Exhibit to Agenda Item #1

Brief the Board on SMUD’s Electric Vehicle (EV) Strategy.

Board Strategic Development Committee and Special SMUD Board of Directors Meeting

Tuesday, April 12, 2022, scheduled to begin at 5:30 p.m.

Virtual Meeting (online)
Why Electric Vehicles (EVs)?

Electric Vehicles improve air quality, lower carbon emissions and support local economic/equity job growth
- Transportation is the largest source of Criteria and GHG emissions in the state
- Clean electricity from SMUD’s Zero Carbon Plan can create a zero-emission solution
- Better air quality will improve regional health

Transportation electrification partnerships will bring new jobs and equity workforce development to support our community and improve quality of life

State and Federal policies support clean transportation, environmental and equity goals
- $10B State and $7.5B Federal policy

April 12, 2022
Strategic Development Committee and Special SMUD Board of Directors Meeting
**Electric Vehicle Goals – Light Duty**

- CARB 2030 Scoping Plan local estimate for 8,000,000 statewide cars by 2030
- SMUD zero carbon plan goal
- Actual population of Light-Duty EVs at end of 2021: **23,576**
- Goals represent a 12x increase in light duty vehicles by 2030
- CARB 2030 Scoping Plan is not a regulatory requirement

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**Forecasted Light-duty EV Growth**

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<th>CARB 2030</th>
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**Strategic Development Committee and Special SMUD Board of Directors Meeting**

April 12, 2022

SMUD
Electric Vehicle Goals – Medium + Heavy Duty

- SMUD’s zero carbon plan goal
- Local estimate based on State policy goals
- Medium/Heavy Duty vehicles at the end of 2021: **117* (estimated)**
- Goals represent about a 60x increase in Medium/Heavy Duty electric vehicles by 2030

*Excludes forklifts and truck refrigeration units
News Headlines

Biden calls for half of new cars to be electric or plug-in hybrids by 2030

The executive order comes in a suite of new goals and mandates to cut climate-warming emissions from the auto sector

Ford will spend $30 billion on electric vehicles, a big increase from earlier plans.

Cities, public utilities flex municipal on EV projects

City-specific problems require city-centered solutions. That’s why cities, often in partnership with utilities, play a key role in building infrastructure for EVs.

Daimler will invest more than $47B in EVs by 2030

Mercedes ready to be all-electric by 2030, eight battery plants to be built

6 Utility Companies Team up to Build Massive EV Charging Network

Ford and PG&E partner on electric F-150 powering homes, grid

Gap Between EV Sales and Charging Stations

Will Utilities be Able to Fill the Void?

Bottom Line

• The EVs are here and the market is accelerating
• Utilities must support mass adoption
• We expect more regulatory pressure on utilities to be prepared

April 12, 2022  Strategic Development Committee and Special SMUD Board of Directors Meeting
Electric Vehicle Strategy – 6 Objectives

**Grid & Charging Infrastructure**
Accelerate grid and charging infrastructure to achieve 2030 electric vehicle goals

**Customer Education & Experience**
Customers contact SMUD first as their trusted advisor and partner to seamlessly transition to electric mobility

**New Technology/Innovation**
Embrace innovation to optimize customer investments that increase value for customers and the grid

**Equitable Access**
Provide equitable access to affordable clean mobility

**Workforce**
Robust workforce development supporting equity job creation

**Regional Collaboration & Investment**
Work with regional partners to secure new investments and grants
Grid & Charging Infrastructure

Goals

2022: Support additional 5,800 light duty electric vehicles and 200 medium/heavy duty electric vehicles

2030: Support 288,000 light duty electric vehicles and 27,800 medium/heavy duty electric vehicles through 2030

Strategic Outcome:
Accelerate grid and charging infrastructure to achieve 2030 electric vehicle goals

Rationale:
Infrastructure must be ready to meet market demand for charging

Key Activities:
• Analyze system capability/constraints and customer charging patterns to determine system infrastructure needs
• Expand incentives and full-service solutions to support customers charging solutions and grid development
• Build partnerships to create public charging stations/plazas
• Support expanded multi-level public charging with incentives
**Grid & Charging Infrastructure**

