OTHER DEBITS)

Line. No.	Title of Account (a)	Ref. Page No. (b)	Current Year End of Quarter/Yr Balance (c)	Prior Year End Balance 12/31 (d)
1	**PROPRIETARY CAPITAL**			
2	Common Stock Issued (201)	250-251	1,321,874,045	1,321,874,045
3	Preferred Stock Issued (204)	250-251	257,994,575	257,994,575
4	Capital Stock Subscribed (202,205)		-	-
5	Stock Liability for Conversion (203,206)		-	-
6	Premium on Capital Stock (207)		1,805,194,230	1,805,194,230
7	Other Paid-In Capital (208-211)	253	30,756,123,589	26,516,580,090
8	Installments Received on Capital Stock (212)		-	-
9	(Less) Discount on Capital Stock (213)	254	6,916,899	6,916,899
10	(Less) Capital Stock Expense (214)	254b	28,951,886	28,951,886
11	Retained Earnings (215, 215.1, 216)	118-119	(4,206,590,722)	(4,591,909,590)
12	Unappropriated Undistributed Subsidiary Earnings (216.1	118-119	838,890,207	344,832,855
13	(Less) Reaquired Capital Stock (217)	250-251	-	-
14	Noncorporate Proprietorship (Nonmajor only)(218)		-	0
15	Accumulated Other Comprehensive Income (219)	122a&b	(8,166,262)	(7,526,997)
16	Total Proprietary Capital (lines 2 through 15)		30,729,450,877	25,611,170,423
17	**LONG-TERM DEBT**			
18	Bonds (221)	256-257	35,115,164,559	36,443,675,751
19	(Less) Reaquired Bonds (222)	256-257	-	0
20	Advances from Associated Companies (223)	256-257	9,093,909,854	806,847,383
21	Other Long-Term Debt (224)	256-257	-	0
22	Unamortized Premium on Long-Term Debt (225)		4,903,468	5,486,058
23	(Less) Unamortized Discount on Long-Term Debt - Debit (226)		30,251,169	26,193,407
24	Total Long-Term Debt (lines 18 through 23)		44,183,726,712	37,229,815,785
25	**OTHER NONCURRENT LIABILITIES**			
26	Obligations Under Capital Leases - Noncurrent (227)		1,243,633,044	813,002,476
27	Accumulated Provision for Property Insurance (228.1)		-	-
28	Accumulated Provision for Injuries and Damages (228.2)		2,251,659,254	3,179,506,735
29	Accumulated Provision for Pensions and Benefits (228.3)		184,604,903	780,037,409
30	Accumulated Miscellaneous Operating Provisions (228.4		1,753,706,614	1,481,283,646
31	Accumulated Provision for Rate Refunds (229)		-	0
32	Long-Term Portion of Derivative Instrument Liabilities		176,597,091	215,988,093
33	Long-Term Portion of Derivative Instrument Liabilities- Hedges		-	-
34	Asset Retirement Obligations (230)		5,912,361,630	5,297,821,486
35	Total Other Noncurrent Liabilities (lines 26 through 34		11,522,562,536	11,767,639,845
36	**CURRENT AND ACCRUED LIABILITIES**			
37	Notes Payable (231)		2,055,000,000	2,185,000,000
38	Accounts Payable (232)		3,582,839,305	3,482,574,166
39	Notes Payable to Associated Companies (233)		-	-
40	Accounts Payables to Associated Companies (234)		226,750,134	76,772,484
41	Customer Deposits (235)		116,804,373	85,699,175
42	Taxes Accrued (236)	262-263	504,591,321	508,618,405
43	Interest Accrued (237)		463,796,034	432,788,163
44	Dividends Declared (238) *		2,319,382	0
45	Matured Long-Term Debt (239)		-	0

Name of Respondent PACIFIC GAS AND ELECTRIC COMPANY	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr) 5/5/2023	Year/Period of Report 2022 Q4

COMPARATIVE BALANCE SHEET (LIABILITIES AND OTHER DEBITS) (Continued)

Line No.	Title of Account (a)	Ref. Page No. (b)	Current Year End of Quarter/Yr Balance (c)	Prior Year End Balance 12/31 (d)
46	Matured Interest (240)		-	0
47	Tax Collections Payable (241)		41,016,803	38,056,452
48	Miscellaneous Current and Accrued Liabilities (242		1,463,562,560	1,330,741,077
49	Obligations Under Capital Leases-Current (243)		232,928,694	469,014,820
50	Derivative Instrument Liabilities (244)		228,244,869	242,244,653
51	(Less) Long-Term Portion of Derivative Instrument Liab.		176,597,091	215,988,093
52	Derivative Instrument Liabilities-Hedges (245)		-	0
53	(Less) Long-Term Portion of Derivative Instrument Liab.-Hedges		-	-
54	Total Current and Accrued Liabilities (lines 37 through 53		8,741,256,384	8,635,521,302
55	**DEFERRED CREDITS**			
56	Customer Advances for Construction (252)		288,675,735	255,873,824
57	Accumulated Deferred Investment Tax Credits (255)	266-267	91,349,274	96,542,098
58	Deferred Gains from Disposition of Utility Plant (256)		-	-
59	Other Deferred Credits (253)	269	1,705,188,018	1,840,485,385
60	Other Regulatory Liabilities (254) [E]	278	16,420,075,785	11,064,558,229
61	Unamortized Gain on Reacquired Debt (257)		150,526	290,227
62	Accum. Deferred Income Taxes-Accel. Amort.(281)	272-273	-	0
63	Accum. Deferred Income Taxes-Other Property (282) [F]	274-275	10,627,816,495	9,813,115,334
64	Accum. Deferred Income Taxes-Other (283) [F]	276-277	2,779,525,383	2,410,129,985
65	Total Deferred Credits (lines 56 through 64)		31,912,781,216	25,480,995,082
66	TOTAL LIABILITIES AND STOCKHOLDERS EQUITY (lines 16, 24, 35, 54 and 65)		127,089,777,725	108,725,142,437

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr.) 5/5/2023	2022/Q4

STATEMENT OF INCOME

1. Enter in column (e) operations for the reporting quarter and in column (f) the balance for the same three-month period for the prior year.
2. Report in column (g) the year to date amounts for electric utility function; in column (i) the year to date amounts for gas utility, and in (k) the year to date amounts for other utility function for the current year.

Line No.	Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)
1	UTILITY OPERATING INCOME				
2	OPERATING REVENUES (400)	300-301	26,581,287,822	23,642,511,758	6,881,830,409
3	OPERATING EXPENSES			0	
4	Operation Expenses (401)	320-323	17,123,024,262	14,695,627,408	5,170,778,769
5	Maintenance Expenses (402)	320-323	3,162,206,754	3,546,958,150	699,763,698
6	Depreciation Expense (403)	336-337	3,602,215,596	3,146,069,757	879,809,143
7	Depreciation Exp. for Asset Retirement Costs (403.1)	336-337	-	-	
8	Amort. & Depl. of Utility Plant (404-405)	336-337	244,780,157	241,392,639	61,053,160
9	Amort. of Utility Plant Acq. Adj. (406)	336-337	-	-	
10	Amort. of Property Losses, Unrecovered Plant and Regulatory Study Costs (407)		- 13,397,111	- 13,397,111	3,349,278
11	Amort. of Conversion Expenses (407.2)		-	-	
12	Regulatory Debit (407.3)		12,060,000	12,060,000	3,015,000
13	(Less) Regulatory Credits (407.4)		1,072,653,184	1,229,192,672	477,271,979
14	Taxes Other Than Income Taxes (408.1)	262-263	837,135,608	758,468,798	208,688,192
15	Income Taxes - Federal (409.1)	262-263	7	(2)	-
16	Income Taxes -Other (409.1)	262-263	1	1,367,558	(2)
17	Provision for Deferred Inc. Taxes (410.1)	234-272-277	17,329,658,629	18,591,272,382	2,364,784,207
18	(Less) Provision for Deferred Inc. Taxes-Cr.(411.1)	234-272-277	18,416,881,192	17,544,480,671	3,012,855,456
19	Investment Tax Credit Adj.- Net (411.4)	266	-	-	
20	(Less) Gains from Disp. of Utility Plant (411.6)		82,886,801	2,735,190	21,127,379
21	Losses from Utility Plant (411.7)		167,053	19,695	2,458
22	(Less) Gains from Disposition of Allowance (411.8)		-	-	-
23	Losses from Disposition of Allowances (411.9)		-	-	
24	Accretion Expense (411.10)		-	- - 0	
25	TOTAL OPERATING EXPENSES (Lines 4-24)		22,752,224,001	0 22,230,224,963	5,879,989,089
26	NET UTILITY OPERATING INCOME (Line 2 minus line 25)		3,829,063,821	0 1,412,286,795	1,001,841,320

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
	(1) * An Original	(Mo, Da, Yr.)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmissio	5/5/2023	2022/Q4

STATEMENT OF INCOME

3. Report in column (h) the year to date amounts for electric utility function; in column (j) the year to date amounts for gas utility, and in (l) the year to date amounts for other utility function for the previous year. '4. If additional columns are needed, place them in a footnote.

ELECTRIC UTILITY		GAS UTILITY		OTHER UTILITY		
Current Year to Date (g)	Prior Year to Date (h)	Current Year to Date (i)	Prior Year to Date (j)	Current Year to Date (k)	Prior Year to Date (l)	Line No.
						1
19,713,571,467	17,897,673,680	6,867,716,355	5,744,838,078		0	2
						3
13,001,612,729	11,393,769,310	4,121,411,533	3,301,858,098			4
2,670,028,606	3,008,519,641	492,178,148	538,438,509			5
2,766,533,077	2,406,187,594	835,682,519	739,882,163			6
-	-	-	-			7
179,547,995	176,191,357	65,232,162	65,201,282		0	8
-	-	-	-			9
						10
13,397,111	13,397,111	-	-			
-	-	-	-			11
12,060,000	12,060,000	-	-			12
956,229,628	1,080,179,342	116,423,556	149,013,330			13
594,298,276	535,652,340	242,837,332	222,816,458			14
21,161,320	8,254,589	(21,161,313)	(8,254,591)			15
9,771,726	5,179,331	(9,771,725)	(3,811,773)			16
15,695,744,541	16,950,182,115	1,633,914,088	1,641,090,267			17
16,796,539,207	15,773,589,633	1,620,341,985	1,770,891,038			18
-	-	-	-			19
55,793,729	2,653,727	27,093,072	81,463		0	20
167,053	19,695	-	-			21
-	-	-	-			22
-	-	-	-			23
-	-	-	-			24
17,155,759,870	17,652,990,381	5,596,464,131	4,577,234,582		0	25
2,557,811,597	244,683,299	1,271,252,225	1,167,603,496		-	26

Name of Respondent	This Report Is:	Date of Report (Mo, Da, Yr.)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	5/5/2023	2022/Q4

STATEMENT OF INCOME

Line No.	Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)	Prior 3 Months Ended Quarterly Only No 4th Quarter (f)
27	NET UTILITY OPERATING INCOME		3,829,063,821	1,412,286,795		
28	OTHER INCOME AND DEDUCTIONS					
29	OTHER INCOME					
30	NONUTILITY OPERATING INCOME					
31	Revenues from Contract Work (415)		0	0		
32	(Less) Costs and Exp. of Contract Work (416)		0	0		
33	Rev. from Nonutility Operations (417)		36,137,398	30,684,974		
34	(Less) Exp. of Nonutility Operations (417.1)		0	0		
35	Nonoperating Rental Income (418)		0	0		
36	Equity in Earnings of Subs. (418.1)	119	464,342,361	379,208,249		
37	Interest and Dividend Income (419)		194,313,214	48,753,487		
38	AFUDC-Other (419.1)		184,225,481	132,828,736		
39	Miscellaneous Nonoperating Income (421)		2,759,119	14,493,970		
40	Gain on Disposition of Property (421.1)		6,694,746	4,103,575		
41	TOTAL OTHER INCOME (lines 30-39)		888,472,319	610,072,991		
42	OTHER INCOME DEDUCTIONS					
43	Loss on Disposition of Property (421.2)		543,424,419	444,082,199		
44	Miscellaneous Amortization (425)		0	0		
45	Donations (426.1)		16,996,589	16,896,203		
46	Life Insurance (426.2)		0	0		
47	Penalties (426.3)		9,728,750	8,902,382		
48	Civic, Political and Related Activities (426.4)		8,511,607	7,431,664		
49	Other Deductions (426.5)		384,053,258	196,886,058		
50	TOTAL OTHER INC. DED. (lines 42-48)		962,714,623	674,198,506		
51	TAXES APPLICABLE TO OTHER INC. & DED.					
52	Taxes Other Than Income Taxes (408.2)	262-263	0	0		
53	Income Taxes-Federal (409.2)	262-263	151,646	0		
54	Income Taxes-Other (409.2)	262-263	1	1		
55	Provision for Deferred Income Taxes (410.2)	234, 272-277	125,035,881	134,204,589		
56	(Less) Prov .for Deferred Inc. Taxes-Cr. (411.2)	234, 272-277	237,675,664	277,858,179		
57	Investment Tax Credit Adj.- Net (411.5)		(5,192,824)	(3,917,491)		
58	(Less) Investment Tax Credits (420)		0	0		
59	TOTAL TAXES ON OTHER INC/DED. (lines 51-57)		(117,680,960)	(147,571,080)		
60	NET OTHER INC/DED. (lines 41, 50, 59)		43,438,656	83,445,565		
61	INTEREST CHARGES					
62	Interest on Long Term Debt (427)		1,302,886,803	1,200,006,997		
63	Amortization of Debt Disc. and Expense (428)		54,829,547	68,983,271		
64	Amort. of Loss on Reacquired Debt (428.1)		16,245,343	13,507,902		
65	(Less) Amort. of Premium on Debt-Cr (429)		1,326,141	817,992		
66	(Less) Amort. of Gain on Reacquired Debt-Cr (429.1)		139,701	139,701		
67	Interest on Debt to Assoc. Cos. (430)		234,025,480	3,724,234		
68	Other Interest Expense (431)		121,099,256	129,144,156		
69	(Less) AFUDC-Borrowed Funds-Cr (432)		81,395,326	55,983,881		
70	NET INTEREST CHARGES (lines 61-68)		1,646,225,261	1,358,424,986		
71	INCOME BEFORE EXTRAORDINARY ITEMS (lines 27, 60, and 70)		2,226,277,216	137,307,374		
72	EXTRAORDINARY ITEMS					
73	Extraordinary Income (434)		0	0		
74	(Less) Extraordinary Deductions (435)		0	0		
75	Net Extraordinary Items (Line 73 less 74)		0	0		
76	Income Taxes-Federal and Other (409.3)	262-263	0	0		
77	Extraordinary Items After Taxes (Line 75 Less Line 76)		0	0		
78	NET INCOME (Lines 71 and 77)		2,226,277,216	137,307,374		

Schedule Page: 114 Line No.: 2 Column: c

Includes interdepartmental operating revenues in Line 2 and operations expenses in Line 4 for the year ended December 31:

	2022		2021	
	Revenues	Expenses	Revenues	Expenses
Electric	55,032,778	94,413,850	45,542,787	82,177,529
Gas	256,414,146	217,033,073	243,093,777	206,459,036
Total	311,446,924	311,446,923	288,636,564	288,636,565

Balance also includes $37,775,295.39 recorded in account 414 related to performance-based grants form the California Department of Water resources.

Schedule Page: 114 Line No.: 4 Column: c

See footnote in row 2, column c

Name of Respondent	This Report Is:	Date of Report	Year/Period
	(1) * An Original	(Mo, Da, Yr.)	of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	05/05/2023	2022/Q4

STATEMENT OF RETAINED EARNINGS

1. Do not report Lines 49-53 on the quarterly version.
2. Report all changes in appropriated retained earnings, unapropriated retained earnings, year to date, and unappropriated undistributed subsidiary earnings for the year.
3. Each credit and debit during the year should be identified as to the retained earnings account in which recorded (accounts 433, 436-439 inclusive). Show the contra primary account affected in column (b).
4. State the purpose and amount for each reservation or appropriation of retained earnings.
5. List first Account 439, Adjustments to Retained Earnings, reflecting adjustments to the opening balance of retained earnings. Follow by credit, then debit items, in that order.
6. Show dividends for each class and series of capital stock.
7. Show separately the State and Federal income tax effect of items shown in Account 439, Adjustments to Retained Earnings.
8. Explain in a footnote the basis for determining the amount reserved or appropriated. If such reservation or appropriation is to be recurrent, state the number and annual amounts to be reserved or appropriated as well as the totals eventually to be accumulated.
9. If any notes appearing in the report to stockholders are applicable to this statement, include them on pages 122-123.

Line No.	Item (a)	Contra Primary Account Affected (b)	Current Quarter/Year Year to Date Balance (c)	Previous Quarter/Year Year to Date Balance (d)
	UNAPPROPRIATED RETAINED EARNINGS (Account 216)			
1	Balance - Beginning of Year		(4,874,509,338)	(4,635,588,904)
2	Changes (identify by prescribed retained earnings accounts)			
3	Adjustments to Retained Earnings (Account 439)			
4				
5	Reclassify stranded tax effects			
6				
7				
8				
9	TOTAL Credits to Retained Earnings (Account 439) (Lines 4-8)		0	0
10				
11	Common Stock Cancellation			
12				
13				
14				
15	TOTAL Debits to Retained Earnings (Account 439) (Lines 10-14)		0	0
16	Balance Transferred from Income (Account 433 less Account 418.1)		1,761,934,855	(241,900,875)
17	Appropriations of Retained Earnings (Account 436)			
18	Reserves for excess earnings on FERC hydroelectric			
19	project licenses pursuant to Federal Power Act Section 10 (d)	215	0	1,146,674
20				
21				
22	TOTAL Appropriations of Retained Earnings (Account 436)		0	1,146,674
23	Dividends Declared - Preferred Stock (Account 437)			
24	Preferred Dividends Declared	238	(71,900,993)	
25				
26				
27				
28				
29	TOTAL Dividends Declared - Preferred Stock (Account 437) (lines 25-28)		(71,900,993)	0
30	Dividends Declared - Common Stock (Account 438)			
31	Common Stock Dividends Declared	234	(1,275,000,000)	0
32				
33				
34				
35				
36	TOTAL Dividends Declared - Common Stock (Account 438) (Total of Lines 31 thru 35)		(1,275,000,000)	0
37	Transfers to Acct. 216.1, Unappropriated Undistributed Subsidiary Earnings		(29,714,992)	1,833,767
38	Balance - End of Period (Enter Total of lines 1,9,15,16,22,29,36,and 37)		(4,489,190,468)	(4,874,509,338)

Name of Respondent PACIFIC GAS AND ELECTRIC COMPANY	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr.) 05/05/2023	Year/Period of Report 2022/Q4

STATEMENT OF RETAINED EARNINGS

Line No.	Item (a)	Contra Primary Account Affected (b)	Current Quarter/Year Year to Date Balance (c)	Previous Quarter/Year Year to Date Balance (d)
	State balance and purpose of each appropriated retained earnings amount at end of year and give accounting entries for any applications of appropriated retained earnings during the year.			
39 40 41 42 43 44	Reserves for excess earnings on FERC hydroelectric project licenses pursuant to Federal Power Act Section 10 (d)	216	0	(1,146,674)
45	TOTAL Appropriated Retained Earnings (Account 215)		0	(1,146,674)
	APPROPRIATED RETAINED EARNINGS-AMORT. RESERVE, FEDERAL (Account 215.1) State below the total amount set aside through appropriations of retained earnings, as of the end of the year, in compliance with the provision of Federally granted hydroelectric project licenses held by the respondent. If any reductions or changes other than the normal annual credits hereto have been made during the year, explain such items in a footnote			
46	TOTAL Appropriated Retained Earnings - Amort., Federal (Account 215.1)		282,599,747	283,746,422
47	TOTAL Appropriated Retained Earnings (Accounts 215, 215.1) (Enter Total of lines 45 and 46)		282,599,747	282,599,748
48	TOTAL Retained Earnings (Accounts 215, 215.1, 216) (Enter Total of lines 38 and 47)		(4,206,590,722)	(4,591,909,590)
	UNAPPROPRIATED UNDISTRIBUTED SUBSIDIARY EARNINGS (Account 216.1) **Report only on an Annual Basis, No Quarterly**			
49	Balance - Beginning of Year (Debit or Credit)		344,832,855	(32,541,627)
50	Equity in Earnings for Year (Credit) (Account 418.1)		464,342,361	379,208,249
51	(Less) Dividends Received (Debit)		0	
52	Other: Stanpac and PEFCO earnings reflected in M&O accounts Other: Dissolution		(1,341,722) 31,056,713 0	(1,833,767)
53	Balance - End of Year (Total of lines 49-52)		838,890,207	344,832,855

Name of Respondent	This Report is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

STATEMENT OF CASH FLOWS

(1) Codes to be used: (a) Net Proceeds or Payments; (b) Bonds, debentures and other long-term debt; (c) Include commercial paper; and (d) Identify separately such items as investments, fixed assets, intangibles, etc.
(2) Information about noncash investing and financing activities must be provided in the Notes to the Financial statements. Also provide a reconciliation between "Cash and Cash Equivalents at End of Period" with related amounts on the Balance Sheet.
(3) Operating Activities - Other: Include gains and losses pertaining to operating activities only. Gains and losses pertaining to investing and financing activities should be reported in those activities. Show in the Notes to the Financials the amounts of interest paid (net of amount capitalized) and income taxes paid.
(4) Investing Activities: Include at Other (line 31) net cash outflow to acquire other companies. Provide a reconciliation of assets acquired with liabilities assumed in the Notes to the Financial Statements. Do not include on this statement the dollar amount of leases capitalized per the USofA General Instruction 20; instead provide a reconciliation of the dollar amount of leases capitalized with the plant cost.

Line No.	Description (See Instruction No. 1 for Explanation of Codes)	Current Year to Date Quarter/Year December 31, 2022	Previous Year to Date Quarter/Year December 31, 2021
	(a)	(b)	(c)
1	Net Cash Flow from Operating Activities:		
2	Net Income (Line 78(c) on page 117)	2,226,277,216	137,307,374
3	Noncash Charges (Credits) to Income:		
4	Depreciation and Depletion	3,860,392,864	3,400,859,507
5	Disallowed Capital Expenditures	15,226,000	—
6	Amortization of Unamortized Loss or Gain on Reacquired Debt	12,628,390	13,368,201
7	Amortization of Expenses, Discount and Premium - Long Term Debt	53,772,218	62,342,624
8	Deferred Income Taxes (Net)	(319,113,364)	1,849,933,849
9	Investment Tax Credit Adjustment (Net)	(5,192,824)	(3,917,491)
10	Net (Increase) Decrease in Receivables	517,856,673	(1,117,742,060)
11	Net (Increase) Decrease in Inventory	(245,902,317)	(31,996,628)
12	Net (Increase) Decrease in Allowances Inventory	—	—
13	Net Increase (Decrease) in Payables and Accrued Expenses	9,164,286,763	(142,336,454)
14	Net (Increase) Decrease in Other Regulatory Assets	(6,786,597,492)	(2,618,280,425)
15	Net Increase (Decrease) in Other Regulatory Liabilities	5,601,430,156	502,585,401
16	(Less) Allowance for Other Funds Used During Construction	184,225,481	132,828,736
17	(Less) Undistributed Earnings from Subsidiary Companies	464,342,361	383,560,625
18	Other (provide details in footnote):	(872,294,551)	891,118,220
19			—
20			—
21			—
22	Net Cash Provided by (Used in) Operating Activities (Total 2 thru 21)	12,574,201,889	24,26,852,758
23			—
24	Cash Flows from Investment Activities:		—
25	Construction and Acquisition of Plant (including land):		—
26	Gross Additions to Utility Plant (less nuclear fuel)	(9,718,512,084)	(7,738,814,982)
27	Gross Additions to Nuclear Fuel	(50,256,025)	(83,009,282)
28	Gross Additions to Common Utility Plant		—
29	Gross Additions to Nonutility Plant		—
30	(Less) Allowance for Other Funds Used During Construction	(184,225,481)	(132,828,736)
31	Other (provide details in footnote):		—
32			—
33			—
34	Cash Outflows for Plant (Total of lines 26 thru 33)	(9,584,542,628)	(7,688,995,528)
35			
36	Acquisition of Other Noncurrent Assets (d)		—
37	Proceeds from Disposal of Noncurrent Assets (d)	34,173,100	808,636,297
38			—
39	Investments in and Advances to Assoc. and Subsidiary Companies	(37,500,000)	(4,301,995)
40	Contributions and Advances from Assoc. and Subsidiary Companies		—
41	Disposition of Investments in (and Advances to)		
42	Associated and Subsidiary Companies		—
43	Payments to Assoc. and Subsidiary Companies	(309,884,443)	(6,318,082)
44	Purchase of Investment Securities (a)		—
45	Proceeds from Sales of Investment Securities (a)		—

Name of Respondent PACIFIC GAS AND ELECTRIC COMPANY		This Report is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr) 5/5/2023	Year of Report 2022/Q4
46	Loans Made or Purchased		—	(145,000,000)
47	Collections on Loans		145,000,000	—
48				—
49	Net (Increase) Decrease in Receivables			—
50	Net (Increase) Decrease in Inventory			—
51	Net (Increase) Decrease in Allowances Held for Speculation			—
52	Net Increase (Decrease) in Payables and Accrued Expenses			—
53	Other		—	0
54	Proceeds from other special trust investment sales		3,566,787,969	1,678,137,456
55	Purchases of other special trust investments		(4,230,022,147)	(1,702,381,818)
56	Net Cash Provided by (Used in) Investing Activities			
57	Total of lines 34 thru 55)		(10,415,988,149)	(7,060,223,670)
58				
59	Cash Flows from Financing Activities:			
60	Proceeds from Issuance of:			
61	Long-Term Debt (b)		4,583,183,205	5,474,468,232
62	Preferred Stock			—
63	Common Stock			—
64	Other (provide details in footnote):			—
65				—
66	Net Increase in Short-Term Debt (c)		(130,000,000)	(1,370,000,000)
67	Other (provide details in footnote):		0	369,967,797
68	Equity contribution from PG&E Corporation		994,393,499	—
69				—
70	Cash Provided by Outside Sources (Total 61 thru 69)		5,447,576,704	4,474,436,029
71				—
72	Payments for Retirement of:			
73	Long-term Debt (b)		(5,940,735,897)	(59,264,103)
74	Preferred Stock			—
75	Common Stock			—
76	Other (provide details in footnote):			—
77	Customer Advances for Construction		120,610,653	40,660,074
78	Net Decrease in Short-Term Debt (c)			—
79	Other		3,980,129	(48,879,642)
80	Dividends on Preferred Stock		(69,581,614)	—
81	Dividends on Common Stock		(1,275,000,000)	—
82	Net Cash Provided by (Used in) Financing Activities			
83	(Total of lines 70 thru 81)		(1,713,150,025)	4,406,952,358
84				—
85	Net Increase (Decrease) in Cash and Cash Equivalents			
86	(Total of lines 22,57 and 83)		445,063,714	(226,418,554)
87				
88	Cash and Cash Equivalents at Beginning of Period		172,037,003	398,455,557
89				
90	Cash and Cash Equivalents at End of period		617,100,717	172,037,003

Schedule Page: 120 Line No.: 18 Column: b

This consists of the following:

	2022	2021
Reorganization items, net	$ —	$ (40,602,973)
(Increase) Decrease in Other Working Capital	(66,430,260)	(182,030,669)
Increase (Decrease) - Other Noncurrent Liabilities	(1,092,973,863)	379,853,421
Others		
Nuclear Fuel Lease Amortization	106,458,341	120,956,456
Payment on capital lease obligation	(2,031,228)	(1,909,701)
Collateral Adjustment	1,536,390	6,764,780
Kincade settlement expense	61,641,115	—
SB 901 amortization	185,845,155	—
Bad Debt Expense	143,455,938	153,917,843
Tax benefit on stock option exercises (shortfall)	918,767	(7,571,800)
Other-net	(210,714,906)	461,740,863
Total	$ (872,294,551)	$ 891,118,220

Schedule Page: 120 Line No.: 18 Column: c

See footnote in column (b), Line 18.

Schedule Page: 120 Line No.: 53 Column: b

Other consists of the following:

	2022	2021
Purchases of customer credit trust investments		$ —
Proceeds from customer credit trust sales		—
Total	$ —	$ —

Schedule Page: 120 Line No.: 53 Column: c

See footnote in column (b), Line 53.

Schedule Page: 120 Line No.: 67 Column: b

Other consists of the following:

	2022	2021
Proceeds from sale of future revenue from transmission tower license sales, net of fees	$ —	$ 369,967,797
Total	$ —	$ 369,967,797

Schedule Page: 120 Line No.: 67 Column: c

See footnote in column (b), Line 67.

Schedule Page: 120 Line No.: 79 Column: b

This consists of the following:

	2022	2021
Increase (Decrease) in customer deposits	$ 30,071,399	$ (33,489,420)
Employee taxes paid for withheld shares	(21,026,606)	(3,814,131)
Other debt issuance and exchange fees	(5,064,664)	(11,576,091)
Total	$ 3,980,129	$ (48,879,642)

FOOTNOTE DATA

Schedule Page: 120 Line No.: 79 Column: c

See footnote in column (b), Line 79.

Schedule Page: 120 Line No.: 90 Column: b

This consists of the following:

	2022	2021
Cash (131)	$ 72,198,551	$ 48,120,166
Special Deposits (132-134)	11,780,009	11,166,837
Temporary Cash Investment (136)	533,122,157	112,750,000
Total	$ 617,100,717	$ 172,037,003

Supplemental disclosure of cash flow information (in millions):

Cash paid for:		
Interest (net of amounts capitalized	$ (1,374)	$ (1,198)
Income taxes, net	—	99

Supplemental disclosures of noncash investing and financing activities:

Capital expenditures financed through accounts payable	1,174	1,311
Operating lease liabilities arising from obtaining ROU assets	(529)	100
Transfer of accounts receivable to a subsidiary company	—	397

Schedule Page: 120 Line No.: 90 Column: c

See footnote in column (b), Line 90.

Name of Respondent	This Report is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

STATEMENTS OF ACCUMULATED COMPREHENSIVE INCOME, COMPREHENSIVE INCOME, AND HEDGING ACTIVITIES

Line No	Item	Unrealized Gains and Losses on Available-for-Sale Securities	Minumum Pension Liability Adjustment (net Amount)	Foreign Current Hedges	Other Adjustments
	(a)	(b)	(c)	(d)	(e)
1	Balance of account 219 at beginning of preceding year				(4,621,218)
2	Preceding Qtr/Yr to date reclassifications from acct 219 to net income				1,115,726
3	Preceding Qtr/Yr to date change in fair value				(4,021,505)
4	Total (lines 2 and 3)				(2,905,779)
5	Balance of account 219 at end of preceding Quarter/year				(7,526,997)
6	Balance of account 219 at beginning of current year				(7,526,997)
7	Current Qtr/Yr to date reclassifications from acct 219 to net income				(5,286,893)
8	Current Qtr/Yr to date change in fair value				4,647,628
9	Total (lines 7 and 8)				(639,265)
10	Balance of account 219 at end of current Quarter/year				(8,166,262)

Name of Respondent	This Report is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

STATEMENTS OF ACCUMULATED COMPREHENSIVE INCOME, COMPREHENSIVE INCOME, AND HEDGING ACTIVITIES

Line No	other cash flow hedges interest rate swaps	Other cash flow hedges [insert footnote at line 1 to specify)	Totals for each category of items recorded in account 219	Net income (carrried forward from page 117, line 78)	Total comprehensive income
	(f)	(g)	(h)	(i)	(j)
1			(4,621,218)		
2			1,115,726		
3			(4,021,505)		
4			(2,905,779)	137,307,374	134,401,595
5			(7,526,997)		
6			(7,526,997)		
7			(5,286,893)		
8			4,647,628		
9			(639,265)	2,226,277,216	2,225,637,951
10			(8,166,262)		

Name of Respondent	This Report Is: (1) *An Original	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

SUMMARY OF UTILITY PLANT AND ACCUMULATED PROVISIONS
FOR DEPRECIATION, AMORTIZATION AND DEPLETION

Report in Column (c) the amount for electric function, in column (d) the amount for gas function, in column (e), (f), and (g) report other (specify) and in column (h) common function.

Line No.	Classification		Total Company for the Current Year/Quarter Ended	Electric
	(a)		(b)	(c)
1	Utility Plant			
2	In Service			
3	Plant in Service (Classified)		87,377,397,454	63,403,343,636
4	Property Under Capital Leases		1,479,487,442	662,270,399
5	Plant Purchased or Sold		(132,839)	(198,578)
6	Completed Construction not Classified		22,112,272,664	13,436,162,193
7	Experimental Plant Unclassified			
8	Total (3 thru 7)		110,969,024,721	77,501,577,650
9	Leased to Others			
10	Held for Future Use			
11	Construction Work in Progress		4,278,662,042	3,013,759,214
12	Acquisition Adjustments			
13	Total Utility Plant (8 thru 12)		115,247,686,763	80,515,336,864
14	Accum Prov for Depr, Amort, & Depl		45,440,205,751	33,253,050,033
15	Net Utility Plant (13 less 14)		69,807,481,012	47,262,286,831
16	Detail of Accum Prov for Depr, Amort & Depl			
17	In Service:			
18	Depreciation		44,640,264,192	33,161,834,137
19	Amort & Depl of Producing Nat Gas Land/Land Right		—	
20	Amort of Underground Storage Land/Land Rights		8,610,789	
21	Amort of Other Utility Plant		791,330,770	91,215,896
22	Total In Service (18 thru 21)		45,440,205,751	33,253,050,033
23	Leased to Others			
24	Depreciation			
25	Amortization and Depletion			
26	Total Leased to Others (24 & 25)		—	—
27	Held for Future Use			
28	Depreciation			
29	Amortization			
30	Total Held for Future Use (28 & 29)		—	—
31	Abandonment of Leases (Natural Gas)			
32	Amort of Plant Acquisition Adj			
33	Total Accum Prov (equals 14) (22,26,30,31,32)		45,440,205,751	33,253,050,033

Name of Respondent	This Report Is: (1) *An Original	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

SUMMARY OF UTILITY PLANT AND ACCUMULATED PROVISIONS
FOR DEPRECIATION, AMORTIZATION AND DEPLETION

Gas (d)	Other (Specify) (e)	Other (Specify) (f)	Other (Specify) (g)	Common (h)
18,084,809,581				5889244237
—				817,217,043
290,300				(224,561)
7,585,040,521				1,091,069,950
25,670,140,402	—	—	—	7,797,306,669
424,827,856				840,074,972
26,094,968,258	—	—	—	8,637,381,641
9,335,187,734	—	—	—	2,851,967,984
16,759,780,524	—	—	—	5,785,413,657
9,327,672,319				2150757736
8,610,789				
(1,095,374)				701,210,248
9,335,187,734	—	—	—	2,851,967,984
—	—	—	—	—
—	—	—	—	—
9,335,187,734	—	—	—	2,851,967,984

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106)

1. Report below the original cost of gas plant in service according to the prescribed accounts.
2. In addition to Account 101, Gas Plant in Service (Classified), this page and the next include Account 102, Gas Plant Purchased or Sold; Account 103, Experimental Gas Plant Unclassified; and Account 106, Completed Construction Not Classified-Gas.
3. Include in column (c) or (d), as appropriate, corrections of additions and retirements for the current or preceding year.
4. Enclose in parentheses credit adjustments of plant accounts to indicate the negative effect of such accounts.
5. Classify Account 106 according to prescribed accounts on an estimated basis if necessary, and include the entries in column (c). Also to be included in column (c) are entries for reversals of tentative distributions of prior year reported in column (b). Likewise, if the respondent has a significant amount of plant retirements which have not been classified to primary accounts at the end of the year, include in column (d) a tentative distribution of such retirements, on an estimated basis, with appropriate contra entry to the account for accumulated depreciation provision. Include also in column (d) reversals of tentative distributions of prior year of unclassified retirements. Attach supplemental statement showing the account distributions of these tentative classifications in columns (c) and (d), in-

Line No.	Account (a)	Balance at Beg. of Year (b)	Additions (c)
1	1. Intangible Plant		
2	301 Organization	0	0
3	302 Franchises and Consents	674,445	0
4	303 Miscellaneous Intangible Plant	(858,670)	16,456
5	TOTAL Intangible Plant	(184,225)	16,456
6	2. Production Plant		
7	Natural Gas Production and Gathering Plant		
8	325.1 Producing Lands	0	0
9	325.2 Producing Leaseholds	0	0
10	325.3 Gas Rights	0	0
11	325.4 Rights-of-Way	0	0
12	325.5 Other Land and Land Rights	0	0
13	326 Gas Well Structures	0	0
14	327 Field Compressor Station Structures	0	0
15	328 Field Measuring and Regulating Station Structures	0	0
16	329 Other Structures	0	0
17	330 Producing Gas Wells-Well Construction	0	0
18	33l Producing Gas Wells-Well Equipment	0	0
19	332 Field Lines	0	0
20	333 Field Compressor Station Equipment	0	0
21	334 Field Measuring and Regulating Station Equipment	0	0
22	335 Drilling and Cleaning Equipment	0	0
23	336 Purification Equipment	0	0
24	337 Other Equipment	0	0
25	338 Unsuccessful Exploration & Devel. Costs	0	0
26	TOTAL Production and Gathering Plant	0	0
27	Products Extraction Plant		
28	340 Land and Land Rights	0	0
29	34l Structures and Improvements	0	0
30	342 Extraction and Refining Equipment	0	0
31	343 Pipe Lines	0	0
32	344 Extracted Products Storage Equipment	0	0
33	345 Compressor Equipment	0	0
34	346 Gas Measuring and Regulating Equipment	0	0
35	347 Other Equipment	0	0
36	TOTAL Products Extraction Plant	0	0
37	TOTAL Nat. Gas Production Plant	0	0
38	Mfd. Gas Prod. Plant(Submit Suppl.Statement)	508,971	0
39	TOTAL Production Plant	508,971	0

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY		5/5/2023	2022/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

cluding the reversals of the prior years tentative account distributions of these amounts. Careful observance of the above instructions and the texts of Accounts 101 and 106 will avoid serious omissions of the reported amount of respondent's plant actually in service at end of year.

6. Show in column (f) reclassifications or transfers within utility plant accounts. Include also in column (f) the additions or reductions of primary account classifications arising from distribution of amounts initially recorded in Account 102. In showing the clearance of Account 102, include in column (e) the amounts with respect to accumulated provision for depreciation acquisition adjustments, etc., and show in column (f) only the offset to the debits or credits distributed in column (f) to primary account classifications.

7. For Account 399, state the nature and use of plant included in this account and if substantial in amount submit a supplementary statement showing subaccount classification of such plant conforming to the requirements of these pages.

8. For each amount comprising the reported balance and changes in Account 102, state the property purchased or sold, name of vendor or purchaser, and date of transaction. If proposed journal entries have been filed with the Commission as required by the Uniform System of Accounts, give also date of such filing.

9. For revisions to the amount of initial asset retirement costs capitalized, included by primary plant account, increases in column (c) additions and reductions in column (e) adjustments.

Retirements (d)	Adjustments (e)	Transfers (f)	Balance at End of Year (g)		Line No.
					1
0	0	0	0	301	2
0	0	0	674,445	302	3
(1,441,187)	0	0	598,973	303	4
(1,441,187)	0	0	1,273,418		5
					6
					7
0	0	0	0	325.1	8
0	0	0	0	325.2	9
0	0	0	0	325.3	10
0	0	0	0	325.4	11
0	0	0	0	325.5	12
0	0	0	0	326	13
0	0	0	0	327	14
0	0	0	0	328	15
0	0	0	0	329	16
0	0	0	0	330	17
0	0	0	0	331	18
0	0	0	0	332	19
0	0	0	0	333	20
0	0	0	0	334	21
0	0	0	0	335	22
0	0	0	0	336	23
0	0	0	0	336	24
0	0	0	0	338	25
0	0	0	0		26
					27
0	0	0	0	340	28
0	0	0	0	341	29
0	0	0	0	342	30
0	0	0	0	343	31
0	0	0	0	344	32
0	0	0	0	345	33
0	0	0	0	346	34
0	0	0	0	347	35
0	0	0	0		36
0	0	0	0		37
0	0	0	508,971		38
0	0	0	508,971		39

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

Line No.	Account (a)	Balance at Beg. of Year (b)	Additions (c)
40	3. Natural Gas Storage and Processing Plant		
41	Underground Storage Plant		
42	350.1 Land	6,616,453	74,640
43	350.2 Rights-of-Way	1,796,338	0
44	351 Structures and Improvements	90,870,108	696,986
45	352 Wells	398,125,779	72,719,051
46	352.1 Storage Leaseholds and Rights	7,220,346	0
47	352.2 Resevoirs	0	0
48	352.3 Non-recoverable Natural Gas	0	0
49	353 Lines	158,152,633	21,158,417
50	354 Compressor Station Equipment	166,773,940	4,406,102
51	355 Measuring and Reg. Equipment	117,865,312	302,532
52	356 Purification Equipment	71,403,494	92,785
53	357 Other Equipment	15,377,538	67,569
54	358 Asset Retirement Costs for Underground Storage Plant	870,727	0
55	TOTAL Underground Storage Plant	1,035,072,668	99,518,082
56	Other Storage Plant		
57	360 Land and Land Rights	955,765	49,007
58	361 Structures and Improvements	1,556,229	14,050
59	362 Gas Holders	6,901,158	654,459
60	363 Purification Equipment	0	0
61	363.1 Liquefaction Equipment	0	0
62	363.2 Vaporizing Equipment	0	0
63	363.3 Compressor Equipment	666,595	0
64	363.4 Meas. and Reg. Equipment	1,720,637	0
65	363.5 Other Equipment	6,572,403	0
66	363.6 Asset Retirement Costs for Other Storage Plant	2,332,166	0
67	TOTAL Other Storage Equipment	20,704,953	717,516
68	Base Load Liquified Natural Gas Terminating and Processing Plant		
69	364.1 Land and Land Rights	0	0
70	364.2 Structures and Improvements	0	0
71	364.3 LNG Processing Terminal Equipment	0	0
72	364.4 LNG Transportation Equipment	0	0
73	364.5 Measuring and Regulation Equipment	0	0
74	364.6 Compressor Station Equipment	0	0
75	364.7 Communications Equipment	0	0
76	364.8 Other Equipment	0	0
77	TOTAL Base Load Liquified Natural		
78	Gas, Terminating and Processing Plant	0	0
79	TOTAL Nat. Gas Storage and Proc. Plant	1,055,777,621	100,235,598
80	4. Transmission Plant		
81	365.1 Land and Land Rights	21,276,301	5,560,165
82	365.2 Rights-of-Way	77,678,200	2,745,153
83	366 Structures and Improvements	245,677,090	11,015,599
84	367 Mains	4,908,742,492	275,105,582
85	368 Compressor Station Equipment	851,737,108	53,174,733
86	369 Measuring and Reg. Sta. Equipment	797,301,096	57,361,945
87	370 Communication Equipment	0	0
88	371 Other Equipment	675,437,348	122,129,385
89	372 Asset retirement costs for transmission plant	271,969,012	181,670,287
90	TOTAL Transmission Plant	7,849,818,647	708,762,849

Name of Respondent	This Report Is: (1) * An Original	Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

Retirements (d)	Adjustments (e)	Transfers (f)	Balance at End of Year (g)		Line No.
					40
					41
0	0	0	6,691,093	350.1	42
0	0	0	1,796,338	350.2	43
0	0	0	91,567,094	351	44
420,257	0	0	470,424,573	352	45
0	0	0	7,220,346	352.1	46
0	0	0	0	352.2	47
0	0	0	0	352.3	48
206,014	0	0	179,105,036	353	49
54,185	0	0	171,125,857	354	50
0	0	0	118,167,844	355	51
0	0	0	71,496,279	356	52
0	0	0	15,445,107	357	53
0	0	0	870,727	358	54
680,456	0	0	1,133,910,294		55
					56
0	0	0	1,004,772	360	57
0	0	0	1,570,279	361	58
0	0	0	7,555,617	362	59
0	0	0	0	363	60
0	0	0	0	363.1	61
0	0	0	0	363.2	62
0	0	0	666,595	363.3	63
0	0	0	1,720,637	363.4	64
0	0	0	6,572,403	363.5	65
0	0	0	2,332,166	363.6	66
0	0	0	21,422,469		67
					68
0	0	0	0	364.1	69
0	0	0	0	364.2	70
0	0	0	0	364.3	71
0	0	0	0	364.4	72
0	0	0	0	364.5	73
0	0	0	0	364.6	74
0	0	0	0	364.7	75
0	0	0	0	364.8	76
					77
0	0	0	0		78
680,456	0	0	1,155,332,763		79
					80
39	0	0	26,836,427	365.1	81
546	0	0	80,422,807	365.2	82
237,788	0	0	256,454,901	366	83
5,763,733	0	0	5,178,084,341	367	84
3,922,914	0	0	900,988,927	368	85
6,817,263	0	0	847,845,778	369	86
0	0	0	0	370	87
155,859	0	0	797,410,874	371	88
0	0	0	453,639,299	372	89
16,898,142	0	0	8,541,683,354		90

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

Line No.	Account (a)	Balance at Beg. of Year (b)	Additions (c)
91	5. Distribution Plant		
92	374 Land and Land Rights	35,154,270	(190,840)
93	375 Structures and Improvements	17,883,425	109,859
94	376 Mains	6,015,359,969	648,691,154
95	377 Compressor Station Equipment	29,019,284	60,439
96	378 Meas. and Reg. Sta. Equip.-General	673,767,295	84,785,030
97	379 Meas. and Reg. Sta. Equip.-City Gate	0	0
98	380 Services	5,542,121,189	430,818,800
99	381 Meters	1,306,593,872	95,834,840
100	382 Meter Installations	0	0
101	383 House Regulators	261,624,415	31,365,188
102	384 House Reg. Installations	0	0
103	385 Industrial Meas. and Reg. Sta. Equipment	101,766,741	10,628,003
104	386 Other Prop. on Customer's Premises	535,662	18,995
105	387 Other Equipment	83,353,121	10,834,565
106	388 Asset retirement costs for distribution plant	12,000,382	0
107	TOTAL Distribution Plant	14,079,179,625	1,312,956,033
108	6. General Plant		
109	389 Land and Land Rights	349,811	0
110	390 Structures and Improvements	153,924,669	0
111	391 Office Furniture and Equipment	6,997,670	63,369
112	392 Transportation Equipment	0	0
113	393 Stores Equipment	0	0
114	394 Tools, Shop and Garage Equipment	111,540,192	13,324,782
115	395 Laboratory Equipment	4,697,429	0
116	396 Power Operated Equipment	0	0
117	397 Communication Equipment	291,433,612	36,858,791
118	398 Miscellaneous Equipment	10,090,892	0
119	399.1 Asset Retirement for General Plant	1,869,412	0
120	Subtotal	580,903,687	50,246,942
121	399 Other Tangible Property	0	0
122	TOTAL General Plant	580,903,687	50,246,942
123	TOTAL (Accounts 101 and 106)	23,566,004,326	2,172,217,878
124	Gas Plant Purchased (See Instr. 8)	(239,370)	0
125	(Less) Gas Plant Sold (See Instr. 8)	(437,612)	0
126	Experimental Gas Plant Unclassified	0	0
127	TOTAL Gas Plant in Service	23,566,202,568	2,172,217,878

SUPPLEMENTAL STATEMENT FOR MANUFACTURED GAS PRODUCTION PLANT, PAGE 204-205, LINE 38

	304 Land and Land Rights	49,569	-
	305 Structures and Improvements	129,821	-
	311 Liquified Petroleum Gas Equipment	329,581	-
	320 Other Equipment	0	-
	TOTAL Manufactured Gas Production Plant	508,971	-

Name of Respondent	This Report Is: (1) * An Original	Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS PLANT IN SERVICE (Accounts 101,102,103, and 106) (Continued)

Retirements (d)	Adjustments (e)	Transfers (f)	Balance at End of Year (g)		Line No.
					91
1,350	0	0	34,962,080	374	92
0	0	0	17,993,284	375	93
6,380,029	0	0	6,657,671,094	376	94
0	0	0	29,079,723	377	95
3,255,283	0	0	755,297,042	378	96
0	0	0	0	379	97
8,909,175	0	0	5,964,030,814	380	98
15,627,381	0	0	1,386,801,331	381	99
0	0	0	0	382	100
3,797,836	0	0	289,191,767	383	101
0	0	0	0	384	102
4,156	0	0	112,390,588	385	103
0	0	0	554,657	386	104
0	0	0	94,187,686	387	105
0	(10,026,914)	0	1,973,468	388	106
37,975,210	(10,026,914)	0	15,344,133,534		107
					108
0	0	0	349,811	389	109
0	0	0	153,924,669	390	110
27,445	(67,449)	0	6,966,145	391	111
0	0	0	0	392	112
0	0	0	0	393	113
480,417	0	0	124,384,557	394	114
0	0	0	4,697,429	395	115
0	0	0	0	396	116
0	0	0	328,292,403	397	117
2,566,143	0	0	7,524,749	398	118
0	(1,091,113)	0	778,299	399	119
3,074,005	(1,158,562)	0	626,918,062		120
0	0	0	0	399	121
3,074,005	(1,158,562)	0	626,918,062		122
57,186,626	(11,185,476)	0	25,669,850,102		123
0	0	0	(239,370)		124
0	(92,058)	0	(529,670)		125
0	0	0	0		126
57,186,626	(11,093,418)	0	25,670,140,402		127

SUPPLEMENTAL STATEMENT FOR MANUFACTURED GAS PRODUCTION PLANT, PAGES 204-205, LINE 38

-	0	0	49,569	304	
-	0	0	129,821	305	
-	0	0	329,581	311	
-	0	0	0	320	
-	-	-	508,971		

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

GAS PROPERTY AND CAPACITY LEASED FROM OTHERS (Account 101.1)

Line No.	Name of Lessor (a)	* (b)	Description of Lease (c)	Lease Payments for Current Year (d)
1	NONE			
2				
3				
4				
5				
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42				
43				
44				
45	TOTAL			

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

GAS PLANT LEASED TO OTHERS (Account 104)

Line No.	Name of Lessee (Designate associated companies with a double asterisk) (a)	Description of Property Leased (b)	Commission Authorization (c)	Expiration Date of Lease (d)	Balance at End of Year (e)
1	NONE				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
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35					
36					
37					
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39					
40					
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42					
43					
44					
45					
46					
47					
48	TOTAL				

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

GAS PLANT HELD FOR FUTURE USE (Account 105)

1. Report separately each property held for future use at end of the year having an original cost of $250,000 or more. Group other items of property held for future use.
2. For property having an original cost of $250,000 or mo previously used in utility operations, now held for future use, give in column (a), in addition to other required information, the date that utility use of such property was discontinued, and the date the original cost was transferred to Account 105.

Line No.	Description and Location of Property (a)	Date Originally Included in This Account (b)	Date Expected to be Used in Utility Service (c)	Balance at End of Year (d)
1				
2	NONE			
3				
4				
5				
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42				
43				
44				
45	TOTAL			0

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

CONSTRUCTION WORK IN PROGRESS -- GAS (Account 107)

1. Report below descriptions and balances at end of year of projects in process of construction (107).
2. Show items relating to "research, development, and demonstration" projects last, under a caption Research, Development, and Demonstration (see Account 107 of the Uniform System of Accounts).
3. Minor projects (5% of the Balance End of the Year for Account 107 or $1,000,000, whichever is less) may be grouped.

Line No.	Description of Project (a)		Construction Work in Progress-Gas (Account 107) (b)
1	31101992	DFM 0405-01, MP 23.95 - 25.84 REP	28,046,413
2	74024170	DFM 0405-01 MP 22.21 - 23.59 REPL PIPE	18,235,092
3	74038521	L-021C MP 36.15 - 51.67 ILI UPGRADE	13,288,738
4	74043800	DFM 0617-06 MP 13.01-19.90 ILI UPGRADE	12,150,361
5	31556286	ODORIZING AND COMBUSTION PROGRAM	10,030,860
6	74012907	MILPITAS METERS REPL OUTGOINGCONV	8,643,241
7	74013548	S-238 HINKLEY ELECTRICAL UPGRADESCONV	7,221,331
8	31315365	LEVELCON CAMERA INSTALLS AT CNG STATION	6,791,758
9	74033443	L-109 MP 37.24 - 38.91 ILI UPGRADES	5,408,812
10	74036760	KETTLEMAN CS REPLACE CONTROLS	4,920,357
11	74033441	L-109 LAUNCHER SAN ANDREAS STATION	4,910,160
12	74047703	153 MP15.37 REPLACE	4,855,340
13	31325262	MANTECA CNG STATION - PHASE 2 UPGRADES	4,462,748
14	74022034	MCDI MCS UPGRADE COMPRESSOR K7/K8/K9	4,372,750
15	31607195	GAS RESERVOIR CROSS COMPRESS UNITS 1-3	4,227,709
16	74029685	HINKLEY COMPRESSOR STA REPLACE CONTROLS	3,501,997
17	74032727	MCDI TC-1N REWORK 2021	3,280,490
18	31212919	SALINAS CNG COMPRESSOR REPLACEMENT	3,264,900
19	74029147	L-130 MP 0.00 - 0.50 REPLACE PIPE	3,211,769
20	74029410	DFM 0405-01 MP 23.26-23.44 INST 8" PIPE	2,869,987
21	74037068	MCD MCD-14 REWORK	2,844,144
22	74004061	L-118A MP 13.0 REPL 8" & 12" STEEL PIPE	2,771,907
23	31312365	SAN RAFAEL CNG DISPENER RELOCATION	2,735,639
24	31543783	OCW D10 SARATOGA & LAWRENCE DRS RBLD	2,721,196
25	74032322	DFM 0405-01 MP 20.68- MP 21.88 TEST	2,685,767
26	74012901	BRENTWOOD TERMINAL REBUILD PHASE 1 - 12	2,681,626
27	74024169	L-021A MP 12.05-16.16 ILI NAPA RIVER HDD	2,675,919
28	74001643	R-708-L-021G,MP2.46–2.66,REPL1003” 0F12"	2,647,705
29	74024342	L-400 MP 193.55 BIOMETHANE INTERCONNECT	2,641,810
30	74015659	L-210A MP 21.88 - 22.83 REPLACE 0.95MI	2,584,841
31	31384171	GTTM RANCHO FELIZ MOBILE HOME PARK	2,502,255
32	74006717	DFM-1209-05 ILI UPGRADE LAUNCHER	2,483,314
33	31137062	L-123 & L-173 BLUE OAKS STA VALVE AUTO	2,465,589
34	74037720	MCDI WS-1E REDRILL	2,461,409
35	TOTAL		424,827,856

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

CONSTRUCTION WORK IN PROGRESS -- GAS (Account 107)

1. Report below descriptions and balances at end of year of projects in process of construction (107).
2. Show items relating to "research, development, and demonstration" projects last, under a caption Research, Development, and Demonstration (see Account 107 of the Uniform System of Accounts).
3. Minor projects (5% of the Balance End of the Year for Account 107 or $1,000,000, whichever is less) may be grouped.

Line No.	Description of Project (a)		Construction Work in Progress-Gas (Account 107) (b)
36	74037069	MCD MCD-15 REWORK	2,440,037
37	31166112	HAYWARD STATION COMPRESSOR REPLACEMENT	2,429,419
38	30861963	MCDI TCS & WSS REBUILD FIRE WATER SYSTEM	2,417,002
39	31099033	SPRECKELS SUGAR METER STATION REBUILD	2,384,246
40	74012855	BIXLER ROAD LIMITORQUE ACTUATOCONV	2,339,780
41	74047045	DE22-SF GAS LOAD CENTER	2,332,332
42	74016608	R-1143 L-300B MP 462.986 - 463.185 CALAV	2,324,228
43	74044460	L-111A MP 4.59-4.62 & 8.64-8.78 REPL	2,285,847
44	74024166	L-021C MP 35.05 ILI NORTH MCDOWELL REC	2,269,708
45	74044322	L-109 HEALY STATION ILI UPGRADES	2,239,232
46	31363175	STOCKTON CNG COMPRESSOR REPLACEMENT	2,228,228
47	31475797	GTTM LEISURE MOBILE HOME PARK	2,217,760
48	74038481	L-191-1 MP 26.77 - 29.11 TEST CAPITAL	2,177,441
49	31212287	SANTA ROSA CNG COMPRESSOR REPLACEMENT	2,116,598
50	74029585	TOPOCK CS REPLACE RAW WATER TANKS	2,083,054
51	74041460	DE21-215 L-215 MP 20 DIRECT EXAM	2,040,090
52	74008389	R-893 L-131 MP 32.51-32.65 REPLACE 24IN	2,021,854
53	31369715	R4 G CAP NEW REG MORROW LN CHICO PFL	1,951,594
54	74029104	DFM 0630-01 MP 10.67-10.85 REPLACE PIPE	1,926,454
55	74033621	DFM 0617-06 MP 20.67 ILI RECEIVER	1,924,111
56	31475756	GTTM CARIBBEES MOBILE HOME PARK	1,908,030
57	1013456	Casings (Unrecoverable)-Monthly CA Only	1,891,237
58	74034463	L-172A MP 8.74 - 36.08 ILI UPGRADES	1,799,074
59	74036029	L-124C MP 0.00-2.85 L-202 MP 0-23 ILI UP	1,766,532
60	31602459	OCW US DS PIPING NAT BRIDGES CONTINGENCY	1,728,025
61	74024802	L-021E MP 70.16 - 70.48 PIPE REPLA	1,713,147
62	74035955	DFM 1209-05 MP 0.0 - 5.02 ILI UPGRADE	1,693,275
63	35278858	GTTM EL DORADO MOBILE ESTATES	1,693,000
64	31312364	RICHMOND CNG DISPENSER RELOCATION	1,675,050
65	31475757	GTTM CASA DE AMIGOS	1,571,315
66	74029687	BRENTWOOD GAS TERMINAL INSTALL CTRLS	1,506,605
67	74008781	DIANA AVE GT REG STATION REBUILD	1,487,327
68	1014508	ECA-1-BA (offsetting 3T4)	1,484,842
69	74002509	L-177A MP 4.75-19.88 ILI UPGRADES	1,445,900
70	TOTAL		424,827,856

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

CONSTRUCTION WORK IN PROGRESS -- GAS (Account 107)

1. Report below descriptions and balances at end of year of projects in process of construction (107).
2. Show items relating to "research, development, and demonstration" projects last, under a caption Research, Development, and Demonstration (see Account 107 of the Uniform System of Accounts).
3. Minor projects (5% of the Balance End of the Year for Account 107 or $1,000,000, whichever is less) may be grouped.

Line No.	Description of Project (a)	Construction Work in Progress-Gas (Account 107) (b)
71	31100007 EDGEWOOD RD STA -ACCESS RD & LIGHTING	1,398,712
72	74022016 L-057A INSTALL NEW REG STATION	1,359,467
73	74002513 L-123 MP 0.00 UPGRADE RECEIVER	1,338,699
74	74029690 OAK FLAT RD METER STA VALVE AUTOMATION	1,329,518
75	74049507 DE22-CRYSTAL SPRINGS STATION	1,303,791
76	31228216 OCW HAWTHORNE-BIRCH-MULLBERRY-CARDOZA	1,274,987
77	74039462 INDIAN SPRINGS PLS REBUILD	1,271,050
78	74008782 FRESNO GAS LOAD CENTER STATION REBUILD	1,259,494
79	31475755 GTTM OLYMPIA GLADE MOBILE ESTATES	1,255,749
80	74012835 L-177A MP 190.20-190.31 REP PIPE	1,244,525
81	74029630 HINKLEY CS REPL COOL TWR SAND FILTERS	1,191,894
82	70041220 0RF Treated Wood Compliance	1,191,187
83	74021283 MCD-10 REWORK WELL TYP1A 2020	1,179,176
84	74009420 R-297 L-303 MP 35.34 REPL EXPOSED PIPE	1,175,261
85	74000285 R-692 L119A & 172A RELOCATION WSAC LEVEE	1,149,064
86	74040148 MCDI MCD-9 FLOW ARMS	1,146,410
87	74015924 R-1133 DFM0213-02 MP 0.07-0.47 SAN ANDRE	1,143,597
88	74020020 WILD GOOSE MTR STA GRIDLEY - RETIREMENT	1,140,131
89	74034886 BETHANY COMP STA REPLACE AIR COMP/DRYER	1,131,975
90	35111877 #OCW BALBOA & 10TH AVE, SAN FRANCIS	1,115,231
91	74008434 DFM-0617-06 MP 12.98 VALVE AUTO	1,045,341
92	74015926 DFM 2403-01 MP 3.45 - 3.69 HAYWARD FT	1,031,029
93	74024224 L-177A MP 180-187.28 VALVE AUTOMATION	1,019,422
94	74036728 BETHANY CS UPGRADE CONTROLS	1,016,933
95		
96		
97		
98		
99		
100	Aggregate total of projects with less than $1,000,000 in actual costs in Construction Work	
101	in Progress, including credits representing preliminary billings.	138,004,905
102		
103		
104		
105	TOTAL	424,827,856

Name of Respondent	This Report is:	Date of Report	Year of Report:
	(1) * An Original	(Mo. Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

ACCUMULATED PROVISION FOR DEPRECIATION OF GAS UTILITY PLANT (Account 108)

1. Explain in a footnote any important adjustments during year.
2. Explain in a footnote any difference between the amount for book cost of plant retired, line 11, column (c), and that reported for gas plant in service, pages 204-209, column (d), excluding retirements of non-depreciable property.
3. The provisions of Account 108 in the Uniform System of Accounts require that retirements of depreciable plant be recorded when such plant is removed from service. If the respondent has a significant amount of plant retired at year end which has not been recorded and/or classified to the various reserve functional classifications, make preliminary closing entries to tentatively functionalize the book cost of the plant retired. In addition, include all costs included in retirement work in progress at year end in the appropriate functional classifications.
4. Show separately interest credits under a sinking fund or similar method of depreciation accounting.

Section A. Balances and Changes During Year

Line No.	Item (a)	Total (c+d+e) (b)	Gas Plant in Service (c)	Gas Plant Held for Future Use (d)	Gas Plant Leased to Others (e)
1	Balance Beginning of Year	8,924,441,920	8,924,441,920		
2	Depreciation Provisions for Year, Charged to				
3	(403) Depreciation Expense	835,682,519	835,682,519		
4	(413) Exp. of Gas Plt. Leas. to Others				
5	Transportation Expenses-Clearing				
6	Other Clearing Accounts				
7	Reverse Common Allocation	(96,542,864)	(96,542,864)		
8					
9	TOTAL Deprec. Prov. for Year (Total of lines 3 through 7)	739,139,655	739,139,655		
10	Net Charges for Plant Retired:				
11	Book Cost of Plant Retired	58,627,815	58,627,815		
12	Cost of Removal	175,247,732	175,247,732		
13	Salvage (Credit)	821,035	821,035		
14	TOTAL Net Chrgs. for Plant Ret. (Total of lines 10 through 12, less 13)	233,054,512	233,054,512		
15	Other Debit or Cr. Items (Describe):				
16	FIN 47 Asset Depreciation	(51,357,762)	(51,357,762)		
17	Decommissioning accrual for LM/PC	17,762,400	17,762,400		
18	Cost deferral - Gas	(33,664,759)	(33,664,759)		
19	Miscellaneous	(69,823)	(69,823)		
20	Balance End of Year (Enter Total of lines 1, 9, and 16, less 14)	9,327,672,319	9,327,672,319		

Section B. Balances at End of Year According to Functional Classifications

21	Production-Manufactured Gas	232,808	232,808		
22	Production and Gathering-Natural Gas	0	-		
23	Products Extraction-Natural Gas	0	-		
24	Underground Gas Storage	397,509,510	397,509,510		
25	Other Storage Plant	6,090,578	6,090,578		
26	Base Load LNG Terminaling & Processing Pl	0	-		
27	Transmission	2,383,966,635	2,383,966,635		
28	Distribution	6,435,611,891	6,435,611,891		
29	General	104,260,897	104,260,897		
30	TOTAL (Enter Total of lines 208 through 2	9,327,672,319	9,327,672,319		

Name of Respondent	This Report is:	Date of Report	Year of Report:
	(1) * An Original	(Mo. Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

ACCUMULATED PROVISION FOR DEPRECIATION OF GAS UTILITY PLANT (Account 108)

1. Explain in a footnote any important adjustments during year.
2. Explain in a footnote any difference between the amount for book cost of plant retired, line 11, column (c), and that reported for gas plant in service, pages 204-209, column (d), excluding retirements of non-depreciable property.
3. The provisions of Account 108 in the Uniform System of Accounts require that retirements of depreciable plant be recorded when such plant is removed from service. If the respondent has a significant amount of plant retired at year end which has not been recorded and/or classified to the various reserve functional classifications, make preliminary closing entries to tentatively functionalize the book cost of the plant retired. In addition, include all costs included in retirement work in progress at year end in the appropriate functional classifications.
4. Show separately interest credits under a sinking fund or similar method of depreciation accounting.

NOTES:

LINE 11, PAGE 219:	
Book cost of plant retired, line 11, column c	58,627,814
Intangible Retirements	(1,441,189)
Book cost of plant retired, pages 204-209, column (d)	57,186,625

LINE 17, PAGE 219:

Reclass to Reg Liability for Decommissioning Accrual associated with Los Medanos/Pleasant Creek Gas Underground Storage Facilities as approved by the 2019 GT&S Rate Case

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS STORED (Account 117, 164.1, 164.2 and 164.3)

1. If during the year adjustment was made to the stored gas inventory in columns (d), (f), (g), and (h), such as to correct cumulative inaccuracies of gas measurements), explain in a footnote the reason for the adjustments, the Dth and dollar amount of adjustment and account charged or credited.

2. Report in column (e) all encroachments during the year upon the volumes designated as gas base, column (b), and system balancing gas, column (c), and gas property recordable in the plant accounts.

3. State in a footnote the basis of segregation of inventory between current and noncurrent portions. Also, state in a footnote the method used to report storage (i.e., fixed asset method or inventory method).

Line No.	Description	(Account 117.1)	(Account 117.2)	Noncurrent (Account 117.3)	(Account 117.4)	Current (Account 164.1)	LNG (Account 164.2)	LNG (Account 164.3)	Total
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1	Balance at Beginning of Year	$ 119,592,211				$ 43,030,451			$ 162,622,661
2	Gas Delivered to Storage (contra Account)					117,077,469			$ 117,077,469
3	Gas Withdrawn From Storage (contra Account)					(70,431,593)			$ (70,431,593)
4	Other Debits or Credits (Net)					0			0
5	Balance at End of Year	$ 119,592,211				$ 89,676,327			$ 209,268,538
6	Dth	128,767,761				16,408,440			145,176,201
7	Amount Per Dth	0.9287				5.4653			1.4415

8 State basis of segregation of inventory between current and noncurrent portions:
- McDonald Island Storage: Above 900 psi
- Los Medanos Storage: Above 600 psi
- Pleasant Creek Storage: Above 750 psi

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

INVESTMENTS (Accounts 123, 124, 136)

1. Report below Investments in Accounts 123, Investments in Associated Companies, 124, Other Investments and 136, Temporary Cash Investments.
2. Provide a subheading for each account and list thereunder the information called for:
(a) Investment in Securities - List and describe each security owned, giving name of issuer, date acquired and date of maturity. For bonds, also give principal amount, date of issue, maturity, and interest rate. For capital stock (including capital stock of respondent reacquired under a definite plan for resale pursuant to authorization by the Board of Directors and included in Account 124, Other Investments), state number of shares, class, and series of stock. Minor investments may be grouped by classes. Investment included in Account 136, Temporary Cash Investments, also may be grouped by classes.
(b) Investment Advances - Report separately for each person or company the amount of loans or investment advances which are properly includable in Account 123. Advances subject to current repayment should be included in Accounts 145 and 146. With respect to each advance, show whether the advance is a note or open account. Each note should be listed giving the date of issuance, maturity date, and specifying whether

Line No.	Description of Investment (a)	Book Cost at Beginning of Year (If book cost is different from cost to respondent, give cost to respondent in a footnote and explain difference.) (b)	Purchases or Additions During Year (c)
1	INVESTMENTS IN ASSOC. COMPANIES (ACCOUNT 123)		3,245,150,000
2			
3	OTHER INVESTMENTS (ACCOUNT 124)		
4			
5	Miscellaneous	-	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
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29			
30	TOTAL OTHER INVESTMENTS (ACCOUNT 124)	-	-
31			
32	TEMPORARY CASH INVESTMENTS (ACCOUNT 136)	112,750,000	21,247,022,158

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

INVESTMENTS (Accounts 123, 124, 136) (Continued)

note is a renewal. Designate any advances due from officers, directors, stockholders, or employees. Exclude amounts reported on page 229.

3. For any securities, notes or accounts that were pledged designate with an asterisk such securities, notes, or accounts and in a footnote state the name of pledgee and purpose of the pledge.

4. If Commission approval was required for any advance made or security acquired, designate such fact in a footnote and give name of Commission, date of authorization, and case or docket number.

5. Report in column (g) interest and dividend revenues from investments including such revenues from securities disposed of during the year.

6. In column (h) report for each investment disposed of during the year the gain or loss represented by the difference between cost of the investment (or the other amount at which carried in the books of account if different from cost) and the selling price thereof, not including any dividend or interest adjustment includible in column (g).

Sales or Other Dispositions During Year (d)	Principal Amount or No. of Shares at End of Year (e)	Book Cost at End of Year (If book cost is different from cost to respondent, give cost to respondent in a footnote and explain difference.) (f)	Revenues for Year (g)	Gain or Loss from Investment Disposed of (h)	Line No.
$0	230,000,000	3,245,150,000			1
-		-			2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
-		-	-	-	29 30
(20,826,650,001)		533,122,157	3,721,263		31 32

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Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

PREPAYMENTS (Account 165)

1. Report below the particulars (details) on each prepayment.
2. Report all payments for undelivered gas on line 5 and complete pages 226 to 227 showing particulars (details) for gas prepayments.

Line No.	Nature of Prepayment (a)	Balance at End of Year (In Dollars) (b)
1	Prepaid Insurance	424,312,307
2	Prepaid Rents	0
3	Prepaid Taxes	0
4	Prepaid Retirement Benefits Other than Pensions (PBOP)	0
5	Gas Prepayments	0
6	Miscellaneous Prepayments	146,653,338
7	TOTAL	570,965,644

EXTRAORDINARY PROPERTY LOSSES (Account 182.1)

Line No.	Description of Extraordinary Loss [Include in the description the date of loss, the date of Commission authorization to use Account 182.1 and period of amortization (mo, yr, to mo, yr).] (a)	Total Amount of Loss (b)	Losses Recognized During Year (c)	WRITTEN OFF DURING YEAR		Balance at End of Year (f)
				Account Charged (d)	Amount (e)	
1	NONE					
2						
3						
4						
5						
6	TOTAL	0	0		0	0

UNRECOVERED PLANT AND REGULATORY STUDY COSTS (182.2)

Line No.	Description of Unrecovered Plant and Regulatory Study Costs [Include in the description the date of loss, the date of Commission authorization to use Account 182.2 and period of amortization (mo, yr, to mo, yr).] (a)	Total Amount of Charges (b)	Costs Recognized During Year (c)	WRITTEN OFF DURING YEAR		Balance at End of Year (f)
				Account Charged (d)	Amount (e)	
1	NONE					
2						
3						
4						
5						
6	TOTAL	0	0		0	0

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Name of Respondent:	This Report Is:	Date of Report:	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

ACCUMULATED DEFERRED INCOME TAXES (Account 190)

1. Report the information called for below concerning the respondent's accounting for deferred income taxes.

2. At Other (Specify), include deferrals relating to other income and deductions.

Line No.	Account (a)	Balance at Beginning of Year (b)	Changes During Year Amounts Debited (Account 410.1) (c)	Changes During Year Amounts Credited (Account 411.1) (d)
1	Electric			
2	Environmental	(43,933,700)	0	0
3	Compensation	32,281,664	160,790,578	136,750,541
4	CIAC	(113,760,281)	22,131,156	30,547,218
5	Injuries and Damages	1,639,649,608	1,626,444,533	1,421,106,963
6	California Corporation Franchise Tax	(189,379,849)	114,441,730	9,469,908
7	Other **(1)**	4,891,264,494	779,252,344	2,323,552,751
8	TOTAL ELECTRIC (Lines 2 thru 6)	6,216,121,936	2,703,060,340	3,921,427,382
9	Gas			
10	Environmental	(175,160,725)	49,747,977	3,094,911
11	Compensation	36,831,329	62,134,252	56,332,338
12	CIAC	171,055,129	3,378,231	4,844,826
13	Injuries and Damages	(80,127,765)	37,758,717	9,695,001
14	California Corporation Franchise Tax	(25,354,468)	32,079,713	16,491,994
15	Other **(2)**	1,342,411,951	548,584,334	794,948,617
16	TOTAL GAS (Lines 10 thru 13)	1,269,655,451	733,683,225	885,407,687
17	Other **(3)**	1,214,521,079	0	0
18	TOTAL Account 190 (Lines 7, 14 and 15)	8,700,298,466	3,436,743,565	4,806,835,069

NOTES:

(1)	Electric - Other			
	Vacation Paid	32,676,543	58,247,744	52,427,313
	Severance costs	10,540,123	388,687	688,479
	Medical and Group Life Insurance	(36,988,593)	8,236,923	8,135,206
	Short Term Incentive Plan	232,958	73,530,366	73,530,366
	Net Operating Loss	3,691,246,293	162,577,758	1,536,873,953
	Property Tax	(53,436,144)	139,446,120	132,298,249
	Other	1,246,993,315	336,824,745	519,599,185
	Subtotal	4,891,264,494	779,252,344	2,323,552,751
(2)	Gas - Other			
	Vacation Paid	13,693,729	24,963,319	22,468,848
	Severance costs	4,741,328	166,580	295,063
	Medical and Group Life Insurance	(13,844,726)	3,530,109	3,486,517
	Short Term Incentive Plan	(323,737)	31,513,014	31,513,014
	Net Operating Loss	902,570,675	287,410,432	379,649,205
	Property Tax	(19,198,949)	51,192,230	48,577,469
	Other	454,773,632	149,808,650	308,958,500
	Subtotal	1,342,411,951	548,584,334	794,948,617
(3)	Other			
	California Corporation Franchise Tax	(30,113,877)		
	Compensation	2,942,778		
	Net Operating Loss	1,101,176,295		
	Property Tax	1,010,870		
	Other	139,505,014		
	Subtotal	1,214,521,079		

Name of Respondent:	This Report Is: (1) * An Original (2) A Resubmission		Date of Report: (Mo, Da, Yr)	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY			5/5/2023	2022/Q4

ACCUMULDTED DEFERRED INCOME TAXES (Account 190) (Continued)

Changes During Year		Adjustments				Balance at End of Year	Line No.
		Debits		Credits			
Amounts Debited (Account 410.2) (e)	Amounts Credited (Account 411.2) (f)	Dcct. No. (g)	Amount (h)	Acct. No. (i)	Amount (j)	(k)	
							1
						(43,933,700)	2
				(A)	(2,294,994)	5,946,633	3
						(105,344,219)	4
						1,434,312,038	5
						(294,351,670)	6
0	0		0	(B)	1,560,221	6,437,125,122	7
0	0		0		(734,774)	7,433,754,203	8
							9
						(221,813,791)	10
						31,029,415	11
						172,521,723	12
						(108,191,482)	13
						(40,942,187)	14
0	0			(C)	(443,196)	1,588,333,039	15
0	0		0		(443,196)	1,420,936,718	16
100,725,642	236,145,992		0	(D)	(1,453,140)	1,348,488,290	17
100,725,642	236,145,992		0		(2,631,109)	10,203,179,211	18

					26,856,111
					10,839,915
					(37,090,310)
					232,958
					5,065,542,488
					(60,584,015)
				1,560,221	1,431,327,976
		0	(B)	1,560,221	6,437,125,122

					11,199,258
					4,869,810
					(13,888,318)
					(323,736)
					994,809,448
					(21,813,710)
				(443,198)	613,480,285
		0	(C)	(443,198)	1,588,333,037

11,748,939	25,028,730				(16,834,087)
20,234,927	32,224,083				14,931,934
67,515,842	172,359,129				1,206,019,581
44,717	718,783				1,684,936
1,181,216	5,815,266			(1,453,139)	142,685,925
100,725,642	236,145,992	0	(D)	(1,453,139)	1,348,488,290

SECURITIES ISSUED OR ASSUMED AND
SECURITIES REFUNDED OR RETIRED DURING THE YEAR

1. Furnish a supplemental statement giving a brief description of security financing and refinancing transactions during the year and the accounting for the securities, discounts, premiums, expenses, and related gains or losses. Identify as to Commission authorization numbers and dates.
2. Furnish particulars (details) showing fully the accounting for the total principal amount, par value, or stated value of each class and series of security issued, assumed, retired, or refunded and the accounting for premiums, discounts, expenses, and gains or losses relating to the securities. Set forth the facts of the accounting clearly with regard to redemption premiums, unamortized discounts, expenses, and gains or losses relating to securities retired or refunded, including the accounting for such amounts carried in the respondent's accounts at the date of the refunding or refinancing transactions with respect to securities previously refunded or retired.
3. Include in the identification of each class and series of security, as appropriate, the interest or dividend rate, nominal date of issuance, maturity date, aggregate principal amount, par value or stated value, and number of shares. Give also the issuance or redemption price and name of the principal underwriting firm through which the security transactions were consummated.
4. Where the accounting for amounts relating to securities refunded or retired is other than that specified in General Instruction 17 of the Uniform System of Accounts, give references to the Commission authorization for the different accounting and state the accounting method.
5. For securities assumed, give the name of the company for which the liability of the securities was assumed as well as particulars (details) of the transactions whereby the respondent undertook to pay obligations of another company. If any unamortized discount, premiums, expenses, and gains or losses were taken over onto the respondent's books, furnish details of these amounts with amounts relating to refunded securities clearly earmarked.

Debt Matured and Retired During 2022

Description:		Principal
Variable Rate $300M Floating Rate First Mortgage Bond, issued 11/15/2021 due 11/14/2022	$	300,000,000
Variable Rate $500M Floating Rate First Mortgage Bond, issued 6/19/2020 due 6/16/2022	(A)	500,000,000
Variable Rate 18-month $1.5B Term Loan, issued 7/1/2020 due 10/01/2022	(B)	1,440,735,897
Variable Rate 364-day $500M Term Loan, issued 4/4/2022 due 4/3/2023	(C)	500,000,000
1.367% $1.5B First Mortage Bonds, issued 3/11/2021 due 3/10/2023	(D)	1,500,000,000
1.75% $2.5B First Mortgage Bond, issued 6/16/2020 due 6/16/2022	(E)	2,500,000,000
Non-interest bearing DWR loan	(F)	37,775,295
	$	6,778,511,192

Name of Respondent	This Report Is:		Date of Report:	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission		(Mo, Da, Yr) 5/5/2023	2022/Q4

SECURITIES ISSUED OR ASSUMED AND
SECURITIES REFUNDED OR RETIRED DURING THE YEAR

Debt Issued During 2022

Description:		Principal
3.25% $1B First Mortgage Bonds, issued 2/18/2022 due 2/16/2024	$	1,000,000,000
4.20% $400M First Mortgage Bonds, issued 2/18/2022 due 3/1/2029		400,000,000
4.40% $450M First Mortgage Bonds, issued 2/18/2022 due 3/1/2032		450,000,000
5.25% $550M First Mortgage Bonds, issued 2/18/2022 due 3/1/2052		550,000,000
4.95% $450M First Mortgage Bonds, issued 6/8/2022 due 6/8/2025		450,000,000
5.45% $450M First Mortgage Bonds, issued 6/8/2022 due 6/15/2027		450,000,000
5.90% $600M First Mortgage Bonds, issued 6/8/2022 due 6/15/2032		600,000,000
Variable Rate 2-Year $400M Term Loan, issued 4/20/2022, due 4/19/2024		400,000,000
Variable Rate 364-day $125M Term Loan, issued 4/20/2022, due 4/19/2023		125,000,000
Variable Rate 364-day $500M Term Loan, issued 4/4/2022, due 4/3/2023		500,000,000
Non-interest bearing DWR loan	(F)	350,000,000
	(G) $	5,275,000,000

Note:
(A) On May 16, 2022, PG&E prepaid $500 million of Floating Rate First Mortgage Bonds in full.
(B) On February 7, 2022, PG&E prepaid $142.5 million of 18-month $1.5 billion Term Loan. On February 18, 2022, PG&E prepaid $1 billion of the Term Loan. On March 31, 2022, PG&E prepaid in full the remaining portion of the Term Loan in a principal amount equal to $298.2 million.
(C) On July 21, 2022, PG&E prepaid the $500 million of Term Loan in full.
(D) On July 25, 2022, PG&E prepaid 1.367% $1.5 billion of First Mortgage Bonds in full.
(E) On May 16, 2022, PG&E prepaid 1.75% $2.5 billion of First Rate Mortgage Bonds in full.
(F) On October 18, 2022, PG&E and the California Department of Water Resources ("DWR") executed a loan agreement to support the extension of Diablo Canyonup to approximately $1.1 billion of which could be repaid by funds received from the United States Departement of Energy. Under the loan agreement, the DWR will pay the Utility a monthly performance-based disbursement equal to $7 for each MWh generated by Diablo Canyon, effective September 2, 2022. The Utility may use the proceeds of the performance-based disbursements for any business purpose, but may not pay as shareholder profits or dividends or as otherwise prohibited by SB 846. The Utility began earning performance-based disbursements beginning on September 2, 2022 and will no longer earn them on the previously-approved retirement dates for Diablo Canyon Unit 1 and Unit 2 (2024 and 2025, respectively). The performance-based disbursements are contingent upon the Utility's ongoing pursuit of extension of the operating period and continued safe and reliable Diablo Canyon operations. The aggregate amount of performance-based disbursements under this agreement will not exceed $300 million.

On October 31, 2022, PG&E received $350 million from the DWR under the loan agreement. The Utility initially accounts for all disbursements from the DWR loan agreement pursuant to ASC 470, Debt. When there is reasonable assurance that the Utility will have loan disbursements forgiven by the DWR, such as when the Utility earns a performance-based disbursement, the Utility will recognize those forgiven loans as income related to government grants. The Utility plans to record the income related to government grants as a deduction to Operating and maintenance expense in the same period(s) that eligible costs are incurred. As of December 31, 2022, the consolidated financial statements reflected $312 million in Long-term debt, and a deduction of $38 million to Operating and maintenance expense for income related to government grants for performance-based disbursements.

(G) Debt issued during 2022 excludes PG&E Recovery Funding LLC (AB1054) and PG&E Wildfire Recovery (SB901) securitizations.

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

LONG TERM DEBT (Accounts 221, 222, 223, and 224)

1. Report by Balance Sheet Account the details concerning long-term debt included in Account 221 Bonds, 222 Reacquired Bonds, 223 Advances from Associated Companies, and 224 Other Long-Term Debt.
2. For bonds assumed by the respondent, include in column (a) the name of the issuing company as well as a description of the bonds.
3. For Advances from Associated Companies, report separately advances on notes and advances on open accounts. Designate demand notes as such. Include in column (a) names of associated companies from which advances were received.
4. For receivers' certificates, show in column (a) the name of the court and date of court order under which such certificates were issued.

Line No.	Class and Series of Obligation and Name of Stock Exchange (a)	Nominal Date of Issue (b)	Date of Maturity (c)	Outstanding (Total amount outstanding without reduction for amounts held by respondent)
1	Account 221:			
2	Floating Rate First Mortgage Bond due 2022	6/19/2020	6/16/2022	-
3	First Mortgage Bonds 1.75% due 2022	6/19/2020	06/16/2022	-
4	First Mortgage Bond 3.25% due 2023	06/14/2013	06/15/2023	375,000,000
5	First Mortgage Bond 3.85% due 2023	11/12/2013	11/15/2023	300,000,000
6	First Mortgage Bond 4.25% due 2023	08/06/2018	08/01/2023	500,000,000
7	First Mortgage Bonds 1.367% due 2023	03/11/2021	03/10/2023	-
8	First Mortgage Bonds 1.70% due 2023	11/15/2021	11/15/2023	900,000,000
9	First Mortgage Bond 3.75% due 2024	02/21/2014	02/15/2024	450,000,000
10	First Mortgage Bond 3.40% due 2024	08/18/2014	08/15/2024	350,000,000
11	First Mortgage Bonds 3.25% Due 2024	2/18/2022	2/16/2024	1,000,000,000
12	First Mortgage Bond 3.50% due 2025	06/12/2015	06/15/2025	400,000,000
13	First Mortgage Bond 3.50% due 2025	11/05/2015	06/15/2025	200,000,000
14	First Mortgage Bonds 3.45% due 2025	07/01/2020	07/01/2025	875,000,000
15	First Mortgage Bonds 4.95% Due 2025	06/08/2022	6/8/2025	450,000,000
16	First Mortgage Bond 2.95% due 2026	03/01/2016	03/01/2026	600,000,000
17	First Mortgage Bonds 3.15% due 2026	07/01/2020	01/01/2026	1,951,469,927
18	First Mortgage Bond 3.30% due 2027	03/10/2017	03/15/2027	400,000,000
19	First Mortgage Bond 3.30% due 2027	11/29/2017	12/01/2027	1,150,000,000
20	First Mortgage Bonds 2.10% due 2027	06/19/2020	08/01/2027	1,000,000,000
21	First Mortgage Bonds 5.45% Due 2027	06/08/2022	6/15/2027	450,000,000
22	First Mortgage Bond 4.65% due 2028	08/06/2018	08/01/2028	300,000,000
23	First Mortgage Bondss 3.75% due 2028	07/01/2020	07/01/2028	875,000,000
24	First Mortgage Bonds 3.00% due 2028	6/3/2021	6/15/2028	800,000,000
25	First Mortgage Bonds 4.20% Due 2029	2/18/2022	3/1/2029	400,000,000
26	First Mortgage Bonds 4.55% due 2030	07/01/2020	07/01/2030	3,100,000,000
27	First Mortgage Bonds 2.50% due 2031	06/19/2020	02/01/2031	2,000,000,000
28	First Mortgage Bonds 3.25% due 2031	03/11/2021	06/01/2031	450,000,000
29	First Mortgage Bonds 3.25% due 2031	11/15/2021	06/01/2031	550,000,000
30	First Mortgage Bonds 4.40% Due 2032	2/18/2022	3/1/2032	450,000,000
31	First Mortgage Bonds 5.90% Due 2032	06/08/2022	6/15/2032	600,000,000
32	First Mortgage Bonds 3.30% due 2040	06/19/2020	08/01/2040	1,000,000,000
33	First Mortgage Bonds 4.50% due 2040	07/01/2020	07/01/2040	1,951,469,927
34	First Mortgage Bond 4.50% due 2041	12/01/2011	12/15/2041	250,000,000
35	First Mortgage Bonds 4.20% due 2041	03/11/2021	06/01/2041	450,000,000
36	First Mortgage Bond 4.45% due 2042	04/16/2012	04/15/2042	400,000,000
37	First Mortgage Bond 3.75% due 2042	08/16/2012	08/15/2042	350,000,000
38	First Mortgage Bond 4.60% due 2043	06/14/2013	06/15/2043	375,000,000
39	First Mortgage Bond 4.75% due 2044	02/21/2014	02/15/2044	450,000,000
40	First Mortgage Bond 4.75% due 2044	08/18/2014	02/15/2044	225,000,000
41	First Mortgage Bond 4.30% due 2045	11/06/2014	03/15/2045	500,000,000
42	First Mortgage Bond 4.30% due 2045	06/12/2015	03/15/2045	100,000,000
43	First Mortgage Bond 4.25% due 2046	11/05/2015	03/15/2046	450,000,000
44	First Mortgage Bond 4.00% due 2046	12/01/2016	12/01/2046	400,000,000
45	First Mortgage Bond 4.00% due 2046	03/10/2017	12/01/2046	200,000,000
46	First Mortgage Bond 3.95% due 2047	11/29/2017	12/01/2047	850,000,000
47	First Mortgage Bonds 4.95% due 2050	07/01/2020	07/01/2050	3,100,000,000
48	First Mortgage Bonds 3.50% due 2050	06/19/2020	08/01/2050	1,925,000,000
49	First Mortgage Bonds 5.25% Due 2052	2/18/2022	3/1/2052	550,000,000
50	Term Loan 18 Months	7/1/2020	10/1/2022	-
51	Term Loan 2-years	4/20/2022	4/19/2024	400,000,000
52	DWR Loan			312,224,705
53				
54	TOTAL ACCOUNT 221			35,115,164,559
55				
56	Account 223:			
57	PG&E Recovery Funding LLC	various	various	1,764,599,195
58	PG&E Wildfire Recovery	various	various	7,329,310,659
59				
60	TOTAL ACCOUNT 223			9,093,909,854
61				
62	TOTAL			44,209,074,413

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY		5/5/2023	2022/Q4

LONG TERM DEBT (Accounts 221, 222, 223, and 224) (Continued)

5. In a supplemental statement, give explanatory details for Accounts 223 and 224 of net changes during the year. With respect to long-term advances, show for each company: (a) principal advanced during year (b) interest added to principal amount, and (c) principal repaid during year. Give Commission authorization numbers and dates.
6. If the respondent has pledged any of its long-term debt securities, give particulars (details) in a footnote, including name of the pledgee and purpose of the pledge.
7. If the respondent has any long-term securities that have been nominally issued and are nominally outstanding at end of year, describe such securities in a footnote.
8. If interest expense was incurred during the year on any obligations retired or reacquired before end of year, include such interest expense in column (f). Explain in a footnote any difference between the total of column (f) and the total Account 427, Interest on Long-Term Debt and Account 430, Interest on Debt to Associated Companies.
9. Give details concerning any long-term debt authorized by a regulatory commission but not yet issued.

INTEREST FOR YEAR		HELD BY RESPONDENT		Redemption Price Per $100 at End of Year	
Rate (in %) (e)	Amount (f)	Reacquired Bonds (Acct. 222) (g)	Sinking and Other Funds (h)	(i)	Line No.
					1
variable	3,761,924				2
1.75%	16,406,250				3
3.25%	12,187,500				4
3.85%	11,550,000				5
4.25%	21,250,000				6
1.37%	11,619,500				7
1.70%	15,300,000				8
3.75%	16,875,000				9
3.40%	11,900,000				10
3.25%	28,256,944				11
3.50%	14,000,000				12
3.50%	7,000,000				13
3.45%	30,187,500				14
4.95%	12,560,625				15
2.95%	17,700,000				16
3.15%	61,471,303				17
3.30%	13,200,000				18
3.30%	37,950,000				19
2.10%	21,000,000				20
5.45%	13,829,375				21
4.65%	13,950,000				22
3.75%	32,812,500				23
3.00%	24,000,000				24
4.20%	14,606,667				25
4.55%	141,050,000				26
2.50%	50,000,000				27
3.25%	14,625,000				28
3.25%	17,875,000				29
4.40%	17,215,000				30
5.90%	19,961,667				31
3.30%	33,000,000				32
4.50%	87,816,147				33
4.50%	11,250,000				34
4.20%	18,900,000				35
4.45%	17,800,000				36
3.75%	13,125,000				37
4.60%	17,250,000				38
4.75%	21,375,000				39
4.75%	10,687,500				40
4.30%	21,500,000				41
4.30%	4,300,000				42
4.25%	19,125,000				43
4.00%	16,000,000				44
4.00%	8,000,000				45
3.95%	33,575,000				46
4.95%	153,450,000				47
3.50%	67,375,000				48
5.25%	25,105,208				49
variable	5,321,215				50
variable	10,426,323				51
N/A	-				52
					53
	1,319,483,148	-	-	-	54
					55
					56
various	26,425,307				57
various	207,600,173				58
					59
	234,025,480				60
					61
	1,553,508,628				62

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

UNAMORTIZED DEBT EXPENSE, PREMIUM AND DISCOUNT ON LONG-TERM DEBT (Accounts 181,225,226)

1. Report under separate subheadings for Unamortized Debt Expense, Unamortized Premium on Long-Term Debt and Unamortized Discount on Long-Term Debt, particulars (details) of expense, premium or discount applicable to each class and series of long-term debt.
2. Show premium amounts by enclosing the figures in parentheses.
3. In column (b) show the principal amount of bonds or other long-term debt originally issued.
4. In column (c) show the expense, premium or discount with respect to the amount of bonds or other long-term debt originally issued.

Line No.	Designation of Long-Term Debt (a)		Principal Amount of Debt Issued (b)	Total Expense, Premium or Discount (c)	AMORTIZATION PERIOD Date From (d)	Date To (e)
1	**ACCOUNT 181 - UNAMORTIZED ISSUANCE COSTS**					
2	3M-LIBOR + 1.48% Floating Rate Mortgage Bond due 2022	(A)	500,000,000	3,190,751	6/19/2020	6/16/2022
3	First Mortgage Bonds 1.75% due 2022	(B)	2,500,000,000	15,953,736	6/19/2020	6/16/2022
4	First Mortgage Bonds 1.367% due 2023	(C)	1,500,000,000	7,760,017	3/11/2021	3/10/2023
5	First Mortgage Bonds 1.70% due 2023		900,000,000	4,457,038	11/15/2021	11/15/2023
6	First Mortgage Bonds 3.25% Due 2024		1,000,000,000	5,153,291	2/18/2022	2/16/2024
7	First Mortgage Bonds 4.95% Due 2025		450,000,000	2,438,303	6/8/2022	6/8/2025
8	First Mortgage Bonds 3.45% due 2025		875,000,000	3,645,283	7/1/2020	7/1/2025
9	First Mortgage Bonds 3.15% due 2026		1,951,469,927	3,199,727	7/1/2020	1/1/2026
10	First Mortgage Bonds 5.45% Due 2027		450,000,000	3,563,303	6/8/2022	6/15/2027
11	First Mortgage Bonds 2.10% due 2027		1,000,000,000	7,631,260	6/19/2020	8/1/2027
12	First Mortgage Bonds 3.00% due 2028		800,000,000	6,572,690	6/3/2021	6/15/2028
13	First Mortgage Bonds 3.75% due 2028		875,000,000	3,645,283	7/1/2020	7/1/2028
14	First Mortgage Bonds 4.20% Due 2029		400,000,000	3,333,500	2/18/2022	3/1/2029
15	First Mortgage Bonds 4.55% due 2030		3,100,000,000	44,414,717	7/1/2020	7/1/2030
16	First Mortgage Bonds 2.50% due 2031		2,000,000,000	15,762,734	6/19/2020	2/1/2031
17	First Mortgage Bonds 3.25% due 2031		450,000,000	3,676,626	3/11/2021	6/1/2031
18	First Mortgage Bonds 3.25% due 2031		550,000,000	4,374,329	11/15/2021	6/1/2031
19	First Mortgage Bonds 4.40% Due 2032		450,000,000	3,862,500	2/18/2022	3/1/2032
20	First Mortgage Bonds 5.90% Due 2032		600,000,000	5,050,570	6/8/2022	6/15/2032
21	First Mortgage Bonds 4.50% due 2040		1,951,469,927	3,199,727	7/1/2020	7/1/2040
22	First Mortgage Bonds 3.30% due 2040		1,000,000,000	10,130,854	6/19/2020	8/1/2040
23	First Mortgage Bonds 4.20% due 2041		450,000,000	4,689,087	3/11/2021	6/1/2041
24	First Mortgage Bonds 4.95% due 2050		3,100,000,000	44,414,717	7/1/2020	7/1/2050
25	First Mortgage Bonds 3.50% due 2050		1,925,000,000	19,501,564	6/19/2020	8/1/2050
26	First Mortgage Bonds 5.25% Due 2052		550,000,000	5,958,001	2/18/2022	3/1/2052
27	Floating Rate 2-Year Term Loan due 2024		$400,000,000	354,786	4/20/2022	4/19/2024
28	LIBOR + 2.25% Term Loan due 2022	(D)	1,500,000,000	8,665,925	7/1/2020	10/1/2022
29						
30	**Short-Term Debt**					
31	Floating Rate First Mortgage Bonds $300 Million		300,000,000	1,085,840	11/15/2021	11/14/2022
32	Floating Rate 364-day Term Loan $125 Million due 2023		$125,000,000	66,989	4/20/2022	4/19/2023
33	Revolving Credit Facility $4.4B due June 2027	(E)	-	23,437,893	10/4/2022	6/22/2027
34	Floating Rate 364-day Term Loan $500 Million due 2023	(F)	500,000,000	322,791	4/4/2022	4/3/2023
35	Others					
36	Unapplied CPUC Fees		-	NA	NA	NA
37	Unapplied SEC Fees		-	NA	NA	NA
38	TOTAL ACCOUNT 181		32,152,939,854	269,513,832		
39				(J)		
40						
41	**ACCOUNT 225 - UNAMORTIZED PREMIUM**					
42	First Mortgage Bonds 3.25% due 2031		550,000,000	(5,560,500)	11/15/2021	06/01/2031
43	TOTAL ACCOUNT 225		550,000,000	(5,560,500)		
44				(J)		
45	**ACCOUNT 226 - UNAMORTIZED DISCOUNT**					
46	First Mortgage Bonds 1.75% due 2022	(B)	2,500,000,000	-	6/19/2020	6/16/2022
47	First Mortgage Bonds 1.70% due 2023		900,000,000	1,107,000	11/15/2021	11/15/2023
48	First Mortgage Bonds 3.25% Due 2024		1,000,000,000	360,000	2/18/2022	2/16/2024
49	First Mortgage Bonds 4.95% Due 2025		450,000,000	531,000	6/8/2022	6/8/2025
50	First Mortgage Bonds 5.45% Due 2027		450,000,000	787,500	6/8/2022	6/15/2027
51	First Mortgage Bonds 2.10% due 2027		1,000,000,000	1,860,000	6/19/2020	8/1/2027
52	First Mortgage Bonds 3.00% due 2028		800,000,000	3,928,000	6/3/2021	6/15/2028
53	First Mortgage Bonds 4.20% Due 2029		400,000,000	272,000	2/18/2022	3/1/2029
54	First Mortgage Bonds 2.50% due 2031		2,000,000,000	2,080,000	6/19/2020	2/1/2031
55	First Mortgage Bonds 3.25% due 2031		450,000,000	954,000	3/11/2021	6/1/2031
56	First Mortgage Bonds 4.40% Due 2032		450,000,000	1,381,500	2/18/2022	3/1/2032
57	First Mortgage Bonds 5.90% Due 2032		600,000,000	1,806,000	6/8/2022	6/15/2032
58	First Mortgage Bonds 3.30% due 2040		1,000,000,000	4,990,000	6/19/2020	8/1/2040
59	First Mortgage Bonds 4.20% due 2041		450,000,000	1,314,000	3/11/2021	6/1/2041
60	First Mortgage Bonds 3.50% due 2050		1,925,000,000	12,146,750	6/19/2020	8/1/2050
61	First Mortgage Bonds 5.25% Due 2052		550,000,000	1,991,000	2/18/2022	3/1/2052
62						
63	TOTAL ACCOUNT 226		14,925,000,000	35,508,750		
64				(J)		

NOTES:

(A) On May 16, 2022, PG&E prepaid $500 million of Floating Rate First Mortgage Bonds in full.

(B) On May 16, 2022, PG&E prepaid 1.75% $2.5 billion of First Rate Mortgage Bonds in full.

(C) On July 25, 2022, PG&E prepaid 1.367% $1.5 billion of First Mortgage Bonds in full.

(D) On February 7, 2022, PG&E prepaid $142.5 million of 18-month $1.5 billion Term Loan. On February 18, 2022, PG&E prepaid $1 billion of the Te
On March 31, 2022, PG&E prepaid in full the remaining portion of the Term Loan in a principal amount equal to $298.2 million.

(E) The revolving credit facility was amended on 6/22/2021 and again on 10/04/2022. The capacity was increased to $4.4 billion and the amortizati
was adjusted. As of 12/31/2022, the Utility had $1.930 billion outstanding draws.

(F) On July 21, 2022, PG&E prepaid the $500 million of Term Loan in full.

(G) The following table recaps charges made to Account 428, Amortization of Debt Discounts and Expense on the Statement of Income for Year of Form 1.

Amortization of FERC 181/226 (Debt Expense & Discount)	38,464,879
Amortization of prepetition debt expense reclassified to regulatory assets in FERC 182.3	14,030,098
Amortization of financing related regulatory assets in FERC 182.3	4,151,357
Recognition of loss on early extinguishment of debt in FERC 428.1	(3,477,253)
Amortization of AB1054 & SB901 Securitization debt expense in FERC 182.3	1,663,060
Various fees (incl legal & SEC fees)	(2,594)
	54,829,547

(H) The following table recaps charges made to Account 429, Amortization of Premium on Debt of the Statement of Income for the Year of the Form 1.

Amortization of FERC 225 (Premium)	(582,590)
Amortization of prepetition debt premium reclassified to regulatory assets in FERC 182.3	(743,551)
	(1,326,141)

(I) Items included under column (g) represent original issuance expense, discount or premium on issuance related to outstanding debt and issuance expense true-up/down.

(J) Items included under column (c) represent original issuance expense, premium or discount on issuance related to outstanding debt which are recoverable through the cost of capital mechanism. Other financing related costs and prepetition debt expense which are also recoverable are reflected on page 232, Other Regulatory Assets (Account 182.3) in the Form 1.

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC	(2) A Resubmission	5/5/2023	2022/Q4

UNAMORTIZED DEBT EXPENSE, PREMIUM AND DISCOUNT ON LONG-TERM DEBT (Accounts 181,225,226) (Continued)

5. Furnish in a footnote particulars (details) regarding the treatment of unamortized debt expense, premium or discount associated with issues redeemed during the year. Also, give in a footnote the date of the Commission's authorization of treatment other than as specified by the Uniform System of Accounts.
6. Identify separately undisposed amounts applicable to issues which were redeemed in prior years.
7. Explain any debits and credits other than amortization debited to Account 428, Amortization of Debt Discount and Expense, or credited to Account 429, Amortization of Premium on Debt - Credit.

Balance at Beginning of Year (f)	Debits During Year (g)	Credits During Year (h)	Balance at End of Year (i)	Line No.
				1
744,509	-	744,509	-	2
3,683,391	-	3,683,391	-	3
4,627,572	4,250	4,631,822	-	4
4,731,592	(597,482)	2,161,711	1,972,399	5
-	5,153,291	2,246,490	2,906,801	6
-	2,438,303	458,311	1,979,992	7
2,551,698	-	729,056	1,822,642	8
2,327,074	-	581,769	1,745,305	9
-	3,563,303	400,305	3,162,998	10
5,987,055	-	1,072,308	4,914,747	11
5,886,303	159,558	902,407	5,143,454	12
2,961,793	-	455,660	2,506,133	13
-	3,333,500	386,340	2,947,160	14
37,752,509	-	4,441,472	33,311,037	15
13,486,170	-	1,484,716	12,001,454	16
3,386,892	-	359,670	3,027,222	17
4,676,007	(365,128)	418,038	3,892,841	18
-	3,862,500	304,628	3,557,872	19
-	5,050,570	284,243	4,766,327	20
2,959,748	-	159,986	2,799,762	21
9,358,659	-	503,604	8,855,055	22
4,502,296	-	231,878	4,270,418	23
42,193,981	-	1,480,491	40,713,490	24
18,508,679	-	647,534	17,861,145	25
-	5,958,001	133,499	5,824,501	26
-	354,786	118,262	236,524	27
69,715	96,034	165,749	-	28
-				29
-				30
995,353	(327,624)	667,730	-	31
-	66,989	44,659	22,330	32
23,219,687	4,118,513	5,170,614	22,167,586	33
-	322,791	322,791	-	34
-				35
2,437,721	431,274	1,515,235	1,353,760	36
16,222	345,060	361,282	-	37
197,064,626	33,968,488	37,270,158	193,762,955	38
	(I)	(G)		39
				40
				41
(5,486,058)	-	(582,590)	(4,903,468)	42
(5,486,058)	-	(582,590)	(4,903,468)	43
	(I)	(H)		44
				45
34,519	-	34,519	0	46
1,036,274	-	553,500	482,774	47
-	360,000	156,936	203,064	48
-	531,000	99,808	431,192	49
-	787,500	88,468	699,032	50
1,459,251	-	261,358	1,197,893	51
3,605,320	-	558,483	3,046,837	52
-	272,000	33,611	238,389	53
1,779,592	-	195,918	1,583,674	54
878,821	-	93,326	785,495	55
-	1,381,500	119,682	1,261,818	56
-	1,806,000	101,641	1,704,359	57
4,609,652	-	248,053	4,361,599	58
1,261,657	-	64,978	1,196,679	59
11,528,321	-	403,323	11,124,998	60
-	1,991,000	57,633	1,933,367	61
				62
26,193,407	7,129,000	3,071,238	30,251,169	63
	(I)	(G)		64
				65
				66
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				69
				70
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Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

UNAMORTIZED LOSS AND GAIN ON REACQUIRED DEBT (Accounts 189, 257)

1. Report under separate subheadings for Unamortized Loss and Unamortized Gain on Reacquired Debt, particulars (details) of gain and loss, including maturity date, on reacquisition applicable to each class and series of long-term debt. If gain or loss resulted from a refunding transaction, include also the maturity date of the new debt
2. In column (c) show the principal amount of bonds or other long-term debt reacquired.
3. In column (d) show the net gain or net loss realized on each debt reacquisition as computed in accordance with General Instruction 17 of the Uniform Systems of Accounts.
4. Show loss amounts by enclosing the figures in parentheses.
5. Explain in a footnote any debits and credits other than amortization debited to Account 428.1, Amortization of Loss on Reacquired Debt, or credited to Account 429.1, Amortization of Gain on Reacquired Debt-Credit.

Line No.	Designation of Long-Term Debt (a)		Date Reacquired (b)	Principal Amount of Debt Reacquired (c)	Net Gain or Net Loss (d)	Balance at Beginning of Year (e)	Balance at End of Year (f)
1	ACCOUNT 189 - UNAMORTIZED LOSS ON REACQUIRED DEBT:						
2	First and Refunding Mortgage Bonds:						
3	Series	Maturity Date					
4	89A	02/01/2022	91-93	200,000,000	(17,094,272)	48,555	-
5	90A	07/01/2023	93,94,95	150,000,000	(20,305,785)	979,349	326,450
6	91A	05/01/2024	95,96,98,99	93,199,000	(22,715,440)	2,092,139	1,195,508
7	91B	07/01/2024	93,94,96	199,993,000	(30,357,846)	2,310,893	1,386,536
8	92B	05/01/2025	95,97	37,000,000	(3,637,963)	412,423	288,696
9	92C	10/01/2025	94	1,000,000	(16,240,343)	2,200,325	1,613,572
10	92D	11/01/2022	95,96,97,98	113,305,000	(9,348,661)	309,615	-
11	93A	03/01/2026	96,97,98	43,984,000	(2,173,037)	321,086	244,025
12	93D	08/01/2026	96,97,98	54,470,000	(1,058,635)	171,708	134,244
13	93F	10/01/2023	98,99	45,234,000	(1,074,516)	75,318	32,279
14	93H	03/01/2024	95,98	27,500,000	(148,230)	12,058	6,493
15	California Pollution Control Financing Authority						
16	Series	Maturity Date					
17	PC 82A	06/01/2022	87	45,000,000	(2,570,850)	18,064	-
18	PC 93A	06/01/2023	4/12/2004	60,000,000	(2,404,021)	177,941	52,336
19	PC 93B	12/01/2023	4/12/2004	200,000,000	(7,424,469)	724,697	346,594
20	PC 96D	11/01/2026	2001	100,000,000	(798,861)	151,948	120,510
21	PC 97C	11/01/2026	2001	148,550,000	(1,021,888)	193,691	153,617
22	First and Refunding Mortgage Bonds:						
23	Series	Maturity Date					
24	91A	05/01/2024	4/12/2004	106,801,000	(1,588,899)	184,864	105,637
25	92B	05/01/2025	4/12/2004	163,000,000	(6,726,521)	1,064,892	745,424
26	92D	11/01/2022	4/12/2004	286,695,000	(13,185,640)	592,172	-
27	93A	03/01/2026	4/12/2004	251,016,000	(12,044,623)	2,292,703	1,742,454
28	93D	08/01/2026	4/12/2004	379,930,000	(18,334,682)	3,767,636	2,945,607
29	93F	10/01/2023	4/12/2004	285,641,000	(11,917,361)	1,071,185	459,079
30	93H	03/01/2024	4/12/2004	271,200,000	(4,405,932)	480,043	258,485
31	QUIDS-Quarterly Income Deferred Securities (Retired 4/12/2004):						
32	Series	Maturity Date					
33	QUIDS	12/31/2025	4/12/2004	300,000,000	(7,532,920)	1,387,313	1,040,485
34							
35							
36							
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38							
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41							
42							
43							

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

UNAMORTIZED LOSS AND GAIN ON REACQUIRED DEBT (Accounts 189, 257)

1. Report under separate subheadings for Unamortized Loss and Unamortized Gain on Reacquired Debt, particulars (details) of gain and loss, including maturity date, on reacquisition applicable to each class and series of long-term debt. If gain or loss resulted from a refunding transaction, include also the maturity date of the new debt
2. In column (c) show the principal amount of bonds or other long-term debt reacquired.
3. In column (d) show the net gain or net loss realized on each debt reacquisition as computed in accordance with General Instruction 17 of the Uniform Systems of Accounts.
4. Show loss amounts by enclosing the figures in parentheses.
5. Explain in a footnote any debits and credits other than amortization debited to Account 428.1, Amortization of Loss on Reacquired Debt, or credited to Account 429.1, Amortization of Gain on Reacquired Debt-Credit.

Line No.	Designation of Long-Term Debt (a)			Date Reacquired (b)	Principal Amount of Debt Reacquired (c)	Net Gain or Net Loss (d)	Balance at Beginning of Year (e)	Balance at End of Year (f)
1	Series	Maturity Date						
2	PC 2004 Series A-D:							
3	PC 2004 Series A-D	12/1/2023	(A)	6/1/2007	345,000,000	(2,502,290)	290,670	139,016
4	PC 2004 Series A-D	12/1/2023	(A)	6/1/2017	345,000,000	(716,522)	211,230	101,048
5								
6	PC 2005 Series A,B,E,F	11/1/2026	(B)	Various	248,550,000	(4,059,164)	377,958	299,760
7								
8	PC 2008 Series A,B	11/1/2026	(B)	9/1/2009	148,550,000	(817,918)	230,288	182,642
9								
10	PC 2008 Series F	11/1/2026	(B)	9/20/2010	50,000,000	(238,595)	71,566	56,759
11								
12	PC 2010 Series E	11/1/2026	(B)	4/2/2012	50,000,000	(454,967)	150,818	119,614
13								
14	Partial Reacquisition of $1B 4.80% Senior Notes							
15		6/15/2023		6/14/2013	461,441,000	(7,502,984)	1,091,694	341,675
16		6/15/2043		6/14/2013		(7,502,984)	5,365,481	5,115,407
17								
18	Reacquisition of $800M 8.25% Senior Notes							
19		(C) 10/15/2018		Various	800,000,000	(16,930,630)	20,659,341	17,167,621
20								
21	TOTAL ACCOUNT 189				6,012,059,000	(254,837,449)	49,489,664	36,721,574
22								
23	NOTES:							
24	(A) The 2004 A-D bonds were reacquired on June 1, 2007 and were remarketed with a maturity date of December 1, 2023.							
25	The bonds were reacquired on June 1, 2017.							
26								
27	(B) The 2005 A-G PC bonds were reacquired in March and April 2008. The 2008 A-D and 2008 F-G bonds were reissued on October							
28	29, 2008 and September 22, 2008, respectively. Upon issuance, the corresponding 2005 A-D and 2005 F-G bonds were cancelled.							
29	On September 1, 2009, the 2009 A-D bonds were issued. Upon issuance, the corresponding 2008 A-D PC bonds were cancelled.							
30	On September 20, 2010, the 2008 F-G PC bonds were reacquired and held in treasury. On April 8, 2010, the 2010 E bonds were reissued.							
31	Upon issuance, the corresponding 2005 E bonds were cancelled. On April 2, 2012, the 2010 E PC bonds were reacquired and held in treasury.							
32	On June 15, 2017, 2008F-G and 2010E PC bonds were reissued. On December 1, 2018, the 2008 PC bond matured and was repaid.							
33								
34	Series	Maturity Date		Series	Maturity Date			
35	2005A	11/1/2026		2008A	11/1/2026			
36	2005B	11/1/2026		2008B	11/1/2026			
37	2005E	11/1/2026		2008F	11/1/2026			
38	2005F	11/1/2026		2010E	11/1/2026			
39								
40	(C) $400M of the $800M Senior Notes due October 15, 2018 was redeemed on November 30, 2017 and the remaining $400M was							
41	redeemed on January 31, 2018.							
42								
43	ACCOUNT 257 - UNAMORTIZED GAIN ON REACQUIRED DEBT:							
44	First and Refunding Mortgage Bonds:							
45	Series	Maturity Date						
46	93A	03/01/2026		97	5,000,000	30,636	4,376	3,326
47	93D	08/01/2026		97	15,600,000	308,462	47,790	37,363
48	93F	10/01/2023		96,97	45,775,000	2,554,600	166,979	71,563
49	93H	03/01/2024		95,96,99	51,300,000	913,250	71,082	38,275
50								
51	TOTAL ACCOUNT 257				117,675,000	3,806,948	290,227	150,526
52								
53								
54								
55								
56								
57								
58								

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

Miscellaneous Current and Accrued Liabilities (Account 242)

1. Describe and report the amount of other current and accrued liabilities at the end of year.

2. Minor items (less than $250,000) may be grouped under appropriate title.

Line No.	Item (a)	Balance at End of Year (b)
1	Third Party Energy Service Providers	427,232,853
2	Performance Incentive	249,872,825
3	Accrued Franchise Requirement	218,681,083
4	Wildfire Fund	192,600,000
5	Customer Credits	111,962,183
6	Emission Liability - Gas	86,125,186
7	Legal Accruals	45,746,000
8	CPUC Reuimbursement and Quarterly Fees	32,469,221
9	Diablo Canyon power plant Retention Bonuses	15,839,458
10	Emission Liability - Electric	13,434,827
11	Refunds Due to Customers	12,217,243
12	Deferred Seismic Work Allowance	11,389,532
13	Self Generation Initiative	11,039,122
14	Diablo Canyon power plant Community Impact Mitigation Program	9,375,000
15	Collateral Deposits – Power	8,638,597
16	Residential Uncollectible Balancing Account	6,167,143
17	Deferred Revenues	4,574,732
18	Severance Liability Accrual	2,613,696
19	Transmission Owner Forfeitures	1,569,500
20	Mission Substation Settlement	957,476
23	California Solar Incentive	515,500
24	Valley Elderberry Longhorn Beetle	441,479
25		
26		
27		
28		
29		
30		
31		
32	Miscellaneous items (individual items < than $250,000)	99,906
33		
34		
35		
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42		
43		
44	TOTAL	$1,463,562,560

Name of Respondent	This Report Is:		Date of Report	Year / Period of Report
	(1) * An Original		(Mo, Da, Yr)	End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission		5/5/2023	2022/Q4

GAS OPERATING REVENUES

1. Report below natural gas operating revenues for each prescribed account total. The amounts must be consistent with the detailed data on succeeding pages.

