



November 3, 2017  
GM 17-285

BOARD OF DIRECTORS

## 2018 BUDGET

Dear Board Members:

I am pleased to submit SMUD's 2018 Budget proposal. It provides funding for operations and maintenance (O&M) and capital programs needed to meet all of the Board's Strategic Directions over the coming year, and lays the foundation to ensure we continue to do so in the future.

As you know, our industry continues to change at an ever increasing pace. Change is happening simultaneously on many fronts, including increased competition and business complexity, growing customer expectations, rising costs and new revenue opportunities. For SMUD to maintain our competitive advantage, we must recognize the changing landscape and reflect that change in our business model, while also delivering reliable, cost-effective and efficient services to our customers. Simply put, delivering our core work efficiently is the foundation of the promise we make to our customers and central to building customer loyalty. The 2018 Budget sets the stage for operational efficiencies, improvements and expansions into new customer offerings that will continue in the coming years, while also looking at new revenue opportunities.

In 2018, we're embarking on exploring new business opportunities that open the door to new markets and revenue sources for SMUD, including expanding our opportunity for new net revenue in traditional wholesale energy markets. We're successfully selling excess transmission capacity, have begun participating in the energy regulation market and are making necessary preparation to participate in CAISO's Energy Imbalance Market (EIM) starting in 2019. We signed a contract with Valley Clean Energy Alliance (VCEA) to provide Community Choice Aggregator (CCA) services, and will continue to prepare for VCEA's launch in spring 2018. Our work with VCEA creates a new revenue stream for SMUD and creates possibilities for expansion into other CCA markets.

As you know, the evolution of the utility business model means we're increasingly reliant on technology in all areas of our business – from enhancing the customer experience to integrating more distributed energy resources (DERs) into our distribution system. Customers are increasingly turning to digital channels such as the internet and email to do business with SMUD, and the 2018 Budget includes initiatives to help us deliver our digital first strategy.

**Arlen Orchard, Chief Executive Officer & General Manager**

Key initiatives for 2018 include a new SMUD app with bill pay and outage communications functionality and increasingly personalized customer experiences on our digital channels.

The proposed 2018 Budget is \$1.74 billion, which is \$161 million more than the 2017 Budget, primarily due to higher planned capital expenditures. We need to continue upgrading infrastructure to maintain reliability and invest in a technological foundation for future changes. The 2018 Budget funds a variety of capital programs including investment to support development of our load serving capacity, grid modernization, compliance with regulatory requirements and support for our customer experience efforts. Major capital projects for 2018 include the continued rebuilding of Station G and Station E substations, the start of the new Franklin substation and the rehabilitation of our Headquarters building. We also included capital funds for the re-purchase of Solano Wind Phase 3 in April 2018. The 2018 Budget contains funding for corporate contingency partially offset by any associated reimbursements from outside entities, which is for items with a high likelihood of occurring in 2018 but without enough definition to be included within a business unit's budget. In 2018, corporate contingency includes funds for load serving capacity projects, California Water Fix project, EMC building replacement and contingency for any additional costs for the Headquarters rehabilitation.

The O&M budget is increasing, primarily due to new work for our planned entry into the EIM, overhaul expenses at Procter & Gamble and Cosumnes power plants, new technology enhancements, additional funds to cover increased wildfire costs, and repair costs from storm damage that occurred at the beginning of 2017. The budget also funds the preparations for switching our residential customers to Time-of-Day (TOD) Rates, including funds for customer outreach and education. Offsetting these increases is a lower commodity budget due to a decline in natural gas costs which we locked in through our hedging programs.

The 2018 Budget authorizes 59 new positions. These positions are in support of the Technology, Grid Strategy & Operations, Workforce and Community Choice Aggregation work groups. As our reliance on technology grows, many of the new positions and, in some cases, new skill sets are necessary to successfully move our business model and SMUD forward. Almost half of the new positions (28 student positions) are to support the expansion of our internship programs to draw on local collegiate resources. Our internship program provides opportunities for local students and creates a pool of future employees for SMUD.

To fulfill the Strategic Directions you've set for us, strong financial management is imperative. The previously approved rate increases for 2018 of 1 percent for commercial customers and 1.5 percent for residential customers and our strong year-end cash balances will be sufficient to cover most of our planned expenditures, with some new borrowing in 2018 to fund the remaining capital expenditures.

