

Exhibit to Agenda Item #1

Microgrids and Resiliency Benefits

Board Strategic Development Committee and Special SMUD Board of Directors Meeting

Tuesday, August 3, 2021, scheduled to begin at 5:30 p.m.

Virtual Meeting (online)

Why are Microgrids Important to SMUD?

- Customer Interest
 - Climate change concerns
 - Energy cost management
 - Sustainability goals
- 2030 Zero Carbon Plan (ZCP) strategy
 - Addition of zero carbon distributed energy resource (DER) assets
 - Grid reliability and resiliency
 - Support customer interest and development
- Senate Bill (SB) 1339 (2018)
 - Compliance with legislative mandate regarding microgrids
- California Energy Commission (CEC) 2020 Integrated Energy Policy Report (IEPR) Update – Volume II
 - Incorporating microgrids into State energy policy



Microgrids in SMUD's Service Territory

Critical Facilities

- UC Davis Medical Center
 - Cogeneration
 - Primary service
 - Energy cost management
- Emergency diesel generators
 - Resiliency of critical loads
 - Building code-based requirement
 - Applicable to commercial facilities




















Commercial Facilities

- SMUD Campus Microgrid (2012)
 - Cogeneration+solar
 - Central plant resilience
 - CEC grant funded research
- SMUD Solar Carport
 - Solar+storage+electric vehicle (EV) charging
 - Resilience of eMobility service
- US Cold Storage
 - Solar+storage+EV charging
 - Resilience
 - Carbon reduction
 - Energy cost management
- RT Power Inn eMobility Hub
 - Solar+storage+EV charging
 - First responders

Residential Customers

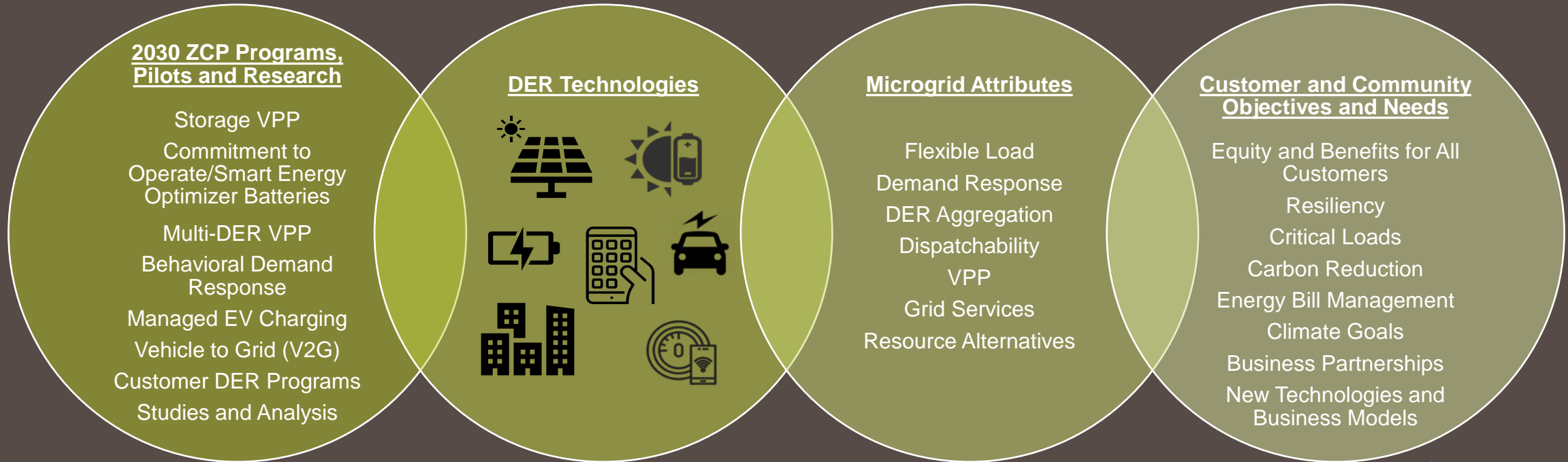
- Anatolia (2010)
 - Solar+storage+load flexibility
 - Dept. of Energy (DOE) grant funded research project
- 2500 R Street (2014)
 - Solar+storage+load flexibility
 - DOE grant funded research project
- New Solar+Battery Storage
 - Resilience
 - Energy cost management
 - Virtual power plant (VPP) opportunities