2. Revenues in columns (b) and (c) include transition costs from upstream pipelines.

3. Other Revenues in columns (f) and (g) include reservation charges received by the pipeline plus usage charges, less revenues reflected in columns (b) through (e). Include in columns (f) and (g) revenues for Accounts 480-495.

Line No.	Title of Account (a)	Revenues for Transition Costs and Take-or-Pay Amount for Current Year (b)	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year (c)	Revenues for GRI and ACA Amount for Current Year (d)	Revenues for GRI and ACA Amount for Previous Year (e)
1	(480) Residential Sales				
2	(481) Commercial & Industrial Sales				
3	(482) Other Sales to Public Authorities				
4	(483) Sales for Resale				
5	(484) Interdepartmental Sales - (Note 1)				
	Total Sales (Lines 1-5):	0	0	0	0
6	(485) Intracompany Transfers				
7	(487) Forfeited Discounts				
8	(488) Misc. Service Revenues				
9	(489.1) Revenues from Transportation of Gas of Others Through Gathering Facilities - (Note 3)				
10	(489.2) Revenues From Transportation of Gas of Others Through Transmission Facilities	6,542,978	4,444,439		
11	(489.3) Revenues From Transportation of Gas of Others Through Distribution Facilities				
12	(489.4) Revenues From Storing of Gas of Others - (Note 4)				
13	(490) Sales of Prod. Ext. from Natural Gas				
14	(491) Rev. from Nat. Gas Proc. by Others				
15	(492) Incidental Gasoline and Oil Sales				
16	(493) Rent from Gas Property				
17	(494) Interdepartmental Rents				
18	(495) Other Gas Revenues - (Note 2)				
19	(400) Balancing Accounts				
20	Subtotal (Lines 1-19)	6,542,978	4,444,439	0	0
21	(496) (Less) Provision for Rate Refunds				
22	TOTAL:	6,542,978	4,444,439	0	0

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year / Period of Report End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS OPERATING REVENUES

4. If increases or decreases from previous year are not derived from previously reported figures, explain any inconsistencies in a footnote.

5. On Page 108, include information on major changes during the year, new service, and important rate increases or decreases.

6. Report the revenue from transportation services that are bundled with storage services as transportation service revenue

Line No.	Other Revenues Amount for Current Year (f)	Other Revenues Amount for Previous Year (g)	Total Operating Revenues Amount for Current Year (h)	Total Operating Revenues Amount for Previous Year (i)	Dekatherm of Natural Gas Amount for Current Year (j)	Dekatherm of Natural Gas Amount for Previous Year (k)
1	3,352,627,871	2,759,103,423	3,352,627,871	2,759,103,423	166,896,076	168,314,554
2	1,004,941,379	713,072,607	1,004,941,379	713,072,607	59,305,478	56,256,526
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	256,414,147	243,093,777	256,414,147	243,093,777	40,681,399	45,816,134
	4,613,983,397	3,715,269,807	4,613,983,397	3,715,269,807	266,882,953	270,387,214
6	0	0	0	0		
7	205	0	205	0		
8	2,742,753	4,188,873	2,742,753	4,188,873		
9	0	0	0	0	0	0
10	446,481,711	449,413,938	453,024,689	453,858,377	100,973,659	115,545,139
11	1,087,199,090	897,797,022	1,087,199,090	897,797,022	511,945,431	538,820,177
12	0	0	0	0	0	0
13	0	0	0	0		
14	0	0	0	0		
15	0	0	0	0		
16	1,777,207	1,939,144	1,777,207	1,939,144		
17	0	0	0	0		
18	144,146,775	97,182,438	144,146,775	97,182,438		
19	564,842,239	552,598,137	564,842,239	552,598,137		
20	6,861,173,377	5,718,389,359	6,867,716,355	5,722,833,798		
21	0	22,004,280	0	22,004,280		
22	6,861,173,377	5,740,393,639	6,867,716,355	5,744,838,078		

Note 1: Interdepartmental sales reported in column (j) and (k) exclude MCFs of natural gas purchased by Company's electric department from third party suppliers.

Note 2: Line 18, cols (h) and (i) include net unbilled revenues of $134,137,151 and $88,595,270 respectively.

Note 3: PG&E has some gathering facilities for ratemaking purposes. However, these are bundled together with our backbone transmission rates and could not be split out.

Note 4: PG&E has some storage for gas of others. However, these are bundled together with other gas in storage and could not be split out.

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	End of 2022/Q4

Revenues from Transportation of Gas of Others Through Gathering Facilities (Account 489.1)

1. Report revenues and Dth of gas delivered through gathering facilities by zone of receipt (i.e. state in which gas enters respondent's system
2. Revenues for penalties including penalties for unauthorized overruns must be reported on page 308.

Line No.	Rate Schedule and Zone of Receipt (a)	Revenues for Transition Costs and Take-or-Pay Amount for Current Year (b)	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year (c)	Revenues for GRI and ACA Amount for Current Year (d)	Revenues for GRI and ACA Amount for Previous Year (e)
1	N O N E - (Note 1)				
2					
3					
4					
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14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25	TOTAL			0	0

(Note 1) - PG&E has some gathering facilities for ratemaking purposes. However, these are bundled together with our backbone transmission rates and could not be split out.

Name of Respondent	This Report Is:	Date of Report		Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023		2022/Q4

Revenues from Transportation of Gas of Others Through Gathering Facilities (Account 489.1)

3. Other Revenues in columns (f) and (g) include reservation charges received by the pipeline plus usage charges, less revenues reflected in columns (b) through (e).
4. Delivered Dth of gas must not be adjusted for discounting.

Line No.	Other Revenues Amount for Current Year (f)	Other Revenues Amount for Previous Year (g)	Total Operating Revenues Amount for Current Year (h)	Total Operating Revenues Amount for Previous Year (i)	Dekatherm of Natural Gas Amount for Current Year (j)	Dekatherm of Natural Gas Amount for Previous Year (k)
1						
2						
3						
4						
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6						
7						
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12						
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21						
22						
23						
24						
25						

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)		Year/Period of Report End of
PACIFIC GAS AND ELECTRIC COMPANY		**5/5/2023**		**2022/Q4**

Revenues from Transportation of Gas of Others Through Transmission Facilities (Account 489.2)

1. Report revenues and Dth of gas delivered by Zone of Delivery by Rate Schedule. Total by Zone of Delivery and for all zones. If respondent does not have separate zones, provide totals by rate schedule.
2. Revenues for penalties including penalties for unauthorized overruns must be reported on page 308.
3. Other Revenues in columns (f) and (g) include reservation charges received by the pipeline plus usage charges for transportation and hub services, less revenues reflected in columns (b) through (e).

Line No.	Rate Schedule and Zone of Receipt	Revenues for Transition Costs and Take-or-Pay Amount for Current Year	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year	Revenues for GRI and ACA Amount for Current Year	Revenues for GRI and ACA Amount for Previous Year
	(a)	(b)	(c)	(d)	(e)
1	GXF				
2	GXFO				
3	GAA				
4	GAFT				
5	GAFTBC				
6	GBALN				
7	GBALP				
8	GNAA				
9	GNAAO		21		
10	GNFT		4,600		
11	GNFTO	6,542,978	4,439,818		
12	GSFT				
13	GSFTC				
14	GTPGTHR				
15	GTPIUT				
16	GAAO				
17					
18					
19					
20					
21					
22					
23					
24					
25	TOTAL	6,542,978	4,444,439	0	0
10	(489.2) Revenues From Transportation of Gas of Others Through Transmission Facilities	6,542,978	4,444,439		

Name of Respondent	This Report Is:	Date of Report		Year/Period of Report
	(1) * An Original	(Mo, Da, Yr)		End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	**5/5/2023**		**2022/Q4**

Revenues from Transportation of Gas of Others Through Transmission Facilities (Account 489.2)

1. Report revenues and Dth of gas delivered by Zone of Delivery by Rate Schedule. Total by Zone of Delivery and for all zones. If respondent does not have separate zones, provide totals by rate schedule.
2. Revenues for penalties including penalties for unauthorized overruns must be reported on page 308.
3. Other Revenues in columns (f) and (g) include reservation charges received by the pipeline plus usage charges for transportation and hub services, less revenues reflected in columns (b) through (e).

Line No.	Rate Schedule and Zone of Receipt	Revenues for Transition Costs and Take-or-Pay Amount for Current Year	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year	Revenues for GRI and ACA Amount for Current Year	Revenues for GRI and ACA Amount for Previous Year
	(a)	(b)	(c)	(d)	(e)
1	GXF				
2	GXFO				
3	GAA				
4	GAFT				
5	GAFTBC				
6	GBALN				
7	GBALP				
8	GNAA				
9	GNAAO		21		
10	GNFT		4,600		
11	GNFTO	6,542,978	4,439,818		
12	GSFT				
13	GSFTC				
14	GTPGTHR				
15	GTPIUT				
16	GAAO				
17					
18					
19					
20					
21					
22					
23					
24					
25	TOTAL	6,542,978	4,444,439	0	0
10	(489.2) Revenues From Transportation of Gas of Others Through Transmission Facilities	6,542,978	4,444,439		

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) **5/5/2023**	End of **2022/Q4**

Revenues from Storing of Gas of Others (Account 489.4)

1. Report revenues and Dth of gas withdrawn from storage by Rate Schedule and in total.
2. Revenues for penalties including penalties for unauthorized overruns must be reported on page 308.
3. Other Revenues in columns (f) and (g) include reservation charges, deliverability charges, injection and withdrawal charges, less revenues reflected in columns (b) through (e).

Line No.	Rate Schedule (a)	Revenues for Transition Costs and Take-or-Pay Amount for Current Year (b)	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year (c)	Revenues for GRI and ACA Amount for Current Year (d)	Revenues for GRI and ACA Amount for Previous Year (e)
1	N O N E - (Note 1)				
2					
3					
4					
5					
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7					
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10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25	TOTAL			0	0

Note 1: PG&E has some storage for gas of others. However, these are bundled together with other gas in storage and could not be split out.

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) **5/5/2023**	End of **2022/Q4**

Revenues from Storing of Gas of Others (Account 489.4)

1. Report revenues and Dth of gas withdrawn from storage by Rate Schedule and in total.
2. Revenues for penalties including penalties for unauthorized overruns must be reported on page 308.
3. Other Revenues in columns (f) and (g) include reservation charges, deliverability charges, injection and withdrawal charges, less revenues reflected in columns (b) through (e).

Line No.	Rate Schedule (a)	Revenues for Transition Costs and Take-or-Pay Amount for Current Year (b)	Revenues for Transition Costs and Take-or-Pay Amount for Previous Year (c)	Revenues for GRI and ACA Amount for Current Year (d)	Revenues for GRI and ACA Amount for Previous Year (e)
1	N O N E - (Note 1)				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25	TOTAL			0	0

Note 1: PG&E has some storage for gas of others. However, these are bundled together with other gas in storage and could not be split out.

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
	(1) * An Original	(Mo, Da, Yr)	End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	**5/5/2023**	**2022/Q4**

Other Gas Revenues (Account 495)

Report below transactions of $250,000 or more included in Account 495, Other Gas Revenues. Group all transactions below $250,000 in one amount and provide the number of items.

Line No.	Description of Transaction (a)	Amount (in dollars) (b)
1	Compensation for Minor or Incidental Services Provided for Others	4,400,832
2	Revenues for Right and/or Benefits Received from Others which are Realized Through Research, Development, and Demonstratio	-
3	Gains on Settlements of Imbalance Receivables and Payables	-
4	Revenues from Penalties earned Pursuant to Tariff Provisions, including Penalties Associated with Cash-out Settlements	(28,364,177)
5	Unbilled Revenues	134,137,151
6	Damage Claim, Gas lost to Atmosphere, Labor and materials to repair gas facilities and other costs associated with repair of gas fa	9,132,739
7	Revenues from customers using the Utility's gas storing facilities, CAC (Customer Advance for Construction) and CIAC (Contributio	24,796,029
8	Miscellaneous below $250k - 1 items	44,201
	Total	144,146,775

Name of Respondent	This Report Is:	Date of Report		Year/Period of Report
	(1) * An Original	(Mo, Da, Yr)		End of
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	**5/5/2023**		**2022/Q4**

Discounted Rate Services and Negotiated Rate Services

1. In column b, report the revenues from discounted rate services.
2. In column c, report the volumes of discounted rate services.
3. In column d, report the revenues from negotiated rate services.
4. In column e, report the volumes of negotiated rate services.

Line No.	Account	Discounted Rate Services	Discounted Rate Services	Negotiated Rate Services	Negotiated Rate Services
		Revenue	Volumes	Revenue	Volumes
	(a)	(b)	(c)	(d)	(e)
1	(481) Commercial & Industrial Sales				
2	(489.2) Revenues From Transportation of Gas of Others Through Transmission Facilities			26,194,409	78,364,698
3	(495) Other Gas Revenues			8,163,427	20,336,936
4					
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16					
17					
18					
19					
20					
21					
22					
23					
24	TOTAL	0	0	34,357,836	98,701,634

Name of Respondent	This Report Is:	Date of Report	Year of Report
	(1) * An Original	(Mo, Da, Yr)	
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS OPERATION AND MAINTENANCE EXPENSES

If the amount for previous year is not derived from previously reported figures, explain in footnotes

Line No.	Account (a)	Amount for Current Year (b)	Amount for Previous Year (c)
1	1. PRODUCTION EXPENSES		
2	A. Manufactured Gas Production		
3	Manufactured Gas Production (Submit Supplemental Statement) Page 325-1	99,058,729	72,024,802
4	B. Natural Gas Production		
5	B1. Natural Gas Production and Gathering		
6	Operation		
7	(750) Operation Supervision and Engineering	-	-
8	(751) Production Maps and Records	-	-
9	(752) Gas Wells Expense	-	-
10	(753) Field Line Expenses	-	-
11	(754) Field Compressor Station Expenses	-	-
12	(755) Field Compressor Station and Power	-	-
13	(756) Field Measuring and Regulating Station Expenses	-	-
14	(757) Purification Expenses	596	346
15	(758) Gas Well Royalties	-	-
16	(759) Other Expenses	1,599,458	1,385,071
17	(760) Rents	-	-
18	TOTAL Operation (Total of lines 7 thru 17)	1,600,054	1,385,418
19	Maintenance		
20	(761) Maintenance Supervision and Engineering	-	-
21	(762) Maintenance of Structures and Improvements	-	-
22	(763) Maintenance of Producing Gas Wells	-	-
23	(764) Maintenance of Field Lines	-	-
24	(765) Maintenance of Field Compressor Station Equipment	-	-
25	(766) Maintenance of Field Meas. and Reg. Sta. Equipment	384,729	12,862
26	(767) Maintenance of Purification Equipment	-	-
27	(768) Maintenance of Drilling and Cleaning Equipment	-	-
28	(769) Maintenance of Other Equipment	165,789	210,789
29	TOTAL Maintenance (Total of lines 20 thru 28)	550,518	223,652
30	TOTAL Natural Gas Production and Gathering (Total of lines 18 and 29)	2,150,572	1,609,069

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
31	B2. Production Extraction		
32	Operation		
33	(770) Operation Supervision and Engineering	-	-
34	(771) Operation Labor	-	-
35	(772) Gas Shrinkage	-	-
36	(773) Fuel	-	-
37	(774) Power	-	-
38	(775) Materials	-	-
39	(776) Operation Supplies and Expenses	-	-
40	(777) Gas Processed by Others	-	-
41	(778) Royalties on Products Extracted	-	-
42	(779) Marketing Expenses	-	-
43	(780) Products Purchased for Resale	-	-
44	(781) Variation in Products Inventory	-	-
45	Less: (782) Extracted Products Used by the Utility-Credit	-	-
46	(783) Rents	-	-
47	TOTAL Operation (Total of lines 33 thru 46)	-	-
48	Maintenance		
49	(784) Maintenance Supervision and Engineering	-	-
50	(785) Maintenance of Structures and Improvements	-	-
51	(786) Maintenance of Extraction and Refining Equipment	-	-
52	(787) Maintenance of Pipe Lines	-	-
53	(788) Maintenance of Extracted Products Storage Equipment	-	-
54	(789) Maintenance of Compressor Equipment	-	-
55	(790) Maintenance of Gas Measuring and Reg. Equipment	-	-
56	(791) Maintenance of Other Equipment	-	-
57	TOTAL Maintenance (Total of lines 49 thru 56)	-	-
58	TOTAL Products Extraction (Total of Lines 47 and 57)	-	-

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
59	C. Exploration and Development		
60	Operation		
61	(795) Delay Rentals	-	-
62	(796) Nonproductive Well Drilling	-	-
63	(797) Abandoned Projects	-	-
64	(798) Other Exploration	-	-
65	TOTAL Exploration and Development (Total of line 61 thru 64)	-	-
	D. Other Gas Supply Expenses		
66	Operation		
67	(800) Natural Gas Well Head Purchases	-	-
68	(800.1) Natural Gas Well Head Purchases, Intracompany Transfers	-	-
69	(801) Natural Gas Field Line Purchases	909,225,579	502,737,986
70	(802) Natural Gas Gasoline Plant Outlet Purchases	-	-
71	(803) Natural Gas Transmission Line Purchases	586,408,076	251,876,127
72	(804) Natural Gas City Gate Purchases	190,839,335	(22,385,400)
73	(804.1) Liquified Natural Gas Purchases	-	-
74	(805) Other Gas Purchases - **Note 1**	299,023,623	250,667,526
75	Less (805.1) Purchased Gas Cost Adjustments	-	-
76	(805.2) Incremental Gas Cost Adjustments	-	-
77	TOTAL Purchased Gas (Total of lines 67 to 76)	1,985,496,613	982,896,239
78	(806) Exchange Gas	-	-
79	Purchased Gas Expense		
80	(807.1) Well Expenses-Purchased Gas	10,357,316	8,648,563
81	(807.2) Operation of Purchased Gas Measuring Stations	-	-
82	(807.3) Maintenance of Purchased Gas Measuring Stations	-	-
83	(807.4) Purchased Gas Calculations Expenses	-	-
84	(807.5) Other Purchased Gas Expenses	6,008,432	34,908,280
85	TOTAL Purchased Gas Expenses (Total of lines 80 thru 84)	16,365,748	43,556,843

Note 1 - Represents Emission Expenses

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
86	(808.1) Gas Withdrawn from Storage-Debit	51,531,052	31,721,079
87	Less (808.2) Gas Deliverd to Storage-Credit	(94,206,439)	(43,347,703)
88	(809.1) Withdrawls of Liquefied Natural Gas for Processing-Credit	-	-
89	Less (809.2) Deliveries of Natural Gas for Processing-Credit	-	-
90	Less Gas Used in Utility Operations-Credit	-	-
91	(810) Gas Used for Compressor Station Fuel-Credit	(5,997,019)	(4,047,220)
92	(811) Gas Used for Products Extraction-Credit	-	-
93	(812) Gas Used for Other Utility Operations-Credit	(1,284,774)	(900,232)
94	TOTAL Gas Used in Utility Operations-Credit (Total of lines 91 thru 93)	(7,281,793)	(4,947,452)
95	(813) Other Gas Supply Expenses	-	-
96	TOTAL Other Gas Supply Exp.(Total of lines 77,78,85,86 thru 89,94,95)	1,951,905,182	1,009,879,007
97	TOTAL Production Expenses (Total of lines 3,30,58,65,and 96)	2,053,114,482	1,083,512,878
98	2. NATURAL GAS STORAGE, TERMINALING AND PROCESSING EXPENSE		
99	A. Underground Storage Expenses		
100	Operation		
101	(814) Operation Supervision and Engineering	-	-
102	(815) Maps and Records	-	-
103	(816) Wells Expenses	1,747	2,336
104	(817) Lines Expenses	-	-
105	(818) Compressor Station Expenses	148,219	485,139
106	(819) Compressor Station Fuel and Power	3,257,722	2,658,902
107	(820) Measuring and Regulating Station Expenses	1,019,049	896,347
108	(821) Purification Expenses	433,796	223,227
109	(822) Exploration and Development	-	-
110	(823) Gas Losses	-	-
111	(824) Other Expenses	16,010,321	22,266,925
112	(825) Storage Well Royalties	-	-
113	(826) Rents	-	-
114	TOTAL Operation (Total of lines 101 thru 113)	20,870,856	26,532,876

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
115	Maintenance		
116	(830) Maintenance Supervision and Engineering	-	89
117	(831) Maintenance of Structures and Improvements	-	-
118	(832) Maintenance of Reservoirs and Wells	994,467	129,417
119	(833) Maintenance of Lines	-	-
120	(834) Maintenance of Compressor Station Equipment	1,218,413	1,064,695
121	(835) Maintenance of Measuring and Regulating Station Equipment	32,895	113,767
122	(836) Maintenance of Purification Equipment	-	-
123	(837) Maintenance of Other	103,068	307,112
124	TOTAL Maintenance (Total of lines 116 thru 123)	2,348,842	1,615,079
125	TOTAL Underground Storage Expenses (Total of lines 114 and 124)	23,219,697	28,147,956
126	B. Other Storage Expenses		
127	Operation		
128	(840) Operation Supervision and Engineering	-	-
129	(841) Operation Labor and Expenses	-	-
130	(842) Rents	-	-
131	(842.1) Fuel	-	-
132	(842.2) Power	-	-
133	(842.3) Gas Losses	-	-
134	TOTAL Operation (Total of lines 128 thru 133)	-	-
135	Maintenance		
136	(843.1) Maintenance Supervision and Engineering	-	-
137	(843.2) Maintenance of Structures and Improvements	-	-
138	(843.3) Maintenance of Gas Holders	-	-
139	(843.4) Maintenance of Purification Equipment	-	-
140	(843.5) Maintenance of Liquification Equipment	-	-
141	(843.6) Maintenance of Vaporizing Equipment	-	-
142	(843.7) Maintenance of Compressor Equipment	980,657	862,128
143	(843.8) Maintenance of Measuring and Regulating Equipment	-	-
144	(843.9) Maintenance of Other Equipment	-	-
145	TOTAL Maintenance (Total of line 136 thru 144)	980,657	862,128
146	TOTAL Other Storage Expenses (Total of line 134 and 145)	980,657	862,128

Name of Respondent	This Report Is:	Date of Report	Date of Report
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PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
147	C. Liquefied Natural Gas Terminating and Processing Expenses		
148	Operation		
149	(844.1) Operation Supervision and Engineering	-	-
150	(844.2) LNG Processing Terminal Labor and Expenses	-	-
151	(844.3) Liquefication Processing Labor and Expenses	-	-
152	(844.4) Liquefication Transportation Labor and Expenses	-	-
153	(844.5) Measuring and Regulating Labor and Expenses	-	-
154	(844.6) Compressor Station Labor and Expenses	-	-
155	(844.7) Communication System Expenses	-	-
156	(844.8) System Control and Load Dispatching	-	-
157	(845.1) Fuel	-	-
158	(845.2) Power	-	-
159	(845.3) Rents	-	-
160	(845.4) Demurrage Charges	-	-
161	(845.5) Wharfage Receipts-Credit	-	-
162	(845.6) Processing Liquefied or Vaporized Gas by Others	-	-
163	(846.1) Gas Losses	-	-
164	(846.2) Other Expenses	-	-
165	TOTAL Operation (Total of lines 149 thru 164)	-	-
166	Maintenance		
167	(847.1) Maintenance Supervision and Engineering	-	-
168	(847.2) Maintenance of Structures and Improvements	-	-
169	(847.3) Maintenance of LNG Processing Terminal Equipment	-	-
170	(847.4) Maintenance of LNG Transportation Equipment	-	-
171	(847.5) Maintenance of Measuring and Regulating Equipment	-	-
172	(847.6) Maintenance of Compressor Station Equipment	-	-
173	(847.7) Maintenance of Communication Equipment	-	-
174	(847.8) Maintenance of Other Equipment	-	-
175	TOTAL Maintenance (Total of lines 167 thru 174)	-	-
176	TOTAL Liquefied Nat Gas Terminating and Processing Exp.(Lines 165 and 175)	-	-
177	TOTAL Natural Gas Storage (Total of lines 125,146, and 176)	24,200,355	29,010,084

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
178	3. TRANSMISSION EXPENSES		
179	Operation		
180	(850) Operation Supervision and Engineering	2,671,693	3,382,022
181	(851) System Control and Load Dispatching	10,572,359	9,070,168
182	(852) Communication System Expenses	-	-
183	(853) Compressor Station Labor and Expenses	-	15,081
184	(854) Gas for Compressor Station Fuel	6,104,738	4,323,619
185	(855) Other Fuel and Power for Compressor Stations	28,251,689	21,928,350
186	(856) Mains Expenses	185,793,257	139,766,335
187	(857) Measuring and Regulating Station Expenses	2,658,108	2,459,366
188	(858) Transmission and Compression of Gas by Others	347,854,131	336,381,116
189	(859) Other Expenses	156,101,613	168,615,355
190	(860) Rents	-	-
191	TOTAL Operation (Total of lines 180 thru 190)	740,007,588	685,941,413
	3. TRANSMISSION EXPENSES (Continued)		
192	Maintenance		
193	(861) Maintenance Supervision and Engineering	2,359,493	3,475,182
194	(862) Maintenance of Structures and Improvements	184	1,171
195	(863) Maintenance of Mains	204,737,035	291,844,443
196	(864) Maintenance of Compressor Station Equipment	7,444,799	6,319,241
197	(865) Maintenance of Measuring and Reg. Station Equipment	17,143,499	16,225,474
198	(866) Maintenance of Communication Equipment	-	(3,718)
199	(867) Maintenance of Other	1,274,127	3,595,282
200	TOTAL Maintenance (Total of lines 193 thru 199)	232,959,137	321,457,074
201	TOTAL Transmission Expenses (Total of lines 191 and 200)	972,966,725	1,007,398,487
202	4. DISTRIBUTION EXPENSE		
203	Operation		
204	(870) Operation Supervision and Engineering	9,590,049	10,472,672
205	(871) Distribution Load Dispatchng	-	-
206	(872) Compressor Station Labor and Expenses	-	-
207	(873) Compressor Station Fuel and Power	-	-

Name of Respondent	This Report Is:	Date of Report	Date of Report
	(1) * An Original	(Mo, Da, Yr)	(Mo, Da, Yr)
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GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
208	(874) Mains and Services Expenses	53,256,777	55,835,574
209	(875) Measuring and Regulating Station Expenses-General	4,242,019	4,159,193
210	(876) Measuring and Regulating Station Expenses-Industrial	-	-
211	(877) Measuring and Regulating Station Expenses-City Gate Check Station	-	-
212	(878) Meter and House Regulator Expenses	1,037,069	910,033
213	(879) Customer Installations Expenses	51,577,623	48,572,479
214	(880) Other Expenses	225,174,970	209,811,065
215	(881) Rents	-	-
216	TOTAL Operation (Total of lines 204 thru 215)	344,878,507	329,761,015
217	Maintenance		
218	(885) Maintenance Supervision and Engineering	3,776,584	5,673,100
219	(886) Maintenance of Structures and Improvements	3,891,588	2,489,986
220	(887) Maintenance of Mains	97,727,496	68,305,939
221	(888) Maintenance of Compressor Station Equipment	-	-
222	(889) Maintenance of Meas. and Reg. Sta. Equip.-General	13,731,623	12,276,968
223	(890) Maintenance of Meas. and Reg. Sta. Equip.-Industrial	10,646,480	15,859,871
224	(891) Maintenance of Meas. and Reg. Sta. Equip.-City Gate Check Station	-	-
225	(892) Maintenance of Services	18,834,427	20,740,273
226	(893) Maintenance of Meters and House Regulators	9,496,948	14,559,569
227	(894) Maintenance of Other Equipment	(2,721,367)	924,987
228	TOTAL Maintenance (Total of lines 218 thru 227)	155,383,779	140,830,692
229	TOTAL Distribution Expenses (Total of lines 216 and 228)	500,262,286	470,591,707
230	5. CUSTOMER ACCOUNTS EXPENSES		
231	Operation		
232	(901) Supervision	(119,757)	582,469
233	(902) Meter Reading Expenses	4,499,432	4,490,305
234	(903) Customer Records and Collection Expenses	117,570,627	106,033,451

Name of Respondent	This Report Is:	Date of Report	Date of Report
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GAS OPERATION AND MAINTENANCE EXPENSES (Continued)

Line No.	Account (a)	Amount for Current Year (b)	Amount for Current Year (b)
235	(904) Uncollectible Accounts	38,123,296	37,868,352
236	(905) Miscellaneous Customer Accounts Expenses	1,382,748	1,334,692
237	TOTAL Customer Accounts Expenses (Total of lines 232 thru 236)	161,456,346	150,309,269
238	6. CUSTOMER SERVICE AND INFORMATIONAL EXPENSES		
239	Operation		
240	(907) Supervision	-	-
241	(908) Customer Assistance Expenses	124,093,391	122,562,779
242	(909) Informational and Instructional Expenses	-	-
243	(910) Miscellaneous Customer Service and Informational Expenses	8,462	(29,144)
244	TOTAL Customer Service and Informational Expenses (Lines 240 thru 243)	124,101,853	122,533,635
245	7. SALES EXPENSES		
246	Operation		
247	(911) Supervision	-	-
248	(912) Demonstration and Selling Expenses	1,414,191	1,443,815
249	(913) Advertising Expenses	-	-
250	(916) Miscellaneous Sales Expenses	-	-
251	TOTAL Sales Expenses (Total of lines 247 thru 250)	1,414,191	1,443,815
252	8. ADMINISTRATIVE AND GENERAL EXPENSES		
253	Operation		
254	(920) Administrative and General Salaries	170,734,425	191,940,723
255	(921) Office Supplies and Expenses	20,233,567	28,827,748
256	(922) Administrative Expense Transferred-Credit	(27,091,710)	(70,566,851)
257	(923) Outside Service Employed	145,016,075	162,200,263
258	(924) Property Insurance	6,965,904	7,140,661
259	(925) Injuries and Damages	239,062,695	417,756,470
260	(926) Employee Pensions and Benefits	155,959,280	183,552,769
261	(927) Franchise Requirements	60,046,378	47,245,173
262	(928) Regulatory Commission Expense	-	-
263	(929) Duplicate Charges	-	-
264	(930.1) General Advertising Expenses	-	274,968
265	(930.2) Miscellaneous General Expenses	4,250,344	5,699,727
266	(931) Rents	-	-
267	TOTAL Operation (Total of lines 254 thru 266)	775,176,957	974,071,651
268	Maintenance		
269	(935) Maintenance of General Plant	896,486	1,425,082
270	TOTAL Administrative and General Exp. (Total of lines 267 and 269)	776,073,443	975,496,733
271	TOTAL Gas O. and M. Exp. (Lines 97, 177, 201, 229, 237, 244, 251, and 270)	4,613,589,681	3,840,296,607

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

GAS USED IN UTILITY OPERATIONS -- CREDIT (Account 810, 811, 812)

1. Report below particulars (details) of credits during the year to Accounts 810, 811 and 812 which offset charges to operating expenses or other accounts for the cost of gas from the respondent's own supply.

2. If any natural gas was used by the respondent for which a change was not made to the appropriate operating expense or other account, list separately in column (c) the Mcf of gas used, omitting entries in columns (d).

Line No.	(a)	Account Charged (b)	Natural Gas: Dth of Gas Used NOTE (A) (c)	Natural Gas: Amount of Credit (d)
1	810 Gas used for Compressor Station Fuel -- Cr	550	1,218,433	5,997,019
2	811 Gas used for Products Extraction -- Cr			
3	Gas Shrinkage and Other Usage in Respdnt's Own Proc.			
4	Gas Shrinkage, Etc. for Respdnt's Gas Processed by Others			
5	812 Gas used for Other Util. Operations -- Cr (Rpt sep. for each prin. use. Group minor uses):			
6	Various Dehydrators and			
7	Station Heaters	550	253,937	1,249,857
8	Other Company Usage	550	7,094	34,917
9				
10				
11				
12				
13				
14	**NOTE (A):**			
15	Column (c) is an estimated quantity and derived by total Mcf of gas used / total amount of credit * amount of credit			
16	charged to each account			
17				
18				
19				
20				
21	TOTAL		1,479,465	7,281,793

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

OTHER GAS SUPPLY EXPENSES (Account 813)

Report other gas supply expenses by descriptive titles which clearly indicate the nature of such expenses. Show maintenance expenses separately. Indicate the functional classification and purpose of property to which any expenses relate.

Line No.	Description (a)	Amount (in dollars) (b)
1	Miscellaneous items	0
2		
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44	TOTAL	0

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

MISCELLANEOUS GENERAL EXPENSES (Account 930.2) (Electric)

Line No.	Description	Amount
1	Industry Association Dues	5
2	Nuclear Power Research Expenses	0
3	Other Experimental and General Research Expenses	0
4	Publishing and Distributing Information and Reports to Stockholders; Trustee, Registrar, and Transfer Agent Fees and Expenses, and Other Expenses of Servicing Outstanding Securities of the Respondent.	0
5	Other expenses (List items of $5,000 or more in this column showing the (1) purpose, (2) recipient and (3) amount of such items. Group amounts of less than $5,000 may be grouped by classes if the number of items so grouped is shown)	
6	Clearing Account Adjustments	(5,422,259)
7	Intervenor Compensation	6,276,661
8	MCI-PG&E Exchange Rights	611,917
9	Bank Service Fees	14,962,038
10	Consulting Services, Outside Attorney Fees, and Contracts	951,233
11	Intercompany Billing	(90,233)
12	Bankruptcy claims settlement net gain	(562,947)
13	Rewards and Recognition	1,120,200
14	Miscellaneous cash receipt (recovery of unclaimed funds)	(669,914)
15	Write off from miscellaneous reconciliations	(214,953)
16		
17	Other miscellaneous adjustments	8,820
	TOTAL	16,970,569

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)	Year of Report
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DEPRECIATION, DEPLETION, AND AMORTIZATION OF GAS PLANT (Accounts 403, 404.1, 404.2, 404.3, 405)
(Except Amortization of Acquisition Adjustments)

1. Report in Section A the amounts of depreciation expense, depletion and amortization for the accounts indicated and classified according to the plant functional groups shown.
2. Report all available information called for in Section B for the report year 1971, 1974 and every fifth year thereafter. Report only annual changes in the intervals between the report years (1971, 1974 and every fifth year thereafter).
Report in column (b) all depreciable plant balances to which rates are applied and show a composite total. (If more desirable, report by plant account, subaccount or functional classifications other than those pre-printed in column (a). Indicate at the bottom of Sec-

Section A. Summary of Depreciation, Depletion, and Amortization Charges

Line No.	Functional Classification (a)	Depreciation Expense (Account 403) (b)	Amortization and Depletion of Producing Natural Gas Land and Land Rights (Account 404.1) (c)	Amortization of Underground Storage Land and Land Rights (Account 404.2) (d)
1	Intangible plant			26,256
2	Production plant, manufactured gas	7,317		
3	Production and gathering plant, natural gas			
4	Products extraction plant			
5	Undergound gas storage plant	59,362,819		
6	Other storage plant	457,924		
7	Base load LNG terminating and processing plant			
8	Transmission plant	179,989,840		
9	Distribution plant	470,977,812		
10	General plant	28,343,943		
11	Common plant alloc to gas	96,542,864		
25	TOTAL	835,682,519		26,256

Name of Respondent	This Report Is: (1) * An Original	Date of Report (Mo, Da, Yr)	Year of Report
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DEPRECIATION AND AMORTIZATION OF GAS PLANT (Accounts 403, 404.1, 404.2, 404.3, 405)
(Except amortization of acquisition adjustments)

tion B the manner in which column (b) balances are obtained. If average balances, state the method of averaging used. For column (c) report available information for each plant functional classification listed in column (a). If composite depreciation accounting is used, report available information called for in columns (b) and (c) on this basis. Where the unit-of-production method is used to determine depreciation charges, show at the bottom of Section B any revisions made to estimated gas reserves.
3. If provisions for depreciation were made during the year in addition to depreciation provided by application of reported rates, state at the bottom of Section B the amounts and nature of the provisions and the plant items to which related.

Section A. Summary of Depreciation, Depletion, and Amortization Charges

Amortization of Other Limited-term Gas Plant (Account 404.3) (e)	Amortization of Other Gas Plant (Account 405) (f)	Total (b to f) (g)	Functional Classification (a)	Line No.
22,072		48,328	Intangible plant	1
		7,317	Production plant, manufactured gas	2
		0	Production and gathering plant, natural gas	3
		0	Products extraction plant	4
		59,362,819	Undergound gas storage plant	5
		457,924	Other storage plant	6
		0	Base load LNG terminating and	7
		0	processing plant	
		179,989,840	Transmission Plant	8
		470,977,812	Distribution Plant	9
		28,343,943	General Plant	10
65,183,834		161,726,698	Common Plant-Gas	11
65,205,905	0	900,914,681	TOTAL	25

Name of Respondent	This Report Is:	Date of Report:	Year of Report:
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EMPLOYEE PENSIONS AND BENEFITS (Account 926)

1. Report below the items contained in Account 926, Employee Pensions and Benefits.

Line No.	Expense (a)	Amount (b)
1	Pensions - defined benefit plans	72,501,198
2	Post-retirement benefits other than pensions (PBOP)	8,016,247
3	Long-term disability plan	4,632,419
4	Retirement Savings Plan (401K)	14,683,323
5	Active Health Cares	55,042,493
6	Short-Term Disability & Paid Family Leave	2,660,962
7	Others (consulting, workers comp, employee recruting and relocation, cost adjustments etc.)	(1,577,362)
8		
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26		
	TOTAL	155,959,280

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 05/05/2023	2022/Q4

CHARGES FOR OUTSIDE PROFESSIONAL AND OTHER CONSULTATIVE SERVICES

1. Report the information specified below for all charges made during the year included in any account (including plant accounts) for outside consultative and other professional services. (These services include rate, management, construction, engineering, research, financial, valuation, legal, accounting, purchasing, advertising, labor relations, and public relations, rendered the respondent under written or oral arrangement for which aggregate payments were made during the year to any corporation, partnership, organization of any kind, or individual [other than for services as an employee or for payments made for medical and related services] amounting to more than $250,000, including payments for legislative services, except those which should be reported in Account 426.4 Expenditures for Certain Civic, Political and Related Activities

(a) Name and address of person or organization rendering services.

(b) total charges for the year

2. Sum under a description "Other", all of the aforementioned services amounting to $250,000 or less.

3. Total under a description "Total", the total of all the aforementioned services.

4. Charges for outside professional and other consultative services provided by associated (affiliated) companies should be excluded from this schedule and reported on Page 358, according to the instructions for that schedule.

Details of this page have been filed with the California Public Utilities Commission.

Name of Respondent STANDARD PACIFIC GAS LINE INC	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr) 5/5/2023	Year of Report 2022/Q4

TRANSACTIONS WITH ASSOCIATED (AFFILIATED) COMPANIES

1. Report below the information called for concerning all goods or services received from or provided to associated (affiliated) companies amounting to more than $250,000.
2. Sum under a description "Other", all of the aforementioned goods and services amounting to $250,000 or less.
3. Total under a description "Total", the total of all of the aforementioned goods and services.
4. Where amounts billed to or received from the associated (affiliated) company are based on an allocation process, explain in a footnote the basis of the allocation.

Line No.	Description of the Good or Service (a)	Name of Associated/Affiliated Company (b)	Accounts Charged or Credited (c)	Amount Charged or Credited (d)
1	**Goods or Services Provided by Affiliated Company**			
2				
3	Gas Transmission Support	Pacific Gas & Electric Company	863, 865, 857, 408.1, 107,108	685,591
4				
5				
6				
7			-	-
8			-	-
9			-	-
10			-	-
11			-	-
12			-	-
13			-	-
14			-	-
15			-	-
16			-	-
17			-	-
18			-	-
19			-	-
20	**Goods or Services Provided for Affiliated Company**			
21				
22	Gas Transmission Expense	Pacific Gas & Electric Company	489	1,948,219
23			-	-
24	Gas Tranmission Expense	Chevron	489	324,703
25			-	-
26			-	-
27			-	-
28			-	-
29			-	-
30			-	-
31			-	-
32			-	-
33			-	-
34			-	-
35			-	-
36			-	-
37			-	-
38			-	-
39			-	-
40			-	-

Name of Respondent	This Report is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY		5/5/2023	2022/Q4

COMPRESSOR STATIONS

1. Report below particulars (details) concerning compressor stations. Use the following subheadings: field compressor stations, products extraction compressor stations, underground storage compressor stations, transmission compressor stations, distribution compressor stations, and other compressor stations.
2. For column (a), indicate the production areas where such stations are used. Relatively small field compressor stations may be grouped by production areas. Show the number of stations grouped. Designate any station held under a title other than full ownership. State in a footnote the name of owner or co-owner, the nature of respondent's

Line No.	Station and Location (a)	Number of Units at Station (b)	Plant Cost (c)
1	UNDERGROUND STORAGE COMPRESSORS		
2			
3	Los Medanos, K-1	1	40,011,590
4			
5	Gill Ranch Storage Field, 5 electric compressor **(A)**		12,958,949
6			
7	McDonald Island, K-1		
8	McDonald Island, K-2		
9	McDonald Island, K-7 (Rental)		
10	McDonald Island, K-8 (Rental)		
11	McDonald Island, K-9 (Rental)		
12	Total McDonald Island	5	120,947,946
13			
14	Pleasant Creek, K-8	1	6,406,319
15			
16	TOTAL UNDERGROUND STORAGE COMPRESSORS	7	180,324,805
17			
18	TRANSMISSION LINE COMPRESSORS		
19			
20	Topock (9 Units)	9	175,001,675
21	Hinkley (12 Units)	12	224,667,725
22	Kettleman, K-1, K-2, & K-3	3	102,031,498
23	Tionesta, K-1	1	33,209,652
24	Burney, K-2	1	127,506,063
25	Gerber, K-1	1	61,206,551
26	Delevan, K-1, K-2, & K-3	3	160,460,786
27	Bethany, K-1 & K-2	2	67,485,027
28	Santa Rosa, K-1 & K-2	2	16,979,897
29			
30	TOTAL TRANSMISSION LINE COMPRESSORS	34	968,548,873
31			
32	GRAND TOTAL	41	1,148,873,678
33			
34	**NOTES:**		
35	**(A**) The Utility owns 25% of Gill Ranch Storage Field, while		
36	the Gill Ranch Storage, LLC is the operator of the facility.		
37			

Name of Respondent	This Report is:	Date of Report	Year of Report
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COMPRESSOR STATIONS

title, and percent of ownership, if jointly owned. Designate any station that was not operated during the past year. State in a footnote whether the book cost of such station has been retired in the books of account, or what disposition of the station and its book cost are contemplated. Designate any compressor units in transmission compressor stations installed and put into operation during the year and show in a footnote the size of each such unit, and the date each such unit was placed in operation.
3. For column (d), include the type of fuel or power if other than natural gas. If two types of fuel or power are used, show separate entries for natural gas and other fuel or power.

Expenses (Except deprec.& taxes)			Operation Data			
Fuel or Power (d)	Other (e)	Gas for Compressor Fuel Mcf (14.73 psia at 60 F) (f)	Total Compressor Hours of Operation During Year (g)	No. of Compressors Operated at Time of Station Peak (h)	Date of Station Peak (i)	Line No.
						1
						2
1,231,298	221,161	49,303	1,820	1	4/22/2022	3
						4
		(ELECTRIC)				5
						6
		(ELECTRIC)	1,301	1	5/28/2022	7
		(ELECTRIC)	1,653	1	5/28/2022	8
			2,343	1	5/28/2022	9
			2,219	1	5/28/2022	10
			1,912	1	5/28/2022	11
2,026,424	1,145,471	81,141	9,426	5	5/28/2022	12
						13
0	0	0	0	0	N/A	14
						15
3,257,722	1,366,632	130,444	11,246	6		16
						17
						18
						19
876,262	1,942,873	605,672	26,132	6	12/5/2022	20
1,299,339	2,074,770	898,102	27,906	4	12/29/2022	21
433,325	389,593	299,514	5,240	3	10/24/2022	22
366,696	194,053	253,460	2,610	1	6/9/2022	23
1,544,148	583,275	1,067,314	7,845	1	6/9/2022	24
1,181,148	444,017	816,409	5,972	1	11/13/2022	25
403,820	1,413,168	279,120	19,007	2	6/13/2022	26
28,168,305	401,861	(ELECTRIC)	5,405	1	8/9/2022	27
83,384	1,190	(ELECTRIC)	16	0	1/4/2022	28
						29
34,356,427	7,444,799	4,219,591	100,132	19		30
						31
37,614,149	8,811,431	4,350,035	111,378	25		32
						33
						34
						35
						36
						37

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GAS STORAGE PROJECTS

1. Report injections and withdrawals of gas for all storage projects used by respondent.

Line No.	Item	Gas Belonging to Respondent **(Dth)**	Gas Belonging to Others **(Dth)**	Total Amount **(Dth)**
	(a)	(b)	(c)	(d)
	STORAGE OPERATIONS (In Dth)			
1	Gas Delivered to Storage			
2	January	-	1,160,916	1,160,916
3	February	-	1,810,145	1,810,145
4	March	130,789	2,399,711	2,530,500
5	April	485,599	2,781,946	3,267,545
6	May	859,556	4,445,715	5,305,271
7	June	692,521	3,441,756	4,134,277
8	July	-	1,984,770	1,984,770
9	August	-	768,939	768,939
10	September	86,777	2,166,526	2,253,303
11	October	46,768	675,376	722,144
12	November	334,690	1,379,453	1,714,143
13	December	-	3,111,830	3,111,830
14	TOTAL (Total of lines 2 thru 13)	2,636,700	26,127,083	28,763,783
15	Gas Withdrawn from Storage			
16	January	860,000	4,187,549	5,047,549
17	February	403,219	2,606,076	3,009,295
18	March	-	907,030	907,030
19	April	-	1,531,707	1,531,707
20	May	-	725,593	725,593
21	June	-	1,343,204	1,343,204
22	July	-	2,641,474	2,641,474
23	August	-	5,803,201	5,803,201
24	September	2,632	1,470,007	1,472,639
25	October	-	4,057,355	4,057,355
26	November	334,680	2,990,279	3,324,959
27	December	677,826	1,390,236	2,068,062
28	TOTAL (Total of lines 16 thru 27)	2,278,357	29,653,711	31,932,068

Name of Respondent	This Report Is: (1) * An Original (2) A Resubmission	Date of Report (Mo, Da, Yr)	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY		5/5/2023	2022/Q4

GAS STORAGE PROJECTS (Continued)

1. On line 4, enter the total storage capacity certificated by FERC.
2. Report total amount in Dth or other unit, as applicable on lines 2, 3, 4, 7. If quantity is converted from Mcf to Dth, provide conversion factor in a footnote.

Line No.	Item (a)	Total Amount (b)
	STORAGE OPERATIONS (In **Mcf**)	
1	Top or Working Gas End of Year	6,122,494
2	Cushion Gas (Including Native Gas)**	122,823,094
3	Total Gas in Reservoir (Total of line 1 and 2)	128,945,588
4	Certificated Storage Capacity *	56,098,233
5	Number of Injection -- Withdrawal Wells	100
6	Number of Observation Wells	11
7	Maximum Day's Withdrawal from Storage	552,974
8	Date of Maximum Day's Withdrawal	02/22/2022
9	LNG Terminal Companies (in Dth)	
10	Number of Tanks	
11	Capacity of Tanks	
12	LNG Volumes	
13	a) Received at "Ship Rail"	
14	b) Transferred to Tanks	
15	c) Withdrawn from Tanks	
16	d) "Boil Off" Vaporization Loss	
17	e) Converted to Mcf at Tailgate of Terminal	

* Certificated Working Storage Capacity
** In June 2021, 51,097,767 Mcf working gas was reclassified to cushion gas as a result of the 2019 Gas Transmission & Storage decision to support the Natural Gas Storage Strategy operation
https://www.pge.com/pipeline/news/newsdetails/index.page?title=20210610_2445_news

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PACIFIC GAS AND ELECTRIC COMPANY		5/5/2023	2022/Q4

TRANSMISSION LINES

1. Report below by States the total miles of transmission lines of each transmission system operated by respondent at end of year.
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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)		Total Miles of Pipe (b)
	TRANSMISSION LINES OPERATED BY RESPONDENT:		
1	SYSTEM300A*	See Note A	504.6
2	SYSTEM300B*	See Note A	508.9
3	SYSTEM319*	See Note A	11.3
4	SYSTEM401*	See Note A	429.3
5	SYSTEMLVC100		0.0
6	SYSTEMLVC110		0.0
7	SYSTEMLVC125		0.0
8	SYSTEMLVC150		0.4
9	SYSTEMLVC175		0.0
10	SYSTEMLVC200		0.0
11	SYSTEMLVC235		0.6
12	SYSTEMLVC275		0.1
13	SYSTEMLVC35		0.0
14	SYSTEMLVC400		0.6
15	SYSTEMLVC45		0.0
16	SYSTEMLVC60		0.3
17	SYSTEMLVC720		0.1
18	SYSTEMLVC80		0.0
19	SYSTEMLVC85		0.0
20	SYSTEMLVC911		0.0
21	SYSTEM001		0.0
22	SYSTEM002		0.1
23	SYSTEM003		0.7
24	SYSTEM004		1.2
25	SYSTEM005		0.5
26	SYSTEM006		0.9
27	SYSTEM007		0.4
28	SYSTEM008		0.6
29	SYSTEM009		0.4
30	SYSTEM012		34.6
31	SYSTEM013		1.2
32	SYSTEM014		0.1

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
33	SYSTEM015	0.0
34	SYSTEM016	19.8
35	SYSTEM018	2.5
36	SYSTEM019	0.9
37	SYSTEM020	0.2
38	SYSTEM022	0.0
39	SYSTEM024	65.0
40	SYSTEM025	13.8
41	SYSTEM026	3.7
42	SYSTEM027	0.7
43	SYSTEM028	9.0
44	SYSTEM029	1.0
45	SYSTEM031	8.6
46	SYSTEM032	0.6
47	SYSTEM033	1.8
48	SYSTEM034	5.5
49	SYSTEM035	9.2
50	SYSTEM036	2.6
51	SYSTEM037	38.4
52	SYSTEM038	0.9
53	SYSTEM040	2.8
54	SYSTEM041	1.6
55	SYSTEM043	0.0
56	SYSTEM044	0.0
57	SYSTEM045	0.5
58	SYSTEM046	3.6
59	SYSTEM047	6.5
60	SYSTEM048	17.6
61	SYSTEM049	2.6
62	SYSTEM050	4.7
63	SYSTEM051	29.6
64	SYSTEM052	160.2

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
65	SYSTEM055	36.2
66	SYSTEM056	32.7
67	SYSTEM057	8.1
68	SYSTEM058	3.3
69	SYSTEM059	1.0
70	SYSTEM060	128.7
71	SYSTEM061	0.2
72	SYSTEM063	1.9
73	SYSTEM064	0.9
74	SYSTEM065	0.1
75	SYSTEM066	7.0
76	SYSTEM067	7.9
77	SYSTEM070	0.0
78	SYSTEM072	3.8
79	SYSTEM073	1.3
80	SYSTEM074	68.3
81	SYSTEM075	38.8
82	SYSTEM076	25.3
83	SYSTEM077	40.1
84	SYSTEM078	24.5
85	SYSTEM079	5.3
86	SYSTEM080	18.5
87	SYSTEM081	29.8
88	SYSTEM082	33.7
89	SYSTEM083	2.5
90	SYSTEM085	0.7
91	SYSTEM089	0.0
92	SYSTEM092	1.5
93	SYSTEM094	7.6
94	SYSTEM095	27.5
95	SYSTEM096	8.1
96	SYSTEM097	15.8

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
97	SYSTEM098	3.6
98	SYSTEM099	4.2
99	SYSTEM100	35.6
100	SYSTEM1001	0.0
101	SYSTEM1002	0.0
102	SYSTEM1003	0.0
103	SYSTEM1004	0.0
104	SYSTEM1005	0.0
105	SYSTEM1006	0.0
106	SYSTEM1007	0.1
107	SYSTEM1009	0.0
108	SYSTEM1010	0.0
109	SYSTEM1011	0.0
110	SYSTEM1012	0.0
111	SYSTEM1013	0.0
112	SYSTEM1014	0.0
113	SYSTEM1015	0.0
114	SYSTEM1016	0.0
115	SYSTEM1017	0.0
116	SYSTEM1018	0.0
117	SYSTEM1019	0.0
118	SYSTEM102	0.7
119	SYSTEM1020	0.1
120	SYSTEM1021	0.0
121	SYSTEM1023	0.0
122	SYSTEM1024	0.0
123	SYSTEM1025	0.0
124	SYSTEM1026	0.0
125	SYSTEM1027	0.0
126	SYSTEM1028	0.0
127	SYSTEM103	41.8
128	SYSTEM1031	0.0

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
129	SYSTEM1032	0.0
130	SYSTEM1033	0.0
131	SYSTEM1034	0.0
132	SYSTEM1035	0.0
133	SYSTEM1036	0.0
134	SYSTEM1037	0.2
135	SYSTEM1038	0.0
136	SYSTEM1039	0.0
137	SYSTEM1040	0.0
138	SYSTEM1041	0.0
139	SYSTEM1042	0.0
140	SYSTEM1043	0.0
141	SYSTEM1044	0.0
142	SYSTEM1045	0.0
143	SYSTEM1046	0.0
144	SYSTEM1047	0.0
145	SYSTEM1048	0.0
146	SYSTEM1049	0.0
147	SYSTEM105	1.2
148	SYSTEM1051	0.0
149	SYSTEM1052	0.1
150	SYSTEM1053	0.0
151	SYSTEM1054	0.0
152	SYSTEM1055	0.0
153	SYSTEM1056	0.0
154	SYSTEM1057	0.0
155	SYSTEM1058	0.0
156	SYSTEM1059	0.0
157	SYSTEM106	18.0
158	SYSTEM1060	0.0
159	SYSTEM1061	0.7
160	SYSTEM1062	0.0

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
161	SYSTEM1063	0.0
162	SYSTEM1064	0.0
163	SYSTEM1065	0.0
164	SYSTEM1066	0.0
165	SYSTEM1067	0.0
166	SYSTEM1068	0.0
167	SYSTEM1069	0.0
168	SYSTEM1070	0.0
169	SYSTEM1071	0.0
170	SYSTEM1072	0.1
171	SYSTEM1073	0.0
172	SYSTEM1074	0.0
173	SYSTEM1075	0.0
174	SYSTEM1076	0.0
175	SYSTEM1077	0.0
176	SYSTEM1078	0.0
177	SYSTEM1079	0.1
178	SYSTEM108	3.8
179	SYSTEM1080	0.0
180	SYSTEM1081	0.0
181	SYSTEM1082	0.0
182	SYSTEM1083	0.0
183	SYSTEM1084	0.1
184	SYSTEM1085	0.0
185	SYSTEM1087	0.0
186	SYSTEM1088	0.0
187	SYSTEM109	42.8
188	SYSTEM1091	0.0
189	SYSTEM1093	0.1
190	SYSTEM1094	0.0
191	SYSTEM1095	1.3
192	SYSTEM1096	0.0

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
193	SYSTEM1098	0.0
194	SYSTEM1099	0.2
195	SYSTEM110	50.5
196	SYSTEM1100	0.0
197	SYSTEM1101	0.0
198	SYSTEM1102	0.0
199	SYSTEM1104	0.0
200	SYSTEM1105	0.6
201	SYSTEM1106	0.0
202	SYSTEM1107	0.0
203	SYSTEM1108	0.0
204	SYSTEM1109	0.0
205	SYSTEM111	25.0
206	SYSTEM1110	0.0
207	SYSTEM1111	0.0
208	SYSTEM1112	0.1
209	SYSTEM1113	0.0
210	SYSTEM1114	0.0
211	SYSTEM1115	0.0
212	SYSTEM1116	0.0
213	SYSTEM1117	0.0
214	SYSTEM1118	0.0
215	SYSTEM1119	0.0
216	SYSTEM112	42.3
217	SYSTEM1120	0.0
218	SYSTEM1121	0.0
219	SYSTEM1122	0.0
220	SYSTEM1123	0.0
221	SYSTEM1124	0.0
222	SYSTEM1125	0.0
223	SYSTEM1126	0.0
224	SYSTEM1127	0.0

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
225	SYSTEM113	35.5
226	SYSTEM1130	0.0
227	SYSTEM1131	0.0
228	SYSTEM1134	0.0
229	SYSTEM1135	0.0
230	SYSTEM1136	0.2
231	SYSTEM1137	0.0
232	SYSTEM1143	0.0
233	SYSTEM1144	0.0
234	SYSTEM1145	0.0
235	SYSTEM1146	0.1
236	SYSTEM1147	0.0
237	SYSTEM1148	0.0
238	SYSTEM1149	0.5
239	SYSTEM115	1.8
240	SYSTEM1150	0.0
241	SYSTEM1153	0.0
242	SYSTEM1154	0.2
243	SYSTEM1155	0.0
244	SYSTEM1156	0.0
245	SYSTEM1157	0.0
246	SYSTEM1158	0.0
247	SYSTEM1159	0.0
248	SYSTEM116	9.5
249	SYSTEM1160	0.0
250	SYSTEM1162	0.0
251	SYSTEM1163	0.4
252	SYSTEM1164	0.0
253	SYSTEM1165	0.1
254	SYSTEM1166	0.0
255	SYSTEM1167	0.0
256	SYSTEM1168	0.1

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
257	SYSTEM1169	0.0
258	SYSTEM1170	0.0
259	SYSTEM1171	0.0
260	SYSTEM1172	0.1
261	SYSTEM1174	0.0
262	SYSTEM1175	0.0
263	SYSTEM1176	0.0
264	SYSTEM1177	0.1
265	SYSTEM1178	0.0
266	SYSTEM118	2.5
267	SYSTEM1182	0.0
268	SYSTEM1183	0.6
269	SYSTEM1184	0.0
270	SYSTEM1185	0.0
271	SYSTEM1186	0.0
272	SYSTEM1187	0.0
273	SYSTEM1189	0.0
274	SYSTEM119	2.2
275	SYSTEM1190	0.0
276	SYSTEM1191	0.0
277	SYSTEM1192	0.1
278	SYSTEM1193	0.0
279	SYSTEM1194	0.0
280	SYSTEM1195	0.0
281	SYSTEM1196	0.0
282	SYSTEM1197	0.0
283	SYSTEM1198	0.0
284	SYSTEM1199	0.0
285	SYSTEM120	0.8
286	SYSTEM1200	0.0
287	SYSTEM1201	0.1
288	SYSTEM1202	0.0

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
289	SYSTEM1203	0.0
290	SYSTEM1204	0.0
291	SYSTEM1205	0.0
292	SYSTEM1206	0.0
293	SYSTEM1207	0.0
294	SYSTEM1208	0.0
295	SYSTEM1209	0.0
296	SYSTEM121	0.9
297	SYSTEM1210	0.0
298	SYSTEM1211	0.0
299	SYSTEM1212	0.1
300	SYSTEM1213	0.0
301	SYSTEM1214	0.0
302	SYSTEM1215	0.0
303	SYSTEM1216	0.0
304	SYSTEM1218	0.0
305	SYSTEM1219	0.0
306	SYSTEM1221	0.0
307	SYSTEM1222	0.0
308	SYSTEM1223	0.1
309	SYSTEM1224	0.0
310	SYSTEM1225	0.0
311	SYSTEM1226	0.0
312	SYSTEM1227	0.0
313	SYSTEM1228	0.0
314	SYSTEM1229	0.0
315	SYSTEM123	2.6
316	SYSTEM1230	0.3
317	SYSTEM1231	0.0
318	SYSTEM1232	0.0
319	SYSTEM1233	0.0
320	SYSTEM1234	0.0

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
321	SYSTEM1235	0.0
322	SYSTEM1236	0.0
323	SYSTEM1237	0.0
324	SYSTEM1238	0.0
325	SYSTEM1239	0.0
326	SYSTEM124	0.5
327	SYSTEM1240	0.0
328	SYSTEM1241	0.0
329	SYSTEM1242	0.4
330	SYSTEM1243	0.0
331	SYSTEM1244	0.0
332	SYSTEM1246	0.0
333	SYSTEM1247	0.2
334	SYSTEM1248	0.0
335	SYSTEM1249	1.4
336	SYSTEM125	0.1
337	SYSTEM1250	0.0
338	SYSTEM1252	0.0
339	SYSTEM1255	0.0
340	SYSTEM1256	0.0
341	SYSTEM1257	0.0
342	SYSTEM1258	0.0
343	SYSTEM1259	0.0
344	SYSTEM126	15.3
345	SYSTEM1261	0.1
346	SYSTEM1262	0.0
347	SYSTEM1263	0.0
348	SYSTEM1264	2.4
349	SYSTEM1265	0.4
350	SYSTEM1266	0.0
351	SYSTEM1267	0.0
352	SYSTEM1268	0.7

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353	SYSTEM1269	0.2
354	SYSTEM127	33.9
355	SYSTEM1270	2.4
356	SYSTEM1271	0.2
357	SYSTEM1273	0.2
358	SYSTEM1274	0.1
359	SYSTEM1275	0.0
360	SYSTEM1276	0.2
361	SYSTEM1278	0.8
362	SYSTEM1279	0.0
363	SYSTEM128	8.9
364	SYSTEM1280	0.0
365	SYSTEM1281	0.1
366	SYSTEM1282	0.0
367	SYSTEM1284	0.0
368	SYSTEM1286	0.0
369	SYSTEM1287	0.0
370	SYSTEM129	4.9
371	SYSTEM1290	0.1
372	SYSTEM1291	0.0
373	SYSTEM1292	0.0
374	SYSTEM1293	0.0
375	SYSTEM130	0.7
376	SYSTEM1301	0.6
377	SYSTEM1302	0.1
378	SYSTEM1303	0.0
379	SYSTEM1304	0.2
380	SYSTEM1305	0.0
381	SYSTEM1307	0.3
382	SYSTEM1308	0.0
383	SYSTEM1309	0.0
384	SYSTEM131	46.3

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Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
385	SYSTEM1310	0.0
386	SYSTEM1311	0.8
387	SYSTEM1312	0.0
388	SYSTEM1313	0.3
389	SYSTEM1314	0.0
390	SYSTEM1315	0.0
391	SYSTEM1316	0.0
392	SYSTEM134	0.8
393	SYSTEM135	59.6
394	SYSTEM136	6.4
395	SYSTEM137	20.7
396	SYSTEM138	15.3
397	SYSTEM139	0.7
398	SYSTEM140	8.2
399	SYSTEM141	4.0
400	SYSTEM142	1.4
401	SYSTEM143	19.2
402	SYSTEM144	1.2
403	SYSTEM145	11.0
404	SYSTEM146	3.4
405	SYSTEM147	1.0
406	SYSTEM148	1.0
407	SYSTEM149	0.7
408	SYSTEM150	7.7
409	SYSTEM151	2.6
410	SYSTEM152	0.7
411	SYSTEM153	1.7
412	SYSTEM154	3.3
413	SYSTEM156	18.7
414	SYSTEM157	1.0
415	SYSTEM158	0.0
416	SYSTEM159	26.5

Name of Respondent	This Report Is:	Date of Report	Year of Report
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PACIFIC GAS AND ELECTRIC COMPANY	(2) A Resubmission	5/5/2023	2022/Q4

TRANSMISSION LINES

1. Report below by States the total miles of transmission lines of each transmission system operated by respondent at end of year.
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3. Report separately any line that was not operated during the past year. Enter in a footnote the particulars (details) and state whether the book cost of such a line, or any portion thereof, has been retired in the books of account, or what disposition of the line and its book cost are contemplated.
4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
417	SYSTEM160	11.0
418	SYSTEM162	0.0
419	SYSTEM163	39.4
420	SYSTEM164	0.0
421	SYSTEM165	9.1
422	SYSTEM166	8.2
423	SYSTEM168	4.4
424	SYSTEM172	3.5
425	SYSTEM173	30.6
426	SYSTEM175	0.0
427	SYSTEM176	51.3
428	SYSTEM178	18.3
429	SYSTEM179	10.6
430	SYSTEM180	23.7
431	SYSTEM182	227.4
432	SYSTEM183	4.5
433	SYSTEM184	2.1
434	SYSTEM185	1.4
435	SYSTEM186	0.2
436	SYSTEM187	0.0
437	SYSTEM188	14.4
438	SYSTEM189	1.3
439	SYSTEM190	2.3
440	SYSTEM192	1.0
441	SYSTEM194	1.3
442	SYSTEM195	0.6
443	SYSTEM196	1.0
444	SYSTEM198	1.1
445	SYSTEM199	0.8
446	SYSTEM1999 See Note A	5.3
447	SYSTEM1999	68.8
448	SYSTEM200	9.9

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
449	SYSTEM202	0.3
450	SYSTEM203	1.8
451	SYSTEM206	12.7
452	SYSTEM207	3.4
453	SYSTEM208	74.0
454	SYSTEM209	153.1
455	SYSTEM210	1.4
456	SYSTEM211	4.9
457	SYSTEM212	7.3
458	SYSTEM213	3.0
459	SYSTEM214	8.6
460	SYSTEM215	7.3
461	SYSTEM216	0.0
462	SYSTEM218	20.2
463	SYSTEM219	7.2
464	SYSTEM220	0.3
465	SYSTEM221	2.4
466	SYSTEM222	1.3
467	SYSTEM223	3.6
468	SYSTEM224	0.0
469	SYSTEM226	4.9
470	SYSTEM227	8.4
471	SYSTEM229	86.6
472	SYSTEM230	6.9
473	SYSTEM231	37.2
474	SYSTEM233	126.2
475	SYSTEM234	15.6
476	SYSTEM235	9.0
477	SYSTEM236	3.7
478	SYSTEM237	18.7
479	SYSTEM238	3.3
480	SYSTEM240	1.3

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
481	SYSTEM241	0.6
482	SYSTEM242	3.6
483	SYSTEM243	0.5
484	SYSTEM244	0.5
485	SYSTEM245	0.7
486	SYSTEM246	50.5
487	SYSTEM247	0.6
488	SYSTEM248	36.7
489	SYSTEM249	0.3
490	SYSTEM250	37.1
491	SYSTEM251	0.1
492	SYSTEM252	33.8
493	SYSTEM253	0.2
494	SYSTEM254	23.9
495	SYSTEM255	0.3
496	SYSTEM256	0.1
497	SYSTEM257	57.6
498	SYSTEM258	22.2
499	SYSTEM260	2.9
500	SYSTEM261	169.4
501	SYSTEM262	12.6
502	SYSTEM263	6.2
503	SYSTEM264	9.0
504	SYSTEM265	29.7
505	SYSTEM266	1.1
506	SYSTEM267	2.6
507	SYSTEM268	1.8
508	SYSTEM269	0.0
509	SYSTEM270	1.6
510	SYSTEM271	3.5
511	SYSTEM272	7.5
512	SYSTEM273	47.0

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
513	SYSTEM274	14.2
514	SYSTEM275	2.1
515	SYSTEM276	4.4
516	SYSTEM277	0.0
517	SYSTEM280	121.6
518	SYSTEM281	2.9
519	SYSTEM282	11.4
520	SYSTEM283	5.2
521	SYSTEM284	68.2
522	SYSTEM285	4.5
523	SYSTEM286	16.0
524	SYSTEM287	16.9
525	SYSTEM288	2.0
526	SYSTEM290	12.8
527	SYSTEM292	13.9
528	SYSTEM293	31.1
529	SYSTEM294	35.0
530	SYSTEM296	13.6
531	SYSTEM297	15.6
532	SYSTEM298	36.9
533	SYSTEM299	58.1
534	SYSTEM300	14.6
535	SYSTEM301	1.4
536	SYSTEM302	2.6
537	SYSTEM303	2.6
538	SYSTEM304	1.4
539	SYSTEM305	2.1
540	SYSTEM306	43.9
541	SYSTEM307	28.2
542	SYSTEM308	3.6
543	SYSTEM310	6.7
544	SYSTEM311	0.0

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
545	SYSTEM312	4.2
546	SYSTEM313	9.6
547	SYSTEM314	6.0
548	SYSTEM315	4.3
549	SYSTEM316	1.1
550	SYSTEM317	2.8
551	SYSTEM318	11.2
552	SYSTEM319	1.8
553	SYSTEM320	18.8
554	SYSTEM321	2.5
555	SYSTEM322	4.9
556	SYSTEM324	4.2
557	SYSTEM325	0.4
558	SYSTEM328	0.8
559	SYSTEM329	3.7
560	SYSTEM330	0.1
561	SYSTEM331	1.1
562	SYSTEM332	0.1
563	SYSTEM340	0.4
564	SYSTEM341	0.1
565	SYSTEM344	1.0
566	SYSTEM345	0.0
567	SYSTEM346	82.7
568	SYSTEM347	15.4
569	SYSTEM348	4.6
570	SYSTEM349	6.6
571	SYSTEM350	1.8
572	SYSTEM351	4.9
573	SYSTEM353	1.9
574	SYSTEM354	4.9
575	SYSTEM355	2.7
576	SYSTEM356	24.0

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
577	SYSTEM358	0.8
578	SYSTEM359	1.0
579	SYSTEM360	0.4
580	SYSTEM361	0.7
581	SYSTEM362	6.1
582	SYSTEM363	8.3
583	SYSTEM364	0.6
584	SYSTEM365	0.3
585	SYSTEM367	0.0
586	SYSTEM368	5.1
587	SYSTEM370	5.2
588	SYSTEM371	0.1
589	SYSTEM372	1.9
590	SYSTEM373	8.3
591	SYSTEM374	0.8
592	SYSTEM400	0.0
593	SYSTEM411	0.0
594	SYSTEM413	0.0
595	SYSTEM421	0.0
596	SYSTEM422	0.0
597	SYSTEM435	0.3
598	SYSTEM439	0.0
599	SYSTEM449	0.0
600	SYSTEM453	0.4
601	SYSTEM461	0.2
602	SYSTEM465	8.8
603	SYSTEM466	39.3
604	SYSTEM467	10.0
605	SYSTEM468	18.7
606	SYSTEM469	0.0
607	SYSTEM471	0.0
608	SYSTEM478	0.6

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
609	SYSTEM479	0.0
610	SYSTEM481	0.0
611	SYSTEM482	2.2
612	SYSTEM483	40.6
613	SYSTEM484	4.2
614	SYSTEM485	0.0
615	SYSTEM486	0.7
616	SYSTEM488	0.0
617	SYSTEM489	0.0
618	SYSTEM490	1.2
619	SYSTEM491	50.4
620	SYSTEM492	0.0
621	SYSTEM494	4.1
622	SYSTEM495	35.2
623	SYSTEM496	30.1
624	SYSTEM497	9.4
625	SYSTEM498	0.0
626	SYSTEM500	0.0
627	SYSTEM501	0.0
628	SYSTEM504	1.2
629	SYSTEM505	4.2
630	SYSTEM506	6.0
631	SYSTEM507	0.0
632	SYSTEM508	24.3
633	SYSTEM509	1.4
634	SYSTEM510	8.6
635	SYSTEM511	15.1
636	SYSTEM512	33.9
637	SYSTEM515	0.0
638	SYSTEM518	0.0
639	SYSTEM520	0.0
640	SYSTEM522	0.0

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)	Total Miles of Pipe (b)
641	SYSTEM779	56.9
642	SYSTEM780	2.9
643	SYSTEM781	11.2
644	SYSTEM782	0.0
645	SYSTEM783	113.7
646	SYSTEM784	4.1
647	SYSTEM786	0.4
648	SYSTEM787	1.4
649	SYSTEM788	34.7
650	SYSTEM789	6.9
651	SYSTEM799	0.1
652	SYSTEM801	4.7
653	SYSTEM804	37.1
654	SYSTEM805	0.1
655	SYSTEM808	4.9
656	SYSTEM809	25.2
657	SYSTEM810	0.8
658	SYSTEM811	0.2
659		
660		
661		
662		
663	TOTAL TRANSMISSION LINES OPERATED BY RESPONDENT	6,434.1
664		
665		
666		
667		
668		
669		
670		
671		
672		

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4. Report the number of miles of pipe to one decimal point.

Line No.	Designation (Identification) of Line or Group of Lines (a)			Total Miles of Pipe (b)
865	**NOTE (A): LINES HELD UNDER A TITLE OTHER THAN FULL OWNERSHIP:**			
866			PGE %	
867	Line Designation	Co-Owner	Ownership	
868	300A	SMUD (1)	96.43	399.0
869	300B	SMUD (2)	96.43	396.9
870	319	So. Cal. Gas	50.00	11.3
871	401	SMUD (3)	95.75	428.7
872				
873				
874				
875				
876				
877				
878				
879	TOTAL LINES HELD UNDER A TITLE OTHER THAN FULL OWNERSHIP			1,235.9
880				
881				
882	TRANSMISSION LINES NOT OPERATED LAST YEAR:			NONE
883				
884				
885	NOTES:			
886	(1) Total length of Line 300A is 504.6 of which only 399.0 miles are held			
887	under a title other than full ownership.			
888	(2) Total length of Line 300B is 508.9 of which only 396.9 miles are held			
889	under a title other than full ownership.			
890	(3) Total length of Line 401 is 429.3 of which only 428.7 miles are held			
891	under a title other than full ownership.			
892				
893				
894				
895				
896				

Name of Respondent	This Report Is: (1) ☐ An Original (2) ☐ A Resubmission	Date of Report (Mo, Da, Yr) 5/5/2023	Year/Period of Report 2022/Q4

Transmission System Peak Deliveries

1. Report below the total transmission system deliveries of gas (in Dth), excluding delivieries to storage, for the periof of system peak deliveries indicated below, during the 12 months embracing the heating system overlapping the year's end for which this report is submitted. The season's peak normally will be reached before the due date of this report, April 30, which permits inclusion of the peak information required on this page. Add rows as necessary to report all data. Number additional rows 6.01, 6.02, etc.

Line No.	Description	Dth of Gas Delivered to Interstate Pipelines (b)	Dth of Gas Delivered to Others (c)	Total (b) + (c) (d)
	SECTION A: SINGLE DAY PEAK DELIVERIES			
1				
2	Volumes of Gas Transported			
3	No-Notice Transportation			
4	Other Firm Transportation (2)		2,028,323	2,028,323
5	Interruptible Transportation (2)		1,507,080	1,507,080
6				
7	TOTAL		3,535,403	3,535,403
8	Volumes of gas Withdrawn from Storage under Storage Contract			
9	No-Notice Storage			
10	Other Firm Storage		4,838	4,838
11	Interruptible Storage (1)		(107,453)	(107,453)
12				
13	TOTAL		(102,615)	(102,615)
14	Other Operational Activities			
15	Gas Withdrawn from Storage for System Operations		386,580	386,580
16	Reduction in Line Pack		187,000	187,000
17				
18	TOTAL		4,006,368	4,006,368
19	SECTION B: CONSECUTIVE THREE-DAY PEAK DELIVERIES			
20				
21	Volumes of Gas Transported			
22	No-Notice Transportation			
23	Other Firm Transportation (2)		6,257,043	6,257,043
24	Interruptible Transportation (2)		4,792,294	4,792,294
25				
26	TOTAL		11,049,337	11,049,337
27	Volumes of gas Withdrawn from Storage under Storage Contract			
28	No-Notice Storage			
29	Other Firm Storage		375,162	375,162
30	Interruptible Storage (1)		(242,363)	(242,363)
31				
32	TOTAL		132,799	132,799
33	Other Operational Activities			
34	Gas Withdrawn from Storage for System Operations		344,760	344,760
35	Reduction in Line Pack		(9,000)	(9,000)
36				
37	TOTAL		11,517,896	11,517,896

(1) PG&E's Park/Lend Service

(2) Includes gas withdrawn from Independent Storage Providers in PG&E's service territory

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AUXILIARY PEAKING FACILITIES

1. Report below auxiliary facilities of the respondent for meeting seasonal peak demands on the respondent`s system, such as underground storage projects, liquefied petroleum gas installations, gas liquefaction plants, oil gas sets, etc.
2. For column (c), for underground storage projects, report the delivery capacity on February 1 of the heating season overlapping the year-end for which this report is submitted. For other facilities, report the rated maximum daily delivery capacities.
3. For column (d), include or exclude (as appropriate) the cost of any plant used jointly with another facility on the basis of predominant use, unless the auxiliary peaking facility is a separate plant as contemplated by general instruction 12 of the Uniform System of Accounts.

Line No.	Location of Facility	Type of Facility	Maximum Daily Delivery Capacity of Facility, Mcf at 14.73 psia at 60 degrees F	Cost of Facility (In dollars)	Was Facility Operated on Day of Highest Transmission Peak Delivery?	
					Yes	No
	(a)	(b)	(c) **(A)**	(d)	(e)	(f)
1	Gill Ranch **(B)**	Underground Storage	47,403	83,669,798	X	
2						
3	McDonald Island	Underground Storage	930,817	867,210,237	X	
4						
5	Los Medanos	Underground Storage	176,397	166,159,820	X	
6						
7	Pleasant Creek	Underground Storage	0	15,999,717		X
8						
9						
10	TOTAL		B	1,133,039,571		
11						
12	**(A) Figures reflect well deliverability capacities discounted for**					
13	**operational limitations and based on full field pressures.**					
14						
15	**(B) PG&E owns 25% of Gill Ranch Storage Field - GRS LLC is the operator of the facility**					
16	**PG&E's share of the 183,000 Mcf maximum delivery capacity is 45,750 Mcf**					
17						
18						
19						
20						
21						
22						
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24						
25						
26						
27						
28						
29						
30						
31						

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GAS ACCOUNT -- NATURAL GAS

1. The purpose of this schedule is to account for the quantity of natural gas received and delivered by the respondent.
2. Natural gas means either natural gas unmixed or any mixture of natural and manufactured gas.
3. Enter in column (c) the year to date Dth as reported in the schedules indicated for the items of receipts and deliveries.
4. Enter in column (d) the respective quarter's Dth as reported in the schedules indicated for the items of receipts and deliveries.
5. Indicate in a footnote the quantities of bundled sales and transportation gas and specify the line on which such quantities are listed.
6. If the respondent operates two or more systems which are not interconnected, submit separate pages for this purpose.
7. Indicate by footnote the quantities of gas not subject to Commission regulation which did not incur FERC regulatory costs by showing (1) the local distribution volumes another jurisdictional pipeline delivered to the local distribution company portion of the reporting pipeline (2) the quantities that the reporting pipeline transported or sold through its local distribution facilities or intrastate facilities and which the reporting pipeline received through gathering facilities or intrastate facilities, but not through any of the interstate portion of the reporting pipeline, and (3) the gathering line quantities that were not destined for interstate market or that were not transported through any interstate portion of the reporting pipeline.
8. Indicate in a footnote the specific gas purchase expense account(s) and related to which the aggregate volumes reported on line No. 3 relate.
9. Indicate in a footnote (1) the system supply quantities of gas that are stored by the reporting pipeline, during the reporting year and also reported as sales,transportation and compression volumes by the reporting pipeline during the same reporting year, (2) the system supply quantities of gas that are stored by the reporting pipeline during the reporting year which the reporting pipeline intends to sell or transport in a future reporting year, and (3) contract storage quantities.
10. Also indicate the volumes of pipeline production field sales that are included in both the company's total sales figure and the company's total transportation figure. Add additional information as necessary to the footnotes.

Line No.	Item (a)	Ref. Page No. (b)	Total Amount of Dth Year to Date (c)
1			
2	GAS RECEIVED		
3	Gas Purchases (Accounts 800-805)		241,013,472
4	Gas of Others Received for Gathering (Account 489.1)	303	-
5	Gas of Others Received for Transmission (Account 489.2) - Note 1		103,027,270
6	Gas of Others Received for Distribution (Account 489.3) - Note 1		522,357,421
7	Gas of Others Received for Contract Storage (Account 489.4)	307	-
8	Gas of Others Received for Production/Extraction/Processing (Account 490 and 491)		-
9	Exchanged Gas Received from Others (Account 806)	328	-
10	Gas Received as Imbalances (Account 806)	328	-
11	Receipts of Respondent's Gas Transported by Others (Account 858)	332	-
12	Other Gas Withdrawn from Storage (Explain) - Note 2	512	31,932,068
13	Gas Received from Shippers as Compressor Station Fuel		-
14	Gas Received from Shippers as Lost and Unaccounted for		10,235,595
15			
16	TOTAL Receipts (Enter Total of lines 3 thru 15)		908,565,826
17	GAS DELIVERED		
18	Gas Sales (Accounts 480-484)	300	266,882,953
19	Deliveries of Gas Gathered for Others (Account 489.1) 303	300	-
20	Deliveries of Gas Transported for Others (Account 489.2)	305	100,973,659
21	Deliveries of Gas Distributed for Others (Account 489.3)	301	511,945,431
22	Deliveries of Contract Storage Gas (Account 489.4) - Note 3	307	-
23	Gas of Others Delivered for Production/Extraction/Processing (Account 490 and 491)		-
24	Exchange Gas Delivered to Others (Account 806)	328	-
25	Gas Delivered as Imbalances (Account 806)	328	-
26	Deliveries of Gas to Others for Transportation (Account 858)	332	-
27	Other Gas Delivered to Storage (Explain)	512	28,763,783
28	Gas Used for Compressor Station Fuel	509	-
29			
30	Total Deliveries (Total of lines 18 thru 29)		908,565,826
31	GAS LOSSES AND GAS UNACCOUNTED FOR		
32	Gas Losses and Gas Unaccounted For		
33	TOTALS		
34	Total Deliveries, Gas Losses & Unaccounted For (Total of lines 30 and 32)		908,565,826

NOTES:

(1) Does not include gas received and delivered to the Utility's Electric Department for electric generation in the amount of 41,210,257 Dth and 40,681,399 Dth, respectively.

(2) Gas Withdrawn from Storage includes 3rd party gas. Ref pg 512

(3) PG&E has some storage for gas of others. However, these are bundled together with other gas in storage and could not be split out.

Name of Respondent	This Report Is:	Date of Report	Year of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr) 5/5/2023	2022/Q4

SYSTEM MAP

1. Furnish 5 copies of a system map (one with each filed copy of this report) of the facilities operated by the respondent for the production, gathering, transportation, and sale of natural gas. New maps need not be furnished if no important change has occurred in the facilities operated by the respondent since the date of the maps furnished with a previous year's annual report. If, however, maps are not furnished for this reason, reference should be made in the space below to the years' annual report with which the maps were furnished.

2. Indicate the following information on the maps:
   (a) Transmission lines-colored in red, if they are not otherwise clearly indicated.
   (b) Principal pipeline arteries of gathering systems.
   (c) Sizes of pipe in principal pipelines shown on map.
   (d) Normal directions of gas flow-indicated by arrows.
   (e) Location of natural gas fields or pools in which the respondent produces or purchases natural gas.
   (f) Locations of compressor stations, products extraction plants, stabilization plants important purification plants, underground storage areas, recycling areas, etc.
   (g) Important main line interconnections with other natural gas companies, indicating in each case whether gas is received or delivered and the name of connecting company.
   (h) Principal communities in which respondent renders local distribution service.

3. In addition, show on each map: graphic scale to which map is drawn; date as of which the map represents the facts it purports to show; a legend giving all symbols and abbreviations used; designations of facilities leased to or from another company, giving name of such other company.

4. Maps not larger than 24 inches square are desired. If necessary, however, submit larger maps to show essential information. Fold the maps to a size not larger than this report. Bind the maps to the report.

The 2022 gas system map of Pacific Gas and Electric Company has been filed with the California Public Utilities Commission.

SELECTED FINANCIAL DATA - CLASS A, B, C, AND D ELECTRIC UTILITIES
PACIFIC GAS AND ELECTRIC COMPANY
PERSON RESPONSIBLE FOR THIS REPORT: Stephanie Williams, Vice President, CFO and Controller
(PREPARED FROM INFORMATION IN THE 2022 FERC ANNUAL REPORTS)

	December 31		
	2021	2022	Annual Average
NET GAS PLANT INVESTMENT (a)			
Gas Utility Plant (California Only)			
1. Intangible Plant	$ 422,910,992	$ 445,084,515	$ 433,997,754
2. Land and Land Rights	195,416,486	205,447,447	200,431,966
3. Depreciable Plant	25,236,327,402	27,425,530,945	26,330,929,174
4. Gross Gas Utility Plant	25,854,654,880	28,076,062,907	26,965,358,894
5. Gas Plant Held for Future Use - Net	0	0	0
6. Construction Work in Progress - Gas	636,534,658	714,413,554	675,474,106
7. Accumulated Deferred Income Taxes	1,269,655,451	1,420,936,718	1,345,296,084
8. Gas Stored Underground	119,592,211	119,592,211	119,592,211
9. Less: Reserves for Depreciation - Gas Utility Plant	9,615,624,985	10,081,512,905	9,848,568,945
10. Less: Amortization and Depletion Reserves	246,906,132	253,289,607	250,097,870
11. Less: Customer Advances and Contribution in Aid of Construction	89,683,775	99,510,600	94,597,188
12. Less: Accumulated Deferred Income and Investment Tax Credits	3,404,691,698	3,910,000,662	3,657,346,180
13. Material and Supplies - Gas Only	313,172,766	378,619,788	345,896,277
14. Net Gas Plant Investment	$ 14,836,703,376	$ 16,365,311,404	$ 15,601,007,389
CAPITALIZATION (Total Company)			
15. Common Stock	$ 1,321,874,045	$ 1,321,874,045	$ 1,321,874,045
16. Capital Stock (Premium, Discount and Expense)-Net	1,769,325,445	1,769,325,445	1,769,325,445
17. Other Paid in Capital	26,516,580,090	30,756,123,589	28,636,351,840
18. Retained Earnings	(4,254,603,732)	(3,375,866,777)	(3,815,235,255)
19. Other Miscellaneous Capital Accounts	0	0	0
20. Common Stock and Equity (Lines 15 through 19)	25,353,175,848	30,471,456,302	27,912,316,075
21. Preferred Stock	257,994,575	257,994,575	257,994,575
22. Long-Term Debt	37,229,815,785	44,183,726,712	40,706,771,249
23. Notes Payable and Current Portion of Long-Term Debt	2,185,000,000	2,055,000,000	2,120,000,000
24. Total Capitalization (Lines 20 through 23)	$ 65,025,986,208	$ 76,968,177,589	$ 70,997,081,899

(a) Includes Common Plant Allocations.

PACIFIC GAS AND ELECTRIC COMPANY
INCOME STATEMENT DATA
FOR CALIFORNIA INTRASTATE GAS OPERATIONS ONLY (b)

	Annual Amount
25. Operating Revenues	$ 6,867,716,355
26. Operating and Maintenance Expense	4,613,589,681
27. Depreciation	835,682,519
28. Amortization and Depletion Expenses and Property Losses	65,232,162
29. Property Taxes (Ad Valorem)	176,293,505
30. Taxes Other than Income and Property Taxes	66,543,827
31. Operating Revenue Deductions (Before Federal and California Income Taxes)	5,757,341,694
32. Federal and California Income Taxes - Net	(17,360,935)
33. Gains and Losses from Disposition of Gas Plant - Net	(27,093,072)
34. Total Utility Operating Expenses	5,712,887,687
35. Net Operating Income (California Intrastate Gas Operations Only)	1,154,828,669
OTHER INCOME AND EXPENSE (Total Company)	
36. Net Operating Income from Other Utility Operations (Total)	2,674,235,153
37. Net Other Income and Deductions	43,438,656
38. Income Before Interest Charges	3,872,502,477
39. Interest Charges	1,646,225,261
40. Income Before Extraordinary Items	2,226,277,216
41. Extraordinary Items - Net of Income Tax	0
42. Net Income	2,226,277,216
43. Preferred Stock Dividends and Redemption Premium	71,900,993
44. Income Available for Common Stock	$ 2,154,376,223
45. Common Stock Dividends	$ 1,275,000,000
OTHER DATA (CALIFORNIA INTRASTATE GAS OPERATIONS ONLY) (b)	
46. Payroll Charged to Operating and Maintenance Expense	$ 683,992,020
47. Payroll Capitalized to Utility Plant - Gas	512,650,712
48. Total Payroll	$ 1,196,642,732
49. Total Exploration & Development Expense (A/Cs 795 through 798)	$ -
50. Purchased Gas Expense (A/Cs 807.1 through 807.5)	$ 16,365,748
51. Interdepartmental Revenues	$ 256,414,146
52. Interdepartmental Expenses	$ 217,033,073
53. Allowance for Funds Used During Construction	$ 44,351,038
54. Revenue from Sales to Residential Customers	$ 3,352,627,871
55. Residential Sales in Dths	166,896,076
56. Therms Sold Residential Customers	1,668,960,760
57. Total Revenue Sales to Ultimate Consumers	$ 4,613,983,397
58. Dths Sold to Ultimate Consumers	266,882,953
59. Therms Sold to Ultimate Consumers	2,668,829,531
60. Average Number of Residential Customers	4,324,433
61. Average Number of Ultimate Customers	4,554,735

(b) Assumes CPUC Jurisdictional Portion of Gas Operations.



2023 Budget

Sacramento Municipal Utility District

Powering forward. Together.

SMUD®

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SMUD®

November 2, 2022
GM 22-155

Board of Directors

Re: 2023 Budget

Dear Board Members:

I am pleased to present SMUD's proposed 2023 Budget. The proposed 2023 Budget Authorization request is **$2.1 billion.** It provides funding for operations and maintenance (O&M) and capital programs needed to successfully meet the Board's Strategic Directions and deliver on our 2030 Clean Energy Vision, both in the coming year and well into in the future. The Budget reflects an increase of about 20% compared to 2022, driven primarily by investments in infrastructure to maintain our high reliability, serve load growth, and decarbonize our power supply. Investments are planned well in advance and any resulting budget increases are reviewed to ensure that SMUD's rates remain among the lowest in California and significantly better than the Board's Strategic Direction 2 metrics. Staff will present detailed information at the Finance & Audit Committee meetings on November 8 and 9. The Proposed Budget supports three broad priorities: Infrastructure Investment, Zero Carbon Plan and Community Impact.

Executive Summary

Each year, we look holistically at our budget, programs, projects, and initiatives to ensure we continue to deliver value to our customers and community in a way that maximizes benefits to all communities and the 1.5 million people we serve. Being a community-owned, not-for-profit utility means we have a responsibility to be good financial stewards of the money our customers pay us for safe, reliable electric service.

In 2022, we continued to accelerate our work on implementing the 2030 Clean Energy Vision. While 2022 provided many challenges to our business – recovery from the Station A fire, low hydroelectric generation due to drought, increasing commodity costs, thermal plant outage, higher interest rates, global supply chain constraints and a record-breaking heatwave – we remained focused on our long-term goals of showcasing SMUD as the example for others to follow in decarbonizing aggressively, safely, reliably, affordably and equitably, while delivering on the goals the Board sets for us through our Strategic Directions. The budget funds priorities for 2023, in alignment with our Enterprise Strategy, which is a guide for prioritizing and aligning work to achieve our goals and set budget spending.

Staff across the organization have been thoughtful in developing the 2023 Budget to ensure we continue to fund the activities that are critically important to support our

customers and community, while also funding activities that support SMUD's long-term success and leadership position. This includes investments in accelerating our carbon reduction efforts, maintaining and improving our infrastructure, and working to ensure positive community impact through our new Community Impact Plan. We'll continue to work with our low-income customers and support our commitment to embed Diversity, Equity, Inclusion & Belonging (DEIB) in everything we do. By partnering with key community and customer partners, we'll continue to deliver maximum community impact, by ensuring every dollar we spend delivers the most value possible.

Our O&M budget (line c in the following table) is increasing by $33 million, and our Public Good budget (line b) is increasing by $12 million. Key initiatives in our 2023 O&M and Public Good budgets include executing our new Community Impact Plan, electric transportation incentives, building electrification programs, and other carbon reducing efforts. As the Board knows, electrification is a critical part of our zero carbon future, and an important part of our strategy to continue to be a leader in the region's transformation to a Clean PowerCity for all our customers. We're continuing to make investments for our low-income customers and in under-resourced communities, so all customers benefit from our carbon reduction efforts. The O&M budget also includes increased funding for vegetation management, wildfire mitigation, cybersecurity, and property and casualty insurance. While staff works diligently to minimize budget impacts from these items, many increases are driven by factors outside of our control, such as supply chain issues, inflation, and rising interest rates.

Our Capital budget (line d) is increasing by $265 million, as we are making investments to achieve our zero carbon future, while also ensuring reliability. Major capital projects for 2023 include expanding the Solano Wind Farm, ongoing construction for the Country Acres Solar project, completing Station G Substation, and ramping up the new ESS Flow Battery partnership project. The 2023 Budget includes funding for new and continuing technology projects, such as the Advanced Distribution Management System (ADMS) and Outage Management Systems (OMS) and completing Phase 1, and launching Phase 2 of our Talent Technology Transformation (T3) project to manage hiring, onboarding, and talent management processes holistically through a single technology platform.

The 2023 Budget authorizes 2,242 full-time positions, an increase of 32 positions. These increases to our permanent staffing support our business investments. The budget also includes funding for our future workforce pipeline needs with limited-term, student, and part-time positions.

We expect an increase in our customer count and kWh sales of electricity in 2023. Our Commodity budget (line a) is increasing as the various components in our portfolio are changing. The Budget includes assumptions for continued low hydroelectric generation, along with higher power, natural gas and resource adequacy prices and includes funds for a new zero-carbon geothermal energy contract that begins in 2023. We recognize the potential for new growth related to building electrification, electric vehicle adoption and mixed-use commercial/residential sales growth, and have maintained conservative

planning assumptions, so we can act nimbly as business conditions change. To manage potential impacts on our budget and operations, we'll monitor these and other factors throughout the year, including the local economy, construction costs and any supply chain and labor shortages.

The proposed 2023 Budget will allow SMUD to:

- Increase support for our community and engage with the Sacramento region to invest in a clean energy future.
- Maintain a reliable grid today and in the future through strong investments in our infrastructure.
- Focus on alignment of key priorities during economic uncertainty with prudent financial management.
- Execute on SMUD's vision to provide reliable, affordable, and sustainable energy while maximizing community benefits for all.

Budget Breakdown

Here is a brief overview of the proposed 2023 Budget compared to the 2022 Budget:

	2022 ($M)	2023 ($M)	Change ($M)
Commodity (a)	$440.7	$485.0	$44.3
Public Goods excluding subsidies (b)	63.6	75.5	11.9
Other O&M (c)	659.6	692.8	33.2
Subtotal	**$1,163.8**	**$1,253.2**	**$89.4**
Debt Service	212.2	225.5	13.3
Capital (d)	359.9	624.9	265.0
Total Budget Authorization	**$1,735.9**	**$2,103.6**	**$367.7**

Totals may reflect minor rounding differences.

The total Public Good budget includes an additional $34 million for rate subsidies that are not included in the Budget Authorization because the Board previously approved these as a component of the rate tariff.

Additional Budget Details

The following sections provide details on the major initiatives and programs funded in the 2023 Budget, grouped by the Board's Strategic Directions (SD).

Competitive Rates (SD-2)

While the 2023 Budget reflects the second year of rate increases that the Board adopted in September 2021, our rates continue to be among the very lowest in California. Commodity costs make up a significant portion of our total O&M budget. Staff has locked in prices for much of our expected energy requirements for 2023 to ensure cost and rate stability for customers. A small portion of budgeted energy purchases are exposed to short-term market price fluctuations, which is a prudent and beneficial practice, especially during the price volatility currently seen in California energy markets.

We'll enter 2023 with approximately $31 million in the Hydro Rate Stabilization Fund (HRSF) and $3.5 million in the Rate Stabilization Fund (RSF), (this excludes funds in RSF for Low Carbon Fuel Standard (LCFS), Cap and Trade (AB32) and Deferred Revenue). These reserve funds help us absorb higher energy costs when hydroelectric production is lower and serve as a buffer against unexpected financial challenges.

SMUD typically conducts a public rate action every other year. We expect to release our Chief Executive Officer and General Manager's Report and Recommendations on Rates and Services in early 2023, which would begin our next rate action. The rate action will include proposed rate increases for 2024 and 2025. As of June 1, 2022, our system rates are on average 45% lower than Pacific Gas & Electric's average rates, which translates to about $1.3 billion in annual bill savings for our customers.

We know our customers expect us to keep our rates low while continuing to deliver safe, reliable, and environmentally responsible power and the products and services they value. Across SMUD, we've continued to focus on Operational Excellence to deliver efficiencies and savings across our business, which frees up funds to support our carbon reduction goals and other strategic initiatives. We'll continue this focus in 2023 and beyond.

Access to Credit Markets (SD-3)

We proactively manage our financial position to maintain high credit ratings. High credit ratings improve access to credit markets and result in a lower cost of borrowing. This is especially important as we look to fund our ambitious zero carbon future and capital spending plan.

We target strong financial metrics in cash flow coverage (fixed charge) and liquidity (days cash). For SMUD's annual budget, the Board sets a minimum fixed charge of 1.50 times operating cash flow, however, we plan for a minimum of 1.70 as a standard. This higher performance standard has proven valuable during the last 3 years of economic uncertainty as investors seek high quality investments.

We manage a strong liquidity position by setting a minimum number of days cash on hand and maintain an additional $300 million commercial paper program and a $100

million line of credit. This strong liquidity position is important in demonstrating to our customers, investors, and rating agencies that SMUD can withstand various financial stresses. Our current days cash threshold is 150 days — the minimum amount of cash on hand before triggering a new debt or commercial paper issuance to replenish cash balances. The commercial paper and line of credit programs allow for short-term borrowing when needed, similar to a credit card, in lieu of issuing long-term debt. Any unused commercial paper or line of credit further enhances our liquidity position, which is viewed positively by investors and ratings agencies.

Reliability (SD-4)

Delivering reliable electric service to our customers is always a top priority. The 2023 Budget includes funding to ensure our transmission and distribution (T&D) systems have sufficient capacity and load serving capability to safely, reliably, and cost-effectively serve the needs of our customers, while meeting regulatory compliance requirements.

Key reliability investments in the 2023 Budget include:

- **Power Control Center (PCC)** – We will launch the design and planning phase of the new PCC to ensure SMUD meets industry compliance standards in availability, readiness, and operating capabilities.

- **Substation investments** – Building a substation is a multi-year effort, and the important work to build Station G substation will be completed in 2023. Station A's load is moving to Station G in late 2022 and final construction at Station G will be complete in early 2023. Additionally, we'll continue our multi-year replacement plan for T&D substation assets, which includes circuit breakers, transformers, and switchgear. Construction for new distribution substations will continue for sites such as the Cordova Hills substation, Meister Lonetree substation, Frienza-Albatross substation, and others to support reliability and load growth. We'll also work on major retrofit projects include completing the Hurley Bus-Tie, which adds redundancy to the Hurley Substation, and replacing the emergency transformer at Requa-Fawn substation.

- **Transmission substation work** – We will start design work for Station H and continue our work on the Sacramento Valley Energy Center/Coyote Creek (SVEC) project. d. The SVEC project is a 250 MW solar and battery storage plant that will be interconnected to SMUD's 230 kV transmission system, including a new 230 kV substation. Additionally, the Elverta substation expansion project will enable over 800 MW of renewable energy to be connected in the northern portion of our service territory and will support achieving our 2030 Zero Carbon Plan. This 4-year project will also improve reliability and redundancy at the Elverta substation.

- **Vegetation management & wildfire mitigation** – In 2023, we plan to trim approximately 110,000 trees as part of our routine distribution tree trimming efforts. We'll continue to remove vegetation that could grow or fall within unsafe distances to the transmission lines and reduce fuels to prevent or minimize the potential effects of a wildfire. Our budget includes $5 million for targeted vegetation management risk reduction work in the Upper American River Project.

- **Pole and cable replacements** – In 2023, we plan to replace 1,200 poles and are targeting to replace 240,000 circuit feet of underground cable. The pole replacement program includes replacing poles that have failed a pole inspection and are not candidates for pole reinforcement. For cable replacements, we prioritize addressing the worst performing cable first, which will decrease future outages, repair costs, customer complaints and reduce the number of the worst performing circuits. Customer-driven work (new business) for 2023 is budgeted at 2022 levels. If customer-driven work falls below the 2023 budget, we will increase the number of pole and underground cable replacements accordingly, as this is ongoing work.

- **Existing Power Generation facilities** – As we shift our focus to zero carbon resources, we're committed to protecting the reliable operations of SMUD's existing generation fleet. In 2023, we'll continue several capital improvement projects, compliance activities driven by increased Dam Safety and Gas Pipeline regulations, and important major maintenance tasks, including inspections and overhauls to maintain reliable operations of our existing assets.

Customer Relations (SD-5), Outreach & Communication (SD-15)

2023 will be a year of change for our customers and community, many of whom are still recovering from the impacts of the COVID-19 pandemic, while continuing to feel the effects of inflation and nationwide supply chain shortages. We'll continue to deliver on the needs of our customers, focusing on outreach, education, and awareness to achieve an equitable carbon free future by 2030 that our customers can participate in.

We're working to engage members of our diverse communities to deliver wide-reaching benefits, including expanded workforce development program offerings. Our new Community Impact Plan provides ways to diversify our portfolio of offerings, creating more inclusive economic development opportunities, supporting capacity building for local non-profits, and expanding our community education and outreach efforts to ensure no community is left behind.

Key customer relations, outreach, and communication investments in the 2023 Budget include:

Our **Community Impact Plan** is a multi-year, $41 million program to meet SMUD's commitment to making meaningful investments in under-resourced communities to ensure their participation in a clean energy future. Through it, we'll focus on:

- Leveraging partnerships to micro-target under-resourced communities.
- Increasing income eligible energy efficiency, electrification, weatherization, solar and electric vehicle (EV) readiness, including small businesses and non-profit organizations.
- Launching our highly targeted Community Ambassador program to meet with customers on a personal level to drive participation in our Clean Energy Vision, with a focus on engaging the hard-to-reach.
- Launching new regional workforce development programs to give participants the skills and tools to find gainful employment in new energy economy careers such as construction, the electrical trades and EV and battery storage maintenance.
- Increasing community education and communication regarding the 2030 Zero Carbon Plan including neighborhood walks, when feasible.

Providing customers **channels and tools** to engage in ways that are intuitive and make sense to them by:

- Upgrading Contact Center technology to enhance future customer interactions by expanding chat features and social media.
- Increasing outbound communications to include billing and payment-related messaging, such as credit card expiration alerts.
- Continuing to enhance outage experiences and communications.
- Continuing education and outreach regarding rate changes for small- and medium-size commercial customers.

Positioning SMUD as the authority on how to decarbonize aggressively, safely, reliably, affordably, and equitably through:

- Launching our next, all-new integrated and multi-language Clean PowerCity campaign to continue building awareness, acceptance, and customer participation - We will focus on demonstrating SMUD's progress toward zero carbon and what customers can do to "Join the Charge" – from free and simple tips to all-in steps such as electric vehicle adoption.
- Providing opportunities through events, conferences and speaking opportunities for customers to "Join the Charge."
- Implementing our youth strategy through direct outreach and digital channels including social media to create advocates, brand ambassadors and influencers among our region's youth to amplify SMUD's story, and boost engagement and participation with tomorrow's customers.

Enhancing our customers' digital experiences by:

- Deepening our marketing efforts in streaming media, including Over-The-Top (OTT) like Hulu and Pandora, and through social media like Instagram and TikTok to reach a wide range of audiences.
- Launching pilots to support customer participation in our Clean Energy Vision, including behavioral load shaping to reduce peak usage and an EV adoption pilot.

Leveraging our existing partnerships and pursuing new opportunities to connect with customers across our service area, including the hard-to-reach to build engagement and participation in our Clean Energy Vision across our community through:

- Continuing to leverage flagship partnerships such as our support for the SMUD Museum of Science & Curiosity, the Sacramento Kings, Sacramento River Cats and Sacramento Republic.
- Deepening outreach to community groups to understand individual community priorities through our Speakers Bureau and Homeowners Association strategy.
- Expanding opportunities for outreach, including increased use of our Speaker's Bureau at external meetings and events.

Our **Sustainable Communities Programs** will continue to support our community in a variety of ways, including:

- Providing Shine Awards totaling $600,000 to support zero carbon-related projects.
- Visiting classrooms and community events with hands-on, engaging activities that teach students about clean energy and the environment and inspire them to pursue careers in the energy industry.
- Hosting marquee regional Science, Technology, Engineering & Math (STEM) competitions, including SMUD's annual Electricity Fair, Solar Regatta, Youth Energy Summit, and Solar Car races to give thousands of students in-depth experience with energy and science education.
- Implementing a new program to rotate free visits to SMUD's MOSAC to benefit communities equitably.
- Hosting commercial, residential and educator workshops to provide technical education to professionals and businesses across the region and introduce our customers to practices and technologies that lower energy usage and expenses while making their homes more comfortable and convenient.

Safety Leadership (SD-6)

SMUD continues to execute on our plan to be a recognized leader in safety. In 2023 we'll continue to progress with our Safety Road Map and Safety Management System (SMS) to foster our safety culture and leadership and further our journey toward our zero-incident goal.

Key safety investments in the 2023 Budget include:

- Continuing to support COVID-19 outbreak prevention methods.
- Continuing training and use of the new SMS software for our contractor safety, risk assessment and incident management modules.
- Expanding our pilot field ergonomics injury prevention program to UARP, Substation, Meter Shop, Warehouse and Facilities departments is part of our plan. This program provides biomechanical instruction to improve an employee's

core body strength and posture, corrective exercises to support joint mobility, muscle flexibility and balance, recovery techniques for muscle inflammation and injury prevention for field activities.
- Continuing to promote SMUD's Public Safety program by updating outward facing billboard campaigns, expanding Emergency Responder (Fire Dept.) and Public Safety Electrical training for battery storage areas, updates to public contractor safety outreach, Electromagnetic Fields, and Radio Frequency (EMF/RF) educational publications, and modifications to public facing webpages with new and easy to find information.

Environmental Leadership (SD-7)

SMUD is recognized as an environmental leader within our industry and beyond. Our commitment to the environment is evident in the power we deliver to our customers, our community involvement, the materials we buy and the decisions we make each day. We're always looking to reduce our impact on the environment, conserve resources and improve the environment for current and future generations. These efforts benefit our employees, customers and most of all, our community.

Key environmental leadership investments in the 2023 Budget include:

- Expanding our Sustainability Program to include:
  - Greenhouse gas emissions beyond those associated with power generation.
  - Green operations to adequately manage air quality, water, and waste by improving operational efficiency, minimizing our operational impacts, and ensuring the quality and quantity of resources.
  - Greater focus on recovery programs to recycle/exchange wood reels and pallets along with surplus metal recovery.
- Increasing our zero emission vehicles by at least 20 replacements of internal combustion engine vehicles.
- Completing our Headquarters main campus drought tolerant landscaping project.
- Ongoing support for recreational facility improvements such as the construction of the Union Valley Bike Trail. We are also improving and expanding campsites and day use areas at Sunset and Fashoda campgrounds. This work is required under the Federal Operating License for the UARP.

Employee Relations (SD-8)

Investments in talent and technology will be critical to developing and enabling a culture that will sustain SMUD's clean energy efforts in a fast-changing industry and world. Equally important is the strong collaborations we're forging across the company to collectively respond to the imperative to build a diverse workforce, foster an inclusive culture, and create a lasting community impact.

Key employee relations investments in the 2023 Budget include:

- Completing Phase 1 and launching Phase 2 of our Talent Technology Transformation technology project. This multi-year project will manage hiring, onboarding, and talent management processes holistically through a single technology platform.
- Opening a child development center in partnership with Sac State and UC Davis Health to help attract and retain the region's top talent, as well as address the need for quality childcare in Sacramento.
- Continuing to execute on SMUD's Diversity, Equity, Inclusion & Belonging (DEIB) Strategy, which includes implementing a refreshed outreach strategy to increase the diversity of talent pools, conducting a DEIB audit of people processes to learn how we can enhance our approaches and ensure our people processes help power an inclusive culture.
- Reviewing and enhancing job descriptions with a focus on modernization, brand voice and application of a DEIB lens.
- Continuing execution of Workforce Optimization for our field crews by implementing additional work groups on the Click Soft mobile scheduling platform. This will include a review and updates to work processes, as well as an improved customer experience.
- Recruit our second cohort into the Powering Careers program to support SMUD's workforce needs with an entry-level feeder source for our apprentice programs. Collaboration between the Sacramento Power Academy and our Sustainable Communities teams will ensure we have a robust pipeline to the program, as well as providing career opportunities within the community.

Resource Planning (SD-9)

In implementing our 2030 Zero Carbon Plan, we're focused on reimagining our generation portfolio through replacing our natural gas assets, expanding our local investments in proven clean technologies, and launching pilot projects and programs for new and emerging technologies, all while continuing our work to improve equity for our under-resourced communities and minimizing cost to our customers.

Key resource planning investments in the 2023 Budget include:

- Expanding renewables and increasing reliability:
    - Beginning construction of the Solano 4 Wind Project (91 MW) and Country Acres Project (344 MW of solar + 172 MW of storage).
    - Continuing evaluation and development of several local and regional utility-scale solar and battery storage projects and other renewable technologies, with targeted online dates in 2025-27.
    - Expecting delivery on Purchase Power Agreements from the new 50 MW Sloughhouse solar project and the Geyser's100 MW Geothermal Project.

- Deploying long-duration energy storage through a new partnership with ESS, Inc. beginning with 4MW/24MWh at several locations in Phase 1 of the partnership.

- Continuing to expand our efforts to support and promote energy efficiency and building electrification through our programs and services. Some new initiatives include:
    - Launching an online shopping experience for heat pump water heaters and a hotline for emergency replacements accessible through our SMUD Energy Store.
    - Expanding our Home Electricity Reports to reach EV and solar customers to encourage customers to reduce electricity use during peak periods and shift use to low or off-peak periods.
    - Evaluating and updating the design of our SmartHomes program in alignment with new codes and standards, as well as building and design practices.
    - Implementing a low- or no-interest financing option to provide an equitable solution for customers transitioning from gas heating and water heating to heat pump systems.
    - Expanding our trade ally network to include contractors that serve commercial customers. The commercial contractor network will provide customers with direct access to a vetted list of participating contractors with experience in energy efficiency and building electrification retrofits.

- Supporting the proliferation of EVs and charging infrastructure through our programs and services, including:
    - Positioning SMUD as our customers' first point of contact when purchasing an EV or charging equipment and providing high quality expert advice.
    - Continuing to advance the adoption of EVs through our auto dealer engagement and education, ride & drive events, and EV support program.
    - Expanding our residential Charge@Home program that provides incentives for home charger and electrical circuit installation by providing a contractor referral and installation solution as well as instant rebates on chargers and circuit installation services through the SMUD Energy Store.
    - Launching a new EV online estimation tool that provides information on total cost of ownership including upfront purchase costs, available incentives, average monthly expenses, lifetime savings, carbon reduction and breakeven timeline.
    - Launching the eFuel^{SM} turnkey commercial installation service that removes key barriers to vehicle electrification with no or low up-front cost installation in exchange for a monthly fee on a SMUD bill.

- Expanding and growing our load flexibility, demand response and customer storage options. Examples include:

  - Implementing new battery storage incentive programs, which includes Critical Peak Pricing Rate and the new Virtual Power Plant (VPP) programs under the My Energy Optimizer suite of program offerings.
  - Launching and implementing customer enrollment and device installations for our NextGen Air Conditioning and Load Management (ACLM) program, which will offer 2-way communicating load control devices for customers with qualifying air conditioners to manage and reduce load during summer peak events.
  - Expanding the scope of our commercial PowerDirect load management program to include additional customer segments and end uses, as well as aggregators to support load management and reduction, primarily during the summer.
  - Expanding the Managed EV Charging pilot with General Motors, Ford, and BMW, which allows charging to be optimized in a way that benefits both the customer and SMUD's grid, with a target of reaching 1,000 customers during the year and opportunities for additional auto manufacturers to participate.

- Continuing to build and evolve our Green Pricing and Solar program offerings, including:
  - Promoting and growing our residential Greenergy program offerings, which includes the redesigned options and the new Neighbor and Climate Advocate options introduced in 2022.
  - Redesigning and deploying our commercial Greenergy program offerings in alignment with the 2030 Zero Carbon Plan, and to meet customer needs for new product options to support corporate, policy or mandates.
  - Develop options for a residential solar Share program for low, moderate income and multi-family customers.
  - Expand our community solar programs for schools and non-profit organizations.

Innovation (SD-10)

Delivering innovative solutions, products, and services to our customers through research and development and implementing new business models continues to be a core value for SMUD. In 2023, we'll work to further align our research and innovation portfolio to meet the needs of the 2030 Zero Carbon Plan, with a particular focus and emphasis on researching technologies, implementing projects, or deploying pilots/programs that have the potential to address gaps or uncertainties and/or accelerate the implementation of initiatives already in flight.

Key innovation investments in the 2023 Budget include:

- Accelerating research in customer load flexibility to allow for the growth of our Virtual Power Plant (VPP) and transition of SMUD's thermal fleet, increasing the integration

of intermittent renewable resources and mitigating grid and customer infrastructure impacts of electrification, including:

- Partnering with customers, installers, and aggregators to measure the ability of customer-sited batteries to provide load reduction through the My Energy Optimizer Partner+ pilot.
- Furthering Vehicle-To-Grid (V2G) readiness for school bus electrification by expanding participation opportunities to additional school districts and developing and testing the ability of charging infrastructure to manage 2-way power flow, as well as begin the planning of future V2G pilots for the light-duty EV segment.

- Researching and addressing key barriers to building and transportation electrification, including:
  - Quantifying load impacts from home electrification retrofits to support the development of tools and systems that distribution planners and customers can use to facilitate decisions about utility service upgrades or solutions to mitigate those upgrades.
  - Deploying a pilot model that transitions EV charging in under-resourced communities from an inaccessible amenity to standard critical infrastructure. More than 100 Level 2 chargers will be installed across 6 multifamily housing sites, in partnership with Sacramento Metropolitan Air Quality Management District and Mutual Housing California with grant support from the California Energy Commission.
  - Providing analysis and evaluation supporting the California Mobility Center with delivery and testing of 5 medium-duty electric trucks built and customized by Zeus Electric Chassis into SMUD's fleet.

