

Exhibit to Agenda Item #4

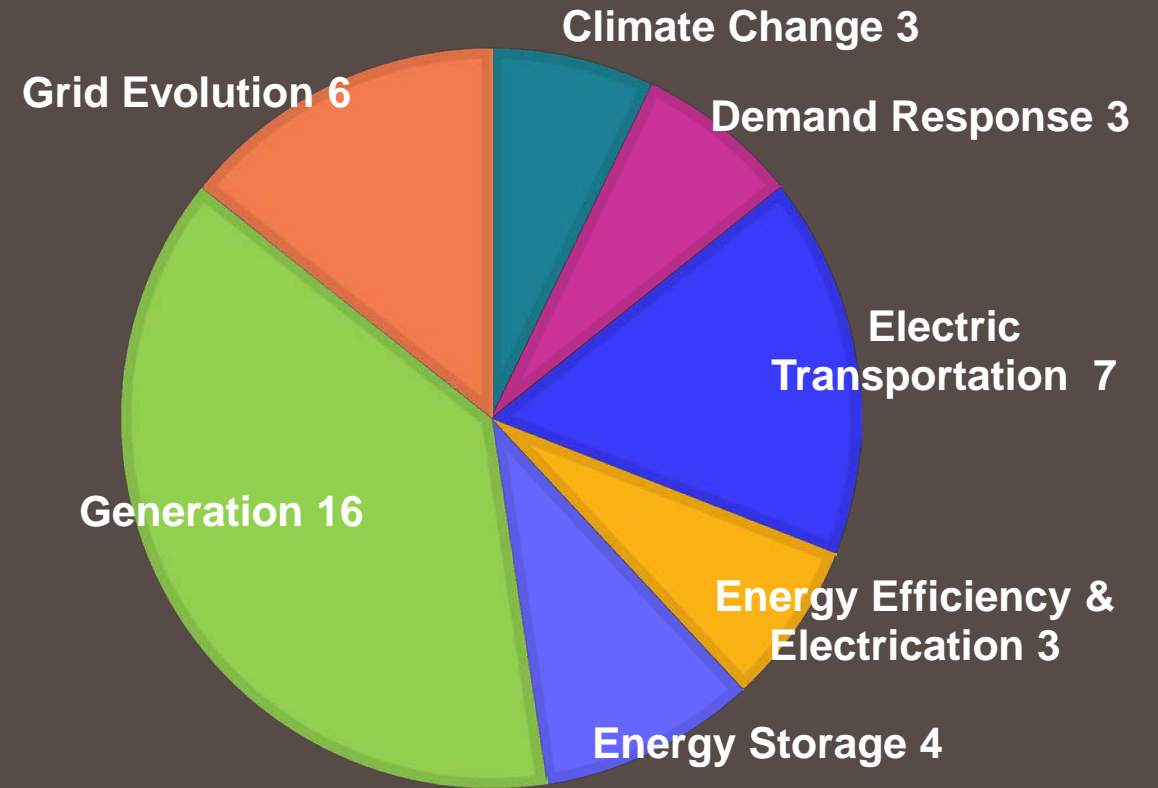
Accept the monitoring report for **Strategic Direction SD-10, Innovation.**

Board Policy Committee and Special SMUD Board of Directors Meeting
Wednesday, September 9, 2020, scheduled to begin at 5:30 p.m.
Virtual Meeting (online)

SD-10 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 benefits our customers and community.

ESR&D PORTFOLIO
TOTAL PROJECTS: 42



Energy Storage

- Procured 7.4 MW of energy storage toward AB 2514 CEC commitment
- Launched Smart Energy Optimizer residential battery program, which aims to shift battery use with grid needs



- Installed 60 kW of second-life Nissan Leaf car batteries as a stationary battery system integrated with 175 kW DCFC and PV
- Installed residential battery storage unit at Power Academy to train SMUD meter technicians

Electric Transportation

Public and Campus EV Charging

- Installed public 175 kW DCFC at SMUD's solar port
- Installed 46 Level 2 EVSE and conduit for 68 spaces at SMUD HQ campus
- Distributed \$230K in DCFC incentives to Shell Station and the City of Elk Grove
- MOBI units provided power at ECOS Earth Day, Cal Expo, SACOG and other community events



Established CMC Partnerships

- Working with Amply Power to deploy multi-charging depot
- Demonstrating Zeus' medium-duty truck in SMUD fleet

Generation

- CEC approved Neighborhood SolarShares
- CARB certified three Low Carbon Fuel Standard emission pathways which produce electricity to charge EVs
- Enhanced WattPlan Grid by building a residential solar plus battery storage module
- Supported repowering the previously non-operational New Hope Dairy digester



Load Flexibility

- Enrolled 108 customers in PowerMinder, a controllable heat pump water heater pilot
- Integrated 90kW battery with existing energy management system at the Hyatt to assess performance, integration and grid impacts



Climate Change

- Implemented Natural Refrigerant Incentive Program
- Conducted technical assessment of potential ecosystem service integration at Rancho Seco II Solar project
- Published SMUD's research and operational activities supporting pollinators

Energy Efficiency & Electric Buildings

- Tested split-system CO₂ heat pump water heaters in fourplexes for performance and cost
- Developed heat pump water heater tool to support optimal design for multi-family and commercial applications



- Evaluated effects of Circadian lighting for children with Autism Spectrum Disorder

Enterprise-Wide Innovations

Economic and Workforce Innovation: California Mobility Center



Improving Reliability with 360 View of the Grid

- Distributed Energy Resource Management System DERMS
- Advanced Distribution Management System (ADMS)

Doing Business with SMUD

- Commercial Building Electrification Program
- Advanced Homes Workflow Automation & Contractor Network tool
- Chatbot
- Realwear

SD-10 Innovation: Request the Board accept the SD-10 Monitoring Report.