# Exhibit to Agenda Item #2

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

Board Policy Committee and Special SMUD Board of Directors Meeting Wednesday, October 9, 2024, scheduled to begin at 6:00 p.m. SMUD Headquarters Building, Auditorium



## SD 10 Innovation

Delivering innovative solutions, products and services to our customers is a core value. To assure our longterm 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.



# Aligning to the Zero Carbon Plan

Natural gas generation repurosing

Goal to retire 2 power plants and re-tool fleet

to drastically reduce operations and emissions.



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Proven clean tech

90% reduction of greenhouse gas emissions\*

>3,000 MW of new renewable energy & storage – equivalent to energy needs of more than 600,000 homes.

Growing rooftop solar and batteries.



New tech & business models

Pilot & scale new projects & programs

Research game changing technologies and alternative fuels.



Financial impact & options

Rate impacts limited to rate of inflation

Expand partnerships and grants to offset costs & generate operational efficiencies.







Zero carbon by 2030

100%

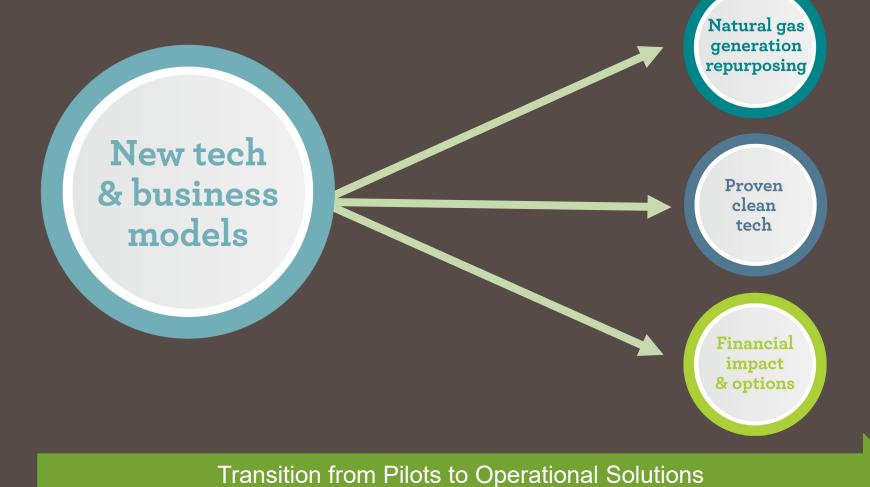
Work with all our communities to reduce greenhouse gas emissions together.

Partner and collaborate with community organizations, attract business, innovation and jobs to Sacramento.

Alignment with SMUD's Sustainable Communities Initiative.



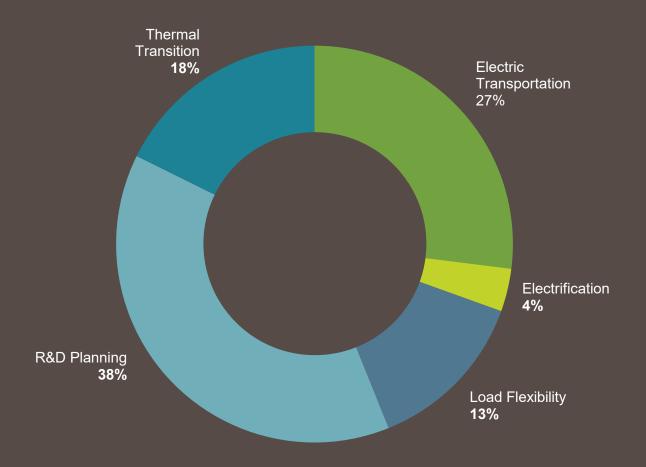
# Operationalizing Innovation



Goal: Eliminate CO, from SMUD's power supply 100% Zero carbon by 2030



# R&D Portfolio Budget (Aug '23 – Jul '24)

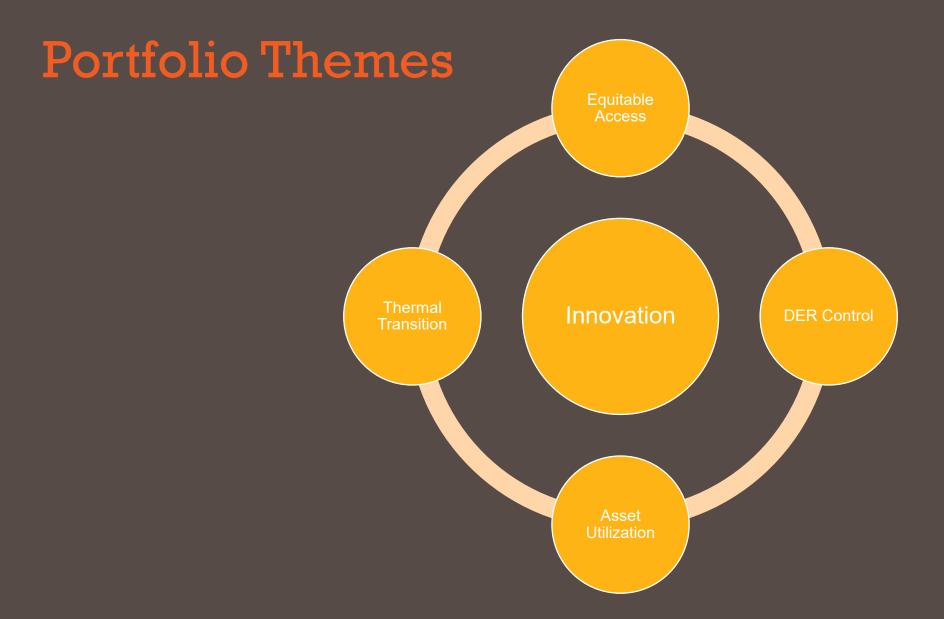


Total: \$6.3M

Significant projects supported by R&D are budgeted in other business unit (i.e. ESS flow battery)



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## Equitable Access to Electrification











- Del Paso mobility hub began operations Oct 2023
- St. Francis Manor Central HPWH study - Saving 54% CO2 and 20% energy costs
- ChargeReady Community construction ramp up

- CEC FAST grant ramping up
- REACH 2 grant delivery
- Smart Panel solution evaluation



## **DER Communication and Control**







DERMS phase 3

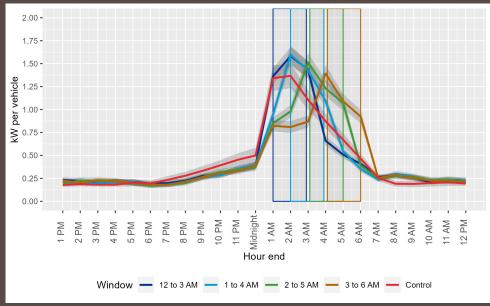


- **Smart Inverters** communication testing
- Twin Rivers Managed charging

- V2G expansion
- Multifamily Virtual Power Plant demo



# Optimize Asset Utilization





- Home Infrastructure Planning phase 2 expanding to full single family population in Q4.
- Residential EV managed charging (Load shift to mitigate impacts on the distribution system – field transformers)
- Transmission Line monitoring to evaluate dynamic line ratings

- Transition EV managed charging from pilot to program
- Large data and AI utilization



## Thermal Transition









- Hedge 4MW Li-ion battery
- ESS Energy Warehouse iron flow battery
- Hydrogen production and blending research
- Carbon Farming and
   Ecosystem Service Research
   at RSSII (Advancing from
   sustainability to restoration)

- ARCHES Hydrogen Hub
- Advanced energy storage technology



# Conclusion

Request the Board accept the SD-10 Monitoring Report.

