



Item 9: Virtual Power Plant Approaches for Demand Flexibility (VPP-FLEX) – GFO-23-309

February 12, 2025 Business Meeting

Dustin Davis
Energy Research and Development Division
Industry & Carbon Management Branch



Solicitation Overview

- GFO-23-309: Virtual Power Plant Approaches for Demand Flexibility
- A VPP utilizes distributed energy resources (DERs) or devices such as smart thermostats, and battery systems to benefit the power system, consumers, and the environment.
- Group 1: Community Virtual Power Plant Approaches for Demand Flexibility
- Group 2: Interoperable Energy Management Systems for Commercial Buildings
- Project Funding:
 - 5 Projects
 - \$15,995,556 with \$5,107,559 in match



Benefits to Californians

- Grid Reliability
- Affordability
- Environmental Sustainability



Source: Lawrence Berkeley National Lab website



Item 9a: Electric Power Research Institute, Inc.

- Location:

- Two schools in Los Angeles Unified School District in City of Maywood

- Funding:

- CEC: \$2,000,000
- Match: \$660,000

- Project Focus:

- Demonstrate energy management system to enable automated demand flexibility
- Integrate EMS with EVConnect
- Commercialize enhanced Edo Energy EMS

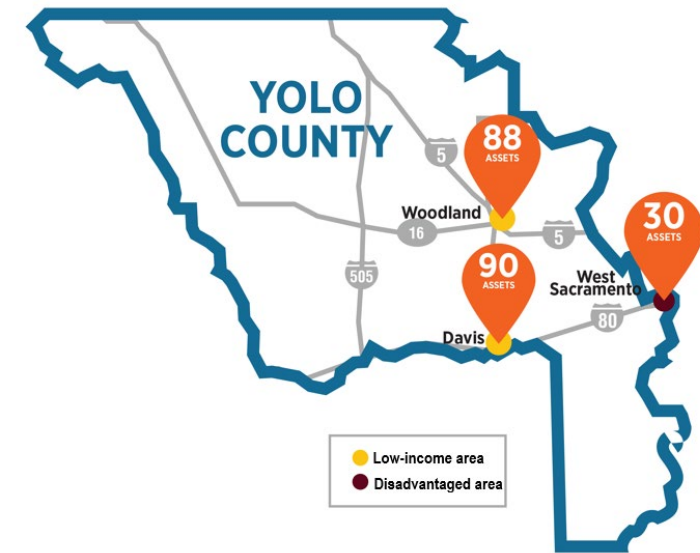


Source: EPRI



Item 9b: The Regents of the University of California, on behalf of the Davis Campus

- Location:
 - Yolo County: Davis, Woodland, and West Sacramento
- Funding:
 - CEC: \$5,000,000
 - Match: \$1,006,559
- Project Focus:
 - Demonstrate VPP
 - Cooling demand management
 - Chiller plant and 200+ HVAC rooftop units to reduce peak demand by 2.8 MW
 - Model for other local governments

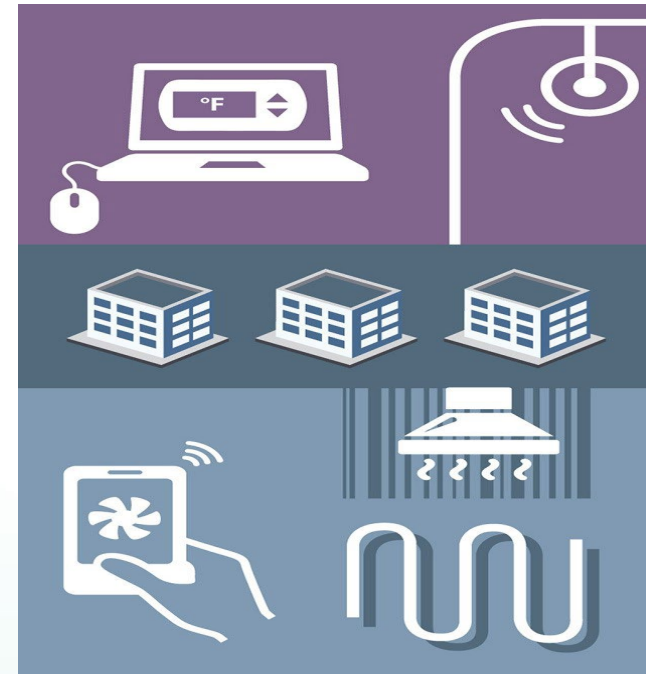


Source: UC Davis



Item 9c: The Regents of the University of California, on behalf of the Berkeley Campus

- Location:
 - UC Irvine and American Honda Motor Co.in Torrance
- Funding:
 - CEC: \$1,999,999
 - Match: \$1,650,000
- Project Focus:
 - Control system for commercial buildings and EV charging
 - Building energy management system to facilitate interoperability
 - Work with industry leaders, conduct training and engage codes and standards bodies

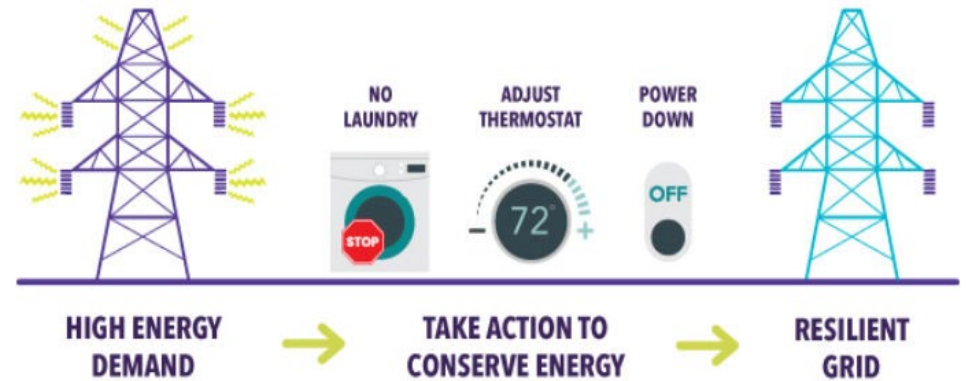


Source: UC Berkeley website



Item 9d: Sonoma Clean Power Authority

- Location:
 - Sonoma and Mendocino Counties
- Funding:
 - CEC: \$4,995,640
 - Match: \$1,081,000
- Project Focus:
 - Enhance dispatch capabilities
 - Broaden participation in GridSavvy program
 - Reduce peak demand by 4 MW with DERs such as batteries, and smart panels
 - Framework for demand flexibility in underserved communities



Source: Sonoma Clean Power



Item 9e: Lawrence Berkeley National Laboratory

- Location:
 - Three CSU campuses: San Diego, Dominguez Hills, and San Marcos and Contra Costa Community College
- Funding:
 - CEC: \$1,999,917
 - Match: \$710,000
- Project Focus:
 - Develop interoperable controls and supporting tools to expand and streamline demand flexibility
 - Demonstrate approach with major building energy management platforms
 - Explore incorporating best practices into ASHRAE to facilitate widespread adoption



Source: LBNL



Market Potential

Virtual Power Plants

- According to a 2024 Brattle report, California's 2035 VPP market potential is 7,671 MW.
- If realized, this would avoid \$755 million per year in traditional power system costs and create savings of \$550 million per year.



Staff Recommendation

- Adopt staff's determination that these actions are exempt from CEQA.
- Approve the five grant agreements.