- Investigating generation technologies for increased decarbonization:
  - Implementing a Long Duration Energy Storage flow battery project in partnership with ESS, Inc. following the successful deployment of SMUD's first lithium-ion utility-scale battery storage project at SMUD's Hedge location.
  - Testing advanced functionality of smart inverters to increase customer hosting capacity and reliability of solar and storage resources.
  - Pursuing partnerships to further technology and access to the Renewable Natural Gas and renewable hydrogen value chains, such as the Alliance for Renewable Clean Hydrogen Energy Systems that provides statewide coordination on a hydrogen hub and unified engagement with the U.S. Department of Energy.

- Researching the potential to create natural habitats through pollinators and planting native species to reduce operational costs of vegetation management, erosion control and fire protection.

Public Power Business Model (SD-11)

We'll continue to promote the public power business model and advocate for policy that provides us with the flexibility to pursue innovative solutions that meet the needs of our customers and community, while ensuring reliability, affordability, and sustainability.

Key public power business model investments in the 2023 Budget include:

- Grant acquisition pursuits to support SMUD's 2030 Zero Carbon Plan.
- Advocacy at the California Energy Commission for funds from the Demand Side Grid Support (DSGS) and Distributed Energy Backup Assets Program (DEBA) Programs to support grid investment.
- Advancing our priorities with federal, state, and local policymakers.
- Providing input to key legislative and regulatory proceedings to ensure that any proposed legislation or regulations align with our business objectives and provide necessary flexibility.
- Ensuring that our Wildfire Mitigation Plan meets all legislative requirements and continues to evolve as technology changes.
- Enhancing our relationship with the Balancing Authority of Northern California and participating in regulatory proceedings involving the creation of the Extended Day Ahead Market (EDAM).

Economic Development (SD-13)

SMUD promotes the economic vitality of our region and the growth of our customer base through strategic leadership and active contributions to regional economic development. We're also helping build a strong innovation ecosystem through support for start-ups, entrepreneurs, and business incubators, with a key focus on encouraging economic growth in under-resourced business communities. We also provide enhanced resources to key Chambers of Commerce, Property & Business Improvement Districts (PBIDS) and industry organizations to support their work with our commercial customers. SMUD helps make our region an attractive destination for businesses of all sizes through affordable rates and customized energy solutions.

System Enhancement (SD-14)

In 2023, staff will continue to work on 2 projects with the appropriate local jurisdictions:

- Auburn Blvd. (from Rusch Park to I-80) with a planned construction start date in 2024.
- Elk Grove Blvd. (between Waterman & School Streets) with a planned construction start date in 2024.

Information Management and Security (SD-16)

Technology plays a critical role for SMUD to institutionalize robust information management and physical security practices, and to ensure regulatory compliance, business resiliency and customer satisfaction. The 2023 budget funds solutions and strategies to implement cybersecurity policies and measures to manage cyber risk effectively and efficiently to SMUD's people, processes, and technology.

Key information management and security investments in the 2023 budget include:

- Growing and implementing technology programs and solutions to enforce cybersecurity policies, procedures and standards aligned to the National Institute of Standards and Technology (NIST) Cybersecurity Framework Security and Privacy Control families.
- Building on momentum and experience from achieving 100% pass rate for consecutive North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) compliance audits conducted by the Western Energy Coordinating Council (WECC), the CIP Program will continue to implement best practices, internal controls, and mature technology compliance implementations.
- Developing and maintaining an updated Disaster Recovery strategy to reduce the risk of IT service disruptions while providing highly available technology solutions that are fast to recover and effectively work toward aligning with SMUD's business continuity needs.

Enterprise Risk Management (SD-17)

The 2023 Budget fully funds key risk mitigation activities. SMUD's enterprise-level risks span the spectrum of operational and strategic business risks and include energy procurement, strategy, operations, natural hazards, political and regulatory issues, economics, and the environment. Risk assessments and mitigation plans continue to be refined and improved by considering SMUD's changing internal and external risk environment and enhancing how SMUD addresses its risks.

Key enterprise risk management initiatives in the 2023 Budget include:
Continuing to mitigate wildfire risk and potential impacts to SMUD's operations, customers, and the community.

Enhancing and improving SMUD's emergency preparedness and response capabilities leveraging lessons learned and tabletop exercises.
Increasing risk education and communications to further enhance SMUD's risk culture.

Diversified Business (SD-19)

Broadening and diversifying our products and services is a key value for SMUD. In 2023, we'll pursue opportunities that benefit our customers and community, create economic

value, achieve a balanced and diversified portfolio and leverage, and optimize our strengths, assets, and expertise, all while maintaining our financial health and reputation.

Key diversified business investments in the 2023 Budget include:

- Operationalizing our partnership with ESS, Inc. where SMUD now holds nonstock equity in the company as part of SMUD's Nonstock Security Pilot Project program, created under new authorities granted to SMUD through AB 689. This statute allows for new deals to be piloted prior to sunsetting the provision in December 2025.
- Continuing to collaborate and support the California Mobility Center (CMC), a private/public consortium focused on innovation and commercialization, standards and policy, workforce development and new business models in electric mobility. In 2023, we'll work with the CMC and its growing list of electric mobility start-ups to reduce barriers to EV adoption, support our vehicle electrification goals and reduce local carbon emissions.
- Expanding our client portfolio for Community Energy Services in support of public power.

Since the approval of our 2030 Zero Carbon Plan last year, we've continued to build a strong foundation for achieving our 2030 Clean Energy goals and will continue the momentum in 2023. Our newly established Enterprise Strategy, Prioritization and Budgeting processes have helped us focus on identifying the work that matters most to our customers, while keeping the Board's Strategic Directions as our guiding anchors.

I am excited to deliver on our Community Impact Plan in 2023, which is key to our strategy to ensure all communities benefit from a clean energy future. The incredible amount of work we've done to implement our 2030 Zero Carbon Plan so far is why others are looking to SMUD as a model to follow. They're taking notice of our holistic approach that's focused on our core business of keeping the lights and our rates affordable, while ensuring we're decarbonizing our power supply in a way that benefits everyone.

Our executive team members will share an overview of SMUD's key 2023 initiatives during the November 8 and 9 Finance & Audit Committee meetings, and I look forward to providing the Board with regular updates on progress throughout the upcoming year.

Respectfully submitted,



Paul Lau
Chief Executive Officer and General Manager

cc: Executive Team
Special Assistant to the Board
Corporate Files

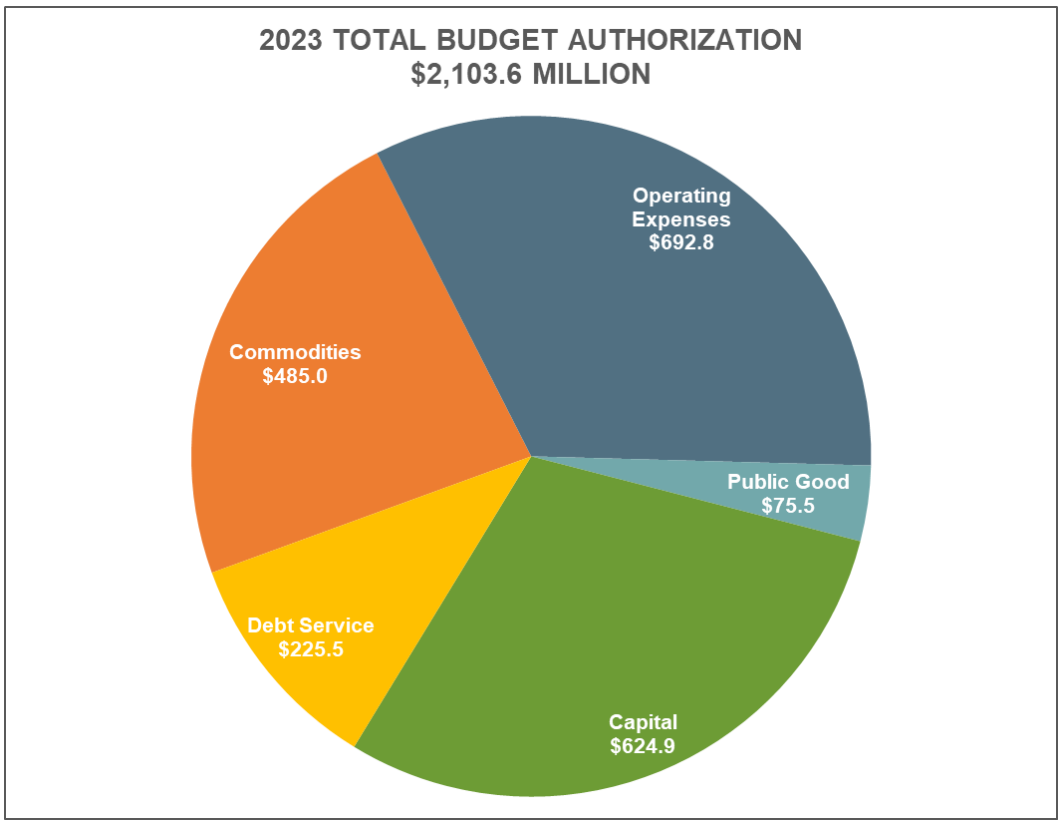
About SMUD

As the nation's sixth-largest, community-owned, not-for-profit electric service, SMUD has been providing low-cost, reliable electricity to Sacramento County for over 75 years. SMUD is a recognized industry leader and award winner for its innovative energy efficiency programs, renewable power technologies and its sustainable solutions for a healthier environment.

We provide electric service to most of Sacramento County and small, adjoining portions of Placer and Yolo Counties. Our service area is divided into seven wards, each represented by an elected board member who serves a 4-year term. Our Board of Directors determines policy direction and appoints our Chief Executive Officer & General Manager, who is responsible for SMUD's day-to-day operations.

SMUD became a Control Area, presently called a Balancing Authority (BA), in June 2002 and since then has operated its transmission and generation system independently. On January 1, 2006, the Western Area Power Administration's Sierra Nevada Region (WAPA-SNR) was integrated into the SMUD BA, followed on December 1, 2006, by the California-Oregon Transmission Project (COTP) – a 500kV transmission line - and the Modesto Irrigation District (MID). On May 8, 2009, together with MID and the cities of Redding and Roseville, SMUD entered into a Joint Powers Agreement to create the new Balancing Authority of Northern California (BANC). With regulatory approval on May 1, 2011, the operations of SMUD BA were transferred to BANC BA. BANC uses SMUD's existing employees and physical resources to be the BANC Operator. BANC's General Manager reports to a five-person Commission made up of SMUD, MID, City of Redding, City of Roseville, and Trinity Public Utility Districts chief executives. This BA, as an independent entity, is not subject to market disruptions that result from financially induced supply shortages within the California Independent System Operator (CAISO) or investor-owned utilities. SMUD is still subject to certain CAISO transmission, grid management and other costs for transactions that use the CAISO controlled grid. These costs have been included in SMUD's 2023 Budget.

SMUD At a Glance



Accounts Served (average)

577,973 Residential

77,028 Commercial

Service Area Population

1.5 million people

Size of our service area

900 square miles

Miles of Power Lines We Own

10,912

Expected System Peak

2,806 MW

Expected Retail Energy Sales

10,458 GWh

Public Good Budget (incl subsidy)

$109.8 million (proposed)

Credit Rating

Standard & Poors: AA

Moodys: Aa3

Fitch: AA

SMUD Governance

Our Board of Directors

SMUD is owned by its customers, who elect a seven-member Board of Directors. Each director represents a different geographic area or "ward." During their four-year terms, they establish policies and values about how we serve you and to set the long-term direction SMUD will take as we move forward.

SMUD's Board of Directors establish our vision and guidelines. The Board reviews and approves strategies, such as Community Impact, Diversity, Equity, Inclusion & Belonging (DEI&B), Electric Vehicle (EV) and Fleet, Wildfire, and Zero Carbon. The Board is the final approval for large expenditures, such as bond issuances, contracts, land purchases, and power purchase agreements. For the annual budget process, the Board approves the budgeted expenses, or authorization to spend, and monitors performance through strategic direction reporting and monthly financial updates.

2022 SMUD Board of Directors:



Brandon Rose
Board President
Ward 1



Nancy Bui-Thompson
Director
Ward 2



Gregg Fishman
Director
Ward 3



Rosanna Herber
Director
Ward 4

Board Committee
Chair, Finance & Audit
Committee



Rob Kerth
Director
Ward 5



Dave Tamayo
Director
Ward 6



Heidi Sanborn
Board Vice President
Ward 7

Strategic Direction – Purpose, Vision & Values

Our Strategic Direction guides us in the decisions we make about SMUD's policies and operations. Our Board continually reviews and refines these guidelines to make sure we'll meet your energy needs, both now and in the future.

Purpose Statement (policy number: SD-1A)

SMUD's purpose is to enhance the quality of life for our customers and community by providing reliable and affordable electricity and leading the transition to a clean energy future.

Vision Statement (policy number: SD-1B)

SMUD's vision is to be a trusted and powerful partner in achieving an inclusive, zero carbon economy. SMUD will leverage its relationships to accelerate innovation, ensure energy affordability and reliability, protect the environment, eliminate greenhouse gas emissions, catalyze economic and workforce development, promote environmental justice, and enhance community vitality for all.

Core Values

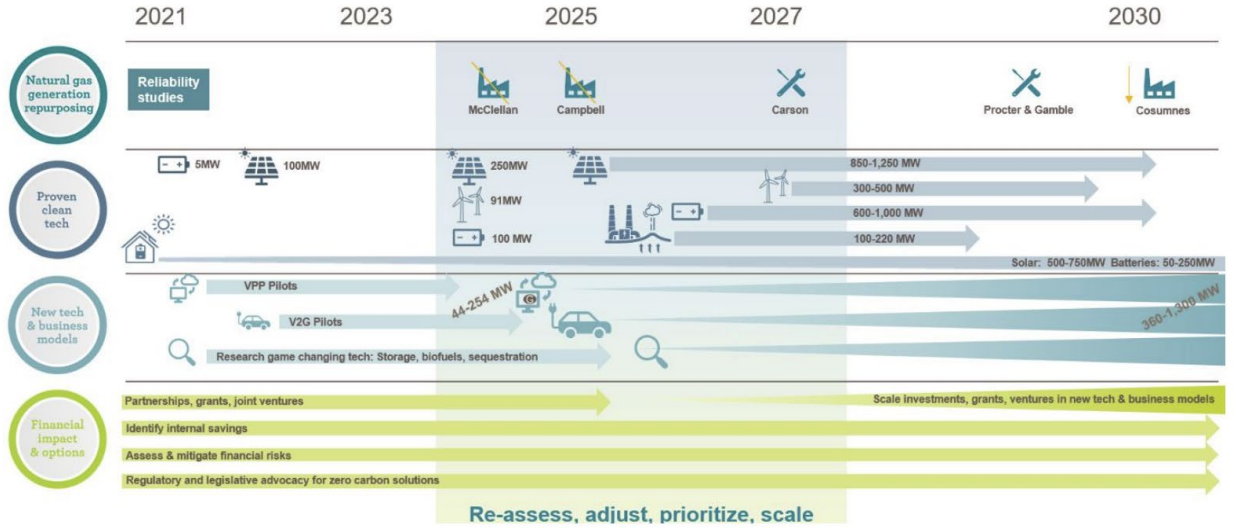
- Competitive Rates (policy number: SD-2)
- Access to Credit Markets (policy number: SD-3)
- Reliability (policy number: SD-4)
- Customer Relations (policy number: SD-5)
- Safety Leadership (policy number: SD-6)
- Environmental Leadership (policy number: SD-7)
- Employee Relations (policy number: SD-8)
- Resource Planning (policy number: SD-9)
- Innovation (policy number: SD-10)
- Public Power Business Model (policy number: SD-11)
- Ethics (policy number: SD-12)
- Information Management and Security (policy number SD-16)
- Enterprise Risk Management (policy number: SD-17)

Key Values

- Economic Development (policy number: SD-13)
- System Enhancement (policy number: SD-14)
- Outreach and Communication (policy number: SD-15)
- Diversified Business (policy number: SD-19)

2030 Zero Carbon Plan

High-level summary of the key elements and actions in our 2030 Zero Carbon Plan.



We are committed to achieving the 2030 Zero Carbon Plan and keeping rates affordable. While the plan represents significant new investments, there are several opportunities to manage the impact to customer bills. This strategy depends on regional, national, and international partnerships to share the costs of common goals and fund the development and acceleration of new technologies. We'll continue to expand new revenue sources, such as Low Carbon Fuel Standard (LCFS) credits, U.S. EPA electric Renewable Identification Number and carbon credits. This strategy also focuses on leveraging use of our low-cost of capital, mechanisms such as green bonds and commodity prepays that may lower costs and improve efficiency in delivery of our operational services. As technologies progress, we'll regularly review the financial impact and manage our finances to keep rate increases low and stable.

If you're interested in learning more about our 2030 Zero Carbon Plan, please visit our 2030 Clean Energy Vision site.

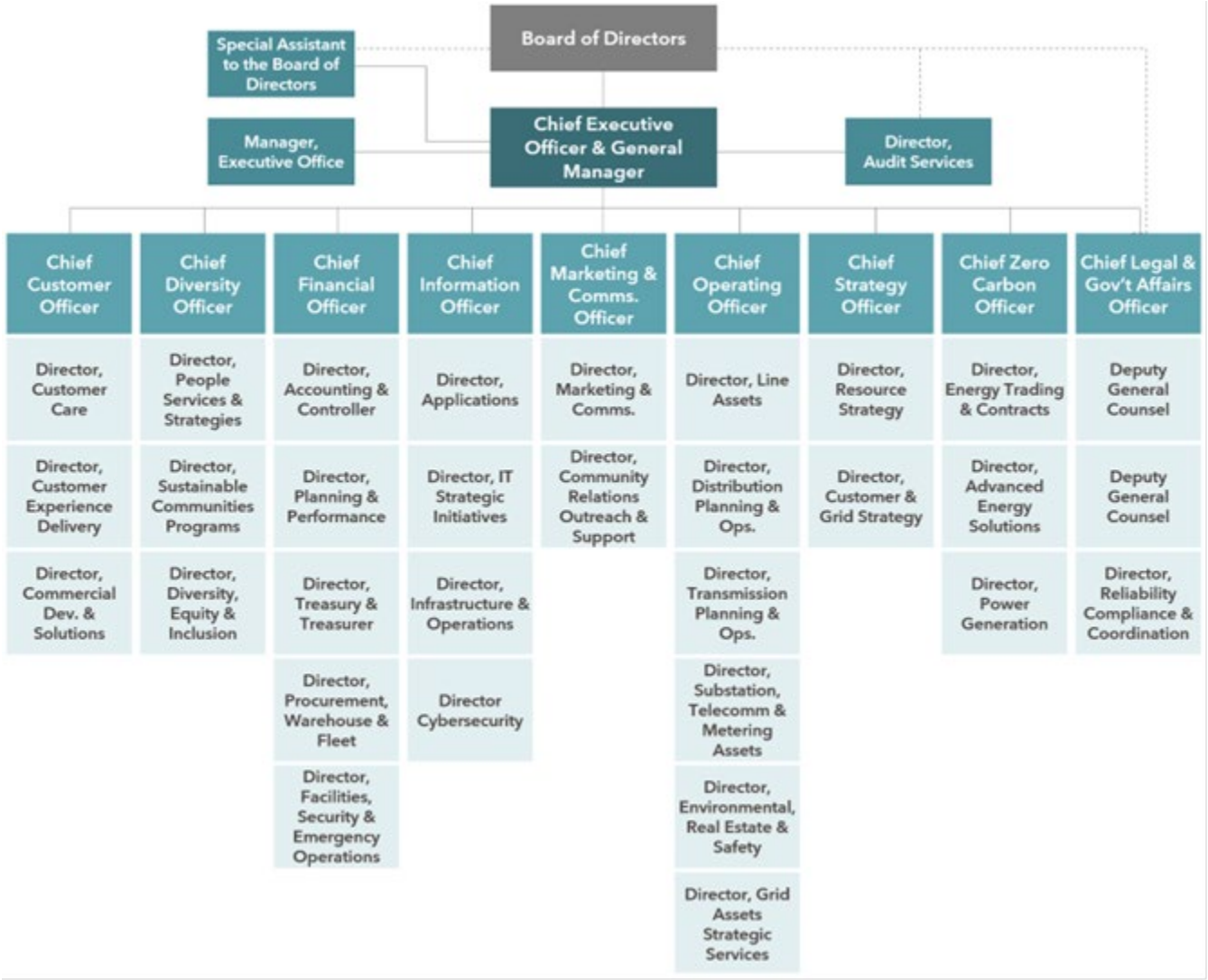
Budget Process and Assumptions

The process to complete the 2023 Budget began with setting financial limits to ensure that the budget would result in achieving our key financial metrics: Positive Net Income, Fixed Charge Ratio of 1.70 and Days Cash of 150 or more. With input from every business unit, we looked holistically at the work planned for the upcoming year and identified the most important work that must be done to support our Clean Energy Vision and our customers. In September 2022, we presented an early look of the budget to the Board and our customers before the budget was finalized. The load, revenue, and commodity forecasts were then completed which results in the final proposed 2023 Budget.

Our planning and budgeting philosophy is to plan and measure the total cost of SMUD business processes and set performance improvement targets for the processes and Business Units that will most efficiently accomplish strategic goals more accurately. This budgeting methodology also most efficiently allocates and plans resources throughout SMUD to the Business Units and work processes.

Organizational Structure

Organization Chart by Executive



Note: SMUD resources support Business Unit processes regardless of organization/functional affiliation.

Business Units & Segments

The SMUD Budget is planned by Business Unit processes which in some cases differ from the organizational/functional reporting structure. The Business Units and Segments are categorized based on work processes and operations and provides better alignment and allocation of costs to specific business functions.

Customer & Community Services	Energy Delivery & Operations	Zero Carbon Energy Solutions	Enterprise Strategy	Information Technology	Workforce, Diversity & Inclusion	Corporate / Enterprise
Customer Experience Delivery	Transmission Planning & Operations	Power Generation	Resource Strategy	Applications	People Services & Strategies	Governance
Customer Operations	Distribution Planning & Ops	Advanced Energy Solutions	Revenue Strategy	Infrastructure & Operations	Diversity, Equity & Inclusion	Finance
Community Energy Services	Line Assets	Commodity, Procurement & Sales	Customer & Grid Strategy	Strategy & Innovation	Sustainable Communities	Legal, Gov't Affairs & Reliability Compliance
Commercial Dev. & Solutions	Substation, Telecom & Network	New Business Development	Enterprise Prioritization	Strategic Initiatives & Operational Tech.		Facilities, Security & Emergency Operations
Business Performance & Optimization	Strategic Services & PMO			Cybersecurity		Procurement, Warehouse & Fleet
	Environmental, Real Estate & Safety					Comms. Marketing & Community Relations
	Operational Excellence					Enterprise Affairs

Budget Summary

Overview

The 2023 Budget Authorization totals $2.1 billion. This represents an increase of $367.7 million from the 2022 Budget. The 2023 Budget is a request to authorize spending.

The 2023 SMUD Budget summarized on the following pages is a blueprint of planned operating, public goods, debt service expenses and capital expenditures for the fiscal year beginning January 1, 2023. Historical comparisons to the 2022 Budget adopted by the Board on December 9, 2021, are shown to put the proposed 2023 Budget in perspective. A forecast of actual 2022 expenses is also shown.

The O&M and Capital Budgets are shown by Business Unit. SMUD Business Units correspond to business processes which deliver specific products and services to SMUD customers. The core business processes are represented by Customer & Community Services, Zero Carbon Energy Solutions and Energy Delivery & Operations Business Units. Included within Zero Carbon and Customer/Community are Public Good costs related to energy efficiency, low-income assistance, renewable generation and research and development. These costs are shown separately because they are designated as Public Goods programs as determined by statute.

The Enterprise Strategy, Information Technology, Workforce, Diversity & Inclusion and Corporate Business Units provide services which enable the other business units to perform their work. The Enterprise Business Unit contains contingency and reserve estimates for the organization.

Within each Business Unit budget, work processes are subdivided into business segments and individual business processes. Business segments and processes enable each business unit to effectively plan and measure performance of its operations at a manageable level.

The budgeted costs shown under each core Business Unit include all the costs of performing the work planned for 2023. These include labor costs from departments throughout SMUD which perform work in the core business processes. Labor costs include employee benefits. Also included in the budget is a surcharge allocation of service costs such as transportation, facilities, technology, human resources, safety and security. Expenditures budgeted by Information Technology, Workforce, Diversity & Inclusion, Energy Delivery & Operations and Corporate represent those process costs that are not allocated to the core business units, such as dedicated software implementations or enhancements that do not meet minimum SMUD criteria for capitalization. The Corporate budget includes insurance and risk management, and cash and debt management; a portion of this budget is allocated to Capital and Public Good.

For detailed descriptions of the cost categories that make up SMUD's budget please see the Supplemental Information section of this document or follow these links – Cost Categories and Expense Type Descriptions.

O&M Budget Summary

The O&M Proposed Budget for 2023 totals $1,253.2 million, which is $89.4 million or 8 percent higher than the 2022 Budget. The O&M budget consists of commodity costs, business unit operating costs, public good and other employee benefit costs. The following sections present detail for these O&M components.

Cost Type $000s	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Labor & Benefit Costs	$232,836	$258,081	$265,261	$7,180	3%
Materials & Equipment	8,974	8,453	9,458	1,005	12%
Other Expenses	54,418	33,381	46,619	13,238	40%
Outside Sevices	171,475	184,216	205,323	21,107	11%
Insurance	27,302	27,200	32,795	5,595	21%
Rebates & Incentives	25,987	34,018	34,837	820	2%
Commodites (excl reimbursements)	762,328	491,950	505,399	13,449	3%
Total Operating Expenses	1,283,320	1,037,298	1,099,692	62,394	6%
Reimbursements	(24,804)	(63,922)	(37,960)	25,962	41%
Allocations/Surcharges	150,839	145,334	151,448	6,114	4%
Expenditures Subtotal	1,409,356	1,118,710	1,213,180	94,470	8%
JPA Interest	4,773	4,773	4,441	(332)	-7%
Other Employee Benefits	(757)	40,359	35,584	(4,775)	-12%
Total O&M Budget	**$1,413,371**	**$1,163,842**	**$1,253,204**	**$89,362**	**8%**
Miscellaneous Revenues	233	(25)	(25)	-	0%
Net O&M	$1,413,604	$1,163,817	$1,253,179	89,362	8%

Business Unit O&M Budget

The following report highlights the O&M Proposed Budget for 2023 categorized by Business Unit. This gives a different perspective of the O&M expenditures (including Public Good) by where the work is performed.

Total Business Unit O&M and Public Good, excluding Commodity, is 732.6 million, which is $49.8 million higher than the 2022 Budget. The 2023 Proposed Budget includes increased mandatory spending for Vegetation Management and Wildfire Mitigation. The 2023 Budget also funds ongoing efforts for Community Initiatives, including our new Community Impact Plan, maintaining operations, and Transportation Electrification. Transportation Electrification is a critical part of our 2030 Zero Carbon Plan and an important part of our strategy to continue to provide a leadership role in the region's transformation to a zero-carbon future.

Business Unit $000s	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Customer & Community Services	$95,694	$102,491	$102,005	($486)	0%
Energy Delivery & Operations	205,767	204,655	212,598	7,943	4%
Zero Carbon Energy Solutions	189,997	215,684	226,066	10,381	5%
Enterprise Strategy	13,877	17,470	16,824	(646)	-4%
Information Technology	29,195	36,476	39,316	2,840	8%
Workforce, Diversity & Inclusion	11,228	9,181	17,547	8,366	91%
Corporate	105,908	106,029	116,762	10,733	10%
Enterprise	12,463	(9,184)	1,519	10,704	117%
Total O&M Business Unit Budget	**$664,129**	**$682,802**	**$732,637**	**$49,835**	**7%**
Commodity (incl reimbursements)	750,000	440,681	484,984	44,303	10%
Other Employee Benefits	(757)	40,359	35,584	(4,775)	-12%
Total O&M Budget	**1,413,371**	**1,163,842**	**1,253,204**	**89,362**	**8%**
Miscellaneous Revenue	233	(25)	(25)	-	0%
Net O&M	$1,413,604	$1,163,817	$1,253,179	$89,362	8%

More detailed and specific information is provided within each Business Unit's documentation of their proposed budget. Please refer to this section for the Business Unit detailed budgets - Business Unit Budgets.

Public Good Budget

Public Good is included in the total O&M budget and is captured within the costs of the Business Unit responsible for the work. Therefore, these costs are not shown on a separate line of the O&M budget and are provided here for *information only* and to present details as to the programs covered. Total Public Good is $110 million, an increase of $11.2 million, after inclusion of rate subsidies. The Public Good Budget is $75.5 million and is the cash disbursement portion of the program that requires Board authorization.

By December 2023, the number of subsidized customers is expected to be approximately 98,571. The total cost of the Energy Assistance Program Rate (EAPR) subsidy is budgeted at $32.4 million in 2023, a decrease of $0.6 million from 2022, and the subsidy for customers using medical equipment decreased by $40 thousand to remain virtually flat at $2.0 million. Total subsidies are $34.4 million.

Energy efficiency spending increased $10.5 million over prior year. Incorporation of savings from codes and standards is included as a component of the energy efficiency portfolio to match standard industry practice going forward. Building electrification is included in Energy Efficiency public good. The Energy Efficiency budget remains in line with the goal of achieving savings of 1.5% of average annual retail energy sales and reflects our goals of reaching zero carbon by 2030. Residential Assistance increased $0.6 million due to the launch of our Community Impact Plan as we diversify our product and service portfolio to access a broader customer. Research &

Development increased $0.9 million to $13.2 million to reflect the ongoing need to investigate new and emerging technologies.

Description $000s	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Energy Efficiency	$42,378	$42,975	$53,437	$10,462	24%
Residential Assistance	7,051	8,296	8,855	558	7%
Revewables	15	-	-	-	-
Research & Development	8,233	12,314	13,168	853	7%
Total Public Good Budget	**$57,678**	**$63,585**	**$75,459**	**$11,874**	**19%**
Rate Subsidy	33,743	35,024	34,356	(668)	-2%
Net Public Good	$91,421	$98,609	$109,815	$11,206	11%

Commodity Budget

Commodity costs are part of the total O&M budget. The Commodity budget for 2023 of $485 million is $44.3 million higher than the 2022 Budget. Commodities are net of surplus power sales. The budget for commodities assumes a typical water year. Purchased power is increasing primarily due to the new Geothermal Purchased Power Agreement (PPA), lower carbon power purchased, higher Renewable Energy Credit (REC) purchases and an increase in expected customer sales. Fuel for Generation is decreasing due to lower thermal generation. There is an increase in transmission costs for Transmission Agency of Northern California (TANC).

Further details on power supply information can be found in the Supplemental Information of this document on these pages - SMUD Generation Sources and Purchased Power.

Description ($000s)	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Purchased Power (net)	$701,815	$215,005	$264,907	$49,902	23%
Fuel for Generation	10,483	196,925	184,973	(11,952)	-6%
Transmission	37,702	28,751	35,104	6,353	22%
O&M Commodities	**$750,000**	**$440,681**	**$484,984**	**$44,303**	**10%**

Other Employee Benefits Budget

Other Employee benefits are part of the total O&M budget. These benefit costs are not allocated or included as a labor expense in the Business Unit expenditures. SMUD's Other Employee Benefits are $35.6 million, a decrease of $4.8 million. This budget consists of the O&M portion (unfunded liability) of Other Post-Employment Benefits (OPEB) expense of $31.8 million which is an increase of $8.2 million from the prior year due to a shift from allocated benefits expense, and $3.8 million of workers compensation which is nearly flat to the prior year's budget.

Capital Budget Summary

The Capital Proposed Budget for 2023 totals $624.9 million, which is $265.0 million or 74 percent higher than the 2022 Budget. This increase is due to two key projects for the Zero Carbon Plan – the Solano 4 Wind Project and the Country Acres Solar + Storage Project. Both projects are key to us meeting the Renewable Portfolio Standard (RPS) requirement.

Cost Type $000s	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Labor & Benefit Costs	$63,585	$80,620	$77,310	($3,310)	-4%
Materials & Equipment	62,379	78,796	75,427	(3,369)	-4%
Other Expenses	8,842	(5,484)	93,291	98,775	>999%
Outside Sevices	206,063	176,129	346,141	170,011	97%
Insurance	931	733	765	33	4%
Total Expenses	341,800	330,795	592,934	262,140	79%
Reimbursements	(44,809)	(28,020)	(29,301)	(1,282)	5%
Allocations/Surcharges	56,356	57,136	61,291	4,155	7%
Total Capital Budget	**$353,347**	**$359,911**	**$624,924**	**$265,013**	**74%**
Miscellaneous Revenues	(546)	(1,106)	(839)	267	24%
Net Capital	352,801	358,805	624,085	265,280	74%

The proposed 2023 capital investment budget is for planned investment in generation, transmission, distribution, buildings, vehicles, technology, and other assets critical to meeting the energy needs of our customers. Proposed ongoing capital expenditures go through a rigorous evaluation and prioritization process, based on value and risk, to ensure we fund those that have the highest contribution to the Board's strategic directives.

Major capital expenditures planned in 2023 include completing work for Station G, starting development work for additions to our wind farm with Solano Phase IV and the Country Acres solar project, and ongoing improvements in our Upper American River Project (UARP) area as part of our hydro relicensing. Programmatic capital planned in 2023 includes cable and pole replacement programs, installing new meters, and new fleet purchases. Technology investments included in the 2023 Proposed Budget are to complete the Advanced Distribution Management System & Outage Management System (ADMS-OMS) and improvements to HR systems and network communications systems with our Talent Technology Transformation (T3) project.

The following report shows the Capital Proposed Budget for 2023 categorized by Business Unit. This gives a different perspective of the capital expenditures by where the work is performed.

Business Unit $000s	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Customer & Community Services	$9,197	$6,619	$7,570	$951	14%
Energy Delivery & Operations	159,739	192,866	184,921	(7,945)	-4%
Zero Carbon Energy Solutions	129,192	108,405	340,223	231,818	214%
Information Technology	28,015	37,245	45,261	8,016	22%
Corporate	27,203	29,777	23,798	(5,979)	-20%
Enterprise	-	(15,000)	23,152	38,152	254%
Total Capital Business Unit Budget	**$353,347**	**$359,911**	**$624,924**	**$265,013**	**74%**
Miscellaneous Revenue	(546)	(1,106)	(839)	267	24%
Net Capital	$352,801	$358,805	$624,085	$265,280	74%

More specific and detailed information is provided within each of the previously mentioned Business Unit's sections of this documentation. Please refer to this section for the Business Unit detailed budgets - Business Unit Budgets.

The following is additional detail of 2023 capital project costs for each Business Unit organized by major project grouping.

Business Unit / Project Group	Major Projects ($000s)	2023 Proposed
Customer & Community Services		**$7,570**
Meters	Purchase and installation of meters	7,570
Energy Delivery & Operations Capital Projects		**$184,921**
Line Distribution Projects	Equipment replacement and upgrades including Natomas 69kV Line 1 extension, Natomas 69kV Line 5 & 6, Del Paso E Commerce Bank 69kV, Station H feeder exit, Rule 16 projects, Rio Del Oro 69kV line, Delta Shores 69kV extension, Elverta/W. Elkhorn feeder, and Elkhorn-Natomas 12kV	33,101
Grid Modernization	69kV motorized switches and line sensor upgrades	767
Distribution Replacements (Non-network)	Work to repair, replace or install transformers, switchgear, reclosers, capacitor banks, down line wires, air switches, etc.	9,494
Pole Replacement & Reinforcement	Includes replacing poles that have failed an inspection and must be replaced as well as pole reinforcements.	21,771
Cable Replacement & Rehabilitation	Program to reduce the yearly number of primary underground cable failures which decreases future outages, repair costs, customer issues and the quantity of poorly performing circuits.	18,382
New Services Connections	Projects associated with the connection of Commercial/Industrial & Residential customers. Includes: Subdivisions, Local Agency projects, Regional Transit and System Enhancements.	23,722
Transmission Line Projects	Transmission line structure replacement program.	833
Distribution Substation Improvements	Large substation improvements and new capacity projects, including Station H substation, Elverta substation, Delta Shores substation, Cordova Hills substation, Station G, Requa-Fawn #2 transformer, Meister Lonetree, Frienza-Albatross Substation, Rio Del Oro Site #1 Substation, Reactive network cable replacement, and Whiterock-Sunrise Bank 2.	39,448
Transmission Substation Improvements	Major transmission substation projects including Station H, Elverta substation rebuild, SVEC Whiterock Solar Substation Switchgear, Hurley Substation 230kV, Station D relay replacement, Hedge transformer #3 & #4 relay, and Pocket CB 5606 replacement.	26,834
Transmission Interconnection Projects	Customer interconnection project planning efforts.	2,398
Substation Easement & Land	Various land acquisitions such as Folsom SOI Site #2, Station J substation & transmission line CEQA, and Arco Arena.	1,601
Environmental Projects	Developing and implementing soil/groundwater investigation and remediation projects under agency oversight within Sacramento County, with the majority of the spending for the 59th Street and Thornton locations.	5,285
Other Projects		1,286

Business Unit / Project Group	Major Projects ($000s)	2023 Proposed
Zero Carbon Energy Solutions		**$340,223**
Hydro Generation	Annual Regulatory Fees associated with the UARP License (USFS, BLM, EDCo, etc.), Camino Discharge Tube & Rehab, Camino road repair, JB penstock valve house controls, Gerle Canal Relining Project, Loon Lake Fire Protection, Union Valley T2 Replacement & 69kV Switchyard Rehabilitation, UARP Unit Breakers & Switchers Upgrade, UARP crane controls upgrade, Union Valley & IH spillway improvements, and fire protection in generators.	20,770
Hydro License & Other	Multi-year project to implement the renewal of the Federal Energy Regulatory Commission (FERC) license; includes Recreation Plan projects such as Union Valley Bike Trails and UARP culvert mitigation work.	15,601
Thermal Projects	Central Valley Financing Authority (CVFA) SCR Nox/catalyst and Turbine CTG1-Engine 185 and SMUD Financing Authority (SFA) Access Platform Improvements.	20,758
Storage Projects	ESS Flow battery demonstration.	9,960
Renewable Projects	Country Acres and other 2030 Energy Plan solar projects such as McClellan and Trick-Meiss.	86,479
Gas Pipeline	Improvements and testing of the local gas pipeline.	993
Decommissioning	Used fuel management of the Rancho Seco Independent Spent Fuel Storage Installation (ISFSI) in accordance with Nuclear Regulatory Commission (NRC) regulation and SMUD specific license requirements.	7,549
Solano Wind	Solano Wind Phase and on-going work related to Phase 1 of the project.	174,579
Fuel Supply Improvements	Capital improvements and modifications to SMUD's portion of PG&E lines (300/401).	3,400
Other Projects		133
Information Technology		**$45,261**
Lifecycle Projects	Upgrades of hardware, storage, and network equipment that has reached the end of useful life. Other efforts included are Itron IEE updgrade (MDMS), telecom fiber optics, AT&T analog service replacement, substation security PIDS, DC battery, ETRM sofware upgrade and Secure Web Gateway refresh projects.	11,721
Enhancement Projects	Improvements to existing technology including lease management accounting software, Extended Day Ahead Market (EDAM) software, real time pole top LIDAR weather station.	1,937
New Technology Projects	Development and implemenation of new technologies including Contact Center technology replacement, customer technology platform, Distribution Planning load allocation software, ED&O long-term project planning tool, Workforce Optimization mobility & scheduling, vegetation work management solution, Talent Technology Transformation (T3), Riva Meter pilot, ADMS - OMS implementation, DO - Distributed Energy Resource Management System (DERMS), fiber-optic DWDM deployment, Synchronous Optical Network (SONET) transformation phase 2.	31,603

Business Unit / Project Group	Major Projects ($000s)	2023 Proposed
Corporate		**$23,798**
Facilities Projects	Projects including PACS System replacement, building and site infrastructure development, electrical system development, and CSC elevator equipment replacement.	14,474
Vehicle Replacement	Work Efficiency Replacements, Legal and Regulatory Compliance Replacements and Life Cycle Replacements.	9,323
Enterprise		**$23,152**
Contingency		15,000
Interconnections & Other	Coyote Creek project	8,152
Total Capital Expenditures		**$624,924**

Allocated Budget Summary

The Allocated Proposed Budget for 2023 totals $137.0 million, which is $3.9 million higher than the 2022 Budget. This is shown as *information only* as 100% of these allocated expenditures are included in the budgeted dollars of all SMUD O&M and Capital described in this documentation.

Cost Type $000s	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Labor & Benefit Costs	$58,797	$64,275	$63,053	($1,222)	-2%
Materials & Equipment	34,942	34,032	37,383	3,351	10%
Other Expenses	2,972	2,597	2,640	43	2%
Outside Sevices	12,490	11,915	15,702	3,787	32%
Insurance	107	410	450	41	10%
Total Operating Expenses	109,307	113,228	119,228	6,000	5%
Reimbursements	(276)	(107)	(65)	42	39%
Allocations/Surcharges	19,716	19,981	17,828	(2,153)	-11%
Total Allocated Budget	**$128,747**	**$133,102**	**$136,991**	**$3,890**	**3%**

Portions of Energy Delivery & Operations, Information Technology, Workforce, Diversity & Inclusion and Corporate costs are allocated to business units based on the quantity of labor hours.

The following report shows the Allocated Proposed Budget for 2023 categorized by Business Unit. This gives a different perspective of the allocated expenditures by where the work is performed.

Business Unit $000s	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Energy Delivery & Operations	$4,938	$4,082	$5,422	$1,339	33%
Information Technology	62,310	65,432	63,765	(1,667)	-3%
Workforce, Diversity & Inclusion	11,792	13,224	15,252	2,028	15%
Corporate	49,707	50,363	52,552	2,189	4%
Total Allocated Business Unit Budget	**128,747**	**133,102**	**136,991**	**$3,890**	**3%**
Revenue	-	-	-	-	-
Net Allocated	128,747	133,102	136,991	3,890	3%

More specific and detailed information is provided within each of the previously mentioned Business Unit's sections of this documentation. Please refer to this section for the Business Unit detailed budgets - Business Unit Budgets.

Position Count Summary

The full-time count of 2,242 is identified in the Board Resolution for approval. Position growth for the 2023 budget year is an increase of 1.8% over the prior year.

Executive Group	2022 Full-time	2022 Limited Term	2022 Part-time	2022 Positions Planned	2023 Full-time	2023 Limited Term	2023 Part-time	2023 Positions Planned	Increase/ Decrease
CEO & General Manager	33	0	1	34	34	0	0	34	0
Chief Communications & Mktg Officer	72	1	3	76	73	0	3	76	0
Chief Legal & Govt Affairs Officer	38	0	4	42	38	0	4	42	0
Chief Financial Officer	304	2	5	311	304	1	12	317	6
Chief Operating Officer	807	14	16	837	824	20	13	857	20
Chief Zero Carbon Officer	257	3	8	268	265	2	9	276	8
Chief Strategy Officer	49	0	2	51	48	0	2	50	(1)
Chief Customer Officer	295	6	103	404	298	6	101	405	1
Chief Diversity Officer	82	7	25	114	90	14	24	128	14
Chief Information Officer	264	6	36	306	268	5	38	311	5
Enterprise Resource Pool	9	0	0	9	0	0	0	0	(9)
Full-time				**2,210**				**2,242**	**32**
Limited Term				**39**				**48**	**9**
Part-time				**203**				**206**	**3**
Total Positions	**2,210**	**39**	**203**	**2,452**	**2,242**	**48**	**206**	**2,496**	**44**

Labor Cost Summary

The labor summary reflects the cost of wages for SMUD employees. The budget for labor and associated benefit costs is shown as *information only* as 100% of these expenditures are included in the budgeted dollars of all SMUD O&M and Capital described in this documentation.

The cost-of-living (COLA) increase for SMUD salaries and wages during 2023 is based on formulas contained in negotiated bargaining agreements and estimates established for unrepresented employees.

Executive Group ($000)	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
CEO & General Manager	$7,425	$8,424	$7,481	($943)	-11%
Chief Marketing & Communications Officer	7,946	8,727	8,907	180	2%
Chief Legal & Govt Affairs Officer	5,766	5,892	6,203	310	5%
Chief Financial Officer	35,332	35,069	37,084	2,015	6%
Chief Operating Officer	127,362	127,756	138,858	11,102	9%
Chief Zero Carbon Officer	35,514	37,033	40,343	3,310	9%
Chief Strategy Officer	6,328	7,066	7,442	376	5%
Chief Customer Officer	32,006	34,187	35,787	1,599	5%
Chief Diversity Officer	11,218	11,402	14,617	3,215	28%
Chief Information Officer	37,348	39,835	41,739	1,904	5%
Total Salaries & Wages	**278,323**	**295,685**	**315,578**	**19,342**	**7%**
Total Overtime	**27,923**	**19,706**	**22,880**	**3,169**	**16%**
Total Salary Costs	**$306,246**	**$315,391**	**$338,459**	**$23,067**	**7%**

Benefits Summary

The benefits summary reflects costs for active and retired employee benefits, the costs to administer those benefits, and Social Security and retirement contributions for current staff. The 2023 Proposed Budget is decreasing due to our Other Post Employee Benefits (OPEB) being fully funded and no longer requiring an annual contribution, lower estimates for Retirement Contributions and slightly lower costs to administer the benefits.

The budget for benefit costs is shown as *information only* as 100% of these expenditures are included in the budgeted dollars of all SMUD O&M and Capital described in this documentation.

Benefit Type $000s	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Retirement Contribution	$93,800	$68,155	$63,638	($4,517)	-7%
Social Security Contribution	22,244	23,654	24,795	1,141	5%
Total Retirement & Social Security	116,044	91,809	88,433	(3,376)	-4%
Health & Welfare	45,696	56,854	51,658	(5,196)	-9%
Administer Benefits	1,784	2,380	2,086	(294)	-12%
Total Health & Welfare	47,480	59,234	53,745	(5,489)	-9%
Total Benefits Budget	**$163,525**	**$151,043**	**$142,177**	**($8,865)**	**-6%**

Debt Service

The following schedules show the summary and details of the 2023 Proposed Budget for Debt Service. SMUD issues Electric Revenue Bonds and Commercial Paper Notes to finance long-lived capital assets. The Debt Service Budget includes accrued interest expense on outstanding Electric Revenue Bonds and Commercial Paper Notes, net of any swap revenues tied to debt issues, scheduled principal repayments of Bonds and Commercial Paper, trustee fees associated with administration of debt service payments, and interest expense and issuance costs associated with planned new debt issues.

Debt Service ($000s)	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Interest Expense	$110,839	$113,294	$106,688	($6,605)	-6%
Interest on New Debt Issuance	-	-	8,500	8,500	100%
Principal Repayments	100,150	100,150	111,165	11,015	11%
Fees/Bond Issuance Cost	823	2,310	2,772	462	20%
Total Debt Service	211,812	215,754	229,125	13,371	6%
Allocated to JPAs	(3,596)	(3,596)	(3,633)	(37)	1%
Net Debt Service	**$208,216**	**$212,158**	**$225,492**	**$13,334**	**6%**

Interest Expense totals $106.7 million in the 2023 Budget, a decrease of $6.6 million from 2022. Revenue Bond Interest is decreasing $6.2 million to $102.9 million. Commercial Paper interest totals $3.8 million in the 2023 Proposed Budget, a decrease of $0.3 million

Included in Interest Expense are Build America Bonds which are gross of the rebate of $6.3 million expected in 2023. The debt service budget includes net debt related swap payments and interest on long-term, variable rate, and subordinated debt. The budget assumes an interest rate of 4.34% (incl. all related fees & swaps) on an average commercial paper balance of $100 million.

Interest on New Debt Issuance totals $8.5 million in the 2023 Budget. This is an estimate of interest expense for new debt expected to be issued within 2023.

Scheduled Principal Repayments of revenue bonds and commercial paper notes total $111.2 million in 2023, an $11.0 million increase from 2022.

Fees/Bond Issuance Cost of $2.8 million are included for new 2023 bond issuances and related fees.

Summary of Debt Service on Existing SMUD Bond Issues

Date Issued	Issue ($000s)	1/1/2023 Principal Balance	Issued Interest Rate	Final Maturity Date	2023 Scheduled Principal Payment	2023 Interest Expense
	Electric Revenue Bonds					
Jun-97	Series K[1]	38,165	5.25% to 5.90%	2024	18,595	651
May-09	Series V[2]	200,000	6.322% (4.11% net)	2036	-	12,644
Jul-10	Series W[3]	250,000	6.156% (4.00% net)	2036	-	15,390
Sep-11	Series X (Refunding)	-	1.50% to 5.00%	2028	-	-
Jan-12	Series Y (Refunding)	-	3.00% to 5.00%	2033	-	-
May-13	Series A	132,020	3.75% and 5.00%	2041	-	4,102
May-13	Series B (Refunding)	81,820	3.00% to 5.00%	2033	6,140	2,485
Jul-16	Series D (Refunding)	104,060	5.00%	2028	19,380	4,731
Dec-17	Series E (Refunding)	111,585	3.00% to 5.00%	2028	22,170	5,160
Aug-18	Series F (Refunding)	103,245	5.00%	2028	26,665	4,659
Apr-19	Series G	191,875	5.00%	2041	-	9,352
May-20	Series H	400,000	4.00% to 5.00%	2050	-	18,699
Jul-21	Series I (Refunding)	96,220	5.00%	2028	4,695	4,722
Jun-22	Series J (Refunding)	132,725	2.06%	2032	13,520	6,381
Jun-22	Series L[4] (Refunding)	98,389	5.00%	2041	-	2,569
Jun-22	Series M[5] (Refunding)	56,401	5.00%	2033	-	1,473
	Subtotal	1,708,990			111,165	93,018
	Subordinated Electric Revenue Bonds					
Jul-19	*Series A*	100,000	5%	2049	-	4,888
Jul-19	*Series B*	100,000	5%	2049	-	5,000
	Subtotal	200,000			-	9,888
	Total Outstanding Bonds	1,908,990	Principal & Interest Payments		111,165	102,906
	Total Debt Service				**111,165**	**102,906**

Debt Service Footnotes:
1) Swapped to a variable rate for the life of the debt, interest expense net of swap payment. Interest expense without swap would be $1,515,544.
2) Interest expense gross of federal government Build America Bond rebate of $3,003,740.
3) Interest expense gross of federal government Build America Bond rebate of $3,656,087.
4) Forecasted debt service based on 2013A refunding
5) Forecasted debt service based on 2013B refunding

Budget Financial Statements

The SMUD financial statements depict the expected results of operations (Income Statement) and cash position (Statement of Cash Flow) at the end of the 2023 budget year. The Income Statement also include "non-cash" expenses such as depreciation and amortization of capital and regulatory assets, which are not included in the 2023 Budget because funds were expended in prior budget years. SMUD's budget presents costs on a business unit basis, which is similar to Federal Energy Regulatory Commission (FERC) groupings.

The pro forma financial statements include the consolidated accounts and operations of SMUD, the Sacramento Financing Authority (SFA), the Northern California Gas Agency No. 1 (NCGA No. 1) and the Northern California Energy Authority (NCEA). SFA is a joint powers agency between SMUD and other entities which have issued debt to construct the Carson Cogeneration plant, Procter & Gamble Cogeneration plant, Campbell Soup Cogeneration plant and the Cosumnes Power Plant, respectively, and own and operate the plants. SMUD has entered into a Power Purchase Agreement with SFA to purchase all the plants' output and pay for JPA and plant costs. NCGA No.1 is a joint powers agency that has issued bonds and used the proceeds to prepay long-term natural gas supply contracts. SMUD has entered into an agreement to buy all the gas procured by NCGA No.1 but is not liable for repayment of the bonds in the event of a default. NCEA is a joint powers agency that has issued bonds and used the proceeds to prepay long-term commodity supply contracts. SMUD has entered into an agreement to buy all the commodities procured by NCEA but is not liable for repayment of the bonds in the event of a default. The relationship between SMUD, SFA, NCGA No.1 and NCEA meets the criteria established by the Governmental Accounting Standards Board (GASB) for consolidation in the controlling entity's financial statements.

Pro Forma Consolidated Income Statement

$ Millions	2022 Forecast	2022 Budget	2023 Proposed
Operating Revenues:			
Sales to Customers	$1,617.9	$1,549.4	$1,669.2
RSF & Other Deferrals	97.9	19.3	28.7
Other Electric Revenue	37.3	32.6	31.5
Total Operating Revenues	**1,753.1**	**1,601.3**	**1,729.4**
Operating Expenses:			
Commodities	750.0	440.7	485.0
Customer & Community Services	89.3	94.8	93.8
Energy Delivery & Operations	207.0	204.7	212.6
Zero Carbon Energy Solutions	143.2	163.9	163.6
Enterprise Strategy	12.9	16.9	15.6
Workforce, Diversity & Inclusion	9.5	7.6	15.9
Information Technology	29.2	36.5	39.3
Corporate Services	104.8	104.1	114.8
Enterprise	35.0	31.2	37.1
Public Good (including EAPR & MED Discount)	91.4	98.6	109.8
Total Operations	**1,472.4**	**1,198.8**	**1,287.5**
Depreciation, Depletion, and Amortization	223.7	222.6	246.1
Total Operating Expenses	**1,696.1**	**1,421.4**	**1,533.6**
Net Operating Income	**$57.1**	**$179.9**	**$195.8**
Other (Income) Expenses:			
Interest Income and Other	($40.6)	($14.0)	($18.1)
Other Non Cash	(8.7)	(15.1)	(12.6)
Total Interest Income & Other	**(49.3)**	**(29.1)**	**(30.7)**
Interest Expense:			
Interest expense	95.0	92.6	95.5
Net Interest Charges	**95.0**	**92.6**	**95.5**
Change in Net Position - Net Income (Loss)	**$11.4**	**$116.4**	**$131.0**
Interest Payments	$109.3	$110.1	$107.7
Principal Payments	115.6	115.6	117.1
Total Fixed Costs	**224.9**	**225.8**	**224.7**
Cash Available to Pay Fixed Costs	$338.3	$435.7	$466.8
Fixed Charge Coverage Ratio	**1.50**	**1.93**	**2.08**
Rate Stabilization Fund	$3.5	$34.0	$3.5

The 2023 Budget will produce $131 million of net income for SMUD; this is an increase of $14.6 million from the 2022 Budget. The fixed charge coverage is planned at 2.08 times operating cash flow. Revenue from electric sales has increased compared to the 2022 Budget due to the impact of the 2023 rate increase and higher load growth.

The budgeted and actual fixed charge ratio and net income as shown on the Pro Forma Income Statement are primary measures of SMUD's financial performance which are monitored closely by the bond rating agencies in setting SMUD's bond rating. The fixed charge ratio is a measure of the number of times net operating cash flow before interest expense covers total cash debt service payments, including both interest and principal, for SMUD, the JPAs and SMUD's share of TANC debt service. Net income is the residual after deducting all expenses from revenues for the period.

For detailed descriptions of the financial statement line items please refer to the Supplemental Information section or to this link – Financial Statement Line Item Descriptions.

Pro Forma Statement of Cash Flows

$ Millions	2023 Proposed
Operating Sources of Funds:	
Receipts from Customers	$1,623.0
Other Electric Revenue	47.7
Total Operating Sources of Funds	1,670.7
Net Operating Expenses	763.8
Commodity Expenses	470.1
Total Operating Uses of Funds	1,233.8
Net Source of Funds from Operations	436.9
Proceeds from Debt Issuance	340.0
Commercial Paper Issuance	0.0
Total Financing Sources of Funds	340.0
Financing Uses of Funds:	
Capital Expenditures & Other Cash Payments	624.1
Net Loans	(0.2)
Principal Payments on Debt	113.0
Interest Payments on Debt	99.9
Total Financing Uses of Funds	836.8
Net (Use) of Funds from Financing	(496.8)
Investing Sources of Funds:	
Interest Income	12.8
Net Source of Funds from Investing	12.8
Net Use of Funds from 2023 Budget	**($47.2)**
Projected Unrestricted Cash Balance @ 1/1/23	$496.4
Net Cash Outflow from 2023 Budget	(387.2)
New Debt & Commercial Paper Issue	340.0
Net Change in Debt Service Reserve Funds	0.0
Transfer from Unrestricted to Restricted	0.0
Projected Unrestricted Cash Balance @ 12/31/23	**$449.1**

The 2023 Pro Forma Cash Flow Statement shows the budgeted sources and uses of cash and the projected year-end unrestricted cash balance for 2023. SMUD's current practice is to maintain unrestricted cash and Rate Stabilization Fund balances at a minimum of 150 days cash on hand, or approximately $452 million. At the end of 2023, SMUD's unrestricted cash balance is projected to be $449.1 million, in addition to the Rate Stabilization Fund balance of $3.5 million. The Hydro Rate Stabilization Fund balance, which is expected to be $31 million, is not included in this target minimum.

SMUD generates positive net cash flow from operations because of net income and non-cash expenses such as depreciation and amortization. In 2023, cash generated from operations is estimated to total approximately $436.9 million. The primary uses of this cash are capital investments, scheduled debt principal repayments and interest payments. The 2023 Budget for capital investment totals $625 million. Scheduled debt principal repayments in 2023 total $111.2 million for SMUD and $1.8 million for SFA (detail included in SFA Budget Documentation).

We currently maintain $300 million in commercial paper capacity and a $100 million line of credit. Any new money needs can be handled through short-term borrowing or issuing new long-term debt.

Business Unit Budgets

The following pages show the detailed budgets and organizational information for each Business Unit of SMUD.

Customer & Community Services

The Customer & Community Services budget includes all residential and commercial customer-focused services such as the Contact Center, retail client services and customer experiences. Also included are costs for billing, revenue assurance, and commercial development. Lastly, this budget includes support of the Community Energy Services (CCAs).

Segments & Work Processes

The Customer Experience Delivery segment develops and executes SMUD's Customer Experience Strategy. We leverage data analytics and customer insights to deliver high-touch positive experiences for our commercial, residential, special assistance and interconnection customers. We collaborate across SMUD to provide tools, insights, expertise, and recommendations to ensure the success of SMUD's 2030 Zero Carbon Plan.

The Customer Operations segment is SMUD's frontline organization that provides customer care services, which include processing transactions, lobby operations, self-service digital operations, as well as technical support, training, and process improvements to support these operations. This segment also provides services which include billing and payments, revenue assurance, field services, as well as technical support, training, and process improvements to support these operations.

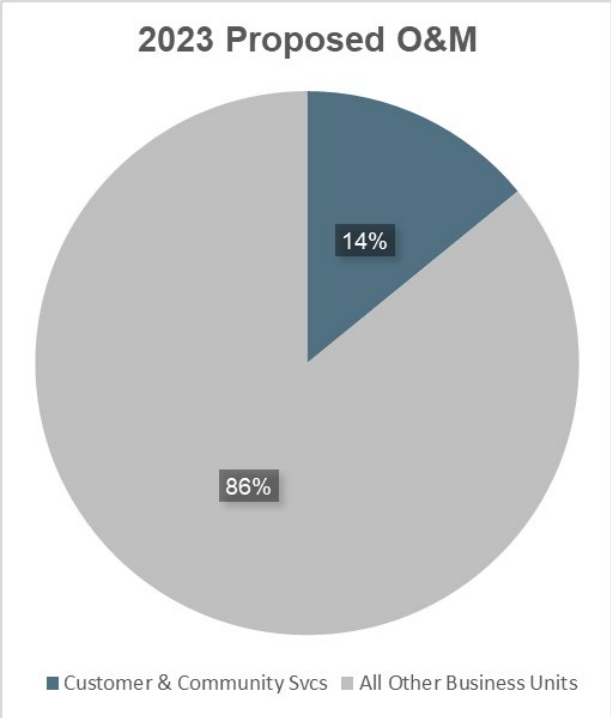
The Community Energy Services segment is SMUD's retail organization that provides strategic and operational products and services in support of public power.

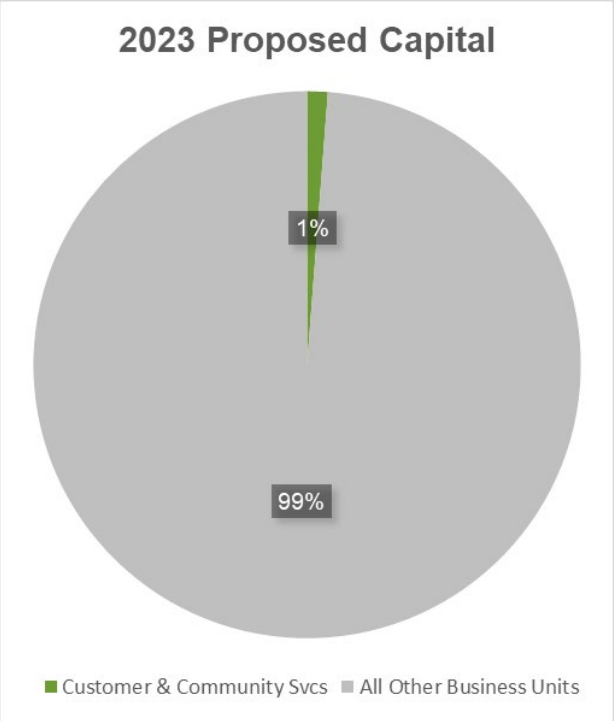
The Commercial Development & Solutions segment assists prospective businesses and developers, coordinating all touch points within SMUD. We act as a liaison to facilitate integration with other utility services to maximize our impact in the community.

The Business Performance & Optimization segment supports operational excellence efforts, data analytics and reporting, and drives adoption of key performance metrics across Customer & Community Services. It also delivers high-quality, well-defined reports, dashboards and data sources that enable data-driven decisions optimizing work and operational excellence.

Business Unit Budget Summary

The following section includes the budget report for the Business Unit presented by its segments and by the cost categories. Additionally, you can see from the charts what proportion the Customer & Community Services Business Unit represents for SMUD for each of the cost categories.





Customer & Community Services Budget Summary by Segment ($000s)

Segment by Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Customer Experience Delivery					
O&M Expense	$7,249	$6,870	$5,958	($912)	-13%
Public Good Expense	6,521	7,661	8,216	555	7%
Total O&M Expenses	13,769	14,531	14,174	(357)	-2%
Capital Expenditures	-	-	-	-	-
Segment Total	**13,769**	**14,531**	**14,174**	**(357)**	-2%
Customer Operations					
O&M Expense	57,238	62,747	60,153	(2,594)	-4%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	57,238	62,747	60,153	(2,594)	-4%
Capital Expenditures	9,197	6,619	7,570	951	14%
Segment Total	**66,434**	**69,366**	**67,723**	**(1,643)**	-2%
Community Energy Services					
O&M Expense	12,272	11,175	13,533	2,358	21%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	12,272	11,175	13,533	2,358	21%
Capital Expenditures	-	-	-	-	-
Segment Total	**12,272**	**11,175**	**13,533**	**2,358**	21%
Commercial Development & Solutions					
O&M Expense	9,268	10,860	9,868	(992)	-9%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	9,268	10,860	9,868	(992)	-9%
Capital Expenditures	-	-	-	-	-
Segment Total	**9,268**	**10,860**	**9,868**	**(992)**	-9%
Business Performance & Optimization					
O&M Expense	3,148	3,179	4,277	1,098	35%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	3,148	3,179	4,277	1,098	35%
Capital Expenditures	-	-	-	-	-
Segment Total	**3,148**	**3,179**	**4,277**	**1,098**	35%
Customer & Community Services Business Unit					
O&M Expense	89,173	94,830	93,789	(1,042)	-1%
Public Good Expense	6,521	7,661	8,216	555	7%
O&M Revenue	108	-	-	-	-
Net O&M Expenses	95,802	102,491	102,005	(486)	0%
Capital Expenditures	9,197	6,619	7,570	951	14%
Capital Revenue	-	-	-	-	-
Net Capital Expenditures	9,197	6,619	7,570	951	14%
Total Business Unit Budget	**$104,999**	**$109,110**	**$109,574**	**$464**	**0.4%**

The 2023 Proposed O&M Budget is lower than the 2022 Budget by ($1.0M), or -1%. The main driver of the decrease is the shift of our billing and payment platform vendor costs to the Information Technology Business Unit. We continue to prioritize our residential and commercial customers and segments, including small and medium businesses.

The 2023 Proposed Public Good Budget is higher than the 2022 Budget by $555K, or 7%. Our 2023 Proposed Budget remains focused on and in support of our low income and underserved communities with the addition of our newly implemented Community Impact Plan. This emphasizes our goal of offering a zero-carbon journey that ensures our most under-resourced customers reap the benefits of a clean energy future.

The 2023 Proposed Capital Budget is higher than the 2022 Budget by $951K or 14%. The 2023 Proposed Budget reflects higher meter installation efforts due to the continued growth our region is experiencing.

Energy Delivery & Operations

The Energy Delivery & Operations budget includes the costs of generating electricity, delivering it to our customers and maintaining the ability to do so safely and reliably. Also, the cost of electrical transmission, line inspections, corrective and preventative maintenance, vegetation management, and underground cable work are included here. Lastly, this budget includes program management services for construction and other non-technology projects, transmission and distribution planning and operations, environmental, safety and real estate services.

Segments & Work Processes

The Transmission Planning & Operations (TP&O) segment develops short-term and long-term system plans for SMUD's transmission grid to meet load serving capability, reliability, and regulatory compliance requirements. TP&O manages and operates the assets which remotely control and monitor fuel to generation sources and SMUD's Extra High Voltage Transmission, Generation, and Gas Pipeline System to deliver electrical energy to SMUD's Distribution System. This segment also operates the Balancing Authority of Northern California (BANC) that includes transmission and generation facilities for WAPA, USBR, City of Roseville, City of Redding, Modesto Irrigation District, and the 500kV COTP, which stretches SMUD's operational control from the California-Oregon border to south of Modesto.

The Distribution Planning & Operations segment develops short-term and long-term plans for SMUD's distribution system to ensure safety, capacity, reliability and regulatory compliance requirements are achieved. It is also responsible for the safe and reliable operation of SMUD's distribution system to deliver energy to our customers.

The Line Assets segment includes all activities associated with design, modification, and installation of transmission and distribution lines, wildfire hardening and vegetation management; transmission and distribution system inspection; and prioritized system maintenance and improvement. This segment also includes design and installation of residential meters, service conductors, subdivision facilities, commercial, 3rd party attachments – industrial developments, overhead and underground line extensions, outdoor lighting, and traffic signals.

The Substation, Telecom & Network segment includes all activities associated with design, modification, and installation of transmission and distribution substations; network underground installation and maintenance; transmission and distribution substation system inspection; and prioritized system maintenance and improvement. This segment also includes design and installation of meters, the downtown network system, and telecommunication systems relaying critical substation information to the Power System Operations Team.

The Strategic Services & Operations PMO segment provides portfolio management, program and project execution, continuous business process and technology solutions. We deliver innovative solutions and provide business value by effectively managing the Operation PMO portfolio of projects and continuous improvement initiatives. We administer consistent results that reduce costs, increase efficiencies, and improve customer and stakeholder satisfaction.

This segment includes the Sacramento Power Academy which is a vital resource to SMUD and

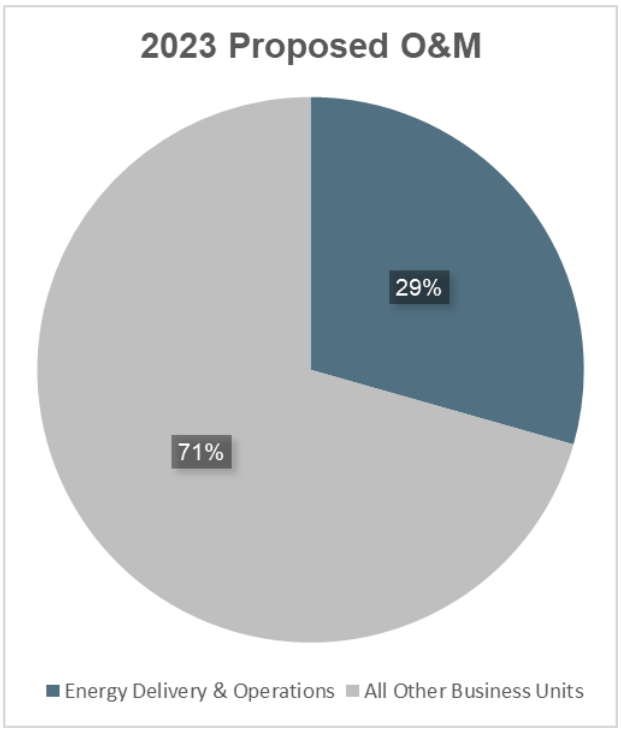
the community. Building skills and growing careers by providing the best training to our employees from development to analysis and delivery. The Sacramento Power Academy manages training for all Energy Delivery & Operations and Power Generation, as well as manages all skilled trades apprenticeship programs which includes the twelve apprenticeship programs that are state and/or federally certified.

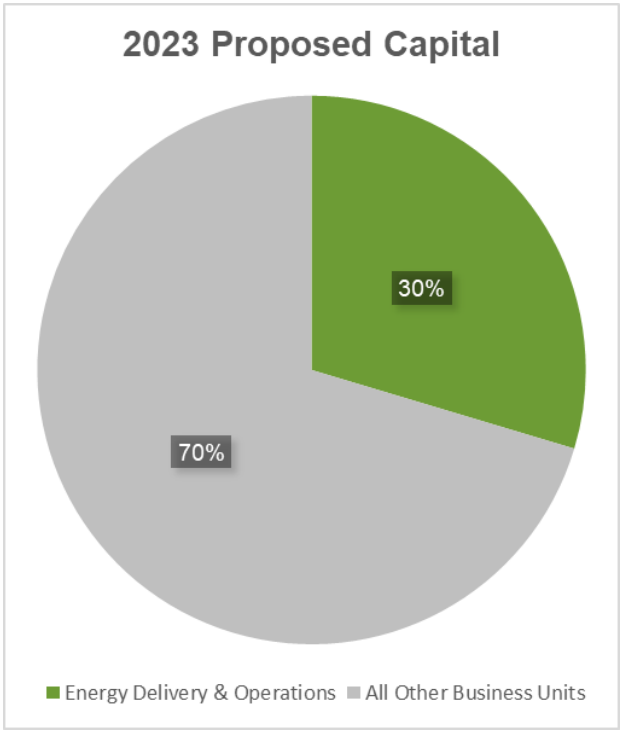
The Environmental, Real Estate & Safety segment provides environmental compliance; environmental stewardship; employee, contractor, and public safety; and real estate/land asset management services. This segment supports SMUD's business unit needs to achieve a zero-injury culture, a commitment to environmental leadership and the Clean Energy Vision, and value-added services.

The Operational Excellence segment supports the Clean Energy Vision by developing and managing a framework to reduce cost, increase efficiency and drive a culture of continuous improvement across the company.

Business Unit Budget Summary

The following section includes the budget report for the Business Unit presented by its segments and by the cost categories. Additionally, you can see from the charts what proportion the Energy Delivery & Operations Business Unit represents for SMUD for each of the cost categories.





Energy Delivery & Operations Budget Summary by Segment ($000s)

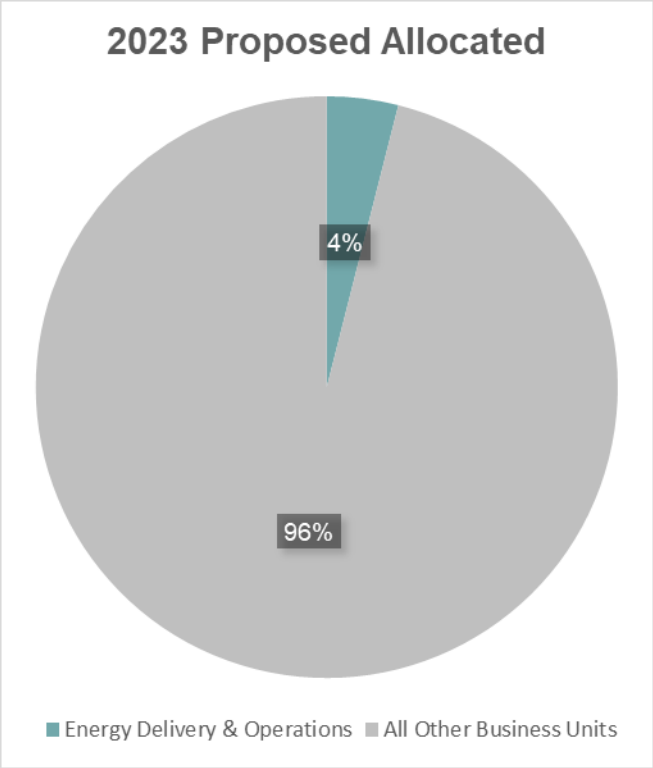
Segment by Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Transmission Planning & Operations					
O&M Expense	$32,322	$33,026	$34,455	$1,429	4%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	32,322	33,026	34,455	1,429	4%
Capital Expenditures	1,737	2,700	2,398	(302)	-11%
Segment Total	**34,059**	**35,727**	**36,853**	**1,126**	3%
Distribution Planning & Operations					
O&M Expense	21,620	22,916	21,584	(1,332)	-6%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	21,620	22,916	21,584	(1,332)	-6%
Capital Expenditures	607	1,780	1,601	(179)	-10%
Segment Total	**22,227**	**24,696**	**23,184**	**(1,511)**	-6%
Line Assets					
O&M Expense	117,118	113,147	113,390	243	0%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	117,118	113,147	113,390	243	0%
Capital Expenditures	81,785	104,207	109,382	5,175	5%
Segment Total	**198,903**	**217,354**	**222,772**	**5,418**	2%
Substation, Telecom & Network					
O&M Expense	23,524	21,281	28,111	6,830	32%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	23,524	21,281	28,111	6,830	32%
Capital Expenditures	66,399	75,403	66,256	(9,147)	-12%
Segment Total	**89,924**	**96,683**	**94,366**	**(2,317)**	-2%
Strategic Services & PMO					
O&M Expense	5,299	6,921	8,828	1,907	28%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	5,299	6,921	8,828	1,907	28%
Capital Expenditures	-	-	-	-	-
Segment Total	**5,299**	**6,921**	**8,828**	**1,907**	28%
Environmental, Real Estate & Safety					
O&M Expense	4,543	6,077	4,844	(1,233)	-20%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	4,543	6,077	4,844	(1,233)	-20%
Capital Expenditures	9,211	8,776	5,285	(3,491)	-40%
Segment Total	**13,754**	**14,853**	**10,129**	**(4,724)**	-32%
Operational Excellence					
O&M Expense	1,340	1,287	1,386	99	8%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	1,340	1,287	1,386	99	8%
Capital Expenditures	-	-	-	-	-
Segment Total	**1,340**	**1,287**	**1,386**	**99**	8%
Energy Delivery & Operations Business Unit					
O&M Expense	205,767	204,655	212,598	7,943	4%
Public Good Expense	-	-	-	-	-
O&M Revenue	191	-	-	-	-
Net O&M Expenses	205,958	204,655	212,598	7,943	4%
Capital Expenditures	159,739	192,866	184,921	(7,945)	-4%
Capital Revenue	-	-	-	-	-
Net Capital Expenditures	159,739	192,866	184,921	(7,945)	-4%
Total Business Unit Budget	**$365,697**	**$397,520**	**$397,519**	**($2)**	**0%**

The 2023 Proposed O&M Budget is higher than the 2022 Budget by $7.9M, or 4%. This is primarily driven by increases in materials, supplies and contract labor for our operations and maintenance work, along with additional labor cost associated with increased labor rates and field workforce hiring and development strategy.

The 2023 Proposed Capital Budget is lower than the 2022 Budget by ($7.9M) or -4%. This is primarily due to the 2022 completion of various large projects for Substation modification and Substation Capacity such as Station G, Oselot Baroque, Del Paso E. Commerce 2nd Bank, and Franklin-Elk Grove Bank 2. Additional decreases in capital are due to the completion of the North City Substation environmental remediation. These decreases are partially offset by cost increases for materials and contract labor due to inflation.

Energy Delivery & Operations Allocated Budget Summary by Segment ($000s)

Allocated expenditures are included in all SMUD Business Unit O&M and Capital line items. The Allocated Budget of this Business Unit is presented here for informational purposes only and is not additive to the previously presented budget amounts.



Segment and Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Environmental, Real Estate & Safety					
Allocated Expense	$4,938	$4,082	$5,422	$1,339	33%
Energy Delivery & Operations Business Unit Total					
Total Allocated Expense	**$4,938**	**$4,082**	**$5,422**	**$1,339**	**33%**

The 2023 Proposed Allocated Budget is higher than the 2022 Budget by $1.3M, or 33%. This is primarily due to the expansion of the Contractor & Public Safety programs and SCORCH (Safely Conducted Observations Reduce Common Hazards).

Zero Carbon Energy Solutions

The Zero Carbon Energy Solutions budget includes the design, construction, maintenance, and transition of SMUD's power generation assets, the sale and procurement of energy resources and settlements of energy transactions, and customer program implementation. This consists of operating and maintaining SMUD's hydroelectric reservoirs and powerhouses, thermal and cogeneration power plants, gas pipeline, and renewable generation wind and solar resources. Also included is establishing and developing new business partnerships that align and support SMUD's 2030 zero carbon goal.

Segments & Work Processes

The Power Generation segment consists of the physical assets which provide natural gas and generate electrical power from hydro, thermal and renewable generation power sources and the employees who design, construct, operate, maintain, and manage those physical assets. Also included in the Power Generation segment is decommissioning, which is responsible for the monitoring of long-term fuel storage facilities.

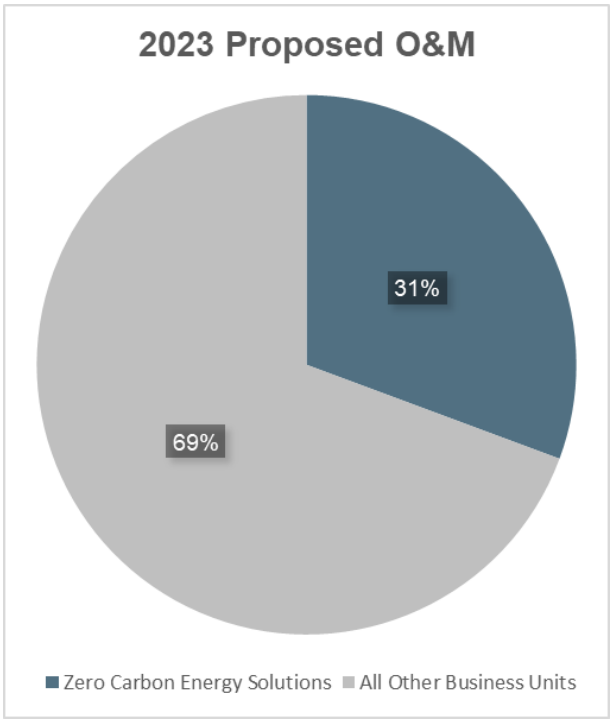
The Advanced Energy Solutions (AES) segment is responsible for research and development, as well as planning and implementation delivery of residential and commercial programs and products in support of SMUD's 2030 Zero Carbon Plan goals. Areas of focus include building energy efficiency and electrification, green pricing, electric vehicles, load flexibility, energy storage, and thermal transition.

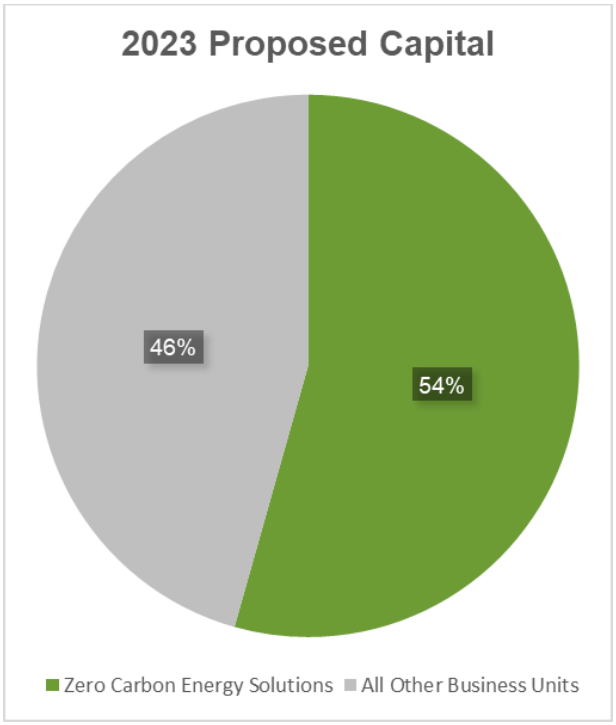
The Commodity Procurement & Sales segment is responsible for the development, procurement, and administration of long, medium, and short-term power, electric transmission, and natural gas contracts. This segment also conducts the associated day-to-day management of and trading activities for resources required to optimize renewable contracts and maintain adequate, cost-effective supplies of natural gas to thermal generation units as well as electrical energy to SMUD customers. Finally, this segment participates in various regulatory forums to protect SMUD's resources and interests.

The New Business Development segment provides strategy, business planning and commercialization services for substantial new net revenue generation and innovation opportunities across the enterprise. We do this by providing institutional business processes and competencies necessary to guide SMUD's optimal use of its assets and expertise to generate new net revenue. The program also provides for an enterprise-wide view of all new net revenue opportunities so that the Executive Team has better visibility into where SMUD is committing its resources and can optimize potential for revenue generation.

Business Unit Budget Summary

The following section includes the budget report for the Business Unit presented by its segments and by the cost categories. Additionally, you can see from the charts what proportion the Zero Carbon Energy Solutions Business Unit represents for SMUD for each of the cost categories.





Zero Carbon Energy Solutions Budget Summary by Segment ($000s)

Segment by Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Power Generation					
O&M Expense	$100,601	$106,581	$105,096	($1,485)	-1%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	100,601	106,581	105,096	(1,485)	-1%
Capital Expenditures	126,829	105,309	336,690	231,381	220%
Segment Total	**227,430**	**211,890**	**441,786**	**229,896**	108%
Advanced Energy Solutions					
O&M Expense	22,089	36,446	34,014	(2,432)	-7%
Public Good Expense	47,343	51,776	62,461	10,685	21%
Total O&M Expenses	69,432	88,222	96,474	8,252	9%
Capital Expenditures	246	96	133	37	39%
Segment Total	**69,679**	**88,318**	**96,607**	**8,290**	9%
Commodity, Procurement & Sales					
O&M Expense	13,162	14,139	15,087	948	7%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	13,162	14,139	15,087	948	7%
Capital Expenditures	2,117	3,000	3,400	400	13%
Segment Total	**15,279**	**17,139**	**18,487**	**1,348**	8%
New Business Development					
O&M Expense	2,029	1,969	4,968	2,998	152%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	2,029	1,969	4,968	2,998	152%
Capital Expenditures	-	-	-	-	-
Segment Total	**2,029**	**1,969**	**4,968**	**2,998**	152%
Zero Carbon Energy Solutions Business Unit					
O&M Expense	137,881	159,135	159,165	29	0%
Public Good Expense	47,343	51,776	62,461	10,685	21%
O&M Revenue	(25)	(25)	(25)	-	0%
Net O&M Expenses	185,199	210,886	221,600	10,714	5%
Capital Expenditures	129,192	108,405	340,223	231,818	214%
Capital Revenue	(546)	(1,106)	(839)	267	24%
Net Capital Expenditures	128,646	107,298	339,384	232,085	216%
JPA Interest Expense	4,773	4,773	4,441	(332)	-7%
Total Business Unit Budget	**$318,619**	**$322,958**	**$565,424**	**$242,466**	**75%**

The 2023 Proposed O&M Budget is higher than the 2022 Budget by $29K, or 0%. The priority is still 2030 Clean Energy goals with efforts in Electrification, Load Flexibility (NextGen ACLM) and New Business Development (Grant Strategy).

The 2023 Proposed Public Good Budget is higher than the 2022 Budget by $10.7M, or 21%. Key efforts in 2023 are focused on expanding our Building Electrification programs, Research and Development projects, including ESS Battery Flow, GM Vehicle to Grid, and Light Duty V2X pilot, and our newly implemented Community Impact Plan. This emphasizes our goal of offering a zero-carbon journey that ensures our most under-resourced customers reap the benefits of a clean energy future.

The 2023 Proposed Capital Budget is higher than the 2022 Budget by $231.8M or 214%. The significant increase is due to 2 key projects for the Zero Carbon Plan - the Solano 4 Wind Project and the Country Acres Solar + Storage Project within the Power Generation segment. Both projects are key to us meeting the RPS requirement.

Enterprise Strategy Business Unit

The Energy Strategy budget includes enterprise strategic planning and prioritization, resource market strategy and planning, customer, and grid strategy support of DERs, integrated distributed resources, low carbon fuel standard work, Zero Carbon and R&D strategies. Also, included are revenue strategy functions like load forecasting and rates and pricing as well as enterprise prioritization.

Segments & Work Processes

The Resource Strategy segment provides the organization with strategic, long-term integrated resource planning and market strategy to help SMUD achieve our long-term greenhouse gas goals, meet all state resource and environmental related mandates, expand renewable generation, and maintain a reliable electric system at reasonable rates.

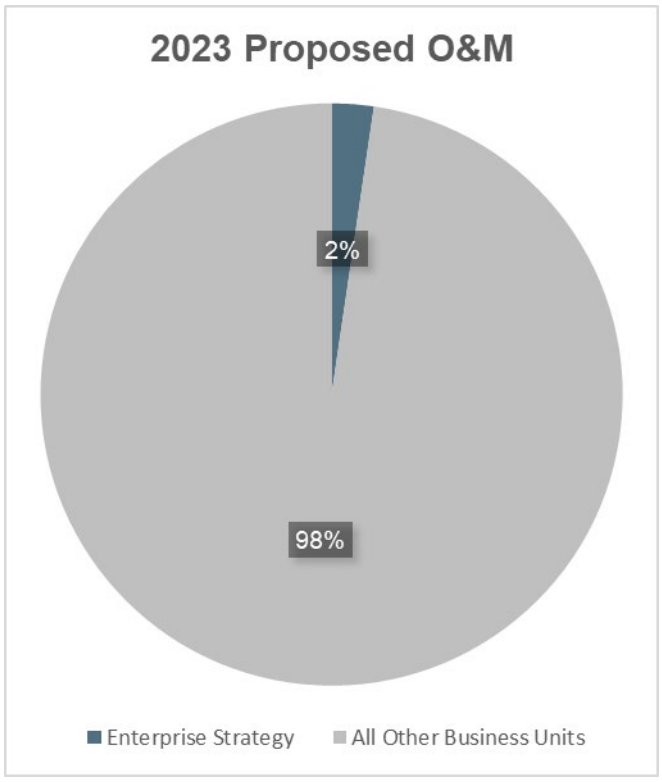
The Revenue Strategy segment is responsible for development of customer pricing of retail energy and load forecasting. Pricing includes development of a rates roadmap, costing and marginal cost studies, rates reports, public rate proceedings, rate implementation support, interpretation of rates and rules, revenue forecasts and analysis of rate impacts. Load Forecasting includes research of customer class energy use, and development of system energy, sales energy and customer forecasts used for budgeting and planning by various departments. The team also maintains a data analytics database used across SMUD, as well as completes a variety of other studies and regulatory filing reports.

The Customer & Grid Strategy segment is responsible for the development of the strategic roadmap for distributed energy resources, the research and demonstration of innovative and emerging technologies, and the coordination of their execution. This includes developing and launching pilots to determine feasibility, infrastructure, and resource investments at scale; developing business cases and ROI for integration into production; and working with key stakeholders to transition to implementation.

The Enterprise Prioritization segment helps to identify and facilitate strategic decisions that have a material impact on our success in meeting our long-term strategic goals of Zero Carbon, World-Class Reliability, Affordable Rates, and Inclusion. The team supports enterprise-wide planning and strategy by providing a coordinated process and methodologies for prioritizing projects and programs across all business areas. The team works closely with business leaders across SMUD and the executive team.

Business Unit Budget Summary

The following section includes the budget report for the Business Unit presented by its segments and by the cost categories. Additionally, you can see from the chart what proportion the Energy Strategy Business Unit represents for SMUD for each of the cost categories.



Enterprise Strategy Budget Summary by Segment ($000s)

Segment by Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Resource Strategy					
O&M Expense	$3,946	$4,889	$4,548	($341)	-7%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	3,946	4,889	4,548	(341)	-7%
Capital Expenditures	-	-	-	-	-
Segment Total	**3,946**	**4,889**	**4,548**	**(341)**	-7%
Revenue Strategy					
O&M Expense	4,072	4,286	4,844	558	13%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	4,072	4,286	4,844	558	13%
Capital Expenditures	-	-	-	-	-
Segment Total	**4,072**	**4,286**	**4,844**	**558**	13%
Customer & Grid Strategy					
O&M Expense	3,901	5,486	4,826	(660)	-12%
Public Good Expense	928	609	1,193	584	96%
Total O&M Expenses	4,829	6,095	6,019	(76)	-1%
Capital Expenditures	-	-	-	-	-
Segment Total	**4,829**	**6,095**	**6,019**	**(76)**	-1%
Enterprise Prioritization					
O&M Expense	1,030	2,200	1,413	(787)	-36%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	1,030	2,200	1,413	(787)	-36%
Capital Expenditures	-	-	-	-	-
Segment Total	**1,030**	**2,200**	**1,413**	**(787)**	-36%
Enterprise Strategy Business Unit					
O&M Expense	12,950	16,861	15,631	(1,230)	-7%
Public Good Expense	928	609	1,193	584	96%
O&M Revenue	-	-	-	-	-
Net O&M Expenses	13,877	17,470	16,824	(646)	-4%
Capital Expenditures	-	-	-	-	-
Capital Revenue	-	-	-	-	-
Net Capital Expenditures	-	-	-	-	-
Total Business Unit Budget	**$13,877**	**$17,470**	**$16,824**	**($646)**	**-4%**

The 2023 Proposed O&M Budget is lower than the 2022 Budget by ($1.2M) or -7%. This is driven mostly by a shift from O&M to Public Good to launch various customer facing programs in the new year. While the Revenue Strategy segment is increasing due to 2023 Rate Case planning and outreach, it is offset by a reduction in Enterprise Prioritization due to a reduction in budgeted positions as the new team was right sized within 2022.

The 2023 Proposed Public Good Budget is higher than the 2022 Budget by $584K, or 96%. The increase is due to a shift from O&M to Public Good to launch various customer facing programs in the new year such as the deployment of Zero Carbon Programs, such as the School Solar Program.

Information Technology Business Unit

The Information Technology budget includes costs for the delivery and support of information technology systems, applications, and hardware. Also included are the costs associated with maintaining and ensuring IT system availability, providing a framework to safeguard information, planning, and setting the enterprise technology strategy, and supporting the enterprise's technology needs.

Segments & Work Processes

The Applications segment is responsible for the delivery and support of the portfolio of new information technology investments in addition to providing application and database administration and maintenance support for all deployed systems, along with applications/system security and operations services.

The Infrastructure and Operations segment provides corporate data/voice network, server/storage infrastructure, corporate email, and system administration services, support center, endpoint computing, computer operations, data center administration, infrastructure change management, and asset management.

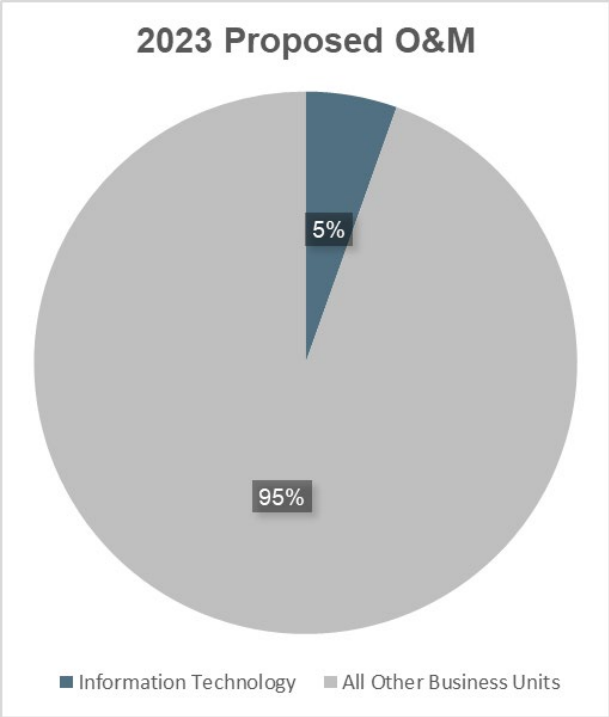
The Strategy & Innovation segment has responsibility for management of technology infrastructure from idea through delivery. The Innovation function supports SMUD-wide initiatives and a culture where innovative ideas are nurtured and developed. The segment also collaborates closely with all business units on enterprise-wide technology road maps, project management and quality assurance functions.

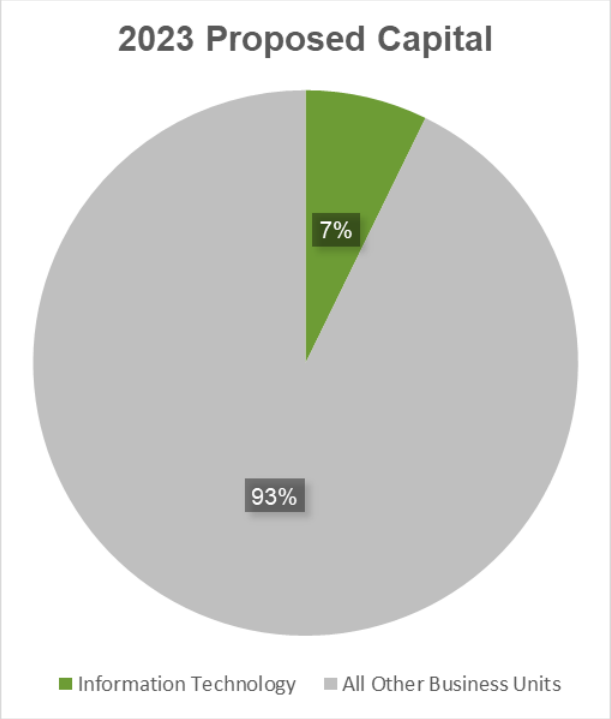
The Strategic Initiatives segment has responsibility for the development, oversight and implementation of technology programs and projects. Program responsibilities include data governance, license and vendor management and enterprise architecture. These support SMUD's vision for short- and long-term plans and ensure the best return on technology investments. This segment is also responsible for major enterprise initiatives like ADMS, DERMS, Network Transformation, Analytics, Data Governance, and technologies to support new business endeavors.

The Cybersecurity segment acts as cybersecurity and privacy risk advisors to continually improve SMUD's cyber risk posture and protect our people, processes, and technology through an organization-wide risk management approach.

Business Unit Budget Summary

The following section includes the budget report for the Business Unit presented by its segments and by the cost categories. Additionally, you can see from the charts what proportion the Information Technology Business Unit represents for SMUD for each of the cost categories.





Information Technology Budget Summary by Segment ($000s)

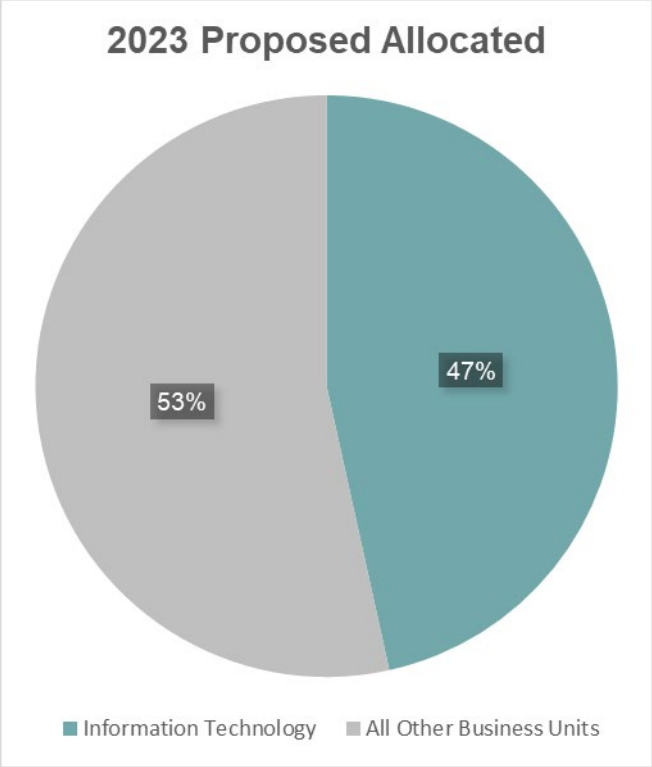
Segment by Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Applications					
O&M Expense	19,665	21,237	27,574	6,337	30%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	19,665	21,237	27,574	6,337	30%
Capital Expenditures	14,927	16,161	21,000	4,839	30%
Segment Total	**34,592**	**37,399**	**48,574**	**11,176**	30%
Infrastructure & Operations					
O&M Expense	1,303	1,758	912	(846)	-48%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	1,303	1,758	912	(846)	-48%
Capital Expenditures	2,597	3,219	5,339	2,121	66%
Segment Total	**3,900**	**4,977**	**6,252**	**1,275**	26%
Strategy & Innovation					
O&M Expense	$1,711	$4,960	$2,204	($2,756)	-56%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	1,711	4,960	2,204	(2,756)	-56%
Capital Expenditures	-	-	-	-	-
Segment Total	**1,711**	**4,960**	**2,204**	**(2,756)**	-56%
Strategic Initiatives					
O&M Expense	4,433	6,126	6,062	(64)	-1%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	4,433	6,126	6,062	(64)	-1%
Capital Expenditures	9,792	17,070	18,317	1,247	7%
Segment Total	**14,224**	**23,196**	**24,379**	**1,183**	5%
Cybersecurity					
O&M Expense	2,083	2,394	2,564	170	7%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	2,083	2,394	2,564	170	7%
Capital Expenditures	700	795	604	(191)	-24%
Segment Total	**2,784**	**3,189**	**3,168**	**(21)**	-1%
Information Technology Business Unit					
O&M Expense	29,195	36,476	39,316	2,840	8%
Public Good Expense	-	-	-	-	-
O&M Revenue	-	-	-	-	-
Net O&M Expenses	29,195	36,476	39,316	2,840	8%
Capital Expenditures	28,015	37,245	45,261	8,016	22%
Capital Revenue	-	-	-	-	-
Net Capital Expenditures	28,015	37,245	45,261	8,016	22%
Total Business Unit Budget	**$57,210**	**$73,721**	**$84,577**	**$10,857**	**15%**

The 2023 Proposed O&M Budget is higher than the 2022 Budget by $2.8M, or 8%. The main driver of the increase is higher project costs and the shift of billing and payment platform vendor costs from Customer & Community Services. Notable 2023 project efforts include a new records evaluation program and continued work on consolidating customer-facing self-service applications into a single customer technology platform. These increases are partially offset by the transfer of the Innovation team to the Zero Carbon Energy Solutions business unit, plus a re-sizing of the Information Technology Innovation budget, used for innovative technology pilots supporting all of SMUD.

The 2023 Proposed Capital Budget is higher than the 2022 Budget by $8.0M or 22%. This is due to an increased volume of capital technology projects. Major projects in the 2023 Proposed Budget are a long-term planning tool for Energy Delivery and Operations, pilot work on next generation meters, Phase 2 of the Vegetation Work Management Solution, technologies for electronic visual inspection of substations, and an upgrade to the Meter Data Management System (MDMS). Other projects include the integration of the Advanced Distribution Management System (ADMS) with the Outage Management System (OMS) and with Distributed Energy Resources (DERs), along with ongoing work to increase fiber-optic network capacity. The 2023 Proposed Budget also includes increased funding for lifecycle work, such as the annual replacement for network/infrastructure hardware.

Information Technology Allocated Budget Summary by Segment ($000s)

Allocated expenditures are included in all SMUD Business Unit O&M and Capital line items. The Allocated Budget of this Business Unit is presented here for informational purposes only and is not additive to the previously presented budget amounts.



Segment and Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Applications					
Allocated Expense	23,520	24,532	21,969	(2,563)	-10%
Infrastructure & Operations					
Allocated Expense	18,881	18,757	19,571	814	4%
Strategic Initiatives					
Allocated Expense	$12,911	$13,992	$14,114	$123	1%
Cybersecurity					
Allocated Expense	6,998	8,151	8,110	(40)	0%
Technology Business Unit Total					
Total Allocated Expense	**$62,310**	**$65,432**	**$63,765**	**($1,667)**	**-3%**

The 2023 Proposed Allocated Budget is lower than the 2022 Budget by ($1.7M), or -3%. The decrease is driven by labor costs shifting to capital projects. This is partially offset by increased software license, maintenance, and support costs. The Strategic Initiatives segment is higher due to increased labor costs to support Operating Technology Network and Advanced Distribution Management System infrastructures.

Workforce, Diversity & Inclusion

The Workforce, Diversity & Inclusion budget includes the costs of employee services such as talent management, benefits management, learning and development programs as well as work for developing and implementing strategies and initiatives to establish SMUD as a diverse and inclusive employer. Also included are sustainable communities' initiatives and programs.

Segments & Work Processes

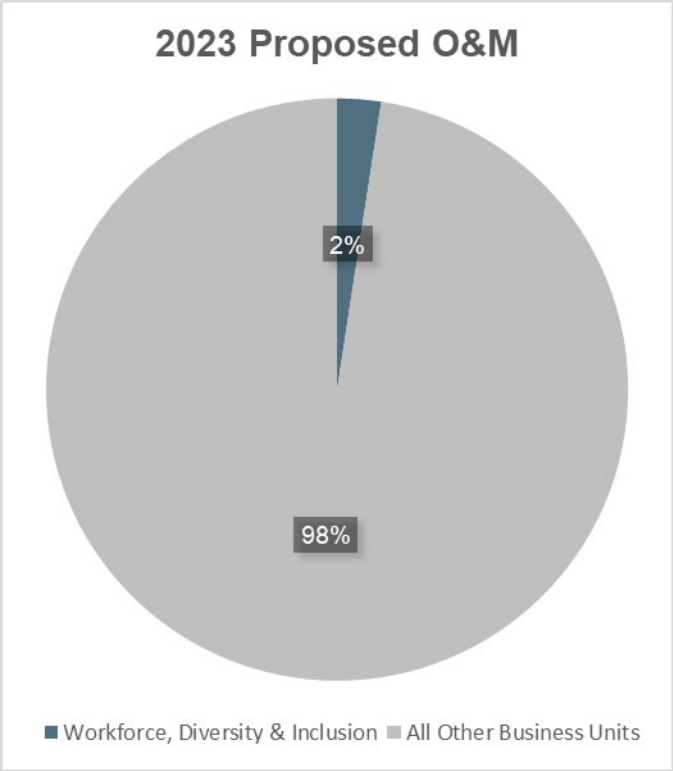
The People Services & Strategies segment provides services, programs, and proactive solutions for SMUD's recruiting, benefits, performance, policies, employee relations and wellness programs to create an inclusive environment where SMUD employees thrive and do their best.

The Diversity, Equity and Inclusion segment serves as a catalyst for change focused on embedding diversity, equity, and inclusion into all SMUD's operations. The segment develops and implements strategies, initiatives, and programs to establish SMUD as a diverse and inclusive employer, and position SMUD as a key player in the community to achieve equity for those it serves.

The Sustainable Communities segment is committed to building thriving and equitable neighborhood outcomes through continued strategic partnerships, sponsorships, education, outreach, and support for small business. We see ourselves as a convener both internally and externally, focused on leveraging collective impact. By using data to target disparity gaps we work with internal and external partners to execute on SMUD's mission to deliver energy, health, housing, transportation, education, workforce, and economic development solutions to ensure that all communities can truly have the best quality of life in our region.

Business Unit Budget Summary

The following section includes the budget report for the Business Unit presented by its segments and by the cost categories. Additionally, you can see from the charts what proportion the Workforce, Diversity and Inclusion Business Unit represents for SMUD for each of the cost categories.



Workforce, Diversity & Inclusion Budget Summary by Segment ($000s)

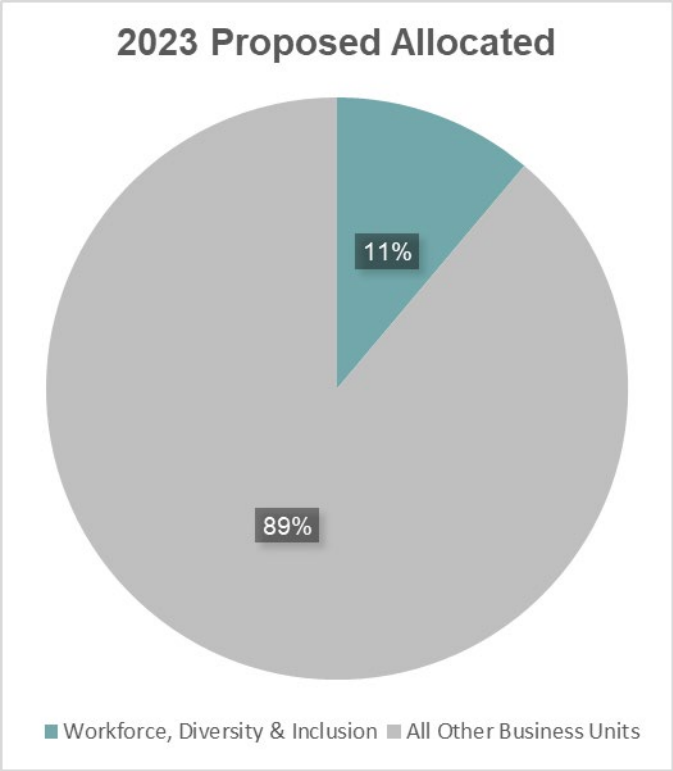
Segment by Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
People Services & Strategies					
O&M Expense	$2,976	$1,516	$6,233	$4,716	311%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	2,976	1,516	6,233	4,716	311%
Capital Expenditures	-	-	-	-	-
Segment Total	**2,976**	**1,516**	**6,233**	**4,716**	311%
Diversity, Equity & Inclusion					
O&M Expense	-	-	-	-	-
Public Good Expense	-	-	-	-	-
Total O&M Expenses	-	-	-	-	-
Capital Expenditures	-	-	-	-	-
Segment Total	**-**	**-**	**-**	**-**	-
Sustainable Communities Initiatives					
O&M Expense	6,477	6,049	9,648	3,598	59%
Public Good Expense	1,775	1,615	1,667	51	3%
Total O&M Expenses	8,252	7,665	11,315	3,650	48%
Capital Expenditures	-	-	-	-	-
Segment Total	**8,252**	**7,665**	**11,315**	**3,650**	48%
Workforce, Diversity & Inclusion Business Unit					
O&M Expense	9,453	7,566	15,881	8,315	110%
Public Good Expense	1,775	1,615	1,667	51	3%
O&M Revenue	-	-	-	-	-
Net O&M Expenses	11,228	9,181	17,547	8,366	91%
Capital Expenditures	-	-	-	-	-
Capital Revenue	-	-	-	-	-
Net Capital Expenditures	-	-	-	-	-
Total Business Unit Budget	**$11,228**	**$9,181**	**$17,547**	**$8,366**	**91%**

The 2023 Proposed O&M Budget is higher than the 2022 Budget by $8.3M, or 110%. This is driven by increases for the Talent Technology Transformation (T3) project Phase 2 delivery, Community Impact Plan programs, a shift of labor resources to staff the Core PS&S Analytics Team, and the launch of the Sustainable Communities Regional Workforce Development program.

The 2023 Proposed Public Good Budget is higher than the 2022 Budget by $51K, or 3%. There is no significant change year to year.

Workforce, Diversity & Inclusion Allocated Budget Summary by Segment ($000s)

Allocated expenditures are included in all SMUD Business Unit O&M and Capital line items. The Allocated Budget of this Business Unit is presented here for informational purposes only and is not additive to the previously presented budget amounts.



Segment and Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
People Services & Strategies					
Allocated Expense	$10,502	$11,527	$12,527	$1,000	9%
Diversity, Equity & Inclusion					
Allocated Expense	1,291	1,697	2,725	1,028	61%
Sustainable Communities Initiatives					
Allocated Expense	-	-	-	-	-
Workforce, Diversity & Inclusion Business Unit Total					
Total Allocated Expense	**$11,792**	**$13,224**	**$15,252**	**$2,028**	**15%**

The 2023 Proposed Allocated Budget is higher than the 2022 Budget by $2.0M, or 15%. This is mainly driven by an increase to fund the 2023 SMUD Pay Equity Study, an increase in Inclusion Services in support of the 2023 SMUD Diversity and Evaluation survey, and an increase in Talent Management due to student intern additions. This is partially offset by a decrease in Corporate Training due to a shift in staff to support the T3 Project Phase 2 deployment.

Corporate Business Unit

The Corporate budget includes the costs associated with corporate governance such as executive management and internal audit; strategic and finance functions like accounting, treasury, financial planning, and enterprise performance; and enterprise services such as procurement, warehouse, vehicle fleet operations, facilities operations and maintenance, and communications, marketing, and community relations. Also included are legal functions including legislative, regulatory, government affairs, corporate legal and records management, as well as ensuring adherence to all industry reliability and compliance standards and requirements.

Segments & Work Processes

The Governance segment is responsible for the planning, organizing, staffing, leading/engaging, and controlling/monitoring of overall activities to ensure that SMUD goals are achieved.

The Finance segment coordinates the development and reporting of strategic and operational plans, budgets, financial statements, and performance metrics for SMUD and JPAs. This segment also manages insurance programs and funding requirements, monitors enterprise-wide risk exposures, industry and market power issues, and updates business and economic forecasts.

The Legal, Government Affairs & Reliability Compliance segment has the responsibility for all legal matters to which SMUD is a party or to which it is legally interested, and is responsible for enterprise records, management, and coordination regarding federal and state regulatory requirements, legislative initiatives and governmental policies, local and regional ordinances and policies and compliance filings to meet mandatory reliability standards. This segment is also monitoring, lobbying, and impacting state and federal legislative and regulatory proposals, coordinating internally and externally to assure the adequacy of controls, developing, and tracking compliance programs, and advancing laws and regulations that allow the greatest innovation and flexibility for SMUD.

The Facilities, Security & Emergency Operations segment provides operation and maintenance services for SMUD grounds and facilities. The segment also provides essential fire, security, emergency preparedness and business continuity services for SMUD.

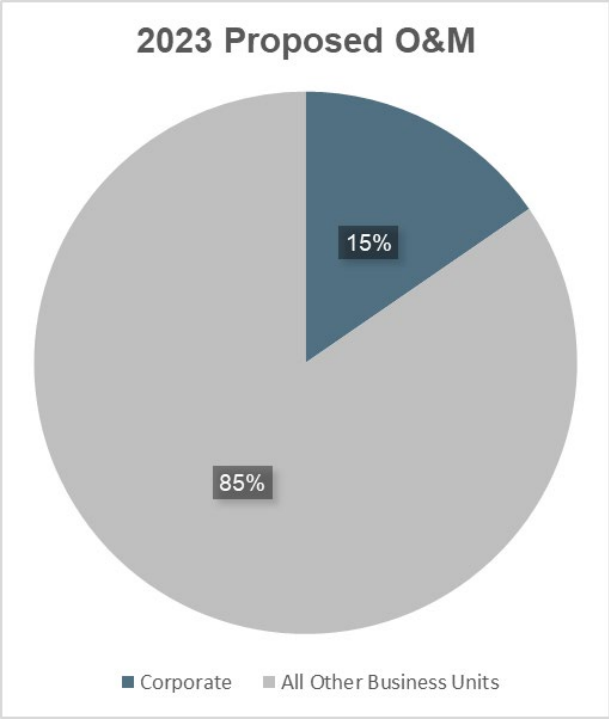
The Procurement, Warehouse & Fleet segment provides fleet equipment and services, warehousing and logistics support, and contracting solutions that support all other areas of SMUD. The segment is primarily focused on providing safe and reliable resources with environmental sustainability, community focused, and cost-effective outcomes.

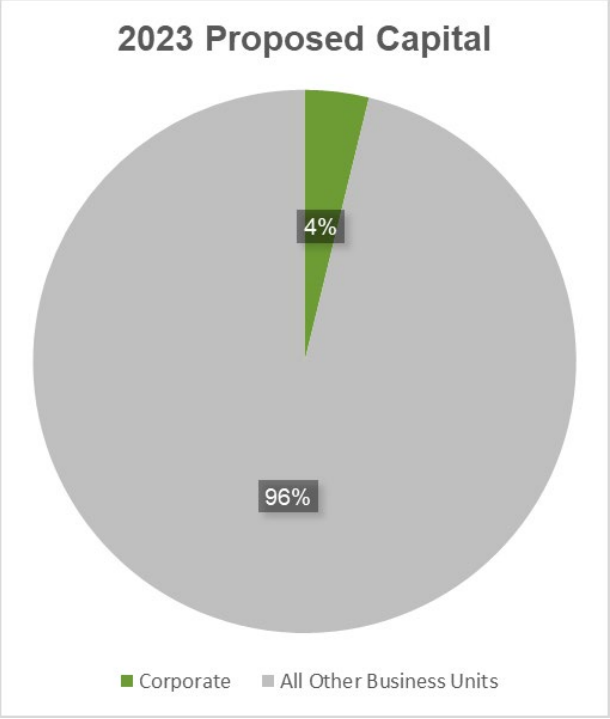
The Communications, Marketing & Community Relations segment promotes the adoption of the SMUD brand and increases awareness of programs, services, and value to the community through marketing, market research, community engagement, digital communication channels and image production and postal services.

The Enterprise Affairs segment houses enterprise-level efforts including the Hazard Mitigation Program and other miscellaneous items.

Business Unit Budget Summary

The following section includes the budget report for the Business Unit presented by its segments and by the cost categories. Additionally, you can see from the charts what proportion the Corporate Business Unit represents for SMUD for each of the cost categories.