**Activity Details**

**Infrastructure Blueprint Project**
- Regional collaborative funded by California Energy Commission grant
- Forecast commercial medium and heavy-duty fleet locations and grid impacts from charging and hydrogen infrastructure

**EV Impacts Analysis**
- Updated assessment of vehicle usage patterns
- Distribution transformer loading and forecasted impacts
- Distribution transformer sizing analysis and standards recommendations

**Residential Charge@home**(SM)
- Installation offering for residential customers through SMUD’s contractor network
- Full program launch Q3 2022

**SMUD eFuel**(SM)
- Commercial customer design support
- Turnkey installation services

**Power Inn Plaza**
- EV charging mega-plaza
- Largest hub of DC Fast Chargers in the country
- Includes backup battery to support first responders charging in an outage

**California Electric Vehicle Infrastructure Project partner**
- Partnership with California Energy Commission and Center for Sustainable Energy to distribute over $15M in incentives
- Supporting deployment of over 100 DC Fast Chargers and 1,500 level 2
- Up to $80K for DCFC, up to $6,500 for L2

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**Strategic Outcome:**
Customers contact SMUD first as their trusted advisor and partner to seamlessly transition to electric mobility.

**Rationale:**
Customers see electricity as more convenient, lower cost and partner with SMUD to interact with the grid.

**Key Activities:**
- Improve the customer experience through expanded education, tools, advisory solutions, and multi-channel marketing.
- Programs to bring down up-front costs and charging costs.
- Engage partners including OEMs, dealers and local agencies to coordinate seamless handoff for customer charging solutions.
- Demonstrate leadership and understand customer challenges by electrifying our own fleet and encouraging employees to electrify.

**Goals**

**2022:** Become the customer's trusted partner and influencer in their electric vehicle transition.

**2030:** Partner with customers to seamlessly connect electric vehicles to maximize their value and minimize their impact.
Customer Education & Experience

Activity Details

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EV Support Program
• Provides one-on-one customer phone support through EV journey
• Includes FAQs and EV Buyers Guide
• Partnership with Plug in America

Expanded public marketing and education
• Comprehensive website detailing rebates, vehicles, fuel savings
• EV educational classes
• Ride & Drive events
• Expanded marketing campaign

Clean Fuel Rewards
• Statewide utility rebate program funded through Low Carbon Fuel Standard funding
• SMUD branded point of purchase instant rebate (now $750 per vehicle)

EV charging discount and pilot rates
• Residential discount of 1.5 cents per kWh from midnight to 6 am
• Commercial pilot launching Q4 2022 to mitigate demand charges

Dealership Engagement Program
• Provides dealer sales team training on selling EVs
• Incentives to dealer & employees
• Awards to most successful dealers
• Partnerships with 22 dealers
**New Technologies & Innovation**

**Goals**

**2022:** 500 customers enrolled in managed charging pilot

**2030:** Vehicle to grid delivering 50-150 MW of virtual power plant capacity

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**Strategic Outcome:**
Embrace innovation to optimize customer investments that increase value for customers and the grid

**Rationale:**
Partner with customers to offer new options and value for customers to interact with the grid and reduce grid impacts

**Key Activities**

- Scale pilots for managed charging to validate technology, explore value propositions, and begin building the resource
- Accelerate vehicle to grid capability to support Zero Carbon Plan virtual power plants
- Explore options for user friendly multi-network access
Residential managed charging pilot
- Pilot program launching in 2022
- Aim to recruit 1,000 customers
- Demonstrate avoiding transformer overloading
- Improve use of surplus daytime solar energy

Expand electric school bus program
- Vehicle to Grid school buses at three additional schools

California Mobility Center grid partnership
- Demonstrate commercial EV fleet Vehicle to Grid technology

Bi-directional charging research
- Planning to demonstrate residential Vehicle to Grid in 2023
- Position research to secure grant funding
Strategic Outcome:
Provide equitable access to affordable clean mobility

Rationale:
Ensure our most under-resourced community members share in the health and financial benefits of clean transportation

