



DER Pilot Program Update

July 11, 2019

Background

- CPA is working with Calpine Energy Solutions and Olivine to implement a Distributed Energy Resources (DER) Pilot Program, expected to launch by January 2020
- The DER Pilot Program will allow CPA to develop critical learning and capabilities in the DER space and inform the broader deployment of local programs
- During April – June, CPA has been working to evaluate various DER Pilot program options
- Today, Staff is seeking input from the Community Advisory Committee on its proposed Pilot program pillars

Work Plan

- CPA, Olivine, and Calpine are currently working together to meet a 2020 DER Pilot Program launch date

Phase 1

DER Program
Opportunities
Defined

March 25 – June 14

- Evaluate DER program options
- Identify best practices
- Conduct deep dive analysis on top 3

Phase 2

Pilot Program Plan

June 15 – August 31

- Select pilot
- Develop design and implementation plan
- Conduct consumer focus or test groups

Phase 3

Implement Pilot

September 6 – Jan 2020

- Board approves DER Pilot Program
- Execute DER Mgmt. Agreement
- Conduct marketing and customer outreach

DER Pilot Program Goals

- Achieves CPA policy objectives
 - Includes air quality and public health, GHG reduction, target DACs, renewable integration, local needs and resilience, economic development
- Achieves benefits to CPA and customers, including rate savings
- Scalable and targets a diverse set of customer segments
- Allows CPA to test wholesale market participation
- Implementable (ease of adoption, technology maturity, etc.)
- \$1.49M budget: Mixture of new infrastructure installation and leveraging existing infrastructure to minimize costs

Proposed DER Pilot Program

- The program would be comprised of four pillars:

	<u>Description</u>	<u>Target Segment</u>
EV Charging	Incentivizes customers to shed EV charging load during peak times	Commercial & Municipal
Solar + Storage	Pairs onsite solar with battery to help customers manage costs and help CPA shift load	Residential & Commercial
Smart Home	Allows CPA to control customer load with smart technology	Residential, including DAC
DAC Community Solar	Low-income residents purchase energy from a solar array at a discounted price	DAC Residential

EV Charging

DER Type: (Load shift, load control)

- Commercial and municipal customers with existing EV smart charging infrastructure will participate in CPA curtailment events that will reduce their EV charging load by 10% during the evening peak ramp-up period (5pm-9pm)
- Events followed by two-hour load recovery period
- Customers receive a monthly or yearly incentive for participation (\$20/month or \$240/year)
- CPA benefits through avoided RA and wholesale energy costs. Also assumes revenue from CPA bidding event capacity into wholesale market

Value Rank to CPA: 1

Value Rank to Customer: 1

Target Segments:
Commercial and Municipal

Estimated participation:
40 customers

Solar + Storage

DER Type: (Distributed generation/storage, load shift)

- Residential and commercial customers pay a \$/kWh price for solar and a yearly lease on a battery to shift their load from low price periods in the middle of the day to higher priced time in evening.
- Customers charge battery with solar during low price periods and discharge battery during evening peak (4pm-9pm)
- Provides energy savings for customers, and additional demand charge savings for commercial customers (additional incentives could be provided in the form of decreased PPA price or battery lease costs to attract participation).*
- CPA benefits through avoided RA costs and ability to call on battery capacity when wholesale prices are high.

*TOU-GS-2 customers receive an additional yearly participation incentive to reach cost-effectiveness.

Value Rank to CPA: 2

Value Rank to Customer: 3

Target Segments:
Residential & Commercial

Projected participation:
1000 Residential customers
960 Commercial customers

Smart Home

DER Type: (Load control, energy efficiency)

- The smart home program is anchored by a smart thermostat which will produce energy savings for customers throughout the cooling period in exchange for participating in load control events called by CPA during the evening ramp (5-9pm)
- Further customer reduction benefits and curtailment possibility with other optional smart home load controls (smart plug(s), multi-purpose sensors, occupancy sensors and/or dimmer switches)
- CPA to provide \$50 enrollment incentive for smart thermostat / \$75 enrollment incentive for additional smart home controls
- CPA benefits through avoided RA costs and ability to activate load control events when wholesale prices are high. Also assumes revenue from CPA will bidding event capacity into wholesale market

Value Rank to CPA: 3

Value Rank to Customer: 2

Target Segment: Residential

Projected participation:
1,000 w existing t-stat
1,000 w new t-stat
1,000 w new t-stat + optional controls

DAC Community Solar

DER Type: (Distributed generation)

- Community solar programs are local solar arrays (front of the meter), sometimes on brownfield sites, used to serve multiple customers. Total system cost ideally lower than rooftop systems due to greater economies of scale
- Programs are geared towards residential customers without suitable site for solar (renters, people with inadequate roof, lower-income, etc)
- Customers subscribe to a portion of total system output in return for bill credits or reduced \$ per kWh energy cost
- CPA able to utilize funds available through the CPUC for projects that are both sited within and benefitting subscribers in a DAC
- CPA benefits through avoided RA costs, some limited wholesale energy savings, and customer PPA payments

Value Rank to CPA: 4

Value Rank to Customer: 4

Target Segment: Residential DACs

Projected participation:
TBD – Depends on level of CPUC funding

Summary and Next Steps

- Staff to incorporate the Committee's feedback on the proposed DER Pilot Program pillars
- A detailed implementation plan will be developed for the DER Pilot during July and August
 - Will include more detailed budgeting for implementation during FY19-20 and first years of selected programs
- A final DER Pilot Program proposal will be presented to the Board of Directors in September 2019