Corporate Budget Summary by Segment ($000s)

Segment by Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Governance					
O&M Expense	$12,688	$11,413	$12,929	$1,516	13%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	12,688	11,413	12,929	1,516	13%
Capital Expenditures	-	-	-	-	-
Segment Total	**12,688**	**11,413**	**12,929**	**1,516**	13%
Finance					
O&M Expense	43,956	44,047	49,207	5,160	12%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	43,956	44,047	49,207	5,160	12%
Capital Expenditures	-	-	-	-	-
Segment Total	**43,956**	**44,047**	**49,207**	**5,160**	12%
Legal, Gov't Affairs & Reliability Compliance					
O&M Expense	12,766	13,802	14,420	618	4%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	12,766	13,802	14,420	618	4%
Capital Expenditures	-	-	-	-	-
Segment Total	**12,766**	**13,802**	**14,420**	**618**	4%
Facilities, Security & Emergency Ops					
O&M Expense	7,918	6,710	9,098	2,388	36%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	7,918	6,710	9,098	2,388	36%
Capital Expenditures	17,935	17,061	14,474	(2,587)	-15%
Segment Total	**25,852**	**23,771**	**23,572**	**(199)**	-1%
Procurement, Warehouse & Fleet					
O&M Expense	1,657	1,760	1,779	19	1%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	1,657	1,760	1,779	19	1%
Capital Expenditures	9,268	12,716	9,323	(3,392)	-27%
Segment Total	**10,925**	**14,475**	**11,102**	**(3,373)**	-23%
Communications, Marketing & Community Relations					
O&M Expense	24,121	26,123	26,902	779	3%
Public Good Expense	1,096	1,924	1,922	(1)	0%
Total O&M Expenses	25,217	28,047	28,824	778	3%
Capital Expenditures	-	-	-	-	-
Segment Total	**25,217**	**28,047**	**28,824**	**778**	3%
Enterprise Affairs					
O&M Expense	1,706	252	505	254	101%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	1,706	252	505	254	101%
Capital Expenditures	-	-	-	-	-
Segment Total	**1,706**	**252**	**505**	**254**	101%
Corporate Business Unit					
O&M Expense	104,812	104,106	114,839	10,734	10%
Public Good Expense	1,096	1,924	1,922	(1)	0%
O&M Revenue	(42)	-	-	-	-
Applied to SMUD Capital & Public Good	(3,840)	(4,955)	(5,497)	(542)	11%
Net O&M Expenses	102,025	101,074	111,265	10,191	10%
Capital Expenditures	27,203	29,777	23,798	(5,979)	-20%
Capital Revenue	-	-	-	-	-
Net Capital Expenditures	27,203	29,777	23,798	(5,979)	-20%
Total Business Unit Budget	**$129,228**	**$130,851**	**$135,062**	**$4,212**	**3%**

The 2023 Proposed O&M Budget is higher than the 2022 Budget by $10.7M, or 10%. This is driven primarily by an increase in insurance premiums, a shifting of staff expense from Enterprise BU to Corporate, Facility Project planning for the new Power Control Center building design, additional outside legal costs, and new funding for the Community Impact Plan.

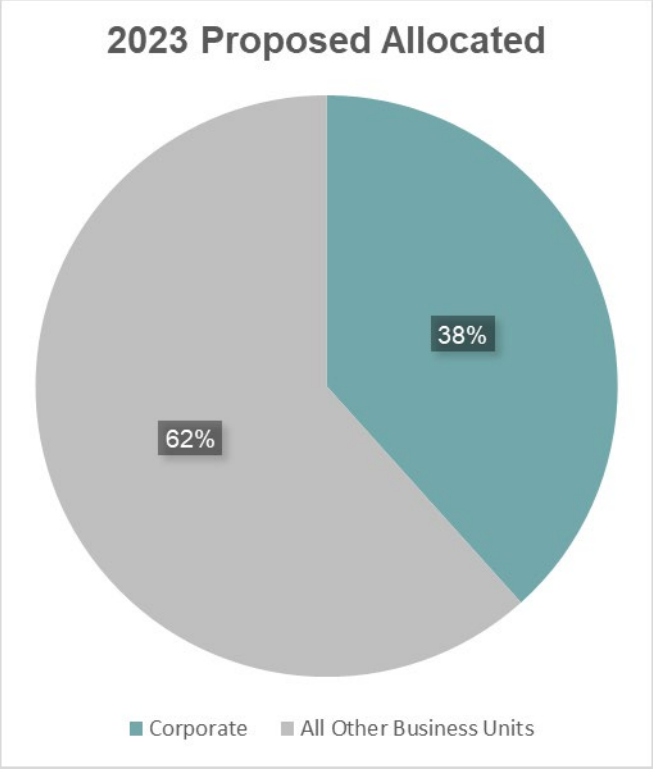
The 2023 Proposed Public Good Budget is lower than the 2022 Budget by ($1K), or 0%. There is no significant change year to year.

The Applied to SMUD Capital & Public Good line on the report above indicates the amount that FERC allows of administrative and general expenses to be allocated to capital and public good work processes. SMUD has chosen a portion of Treasury and Risk Management (including Insurance) as the base of this allocation. Therefore, the allocation applied to other Business Units is shown in the report above to avoid duplication of overall O&M dollars.

The 2023 Proposed Capital Budget is lower than the 2022 Budget by ($6.0M), or -20%. This is driven by fewer Fleet purchases due to supply chain constraints, fewer Facilities projects to plan and execute and the completion of more costly projects in 2022. These projects include SMUD HQ Site Civil work, the Child Care Center Tenant Improvements and PSO Console Replacement work.

Corporate Allocated Budget Summary by Segment ($000s)

Allocated expenditures are included in all SMUD Business Unit O&M and Capital line items. The Allocated Budget of this Business Unit is presented here for informational purposes only and is not additive to the previously presented budget amounts.



Segment and Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
Facilities, Security & Emergency Ops					
Allocated Expense	21,940	24,871	24,548	(324)	-1%
Procurement, Warehouse & Fleet					
Allocated Expense	26,298	23,993	26,447	2,454	10%
Communications, Marketing & Community Relations					
Allocated Expense	$1,468	$1,499	$1,558	$58	4%
Corporate Business Unit Total					
Total Allocated Expense	**$49,707**	**$50,363**	**$52,552**	**$2,189**	**4%**

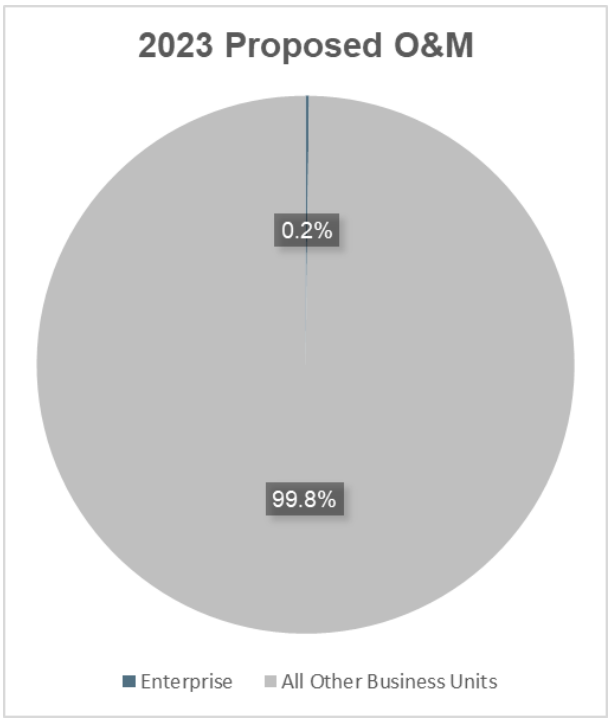
The 2023 Proposed Allocated Budget is higher than the 2022 Budget by $2.2M, or 4%. This increase is driven primarily by an increase in fuel costs due to pricing and an increase in warehouse material purchase pricing due to supply chain constraints. This is partially offset by a reduction in Procurement labor and vendor support costs.

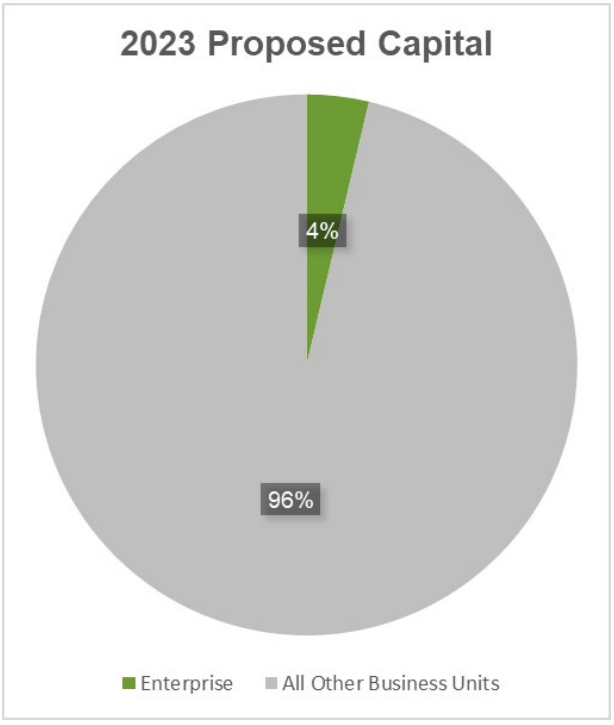
Enterprise Business Unit

The Enterprise budget includes corporate contingency, claims, reserves, settlements, and other company-wide special items. Also included is the cost of worker's compensation and other post-employment benefits.

Business Unit Budget Summary

The following section includes the budget report for the business unit presented by its segments and by the cost categories. Additionally, you can see from the charts what proportion the Enterprise Business Unit represents for SMUD for each of the cost categories.





Enterprise Budget Summary by Segment ($000s)

Segment by Funding Type	2022 Forecast	2022 Budget	2023 Proposed	$ Change vs Budget	% Change vs Budget
General					
O&M Expense	$12,448	$1,515	$1,519	$4	0%
Public Good Expense	15	-	-	-	-
Total O&M Expenses	12,463	1,515	1,519	4	0%
Capital Expenditures	-	-	8,152	8,152	100%
Segment Total	**12,463**	**1,515**	**9,671**	**8,156**	538%
Contingency					
O&M Expense	-	(10,699)	-	10,699	-100%
Public Good Expense	-	-	-	-	-
Total O&M Expenses	-	(10,699)	-	10,699	-100%
Capital Expenditures	-	(15,000)	15,000	30,000	200%
Segment Total	**-**	**(25,699)**	**15,000**	**40,699**	158%
Enterprise Business Unit					
O&M Expense	12,448	(9,184)	1,519	10,704	117%
Public Good Expense	15	-	-	-	-
O&M Revenue	-	-	-	-	-
Net O&M Expenses	12,463	(9,184)	1,519	10,704	117%
Capital Expenditures	-	(15,000)	23,152	38,152	254%
Capital Revenue	-	-	-	-	-
Net Capital Expenditures	-	(15,000)	23,152	38,152	254%
Total Business Unit Budget	**$12,463**	**($24,184)**	**$24,671**	**$48,855**	**202%**

The 2023 Proposed O&M Budget is higher than the 2022 Budget by $10.7M, or 117%. This Business Unit houses enterprise level costs for Contingency, Other Employment Benefits, and General/Miscellaneous items such as Claims Administration. The increase is due to planning a credit amount for Operational Excellence related items in 2022 that is not being carried forward in 2023 since any Operational Excellence savings are now embedded in the individual Business Unit Budgets.

The 2023 Proposed Capital Budget is higher than the 2022 Budget by $38.2M, or 254%. This represents a shift in methodology for capital reserve planning. In 2022 we planned a credit of $15M to anticipate slippage in capital costs. In 2023 we are moving back to our more conservative methodology of planning our normal capital reserve of $15M. There is also $8.2M planned for the interconnection fee as part of the Coyote Creek project.

Supplemental Information

1. Power Supply Details
    a. Power Supply Assumptions
    b. Energy Sales & Requirements
    c. Energy Requirements
    d. SMUD Generation Sources
    e. Purchased Power

2. Cost Categories

3. Cost Category Descriptions

4. Financial Statement Line Item Descriptions

5. Performance Metrics

6. Resolutions

Power Supply & Requirements

Power Supply Assumptions

The 2030 Zero Carbon Plan is the basis for the operating assumptions for the 2023 Budget. Electricity and natural gas prices are forecasted to be higher than what was projected in the 2022 Budget. The Upper American River Project (UARP) generation will be higher due to fewer planned outages, renewable generation is expected to be higher than the 2022 budget and thermal generation is expected to be lower.

Energy Sales & Requirements

Total expected supply requirements are forecasted to be approximately 3% higher than the 2022 budget. Our expected retail energy sales to customers are projected to increase and our expected system peak load is forecasted to decrease.

The following tables provide additional information regarding generation, purchased power and market transactions

Description	2022 Budget	2023 Proposed	Change vs Budget
Expected System Peak (MW)	2,874	2,806	(68)
Expected Retail Energy Sales (GWh)	10,166	10,458	292
Expected Wholesale Sales, Distribution & Transmission Losses (GWh)	444	452	8
Expected Supply Requirements (GWh)	10,610	10,910	300
Generation:			
Total SMUD Generation (GWh)	7,410	7,429	19
SMUD Generation as a % of expected supply requirement	70%	68%	-2%
Purchased Power:			
Net Purchased Power (GWh)	3,199	3,481	282
Net Purchased Power as % of expected supply requirement	30%	32%	2%
Gas:			
Expected Gas Burn (NG+Biogas) for Thermal Generation and Steam Sales (mmBtu)	40,112,300	38,291,660	(1,820,640)
Committed Fuel (NG+Biogas) Purchases (mmBtu)	33,998,352	31,722,212	(2,276,140)
Committed Purchases (NG+Green Gas) as a % of Expected for Thermal Generation and Steam Sales	85%	83%	-2%
Actual / forward prices of uncommitted transactions:			
On Peak Power Price Forecast ($/MWh)	$74	$88	$14
Off Peak Power Price Forecast ($/MWh)	$60	$75	$15
Flat Power Price Forecast ($/MWh)	$68	$82	$14
Forward Natural Gas Price Forecast ($/mmBtu)	$5.61	$6.55	$0.94

Energy Requirements

Summary (GWh)	2022 Budget	2023 Proposed	Change vs Budget	% Change vs Budget
Generation:				
SMUD-Owned Large Hydro	1,252	1,576	324	26%
SMUD-Owned Gas Fired	5,149	4,380	(769)	-15%
SMUD-Owned Renewable	1,009	1,473	464	46%
Total Generation	**7,410**	**7,429**	**19**	**0.3%**
Market Energy:				
Market Sales	(2,898)	(3,607)	(709)	24%
Long-Term Contracts	4,494	5,424	930	21%
Short-Term Purchases	63	0	(63)	-100%
Market Purchases	1,581	1,707	126	8%
Total Market Transactions	**3,240**	**3,524**	**284**	**9%**
Market Energy:				
Transmission Losses	**(41)**	**(43)**	**(2)**	**5%**
Total Supply Requirement	**10,609**	**10,910**	**301**	**3%**

The following pages have details about the budget assumptions for SMUD's power supply by generation and purchasing sources.

SMUD Generation Sources

SMUD Hydroelectric (Upper American River Project)

The 2023 Budget assumes median rainfall and normal starting reservoir levels in 2023. Generation is expected to be 1,303 GWh.

Other SMUD Generation: South Fork, Chili Bar, Photovoltaic, Hedge Battery, Solano Wind

The 2023 Budget assumes average generation subject to limitations governing the operation of each plant. The largest contributor, Solano Wind is expected to generate 593 GWh.

Cosumnes Power Plant

This 570 MW gas-fired combined cycle power plant began commercial operation in February 2006. Forecasted generation from this plant in 2023 is 3,761 GWh.

Carson Cogeneration

This gas-fired cogeneration project, which began commercial operation in October 1995, consists of a 65 MW combined cycle unit and a 42 MW peaking unit. With the installation of an auxiliary steam boiler in 2017, if running the cogeneration unit is uneconomic, it can be turned off. Energy will be supplied from the auxiliary boiler instead of the cogeneration unit. The forecasted generation from this facility in 2023 is 399 GWh.

Procter & Gamble Cogeneration

This gas-fired cogeneration plant began commercial operation in March 1997. It consists of a 136 MW combined cycle power plant and a 50 MW peaking unit that became operational in May 2001. With the installation of an auxiliary steam boiler in 2016, if running the cogeneration unit is uneconomic, it can be turned off. Steam will be supplied from the auxiliary boiler instead of the cogeneration unit. Forecasted generation from this facility in 2023 is 725 GWh.

Campbell Soup Cogeneration

This gas-fired combined cycle plant began commercial operation in December 1997. It consists of a 160 MW combined cycle power unit. Beginning in 2008 the 72 MW McClellan gas turbine is also included under SPA. Forecasted generation from these two units in 2023 is 591 GWh.

Purchased Power

The 2023 Budget assumes delivery of energy and capacity from the following contracts:

Counterparty	Capacity MW	Energy GWh	Expiration Date
Western Area Power Administration (WAPA) / Central Valley Project (CVP)	265 MW	511 GWh	
Western Area Power Administration (WAPA)		30 GWh	
Loyalton Biomass	4.2 MW	10 GWh	2023
Santa Cruz Landfill	1.5 MW	12 GWh	2024
Sutter Energy Center	258 MW	1,463 GWh	2024
Kiefer Landfill	12 MW	109 GWh	Kiefer I - 2024 Kiefer II - 2026
IBR Highwinds	50 MW	98 GWh	2025
MM Yolo	2.4 MW	21 GWh	2026
enXco - Solar	1 MW	2 GWh	2028
Feed-in-Tariff Solar Projects	100 MW	210 GWh	2030
Calpine Geysers Geothermal	100 MW	876 GWh	2032
Van Warmerdam Dairy Biogas	0.5 MW	2 GWh	2033
New Hope Dairy Biogas	0.4 MW	2 GWh	2033
Patua (aka Gradient) Geothermal	19 MW	146 GWh	2033
Conergy Solar	1.3 MW	2 GWh	2034
Van Steyn Dairy Biogas	0.12 MW	1 GWh	2035
Rancho Seco Solar I	11 MW	22 GWh	2036
Recurrent Solar	60 MW	171 GWh	2037
Rancho Seco Solar II	160 MW	284 GWh	2039
CalEnergy	30 MW	223 GWh	2039
Grady Wind	200 MW	897 GWh	2043
Wildflower Solar	13 MW	31 GWh	2045
Navajo Solar	100 MW	301 GWh	2051

The balance of energy requirements to meet forecasted sales to customers will be met by short-term purchases of energy.

Some of the long-term and short-term contracts will be delivered over SMUD's 528 MW share of the California-Oregon Transmission Project (Northwest) or under the South-of-Tesla transmission agreement with PG&E (Southwest & Southern California). These purchases are coordinated through SMUD's membership in the Western Systems Power Pool (WSPP), which facilitates sales and exchanges among its 30 member utilities, and through market trading.

Lastly, another 5-year extension to the WAPA Custom Product ~300-MW sale/purchase contract with WAPA allows SMUD to import additional power from California Oregon Border through 2024.

Cost Categories

The Budget includes the following major components:

OPERATING EXPENSES (O&M): Expenses related to producing and acquiring energy, operating and maintaining the electrical delivery system, providing service to customers including public goods (energy efficiency, low-income assistance, new renewable generation sources, and research and development of advanced technologies) programs, and corporate activities. Included within this category as a separate line item are commodity costs associated with energy supply. These costs include purchased power, fuel for energy production, and transmission wheeling costs.

Also included under Zero Carbon Energy Solutions are fuel, operating and interest expense associated with SFA: Carson Cogeneration plant, Procter & Gamble plant, Campbell Soup Cogeneration plant, Cosumnes Power Plant; NCGA No. 1, and NCEA pass-through gas costs. These expenses are shown in the SMUD Budget because SMUD will reimburse SFA, NCGA No. 1 and NCEA for their costs under the terms of the Power and Gas Purchase Agreements. The detailed SFA, NCGA No. 1 and NCEA Budgets are also in separate booklets and/or resolutions as they will be approved by the SFA, NCGA No. 1 and NCEA Commissions.

CAPITAL INVESTMENT: Investment in additions and improvements to SMUD's property, plant and equipment. The Capital Investment budget includes all qualifying costs related to acquiring or constructing tangible and intangible assets which meet SMUD's capitalization guidelines - cost exceeding $5,000 and an estimated service life greater than two years. SMUD follows Federal Energy Regulatory Commission (FERC) capitalization guidelines which dictate the inclusion of all direct costs (labor, employee benefits, materials, services and other) and a proportionate share of indirect costs (engineering and construction supervision and support, transportation, insurance, etc.) related to capital projects. Capital assets are depreciated on a straight-line basis over their estimated useful service life.

ALLOCATED: Costs in four business units: Information Technology, Workforce, Diversity & Inclusion, Energy Delivery & Operations and Corporate, which enable the business units to perform work. These costs are allocated to both O&M and capital, based on the quantity of labor hours. The aggregated allocated costs are presented in the budget documentation separately as information only; the actual costs are reflected in each of the Business Unit's budgets as the total cost of their work processes.

DEBT SERVICE: Interest expense on and principal repayments of SMUD's outstanding long-term debt and commercial paper notes, any revenues or payments on interest rate swaps, and trustee fees and debt issuance costs. Detail is provided in the Debt Service Summary.

Return to Budget Summary section

Expense Type Descriptions

Activity Type Labor: SMUD employee labor planned to a business unit work process. Each Activity Type has a standard hourly charge-out rate that is based on work (non-leave) hours, average annual employee salaries, and includes benefits.

Materials & Equipment: Materials and equipment either issued from inventory or purchased for a specific project or task.

Other Expenses: Is a grouping of several non-material costs including dues and publications, memberships, training, travel, rents, leases, license fees, taxes, advertising, utilities, and postage.

Outside Services: The cost of outside services contracts, consultants, and outside legal counsel services.

Insurance: The cost of property and liability insurance.

Rebates & Incentives: The cost of rebates and incentives paid to customers for energy efficiency, building electrification and electric transportation programs.

Commodities: The cost of purchased power, wheeling, and fuel for SMUD and JPA generating plants, net of surplus/wholesale power sales which is revenue generated from selling energy which is not needed to meet SMUD retail load.

Reimbursements: Reimbursements, cost-sharing grants, or pass-through amounts received from outside parties to reduce net costs.

Allocations/Surcharges: Includes cost center overheads and surcharges. Cost center overheads are a rate developed to recover the indirect costs of a Cost Center and includes activity type labor for administration, supervision, training, and miscellaneous general expenses such as office supplies and travel. It is assessed per hour of activity type labor planned directly to the work. Surcharge rates are developed to recover 1) an allocation of internal service costs such as transportation and technology assessed per hour of activity type labor planned directly to the work, 2) the costs of procuring outside service agreements (excluding outside legal service) and cost of procuring, storing, and handling materials and equipment assessed relative to the contract amount or whether material issued from inventory or purchased specifically for a project or task, and 3) miscellaneous general and administrative SMUD expenses including insurance and risk management, cash management, debt management, and other assessed to capital and public good projects based on a flat percentage of overall SMUD activity type labor.

Financial Statement Line Item Descriptions

Sales to Customers: The Sales to Customers budget is the revenue received from our residential and commercial electrical customers for power usage.

RSF & Other Deferrals: The Rate Stabilization Fund (RSF) & Other Deferrals budget includes revenues deferred to the rate stabilization fund.

Other Electric Revenue: The Other Electric Revenue budget is the revenue received from other services such as Community Energy Services (CCAs), LCFS revenues, steam sales, rental income and miscellaneous services revenues.

Commodities: The Commodities budget includes the long, medium and short-term power, electric transmission, and natural gas purchases. The budget is shown net of surplus and wholesale power sales revenue, which represents revenues from the sale of generation and bulk power purchases which are surplus to our generation needs.

Customer & Community Services: The Customer & Community Services budget includes all residential and commercial customer-focused services such as the Contact Center, retail client services and customer experiences. Also included are costs for billing, revenue assurance, and commercial development and business attraction. Lastly, this budget includes support of the Community Energy Services (CCAs).

Energy Delivery & Operations: The Energy Delivery & Operations budget includes the costs of generating electricity, delivering it to our customers and maintaining the ability to do so safely and reliably. Also, the cost of electrical transmission, line inspections, corrective and preventative maintenance, vegetation management, and underground cable work are included here. Lastly, this budget includes program management services for construction and other non-technology projects, transmission and distribution planning and operations, environmental, safety and real estate services.

Zero Carbon Energy Solutions: The Zero Carbon Energy Solutions budget includes the design, construction, maintenance, and transition of SMUD's power generation assets, the sale and procurement of energy resources and settlements of energy transactions, and customer program implementation. This consists of operating and maintaining SMUD's hydroelectric reservoirs and powerhouses, thermal and cogeneration power plants, gas pipeline, and renewable generation wind and solar resources. Also included is establishing and developing new business partnerships that align and support SMUD's 2030 zero carbon goal.

Enterprise Strategy: The Energy Strategy budget includes enterprise strategic planning and prioritization, resource market strategy and planning, customer, and grid strategy support of DERs, integrated distributed resources, low carbon fuel standard work, Zero Carbon and R&D strategies. Also, included are revenue strategy functions like load forecasting and rates and pricing as well as enterprise prioritization.

Information Technology: The Information Technology budget includes costs for the delivery and support of information technology systems, applications, and hardware. Also included are the costs associated with maintaining and ensuring IT system availability, providing a framework to safeguard information, planning, and setting the enterprise technology strategy, and supporting the enterprise's technology needs.

Workforce, Diversity & Inclusion: The Workforce, Diversity & Inclusion budget includes the costs of employee services such as talent management, benefits management, learning and development programs as well as work for developing and implementing strategies and initiatives to establish SMUD as a diverse and inclusive employer. Also included are sustainable communities' initiatives and programs.

Corporate: The Corporate budget includes the costs associated with corporate governance such as executive management and internal audit; strategic and finance functions like accounting, treasury, financial planning, and enterprise performance; and enterprise services such as procurement, warehouse, vehicle fleet operations, facilities operations and maintenance, and communications, marketing, and community relations. Also included are legal functions including legislative, regulatory, government affairs, corporate legal and records management, as well as ensuring adherence to all industry reliability and compliance standards and requirements.

Enterprise: The Enterprise budget includes corporate contingency, claims, reserves, settlements, and other company-wide special items. Also included is the cost of worker's compensation and other post-employment benefits.

Public Good: Public Goods programs include customer public good programs such as solar rebates and incentives, low income & medical rate subsidies and administration, emerging technologies, energy efficiency, and building electrification. It also includes energy operations public good programs such as EV charging, research and development, renewable initiatives such as biomass gasification, and distributed technology.

Depreciation, Depletion and Amortization: The depreciation, depletion and amortization budget is the depreciation of SMUD's electric utility plant-in-service and the Carson Cogeneration, Procter & Gamble Cogeneration, Campbell Soup Cogeneration and Cosumnes plants. The Budget amount is based on existing plant-in-service and estimated completion dates for construction work-in-progress, and the most current depreciation rates. It also includes amortization of costs associated with the new operating license for SMUD's Upper American River Project (UARP) hydroelectric generation facilities and Rancho Seco fuel decommissioning.

Interest Income and Other: The interest income and other budget is SMUD's interest income, based on the assumption that SMUD will earn an average of approximately 0.85 percent on unrestricted and restricted cash balances. This line also includes any interest earned by SFA, NCGA No. 1 and NCEA on their fund balances. Also included in this line is miscellaneous income.

Other Non-Cash: The other non-cash budget includes write-off of preliminary project costs, which is an estimate of costs to be written off related to projects which SMUD has deferred preliminary costs until feasibility or planning studies can be completed and final determination can be made on whether such projects will be developed. It also includes the corporate capital surcharge. Also

included is Contribution in Aid of Construction (CIAC). This represents the recognition of money received for prior development costs and for grant projects for capital items. The receipt of funds being recognized on the income statement is made in order to match the money received with the depreciation. Additionally, advance capacity payments are included here, as well as Fuel Sales to SMUD from NCGA and NCEA and uncollectable accounts on loan and other billings, as well as some JPA allocations.

Interest Expense: The interest expense budget includes interest on long-term debt and commercial paper which reflects SMUD's obligation for existing debt, and interest expense on SFA, NCGA No. 1 and NCEA bonds.

Interest Payments: Represents the cash basis interest payments on SMUD, SFA, NCGA No.1 and NCEA bonds, commercial paper notes, and SMUD's share of TANC bonds, not including amortization of deferred bond issuance costs and gain/loss on bond refundings.

Principal Payments: Represents scheduled repayment of long-term debt.

Cash Available to Pay Fixed Costs: Represents the net cash flow before interest expense on a consolidated basis.

Fixed Charge Coverage Ratio: The fixed charge coverage ratio is a measure of the number of times net cash flow before interest expense on a consolidated basis covers total cash debt service payments, including both interest and principal, for SMUD, SFA and SMUD's share of TANC debt service.

Rate Stabilization Fund: This is a fund set up by the Board to provide a cushion against a rate increase in years where weather conditions or other non-controllable events cause large budget variances. No transfers in or out of the Rate Stabilization Funds are budgeted.

Unrestricted Cash: Cash available for operating and capital expenditures. Detail of change is shown on the Pro Forma Sources and Uses of Cash.

Restricted for Debt Service: Amounts deposited in restricted debt service funds as fixed by Bond Resolutions.

Decommissioning Fund: Amounts set aside with external trustee to cover estimated cost of decommissioning Rancho Seco. SMUD received a certification of completion of decommissioning from the Nuclear Regulatory Commission (NRC) in 2009. The remaining funds are for decommissioning of the spent fuel storage facility in 2028.

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Performance Metrics

Strategic Direction	Metric	2022 Forecast	2022 Target	2023 Target
SD-2 Competitive Rates	**Competitive System Average Rates**			
	Percent below Pacific Gas & Electric	45.5%	18.0%	18.0%
	Percent below each Customer Class	42.0%	Meet 10% Goal for each Customer class	Meet 10% Goal for each Customer class
SD-3 Access to Credit Markets	**Fixed Charge Ratio of at least 1.50 [1]**	1.50	1.93	2.05
	SMUD Availability of Generation Assets [2]	74%	97%	97%
	Overall Availability of Transmission Assets	100%	>99.99%	>99.99%
	Distribution System Reliability [3]			
	Duration of Outages (SAIDI)			
	SAIDI With Major Event	N/A	67.5 - 93.3 min	67.5 - 93.3 min
	SAIDI Excludes Major Event	62.3	49.7 - 68.7 min	49.7 - 68.7 min
	Frequency of Outages (SAIFI)			
	SAIFI With Major Event	N/A	0.99 - 1.33	0.99 - 1.33
	SAIFI Excludes Major Event	1.06	0.85 - 1.14	0.85 - 1.14
SD-5 Customer Relations	**Customer Satisfaction Survey [4]**	95%	95%	95%
	Value for What You Pay [5]	72%	70%	73%
SD-6 Safety	**Shift safety culture, improve safety results, and maintain positive financial performance**			
	Leading Indicator			
	Employee-Supervisor Interactions [6]	152%	95%	95%
	Incident Reports ≤ 3 days [7]	100%	95%	95%
	Incident Investigations ≤ 5 days [8]	100%	95%	95%
	Days Away Restricted Time (DART)			
	Severity incidents to 13 or less than by 2025	5	23	19
	Workers' Compensation			
	Workers' compensation program performance	$0.43	$0.76	$0.67
SD-8 Employee Relations	**Employee Engagement [9]**			
	Sustain Employee Engagement	N/A	N/A	>80%
SD-9 Resource Planning	**Reduce carbon emissions**			
	Energy efficiency and electrification from buildings [10] (2030 goal: 365,000)	91,803 [a]	131,359 [b]	99,987 [c]
	Energy efficiency and electrification from transportation [11] (2030 goal: 1,000,000)	94,848 [a]	88,383	117,000 [b]
	Procure Renewable Energy to achieve SMUD's Renewable Portfolio Standards requirements [12]			
	% of SMUD's Retail Sales (Statutes require: 44% by 2024, 52% by 2027, and 60% by 2030)	37.0%	35.8%	41.3%
SD-13 Economic Development	**Supplier Education and Economic Development (SEED) - Percent of Contract Dollars [13]**	22%	20%	20%

Notes to Performance Metrics:

1. Due to Cosumnes Power Plant extended outage, the 2022 commodity budget was augmented by an additional $309.3M. This additional commodity cost resulted in substantially lower net income and fixed charge forecasts.

2. The 2022 Forecast is under target due to the outage at the Cosumnes Power Plant.

3. N/A – No Major Events in 2022. Barring any major events, we are on track to meet reliability targets for both SAIDI and SAIFI. The major contributing factors to reliability this year are vehicle accidents, equipment failures, and underground cable failures.

4. April 2022, SMUD resumed normal collections activity which increased customer interactions and an additional need for SMUD support. Extensive customer communication was sent across various channels to help customers prepare for this change. In addition, Contact Center staff highlighted the importance of delivering an exceptional customer experience through refresher and soft-skills training, partnerships with agency resources to assist limited-income customers, and by leveraging flexible payment arrangement options for customers to manage their bills.

5. Board target is to reach 70% by the end of 2025 and 80% by the end of 2030, with neither the average commercial customer score falling below 69%, nor the average residential customer score falling below 65% in any year.

6. Individual workgroups across SMUD determine the target or frequency of interactions per month, quarter or twice a year with an increased focus on "Eyes on Work." As of September 2022, the target for Supervisor Employee Interactions was 6,905 the actual was 10,471 interactions for a Percentage of 152% observed for SMUD. All work group are on target to meet or exceed their 2022 Supervisor Employee Interaction target.

7. As of the end of September, 13 of the 13 incidents included in this metric were reported within 3 days of the supervisor being notified of the incident. The prediction is based off of the performance in the last 9 months.

8. As of the end of September, 13 of the 13 incidents included in this metric have been investigated and completed in SITS on or before the due date. The prediction is based off of the performance in the last 9 months.

9. Next Survey Q1 of 2023.

10. All figures in this metric series are cumulative.
    a. Forecast is lower than target primarily because of the following:
        i. Commercial energy efficiency and electrification programs experienced reduced activity and participation as businesses continue to experience challenging financial conditions, inflationary impacts, and increased project costs,
        ii. Home Electricity Reports program was delayed due to longer than expected operational readiness work,

iii. Target is a cumulative goal and includes shortfalls from prior years impacted by the COVID pandemic with continued economic and supply chain challenges.

b. 2022 target was set based on the resource modeling tools and framework of the 2019 IRP which is being updated to reflect the assumptions and framework in line with the Zero Carbon Plan
c. 2023 target (TBD) developed reflecting the most current resource planning and carbon reduction data and assumptions in the Zero Carbon Plan

11. All figures in this metric series are cumulative.
    a. Carbon emission reductions from transportation electrification are based on an average of 3 tonnes per equivalent light duty vehicle.
    b. 2023 target developed reflecting the most current resource planning and carbon reduction data and assumptions in the Zero Carbon Plan.

12. SMUD expects its 2022 Renewable Portfolio Standard (RPS) percentage to be ~37% using in year purchases and banked surplus from previous years. While we are slightly under our target for 2022 due to renewable project delays, the RPS rules allow for additional purchase of renewables across the compliance period such that total renewable generation meets the compliance period total requirements (current compliance period (4) runs from 2021 to 2024). Thus, we will procure additional renewables in 2023 and 2024 and are on track to fulfill our RPS obligations for compliance period 4.

13. In 2022 SEED has benefited from a number of large construction contract awards with SEED prime suppliers. This attributes to the above target forecast.

Resolutions

1. 2023 Budget Resolution
2. Debt Resolution

RESOLUTION NO. 22-12-05

WHEREAS, the proposed 2023 Budget is expected to result in a positive net income for 2023; **NOW THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. This resolution may be referred to as the 2023 Budget Resolution.

Section 2. (a) There is hereby appropriated from the General Fund sufficient monies for the payment of demands against SMUD which relate to obligations incurred for the purposes and within the amount specified for such purposes in the following projection of SMUD's program for the period January 1, 2023, through December 31, 2023.

Operations and maintenance:	
Commodity - purchased power, fuel, and wheeling	$484,983,574
Public Goods	75,458,718
Customer, energy delivery, enterprise strategy, workforce diversity & inclusion, information technology, corporate services and Rancho Seco	692,762,054
Sub-Total	$1,253,204,346
Debt Service	225,492,038
Capital and reserve	624,924,320
TOTAL	$2,103,620,704

(b) The Commodity line item budget is based on assumptions of average rainfall and temperatures during 2023. SMUD has in place a

Hydro Generation Adjustment (HGA) mechanism whereby, based on the actual rainfall amounts between April 1, 2022 and March 31, 2023 in comparison to the budget assumptions, SMUD may transfer funds to or from the Hydro Rate Stabilization Fund and, once pre-established limits are met, increase or decrease customer rates. The Commodity line item budget will be increased or reduced based on the actual transfer and/or change in customer revenues from the HGA adjustment.

(c) SMUD also has in place or may enter into additional agreements under which monies will be received by SMUD in the event actual weather conditions are drier than average. In the event of below average rainfall, the Commodity line item budget will be increased by an amount equal to the payments received under these contracts.

(d) SMUD has budgeted to receive 511 gigawatt hours of energy in 2023 under its contract with the Western Area Power Administration (WAPA). This energy primarily is generated at Central Valley Project hydroelectric plants, and the actual quantity of energy received will be dependent on rainfall, carryover water storage and operation of the WAPA system to meet contractual water deliveries. Because WAPA generation facilities are spread over a wide area, insurance is not practical for offsetting variations of energy deliveries due to weather. One purpose of the Rate Stabilization Fund is to mitigate such variations. The Accountant is hereby authorized to transfer funds as follows based on actual WAPA energy deliveries in the 2023 season: for every megawatt hour below 511,000 transfer NP15 EZ Gen Hub (NP15) power price per MWh from the Fund, up to a maximum of $3.5 million; for every megawatt hour over 511,000 transfer the NP15 power price per MWh into the Fund, up

to a maximum of $30 million. The Commodity line item budget will be increased or reduced accordingly. The NP15 power price for the transfers is the weighted average of actual NP15 power prices based on when the energy from WAPA is received by SMUD on an hourly basis.

(e) Budgeted energy purchases necessary to meet customer energy sales requirements (10,458 GWh) are based on average weather conditions and expected customer growth in 2023. Should actual weather conditions or growth levels cause SMUD retail sales and related energy requirements to be higher, the Commodity line item budget will be increased by the NP15 power price per megawatt-hour of additional retail energy sales to offset the cost of these sales.

(f) SMUD participates in regulatory programs such as Low Carbon Fuel Standard (LCFS) and Cap-and-Trade. Under these programs, SMUD has the option to monetize the credits and allowances applicable to these programs through sales transactions. When SMUD collects revenues through these sales, it is required to apply the proceeds toward specific expenses that support the program goals. An additional purpose of the Rate Stabilization Fund is to mitigate fluctuations from regulatory programs. The Accountant is hereby authorized to transfer funds to or from the Rate Stabilization Fund to match LCFS and Cap-and-Trade revenues with expenses. The budgeted amount will be increased or decreased accordingly.

(g) For purposes of Section 11891.6 of the Municipal Utility District Act, there shall be deemed added to each line item, in section 2a, a 10 percent contingency. Demands against SMUD which relate to obligations incurred for each line item and are within such line item amount plus the 10 percent contingency may be paid

without prior specific approval of this Board, provided the total of such payments during 2023 may not exceed the total budget amount plus this 10% contingency, plus the commodity contingency and adjustments for weather hedge contracts, higher retail sales and Rate Stabilization transfers as set forth in paragraphs (b), (c), (d), (e) and (f) above.

Section 3. Demands against SMUD may be paid without the prior specific approval of this Board if they relate to obligations incurred for the purpose and within the amounts specified in Section 2, provided such demands are approved by the CEO & General Manager or someone to whom he has delegated such approval authority. It is the purpose and intent of this paragraph to delegate to the CEO & General Manager authority to make purchases, to negotiate and execute contracts, and expend funds in any manner necessary or appropriate to the administration of the business affairs of SMUD, all within the amounts and for the purposes set forth above, and subject to the provisions of existing law and of all the duly passed resolutions of this Board, including the Board-approved delegations of authority.

Section 4. At monthly intervals the Treasurer shall transfer from the General Fund appropriate amounts into each of the various funds established to service SMUD's general obligation indebtedness, its Electric System Revenue Bond indebtedness, and its Electric Revenue Bond indebtedness in approximately equal installments as set forth in the tabulations on file with the Accountant. Investment authority, for all funds, is delegated to the Treasurer for a one-year period in accordance with California Code Section 53607.

Section 5. The number of permanent full-time employees during 2023 shall not exceed 2,242 employees plus a five percent contingency without further authorization of this Board.

Section 6. The Public Goods Charge shall be adjusted from 15.05 percent of 1994 revenues to 16.77 percent of 1994 revenues. The percentage allocation for the public goods charge expenditures shall be adjusted from 6.61 percent to 6.60 percent for low-income assistance, and from 6.56 percent to 8.16 percent for energy efficiency, and from 1.88 percent to 2.01 percent for research and development, and stayed the same at 0.00 percent for new renewable generation.

Section 7. The authorization for spending includes $20.4 million of commodity for Valley Clean Energy Alliance which will be reimbursed in full to SMUD.

Approved: December 8, 2022

INTRODUCED: DIRECTOR SANBORN				
SECONDED: DIRECTOR KERTH				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO				X
SANBORN	X			

RESOLUTION NO. 22-12-06

Supplemental Resolution (Supplemental to Resolutions No. 6457, 8107, 83-7-26 as amended by Resolution No. 87-10-22, No. 92-12-29, No. 93-12-19, No. 94-12-16, No. 95-12-10, No. 96-12-07, No. 97-12-18, No. 98-11-12, No. 99-12-10, No. 00-12-11, No. 01-12-02, No. 02-11-04, No. 03-12-14, No. 04-12-11, No. 05-12-13, No. 06-12-08, No. 07-12-08, No. 08-12-05, No. 09-12-08, No. 10-12-03, No. 11-12-08, No. 12-12-06, No. 13-12-09, No. 14-12-13, No. 15-12-08, No. 16-12-14, No. 17-12-13, No. 18-12-12, No. 19-11-05, No. 20-12-14, and No. 21-12-11) declaring the intention of the Board of Directors of the Sacramento Municipal Utility District to Authorize the issuance of additional Revenue Bonds	)

WHEREAS, Sacramento Municipal Utility District ("SMUD") on July 23, 1970, May 2, 1974, and July 21, 1983, by the adoption by its Board of Directors of Resolutions No. 6457, 8107, and 83-7-26, as amended by Resolution No. 87-10-22 adopted October 1, 1987; Resolutions No. 92-2-11, No. 92-12-29, No. 93-12-19, No. 94-12-16, No. 95-12-10, No. 96-12-07, No. 97-12-18, No. 98-11-12, No. 99-12-10, No. 00-12-11, No. 01-12-02, No. 02-11-04, No. 03-12-14, No. 04-12-11, No. 05-12-13, No. 06-12-08, No. 07-12-08, No. 08-12-05, No. 09-12-08, No. 10-12-03, No. 11-12-08, No. 12-12-06, No. 13-12-09, No. 14-12-13, No.15-12-08, No.17-12-13, No. 18-12-12, 19-11-05, 20-12-14, and 21-12-11 adopted by the Board of Directors on February 6, 1992, December 17, 1992, December 16, 1993, December 15, 1994, December 14, 1995, December 19, 1996, December 17,

1997, November 30, 1998, December 2, 1999, December 7, 2000, December 6, 2001, November 7, 2002, December 4, 2003, December 2, 2004, December 1, 2005, December 7, 2006, December 6, 2007, December 4, 2008, December 3, 2009, December 3, 2010, December 1, 2011, December 6, 2012, December 5, 2013, December 4, 2014, December 3, 2015, December 1, 2016, December 21, 2017, December 20, 2018, November 21, 2019, December 10, 2020, and December 9, 2021, respectively (collectively, the "Prior Resolutions"), found and determined that it was necessary to raise funds by the issuance of revenue bonds in the maximum principal amount of $8,255,000,000 pursuant to Sections 12850, et seq., of the California Public Utilities Code (the "Act"); and

WHEREAS, in order to provide reliable electric service to its customers, it is necessary for SMUD to make certain capital improvements and other capital expenditures to its system, which capital improvements and other capital expenditures are designed to have useful lives of up to 40 years, or more; and

WHEREAS, to fairly apportion the costs of such capital improvements and other capital expenditures among SMUD's customers who will receive the benefits of such improvements, SMUD has determined to authorize the financing of such improvements and expenditures with bonds of SMUD; and

WHEREAS, to provide bond financing for such improvements and expenditures, it now appears necessary to increase the authorized issue of revenue bonds that may be issued by SMUD pursuant to the Act; and

WHEREAS, the Board of Directors of SMUD desires to inform its customers and the public of its plans for financing capital improvements and other capital expenditures to its system by specifying certain items for which the proceeds of said revenue bonds are to be used, which uses shall not include daily maintenance and operations costs; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. The Board of Directors of SMUD declares its intention to authorize the issuance of additional revenue bonds or Clean Renewable Energy Bonds for the purpose of financing, in whole or in part, the costs of the capital items identified in SMUD's 2023 capital budget, 2021 and 2022 capital expenditures not previously financed, the prepayment of purchased power or natural gas and the purchase of natural gas reserves, pipelines or storage facilities, for all of which SMUD is authorized by law to issue such bonds. SMUD has paid or reasonably expects to pay certain expenditures (the "Reimbursement Expenditures") in connection with such capital items prior to the issuance of such bonds, and hereby officially declares its intent to use certain proceeds of such bonds to reimburse the Reimbursement Expenditures. The declarations contained in this section are made solely for purposes of establishing compliance with Section 1.150-2 of the U. S. Treasury Regulations, and do not bind SMUD to make any expenditure, incur any indebtedness or proceed with the above-mentioned capital expenditures.

Section 2. The maximum principal amount of the additional revenue bonds proposed to be issued under this supplemental resolution is

$400,000,000. Such maximum principal amount is in addition to the $8,255,000,000 principal amount of revenue bonds authorized pursuant to the Prior Resolutions. Such additional bonds may be issued in series from time to time, and it shall not be necessary that all of the bonds proposed to be issued be issued at any one time.

Proceeds from the issuance of these bonds will be used to finance capital improvements identified in SMUD's 2023 capital budget, 2021 and 2022 capital expenditures not previously financed, capital expenditures for the prepayment of purchased power or natural gas and the purchase of natural gas reserves, pipelines or storage facilities. The declarations contained in this section are made solely for purposes of establishing compliance with Section 12852 of the California Public Utilities Code, and do not bind SMUD to make any expenditure, incur any indebtedness or proceed with the above-mentioned capital expenditures.

Section 3. The maximum term of any of such bonds is 40 years. Said maximum term shall be calculated in each case from the date of each series of bonds in the event the maximum authorized amount is divided into two or more series.

Section 4. The maximum rate of interest to be payable upon such bonds shall not exceed the interest rate per annum equal to the greater of fifteen percent (15 percent) per annum or the yield of United States Treasury bonds having a remaining term equal, as nearly as practicable, to the final maturity of such bonds, as determined by SMUD as of the date of sale of such

bonds, plus three percent (3 percent). The maximum discount with respect to such bonds shall not exceed ten percent (10 percent).

Section 5. This resolution shall take effect immediately, subject only to the right of referendum provided in Article 6a of Chapter 6 of Division 6 of the California Public Utilities Code (beginning at Section 12850 thereof).

Section 6. The Secretary of SMUD is hereby directed to publish a copy of this resolution once a week for two successive weeks in a newspaper of general circulation published within SMUD. At any time within 60 days after the date of the second such publication, a referendum petition signed by voters in number equal to at least three percent (3 percent) of the total vote cast, as defined in Section 11507 of the California Public Utilities Code, demanding the submission of this resolution to a vote of the voters of SMUD for their assent to the issuance of the proposed bonds, may be filed with the Secretary of SMUD. Upon presentation to the Secretary of SMUD of such a referendary petition, this resolution shall not be of effect unless and until it has been assented to by the voters.

Approved: December 8, 2022

INTRODUCED: DIRECTOR HERBER				
SECONDED: DIRECTOR FISHMAN				
DIRECTOR	AYE	NO	ABSTAIN	ABSENT
ROSE	X			
BUI-THOMPSON	X			
FISHMAN	X			
HERBER	X			
KERTH	X			
TAMAYO				X
SANBORN	X			

SMUD®

November 5, 2021
GM 21-280

BOARD OF DIRECTORS

Re: 2022 SMUD Proposed Budget

Dear Board Members:

I'm pleased to submit SMUD's proposed 2022 Budget. It provides funding for operations and maintenance (O&M) and capital programs needed to successfully meet all the Board's Strategic Directions and deliver on our 2030 Clean Energy Vision in the coming year and ensures we'll continue to do so in the future.

Executive Summary

As a community-owned, not-for-profit utility, we look holistically at our budget, programs, projects, and initiatives each year to make sure we continue to deliver value to our customers and community in a way that maximizes benefits to all communities and the 1.5 million people we serve.

With the Board's leadership, we embarked on a bold journey in 2021 to remove all carbon emissions from our power supply by 2030, while maintaining our world class reliability and keeping any needed rate increases within the rate of inflation. As the Board knows, our carbon reduction goal is the most ambitious of any large utility in the nation. This budget proposal reflects our 2030 Clean Energy Vision and other changes since 2021 budget, including our organizational realignment. The realignment has allowed us to consolidate functions and increase organizational efficiency to free up funds that can support achieving our 2030 zero carbon goal, drive prioritization, harness innovation and sharpen our focus on diversity, equity, and inclusion.

Our 2022 proposed budget is ambitious, and funds far-reaching initiatives, which we've grouped into 5 themes: safety and reliability, affordability, organizational agility, environmental leadership, and community vitality, which you will see during staff presentations and in the budget documentation. Staff across the organization have been thoughtful in developing the 2022 Budget to ensure we continue to fund the activities that are critically important to support our customers and community while also funding activities that support SMUD's long-term success and leadership position. Included are our investments in accelerating our carbon reduction efforts, infrastructure investments, and initiatives to create a beneficial impact for our community by leveraging our strategic partnerships, such as our Sustainable Communities program, continuing to work with our low-income customers and support our commitment to embed Diversity, Equity & Inclusion (DE&I) in everything we do at SMUD. By partnering

with key community and customer partners, we continue to deliver on our track record of maximizing community impact, by ensuring every dollar we spend delivers the most value possible.

The proposed 2022 Budget Authorization request is **$1.7 billion**, which is **$9 million lower than the 2021 Budget**, primarily due to lower capital expenditures.

We know combatting climate change is one of the most pressing imperatives facing mankind and we're investing in delivering on our Zero Carbon Plan. Our O&M budget (line c in the table below) is increasing by $28 million while our Public Good budget (line b) is decreasing slightly, by $4.5 million, as we reallocate funds from a placeholder in the 2021 budget to specific programs in the 2022 budget. Key initiatives included in our 2022 O&M budget include electric transportation incentives, building electrification programs and other carbon reducing efforts. As the Board knows, electrification is a critical part of our zero carbon future, and an important part of our strategy to continue to be a leader in the region's transformation to a Clean PowerCity^{SM} for all of our customers. We're continuing to make investments for our low-income customers and under-resourced communities so that all customers benefit from our carbon reduction efforts. The budget funds customer outreach and education for these efforts. The O&M budget also includes increased funding for vegetation management, wildfire mitigation actions, cyber security and property and casualty insurance. While staff works diligently to minimize budget impacts from these items, many increases are outside of our control.

Capital (line d) is decreasing by $31 million. Major capital projects for 2022 include continuing to build Station G, expanding the Solano Wind Farm and ongoing work at Union Valley in support of our 50-year hydro license. The 2022 Budget includes funding for new and continuing technology projects, such as the Advanced Distribution Management System (ADMS) and Distributed Energy Resource Management Systems (DERMS) to provide increased visibility and management of distributed energy resources, Workforce Optimization to maximize the field crews scheduling and work efficiency and Talent Technology Transformation (T3) to manage hiring, onboarding and talent management processes holistically through a single technology platform.

The 2022 Budget authorizes 2,210 full-time positions and funding for 39 limited-term positions. There is no change to our overall staffing level from last year's budget despite the many new initiatives to achieve our ambitious new carbon reduction goal. This is a reflection of our success in creating efficiencies within the organization due to the realignment. The budget includes funding for our future workforce pipeline needs with student positions.

We expect a slight increase in our customer count and kWh sales of electricity in 2022. Our commodity budget (line a) remains flat as the various components in our portfolio are changing – we are realizing the savings of a higher priced commodity contract ending, coupled with higher power, natural gas and resource adequacy prices. We recognize the potential for new growth related to building electrification, electric vehicle adoption and mixed-use commercial/residential sales growth, and have maintained

conservative planning assumptions so we can act nimbly as business conditions change. To manage potential impacts on our budget and operations, we'll monitor these and other factors throughout the year, including the local economy, construction costs and any supply chain and labor shortages.

Budget breakdown

Here is a brief overview of the proposed 2022 Budget compared to the 2021 Budget, dollars in millions ($M):

	2021 ($M)	2022 ($M)	Change ($M)
Commodity (a)	$440.9	$440.7	($0.2)
Public Goods excluding subsidies (b)	68.1	63.6	(4.5)
Other O&M (c)	631.2	659.6	28.4
Subtotal	**$1,140.2**	**$1,163.9**	**$23.7**
Debt Service	213.7	212.2	(1.6)
Capital (d)	390.9	359.9	(31.0)
Total Budget Authorization	**$1,744.8**	**$1,735.9**	**($8.9)**

Totals may reflect minor rounding differences.

The total public good budget includes an additional $35 million for rate subsidies that are not included in the Budget Authorization because the Board previously approved these as a component of the rate tariff.

Additional Budget details

The following sections provide details on the major initiatives and programs funded in the 2022 Budget, grouped by the Board's Strategic Directions (SD).

Competitive Rates (SD-2)

The 2022 Budget reflects the first year of our recently approved rate increases that the Board adopted in September 2021. Commodity costs make up a good portion of our total O&M budget. Staff has locked in prices for most of our expected energy requirements for 2022 to ensure cost and rate stability for customers. Only a small portion of budgeted energy purchases are exposed to short-term market price fluctuations – a beneficial practice, especially during the price volatility currently reflected in California power and energy prices.

We'll enter 2022 with approximately $56 million in the Hydro Rate Stabilization Fund (HRSF) and $69 million in the Rate Stabilization Fund (RSF), net of Low Carbon Fuel Standard (LCFS) and Cap and Trade (AB32) funds. These reserve funds help us

absorb higher energy costs when hydroelectric production is down and serve as a buffer against unexpected financial developments.
In 2022, we'll implement the Board-approved Solar and Storage rate and an optional Critical Peak Pricing rate, plus we'll be looking to pilot and test more new optional rates.

We know our customers expect us to keep our rates low while continuing to deliver safe, reliable, and environmentally responsible power and the products and services they value. Operational Excellence has a renewed focus across SMUD in 2022 and beyond to free up funds to support our carbon reduction goals and other strategic initiatives. The formal Operational Excellence program, created in 2021, supports the 2030 Clean Energy Vision by developing and managing a consistent framework to reduce costs, increase efficiency and drive a culture of continuous improvement.

We will continue to implement the consolidated functions identified with the 2021 organizational realignment such as project management and planning functions to create higher value and benefits at a lower cost. We will also continue to explore external funding opportunities through grants and partnerships to support 2030 Zero Carbon Plan objectives.

Access to Credit Markets (SD-3)

We proactively manage our strong financial position to maintain high credit ratings. These strong credit ratings improve access to credit markets and result in a lower cost of borrowing – an especially important financial benefit as we look to fund our ambitious zero carbon future.

We target strong financial metrics in cash flow coverage (fixed charge) and liquidity (days cash). The Board sets a minimum fixed charge of 1.50 times operating cash flow; however, we aim for a minimum of 1.70 as a standard. This higher performance standard has proven valuable during the last two years' economic uncertainty stemming from the pandemic. Our current 2022 forecast plans for a fixed charge coverage of 1.93 times.

We maintain a strong liquidity position by setting a minimum number of days cash on hand and managing a $400 million commercial paper program. The commercial paper program allows for short-term borrowing when needed in lieu of issuing long-term debt, similar to a credit card or line of credit. A strong liquidity position is important in demonstrating to investors and rating agencies that SMUD can withstand various financial stresses. Our current days cash threshold is 150 days — the minimum amount of cash on hand before triggering a new debt or commercial paper issuance to replenish cash balances. Additionally, the unused commercial paper capacity further enhances our liquidity position as interpreted by investors and ratings agencies.

Reliability (SD-4)

Power reliability for our customers remains a top priority. The 2022 budget includes the necessary funding to ensure our transmission and distribution (T&D) systems have sufficient capacity and load serving capability to safely, reliably and cost effectively serve the needs of our customers while meeting regulatory compliance requirements. The budget was developed through a risk-based approach and the careful balance between capital investments and O&M work.

The 2022 budget continues to fund implementation of our Wildfire Mitigation Plan and infrastructure replacement plans such as cable replacement, pole replacement and T&D substation assets replacement. It also includes work to complete the upgrade of one of our 230kV transmission lines to increase the load serving capability of our transmission grid. In addition, the budget includes projects to expand or upgrade sections of our distribution system to serve continued load growth in downtown Sacramento and the Railyards. Outside of downtown Sacramento, there are projects planned to serve continued residential and commercial development growth in existing and new communities such as the Sunrise-Douglas area, Rio Del Oro and Cordova Hills in Rancho Cordova; Russell Ranch, Folsom Ranch and Mangini in Folsom; East Elk Grove, Laguna Ridge and Southeast Policy area in Elk Grove; Metro Airpark and the California Northstate University Medical Center to be located at the former Sleep Train Arena site.

Key reliability investments in the 2022 Budget include:

- **Grid substation improvements and new capacity** – Building a large substation is a multi-year effort, and the important work to build Station G substation continues in the 2022 budget. Most of the electrical equipment will be received and commissioned on the site in 2022. Electrical construction will be completed in fall 2022 and cutover of 12 kV networks from Station A to Station G will begin in fall 2022 and finish before summer 2023. Engineering design work for Station H will continue, and the material procurement process will be initiated. Station A will be decommissioned once Station G is fully operational. We'll continue our multi-year replacement plan for T&D substation assets, which includes circuit breakers, transformers, and switchgears. Construction for reconfiguration of the Hurley substation 230 kV bus to improve reliability will begin in summer 2022 and continue over the next 2 years in phases due to the complexity of the project. In 2022, we will also construct 1 new distribution substation, Oselet-Baroque, and add 1 more transformer to Del Paso East Commerce distribution substation.

- **Vegetation management & wildfire mitigation** – In 2022, we plan to trim about 104,000 trees as part of our routine distribution tree trimming efforts. We'll continue to remove vegetation that could grow or fall within unsafe distances to the transmission lines and reduce fuels minimizing the potential effects of a wildfire. Our budget includes $9 million for targeted vegetation management risk reduction work in the Upper America River Project (UARP). We'll also complete

phase 2 of the 4kV line undergrounding effort in Bush Creek Reservoir, which will eliminate the last remaining 4kV overhead/wood construction line in the UARP.

- **Protecting the reliability of our existing Power Generation facilities** – As we shift our focus to zero carbon resources, we're committed to protecting the reliable operation of SMUD's existing generation fleet. To that end, we're planning to complete several important major maintenance tasks in 2022, including inspections and overhauls to keep emissions as low as possible.

- **Pole and cable replacements** – In 2022, we plan to replace 1,200 poles and are targeting to replace 240,000 circuit feet of underground cable. The Pole Replacement Program includes replacing poles that have failed a pole inspection and are not candidates for pole reinforcement. For cable replacements, we prioritize addressing the worst performing cable first, which will decrease future outages, repair costs, customer complaints and reduce the number of the worst performing circuits. Customer driven work (new business) for 2022 is budgeted at current 2021 levels. If customer driven work decreases in 2022, we will increase the number of poles and underground cable targets accordingly, as this is annual ongoing work.

Customer Relations (SD-5), Outreach & Communication (SD-15)

2022 will be a significant year for SMUD and our customers as we plan for emerging from the COVID-19 pandemic, with a return to more in-person outreach and events as well as normal billing operations. With our sights on zero carbon by 2030, we're focused on outreach, communication and engagement that helps bring all our customers and communities along as partners in this important mission.

Supporting our customers and community partners by keeping the lights on, supporting economic development and securing the customer experience while delivering on the goals of the 2030 Zero Carbon Plan continue to be priorities for SMUD.

In 2022 we'll restart collections activities for unpaid bills using a personalized approach that uses advanced analytics to help us identify and support customers who need the most significant and immediate aid. We will also continue to seek out other funding options, as they may become available.

In support of our work to deliver value to our customers and community, key investments in the 2022 Budget include:

- Establish multi-year partnerships with local non-profits to equitably provide resource support to our underserved communities as part of our Sustainable Communities Initiative.

- Implementing the 2021 Rate Action process deliverables that were approved by the Board in September 2021 and providing customers with tools and information to help manage their energy usage.

- Continuing our Energy Assistance Program Rate (EAPR) support by providing our customers most in need with home weatherization, energy efficiency and electrification to reduce their electric bill burden.

- Capitalizing on the SMUD brand to increase our customer population and its sustainable revenue future by helping recruit businesses to the Sacramento area, thus bringing more jobs, opportunities, development, and economic vitality.

- Balancing SMUD's priorities and maintaining pace with changing customer expectations in these uncertain times aligned with Customer Satisfaction and Value for What you Pay (VFP) metric targets.

- Providing updated and enhanced mapping on the Sustainable Communities Resource Priorities Map to address environmental justice, climate change and equity related to impacts on SMUD customers and activities.

- Continuing communication, outreach and education related to our 2030 Clean Energy Vision, including:
    - Delivering a new phase of our integrated Clean PowerCity^{SM} campaign to increase awareness and customer participation. Key focus areas include building and vehicle electrification and distributed energy resources.
    - Enhancing ongoing market research to understand customers' awareness and perceptions for multiple demographics.
    - Building interactive experiences on smud.org to grow awareness and understanding.
    - Continuing community forums and listening sessions to understand various customer segments more deeply.

- Enhancing the digital user experience by:
    - Continuing to test and expand marketing efforts into streaming media, including Over-The-Top (OTT) television like Hulu and streaming audio like Pandora.
    - Planning personalization in customers' digital experiences and preferences to increase participation in decarbonization.
    - Building awareness of and engagement around SMUD's 2030 Clean Energy Vision and other key priorities through channel-specific social media strategies, with a focus on building SMUD's TikTok presence and engagement.

- Reestablishing our presence in the community by returning to community events as safely allows, such as:
    - The State Fair, the California Capital Air Show and home and garden shows.
    - Planning additional nonprofit events in 2022 as COVID-19 hopefully subsides.
    - Returning to large-scale volunteer projects through our SMUD Cares volunteerism efforts.

- Maintaining our focus on our partnerships:
    - Continue to leverage flagship partnerships such as our support for the SMUD Museum of Science & Curiosity.
    - Expand opportunities and support material as part of our 2030 Clean Energy Vision outreach, including increased use of our speaker's bureau at external meetings and events.

- Completing customer research studies and delivering data and analysis to inform program development and enhancements. Key projects include annual EAPR customer satisfaction research and monitoring customers' electric vehicle experiences. These studies also help us continue to enhance SMUD's brand and drive improvements in customer perception of and their experiences with SMUD.

Safety (SD-6)

SMUD continues to execute our plan to be a recognized leader in safety. In 2022, we'll implement our 3-year Safety Road Map and Safety Management System (SMS) that fosters SMUD's safety culture and leadership and furthers our journey toward our organizational goal of zero incident and injuries.

Key safety investments in the 2022 Budget include:

- Continuing to support COVID-19 and re-entry efforts in 2022. Priorities for 2022 include regulatory tracking, exposure guidance, personal protective equipment usage, contact tracing, ergonomic support for remote workers, COVID-19 safety protocols for contractors, re-entry training and review/safety consultation for the re-introduction of SMUD staff into SMUD facilities and participation in public events/activities.

- Training and use of the new Safety Management System (SMS) software for our inspection tool, risk assessment and compliance calendar modules. In addition, Safety will have new dashboard capabilities to collect data analytics for these programs as well as implementing new concern reporting, safety observations and ergonomic modules that are rolling out in late 2021 and early 2022.

- Expanding SMUD's pilot field ergonomics injury prevention program. This program provides biomechanical instruction to improve an employee's core body

strength and posture, corrective exercises to support joint mobility, muscle flexibility and balance, recovery techniques for muscle inflammation and injury prevention instruction for field activities.

- Using the new SMS for Safely Conducted Observations Reduce Common Hazards (SCORCH) field observations to provide SCORCH observers with the ability to use tablets and phones in the field to conduct and track observations. In addition, SCORCH will continue to focus on safety observations and removal of safety barriers for remote and on-site workers.
- Continuing to implement our contractor safety pre-qualification program to increase the review of high-risk project contracts.

- Re-evaluate SMUD's Public Safety program that includes: expanding Emergency Responder and Public Safety Electrical training; evaluation of school public safety publications; evaluation of public contractor safety outreach; drone safety and updating Electromagnetic Fields and Radio Frequency (EMF/RF) educational publication updates.

Environmental Leadership (SD-7)

SMUD is recognized as an environmental leader within our industry and beyond. Our commitment to the environment is evident in the power we deliver to our customers, our community involvement, the materials we buy and the decisions we make each day. We're always looking to reduce our impact on the environment, conserve resources and improve the environment for current and future generations. These efforts benefit our employees, customers and most of all, our community.

Key environmental leadership investments in the 2022 Budget include:

- Performing annual reporting of SMUD's greenhouse gas (GHG) reductions using the CDP (formerly known as the Carbon Disclosure Project). The CDP is a not-for-profit organization that runs the global disclosure system to measure and report on company environmental impacts related to GHG emissions.

- Submitting the Habitat Conservation Plan (HCP) to U.S. Fish & Wildlife by the end of 2022 for permit issuance in 2023.

- Working with U.S. Fish & Wildlife to develop a 30-year Eagle Take Permit. We'll continue to initiate agreed-upon mitigation measures to retrofit utility poles at Solano Wind Farm to be avian safe, while evaluating new sensor technologies to reduce avian impacts. We currently have a 5-year permit and will be working to finalize the 30-year permit with these enhancements.

- Supporting soil remediation efforts at our 59th Street facility to remove solvents in soil and groundwater remediation efforts at the former Community Linen site (FCL). The 59th Street project will include the demolition of 2 buildings and

removal of contaminated soil. In addition, SMUD will initiate treatment of groundwater in mid-2022 at FCL.

- Continuing to support recreational improvements such as the construction of the Union Valley Bike Trail from Wench Creek to Yellow Jacket campgrounds. Also, reconstructing campsites at Yellow Jacket and West Point campgrounds along with boat ramp construction at these sites. This work is part of the construction and upgrade of recreational facilities for our UARP Operating License implementation requirements.
- Enhancing to our fleet by increasing the number of electric vehicles to upwards of 18% of our total fleet. SMUD's goal is to make 50% of all light-duty vehicle miles driven be zero emissions and all electric by 2025.

- Initiating construction of a landfill cap for SMUD's North City substation property. We're working with Sacramento City and County, along with CalRecycle to coordinate the design and eventual construction of a cap once the existing substation is decommissioned. Work includes an engineering design for the cap and a stormwater retention basin that can be used jointly by SMUD and the City of Sacramento.

- Continuing to enhance our procurement process to support a best practice approach to sustainable purchasing. To assist in this effort, SMUD is a member of the Electrical Utility Industry Sustainable Supply Chain Alliance, where we can work jointly with other utilities in the sharing of sustainable purchasing best practices.

- Integrating Environmental Justice components into SMUD's California Environmental Quality Act (CEQA) documents. The Environmental Justice chapter in our CEQA documents will describe the relevant socioeconomic characteristics and current environmental burdens of the project while evaluating enhancements to lessen the negative environmental impacts caused by the project.

Employee Relations (SD-8)

Investments in talent and culture will be critical to SMUD's ability to deliver on the 2030 Clean Energy Vision. We'll advance our talent acquisition strategy, particularly those impacting critical roles and skills. Additionally, we'll invest in equitable workforce strategies, so that SMUD can continue to reflect the diverse community we serve and build a culture of high trust, inclusion and belonging.

Key employee relations investments in the 2022 Budget include:

- More deeply embedding Diversity, Equity & Inclusion (DE&I) in all we do, with a focus on strategy, policy and education, specifically:
    - Establishing a DE&I road map with milestones, monitoring and reporting.

  - Launching our employee Diversity, Equity, Inclusion and Belonging advisory council.
  - Training our workforce on concepts and values of Diversity, Equity, Inclusion and Belonging.

- Continuing to address risks to workforce agility through our succession planning and strategic workforce planning programs. In 2022, our strategic workforce planning emphasis will be on reviewing critical roles considering our 2030 Clean Energy Vision and bringing a DE&I lens to review and revise our succession planning program, so it supports our efforts to increase our workforce diversity.

- Opening a child development center in partnership with CSU, Sacramento and UC Davis Health to help attract and retain the region's top talent, as well as address the need for quality childcare in Sacramento.

- Implementing successor Memorandums of Understanding (MOUs) for the International Brotherhood of Electrical Workers (IBEW) and the Organization of SMUD Employees (OSE) that are effective January 1, 2022, including providing education to SMUD leaders over the impacted employees regarding negotiated changes. We'll negotiate a new MOU for the SMUD Public Safety Officer's Association (PSOA) bargaining unit before the current labor contract expires on December 31, 2022.

- Launching the Talent Technology Transformation (T3) project, which will enhance applicant and employee experience, improve our human resources technology ecosystem and enhance data-driven decision making for SMUD's people processes and policies.

- Evaluating Total Rewards benefits offerings including exploring additional adaptive benefits that meet the needs of SMUD's diverse workforce.

- Implementing the Powering Careers program, which is focused on building a pipeline for underrepresented communities to enter skilled trades at SMUD and other industry partners in our region.

- Continuing to refine and enhance communications with employees based on reader and viewer data to drive understanding of and engagement in key SMUD efforts and activities.

Resource Planning (SD-9)

In March 2021, the Board adopted the 2030 Zero Carbon Plan, our flexible road map to achieving our zero carbon goal while ensuring all customers and communities we serve share in the benefits of decarbonization. While SMUD has always had an Integrated Resource Plan target to meet or exceed goals established by the State for renewable energy and the reduction of carbon emissions, our 2030 Zero Carbon Plan greatly

accelerates these efforts, working toward eliminating carbon emissions from our power supply by 2030.

We're focused on reimagining our generation portfolio through retiring or retooling our natural gas assets, expanding our local investments in proven clean technologies, and launching pilot projects and programs for new and emerging technologies, all while continuing our work to improve equity for our under-resourced communities and minimizing the cost of implementing our 2030 Zero Carbon Plan. The projects planned in 2022 are foundational to the decarbonization of our grid and achieving our zero carbon goal. These include planning, developing, and implementing renewable projects and customer offerings, including building and vehicle electrification and energy efficiency programs, renewable energy, and reliability projects. We're also preparing the distribution system for the future by beginning implementation of our Integrated Distributed Resource Plan (IDRP) and continuing our grid modernization work.

Equity and inclusion are a major focus of our decarbonization efforts. We're working to engage members of our diverse communities to deliver wide-reaching benefits, including expanded workforce development program offerings to support clean technologies. The 2 natural gas plants we're planning to retire are located in local disadvantaged/under-resourced communities and by focusing our efforts on retiring these 2 plants and adding new local renewable projects, we're providing a direct reduction of local natural gas generation and emissions in communities that are impacted the most.

Key resource planning investments in the 2022 Budget include:

- Expanding renewables and increasing reliability:
    - Continuing evaluation and development of several local utility-scale solar and battery storage projects, with targeted online dates in 2024.
    - Expecting new 100 MW solar project with the Navajo Tribal Utility Authority in Southern California to come online in 2022.

- Continuing to evaluate additional proven clean technology options, such as concentrating solar power, wind, geothermal and long-duration energy storage options; continuing to study the local reliability needs along our path to 2030 Zero Carbon and continuing to explore new technologies such as the Allam-Fetvedt Cycle carbon capture technology and expanding our understanding of clean fuels that could be viable alternatives as we transition away from natural gas.

- Continuing work with local and state government to guide building codes to encourage building electrification.

- Completing work on grid modernization efforts including the Automated Distribution Management System (ADMS) and continuing work on the Distributed Energy Resource Management System (DERMS), which lay the foundation for

integration of Distributed Energy Resources (DERs) such as distributed solar and energy storage, flexible demand, and electric vehicles.

- Beginning a planning effort to evaluate how medium- and heavy-duty electric vehicle (EV) fleets and charging infrastructure are expected to impact our distribution grid, and what opportunities there may be to mitigate those impacts.

- Launching a new program, SMUD eFuel^{SM} aimed at advancing commercial transportation electrification. The program will provide businesses with no-cost consultations on converting to EVs. SMUD will also install EV chargers and infrastructure for eligible customers for no- or low-money down in exchange for a monthly fee on their SMUD bill.

- Launching new Virtual Power Plant programs and the optional Critical Peak Pricing rate providing needed load flexibility in support of our 2030 Zero Carbon Plan.

- Incorporating equity components into SMUD's building energy efficiency and electrification programs and into our transportation electrification offerings for under-resourced communities and EAPR customers.

- Expanding and refining our building electrification programs with an increase in gas to electric conversions across all sectors, including:
    - Launching a newly evolved Smart Homes program to an all-electric only offering, along with greater integration with load management products.
    - Launching an Express Water Heating service within the Advanced Homes program.

- Expediting utility service planning to support the launch of the Power Inn Station RT Charging Plaza, which incorporates solar, energy storage and vehicle charging for public and fleet vehicles.

Innovation (SD-10)

Delivering innovative solutions, products, and services to our customers through research and development and implementing new business models continues to be a core value for SMUD. In 2022, we'll embark on an innovation culture and mindset shift along with aligning innovation activities through the Technology & Innovation business unit. This focus ensures innovative ideas align with enterprise priorities and operational excellence guidelines. We're also focusing our investments on emerging technology innovations for 2022 that directly align with our 2030 Zero Carbon Plan.
Key innovation investments in the 2022 Budget include:

- Accelerating research in building and transportation load flexibility to allow for the transition of SMUD's thermal fleet by 2030, increasing integration of intermittent renewable resources and mitigating grid and customer infrastructure impacts of electrification, such as:

  - Researching the ability to orchestrate diverse residential customer-sited devices to deliver load flexibility as a reliable resource.
  - Collaborating with a consortium of vehicle manufacturers to test the impact and reliability of a residential-managed charging program to protect service transformers and soak up solar generation to reduce curtailment risks.
  - Furthering vehicle-to-grid readiness for school bus electrification by expanding participation opportunities to additional school districts to develop and test charging infrastructure's ability to enable a 2-way power flow.

- Researching and addressing key barriers to building and transportation electrification, including:
  - Quantifying and forecasting customer adoption of building and transportation electrification and developing a plan for delivering needed upgrades to grid infrastructure and mitigation measures to accelerate sector growth.
  - Partnering with regional agencies to create a regional zero emission vehicle deployment strategy to address the needs of under-resourced communities and to capture funding support from federal and state agencies.
  - Assessing our first eMobility hub with EV charging and expanding our support of hubs within disadvantaged communities.
  - Continuing California Mobility Center client services by deploying 5 medium-duty electric trucks built and customized by Zeus Electric Chassis into SMUD's fleet.

- Investigating options to increase the efficiency and precision of grid monitoring and control capabilities by:
  - Evaluating the use of dynamic transmission line ratings to inform short-term operational and long-term planning decisions.
  - Testing advanced functionality of smart inverters to increase customer hosting capacity and reliability of solar and storage resources.

- Building on efforts launched in 2021, the Innovation Team will proliferate the innovation effort bringing it to all corners of SMUD using the IDEAHub portal for employees to submit innovative ideas.

- Researching the potential to create natural habitats through pollinators and planting native species to sequester carbon and advance our efforts in responsible power generation land development.

Public Power Business Model (SD-11)

We'll continue to guard local decision making and flexibility as we pursue innovative solutions that meet the needs of our customers and community.

Key areas of focus in the2022 Budget include:

- Post-2020 carbon state and federal policies and regulations.
- Transportation and building electrification frameworks.
- Oversight of wildfire mitigation plans.
- Legislative and regulatory mandates.
- Load Management Standards.
- Federal policies on transmission.
- Energy markets.

Economic Development (SD-13)

SMUD promotes the economic vitality of our region and the growth of our customer base through strategic leadership and active participation in regional economic development partnerships. This includes supporting efforts to retain, recruit and grow commercial and industrial customers, offering Economic Development Rates and program incentives and providing a SMUD contracting program for certified small business customers. We're also helping build a strong innovation ecosystem through support for start-ups, entrepreneurs and business incubators, with a key focus on encouraging economic growth in disadvantaged neighborhoods. We also provide enhanced resources to key chambers of commerce to support their work with our commercial customers.

SMUD helps make our region an attractive destination for businesses of all sizes through affordable rates and customized energy solutions.

Key economic development investments in the 2022 Budget include:

- Building awareness and adoption of the 2030 Zero Carbon Plan among key business partners.
- Maximizing and diversifying participation in the Supplier Education and Economic Development (SEED) program by leveraging key partnerships and identifying opportunities to expand outreach and engage under-resourced communities.

- Utilizing our Community Resource Liaisons, formerly called the Loaned Executive Program, in support of chamber partners and initiatives that provide innovative support and strengthen our business communities.

- Improve support to small businesses in under-resourced communities to help them adopt zero carbon practices and innovate, to spur inclusive economic development.

System Enhancement (SD-14)

The 2022 Budget includes 2 key system enhancement projects. The first project involves underground placement of our facilities as part of the City of Elk Grove's Streetscape Project at Elk Grove Boulevard from Waterman Road to School Street. The second project is completing detailed design of the City of Citrus Heights' Auburn Blvd. Project (from Rusch Park to Interstate 80).

Information Management and Security (SD-16)

Technology plays a critical role in the collaboration across SMUD to institutionalize robust information management and physical security practices, which are critical to effective risk management, and to ensure regulatory compliance, business resiliency and customer satisfaction. Multiple SMUD teams working together are critical for SMUD to take prudent and reasonable measures to accomplish the objectives of SD-16. Cybersecurity's mission is to work closely across SMUD to help manage risk by strategic alignment of policies and processes across cybersecurity, physical security, customer privacy and records management. The 2022 budget funds solutions and strategies to implement effective and efficient measures to manage information risk to SMUD's people, processes, and technology.

Key information management and security investments in the 2022 Budget include:

- Publishing and enforcing cybersecurity policies, procedures and standards aligned to the National Institute of Standards and Technology (NIST) Cybersecurity Framework Security and Privacy Control families. This effort builds on 2021's successful system integration of new technology solutions that enabled continued maturation of our cybersecurity governance, risk and compliance programs. This continual process ensures we are implementing effective policy to protect our information confidentiality, integrity, and availability.

- Continuing to mature cybersecurity technical and programmatic efforts to be integrated within critical business technology and processes to ensure cybersecurity and privacy are incorporated early to avoid risk to cost, schedule and performance of SMUD's operational business requirements. This includes improvements in Cyber and Privacy governance, CIP compliance, Information Technology and Operational Technology Risk Assessments, Cloud and

Applications Security, Supply Chain Risk Management, Physical Security and Awareness Training for employees who have privileged access to our information and technology.

- Extending 2021's Critical Infrastructure Protection (CIP) vendor risk assessments to the enterprise, further strengthening SMUD's overall risk posture.

- Preparing for and participating in the North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) compliance Audit conducted by the Western Energy Coordinating Council (WECC). This effort builds on the successful completion of the CIP Mock Audit in 2021.

Enterprise Risk Management (SD-17)

The 2022 Budget fully funds key risk mitigation activities. SMUD's enterprise-level risks span the spectrum of operational and strategic business risks and include those associated with energy procurement, strategy, operations, natural hazards, political and regulatory issues, economics, and the environment. Risk assessments and mitigation plans continue to be refined and improved by considering SMUD's changing internal and external risk environment and enhancing how SMUD addresses its risks. Mitigation activities for high and significantly high risks identified in the enterprise risk register will continue to be monitored closely to ensure these risks are adequately managed.

Some key enterprise risk management initiatives in the 2022 Budget include:

- Continuing to mitigate wildfire risk and potential impacts to SMUD's operations, customers and the community.

- Enhancing and improving SMUD's emergency preparedness and response capabilities leveraging lessons learned from our response to the COVID-19 pandemic and the Caldor Fire.

- Supporting and informing the new Enterprise Strategy business unit with enterprise risk management assessment and information.

Enterprise Risk Management will continue to align with Internal Audit and other lines of defense through shared best risk management practices.

Diversified Business (SD-19)

Broadening and diversifying our products and services is a key value for SMUD. In 2022, we'll pursue opportunities that benefit our customers and community, create economic value, achieve a balanced and diversified portfolio and leverage and optimize our strengths, assets and expertise, all while maintaining our financial health and reputation.

Key diversified business investments in the 2022 Budget include:

- Continuing to collaborate and support the California Mobility Center (CMC), a private/public consortium focused on innovation and commercialization, standards and policy, workforce development and new business models in electric mobility. In 2022, we'll work with the CMC and its growing list of electric mobility start-ups to reduce barriers to EV adoption, support our vehicle electrification goals and reduce local carbon emissions.

- Continuing work on our Community Energy Services business for Valley Clean Energy and East Bay Community Energy.

- Continuing to identify, structure and implement new strategic partnerships for SMUD that are aligned with the 2030 Clean Energy Vision and that generate new sources of revenue.

In closing, 2022 will build on the foundation and momentum that was established in 2021 with the approval of the 2030 Zero Carbon Plan and adoption of new customer rates and optional programs, such as the solar and storage rate and incentives and virtual power plant program. Over the next 8 years on our journey to zero carbon by 2030, we'll lead the nation toward a transformational and inclusive clean energy future, starting right here with our own customers and community. Our holistic approach to developing the 2022 Budget and road ahead toward zero carbon is centered around bringing more value to all of our customers and community while keeping our rates low and continuing to provide world class reliability. The 2022 Budget is designed to deliver on the Board's Strategic Directions while also achieving strong financial metrics that ensures our strong foundation.

Our executive team members will share an overview of their key 2022 initiatives during the November 9 and 10 Finance & Audit Committee meetings and I look forward to providing the Board with regular updates on progress throughout the upcoming year.

Respectfully submitted,

Paul Lau

Paul Lau
Chief Executive Officer and General Manager

cc: Executive Team
Special Assistant to the Board
Corporate Files

2022 Budget



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2022 Budget

Strategic Direction

Purpose, Vision & Values

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Strategic Direction

Core Values: Strategically Essential for SMUD

SD-1	Purpose and Vision Statement
SD-2	Competitive Rates
SD-3	Access to Credit Markets
SD-4	Reliability
SD-5	Customer Relations
SD-6	Safety
SD-7	Environmental Leadership
SD-8	Employee Relations
SD-9	Resource Planning
SD-10	Innovation
SD-11	Public Power Business Model
SD-12	Ethics
SD-16	Information Management & Security Policy
SD-17	Enterprise Risk Management

Key Values: Provide Value-Added Services

SD-13	Economic Development
SD-14	System Enhancement
SD-15	Outreach & Communication
SD-19	Diversified Business

Strategic Direction (continued)

Purpose Statement

SD-1A SMUD's purpose is to enhance the quality of life for our customers and community by providing reliable and affordable electricity and leading the transition to a clean energy future.

Vision Statement

SD-1B SMUD's vision is to be a trusted and powerful partner in achieving an inclusive, zero carbon economy. SMUD will leverage its relationships to accelerate innovation, ensure energy affordability and reliability, protect the environment, eliminate greenhouse gas emissions, catalyze economic and workforce development, promote environmental justice, and enhance community vitality for all.

Strategic Direction (continued)

Core Values: Strategically Essential for SMUD

SD-2 Maintain Competitive Rates

SD-3 Maintain Access to Credit Markets

SD-4 Reliability - Meeting customer energy requirements

SD-5 Maintain a high level of Customer Relations

SD-6 Safety - Creating a safe environment for employees and the public is a core value of SMUD

SD-7 Environmental Leadership - Continuous improvement in pollution prevention, minimizing environmental impacts, conserving resources and promoting equity within SMUD's diverse communities

SD-8 Employee Relations - Developing and maintaining a high quality, diverse and inclusive workplace that engages and inspires employees to commit to SMUD's purpose, vision and values

Strategic Direction (continued)

Core Values: Strategically Essential for SMUD

SD-9 Provide customer-owners with a sustainable power supply through the use of an integrated Resource Planning process

SD-10 Deliver innovative solutions, products and services to our customers

SD-11 Public Power Business Model – Support and strengthen the public power business model

SD-12 Ethics – Maintain the public trust and confidence in the integrity and ethical conduct of the Board and SMUD employees

SD-16 Information Management and Security Policy - Proper management of cyber and physical information, as well as physical security, are critical to effective risk management and to ensure regulatory compliance, business resiliency and customer satisfaction. SMUD will take prudent and reasonable measures to ensure information security, physical security, customer privacy and proper record management.

SD-17 SMUD will implement and maintain an integrated enterprise risk management process that identifies, assesses, manages and mitigates a variety of risks facing SMUD, including financial, supply, operational, physical and cyber security, climate change, legal, legislative and regulatory, and reputational risk.

Strategic Direction (continued)

Key Values: Provide Value-Added Services

SD-13 Economic Development – Promote economic vitality of our region and the growth of our customer base

SD-14 Make selected distribution system enhancements such as relocation or underground placement of primary power lines.

SD-15 Broad Outreach and Communication to SMUD's customers and the community

SD-19 Broaden and diversify the products and services that SMUD offers

2022 Budget
Performance Metrics

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Performance Metrics

Strategic Direction	Metric	2021 Forecast	2021 Target	2022 Target
SD-2 Competitive Rates	**Competitive System Average Rates**			
	Percent below Pacific Gas & Electric	36.7%	18.0%	18.0%
	Percent below each Customer Class	31.2%	Meet 10% Goal for each Customer class	Meet 10% Goal for each Customer class
SD-3 Access to Credit Markets	**Fixed Charge Ratio of at least 1.50**	2.12	1.80	1.93
	SMUD Availability of Generation Assets	99%	97%	97%
	Overall Availability of Transmission Assets	100%	>99.99%	>99.99%
	Distribution System Reliability[1]			
	Duration of Outages (SAIDI)			
	SAIDI With Major Event	213.6 min	67.5 - 93.3 min	67.5 - 93.3 min
	SAIDI Excludes Major Event	55.1 min	49.7 - 68.7 min	49.7 - 68.7 min
	Frequency of Outages (SAIFI)			
	SAIFI With Major Event	1.48	0.99 - 1.33	0.99 - 1.33
	SAIFI Excludes Major Event	1.09	0.85 - 1.14	0.85 - 1.14

Performance Metrics (continued)

Strategic Direction	Metric	2021 Forecast	2021 Target	2022 Target
SD-5 Customer Relations	**Customer Satisfaction Survey**[2]	95%	95%	95%
	Value for What You Pay[3]	76%	70%	72%
SD-6 Safety	**Shift safety culture, improve safety results, and maintain positive financial performance**			
	Leading Indicator			
	Employee-Supervisor Interactions	173%	95%	95%
	Incident Reports ≤ 3 days[4]	88%	95%	95%
	Incident Investigations ≤ 5 days[5]	65%	95%	95%
	Days Away Restricted Time (DART)			
	Severity incidents to 13 or less than by 2025	16	23	20
	Workers' Compensation			
	Workers' compensation program performance	$1.29	$0.85	$0.76
SD-8 Employee Relations	**Employee Engagement**[6]			
	Sustain Employee Engagement	TBD	>80%	>80%

Performance Metrics (continued)

Strategic Direction	Metric	2021 Forecast	2021 Target	2022 Target
SD-9 Resource Planning	**Reduce carbon emissions**			
	Energy efficiency and electrification from buildings (2030 goal: 365,000)	90,723	95,760	131,359
	Energy efficiency and electrification from transportation[7] (2030 goal: 1,000,000)	68,991	70,500	88,383
	Procure Renewable Energy to achieve SMUD's Renewable Portfolio Standards requirements			
	% of SMUD's Retail Sales (Statutes require: 44% by 2024, 52% by 2027, and 60% by 2030)	35.8%	35.8%	38.5%
SD-13 Economic Development	**Supplier Education and Economic Development (SEED) - Percent of Contract Dollars**	20%	20%	20%

Performance Metrics (continued)

Footnotes:

[1] 2021 Forecast is based on 2021 Actuals through September 30 and 2018-2020 for October through December. One major event occurred January 26-29th 2021. In 2021, 2 of the 4 metrics for SAIDI/SAIFI are projected to be within the Strategic Direction. The impact to SAIFI and SAIDI during the major event far exceeded the allowance provided for the major event threshold.

[2] The Customer Satisfaction metric measures customers responding as very satisfied or satisfied with service received in the areas of New Connects, Billing Inquiries, Outbound Outage Communication, Tree Trimming, IVR One Payment or IVR Payment Arrangements.

[3] Board target is to reach 70% by the end of 2025 and 80% by the end of 2030, with neither the average commercial customer score falling below 69%, nor the average residential customer score falling below 65% in any year. While the 2021 Forecasted VFP score is above target, we expect a negative correction in the 2022 VFP score due to the restart of shut-offs, collections, late fees and rate increases.

[4] As of the end of September, 32 of the 37 incidents included in this metric were reported within 3 days of the supervisor being notified. The prediction is based off the performance in the last 9 months.

[5] As of the end of September, 20 of the 31 incidents included in this metric have been investigated and completed in SITS on or before the due date. The prediction is based off the performance in the last 9 months.

[6] 2021 Engagement Survey was deployed mid-October to early November and results are not yet available.

[7] Currently metrics include light-duty vehicles only. Working to add Medium and Heavy Duty.

2022 Budget

Business Units & Segments and Organizational Chart

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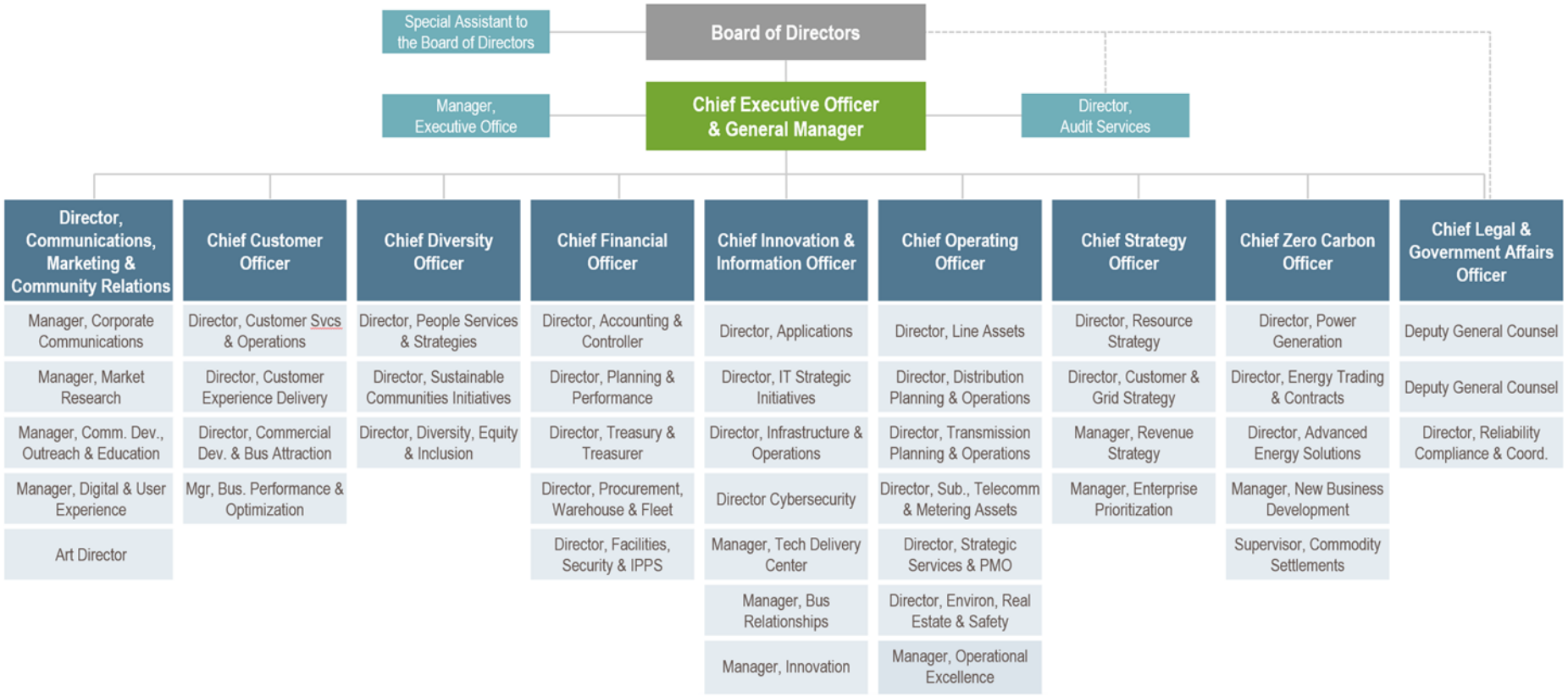
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Business Units & Segments

The SMUD Budget is planned by Business Unit processes which in some cases differs from the organizational/functional reporting structure.

Customer & Community	Energy Delivery & Operations	Zero Carbon Energy Solutions	Enterprise Strategy	Workforce, Diversity & Inclusion	Technology & Innovation	Corporate/ Enterprise
Customer Experience Delivery	Transmission Planning & Ops	Power Generation	Resource Strategy	People Services & Strategies	Applications	Governance
Customer Services & Operations	Distribution Planning & Ops	Advanced Energy Solutions	Revenue Strategy	Diversity, Equity & Inclusion	Infrastructure & Operations	Finance
Revenue Services & Operations	Line Assets	Commodity, Procurement & Sales	Customer & Grid Strategy	Sustainable Communities	Strategy & Innovation	Legal, Gov't Affairs & Reliability Compliance
Community Energy Services	Substation, Telecom & Network	New Business Development	Enterprise Prioritization		Strategic Initiatives	Facilities, Security & Office Services
Commercial Development & Business Attraction	Strategic Services & PMO				Cybersecurity	Procurement, Warehouse & Fleet
	Environmental, Real Estate & Safety					Comm. Marketing & Community Relations
	Operational Excellence					Enterprise Affairs

Organization Chart by Executive



Note: SMUD resources support Business Unit processes regardless of organization/functional affiliation.

2022 Budget

Economic Outlook & Assumptions

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Economic Outlook & Assumptions

The planning data presented here is based on a recent update as part of the Load Forecasting process.

New customers to be added to SMUD's customer base in 2022 are projected to total approximately 4,766. This is less than a 1 percent annual growth rate, which is below the average growth during the past decade. Of the 2022 projection, 4,076 are new residential customers and 690 are other customers. Looking to the future, we are seeing regular growth in residential and commercial customers.

	2021 Budget	New Customers	2022 Budget
Residential customers	572,084	4,076	576,160
All other customers	76,148	690	76,838
TOTAL customers*	648,232	4,766	652,998

*Reflects monthly average instead of end-of-year count in order to reflect the fluctuation of SMUD's customer growth.

Inflation Escalation Factors:

The forecasted inflation factor for use where applicable in preparing the 2022 Budget is 2%. The longer-term outlook (ten years) used in the business strategy update is the same, at 2% per year.

The cost-of-living (COLA) increase for SMUD salaries and wages during 2022 is based on formulas contained in negotiated bargaining agreements.

Economic Outlook & Assumptions

(continued)

Energy Sales & Requirements

Description	2021 Budget	2022 Proposed	Change vs Budget
Expected System Peak (MW)	2,870	2,874	4
Expected Retail Energy Sales (GWh)	10,087	10,166	79
Expected Wholesale Sales, Distribution & Transmission Losses (GWh)	474	444	(30)
Expected Supply Requirements (GWh)	10,561	10,610	49
GENERATION			
Total SMUD Generation (GWh)	6,820	7,410	590
SMUD Generation as a % of expected supply requirement	65%	70%	5%
PURCHASED POWER			
Net Purchased Power (GWh)	3,742	3,199	(543)
Net Purchased Power as % of expected supply requirement	35%	30%	-5%
GAS			
Expected Gas Burn (NG+Biogas) for Thermal Generation and Steam Sales (mmBtu)	33,248,660	40,112,300	6,863,640
Committed Fuel (NG+Biogas) Purchases (mmBtu)	29,090,645	33,998,352	4,907,707
Committed Purchases (NG+Green Gas) as a % of Expected for Thermal Generation and Steam Sales	87%	85%	-2%
ACTUAL / FORWARD PRICES of UNCOMMITTED TRANSACTIONS			
On Peak Power Price Forecast ($/MWh)	$42	$74	$32
Off Peak Power Price Forecast ($/MWh)	$34	$60	$26
Flat Power Price Forecast ($/MWh)	$39	$68	$29
Forward Natural Gas Price Forecast ($/mmBtu)	$3.08	$5.61	$2.53

Energy sales to customers is projected to increase slightly from the 2021 Budget assumption.

Unmanaged Peak load is forecasted to increase by 4MW from the 2021 Budget assumption.

Economic Outlook & Assumptions

(continued)

Energy Requirements

Summary (GWh)	2021 Budget	2022 Proposed	Change vs Budget	Change vs Budget
Generation:	**GWh**	**GWh**	**GWh**	**GWh**
SMUD-Owned Large Hydro	1,503	1,252	(251)	-17%
SMUD-Owned Gas Fired	4,239	5,149	910	21%
SMUD-Owned Renewable	1,077	1,009	(68)	-6%
TOTAL - Generation	***6,820***	***7,410***	***590***	***9%***
Market Energy:	**GWh**	**GWh**	**GWh**	**GWh**
Uncommitted Sales	(2,473)	(2,898)	(425)	17%
Long-Term Contracts	4,185	4,494	309	7%
Short-Term Purchases	0	63	63	100%
Uncommitted Purchases	2,087	1,581	(506)	-24%
TOTAL - Market Transactions	***3,799***	***3,240***	***(559)***	***-15%***
Transmission Losses	***(58)***	***(41)***	***17***	***-29%***
TOTAL - Supply Requirement	**10,561**	**10,609**	**48**	**0%**

Economic Outlook & Assumptions

(continued)

Power Supply Assumptions

The 2030 Zero Carbon Plan is the basis for the operating assumptions for the 2022 Budget. Electricity and natural gas prices are forecasted to be higher than what was projected in the 2021 Budget. The Upper American River Project (UARP) generation will be lower, and renewable and thermal generation are forecasted to be higher than the 2021 Budget.

SMUD became a Control Area, presently called a Balancing Authority (BA), in June 2002 and since then has operated its transmission and generation system independently. On January 1, 2006, the Western Area Power Administration's Sierra Nevada Region (WAPA-SNR) was integrated into the SMUD BA, followed on December 1, 2006, by the California-Oregon Transmission Project (COTP) – a 500kV transmission line - and the Modesto Irrigation District (MID). On May 8, 2009, together with MID and the cities of Redding and Roseville, SMUD entered into a Joint Powers Agreement to create the new Balancing Authority of Northern California (BANC). With regulatory approval on May 1, 2011, the operations of SMUD BA were transferred to BANC BA. BANC uses SMUD's existing employees and physical resources to be the BANC Operator. BANC's General Manager reports to a five-person Commission made up of SMUD, MID, City of Redding, City of Roseville, and Trinity Public Utility Districts chief executives. This BA, as an independent entity, is not subject to market disruptions that result from financially induced supply shortages within the California Independent System Operator (CAISO) or investor-owned utilities. SMUD is still subject to certain CAISO transmission, grid management and other costs for transactions that use the CAISO controlled grid. These costs have been included in SMUD's 2022 Budget.

Economic Outlook & Assumptions

(continued)

SMUD Generation

SMUD Hydroelectric (Upper American River Project): The 2022 Budget assumes median rainfall and normal starting reservoir levels in 2022. Generation is expected to be 1,303 GWh.

Other SMUD Generation (South Fork, Chili Bar, Photovoltaic, Hedge Battery, Solano Wind): The 2022 Budget assumes average generation subject to limitations governing the operation of each plant. The largest contributor, Solano Wind is expected to generate 593 GWh.

Cosumnes Power Plant: This 570 MW gas-fired combined cycle power plant began commercial operation in February 2006. Forecasted generation from this plant in 2022 is 3,761 GWh.

Carson Cogeneration: This gas-fired cogeneration project, which began commercial operation in October 1995, consists of a 65 MW combined cycle unit and a 42 MW peaking unit. With the installation of an auxiliary steam boiler in 2017, if running the cogeneration unit is uneconomic, it can be turned off. Energy will be supplied from the auxiliary boiler instead of the cogeneration unit. The forecasted generation from this facility in 2022 is 399 GWh.

Procter & Gamble Cogeneration: This gas-fired cogeneration plant began commercial operation in March 1997. It consists of a 136 MW combined cycle power plant and a 50 MW peaking unit that became operational in May 2001. With the installation of an auxiliary steam boiler in 2016, if running the cogeneration unit is uneconomic, it can be turned off. Steam will be supplied from the auxiliary boiler instead of the cogeneration unit. Forecasted generation from this facility in 2022 is 725 GWh.

Campbell Soup Cogeneration: This gas-fired combined cycle plant, began commercial operation in December 1997. It consists of a 160 MW combined cycle power unit. Beginning in 2008 the 72 MW McClellan gas turbine is also included under SPA. Forecasted generation from these two units in 2022 is 591 GWh.

Economic Outlook & Assumptions

(continued)

Purchased Power

The 2022 Budget assumes delivery of energy and capacity from the following contracts:

Western Area Power Administration (WAPA) / Central Valley Project (CVP): Provide 265 MW of capacity and 661 GWh of energy. Under a separate agreement, WAPA provides 38 GWh to serve its customers located within SMUD's service territory.

Kiefer Landfill: Provide a total of 12 MW of capacity and 109 GWh of energy under two separate agreements. The original Kiefer I contract was extended in November 2014, for an additional 10 years. The current Kiefer II contract was extended in March 2016, for an additional 10 years.

MM Yolo: Provide 2.4 MW of capacity and 21 GWh of green energy under an agreement that expires in June 2026.

IBR Highwinds: Provide 50 MW of capacity and 98 GWh of energy under an agreement signed in July 2015 to extend the original contract for additional 10 years.

Grady Wind: Provide 200 MW of capacity and 803 GWh of energy of under an agreement that expires in December 2043.

enXco – Solar: Provide 1.0 MW of capacity and 2 GWh under an agreement which expires in August 2028.

Santa Cruz Landfill: Provide 1.5 MW of capacity and 12 GWh of energy under an agreement, which expires in September 2024.

Feed-in-Tariff Solar Projects: Provide 100 MW capacity and 211 GWh of energy delivered from all projects under a 20-year term ending in December 2030.

Van Warmerdam Dairy Biogas: Provide 0.5 MW of capacity and 2 GWh of energy under an agreement which expires in May 2033.

Economic Outlook & Assumptions (continued)

Purchased Power (continued)

New Hope Dairy Biogas: Provide 0.4 MW of capacity and 2 GWh of energy under an agreement which expires in August 2033.

Patua (aka Gradient) Geothermal: Provide 19 MW of capacity and 147 GWh of energy under an agreement which expires in December 2033.

Loyalton Biomass: Provide 4.2 MW of capacity and 33 GWh of energy under an agreement which expires in March 2023.

Van Steyn Dairy Biogas: Provide 0.12 MW of capacity and 1 GWh of energy under an agreement which expires in June 2035.

Conergy Solar: Provide 1.3 MW of capacity and 2 GWh of energy under an agreement that expires in August 2034.

Navajo Solar: Provide 100 MW of capacity and 286 GWh of energy under an agreement that expires in December 2051.

Wildflower Solar: Provide 13 MW of capacity and 31 GWh of energy under an agreement that expires in December 2045.

Rancho Seco Solar: Rancho Seco I provides 11 MW of capacity and 22 GWh of energy under a 30-year agreement which expires in August 2036. Rancho Seco II provides 160 MW of capacity and 335 GWh of energy through November 2039.

Recurrent Solar: Provide 60 MW of capacity and 171 GWh of energy under an agreement that expires in December 2037.

Sutter Energy Center: Provide 258 MW of capacity and 1,238 GWh of energy under a three-year contract with Calpine Energy Services, L.P. effective January 2021 from a natural gas-fired, combined-cycle.

CalEnergy: Provide 30 MW of capacity and 223 GWh of geothermal energy under an agreement expiring December 2039.

Economic Outlook & Assumptions (continued)

Purchased Power (continued)

The balance of energy requirements to meet forecasted sales to customers will be met by short-term purchases of energy. Some of the long-term and short-term contracts will be delivered over SMUD's 528 MW share of the California-Oregon Transmission Project (Northwest) or under the South-of-Tesla transmission agreement with PG&E (Southwest & Southern California). These purchases are coordinated through SMUD's membership in the Western Systems Power Pool (WSPP), which facilitates sales and exchanges among its 30 member utilities, and through market trading. Lastly, another 5-year extension to the WAPA Custom Product ~300-MW sale/purchase contract with WAPA allows SMUD to import additional power from California Oregon Border through 2024.

2022 Budget

Budget Summary

Powering forward. Together.

Budget Summary

Overview

The 2022 Budget Authorization totals $1.7 billion. This represents a decrease of $9 million from the 2021 Budget. The 2022 Budget is a request to authorize new spending.

The 2022 SMUD Budget summarized on the following pages is a blueprint of planned operating, public goods and debt service expenses and capital expenditures for the fiscal year beginning January 1, 2022. Historical comparisons to the 2021 Budget adopted by the Board on December 10, 2020, are shown to put the 2022 Budget in perspective. A forecast of actual 2021 expenses is also shown.

The O&M and Capital Budgets are shown by Business Unit. SMUD Business Units correspond to business processes which deliver specific products and services to SMUD customers. The core business processes are represented by Customer & Community Services, Zero Carbon Energy Solutions and Energy Delivery & Operations Business Units. Included within Zero Carbon and Customer/Community are Public Good costs related to energy efficiency, low-income assistance, renewable generation and research and development. These costs are shown separately because they are designated as Public Goods programs as determined by statute.

The Enterprise Strategy, Technology & Innovation, Workforce, Diversity & Inclusion and Corporate Services Business Units provide services which enable the other business units to perform their work. The Enterprise Business Unit contains contingency and reserve estimates for the organization. The planning and budgeting philosophy is to more accurately plan and measure the total cost of SMUD business processes and set performance improvement targets for the processes and Business Units that will most efficiently accomplish strategic goals. This budgeting methodology also most efficiently allocates and plans resources throughout SMUD to the Business Units and work processes.

Within each Business Unit budget, work processes are subdivided into business segments and individual business processes. Budget detail is provided at both levels. Business segments and processes enable each business unit to effectively plan and measure performance of its operations at a manageable level.

Budget Summary (continued)

The budgeted costs shown under each core Business Unit include all the costs of performing the work planned for 2022. These include labor costs from departments throughout SMUD which perform work in the core business processes. Labor costs include employee benefits. Also included in the budget is a surcharge allocation of service costs such as transportation, facilities, technology, human resources, safety and security. Expenditures budgeted by Technology & Innovation, Workforce, Diversity & Inclusion, Energy Delivery & Operations and Corporate Services represent those process costs that are not allocated to the core business units, such as dedicated software implementations or enhancements that do not meet minimum SMUD criteria for capitalization. The Corporate Services budget includes insurance and risk management, cash and debt management, and corporate legal, reliability compliance, legislative, regulatory and government relations, planning and performance, executive management and Board of Directors; a portion of this budget is allocated to Capital and Public Good. The Enterprise budget includes contingency and reserve estimates for the organization.

The 2022 Budget includes the following major components:

OPERATING EXPENSES (O&M): Expenses related to producing and acquiring energy, operating and maintaining the electrical delivery system, providing service to customers including public goods (energy efficiency, low-income assistance, new renewable generation sources, and research and development of advanced technologies) programs, and corporate activities. Included within this category as a separate line item are commodity costs associated with energy supply. These costs include purchased power, fuel for energy production, and transmission wheeling costs.

Also included under Zero Carbon Energy Solutions are fuel, operating and interest expense associated with SFA: Carson Cogeneration plant, Procter & Gamble plant, Campbell Soup Cogeneration plant, Cosumnes Power Plant; NCGA No. 1, and NCEA pass-through gas costs. These expenses are shown in the SMUD Budget because SMUD will reimburse SFA, NCGA No. 1 and NCEA for their costs under the terms of the Power and Gas Purchase Agreements. The detailed SFA, NCGA No. 1 and NCEA Budgets are also in separate booklets and/or resolutions as they will be approved by the SFA, NCGA No. 1 and NCEA Commissions.

Budget Summary (continued)

CAPITAL INVESTMENT: Investment in additions and improvements to SMUD's property, plant and equipment. The Capital Investment budget includes all qualifying costs related to acquiring or constructing tangible and intangible assets which meet SMUD's capitalization guidelines - cost exceeding $5,000 and an estimated service life greater than two years. SMUD follows Federal Energy Regulatory Commission (FERC) capitalization guidelines which dictate the inclusion of all direct costs (labor, employee benefits, materials, services and other) and a proportionate share of indirect costs (engineering and construction supervision and support, transportation, insurance, etc.) related to capital projects. Capital assets are depreciated on a straight-line basis over their estimated useful service life.

ALLOCATED: Costs in four business units: Technology & Innovation, Workforce, Diversity & Inclusion, Energy Delivery & Operations and Corporate Services, which enable the business units to perform work. These costs are allocated to both O&M and capital, based on the quantity of labor hours. The aggregated allocated costs are presented in the budget documentation separately as information only; the actual costs are reflected in each of the Business Unit's budgets as the total cost of their work processes.

DEBT SERVICE: Interest expense on and principal repayments of SMUD's outstanding long-term debt and commercial paper notes, any revenues or payments on interest rate swaps, and trustee fees and debt issuance costs. Detail is provided in the Debt Service Summary.

Budget Summary (continued)

Description of Cost Categories

Activity Type Labor	SMUD employee labor planned to a business unit work process. Each Activity Type has a standard hourly charge-out rate that is based on work (non-leave) hours, average annual employee salaries, and includes benefits.
Materials & Equipment	Materials and equipment either issued from inventory or purchased for a specific project or task.
Dues & Publications	Dues and publications and general membership requirements to accomplish work.
General Expenditures	All services and other non-material costs not covered by other specific cost categories including training, travel, rents, leases, licenses, fees, taxes, etc.
Outside Services	The cost of outside services contracts, consultants, and outside legal service.
Advertising	The cost of advertising.
Utilities & Postage	The cost of telephones, other utilities and postage.
Insurance	The cost of property and liability insurance.
Rebates & Incentives	The cost of energy efficiency rebates and incentives.
Commodities	The cost of purchased power, wheeling, and fuel for SMUD and JPA generating plants.
Surplus/Whsl Pwr Sales	The revenue generated from selling energy which is not needed to meet SMUD retail load.
LI/LS Rate Discount	The discount given to customers who qualify for the Low Income or Medical Energy Discount (MED) rate subsidy.
Cost Reductions/Reimb	Reimbursements, cost-sharing grants, or pass-through amounts received from outside parties to reduce net costs.
Cost Center Overhead	A rate developed to recover the indirect costs of a Cost Center. Includes Activity Type labor for administration, supervision, training, and miscellaneous general expenses such as office supplies and travel. It is assessed per hour of Activity Type Labor planned directly to the work.
Surcharges	Surcharge rates developed to recover 1) an allocation of internal service costs such as transportation and technology assessed per hour of Activity Type Labor planned directly to the work, 2) the costs of procuring outside service agreements (excluding outside legal service) and cost of procuring, storing, and handling materials and equipment assessed relative to the contract amount or whether material issued from inventory or purchased specifically for a project or task, 3) miscellaneous general and administrative SMUD expenses including insurance and risk management, cash management, debt management, and other assessed to capital and public good projects based on a flat percentage of overall SMUD activity type labor.

O&M Budget Summary

Description ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
Commodity (net) *[1]*	**463,967**	**440,889**	**440,681**	**(208)**	**0%**
Customer/Community (excl. PubGd)	$86,783	$96,224	$94,830	($1,394)	-1%
Public Good	9,874	10,557	7,661	(2,896)	-27%
Customer/Community	**96,657**	**106,781**	**102,491**	**(4,290)**	**-4%**
Energy Delivery & Operations	**175,403**	**187,260**	**204,655**	**17,394**	**9%**
Zero Carbon (excl. PubGd)	132,272	144,105	159,135	15,030	10%
JPA Interest Expense	5,332	5,332	4,773	(559)	-10%
Public Good	35,179	53,062	51,776	(1,286)	-2%
Zero Carbon Energy Solutions	**172,783**	**202,499**	**215,684**	**13,186**	**7%**
Enterprise Strategy (excl. PubGd)	12,788	11,943	16,861	4,919	41%
Public Good	447	627	609	(18)	-3%
Enterprise Strategy	**13,235**	**12,570**	**17,470**	**4,900**	**39%**
Workforce (excl. PubGd)	5,410	7,177	7,566	389	5%
Public Good	1,544	1,676	1,615	(61)	-4%
Workforce, Diversity & Inclusion	**6,954**	**8,854**	**9,181**	**328**	**4%**
Technology & Innovation	**34,451**	**38,906**	**36,476**	**(2,430)**	**-6%**
Corporate (excl. PubGd)	93,952	91,070	104,106	13,036	14%
Public Good	1,289	1,471	1,924	452	31%
Corporate	**95,242**	**92,541**	**106,029**	**13,488**	**15%**
Enterprise (excl. PubGd)	13,711	16,502	(9,184)	(25,686)	-156%
Public Good	0	700	0	(700)	-100%
Enterprise	**13,711**	**17,202**	**(9,184)**	**(26,386)**	**-153%**
Other Employee Benefits *[2]*	**(969)**	**32,704**	**40,359**	**7,655**	**23%**
O&M Budget Authorization	**$1,071,434**	**$1,140,206**	**$1,163,842**	**$23,636**	**2%**
Revenue	**(70)**	**(25)**	**(25)**	**0**	**0%**
O&M Net	**$1,071,364**	**$1,140,181**	**$1,163,817**	**$23,636**	**2%**

[1] Net of surplus sales. The 2022 Budget assumes median water year.

[2] Other Post-Employment Benefits (OPEB) and Workers Compensation - These benefits are not allocated or included as a labor expense in the Business Units. 2021 forecast includes Accounting adjustments of ($25.5M).