Microgrid Strategy Alignment

SMUD Strategic Objectives	Residential Customers Drivers	Commercial Customers Drivers	Common Drivers
Promote customer and community resiliency, equity and inclusion	 Food Spoilage  Medical Devices	 Outage Costs  Critical Facilities	 Manage Costs
Support the needs of critical facilities	 Emergency Services	 Diesel Back-up	 Emergency Services
Optimize DERs for customer, grid and resource needs	 Solar + Storage  Smart Thermostat  Light Duty EVs	 Solar PV  Battery Storage  Heavy Duty EVs	 Technology Costs  Evolving Industry
Contribute to the 2030 Zero Carbon Plan goals	 Energy Consumption	 Carbon Reduction	 Carbon Footprint

2030 Zero Carbon Plan and Microgrids

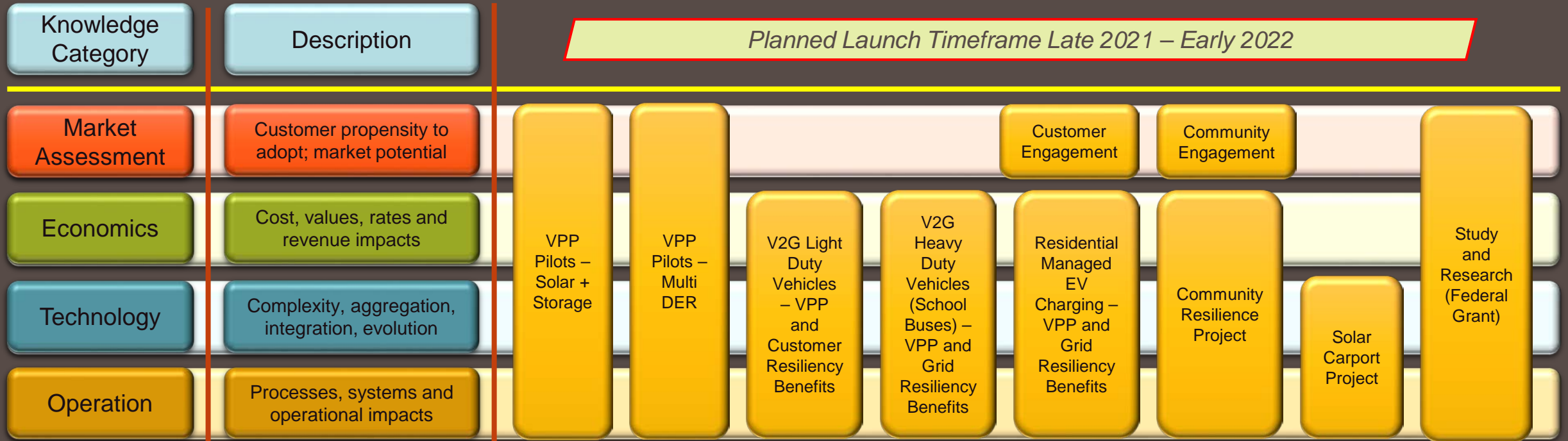
New Customer DER Partnership Paradigm



The 2030 Zero Carbon Plan programs, pilots and research contain the building blocks for determining the cost and value of microgrids and how they can meet the needs and objectives of SMUD's customers and community

Accelerate and Scale

2030 Zero Carbon Plan pilots, programs and research will help address knowledge gaps, enhance our understanding of microgrids, and accelerate our ability to scale microgrids:



The goal is to efficiently and cost effectively meet our customer and community needs and objectives and implement microgrids as one solution of many towards achieving the 2030 Zero Carbon Plan goals.

Questions?