We expect a modest increase in our customer count in 2018, and a slight increase in our kWh sales volume. We recognize the potential for new growth related to indoor agriculture and mixed-use commercial/residential growth, but have maintained conservative sales estimates as this markets are still in transition. Electric vehicle (EV) energy usage is still relatively low, but we're working closely with the industry and potential EV buyers to support

greater EV adoption in our region. We'll continue to monitor and manage these and other factors, including local construction and employment, and their impact on our Budget and operations.

## Budget Breakdown

Here is a brief overview of the 2018 Budget compared to the 2017 Budget (dollars in millions):

	2017	2018	Change
<b>Commodity</b>	\$468.9	\$435.1	(\$33.8)
<b>Public Goods</b>	67.1	55.0	(12.1)
<b>All other O&amp;M</b>	479.6	545.2	65.6
<b>Sub Total</b>	\$1,015.6	\$1,035.3	\$19.7
<b>Debt Service</b>	\$182.5	\$181.1	(1.4)
<b>Capital and Reserve</b>	376.6	519.4	142.8
<b>Total Authorization</b>	<b>\$1,574.8</b>	<b>\$1,735.8</b>	<b>\$161.0</b>

*Totals may reflect minor rounding differences*

The 2018 Budget is projecting net income of \$129 million and a fixed charge ratio of 1.98.

The following sections provide details on the specific initiatives and programs funded in the 2018 Budget, grouped by Strategic Direction.

### Competitive Rates (SD-2)

The 2018 Budget reflects the 1 percent rate increase for commercial customers and a 1.5 percent rate increase for residential customers approved by the Board in July 2017. Energy supply commodity costs make up about half of our total O&M budget. Staff has locked in prices for most of our expected energy requirements for 2018 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 2018 with approximately \$62 million in the Hydro Rate Stabilization Fund and \$40 million in the Rate Stabilization Fund. A transfer of \$14.4 million into the Rate Stabilization Fund is expected in December 2017 as a result of higher energy deliveries from Western Area Power Administration due to our record setting water year. These reserve funds help us absorb higher energy costs when hydroelectric production is down and serve as a buffer against unexpected financial developments.

We recognize that delivering operational efficiency improvements is an important tool to help reduce upward pressure on rates, and there are numerous initiatives planned for 2018 across SMUD to make our processes more efficient. We'll continue to drive performance improvements by focusing on annual improvement priorities with measured outcomes and

benefits realization, application of operational excellence and streamlined planning and prioritization processes. A few examples of efficiencies in the 2018 Budget are:

- Operationalizing an Agile framework into our technology project portfolio.
- Workforce optimization within Grid Assets including scheduling and mobile work management which includes improvements for annual line patrols and distribution inspections resulting in higher work output, for roughly the same budget amount.
- Improving Facilities maintenance planning and scheduling processes.
- Reducing our Public Goods budget by \$12 million by redefining our customer focus on customer segments and still meeting our energy efficiency goals, and also closing-out of the SB-1 Solar Rooftop program, having exceeded our program goals.
- Efficiency gains in field force training by converting 25 courses to eLearning instruction. This will reduce the number of bundled/classroom training days required of our field workforce.

One key initiative that staff will work in conjunction with the Board is the development of a strategic pricing roadmap. Adoption of time-of-day pricing structure was an important milestone, but we need to continue to evolve our pricing strategy. We need to transition our pricing from a “rate” to a customer program that offers pricing options and allows our customer to optimize the technology of their choice, from storage, to a connected thermostat, to charging of electric vehicles.

### **Access to Credit Markets (SD-3)**

SMUD is in a strong financial position. In order to maintain our AA- credit ratings, we’ve set a strategic financial target to maintain strong operating cash flow. The Board has set a minimum target of 1.45 times operating cash flow, though in our plan we aim to exceed that target to support the higher level of proposed capital spending. Our forecasted 2018 operating cash flow cover is 1.98.