O&M Budget Summary (continued)

Cost Category ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
ActivityType Labor	**$228,217**	**$245,707**	**$258,081**	**$12,373**	**5%**
Material & Equipment	*8,342*	*9,614*	*8,453*	*(1,162)*	*-12%*
Dues & Publications	*5,087*	*6,584*	*6,787*	*203*	*3%*
General Expenditures	*35,603*	*52,377*	*13,507*	*(38,870)*	*-74%*
Outside Services	*145,056*	*148,150*	*184,216*	*36,065*	*24%*
Advertising	*3,101*	*3,725*	*3,868*	*143*	*4%*
Utilities & Postage	*8,033*	*7,716*	*9,219*	*1,503*	*19%*
Insurance	*24,300*	*24,228*	*27,200*	*2,972*	*12%*
Rebates & Incentives	*18,998*	*28,216*	*34,018*	*5,802*	*21%*
Commodities	*583,526*	*587,406*	*693,071*	*105,664*	*18%*
Surplus/Whsl Pwr Sales	*(108,216)*	*(97,957)*	*(201,120)*	*(103,164)*	*105%*
Non-Labor Expenditures	**723,829**	**770,060**	**779,217**	**9,157**	**1%**
Cost Reduction/Reimb	**(22,560)**	**(62,552)**	**(63,922)**	**(1,370)**	**2%**
Cost Center Overhead	**52,845**	**54,115**	**50,655**	**(3,460)**	**-6%**
Surcharges	**84,740**	**94,840**	**94,679**	**(161)**	**0%**
Expenditures Subtotal	**1,067,071**	**1,102,170**	**1,118,710**	**16,540**	**2%**
JPA Interest	***5,332***	***5,332***	***4,773***	**(559)**	**-10%**
Other Employee Benefits	**(969)**	**32,704**	**40,359**	**7,655**	**23%**
O&M Budget Authorization *[1]*	**$1,071,434**	**$1,140,206**	**$1,163,842**	**$23,636**	**2%**
Revenue	**(70)**	**(25)**	**(25)**	**0**	**0%**
O&M Net	**$1,071,364**	**$1,140,181**	**$1,163,817**	**$23,636**	**2%**

[1] O&M Budget Authorization includes Public Good. A summary of Public Good is provided on the following page.

O&M Budget Summary (continued)

Public Good

Description ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
Energy Efficiency	$28,523	$35,666	$42,975	$7,308	20%
Residential Assistance	10,390	11,193	8,296	(2,897)	-26%
Renewables	10	724	0	(724)	-100%
Research & Development	9,411	20,511	12,314	(8,197)	-40%
Public Good Budget Authorization	**$48,334**	**$68,094**	**$63,585**	**($4,509)**	**-7%**
Rate Subsidy	34,369	40,021	35,024	(4,997)	-12%
Total Public Good *[1], [2]*	**$82,703**	**$108,115**	**$98,609**	**($9,506)**	**-9%**

[1] Public Good expenditures are included in SMUD O&M summary (this table is information only)

[2] Specific information is provided within Customer/Community, Zero Carbon, Workforce and Corporate sections.

O&M Budget Summary (continued)

Commodity Budget

Description ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
Purchased Power (net) *[1]*	$286,400	$251,152	$215,005	($36,147)	-14%
Fuel for Generation	158,193	159,567	196,925	37,358	23%
Transmission	30,189	30,169	28,751	(1,418)	-5%
O&M Commodities	**$474,782**	**$440,889**	**$440,681**	**($208)**	**0%**

[1] Excludes transfer of $10.8M from Rate Stabilization Fund.

O&M Budget Summary (continued)

The O&M Proposed Budget for 2022 totals $1,164 million, which is $23.6 million or 2 percent higher than the 2021 Budget.

Business Unit O&M:

Total Business Unit O&M, excluding Commodity and Public Good, is $659.6 million, which is $28.4 million higher than the 2021 Budget. The 2022 Proposed Budget includes increased mandatory spending for Vegetation Management and Wildfire Mitigation. The 2022 Budget also funds ongoing efforts for Community Initiatives, maintaining operations, and Transportation Electrification. Transportation Electrification is a critical part of our newly-adopted 2030 Zero Carbon Plan and an important part of our strategy to continue to provide a leadership role in the region's transformation to a zero-carbon future.

More detailed and specific information is provided within each Business Unit's documentation.

Public Good: Total Public Good is $99 million, a decrease of $9.5 million, after inclusion of rate subsidies. The Public Good Budget is $63.6 million. The difference is because the Budget represents the cash disbursement portion of the program that requires Board authorization.

By December 2022, the number of subsidized customers is expected to be approximately 128,983. The total cost of the EAPR subsidy is budgeted at $33 million in 2022, a decrease of $5.4 million from 2021, and the subsidy for customers using medical equipment increased by $0.4 million to $2 million. Total subsidies are $35 million.

Energy efficiency spending increased $7.3 million. Incorporation of savings from codes and standards is included as a component of the energy efficiency portfolio to match standard industry practice going forward. The energy efficiency budget remains in line with the goal of achieving savings of 1.5% of average annual retail energy sales and reflects our goals of reaching zero carbon by 2030. Research & Development decreased $8.2 million to $12.3 million as funds are being diverted to energy efficiency, building electrification and transportation electrification programs.

More detailed and specific information is provided within the Customer, Zero Carbon Energy Solutions, Workforce, Diversity & Inclusion and Corporate Services Business Unit documentation.

O&M Budget Summary (continued)

Commodities: The Commodity budget for 2022 of $440.7 million is $0.2 million lower than the 2021 Budget. Purchased power is decreasing due to lower prices for a new renewable energy contract, the expiration of a higher priced contract, and power sales to market. Fuel for Generation is increasing due to low reservoir levels leading to low hydro generation coupled with an increase in gas prices. There is a slight decrease in transmission costs for TANC and WAPA. Further details on power supply information can be found on pages 17-24.

Other Employee Benefits: SMUD's Other Employee Benefits, is $40.4 million, an increase of $7.7 million. This item consists of the O&M portion (unfunded liability) of Other Post-Employment Benefits (OPEB) expense of $23.6 million, $3.7 million of workers compensation and GASB 68 accounting adjustments of $13 million.

Capital Budget Summary

Description ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
Customer/Community	$3,967	$6,884	$6,619	($265)	-4%
Energy Delivery & Operations	185,166	196,494	192,866	(3,628)	-2%
Zero Carbon Energy Solutions	68,068	82,736	108,405	25,669	31%
Technology & Innovation	20,278	27,327	37,245	9,918	36%
Corporate	23,522	31,363	29,777	(1,586)	-5%
Contingency & Reserve	0	46,100	(15,000)	(61,100)	-133%
Capital Budget Authorization	**$301,000**	**$390,903**	**$359,911**	**($30,992)**	**-8%**
Revenue *[1]*	(587)	0	(1,106)	(1,106)	100%
Capital Net	**$300,414**	**$390,903**	**$358,805**	**($32,099)**	**-8%**

[1] 2022 Proposed and 2021 Forecast revenue is a multi-year capital grant for the Upper American River Project culvert mitigation

Capital Budget Summary (continued)

Cost Category ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
ActivityType Labor	**$59,362**	**$62,642**	**$80,620**	**$17,977**	**29%**
Material & Equipment	*56,583*	*72,415*	*78,796*	*6,381*	*9%*
Dues & Publications	*100*	*91*	*91*	*0*	*0%*
General Expenses	*29,794*	*68,471*	*(5,577)*	*(74,048)*	*-108%*
Outside Services	*144,828*	*154,510*	*176,129*	*21,620*	*14%*
Advertising	*9*	*0*	*0*	*0*	*0%*
Utilities & Postage	*12*	*3*	*3*	*0*	*0%*
Insurance	*543*	*659*	*733*	*74*	*11%*
Non-Labor Expenses	**231,869**	**296,148**	**250,175**	**(45,973)**	**-16%**
Cost Reduction/Reimb	**(34,629)**	**(21,870)**	**(28,020)**	**(6,150)**	**28%**
Expenditures	**256,602**	**336,921**	**302,775**	**(34,146)**	**-10%**
Cost Center Overhead	**16,683**	**18,147**	**17,851**	**(297)**	**-2%**
Surcharges	**27,715**	**35,835**	**39,285**	**3,450**	**10%**
Capital Budget Authorization	**$301,000**	**$390,903**	**$359,911**	**($30,992)**	**-8%**
Revenue *[1]*	**(587)**	**0**	**(1,106)**	**(1,106)**	**100%**
Capital Net	**$300,414**	**$390,903**	**$358,805**	**($32,099)**	**-8%**

[1] 2022 Proposed and 2021 Forecast revenue is a multi-year capital grant for the Upper American River Project culvert mitigation

Capital Budget Summary (continued)

Capital: The proposed 2022 capital investment budget is $359.9 million for planned investment in generation, transmission, distribution, buildings, vehicles, technology and other assets critical to meeting the energy needs of our customers. Proposed ongoing capital expenditures go through a rigorous evaluation and prioritization process, based on value and risk, to ensure we fund those that have the highest contribution to the Board's strategic directives.

Major capital expenditures planned in 2022 include continuing work for Station G, starting development work for additions to our wind farm with Solano Phase IV, and ongoing improvements in our UARP area as part of our hydro relicense. Programmatic capital planned in 2022 includes cable and pole replacement programs, installing new meters, and new fleet purchases. Technology investments included in the 2022 Proposed Budget are to complete the Advanced Distribution Management System (ADMS), ongoing work for Workforce Optimization, and improvements to HR systems and network communications systems with our Talent Technology Transformation (T3) project.

More detailed and specific information is provided within each Business Unit's Documentation.

Allocated Budget Summary

Description ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
Workforce, Diversity & Inclusion	$11,299	$12,332	$13,224	$892	7%
Technology & Innovation	59,939	62,378	65,432	3,054	5%
Energy Delivery & Operations	3,820	3,675	4,082	407	11%
Corporate	46,744	52,931	50,363	(2,567)	-5%
Total Allocated Budget *[1]*	**$121,802**	**$131,316**	**$133,102**	**$1,786**	**1%**

[1] Allocated Budget expenditures are included in all SMUD Business Unit O&M and Capital summaries (this table is information only)

Allocated Budget Summary (continued)

Cost Category ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	$ Change vs Budget
ActivityType Labor	**$59,391**	**$65,899**	**$64,275**	**($1,624)**	**-2%**
Material & Equipment	*32,300*	*28,532*	*34,032*	*5,501*	*19%*
Dues & Publications	*128*	*113*	*113*	*(1)*	*-1%*
General Expenses	*300*	*460*	*545*	*86*	*19%*
Outside Services	*9,957*	*12,951*	*11,915*	*(1,036)*	*-8%*
Advertising	*32*	*44*	*56*	*13*	*29%*
Utilities & Postage	*1,433*	*1,844*	*1,883*	*39*	*2%*
Insurance	*231*	*317*	*410*	*92*	*29%*
Non-Labor Expenses	**44,381**	**44,260**	**48,953**	**4,693**	**11%**
Cost Reduction/Reimb	**(500)**	**(436)**	**(107)**	**329**	**75%**
Expenditures	**103,271**	**109,723**	**113,121**	**3,398**	**3%**
Cost Center Overhead	**14,425**	**15,437**	**14,155**	**(1,282)**	**-8%**
Surcharges	**4,105**	**6,155**	**5,826**	**(330)**	**-5%**
Total Allocated Budget *[1]*	**$121,802**	**$131,316**	**$133,102**	**$1,786**	**1%**

[1] Allocated Budget expenditures are included in all SMUD Business Unit's O&M and Capital summaries (this table is information only)

Allocated Budget Summary (continued)

The Allocated Proposed Budget for 2022 totals $133.1 million, which is $1.8 million higher than the 2021 Budget. This is shown as **information only** as 100% of these allocated expenditures are included in the budget dollars of all SMUD O&M and Capital described in this documentation. Workforce, Diversity & Inclusion, Technology & Innovation, Energy Delivery & Operations and Corporate Services costs are allocated to business units based on the quantity of labor hours.

More specific and detailed information is provided within each of the previously mentioned Business Unit's sections of this documentation.

Position Count Summary

Executive Hierarchy	2021 Full-time	2021 Limited Term	2021 Part-time	2021 Positions Planned	2022 Full-time	2022 Limited Term	2022 Part-time	2022 Positions Planned	Increase/ Decrease
CEO & General Manager	33	0	1	34	33	0	1	34	0
Communications, Marketing & Community Relations	63	2	3	68	64	1	3	68	0
Chief Legal & Gov't Affairs Officer	38	0	4	42	38	0	4	42	0
Chief Financial Officer	302	7	8	317	307	2	5	314	(3)
Chief Operating Officer	779	21	21	821	796	14	16	826	5
Chief Zero Carbon Officer	246	1	4	251	254	2	7	263	12
Chief Strategy Officer	41	0	6	47	46	0	2	48	1
Chief Customer Officer	278	29	105	412	296	7	104	407	(5)
Chief Diversity Officer	74	7	9	90	80	6	24	110	20
Chief Information & Innovation Officer	262	12	36	310	265	7	37	309	(1)
Enterprise Resource Pool	41	13	1	55	31	0	0	31	(24)
Full-time				**2,157**				**2,210**	**53**
Limited Term				**92**				**39**	**(53)**
Part-time				**198**				**203**	**5**
SMUD Total	**2,157**	**92**	**198**	**2,447**	**2,210**	**39**	**203**	**2,452**	**5**

Position Count: The full-time count of 2,210 is identified in the Board Resolution.

Labor Cost Summary

Executive Hierarchy ($000)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
CEO & General Manager	$13,478	$15,288	$16,567	$1,279	8%
Chief Legal & Gov't Affairs Officer	5,736	5,797	5,892	95	2%
Chief Financial Officer	34,484	36,193	35,653	(540)	-1%
Chief Operating Officer	117,917	121,815	127,756	5,941	5%
Chief Strategy Officer	5,849	6,631	7,066	435	7%
Chief Zero Carbon Officer	31,057	29,905	37,033	7,128	24%
Chief Customer Officer	32,351	36,079	34,187	(1,892)	-5%
Chief Diversity Officer	9,546	8,882	11,402	2,520	28%
Chief Information & Innovation Officer	36,181	39,033	39,835	802	2%
Salaries & Wages*	$264,639	$281,710	$295,685	$7,167	5.0%
Overtime	$21,961	$17,913	$19,706	$1,474	10.0%
SMUD TOTAL	**$286,600**	**$299,623**	**$315,391**	**$15,768**	**5.3%**

*Salaries & Wages includes paid leave ----- 2021 Budget not adjusted for any organizational realignment

Labor Salaries: The labor summary reflects the cost of wages for SMUD employees. The budget for labor and associated benefit costs is included on the previous budget summary pages.

Benefits Summary

Summary ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
Active Employee Benefits	$43,006	$45,188	$48,564	$3,376	7%
Administer Benefits	2,103	2,532	2,380	(153)	-6%
Normal Cost Retirement Funding (OPEB)	0	9,597	8,290	(1,307)	-14%
Subtotal Health & Welfare	**$45,109**	**$57,317**	**$59,234**	**$1,916**	**3%**
FICA Contribution	21,437	22,472	23,654	1,183	5%
Retirement Contribution	119,940	71,159	68,155	(3,004)	-4%
Subtotal FICA and Retirement	**$141,377**	**$93,631**	**$91,809**	**($1,821)**	**-2%**
TOTAL	**$186,486**	**$150,948**	**$151,043**	**$95**	**0%**

Benefits: The benefits summary reflects costs for active and retired employee benefits, the costs to administer those benefits, and FICA and retirement contributions for current staff. 2022 Proposed Budget is increasing slightly due to higher active employee benefits, offset by lower Normal Cost (OPEB) and Retirement Contribution expenses compared to 2021 Budget.

2022 Budget
Debt Service

Powering forward. Together.

SMUD®

Debt Service Budget

The following schedules show the summary and details of the 2022 Proposed Budget for Debt Service. SMUD issues Electric Revenue Bonds and Commercial Paper Notes to finance long-lived capital assets. The Debt Service Budget includes accrued interest expense on outstanding Electric Revenue Bonds and Commercial Paper Notes, net of any swap revenues tied to debt issues, scheduled principal repayments of Bonds and Commercial Paper, trustee fees associated with administration of debt service payments, and interest expense and issuance costs associated with planned new debt issues.

Revenue Bond Interest totals $109.2 million in the 2022 Budget, a decrease of $4.4 million from 2021.

Commercial Paper Interest totals $4.1 million in the 2022 Budget, an increase of $0.3 million from 2021. Short-term interest rates assumed for 2022 are an average of 0.10%; The budget assumes an average commercial paper balance of $100 million.

Scheduled Principal Repayments of revenue bonds and commercial paper notes total $100.2 million in 2022, a $2.1 million increase from 2021.

Fees/Bond Issuance Costs of $2.3 million are included for new 2022 bond issuances and related fees.

Debt Service Budget (continued)

Debt Service ($000s)	2021 Forecast	2021 Budget	2022 Proposed	$ Change vs Budget	% Change vs Budget
Interest Expense[1]	$116,297	$117,425	$113,294	($4,131)	-3%
Principal Repayments	98,040	98,040	100,150	2,110	2%
Fees/Bond Issuance Cost	794	2,079	2,310	231	191%
Total Debt Service	$215,131	$217,544	$215,754	($1,790)	0%
Allocated to JPAs	(3,812)	(3,812)	(3,596)	216	-6%
NET DEBT SERVICE	**$211,319**	**$213,732**	**$212,158**	**($1,574)**	**0%**

[1] Build America Bonds are shown gross of the rebate of $9.3 million expected in 2022. The budget authorization is requested gross of the rebate. Includes net debt related swap payments and interest on long-term, variable rate, and subordinated debt. Assumes an interest rate of 4.34% (incl. all related fees & swaps) on avg. commercial paper balance of $100 million.

Debt Service Budget (continued)

Date Issued	Issue	1/1/2022 Principal Balance	Issued Interest Rate	Final Maturity Date	2022 Scheduled Principal Payment	2022 Interest Expense
	Electric Revenue Bonds					
Jun-97	Series K[1]	55,835	5.25% to 5.90%	2024	17,670	90
May-09	Series V[2]	200,000	6.322% (4.11% net)	2036	-	12,644
Jul-10	Series W[3]	250,000	6.156% (4.00% net)	2036	-	15,390
Sep-11	Series X (Refunding)	0	1.50% to 5.00%	2028	-	0
Jan-12	Series Y (Refunding)	163,765	3.00% to 5.00%	2033	5,980	7,935
May-13	Series A	132,020	3.75% and 5.00%	2041	-	6,592
May-13	Series B (Refunding)	81,880	3.00% to 5.00%	2033	60	3,996
Jul-16	Series D (Refunding)	124,160	5.00%	2028	20,100	5,715
Dec-17	Series E (Refunding)	132,870	3.00% to 5.00%	2028	21,285	6,241
Aug-18	Series F (Refunding)	127,645	5.00%	2028	24,400	5,921
Apr-19	Series G	191,875	5.00%	2041	-	9,352
May-20	Series H	400,000	4.00% to 5.00%	2050	-	18,699
Jul-21	Series I[4] (Refunding)	106,875	5.00%	2028	10,655	5,142
Jul-22	Series J	157,785	2.06%	2032	-	1,451
	Subtotal	1,966,925			100,150	99,170
	Subordinated Electric Revenue Bonds					
Jul-19	*Series A*	100,000	5%	2049	-	5,000
Jul-19	*Series B*	100,000	5%	2049	-	5,000
	Subtotal	200,000			-	10,000
	Total Outstanding Bonds	2,166,925	Principal & Interest Payments		100,150	109,170
	Total Debt Service				**100,150**	**109,170**

1) Swapped to a variable rate for the life of the debt, interest expense net of swap payment. Interest expense without swap would be $2,467,500.

2) Interest expense gross of federal government Build America Bond rebate of $4,173,152.

3) Interest expense gross of federal government Build America Bond rebate of $5,079,470.

4) Forecasted debt service based on 2012Y refunding

SMUD®

November 6, 2020
GM 20-240

BOARD OF DIRECTORS

2021 BUDGET

Dear Board Members:

I am pleased to submit SMUD's 2021 Budget proposal, my first as SMUD's new CEO & General Manager. It provides funding for operations and maintenance (O&M) and capital programs needed to successfully meet all the Board's Strategic Directions over the coming year and ensures we will continue to do so in the future.

As a community-owned, not-for-profit utility, we look holistically at our budget, programs, projects and initiatives each year to make sure we deliver value to our customers and community in a way that maximizes the benefit, while also striving to be as fair and equitable as possible for the 1.5 million people we serve.

There were two major new drivers we considered while preparing this budget: first, the Board's 2030 Climate Emergency Declaration and our new 2030 Clean Energy Vision. Second, the COVID-19 pandemic, which continues to impact the economy and SMUD's business. Other key drivers that continue to be reflected in the proposed budget include: safety and reliability, affordable rates, value for our customers, and community vitality. Staff has been thoughtful in developing the 2021 Budget that reflects the current uncertainties while ensuring we continue to fund the activities that are critically important to support our customers and community during this challenging time, while also funding activities that support SMUD's long-term success and leadership position, including our investments in accelerating our carbon reduction efforts.

The proposed 2021 Budget balances constrained resources due to flat energy sales per customer, economic uncertainty around the COVID-19 pandemic and investments needed to support our carbon reduction goals, wildfire mitigation, vegetation management and infrastructure investments with our commitment to deliver on our purpose to enhance the quality of life for our customers and community. In addition to keeping the lights on and rates affordable, the Budget includes several initiatives to create a beneficial impact for our community by leveraging our strategic partnerships, including our Sustainable Communities initiative, continuing work with our low-income customers, our support for the SMUD Museum of Science & Curiosity, (formerly the Powerhouse Science Center), and the California Mobility Center, which is a public-private innovation initiative to make Sacramento an international hub for eMobility

investments. By combining efforts with key customer and community partners, we'll maximize community impact, helping to ensure every dollar we spend delivers value.

In 2021, we'll continue to focus on optimization and operational excellence, building on the progress we've made to streamline our operations and reduce expected costs to help offset necessary expenditures that support key initiatives and operations. One of our top priorities is to remain focused on getting the maximum value from every dollar we spend. In developing the proposed 2021 Budget, we went through an enhanced risk assessment process to allocate money within the budget based on level of risk. This allowed us to absorb unexpected increases in wildfire mitigation, vegetation management and low-income subsidies, among others.

The proposed 2021 Budget Authorization is **$1.7 billion**, which is **$62 million lower than the 2020 Budget**, primarily due to lower commodity and capital expenditures. The 2021 Budget funds a variety of items including investments and programs to support our grid modernization, wildfire mitigation, cybersecurity, and investments to deliver our Sustainable Communities initiative. In 2021, we have allocated additional funds for clean energy resources and pathway analysis, research and development, pilots, and technology innovation activities as we begin to plan and execute on our ambitious 2030 Clean Energy Vision.

Major capital projects for 2021 include continuing to rebuild Station G, work on the expansion of the Solano Wind Farm, the purchase and operationalization of Chili Bar Hydroelectric facility and work at Union Valley in support of our hydro license. The 2021 Budget includes funding for new and continuing technology projects, such as the Advanced Distribution Management System (ADMS) and Distributed Energy Management Systems (DERMS) to provide increased visibility and management of distributed energy resources, Workforce Optimization for Energy Delivery to maximize the efficiency of the field crews and field work and Talent Transformation for Human Resources, Diversity & Inclusion (HRD&I) to manage hiring, onboarding and talent management processes holistically through a single technology platform. This Budget contains funding for corporate contingency and reserve, which aligns with prudent fiscal management practices and is designated for items with the potential of occurring in 2021 but without enough definition to be included within a business unit's budget. In 2021, corporate contingency includes funds for inventory and land purchases and additional development projects and programs.

The O&M budget is increasing slightly due to mandatory costs for vegetation management and additional wildfire mitigation plans and actions. We are increasing our spending on low carbon pathways analysis, plus pilots, projects, and initiatives to support the acceleration of our carbon reduction efforts. Funds have been budgeted for electric transportation incentives, building electrification programs and other carbon reducing efforts. As the Board knows, electrification is a critical part of our low carbon future, and an important part of our strategy to continue to be a leader in the region's transformation to a low-carbon future. The budget also funds customer outreach and education for these items.

The 2021 Budget authorizes 2,157 full-time positions – a reflection of our success in creating efficiencies within the organization, as it reflects a decrease of 30 planned positions from the prior year's plan due to capturing savings from staff attrition. In addition to a full-time workforce, the Budget reflects funding for SMUD's flexible workforce strategy in support of temporary and part-time work, plus funding for our future workforce pipeline needs with student positions.

To fulfill the Strategic Directions you've set for us, especially during this time of uncertainty and industry transformation, strong financial management is imperative. The previously approved rate increases of 2.50% in January 2021 and 2.00% in October 2021 and our year-end cash balances will be sufficient to achieve our financial metrics.

Although we expect a slight increase in our customer count in 2021, we are expecting a decrease in our kWh sales of electricity. We recognize the potential for new growth related to building electrification, electric vehicle adoption and mixed-use commercial/residential sales growth, but have maintained conservative sales estimates as these markets are complex, and we don't expect to see a material increase until after 2025. We'll continue to monitor these and other factors, including local construction and employment, and manage their impact on our budget and operations.

Budget Breakdown

Here is a brief overview of the proposed 2021 Budget compared to the 2020 Budget, dollars in millions ($M):

	2020 ($M)	2021 ($M)	Change ($M)
Commodity	**$474.2**	**$440.9**	**($33.3)**
Public Goods without Subsidies	69.1	68.1	(1.0)
Public Goods Subsidies	29.6	40.0	10.4
Public Goods Total	**98.7**	**108.1**	**9.4**
Other O&M	**614.8**	**631.2**	**16.5**
Subtotal (of commodity, public goods and other O&M)	**$1,158.1**	**$1,140.2**	**($17.8)**
Debt Service	191.9	213.7	21.9
Capital	456.6	390.9	(65.7)
Total Budget (of subtotal plus debt service + capital)	**$1,836.1**	**$1,784.8**	**($51.3)**
Total Budget Authorization*	**$1,806.5**	**$1,744.8**	**($61.7)**

Totals may reflect minor rounding differences.

*Budget Authorization does not include public good subsidies because Board approves as a component of rates.

The following sections provide details on the major initiatives and programs funded in the 2021 Budget, grouped by the Board's Strategic Directions (SD).

Competitive Rates (SD-2)

The 2021 Budget reflects the second year of our phased-in rate increase approach that the Board adopted in June 2019. Energy supply commodity costs make up almost half of our total O&M budget. Staff has locked in prices for most of our expected energy requirements for 2021 to ensure cost and rate stability for customers. Only a small portion of budgeted energy purchases are exposed to short-term market price fluctuations.

We'll enter 2021 with approximately $82 million in the Hydro Rate Stabilization Fund (HRSF) and $34 million in the Rate Stabilization Fund (RSF), net of Low Carbon Fuel Standard (LCFS) and Cap and Trade (AB32) funds. These reserve funds help us absorb higher energy costs when hydroelectric production is down and serve as a buffer against unexpected financial developments.

SMUD will conduct a public rate action during 2021, which will include a new solar rate for customers with renewable generating facilities, such as rooftop solar. The proposal will include creative ways to continue to make solar accessible to all customers, including low-income customers.

We know our customers expect us to keep our rates low while continuing to deliver safe, reliable, and environmentally responsible power and the products and services they value. Operational Excellence will continue to be a focus across SMUD in 2021 and beyond to free up dollars to support our carbon reduction goals and other strategic initiatives. There are many initiatives focused on making our processes as efficient as possible.

2021 Budget investments and improvements to create efficiencies and operational savings include:

- Continuing outreach to commercial and residential customers that are behind in payments to SMUD to provide payment options and minimize write-offs.

- Automating the manual Corrective Notifications process used when our utility inspectors are out in the field and find an issue. The Corrective Notification Automation project will free up resources and increase the frequency and accuracy with which notifications are processed on a daily occurrence.

- Implementing the Distribution Line Inspection mobility project to eliminate the need for secondary handheld devices in the field. This allows inspectors to use their SMUD-issued phones to capture notes, corrective notifications, etc. instead of using a costly secondary device.

- Saving about $500,000 annually in cash discounts from our new Procure-to-Pay Supply Chain discount management strategy that was implemented in 2020. We're also giving our vendors the opportunity to receive their payments earlier and enhancing our electronic vendor payment channels for increased security, savings and efficiency.

- Developing the Real Estate PowerClerk and Property Management Lifecycle programs for improved utilization of staff time and land assets at SMUD, estimating a savings of $750,000 over 3 years related to real estate management.

Access to Credit Markets (SD-3)

SMUD proactively manages its strong financial position to maintain high credit ratings. These strong credit ratings improve access to credit markets and result in a lower cost of borrowing – an especially important financial benefit as we look to finance our ambitious low-carbon future. We were able to borrow early during the COVID-19 pandemic and have additional cash in 2020, which provides operational flexibility while limiting our need for any borrowing in 2021.

Our operations target strong financial metrics in cash flow coverage (fixed charge) and liquidity (days cash). The Board sets a minimum fixed charge of 1.50 times operating cash flow; however, we aim for a minimum of 1.70. Our current 2021 forecast plans for a fixed charge coverage of 1.80 times.

SMUD maintains a strong liquidity position by setting a minimum number of days cash on hand and managing a $400 million commercial paper program. The commercial paper program allows us to do short-term borrowing when needed in lieu of issuing long-term debt, similar to a credit card or line of credit. A strong liquidity position is important in demonstrating to investors and rating agencies that SMUD can withstand various financial stresses. Our current days cash threshold is 150 days — the minimum amount of cash on hand before triggering a new debt or commercial paper issuance to replenish cash balances.

Reliability (SD-4)

Power reliability for our customers remains a top priority. The 2021 Budget funds the ongoing preventive maintenance and capital improvement projects needed to ensure high reliability of our distribution system. Increased investments in prior years have delivered the desired improvements and we're continuing to invest in reliability enhancements in 2021. We understand that any power outage is a negative experience for our customers and will continue proactive communications to customers during outages.

Some major efforts to address reliability in the 2021 Budget include:

- **Grid substation improvements & new capacity** – We'll continue work on building Substation G. The control building and site work construction is expected to be complete in the fall of 2021, with project completion targeted for 2022. Work on Substation H continues and will address normal substation capacity deficiencies at Station D and Station E due to growth. As part of the planning for Station G and H, the existing Station A will be decommissioned once Station G is turned over to Operations. We are also on track with our multi-year replacement plan for Transmission & Distribution (T&D) substation assets, which includes circuit breakers, transformers and switchgears. Equipment replacements in 2021 includes 4 transformers, 3 transmission circuit breakers and 8 69kV circuit breakers.

- **Vegetation management & wildfire mitigation** – In 2021, we plan to trim 84,000 trees as part of our routine tree trimming efforts. We continue to remove vegetation that could grow or fall within unsafe distances to the transmission lines and reduce fuels minimizing the potential effects of a wildfire. We are also working to underground the 4kV line in Bush Creek Reservoir and Junction Dam at Union Valley. This will eliminate wildfire exposure and reduce future vegetation management activities associated with this line.

- **Transition of Chili Bar hydro facility to SMUD** – The Chili Bar facilities are north of Placerville and began operating in 1965. SMUD built Chili Bar and gave it to PG&E to compensate for damage to its powerhouse during the building of our Upper American River Project (UARP). The UARP is immediately upstream from Chili Bar Reservoir and is in our "Stairway of Power" that currently features 11 dams and 8 powerhouses. The Chili Bar powerhouse has a generating capacity of 7MW. The purchase will increase our hydroelectric generation portfolio to 695MW and add to our Renewable Portfolio Standard as Chili Bar's generating capacity is under the state's 30MW maximum capacity, thereby qualifying it as a renewable resource.

- **Pole and cable replacements** – In 2021, we plan to replace 1,200 poles and are targeting to replace 300,000 circuit feet of cable for 4kV, 12kV and 21kV lines. The Pole Replacement Program includes replacing poles that have failed a pole inspection and are not candidates for pole reinforcement. The new poles will meet the compliance requirements established by SMUD and the California Public Utilities Commission. For cable replacements, the plan is to address the worst performing cable first, which will decrease future outages, repair costs, customer complaints and reduce the number of the worst performing circuits.

- **Transmission and distribution –** The 2021 budget includes work to complete the upgrade of 1 of our 230kV transmission lines to increase the load serving capability of our transmission grid. The budget also includes projects to expand or upgrade sections of our distribution system such as 21kV extension projects that serve load in downtown Sacramento and The Railyards, Department of General Services projects on O Street, P Street and Richards Blvd., Capitol

Hotel, Cathedral Square and the MLS Soccer Stadium. Additional distribution capacity projects are also planned to serve new communities such as Rio Del Oro in Rancho Cordova, Russell Ranch, Folsom Ranch and Mangini in Folsom and multiple commercial developments at Metro Airpark in Natomas and California Northstate University Medical Center in Elk Grove.

Customer Relations (SD-5), Outreach and Communication (SD-15)

2021 is an important year for maintaining and enhancing our strong customer relations and brand loyalty. We want customers to feel in control of their energy usage by delivering reliable energy, information, and the tools they need in a way that is easy, responsive, personal and collaborative. In 2021, we will resume customer collections activities and focus on managing the financial risk and customer experience related to COVID-19 recovery and changes to our rates.

In support of our work to deliver value to our customers and community, initiatives in the 2021 Budget include:

- Supporting the Commercial Rate Restructure that was approved by the Board in 2019 and providing commercial customers with rate analyses to help them better understand the impacts of the Commercial Rate Restructure on their business.

- Continuing our Energy Assistance Program Rate (EAPR) support by providing our customers most in need with home weatherization, energy efficiency and electrification to reduce their electric bill burden.

- Expanding efforts to support our customers most in need in collaboration with our Sustainable Communities initiative by leveraging community partnerships. Sustainable Communities is a holistic strategy that defines SMUD's vision for creating a healthy community and region through workforce and economic development, social equity, climate change leadership and environmental justice initiatives.

- Continuing our work in the community with our SMUD Cares campaign, Shine Awards and work with the SMUD Museum of Science & Curiosity, formerly the Powerhouse Science Center.

- Expanding digital communication capabilities to ensure delivery within the customer's preferred channel (IVR, text, mobile app).

- Maintaining pace with changing customer expectations in these uncertain times to meet Customer Satisfaction and Value for What you Pay (VFP) targets.

Safety (SD-6)

SMUD continues to execute our plan to be a recognized leader in safety. In 2021, we'll implement our 3-year Safety Road Map and Safety Management System (SMS) that fosters SMUD's safety culture and leadership and furthers our journey toward our organizational goal of zero incident and injuries.

Key safety commitments in the 2021 Budget include:

- Continuing to support COVID-19 and re-entry efforts in 2021. Goals for 2021 include ongoing exposure guidance, personal protective equipment usage, contact tracing, ergonomic support for remote workers, re-entry training and review/safety consultation for the re-introduction of SMUD staff in the participation of public events/activities.

- Implementing our 3-year Safety Road Map, which outlines our strategy to continue to build a Safety for Life culture at SMUD for employees, SMUD contractors and the public. The Road Map focuses on roles and responsibilities, goals for leadership, staff, contractors, and the public, identifying priority areas and initiatives to reduce injuries and record milestones.

- Populating and implementing the SMS software program to consolidate many of SMUD's safety programs and the conduct data trending and analytics reviews.

- Updating and using the new SMS for Safely Conducted Observations Reduce Common Hazards (SCORCH) field observations to provide SCORCH observers with the ability to use tablets and phones in the field to conduct and track observations. Data can then be more efficiently used for trending, incident investigations and barrier removal.

- Expanding our Contractor Safety pre-qualification pilot program to increase the review of high-risk project contracts.

- Expanding and formalizing SMUD's Emergency Responder and Public Safety Electrical training program to ensure that first responders have knowledge of electrical hazards during emergency response activities.

Environmental Leadership (SD-7)

SMUD is recognized as an environmental leader within our industry and beyond. Our commitment to the environment is evident in the power we deliver to our customers, our community involvement, the materials we buy and the decisions we make each day. We're always looking to reduce our impact on the environment, conserve resources, and improve the environment for current and future generations. These efforts benefit our employees, customers and most of all, our community.

A large focus in 2021 is to update SMUD's internal 5-year Environmental Sustainability plan. The report provides a roadmap and strategy to reduce SMUD's non-power generation carbon footprint of our business practices through reduced energy use, water conservation, waste minimization, Greenhouse Gas (GHG) emission reduction and fleet electrification. In 2021, the Environmental Services team will audit the success of the last 5 years of sustainability efforts and amend its sustainability plan based on audit results and operational changes on our campuses.

Other environmental leadership investments in the 2021 Budget include:

- Working with Sustainable Communities to communicate and bolster the impact of existing and new SMUD Environmental and Safety and Sustainable Communities efforts.

- Continuing to investigate alternative technologies to reduce the use of Sulfur Hexafluoride (SF6), a potent Greenhouse (GHG) gas. SF6 contributes to the greenhouse effect and has more than ***22,000 times*** the global warming potential of carbon dioxide. SMUD staff are working with engineering teams to use non-SF6 gas equipment, like vacuum-interrupting technology, as a replacement for SF6 breakers.

- Reporting SMUD's GHG reductions using CDP (formerly known as the Carbon Disclosure Project). The CDP is a not-for-profit organization that runs the global disclosure system to measure and report on company environmental impacts related to GHG emissions. The CDP report in 2019 and 2020 described SMUD's governance and strategy, risk and opportunity management and emissions management related to climate change. This report, in combination with mandatory and other voluntary GHG reports, provides stakeholders with a measure of SMUD GHG emissions, and reduction efforts to reduce emissions.

- Continuing to initiate agreed upon mitigation measures to retrofit utility poles at Solano Wind Farm to be avian safe while expanding our avian field monitoring program under the provisions of our new Eagle Take Permit.

- Implementing environmental justice components into California Environmental Quality Act (CEQA) documents. Environmental justice components will be used in the development of SMUD CEQA projects and staff will work with project managers and Sustainable Communities in the review of findings and outcomes.

- Continuing recreational improvements such as the construction of the Union Valley Bike Trail from Wench Creek to Yellow Jacket campgrounds and reconstructing existing campsites at Yellow Jacket and expanding the campground by 65 units. We are also paving drive loops, ensuring ADA compliance, and installing a shower facility with toilets at Yellow Jacket. This work is part of the construction/upgrade of recreational facilities for UARP Operating License Implementation requirements.

- Making enhancements to our fleet by increasing the number of electric vehicles to upwards of 18% of our total fleet, which includes the purchase of 5 Zeus Electric—A California Mobility Center pilot client—work trucks and 6 all-electric pickup trucks from Lordstown Motors. The increase in fleet electrification will contribute to increasing our fuel economy and "all-electric miles driven" will become a new measure that we will report on and set goals for after 2021.

- Initiating design of a landfill cap for SMUD's North City property to meet state minimum standards for landfill closure. SMUD staff is working with Sacramento City and County, along with CalRecycle to coordinate design and eventual construction of a cap once the existing substation is decommissioned. Work includes an engineering design for the cap and a stormwater retention basin that can be used jointly by SMUD and the City of Sacramento.

- Continuing to enhance our procurement process to support a best practice approach to sustainable purchasing. To assist in this effort, SMUD will become a member of the Electrical Utility Industry Sustainable Supply Chain Alliance, where we can work jointly with other utilities in the sharing of sustainable purchasing best practices.

Employee Relations (SD-8)

The uncertainty we experienced throughout 2020 is precisely why a focus on culture is among the top of HRD&I priorities. To attract, retain and engage talent that will drive our region forward, we are adapting our strategy to respond to an ever-changing work environment by including a focus on navigating remote work culture, demonstrating respect for all people and enhancing collaboration. We are elevating our sustained commitment to diversity and inclusion in the workplace by improving equitable practices and approaches to talent acquisition and employee development as we continue to leverage varied skills, experiences, and perspectives. These investments will be critical to SMUD's ability to deliver on strategy, open doors to innovation and foster an inclusive culture that reflects the broad values of our customers and community.

Key employee relations investments in the 2021 Budget include:

- Negotiating new Memorandums of Understanding (MOU) with bargaining units IBEW and OSE with total compensation packages for these represented employees that successfully meet SMUD's financial targets while maintaining competitive pay, safety in the workplace, employee engagement and positive labor management relations between SMUD and the bargaining units before current labor contracts expire on December 31, 2021.

- Continuing development and implementation of a child development center in conjunction with CSU Sacramento and UC Davis Health to be completed by fall 2021.

- Conducting an employee engagement survey to continue obtaining feedback and benchmarking data for comparison purposes in key areas including work environment, advancement, recognition, pay and benefits, leadership, communication, job role and training and development opportunities.

- Accelerating and deepening SMUD's diversity and inclusion strategy by improving equitable practices in our operations, implementing a Diversity Council, onboarding a Program Manager and piloting programs to improve diversity, equity and inclusion in our hiring processes and employee development efforts.

- Implementing the Powering Careers program, a collaboration between HRD&I and Energy Delivery, to focus on building a pipeline for underrepresented communities to get into skilled trades at SMUD and other industry partners in our region.

- Expanding recruitment and talent outreach strategies to include community partnerships, Employee Resource Groups, veterans' organizations, and continued investment in GlassDoor and other advertising/recruiting platforms. This will provide increased visibility and partnership opportunities with community organizations as part of our talent acquisition efforts.

- Developing mentorship and coaching programs that provide increased opportunities for development and career growth, expand networking and visibility across business units and levels of leadership, and improve opportunities for advancement for underrepresented groups within SMUD.

Resource Planning (SD-9)

The Board adopted the current Integrated Resource Plan (IRP) in 2018 and recently adopted a more ambitious 2030 zero carbon goal outlined in the Climate Emergency Declaration. The new 2030 Clean Energy objective will be studied over the next 6 months and the Board will be presented with the pathway for the 2030 carbon goal in March 2021. While SMUD has always had an IRP target to meet or exceed goals established by the State for renewable energy and the reduction of carbon emissions, our new 2030 plan will greatly accelerate these efforts. Starting in Q4 2020, SMUD staff will undertake a public process with the Board and other stakeholders to explore options to achieve the new 2030 zero carbon goal.

Although we haven't yet determined the details of the new 2030 zero carbon plan, the SD-9 projects planned in 2021 are fundamental to the decarbonization of our grid and are supportive of this new direction. These efforts include planning, developing, and implementing renewable projects and customer offerings, including building and vehicle electrification and energy efficiency programs, renewable energy, and reliability projects. We are also preparing the distribution system for the future by beginning

implementation of our Integrated Distributed Resource Plan (IDRP) and continuing our grid modernization work.
In 2021, Activities in support of achieving our SD-9 goals include:

- Expanding renewables and increasing reliability:
    - Continuing the development of Solano Phase 4 in Solano County adjacent to our other wind resources at this location.
    - Continuing evaluation and development of several utility solar and battery storage projects, online target of 2024.
    - Continuing work on a 100 MW solar project with the Navajo Tribal Utility Authority in Southern California due online in 2022.
    - Installing of our first utility-scale battery at the Hedge Substation, which will provide operational benefits for our system and give staff beneficial operations experience with battery storage, prior to ramping up much larger systems.
    - Continuing to identify future locations for local solar and battery storage projects in support of our renewable goals and green programs such as Neighborhood Solar Shares.

- Expanding our building electrification offerings.

- Working with local and state government to guide building codes to encourage building electrification.

- Continue exploring solar rate structures that reflect the value of solar and encourage intelligent dispatch of battery storage, either through tariffs or associated programs to be included in the formal rate action to begin in Q1 of 2021.

- Completing work on grid modernization efforts including the Automated Distribution Management System (ADMS) and continuing work on the Distributed Energy Resource Management System (DERMS),which lay the foundation for integration of Distributed Energy Resources (DERs) such as solar, energy storage, flexible demand and electric vehicles.

- Beginning a planning effort to evaluate how medium- and heavy-duty EV fleets and charging infrastructure are expected to impact our distribution grid, and what opportunities there may be to mitigate those impacts.

Innovation (SD-10)

One of our core values is delivering innovative solutions, products, and services to our customers. We are increasing our investment in technology innovations for 2021, especially as it relates to programs and projects that support our carbon goals. We will

also investigate, research, and demonstrate a variety of projects that support SMUD's strategic goals, including:

- Accelerating research in building and transportation load flexibility to allow for the intermittent renewable resources and mitigate the infrastructure impacts of electrification, such as:
    - Supporting the development of vehicle-to-grid readiness for school bus electrification. Vehicle-to-grid readiness means the charging infrastructure is ready to support charging the vehicle and includes a battery storage system for the grid to enable 2-way power flow.
    - Demonstrating the flexibility of commercial thermal energy storage.
    - Continuing the implementation and evaluation of the AB 2514 battery storage pilots (residential behind-the-meter storage, new residential construction, StorageShares, residential heat pump water heaters).

- Researching key barriers to building and transportation electrification, including:
    - Multi-family/central heat pump water heating system design and performance.
    - Mitigating panel and grid infrastructure upgrades needed to support electrification goals.
    - Expanding EV pilot program offerings to provide design consulting services for medium and heavy-duty EVs and commercial light duty vehicles such as sedans and pickups.
    - Investing in low-income and disadvantaged communities (DAC) sustainability projects through a portfolio of offerings such as working with Sacramento Metro Air Quality Management District (SMAQMD) on eMobility hubs with EV charging at specific community locations within DACs.

- Investigating options to increase the efficiency and precision of grid monitoring capabilities.
    - Implementing a transmission line monitoring pilot to test the achievability and usability of dynamic line ratings to inform short-term operational and long-term planning decisions.
    - Assessing a technology that provides active grid monitoring capabilities, including fault detection, fire alarms, load data, protector status, and equipment health condition for the Downtown Network.

- Expanding our microgrid capabilities and development of associated processes.
    - Converting SMUD's solar port to demonstrate a solar plus storage microgrid capable of providing emergency EV charging during outages.

- Planning for Phase 3 of the DERMS development to enable management and alignment of customer-sited batteries and flexible loads such as EVs, heat pump water heaters and smart thermostats.

- Providing client services to support business development of California Mobility Center clients in electric transportation, including initiatives such as:
    - Incorporating 5 medium-duty electric trucks built and customized by Zeus Electric Chassis into SMUD's fleet.
    - Partnering with Amply in its testing of a "gas station" model, multi-tenant charging depot for commercial customer fleets in Sacramento.

Public Power Business Model (SD-11)

We'll continue to guard local decision making and flexibility as we pursue innovative solutions that meet the needs of our customers and community.

The primary focus areas for Government Affairs activities in the 2021 Budget include:

- Post-2020 carbon policies and regulations.
- NEM, grid charges and other utility fees.
- Transportation electrification frameworks.
- Oversight of wildfire mitigation plans.
- Legislative and regulatory mandates in response to mid-August 2020 rolling outages.
- Federal policies on transmission.
- Energy markets.

Economic Development (SD-13)

SMUD promotes the economic vitality of our region and the growth of our customer base through strategic leadership and active participation in regional economic development partnerships. This includes supporting efforts to retain, recruit, and grow commercial and industrial customers, offering Economic Development Rates and program incentives and providing a SMUD contracting program for certified small business customers. We're also helping build a strong innovation ecosystem through support for start-ups, entrepreneurs, and business incubators, with a key focus on encouraging growth in disadvantaged neighborhoods.

SMUD helps make our region an attractive destination for businesses of all sizes through affordable rates and customized energy solutions.
Key initiatives in the 2021 Budget include:

- Realigning and leveraging strategic business partnership benefits to maximize support of commercial customers impacted by the COVID-19 pandemic.

- Maximizing Supplier Education and Economic Development (SEED) awareness and vendor participation through key partnerships, outreach and the launch of engagement tools including online program webinars; enhancement of the SEED vendor verification process and development and implementation of a key study to assess small business availability in, and surrounding SMUD's service area to inform a SEED outreach strategy.

- Supporting regional and international interest and investment in the California Mobility Center—a public/private consortium created to fund and commercialize new mobility technologies including customized technical, digital and advanced manufacturing of electric vehicles, autonomous transportation, battery storage, shared mobility solutions, and public transit – as well as develop new business and policy models for adoption on the international stage.

System Enhancement (SD-14)

The 2021 Budget includes 2 projects that SMUD has committed to fund under the SD-14 policy. The first project involves construction completion of Sacramento County's Hazel Avenue Improvement Project - Phase 3 (from Sunset Avenue to Madison Avenue). The second project is City of Elk Grove's Streetscape Project (at Elk Grove Boulevard from Waterman Road to School Street) and entails detailed design activities in 2021. These projects will underground the existing overhead facilities that are within the scope of work.

Information Management and Security (SD-16)

Technology plays a critical role in the collaboration across SMUD, especially looking to the future with so many more employees working remotely, to institutionalize robust information management and physical security practices. Multiple disciplines, specifically cybersecurity, physical security and legal, are critical for SMUD to take prudent and reasonable measures to accomplish the objectives of SD-16. Accordingly, the 2021 Budget funds technology and cybersecurity solutions and strategies to implement efficient and effective measures to manage information risk to SMUD's people, processes, and technology.

Key initiatives in the 2021 Budget include:

- Integrating cybersecurity-related technology solutions. Building on work from 2020 to mature the Cybersecurity department's implementation of the National Institute of Standards and Technology Cybersecurity Framework to protect our people, processes and technology, in 2021 we will work to finalize system integration of 2 new solutions to mature our cybersecurity governance, risk and compliance program. These systems will enhance our cybersecurity engineering practices and ensure we are implementing effective policy to protect our information confidentiality, integrity, and availability. The Risk Management Framework will introduce repeatable processes that enhance or support the

enterprise – Data Governance, Enterprise Risk Management (ERM), Business Strategy & Requirements, IT Strategy & Governance and Project and Procurement Lifecycles.

- Expanding Cybersecurity programs to deliver 24/7 cyber risk management. Mature cybersecurity technical and programmatic efforts to be integrated in critical business capability and requirements processes and practices to ensure cyber and privacy are baked in early to avoid risk to cost, schedule and performance of SMUD's operational business requirements. This includes improvements in Cyber and Privacy governance, CIP compliance, IT and OT Risk Assessments, Cloud and Applications Security, Supply Chain Risk Management and awareness and training for employees who have privileged access to our information and technology.

- Integrate application rationalization and enterprise architecture functions. Staff will continue to develop a strategic view of applications with potential future savings by retiring or consolidating applications used across SMUD.

Enterprise Risk Management (SD-17)

The 2021 Budget fully funds key risk mitigation activities. SMUD's enterprise-level risks span the spectrum of operational and strategic business risks and include those associated with energy procurement, strategy, operations, natural hazards, political and regulatory issues, economics, and the environment. Risk assessments and mitigation plans continue to be refined and improved by considering SMUD's changing internal and external risk environment and enhancing how SMUD addresses its risks. Mitigation activities for high and significantly high risks identified in the enterprise risk register will continue to be monitored closely to ensure these risks are adequately managed.

Some key initiatives in the 2021 Budget include:

- Continuing to mitigate wildfire risk and potential impacts to SMUD's customers and the community.
- Enhancing and improving SMUD's emergency preparedness and response capabilities that leverages lessons learned from our response to the COVID-19 pandemic this year.

Enterprise Risk Management will continue to align with Internal Audit and other lines of defense through shared best risk management practices.

Diversified Business (SD-19)

Broadening and diversifying our products and services is a key value for SMUD. In 2021, we will pursue opportunities that benefit our customers and community, create economic value, achieve a balanced and diversified portfolio, leverage and optimize our

strengths, assets, and expertise, all while maintaining our financial health and reputation.

Some efforts in the 2021 Budget include:

- Standing up the California Mobility Center, a private/public consortium focused on innovation and commercialization, standards and policy, workforce development and new business models in electric mobility.

- Working with the California Mobility Center, Zeus and Amply to reduce barriers to EV adoption, support our vehicle electrification goals and reduce local carbon emissions.

- Participating in energy and power markets, selling transmission and ancillary services.

- Continuing work on our Community Energy Services business for Valley Clean Energy and East Bay Community Energy.

In closing, 2021 promises to be a transformative year for SMUD and the Sacramento community, and the budget includes funding for setting the Sacramento community on a path to achieving a low-carbon future while also working to enhance the vitality of all Sacramento area residents through our Sustainable Communities and other initiatives. I'm proud of the work we've done to build a budget that supports the Board's Strategic Directions, covers the increased costs of wildfire mitigation, provides additional funds in support of our 2030 carbon goals, and continues to deliver value for our customers and community while also responding to the ongoing COVID-19 pandemic. It's also important to note that the 2021 Budget is designed to deliver on these key goals while also achieving strong financial metrics that create our strong foundation.

I look forward to providing the Board with regular updates on progress throughout the upcoming year.

Respectfully submitted,



Paul Lau
Chief Executive Officer and General Manager

cc: Corporate Files

2021 Budget



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2021 Budget

Strategic Direction

Purpose, Vision & Values



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Strategic Direction

Core Values: Strategically Essential for SMUD

SD-1	Purpose and Vision Statement
SD-2	Competitive Rates
SD-3	Access to Credit Markets
SD-4	Reliability
SD-5	Customer Relations
SD-6	Safety
SD-7	Environmental Leadership
SD-8	Employee Relations
SD-9	Resource Planning
SD-10	Innovation
SD-11	Public Power Business Model
SD-12	Ethics
SD-16	Information Management & Security Policy
SD-17	Enterprise Risk Management

Key Values: Provide Value-Added Services

SD-13	Economic Development
SD-14	System Enhancement
SD-15	Outreach & Communication
SD-19	Diversified Business

Strategic Direction (continued)

Purpose Statement

SD-1A SMUD is community-owned. Our purpose is to enhance the quality of life for our customers and community through creative energy solutions.

Vision Statement

SD-1B SMUD's vision is to be the trusted partner with our customers and community, providing innovative solutions to ensure energy affordability and reliability, improve the environment, reduce our region's carbon footprint, and enhance the vitality of our community.

Strategic Direction (continued)

Core Values: Strategically Essential for SMUD

SD-2 Maintain Competitive Rates

SD-3 Maintain Access to Credit Markets

SD-4 Reliability - Meeting customer energy requirements

SD-5 Maintain a high level of Customer Relations

SD-6 Safety - Creating a safe environment for employees and the public is a core value of SMUD

SD-7 Environmental Leadership - Community engagement, continuous improvement in pollution prevention, carbon reduction, energy efficiency, and conservation

SD-8 Employee Relations - Developing and maintaining a high quality, inclusive workplace that engages and inspires employees to commit to SMUD's purpose, vision and values

Strategic Direction (continued)

Core Values: Strategically Essential for SMUD

SD-9 Provide customer-owners with a sustainable power supply through the use of an integrated Resource Planning process

SD-10 Deliver innovative solutions, products and services to our customers

SD-11 Public Power Business Model – Support and strengthen the public power business model

SD-12 Ethics – Maintain the public trust and confidence in the integrity and ethical conduct of the Board and SMUD employees

SD-16 Information Management and Security Policy - Proper management of cyber and physical information are critical to effective risk management and to ensure regulatory compliance, business resiliency and customer satisfaction. SMUD will take prudent and reasonable measures to ensure information security, customer privacy and proper record management.

SD-17 SMUD will implement and maintain an integrated enterprise risk management process that identifies, assesses, manages and mitigates a variety of risks facing SMUD, including financial, supply, operational, physical security, climate change, legal, legislative and regulatory, and reputational risk.

Strategic Direction (continued)

Key Values: Provide Value-Added Services

SD-13 Economic Development – Promote economic vitality of our region and the growth of our customer base

SD-14 Make selected distribution system enhancements such as relocation or underground placement of primary power lines.

SD-15 Broad Outreach and Communication to SMUD's customers and the community

SD-19 Broaden and diversify the products and services that SMUD offers

2021 Budget
Performance Metrics



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Performance Metrics

Strategic Direction	Metric	2020 Forecast	2020 Target	2021 Target
SD-2 Competitive Rates	**Competitive System Average Rates**			
	Percent below Pacific Gas & Electric	35.7%	18.0%	18.0%
	Percent below each Customer Class	28.8% average below each Customer class	Meet 10% Goal for each Customer class	Meet 10% Goal for each Customer class
SD-3 Access to Credit Markets	**Fixed Charge Ratio of at least 1.50**	2.07	1.69	1.80
SD-4 Reliability	**Customer Load Demand**	100%	100%	100%
	SMUD Availability of Generation Assets *[1]*	98%	97%	97%
	Overall Availability of Transmission Assets	100%	>99.99%	>99.99%
	Distribution System Reliability			
	Duration of Outages (SAIDI) *[2]*			
	SAIDI With Major Event	N/A	67.5 - 93.3 min	67.5 - 93.3 min
	SAIDI Excludes Major Event	54.1	49.7 - 68.7 min	49.7 - 68.7 min
	Frequency of Outages (SAIFI) *[2]*			
	SAIFI With Major Event	N/A	0.99 - 1.33	0.99 - 1.33
	SAIFI Excludes Major Event	0.9	0.85 - 1.14	0.85 - 1.14
SD-5 Customer Relations	**Customer Satisfaction Survey** *[3]*	95%	95%	95%
	Value for What You Pay *[4]*	70%	70%	70%

Performance Metrics (continued)

Strategic Direction	Metric	2020 Forecast	2020 Target	2021 Target
SD-6 Safety	**Shift safety culture, improve safety results, and maintain positive financial performance**			
	Leading Indicator			
	Employee-Supervisor Interactions	95%	95%	95%
	Incident Reports ≤ 3 days *[5]*	95%	95%	95%
	Incident Investigations ≤ 5 days *[6]*	95%	95%	95%
	Days Away Restricted Time (DART) *[7]*			
	Annual average	1.2	1.0	1.0
	Workers' Compensation			
	Maintain positive financial performance of the workers' compensation program. *[8]*	$0.59	$0.94	$0.85
	Public Safety			
	Corrective actions implemented (to protect the public from injuries related to SMUD ops. or facilities.)	100%	95%	N/A
SD-8 Employee Relations	**Employee Engagement**			
	Sustain Employee Engagement	N/A	>80%	>80%
SD-9 Resource Planning	**Renewable Energy to meet SMUD's Load**			
	Renewable Portfolio Standards (RPS) *[9]*	34.8%	33.0%	35.8%
SD-13 Economic Development	**Supplier Education and Economic Development (SEED) - Percent of Contract Dollars**	20%	20%	20%

Performance Metrics (continued)

Footnotes:

[1] Maintain high level of availability of generation assets (adjusted IEEE availability for peak load season June – September).

[2] We have not had any Major Events thus far in 2020. The 2020 forecast is based on actuals through August 2020, and averages of data from 2015-2019 for September – December.

[3] The Customer Satisfaction metric measures customers responding as very satisfied or satisfied with service received in the areas of New Connect, Billing Inquiries, Outbound Outage Communication, Tree Trimming, IVR One Payment and IVR Payment Arrangements.

[4] Board target is to reach 70% by the end of 2025 and 80% by the end of 2030, with neither the average commercial customer score falling below 69%, nor the average residential customer score falling below 65% in any year. The VFP score for 2021 is expected to be impacted by the restart of late fees, shut-offs, collections, communication of commercial rate restructure, rate action and smaller rate increases, NEM proposal/Board approval, and COVID slow economic recovery.

[5] Employee-Supervisory Interactions Incident Reports excludes incident types where the date of injury may be difficult to determine. It measures the percentage of reports completed with the target date, which is normally set to 3 days, but may be extended due to extenuating circumstances.

[6] Incident Investigations excludes incident types where the investigation may require coordination of outside parties or may have a high degree of complexity. It measures the percentage of investigations completed within the target date, which is normally set to 5 days, but may be extended due to extenuating circumstances.

[7] Current Board SD-6 target is to reduce SMUD's injury severity rate to 1.4 by 2020. The Board SD-6 is being revised for 2021; DART Rate is under development with a 5-year goal of ≤1.0 with a recommended range of 1.1 to 0.90.

[8] The projected loss rates per $100 of payroll are calculated based on SMUD's historical loss experience and actuarial judgment.

[9] SMUD will meet the 2020 target (33% - 3,130 GWh) using forecasted 2020 generation (34.8% - 3,300 GWh). The 2021 Renewable Portfolio Standard (RPS) target is 35.75% (~3,400 GWh). The RPS statutes allow renewables procured above the compliance period targets can be carried over and applied in future compliance periods.

2021 Budget

Business Units & Segments and Organizational Chart



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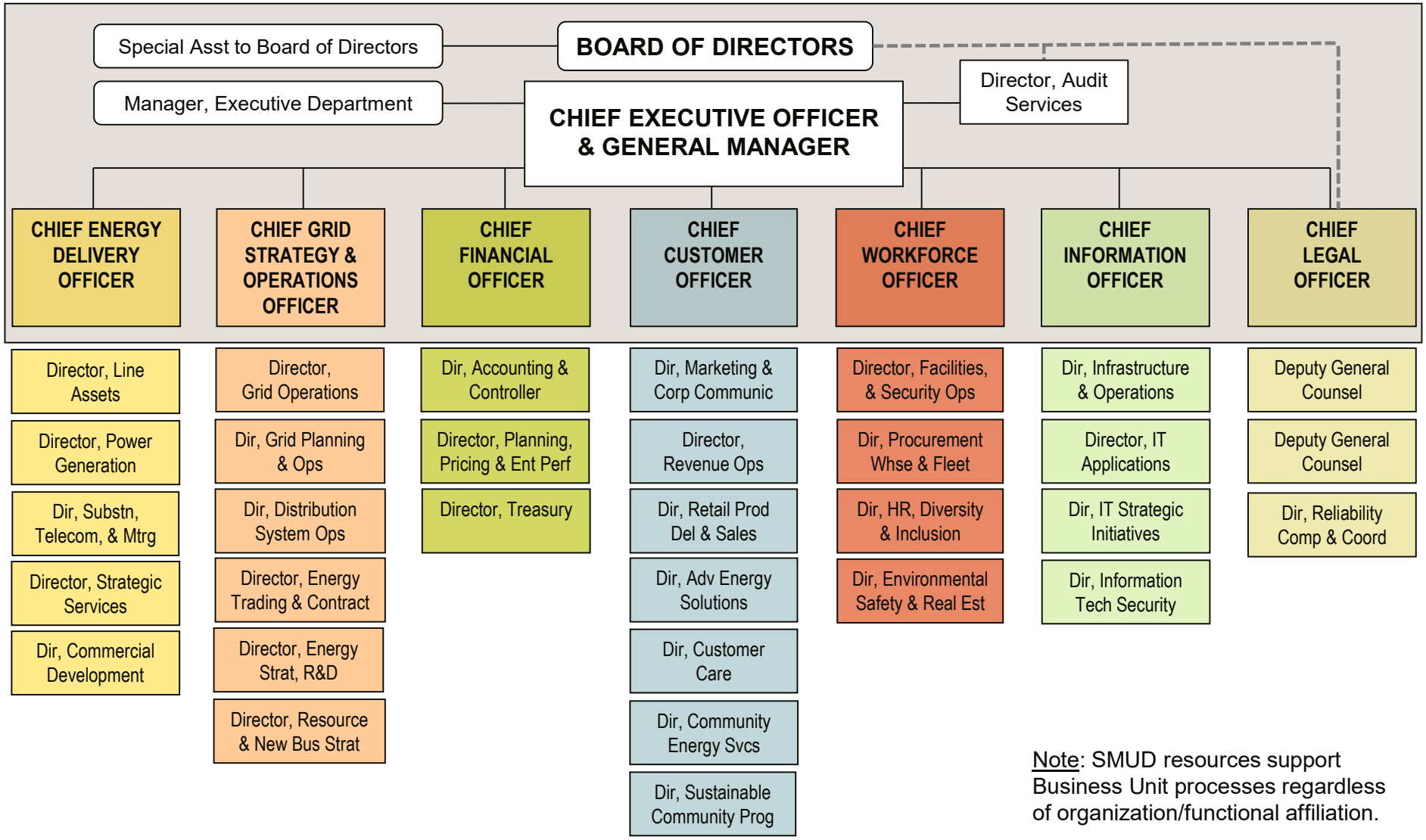
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Business Units & Segments

The SMUD Budget is planned by Business Unit processes which in some cases differs from the organizational/functional reporting structure.

Customer/ Community	Energy Operations	Energy Delivery	Internal	Technology	Corporate/ Enterprise
Retail Product Delivery & Sales	Grid Planning & Operations	Power Generation	Operations	Applications & Projects	Governance
Advanced Energy Solutions	Commodity, Procurement & Sales	Grid Assets	Services	Infrastructure & Operations	Strategic & Finance
Revenue Services & Operations	Energy Strategy, Research & Development	Strategic Services	Support	Strategy Planning & Governance	Legal, Gov't Affairs & Reliability Compliance
Communic. Marketing & Community Relations	Resource & New Business Strategy	Commercial Development		Strategic Initiatives	Enterprise Affairs
Customer Services & Operations	Integrated Resource Plan			Cybersecurity	
Sustainable Communities					
Community Energy Services					
Lean Portfolio Mgmt					

Organization Chart by Executive



Note: SMUD resources support Business Unit processes regardless of organization/functional affiliation.

2021 Budget
Economic Outlook & Assumptions



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Economic Outlook & Assumptions

The planning data presented here is based on a recent update as part of the Corporate Resource Planning process.

Customer count is down slightly in the 2020 Forecast from what was assumed in the 2020 Budget. Looking ahead, we are seeing regular growth in the future in residential customers and commercial customers.

New customers to be added to SMUD's customer base in 2021 are projected to total approximately 4,644. This is less than a 1 percent annual growth rate, which is below the average growth during the past decade. Of the 2021 projection, 4,398 are new residential customers and 246 are other customers.

	2020 BUDGET	2020 FORECAST	2021 BUDGET
New residential customers	4,825	(174)	4,398
All other new customers	754	22	246
TOTAL new customers*	5,579		4,644
Residential customers	567,860	567,686	572,084
All other customers	75,880	75,902	76,148
TOTAL customers**	643,740	643,588	648,232

*Reflects monthly average instead of end-of-year count in order to reflect the fluctuation of SMUD's customer growth.

Inflation Escalation Factors:

The forecasted inflation factor for use where applicable in preparing the 2021 Budget is 2%. The longer-term outlook (ten years) used in the business strategy update is the same, at 2% per year.

The cost-of-living (COLA) increase for SMUD salaries and wages during 2021 is based on formulas contained in negotiated bargaining agreements.

Economic Outlook & Assumptions

(continued)

Energy Sales & Requirements

Description	2020 Budget	2021 Proposed	Change vs Budget
Expected System Peak (MW)	2,850	2,870	20
Expected Retail Energy Sales (GWh)	10,258	10,087	(171)
Expected Wholesale Sales, Distribution & Transmission Losses (GWh)	482	474	(8)
Expected Supply Requirements (GWh)	10,740	10,561	(179)
GENERATION			
Total SMUD Generation (GWh)	7,572	6,820	(753)
SMUD Generation as a % of expected supply requirement	71%	65%	-6%
PURCHASED POWER			
Net Purchased Power (GWh)	3,167	3,742	574
Net Purchased Power as % of expected supply requirement	29%	35%	6%
GAS			
Expected Gas Burn (NG+Biogas) for Thermal Generation and Steam Sales (mmBtu)	39,275,310	33,248,660	(6,026,650)
Committed Fuel (NG+Biogas) Purchases (mmBtu)	35,219,975	29,090,645	(6,129,329)
Committed Purchases (NG+Green Gas) as a % of Expected for Thermal Generation and Steam Sales	90%	87%	-2%
ACTUAL / FORWARD PRICES of UNCOMMITTED TRANSACTIONS			
On Peak Power Price Forecast ($/MWh)	$38	$42	$4
Off Peak Power Price Forecast ($/MWh)	$32	$34	$2
Flat Power Price Forecast ($/MWh)	$35	$39	$3
Forward Natural Gas Price Forecast ($/mmBtu)	$2.94	$3.08	$0.15

Energy sales to customers is projected to decrease from the 2020 Budget assumption.

Unmanaged Peak load is forecasted to increase by 20MW from the 2020 Budget assumption.

Economic Outlook & Assumptions

(continued)

Energy Requirements

Summary (GWh)	2020 Budget	2021 Proposed	Change vs Budget	Change vs Budget
Generation:	**GWh**	**GWh**	**GWh**	**GWh**
SMUD-Owned Large Hydro	1,463	1,503	40	3%
SMUD-Owned Gas Fired	4,580	4,239	(340)	-7%
SMUD-Owned Renewable	1,530	1,077	(452)	-30%
TOTAL - Generation	***7,572***	***6,820***	***(753)***	***-10%***
Market Energy:	**GWh**	**GWh**	**GWh**	**GWh**
Uncommitted Sales	(2,199)	(2,473)	(274)	12%
Long-Term Contracts	3,542	4,185	644	18%
Short-Term Purchases	0	0	(0)	0%
Uncommitted Purchases	1,879	2,087	208	11%
TOTAL - Market Transactions	***3,222***	***3,799***	***577***	***18%***
Transmission Losses	***(55)***	***(58)***	***(3)***	***5%***
TOTAL - Supply Requirement	**10,740**	**10,561**	**(178)**	**-2%**

Economic Outlook & Assumptions

(continued)

Power Supply Assumptions

The 2040 Energy Plan is the basis for the operating assumptions for the 2021 Budget. Electricity prices are forecast to be higher, and natural gas prices are forecast to be higher in the 2021 Proposed Budget than what was forecast in the 2020 Budget. The Upper American River Project (UARP) generation, renewable generation, and thermal generation are forecasted to be lower in the 2021 Budget.

SMUD became a Control Area, presently called a Balancing Authority (BA), in June 2002 and since then has operated its transmission and generation system independently. On January 1, 2006, the Western Area Power Administration's Sierra Nevada Region (WAPA-SNR) was integrated into the SMUD BA, followed on December 1, 2006, by the California-Oregon Transmission Project (COTP) – a 500kV transmission line - and the Modesto Irrigation District (MID). On May 8, 2009, together with MID and the cities of Redding and Roseville, SMUD entered into a Joint Powers Agreement to create the new Balancing Authority of Northern California (BANC). With regulatory approval on May 1, 2011, the operations of SMUD BA were transferred to BANC BA. BANC uses SMUD's existing employees and physical resources to be the BANC Operator. BANC's General Manager reports to a five-person Commission made up of SMUD, MID, City of Redding, City of Roseville, and Trinity Public Utility Districts chief executives. This BA, as an independent entity, is not subject to market disruptions that result from financially induced supply shortages within the California Independent System Operator (CAISO) or investor-owned utilities. SMUD is still subject to certain CAISO transmission, grid management and other costs for transactions that use the CAISO controlled grid. These costs have been included in SMUD's 2021 Budget.

Economic Outlook & Assumptions

(continued)

SMUD Generation

SMUD Hydroelectric (Upper American River Project): The 2021 Plan assumes median rainfall and normal starting reservoir levels in 2021. Generation is expected to be 1,558 GWh.

Other SMUD Generation (South Fork, Chili Bar PH, Photovoltaic, Solano Wind): The 2021 Plan assumes average generation subject to limitations governing the operation of each plant. The largest contributor, Solano Wind Phases 1, 2 & 3 is expected to generate 612 GWh.

SFA Cosumnes Power Plant: This 500 MW gas-fired combined cycle power plant began commercial operation in February 2006. Forecasted generation from this plant in 2021 is 3,698 GWh.

CVFA Carson Cogeneration: This gas-fired cogeneration project, which began commercial operation in October 1995, consists of a 61 MW combined cycle unit and a 42 MW peaking unit. With the installation of an auxiliary steam boiler in 2017, if running the cogeneration unit is uneconomic, it can be turned off. Energy will be supplied from the auxiliary boiler instead of the cogeneration unit. The forecasted generation from this facility in 2021 is 181 GWh.

SCA Procter & Gamble Cogeneration: This gas-fired cogeneration plant began commercial operation in March 1997. It consists of a 120 MW combined cycle power plant and a 49 MW peaking unit that became operational in May 2001. With the installation of an auxiliary steam boiler in 2016, if running the cogeneration unit is uneconomic, it can be turned off. Steam will be supplied from the auxiliary boiler instead of the cogeneration unit. Forecasted generation from this facility in 2021 is 454 GWh.

SPA Campbell Soup Cogeneration: This gas-fired combined cycle plant, began commercial operation in December 1997. It consists of a 170 MW combined cycle power unit. Beginning in 2008 the 72 MW McClellan gas turbine is also included under SPA. Forecasted generation from these two units in 2021 is 277 GWh.

Economic Outlook & Assumptions

(continued)

Purchased Power

The 2021 Plan assumes delivery of energy and capacity from the following contracts:

Western Area Power Administration (WAPA) / Central Valley Project (CVP): Provide 347 MW of capacity and 661 GWh of energy. Under a separate agreement, WAPA provides 38 GWh to serve its customers located within SMUD's service territory.

Kiefer Landfill: Provide a total of 12.0 MW of capacity and 109 GWh of energy under two separate agreements. The original Kiefer I contract was extended in November 2014, for an additional 10 years. The current Kiefer II contract was extended in March 2016, for an additional 10 years.

MM Yolo: Provide 2.4 MW of capacity and 21 GWh of green energy under an agreement that expires in June 2026.

IBR Highwinds: Provide 50 MW of capacity and 98 GWh of energy under an agreement signed in July 2015 to extend the original contract for additional 10 years.

IBR Biomass (previously RockTenn): Provide 45 MW of capacity and 180 GWh of energy under an agreement that expires in August 2021.

Grady Wind: Provide 200 MW of capacity and 934 GWh of energy of energy under an agreement that expires in December 2043.

enXco – Solar: Provide 1.0 MW of capacity and 2 GWh under an agreement which expires in August 2028.

Santa Cruz Landfill: Provide 1.5 MW of capacity and 12 GWh of energy under an agreement, which expires in September 2024.

Feed-in-Tariff Solar Projects: Provide 100 MW capacity and 212 GWh of energy delivered from all projects under a 20-year term ending in December 2030.

Van Warmerdam Dairy Biogas: Provide 0.5 MW of capacity and 2 GWh of energy under an agreement which expires in May 2033.

Economic Outlook & Assumptions

(continued)

Purchased Power, cont'd

New Hope Dairy Biogas: Provide 0.4 MW of capacity and 2 GWh of energy under an agreement which expires in August 2033.

Patua (aka: Gradient) Geothermal: Provide 19 MW of capacity and 147 GWh of energy under an agreement, which expires in December 2033.

Loyalton Biomass: Provide 4.2 MW of capacity and 33 GWh of energy under an agreement, which expires in March 2023.

Van Steyn Dairy Biogas: Provide 0.12 MW of capacity and 1 GWh of energy under an agreement, which expires in June 2035.

Camp Far West: Provide 6.8 MW of capacity and 21 GWh of energy under an agreement which expires in July 2031.

Conergy Solar: Provide 1.3 MW of capacity and 2 GWh of energy under an agreement that expires in August 2034.

Wildflower Solar: Provide 13 MW of capacity and 31 GWh of energy under an agreement that expires in December 2045.

Rancho Seco Solar: Rancho Seco I provides 11 MW of capacity and 23 GWh of energy under a 30-year agreement which expires in August 2036. Rancho Seco II will begin production on December 31, 2020 and will provide 160 MW of capacity and 337 GWh of energy through November 2039.

Recurrent Solar: Provide 55 MW of capacity and 171 GWh of energy under an agreement that expires in December 2037.

Sutter Energy Center: Provide 258 MW of capacity and 925 GWh of energy under a three-year contract with Calpine Energy Services, L.P. effective January 2021 from a natural gas-fired, combined-cycle.

CalEnergy: Provide 30 MW of capacity and 223 GWh of geothermal energy under an agreement expiring December 2039.

SB-859 Biomass: 2.7 MW capacity biomass project is expected in January 2021.

Economic Outlook & Assumptions

(continued)

Purchased Power

The balance of energy requirements to meet forecasted sales to customers will be met by short-term purchases of energy. Some of the long-term and short-term contracts will be delivered over SMUD's 528 MW share of the California-Oregon Transmission Project (Northwest) or under the South-of-Tesla transmission agreement with PG&E (Southwest & Southern California). These purchases are coordinated through SMUD's membership in the Western Systems Power Pool (WSPP), which facilitates sales and exchanges among its 30 member utilities, and through market trading. Lastly, another 5-year extension to the WAPA Custom Product ~300-MW sale/purchase contract with WAPA allows SMUD to import additional power from California Oregon Border through 2024.

2021 Budget

Budget Summary



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Budget Summary

Overview

The 2021 Budget Authorization totals $1.7 billion. This represents a decrease of $62 million from the 2020 Budget. The 2021 Budget is a request to authorize new spending.

The 2021 SMUD Budget summarized on the following pages is a blueprint of planned operating, public goods and debt service expenses and capital expenditures for the fiscal year beginning January 1, 2021. Historical comparisons to the 2020 Budget adopted by the Board on November 20, 2019 are shown to put the 2021 Budget in perspective. A forecast of actual 2020 expenses is also shown.

The O&M and Capital Budgets are shown by Business Unit. SMUD Business Units correspond to business processes which deliver specific products and services to SMUD customers. The core business processes are represented by the Customer & Community Services, Energy Operations and Energy Delivery Business Units. Included within Energy Operations and Customer/Community are Public Good costs related to energy efficiency, low-income assistance, renewable generation and research and development. These costs are shown separately because they are designated as Public Goods programs as determined by statute.

The Technology, Internal Services and Corporate Services Business Units provide services which enable the other business units to perform their work. The Enterprise Business Unit contains contingency and reserve estimates for the organization. The planning and budgeting philosophy is to more accurately plan and measure the total cost of SMUD business processes and set performance improvement targets for the processes and Business Units that will most efficiently accomplish strategic goals. This budgeting methodology also most efficiently allocates and plans resources from throughout SMUD to the Business Units and work processes.

Within each Business Unit budget, work processes are subdivided into business segments and individual business processes. Budget detail is provided at both levels. Business segments and processes enable each business unit to effectively plan and measure performance of its operations at a manageable level.

Budget Summary (continued)

The budgeted costs shown under each core Business Unit include all the costs of performing the work planned for 2021. These include labor costs from departments throughout SMUD which perform work in the core business processes. Labor costs include employee benefits. Also included in the budget is a surcharge allocation of internal service costs such as transportation, facilities, technology, human resources, and security. Expenditures budgeted by Technology and Internal Services represent those process costs that are not allocated to the core business units, such as dedicated software implementations or enhancements that do not meet minimum SMUD criteria for capitalization. The Corporate Services budget includes insurance and risk management, cash and debt management, and corporate legal, reliability compliance, legislative, regulatory and government relations, planning and performance, executive management and Board of Directors; a portion of this budget is allocated to Capital and Public Good. The Enterprise budget includes contingency and reserve estimates for the organization.

The 2021 Budget includes the following major components:

OPERATING EXPENSES (O&M): Expenses related to producing and acquiring energy, operating and maintaining the electrical delivery system, providing service to customers including public goods (energy efficiency, low-income assistance, new renewable generation sources, and research and development of advanced technologies) programs, and corporate activities. Included within this category as a separate line item are commodity costs associated with energy supply. These costs include purchased power, fuel for energy production, and transmission wheeling costs.

Also included under Energy Delivery are fuel, operating and interest expense associated with CVFA's Carson Cogeneration plant, SCA's Procter & Gamble plant, SPA's Campbell Soup Cogeneration plant, SFA's Cosumnes Power Plant, NCGA No. 1 and NCEA pass-through gas costs. These expenses are shown in the SMUD Budget because SMUD will reimburse CVFA, SCA, SPA, SFA, NCGA No. 1 and NCEA for their costs under the terms of the Power and Gas Purchase Agreements. The detailed CVFA, SCA , SPA, SFA, NCGA No. 1 and NCEA Budgets are also in separate booklets and/or resolutions as they will be approved by the CVFA, SCA, SPA, SFA, NCGA No. 1 and NCEA Commissions.

Budget Summary (continued)

CAPITAL INVESTMENT: Investment in additions and improvements to SMUD's property, plant and equipment. The Capital Investment budget includes all qualifying costs related to acquiring or constructing tangible and intangible assets which meet SMUD's capitalization guidelines - cost exceeding $5,000 and an estimated service life greater than two years. SMUD follows Federal Energy Regulatory Commission (FERC) capitalization guidelines which dictate the inclusion of all direct costs (labor, employee benefits, materials, services and other) and a proportionate share of indirect costs (engineering and construction supervision and support, transportation, insurance, etc.) related to capital projects. Capital assets are depreciated on a straight-line basis over their estimated useful service life.

ALLOCATED: Costs in the two supporting business units, Technology and Internal Services, which enable the core business units to perform work. These costs are allocated to both O&M and capital costs, based on the quantity of labor hours. The aggregated allocated costs for Technology and Internal Services are presented in the budget documentation separately as information only; the actual costs are reflected in each of the Business Unit's budgets as the total cost of their work processes.

DEBT SERVICE: Interest expense on and principal repayments of SMUD's outstanding long-term debt and commercial paper notes, any revenues or payments on interest rate swaps, and trustee fees and debt issuance costs. Detail is provided in the Budget Summary.

Budget Summary (continued)

Description of Cost Categories

Activity Type Labor	SMUD employee labor planned to a business unit work process. Each Activity Type has a standard hourly charge-out rate that is based on work (non-leave) hours, average annual employee salaries, and includes benefits.
Materials & Equipment	Materials and equipment either issued from inventory or purchased for a specific project or task.
Dues & Publications	Dues and publications and general membership requirements to accomplish work.
General Expenditures	All services and other non-material costs not covered by other specific cost categories including training, travel, rents, leases, licenses, fees, taxes, etc.
Outside Services	The cost of outside services contracts, consultants, and outside legal service.
Advertising	The cost of advertising.
Utilities & Postage	The cost of telephones, other utilities and postage.
Insurance	The cost of property and liability insurance.
Rebates & Incentives	The cost of energy efficiency rebates and incentives.
Commodities	The cost of purchased power, wheeling, and fuel for SMUD and JPA generating plants.
Surplus/Whsl Pwr Sales	The revenue generated from selling energy which is not needed to meet SMUD retail load.
LI/LS Rate Discount	The discount given to customers who qualify for the Low Income or Medical Energy Discount (MED) rate subsidy.
Cost Reductions/Reimb	Reimbursements, cost-sharing grants, or pass-through amounts received from outside parties to reduce net costs.
Cost Center Overhead	A rate developed to recover the indirect costs of a Cost Center. Includes Activity Type labor for administration, supervision, training, and miscellaneous general expenses such as office supplies and travel. It is assessed per hour of Activity Type Labor planned directly to the work.
Surcharges	Surcharge rates developed to recover 1) an allocation of internal service costs such as transportation and technology assessed per hour of Activity Type Labor planned directly to the work, 2) the costs of procuring outside service agreements (excluding outside legal service) and cost of procuring, storing, and handling materials and equipment assessed relative to the contract amount or whether material issued from inventory or purchased specifically for a project or task, 3) miscellaneous general and administrative SMUD expenses including insurance and risk management, cash management, debt management, and other assessed to capital and public good projects based on a flat percentage of overall SMUD activity type labor.

O&M Budget Summary

Description ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
Customer/Community (excl. PubGd)	$130,648	$141,435	$139,439	($1,996)	-1%
Public Good	36,524	35,811	28,643	(7,168)	-20%
Customer/Community	**167,172**	**177,246**	**168,082**	**(9,163)**	**-5%**
Energy Delivery (excl. JPA)	217,140	207,053	228,699	21,645	10%
JPA Interest Expense	5,822	5,822	5,332	(490)	-8%
Energy Delivery (excl. JPA)	**222,962**	**212,875**	**234,030**	**21,155**	**10%**
Commodity (net) [1]	456,217	474,182	440,889	(33,293)	-7%
Energy Operations (excl. PubGd)	83,171	109,269	96,746	(12,523)	-11%
Public Good	21,725	24,287	39,451	15,164	62%
Energy Operations	**561,113**	**607,738**	**577,086**	**(30,652)**	**-5%**
Internal Svcs	**21,422**	**15,201**	**16,363**	**1,162**	**8%**
Technology	**31,581**	**40,358**	**35,215**	**(5,143)**	**-13%**
Corporate Services	**65,541**	**62,577**	**59,624**	**(2,953)**	**-5%**
Enterprise (excl. PubGd)	6,203	1,400	17,102	15,702	>999%
Public Good	2,477	9,000	0	(9,000)	-100%
Enterprise	**8,679**	**10,400**	**17,102**	**6,702**	**64%**
Other Employee Benefits [2]	**(3,864)**	**31,651**	**32,704**	**1,053**	**3%**
O&M Budget Authorization	**$1,074,605**	**$1,158,045**	**$1,140,206**	**($17,839)**	**-2%**
Revenue	**(311)**	**(55)**	**(25)**	**30**	**55%**
O&M Net	**$1,074,294**	**$1,157,990**	**$1,140,181**	**($17,809)**	**-2%**

[1] Net of surplus sales. The 2021 Budget assumes median water year.

[2] Other Post-Employment Benefits (OPEB) and Workers Compensation - These benefits are not allocated or included as a labor expense in the Business Units. 2020 forecast includes $20M reimbursement from OPEB that was paid to PERS.

O&M Budget Summary (continued)

Cost Category ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
ActivityType Labor	**$237,604**	**$244,249**	**$245,707**	**$1,458**	**1%**
Material & Equipment	*10,345*	*10,204*	*9,614*	*(589)*	*-6%*
Dues & Publications	*9,233*	*7,048*	*6,584*	*(464)*	*-7%*
General Expenditures	*25,279*	*34,791*	*52,377*	*17,586*	*51%*
Outside Services	*147,010*	*145,698*	*148,150*	*2,452*	*2%*
Advertising	*2,910*	*3,665*	*3,725*	*60*	*2%*
Utilities & Postage	*7,810*	*7,364*	*7,716*	*352*	*5%*
Insurance	*22,088*	*22,477*	*24,228*	*1,751*	*8%*
Rebates & Incentives	*24,616*	*29,097*	*28,216*	*(882)*	*-3%*
Commodities	*521,214*	*598,062*	*587,406*	*(10,656)*	*-2%*
Surplus/Whsl Pwr Sales	*(53,594)*	*(77,974)*	*(97,957)*	*(19,982)*	*26%*
Non-Labor Expenditures	**716,911**	**780,432**	**770,060**	**(10,372)**	**-1%**
Cost Reduction/Reimb	**(19,192)**	**(58,080)**	**(62,552)**	**(4,472)**	**8%**
Cost Center Overhead	**49,203**	**56,817**	**54,115**	**(2,703)**	**-5%**
Surcharges	**88,123**	**97,154**	**94,840**	**(2,314)**	**-2%**
Expenditures Subtotal	**1,072,648**	**1,120,572**	**1,102,170**	**(18,402)**	**-2%**
JPA Interest	**5,822**	**5,822**	**5,332**	**(490)**	**-8%**
Other Employee Benefits	**(3,864)**	**31,651**	**32,704**	**1,053**	**3%**
O&M Budget Authorization *[1]*	**$1,074,605**	**$1,158,045**	**$1,140,206**	**($17,839)**	**-2%**
Revenue	**(311)**	**(55)**	**(25)**	**30**	**55%**
O&M Net	**$1,074,294**	**$1,157,990**	**$1,140,181**	**($17,809)**	**-2%**

[1] O&M Budget Authorization includes Public Good. A summary of Public Good is provided on the following page.

O&M Budget Summary (continued)

Public Good

Description ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
Energy Efficiency	$33,219	$37,135	$35,666	($1,469)	-4%
Residential Assistance	15,513	13,627	11,193	(2,435)	-18%
Renewables	2,787	4,525	724	(3,801)	-84%
Research & Development	9,207	13,811	20,511	6,700	49%
Public Good Budget Authorization	**$60,725**	**$69,098**	**$68,094**	**($1,004)**	**-1%**
Rate Subsidy	32,375	29,578	40,021	10,443	35%
Total Public Good *[1], [2]*	**$93,100**	**$98,676**	**$108,115**	**$9,439**	**10%**

[1] Public Good expenditures are included in SMUD O&M summary (this table is information only)

[2] Specific information is provided within Customer/Community and Energy Operations.

O&M Budget Summary (continued)

Commodity Budget

Description ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
Purchased Power (net)	$270,369	$239,309	$251,152	$11,843	4%
Fuel for Generation	158,560	203,924	159,567	(44,357)	-28%
Transmission	27,289	30,949	30,169	(780)	-3%
O&M Commodities	**$456,217**	**$474,182**	**$440,889**	**($33,293)**	**-7%**

O&M Budget Summary (continued)

The O&M Proposed Budget for 2021 totals $1,140 million, which is $18 million or 2 percent lower than the 2020 Budget.

Business Unit O&M:

Total Business Unit O&M, excluding Commodity and Public Good, is $631.2 million, which is $16.5 million higher than the 2020 Budget. The 2021 Proposed Budget includes increased mandatory spending for Vegetation Management and Wildfire Mitigation. The 2021 budget also funds ongoing efforts for Community Initiatives, maintaining operations, and Transportation Electrification. Transportation Electrification is a critical part of our newly-adopted 2040 Energy Plan and an important part of our strategy to continue to provide a leadership role in the region's transformation to a low-carbon future.

More detailed and specific information is provided within each Business Unit's documentation.

Public Good: Total Public Good is $108.1 million, an increase of $9.4 million, after inclusion of rate subsidies. The Public Good Budget is $68.1 million. The difference is because the Budget represents the cash disbursement portion of the program that requires Board authorization.

By December 2021, the number of subsidized customers is expected to be approximately 128,983. The total cost of the EAPR subsidy is budgeted at $38 million in 2021, an increase of $10.7 million from 2020, and the subsidy for customers using medical equipment decreased by $0.2 million to $1.6 million. Total subsidies are $40 million.

Energy efficiency spending decreased $1.5 million. Incorporation of savings from codes and standards was included as a component of the energy efficiency portfolio to match standard industry practice going forward. The energy efficiency budget remains in line with the goal of achieving savings of 1.5% of average annual retail energy sales. Research & Development increased $6.7 million to $20.5 million to reflect increased investment in innovation and achieving a low-carbon future.

More detailed and specific information is provided within the Customer and Energy Operations Business Unit documentation.

O&M Budget Summary (continued)

Commodities: The Commodity budget for 2021 of $440.9 million is $33.3 million lower than the 2020 Budget. Purchased power is increasing primarily due to Sutter/Calpine contract extending for the full year (capacity and energy), Mid-River capacity contract, and additional Renewable Energy Credits (REC) purchases as part of the optimization strategy (proceeds from biogas sale). Fuel for Generation is decreasing due to biogas sales, Rosa sale, and shift of SMUD thermal to Sutter/Calpine due to reduced fuel cost. Further details on power supply information can be found on pages 17-23.

Other Employee Benefits: SMUD's Other Employee Benefits, is $32.7 million, an increase of $1 million. This item consists of the O&M portion (unfunded liability) of Other Post-Employment Benefits (OPEB) expense of $29 million and $3.7 million of workers compensation.

The total OPEB cost of $39 million is the sum of the O&M portion of $29 million and the current year contribution of $9.6 million. OPEB are costs related to other post employment benefits other than pension (primarily health and dental insurance), for SMUD current and future retirees.

Capital Budget Summary

Description ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
Customer/Community	$4,672	$4,406	$7,298	$2,892	66%
Energy Delivery	230,764	261,380	208,262	(53,118)	-20%
Energy Delivery Resource Projects	15,061	36,845	60,720	23,874	65%
Energy Operations	1,835	5,899	5,354	(545)	-9%
Energy Operations Resource Projects	3,019	3,250	3,000	(250)	-8%
Internal Services	25,159	27,531	33,902	6,372	23%
Technology	29,158	36,100	26,267	(9,833)	-27%
Corporate	0	6,298	0	(6,298)	-100%
Contingency & Reserve	44,800	74,900	46,100	(28,800)	-38%
Capital Budget Authorization	**$354,467**	**$456,610**	**$390,903**	**($65,706)**	**-14%**
Revenue	(513)	(705)	0	705	-100%
Capital Net	**$353,954**	**$455,904**	**$390,903**	**($65,001)**	**-14%**

Capital Budget Summary (continued)

Cost Category ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
ActivityType Labor	**$64,395**	**$65,974**	**$62,642**	**($3,331)**	**-5%**
Material & Equipment	*61,293*	*69,005*	*72,415*	*3,410*	*5%*
Dues & Publications	*93*	*201*	*91*	*(110)*	*-55%*
General Expenses	*52,247*	*84,964*	*68,471*	*(16,493)*	*-19%*
Outside Services	*150,878*	*194,438*	*154,510*	*(39,928)*	*-21%*
Advertising	*11*	*0*	*0*	*0*	*0%*
Utilities & Postage	*11*	*6*	*3*	*(3)*	*-50%*
Insurance	*215*	*656*	*659*	*3*	*0%*
Non-Labor Expenses	**264,748**	**349,269**	**296,148**	**(53,121)**	**-15%**
Cost Reduction/Reimb	**(24,898)**	**(15,258)**	**(21,870)**	**(6,612)**	**43%**
Expenditures	**304,245**	**399,984**	**336,921**	**(63,064)**	**-16%**
Cost Center Overhead	**16,801**	**18,595**	**18,147**	**(447)**	**-2%**
Surcharges	**33,421**	**38,030**	**35,835**	**(2,195)**	**-6%**
Capital Budget Authorization	**$354,467**	**$456,610**	**$390,903**	**($65,706)**	**-14%**
Revenue	**(513)**	**(705)**	**0**	**705**	**-100%**
Capital Net	**$353,954**	**$455,904**	**$390,903**	**($65,001)**	**-14%**

Capital Budget Summary (continued)

Project Summary ($000s)	2021 [1]	2022-23 [2]
Customer/Community	**$ 6,884**	**$ -**
Meters	*6,884*	
Energy Operations	**$ 8,354**	**$ 9,859**
Energy Operations Technology	*1,180*	*1,606*
Gas	*3,000*	
Interconnection	*1,112*	
Research & Development	*667*	*160*
Substation Land & Easement	*2,395*	*8,094*
Internal Services	**$ 33,902**	**$ 21,731**
Environmental	*2,540*	*9,818*
Facilities	*20,019*	*11,912*
Vehicle Replacement	*11,343*	
Technology	**$ 26,681**	**$ 15,148**
Customer Technology	*784*	
Grid Technology	*6,503*	*613*
IT Lifecycle and Infrastructure	*6,311*	*2,270*
Telecom	*3,722*	
Enterprise Technology	*4,384*	*3,548*
Distribution Management System	*4,977*	*8,717*

Capital Budget Summary (continued)

Project Summary ($000s)	2021 [1]	2022-23 [2]
Energy Delivery	**$ 268,982**	**$ 337,774**
Cable Replacement	*23,278*	
Decommissioning	*6,751*	*11,609*
Gas Pipeline	*866*	*4*
Hydro License	*26,942*	*27,724*
Hydro Other	*18,470*	*8,466*
Hydro Production	*9,896*	*25,420*
Line Projects	*45,623*	*27,918*
New Services/Local Agency	*12,627*	*2,135*
New Substation	*24,314*	*12,333*
Other Energy Assets	*558*	*491*
Pole Replacement	*19,893*	
Renewable Production	*2,911*	*10,801*
Substation Lifecycle and Improvements	*31,185*	*26,667*
Thermal Production	*1,362*	*200*
Solano 4	*11,409*	*99,385*
Transmission Substation	*23,038*	*76,852*
Transmission Line	*9,859*	*7,770*
Corporate	**$ 46,100**	**$ -**
Corporate Contingency	*46,100*	
Capital Budget Authorization [1], [2]	**$ 390,903**	**$ 384,512**

[1] Requested Board Authorization amount for 2021 spending.

[2] Provided for Board information as an estimate of the amount needed to complete projects started in 2021 or earlier. 2022-23 costs do not include amounts for ongoing annual programmatic spending or for projects starting after 2021.

Capital Budget Summary (continued)

SMUD has historically had two categories of capital for budget authorization, Annual and Reserve/Contingency Capital. Annual Capital is for projects with completion dates or specific milestone dates within the current budget year and as such budget dollars are requested during the annual budget cycle. Projects that were approved in prior years but have not been completed are resubmitted to the Board annually for approval to continue the project. Reserve/Contingency Capital projects will be completed if load growth or customer growth is greater than expected, if there are unexpected expenditures, or if there are projects in which the planning phase will be complete and work will begin in 2021.

Capital: The proposed 2021 capital investment budget is $390.9 million, for planned investment in generation, transmission, distribution, buildings, vehicles, technology and other assets critical to meeting the energy needs of our customers. Proposed ongoing capital expenditures go through a rigorous evaluation and prioritization process, based on value and risk, to ensure we fund those that have the highest contribution to the Board's strategic directives. This total includes the Reserve Capital Budget of $15 million for unexpected end-of-year project carryover and capital contingency.

Major capital expenditures planned in 2021 include work for Station E and Station G, starting development work for additions to our wind farm with Solano Phase IV, and the purchase of Chili Bar. Ongoing capital planned in 2021 includes cable and pole replacement programs, installing new meters, and new fleet purchases. Technology investments included in the 2021 Proposed Budget are to complete the Advanced Distribution Management System (ADMS), ongoing work for Workforce Optimization, and improvements to HR systems and network communications systems.

Contingency and Reserve in the 2021 Proposed Budget totals $46.1 million. This contingency/reserve money is planned for the following potential items: reserve for carry-over and unexpected capital projects, system enhancement projects, land purchases, and inventory/spare parts purchases.

More detailed and specific information is provided within each Business Unit's Documentation.

Allocated Budget Summary

Description ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
Internal Services	$63,343	$70,441	$68,938	($1,504)	-2%
Technology	61,707	65,620	62,378	(3,242)	-5%
Total Allocated Budget *[1]*	**$125,050**	**$136,061**	**$131,316**	**($4,745)**	**-3%**

[1] Allocated Budget expenditures are included in all SMUD Business Unit's O&M and Capital summaries (this table is information only)

Allocated Budget Summary (continued)

Cost Category ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	$ Change vs Budget
ActivityType Labor	**$59,235**	**$63,974**	**$65,899**	**$1,925**	**3%**
Material & Equipment	*35,275*	*12,831*	*28,532*	*15,701*	*122%*
Dues & Publications	*126*	*90*	*113*	*23*	*25%*
General Expenses	*731*	*1,226*	*460*	*(766)*	*-62%*
Outside Services	*10,165*	*33,871*	*12,951*	*(20,921)*	*-62%*
Advertising	*35*	*153*	*44*	*(110)*	*-72%*
Utilities & Postage	*1,497*	*1,793*	*1,844*	*50*	*3%*
Insurance	*285*	*294*	*317*	*23*	*8%*
Non-Labor Expenses	**48,113**	**50,259**	**44,260**	**(5,999)**	**-12%**
Cost Reduction/Reimb	**(73)**	**(90)**	**(436)**	**(346)**	**383%**
Expenditures	**107,275**	**114,143**	**109,723**	**(4,420)**	**-4%**
Cost Center Overhead	**12,315**	**16,175**	**15,437**	**(737)**	**-5%**
Surcharges	**5,459**	**5,743**	**6,155**	**412**	**7%**
Total Allocated Budget *[1]*	**$125,050**	**$136,061**	**$131,316**	**($4,745)**	**-3%**

[1] Allocated Budget expenditures are included in all SMUD Business Unit's O&M and Capital summaries (this table is information only)

Allocated Budget Summary (continued)

The Allocated Proposed Budget for 2021 totals $131.3 million, which is $4.7 million lower than the 2020 Budget. This is shown as **information only** as 100% of these allocated expenditures are included in the budget dollars of all SMUD O&M and Capital described in this documentation. Internal Services and Technology costs are allocated to business units based on the quantity of labor hours.

More specific and detailed information is provided within Internal & Technology Business Unit Documentation.

Position Count Summary

Executive Hierarchy	2020 Full-time	2020 Limited Term	2020 Part-time	2020 Approved Positions	2021 Full-time	2021 Limited Term	2021 Part-time	2021 Positions Planned	Increase/ Decrease
CEO & General Manager	33	1	1	35	32	0	1	33	(2)
Chief Legal Officer	40	2	4	46	38	0	4	42	(4)
Chief Financial Officer	88	7	6	101	90	3	5	98	(3)
Chief Energy Delivery Officer	694	27	13	734	681	24	7	712	(22)
Chief Grid Strategy & Operations Officer	289	3	23	315	281	0	22	303	(12)
Chief Customer Officer	414	47	113	574	417	44	113	574	0
Chief Workforce Officer	367	9	21	397	354	8	9	371	(26)
Chief Information Officer	262	15	49	326	264	13	37	314	(12)
Full-time				**2,187**				**2,157**	**(30)**
Limited Term				**111**				**92**	**(19)**
Part-time				**230**				**198**	**(32)**
SMUD Total	**2,187**	**111**	**230**	**2,528**	**2,157**	**92**	**198**	**2,447**	**(81)**

Position Count: The full-time count is identified in the Board Resolution.

Labor Cost Summary

Executive Hierarchy ($000)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
CEO & General Manager	$6,157	$6,348	$6,177	($171)	-3%
Chief Legal Officer	5,810	6,036	5,797	(239)	-4%
Chief Financial Officer	11,408	11,482	11,518	36	0%
Chief Energy Delivery Officer	96,695	102,698	101,355	(1,343)	-1%
Chief Grid Strategy & Operations Officer	43,209	44,595	44,581	(14)	0%
Chief Customer Officer	48,587	51,438	51,351	(86)	0%
Chief Workforce Officer	39,024	40,495	39,811	(684)	-2%
Chief Information Officer	37,007	39,617	39,033	(584)	-1%
Salaries & Wages*	$267,550	$284,038	$281,710	($2,328)	-0.8%
Overtime	$20,346	$18,671	$17,913	($758)	-4.1%
SMUD TOTAL	**$287,896**	**$302,709**	**$299,623**	**($3,086)**	**-1.0%**

*Salaries & Wages includes paid leave ----- 2020 Budget not adjusted for any organizational realignment

Labor Salaries: The labor summary reflects the cost of wages for SMUD employees. The budget for labor and associated benefit costs is included on the previous budget summary pages.

Benefits Summary

Summary ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
Active Employee Benefits	$40,860	$44,970	$45,188	$218	0%
Administer Benefits	2,003	2,594	2,532	(62)	-2%
Normal Cost Retirement Funding (OPEB)	9,451	9,547	9,597	50	1%
Subtotal Health & Welfare	**$52,315**	**$57,112**	**$57,317**	**$206**	**0%**
FICA Contribution	21,125	22,703	22,472	(231)	-1%
Retirement Contribution	84,152	84,614	71,159	(13,455)	-16%
Subtotal FICA and Retirement	**$105,277**	**$107,317**	**$93,631**	**($13,687)**	**-13%**
TOTAL	**$157,591**	**$164,429**	**$150,948**	**($13,481)**	**-8%**

Benefits: The benefits summary reflects costs for active and retired employee benefits, the costs to administer those benefits, and FICA and retirement contributions for current staff. 2021 proposed budget is decreasing mainly due to lower staffing levels compared to 2020 Budget, partially offset by increasing medical and other benefits costs.

2021 Budget
Debt Service



Powering forward. Together.

SMUD®

Debt Service Budget

The following schedules show the summary and details of the 2021 Proposed Budget for Debt Service. SMUD issues Electric Revenue Bonds and Commercial Paper Notes to finance long-lived capital assets. The Debt Service Budget includes accrued interest expense on outstanding Electric Revenue Bonds and Commercial Paper Notes, net of any swap revenues tied to debt issues, scheduled principal repayments of Bonds and Commercial Paper, trustee fees associated with administration of debt service payments, and interest expense and issuance costs associated with planned new debt issues.

Revenue Bond Interest totals $113.6 million in the 2021 Budget, an increase of $15.2 million from 2020.

Commercial Paper Interest totals $3.8 million in the 2021 Budget, a decrease of $1 million from 2020. Short-term interest rates assumed for 2021 are an average of 0.52%; The budget assumes an average commercial paper balance of $100 million.

Scheduled Principal Repayments of revenue bonds and commercial paper notes total $98 million in 2021, a $5.1 million increase from 2020.

Fees/Bond Issuance Costs of $2.1 million are included for new 2021 bond issuances and related fees.

Debt Service Budget (continued)

Debt Service ($000s)	2020 Forecast	2020 Budget	2021 Proposed	$ Change vs Budget	% Change vs Budget
Interest Expense[1]	$102,467	$103,245	$117,425	$14,180	14%
Principal Repayments	92,920	92,920	98,040	5,120	6%
Fees/Bond Issuance Cost	1,850	1,836	2,079	243	13%
Total Debt Service	$197,237	$198,001	$217,544	$19,543	10%
Allocated to JPAs	(6,126)	(6,126)	(3,812)	2,314	-38%
NET DEBT SERVICE	**$191,111**	**$191,875**	**$213,732**	**$21,857**	**11%**

[1] Build America Bonds are shown gross of the rebate of $9.3 million expected in 2021. The budget authorization is requested gross of the rebate. Includes net debt related swap payments and interest on long-term, variable rate, and subordinated debt. Assumes an interest rate of 4.34% (incl. all related fees & swaps) on avg. commercial paper balance of $100 million.

Debt Service Budget (continued)

SUMMMARY OF DEBT SERVICE ON SMUD BOND ISSUES ($000s)						
Date Issued	Issue	1/1/2021 Principal Balance	Issued Interest Rate	Final Maturity Date	2021 Scheduled Principal Payment	2021 Interest Expense
	Electric Revenue Bonds					
Jun-97	Series K[1]	72,620	5.25% to 5.90%	2024	16,785	113
May-09	Series V[2]	200,000	6.322% (4.11% net)	2036	-	12,644
Jul-10	Series W[3]	250,000	6.156% (4.00% net)	2036	-	15,390
Sep-11	Series X (Refunding)	156,770	1.50% to 5.00%	2028	29,740	7,229
Jan-12	Series Y (Refunding)	169,530	3.00% to 5.00%	2033	5,765	8,186
May-13	Series A	132,020	3.75% and 5.00%	2041	-	6,592
May-13	Series B (Refunding)	84,905	3.00% to 5.00%	2033	3,025	4,072
Jul-16	Series D (Refunding)	133,360	5.00%	2028	9,200	6,368
Dec-17	Series E (Refunding)	152,560	3.00% to 5.00%	2028	19,690	7,256
Aug-18	Series F (Refunding)	141,480	5.00%	2028	13,835	6,813
Apr-19	Series G	191,875	5.00%	2041	-	9,352
May-20	Series H	400,000	4.00% to 5.00%	2050	-	18,699
Aug-20	Series I[4] (Refunding)	0	1.55%	2028	-	875
	Subtotal	2,085,120			98,040	103,588
	Subordinated Electric Revenue Bonds					
Jul-19	*Series A*	100,000	5%	2049	-	5,000
Jul-19	*Series B*	100,000	5%	2049	-	5,000
	Subtotal	200,000			-	10,000
	Total Outstanding Bonds	2,285,120	Principal & Interest Payments		98,040	113,588
	Total Debt Service				**98,040**	**113,588**

1) Swapped to a variable rate for the life of the debt, interest expense net of swap payment. Interest expense without swap would be $3,371,944.

2) Interest expense gross of federal government Build America Bond rebate of $4,173,152.

3) Interest expense gross of federal government Build America Bond rebate of $5,079,470.

4) Forecasted debt service based on 2011X refunding

SMUD®

November 1, 2019
GM 19-263

BOARD OF DIRECTORS

2020 BUDGET

Dear Board Members:

I am pleased to submit SMUD's 2020 Budget proposal. It provides funding for operations and maintenance (O&M) and capital programs needed to successfully meet all the Board's Strategic Directions over the coming year and ensures we will continue to do so in the future.

As a community-owned, not-for-profit utility, we look holistically at our budget, programs, projects, and initiative each year to make sure we deliver value to our customers and community in a way that's as fair and equitable as possible to the 1.5 million people we serve.

As we approach the start of a new decade, we recognize 2020 will be an important year for SMUD, our customers, and community as we initiate new programs and services to achieve our aggressive new carbon reduction goals and continue our conversations with customers and our community related to Net Energy Metering (NEM). In 2019, we released our first-ever Wildfire Mitigation Plan, which formalizes our continued mitigation efforts to reduce risk related to wildfires and lays out the framework for public outreach. In 2020, we will plan the implementation of our multi-year rollout of commercial rate restructuring, which allows us to more closely align our revenue with our costs. Together, these changes help position SMUD to successfully navigate the significant changes facing our industry. We expect the pace of change will continue to increase, making the need to optimize our approaches, right-size mitigation efforts, ensure holistic views and collaborate across the organization more important than ever – all in our effort to maximize the value SMUD brings to our community.

The 2020 budget balances constrained labor and financial resources due to flat energy sales per customer and investments needed to support our carbon reduction goals, wildfire mitigation, technology, and infrastructure investments with our commitment to deliver on our purpose to enhance the quality of life for our customers and community. The Budget includes several initiatives to maximize community impact by leveraging our strategic partnerships, including our Sustainable Communities initiative, the California Mobility Center, our support for the Powerhouse Science Center, and the new child development center. By combining efforts with key community partners, we'll maximize community impact, helping to ensure every dollar we spend delivers value.

Arlen Orchard, Chief Executive Officer & General Manager

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In 2020, we maintain our focus on optimization and operational excellence, building on progress we've made to streamline our operations and reduce expected costs to help offset necessary expenditures that support key initiatives and operations. It's one of our top priorities to remain focused on getting the maximum value from every dollar we spend.

The proposed 2020 Budget is $1.8 billion, which is $96 million higher than the 2019 Budget, primarily due to higher commodity and O&M expenditures. The 2020 Budget funds a variety of items including investments and programs to support our Integrated Resource Plan (IRP), grid modernization, regulatory compliance requirements for programs like Wildfire and Cybersecurity, and investments to deliver our Sustainable Communities Initiative.

Major capital projects for 2020 include the continued rebuilding of Stations E and G, the White Rock Tunnel Bolt Replacement, starting the expansion of the Solano Wind Farm, and continued work at Union Valley in support of our hydro license. The 2020 Budget includes funding for new and continuing technology projects, such as the Advanced Distribution Management System (ADMS) to provide increased visibility into our distributed energy resources, Workforce Optimization for Energy Delivery to maximize the efficiency of the field crews and field work, and Talent Transformation for Human Resources, Diversity & Inclusion to manage hiring, onboarding and talent management process holistically through one technology platform. This Budget contains funding for corporate contingency and reserve, which aligns with prudent fiscal management practices and is designated for items with the potential of occurring in 2020 but without enough definition to be included within a business unit's budget. In 2020, corporate contingency includes funds for inventory and land purchases, system enhancements for SD-14, additional development projects, and potential new contracts for Community Energy Services.

The O&M budget is increasing primarily due to increases for projects and initiatives to support our IRP carbon reduction goals, including spending on electric transportation incentives and building electrification programs. As the Board knows, electrification is a critical part of our newly-adopted IRP, and an important part of our strategy to continue to provide a leadership role in the region's transformation to a low-carbon future. The budget also funds customer outreach and education for these items. Heightened focus on wildfire mitigation efforts and higher insurance premiums are also contributing to the increased O&M budget.

The 2020 Budget authorizes 19 new full-time positions. In addition to a full-time workforce, the Budget reflects increased funding for SMUD's flexible workforce strategy in support of temporary and part-time work, plus increases in funding for our future workforce pipeline needs with student positions. Most of the new full-time positions are in support of technology programs, some converting contractors to employees to be more cost-effective and others to support the new suite of technology applications and in some cases new skill sets, as our reliance on technology grows. The temporary positions are in Community Energy Services in support of Community Choice Aggregation (CCA) clients. The positions for CCA work are all limited-term as we continue to right size the staffing level for this new line of business.

To fulfill the Strategic Directions you've set for us, especially during this time of industry transformation, strong financial management is imperative. The previously approved rate increases of 3.75% in January 2020 and 3.00% in October 2020 and our year-end cash balances will be sufficient to cover a portion of our planned capital investments; new borrowing in 2020 will fund the remaining capital expenditures.

We expect a modest increase in our customer count in 2020, and a slight decrease in our kWh sales of electricity. We recognize the potential for new growth related to building electrification, electric vehicle adoption, and mixed-use commercial/residential sales growth, but have maintained conservative sales estimates as these markets are complex, and we don't expect to see a material increase until after 2025. We'll continue to monitor these and other factors, including local construction and employment, and manage their impact on our budget and operations.

Budget Breakdown

Here is a brief overview of the 2020 Budget compared to the 2019 Budget:

	2019 ($M)	2020 ($M)	Change ($M)
Commodity	$448.1	$474.2	$26.1
Public Goods	61.3	69.1	7.8
All Other O&M	571.7	614.8	43.1
Sub Total	**$1,081.1**	**$1,158.1**	**$77.0**
Debt Service	186.1	191.9	5.8
Capital and Reserve	443.9	456.6	12.8
Total Authorization	**$1,711.0**	**$1,806.5**	**$95.5**

Totals may reflect minor rounding differences

The 2020 Budget is projecting net income of $49 million and a fixed charge ratio of 1.69.

The following sections provide details on the specific initiatives and programs funded in the 2020 Budget, grouped by Strategic Direction (SD).

Competitive Rates (SD-2)

The 2020 Budget reflects the phased-in rate increase approach the Board adopted in June 2019. Energy supply commodity costs make up almost half of our total O&M budget. Staff has locked in prices for most of our expected energy requirements for 2020 to ensure cost and rate stability for customers. Only a small portion of budgeted purchases are exposed to short-term market price fluctuations.

We'll enter 2020 with approximately $82 million in the Hydro Rate Stabilization Fund (HRSF) and $41 million in the Rate Stabilization Fund (RSF). A transfer of $8.4 million to the RSF is expected in December 2019 because of higher energy deliveries from Western Area Power Administration (WAPA) from the high hydro generation year. These reserve funds help us

absorb higher energy costs when hydroelectric production is down and serve as a buffer against unexpected financial developments.

In 2020, a large effort will be focused on understanding the value of solar and solar-plus-storage as we seek to develop a NEM successor rate. Additionally, we will seek extensive community input to understand how our customers want us to spend our dollars and where and how they want to invest in achieving a low- carbon future. This work will be reflected in a recommendation on how future rates will help SMUD achieve our low-carbon future through important cost signals as we work to make sure that each dollar we spend achieves the greatest progress toward our goals.

Investments to support our carbon reduction goals, wildfire mitigation, technology, and infrastructure coupled with flat per customer energy usage are putting upward pressure on rates. At the same time, we know our customers expect us to keep our rates low while continuing to deliver safe, reliable, and environmentally responsible power and the products and services they value. Operational Excellence will continue to be a focus across SMUD in 2020 and beyond to free up dollars to minimize rate increases. In 2020, there are many initiatives focused on continuing to make our processes as efficient as possible.

2020 Budget investments and improvements to create efficiencies include:

- **The Energy Trading Dashboard** was created by the Business Intelligence & Analytics team to deliver new datasets, reports, and a dashboard interface that provides easier, faster access to disparate data from multiple sources. This new solution reduces manual data collection efforts and replaces a weekly paper report. Additional technology solutions to further connect and analyze data for the commodity risk management group are funded in the 2020 budget. The suite of solutions are anticipated to bring new insights into the commodity budget.

- **The Technology project portfolio** reduced its planned spending compared to 2019, while still supporting our increasing reliance on technology across the business. This was a result of a more rigorous project prioritization process and better collaboration across business units.