Key Activities:
• Execute Community Impact Strategy
• Partner with community-based organizations to expand charging in underserved communities (single and multi-family, commercial)
• Address charging deserts and expand access to electric transportation solutions
• Expand equity-targeted incentives

Goals
2022: Up to 250 EVSE via Clean Cars for All and launch first eMobility hub
2030: With partners, create equitable access within region for under-resourced communities
Partnerships with Habitat for Humanity, Grid Alternatives and Community Resource Project
- 30 EV ready homes in 2022
- Additional 115 EV ready homes by 2024
- Ensure these customers are ready to own an EV

eMobility Hubs
- Expansion of eMobility Hubs by 3 additional sites
- Sites in early stages of planning

Clean Cars 4 All
- Partnership with Sacramento Metro. Air Quality Management District
- Offer customers up to $9,500 towards the purchase of an EV
- SMUD provides dealer engagement and install of 250 EVSEs in 2022

SMUD Energy Saver Bundles
- Offering EV ready homes to income-eligible home-owners
- Estimated 100 EV ready installs in 2022

Sacramento PEV Collaborative
- Local EV grassroots coordination
- Provide collaboration, awareness building of benefits, opportunities for EVs in under-resourced and disadvantaged communities
Strategic Outcome:
Robust workforce development supporting equity job creation

Rationale:
Focused job training within underserved communities will provide direct economic benefits and support equity

Key Activities:
• Partner with community-based organizations, regional agencies and educational institutions on outreach, education and training
• Partner with California Mobility Center to leverage workforce development and career pathways
• Include inclusive workforce development and job pipelines in project designs

Goals

2022: Partner with Community Based Organizations to offer workforce development programs, 70 trainees

2030: Equity workforce programs have a significant impact on regional EV workforce
Energy Career Pathways
- Partnership with Grid Alternatives
- Solar, battery storage, electrification, EV charging installation
- Includes 4 weeks paid hands-on instruction, job readiness training, employer interviews
- 2022 goal: 70 trainees and a minimum of 28 job placements

High School Autonomous Vehicle Racing
- Electric mobility STEM competitions in title 1
- Students build and code their own autonomous vehicle
- Students learn about SMUD's 2030 vision and the benefits of electric transportation
- Teams race for fun/prizes at Golden One center in May

California Mobility Center Workforce Partnership
- California Mobility Center aim to create entry points for tech careers
- Focus on advanced mobility and overall advanced manufacturing sector
Regional Collaboration & Investment

Goals

2022: Execute grant strategy to bring new investment into the region

2030: Electric vehicle portfolio supports 2030 zero carbon plan financial goals

Strategic Outcome:
Work with regional partners to secure new investments and grants

Rationale:
Working together with partners to bring funding and investment to our region will increase regional prosperity and lower SMUD costs of electrification

Key Activities:
- Grant strategy drives project concepts for proactive grant pre-capture and capture
- Collaborate and partner with regional agencies & organizations to attract significant investment in the region
- Maximize SMUD access to Low Carbon Fuel Standard (LCFS) credits to offset SMUD costs

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Federal Outreach
- Congressional testimony announcing 2030 Zero Carbon Plan
- Engaged with appointees at White House, Dept of Energy, Environmental Protection Agency, and SMUD congressional delegation

Department of Energy Collaboration
- SMUD visit from Energy Secretary Jennifer Granholm
- Intelligence on Dept of Energy priorities for energy-related grants
- Invite for SMUD to join Dept of Energy Vehicle to X memo of understanding

Local Outreach
- Coordination with local jurisdictions aligning local climate action initiatives with SMUD’s 2030 Zero Carbon Plan
- Engagement of state officials offering SMUD assistance to achieve EV goals

4-Agency Partnership
- Collaborative effort with SMUD, Sacramento Area Council of Governments, Sacramento Metro Air Quality Management District, Regional Transit
- Consensus on regional priorities for joint pursuit of federal and state funds
- Over $960M in investments identified in electric transit buses, regional charging plazas, disadvantaged community eMobility hubs and workforce development

Renewable Energy
- SMUD providing 100% of energy consumed by EVs from renewable sources
- Enables an increase in value of 33% in Low Carbon Fuel Standard credits