We’ll start 2018 with a strong cash balance, due in part to funds that were borrowed in anticipation of the increased capital spending. This will also allow us to use cash, a preferred source of funding for investments in technology. We’re forecasting to end 2018 with an unrestricted cash balance of \$539 million, and a Rate Stabilization Fund balance of \$40 million, which combined, is more than the target minimum for cash reserves. We intend to issue debt in the amount of \$200 million to cover the replacement or upgrade of aging infrastructure such as the Headquarters building, underground cable, Stations E and G, and Franklin substation.

We’re continuing with our transition to residential TOD Rates. In July 2017, the Board approved TOD to be the standard residential rate beginning in 2019. Between now and next fall, we’re finalizing our preparation including upgrading computer systems, training staff and

increasing our outreach efforts to educate our customers on the new rates. In 2018, we begin the transition to TOD and will launch the Friends & Family campaign in the fourth quarter.

As always, the largest budget exposure for 2018 will be the effect a dry winter could have on hydroelectric generation and the hydropower SMUD receives from the Central Valley Project via the Western Area Power Administration. Due to above normal precipitation this year, we were able to put money back into the depleted savings account, but a dry year could force us to make unbudgeted market purchases, potentially reducing net income and cash flows. To reduce the negative impacts of an extremely dry year, staff has entered into insurance-like precipitation contracts to supplement a hydroelectric rate surcharge and will again ask to use the Rate Stabilization Fund to offset the purchase of any needed replacement power.

### **Reliability (SD-4)**

Keeping the lights on for our customers remains a top priority. The 2018 Budget funds the ongoing preventive maintenance and capital improvement projects needed to ensure high reliability of our distribution system. While our reliability is generally high, we've seen an increase in outage frequency and duration largely attributable to car/pole accidents and outages associated with trees outside of SMUD's rights-of-way. We understand that any power outage is a negative experience for our customers. We're actively taking steps to reduce the frequency and duration of outages and continue efforts to improve our proactive communications with customers during outages.

In 2018, we'll continue rebuilding two of our large substations. Environmental work and final grading of Station E will be completed, plus we'll complete design on Station G and start construction on Franklin Bulk substation. We're making substantial improvements in 2018 to our line infrastructure in support of new indoor cultivation business and have additional funding within the corporate contingency budget if this new business grows beyond our current estimates.

Activities funded in the 2018 Budget to specifically address customer outages include:

- In an effort to reduce the number of car-pole crashes: relocating 12 poles to a less-congested location; adding new, more reflective visibility strips to targeted corridors that experience high volume accidents, as well as replacing older visibility strips during the normal cycle inspection of poles; and installing four more pole-barrier raptors to bring our count up to eight, and then studying the efficacy of the new barriers.
- Using Light Detection And Ranging (LiDAR) technology to identify diseased trees that may result in "non-preventable" outages and help mitigate wildfires.
- Continuing grid modernization efforts through substation and line automation. We'll also begin deployment of Supervisory Control and Data Acquisition (SCADA) network core and fault tolerance components and update our communications system by implementing a fully functioning telecommunications network.

- Ongoing improvements at our Upper American River Project (UARP) to remediate aging infrastructure.
- Continuing investment in core fleet vehicles, tools, and equipment to improve availability, safety, and reliability for our field operations.
- Completing the replacement of our two-way radio system, backup DC power and OC3 Loop and Fresh Pond microwave radio. This project will replace the legacy microwave radios in the loop that extends from Sacramento to El Dorado County including the microwave antenna, wave guide, switches and site alarms. Additionally, the network management system will be modified to accept equipment alarms from the new radios.
- Finalizing SMUD architecture for Advanced Data Management System (ADMS) and implement an ADMS test environment which will allow SMUD staff hands-on access to the new system. This supports the integration of distributed energy resources.
- Pursuing infrastructure upgrades to increase our load serving capacity and beginning work on the Hurley Reconductoring project.

Ongoing annual activities included in the 2018 Budget include funds for the 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)**

By focusing on empowering our customers to thrive in a new energy future, we'll foster stronger customer loyalty. Our customer experience efforts integrate business discipline into customer service through enterprise priorities, operations and tactics. We want customers to feel in control of their energy usage by reliably delivering energy, information and tools they need in a way that is easy, responsive, personal and collaborative. Our overarching goal is to increase customer loyalty among all of our customer segments as measured through our Value for What You Pay metric.