- **The Cosumnes Power Plant (CPP) Advanced Gas Path (AGP)** was upgraded in 2019 making the plant more efficient and able to generate more MWs – from 500MW to 600MW. The increased efficiency and generation are incorporated in the 2020 budget.

- **A series of process improvement actions** are underway to identify, analyze and improve existing business processes within Grid Assets as part of the ongoing Workforce Optimization project. Specifically, the project aims to maximize resource management and operational performance, improve customer service and the employee experience, and reduce costs.

Access to Credit Markets (SD-3)

SMUD proactively manages its strong financial position to maintain our high credit ratings. High credit ratings improve access to credit markets and result in a lower cost of borrowing – the importance of these financial mechanisms grow as we look to invest to achieve our ambitious low carbon future. We target strong financial metrics for cash flow coverage (fixed charge) and liquidity (days cash). The Board sets a minimum fixed charge target of 1.50 times operating cash flow, however, we target a range of 1.65 to 1.70. Our current 2020 forecast plans for a fixed charge coverage of 1.69 times.

SMUD also maintains a strong liquidity position by setting a minimum number of days cash on hand and reserving additional commercial paper capacity. Having available capacity is important to demonstrate to investors and rating agencies our ability to withstand financial stress. When the commercial paper program was expanded to $400 million in 2019, we set our liquidity planning target to have no less than $150 million available to provide liquidity for capital spending when necessary or for emergencies or unforeseen capital repairs in the future. The additional liquidity available from open commercial paper capacity is viewed favorably and is considered as adjusted days cash by the rating agencies.

Our current days cash threshold is 130 days — an amount of cash on hand used as a trigger for issuing new debt to replenish cash balances. In 2020, we'll begin moving toward an increased minimum days cash threshold of 150 days to further strengthen our financial position and bring us in line with peer utilities rated similarly in the AA category.

We intend to fund capital expenditures through mid-2020 from a combination of cash and borrowing through the issuance of commercial paper. In the summer of 2020, we intend to refund any outstanding commercial paper with longer term debt. For the remainder of the year, we'll use available commercial paper capacity for any additional capital spending needs that would deplete our cash balances below the minimum 150-day threshold.

We're forecasting to end 2020 with an unrestricted cash balance of $430 million, and a Rate Stabilization Fund balance of $41 million, which combined, is approximately 150 days cash. This is in addition to having $400 million in commercial paper capacity. Combined, our minimum liquidity target will be equivalent to approximately 266 days of cash on hand.

Reliability (SD-4)

Power reliability for our customers remains a top priority. The 2020 Budget funds the ongoing preventive maintenance and capital improvement projects needed to ensure high reliability of our distribution system. Our increased investments in prior years have delivered the desired reliability improvements, and we're continuing to invest in reliability enhancements in 2020. We understand that any power outage is a negative experience for our customers and will continue efforts with proactive communications to customers during outages.

Some major efforts to address reliability in the 2020 Budget are:

- **White Rock Tunnel Bolt Replacement** – This multi-year project will remedy the current end-of-life rock bolts in the White Rock Tunnel. Additionally, the Rock Trap will be improved to protect the White Rock Powerhouse. This project will extend design life by 50 years, allowing continuous operation of the White Rock Powerhouse. Other benefits include reducing operational risk and risk of extended summer month outages, eliminating risk of water flow curtailments to the powerhouse, and eliminating risk to the powerhouse and penstock facilities from damage due to tunnel debris – all of which ensure maximum generation from this carbon-free generation source.

- **69kV Cable Replacement (Pocket Line 7 & 8)** – This project will address over half of SMUD's total direct-buried 69kV cable. The cable within the scope of this project was installed in the 1970s, with some sections installed over 45 years ago. In 2017, there were two failures on Pocket Line 8, in which an average of over 15,000 customers were impacted. This project will significantly and positively impact our reliability measures of outage duration (SAIDI) and outage frequency (SAIFI).

- **4kV, 12kV & 21kV Cable replacement** – In addition to the 69kV project, the 2020 cable replacement program aims to replace approximately 360,000 circuit feet of cable. Our plan is to address the worst performing cable first, which will decrease future outages, repair costs, customer complaints, and reduce the quantity of worst performing circuits.

- **Bulk Substation projects** – In 2020, we'll continue building the substation at Station G and complete Station E.

- **Distribution system expansion and upgrades** to serve load in downtown Sacramento, including 21kV extension projects to serve multiple Department of General Services (DGS) projects, new communities such as Greenbriar and Riola Vineyards and commercial developments such as Centene and Natomas Crossing in the northwest area of our service territory. We'll also expand the system to support indoor cultivation facilities.

- **Re-configure Hurley Bulk substation** with the installation of a 230kV bus-tie circuit breaker to minimize negative impacts should an outage occur at the substation.

Ongoing annual activities in the 2020 Budget include funds for tree trimming to mitigate wildfires and improve reliability, corrective maintenance for primary faults, maintenance of the hydro power plant structures and roads, and continued systematic evaluation of the condition of our assets to determine capital replacement plans and help prioritize maintenance work.

Customer Relations (SD-5), Outreach and Communication (SD-15)

2020 is a crucial year for maintaining and enhancing our strong customer relations and brand loyalty. We want customers to feel in control of their energy usage by reliably delivering energy, information, and the tools they need in a way that is easy, responsive, personal, and collaborative. Our overarching goal is to increase customer loyalty among all our customer segments as measured through our Value for What You Pay metric.

To continue delivering value to our customers and community, our 2020 Budget includes funds for:

- Supporting the 2020 Commercial Rate Restructure, the process to develop a NEM successor rate and continuing the Energy Assistance Program Rate (EAPR) restructure.

- Executing our Sustainable Communities initiative, which helps bring environmental equity and economic vitality to all communities in our service area, with special attention given to historically under-served neighborhoods. Our Sustainable Communities initiative focuses on four key areas: social well-being, a healthy environment, a prosperous economy, and mobility.

- Community development, outreach and education with our SMUD Cares campaign, Shine Awards, and our partnership with the Powerhouse Science Center.

- Construction of the new child development center on Folsom Blvd. in partnership with UC Davis Health and Sacramento State. The center is scheduled to open in early 2021.

- Targeted customer outreach in support of building and vehicle electrification and decarbonization. This includes: expanding products, programs and services for our customers.

- Enhancing our Customer Relationship Management Systems.

- Improving systems and operations through Meter-to-Cash life cycle upgrades and system stabilization efforts.

Safety (SD-6)

SMUD continues to implement a plan to be a recognized leader in safety – Be Safe. Always. In 2020, we'll continue our work to finalize and implement a 5-year Safety Road Map that fosters SMUD's safety culture and leadership and furthers our journey towards our organizational goal of a zero-incident culture.

Key safety commitments in the 2020 Budget are:

- Finalizing a 5-year Safety Road Map that outlines our strategy to continue to build a Safety for Life culture at SMUD for employees, SMUD contractors and the public. The Road Map will focus on roles and responsibilities, priority areas, a strategy to reduce injuries, improved field ergonomics, leading indicators, and milestones.

- Purchasing and implementing a Safety Management System software program to allow for the consolidation of many of SMUD's safety programs and the ability to conduct data trending and analytics.

- Updating and using a new Safely Conducted Observations Reduce Common Hazards (SCORCH) field observation safety tracking system to provide SCORCH teams the ability to use tablets and phones in the field to conduct and track observations. Data can then be more efficiently used for trending, incident investigations, and barrier removal.

- Conducting a second Contractor Safety pre-qualification program pilot. We'll expand implementation of the system and increase the review of high-risk project contracts up to 100 in 2020. Other efforts include improved onboarding, safety plan review, field inspections, and project close out efforts.

- Integrating a Safety for Life culture program into SMUD public safety communications. Safety will partner with Communications to include at least 4 public communication shares on SMUD.org and in other public outreach efforts.

- Training employees on SMUD's root cause analysis software program (TapRoot) for investigating serious incidents and serious near misses.

- Ongoing development and updating of Safety Standards and training programs. Safety is working on updating outdated Safety Standards and developing new training programs in conjunction with the Sacramento Power Academy to improve safety compliance and assist in the integration of safety efforts throughout SMUD's work procedures.

- Ongoing improvements in Safety's communication plan to ensure that Safety messaging is clear, consistent, timely, and drives positive safety changes. The communication plan focuses on internal and external communications to employees, contractors and customers.

Environmental Leadership (SD-7)

SMUD has long been recognized as an environmental leader within our industry and beyond. Our commitment to the environment is evident in the power we deliver to our customers, our community involvement, the materials we buy, and the decisions we make each day. We're always looking to reduce our impact on the environment, conserve resources, and improve

the environment today and for future generations. These efforts benefit our employees, customers and most of all, our community.

A large focus in 2020 is the effort to reduce the use of Sulfur Hexafluoride (SF6), a potent Greenhouse (GHG) gas. SF6 contributes to the greenhouse effect and has more than ***22,000 times*** the global warming potential of carbon dioxide. Engineering teams are looking into the use of non-SF6 gas equipment at the different voltage levels used on SMUD's electric system. Staff will start reducing dependencies on SF6 gas equipment by using vacuum-interrupting technology on four 69kV breaker replacement projects at Hedge Substation. At higher voltage levels such as 115 and 230kV, clean air technology is in development as SF6 remains the dominant gas used throughout the industry. SMUD engineering teams are working with the California Air Resources Board (CARB) and equipment manufacturers to come up with a manufacturing schedule that is acceptable to all parties and meets CARB's new proposed SF6 regulation to phase out the purchasing of new SF6 equipment by 2025.

Other environmental leadership investments in the 2020 Budget include:

- Working with Sustainable Communities to communicate and bolster the impact of existing and new SMUD Environmental and Safety and Sustainable Communities efforts.

- Reporting SMUD's GHG reductions using CDP (formerly known as the Carbon Disclosure Project). The CDP is a not-for-profit organization that runs the global disclosure system to measure and report on company environmental impacts related to GHG emissions. The CDP report in 2019 and 2020 reports on SMUD's governance and strategy, risk and opportunity management, and emissions management related to climate change. This report, in combination with mandatory and other voluntary GHG reports, provides stakeholders with a measure of SMUD GHG emissions, and reduction efforts to reduce GHG emissions.

- Staff will initiate agreed upon mitigation measures to retrofit utility poles at Solano Wind Farm to be avian safe while expanding our avian field monitoring program under the provisions of our new Eagle Take Permit.

- Developing and implementing environmental justice components into California Environmental Quality Act (CEQA) documents. Staff will work across the organization to develop and evaluate the impacts of incorporated environmental justice changes in our CEQA documents, finalize the components, and pilot these in our CEQA documents in late 2020.

- Increasing environmental sustainability within our workforce and workplace to lower the environmental footprint of our business practices through reduced energy use, water conservation, waste minimization, GHG emission reduction, and Fleet Electrification.

- Continuing recreational improvements such as Ice House Reservoir upgrades, Brush Creek boat launch development, and Loon Lake Reservoir upgrades that we committed to under the new operating license for the UARP.

- Identifying and selecting a developer(s) to transform our former 20-acre corporation yard at 59th Street into a mixed-use, transit-oriented infill development. The objective is to create all-electric single-family and multi-family housing options for different income levels, all-electric neighborhoods, retail and office spaces, and a potential community gathering area.

- Partnering with Procurement to continue enhancing our collaborative procurement process to include new sustainability questions and approaches in supplier partnerships as part of our best practice approach to sustainable purchasing.

Employee Relations (SD-8)

A thriving work environment and culture are top priorities for SMUD to attract, retain, and engage the talent that will drive our region forward. With insights from our 2019 Engagement Pulse survey, we will launch targeted strategies to enhance collaboration, improve communication, and ensure SMUD is a workplace with a culture based on trust and respect for all. Our sustained commitment to diversity and inclusion in the workplace grows increasingly important as we continue to leverage varied skills, experiences, and perspectives to deliver on strategy and open doors to innovation. We consider diversity and inclusion to be key components that help us deliver our strategic objectives, and our goal is to have a diverse and inclusive culture that reflects the broad values of our customers and community.

As change accelerates in the utility industry, we recognize the need for flexibility and nimbleness and the need for our employees to acquire new skills to ensure SMUD remains successful.

Key employee relations investments in the 2020 Budget are:

- Expanding our learning technology capabilities to enable more on-demand learning through an enterprise technology solution.

- Identifying and responding to the most critical talent needs across the enterprise through strategic workforce planning.

- Continuing to pave the way for clearer career paths that will support retention and professional development in 2020 with the launch of a pilot program to help entry-level employees brand, market, and develop their skills and abilities outside of their current roles.

- Implementing mentorship and recognition strategies with Employee Resource Groups, as well as providing increased visibility and partnership opportunities with community organizations as part of our talent acquisition and community relations initiatives.

- Continue to cultivate our employer brand to appeal to prospective and current employees. To improve candidates' experiences, we'll continue to leverage our 2019 investment in GlassDoor and use the platform to advertise job postings and accept applications in 2020.

- Developing a program that will create a sustainable pathway for disadvantaged youth, ages 18-24, to enter skilled trades at SMUD and in the community to provide employment opportunities and help increase diversity in the trades.

- Refining SMUD's new employee onboarding process to include a social networking component. By asking new hires to connect with colleagues inside and outside of their function, they stand to gain a broader understanding of SMUD's business and culture.

- Continuing to evaluate additional ancillary benefits to attract and retain top talent and make enhancements accordingly to our benefits offerings. This addresses the increasingly diverse and multi-generational workforce at SMUD resulting in employees' benefits needs becoming more diverse. A recent Total Rewards survey indicated employees are interested in benefits as wide ranging as legal/estate planning, student loan assistance, and supplemental insurance.

Resource Planning (SD-9)

The Board adopted our Integrated Resource Plan (IRP) in 2018. SMUD has always had an aggressive IRP to meet or exceed goals established by the State for renewable energy and the reduction of carbon emissions. Our new IRP, with updated targets, is focused on an ambitious goal to deliver net-zero-carbon electricity by 2040. Over the next 20 years, we'll invest more than $6.5 billion in carbon-reducing technology and renewable energy choices for our customers, such as more solar, hydro and wind power as well as energy storage, electric vehicles, and increased electrification of homes and businesses.

SMUD's IRP goes beyond traditional resource planning with goals to significantly reduce carbon emissions from vehicles and buildings, the second- and third-largest GHG emitting sectors of our economy. Our carbon reduction goals will deliver significant community benefits, including a 64% reduction in *regional* carbon emissions by 2040.

Efforts that support our carbon reduction goals in the 2020 Budget include:

- Planning, developing, and implementing projects and customer offerings, including building and vehicle electrification and energy efficiency programs, renewable energy and reliability projects.

  - Development of our new local solar projects at Rancho Seco (160MW) and in northern Sacramento County (13MW), both due online in 2020.
  - Development of the new 3MW South Fork Power House hydroelectric plant due online in 2020.
  - Continued development of Solano Phase 4 in Solano County adjacent to our other wind resources.
  - Continued local solar and battery storage site exploration identifying prime locations for these resources for future development.
  - New local system upgrades to be completed in 2020, including line reconductoring and capacitor banks.
  - New solar project (100MW) with the Navajo Tribal Utility Authority in Southern California due online in 2022.

- Continuing the Integrated Distributed Resource Plan study that will provide information about the possible impacts of higher electrification on our grid.

- Studying the benefits of the proposed CAISO Extended Day-Ahead Market.

- Transitioning electric vehicle offerings from the “Charge Free for 2 Years” program to a statewide “Point of Purchase” program.

- Significantly expanding our building electrification offerings with a goal of growing participation by more than 50% over 2019.

- Coordinating comprehensive messages for marketing and customer engagement around building electrification programs.

- Working with local and state government to influence policy for local government reach codes at the local level and statewide building codes to encourage building electrification.

- Proposing NEM 2.0 rate structures that reflect the value of solar and encourage intelligent dispatch of battery storage, either through tariffs or associated programs.

- Completing work on grid modernization efforts including the Automated Distribution Management System (ADMS) and continuing work on the Distributed Energy Resource Management System (DERMS), both of which lay the foundation for the transactive grid and enable integration of DERs such as solar, energy storage and EVs.

Innovation (SD-10)

One of our core values is delivering innovative solutions, products and services to our customers. We’ll investigate, research and demonstrate a variety of projects that support SMUD’s strategic goals, including:

- Launching new commercial building electrification offerings such as incentives for heat pump space heating and water heating.

- Researching key barriers to electrification, including:
    - Multi-family/central heat pump water heating system design and performance.
    - Mitigation of panel and grid infrastructure upgrades needed to support IRP electrification goals.

- Launching an emergency replacement program for failed gas water heaters to replace them with electric heat pump water heaters.

- Expanding EV program offerings to provide renewable energy to electric vehicles and begin to offer incentives for medium and heavy-duty EVs and commercial fleets.

- Investing in low-income and Disadvantaged Communities (DAC) sustainability projects through a portfolio of offerings such as:
    - Working with program contractors to install EV charging in support of Sacramento Metropolitan Air Quality Management District's (SMAQMD) Clean Cars 4 All program, where SMAQMD is offering "cash for clunkers" incentives for used EVs to benefit low-income customers.
    - Working with SMAQMD on eMobility hubs with EV charging at specific community locations within DAC.
    - Developing new offerings to support transportation electrification in low-income areas and DAC.

- Conducting managed EV charging research, including support of vehicle-to-grid readiness for school bus electrification. Vehicle-to-grid readiness means the charging infrastructure is ready to support charging the vehicle and a battery storage system for the grid to enable two-way power flow.

- Evaluating battery storage pilots to date (residential behind-the-meter storage, new residential construction, StorageShares, thermal energy storage) and gain Board approval for new proposed AB 2514 storage goals for 2021through 2023.

- Installing the 4MW Hedge battery storage project in support of StorageShares, with the capability for market participation.

- Planning for Phases 2 and 3 of the DERMS development to enable management and alignment of customer-sited batteries and flexible loads such as EVs, heat pump water heaters, and smart thermostats.

Public Power Business Model (SD-11)

We'll continue to guard local decision making and flexibility as we pursue innovative solutions that meet the needs of our customers and community.

The primary focus areas for Government Affairs activities in the 2020 Budget are:

- Post-2020 carbon policies and regulations.
- Renewable Portfolio Standard regulations.
- Oversight of wildfire mitigation plans.
- Grid charges and other utility fees.
- Federal policies on transmission.
- Energy markets.

Economic Development (SD-13)

SMUD promotes the economic vitality of our region and the growth of our customer base through strategic leadership and active participation in regional economic development partnerships. This includes supporting efforts to retain, recruit, and grow commercial and industrial customers, offering Economic Development Rates and program incentives and providing a SMUD contracting program for certified small business customers. We're also helping build a strong innovation ecosystem through support for start-ups, entrepreneurs and business incubators.

SMUD helps make our region an attractive destination for businesses of all sizes through affordable rates and customized energy solutions.

Key initiatives in the 2020 Budget are:

- Executing on our Sustainable Communities efforts to encourage growth in disadvantaged neighborhoods.
- Providing strategic leadership for local economic development organizations and initiatives.
- Promoting the Economic Development Rate in conjunction with business attraction, retention and growth efforts.
- Supplier Education and Economic Development (SEED) awareness and vendor participation through key partnerships, outreach and the launch of engagement tools including online program webinars; enhancement of the SEED vendor verification

process and development and implementation of a key study to assess small business availability in, and surrounding SMUD's service area to inform a SEED outreach strategy.

- Supporting regional and international interest and investment in the California Mobility Center—a public/private consortium created to fund and commercialize new mobility technologies including customized technical, digital and advanced manufacturing of electric vehicles, autonomous transportation, battery storage, shared mobility solutions, and public transit – as well as develop new business and policy models for adoption on the international stage.

System Enhancement (SD-14)

There are four SD-14 projects included in the 2020 Budget. Three of these projects (Sacramento County's streetscape project at Fair Oaks Blvd between Landis Ave and Angeline Ave; Hazel Ave from Sunset to Madison Ave; City of Citrus Heights project at Auburn Blvd from Rusch Park to I-80) are scheduled for construction in 2020. The fourth project (City of Elk Grove's streetscape project at Elk Grove Blvd from Waterman Rd to School St) will be designed in 2020. These projects will underground the existing overhead facilities that are within the project boundaries.

Information Management and Security (SD-16)

The effective and efficient use of technology is a strategic imperative for all our operations. The 2020 Budget funds technology solutions as well as the components of SD-16.

Key initiatives in the 2020 Budget are:

- Maturing Information Technology Security efforts to make cybersecurity a cornerstone of everything we do with technology. We're expanding our programs to deliver organization-wide 24/7 cyber risk management. This includes improvements in security and privacy governance, risk, CIP, Operational Technology security, and overall employee awareness.

- Application rationalization and enterprise architecture. We're continuing to develop a strategic view of applications with potential future savings to be achieved by retiring or consolidating applications used across SMUD as part of our efforts to update our enterprise application architecture.

- Enhance our customers' experiences with SMUD by continuing to ensure and improve security for digital interactions such as payment technology, mobile applications, and all other digital channels.

Enterprise Risk Management (SD-17)

The 2020 Budget fully funds identified risk mitigation activities. SMUD's enterprise-level risks span the spectrum of operational and strategic business risks and include those associated with energy commodities, strategy, operations, natural hazards, political and regulatory issues, economics, and the environment. Risk assessments and mitigation plans continue to be refined and improved by considering SMUD's changing internal and external risk environment and enhancing how SMUD addresses risks. Risk mitigations for significantly-high and high risks identified in the enterprise risk register will continue to be monitored closely to ensure risks are managed appropriately.

Some key initiatives in the 2020 Budget are:

- Enhancing SMUD's enterprise continuity capabilities.
- Leveraging financial tools to support SMUD's ability to model financial impacts of trends and/or revenue risk, operations and maintenance, and capital spending.
- Mitigating wildfire risk.
- Creating a more agile workforce.
- Developing proposals for our Net Energy Metering successor rate and planning implementation of rates for our commercial customers.

SMUD continues to work closely with compliance and regulatory bodies to stay current with all compliance standards and reviews, and updates procedures and systems to ensure full compliance. SMUD proactively monitors the direction of future standards and manages the strategic direction of our systems to provide safe and reliable energy to our customers.

We'll continue to update the enterprise risk portfolio and provide the Board with leading risk indicators as early warning signals that call for action. The overarching goal is to encourage the integration of risk-based thinking into decision-making at all levels. Enterprise Risk Management will continue to align with Internal Audit and other lines of defense through shared best practices.

Diversified Business (SD-19)

Broadening and diversifying our products and services is a key value for SMUD. In 2020, we will pursue opportunities that benefit our customers and community, create economic value, achieve a balanced and diversified portfolio, leverage and optimize our strengths, assets and expertise, all while maintaining our financial health and reputation.

Some new net revenue areas in the 2020 Budget are:

- Providing EV charging infrastructure as a service to reduce barriers to EV adoption, support our vehicle electrification goals and reduce local carbon emissions.

- Participating in energy and power markets, selling transmission, and ancillary services.

- Continuing work on our Community Energy Services business for Valley Clean Energy and East Bay Community Energy and pursuing additional opportunities that make sense for SMUD and our customers.

- Stand-up the California Mobility Center, a private/public consortium focused on innovation and commercialization, standards and policy, workforce development, and new business models in electric mobility.

2020 promises to be an exciting and transformative year for SMUD and the Sacramento community, and the budget includes funding for setting the Sacramento community on a path to achieving a low-carbon future while also working to enhance the vitality of all Sacramento area residents through our Sustainable Community initiatives. Staff will continue to update the Board on progress throughout the upcoming year.

Respectfully submitted,



Arlen Orchard
Chief Executive Officer and General Manager

2020 Budget

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2020 Budget

Strategic Direction

Purpose, Vision & Values

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Strategic Direction

Core Values: Strategically Essential for SMUD

SD-1	Purpose and Vision Statement
SD-2	Competitive Rates
SD-3	Access to Credit Markets
SD-4	Reliability
SD-5	Customer Relations
SD-6	Safety
SD-7	Environmental Leadership
SD-8	Employee Relations
SD-9	Resource Planning
SD-10	Innovation
SD-11	Public Power Business Model
SD-12	Ethics
SD-16	Information Management & Security Policy
SD-17	Enterprise Risk Management

Key Values: Provide Value-Added Services

SD-13	Economic Development
SD-14	System Enhancement
SD-15	Outreach & Communication
SD-19	Diversified Business

Strategic Direction (continued)

Purpose Statement

SD-1A SMUD is community-owned. Our purpose is to enhance the quality of life for our customers and community through creative energy solutions.

Vision Statement

SD-1B SMUD's vision is to be the trusted partner with our customers and community, providing innovative solutions to ensure energy affordability and reliability, improve the environment, reduce our region's carbon footprint, and enhance the vitality of our community.

Strategic Direction (continued)

Core Values: Strategically Essential for SMUD

SD-2 Maintain Competitive Rates

SD-3 Maintain Access to Credit Markets

SD-4 Reliability - Meeting customer energy requirements

SD-5 Maintain a high level of Customer Relations

SD-6 Safety - Creating a safe environment for employees and the public is a core value of SMUD

SD-7 Environmental Leadership - Community engagement, continuous improvement in pollution prevention, carbon reduction, energy efficiency, and conservation

SD-8 Employee Relations - Developing and maintaining a high quality, inclusive workplace that engages and inspires employees to commit to SMUD's purpose, vision and values

Strategic Direction (continued)

Core Values: Strategically Essential for SMUD

SD-9 Provide customer-owners with a sustainable power supply through the use of an integrated Resource Planning process

SD-10 Deliver innovative solutions, products and services to our customers

SD-11 Public Power Business Model – Support and strengthen the public power business model

SD-12 Ethics – Maintain the public trust and confidence in the integrity and ethical conduct of the Board and SMUD employees

SD-16 Information Management and Security Policy - Proper management of cyber and physical information are critical to effective risk management and to ensure regulatory compliance, business resiliency and customer satisfaction. SMUD will take prudent and reasonable measures to ensure information security, customer privacy and proper record management.

SD-17 SMUD will implement and maintain an integrated enterprise risk management process that identifies, assesses, manages and mitigates a variety of risks facing SMUD, including financial, supply, operational, physical security, climate change, legal, legislative and regulatory, and reputational risk.

Strategic Direction (continued)

Key Values: Provide Value-Added Services

SD-13 Economic Development – Promote economic vitality of our region and the growth of our customer base

SD-14 Make selected distribution system enhancements such as relocation or underground placement of primary power lines.

SD-15 Broad Outreach and Communication to SMUD's customers and the community

SD-19 Broaden and diversify the products and services that SMUD offers

2020 Budget
Performance Metrics

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Performance Metrics

Strategic Direction	Metric	2019 Forecast	2019 Target	2020 Target
SD-2 Competitive Rates	**Competitive System Average Rates**			
	Percent below Pacific Gas & Electric *[1]*	36.5%	18.0%	18.0%
	Percent below each Customer Class *[1]*	Meet 10% Goal for each Customer class	Meet 10% Goal for each Customer class	Meet 10% Goal for each Customer class
SD-3 Access to Credit Markets	**Fixed Charge Ratio of at least 1.50** *[2]*	1.90	1.76	1.69
SD-4 Reliability	**Customer Load Demand** *[3]*	100%	100%	100%
	SMUD Availability of Generation Assets *[4]*	98%	97%	97%
	Overall Availability of Transmission Assets	100%	>99.99%	>99.99%
	Distribution System Reliability			
	Duration of Outages (SAIDI) *[5]*			
	SAIDI With Major Event	102.4 min	67.5 - 93.3 min	67.5 - 93.3 min
	SAIDI Excludes Major Event	53.9 min	49.7 - 68.7 min	49.7 - 68.7 min
	Frequency of Outages (SAIFI) *[5]*			
	SAIFI With Major Event	1.2	0.99 - 1.33	0.99 - 1.33
	SAIFI Excludes Major Event	0.9	0.85 - 1.14	0.85 - 1.14
SD-5 Customer Relations	**Customer Satisfaction Survey**	95%	95%	95%
	Value for What You Pay	69%	73%	70%

Performance Metrics (continued)

Strategic Direction	Metric	2019 Forecast	2019 Target	2020 Target
SD-6 Safety	**Shift safety culture, improve safety results, and maintain positive financial performance**			
	Leading Indicator			
	Employee-Supervisor Interactions	100%	95%	95%
	Incident Reports ≤ 3 days *[6]*	100%	95%	95%
	Incident Investigations ≤ 5 days *[7]*	90%	95%	95%
	Days Away Restricted Time (DART) *[8]*			
	Annual average	1.0	1.4	1.0
	Workers' Compensation			
	Average Workers' Compensation Cost per $100 payroll (Actuarial Basis) (Maintain positive financial performance of the workers' compensation program.) *[9]*	$0.68	$0.94	$0.94
	Public Safety			
	Corrective actions implemented (to protect the public from injuries related to SMUD ops. or facilities.)	100%	95%	95%
SD-8 Employee Relations	**Employee Engagement**			
	Sustain Employee Engagement *[10]*	87%	>80%	>80%
SD-9 Resource Planning	**Energy Savings** *[11]*			
	GWh Savings - Energy Efficiency	164	161	161
	Renewable Energy to meet SMUD's Load			
	Renewable Portfolio Standards (RPS) *[12]*	31.0%	31.0%	33.0%
SD-13 Economic Development	**Supplier Education and Economic Development (SEED) - Percent of Contract Dollars**	28%	20%	20%

Performance Metrics (continued)

Footnotes:

[1] 2019 Forecast is based on rate forecasts as of September 2019.

[2] Fixed Charge Ratio 2019 Forecast is as of October 2019.

[3] Customer Load Demand met through Use of Generation Resources and Purchased Power Portfolio. Target reflects Board Generation Resources and Purchase Power Portfolio Target.

[4] Maintain high level of availability of generation assets (adjusted IEEE availability for peak load season June - September). Supports Board target for overall availability of transmission assets.

[5] 2019 Forecast is based on 2019 Actuals through September 30 and 2014-2018 for October through December. One major event occurred January 6-7th, 2019. In 2019, 3 of the 4 metrics for SAIDI/SAIFI are projected to be within the Strategic Direction. The impact to SAIDI during the major event far exceeded the allowance provided for the SAIDI major event threshold.

[6] Employee-Supervisor Interactions Incident Reports excludes incident types where the date of injury may be difficult to determine. It measures the percentage of reports completed within the target date, which is normally set to 3 days, but may be extended due to extenuating circumstances.

[7] Incident Investigations excludes incident types where the investigation may require coordination of outside parties or may have a high degree of complexity. It measures the percentage of investigations completed within the target date, which is normally set to 5 days, but may be extended due to extenuating circumstances.

[8] Board SD-6 targeted to reduce SMUD's injury severity rate to 1.4 by 2020.

[9] The projected loss rates per $100 payroll (for 2019/20 and 2020/21) are calculated based on SMUD's historical loss experience and actuarial judgment.

[10] Employee Engagement metrics reflects the percentage of employees classified as "fully engaged" and "key contributor" combined together to exceed 80% as measured through the bi-annual engagement survey. As we evaluate improved approaches to measuring an organization's engagement, this metric may be modified.

[11] Total energy savings goals are reflective of Board's 10-year energy efficiency goals. GWh savings for 2020 Target include 10 GWh of Electrification, 148 GWh of Energy Efficiency Estimated Pilots, and 3 GWh of Low Income.

[12] SMUD will meet the 2019 target (31%; ~3,130 GWh) using forecasted 2019 generation (31.2%; ~3,150 GWh). The 2020 Renewable Portfolio Standards (RPS) target is 33% (~3,350 GWh). The RPS statutes allow renewables procured above the compliance period targets to be carried over and applied in future compliance periods.

2020 Budget

Business Units & Segments and Organizational Chart

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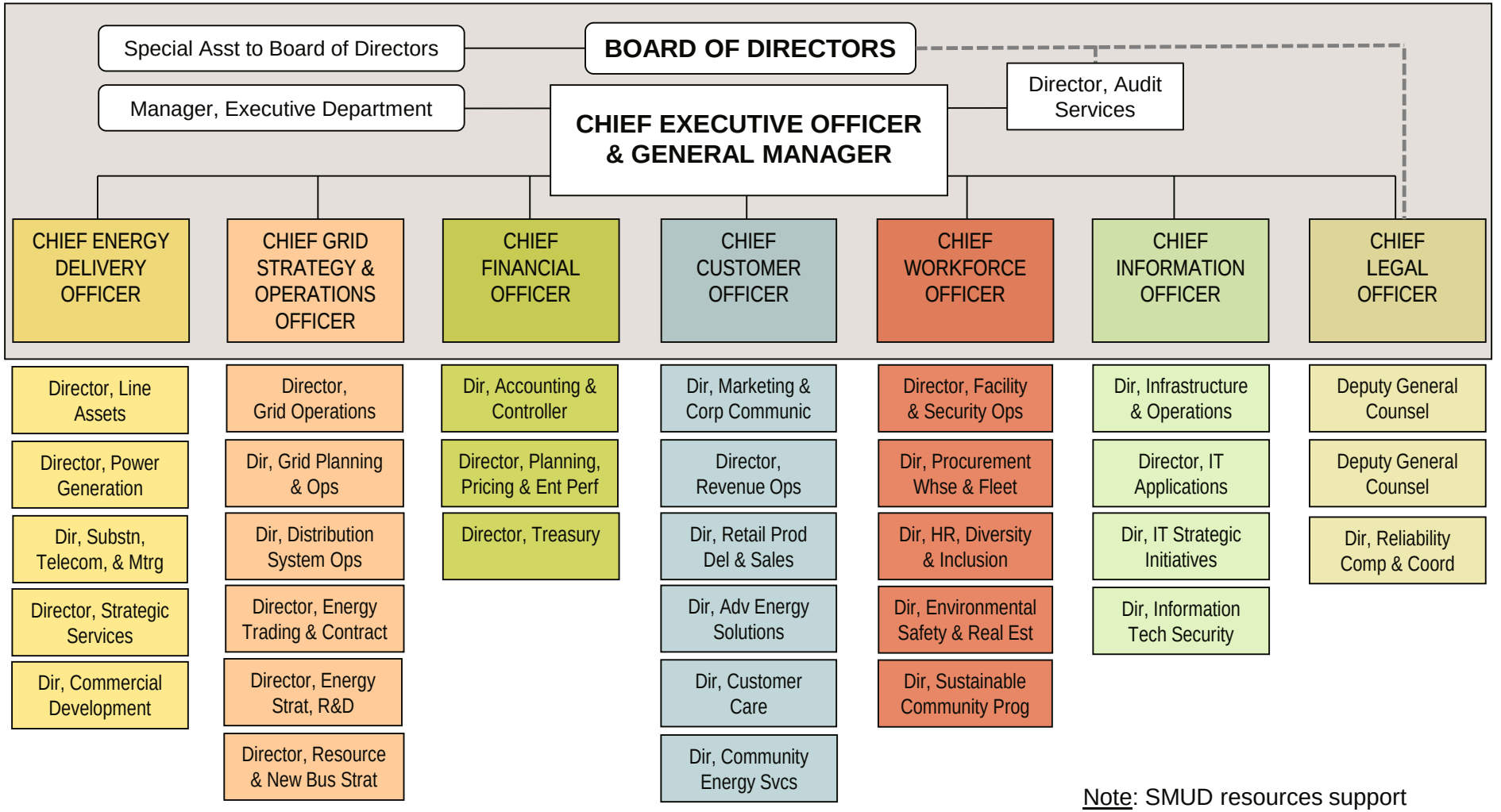
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Business Units & Segments

The SMUD Budget is planned by Business Unit processes which in some cases differs from the organizational/functional reporting structure.

Customer/ Community	Energy Operations	Energy Delivery	Internal	Technology	Corporate
Retail Product Delivery & Sales	Grid Planning & Operations	Power Generation	Operations	Applications	Governance
Advanced Energy Solutions	Commodity, Procurement & Sales	Grid Assets	Services	Infrastructure & Operations	Strategic & Finance
Revenue Operations	Energy Strategy, Research & Development		Support	Strategy Planning & Governance	Legal, Gov't Affairs & Reliability Compliance
Communic. Marketing & Community Relations	Resource & New Business Strategy			Strategic Initiatives	Enterprise Affairs
Customer Care	Integrated Resource Plan			Information Security	

Organization Chart by Executive



Note: SMUD resources support Business Unit processes regardless of organization/functional affiliation.

2020 Budget

Economic Outlook & Assumptions

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Economic Outlook & Assumptions

The planning data presented here is based on a recent update as part of the Corporate Resource Planning process.

Customer count is up slightly in the 2019 Forecast from what was assumed in the 2019 Budget. Looking ahead, we are seeing regular growth in the future in residential customers and commercial customers.

New customers to be added to SMUD's customer base in 2020 are projected to total approximately 5,579. This is about a 1 percent annual growth rate, which is below the average growth during the past decade. Of the 2020 projection, 4,825 are new residential customers and 754 are other customers.

	2019 BUDGET	2019 FORECAST	2020 BUDGET
New residential customers	5,196	(218)	4,825
All other new customers	(9)	447	754
TOTAL new customers*	5,187		5,579
Residential customers	563,035	562,817	567,860
All other customers	75,126	75,573	75,880
TOTAL customers**	638,161	638,390	643,740

*Reflects monthly average instead of end-of-year count in order to reflect the fluctuation of SMUD's customer growth.

Economic Outlook & Assumptions

(continued)

Energy sales to customers is projected to decrease from the 2019 Budget assumption.

Unmanaged Peak load is forecasted to decrease by 5MW from the 2019 Budget assumption.

	2019 BUDGET	2020 BUDGET
Billed energy sales (GWh)	10,348	10,258
Peak load (MW)	2,855	2,850

Inflation Escalation Factors:

The forecasted inflation factor for use where applicable in preparing the 2020 Budget is 2%. The longer-term outlook (ten years) used in the business strategy update is the same, at 2% per year.

The cost-of-living (COLA) increase for SMUD salaries and wages during 2020 is based on formulas contained in negotiated bargaining agreements.

Economic Outlook & Assumptions

(continued)

Power Supply Assumptions

The Integrated Resource Plan is the basis for the operating assumptions for the 2020 Budget. Electricity prices are forecast to be higher, and natural gas prices are forecast to be lower in the 2020 Proposed Budget than what was forecast in the 2019 Budget. The Upper American River Project (UARP) generation and renewable generation are forecasted to be slightly lower in 2020, while thermal generation is forecasted also to be slightly lower in the 2020 Budget.

SMUD became a Control Area, presently called a Balancing Authority (BA), in June 2002 and since then has operated its transmission and generation system independently. On January 1, 2006, the Western Area Power Administration's Sierra Nevada Region (WAPA-SNR) was integrated into the SMUD BA, followed on December 1, 2006, by the California-Oregon Transmission Project (COTP) – a 500kV transmission line - and the Modesto Irrigation District (MID). On May 8, 2009, together with MID and the cities of Redding and Roseville, SMUD entered into a Joint Powers Agreement to create the new Balancing Authority of Northern California (BANC). With regulatory approval on May 1, 2011, the operations of SMUD BA were transferred to BANC BA. BANC uses SMUD's existing employees and physical resources to be the BANC Operator. BANC's General Manager reports to a five person Commission made up of SMUD, MID, City of Redding, City of Roseville, and Trinity Public Utility Districts chief executives. This BA, as an independent entity, is not subject to market disruptions that result from financially induced supply shortages within the California Independent System Operator (CAISO) or investor-owned utilities. SMUD is still subject to certain CAISO transmission, grid management and other costs for transactions that use the CAISO controlled grid. These costs have been included in SMUD's 2020 Budget.

Economic Outlook & Assumptions

(continued)

SMUD Generation

SMUD Hydroelectric (Upper American River Project): The 2020 Plan assumes median rainfall and normal starting reservoir levels in 2020. Generation is expected to be 1,522 GWh.

Other SMUD Generation (South Fork, Photovoltaic, Solano Wind): The 2020 Plan assumes average generation subject to limitations governing the operation of each plant. The largest contributor, Solano Wind Phases 1, 2 & 3 is expected to generate 619 GWh.

SFA Cosumnes Power Plant: This 500 MW gas-fired combined cycle power plant began commercial operation in February 2006. Forecasted generation from this plant in 2020 is 3,989 GWh.

CVFA Carson Cogeneration: This gas-fired cogeneration project, which began commercial operation in October 1995, consists of a 61 MW combined cycle unit and a 42 MW peaking unit. With the installation of an auxiliary steam boiler in 2017, if running the cogeneration unit is uneconomic, it can be turned off. Energy will be supplied from the auxiliary boiler instead of the cogeneration unit. The forecasted generation from this facility in 2020 is 269 GWh.

SCA Procter & Gamble Cogeneration: This gas-fired cogeneration plant began commercial operation in March 1997. It consists of a 120 MW combined cycle power plant and a 49 MW peaking unit that became operational in May 2001. With the installation of an auxiliary steam boiler in 2016, if running the cogeneration unit is uneconomic, it can be turned off. Steam will be supplied from the auxiliary boiler instead of the cogeneration unit. Forecasted generation from this facility in 2020 is 601 GWh.

SPA Campbell Soup Cogeneration: This gas-fired combined cycle plant, began commercial operation in December 1997. It consists of a 170 MW combined cycle power unit. Beginning in 2008 the 72 MW McClellan gas turbine is also included under SPA. Forecasted generation from these two units in 2020 is 569 GWh.

Economic Outlook & Assumptions

(continued)

Purchased Power

The 2020 Plan assumes delivery of energy and capacity from the following contracts:

Western Area Power Administration (WAPA) / Central Valley Project (CVP): Provide 376 MW of capacity and 661 GWh of energy. Under a separate agreement, WAPA provides 38 GWh to serve its customers located within SMUD's service territory.

Kiefer Landfill: Provide a total of 14.0 MW of capacity and 109 GWh of energy under two separate agreements. The original Kiefer I contract was extended in November 2014, for an additional 10 years. The current Kiefer II contract was extended in March 2016, for an additional 10 years.

MM Yolo: Provide 2.4 MW of capacity and 21 GWh of green energy under an agreement that expires in June 2026.

IBR Highwinds: Provide 50 MW of capacity and 127 GWh of energy under an agreement signed in July 2015 to extend the original contract for additional 10 years.

IBR Biomass (previously RockTenn): Provide 45 MW of capacity and 313 GWh of energy under an agreement that expires in August 2021.

Grady Wind: Provide 200 MW of capacity and 900 GWh of energy of energy under an agreement that expires in December 2043.

enXco – SolarShares®: Provide 0.5 MW of capacity and 2 GWh of energy to participants of SolarShares® program under an agreement which expires in August 2028.

Santa Cruz Landfill: Provide 1.5 MW of capacity and 12 GWh of energy under an agreement, which expires in September 2024.

Feed-in-Tariff Solar Projects: Provide 100 MW capacity and 213 GWh of energy delivered from all projects under a 20-year term ending in December 2030.

Van Warmerdam Dairy Biogas: Provide 0.5 MW of capacity and 2 GWh of energy under an agreement which expires in May 2033.

Economic Outlook & Assumptions

(continued)

Purchased Power (cont'd)

New Hope Dairy Biogas: Provide 0.4 MW of capacity and 2 GWh of energy under an agreement which expires in August 2033.

Patua (aka: Gradient) Geothermal: Provide 25 MW to 19 MW of capacity and 147 GWh of energy under an agreement, which expires in December 2033.

Loyalton Biomass: Provide 4.2 MW of capacity and 33 GWh of energy under an agreement, which expires in March 2023.

Van Steyn Dairy Biogas: Provide 0.12 MW of capacity and 1 GWh of energy under an agreement, which expires in June 2035.

Camp Far West: Provide 6.8 MW of capacity and 21 GWh of energy under an agreement which expires in July 2031.

Conergy SolarShares®: Provide 1.3 MW of capacity and 2 GWh of energy to participants of SolarShares® program, under an agreement that expires in August 2034.

Rancho Seco Solar: Rancho Seco I provides 11 MW of capacity and 23 GWh of energy under a 30-year agreement which expires in August 2036. Rancho Seco II will begin production on December 31, 2019 and will provide 157 MW of capacity and 337 GWh of energy through November 2039.

Sutter Energy Center: Provide 258 MW of capacity and 528 GWh of energy under a two-year contract with Calpine Energy Services, L.P. effective April 2019 from a natural gas-fired, combined-cycle.

CalEnergy: Provide 20 MW of capacity and 199 GWh of geothermal energy under an agreement expiring December 2039.

SB-859 Biomass: Provide 2.6 MW of capacity and 19 GWh of energy, per State legislation requiring utilities in California to procure power from biomass plants that burn forest fuels from high hazard areas as identified by Cal Fire. A biomass project of 2.7 MW of capacity is expected in January 2020.

Economic Outlook & Assumptions

(continued)

Purchased Power

The balance of energy requirements to meet forecasted sales to customers will be met by short-term purchases of energy. Some of the long-term and short-term contracts will be delivered over SMUD's 528 MW share of the California-Oregon Transmission Project (Northwest) or under the South-of-Tesla transmission agreement with PG&E (Southwest & Southern California). These purchases are coordinated through SMUD's membership in the Western Systems Power Pool (WSPP), which facilitates sales and exchanges among its 30 member utilities, and through market trading. Lastly, another 5-year extension to the WAPA Custom Product ~300-MW sale/purchase contract with WAPA allows SMUD to import additional power from California Oregon Border through 2020.

2020 Budget

Budget Summary

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Budget Summary

Overview

The 2020 Budget totals $1.8 billion. This represents an increase of $96 million from the 2019 Budget. The 2020 Budget is a request to authorize new spending.

The 2020 SMUD Budget summarized on the following pages is a blueprint of planned operating, public goods and debt service expenses and capital expenditures for the fiscal year beginning January 1, 2020. Historical comparisons to the 2019 Budget adopted by the Board on December 20, 2018 are shown to put the 2020 Budget in perspective. A forecast of actual 2019 expenses is also shown.

The O&M and Capital Budgets are shown by Business Unit. SMUD Business Units correspond to business processes which deliver specific products and services to SMUD customers. The core business processes are represented by the Customer & Community Services, Energy Operations and Energy Delivery Business Units. Included within Energy Operations and Customer/Community are Public Good costs related to energy efficiency, low income assistance, renewable generation and research and development. These costs are shown separately because they are designated as Public Goods programs as determined by statute.

The Technology, Internal Services and Corporate Services Business Units provide services which enable the other business units to perform their work. The Enterprise Business Unit contains contingency and reserve estimates for the organization. The planning and budgeting philosophy is to more accurately plan and measure the total cost of SMUD business processes and set performance improvement targets for the processes and Business Units that will most efficiently accomplish strategic goals. This budgeting methodology also most efficiently allocates and plans resources from throughout SMUD to the Business Units and work processes.

Within each Business Unit budget, work processes are subdivided into business segments and individual business processes. Budget detail is provided at both levels. Business segments and processes enable each business unit to effectively plan and measure performance of its operations at a manageable level.

Budget Summary (continued)

The budgeted costs shown under each core Business Unit include all the costs of performing the work planned for 2020. These include labor costs from departments throughout SMUD which perform work in the core business processes. Labor costs include employee benefits. Also included in the budget is a surcharge allocation of internal service costs such as transportation, facilities, technology, human resources, and security. Expenditures budgeted by Technology and Internal Services represent those process costs that are not allocated to the core business units, such as dedicated software implementations or enhancements that do not meet minimum SMUD criteria for capitalization. The Corporate Services budget includes insurance and risk management, cash and debt management, and corporate legal, reliability compliance, legislative, regulatory and government relations, planning and performance, executive management and Board of Directors; a portion of this budget is allocated to Capital and Public Good. The Enterprise budget includes contingency and reserve estimates for the organization.

The 2020 Budget includes the following major components:

OPERATING EXPENSES (O&M): Expenses related to producing and acquiring energy, operating and maintaining the electrical delivery system, providing service to customers including public goods (energy efficiency, low income assistance, new renewable generation sources, and research and development of advanced technologies) programs, and corporate activities. Included within this category as a separate line item are commodity costs associated with energy supply. These costs include purchased power, fuel for energy production, and transmission wheeling costs.

Also included under Energy Delivery are fuel, operating and interest expense associated with CVFA's Carson Cogeneration plant, SCA's Procter & Gamble plant, SPA's Campbell Soup Cogeneration plant, SFA's Cosumnes Power Plant, NCGA No. 1 and NCEA pass-through gas costs. These expenses are shown in the SMUD Budget because SMUD will reimburse CVFA, SCA, SPA, SFA, NCGA No. 1 and NCEA for their costs under the terms of the Power and Gas Purchase Agreements. The detailed CVFA, SCA , SPA, SFA, NCGA No. 1 and NCEA Budgets are also in separate booklets and/or resolutions as they will be approved by the CVFA, SCA, SPA, SFA, NCGA No. 1 and NCEA Commissions.

Budget Summary (continued)

CAPITAL INVESTMENT: Investment in additions and improvements to SMUD's property, plant and equipment. The Capital Investment budget includes all qualifying costs related to acquiring or constructing tangible and intangible assets which meet SMUD's capitalization guidelines - cost exceeding $5,000 and an estimated service life greater than two years. SMUD follows Federal Energy Regulatory Commission (FERC) capitalization guidelines which dictate the inclusion of all direct costs (labor, employee benefits, materials, services and other) and a proportionate share of indirect costs (engineering and construction supervision and support, transportation, insurance, etc.) related to capital projects. Capital assets are depreciated on a straight-line basis over their estimated useful service life.

ALLOCATED: Costs in the two supporting business units, Technology and Internal Services, which enable the core business units to perform work. These costs are allocated to both O&M and capital costs, based on the quantity of labor hours. The aggregated allocated costs for Technology and Internal Services are presented in the budget documentation separately as information only; the actual costs are reflected in each of the Business Unit's budgets as the total cost of their work processes.

DEBT SERVICE: Interest expense on and principal repayments of SMUD's outstanding long-term debt and commercial paper notes, any revenues or payments on interest rate swaps, and trustee fees and debt issuance costs. Detail is provided in the Budget Summary.

Budget Summary (continued)

Description of Cost Categories

Activity Type Labor	SMUD employee labor planned to a business unit work process. Each Activity Type has a standard hourly charge-out rate that is based on work (non-leave) hours, average annual employee salaries, and includes benefits.
Materials & Equipment	Materials and equipment either issued from inventory or purchased for a specific project or task.
Dues & Publications	Dues and publications and general membership requirements to accomplish work.
General Expenditures	All services and other non-material costs not covered by other specific cost categories including training, travel, rents, leases, licenses, fees, taxes, etc.
Outside Services	The cost of outside services contracts, consultants, and outside legal service.
Advertising	The cost of advertising.
Utilities & Postage	The cost of telephones, other utilities and postage.
Insurance	The cost of property and liability insurance.
Rebates & Incentives	The cost of energy efficiency rebates and incentives.
Commodities	The cost of purchased power, wheeling, and fuel for SMUD and JPA generating plants.
Surplus/Whsl Pwr Sales	The revenue generated from selling energy which is not needed to meet SMUD retail load.
LI/LS Rate Discount	The discount given to customers who qualify for the Low Income or Medical Energy Discount (MED) rate subsidy.
Cost Reductions/Reimb	Reimbursements, cost-sharing grants, or pass-through amounts received from outside parties to reduce net costs.
Cost Center Overhead	A rate developed to recover the indirect costs of a Cost Center. Includes Activity Type labor for administration, supervision, training, and miscellaneous general expenses such as office supplies and travel. It is assessed per hour of Activity Type Labor planned directly to the work.
Surcharges	Surcharge rates developed to recover 1) an allocation of internal service costs such as transportation and technology assessed per hour of Activity Type Labor planned directly to the work, 2) the costs of procuring outside service agreements (excluding outside legal service) and cost of procuring, storing, and handling materials and equipment assessed relative to the contract amount or whether material issued from inventory or purchased specifically for a project or task, 3) miscellaneous general and administrative SMUD expenses including insurance and risk management, cash management, debt management, and other assessed to capital and public good projects based on a flat percentage of overall SMUD activity type labor.

O&M Budget Summary

Description ($000s)	2019 Forecast	2019 Budget	2020 Proposed	$ Change vs Budget	% Change vs Budget
Customer/Community (excl. PubGd)	121,214	122,010	125,251	3,241	3%
Public Good	44,373	41,261	35,811	(5,450)	-13%
Customer/Community	**165,587**	**163,270**	**161,062**	**(2,209)**	**-1%**
Energy Delivery (excl. JPA)	203,197	196,367	207,053	10,686	5%
JPA Interest Expense	7,576	7,547	5,822	(1,725)	-23%
Energy Delivery (excl. JPA)	**210,773**	**203,914**	**212,875**	**8,962**	**4%**
Commodity (net) [1]	432,449	448,091	474,182	26,091	6%
Energy Operations (excl. PubGd)	88,428	84,909	109,269	24,360	29%
Public Good	15,718	20,029	24,287	4,258	21%
Energy Operations	**536,595**	**553,029**	**607,738**	**54,709**	**10%**
Internal Svcs	**20,635**	**12,893**	**15,201**	**2,308**	**18%**
Technology	**33,221**	**39,308**	**40,358**	**1,050**	**3%**
Corporate Services	**69,843**	**63,322**	**78,761**	**15,438**	**24%**
Enterprise (excl. PubGd)	0	14,700	1,400	(13,300)	-90%
Public Good	3,850	0	9,000	9,000	100%
Enterprise	**3,850**	**14,700**	**10,400**	**(4,300)**	**-29%**
Other Employee Benefits [2]	**(5,910)**	**30,634**	**31,651**	**1,017**	**3%**
O&M Budget Authorization	**$1,034,594**	**$1,081,069**	**$1,158,045**	**$76,976**	**7%**
Revenue	**(107)**	**(55)**	**(55)**	**0**	**0%**
O&M Net	**$1,034,487**	**$1,081,014**	**$1,157,990**	**$76,976**	**7%**

[1] Net of surplus sales. The 2020 Budget assumes median water year.

[2] Other Post-Employment Benefits (OPEB) and Workers Compensation - These benefits are not allocated or included as a labor expense in the Business Units. 2019 forecast includes $20M reimbursement from OPEB that was paid to PERS.

O&M Budget Summary (continued)

Cost Category ($000's)	2019 Forecast	2019 Budget	2020 Proposed	$ Change vs Budget	% Change vs Budget
ActivityType Labor	**$225,130**	**$228,683**	**$244,249**	**$15,566**	**7%**
Material & Equipment	*10,282*	*11,057*	*10,204*	*(854)*	*-8%*
Dues & Publications	*5,801*	*6,846*	*7,048*	*202*	*3%*
General Expenditures	*31,358*	*31,994*	*34,791*	*2,797*	*9%*
Outside Services	*139,531*	*128,243*	*145,698*	*17,455*	*14%*
Advertising	*3,641*	*3,707*	*3,665*	*(42)*	*-1%*
Utilities & Postage	*8,239*	*7,243*	*7,364*	*121*	*2%*
Insurance	*19,296*	*18,931*	*22,477*	*3,546*	*19%*
Rebates & Incentives	*26,867*	*27,452*	*29,097*	*1,645*	*6%*
Commodities	*488,912*	*562,737*	*598,062*	*35,325*	*6%*
Surplus/Whsl Pwr Sales	*(48,270)*	*(72,620)*	*(77,974)*	*(5,355)*	*7%*
Non-Labor Expenditures	**685,657**	**725,592**	**780,432**	**54,840**	**8%**
Cost Reduction/Reimb	**(19,213)**	**(54,783)**	**(58,080)**	**(3,297)**	**6%**
Cost Center Overhead	**56,193**	**51,746**	**56,817**	**5,071**	**10%**
Surcharges	**85,161**	**91,651**	**97,154**	**5,503**	**6%**
Expenditures Subtotal	**1,032,928**	**1,042,889**	**1,120,572**	**77,683**	**7%**
JPA Interest	**7,576**	**7,547**	**5,822**	**(1,725)**	**-23%**
Other Employee Benefits	**(5,910)**	**30,634**	**31,651**	**1,017**	**3%**
O&M Budget Authorization *[1]*	**$1,034,594**	**$1,081,069**	**$1,158,045**	**$76,976**	**7%**
Revenue	**(107)**	**(55)**	**(55)**	**0**	**0%**
O&M Net	**$1,034,487**	**$1,081,014**	**$1,157,990**	**$76,976**	**7%**

[1] O&M Budget Authorization includes Public Good. A summary of Public Good is provided on the following page.

O&M Budget Summary (continued)

Public Good

2020 Summary ($000s)	Customer/ Community	Energy Operations	Enterprise/ Contingency	Total
Energy Efficiency	$26,659	$10,476	$0	$37,135
Residential Assistance	8,627	0	5,000	13,627
Renewables	525	0	4,000	4,525
Research & Development	0	13,811	0	13,811
Public Good Budget Authorization *[1]*	**$35,811**	**$24,287**	**$9,000**	**$69,098**
Rate Subsidy	0	0	29,578	29,578
Total Public Good *[2]*	**$35,811**	**$24,287**	**$38,578**	**$98,676**

[1] Public Good expenditures are included in SMUD O&M summary (this table is information only)

[2] Specific information is provided within Customer/Community, Energy Operations and Enterprise Business Units.

O&M Budget Summary (continued)

The O&M Proposed Budget for 2020 totals $1,158 million, which is $77 million or 7 percent higher than the 2019 Budget.

Commodities: The Energy Operations Commodity budget for 2020 of $474.2 million is $26 million higher than the 2019 Budget. Details on the commodity assumptions in the 2020 Proposed Budget are found on pages 18-22.

Business Unit O&M:

Total Business Unit O&M, excluding Commodity and Public Good, is $614.8 million, which is $43.1 million higher than the 2019 Budget. The 2020 Proposed Budget includes new spending for our Integrated Resource Plan, which includes increases in Transportation Electrification programs. Transportation Electrification is a critical part of our newly-adopted IRP and an important part of our strategy to continue to provide a leadership role in the region's transformation to a low-carbon future. The budget also funds the customer outreach and education for these items. The O&M budget also includes investment in the California Mobility Center, a collaboration with regional leaders, policymakers, and venture capitalists to embark on a road to mobility innovation. The 2020 Budget funds continued increased costs for wildfire mitigation efforts which include higher insurance coverage and vegetation management work.

More detailed and specific information is provided within each Business Unit's documentation.

O&M Budget Summary (continued)

Public Good: Total Public Good is $98.7 million, an increase of $4.8 million, after inclusion of rate subsidies. The Public Good Budget is $69.1 million. The difference is because the Budget represents the cash disbursement portion of the program that requires Board authorization.

By December 2020, the number of subsidized customers is expected to be approximately 73,659. The total cost of the EAPR subsidy is budgeted at $27.8 million in 2020, a decrease of $2.9 million from 2019, and the subsidy for customers using medical equipment decreased by $0.1 million to $1.8 million. Total subsidies are $29.6 million.

Energy efficiency spending increased $2.8 million to reflect new building electrification work and pilots and programs for low income customers. Incorporation of savings from codes and standards was included as a component of the energy efficiency portfolio to match standard industry practice going forward. The energy efficiency budget remains in line with the goal of achieving savings of 1.5% of average annual retail energy sales.

More detailed and specific information is provided within Customer, Energy Operations and Enterprise Business Unit documentation.

Other Employee Benefits: SMUD's Other Employee Benefits, is $31.7 million, an increase of $1 million. This item consists of the O&M portion (unfunded liability) of Other Post-Employment Benefits (OPEB) expense of $28 million and $3.7 million of workers compensation.

The total OPEB cost of $37.5 million is the sum of the O&M portion of $28 million and the current year contribution of $9.5 million. OPEB are costs related to other post employment benefits other than pension (primarily health and dental insurance), for SMUD current and future retirees.

Capital Budget Summary

Description ($000s)	2019 Forecast	2019 Budget	2020 Proposed	$ Change vs Budget	% Change vs Budget
Customer/Community	$ 4,335	$ 4,518	$ 4,406	$ (112)	-2%
Energy Delivery	202,492	213,329	261,380	48,051	23%
Energy Delivery Resource Projects	54,126	68,559	36,845	(31,714)	-46%
Energy Operations	7,071	5,308	5,899	591	11%
Energy Operations Resource Projects	1,551	6,072	3,250	(2,822)	-46%
Internal Services	61,643	54,143	27,531	(26,612)	-49%
Technology	37,828	42,227	36,100	(6,128)	-15%
Corporate	0	0	6,298	6,298	100%
Contingency & Reserve	33,600	49,700	74,900	25,200	51%
Capital Budget Authorization	**$ 402,646**	**$ 443,856**	**$ 456,610**	**$ 12,753**	**3%**
Revenue	(318)	(705)	(705)	0	0%
Capital Net	**$ 402,328**	**$ 443,151**	**$ 455,904**	**$ 12,753**	**3%**

Capital Budget Summary (continued)

Cost Category ($000's)	2019 Forecast	2019 Budget	2020 Proposed	$ Change vs Budget	% Change vs Budget
ActivityType Labor	**$62,877**	**$65,192**	**$65,974**	**$782**	**1%**
Material & Equipment	*63,077*	*66,026*	*69,005*	*2,979*	*5%*
Dues & Publications	*195*	*211*	*201*	*(10)*	*-5%*
General Expenses	*40,735*	*68,978*	*84,964*	*15,986*	*23%*
Outside Services	*208,893*	*213,442*	*194,438*	*(19,004)*	*-9%*
Advertising	*6*	*0*	*0*	*0*	*0%*
Utilities & Postage	*28*	*8*	*6*	*(2)*	*-27%*
Insurance	*543*	*645*	*656*	*11*	*2%*
Non-Labor Expenses	**$313,477**	**$349,309**	**$349,269**	**($40)**	**0%**
Cost Reduction/Reimb	**($28,290)**	**($27,153)**	**($15,258)**	**$11,895**	**44%**
Expenditures	**$348,065**	**$387,348**	**$399,984**	**$12,637**	**3%**
Cost Center Overhead	**19,020**	**19,120**	**18,595**	**(525)**	**-3%**
Surcharges	**35,561**	**37,388**	**38,030**	**642**	**2%**
Capital Budget Authorization	**$402,646**	**$443,856**	**$456,610**	**$12,753**	**3%**
Revenue	**(318)**	**(705)**	**(705)**	**0**	**0%**
Capital Net	**$402,328**	**$443,151**	**$455,904**	**12,753**	**3%**

Capital Budget Summary (continued)

Project Summary ($000s)	2020 [1]	2021-22 [2]
Meters	*4,406*	*9,115*
Customer/Community	**$ 4,406**	**$ 9,115**
Cable Replacement	*21,018*	*46,341*
Decommissioning	*5,649*	*11,733*
Gas Pipeline	*570*	*2,377*
Hydro License	*9,586*	*26,931*
Hydro Other	*6,324*	*9,294*
Hydro Production	*24,391*	*35,003*
Line Projects	*47,870*	*107,706*
New Services/Local Agency	*15,836*	*27,921*
New Substation	*37,925*	*25,153*
Other Energy Delivery	*1,119*	*1,260*
Pole Replacement	*17,863*	*38,578*
Power Generation	*1,937*	*-*
Renewable Production	*18,731*	*101,114*
Substation Lifecycle and Improvements	*35,879*	*48,609*
Thermal	*-*	*6,900*
Thermal Production	*2,314*	*1,005*
Transmission	*52,067*	*34,091*
Energy Delivery	**$ 299,078**	**$ 524,016**

Capital Budget Summary (continued)

Project Summary ($000s)	2020 [1]	2021-22 [2]
Energy Operations Technology	*1,434*	*735*
Gas	*3,250*	*6,500*
Interconnection	*1,780*	*3,515*
Substation Land & Easement	*685*	*1,697*
Energy Operations	**$ 7,149**	**$ 12,447**
Environmental	*2,770*	*9,138*
Facilities	*16,099*	*23,396*
Vehicle Replacement	*8,662*	*17,374*
Internal Services	**$ 27,531**	**$ 49,909**
Customer Technology	*132*	*3,774*
DMS	*6,771*	*10,880*
Grid Technology	*9,069*	*5,234*
Information Security	*272*	*1,625*
IT Lifecycle and Infrastructure	*5,055*	*10,872*
Other Technology	*45*	*-*
Shared Services Technology	*9,302*	*58,108*
Telecom	*6,601*	*4,691*
Technology	**$ 37,247**	**$ 95,183**
Corporate Contingency/Reserve	*81,198*	99,660
Capital Budget Authorization	**$ 456,610**	**$ 790,331**

[1] Requested Board Authorization amount for 2020 spending.

[2] Provided for Board information as an estimate of the amount needed to complete projects started in 2020 or earlier.

Capital Budget Summary (continued)

SMUD has historically had two categories of capital for budget authorization, Annual and Reserve/Contingency Capital. Annual Capital is for projects with completion dates or specific milestone dates within the current budget year and as such budget dollars are requested during the annual budget cycle. Projects that were approved in prior years but have not been completed are resubmitted to the Board annually for approval to continue the project. Reserve/Contingency Capital projects will be completed if load growth or customer growth is greater than expected, if there are unexpected expenditures, or if there are projects in which the planning phase will be completed and work will begin in 2020. Beginning in 2020, Reserve Capital is planned within the Enterprise Business Unit.

Capital: The proposed 2020 capital investment budget is $456.6 million, for planned investment in generation, transmission, distribution, buildings, vehicles, technology and other assets critical to meeting the energy needs of our customers. Proposed ongoing capital expenditures go through a rigorous evaluation and prioritization process, based on value and risk, to ensure we fund those that have the highest contribution to the Board's strategic directives. This total includes the Reserve Capital Budget of $15.0 million for unexpected end-of-year project carryover and capital contingency.

Major capital expenditures planned in 2020 include work for Station E and Station G, starting development work for additions to our wind farm with Solano Phase IV, and the White Rock Tunnel Bolt Replacement. Ongoing capital planned in 2020 includes cable and pole replacement programs, installing new meters, and new fleet purchases. Technology investments included in the 2020 Proposed Budget are to complete the Advanced Distribution Management System (ADMS), ongoing work for Workforce Optimization, and improvements to HR systems and network communications systems.

Contingency and Reserve in the 2020 Proposed Budget totals $74.9 million. This contingency/reserve money is planned for the following potential items: reserve for carry-over and unexpected capital projects, system enhancement projects, land purchases, inventory/spare parts, and the purchase of Chili Bar from PG&E.

More detailed and specific information is provided within each Business Unit's Documentation.

Allocated Budget Summary

Description ($000s)	2019 Forecast	2019 Budget	2020 Proposed	$ Change vs Budget	% Change vs Budget
Supply Chain	$ 15,851	$ 14,967	$ 16,548	$ 1,581	11%
Fleet & Fuel	8,670	9,398	8,995	(403)	-4%
Other Internal Services [1]	41,599	46,023	44,899	(1,125)	-2%
Internal Services	**66,120**	**70,388**	**70,441**	**54**	**0%**
Technology	**56,336**	**59,800**	**65,620**	**5,820**	**10%**
Total Allocated Budget [2]	**$122,456**	**$130,188**	**$136,061**	**$ 5,873**	**5%**

[1] Other Internal Services: Health & Safety, Organizational Development, Inclusion, Fire Protection, Security, Postal & Print Shop, Graphics, Human Resources, Labor Relations, Facilities and Fleet (excluding fuel)

[2] Allocated Budget expenditures are included in all SMUD Business Unit's O&M and Capital summaries (this table is information only)

Allocated Budget Summary (continued)

Cost Category ($000's)	2019 Forecast	2019 Budget	2020 Proposed	$ Change vs Budget	$ Change vs Budget
ActivityType Labor	**$56,691**	**$58,729**	**$63,974**	**$5,245**	**9%**
Material & Equipment	*14,094*	*13,296*	*12,831*	*(465)*	*-3%*
Dues & Publications	*10*	*38*	*90*	*52*	*135%*
General Expenses	*1,302*	*1,305*	*1,226*	*(79)*	*-6%*
Outside Services	*28,861*	*33,394*	*33,871*	*477*	*1%*
Advertising	*128*	*153*	*153*	*0*	*0%*
Utilities & Postage	*1,679*	*1,752*	*1,793*	*42*	*2%*
Insurance	*215*	*420*	*294*	*(126)*	*-30%*
Non-Labor Expenses	**$46,289**	**$50,358**	**$50,259**	**($99)**	**0%**
Cost Reduction/Reimb	**($150)**	**($86)**	**($90)**	**($5)**	**5%**
Expenditures	**102,830**	**109,002**	**114,143**	**5,141**	**5%**
Cost Center Overhead	**14,491**	**15,814**	**16,175**	**361**	**2%**
Surcharges	**5,136**	**5,372**	**5,743**	**371**	**7%**
Total Allocated Budget *[1]*	**$122,456**	**$130,188**	**$136,061**	**$5,873**	**5%**

Allocated Budget Summary (continued)

The Allocated Proposed Budget for 2020 totals $136.1 million, which is $5.9 million higher than the 2019 Budget. This is shown as **information only** as 100% of these allocated expenditures are included in the budget dollars of all SMUD O&M and Capital described in this documentation. Internal Services and Technology costs are allocated to business units based on the quantity of labor hours.

More specific and detailed information is provided within Internal & Technology Business Unit Documentation.

Position Count Summary

Executive Hierarchy	2019 Full-time	2019 Limited Term	2019 Part-time	2019 Approved Positions	2020 Full-time	2020 Limited Term	2020 Part-time	2020 Positions Planned	Increase/ Decrease
CEO & General Manager	34	21	9	64	35	27	8	70	6
Chief Legal Officer	41	2	4	47	40	2	4	46	(1)
Chief Financial Officer	90	2	5	97	88	7	6	101	4
Chief Energy Delivery Officer	697	19	14	730	694	27	13	734	4
Chief Grid Strategy & Operations Officer	287	3	23	313	289	3	23	315	2
Chief Customer Officer	411	22	107	540	412	20	105	537	(3)
Chief Workforce Officer	364	14	10	388	367	10	22	399	11
Chief Information Officer	244	13	43	300	262	15	49	326	26
Full-time				**2,168**				**2,187**	**19**
Limited Term				**96**				**111**	**15**
Part-time				**215**				**230**	**15**
SMUD Total	**2,168**	**96**	**215**	**2,479**	**2,187**	**111**	**230**	**2,528**	**49**

Position Count: The full-time count is identified in the Board Resolution.

Labor Cost Summary

Executive Hierarchy ($000)	2019 Forecast	2019 Budget	2020 Proposed	$ Change vs Budget	% Change vs Budget
CEO & General Manager	$9,233	$8,543	$9,825	$1,282	15%
Chief Legal Officer	6,020	6,160	6,036	($123)	-2%
Chief Financial Officer	11,302	11,308	11,482	$174	2%
Chief Energy Delivery Officer	97,067	95,917	102,698	$6,781	7%
Chief Grid Strategy & Operations Officer	42,012	42,565	44,595	$2,030	5%
Chief Customer Officer	44,529	44,935	47,729	$2,794	6%
Chief Workforce Officer	38,934	39,971	40,726	$755	2%
Chief Information Officer	34,227	34,511	39,617	$5,106	15%
Salaries & Wages*	$263,151	$267,104	$284,038	$16,934	6.3%
Overtime	$20,175	$16,807	$18,671	$1,864	11.1%
SMUD TOTAL	**$283,326**	**$283,911**	**$302,709**	**$18,798**	**6.6%**

*Salaries & Wages includes paid leave ----- 2019 Budget not adjusted for any organizational realignment

Labor Salaries: The labor summary reflects the cost of wages for SMUD employees. The budget for labor and associated benefit costs is included on the previous budget summary pages.

2020 Budget
Debt Service

Powering forward. Together.

SMUD®

Debt Service Budget

The following schedules show the summary and details of the 2020 Proposed Budget for Debt Service. SMUD issues Electric Revenue Bonds and Commercial Paper Notes to finance long-lived capital assets. The Debt Service Budget includes accrued interest expense on outstanding Electric Revenue Bonds and Commercial Paper Notes, net of any swap revenues tied to debt issues, scheduled principal repayments of Bonds and Commercial Paper, trustee fees associated with administration of debt service payments, and interest expense and issuance costs associated with planned new debt issues.

Revenue Bond Interest totals $98.4 million in the 2020 Budget, an increase of $5.9 million from 2019.

Commercial Paper Interest totals $4.8 million in the 2020 Budget, a decrease of $5.8 million from 2019. Short-term interest rates assumed for 2020 are slightly higher than those assumed for 2019; The budget assumes an average commercial paper balance of $150 million.

Scheduled Principal Repayments of revenue bonds and commercial paper notes total $92.9 million in 2020, a $5.5 million increase from 2019.

Fees/Bond Issuance Costs of $1.8 million are included for new 2020 bond issuances and related fees.

Debt Service Budget (continued)

Debt Service ($000s)	2019 Forecast	2019 Budget	2020 Proposed	$ Change vs Budget	% Change vs Budget
Interest Expense[1]	$97,705	$103,208	$103,245	$37	0%
Principal Repayments	87,425	87,425	92,920	5,495	6%
Fees/Bond Issuance Cost	1,613	1,763	1,836	73	4%
Total Debt Service	$186,743	$192,397	$198,001	$5,604	3%
Allocated to JPAs	(6,314)	(6,314)	(6,126)	188	-3%
NET DEBT SERVICE	**$180,429**	**$186,083**	**$191,875**	**$5,792**	**3%**

[1] Build America Bonds are shown gross of the rebate of $9.2 million expected in 2019. The budget authorization is requested gross of the rebate. Includes net debt related swap payments and interest on long-term, variable rate, and subordinated debt. Assumes an interest rate of 3.15% (incl. all related fees & swaps) on avg. commercial paper balance of $150 million.

The Debt Service component of the 2020 Proposed Budget totals $198 million, an increase of $5.6 million or 3% percent over 2019. The increase is due to a normal fluctuation in debt service schedules.

Interest expense represents accrued interest on revenue bonds and commercial paper, net of any related swap revenue. The credit for debt service charged to the JPAs represents the portion of the interest expense on the District's investments in the PG&E Line 301/400 pipeline, the local gas pipeline (including Cosumnes extension) and the Rosa natural gas reserves which is allocated to the cogeneration plants for fuel delivery and included in the SMUD and JPA budgets under fuel commodity. Principal repayments represent scheduled repayment of revenue bonds and commercial paper notes.

Debt Service Budget (continued)

SUMMMARY OF DEBT SERVICE ON EXISTING SMUD BOND ISSUES ($000'S)						
Date Issued	Issue	1/1/2020 Principal Balance	Issued Interest Rate	Final Maturity Date	2020 Scheduled Principal Payment	2020 Interest Expense
	Electric Revenue Bonds					
Jun-97	Series K[1]	88,470	5.25% to 5.90%	2024	15,850	679
May-09	Series V[2]	200,000	6.322% (4.11% net)	2036	-	12,644
Jul-10	Series W[3]	250,000	6.156% (4.00% net)	2036	-	15,390
Sep-11	Series X (Refunding)	188,440	1.50% to 5.00%	2036	31,670	8,748
Jan-12	Series Y (Refunding)	175,065	3.00% to 5.00%	2033	5,535	8,427
May-13	Series A	132,020	3.75% and 5.00%	2041	-	6,592
May-13	Series B (Refunding)	90,635	3.00% to 5.00%	2033	5,730	4,296
Jul-16	Series D (Refunding)	139,805	5.00%	2028	6,445	6,735
Dec-17	Series E (Refunding)	170,755	3.00% to 5.00%	2028	18,195	8,194
Aug-18	Series F (Refunding)	150,975	5.00%	2028	9,495	7,369
Apr-19	Series G	191,875	5.00%	2041	-	9,352
	Subtotal	1,778,040			92,920	88,426
	Subordinated Electric Revenue Bonds					
Jul-19	*Series A*	100,000	5%	2049	-	5,000
Jul-19	*Series B*	100,000	5%	2049	-	5,000
	Subtotal	200,000			-	10,000
	Total Outstanding Bonds	1,978,040	Principal & Interest Payments		92,920	98,426
	Total Debt Service				**92,920**	**98,426**

1) Swapped to a variable rate for the life of the debt, interest expense net of swap payment. Interest expense without swap would be $4,280,125.

2) Interest expense gross of federal government Build America Bond rebate of $4,155,451.

3) Interest expense gross of federal government Build America Bond rebate of $5,057,924.

From: Mark <Mark@freewayblogging.com>
Sent: Thursday, September 21, 2023 12:11 PM
To: Jenna Lesch <Jenna.Lesch@smud.org>; Donna Lofton <Donna.Lofton@smud.org>
Subject: [EXTERNAL] Fw: Message for the SMUD Board of Directors - please forward

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

September 21, 2023

Good afternoon Ms. Lesch and Ms. Lofton,

You may have already done it but will you please forward this message with attachments to the Board of Directors?

I want to make sure they have it.

Thank you very much,

Mark Graham

------- Forwarded Message -------
From: Mark <Mark@freewayblogging.com>
Date: On Wednesday, August 2nd, 2023 at 7:22 AM
Subject: Message for the SMUD Board of Directors - please forward
To: Jenna Lesch <Jenna.Lesch@smud.org>, donna.lofton@smud.org <donna.lofton@smud.org>

August 2, 2023

Good morning Ms. Lesch and Ms. Lofton,

It may not have been clear from when I sent you this message under a different subject line that I wanted the Board of Directors to see my message too. The reason is I presented a question and asked each Director to please read the SMUD 2022 Rate Costing Study, which according to the current CEO and GM Report provides the cost justification for the proposed rates for the next 2 years, and consider my question. I am asking again. Will you please forward this along with the 3 attachments to each of the Directors and appropriate staff? Ms. Lofton I did ask you to forward my July 28 message to the Board. Please forward this one to the Board too. Thank you.

Summary

SMUD's cost justification for the proposed 2024 and 2025 rates is incomplete for the reasons described in this message.

The CEO and General Manager's Report for the 2024 and 2025 rates says, "The cost-of-service analysis that demonstrates cost-justification for the proposed rates is the SMUD Rate Costing Study ('2022 Rate Study') which is incorporated herein by this reference." (Page 76) Unfortunately said study provides only some, but not all, of SMUD's costs and fails to present the total, with the proposed rate increases. It provides what SMUD calls the foundation but it fails to provide the rest of the house. In the absence of a new rate design study for the current rate action SMUD has failed to cost justify the proposed rates.

Discussion

For the convenience of everybody I am sending in this email a copy of the SMUD 2022 Rate Costing Study, which SMUD sent to me last month. You will notice that although some components of marginal cost are presented in terms of dollars per kilowatt hour, the total marginal cost is not. This is an omission which should be cured. The study says, "This Rate Costing Study reflects the 2022 marginal cost which is a foundation to design rates." (page 4)

It may be a foundation but what about everything else? What about the house? According to the Rates department's answers dated July 28 to my questions dated July 13, there is no document which bridges the gap between your 2022 Rate Costing Study and the proposed 2024 and 2025 rates. SMUD has not done another rate design study since the one in 2017 - 2018, nor is it planning to do a rate design study for the current rate action.

For ease of comparison, and to illustrate the omission, I am also sending in this email a copy of the "2017 (sic) Residential Time-of-Use Rate (RT02) Design Study", to which the 2017 CEO and GM Report, Appendix I, referred. It was actually 2018.

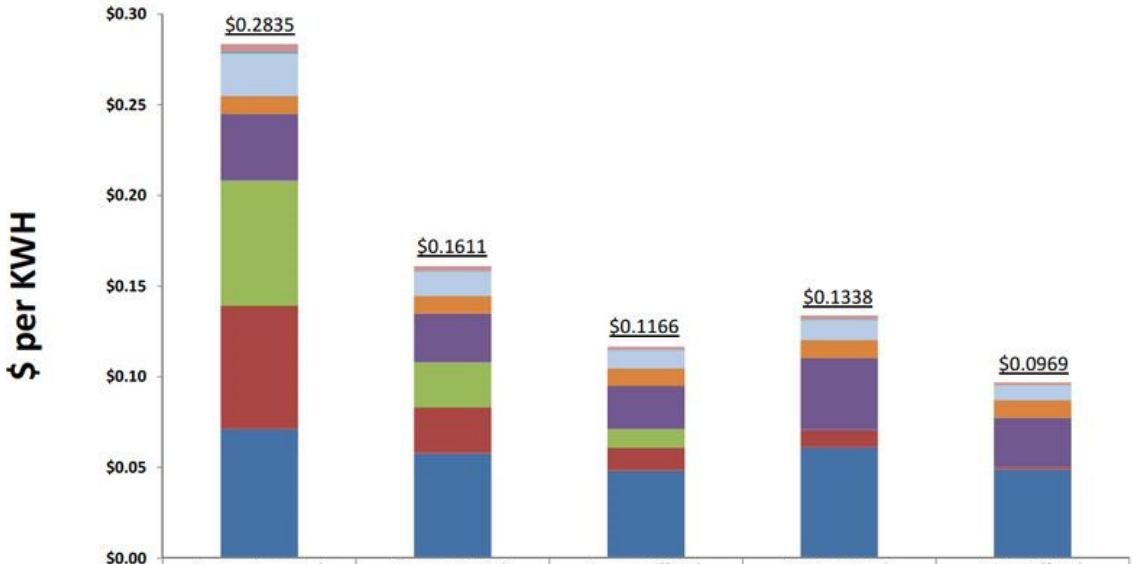
Directors please take a look at Tables L and M on page 14, Tables N and O on page 15, and Figure 4 on page 16. Table O and Figure 4 provide not only the foundation but the entire house; meaning all, not only some, of the components of marginal cost and their total plus the two scalars and the proposed rate increase and their sums.

Table L shows Time of use energy marginal cost. For each Rates Time of Use it shows the marginal cost for each of the 5 marginal cost components and the sum, the Total Energy Marginal Cost.
Table M shows Proposed energy charge. For each Rates Time of Use it shows the Total Energy Marginal Cost from Table L plus the scalar of 9.2% and the sum, the 2017 Energy charges.
Table N shows Proposed Energy Charge Adjusted for Anticipated Budget Year Loadshape. For each Rates Time of Use it shows the 2017 Energy charges plus a 0.35% scalar and the sum, the 2018 Energy Charges w/o Rate Increase.
Table O shows Proposed Residential Charges Adjusted for Rate Increase. For each Rates Time of Use and for the SIFC it shows the 2018 Energy Charges w/o Rate Increase and the 2018 Proposed, which is 1.5% higher.

Notice the units for each of Tables L through O and Figure 4: dollars per kilowatt hour. Except for the SIFC which is in units of dollars per month.

Figure 4, on page 16, is a beautiful bar graph which presents the rates from Table O. A picture is worth a thousand words so I am sending Figure 4 below.

Figure 4: 2017-2018 Residential Time-of-Use Marginal Cost Decomposition



	Summer Super Peak	Summer On Peak	Summer Off Peak	Winter On Peak	Winter Off Peak
2018 Rev. Req.	$0.0042	$0.0025	$0.0017	$0.0020	$0.0014
TOU Adj. Scalar	$0.0010	$0.0006	$0.0004	$0.0005	$0.0003
Non-Marginal	$0.0235	$0.0133	$0.0097	$0.0111	$0.0080
Public Goods	$0.0096	$0.0096	$0.0096	$0.0096	$0.0096
Distribution Fac	$0.0371	$0.0270	$0.0239	$0.0398	$0.0271
T&D (above 12kV)	$0.0689	$0.0248	$0.0102	$0.0000	$0.0000
Generation Cap	$0.0680	$0.0253	$0.0126	$0.0096	$0.0013
Energy+Ancilliary+RPS	$0.0713	$0.0580	$0.0484	$0.0612	$0.0491

The point is this: from the 2018 Rate Design Study one was able to see everything; all the marginal cost components and then the same with the additions of the 9.2% scalar, the 0.35% scalar and the 1.5% proposed rate increase. The figures in dollars per kilowatt hour (or dollars per month for the SIFC) in Table O and Figure 4 were the final rates proposed by the CEO and GM. The Board adopted these same rates in the rate resolution.

Unfortunately for the current rate action there is no such presentation of data. As I said earlier SMUD Rates told me there is no document which bridges the gap, as the 2018 rate design study does, between (some of) the marginal cost components and the proposed rates, nor did SMUD do a new rate design study nor is it planning to do one. This is an omission which should be cured.

My recommendation is for SMUD to do a new rate design study for the proposed rates or at least fill in the gaps in the 2022 Rate Costing Study by providing the rest of the house, as the 2018 residential TOU rate design study did. The rest of the house refers to data we have seen in Tables L through O and Figure 4 of the 2018 residential TOU rate design study. Without it the cost justification is incomplete.

Directors what do you think about this?

Thank you and best wishes,

Mark Graham

P.S. Rates answered "No" to each of the following questions:

#1 Is there a document by SMUD which bridges the gap between your 2022 Rate Costing Study and the proposed 2024 and 2025 rates? In other words which

#2 Has SMUD done another rate design study since the one in 2017 - 2018?

#3 Are you planning to do a rate design study for the current rate action? When? If you do create one please send me a copy ASAP.

------- Forwarded Message -------
From: Mark <Mark@freewayblogging.com>
Date: On Friday, July 28th, 2023 at 11:01 AM
Subject: Request for the August 3 public workshop - present the cost justification for the proposed rates
To: Jenna Lesch <Jenna.Lesch@smud.org>
CC: donna.lofton@smud.org <donna.lofton@smud.org>

July 28, 2023

Good morning Ms. Lesch and Ms. Lofton,

I do not know who at SMUD I should write to about this, but I do want the Board to know about this request. Ms. Lofton will you please forward this to the Board?

Ms. Lesch will you please forward this to the appropriate person or department?

The CEO and General Manager's Report for the 2024 and 2025 rates says, "The cost-of-service analysis that demonstrates cost-justification for the proposed rates is the SMUD Rate Costing Study ('2022 Rate Study') which is incorporated herein by this reference." (Page 76)

I recommend that each Director on the SMUD Board of Directors read the above cited study so you will be familiar with it for the August 30 rate hearing. In particular ask yourself whether the study actually provides the cost justification for the proposed rates.

SMUD has sent me a copy of the 2022 Rate Costing Study. I have reviewed it. It fails to present any data in the appropriate units, which are dollars per kilowatt hours and dollars per month in the case of the SIFC, to demonstrate cost justification. This is an omission. SMUD has set a precedent for providing cost justification and should have followed the precedent in the current rate action.

In 2016 SMUD hired NERA Economic Consulting in connection with the original Time of Day rates. NERA reviewed something called the 2017 or 2018 RT02 rate design study. I have mentioned this to the Board

before. The value in the rate design study is that it presented the components of marginal cost and total marginal cost in appropriate units, which are dollars per kilowatt hour. This is why I think SMUD should have done a new rate design study for the current rate action.

My request

My request is for SMUD staff to discuss and present the cost justification at the August 3 public workshop. Also, explain why SMUD has not done a new rate design study in connection with the current rate action.

Will you do this? SMUD staff failed to address this at the first public workshop. I listened to it through your website.

Will you acknowledge your receipt of this message and tell me whether SMUD staff will include this information in the August 3 public workshop?

Thank you,

Mark Graham

P.S. This will tell you exactly what document I am talking about when I mention the RT02 rate design study.

Appendix I on pages 109-112 of the 2017 Chief Executive Officer and General Manager's Report and Recommendation on Rates and Services (hereinafter "2017 GM Report") is a letter from NERA Economic Consulting dated December 6, 2016 (the "NERA Marginal Cost Study Review Letter") to SMUD's Resource Planning and Pricing (RP&P) Department. The NERA Marginal Cost Study Review Letter begins by saying:

> "Dear RP&P Staff,
>
> NERA Economic Consulting (NERA) was engaged by the Sacramento Municipal Utility District (SMUD) to provide an independent review of SMUD's 2016 Marginal Cost of Service (MCS) Study and its proposed residential Time of Use (TOU) rates for the period 2017 – 2019. NERA was primarily responsible for assessing SMUD's marginal cost methods and whether the results of the MCS study were appropriately considered in the determination of cost allocation by rate class as well as in the proposed rate design.

Documents Reviewed

In conducting our review, we reviewed SMUD's draft marginal cost model and marginal cost study report, SMUD's Capital Expansion Plans, and SMUD's draft report titled "2017 Residential Time-of-Use Rate (RT02) Design Study". Additionally, NERA requested clarification on any questions arising from the review of the documentation. Although a comprehensive review of the study was performed, NERA did not audit the input data to the MCS model or the rate models employed by SMUD."



Sacramento Municipal Utility District

2022 Rate Costing Study

Revenue Strategy

June 30, 2022

Powering forward. Together.

SMUD®

0622-22

2022 Rate Costing Study

Prepared by the Pricing Division of SMUD's Revenue Strategy department
June 30, 2022

The Revenue Strategy department provides fiscal and electric policy information, forecasting and advice to the Board of Directors and Executives of the Sacramento Municipal Utility District.

For questions regarding the contents of this report, please contact Pricing at 916-732-6222 or at pricing@smud.org.

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1 | Introduction

The Sacramento Municipal Utility District's (SMUD) proposed rate structure as defined by the Chief Executive Officer & General Manager's Report and Recommendation on Rates and Services is influenced by SMUD's Marginal Cost. Marginal costs are the additional costs SMUD incurs to provide electric service to a new customer or a new load, or the savings expected from not serving that customer or load. These costs vary by the voltage at which electricity is delivered to the customer.

To provide electric service, a utility must acquire power, maintain transmission and distribution systems to deliver the power, and provide customer service. Each of these basic functions has several components.

- Acquiring power – SMUD provides power to a marginal customer from its marginal resource in the market. In addition to buying power for its customers, SMUD must provide ancillary services such as regulation and three types of reserves (spinning, non-spinning, and replacement), and transmission services;
- Delivering power –requires a physical system of towers and poles, cables and wires, substations, transformers and other electrical equipment. These are the transmission, distribution, and distribution facilities systems; and
- Customer service – includes a whole array of activities which range from the initial connection of the customer to the electrical system to answering questions about a customer's bill. In general, these activities include gathering data from the customer's meter for usage, billing, maintaining customer records, operating and maintaining meters and part of the distribution system, and providing information and responding to customers' inquiries.

SMUD's 2022 marginal cost reflects the current state of California's power markets and SMUD operations. It uses hourly allocation factors applied to all marginal cost components for assessing resource alternatives. The numbers presented in this study do not include losses. Marginal transmission and distribution (T&D) capacity costs reflect SMUD's costs to support additional load growth in SMUD's service area while maintaining T&D reliability. Marginal customer costs reflect the capital, software and personnel required to provide a high level of customer care. This Rate Costing Study reflects the 2022 marginal cost which is a foundation to design rates.

2 | Marginal Cost Components

While marginal cost is described in the singular sense, it is made up of several components, as listed in Table 2.1 below.

Table 2.1 – Classification of Marginal Cost Components

Category	Component	Description	Breakdown	Unit of Measure
Generation	Generation	Electricity production, ancillary services, line loss	Energy	$/kWh
	Capacity	Capital costs, fixed O&M for power generation	Demand	$/kW-year
	GHG Compliance	Cost for GHG compliance	Energy	$/kWh
	Renewable Portfolio Standard	Cost for Renewable Portfolio Standard compliance	Energy	$/kWh
Transmission and Distribution	Transmission	230 kV lines and infrastructure	Demand	$/kW-year
	Subtransmission	115 & 69 kV lines and infrastructure	Demand	$/kW-year
	Distribution	21, 12 and 4 kV lines and infrastructure	Demand	$/kW-year
Customer	Distribution Facilities	Line extensions and step-down transformers	Customer	$/customer-year
	Meter	Meter, installation and O&M	Customer	$/customer-year
	Services	Meter reading & customer records	Customer	$/customer-year

Each category is associated with energy-related, demand-related or customer-related investment criteria for SMUD expenditures. Energy-related refers to expenses incurred when SMUD supplies energy services. Demand-related refers to the costs incurred when SMUD provides generation, distribution or transmission capacity. Customer-related investment is associated with connecting new customers to SMUD's distribution system and providing billing and other services. Finally, the table indicates major characteristics associated with each category. The following sections present a more detailed summary of each marginal cost component.

3 Marginal Costs for Energy

SMUD's 2022 marginal cost calculates generation marginal costs by forecasting long-term California energy and capacity markets. It includes:

- Energy costs;
- Ancillary services; and
- Capacity for Northern California.

Essentially, the market prices for these products are SMUD's marginal costs for energy, ancillary services and generation capacity.

Market Prices for Energy and GHG Compliance

SMUD prepares long-term forecasts for its hourly energy supply costs which includes costs based on forecasts of market prices for energy and the cost of complying with California's cap and trade program (AB32) to use as the marginal energy cost.

Market Prices for Ancillary Services

The marginal costs for energy deliveries to SMUD customers also include the market prices of ancillary services. Ancillary services provide the operating reserves necessary for stable and reliable energy delivery. The market prices for these ancillary services relate directly to market prices for energy. National and regional reliability councils establish the amount of ancillary services that SMUD and other California utilities must provide as a percent of generation output. The current requirement for SMUD averages the percent of the annual energy delivered to SMUD's transmission system stated as a cost which has been levelized over the next 20 years. SMUD's marginal cost for energy and ancillary services is shown in Table 3.1, column [a].

Renewable Portfolio Standard (RPS)

The California Renewable Energy Resources Act, established by Senate Bill X1-2 and the Clean Energy and Pollution Reduction Act of 2015, enacted by Senate Bill 350 (SB 350) require that SMUD meet 33% of its retail sales from RPS eligible renewable resources by 2020. Senate Bill 100, passed by the legislature and approved by Governor Brown on September 10, 2018, establishes a new 60% target by 2030. The bill also creates a statewide planning goal to meet all of the State's retail electricity supply with a mix of RPS-eligible and zero-carbon resources by December 31, 2045.

As shown in Table 3.1 column [b], the RPS Cost adder is the additional cost for energy related to RPS compliance and relies on a consultant developed average cost of renewable power (primarily provided by utility scale solar and wind technologies) and conventional energy price forecasts to calculate annual RPS premiums per kWh.

Marginal Cost of Capacity with Generation

The marginal cost of generation capacity represents the costs faced by SMUD for securing firm capacity through contracts or market purchases. Marginal generation capacity costs represent SMUD's costs for procuring firm-dispatchable generation capacity through contracts with power producers to meet resource adequacy targets. The generation capacity costs are summarized in Table 3.1, column [c].

Table 3.1 – Generation Marginal Costs by Time-of-Day Period (2022$)

	[a]	[b]	[c]	[d]
Time-of-Day	**Energy + Ancillary ($/kWh)**	**RPS ($/kWh)**	**Capacity ($/kWh)**	**Total ($/kWh)**
Summer Peak	$ 0.0602	$ 0.0077	$ 0.1177	$ 0.1856
Summer Off-Peak	$ 0.0497	$ 0.0077	$ 0.0114	$ 0.0688
Non-Summer Peak	$ 0.0630	$ 0.0077	$ 0.0390	$ 0.1097
Non-Summer Off-Peak	$ 0.0598	$ 0.0077	$ 0.0031	$ 0.0706
Non-Summer Off-Peak Saver	$ 0.0355	$ 0.0077	$ 0.0039	$ 0.0471
Average	$ 0.0525	$ 0.0077	$ 0.0146	$ 0.0748

4 Demand-related Marginal Costs

Demand-related costs include the installed capital costs, financing, and operation and maintenance (O&M) expenses to maintain SMUD's marginal investments in the transmission, sub-transmission and distribution systems. Additions to transmission and subtransmission systems are based on growth in the system's peak load.

Marginal T&D Capacity Costs

SMUD's 230 kV transmission system allows SMUD to access power from energy markets. Marginal transmission investments represent the forward-looking capital costs and O&M expenses of high voltage transmission facilities, interconnection facilities, and voltage support equipment. Marginal subtransmission (at 69/115 kV) investments include the costs associated with bulk substations and the lines that connect the transmission system to the distribution system. Distribution system investments include the low voltage substations and the 21 kV, 12 kV, and 4 kV primary feeders that emanate from these distribution substations.

Marginal capacity costs include the installation costs, replacement costs from early retirements, O&M, general plant, administrative and general expenses (A&G), and working capital. The installed capital costs are annualized over the expected life of the equipment. Marginal capacity costs are measured in dollars per kilowatt-year of peak demand. Table 4.1 presents the marginal transmission, subtransmission and distribution capacity costs allocated to time periods and presented as cost per kilowatt-year. Distribution marginal cost includes cable and pole replacement.

Table 4.1 – Marginal T&D Capacity Costs

(2022$)

System	$/kW Year
Transmission	$9.53
Subtransmission	$39.14
Distribution	$39.82
Total	$88.49

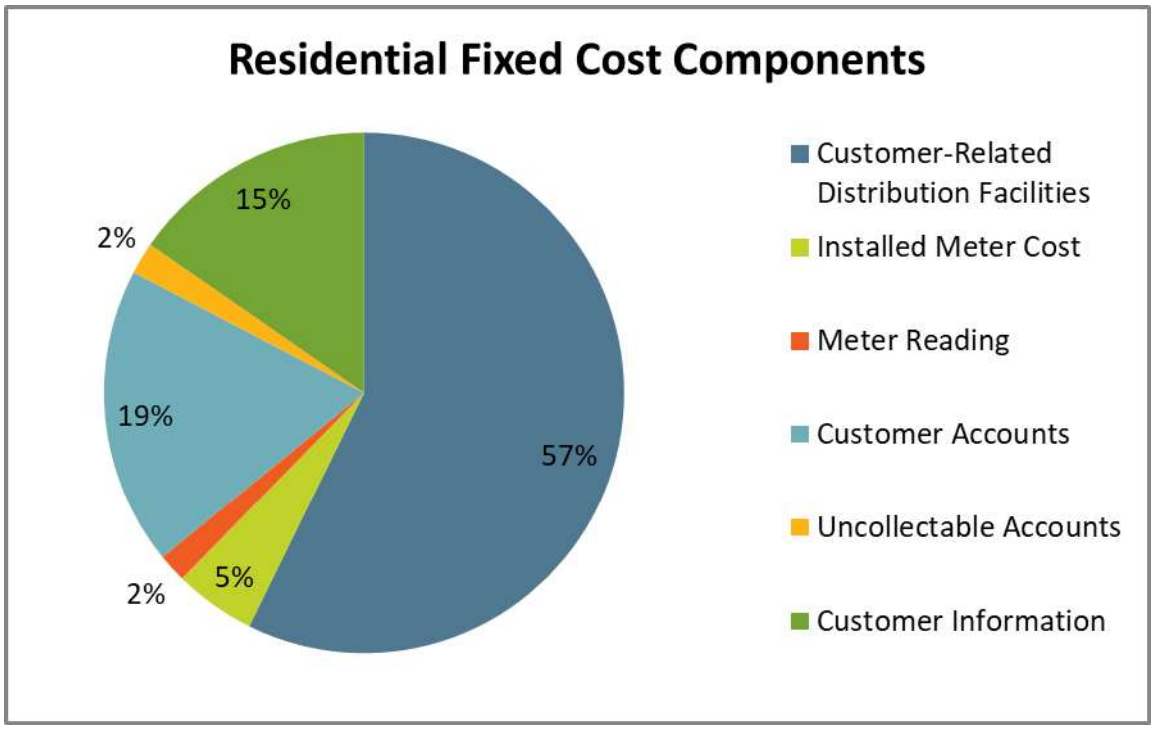
5 Customer-related Marginal Costs

Customer related costs are grouped into three major components

- Distribution facilities that connect the customer to the distribution system;
- Installed meter costs; and
- Customer services.

The distribution facilities costs are calculated in dollars per customer-year. Facility installations are designed and built to accommodate customer specific capacity and voltage level requirements and are fixed regardless of demand. In that respect, the marginal costs can be stated as a dollars per kilowatt. Other customer costs are stated as dollars per customer and thus do not vary with customer energy usage or demand. These costs vary by the number of customers and must be recouped by SMUD. The numbers in this section are in 2022 dollars. As an example, Figure 5.1 shows a breakdown of customer-related costs for residential customers.

Figure 5.1 – Residential Customer-related Costs by Component



Customer-related costs described in the following sections are found in Table 5.1.

Marginal Customer-related Distribution Facilities

Distribution facilities costs are largely driven by voltage levels and transformer sizing. For customers who are served at the secondary voltage level, marginal customer distribution facilities costs include the SMUD-owned final step-down transformer and the lines that connect the customer to the 12 kV or 21 kV primary feeder. For customers who take power at primary voltage,

i.e. 12 kV, 21 kV, 69 kV or 115 kV, the distribution facilities include the costs associated with connecting the customer's transformer to SMUD's existing distribution or subtransmission system. Marginal distribution facilities vary with the installed capacity of the customer. The marginal distribution facilities cost has been determined as a cost per customer-year, by customer type, and rate class, as shown in Table 5.1, column [c].

Installed Meter Cost

Meter costs include the capital, installation and O&M costs for servicing the meter. Meter costs vary by customer class and by the service voltage. Metering costs for customers served at higher voltages include voltage reduction equipment, wiring and the physical structures required for metering these customers. See Table 5.1, column [d].

Meter Reading

Meter reading costs are calculated using historical and forecasted data (2016-2020). As the standard meter-read practice is for all meters to communicate usage data wirelessly to SMUD, the total cost is divided by total metered customers to generate a cost per metered customer value. See Table 5.1, column [e].

Customer Account Service Costs

Customer account service costs include the costs of billing, and a variety of aspects of customer care. These services also include O&M expenses for the call center and information services, customer and Account Management services, collections, and billing system costs.

Public Goods expenses for energy efficiency, low-income and medical assistance, advanced and renewable technologies, and research and development expenses are excluded from Customer Account costs for marginal costing purposes. See Table 5.1, column [f].

Uncollectable Expenses

The cost of uncollectable expenses is allocated to customer segments based on historical write-off data that is broken down into the broad customer categories. See Table 5.1, column [g].

Customer Information

Customer Assistance and information awareness costs consist of historical costs for general communications and customer planning activities, customer assistance expenses, advertising, and commercial account management. See Table 5.1, column [h].

Table 5.1 – Customer-related Marginal Cost ($/customer-year)

[a]	[b]	[c]	[d]	[e]	[f]	[g]	[h]	[i]
Class	Sub-Class	Customer-Related Distribution Facilities	Installed Meter Cost	Meter Reading	Customer Accounts	Uncollectable Accounts	Customer Information	Total
Residential	Standard	$322	$28	$10	$104	$11	$86	$561
	Three Phase	$1,352	$28	$10	$104	$11	$86	$1,592
Small Commercial 0-299kW	<20kW	$1,352	$53	$10	$80	$5	$298	$1,798
	>20kW	$4,188	$145	$10	$114	$29	$298	$4,785
Agricultural	<30kW	$1,620	$53	$10	$80	$5	$185	$1,953
	>30kW	$3,457	$145	$10	$80	$5	$499	$4,195
Medium Commercial 300-499kW	Secondary	$24,963	$145	$10	$114	$29	$749	$26,010
	Primary	$1,403	$2,364	$10	$114	$29	$749	$4,669
Large Commercial 500-1,000kW	Secondary	$39,035	$145	$10	$114	$29	$780	$40,113
	Primary	$1,403	$2,364	$10	$114	$29	$780	$4,699
	Subtransmission	$5,696	$17,888	$10	$114	$29	$780	$24,517
Very Large Commercial 1,000kW +	Secondary	$76,802	$145	$10	$114	$29	$790	$77,890
	Primary	$1,403	$2,364	$10	$114	$29	$790	$4,709
	Subtransmission	$5,696	$17,888	$10	$114	$29	$790	$24,527
Lighting	Street Lighting	$0	$0	$10	$83	$0	$91	$185
	Traffic Lighting	$0	$53	$10	$83	$0	$91	$237

6 Other Cost Adders

Zero Carbon Plan (ZCP)

On April 28, 2021, the SMUD Board of Directors approved the 2030 Zero Carbon Plan to eliminate carbon emissions from our power supply by 2030. Absolute zero carbon is a bold and ambitious goal — one we believe we can and must achieve. We can't get there with today's technology and we can't get there alone. That's why innovation and partnerships are key pillars of the vision.

The bold vision gives SMUD an opportunity to be the convener to bring together a wide-range of stakeholders — businesses, elected officials, community leaders and organizations, think tanks, regulators, start-ups, academic institutions, venture capitalists and others to align resources for maximum impact. We'll be looking to partner with others to develop technology, find innovative sources of funding and develop new business models. We'll also need to work closely with regulators on climate-friendly policies and regulations that encourage electrification in the building and transportation sectors, which are currently the largest emitters of carbon/greenhouse gases in California. SMUD is committed to achieving our zero carbon goal in an inclusive way that leaves no communities behind.

SMUD will achieve its zero carbon goals by focusing on four areas:

- Natural gas generation – we'll reimagine our natural gas fleet to eliminate gas emissions through retirement, re-tooling and using renewable fuels.
- Proven clean technology – we'll expand the use of our existing carbon-free energy technologies like wind, solar, hydro, biomass, geothermal energy, battery storage and demand response. These technologies can get us about 90% of the way to our carbon free goal.
- New technology and business models – we'll explore new and emerging technologies – like power-to-gas technology, hydrogen and methane, long-duration batteries and carbon sequestration – that are either currently unknown or are not ready for large scale adoption due to price, reliability or other factors. This will help us identify potential partnerships and business models like virtual power plants, and launch pilot projects and programs to test.
- Financial impacts and options – we're focused on making sure achieving our zero carbon goal is possible at a reasonable cost that minimizes rate increases for our customers, limiting rate impacts to the annual rate of inflation. We'll do that by identifying savings and pursuing partnerships and grants that support the zero carbon goal.

The costs necessary to achieve our ZCP includes the cost to reduce gas emissions, added reliability costs, energy losses from battery storage efficiency losses, and commodity cost

differences associated with our plan for thermals such as reduced need for gas, differences in O&M budgets for gas plants, and reduced overall efficiency for our gas fleet.

The 20-year levelized cost of the ZCP is projected to be $0.0155/kWh.

Public Good Costs

The public good budget line item was added in 1998 based on policy changes approved by the Board and implemented May 1, 1998. Public Good programs include programs such as PV rebates and incentives, low income & medical rate subsidies and administration, emerging technologies, research and development, energy efficiency, and building electrification.

The 20-year levelized public good cost is projected to be $0.0153/kWh.

7 | Future Direction and Uses

Marginal costs are important decision-making tools for:

- Designing wholesale and retail rates;
- Estimating costs to serve customers;
- Estimating the benefits of proposed generation, transmission, distribution, energy efficiency, and load management investments; and
- Evaluating a customer's competing service options.

This Rate Costing Study is the latest study SMUD has undertaken. Changes in industry conditions and SMUD's own practices and costs demand that SMUD periodically update marginal costs to ensure that they remain an effective analysis tool. SMUD is therefore presenting this information for district-wide use in the areas identified above and others as conditions arise.

Sacramento and the rest of the country have been impacted by the COVID-19 pandemic. While we believe energy usage has stabilized and reached a new normal, SMUD and the community continue to be impacted by inflation.

8 Glossary

A&G Administrative and General – expenditures related to the day-to-day operations of a business.

Commercial Time Periods

Season	Time Period	Time	Days
Summer	Peak	4 pm to 9 pm	Monday through Friday, excluding holidays
	Off-Peak	All other hours	Every day, including holidays
Non-Summer	Peak	4 pm to 9 pm	Monday through Friday, excluding holidays
	Off-Peak	All other hours	Every day, including holidays
	Off-Peak Saver	9 am to 4 pm	Every day, including holidays

GHG Greenhouse Gas – Gases that trap heat in the atmosphere are called greenhouse gases.

O&M Operations and Maintenance - services required to assure the built environment will perform the functions for which a facility was designed and constructed.

RPS Renewable Portfolio Standard – A regulation that requires the increased production of energy from renewable energy sources, such as wind, solar, biomass, and geothermal.

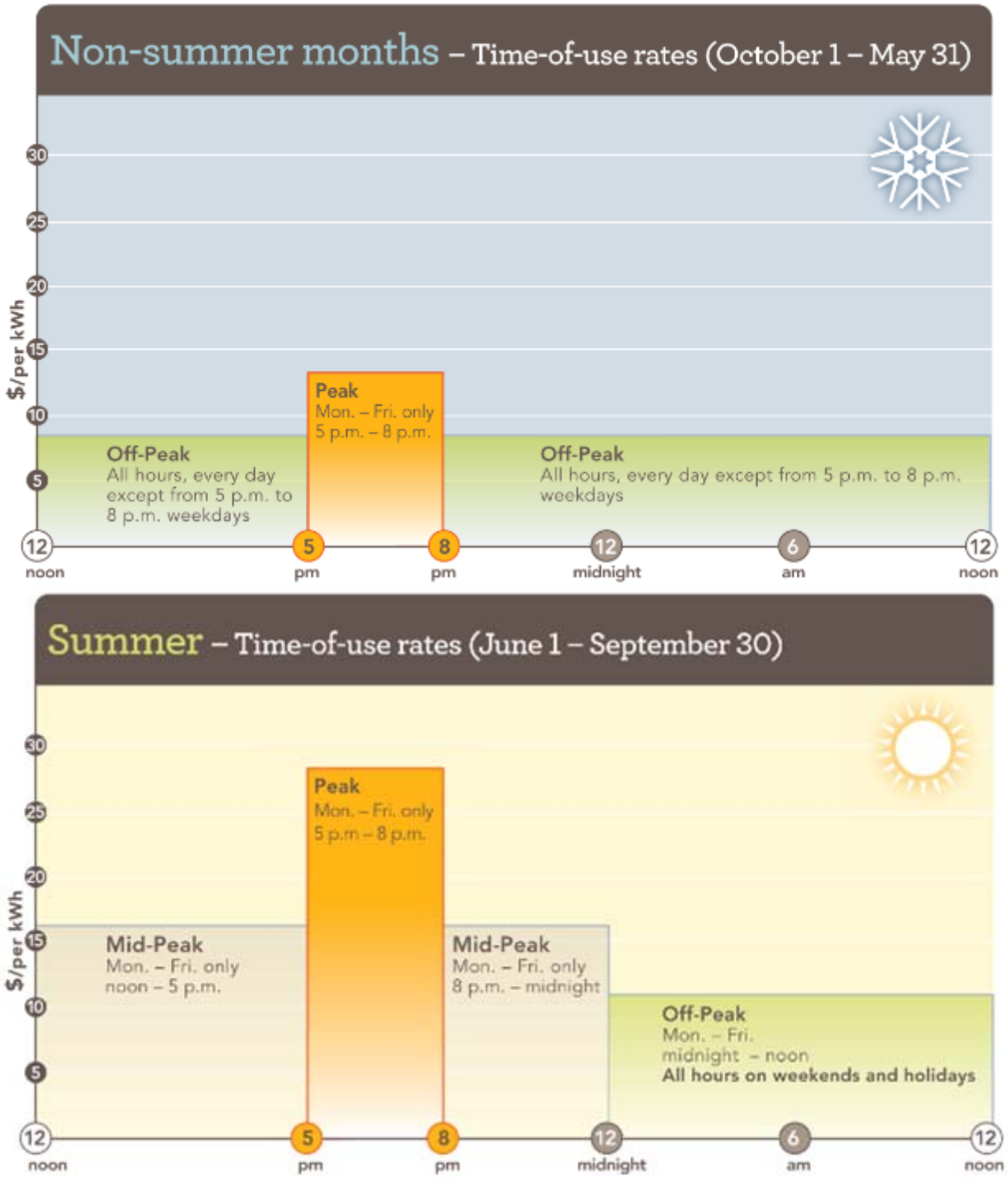
T&D Transmission and Distribution:

Electric power **transmission** is the bulk movement of electrical energy from a generating site, such as a power plant, to an electrical substation.

Electric power **distribution** is the local wiring between high-voltage substations and customers.

ZCP 2030 Zero Carbon Plan – plan adopted by the Board to eliminate carbon emissions from our power supply by 2030.

2018 Residential Time-of-Use Rate (RT02) Design Study



OVERVIEW

SMUD's proposed rate structure as defined by the Chief Executive Officer & General Manager's Report and Recommendation on Rates and Services is based on by SMUD's Marginal Cost of service. Marginal costs are the additional costs SMUD incurs to provide electric service to a new customer, a new load or the savings expected from not serving that customer or load. These costs vary by the voltage at which electricity is delivered to the customer.

To provide electric service a utility must acquire power, maintain transmission and distribution systems to deliver the power, and provide customer service. Each of these basic functions has several components. SMUD provides power to a marginal customer from its marginal resource in the market. In addition to buying power for its customers, SMUD must provide ancillary services such as regulation and three types of reserves (spinning, non-spinning, and replacement), and transmission services.

Delivering power to customers requires a physical system of towers and poles, cables and wires, substations, transformers and other electrical equipment. These are the transmission, distribution, and distribution facilities systems.

Customer service includes a whole array of activities which range from the initial connection of the customer to the electrical system, to answering questions about a customer's bill. In general, these activities include electronic reading the customer's meter for usage, billing, maintaining customer records, operating and maintaining meters and part of the distribution system, customer accounts, and providing information and responding to customers' inquiries.

The 2016 Marginal Cost Study reflects the current state of California's power markets and SMUD operations. Generation (capacity and energy), transmission and distribution capacity marginal costs, including losses[1], are developed on an 8,760 hour basis and summarized by month, daytypes (weekday or weekend including holidays) and hour. For each time-of-use period, an average price is calculated from the corresponding summarized hourly prices weighted by the class's average hourly energy delivered.

For California publicly owned utilities, Senate Bill X1-2 and Senate Bill 350 legislatively establishes renewable power targets, 33% by 2020 and 50% by 2030, respectively. In this study, an adder is calculated to recognize additional costs for renewable power procurement and added to marginal energy costs.

Marginal customer costs include SMUD-owned distribution facilities that connect the customer to the 12 kV or 21 kV primary feeders, the meter, meter reading, billing, and a variety of aspects of customer care. To the extent accommodated by the $20 fixed charge established by Board resolution August 4, 2011, these costs are allocated on a per customer basis. To be consistent with the allocation convention from prior studies, the residual costs mostly consisting of distribution facilities are allocated 25% evenly across all hours and 75% on an hourly basis weighted by the hourly distribution of residential monthly non-coincident peak demands divided

[1] For the residential class, losses range from 5 to 7 percent depending on season, and reflect transmission and distribution losses down to the secondary distribution service level.

by the class's average hourly energy delivered. This residual cost is recouped in the energy charge.

In addition to the aforementioned marginal cost, a one cent adder is applied to the calculated marginal energy rate to recoup SMUD's Public Goods expenses for energy efficiency, low-income and medical assistance, advanced and renewable technologies, and research and development (R&D) expenses.

The proposed rate structure is completed by setting proposed rate revenues equal to rate revenues for the budget years. The reconciliation of marginal costs to rate revenues is accomplished through increasing final marginal cost energy charges by a scalar.

MARGINAL COST COMPONENTS

While marginal cost is described in the singular sense, it is actually made up of a number of components, as listed in Table A below.

