

Exhibit to Agenda Item #1a

Zero Carbon Energy Solutions 2023 Proposed Budget.

Board Finance & Audit Committee and Special SMUD Board of Directors Meeting
Wednesday, November 9, 2022, scheduled to begin at 5:30 p.m.

Virtual Meeting (online)

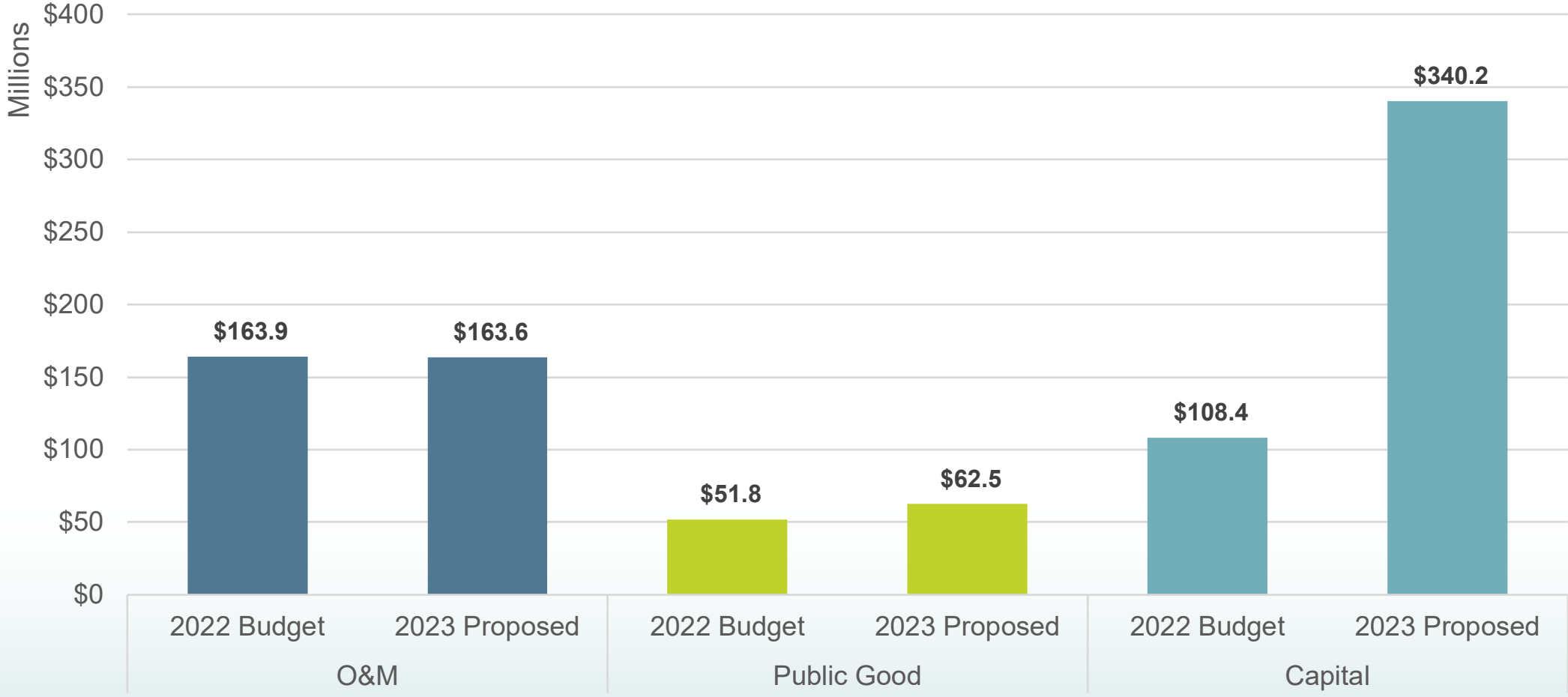
Zero Carbon Energy Solutions 2023 Proposed Budget & Initiatives

Lora Anguay
Chief Zero Carbon Officer

Zero Carbon Energy Solutions

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

2023 Proposed Budget





Infrastructure Investment

Alignment to Strategic Direction: SD-4 SD-6 SD-8 SD-11 SD-14 SD-16 SD-17

Maintain existing assets

- Protect the reliability of our existing power generation facilities.
- Improve recreational facilities
 - Union Valley Bike Trail
 - Sunset and Fashoda campgrounds

Enable integration of grid and distributed energy resources

- Test advanced functionality of smart inverters to increase customer hosting capacity and reliability of solar and storage resources.
- Mitigate grid and customer infrastructure impacts of electrification through new technologies and customer programs





Zero Carbon Plan

Alignment to Strategic Direction: SD-2 SD-3 SD-7 SD-9 SD-10 SD-19

Pursue grant opportunities

- Complete grant concept papers
- Actively monitor and pursue
- Sustainable Communities as a foundational component

Natural gas generation repurposing

- Continue to support partnership for carbon capture technologies
- Pursue partnerships to further technology and access to the Renewable Natural Gas (RNG) and renewable hydrogen value chains



U.S. DEPARTMENT OF
ENERGY



Alliance for Renewable Clean
Hydrogen Energy Systems



Zero Carbon Plan

Alignment to Strategic Direction: SD-2 SD-3 SD-7 SD-9 SD-10 SD-19

Proven clean technologies

- Solano 4 Wind Project (91 MW)
- Country Acres Project (344 MW Solar + 172 MW Storage)
- Continue planning, evaluation and deployment of additional proven clean technology resources