The number of energy-related products and providers of energy-related services available to customers continues to grow, and SMUD's customer segment strategies recognize that utilities can no longer take a one-size-fits-all approach to product and service delivery. The strategies use detailed customer data and analytics to deliver the right products, services, tools and information to the right customers at the right time in the channels of their choice and, in turn, boost value and customer loyalty.

In support of this work, our 2018 Budget includes funds for:

- Preparing residential customers for the transition to TOD Rates through an integrated communications, marketing and outreach strategy to help customers understand how TOD could impact their bill and how to mitigate those impacts.

- Increasing the number of EAPR pilot participants to continue to improve energy affordability for customers who need it most by helping them reduce both energy usage and their bills.
- Continuing to enhance our digital channels and improve customers' experience through initiatives including a mobile app featuring bill payments and outage communications, video bill, an enhanced IVR and increasingly personalized digital customer experiences.
- Expanding and growing our Solar Shares® program for commercial and residential customers by offering a complementary and cost-effective option to behind-the-meter PV installation, sourced from utility-scale PV systems.
- Continuing to pilot SMUD Energy Store, adding products and enhancing features intended to drive customer value.
- Building sustainable communities through continued partnerships, sponsorships, education, outreach, support for small business through SEED and economic development efforts.
- Continuing our scholarship program for economically disadvantaged high school and college students in SMUD's service territory and expanding the use of our college internship programs to support the community and help build SMUD's future workforce.
- Improving and revitalizing neighborhoods across the Sacramento region through our Shine community development awards program. In 2018, we'll promote the winning projects from 2017 and implement year two of the awards.
- Improving relationships with commercial developers through early action, closer coordination, removal of barriers, and improved communication and education.
- Beginning work on the Street Car Project, including utility relocation and design review as part of the downtown Sacramento revitalization effort. Final design is expected February 2018 with construction beginning in spring 2019.
- Installing drought tolerant landscaping at existing substations as part of our substation beautification efforts. This will reduce maintenance costs and improve the appearance of existing substations.

### **Safety (SD-6)**

In 2017, SMUD worked toward a zero incident safety culture for our employees, contractors and the public. SMUD continued a 5-year trend of reducing the number of incidents that

resulted in employee days away from work or restricted duties. With continued and improved employee engagement in safety, SMUD continues to implement a plan to be a recognized leader in safety – Be Safe. Always.

Initiatives to continue to improve safety in 2018 include:

- Implementing a SMUD-wide Safety for Life program.
- Expansion of near miss reporting
- Updating our employee-supervisor interaction program.
- Expanding our Functional Movement Screening program to reduce soft-tissue injuries.
- Implementing a formalized contractor safety program and begin beta testing a contractor safety pre-qualification program.
- Continuing to increase our outreach in the community by providing excavation safety materials to equipment rental yards to reduce potential dangers.
- Improved tracking and reporting for public safety incidents.

### **Environmental Leadership (SD-7)**

SMUD's commitment to the environment is evident every day. It's part of how we work, the power we supply to our customers, the materials we buy and the decisions we make. We're always looking to reduce our impact on the environment and conserve resources for future generations. These efforts benefit our employees, customers and community.

Environmental leadership commitments in 2018 include:

- Leading California utilities in the evaluation of a replacement gas for sulfur hexafluoride (a greenhouse gas) used in equipment breakers.
- Implementing our environmental sustainability plan that promotes energy efficiency, green procurement and community outreach efforts.
- Ongoing environmental stewardship support in conducting permitting for the proposed Colusa-Sutter transmission line, Rancho Seco PV II, Solano Phase IV Wind and South Fork Powerhouse projects.
- Participating in the Capital Region Climate Readiness Collaborative. SMUD is a founding member of this regional, cross-sector public-private partnership, focused on understanding and planning for the physical impacts of climate change.