Each category is associated with energy-related, demand-related or customer-related investment criteria for SMUD expenditures. Energy-related refers to expenses incurred when SMUD supplies energy services. Demand-related refers to the costs incurred when SMUD provides generation, distribution or transmission capacity. Customer-related investment is associated with connecting new customers to SMUD's distribution system and providing billing and other services. Finally, the table indicates major characteristics associated with each category. The following sections present a more detailed summary of each marginal cost component.

Table A: Classification of Marginal Cost Components

Category	Component	Description	Unit of Measure
Generation	Generation	Electricity production, ancillary services, line loss	Energy - $/kWh
	Capacity	Capital costs, fixed O&M for power generation	Demand - $/kW-year
	RPS	Cost for Renewable Portfolio Standard compliance	Energy - $/kWh
Transmission and Distribution	Transmission	230 kV lines and infrastructure	Demand - $/kW-year
	Subtransmission	115 & 69 kV lines and infrastructure	Demand - $/kW-year
	Distribution	21, 12 and 4 kV lines and infrastructure	Demand - $/kW-year
Customer	Distribution Facilities	Line extensions and step-down transformers	Customer - $/customer-year
	Meter	Meter, installation and O&M	Customer - $/customer-year
	Services	Meter reading, customer records, information and customer service	Customer - $/customer-year

SEASONS AND TIME-OF-USE (TOU) DEFINITIONS

This study frequently references time-of-use (TOU) periods. The TOU periods are the same throughout this report. There are two TOU seasons and a total of five TOU periods. The TOU seasons consist of a four-month summer (June 1 through September 30) and eight-month winter (October 1 through May 31). The TOU periods are as follows:

Table B: TOU Periods by TOU Season

Time Periods	
Summer Peak	Summer weekdays between 5:00pm and 8:00pm, exclusive of SMUD tariff designated holidays.
Summer Mid-Peak	Summer weekdays between noon and 5:00pm and 8:00pm to midnight, exclusive of SMUD tariff designated holidays.
Summer Off-Peak	All other Summer hours, including holidays.
Winter Peak	Summer weekdays between 5:00pm and 8:00pm, exclusive of SMUD tariff designated holidays.
Winter Off-Peak	All other Winter hours, including holidays.

Tariff designated holidays include New Years, Martin Luther King Jr.'s Birthday, Lincoln's Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day and Christmas Day.

MARGINAL ENERGY, CALIFORNIA RENEWABLE PORTFOLIO STANDARD COMPLIANCE, ANCILLARY SERVICES AND GENERATION CAPACITY COSTS

The 2016 Marginal Cost Study calculates generation marginal costs by forecasting long-term California energy and capacity markets. It includes energy costs based on forecasts of market prices for energy, ancillary services and capacity for northern California. Essentially, the market prices for these products are SMUD's marginal costs for energy, ancillary services and generation capacity. Generation (capacity and energy), transmission and distribution capacity marginal costs, including secondary losses, are developed on an 8,760 hour basis and summarized by month, daytypes (weekday or weekend including holidays) and hour. For each time-of-use period, an average price is calculated from the corresponding summarized hourly prices weighted by the class's average hourly energy delivered.

Market Prices for Energy

SMUD prepares long-term forecasts for its hourly energy supply costs to use as the marginal energy cost. As shown in Table C, the residential class weighted average marginal energy cost is $0.0474/kWh.

Table C. Generation Marginal Energy Cost by TOU Period

Period		Marginal Energy Costs ($/kWh)
Rates Time Of Use	Summer Peak	$0.0665
	Summer Mid-Peak	$0.0533
	Summer Off-Peak	$0.0438
	Winter Peak	$0.0566
	Winter Off-Peak	$0.0446
Weighted Average		$0.0474

California Renewable Portfolio Standard (RPS) Compliance Adder

"Governor Edmund G. Brown, Jr. signed into legislation Senate Bill 350 in October 2015, which requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030."[2] The recent legislative requirement extends Senate Bill X1-2 which was "signed by Governor Edmund G. Brown, Jr., in April 2011 setting the RPS target at 33% by 2020."[3]

As shown in Table D, the RPS Cost adder recognizes the additional cost for energy related to RPS compliance and relies on a consultant developed average cost of renewable power (primarily provided by utility scale solar and wind technologies), conventional energy price forecasts and annual compliance targets[4] to calculate annual RPS premiums per kWh. The residential class RPS weighted average compliance adder of $0.0044/kWh has been included in this report.

Table D. RPS Compliance Cost by TOU period

Period		RPS Costs Compliance Adder ($/kWh)
Rates Time Of Use	Summer Peak	$0.0044
	Summer Mid-Peak	$0.0044
	Summer Off-Peak	$0.0044
	Winter Peak	$0.0044
	Winter Off-Peak	$0.0044
Weighted Average		$0.0044

[2] http://www.energy.ca.gov/portfolio

[3] http://www.energy.ca.gov/portfolio

[4] Annual RPS targets assume a gradual progression to the legislatively established RPS goals of 33% by 2020 and 50% by 2030.

Market Prices for Ancillary Services

The marginal costs for energy deliveries to SMUD customers also include the market prices of ancillary services. Ancillary services provide the operating reserves necessary for stable and reliable energy delivery. The market prices for these ancillary services relate directly to market prices for energy. National and regional reliability councils establish the amount of ancillary services that SMUD and other California utilities must provide as a percent of generation output. The current requirement for SMUD averages the percent of the annual energy delivered to SMUD's transmission system stated as a cost which is summarized for the residential class in the Table E.

Table E. Ancillary Service Cost Adder by TOU Period

Period		AS Cost Adder ($/kWh)
Rates Time Of Use	Summer Peak	$0.0003
	Summer Mid-Peak	$0.0002
	Summer Off-Peak	$0.0002
	Winter Peak	$0.0003
	Winter Off-Peak	$0.0002
Weighted Average		$0.0002

The generation marginal cost of energy combined with ancillary services costs and the RPS compliance adder forms the bundled amounts listed in Table F.

Table F. Generation Marginal Energy Costs by TOU Period (Bundled)

Period		Bundled Marginal Energy Costs ($/kWh)
Rates Time Of Use	Summer Peak	$0.0713
	Summer Mid-Peak	$0.0580
	Summer Off-Peak	$0.0484
	Winter Peak	$0.0612
	Winter Off-Peak	$0.0491
Weighted Average		$0.0520

Marginal Cost of Capacity with Generation/ISO Charges

The marginal cost of generation capacity represents the costs faced by SMUD for securing firm capacity through contracts or market purchases. Unlike marginal energy costs, which represent the variable expense of fuel and related maintenance, marginal generation capacity costs represent the fixed costs including those associated with the financing and construction of a

power plant. Additionally, while not required, SMUD generally follows the California Public Utility Commission's (CPUC) Resource Adequacy Requirement (RAR) that requires load serving entities to demonstrate they have enough generation resources to cover 115-percent of their 1-in-2 probability peak load[5]. Thus, SMUD may procure generation capacity to meet the shortfall (if any) between its generation resource total and the "115-percent of peak load" target.

The 2016 Study forecasts generation marginal capacity costs using the following methods:

- Short-term Generation Capacity Costs – Short-term capacity costs are forecast using actual broker quotes for capacity obtained from SMUD's Energy Trading and Contracts group.
- Medium-term Generation Capacity Costs – a three year straight-line transition from short-term to long-term forecasts.
- Long-term Generation Capacity Costs – rely on a consultant-developed fundamental wholesale capacity price forecast.[6]

The levelized generation marginal capacity cost is subsequently distributed to monthly values using capacity allocation factors.[7] For example, capacity has more value during the summer months where capacity is most needed while non-summer months have little capacity value since loads are relatively low and capacity is abundant. The resultant levelized monthly generation marginal capacity costs are increased by the Resource Adequacy Requirement (RAR) percentage of 15%.

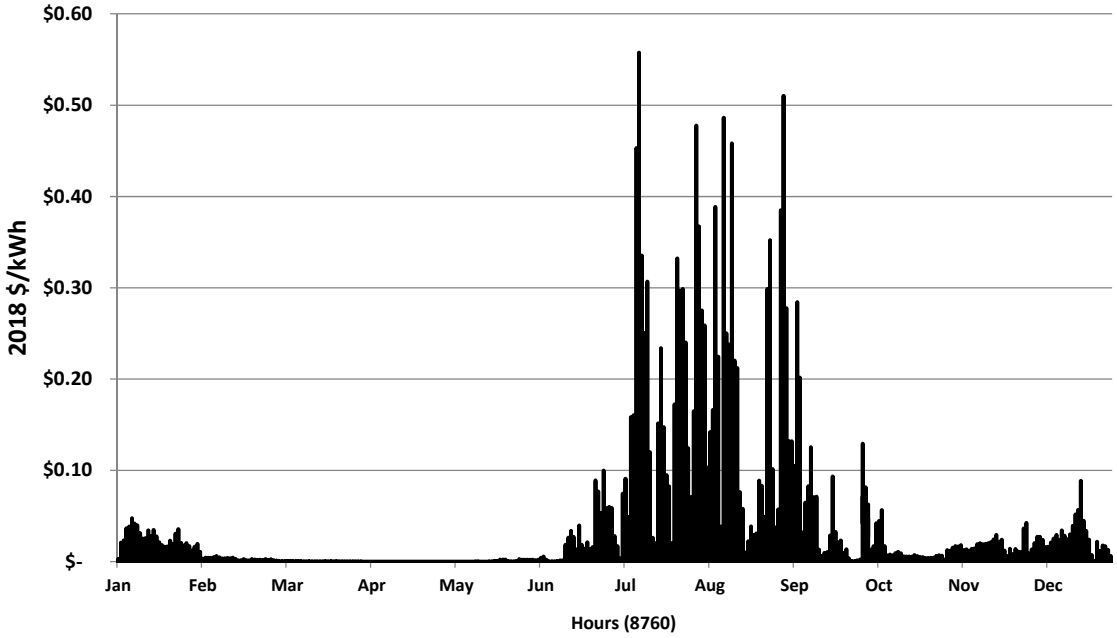
As shown in Figure 1, the monthly generation marginal capacity costs were allocated to hours within each month using the probability-of-peak (PoP) factors provided by SMUD's Load Research and Forecasting department. The PoP factors were created in 2006 using over twenty years of historical load data to determine the statistical likelihood that SMUD will reach peak demand for each hour of the year.

[5] Details of the CPUC's RA program can be found on the CPUC's website: http://www.cpuc.ca.gov/PUC/energy/Procurement/RA/

[6] "Annual Capacity Values (nominal and real)," IHS North American Power Market Fundamentals-Rivalry, April 2016

[7] The monthly capacity allocation factors, developed by the long-term planning group, are consistent with the factors used in the 2009 study.

Figure 1: Capacity Value Hourly Cost Distribution based on POP



The hourly prices are summarized by month, daytypes (weekday or weekend including holidays) and hour. For each time-of-use period, an average price is calculated from the corresponding summarized hourly prices weighted by the class's average hourly energy delivered.

The generation capacity costs for the residential class are summarized in Table G.

Table G. Generation Marginal Capacity Costs by TOU Period

Period		Marginal Generation Capacity Costs ($/kWh)
Rates Time Of Use	Summer Peak	$0.0680
	Summer Mid-Peak	$0.0253
	Summer Off-Peak	$0.0126
	Winter Peak	$0.0096
	Winter Off-Peak	$0.0013
Weighted Average		$0.0108

DEMAND-RELATED MARGINAL COSTS

Demand-related costs include the installed capital costs, financing, and operation and maintenance (O&M) expenses to maintain SMUD's marginal investments in the transmission, sub-transmission and distribution systems. Additions to transmission and subtransmission

systems are based on growth in the system's peak load. Additions to the distribution system are based on non-coincident peak load growth in each of SMUD's four distribution planning areas.

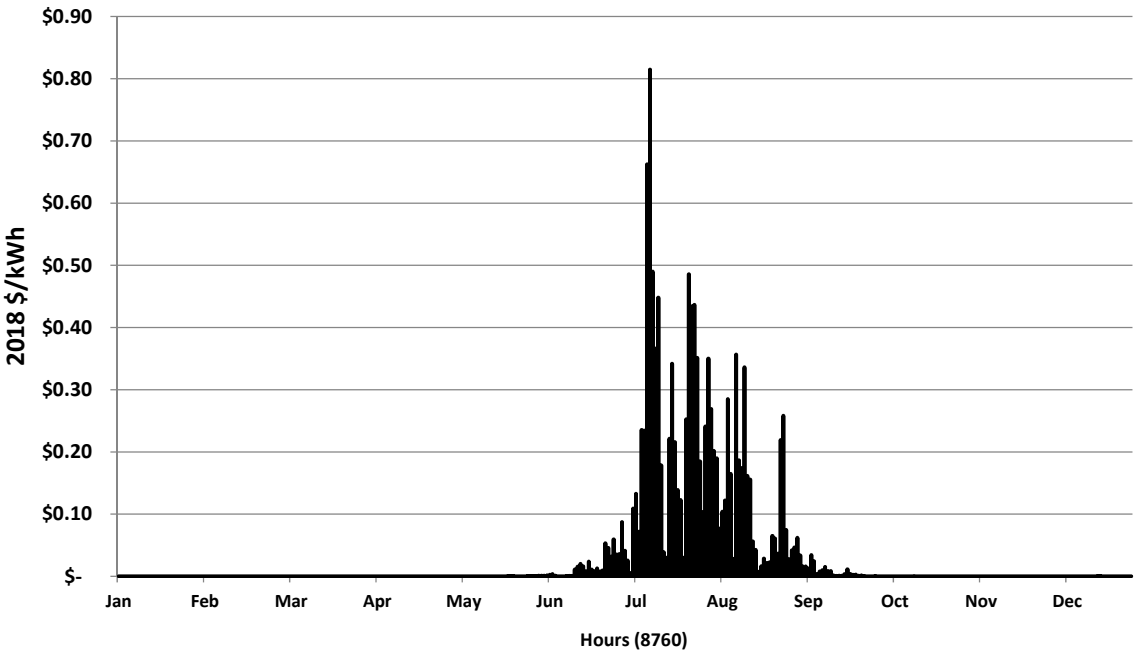
Marginal T&D Capacity Costs

SMUD's 230 kV transmission system allows SMUD to access power from energy markets. Marginal transmission investments represent the forward-looking capital costs and operating and maintenance (O&M) expenses of high voltage transmission facilities, interconnection facilities, and voltage support equipment. Marginal sub-transmission (at 69/115 kV) investments include the costs associated with bulk substations and the lines that connect the transmission system to the distribution system. Distribution system investments include the low voltage substations and the 21 kV, 12 kV, and 4 kV primary feeders that emanate from these distribution substations.

Marginal capacity costs include the installation costs, replacement costs from early retirements, O&M, general plant, administrative and general expenses (A&G), and working capital. The installed capital costs are annualized over the expected life of the equipment. Marginal capacity costs are measured in dollars per kilowatt-year of peak demand.

As shown in Figure 2, annualized costs which are projected to remain constant in real terms and rise nominally with inflation are levelized over the analysis period and allocated hourly based on the probability-of-peak (PoP) factors provided by SMUD's Load Research and Forecasting department.

Figure 2: Capacity Value Hourly Cost Distribution based on POP



These hourly costs are summarized by the hourly prices are summarized by month, daytypes (weekday or weekend including holidays) and hour. For each time-of-use period, an average price is calculated from the corresponding summarized hourly prices weighted by the class's average hourly energy delivered.

Table H presents the residential class's marginal transmission, sub-transmission and distribution capacity costs allocated to time periods and presented as cost per kilowatt-hour.

Table H. Marginal T&D Capacity Costs ($/kWh)

Period		Transmission	Sub-Transmission	Distribution	Total T&D Capacity
Rates Time Of Use	Summer Peak	$0.0215	$0.0118	$0.0356	$0.0689
	Summer Mid-Peak	$0.0077	$0.0042	$0.0128	$0.0248
	Summer Off-Peak	$0.0032	$0.0017	$0.0053	$0.0102
	Winter Peak	$0.0000	$0.0000	$0.0000	$0.0000
	Winter Off-Peak	$0.0000	$0.0000	$0.0000	$0.0000
Weighted Average		$0.0028	$0.0015	$0.0046	$0.0089

CUSTOMER-RELATED MARGINAL COSTS

Customer related costs are grouped into three major components: distribution facilities that connect the customer to the distribution system, installed meter costs, and customer services. The distribution facilities costs are calculated in dollars per customer-year. Facility installations are designed and built to accommodate customer specific capacity and voltage level requirements and fixed regardless of demand. In that respect, the marginal costs can be stated as a $/kW. Other customer costs are stated as dollars per customer and thus do not vary with customer energy usage or demand. These costs vary by number of customers and must be recouped by SMUD.

Marginal Customer Related Distribution Facilities

Distribution facilities costs are largely driven by voltage levels and transformer sizing. For residential customers who are served at the secondary voltage level, marginal customer distribution facilities costs include the SMUD-owned final step-down transformer and the lines that connect the customer to the 12 kV or 21 kV primary feeders. Marginal distribution facilities vary with the installed capacity of the customer. For the 2016 Marginal Cost Study, residential class distribution facilities costs are estimated to be $269.77 per year in 2015 and escalated via index[8] to the 2018 values of $292.15 per year or $24.35 per month.

Meter Costs

Meter costs include the capital, installation and O&M costs for servicing the meter. Meter costs vary by customer class and by the service voltage. Metering costs for customers served at higher voltages include voltage reduction equipment, wiring and the physical structures required for metering these customers. The customer related meter cost is estimated to be $33.81 for 2015 and escalated via index[8] to the 2018 values of $36.62 per year or $3.05 per month.

Customer Account Service Costs

Customer account service costs include the costs of meter reading, billing, and a variety of aspects of customer care. These services also include O&M expenses for the call center and information services, customer and Account Management services, collections, and the integrated computer system (SAP). Table I shows by description for 2015 and escalated via index[8] to the 2018 values of $147.47 per year or $12.29 per month.

Table I: Customer Account Service Costs Components

	2015		2018	
Description	**Annual**	**Month**	**Annual**	**Month**
Meter Reading	$5.05	$0.42	$5.35	$0.45
Customer Accounting	$81.78	$6.81	$87.10	$7.26
Uncollectible Accounts	$10.07	$0.84	$10.73	$0.89
Customer Information	$42.27	$3.52	$44.29	$3.69
Total	$139.16	$11.60	$147.47	$12.29

The customer-related distribution facilities cost, meter cost, and customer account services marginal cost forms the bundled amounts listed in Table K below.

PUBLIC GOODS MARGINAL COSTS

Public Goods expenses for energy efficiency, low-income and medical assistance, advanced and renewable technologies, and research and development (R&D) expense was calculated to be $0.0096 per kWh over the last 5 year period (2011-2015). This figure has remained steady in historical periods and thus no escalation was applied in study.

APPLICATION TO RATE DESIGN

Proposed Rate Design

SMUD's proposes the following two-part rate design comprised of a monthly fixed charge and an energy charge which varies by season and time period as shown in Table J:

[8] Escalation indices were primarily developed based on Handy Witman and IHS provided cost indices. When available, SMUD distribution labor indices based on historical and approved average wage increases per Memorandum of Understanding. Loaders based on actual and budgeted cost 2003-2017.

Table J: Proposed Rate Design

Season and Charge Components	Unit		2018
System Infrastructure Fixed Charge	per month	$	20.30
Summer Peak	per kWh	$	0.2835
Summer Mid-Peak	per kWh	$	0.1611
Summer Off-Peak	per kWh	$	0.1166
Winter Peak	per kWh	$	0.1338
Winter Off-Peak	per kWh	$	0.0969

Season	
Summer	Summer Billing Periods (June 1 - September 30)
Winter	All non-summer months
Time Periods	
Summer Peak	Summer weekdays between 5:00pm and 8:00pm, exclusive of SMUD tariff designated holidays.
Summer Mid-Peak	Summer weekdays between noon and 5:00pm and 8:00pm to midnight, exclusive of SMUD tariff designated holidays.
Summer Off-Peak	All other Summer hours, including holidays.
Winter Peak	Summer weekdays between 5:00pm and 8:00pm, exclusive of SMUD tariff designated holidays.
Winter Off-Peak	All other Winter hours, including holidays.

This design is influenced by SMUD's Marginal Cost of service as described in previous sections.

Site Infrastructure Fixed Charge

The SIFC is comprised of the marginal meter costs, customer service and accounting, unbilled as well as the marginal cost of service line and transformer (together distribution facilities) accommodated by the $20 fixed charge established by board resolution and outlined in Table K:

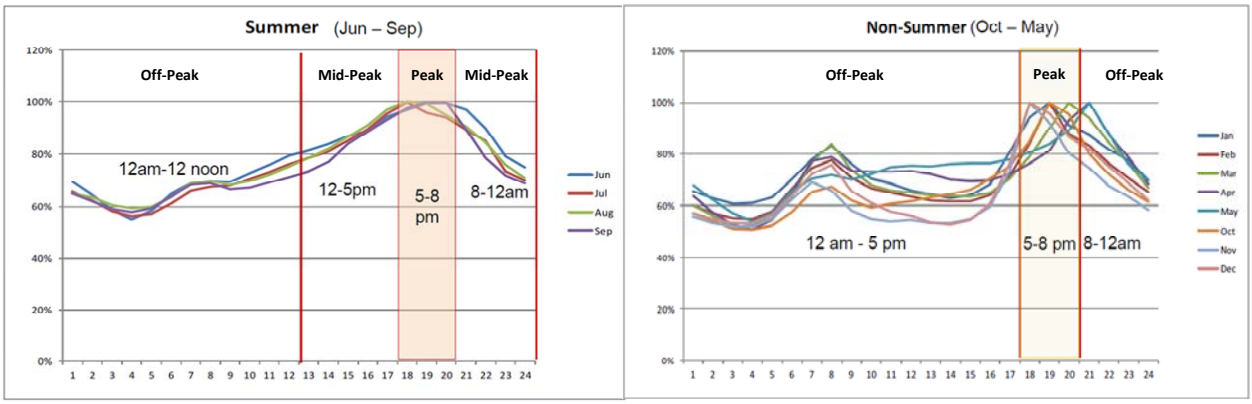
Table K: MONTHLY SITE INFRASTRUCTURE FIXED CHARGE COMPONENTS

Marginal Cost Component		2018 Monthly Marginal Cost		$20 SIFC Components
Meter Costs	$	3.05	$	3.05
Meter Reading	$	0.45	$	0.45
Accounts	$	7.26	$	7.26
Uncollectable	$	0.89	$	0.89
Customer & Information	$	3.69	$	3.69
Distribution Facility	$	24.35	$	4.66
Total	$	39.69	$	20.00

Factors that were considered in the selection of Time-of-Use Periods

In 2011, SMUD's Board adopted the Smart Pricing Option (SPO) Pilots rates, which tested three time-of-use rate designs featuring a 3-hour peak pricing period. The study concluded that customers were able to successfully react to higher prices established over 3-hours and conserve. Learning from the SPO study and in conjunction with Board Strategic Direction SD-2[9], this time-of-use rate design continues to signals the three hours where market energy prices were historically highest for SMUD with the winter peak price and the summer peak price both between 5pm and 8pm on weekdays as shown in the Figure 3 below[10]:

Figure 3: NP15 day-ahead market prices as a percentage of maximum values



In addition to the summer peak period, a summer mid-peak period between noon and midnight was established to further better align prices with the costs of electricity when it is used, and better match how SMUD incurs power supply cost.

Time-of-Use Energy Charges

SMUD's energy charges are comprised of generation (capacity and energy), ancillary service, RPS compliance, transmission and distribution capacity marginal costs, including losses, which are developed on an 8,760 hour basis and summarized by month, daytypes (weekday or weekend including holidays) and hour. For each time-of-use period, an average price is calculated from the corresponding summarized hourly prices weighted by the class's average hourly energy delivered.

In addition, the residual cost of distribution facilities are recouped as an energy charge. These residual costs are allocated 25% evenly across all hours and 75% on an hourly basis weighted by the hourly distribution of residential monthly non-coincident peak demands divided by the class's average hourly energy delivered.

[9] Board Strategic Direction SD-2 Competitive Rates establishes the rate principles that prices should reflect the cost of energy when it used, and in particular, should signal the need to reduce energy during SMUS's high-cost peak periods.

[10] 2014-2015 NP15 day-ahead market prices as a percentage of maximum values.

Public Goods expenses for energy efficiency, low-income and medical assistance, advanced and renewable technologies, and research and development (R&D) expenses are estimated to be $0.0096 per kWh in 2018.

Table L: Time-of-Use Energy Marginal Cost

Time-of-Use		Energy, Ancillary Service & RPS Cost	Generation Capacity	Trans & Dist	Residual Distribution Facilities	Public Good	Total Energy Marginal Cost
Rates Time Of Use	Summer Peak	$0.0713	$0.0680	$0.0689	$0.0371	$0.0096	$0.2548
	Summer Mid-Peak	$0.0580	$0.0253	$0.0248	$0.0270	$0.0096	$0.1447
	Summer Off-Peak	$0.0484	$0.0126	$0.0102	$0.0239	$0.0096	$0.1048
	Winter Peak	$0.0612	$0.0096	$0.0000	$0.0398	$0.0096	$0.1202
	Winter Off-Peak	$0.0491	$0.0013	$0.0000	$0.0271	$0.0096	$0.0872

The proposed time-of-use energy rate is completed by setting proposed rate revenues equal to rate revenues for the budget year. The reconciliation of marginal costs to rate revenues is accomplished through increasing final marginal cost energy charges by a scalar of 9.2%.

Table M: Proposed Energy Charge

Time-of-Use		Total Energy Marginal Cost	Scalar 9.2%	2017 Energy Charges
Rates Time Of Use	Summer Peak	$0.2548	$0.0235	$0.2783
	Summer Mid-Peak	$0.1447	$0.0133	$0.1580
	Summer Off-Peak	$0.1048	$0.0097	$0.1145
	Winter Peak	$0.1202	$0.0111	$0.1313
	Winter Off-Peak	$0.0872	$0.0080	$0.0952

Revenue Requirement, Forecasted Residential Loadshapes for Budget Period 2018 and 2019

The marginal price signals in this study were developed using the historical 2013 average residential load shape, a year displaying historically typical weather characteristics for SMUD service area. As evidenced in SMUD's SPO study, introducing residential customers to time-of-use pricing as the standard for the forecast period is anticipated to result in the shifting of load from high price peak and mid-peak periods to lower price periods. Time-of-use rates developed using marginal cost pricing and the current typical average residential load shape (before load shifting), is anticipated to reduce the average rate charged for energy from 11.92¢ per kWh on a seasonal flat rate to 11.88¢ per kWh resulting in an energy rate reduction of 0.35%. As a result, the final energy charges calculated previously are adjusted by scalar to achieve a rate neutral design over the 2018 and 2019 budget period as shown in Table N.

Table N: Proposed Energy Charge Adjusted for Anticipated Budget Year Loadshape

Time-of-Use		2017 Energy Charges	Scalar 0.35%	2018 Energy Charges w/o Rate Increase
Rates Time Of Use	Summer Peak	$0.2783	$0.0010	$0.2793
	Summer Mid-Peak	$0.1580	$0.0006	$0.1586
	Summer Off-Peak	$0.1145	$0.0004	$0.1149
	Winter Peak	$0.1313	$0.0005	$0.1318
	Winter Off-Peak	$0.0952	$0.0003	$0.0955

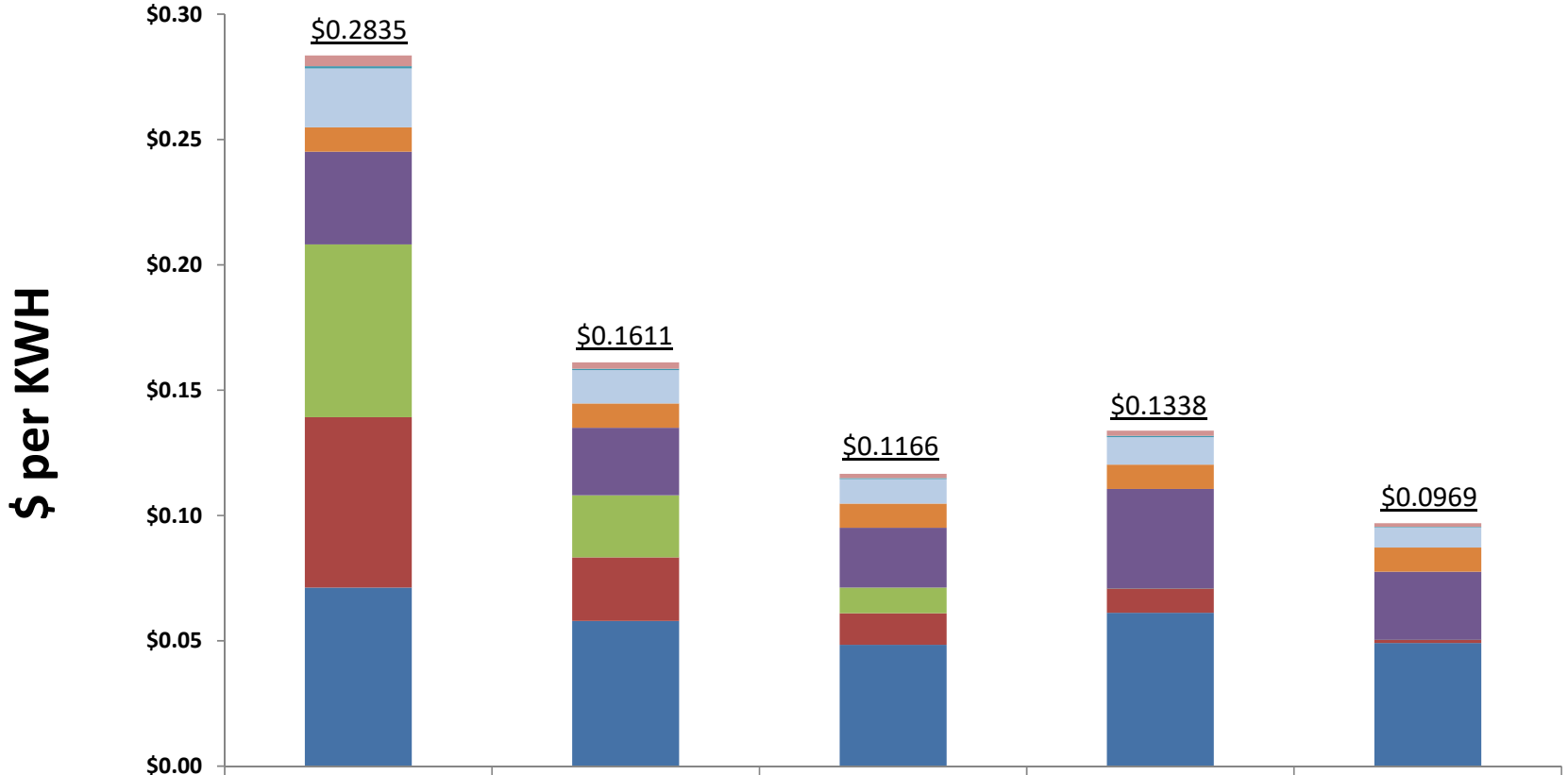
For the budget period, staff proposes a residential rate increase of 1.5% in 2018. Table N shows the rate increase applied to residential charges:

Table O: Proposed Residential Charges Adjusted for Rate Increase

Proposed Rate Increase		0%	1.5%
Season and Charge Components	Unit	2018 Energy Charges w/o Rate Increase	2018 Proposed
System Infrastructure Fixed Charge	per month	$ 20.00	$ 20.30
Summer Peak	per kWh	$ 0.2793	$ 0.2835
Summer Mid-Peak	per kWh	$ 0.1586	$ 0.1611
Summer Off-Peak	per kWh	$ 0.1149	$ 0.1166
Winter Peak	per kWh	$ 0.1318	$ 0.1338
Winter Off-Peak	per kWh	$ 0.0955	$ 0.0969

Figure 4 below shows the margin cost decomposition of the proposed rates:

Figure 4: 2017-2018 Residential Time-of-Use Marginal Cost Decomposition



	Summer Super Peak	Summer On Peak	Summer Off Peak	Winter On Peak	Winter Off Peak
2018 Rev. Req.	$0.0042	$0.0025	$0.0017	$0.0020	$0.0014
TOU Adj. Scalar	$0.0010	$0.0006	$0.0004	$0.0005	$0.0003
Non-Marginal	$0.0235	$0.0133	$0.0097	$0.0111	$0.0080
Public Goods	$0.0096	$0.0096	$0.0096	$0.0096	$0.0096
Distribution Fac	$0.0371	$0.0270	$0.0239	$0.0398	$0.0271
T&D (above 12kV)	$0.0689	$0.0248	$0.0102	$0.0000	$0.0000
Generation Cap	$0.0680	$0.0253	$0.0126	$0.0096	$0.0013
Energy+Ancilliary+RPS	$0.0713	$0.0580	$0.0484	$0.0612	$0.0491

2020
ANNUAL REPORT

of

Pacific Gas and Electric Company
77 Beale Street
P.O. Box 770000, B7C
San Francisco, CA 94177

to the

Public Utilities Commission
of the
State of California
For the Year Ended December 31, 2020



Volume No. 1 (Form 1)

Name of Respondent	This Report Is:	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) [X] An Original (2) [ ] A Resubmission	04/13/2021	End of 2020/Q4

STATEMENT OF INCOME

Quarterly
1. Report in column (c) the current year to date balance. Column (c) equals the total of adding the data in column (g) plus the data in column (i) plus the data in column (k). Report in column (d) similar data for the previous year. This information is reported in the annual filing only.
2. Enter in column (e) the balance for the reporting quarter and in column (f) the balance for the same three month period for the prior year.
3. Report in column (g) the quarter to date amounts for electric utility function; in column (i) the quarter to date amounts for gas utility, and in column (k) the quarter to date amounts for other utility function for the current year quarter.
4. Report in column (h) the quarter to date amounts for electric utility function; in column (j) the quarter to date amounts for gas utility, and in column (l) the quarter to date amounts for other utility function for the prior year quarter.
5. If additional columns are needed, place them in a footnote.

Annual or Quarterly if applicable
5. Do not report fourth quarter data in columns (e) and (f)
6. Report amounts for accounts 412 and 413, Revenues and Expenses from Utility Plant Leased to Others, in another utility columnin a similar manner to a utility department. Spread the amount(s) over lines 2 thru 26 as appropriate. Include these amounts in columns (c) and (d) totals.
7. Report amounts in account 414, Other Utility Operating Income, in the same manner as accounts 412 and 413 above.

Line No.	Title of Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)	Prior 3 Months Ended Quarterly Only No 4th Quarter (f)
1	UTILITY OPERATING INCOME					
2	Operating Revenues (400)	300-301	20,627,134,250	18,842,698,287		
3	Operating Expenses					
4	Operation Expenses (401)	320-323	12,450,954,263	21,770,132,822		
5	Maintenance Expenses (402)	320-323	3,289,692,994	2,572,214,173		
6	Depreciation Expense (403)	336-337	3,152,310,569	2,915,778,086		
7	Depreciation Expense for Asset Retirement Costs (403.1)	336-337				
8	Amort. & Depl. of Utility Plant (404-405)	336-337	268,182,440	312,345,977		
9	Amort. of Utility Plant Acq. Adj. (406)	336-337				
10	Amort. Property Losses, Unrecov Plant and Regulatory Study Costs (407)		44,858,959	2,113,770		
11	Amort. of Conversion Expenses (407)					
12	Regulatory Debits (407.3)		12,060,000	2,613		
13	(Less) Regulatory Credits (407.4)		1,232,030,318			
14	Taxes Other Than Income Taxes (408.1)	262-263	687,990,525	676,420,547		
15	Income Taxes - Federal (409.1)	262-263	-18,742,076	457,455		
16	- Other (409.1)	262-263	15,226,597	168,031,963		
17	Provision for Deferred Income Taxes (410.1)	234, 272-277	987,062,652	367,396,283		
18	(Less) Provision for Deferred Income Taxes-Cr. (411.1)	234, 272-277	352,833,793	3,619,594,973		
19	Investment Tax Credit Adj. - Net (411.4)	266				
20	(Less) Gains from Disp. of Utility Plant (411.6)		1,930,139	9,459,742		
21	Losses from Disp. of Utility Plant (411.7)		1,764,604			
22	(Less) Gains from Disposition of Allowances (411.8)					
23	Losses from Disposition of Allowances (411.9)					
24	Accretion Expense (411.10)					
25	TOTAL Utility Operating Expenses (Enter Total of lines 4 thru 24)		19,304,567,277	25,155,838,974		
26	Net Util Oper Inc (Enter Tot line 2 less 25) Carry to Pg117,line 27		1,322,566,973	-6,313,140,687		

Name of Respondent	This Report Is:	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) [X] An Original (2) [ ] A Resubmission	04/13/2021	End of 2020/Q4

STATEMENT OF INCOME FOR THE YEAR (Continued)

9. Use page 122 for important notes regarding the statement of income for any account thereof.
10. Give concise explanations concerning unsettled rate proceedings where a contingency exists such that refunds of a material amount may need to be made to the utility's customers or which may result in material refund to the utility with respect to power or gas purchases. State for each year effected the gross revenues or costs to which the contingency relates and the tax effects together with an explanation of the major factors which affect the rights of the utility to retain such revenues or recover amounts paid with respect to power or gas purchases.
11 Give concise explanations concerning significant amounts of any refunds made or received during the year resulting from settlement of any rate proceeding affecting revenues received or costs incurred for power or gas purches, and a summary of the adjustments made to balance sheet, income, and expense accounts.
12. If any notes appearing in the report to stokholders are applicable to the Statement of Income, such notes may be included at page 122.
13. Enter on page 122 a concise explanation of only those changes in accounting methods made during the year which had an effect on net income, including the basis of allocations and apportionments from those used in the preceding year. Also, give the appropriate dollar effect of such changes.
14. Explain in a footnote if the previous year's/quarter's figures are different from that reported in prior reports.
15. If the columns are insufficient for reporting additional utility departments, supply the appropriate account titles report the information in a footnote to this schedule.

ELECTRIC UTILITY		GAS UTILITY		OTHER UTILITY		Line No.
Current Year to Date (in dollars) (g)	Previous Year to Date (in dollars) (h)	Current Year to Date (in dollars) (i)	Previous Year to Date (in dollars) (j)	Current Year to Date (in dollars) (k)	Previous Year to Date (in dollars) (l)	
						1
15,790,806,398	14,242,164,773	4,836,327,852	4,600,533,514			2
						3
9,856,775,900	19,399,846,326	2,594,178,363	2,370,286,496			4
2,673,921,209	1,839,076,052	615,771,785	733,138,121			5
2,461,733,443	2,237,751,122	690,577,126	678,026,964			6
						7
192,418,079	218,499,956	75,764,361	93,846,021			8
						9
44,858,959	2,113,770					10
						11
12,060,000	2,613					12
1,014,812,993		217,217,325				13
497,930,437	498,485,612	190,060,088	177,934,935			14
-18,788,436	-20,429,813	46,360	20,887,268			15
-43,266,945	85,600,295	58,493,542	82,431,668			16
465,052,214	573,464,127	522,010,438	-206,067,844			17
24,320,202	3,728,166,990	328,513,591	-108,572,017			18
						19
1,930,127	6,641,455	12	2,818,287			20
1,764,604						21
						22
						23
						24
15,103,396,142	21,099,601,615	4,201,171,135	4,056,237,359			25
687,410,256	-6,857,436,842	635,156,717	544,296,155			26

Name of Respondent	This Report Is:	Date of Report (Mo, Da, Yr)	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) [X] An Original (2) [ ] A Resubmission	04/13/2021	End of 2020/Q4

STATEMENT OF INCOME FOR THE YEAR (continued)

Line No.	Title of Account (a)	(Ref.) Page No. (b)	TOTAL Current Year (c)	TOTAL Previous Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)	Prior 3 Months Ended Quarterly Only No 4th Quarter (f)
27	Net Utility Operating Income (Carried forward from page 114)		1,322,566,973	-6,313,140,687		
28	Other Income and Deductions					
29	Other Income					
30	Nonutilty Operating Income					
31	Revenues From Merchandising, Jobbing and Contract Work (415)					
32	(Less) Costs and Exp. of Merchandising, Job. & Contract Work (416)					
33	Revenues From Nonutility Operations (417)		6,120,577			
34	(Less) Expenses of Nonutility Operations (417.1)					
35	Nonoperating Rental Income (418)					
36	Equity in Earnings of Subsidiary Companies (418.1)	119	29,086,863	-91,657		
37	Interest and Dividend Income (419)		56,861,975	131,791,178		
38	Allowance for Other Funds Used During Construction (419.1)		140,080,186	79,271,096		
39	Miscellaneous Nonoperating Income (421)		21,522,402	14,613,757		
40	Gain on Disposition of Property (421.1)		81,540	4,832,442		
41	TOTAL Other Income (Enter Total of lines 31 thru 40)		253,753,543	230,416,816		
42	Other Income Deductions					
43	Loss on Disposition of Property (421.2)		43,530,137			
44	Miscellaneous Amortization (425)					
45	Donations (426.1)		8,172,778	9,792,051		
46	Life Insurance (426.2)					
47	Penalties (426.3)		25,533,353	49,111,094		
48	Exp. for Certain Civic, Political & Related Activities (426.4)		7,796,638	7,827,488		
49	Other Deductions (426.5)		189,124,167	788,346,091		
50	TOTAL Other Income Deductions (Total of lines 43 thru 49)		274,157,073	855,076,724		
51	Taxes Applic. to Other Income and Deductions					
52	Taxes Other Than Income Taxes (408.2)	262-263				
53	Income Taxes-Federal (409.2)	262-263	651,449	5,078,589		
54	Income Taxes-Other (409.2)	262-263	-1,770,469	-80,871,606		
55	Provision for Deferred Inc. Taxes (410.2)	234, 272-277	-121,916,110	6,976,547		
56	(Less) Provision for Deferred Income Taxes-Cr. (411.2)	234, 272-277	90,390,785	247,415,278		
57	Investment Tax Credit Adj.-Net (411.5)		-6,991,812	-5,498,780		
58	(Less) Investment Tax Credits (420)					
59	TOTAL Taxes on Other Income and Deductions (Total of lines 52-58)		-220,417,727	-321,730,528		
60	Net Other Income and Deductions (Total of lines 41, 50, 59)		200,014,197	-302,929,380		
61	Interest Charges					
62	Interest on Long-Term Debt (427)		909,242,062	677,880,030		
63	Amort. of Debt Disc. and Expense (428)		49,782,057	126,739,333		
64	Amortization of Loss on Reaquired Debt (428.1)		14,024,025	16,352,937		
65	(Less) Amort. of Premium on Debt-Credit (429)		743,550	743,550		
66	(Less) Amortization of Gain on Reaquired Debt-Credit (429.1)		142,323	144,644		
67	Interest on Debt to Assoc. Companies (430)					
68	Other Interest Expense (431)		174,148,932	240,449,603		
69	(Less) Allowance for Borrowed Funds Used During Construction-Cr. (432)		34,688,521	54,836,103		
70	Net Interest Charges (Total of lines 62 thru 69)		1,111,622,682	1,005,697,606		
71	Income Before Extraordinary Items (Total of lines 27, 60 and 70)		410,958,488	-7,621,767,673		
72	Extraordinary Items					
73	Extraordinary Income (434)					
74	(Less) Extraordinary Deductions (435)					
75	Net Extraordinary Items (Total of line 73 less line 74)					
76	Income Taxes-Federal and Other (409.3)	262-263				
77	Extraordinary Items After Taxes (line 75 less line 76)					
78	Net Income (Total of line 71 and 77)		410,958,488	-7,621,767,673		

2021
ANNUAL REPORT

of

Pacific Gas and Electric Company
77 Beale Street
P.O. Box 770000, B7C
San Francisco, CA 94177

to the

Public Utilities Commission
of the
State of California
For the Year Ended December 31, 2021



Volume No. 2 (Form 2)

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr.) 4/11/2022	2021/Q4

STATEMENT OF INCOME

1. Enter in column (e) operations for the reporting quarter and in column (f) the balance for the same three-month period for the prior year.
2. Report in column (g) the year to date amounts for electric utility function; in column (i) the year to date amounts for gas utility, and in (k) the year to date amounts for other utility function for the current year.

Line No.	Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)
1	UTILITY OPERATING INCOME				
2	OPERATING REVENUES (400)	300-301	23,642,511,758	20,627,134,250	
3	OPERATING EXPENSES				
4	Operation Expenses (401)	320-323	14,695,627,408	12,450,954,263	
5	Maintenance Expenses (402)	320-323	3,546,958,150	3,289,692,994	
6	Depreciation Expense (403)	336-337	3,146,069,757	3,152,310,569	
7	Depreciation Exp. for Asset Retirement Costs (403.1)	336-337			
8	Amort. & Depl. of Utility Plant (404-405)	336-337	241,392,639	268,182,440	
9	Amort. of Utility Plant Acq. Adj. (406)	336-337			
10	Amort. of Property Losses, Unrecovered Plant and Regulatory Study Costs (407)		13,397,111	44,858,959	
11	Amort. of Conversion Expenses (407.2)				
12	Regulatory Debit (407.3)		12,060,000	12,060,000	
13	(Less) Regulatory Credits (407.4)		1,229,192,672	1,232,030,318	
14	Taxes Other Than Income Taxes (408.1)	262-263	758,468,798	687,990,525	
15	Income Taxes - Federal (409.1)	262-263	(2)	(18,742,076)	
16	Income Taxes -Other (409.1)	262-263	1,367,558	15,226,597	
17	Provision for Deferred Inc. Taxes (410.1)	234-272-277	18,591,272,382	987,062,652	
18	(Less) Provision for Deferred Inc. Taxes-Cr.(411.1)	234-272-277	17,544,480,671	352,833,793	
19	Investment Tax Credit Adj.- Net (411.4)	266			
20	(Less) Gains from Disp. of Utility Plant (411.6)		2,735,190	1,930,139	
21	Losses from Utility Plant (411.7)		19,695	1,764,604	
22	(Less) Gains from Disposition of Allowance (411.8)				
23	Losses from Disposition of Allowances (411.9)				
24	Accretion Expense (411.10)				
25	TOTAL OPERATING EXPENSES (Lines 4-24)		22,230,224,963	19,304,567,277	
26	NET UTILITY OPERATING INCOME (Line 2 minus line 25)		1,412,286,795	1,322,566,973	

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmissio	(Mo, Da, Yr.) 4/11/2022	2021/Q4

STATEMENT OF INCOME

3. Report in column (h) the year to date amounts for electric utility function; in column (j) the year to date amounts for gas utility, and in (l) the year to date amounts for other utility function for the previous year. '4. If additional columns are needed, place them in a footnote.

ELECTRIC UTILITY		GAS UTILITY		OTHER UTILITY		
Current Year to Date	Prior Year to Date	Current Year to Date	Prior Year to Date	Current Year to Date	Prior Year to Date	Line No.
(g)	(h)	(i)	(j)	(k)	(l)	
						1
17,897,673,680	15,790,806,398	5,744,838,078	4,836,327,852			2
						3
11,393,769,310	9,856,775,900	3,301,858,098	2,594,178,363			4
3,008,519,641	2,673,921,209	538,438,509	615,771,785			5
2,406,187,594	2,461,733,443	739,882,163	690,577,126			6
						7
176,191,357	192,418,079	65,201,282	75,764,361			8
						9
						10
13,397,111	44,858,959					
						11
12,060,000	12,060,000					12
1,080,179,342	1,014,812,993	149,013,330	217,217,325			13
535,652,340	497,930,437	222,816,458	190,060,088			14
8,254,589	(18,788,436)	(8,254,591)	46,360			15
5,179,331	(43,266,945)	(3,811,773)	58,493,542			16
16,950,182,115	465,052,214	1,641,090,267	522,010,438			17
15,773,589,633	24,320,202	1,770,891,038	328,513,591			18
						19
2,653,727	1,930,127	81,463	12			20
19,695	1,764,604					21
						22
						23
						24
17,652,990,381	15,103,396,142	4,577,234,582	4,201,171,135			25
244,683,299	687,410,256	1,167,603,496	635,156,717			26

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr.) 4/11/2022	2021/Q4

STATEMENT OF INCOME

Line No.	Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)	Prior 3 Months Ended Quarterly Only No 4th Quarter (f)
27	NET UTILITY OPERATING INCOME		1,412,286,795	1,322,566,973		
28	OTHER INCOME AND DEDUCTIONS					
29	OTHER INCOME					
30	NONUTILITY OPERATING INCOME					
31	Revenues from Contract Work (415)					
32	(Less) Costs and Exp. of Contract Work (416)					
33	Rev. from Nonutility Operations (417)		30,684,974	6,120,577		
34	(Less) Exp. of Nonutility Operations (417.1)					
35	Nonoperating Rental Income (418)					
36	Equity in Earnings of Subs. (418.1)	119	379,208,249	29,086,863		
37	Interest and Dividend Income (419)		48,753,487	56,861,975		
38	AFUDC-Other (419.1)		132,828,736	140,080,186		
39	Miscellaneous Nonoperating Income (421)		14,493,970	21,522,402		
40	Gain on Disposition of Property (421.1)		4,103,575	81,540		
41	TOTAL OTHER INCOME (lines 30-39)		610,072,991	253,753,543		
42	OTHER INCOME DEDUCTIONS					
43	Loss on Disposition of Property (421.2)		444,082,199	43,530,137		
44	Miscellaneous Amortization (425)					
45	Donations (426.1)		16,896,203	8,172,778		
46	Life Insurance (426.2)					
47	Penalties (426.3)		8,902,382	25,533,353		
48	Civic, Political and Related Activities (426.4)		7,431,664	7,796,638		
49	Other Deductions (426.5)		196,886,058	189,124,167		
50	TOTAL OTHER INC. DED. (lines 42-48)		674,198,506	274,157,073		
51	TAXES APPLICABLE TO OTHER INC. & DED.					
52	Taxes Other Than Income Taxes (408.2)	262-263				
53	Income Taxes-Federal (409.2)	262-263		651,449		
54	Income Taxes-Other (409.2)	262-263	1	(1,770,469)		
55	Provision for Deferred Income Taxes (410.2)	234, 272-277	134,204,589	(121,916,110)		
56	(Less) Prov .for Deferred Inc. Taxes-Cr. (411.2)	234, 272-277	277,858,179	90,390,785		
57	Investment Tax Credit Adj.- Net (411.5)		(3,917,491)	(6,991,812)		
58	(Less) Investment Tax Credits (420)					
59	TOTAL TAXES ON OTHER INC/DED. (lines 51-57)		(147,571,080)	(220,417,727)		
60	NET OTHER INC/DED. (lines 41, 50, 59)		83,445,565	200,014,197		
61	INTEREST CHARGES					
62	Interest on Long Term Debt (427)		1,200,006,997	909,242,062		
63	Amortization of Debt Disc. and Expense (428)		68,983,271	49,782,057		
64	Amort. of Loss on Reacquired Debt (428.1)		13,507,902	14,024,025		
65	(Less) Amort. of Premium on Debt-Cr (429)		817,992	743,550		
66	(Less) Amort. of Gain on Reacquired Debt-Cr (429.1)		139,701	142,323		
67	Interest on Debt to Assoc. Cos. (430)		3,724,234			
68	Other Interest Expense (431)		129,144,156	174,148,932		
69	(Less) AFUDC-Borrowed Funds-Cr (432)		55,983,881	34,688,521		
70	NET INTEREST CHARGES (lines 61-68)		1,358,424,986	1,111,622,682		
71	INCOME BEFORE EXTRAORDINARY ITEMS (lines 27, 60, and 70)		137,307,374	410,958,488		
72	EXTRAORDINARY ITEMS					
73	Extraordinary Income (434)					
74	(Less) Extraordinary Deductions (435)					
75	Net Extraordinary Items (Line 73 less 74)					
76	Income Taxes-Federal and Other (409.3)	262-263				
77	Extraordinary Items After Taxes (Line 75 Less Line 76)					
78	NET INCOME (Lines 71 and 77)		137,307,374	410,958,488		

2022
ANNUAL REPORT

of

Pacific Gas and Electric Company
300 Lakeside Drive
Oakland, CA 94612

to the

Public Utilities Commission
of the
State of California
For the Year Ended December 31, 2022



Volume No. 2 (Form 2)

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr.) 5/5/2023	2022/Q4

STATEMENT OF INCOME

1. Enter in column (e) operations for the reporting quarter and in column (f) the balance for the same three-month period for the prior year.
2. Report in column (g) the year to date amounts for electric utility function; in column (i) the year to date amounts for gas utility, and in (k) the year to date amounts for other utility function for the current year.

Line No.	Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)
1	UTILITY OPERATING INCOME				
2	OPERATING REVENUES (400)	300-301	26,581,287,822	23,642,511,758	6,881,830,409
3	OPERATING EXPENSES			0	
4	Operation Expenses (401)	320-323	17,123,024,262	14,695,627,408	5,170,778,769
5	Maintenance Expenses (402)	320-323	3,162,206,754	3,546,958,150	699,763,698
6	Depreciation Expense (403)	336-337	3,602,215,596	3,146,069,757	879,809,143
7	Depreciation Exp. for Asset Retirement Costs (403.1)	336-337	-	-	
8	Amort. & Depl. of Utility Plant (404-405)	336-337	244,780,157	241,392,639	61,053,160
9	Amort. of Utility Plant Acq. Adj. (406)	336-337	-	-	
10	Amort. of Property Losses, Unrecovered Plant and Regulatory Study Costs (407)		- 13,397,111	- 13,397,111	3,349,278
11	Amort. of Conversion Expenses (407.2)		-	-	
12	Regulatory Debit (407.3)		12,060,000	12,060,000	3,015,000
13	(Less) Regulatory Credits (407.4)		1,072,653,184	1,229,192,672	477,271,979
14	Taxes Other Than Income Taxes (408.1)	262-263	837,135,608	758,468,798	208,688,192
15	Income Taxes - Federal (409.1)	262-263	7	(2)	-
16	Income Taxes -Other (409.1)	262-263	1	1,367,558	(2)
17	Provision for Deferred Inc. Taxes (410.1)	234-272-277	17,329,658,629	18,591,272,382	2,364,784,207
18	(Less) Provision for Deferred Inc. Taxes-Cr.(411.1)	234-272-277	18,416,881,192	17,544,480,671	3,012,855,456
19	Investment Tax Credit Adj.- Net (411.4)	266	-	-	
20	(Less) Gains from Disp. of Utility Plant (411.6)		82,886,801	2,735,190	21,127,379
21	Losses from Utility Plant (411.7)		167,053	19,695	2,458
22	(Less) Gains from Disposition of Allowance (411.8)		-	-	-
23	Losses from Disposition of Allowances (411.9)		-	-	
24	Accretion Expense (411.10)		-	- - 0	
25	TOTAL OPERATING EXPENSES (Lines 4-24)		22,752,224,001	0 22,230,224,963	5,879,989,089
26	NET UTILITY OPERATING INCOME (Line 2 minus line 25)		3,829,063,821	0 1,412,286,795	1,001,841,320

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmissio	(Mo, Da, Yr.) 5/5/2023	2022/Q4

STATEMENT OF INCOME

3. Report in column (h) the year to date amounts for electric utility function; in column (j) the year to date amounts for gas utility, and in (l) the year to date amounts for other utility function for the previous year. '4. If additional columns are needed, place them in a footnote.

ELECTRIC UTILITY		GAS UTILITY		OTHER UTILITY		
Current Year to Date (g)	Prior Year to Date (h)	Current Year to Date (i)	Prior Year to Date (j)	Current Year to Date (k)	Prior Year to Date (l)	Line No.
						1
19,713,571,467	17,897,673,680	6,867,716,355	5,744,838,078		0	2
						3
13,001,612,729	11,393,769,310	4,121,411,533	3,301,858,098			4
2,670,028,606	3,008,519,641	492,178,148	538,438,509			5
2,766,533,077	2,406,187,594	835,682,519	739,882,163			6
-	-	-	-			7
179,547,995	176,191,357	65,232,162	65,201,282		0	8
-	-	-	-			9
						10
13,397,111	13,397,111	-	-			
-	-	-	-			11
12,060,000	12,060,000	-	-			12
956,229,628	1,080,179,342	116,423,556	149,013,330			13
594,298,276	535,652,340	242,837,332	222,816,458			14
21,161,320	8,254,589	(21,161,313)	(8,254,591)			15
9,771,726	5,179,331	(9,771,725)	(3,811,773)			16
15,695,744,541	16,950,182,115	1,633,914,088	1,641,090,267			17
16,796,539,207	15,773,589,633	1,620,341,985	1,770,891,038			18
-	-	-	-			19
55,793,729	2,653,727	27,093,072	81,463		0	20
167,053	19,695	-	-			21
-	-	-	-			22
-	-	-	-			23
-	-	-	-			24
17,155,759,870	17,652,990,381	5,596,464,131	4,577,234,582		0	25
2,557,811,597	244,683,299	1,271,252,225	1,167,603,496		-	26

Name of Respondent	This Report Is:	Date of Report	Year/Period of Report
PACIFIC GAS AND ELECTRIC COMPANY	(1) * An Original (2) A Resubmission	(Mo, Da, Yr.) 5/5/2023	2022/Q4

STATEMENT OF INCOME

Line No.	Account (a)	(Ref.) Page No. (b)	Total Current Year to Date Balance for Quarter/Year (c)	Total Prior Year to Date Balance for Quarter/Year (d)	Current 3 Months Ended Quarterly Only No 4th Quarter (e)	Prior 3 Months Ended Quarterly Only No 4th Quarter (f)
27	NET UTILITY OPERATING INCOME		3,829,063,821	1,412,286,795		
28	OTHER INCOME AND DEDUCTIONS					
29	OTHER INCOME					
30	NONUTILITY OPERATING INCOME					
31	Revenues from Contract Work (415)		0	0		
32	(Less) Costs and Exp. of Contract Work (416)		0	0		
33	Rev. from Nonutility Operations (417)		36,137,398	30,684,974		
34	(Less) Exp. of Nonutility Operations (417.1)		0	0		
35	Nonoperating Rental Income (418)		0	0		
36	Equity in Earnings of Subs. (418.1)	119	464,342,361	379,208,249		
37	Interest and Dividend Income (419)		194,313,214	48,753,487		
38	AFUDC-Other (419.1)		184,225,481	132,828,736		
39	Miscellaneous Nonoperating Income (421)		2,759,119	14,493,970		
40	Gain on Disposition of Property (421.1)		6,694,746	4,103,575		
41	TOTAL OTHER INCOME (lines 30-39)		888,472,319	610,072,991		
42	OTHER INCOME DEDUCTIONS					
43	Loss on Disposition of Property (421.2)		543,424,419	444,082,199		
44	Miscellaneous Amortization (425)		0	0		
45	Donations (426.1)		16,996,589	16,896,203		
46	Life Insurance (426.2)		0	0		
47	Penalties (426.3)		9,728,750	8,902,382		
48	Civic, Political and Related Activities (426.4)		8,511,607	7,431,664		
49	Other Deductions (426.5)		384,053,258	196,886,058		
50	TOTAL OTHER INC. DED. (lines 42-48)		962,714,623	674,198,506		
51	TAXES APPLICABLE TO OTHER INC. & DED.					
52	Taxes Other Than Income Taxes (408.2)	262-263	0	0		
53	Income Taxes-Federal (409.2)	262-263	151,646	0		
54	Income Taxes-Other (409.2)	262-263	1	1		
55	Provision for Deferred Income Taxes (410.2)	234, 272-277	125,035,881	134,204,589		
56	(Less) Prov .for Deferred Inc. Taxes-Cr. (411.2)	234, 272-277	237,675,664	277,858,179		
57	Investment Tax Credit Adj.- Net (411.5)		(5,192,824)	(3,917,491)		
58	(Less) Investment Tax Credits (420)		0	0		
59	TOTAL TAXES ON OTHER INC/DED. (lines 51-57)		(117,680,960)	(147,571,080)		
60	NET OTHER INC/DED. (lines 41, 50, 59)		43,438,656	83,445,565		
61	INTEREST CHARGES					
62	Interest on Long Term Debt (427)		1,302,886,803	1,200,006,997		
63	Amortization of Debt Disc. and Expense (428)		54,829,547	68,983,271		
64	Amort. of Loss on Reacquired Debt (428.1)		16,245,343	13,507,902		
65	(Less) Amort. of Premium on Debt-Cr (429)		1,326,141	817,992		
66	(Less) Amort. of Gain on Reacquired Debt-Cr (429.1)		139,701	139,701		
67	Interest on Debt to Assoc. Cos. (430)		234,025,480	3,724,234		
68	Other Interest Expense (431)		121,099,256	129,144,156		
69	(Less) AFUDC-Borrowed Funds-Cr (432)		81,395,326	55,983,881		
70	NET INTEREST CHARGES (lines 61-68)		1,646,225,261	1,358,424,986		
71	INCOME BEFORE EXTRAORDINARY ITEMS (lines 27, 60, and 70)		2,226,277,216	137,307,374		
72	EXTRAORDINARY ITEMS					
73	Extraordinary Income (434)		0	0		
74	(Less) Extraordinary Deductions (435)		0	0		
75	Net Extraordinary Items (Line 73 less 74)		0	0		
76	Income Taxes-Federal and Other (409.3)	262-263	0	0		
77	Extraordinary Items After Taxes (Line 75 Less Line 76)		0	0		
78	NET INCOME (Lines 71 and 77)		2,226,277,216	137,307,374		

From: Kyle M. White
To: Public Comment
Subject: [EXTERNAL] Proposed Rate changes
Date: Thursday, September 7, 2023 12:37:44 PM

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Do the changes include similar increases to the rate paid for residential solar?

If not, this will further widen the gap between what residential solar generators pay and receive, thus even further reducing the incentive for solar.

It only seems fair that a similar increase be made to the rate paid for excess solar generation.

Kyle White
(916) **572-8697**

From: Tamara Eugene
To: Public Comment
Subject: [EXTERNAL] I Appose
Date: Thursday, September 21, 2023 3:53:24 PM

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon, I am APPOSED or AGAINST the rate hikes Smud plans on raising the hikes for the next two days. Thank you.

Tamara Eugene-Raja

From: John
To: Public Comment
Subject: [EXTERNAL]
Date: Thursday, September 21, 2023 4:38:42 PM

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Please don't raise rates I oppose because most Americans can't afford increase thank you so much sincerely John

Exhibit to Agenda Item #14

Cast vote on **Sacramento Local Agency Formation Commission (LAFCo)** ballot regarding i) the election of a Special District Representative; ii) distribution of ballots by email; and iii) submission of completed ballots by email.

Board of Directors Meeting

Thursday, September 21, 2023, scheduled to begin at 6:00 p.m.

SMUD Headquarters Building, Auditorium

LAFCo Ballot

- Due to the size of the Special District Selection Committee, LAFCo has determined to conduct the Committee's business in writing pursuant Gov. Code § 56332(f).
- All votes are due in writing on or before 5:00 p.m. on September 30, 2023.
- Election Ballot:
    1) Special District Representative to LAFCo Regular Seat #7.
    2) Option to complete the election of special district representatives via email – approval of LAFCo distributing electronic ballots to districts that wish to receive them in the future.
    3) Does SMUD prefer to receive its ballot via email and submit its vote electronically (via fax, email or scanned ballot).

Election of Special District Representative to LAFCo

Nominees (in alphabetical order) – Select One:

1) Lindsey Carter, Herald File Protection District [Incumbent]
2) Brian Danzl, Cordova Recreation & Park District
3) Paul Lindsey, Florin Resource Conservation District
4) Joanna McVay, North Highlands Recreation & Park District
5) Edwin Perez, Reclamation District 1000
6) Michael Seaman, Fulton El Camino Recreation & Park District
7) Robert “Bob” Wichert, Sacramento Suburban Water District

Option of Electronic Elections (Item 1)

LAFCo and Special Districts have the option of completing the election of special district representatives via email. Does your district approve of LAFCo distributing electronic ballots to districts that wish to receive them in the future?

A "Yes" vote means SMUD authorizes LAFCo to send out ballots via email to those special districts who choose to vote electronically in future elections.

A "No" vote means LAFCo should continue to distribute paper ballots to all districts and distribute them via certified mail.

Option of Electronic Elections (Item 2)

If so, in the future does your district prefer to receive its ballot via email and submit its vote electronically (via fax, email or scanned ballot)?

A "Yes" vote means SMUD wishes to receive electronic ballots in future elections and have the option to return its ballot in an electronic format (email, fax or scanned ballot).

A "No" vote means SMUD prefers to continue to receive and submit paper ballots.

Requested Action

1) Select a candidate for SMUD's vote to serve as Special District Representative to LAFCo Regular Seat # 7.

2) Approve LAFCo's distribution of electronic ballots to districts that wish to receive them in the future.
   - Staff recommends a "Yes" vote.

3) Approve SMUD's receipt of LAFCo ballots via email and to submit SMUD's vote electronically (via fax, email or scanned ballot).
   - Staff recommends a "Yes" vote.

College/Glen Neighborhood Association

September 21, 2023

To: SMUD Board: Brandon Rose, Nancy Bui-Thompson, Gregg Fishman, Rosanna Herber, Rob Kerth, Dave Tamayo & Heidi Sanborn

From: Annette Deglow, President
College-Glen Neighborhood Association
8424 Olivet Court • Sacramento, CA 95826
Home: 383-6621 Cell: 806-3138

Regarding: **Oki Park Easement**

The College-Glen Neighborhood Association/Foundation asks that the City of Sacramento, SMUD and WAPA enforce the ALREADY POSTED No trespassing, No dumping, and No camping for the Oki South Easement Area. At the same time, we are asking that the City of Sacramento, SMUD and WAPA clear the field of all weeds, levels the ground and installs a temporary compacted dirt or gravel-based parking lot with weed control until a more permanent parking lot can be provided. The Association/Foundation believes doing so will reduce the risk of fire and provide much needed area parking.

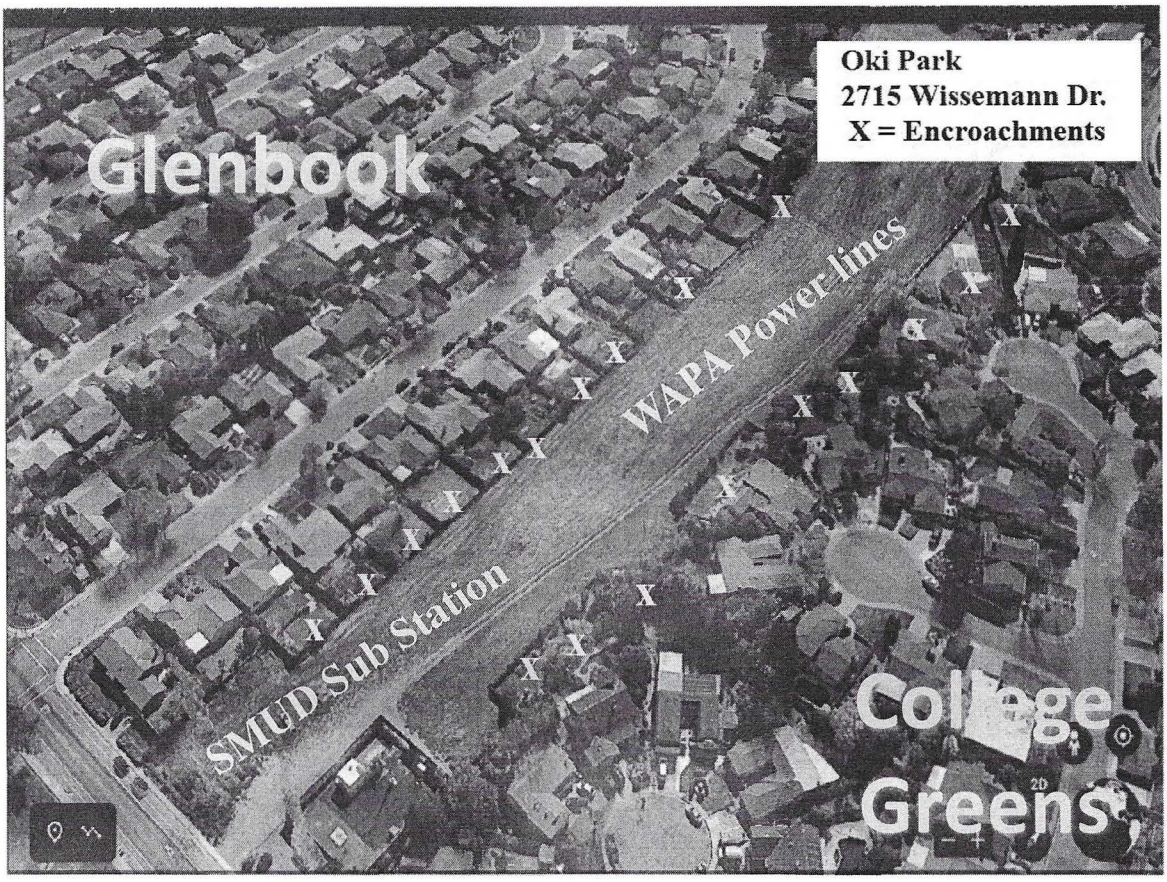
Every year SMUD grants hundreds of thousands of dollars for community projects. We are not asking for beautification: we need safety under the SMUD and WAPA power lines. The need has been here for ***more than 50-years***. Please enforce your regulations and use some of your community resources to make this area safe and useful for the community.

Please see the attached photos related to the August 11, 2023, fire in the Oki South Easement Area.

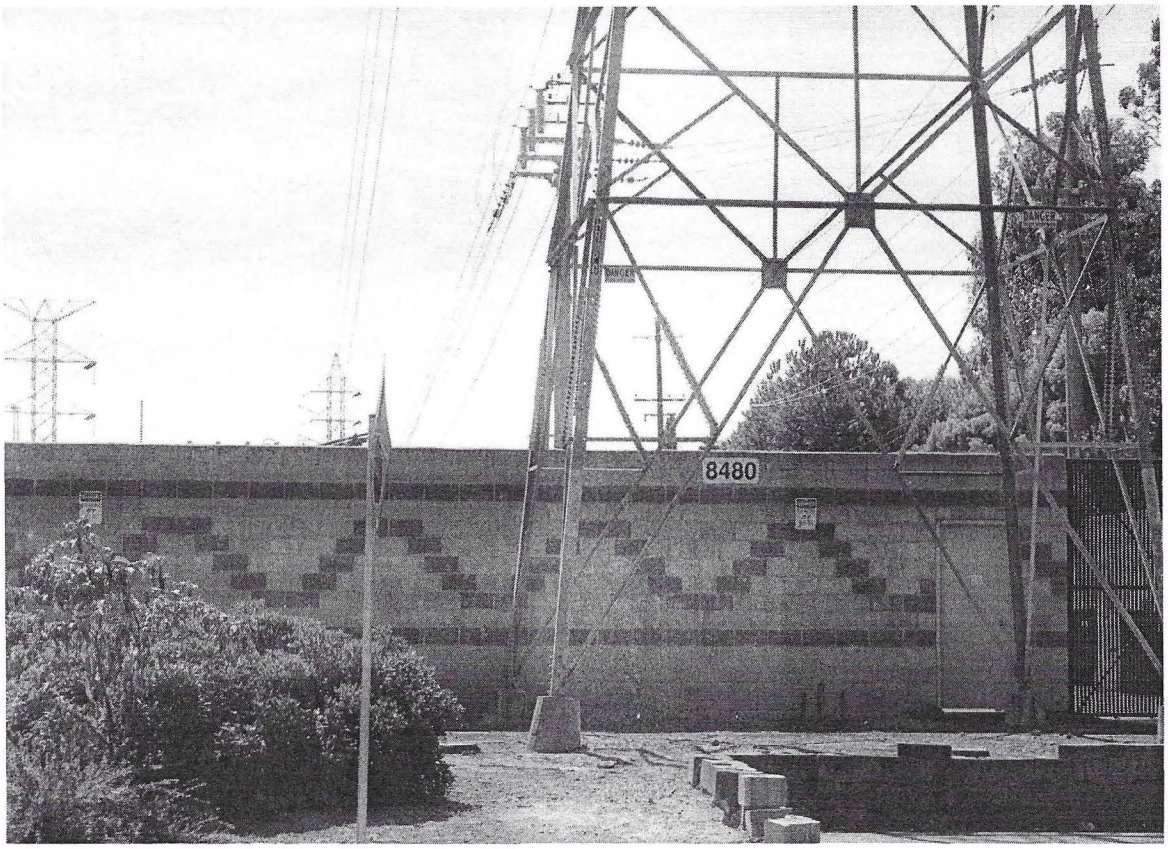
The photos document the absence of enforcement as related to "NO TRESPASSING" and that SMUD has a substation at this site.

The photos also document that there was a fire at the site and the next day there was a need for parking in the area and park users ignored the signs and parked in the burn area. The photos also document there continues to be a significant amount of fuel for another fire. Collectively, the photos document a potential danger and need for the City, SMUD and WAPA to take action to enforce the posted regulations and to make the area safe and useful for the community.

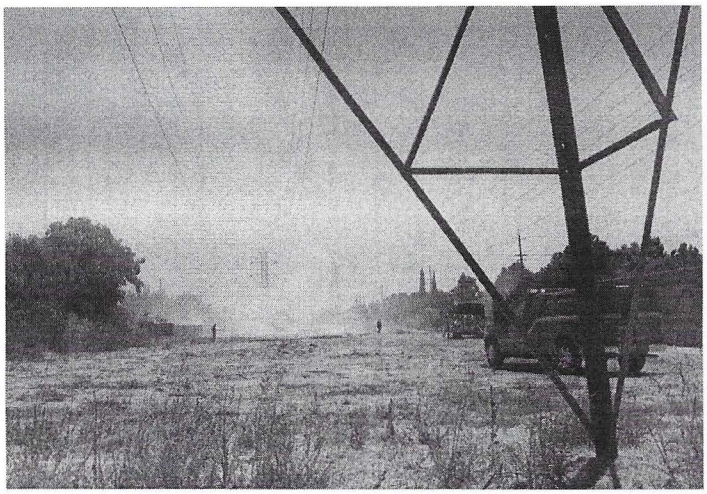
ec: CGNA/Foundation Boards
Councilmember Eric Guerra
WAPA

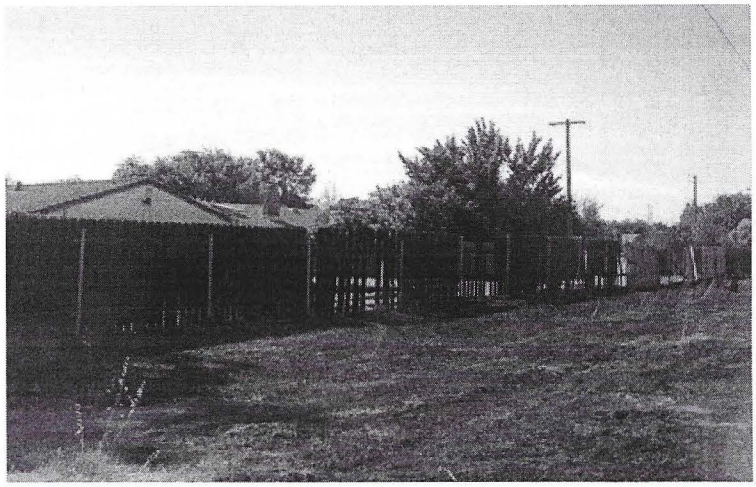


Oki Park Easement

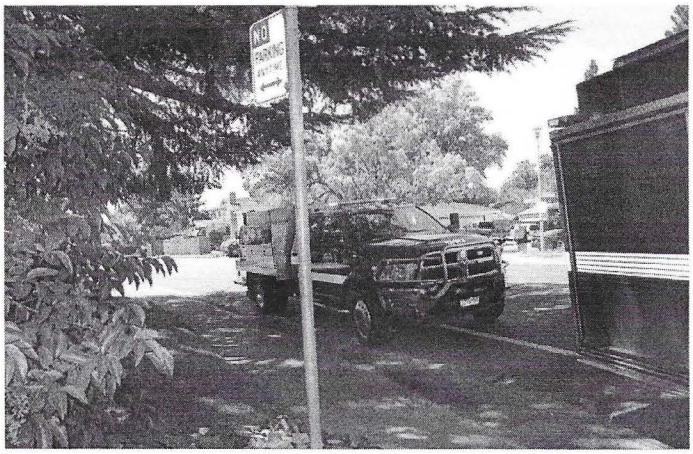


SMUD Substation



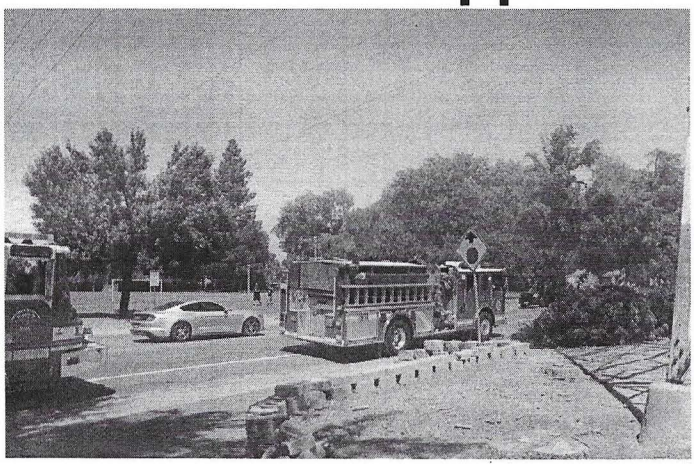


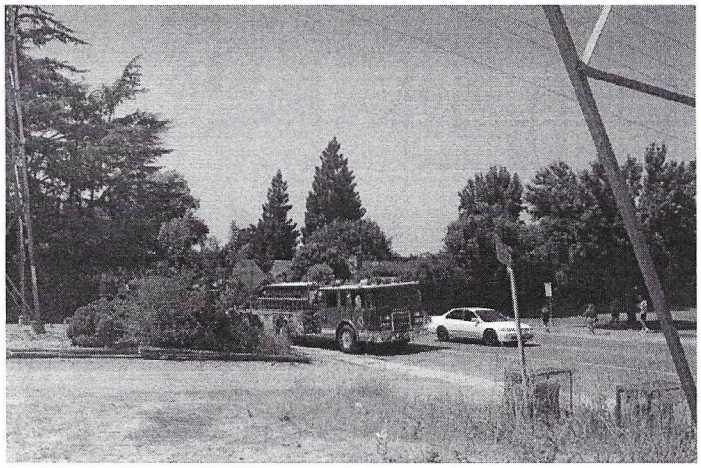
Fire Friday, August 11, 2023 - midafternoon

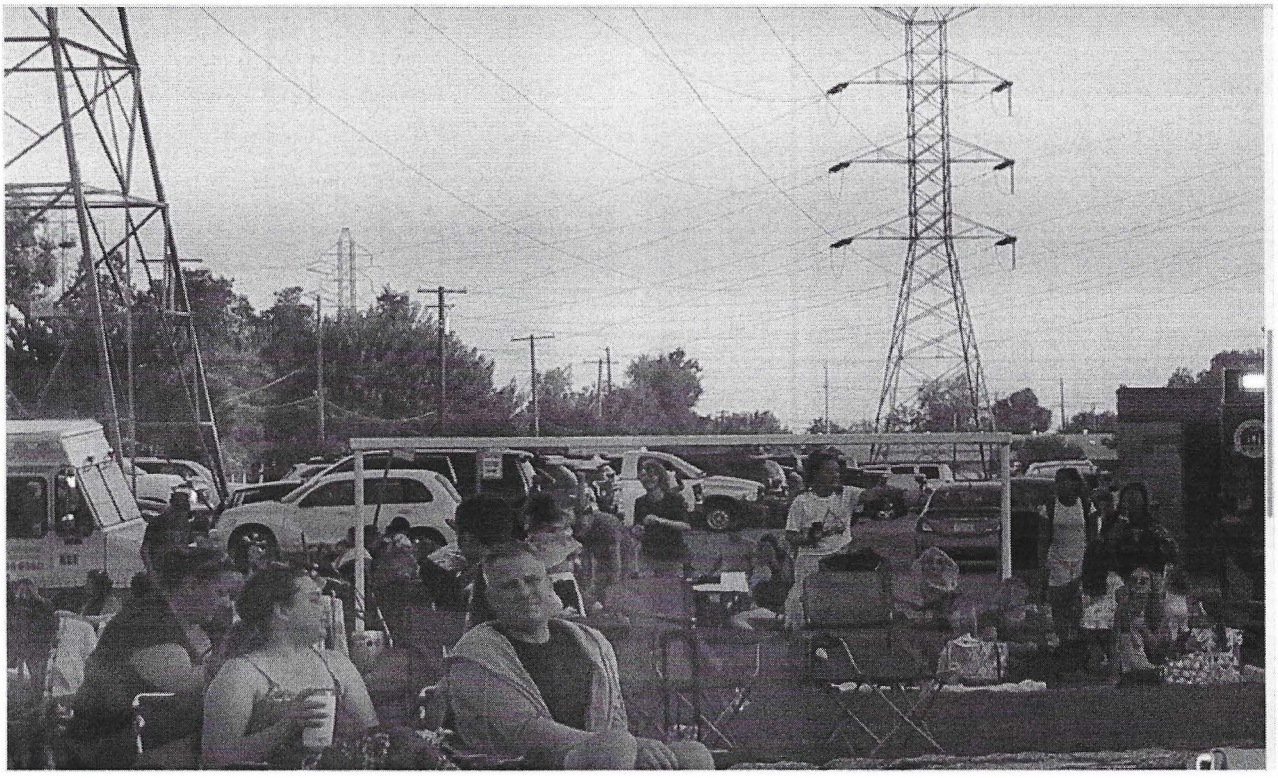




Support for Station 60







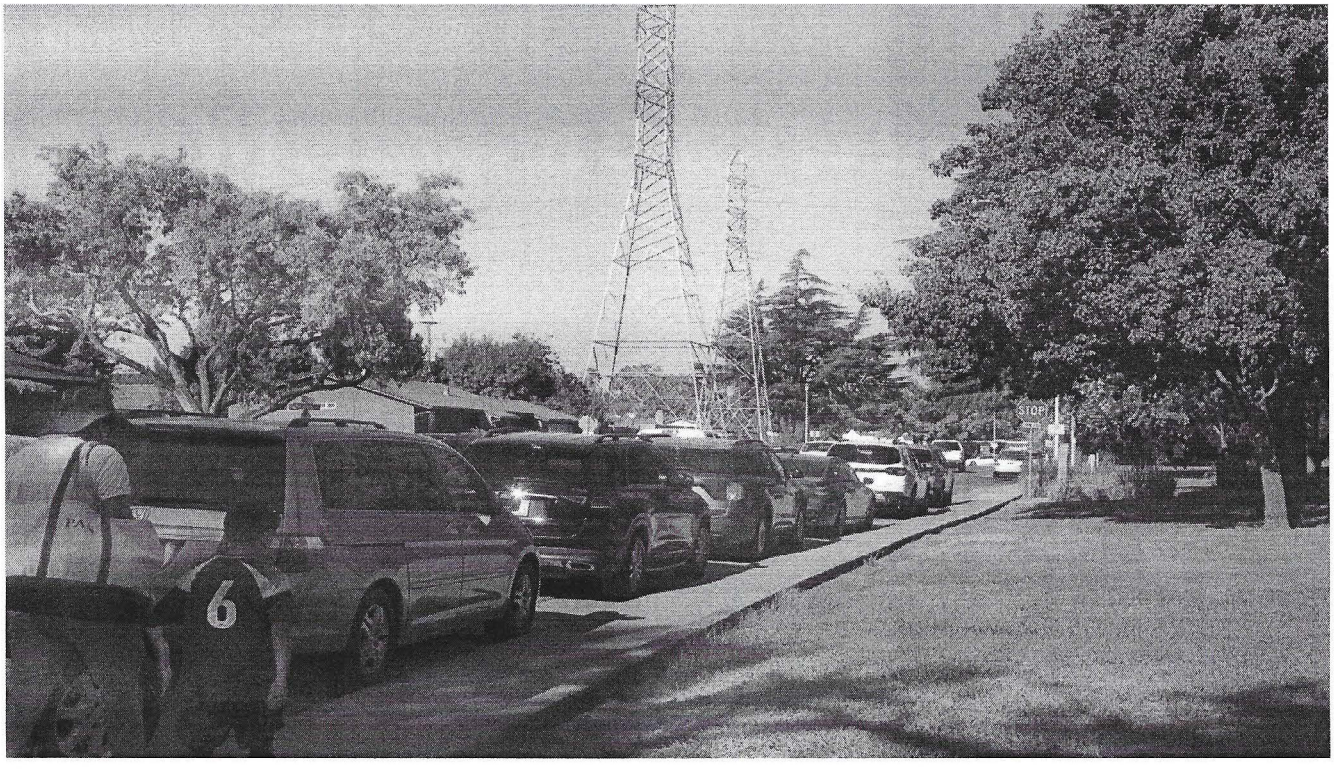
Movie in Oki Park 2022



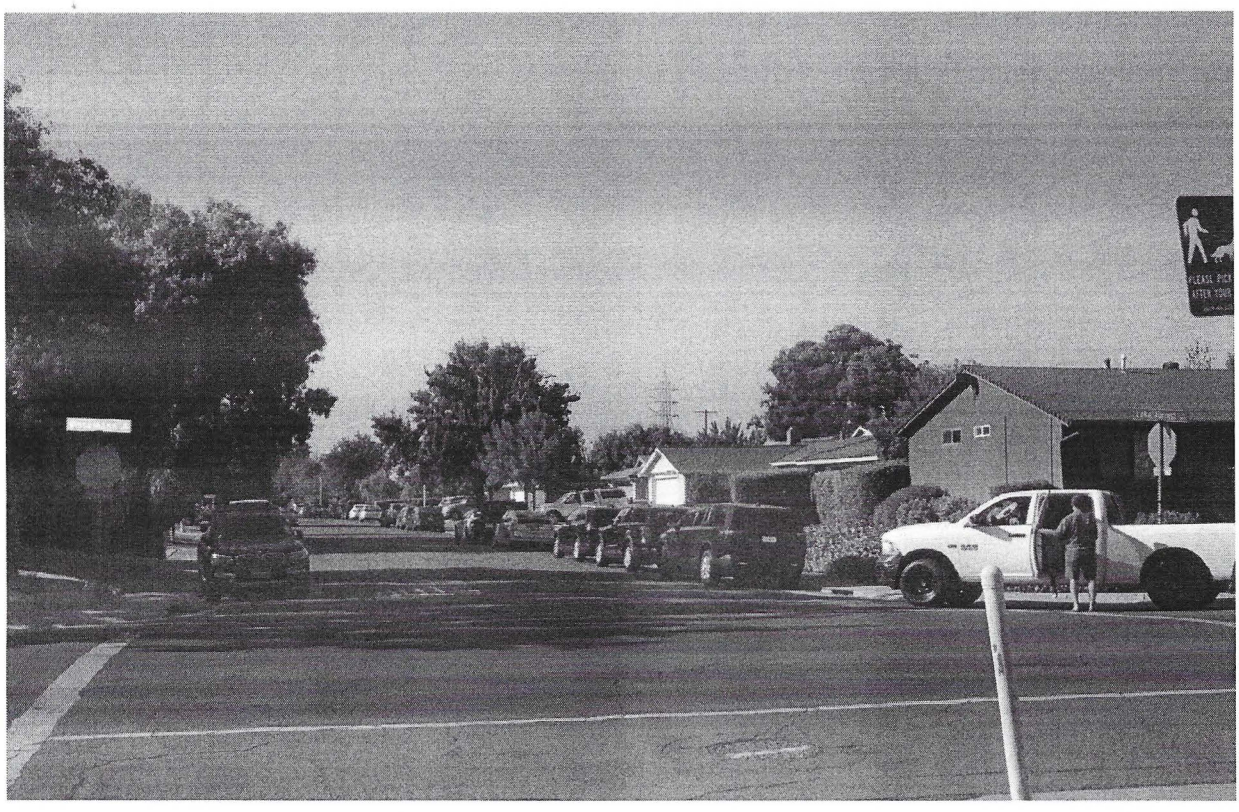
Soccer in Oki Park 2023



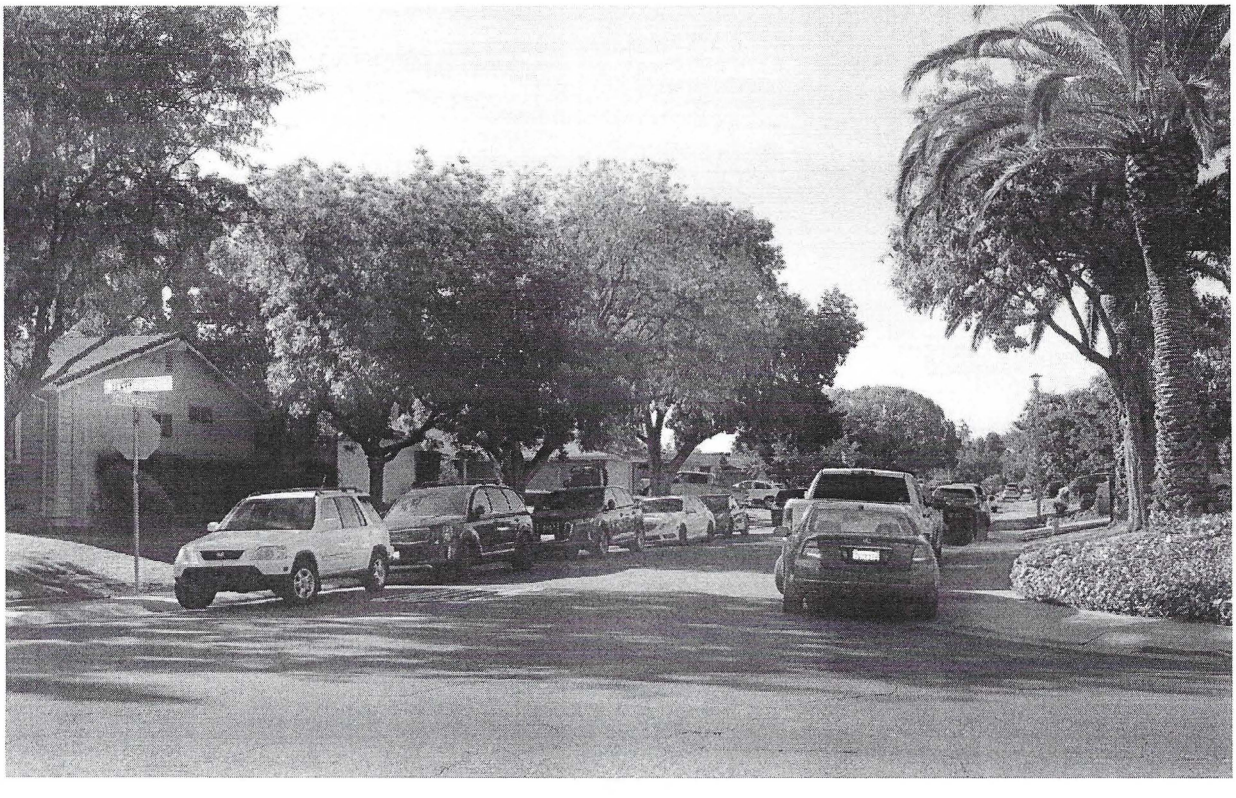
Wissemann Drive to the East



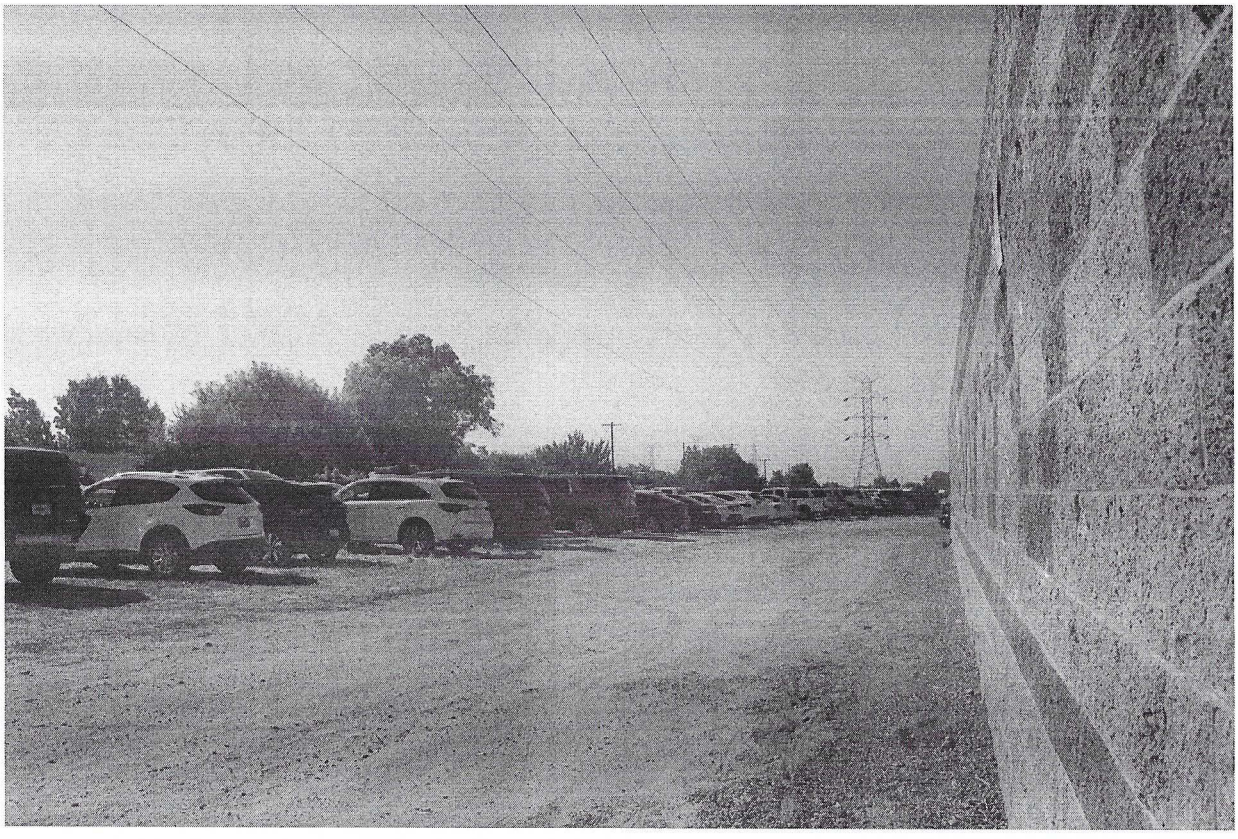
Wissemann Drive to the West



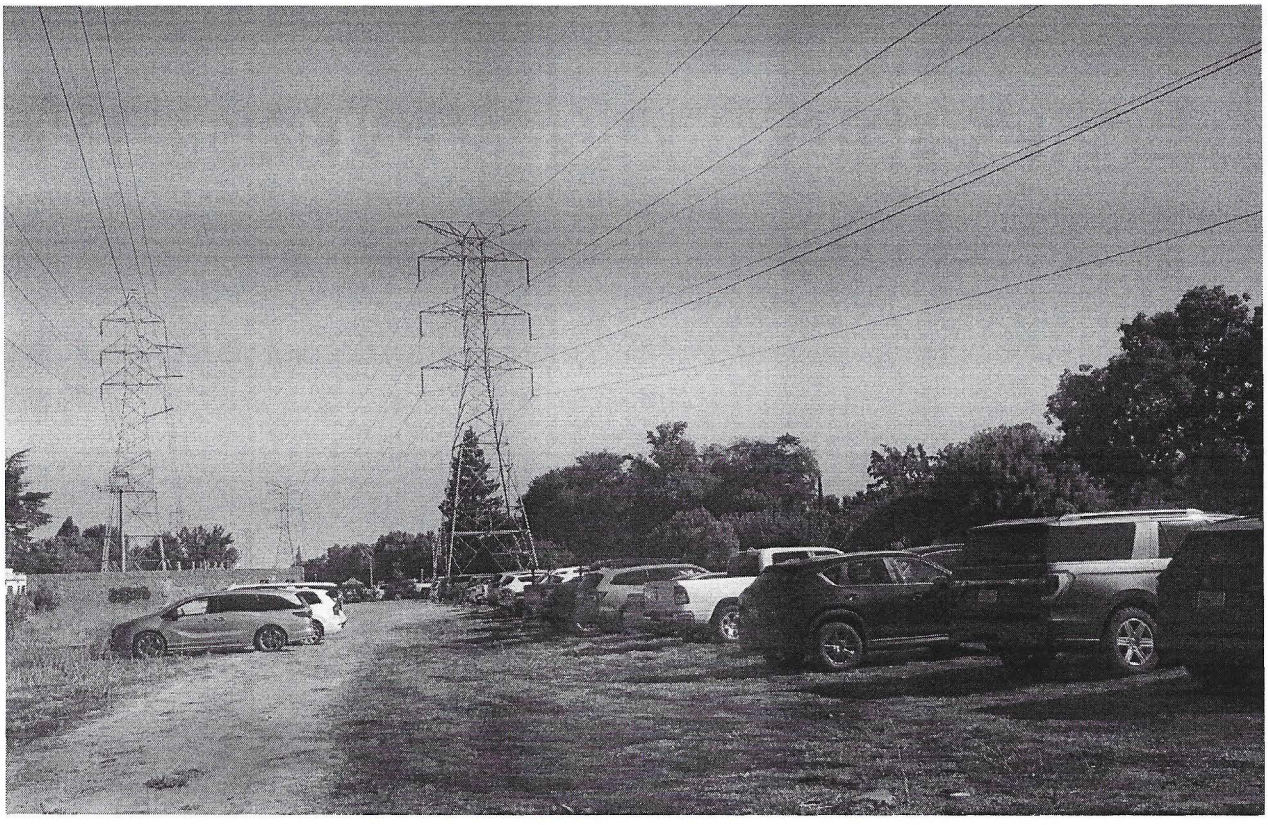
Everglade Drive off Lake Forest Drive

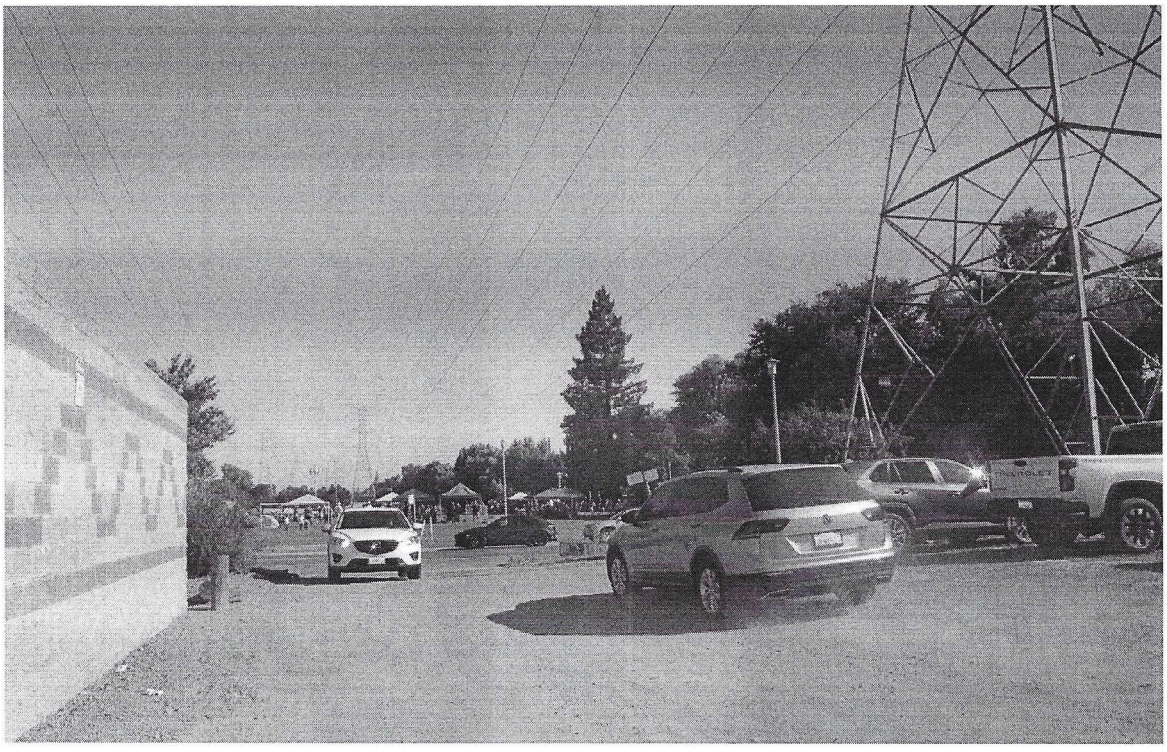


Cliffwood Drive off Wissemann Drive

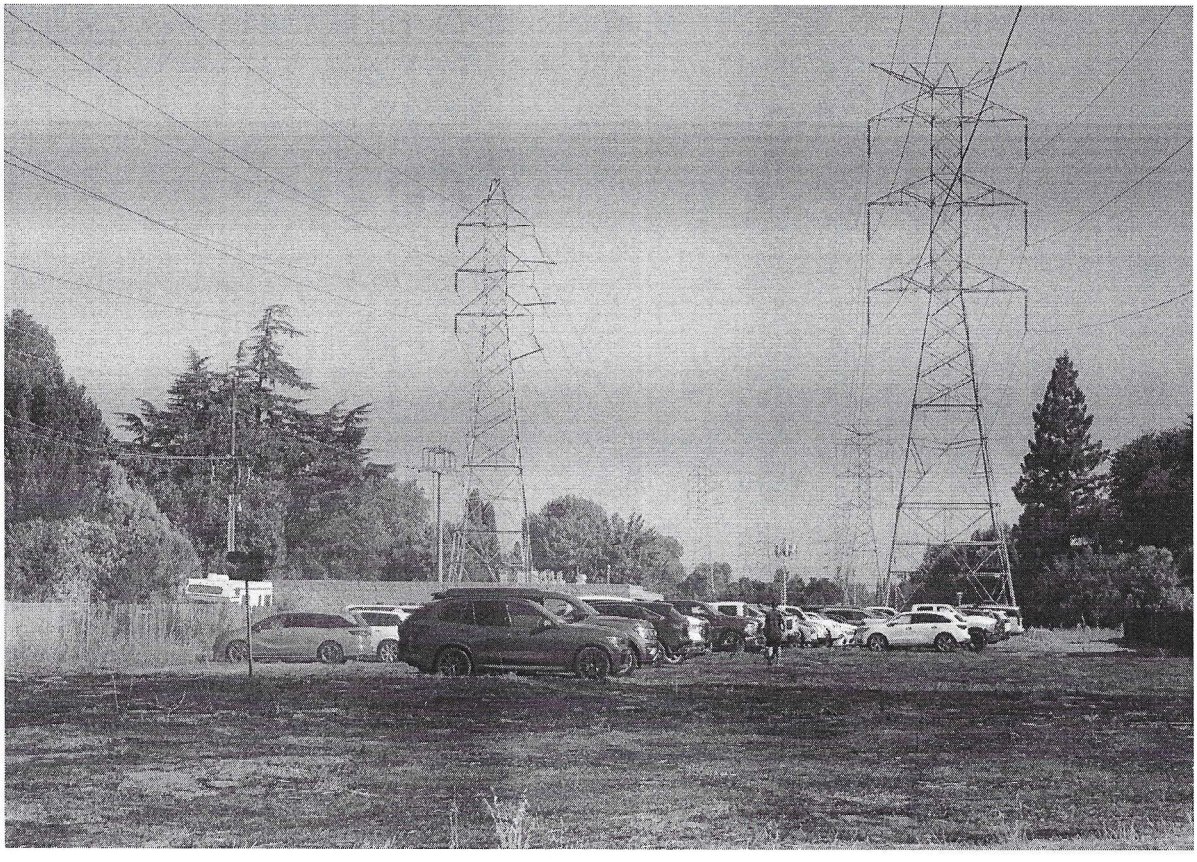


Easement Parking the day after the fire



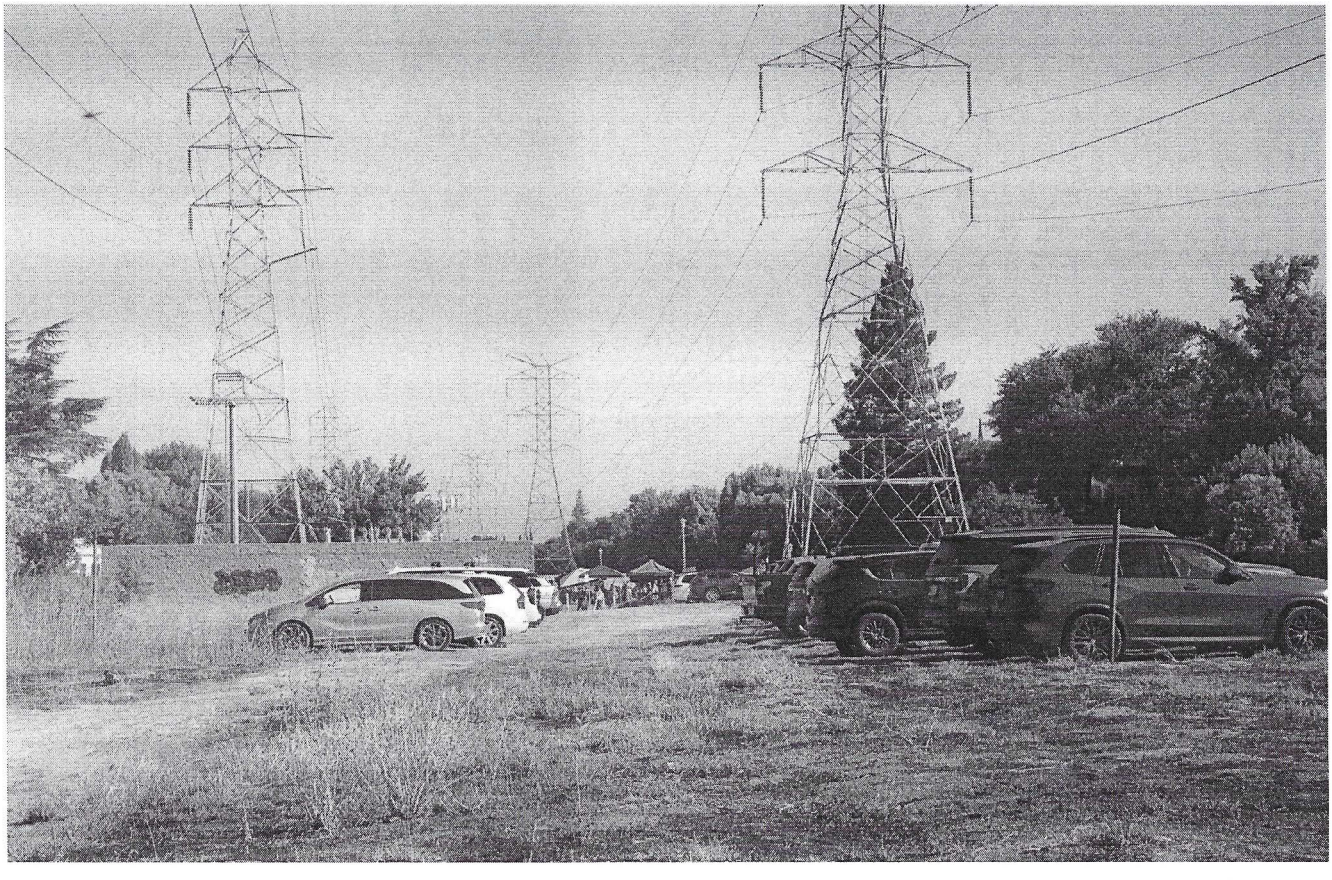


Oki Park Easement Parking





Fule for the Another Fire





Oki Park Easement Parking



From: Jay
To: Public Comment
Subject: [EXTERNAL] Billing policy
Date: Tuesday, September 12, 2023 8:24:37 AM

CAUTION: This email originated from outside of SMUD. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello, my name is James Potter. I have been a smart customer for. 8 to 10 years I recently moved into an apartment when I did the bills from the prior resident was added to my account for a year now I've been trying to have it removed with no luck. Everything that I was asked to present I did the gentleman that asked for everything called me two weeks later told me that I didn't send everything in on time and now that bill is mine and there's nothing I can do about it I don't understand how you guys think it's right to add a bill that's clearly not related to the tenant to their account it was obviously an account it was open by someone else. It was in somebody else's name it's not possible for it to be my bill because I had service in another residence at the time and I don't understand how it would even be legal for you to add this wheel to mine , I believe the policy should be looked at and changed so that you are not adding an extra burden to your customers by making them pay bills they clearly do not belong to them and may be making it easier to address the concerns of the bill I've called multiple times every time I call I'm told it there's no record of me calling previously, I asked for paperwork to be sent out so that I may contest the bill not once have I received the paperwork. All I get told is to come into the office which I would have to take a day off of work to do so I don't think it's right that I should have to miss out on work to prove somehow the building it was not in my name is not mine

SSS No.	Committee Meeting & Date
E,S RES 23-05	Policy, October 11, 2023
	Board Meeting Date: October 19, 2023

BOARD AGENDA ITEM

STAFFING SUMMARY SHEET

TO		TO	
1.	Frankie McDermott	6.	Claire Rogers
2.	Jennifer Davidson	7.	
3.	Brandy Bolden	8.	
4.	Farres Everly	9.	**Legal**
5.	Suresh Kotha	10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Ellias van Ekelenburg	Env, Safety, and Real Estate Services	B209	7475	09/14/2023

NARRATIVE:

Requested Action: Accept the monitoring report for Strategic Direction SD-6, Safety Leadership.

Summary: Report on the status of Strategic Direction SD-6 Safety, for safety performance from January through June of 2023. Report addresses safety leadership accomplishments during the first 6 months of the year, current Days Away Restricted Time numbers, and safety opportunities and challenges.

Board Policy: *(Number & Title)* This report supports the SD-6 Core Value of Safety by providing a safety performance status.

Benefits: Provide the scheduled bi-annual monitoring report as requested by the Board of Directors and Executive Staff. The report provides an opportunity to make recommendations or policy revisions, as necessary.

Cost/Budgeted: None

Alternatives: Provide the Board monitoring report without a presentation.

Affected Parties: Board of Directors, Executive Staff

Coordination: Organization-wide

Presenter: Ellias van Ekelenburg, Director of Environmental, Safety, and Real Estate Services

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
SD-6, Safety Leadership Board Monitoring Report	5

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

SACRAMENTO MUNICIPAL UTILITY DISTRICT

OFFICE MEMORANDUM

TO: Board of Directors **DATE:** September 28, 2023

FROM: Claire Rogers *CR 9/28/23*

SUBJECT: **Audit Report No. 28007612**
Board Monitoring Report; SD-6: Safety Leadership

Internal Audit Services (IAS) received the SD-6 *Safety Leadership* first-half 2023 Biannual Board Monitoring Report and performed the following:

- Selected a sample of statements and assertions in the report for review.
- Interviewed report contributors and verified the methodology used to prepare the statements in our sample.
- Validated the reasonableness of the statements in our sample based on the data or other support provided to us.

During the review, nothing came to IAS' attention that would suggest the items sampled within the SD Board Monitoring report did not fairly represent the source data available at the time of the review.

CC:

Paul Lau

DRAFT

Board Monitoring Report 1st and 2nd Quarters, 2023
Strategic Direction SD-6, Safety Leadership

1. Background

Strategic Direction SD-6, Safety Leadership states that:

Creating a safe environment for employees and the public is a core value of SMUD.

Through best practice methods and continuous improvement, SMUD will be recognized as a leader in employee safety while also assuring the safety of the public related to SMUD operations and facilities. SMUD commits to a proactive approach, including the active involvement of SMUD leadership, employees, contractors, and the community, as well as comprehensive monitoring of organizational and public safety performance.

Therefore, SMUD will continue to improve safety results to:

Workplace Safety

a) Reduce SMUD's injury severity incidents to 13 or less than by 2025, as measured by OSHA's Days Away Restricted Time (DART), a rate that demonstrates top quartile safety performance for similar size utilities using the Bureau of Labor Statistics (BLS) work-related safety data.

b) Provide timely, quality health care for injured employees that aids their recovery while maintaining positive financial performance of the workers' compensation program.

Contractor Safety

a) Support contractors to reduce and eliminate potential hazards for Serious Injuries and/or Fatality (SIF) when conducting high risk work.

Public Safety

a) Track and report injuries to the public related to SMUD operations or facilities.

b) Implement measures to protect the public from injuries related to SMUD operations or facilities.

2. Executive Summary

SMUD is in compliance with the SD-6 direction and is in alignment with SMUD's new 5-year strategy of working toward a zero-incident culture.

Workplace Safety
SMUD has recorded 21 OSHA Recordables injuries in the first half of 2023. This is a 40% increase from this time last year (15 OSHA Recordables). Of the 21 injuries, 7 DART (4 Lost Time & 3 Modified Duty injuries) resulted in a 0.66 DART rate. Although we have seen an uptick in workplace injuries during the first and second quarter, SMUD is still on track to meet the 2025 Target (See Appendix A).

Quality care of injured employees is measured through the Workers' Compensation program's performance, which is assessed annually by an independent actuary. SMUD continues to have a reduction in claims over the past three years, a reduction in injury frequency rates, and a reduction in indemnity benefits as presented below.

	2018	2019	2020	2021	2022
No. of Claims (Medical & Indemnity)	120	85	89	59	54
Incident rate per 100 employees	5.06	3.6	2.3	2.4	2.2
Rates per $100 payroll	.98	.94	.94	.85	.67

This year has continued to present challenges with COVID-19. COVID-19 has not only impacted the way SMUD is getting work done but has also resulted in new and emerging legislation surrounding paid leave and workers' compensation liabilities for COVID related injuries. Despite these challenges SMUD's program remains strong and continues to lead when compared with similarly situated organizations. No COVID-19 claims were made in 2023.

Contractor Safety
SMUD continues to use ISN to evaluate safety records and performance for high-risk contractors. This evaluation focuses on Contractor Fatality History, OSHA Citation History, DART and Total Recordable Incident Rates (TRIR), Insurance Experience Ratio, Safety Culture Questions, and Safety Program Review. Currently SMUD has 100 contractors in the ISN system.

This year we have increased the number of site safety evaluations for high-risk contractors to validate safety performance on the jobsites. Safety has completed **137** site safety visits through the 2nd Quarter of 2023 and are well on our way to meet the 2023 goal of 200 evaluations. These visits focus on SMUD contractors who work with Power Generation, Environmental Services, Line, Substation, Facilities and Vegetation Management on projects where high-risk work is performed. This work includes high voltage work, working at heights, vegetation management, confined spaces, excavations, etc. Additionally, we have fully integrated the use of the Safety Management System (SMS) for inspections, incident tracking, reporting and investigations of SMUD contractors. This allows SMUD to verify safe working practices by our contractors to reduce the potential for serious injuries or property damage. Contractor reported incidents require an investigation to be completed, and typically will warrant additional site safety visits to verify corrective measures have been put into place to reduce further occurrences.