Zero Carbon Plan

Alignment to Strategic Direction: SD-2 SD-3 SD-7 SD-9 SD-10 SD-19

New technologies and business models

- Accelerate research in customer load flexibility to allow for the growth of our Virtual Power Plant (VPP) and transition of SMUD's thermal fleet, thereby increasing the integration of intermittent renewable resources
- Implement a Long Duration Energy Storage (LDES) flow battery project in partnership with ESS
- Research the potential to create natural habitats through pollinators and planting native species to reduce operational costs of vegetation management and erosion control





Zero Carbon Plan

Alignment to Strategic Direction: SD-2 SD-3 SD-7 SD-9 SD-10 SD-19

Zero carbon customer programs

Energy efficiency and building electrification

- Support the region's efforts to decarbonize through building electrification programs
- Reduce overall cost through energy efficiency programs

Load flexibility

- Continue to expand and build our Virtual Power Plant to provide additional resources and manage grid impacts
- Support adoption of rooftop solar with battery storage incentives

Green pricing and solar offerings

- Facilitate options for renewable energy through pricing programs

Electric vehicles

- Support customer adoption
- Minimize Grid Impacts





Community Impact

Alignment to Strategic Direction: SD-5 SD-13 SD-15

Leverage the energy transition to create local jobs and improve the economic outlook of the Sacramento region

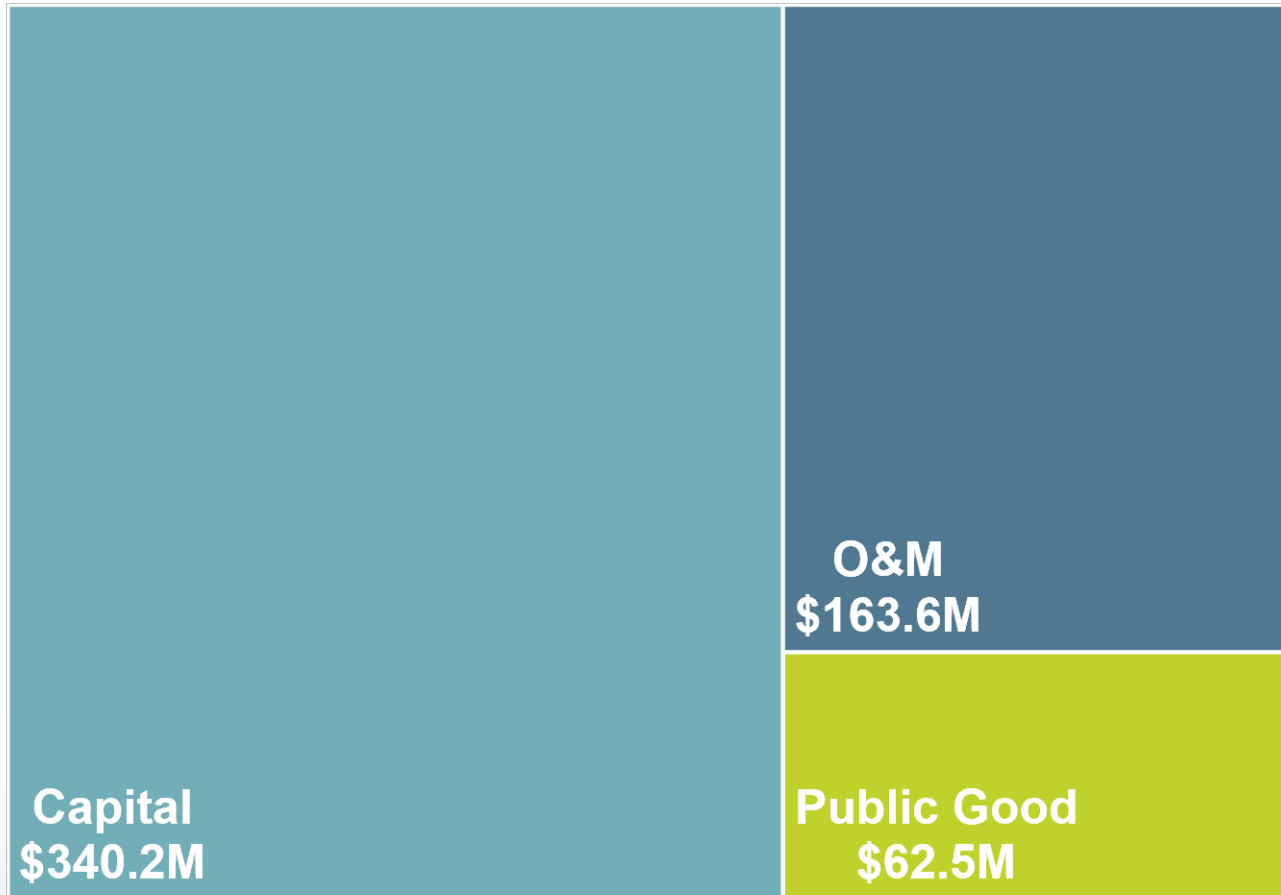
- ESS Partnership
- My Energy Optimizer, Partner+

Ensure equitable access to programs and services

- Design and execute Community Impact Strategy Programs and Services
- Launch comprehensive regional workforce development



2023 Proposed Budget



Major Budget Items
<ul style="list-style-type: none">• Utility Scale Renewable Projects: \$258.7M<ul style="list-style-type: none">▪ Solano 4 Wind Project▪ Country Acres Solar and Storage Project• Power Generation Asset Management and Compliance: \$151.1M• Customer Programs: \$83.3M• Community Impact Plan (SMUD): \$13.6M<ul style="list-style-type: none">▪ ZCES: \$7.7M• Long Duration Energy Storage Projects: \$11.0M<ul style="list-style-type: none">▪ ESS Iron Flow• Vehicle to Grid: \$3.7M<ul style="list-style-type: none">▪ General Motors V2G▪ Light Duty V2X Pilot▪ Twin Rivers Electric School Busses

Questions?