- Results of pilot work on organic waste food collection in SMUD's region to be distributed to partners in the region. The waste feedstock can be utilized in the existing anaerobic digesters in our region to generate electricity.
- Continuing investment and research in EV charging and demand energy response.
- Purchase of 11 Jobsite Energy Management System (JEMS) vehicles and conducting two zero RPM pilots.
- Continuing the recreation improvements we committed to under the new operating license for the UARP.
- Partnering with Grid Alternatives supporting the installation of "free" solar systems for low income customers in disadvantaged communities as an initiative within the EAPR pilots.
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### **Employee Relations (SD-8)**

In 2018, we'll continue to focus on attracting and retaining an engaged, highly skilled and diverse workforce to deliver SMUD's strategic objectives. We'll continue to implement our strategic workforce planning, knowledge capture and succession planning strategies. We're increasingly looking to workforce and predictive analytics to better understand current and future talent trends and will expand our workforce analytics capabilities in 2018 to continue refining our workforce strategies.

Strategic talent initiatives in 2018 include increasing our use of social media to quickly reach and attract desired talent, continuing our robust scholarship and internship programs and partnering with local schools and universities while strengthening our talent pipeline. We'll also leverage our engineering rotational program and explore creating similar programs for other difficult-to-fill positions.

In 2018, efforts will be focused on continuing to develop and implement total rewards strategies to mitigate rising health care costs, while continuing to provide current and future employees quality benefits and care.

Talented and engaged employees are key to delivering SMUD's future success, and employee development is a priority of our employee relations efforts. In 2018, we'll continue to invest in developing leaders at all levels of SMUD with a focus on developing critical competencies needed for SMUD's future, such as Agile capabilities and practices for software development, critical thinking and operational excellence skills. We'll continue to place emphasis on career development to retain our best employees, helping them develop relevant new skills that support SMUD's Strategic Directions. We'll also implement strategic initiatives to enhance our diversity and cultural awareness programs.

As we prepare for the completion of our Headquarters building rehabilitation project, we'll establish an interior design to create a flexible, collaborative and innovative workplace. Similar design concepts will be extended across all SMUD workspaces.

### **Resource Planning (SD-9), Research and Development (SD-10)**

Through our integrated energy resource planning, we're on track to meet long-term goals established by the Board and the State for renewable energy and the reduction of carbon emissions. The CPUC, CEC and CARB are currently working on setting carbon planning targets for 2030. Although the CARB has already set allowance allocations for utilities through 2030, the carbon targets will be what the utilities must plan to meet in their Integrated Resource Plan (IRP) filings. We will work with the Board to establish our carbon targets and set a path for carbon reduction through 2030.

Highlights of the 2018 Budget include:

- Continuing efforts to enter the CAISO EIM in 2019.
- Obtaining access to CAISO for power output from Solano as part of the proposed future expansion of our wind resources. We plan to develop and submit a Large Generator Interconnection Agreement.
- Evaluating the benefit of additional managed services such as Energy Market & Portfolio Services, Energy Management Systems and Demand Response.
- Supporting the expanding market for EVs through our "Charge Free for Two Years" incentive program for residential customers, paired with our off-peak rate reduction for home charging. Support and incentivize the installation of charging infrastructure in workplace and multi-family applications, as well as geographic deployment of DC fast charging infrastructure in our service territory. Implement an EV dealer education and incentive program and educate the public on the benefits of EV's through marketing and ride-and-drive events throughout the year.
- Aligning our programs to maximize the regional impact of VW Green Cities initiative. Electrify America, a Volkswagen subsidiary, will invest \$44 million in Sacramento to provide access to ZEV technology in disadvantaged communities.
- Continuing to use the Low Carbon Fuel Standard credits we receive for "fueling" EVs to offer free charging for two years as an incentive to purchase new EVs. This will be a low-cost, highly visible offering that supports transportation electrification.
- Wrapping up our SB-1 10-year commitment to provide incentives for the promotion and growth of solar PV in our service territory. We exceeded our objective by installing more than 125MW of PV systems with an established and thriving solar industry and contractor community in place. The SB-1 surcharge will cease the first quarter of 2018. Any remaining money from the total \$130M collected from the SB-1 surcharge will

support the installation of PV for customers in our disadvantaged and low-income communities over the next few years.

- Offering installation stipends on new PV interconnections for secondary PV production meters to provide data on the production value of customer-sited solar generation to better manage our grid. Our interconnection process has been refined to improve our customer experience and communication and our average cycle time has been reduced from 25 to 15 days.
- Adding multi-family energy efficiency programs to address the gap in this market segment.
- Deploying customer energy storage offerings that position SMUD to better share energy storage benefits with customers as costs continue to decline.