In addition, SMUD Procurement and Safety have partnered to enhance contract language as it relates to contractor safety requirements, Request for Proposal (RFP) templates for high-risk work and incorporating contractor safety as part of the onboarding process.

Public and Community Safety
SMUD tracks public and community incidents in the Safety Incident Tracking System (SITS) involving car-pole, electrical contact, dig-in incidents, and injuries to the public that are related to SMUD's operations or facilities. For the first half of 2023, there have been 128 incidents where the public struck a SMUD asset with a vehicle, with three fatalities from such events. 36 dig-ins have been reported with no injuries.

3. Additional Supporting Information

The new SD-6 Safety Direction became effective February 2021. Our goal is to achieve the desired performance objectives by year-end 2025. This report summarizes the first half of the 2023 safety performance.

Safety Leadership. The Safety Team continues with its integration efforts to support Executive Leadership's 5-year plan that emphasizes zero incidents and injuries and a focus on a zero-incident safety culture. SMUD's Chief Executive Officer (CEO) Paul Lau, re-emphasized the need to improve safety at SMUD with a greater focus on improving our "Safety for Life" culture, reducing the risk of serious injuries and fatalities, implementing a safety management system (SMS), and improving the analysis of injury and incident trends. These goals and strategies are outlined in SMUD's Safety Road Map, which was revised in 2023.

Safety Management System (SMS). During the first half of 2023, Safety continued to focus on optimization of Benchmark Gensuite the new Safety Management System (SMS). Online processes are currently in use. The Safety team continue to be enhanced and new processes are being introduced to employees within various applications in SMS. This includes the recording of field tailboards, safety inspections, supervisor employee interactions, EMF meter loans, contractor safety, office and field ergonomics and more. Customized dashboards are being created and will start rolling out during the second half of the year.

Safety Standards Development. SMUD's safety team continues to update Health & Safety Standards, as a foundation and in support of the organization's World Class Safety initiatives. The Standards routing process was improved in January 2023, when the feedback for the SMS "Doc Manager" application was not favorably received by end users. The Core Safety Standards Team is now utilizing the same routing process as the Sacramento Power Academy, through SharePoint and using docusign. During 2023 the following procedures were updated; heat illness prevention, contractor safety, and fall protection.

The Standards Team has also implemented the regulatory updates issued from the California Department of Public Health (per CA/OSHA regulations) on COVID-19 requirements, to ensure our Injury Illness Prevention Program (IIPP) and COVID-19 Appendix reflect the most up-to-date regulatory requirements. Information on the updates have been provided to all SMUD personnel in various formats, including Safety Meetings, ENN's, on-site electronic monitors, drop-in meetings, and Safety Training.

Supervisor-Employee Interactions. Safety continues to strengthen the quality of the supervisor-employee interaction program by improving inspections and moving the process to the Safety Management System (SMS). Emphasis is placed on field visits for work with the

highest hazard potential. Team Members continued visiting various crews throughout SMUD, to assist with employee safety concerns, processes, procedures, and equipment. For office personnel, an emphasis is placed on observing personnel pertaining to ergonomic risk, and slip/trip/fall hazards in walking areas. During the first half of 2023, a total of 6,495 Supervisor-Employee interactions were complete that resulted in a 132% percentage observed.

Near Miss Reporting. Leadership continues to support and encourage near miss and positive observation/good catch reporting. The goal of this process is to identify opportunities for learning, to prevent incidents from occurring. During the first two quarters of 2023, 84 near miss and positive observation/good catch reports have been reported and recorded in the Safety Management System (SMS). Seventy-two have been recorded using the Concern Reporting application and 12 in Incident & Measurements.

Safely Conducted Observations Reduce Common Hazards (SCORCH). Throughout the first half of 2023, a total of 2169 employees were observed under the Office & Professional process. Safety awareness campaigns related to **Head/Neck Posture and Back Posture (Non-lifting Related)** were implemented to positively influence employee ownership to a change in behavior. Risk mitigation tips to promote elevated awareness for these behaviors included guidance for proper monitor height and distance settings to avoid sustained awkward postures of the Head/Neck. (Note: top up monitor should be set at eye level and distance at an arm's length as a general rule of thumb) Tips stressing the importance of maintaining a neutral posture with head, shoulders and hips in alignment to avoid awkward postures to the back were provided. (Note: This included tips for avoiding twisting at the torso, leaning forward at the hips, or leaning to one side or the other.) A SMUD cultural opportunity for improvement would be to try and limit employees attending multiple MS Teams/online meetings, schedule meeting micro reenergizer breaks or end meetings 10 minutes early to provide employees time to get up, move and stretch.

Under the Electrical Trades and CFAS-field process, a total of 1918 field employees were observed. Field awareness campaigns focused on **Knee Protection/Ergo Mat and Walk About/Pre-Trip Inspection.** Team meetings and morning tailboards were used to seek employee commitment to the use of the ergo mat when working on a hard surface in a kneeling position no matter the duration of time. Providing the knees some added cushion when performing certain tasks can aid in minimizing the exposure for aches and pains to the knees. The value of early recognition for potential hazards around vehicles prior to departure was another highlighted behavior. This step provides visible confirmation of properly secured loads, identification of vehicle damage, flat tires, and fluid leakage. This topic was a part of quarterly safety meetings along with newly created signage emphasizing carving out time to perform the Walk About.

SCORCH Safety for Life promotions included its "7 Minutes for Safety" digital campaign. This highlighted the use of the Safety Management System (SMS) to complete a safety observation, which on average only takes approximately 7 minutes. Distraction Awareness/Eyes on Path campaigns were implemented to encourage employees to avoid cell phone or any other distractions while walking around campus to avoid potential slip, trips or falls. SCORCH team members attended Dekra's 2023 Safety in Action Conference. SMUD's engagement contributions include serving as a member of Dekra's Conference Steering Committee team, along with providing a presentation of its best practice breakout sessions. Topics from this conference will proudly be shared with all employees during the 3rd quarter in support of SMUD's World Class Safety initiative.

4. Challenges

COVID-19. The safety of our employees is of utmost importance, so we continue to monitor SMUD COVID-19 cases and manage prevention efforts. In 2023 SMUD Safety, People, Services, & Strategies, and the Communications updated the COVID-19 guidance to meet regulatory changes within the Cal-OSHA Emergency Temporary Standard for facial coverings, testing programs, quarantine, and isolation guidelines to protect employees, contractors, and the public. SMUD continues to provide employees with COVID-19 antigen testing at our EC-OC Med Services clinic. Our third-party vendor Axiom Medical continues to handle employee contact tracing and this process has been working well. In order to improve our employee experience, the Safety dept. led the roll out of a new mobile app that allows employees to log positives cases and receive guidance at any time. During Q1/Q2 2023, SMUD has received notifications of 112 COVID positive cases from staff. As required both contact tracing and notification of potential exposures have occurred with all personnel impacted.

Work-Related Musculoskeletal Disorders (WMSDs) The safety team continues to partner with business units to a reduce all WMSD's. Ergonomic evaluations are conducted in the office, field, and virtually to meet the needs of the workforce. Safety consulted with a Board-Certified Professional Ergonomist to evaluate our hybrid Ergonomics Program. The consultant identified many success factors as well as a few areas of improvements. Action items include reviewing and updating the Ergonomics Standard, make changes to Ergo Evaluator application in SMS, and creating an Ergonomics SharePoint site. In addition, Safety continues to partner with SCORCH to utilize data to reduce potential soft tissue injuries.

Wildfire Smoke. In April of 2023, the safety team reviewed the Health & Safety Standard for Wildfire Smoke for any gaps and collaborated with other work groups to ensure any necessary equipment, to reduce employee exposures were available and ready to deploy. In addition, there was a review and update of the Wildfire Smoke Training to ensure field crew members received information on how to access resources and mitigate hazards, should a Wildfire Smoke event occur. The training was delivered to all field crew personnel in May 2023. Examples of resources available to SMUD employees are: the use of the Purple Air monitoring system, in cab vehicle air filters, PPE, and work/crew scheduling. This year, to date, we have had 0 days of notifications.

5. Recommendation

SMUD is committed to becoming a recognized leader in safety. Both SMUD's leadership team and employees recognize that to achieve success we must integrate safety into all that we do. It is recommended that the Board accept the Monitoring Report for SD-6.

6. Appendices - Business Segment Safety Program Improvement Initiatives

Energy Delivery and Operations. Safety assists with various types of concerns, action items, and provide safety expertise, on topics such as Arc Flash Reduction through Prevention Through Design (PTD) and Fall Protection design and implementation.

The team has continued to work with the SMUD Power Academy, to review internal and external safety training programs, to improve and ensure continued consistency and quality. An example of this work is with the Confined Space Rescue Program. Several team members have worked with an outside vendor and in-house subject matter experts of SMUD, to develop a more robust confined space rescue & equipment training; should a need for a rescue arise on a SMUD jobsite. We understand, in these circumstances, time is of the essence and there is limited subject-matter expert manpower within the Sacramento emergency responders' teams, for these types of rescues. Our crews need to have the tools necessary to perform their own rescues, with knowledge and confidence. Safety also assists with the review of the WASSP Field Procedures for various Business Units within ED&O, to ensure Cal/OSHA regulatory safety requirements are met within the procedures.

In late Q1, Safety began a pilot program for World Class Safety with several field force groups including, Warehouse, Fleet, CMI/Survey, Telecomm, and Meter Shop. The program utilizes our Safety Management System (SMS) to track safety stats focusing on the safe behaviors for continuous improvements. As part of this pilot program the SCORCH Team Lead, work group safety rep/s, and the safety supervisor, review various leading indicators, which are compared to the work group's previous quarterly stats. Examples include but are not limited to the following.

1. Visual inspection or "360 Walk-About"
2. Monthly Vehicle Inspection (Inspection Tool application)
3. Crew Visits with Leadership & Safety (Inspection & ACE Forms application)
4. Near Misses/Good Catches & Field Ergo (Concern Reporting application)
5. Corrective Actions and Safety Process Improvements (ATS application)
6. Safety Training Completion Rate

These efforts were chosen, as they reflect on employee accountability and safe behaviors in which to improve on. The quarterly pilot meetings provide a regular cadence to review our collaborative safety efforts, seek opportunities and additional topics to focus and improve upon, and to raise the organization as a Leader in World Class Safety. This program will continue to grow and develop as we incorporate safety in all we do.

Joint Labor Management Safety Committee (JLMSC) continues with an "All field teams' approach" which allows for the sharing of ideas and mitigation controls, of similar risks within the organization, from field work group to field work group.

Flame Retardant (FR) Clothing vendor continues deliveries on a regular basis in the ECOC Yard vs. crews driving to the vendor store location. This continues to provide a significant cost savings (in time and gas) to SMUD, by eliminating hundreds of individual trips back and forth by crew members. Field crew response continues to be positive of this safety improvement, which they recognize, and appreciate.

Field Ergonomics. The filed ergonomic program has expanded to include all of ED&O, Zero Carbon, and Finance field operations. After an initial group training during the monthly safety

meetings for the various work groups to share the program details, our ergonomic expert has gone out to the respective job sites to provide the crew(s) with specific or personal, one-on-one assistance, covering stretching techniques; providing ergo support tools; identifying awkward postures, excessive/forceful exertions, and repetitive motions. This program originally started within Line Division and has been pro-actively requested by other field force work groups. In Q1 the following work groups began participating; Warehouse field crews, Fleet, Substation, and in Meter Shop. Hydro Operations receives weekly onsite visits in the Fresh Pond Yard along with ergo evaluations for Power Plant staff. Q2 was our most successful month with Line Division. Substation had 2 group trainings both in safety meetings & their "All-Hands" meetings and had 1 new eval and 1 follow up eval. The Warehouse Field Forces had 5 days (different weeks) of walk throughs, with 3 new evals and 3 follow-up evals. Hydro had 4 site visits with walk-throughs at various Power Plants and 1 follow-up eval. And the Fleet Department had 5 site visits & walk throughs, with 2 new evals and 1 follow up visit. Their night shift was visited 1 time- with more to come!

Safety for Life. Safety is excited to bring back our in-person Safety Day for SMUD families this year. The in-person Safety for Life event has been in the planning stages for several months and is scheduled to occur in October at The Safety Centers Safetyville town. Some of the events scheduled at Safety Day are: pedestrian safety, bicycle safety, and a CPR class.

Sparky's Crew continues to get families involved in safety by sending postcards and quarterly newsletters to SMUD families enrolled.

As stated in 2022 we have placed more emphasis on getting more personal shares for our Safety for Life communications and we have received many more for the start of 2023. Some very impactful ones recently came from one of SMUD's Directors and an employee sharing their personal stories involving cancer and the importance of regular checkups and screenings.

Health and Wellness. Now, more than ever, health and wellness are at the forefront for employees. At SMUD, we continue to support the health and wellbeing of all our employees and provide programs and services to accommodate their needs in a variety of different formats. We're addressing the physical, mental, and emotional health of our employees by offering seminars, webinars, consultations, lunch and learns about various health & wellness topics. We encourage employees to take walks, stretch breaks and other measures to step away from their computer periodically to reset.

To accommodate many of the employees returning to the office, new training was developed and implemented to allow everyone to use the gym safely, at their own convenience. The Fitness Center has been a staple at SMUD for years and provided the space and equipment for employees to resume their normal routine and live a healthier and more balanced lifestyle. SMUD encourages employees to take part in the Health Assessment Program (HAP) to improve their physical, financial, social, spiritual, and emotional wellness.

Zero Carbon Energy Solutions (ZCES). Power Generation continues to prioritize employee safety while ensuring critical work is completed. For example, Power Generation employees continue with their Daily Dozen morning stretches for soft tissue injury reduction.

Currently, our OSHA Voluntary Protection Program (VPP) Safety Coordinator continues to work as a liaison between the contractor and the Hydro Operations crews, to ensure the findings are being addressed and completed, as a requirement to maintain the Cal/OSHA VPP status. As a reminder: VPP is designed to recognize employers and their employees who have implemented

safety and health programs which effectively prevent and control occupational hazards. These programs go beyond the minimum required Cal/OSHA regulations and provide the best feasible protection at the site. Achieving this status ensures Hydro Operations will continue with safety process improvements as the annual comprehensive safety audits are performed by the third-party contractor.

VPP establishments are considered leaders in the field of workplace safety and health. The management commitment and employee participation are key elements in achieving VPP recognition. Applications within the Safety Management System's are being utilized by Hydro Operations to ensure employees have a convenient avenue to participate in safety related activities and to track improvement.

Customer & Community Services (CCS). Safety and Security continue to work closely with Customer & Community Services to maintain safe operations of the CSC lobby. Ergonomic improvements of the customer cashier lobby are well underway to better accommodate staff to serve our customers. Safety has collaborated with Facilities to help support the need of CCS leadership, to improve operations within the cashier lobby. Ergonomics and space upgrades will allow better workflow of tasks and people within the area, while better serving our customers with more accessibility windows. CCS client support continues to be our goal, so we have increased our visibility through in-person meetings, safety walk throughs and discussions with supervisors.

Corporate Financial and Administrative Services (CFAS). This year, the Sacramento area experienced an unprecedented record-breaking storm requiring SMUD to request mutual aid for the first time. Facilities played a crucial role in organizing rest and recovery rooms for our mutual aid. Facilities also continues to support Home-Based Agent workspace installations to ensure ergonomic comfort for employees working at home. Facilities and Safety collaborated in developing a new tailboard form for Buildings and Grounds. The new tailboard was developed to be more relevant to the tasks being performed and allowed easier tracking and trending of safety observations identified in the tailboard. Tailboard participation increased to 70% within the first month of implementation. Facilities completed the ECOC Shops Building EV Charger Installations project and installed a total of 25 new EV chargers in support of the SMUD 2030 Zero Carbon goal of supporting EV Charging infrastructure throughout SMUD campuses as a united effort with SMUD contractors.

During the storm, the Warehouse provided 24/7 support in emergency deliveries of poles and transformers in addition to providing and procuring supplies and equipment for our SMUD employees and mutual aid. The Warehouse continues to partner with Safety in heat-illness prevention mitigations to ensure all field employees have access to cool water, portable shade, and UV skin protection. During days with high heat hazards, Warehouse provides electrolyte-replenishing beverages to field employees. Safety and Warehouse have collaborated to provide a different brand of electrolyte-replenishing powder packets convenient for field forces that offered greater hydration and is readily available in vending machines. Safety and Warehouse also collaborated on inspecting and purchasing new personal fall protection equipment for the Sacramento Power Academy Climbing School as a joint effort to ensure Climbing School students are using safe, effective, and readily available fall protection equipment.

Warehouse, Fleet, and Safety collaborated to encourage increased employee engagement during monthly safety meetings. Warehouse and Fleet incorporated employee Safety for Life presentations in which employees receive the opportunity to present a personal safety share relevant to their personal lives both at work or outside of work. Warehouse, Fleet, and Safety

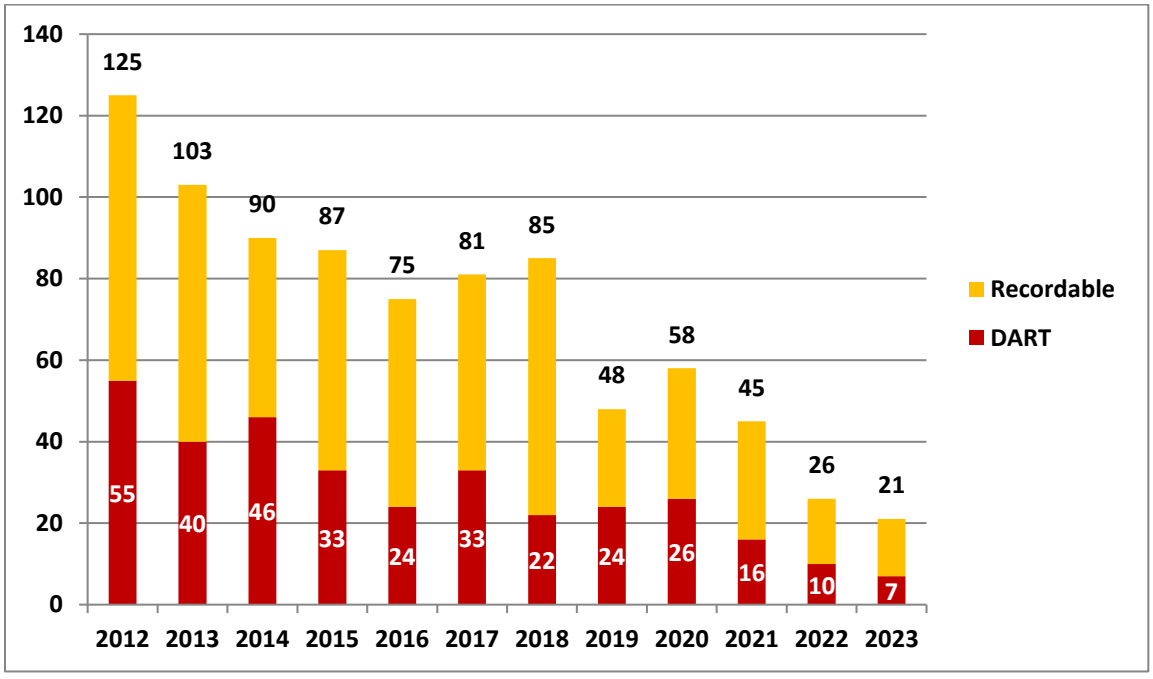
also collaborated on implementing the Injury Prevention Program with ROC Physical Therapy to address employee ergonomic concerns and prevent possible ergonomic injuries. Fleet switched to Geotab as their new fleet tracking system. To improve safe driving awareness, Fleet developed a dashboard to share metrics of assigned fleet vehicles with various business units. Fleet employees continue to participate in EV training courses customized to suit SMUD's needs in preparation for the transition to an all-electrified fleet by 2030.

All business units continue to partner in a consultative collaborative development of a World Class Safety program as One SMUD with quarterly meetings addressing leading and lagging indicators and the latest safety observation trends across the enterprise.

Driver Safety. Supervisors are conducting side-by-side ride alongs to provide coaching and safe driving skills guidance. While Safety was able to provide additional in-person class room and behind the wheel Smith System training. Driving Rodeos continue to be in high demand and the new partnership with Safetyville turned out to be a big success. In 2023 Safety hosted a Driving Rodeo events for Substation operations. Safety has increased the sharing of driving-safety related topics at ED&O Safety meetings this year and is working on new safe-driving messaging materials for the ECOC Yard, HQ and Fresh Pond parking areas, as well as for digital displays at each location. Additionally, a refresh of the safe driving decals on Fleet vehicles is under way. Safe driving is being emphasized in vehicle reports that are provided to directors and managers who have frequent drivers. The reports are focused on speeding with the potential of more driving details to be added.

Appendix A

DART Count and OSHA Recordable 2012-2023



DRAFT

RESOLUTION NO. _____

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

This Board accepts the monitoring report for **Strategic Direction SD-6, Safety Leadership**, substantially in the form set forth in **Attachment ___** hereto and made a part hereof.

SSS No. SCS 23-243	**BOARD AGENDA ITEM** **STAFFING SUMMARY SHEET**	Committee Meeting & Date Finance & Audit – 10/17/23
		Board Meeting Date October 19, 2023

TO		TO	
1.	Robert Adams	6.	Lora Anguay
2.	Casey Fallon	7.	Scott Martin
3.	Daniel Stricklin	8.	Jose Bodipo-Memba
4.	Joel Ledesma	9.	**Legal**
5.	Jennifer Davidson	10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Jesse Mays	Procurement	EA404	5744	10/4/2023

NARRATIVE:

Requested Action: Approve Contract Change No. 01 to Contract No. 4500140795 with Mars Transformers LLC to increase the contract not-to-exceed amount for power transformers by $5 million, from $1,847,848 to $6,847,848 plus applicable sales tax.

Summary: This contract was awarded on an Emergency Direct Procurement basis to Mars Transformers LLC in August 2023. The original contract was awarded for the period from August 29, 2023, to November 30, 2023, for an amount not to exceed $1,847,848. The original contract included the purchase, transportation, and installation of one (1) 75MVA 230kV Transformer to temporarily replace a power transformer that failed at Camino Powerhouse in May of 2023. Short term, Mars Transformers is the only reliable source for large power transformers in the market that meet our needs and urgent timeline for the Camino power generation site.

In addition to the transformer purchased by emergency procurement delegation above, SMUD has negotiated the commercial terms and conditions for a second large 100 MVA Power Transformer from Mars Transformers, which is intended to be a permanent replacement unit for Camino 1. For this additional unit, SMUD is requesting approval of an additional $5 million to allow SMUD to finalize the purchase of the 100MVA transformer to restore a critical power generation facility and system reliability.

Currently, the contract balance is approximately $1,475,154.

Contract Actions	Amount	Cumulative Total	Description
Original Contract	$1,847,848	$1,847,848	Emergency Direct Procurement Award of 75MVA Transformer
Pending Change No. 01	$ 5,000,000	$6,847,848	Add 100MVA Transformer

Comments: This is a nonstandard SMUD contract format. The nonstandard terms and conditions have been reviewed and approved by SMUD Legal on August 23, 2023.

Board Policy: *(Number & Title)* Board-Staff Linkage BL-8, Delegation to the CEO with Respect to Procurement; Strategic Direction SD-4, Reliability.

Benefits: SMUD receives a 100MVA transformer for Camino to restore a critical power generation facility and system reliability.

Cost/Budgeted:	$6,847,848; Budgeted for 2023 by Zero Carbon Energy Solutions.
Alternatives:	Solicit proposals through the Request for Proposals (RFP) process and wait for a new unit to be manufactured. The current manufacturing lead time for a new transformer of this size is approximately two years.
Affected Parties:	Zero Carbon Energy Solutions, Supply Chain Services, and Supplier
Coordination:	Zero Carbon Energy Solutions, and Supply Chain Services.
Presenter:	Casey Fallon, Director, Procurement, Warehouse & Fleet

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
Contract Change 1 – Mars Transformers LLC for Power Transformers	**6**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

RESOLUTION NO. _____

WHEREAS, Contract No. 4500140795 with **Mars Transformers, LLC (Mars)** was awarded on an emergency direct procurement basis in August 2023 for the period August 29, 2023, to November 30, 2023, for an amount not to exceed $1,847,848 for the purchase, transportation and installation of one 75MVA 230kV Transformer to temporarily replace a power transformer that failed at **Camino Powerhouse**; and

WHEREAS, Mars is the only reliable source for large power transformers in the current market that meet SMUD's needs and urgent timeline for the Camino power generation site; and

WHEREAS, staff has negotiated the commercial terms and conditions for a second large 100MVA Power Transformer, which is intended to be a permanent replacement unit for Camino 1; and

WHEREAS, increasing the contract amount will allow SMUD to move forward without delay and significant costs to secure the purchase of the permanent transformer to restore a critical power generation facility and system reliability; **NOW, THEREFORE**,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. That this Board hereby authorizes the Chief Executive Officer and General Manager, or his designee, to increase the contract not-to-exceed amount for power transformers by $5,000,000, from $1,847,848 to $6,847,848 plus applicable sales tax, for Contract No. 4500140795 with **Mars Transformers LLC**.

Section 2. The Chief Executive Officer and General Manager, or his designee, is authorized to make future changes to the terms and conditions of the contract that, in his prudent judgment: (a) further the primary purpose of the contract; (b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract amount and applicable contingencies.

7

SSS No. SCS 23-207

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
Finance & Audit - 10/17/23
Board Meeting Date
October 19, 2023

TO		TO	
1.	Tasha Crawford	6.	Scott Martin
2.	Robert Adams	7.	Jose Bodipo-Memba
3.	Casey Fallon	8.	
4.	Jennifer Davidson	9.	**Legal**
5.	Lora Anguay	10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Dejona Lopez	Procurement, Warehouse & Fleet	EA404	5331	9/19/2023

NARRATIVE:

Requested Action: Approve Contract Change No. 2 to Contract No. 4500137959 with Wood Mackenzie dba Power Advocate, Inc. for consulting services to extend the contract expiration date from April 30, 2024, to March 31, 2026, and to increase the contract amount by $3 million, from $1.5 million to $4.5 million.

Summary: This contract was awarded as a sole source contract to Wood Mackenzie dba Power Advocate, Inc. ("Power Advocate") in March 2023 for consulting services to support the Supply Chain team in three priority areas: 1) supply chain risk management, 2) category sourcing opportunities, and 3) the future of the supply chain procurement team with regard to renewable generation and distributed energy resources categories. The original contract was awarded for the period of March 6, 2023, to December 31, 2023, for a not-to-exceed amount of $1 million. Contract Change No. 01 was processed to extend the contract expiration date by four months from December 31, 2023, to April 30, 2024 and increase the contract amount by $500,000, from $1 million to $1.5 million to ensure continuity of support in finalizing solicitations, contracts, implementation of critical procurement strategy areas of emergency procurement contracts, thermal plant operator contract analysis, and sourcing large power transformers and construction services to support the clean energy transition. Contract Change No. 02 is being requested to extend the contract expiration date by two years from April 30, 2024, to March 31, 2026, and to increase the contract amount by $3 million, from $1.5 million to $4.5 million to further develop, plan, and execute contracting supply chain strategies for critical infrastructure, equipment, and services to support the clean energy transition including power control center planning and construction, transmission and distribution equipment, and the evaluation of engineer, procurement, and construction (EPC) generation project opportunities. The strategic planning and development effort will include the following areas of focus through the new contract end date of March 2026: 1) formulate strategic supply chain recommendations to senior leadership and project staff, 2) advise on go-to-market approaches based on global perspective of market conditions, 3) provide expert perspective of global trends within electric utilities and clean energy transition, and 4) provide supply chain category analytical excellence.

Power Advocate is uniquely positioned to support this work in that they pair extensive knowledge of global energy markets with their unique cost and supply chain intelligence technology as a service to provide a greater breadth and depth of market-leading analysis, data, and insight. No other consulting firm has this depth and breadth of expertise including the paired market intelligence and technology as a service; therefore, a solicitation would be an idle act. SMUD has negotiated a 13% discount to the rates for a cost savings of approximately $192,000 over the term of the contract. Therefore, the pricing is considered fair and reasonable.

Currently, the contract balance is approximately $809,272.

Contract Actions	Amount	Cumulative Total	Description
Original Contract	$1,000,000		
Change No. 01	$500,000	$1,500,000	Extend & Increase
Pending Change No. 02	$3,000,000	$4,500,000	Extend & Increase

Comments: This is a non-standard SMUD contract format, the terms and conditions of which have previously been reviewed and approved by SMUD Risk Management and Legal.

Board Policy: *(Number & Title)* Board-Staff Linkage BL-8, Delegation to the CEO with Respect to Procurement

Benefits: Ability for SMUD's Procurement Department to continue to have access to these critical consulting services to train and assist the department to meet current and future planning and sourcing needs.

Cost/Budgeted: $3,000,000; Budgeted for 2023-2026 by Procurement, Warehouse & Fleet.

Alternatives: Do not extend or increase. Power Advocate is uniquely positioned to support this work in that they pair extensive knowledge of global energy markets with their unique cost and supply chain intelligence technology as a service to provide a greater breadth and depth of market-leading analysis, data, and insight. No other consulting firm has this depth and breadth of expertise including the paired market intelligence and technology as a service.

Affected Parties: Procurement, Warehouse & Fleet and Power Advocate, Inc.

Coordination: Procurement, Warehouse & Fleet, Casey Fallon (Contract Manger).

Presenter: Casey Fallon, Director, Procurement, Warehouse & Fleet

Additional Links:

SUBJECT

Contract Change – Power Advocate Consulting Services

ITEM NO. ***(FOR LEGAL USE ONLY)***

7

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

RESOLUTION NO. _____

WHEREAS, Contract No. 4500137959 with **Wood Mackenzie dba Power Advocate, Inc. (Power Advocate)** was awarded as a sole source contract for the period March 6, 2023, to December 31, 2023, for a not-to-exceed amount of $1,000,000 for consulting services to support the Supply Chain team in three priority areas: 1) supply chain risk management, 2) category sourcing opportunities, and 3) the future of the supply chain procurement team with regard to renewable generation and distributed energy resources categories; and

WHEREAS, Contract Change No. 1 extended the expiration date by four months from December 31, 2023, to April 30, 2024, and increased the contract amount by $500,000, from $1,000,000 to $1,500,000; and

WHEREAS, further development, planning, and execution of contracting strategies for critical infrastructure, equipment, and services are key to support the clean energy transition including i) power control center planning and construction, ii) transmission and distribution equipment, and iii) the evaluation of engineer, procurement and construction generation project opportunities; and

WHEREAS, increasing the contract amount and extending the expiration date will allow SMUD to move forward with strategic planning and development efforts that will include the following areas of focus: 1) formulate strategic supply chain recommendations to senior leadership and project staff, 2) advise on go-to-market approaches based on global perspective of market conditions, 3) provide expert perspective of global trends within electric utilities and clean energy transition, and 4) provide supply chain category analytical excellence; and

WHEREAS, the pricing is considered fair and reasonable as SMUD has negotiated a 13% discount to the rates for a cost savings of approximately $192,000 over the term of the contract; and

WHEREAS, it would be an idle act to formally competitively bid the procurement of consulting services since **Power Advocate** is uniquely positioned to support this work in that they pair extensive knowledge of global energy markets with their unique cost and supply chain intelligence technology as a service that no other consulting firm has the depth and breadth of expertise coupled with the market intelligence and technology as a service; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. That this Board hereby authorizes the Chief Executive Officer and General Manager, or his designee, to extend the contract expiration date from April 30, 2024, to March 31, 2026, and to increase the contract not-to-exceed amount for consulting services by $3,000,000, from $1,500,000 to $4,500,000, for Contract No. 4500137959 with **Wood Mackenzie dba Power Advocate, Inc.**

Section 2. The Chief Executive Officer and General Manager, or his designee, is authorized to make future changes to the terms and conditions of the contract that, in his prudent judgment: (a) further the primary purpose of the contract; (b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract amount and applicable contingencies.

8

SSS No. SCS 23-225

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
Finance & Audit – 10/17/23
Board Meeting Date
October 19, 2023

TO		TO	
1.	Robert Adams	6.	Jennifer Davidson
2.	Casey Fallon	7.	Scott Martin
3.	Amber Steeves	8.	Jose Bodipo-Memba
4.	Ed Hamzawi	9.	**Legal**
5.	Lora Anguay	10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Andrew McDermott	Procurement	EA404	5862	9/21/23

NARRATIVE:

Requested Action: Approve Contract Change No. 7 to Contract No. 4500116379 with Efficiency First California for administrative services for SMUD's Electrification Programs to extend the expiration date by three years from April 30, 2024, to April 30, 2027, and to increase the contract not-to-exceed amount by $12 million with three optional one-year extensions to April 30, 2030, for $3 million each or $9 million in the aggregate, for a total contract not-to-exceed amount of $28.8 million.

Summary: This contract was awarded on April 25, 2019, via Resolution No. 19-04-05 to Efficiency First California (EFCA) for the period May 1, 2019, to April 30, 2022, with two optional one-year extensions, for a not-to-exceed amount of $7,800,000. Contract Change No. 1 added Brighton Energy to the list of subcontractors to assist CalCERTS with field verifications. Contract Change No. 2 added R. Connally Construction Consulting to provide Field Quality Checks. Contract Change No. 3 updated the items in the Non-disclosure Agreement (NDA). Contract Change No. 4 extended the expiration date by one year to April 30, 2023. Contract Change No. 5 revised the scope, rate schedule, and NDA. Contract Change No. 6 extended the expiration date by one year to April 30, 2024. Contract Change No. 7 will extend the expiration date by three (3) years to April 30, 2027, and increase the contract not-to-exceed amount by $12 million with three (3) optional one-year extensions for $3 million each or $9 million in the aggregate to April 30, 2030, for a total contract not-to-exceed amount of $28,800,000.

Since 2008, EFCA has been awarded four contracts through the Request for Proposals (RFP) process to support SMUD programs. EFCA is an integral part of the following SMUD programs including Advanced Home Solutions, Charge@Home and soon, the Commercial Energy Building Electrification (BE) and Electrical Vehicle (EV) programs. EFCA's processes, procedures, platform, and contractor relationships are essential to the SMUD programs that promote building decarbonization. As the Program Administrator, EFCA provides essential program administration support, including desktop review, field quality control, contractor webinars, and field mentoring. EFCA also oversees the SMUD Contractor Network including, but not limited to, contractor onboarding, training and support, contractor scoring, and managing the customer-facing website directory. EFCA manages the Software as a Service platform used by contractors to validate SMUD customers and enter project information, and that houses all project data. Identified as the most qualified applicant for the Advanced Homes Solutions Electrification Programs Administrator, EFCA will ensure critical program continuity and minimize disruption of essential residential electrification programs while expanding commercial program participation.

Currently, the contract balance is approximately $107,890.

Contract Actions	Amount	Cumulative Total	Description
Original Contract	$7,800,000	$7,800,000	
Change No. 01	$0.00	$7,800,000	Added subcontractor
Change No. 02	$0.00	$7,800,000	Added subcontractor

Change No. 03	$0.00	$7,800,000	Updated NDA
Change No. 04	$0.00	$7,800,000	Extended expiration date – 4/30/23
Change No. 05	$0.00	$7,800,000	Updated scope, rates, NDA
Change No. 06	$0.00	$7,800,000	Extended expiration date – 4/30/24
Pending Change No. 07	$21,000,000	$27,800,000	Increase contract value and extend to 4/30/30

Board Policy: *(Number & Title)* Board-Staff Linkage BL-8, Delegation to the CEO with Respect to Procurement; Strategic Direction SD-9, Resource Planning

Benefits: Advanced Home Solutions, Charge@Home, and Commercial BE/EV offerings are SMUD's flagship decarbonization programs, and therefore essential to SMUD and the region achieving carbon reduction goals. Together, these programs are currently forecasted to save approximately 25 e-GWh in 2023. Because these programs depend so heavily on contractors, it is essential that the Program Administrator be able to deliver a seamless and consistent experience for contractors (and ultimately our customers) on the SMUD Contractor Network. Contractors are typically on the frontline to provide solutions for SMUD customers and informing them of electrification options for their homes and businesses. As a nonprofit trade organization, EFCA is better positioned as a respected trade ally to support contractors to best serve our customers as they transition from gas to electric. This also helps SMUD reach enterprise decarbonization goals. As the current Program Administrator, EFCA is well versed in SMUD's priorities, program requirements, enterprise goals, and can navigate external challenges including supply chain issues and increased customer demand.

Cost/Budgeted: $20,000,000; Budgeted for 2024-2030 by Advanced Energy Solutions.

Alternatives: The alternative is to release a new RFP. However, staff previously conducted a Request for Qualification (RFQ) to assess viable options and determined that EFCA was the only qualified vendor with the experience necessary to maintain program continuity. Transitioning to a new vendor would cause significant disruptions to several programs, including the possible shut down of the Advanced Homes Solution program, resulting in a negative experience for contractors and customers and significant impacts to SMUD's Enterprise Performance Goals.

Affected Parties: Advanced Energy Solutions, Supply Chain Services, and Efficiency First California

Coordination: Advanced Energy Solutions and Cheri Davis, and Supply Chain Services.

Presenter: Ed Hamzawi, Director, Advanced Energy Solutions
Casey Fallon, Director, Procurement, Warehouse & Fleet

Additional Links:

SUBJECT		ITEM NO. *(FOR LEGAL USE ONLY)*
	CC No. 7 to Agreement 4500116379 with Efficiency First California for SMUD's Electrification Program Administrator	**8**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

RESOLUTION NO. _____

WHEREAS, by Resolution No. 19-04-05, adopted on April 25, 2019, this Board authorized the Chief Executive Officer and General Manager to award Contract No. 4500116379 to **Efficiency First California (EFCA)** to provide administrative services for SMUD's Home Performance Program for the period of May 1, 2019, to April 30, 2022, with two optional one-year extensions, for a total amount not to exceed $7,800,000; and

WHEREAS, Contract Change No. 1 added a new subcontractor, **Brighton Energy**, to assist CalCERTS, Inc. with field verifications; and

WHEREAS, Contract Change No. 2 added a new subcontractor, **R. Connally Construction Consulting**, to assist with Field Quality Checks; and

WHEREAS, Contract Change No. 3 updated items in the Non-disclosure Agreement (NDA); and

WHEREAS, Contract Change No. 4 extended the contract expiration date by one year to April 30, 2023; and

WHEREAS, Contract Change No. 5 revised the scope, rate schedule, and NDA; and

WHEREAS, Contract Change No. 6 extended the expiration date by one year to April 30, 2024; and

WHEREAS, **EFCA** has been awarded four contracts to support SMUD programs through solicitations and is an integral part of SMUD's Advanced Home Solutions, Charge@Home, and forthcoming Commercial Energy Building Electrification (BE) and Electrical Vehicle (EV) programs; and

WHEREAS, **EFCA's** processes, procedures, platform, and contractor relationships are essential to the SMUD programs that promote building decarbonization; and

WHEREAS, **EFCA**, as Program Administrator, provides essential program administration support, including desktop review, field quality control, contractor webinars, and field mentoring while also overseeing the SMUD Contractor Network and managing the Software as a Service platform that houses all project data and is used by contractors to validate SMUD customers and enter project information; and

WHEREAS, increasing the contract amount and extending the contract term will ensure critical program continuity and minimize disruption of essential electrification programs while expanding commercial program participation; **NOW, THEREFORE**,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

Section 1. That this Board hereby authorizes the Chief Executive Officer and General Manager, or his designee, to execute Contract Change No. 7 to Contract No. 4500116379 with **Efficiency First California** to extend the expiration date by three years from April 30, 2024, to April 30, 2027, and to increase the contract by $12,000,000 with three optional one-year extensions to April 30, 2030, for $3,000,000 each or $9,000,000 in the aggregate, for a total contract not-to-exceed amount of $28,800,000.

Section 2. The Chief Executive Officer and General Manager, or his designee, is authorized to make future changes to the terms and conditions of the contract that, in his prudent judgment: (a) further the primary purpose of the contract;

(b) are intended to provide a net benefit to SMUD; and (c) do not exceed the authorized contract amount and applicable contingencies.

SSS No. CFO 23-010

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
Finance & Audit - 10/17/23
Board Meeting Date
October 19, 2023

TO		TO	
1.	Jennifer Davidson	6.	
2.	Jose Bodipo-Memba	7.	
3.	Lora Anguay	8.	
4.	Scott Martin	9.	**Legal**
5.		10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**		**Yes**	X	**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Lisa Limcaco	Accounting	B351	7045	10/05/23

NARRATIVE:

Requested Action: Authorize SMUD's Accountant to defer, as a regulatory liability, recognition of $5 million in revenue from a donation received in connection with the sale of SMUD's real property in Solano County, and match revenue recognition to expenses related to SMUD's Sustainable Communities Program in the appropriate accounting period for rate-making purposes.

Summary: In March 2023, SMUD received a $5 million contribution from the sale of real property in the Solano Wind Resources Area (Solano Property) that shall be used at SMUD's discretion, provided that SMUD shall use the contribution through its Sustainable Communities Program, in an effort to minimize the impact of its transition to clean power on historically underserved communities and neighborhoods.

Pursuant to Governmental Accounting Standards Board (GASB) codification section Re10 Regulated Operations, staff is recommending the Board to authorize SMUD's Accountant to defer recognition of $5 million in revenue as a regulatory liability for recognition in future years. The revenue deferral will help offset future Sustainable Communities program expenditures and allow for appropriate matching of revenue with expense recognition for rate making purposes.

Board Policy: *(Number & Title)* Strategic Direction SD-2, Competitive Rates.

Benefits: The accounting treatment will more accurately reflect SMUD's operating results.

Cost/Budgeted: N/A

Alternatives: Recognize the donation as revenue received. Recognizing the revenue as received could result in revenue not matching with program expenses, and therefore revenue may not match the appropriate accounting period for rate making purposes.

Affected Parties: Accounting, Budget, Treasury

Coordination: Accounting, Budget, Treasury

Presenter: Lisa Limcaco, Director, Accounting & Controller

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
Deferral of Donation in Connection with Sale of Solano Property	**9**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

RESOLUTION NO. _____

WHEREAS, by Resolution No. 22-10-18, adopted on November 2, 2022, this Board made findings that the sale of the fee interest in real property within the **Solano Wind Resources Area (Solano Property)** was exempt from the Surplus Land Act in light of exchanged land rights and furtherance of SMUD's energy generation, storage and transmission purposes; and

WHEREAS, SMUD received a $5,000,000 contribution from the sale of the **Solano Property** to be used at SMUD's discretion through its **Sustainable Communities Program** to minimize the impact of its transition to clean power on historically underserved communities and neighborhoods; and

WHEREAS, if SMUD were to recognize the revenue upon the sales transaction, the revenue would be recognized in one period and the matching expenses could be recognized in a different period; and

WHEREAS, the **Sustainable Communities Program** expenses will be recognized in the period incurred; and

WHEREAS, normal accounting practices would be to recognize the revenues and expenses in the accounting period incurred; and

WHEREAS, pursuant to Governmental Accounting Standards Board (GASB) codification section Re10 Regulated Operations, for rate-making purposes, it would be appropriate to match the expenses with the revenues so that the revenue is recognized in the same period in which the amount is expended and will, therefore, more accurately reflect revenues and expenses in the same period; **NOW, THEREFORE,**

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

That this Board authorizes SMUD's Accountant to defer recognition of $5,000,000 in revenue from the contribution received from the sale of the **Solano Property** as a regulatory liability and then match revenue recognition to expenses related to SMUD's **Sustainable Communities Program** in the appropriate accounting period for rate-making purposes.

SSS No. LEG 2023-0110

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
ERCS – 10/18/23
Board Meeting Date
October 19, 2023

TO		TO	
1.	Ed Hamzawi	6.	Suresh Kotha
2.	Steve Lins	7.	Frankie McDermott
3.	Scott Martin	8.	
4.	Brandy Bolden	9.	**Legal**
5.	Lora Anguay	10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Andrew Meditz	Legal Department	B406	6124	09/25/23

NARRATIVE:

Requested Action: Conduct a public hearing to consider two new federal standards in accordance with the Public Utility Regulatory Policies Act of 1978 (PURPA), as amended by the Infrastructure Investment and Jobs Act of 2021 (IIJA): Demand-Response Practices (Section 111(d)(20)) and Electric Vehicle Charging Programs (Section 111(d)(21)).

Summary: The Infrastructure Investment and Jobs Act of 2021 (IIJA) enacted by Congress and signed into law, amended PURPA to require Board consideration of two new federal standards. The IIJA adds Sections 111(d)(20) and 111(d)(21) to PURPA. As part of the PURPA administrative process, SMUD commenced consideration of the standards on October 20, 2022 and the SMUD Board is required to conduct a public hearing to consider each of the proposed standards. The Board is not required to adopt the standards but is required to consider and make findings on or before November 15, 2023.

Attached are Staff Reports for each of the two federal standards. The reports are made available on www.smud.org and will be presented at the public hearing.

Board Policy: *(Number & Title)* Strategic Direction SD-2, Competitive Rates, Strategic Direction SD-7, Environmental Leadership, and Strategic Direction SD-9, Resource Planning.

Benefits: Compliance with PURPA and Board consideration of federal standards.

Cost/Budgeted: N/A

Alternatives: This action is legally required to maintain compliance.

Affected Parties: Legal, Enterprise Strategy, Rates/Pricing

Coordination: Legal, Enterprise Strategy, Rates/Pricing

Presenter: Andrew Meditz, Senior Attorney
Ed Hamzawi, Director, Advanced Energy Solutions

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
Public Utility Regulatory Policies Act (PURPA) Hearing	**10a**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

SACRAMENTO MUNICIPAL UTILITY DISTRICT

PUBLIC UTILITY REGULATORY POLICIES ACT OF 1978 AS AMENDED BY THE INFRASTRUCTURE INVESTMENT AND JOBS ACT OF 2021

Board Determination on the Demand-Response Practices Standard

Summary

The Sacramento Municipal Utility District's (SMUD) Board of Directors has made its determination on the Demand-Response Practices Standard set forth in Section 111(d)(20) of the Public Utility Regulatory Policies Act of 1978 (PURPA), as amended by the Infrastructure Investment and Jobs Act of 2021 (IIJA). The Board considered the Demand-Response Practices Standard on the basis of its effect on conservation of energy, efficient use of facilities and resources, and equity among electrical consumers, and the objective and requirements of the Municipal Utility District Act (Cal. Pub. Util. Code, § 11501 et seq.).

Statement of Facts

The IIJA was enacted on November 15, 2021, adding new obligations under Title 1 of PURPA. IIJA amended Section 111(d) of PURPA to require each non-regulated utility to consider a new proposed regulatory standard which encourages utilities to promote the use of demand-response practices by customers to reduce electricity consumption during periods of unusually high demand. SMUD is a covered utility for purposes of PURPA.

SMUD commenced consideration of the standard on October 20, 2022, through Board Resolution No. 22-10-15. On October 18, 2023, the Staff Report and Findings on the Demand-Response Practices Standard (Staff Report) was presented and discussed at a public hearing conducted by the SMUD Board at the Energy Resource and Customer Services Committee meeting. SMUD provided public notice of the hearing and the Staff Report was also made available to the public on SMUD's web site (www.smud.org) prior to the hearing. Comments were requested from the public as to the need and desire for SMUD to adopt the Demand-Response Practices Standard. Transcript copies of the public hearing and written materials submitted are available for public inspection.

Determination

The Board has considered the information contained in the Staff Report and adoption of the Demand-Response Practices Standard. The Board has determined that its consideration of the Demand-Response Practices Standard, and the determinations made with respect thereto, are in accord with the provisions of the Municipal Utility District Act and PURPA, as amended by the IIJA. The Demand-Response Practices Standard has been considered in light of the record developed during the proceedings on the standard. The Board recognizes the importance of and concurs in the purpose of

conservation of electrical energy, efficiency in the use of facilities and resources, and equitable rates as described in PURPA. These purposes were considered in reaching the determination below.

The Board's determination follows.

I. Standard Under Consideration:

DEMAND-RESPONSE PRACTICES STANDARD

"Section 111(d)(20) -

(A) In general

Each electric utility shall promote the use of demand-response and demand flexibility practices by commercial, residential, and industrial consumers to reduce electricity consumption during periods of unusually high demand.

(B) Rate recovery

…

(ii) Nonregulated electric utilities

A nonregulated electric utility may establish rate mechanisms for the timely recovery of the costs of promoting demand-response and demand flexibility practices in accordance with subparagraph (A)."

II. Findings:

1. SMUD has adopted Competitive Rates Strategic Direction No. 2 (SD-2) which, among other things, requires rates be designed with a goal to reflect the cost of energy when it is used, reduce consumption during periods of high system demand, encourage energy efficiency and conservation, provide customers flexibility and choices.
2. SMUD has adopted Environmental Leadership Strategic Direction No. 7 (SD-7) which, among other things, requires SMUD to conduct its business affairs and operations in a sustainable manner by minimizing environmental impacts and conserving resources, and promotes the efficient use of energy by our customers.
3. SMUD has adopted Resource Planning Strategic-Direction Policy No. 9 (SD-9) which prioritizes carbon emissions reduction by, among other things, pursuing energy efficiency and new technologies which serve to provide flexible demand response capability.
4. SMUD has for decades provided demand-response programs to promote the more efficient use of electricity and reduce usage during periods of high demand, including the PowerDirect program for commercial/industrial customers and an air conditioning load management program for residential customers.
5. SMUD's 2030 Zero Carbon Plan contemplates 360 – 1,320 MW of Virtual Power Plants (VVPs) contributing to our demand-response supply, made up of residential and commercial loads, as well as managed electric vehicle charging and vehicle-to-grid (V2G) dispatch. SMUD

launched a new residential VPP demand-response program in 2022 focused on thermostats and another one in 2023 focused on load control switches, and anticipates incorporating battery storage and potentially V2G into our VPP programs.

6. SMUD is actively engaged in V2G pilot programs and is exploring ways to ensure customers are charging their vehicles at optimum times for the grid, and anticipates by 2030 as many as 1 in 3 kWhs SMUD delivers will be used to serve electric vehicles.
7. SMUD has partnered with electric vehicle manufacturers to offer residential customers access to a managed charging program and has program offerings that incentivize the adoption of Automated Load Management Systems which shifts charging load to low demand periods.
8. SMUD's demand-response programs are designed to account for the variance in costs of purchasing and generating electricity, and therefore do not require separate rate recovery mechanisms because the program costs are offset by the savings on our commodity budget.
9. SMUD has adopted Time-of-Day pricing for its commercial/industrial customers which promotes demand-response during the peak period of 4-9 p.m. and for residential customers during the peak period of 5-8 p.m., and also in the summer months during mid-peak periods of 12-5 p.m. and 8 p.m.-midnight.
10. SMUD has a Critical Peak Pricing rate which further incentivizes residential customer participation in demand-response programs that utilize thermostats and batteries to reduce electricity consumption during high demand periods.
11. As reflected in the Strategic Direction, and through its various programs, initiatives, and rates, SMUD's demand-response practices meet the new federal standard.

III. <u>Determination by the SMUD Board</u>

The Demand-Response Practices Standard is appropriate for use by SMUD.

DRAFT

RESOLUTION NO. _____

WHEREAS, the Infrastructure Investment and Jobs Act of 2021 (IIJA) was enacted by Congress and signed into law; and

WHEREAS, the IIJA adds Section 111(d)(20) to the Public Utility Regulatory Policies Act of 1978 (PURPA), which requires SMUD to consider a new proposed regulatory standard relating to Demand-Response Practices; and

WHEREAS, through Resolution No. 22-10-15, the Board commenced consideration of the Demand-Response Practices Standard; **NOW, THEREFORE**,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

The Board Determination on the Demand-Response Practices Standard is hereby adopted and approved, substantially in the form of **Attachment ____**.

10b

SSS No. LEG 2023-0110

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

Committee Meeting & Date
ERCS – 10/18/23
Board Meeting Date
October 19, 2023

TO		TO	
1.	Ed Hamzawi	6.	Suresh Kotha
2.	Steve Lins	7.	Frankie McDermott
3.	Scott Martin	8.	
4.	Brandy Bolden	9.	**Legal**
5.	Lora Anguay	10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
Andrew Meditz	Legal Department	B406	6124	09/25/23

NARRATIVE:

Requested Action: Conduct a public hearing to consider two new federal standards in accordance with the Public Utility Regulatory Policies Act of 1978 (PURPA), as amended by the Infrastructure Investment and Jobs Act of 2021 (IIJA): Demand-Response Practices (Section 111(d)(20)) and Electric Vehicle Charging Programs (Section 111(d)(21)).

Summary: The Infrastructure Investment and Jobs Act of 2021 (IIJA) enacted by Congress and signed into law, amended PURPA to require Board consideration of two new federal standards. The IIJA adds Sections 111(d)(20) and 111(d)(21) to PURPA. As part of the PURPA administrative process, SMUD commenced consideration of the standards on October 20, 2022 and the SMUD Board is required to conduct a public hearing to consider each of the proposed standards. The Board is not required to adopt the standards but is required to consider and make findings on or before November 15, 2023.

Attached are Staff Reports for each of the two federal standards. The reports are made available on www.smud.org and will be presented at the public hearing.

Board Policy: *(Number & Title)* Strategic Direction SD-2, Competitive Rates, Strategic Direction SD-7, Environmental Leadership, and Strategic Direction SD-9, Resource Planning.

Benefits: Compliance with PURPA and Board consideration of federal standards.

Cost/Budgeted: N/A

Alternatives: This action is legally required to maintain compliance.

Affected Parties: Legal, Enterprise Strategy, Rates/Pricing

Coordination: Legal, Enterprise Strategy, Rates/Pricing

Presenter: Andrew Meditz, Senior Attorney
Ed Hamzawi, Director, Advanced Energy Solutions

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
Public Utility Regulatory Policies Act (PURPA) Hearing	**10b**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

DRAFT

SACRAMENTO MUNICIPAL UTILITY DISTRICT

PUBLIC UTILITY REGULATORY POLICIES ACT OF 1978 AS AMENDED BY THE INFRASTRUCTURE INVESTMENT AND JOBS ACT OF 2021

Board Determination on the Electric Vehicle Charging Programs Standard

Summary

The Sacramento Municipal Utility District's (SMUD) Board of Directors has made its determination on the Electric Vehicle Charging Programs Standard set forth in Section 111(d)(20) of the Public Utility Regulatory Policies Act of 1978 (PURPA), as amended by the Infrastructure Investment and Jobs Act of 2021 (IIJA). The Board considered the Electric Vehicle Charging Programs Standard on the basis of its effect on conservation of energy, efficient use of facilities and resources, and equity among electrical consumers, and the objective and requirements of the Municipal Utility District Act (Cal. Pub. Util. Code, § 11501 et seq.).

Statement of Facts

The IIJA was enacted on November 15, 2021, adding new obligations under Title 1 of PURPA. IIJA amended Section 111(d) of PURPA to require each non-regulated utility to consider a new proposed regulatory standard which encourages utilities to promote greater electrification of the transportation sector. SMUD is a covered utility for purposes of PURPA.

SMUD commenced consideration of the standard on October 20, 2022, through Board Resolution No. 22-10-15. On October 18, 2023, the Staff Report and Findings on the Electric Vehicle Charging Programs Standard (Staff Report) was presented and discussed at a public hearing conducted by the SMUD Board at the Energy Resource and Customer Services Committee meeting. SMUD provided public notice of the hearing and the Staff Report was also made available to the public on SMUD's web site (www.smud.org) prior to the hearing. Comments were requested from the public as to the need and desire for SMUD to adopt the Electric Vehicle Charging Programs Standard. Transcript copies of the public hearing and written materials submitted are available for public inspection.

Determination

The Board has considered the information contained in the Staff Report and adoption of the Electric Vehicle Charging Programs Standard. The Board has determined that its consideration of the Electric Vehicle Charging Programs Standard, and the determinations made with respect thereto, are in accord with the provisions of the Municipal Utility District Act and PURPA, as amended by the IIJA. The Electric Vehicle Charging Programs Standard has been considered in light of the record developed during the proceedings on the standard. The Board recognizes the importance of and concurs in the purpose of conservation of electrical energy, efficiency in the use of facilities and resources, and equitable rates as described in PURPA. These purposes were considered in reaching the determination below.

The Board's determination follows.

I. Standard Under Consideration:

ELECTRIC VEHICLE CHARGING PROGRAMS STANDARD

"Section 111(d)(21) -

Each State[1] shall consider measures to promote greater electrification of the transportation sector, including the establishment of rates that —

(A) promote affordable and equitable electric vehicle charging options for residential, commercial, and public electric vehicle charging infrastructure;

(B) improve the customer experience associated with electric vehicle charging, including by reducing charging times for light-, medium-, and heavy-duty vehicles;

(C) accelerate third-party investment in electric vehicle charging for light-, medium-, and heavy-duty vehicles; and

(D) appropriately recover the marginal costs of delivering electricity to electric vehicles and electric vehicle charging infrastructure."

II. Findings:

1. SMUD has adopted Competitive Rates Strategic Direction No. 2 (SD-2) which, among other things, requires rates be designed to reflect the cost of energy when it is used and equitably allocate costs across and within customer classes.
2. SMUD has adopted Environmental Leadership Strategic Direction No. 7 (SD-7) which makes environmental leadership a core value of SMUD by, among other things, promoting the advancement of the electrification of vehicles.
3. SMUD has adopted Resource Planning Strategic-Direction Policy No. 9 (SD-9) which prioritizes carbon emissions reduction by, among other things, pursuing vehicle electrification to reduce 1,000,000 metric tons from transportation in 2030 while at the same time improving equity for under-served communities.
4. SMUD's 2030 Zero Carbon Plan recognizes that widespread adoption of electric vehicles will be key to achieving zero carbon by prioritizing electrification of transportation. Just last year in 2022, staff updated SMUD's Board of Directors on its Enterprise Electric Vehicle Strategy to accelerate the transition to electricity as a transportation fuel to meet the decarbonization goals set out by the 2030 Zero Carbon Plan.
5. SMUD has initiated cooperative agreements to advance the electric transportation sector, both at the regional level and on a broader scale, including a 4-Agency Memorandum of Understanding, joining Sacramento Area Council of Governments (SACOG), Sacramento Metropolitan Air Quality Management District (SMAQMD), and Sacramento Regional Transit (SacRT) to create a regional zero emission vehicle deployment strategy that prioritizes electrification in under-resourced communities, personal and shared ride vehicles, public

[1] "State" is defined to include a nonregulated electric utility, such as SMUD.

and private transit, micro-transit and passenger shuttles, and medium and heavy-duty fleets.

6. SMUD also partnered with Plug In America to launch its dealer engagement program to train, certify and support dealers selling electric vehicles in our service territory and to deploy an online electric vehicle buying guide.
7. SMUD is an active member of the Sacramento PEV Collaborative, Sacramento Clean Air Partnership, and the West Coast Clean Transit Corridor Initiative to accelerate infrastructure planning and deployment of charging plazas along key transportation corridors.
8. SMUD collaborates with partners to identify grant opportunities that include potential awards to scale charging deployments serving multifamily residents, surrounding communities, and regional corridor fast charging to reduce charging times. For example, SMUD, SACOG, SMAQMD, SacRT, Sacramento Clean Cities, the California Mobility Center, and the Cities of Sacramento and West Sacramento recently completed a California Energy Commission (CEC) funded blueprint study of electric vehicle infrastructure.
9. SMUD's Charge@Home program provides up to $1,000 in rebates for residential wiring upgrades and installation of home electric vehicle charging equipment.
10. SMUD upgrades and equips homes at no cost to the residents for electric vehicle charging for customers participating in the Clean Cars 4 All (CC4A) low-income program.
11. SMUD's multifamily program conducts comprehensive electrification assessments with recommendations for charger installations through the SMUD Contractor Network and the SMUD eFuel^{sm} Solutions program. And SMUD was recently awarded a CEC grant to install over 100 chargers in new, existing, and planned multifamily complexes.
12. SMUD helped build and energize Sacramento's first eMobility Hub in the Del Paso Heights neighborhood, an historically under-resourced community. SMUD is actively exploring locations for siting of additional eMobility Hubs by assessing the impact on surrounding communities to determine the efficacy of scaling eMobility Hubs to as many as 52 sites.
13. SMUD has deployed direct current (DC) fast charging at six sites to address and alleviate concerns about access to charging, range anxiety and charging times, and the CEC recently awarded SMUD a grant to upgrade the DC fast chargers at two of the six existing sites and to add a seventh SMUD fast charging site.
14. For commercial/industrial customers, SMUD offers incentives up to $30,000 to support the deployment of high-power DC fast chargers (greater than 50 kW) and up to $15,000 in incentives for electric vehicle purchases by commercial fleets. An additional $15,000 is available for those who site DC fast chargers in equity locations.
15. SMUD partnered with Electrify America as one of the first Green City investment focal areas to deploy seven DC fast charging sites.
16. SMUD is the first utility to directly partner with the CEC and the Center for Sustainable Energy to provide $1,000,000 in direct incentive dollars to help fund the California Electric Vehicle Incentive Program in our service territory, which through 2022, led to the deployment of more than 100 DC fast chargers across our service territory.
17. SMUD has begun development of a smartphone electric vehicle app featuring an integrated e-Roaming platform to provide SMUD customers with single account access to multiple

charging network partners and to deliver more equitable access and rates for electric charging by residents in multifamily homes and equity communities.

18. SMUD has adopted a residential electric vehicle rate discount of 1.5 cents/kWh off of the standard retail rate and also a commercial pilot electric vehicle rate intended to mitigate demand charges for low utilization at the beginning of charging infrastructure deployments; both of which are designed to recover SMUD's marginal cost by reflecting the cost of energy when it is used and equitably allocate costs across and within customer classes.
19. As reflected in the Strategic Direction, and through its various practices, initiatives, and rates, SMUD's electric vehicle charging programs meet the new federal standard.

III. Determination by the SMUD Board

The Electric Vehicle Charging Programs Standard is appropriate for use by SMUD.

DRAFT

RESOLUTION NO. _____

WHEREAS, the Infrastructure Investment and Jobs Act of 2021 (IIJA) was enacted by Congress and signed into law; and

WHEREAS, the IIJA adds Section 111(d)(21) to the Public Utility Regulatory Policies Act of 1978 (PURPA), which requires SMUD to consider a new proposed regulatory standard relating to Electric Vehicle Charging Programs; and

WHEREAS, through Resolution No. 22-10-15, the Board commenced consideration of the Electric Vehicle Charging Programs Standard; **NOW, THEREFORE**,

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

The Board Determination on the Electric Vehicle Charging Programs Standard is hereby adopted and approved, substantially in the form of **Attachment ____**.

SSS No.	BOARD AGENDA ITEM STAFFING SUMMARY SHEET	Committee Meeting & Date ERCS – 10/18/2023
DPG 23-073		Board Meeting Date 10/19/2023

TO		TO	
1.	Lora Anguay	6.	
2.	Claire Rogers	7.	
3.	Frankie McDermott	8.	
4.	Suresh Kotha	9.	**Legal**
5.	Brandy Bolden	10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
James Frasher	Research and Development		6082	9/25/2023

NARRATIVE:

Requested Action: Accept the monitoring report for **Strategic Direction SD-10, Innovation**.

Summary: The purpose of this meeting is to facilitate a discussion with the SMUD Board of Directors on Strategic Direction SD-10, Innovation. The presentation will briefly summarize SMUD's innovation pilots and research initiates and the role this work plays in achieving the Zero Carbon Vision.

Board Policy: *(Number & Title)* SD-10, Innovation

Benefits: The Zero Carbon Plan relies on new technology and business models to fully achieve zero carbon. Innovation, directed by SD-10, guides research into game changing technologies, design of pilot programs and the focus of research projects.

Cost/Budgeted: Contained within internal labor budget.

Alternatives: Provide information via written report through the Chief Executive Officer and General Manager

Affected Parties: SMUD customers and employees

Coordination: The innovation portfolio is cross cutting across the entire enterprise.

Presenter: James Frasher, Manager, Economic Development and Partnership

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
SD-10, Innovation Board Monitoring Report	11

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

SACRAMENTO MUNICIPAL UTILITY DISTRICT

OFFICE MEMORANDUM

TO: Board of Directors **DATE:** September 28, 2023

FROM: Claire Rogers *CR 9/28/23*

SUBJECT: **Audit Report No. 28007611**
Board Monitoring Report; SD-10: Innovation

Internal Audit Services (IAS) received the SD-10 *Innovation* 2023 Annual Board Monitoring Report and performed the following:

- Selected a sample of statements and assertions in the report for review.
- Interviewed report contributors and verified the methodology used to prepare the statements in our sample.
- Validated the reasonableness of the statements in our sample based on the data or other support provided to us.

During the review, nothing came to IAS' attention that would suggest the items sampled within the SD Board Monitoring report did not fairly represent the source data available at the time of the review.

CC:

Paul Lau

Board Monitoring Report 2023
Strategic Direction, SD-10 Innovation

1) Background

SD-10 States: Delivering innovative solutions, products and services to our customers is a core value. To assure our long-term competitiveness, SMUD shall invest in research and development projects that support its core and key values and integrate emerging technologies and new business models into SMUD's customer offerings in a way that balances risk and opportunity and benefits our customers and community.

2) Executive Summary

SMUD's Research & Development portfolio (R&D) addresses innovation and challenges in *electric transportation, energy efficiency, building electrification, load flexibility, thermal transition, and climate change.* The research provides insight into future planning and supports the development of near-term technology solutions for SMUD customers and the grid, in support of SMUD's target of zero carbon by 2030 and associated thermal transition. The number of individual projects in the R&D portfolio were reduced this year to focus on foundational initiatives supporting SMUD's Zero Carbon Plan (ZCP) goals and significant effort was expended supporting the pursuit and delivery of awarded state and federal funding opportunities.

Our conclusion is that SMUD is in compliance with SD-10 Innovation.

SD Requirement	Purpose	Outcome	Notes
Project Implementation	Project distribution indicates breadth of portfolio diversity and prioritization of program areas.	33 active projects in 2023. 6 projects are complete as of August 1, 2023[1].	This reflects a 21% decrease in active projects and 14% reduction in completions compared to previous reporting period.
Risk	Technology risk assesses ability to meet expected performance goals. Implementation risk assesses probability of deployment.	66% of projects are deemed low to medium-low technology risk. 66% are deemed low to medium-low implementation risk.	The risk portfolio is consistent with the previous reporting period. Potential risks are managed by creating a diversified portfolio and partnering with other entities to distribute risk and mitigation.
Benefits	Research stage and benefits timeframe indicate the relevance of portfolio to address customer needs and strategic planning.	73% of projects are in stages 4-5[2]. 85% are expected to provide benefits to SMUD or customers within 5 years.	Percent of stages 4-5 is consistent with 2022's 91%, reflecting the focus on near-term applications. Benefits time frame is consistent with 2022.

Table 1: SD Requirements Compliance

[1] Reporting metrics and achievements reflect the reporting period of August 1, 2022 – July 31, 2023.

[2] Stage 1 - Preliminary Investigation, Stage 2 - Concept Definition/Lab scale, Stage 3 - Concept Development (Prototype/bench scale), Stage 4 - Technology Development and Verification (pilot scale; field testing), Stage 5 - Commercialization

3) Additional Supporting Information

Project Implementation: SMUD's Research and Development team has the primary responsibility of meeting SD-10; however, notable innovation occurs throughout SMUD.

Electric Transportation (ET)

Transportation electrification improves air quality and reduces net greenhouse gas emissions and petroleum consumption to support energy sustainability, while creating new revenue streams for SMUD. This strategy is supported through investigation of mitigation of grid impacts due to charging, improvement of electric vehicles (EV) value via pricing signals and remote controls, increased EV adoption and access to charging. SMUD is specifically exploring multiple opportunities to expand our understanding of Vehicle-to-Grid (V2G) capabilities, applications, and implications.

Key Achievements:

- SMUD was awarded $2.23M by the California Energy Commission REACH grant for the ChargeReady Community project, to deploy EV chargers to underserved multi-family homes. SMUD staff have begun conducting visits and delivered the Community Engagement Plan to the CEC. Construction is expected to begin later this year.
- The Del Paso Mobility Hub (five level 2 and two DC fast chargers) completed interconnection this summer. Evaluation over the next year of the hub's utilization and business model serving shared electric vehicles and an electric shuttle will inform SMUD's strategy to increase EV charging access for hard to reach customers.
- The Residential Managed EV Charging pilot has enrolled over 300 customers with vehicles from GM, Ford and BMW. Recruitment to Tesla customers began this summer and is expected to reach 500 customers. No results yet, staff are working with the Auto OEMS on QC/QA of the data collected to date as part of early evaluation efforts.
- The CEC BESTFIT grant with the Twin Rivers Unified School District (TRUSD) aims to evaluate the effectiveness of managed charging (V1G) and V2G capabilities of electric school buses and light duty vehicles to balance impacts on customer and utility electrical distribution infrastructure and create value through grid services. Targeted use cases include reduced grid impacts, reduced customer infrastructure costs, wholesale cost avoidance, and mirror performance of stationary storage with V2G. With charger/bus compatibility issues now resolved, the charging infrastructure including bidirectional equipment has reached a stable point with formal interconnection expected soon. Ford Pro has been supporting Automated Load Management for TRUSD and is currently developing managed charging and bidirectional charging software to support testing.
- The Light Duty Fleet V2G project has installed a Fermata FE-15 bidirectional charger (V2G) on SMUD's campus and is being tested using SMUD's fleet Nissan Leaf and a Nissan Leaf on loan from Tokyo Electric Power Company. This charger is UL certified with endorsement by Nissan that it does not void their vehicle warranty. Currently planning to test Fermata's new FE-20 bidirectional charger.
- Continued collaboration with auto OEMs on emerging bidirectional charging products. Collaboration with GM includes grant application coordination and planning for a future light duty fleet bidirectional charging demonstration. Collaboration with TEPCO,

Fermata, and Nissan includes grant application coordination and planning for future demonstration of commercial and residential light duty fleet bidirectional charging.

Energy Efficiency (EE) & Electric Buildings (EB)

This program area optimizes energy delivery costs and improves grid asset utilization through targeted, time-specific energy efficiency and building electrification as well as by capturing permanent outcomes in building codes. R&D explores emerging and underutilized technologies; working to lower barriers to technology adoption.

Key Achievements:

- Statewide, 32 - 120V Heat Pump Water Heater (HPWH) installations were monitored and found to save money and time compared to standard 240V HPWH installations on average, primarily due to reduced electrical interventions.
- Staff completed phase 1 of the Home Infrastructure Planning project, creating a process for collection and cleaning of data sourced from inside and outside SMUD. Staff transition delayed the launch of phase 2 until Q3 2023, which will conduct analysis to develop tools and forecasts to help distribution planners and customers make optimal decisions regarding utility service upgrades supporting residential electrification.

Load Flexibility

This program supports cost-effective, reliable, scalable flexible resource growth to serve future grid needs. R&D determines functional, operational and market viability of flexible loads to align supply and demand, give customers bill management options, improve air quality, and reduce carbon emissions.

Key Achievements:

- SMUD launched the My Energy Optimizer, Partner level, in June 2022. The pilot is ahead of plan with over 13,000 thermostats enrolled. SMUD is working with the vendor on staggered dispatch of thermostats, to attempt to create a steadier, more predictable load shed during events. Recruitment for Partner+ begins this fall, targeting customer-owned and sited battery storage to operate a Virtual Power Plant, maximizing value to customers and benefitting grid operations.
- Smart inverters allow utilities to monitor residential PV and storage (potentially as an alternative to generation submeters) and provide control functionality to assist in grid support. This project will test smart inverter connection via two pathways: direct connection and through vendors/aggregators. Direct connection will assist in development of the DERMS, while the vendor/aggregator pathway leverage OEM and aggregator relationships to establish pilot access agreements to a broader range of smart inverters. Data analysis for the direct connection pathway is underway with testing for the vendor/aggregator pathway to initiate soon.

Thermal Transition

R&D pursues innovative grid, storage and generation solutions to facilitate SMUD's goal of zero carbon by 2030 and accelerate interconnection of grid-connected systems and devices to ensure safe and efficient operation. This program supports system reliability

and reducing emissions through alignment of DERs and zero-carbon generation with grid needs. It seeks to improve grid reliability through reduced outage frequency and duration; control of the distribution system, voltage and frequency variations, and overload conditions; and optimize grid benefits of DERs through advancing integration standards and coordinated automation.

Key Achievements:

- The Lithium-Ion 4 MW / 8 MWh utility-scale storage battery at the Hedge substation supports the StorageShares program and SMUD's goal of adding 1,100 MWs of battery capacity by 2030. Proximity to the Sacramento Power Academy training facility will foster opportunities for workforce development in battery storage operations. We declared Commercial Operations Date early this year and continue to troubleshoot operation and seek performance enhancements. Performance benchmarking and use case testing to begin late 2023.
- The ESS Phase 1 demonstration will deploy 4 MW / 32 MWh of Long Duration Energy Storage (LDES) iron flow batteries. This project will compare the reliability and uptimes of LDES and Lithium-Ion batteries as part of SMUD's partnership with ESS. Two ESS battery models will be tested: the Energy Warehouse and Energy Center. Construction of 6 Energy Warehouses has been completed at the Hedge Power Academy. Site Acceptance Testing is in process with use case and performance testing to follow.
- Renewable Natural Gas (RNG) and Green Hydrogen remain the leading alternative fuel candidates to convert and decarbonize thermal generation fleet operations longer term. Mote, in collaboration with SMUD, was awarded $500k by the CA Department of Conservation Forest Biomass to Carbon-Negative Biofuels Pilot Program. This project intends to use waste biomass from clearing the UARP transmission corridor for Thermochemical conversion to hydrogen. This grant focuses on site selection, pre-construction project validation and engineering, community benefits, and Front-End Engineering Design for consideration as a project for development. This project ends this year and will provide insight on investments needed to supply green hydrogen.
- The Dynamic Line Rating evaluation tests the achievability and usability of the LineVision V3 monitoring system for short-term operational and long-term planning decisions regarding transmission lines. The goal is to increase the efficiency of transmission asset utilization while maintaining reliability. Data analysis has been completed for one years' worth of data on one of the UARP transmission lines with business case evaluation underway to decide whether to operationalize this technology and pursue targeted deployment on other transmission lines.

Climate Change

This program provides technical, economic, and policy expertise on climate change and impacts to SMUD territory. It compliments SMUD's Zero Carbon Plan and aligns with our board direction to address climate vulnerabilities, and we partner with our customers and community on mitigation opportunities and regenerative, net positive projects.

Key Achievements:

- Carbon Farming and Ecosystem Service Research is a four-year study aiming to restore California prairie under PV panels at Rancho Seco II. The project is evaluating the use of native pollinator plant species to reduce operational costs associated with vegetation management, erosion control and fire protection at utility solar sites, quantifying the impact on the power production of the PV system, and measuring the carbon captured and sequestered in the soil by these plants.

Enterprise-Wide Innovations

While SD-10 innovation goals are met by R&D research programs, additional notable achievements occurred across SMUD supporting progressive customer offerings.

- The Innovation program at SMUD is evolving to focus on identifying and tracking strategic partnerships with local and regional community members and vendors from around the world to bring technology to scale that solves for SMUD's 2030 zero carbon objective. Interactions with 20 vendors are currently being tracked in 2023.
- IT's Energy Trading and Contracts (ET&C) is leveraging Python technology to automate regression testing of SMUD's PCI Energy Solution's resource optimization system. Upgrades occur twice a year, totaling 600 hours of testing. To date, 20% of the manual regression tests around product customizations have been automated.
- ET&C completed a Container orchestration proof of concept to reduce maintenance and improve reliability using a serverless cloud architecture for 100+ Docker microservices.
- DERMs Phase 1 and ADMS development is complete, implemented Q3 2022. DERMS Phase 2 development and building the QA DERMS test system is complete. DERMS Phase 3 design completed, continuing development of the core DERMS system functionality. SolarEdge and Virtual Peaker are continuing to integrate their systems into DERMS. DERMS Phase 2 and 3 are planned to go-live together September 2024.

Summary: As SMUD shifts to implementation of the 2030 Zero Carbon Plan, R&D has ramped up support for thermal transition and load flexibility technologies and business models, focused on energy storage and electric transportation, while continuing to advance research in climate change. These innovations help mitigate grid infrastructure impacts, maintain customer choice and offer new solutions toward a low carbon future. Our diverse portfolio helps maintain long-term competitiveness and balance risk with potential environmental and economic benefits, ensuring community benefits.

4) Challenges: 2023 continued in a primarily remote work environment with increasing physical attendance on site throughout the year. Vigilance remains due to the ongoing health impacts of COVID-19, and concern about supply chain and inflationary impacts. The R&D team was reorganized as part of the Strategic Partnerships and Grants team to better reflect the integration of R&D with partnership and external funding opportunities. Staff resources were focused on providing subject matter expertise for efforts supporting zero carbon by 2030, balanced between grant planning, acquisition and delivery to reduce SMUD's cost for R&D and project planning and implementation.

5) Recommendation: Recommend the Board accept the SD-10 Monitoring Report.

SD-10 Innovation 2022 Board Monitoring Report
Appendix

Table 2: R&D Projects

Research Program	ID	Project Name	Project Description	SD-10 Benefits	Start Date	End Date	Ward
Building Electrification	120	Home Infrastructure Planning Phase 2	This project will develop a Residential End State model to provide load growth insights and intelligence to optimize decision-making for distribution system upgrades, recommend program offerings, and estimate the likely costs of full electrification due to panel upgrades and distribution grid upgrades.	The main goal is to reduce the costs incurred by SMUD and our residential customers as they electrify their homes decarbonizing our district. This will help to reduce future rate increases expected from the 2030 Zero Carbon Plan and it will accelerate our decarbonization transition of residential homes.	5/1/2023	12/29/2023	All
Building Electrification	72	120V Heat Pump Water Heater Field Trial	Conduct a statewide field trial of 120V heat pump water heaters, to ensure their performance meets the needs of customers, and to investigate typical installation costs and technical hurdles. Water heating and space heating together account for two thirds of residential energy usage in the US therefore should be included in any plan to decarbonize the built environment and by installing 120V HPWH, panel upgrades may be avoided.	SMUD will be one of the first utilities nationally to deploy 120V HPWH as part of a program. In parallel with introducing this new technology without delay, SMUD is testing its effectiveness in the field, in order to make course corrections to the technology and program delivery as needed. Assuming the study results are favorable, these updated to SMUD existing program will be made in early 2024.	4/27/2021	7/31/2023	All

Building Electrification	67	St. Francis Manor Central HPWH Study	SMUD staff monitored the performance and benefits of converting a gas powered (boiler) domestic hot water system to a heat pump water heater (HPWH) driven system and found that primarily due to incorrect flows/piping of the water flow and the addition of a kitchen, there was insufficient hot water to serve demand throughout the year. However, simple solutions have been identified (adjust the direction of the water flow and install a dedicated HPWH for the kitchen) to meet the customer's needs and deem this project a success.	Confirm the realized savings and benefit of replacing existing boiler and gas-powered hot water systems in a central plant with a HPWH with small gas backup, which will inform replacements for the 50-100 similar commercial sites within SMUD territory that could electrify the hot water system.	4/1/2021	9/30/2023	5
Building Electrification	65	CalTF	Co-funding CalTF's development of the eTRM (Electronic Technical Resource Manual) as the basis for IOU EE program deemed measure savings. The eTRM adds functionality for POUs to use the available data and transition to transparent accounting of savings, including Carbon savings. POUs can set different baselines for measure savings than the IOUs.	SMUD will benefit from a centralized California eTRM online repository for all statewide deemed measures. The platform will ensure the accuracy, transparency, and accessibility of all deemed measure values, supplementing our current approach of conducting M&V studies every three years.	1/1/2018	12/31/2022	All

Building Electrification	112	Home Infrastructure Planning (Phase I)	Phase I leverages historical SMUD single-family electrification programs data to understand drivers for service panel upgrades. Collaboration with SMUD IT will generate Machine Learning predictions based on building attributes, customer demographics, and existing infrastructure. In later phases, these predictions will be the basis for customer engagements on building electrification, incentives programs, and predictive distribution planning.	Generating insights about infrastructure upgrades for SMUD distribution planners, electrification program designers, and SMUD Customers. The innovative tools produced in this project will help scale programs and optimally allocate resources towards 2030 ZCP goals.	10/22/2021	11/25/2022	All
Climate Change	64	Carbon Farming and Ecosystem Service Research at RSSII	Conduct field experiments at Rancho Seco to research ecosystems and evaluate the use of native species/pollinators to reduce the operational costs associated with vegetation management, erosion control, and fire protection. The project will explore the effects of vegetation and panel layout on PV generation and soil carbon.	The project will help identify and demonstrate strategies to integrate ecosystem services and agricultural value into large scale solar projects, helping to mitigate their environmental impact and build public support for their continued construction, assisting SMUD in achieving the 2030 ZCP.	1/30/2021	1/30/2026	2
Climate Change	109	Natural Refrigerant Incentive Pilot Program	Provides incentive for customer natural refrigerant systems, replacing super-polluting conventional refrigerants with high global warming potential. SMUD's first incentive program based on GHG reduction, not kWh savings. Monitored field pilots are underway at Grocery Outlet and Raley's stores in Sacramento.	DEED grant funding ($125K) was secured to support the Grocery Outlet project and technology transfer. First of its kind for the utility industry, this program demonstrates SMUD's leadership in leveraging relationships with our customers to help them save money and reduce GHG emissions in the region.	1/1/2018	12/31/2022	All
Electric Transportation	20	Twin Rivers Commercial Managed Charging (V1G, V2G)	Incorporate electric school buses and light duty vehicles to evaluate the effectiveness of managed charging and vehicle-to-grid capabilities to balance impacts on customer and utility electrical distribution and create value through grid services.	V1G findings will support smart charging applications which can mitigate customer charging costs and support grid management and deferred infrastructure upgrades. Reduce grid impacts, reduced customer infrastructure build-out cost, wholesale energy or capacity cost avoidance, and mirror characteristics of stationary storage using V2G.	1/30/2021	9/30/2024	5
Electric Transportation	107	V2G Commercial Expansion	This project will build off the electric school bus project with Twin Rivers Unified School District. We will demonstrate and test Automated Load Management, Managed Charging, and Vehicle to Grid functionality with electric school buses and other capable EVs.	Reduce grid impacts, reduced customer infrastructure build-out cost, wholesale energy or capacity cost avoidance, and mirror characteristics of stationary storage using V2G.	1/1/2022	12/30/2024	All

Electric Transportation	114	V4AMERICA	SMUD, GM and CMC are partnering to plan and deploy GM's EV fleet management solution to help reduce impacts to the grid through managed charging and vehicle to grid (V2G) dispatch.	This is a unique opportunity for SMUD to work with an automaker OEM in developing and piloting their charge management software. Effective charge management and Vehicle to Grid (V2G) dispatch has the potential to mitigate millions in grid infrastructure upgrades to support electrification of personal vehicles and commercial fleets over the coming decade.	1/1/2023	9/30/2025	All
Electric Transportation	15	Zeus Electric Truck Deployment	Collaboration with the California Mobility Center and Zeus Electric Chassis to deploy and test five Medium-Duty Electric Vehicles. Five unique configurations of the Zeus truck will operate in SMUD's fleet to study the performance, duty-cycle, and costs associated with utilizing electric trucks.	Inform both SMUD operations and customers of the challenges and benefits of fleet electrification. This project synergizes with the launch of the California Mobility Center which will support local economies and improve health and safety in DACs.	1/3/2023	6/30/2023	All
Electric Transportation	97	ChargeReady Community	In early 2022, SMUD was awarded the CEC's Reliable, Equitable, and Accessible Charging for multi-family Housing (REACH) grant (GFO-21-603) to deploy charging infrastructure to multi-family housing units (MFHs) in underserved communities. The main goal of the project is to develop a technical and business model to inform future deployments and disseminate knowledge in the industry. Project partners include Mutual Housing and the SMAQMD. The project team will install at least 108 Level II handles at up to 10 locations in Sacramento, utilizing SMUD's eFuel program for design and construction. OLD description: ChargeReady Community is the Sacramento region's replicable, equity-first EV charging solution for multi-family housing (MFH). Powered by Sacramento Municipal Utilities District (SMUD) and in partnership with community-based organization (CBO) and site host Mutual Housing California (Mutual Housing) and Sacramento Metropolitan Air Quality Management District (SMAQMD), ChargeReady Community will deploy a pilot model that transitions EV charging in under-resourced communities from inaccessible amenity to expected, critical infrastructure.	Help SMUD better understand the challenges and opportunities of deploying EVSEs in multi-unit dwelling in underserved communities, helping SMUD advance the adoption of electric transportation, which contributes to GHG emissions reductions, and promoting equity in transportation.	5/11/2022	6/30/2025	All

Electric Transportation	17	Del Paso Mobility Hub	Help create an e-Mobility hub for different modes of transportation, such as taxis, Uber, Jump, buses, etc. It will also include EV charging capability as well as gig cars. The first project in execution is the Del Paso Mobility Hub.	This is a novel project and transportation facility concept. It includes electric and fuel cell vehicles, including an electric shuttle, EV charging, shared vehicles, electric micro-mobility (ebikes and electric scooters) and transportation services.	9/1/2022	8/31/2023	5
Electric Transportation	104	Light Duty Fleet V2G	This project will test and demonstrate V2X functionality on campus with capable fleet vehicles such as the Nissan Leaf and Ford F150 Lightning. We hope to understand interconnection process, installation requirements, and V2X functionality through this project before proposing a larger scale pilot.	Informed deployment of light-duty V2X will reduce grid impacts and customer infrastructure build-out costs. LDV fleet management can also offer wholesale energy or capacity cost avoidance, and mirror characteristics of stationary storage.	1/1/2022	12/31/2023	All
Electric Transportation	22	Residential Managed EV Charging (V1G)	Actively manage residential EV charging times and peak power consumption. Managed EV charging can enable deferment of distribution system upgrades, smooth the duck curve, reduce renewable generation curtailment, and provide import and export arbitrage opportunities.	Benefits include reduction of the financial risks associated with transportation electrification, specifically by mitigating the risk of overloading electrical distribution infrastructure. Another secondary benefit is to better align energy delivery for charging with low-cost energy supply.	10/1/2021	12/30/2024	All
Electric Transportation	24	SMUD-Owned EVSE	Operation and maintenance of SMUD's public level 2 and DCFC charging stations.	Increase EV adoption by having publicly available working charging stations in high trafficked areas.	1/1/2014	12/31/2027	All
Energy Storage	119	ESS Flow Battery R&D	Project will deploy 29 ESS Energy Centers at Hedge Solar Farm. These centers will be 3.55 MW/28.4 MWh of long duration energy storage. The project will test the reliability and uptimes for comparison of LDES and Lithium-Ion batteries.	This field demonstration will test the reliability and technical parameters of the ESS long duration flow batteries in comparison to lithium-ion batteries as well as the ability to scale up to larger installations of 200MW.	5/1/2023	7/1/2026	3
Energy Storage	122	Hedge 4 MW/8MWh Monitoring and Maintenance	Operation of a 4 MW / 8 MWh utility-scale storage battery to test different operational modes and grid interactions.	The operation and testing of the Hedge Lithium-ion battery will inform the installation and direction of SMUD's future battery projects as they ramp up to meet the 2030 plan of ~3000MW of renewables and storage.	1/20/2023	1/19/2025	3
Energy Storage	6	Hedge Utility-Scale Battery	Deployment and operation of a 4 MW / 8 MWh utility-scale storage battery to test different operational modes and grid interactions.	The Hedge Battery supports the StorageShares program and SMUD's goal of adding 1,100 MWs of battery capacity in the coming decade. Proximity to the Sacramento Power Academy training facility will foster opportunities for workforce development in battery storage operations.	3/1/2019	8/31/2023	3

Energy Storage	5	Residential Energy Storage Programs	Continuation of Residential BTM energy storage systems including Commitment to Operate, Smart Energy Optimizer, and PowerMinder. Study of these systems will answer research questions regarding how customers respond to dispatch models, what communication standards could promote battery manufacturer relationships and data communication quality.	Residential BTM energy storage are customer-facing innovations that will provide resilience and system benefits to customers and SMUD alike. This work will inform future pilots including Multi-DER and Capacity Contracts VPPs.	1/1/2021	12/31/2023	All
Energy Storage	29	Sunverge in Schools	Partner with schools to install eight battery energy storage units at high schools or colleges to provide early hands-on education of battery energy storage systems.	Support local workforce development by developing a battery energy storage curriculum and installing battery energy storage system at educational institutes.	1/1/2021	8/21/2023	
Energy Storage	87	LDES Market & Technology Report	This project will perform detailed technology and cost characterization of Long Duration Energy Storage (LDES) technologies. Existence of developers, suppliers, cost and performance characteristics, market of LDES options and the techno-economic feasibility of adopting and implementing LDES will be considered. Perform an assessment of the viability and adoption of LDES that provide compelling features that help mitigate the issues associated with variable and intermittent renewables by improving its dispatchability and help meet or exceed SMUD's Zero Carbon Plan (ZCP). Investigate current, planned and potential LDES technologies that will provide highest values to SMUD. Perform comparative analysis of viable LDES technologies, discuss pros & cons, along with attributes for next steps that will meet or exceed ZCP.	Empower SMUD planners to make confident technology decisions along the flexible path to zero carbon. These technologies will provide grid stability and predictable electricity prices for SMUD customers.	4/29/2021	4/29/2023	All
Generation and Sequestration	34	Dairy Digesters eRIN Applications	Develop and submit the biogas-to-electricity pathway applications for Van Steyn, Van Warmerdam and New Hope dairy digesters under the Renewable Fuel Standard (RFS) for electricity Renewable Identification Number (eRIN) credits, generated when electricity produced from dairy digester biogas is used to charge electric vehicles in SMUD service territory.	The use of eRIN credits could unlock $0.12/kWh to $0.33/kWh of electricity generated for electric vehicle charging. This legal and financial innovation offer sound investment into biofuels production and carbon-negative transportation for electric vehicles.	1/1/2021	12/31/2023	7
Generation and Sequestration	55	DER Carbon Tool	Expand DER planning and modeling tool that assesses carbon reduction/savings, budgeting, portfolio optimization, cost effectiveness and load forecasting to include EE, Load flexibility, ET solar PV and battery storage measures.	Provide hourly forecasting of load shapes, evaluate carbon impacts and cost effectiveness for programs. Provides insights about DER valuation and the attribution of GHG reductions.	11/1/2020	12/31/2023	All

Generation and Sequestration	91	Hydrogen Blend Collaborative Research	Address the barriers on pipeline materials compatibility and degradation related to the blending of hydrogen into natural gas pipelines, a concept referred to as HyBlend. SMUD will provide data and serve as one of the injection points of H2. The data that will be provided will be analyzed to quantify the costs and opportunities of H2 production and integration into the natural gas system.	The HyBlend project will specify the role Hydrogen can play in the transformation of SMUD's thermal generation. HyBlend is a leading fuel choice that offers benefits for seasonal energy storage, resilience, and GHG emissions reductions.	7/1/2021	7/30/2023	All
Generation and Sequestration	39	LCFS Electricity Pathways for Dairy Digesters, Solar and Wind	LCFS Electricity pathway applications for Van Warmerdam, Van Steyn and New Hope dairy digesters, wastewater biogas and wind/solar that perform carbon intensity life cycle modeling, certification, verification, monetization, and reporting for LCFS credits to charge electric vehicles in SMUD territory. This initiative stimulates revenue generation, supports the growth of electric transportation and advanced renewable generation and helps achieve carbon zero target goal.	At full utilization of the 30 dairies and 14,000 cows in SMUD territory, the dairy digesters could offset a minimum of 70,000 Metric Tons of CO2 per year, while garnering $12.6 Million per year in LCFS credits. In 2021, Van Warmerdam and Van Steyn reduced 7,856 MT of GHG worth $1.2M LCFS. This project also proved the financial viability of Zero Carbon Intensity (CI) wind generation, which garnered approximately $1 Million from LCFS.	6/1/2019	12/31/2030	All
Generation and Sequestration	77	NET Power - Allam Fetvedt Cycle (Super Critical CO2 Cycle) Study	Participation in the EPRI SDF which will perform research on the Allam Fetvedt Cycle for supercritical carbon capture. The project will yield a technology assessment, value proposition, and analysis of SMUD-focused applications.	Key information on the design of Allam-Fetvedt Cycles was learned during this project, along with detailed testing data and performance assessments. The project provided insights on the technology and its operations, informing SMUD that it is too early to invest in deployment of this technology.	4/28/2021	12/31/2023	All
Generation and Sequestration	124	TC Biomass to Hydrogen Production and Delivery Facility Site Evaluation	Mote in collaboration with SMUD was awarded $500k by the CA Department of Conservation Forest Biomass to Carbon-Negative Biofuels Pilot Program. The project motivation has the end goal of using waste biomass from clearing the UARP transmission corridor for Thermochemical conversion to hydrogen. This grant project will focus on candidate site selection, pre-construction project validation and engineering, community benefits plan, and begin Front-End Engineering Design (FEED) for consideration as a potential project for development.	This project will provide insight on investments needed to build a supply of green hydrogen.	1/1/2023	12/31/2023	All
Grid Evolution	89	Smart Inverters	This project will test smart inverter connection via two pathways: direct connection and through vendors/aggregators. Direct connection will assist in development of the DERMS, while the vendor/aggregator pathway leverage OEM and aggregator relationships to establish pilot access agreements to a broader range of smart inverters.	Smart inverters are new technology that allows SMUD to monitor residential PV and storage and provides control functionality to assist in grid support.	7/1/2021	3/31/2023	All

Grid Evolution	45	Transmission Line Monitoring	Test the achievability and usability of Dynamic Line Ratings (DLR) to inform short-term operational and long-term planning decisions, using the LineVision V3 monitoring system.	Increases efficiency of transmission asset utilization while maintaining reliability. Advanced line rating methodologies can result in cost savings and operational benefits.	4/22/2021	12/31/2023	All
Grid Evolution	101	EPRI Substations SF6 Alternatives project	EPRI conducted high voltage tests on a range of alternatives, to study the safe and effective handling, operation, maintenance, and disposal of these new alternative approaches, and study the tradeoffs utilities will face after implementation.	Access to insights discovered by EPRI that will help our ability to comply with regulations to phase out the use of SF6 gas after January 1, 2025. The AirPlus formulation has been discontinued and there are now two manufacturers pursuing the g3 alternative, with additional research and testing to follow.	9/1/2021	12/31/2022	All
Load Flexibility	49	My Energy Optimizer Partner (Multi-DER VPP)	This project will research the ability of the proposed solution to orchestrate a diversity of qualifying residential customer-sited devices to deliver load flexibility needs throughout the year and to assess whether it makes sense to continue to scale-up.My Energy Optimizer (MEO) give aggregators control of residential customers thermostats and battery systems to deliver load flexibility needs throughout the year. Should the research result in favorable findings, these offerings will become reliable assets that grid can depend on when load needs to be shifted.	Upon successful completion of the Multi-DER VPP, SMUD will have a guaranteed, load flexible residential program. This load will be integrated with the DERMS and allow SMUD to operate as required for business needs (EIM/RA/Emergency).Assuming these offerings result in consistent reliable load shifts, it will be incorporated into SMUD DERMS to allow SMUD to operate as required for business needs (EIM/RA/Emergency).	1/5/2021	12/31/2024	All
Load Flexibility	69	EnergyKit HEMS field demo	Ynventive, CLTC, Panasonic and SMUD have partnered to install the EnergyKit home energy management system into eight residential homes and evaluate it's performance managing residential loads in response to price signals and demand thresholds.	Assuming the EnergyKit EMS performs as expected, it could enable customers to reliably shift their loads due to price signals and provide an alternative to panel upgrades for capacity constrained customers interested in electrification.	4/30/2021	9/30/2024	All

Table 3: Enterprise-Wide Initiatives

Initiative Name	Initiative Description	Initiative Benefits	Start Date	End Date	Ward
Strategic Partnerships (formerly "Innovation Program")	The Innovation program at SMUD is evolving to focus on identifying and tracking strategic partnerships with local and regional community members and vendors from around the world to bring technology to scale that solves for SMUD's 2030 zero carbon objective. Interactions with 20 vendors are currently being tracked in 2023	Coordinate interactions across SMUD with external vendors offering new products and solutions that support SMUD in achieving our 2030 Clean Energy Vision. Reduce staff time spent responding to shotgun meeting requests from prospective vendors.	2023	Ongoing	All
Automated regression testing	IT's Energy Trading and Contracts team is leveraging Python technology to automate regression test of SMUD's PCI Energy Solution's resource optimization system.	Upgrades occur twice a year for a total of 600 hours of testing. To date, 20% of the manual regression tests around product customizations have been automated.	2023	2023	All

Container orchestration proof of concept	IT's Energy Trading and Contracts team leveraged a serverless architecture in the cloud to implement a Container orchestration proof of concept for SMUD's Docker microservices. Containers combine an app plus its configuration and dependencies into a single, independently deployable unit.	Containers are an excellent fit for bundling and deploying independent microservices. This approach will reduce the maintenance and improve reliability of SMUD's 100 plus Docker microservices (computer applications).	2023	2023	All
DERMS	Strategic business partnership with OSI to develop a Distributed Energy Resource Management System whereas SCADA and behind the meter resources can be used to solve distribution constraints, participate in the market, and manage flexible loads.	Leverage DER capabilities to meet economic objectives, peak load reduction, local constraint issues, deferred infrastructure investment, and grid optimization. As OSI's partner, SMUD shares revenue from future sales.	2018	2028	All
ADMS	Implement a real-time Advanced Distribution Management System (ADMS) Platform (DMS and D-SCADA) to improve management and control of distribution system, enhance distribution operations functions, optimize distribution system and improve forecasting accuracy.	ADMS is the foundation to support providing SMUD's Distribution System Operations a 360 view of distribution and is required to support future DERMS Phases.	2018	2022	All

DRAFT

RESOLUTION NO. _____

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

This Board accepts the monitoring report for **Strategic Direction SD-10, Innovation**, substantially in the form set forth in **Attachment ___** hereto and made a part hereof.

12

SSS No.	Committee Meeting & Date
DPG 23-074	ERCS – 10/18/2023
	Board Meeting Date: 10/19/2023

BOARD AGENDA ITEM
STAFFING SUMMARY SHEET

TO		TO	
1.	Lora Anguay	6.	
2.	Claire Rogers	7.	
3.	Frankie McDermott	8.	
4.	Suresh Kotha	9.	**Legal**
5.	Brandy Bolden	10.	**CEO & General Manager**

Consent Calendar	X	**Yes**		**No** *If no, schedule a dry run presentation.*	**Budgeted**	X	**Yes**		**No** *(If no, explain in Cost/Budgeted section.)*

FROM (IPR)	DEPARTMENT	MAIL STOP	EXT.	DATE SENT
James Frasher	New Business Development		6082	9/25/2023

NARRATIVE:

Requested Action: Accept the monitoring report for **Strategic Direction SD-19, Diversified Business**.

Summary: The purpose of this meeting is to facilitate a discussion with the SMUD Board of Directors on Strategic Direction SD-19, Diversified Business. The presentation will briefly summarize SMUD's technology partnerships, community choice aggregator services and grant initiatives.

Board Policy: *(Number & Title)* Strategic Direction SD-19, Diversified Business.

Benefits: The Zero Carbon Plan requires the development of New Technology and Business Models to be successful. The guidance from SD-19 encourages consideration of partnerships and business models to help accelerate solutions, programs and technologies that are near market ready to transition to full commercialization. Collaboration with technology and industry partners creates mutual benefits for both SMUD and partners. SMUD's industry leading Zero Carbon Vision allows technology and solutions to be quickly evaluated in real-world conditions. Early collaboration with technology partners can provide long-term benefits through preferred technology pricing at scale, revenue growth and improved access to technology in a supply chain constrained environment.

Cost/Budgeted: Contained within internal labor budget.

Alternatives: Provide information via written report through the Chief Executive Officer and General Manager.

Affected Parties: SMUD Customers, SMUD employees, peer utilities, community partners and technology developers.

Coordination: Evaluation of Diversified Business initiatives are cross cutting across the entire enterprise.

Presenter: James Frasher, Manager, Economic Development and Partnership

Additional Links:

SUBJECT	ITEM NO. *(FOR LEGAL USE ONLY)*
SD-19, Diversified Business Board Monitoring Report	**12**

ITEMS SUBMITTED AFTER DEADLINE WILL BE POSTPONED UNTIL NEXT MEETING.

SACRAMENTO MUNICIPAL UTILITY DISTRICT

OFFICE MEMORANDUM

TO: Board of Directors **DATE:** September 28, 2023

FROM: Claire Rogers *CR 9/28/23*

SUBJECT: **Audit Report No. 28007601**
Board Monitoring Report; SD-19: Diversified Business

Internal Audit Services (IAS) received the SD-19 *Diversified Business* 2022 Annual Board Monitoring Report and performed the following:

- Selected a sample of statements and assertions in the report for review.
- Interviewed report contributors and verified the methodology used to prepare the statements in our sample.
- Validated the reasonableness of the statements in our sample based on the data or other support provided to us.

During the review, nothing came to IAS' attention that would suggest the items sampled within the SD Board Monitoring report did not fairly represent the source data available at the time of the review.

CC:

Paul Lau

Board Monitoring Report FY 2022
SD-19, Diversified Business

1) Background

Strategic Direction SD-19 states that:
Broadening and diversifying the products and services that SMUD offers is a key value. The desired results are to: a) generate new revenues that contribute to SMUD's long-term financial health; b) spur the creation of innovative products and services; c) capture the value of SMUD's brand and intellectual property; d) better leverage and optimize SMUD's assets; and e) enable SMUD to continue to attract and retain a talented workforce.

Therefore:

a) SMUD shall broaden and diversify its lines of business, which may include:
- i) Being an external service provider;
- ii) Expanding wholesale energy market opportunities;
- iii) Capitalizing on intellectual property and assets to develop products and services either solely or through strategic partnerships;
- iv) Selling products and services aligned with SMUD's purpose and Strategic Directions.

b) SMUD shall ensure any new lines of business:
- i) Benefit SMUD's customers and our community;
- ii) Achieve a balanced, diversified portfolio of rewards and risks;
- iii) Create economic value without compromising SMUD's financial health;
- iv) Do not pose unreasonable risk to SMUD's reputation;
- v) Align with, leverage, and optimize SMUD's strengths, assets and expertise;
- vi) Position SMUD for the future.

2) Executive Summary

a) The 2030 Zero Carbon Plan has positioned SMUD as a leader in the utility industry. The Diversified Business portfolio utilizes that leadership position to build revenue generating partnerships with technology developers, pursue external funding (grants) to support innovation and partnership, enable technology solutions to become fully commercialized through real world pilots and demonstrations, and provide services to other organizations to support their decarbonization efforts.

b) **SMUD is in compliance with SD-19, Diversified Business.**

c) Eliminating the final 10% of emissions from SMUDs energy supply requires the development of new technology and business models. External funding allows

SMUD to accelerate the pursuit of partnerships and emerging technologies that are necessary to reach zero emissions. Without external funding many these pursuits could become cost prohibitive.

External Funding (2022)

Total SMUD Project Costs	Funds Awarded to SMUD	SMUD Cost Share
$15,177,496	$9,193,211	$5,984,285

Grant funding also supports workforce development and training initiatives that help develop a talented workforce with the skills necessary to support building and maintaining a zero carbon economy.

d) Partnership benefits to SMUD may include revenue sharing agreements, intellectual property development, future pricing commitments, service based payments and/or partner commitments to regional investment. Partners benefit from SMUDs zero carbon leadership, subject matter expertise and collaboration on real world pilots and full-scale demonstrations.

Strategic Partners and Revenue Generating Relationships

Partner	Area of Focus
Open Systems International, Inc. (OSI)	ADMS / DERMS
ESS Inc.	Long Duration Energy Storage
Swell Energy	Virtual Power Plant Aggregator
California Mobility Center	Mobility Innovation and Workforce Development
GridX	Data analytics and customer information platform developer
Simple Energy (Uplight)	Customer engagement and load flexibility
Smart Energy Water (SEW)	Customer Experience Platform Development
Community Choice Aggregators	Community Choice Aggregation services

Portfolio Revenue

2022 Gross Revenue	2022 Costs	2022 Net Revenue
$10,456,183	$9,294,409	$1,161,774

3) Additional Supporting Information

a) Additional funding

Funding is most often pursued through grants, however this category is not limited to grants. SMUD considers foundation funding, disaster recovery funds,

state and federal funding allocations and other sources of funding in this category. Descriptions of 2022 funding are listed in Appendix A.

b) Community Choice Aggregator Services
SMUD currently provides services to (5) community choice aggregators. Specific details on these CCA's are listed in Appendix B.

c) Technology and Industry Partners
Diversified business is often an outcome of technology and industry partnerships. These relationships often build on the successes of individual pilots, projects, or other innovation initiatives. Specific details of projects and innovation are outlined in the SD-10, Innovation monitoring report. Additional strategic partnership details are included in appendix C of this report.

4) Challenges

a) The inflation reduction act along with other recent economic drivers has created an environment with significant opportunities to pursue external funding. That environment alongside SMUD's leadership position in pushing towards zero carbon has created a significant number of potential opportunities and partnerships to consider. The prevalence of funding opportunities and the volume of companies with a desire to work with SMUD create challenges in filtering through the volume of opportunities in pursuit of the best opportunities. Strategic partnerships are often made more complex due to involving technologies that are not fully commercialized or market ready. This combination of technology maturity and the broad scope of funding opportunities means that SMUD must be highly selective in choosing who to partner with and which funding opportunities to pursue.

Developing the correct portfolio of grants and partnerships is critical to meeting the direction of SD-19. Pursuing too many initiatives in parallel can result in a lack of support on the most important areas of focus. Additionally, it is critical that the efforts pursued have strong alignment with each other and the overall zero carbon plan.

b) The long-term economic benefit from strategic partnerships begins with the impact that work can have on our community and the elimination of carbon from the electrical system. Benefits beyond those local value streams, especially recurring revenue, require development and delivery of long-term business models. The time it takes those business models to develop and evolve can be highly variable. Due to the long-term uncertainty of new revenue models SMUD first verifies that partnership pursued under SD-19 will benefit SMUD customers and our community prior to considering long term revenue generation.

5) Recommendation

It is recommended that the Board accept the Fiscal Year 2022 Monitoring Report for SD-19, Diversified Business.

Appendix A

External Funding Project Descriptions

1) **SMUD Neighborhood Electrification Project:** This project will build on years of energy efficiency, weatherization and electrification work for customers most in need, focusing on one of the most under-resourced neighborhoods in the Sacramento region –Meadowview. This project will provide clean energy technology for up to 300 single family homes in the same neighborhood, aiming for full electrification of homes when feasible and cost-effective. Families residing in these homes will benefit from better indoor air quality, lower utility bills, and lower financial stress associated with failure of older existing appliances. When feasible, homes will be EV-ready, so residents will be able to consider acquiring an electric car, offering vehicle fuel, service, maintenance, and other cost savings for the households, and improvements to regional air quality and contribution to meeting statewide GHG reduction goals.

   SMUD will take a holistic neighborhood approach while utilizing many existing program processes, resources and partnerships. Electrifying a neighborhood may create efficiencies in terms of marketing, outreach, planning, design, equipment costs and labor costs. In addition, it helps decarbonize a specific under-resourced neighborhood and establishes the neighborhood as a showcase for what's possible in the region, while reducing the energy burden on stressed households.

2) **Reach 1.0 – Charge Ready Community:** ChargeReady Community is the Sacramento region's replicable, equity-first electric vehicle (EV) charging solution for multi-family housing (MFH). Powered by Sacramento Municipal Utilities District (SMUD), and in partnership with Mutual Housing California (Mutual Housing), ChargeReady Community will deploy a model that transitions charging in under-resourced communities from inaccessible amenity to expected, critical infrastructure.

   ChargeReady Community's unique approach will implement streamlined installation for both existing and new-construction MFH, no and low-cost payment options including solutions for under and unbanked residents, and persona and neighborhood-based resources and outreach that build toward EV usage and ownership. With SMUD and Mutual Housing California's *ChargeReady Community* will empower impacted neighborhoods and ensure Sacramento communities are livable, resilient, and ready for a low-carbon future.

3) **Forest Biomass to Carbon-Negative Biofuels Pilot Program (MOTE):** Hydrogen and biofuels have the potential to be significant contributors to grid decarbonization. The MOTE projects is designed to evaluate the opportunity to utilize biomass from forest management to create hydrogen that can be used to

help power future thermal resources period. This project specifically is a study to evaluate potential sites and community impact.

4) **BRIC - Microgrid Scoping Project:** Inverters and other distributed energy resources are continuing to play a larger role in the overall operation of the electrical system. The microgrid scoping project is a study to look at the potential role those technologies may play to enable microgrids that can be leveraged to both support the electrical system and increase resiliency for our community. The study will develop a blue print for micro grid planning and development which can be leveraged to create resiliency centers. Additionally, the results of this study will be leveraged future grant applications and provide insight and guidance for future microgrid projects.

Appendix B

Community Choice Aggregator Detail

Community Choice Aggregation. In 2002, Assembly Bill 117 was passed to establish Community Choice Aggregation in the State by authorizing Community Choice Aggregators ("CCAs") to aggregate customer electric load and purchase electricity for customers. SMUD sees the growth of CCAs as an opportunity to support organizations with values closely aligned with SMUD's values, while also generating additional revenue for SMUD. CCA programs are proliferating in the State thanks to support for expanding renewable energy use and desire for local control particularly for electricity procurement. There are numerous CCAs operating in the State, and more are anticipated to launch in the future. CCAs are responsible for procuring wholesale power, setting the generation rate, and staffing a call center to handle opt-outs and questions about the power portfolio. The local investor-owned utility ("IOU") continues to deliver electricity from the electric grid, maintain its electric infrastructure, bill customers and collect payments.

In October 2017, SMUD contracted with Valley Clean Energy ("VCE"). VCE is a joint powers agency formed in 2016 by the City of Woodland, the City of Davis and Yolo County to implement a local CCA program. The service territory expanded to include the City of Winters in 2021.

In February 2018, SMUD contracted with East Bay Community Energy ("EBCE"). EBCE is a joint powers agency formed in 2016 by the cities of Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Oakland, Piedmont, San Leandro and Union City in Alameda County to implement a local CCA program. EBCE expanded its territory to the cities of Pleasanton, Newark, and Tracy in April 2021.

In June 2019, SMUD contracted with Silicon Valley Clean Energy ("SVCE"). SVCE is a joint powers agency formed in 2016 by the cities of Campbell, Cupertino, Gilroy, Lost Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Saratoga, Sunnyvale and Unincorporated Santa Clara County to implement a local CCA program.

In October 2022, SMUD contracted with Marin Clean Energy ("MCE"). MCE is a joint powers agency formed in 2010 and represents 37 member communities across four Bay Area counties: Contra Costa, Marin, Napa and Solano.

In December 2022, SMUD contracted with Sonoma Clean Power ("SCP"). SCP is a joint powers agency that serves Sonoma and Mendocino counties.

Appendix C

Partner List and Description

1) **Open System International, Inc. (OSI)**: Strategic technology partnership to implement and deploy an industry-leading Distributed Energy Resource Management System (DERMS). SMUD will receive royalties from future sales of the enhanced product suite for DERMs. DERMs Phase 1 and ADMS development is complete, implemented Q3 2022. DERMS Phase 2 development and building the QA DERMS test system is complete. DERMS Phase 3 design completed, continuing development of the core DERMS system functionality. SolarEdge and Virtual Peaker are continuing to integrate their systems into DERMS. DERMS Phase 2 and 3 are planned to go-live together September 2024.

2) **ESS Inc.:** Agreement to provide up to 200 megawatts (MW) / 2 gigawatt-hours (GWh) of ESS' environmentally safe and sustainable long duration energy storage solutions.

   The agreement calls for ESS to deliver a mix of its Energy Warehouse™ and Energy Center™ long-duration energy storage (LDES) solutions for integration with the SMUD electric grid beginning in 2023. SMUD will deploy the LDES systems in support of its 2030 Zero Carbon Plan which aims to reduce thermal generation, maximize local solar generation, provide neighborhood resiliency, and increase social justice and equity. LDES is a key component in SMUD's decarbonization plan, without compromising reliability or low electricity rates.

   As part of this multi-year agreement, ESS intends to set up facilities for battery system assembly, operations and maintenance support and project delivery in Sacramento, creating local, high paying jobs. In addition, SMUD and ESS plan to establish a Center of Excellence to expand the workforce and knowledge base for LDES technology in partnership with higher education institutions. The Center will provide advanced LDES technical training, creating a statewide skilled talent pool to help build and maintain California's fast-growing long-duration energy storage resources.

3) **Swell Energy:** agreement for Swell to act as the aggregator for the My Energy Optimizer Partner+ program – a residential customer-driven virtual power plant initiative.

The initial effort will bring 20 MWh and 10 MW of renewable capacity to SMUD by recruiting, installing and aggregating capacity from customers' battery storage systems located in the utility's service area. The program has the opportunity to scale to 54 MWh and 27 MW over the term of the partnership.

4) **California Mobility Center (CMC):** The CMC is working to create a regional technology HUB that focuses on advancing mobility related technologies and the workforce needed to support them. The CMC works with many regional partners including SMUD to pursue mobility related grants, engage with technology companies interested in the Sacramento area, identify workforce needs to facilitate transformation of the mobility industry and provide community workforce development opportunities.

5) **GridX:** SMUD and GridX have partnered to pilot and demonstrate GridX technology. These pilots provide a mutual benefit for SMUD and GridX. SMUD customers benefit from GridX data analytics to help inform their energy decisions. Additionally when these pilots support GridX to expand their services to additional clients some of that revenue is shared with SMUD to support long term affordability.

6) **Simple Energy (Uplight):** Simple Energy has partnered with SMUD to operate the SMUD Energy Store. This partnership is a revenue sharing agreement that benefits directly from sales on the Energy Store site.

7) **Smart Energy Systems, Inc. dba Smart Energy Water (SEW):** SEW is a digital platform developer dedicated to solving global energy and water crises. SMUD and SEW are Co-developing innovative utility centric communication tools such as, customer facing self-service modules, payment processing, prepay, eMobility, and advanced analytics for grid resilience. These tools support SMUD in our zero carbon journey and may generate future shared revenue if the tools are adopted by other utilities.

DRAFT

RESOLUTION NO. _____

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SACRAMENTO MUNICIPAL UTILITY DISTRICT:

This Board accepts the monitoring report for **Strategic Direction SD-19, Diversified Business**, substantially in the form set forth in **Attachment ___** hereto and made a part hereof.