### **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 community and our customers.

The main areas of focus for our Government and Regulatory Affairs activities in 2018 are the post-2020 carbon policies and regulations, Integrated Resource Planning and Renewables Portfolio Standard (RPS) regulations, the CAISO's regional expansion proposal, issues relating to Community Choice Aggregation, cyber-security legislation and federal policies on transmission, markets, and tax reform.

### **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 helping to retain, recruit and grow commercial and industrial rate-paying 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 for 2018 include:

- Continue our leadership role with our local economic development partners on new and improved ways to promote the Sacramento region and attract new businesses

and jobs, while highlighting the value of SMUD's economic impact on the local community.

- Continuing to promote SEED awareness and participation with targeted project outreach and engagement plans for large scale projects like the Headquarters rehabilitation. SEED participation in the Headquarters project has a target of 25 percent through outreach and education as well as implementing a Community Workforce Agreement for the project.
- Increasing external course offerings at Sacramento Power Academy to offer courses to 225 students over 450 course days.
- Expanding relationships with cities and counties within our service territory to align resources and priorities to help identify opportunities to better partner and advance regional economic development.

### **System Enhancement (SD-14)**

SMUD's construction activities for the Hazel Avenue Phase 2 project were substantially completed in mid-2017.

There are no new SD-14 projects in the 2018 budget, and there are no dollars planned in 2018 for the current projects. We will work with local jurisdictions to ensure they understand the availability of the funding and help them understand the qualification criteria for relocation or underground placement of existing overhead lines. If qualified projects are submitted during 2018, we'll work to support the projects.

### **Information Management and Security (SD-16)**

The effective and efficient use of technology is a strategic imperative for all of our operations. The budget funds technology solutions as well as the components of SD-16 Information Security, Customer Privacy and Records Management.

Key initiatives for 2018 include:

- Developing an enterprise cloud strategy and roadmap to recognize the continued growth of cloud solutions.
- Continuing work in conjunction with national and regional reliability regulators to implement the NERC Critical Infrastructure Protection standards in 2018. As part of our ongoing security best practices, we'll implement requirements for encryption and supply chain and implement Division of Dam Safety and Inspection cyber controls for our hydroelectric assets.

- Continue improving our Security Awareness Program, in areas including cloud security, risk management and the Information Security Operations Center. In 2018, there's new work for web and mobile application security testing.
- Moving all of our secondary systems to a hosted (offsite) data center provider.

### **Enterprise Risk Management (SD-17)**

The 2018 Budget fully funds our continuing risk mitigation activities. SMUD's enterprise-level risks span the spectrum of 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 taking into account SMUD's changing internal and external risk environment and enhancing how SMUD addresses risks. Some key initiatives for 2018 include advancing the Disaster Recovery and Business Continuity Plans and the Long Range Asset Management Program. Another key initiative is the implementation of an Energy Trade Risk Management (ETRM) system to better manage all commodities, increase market position and exposure visibility as well as reporting capabilities.

SMUD continues to work closely with all 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.

Staff continues 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 create greater alignment with internal Audit and other lines of defense through shared best practices.

### **Emerging Technologies (SD-18)**

In 2018, we'll focus on investigating, researching and demonstrating DER projects. Examples include:

- Testing smart inverters to determine capabilities for managing PV generation and eliminating the need for secondary meters.
- Continuing work with indoor growers to improve the energy efficiency of grow facilities and reduce grid impacts.
- Launching a pilot to test battery and thermal energy storage business models with customers.

- Demonstrating a bench-scale technology that will reduce the cost of the methanation process to create Renewable Natural Gas (RNG) that can be used to decarbonize SMUD's thermal fleet.
- Seeking out new partnerships and innovative products and services that create new economic value for SMUD.
- Leveraging the NEC partnership to grow net revenues and establish SMUD in international markets.
- Work with local developers to identify all-electric new home projects. These homes will have no gas service to the property, and will save approximately one tonne of greenhouse gas per home per year.

Staff will continue to update the Board on these issues throughout the upcoming year.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Arlen Orchard', with a large, sweeping flourish at the end.

Arlen Orchard  
Chief Executive Officer and General Manager