



MARIN COUNTY | NAPA COUNTY | UNINCORPORATED CONTRA COSTA COUNTY | UNINCORPORATED SOLANO COUNTY  
BENICIA | CONCORD | DANVILLE | EL CERRITO | FAIRFIELD | HERCULES | LAFAYETTE | MARTINEZ | MORAGA | OAKLEY  
PINOLE | PITTSBURG | PLEASANT HILL | RICHMOND | SAN PABLO | SAN RAMON | VALLEJO | WALNUT CREEK

## Technical Committee Meeting Friday, April 5, 2024 10:00 A.M.

*Public comments may be made in person or remotely via the details below.*

1125 Tamalpais Avenue, San Rafael, CA 94901 (MCE)  
2300 Clayton Road, Suite 1150, Concord, CA 94920 (MCE)  
11780 San Pablo Ave., Suite D, El Cerrito, CA 94530 (Contra Costa County)

### Remote Meeting Participation for Members of the Public

Video Conference: <https://t.ly/QzAmo>  
Phone: Dial (669) 900-9128, Meeting ID 828 5103 7385, Passcode  
142534

### Agenda Page 1 of 2

1. Roll Call/Quorum
2. Board Announcements (Discussion)
3. Public Open Time (Discussion)
4. Report from Chief Executive Officer (Discussion)
5. Consent Calendar (Discussion/Action)  
    C.1 Approval of 10.6.23 Meeting Minutes
6. Virtual Power Plant Ten Year Vision (Discussion)
7. Achieving MCE's Mission by Addressing Risk (Discussion)
8. Committee & Staff Matters (Discussion)
9. Adjourn

*The Technical Committee may discuss and/or take action on any or all of the items listed on the agenda irrespective of how the items are described.*

*This Committee may be attended by Board Members who do not serve on this Committee. In the event that a quorum of the entire Board is present, this Committee shall act as a Committee of the Whole. Any item acted upon by the Committee of the Whole will be considered advisory to the Board of Directors and require consideration and action by the Board of Directors at a noticed Board meeting before adoption or approval of the item.*

DISABLED ACCOMMODATION: If you are a person with a disability who requires an accommodation or an alternative format, please contact MCE at (888) 632-3674 or [ada-coordinator@mcecleanenergy.org](mailto:ada-coordinator@mcecleanenergy.org) at least 72 hours before the meeting start time to ensure arrangements are made.

## DRAFT

### MCE TECHNICAL COMMITTEE MEETING MINUTES

Friday, October 6, 2023

10:00 A.M.

---

<b>Present:</b>	Alexis Fineman, Town of San Anselmo Eduardo Martinez, City of Richmond Devin Murphy, City of Pinole Charles Palmares, City of Vallejo Scott Perkins, City of San Ramon Katie Rice, County of Marin
<b>Absent:</b>	Gina Dawson, City of Lafayette John Gioia, Contra Costa County
<b>Staff &amp; Others:</b>	Jesica Brooks, Board Clerk Darlene Jackson, Lead Board Clerk Vicken Kasarjian, Chief Operating Officer Justin Kudo, Senior Strategic Analysis and Rates Manager Tanya Lomas, Internal Operations Assistant Alexandra McGee, Director of Strategic Initiatives Ashley Muth, Internal Operations Coordinator Zae Perrin, Director of Customer Operations Daniel Settlemyer, Internal Operations Coordinator Jamie Tuckey, Chief of Staff Dawn Weisz, Chief Executive Officer

**1. Roll Call**

Chair Murphy called the regular Technical Committee meeting to order at 10:05 a.m. with quorum established by roll call.

**2. Board Announcements (Discussion)**

There were no announcements.

**3. Public Open Time (Discussion)**

Chair Murphy opened the public comment period and there were no comments.

**4. Report from Chief Executive Officer (Discussion)**

CEO Dawn Weisz introduced this item and addressed questions from Committee members.

**5. Consent Calendar (Discussion/Action)**

C.1 Approval of 6.2.23 Meeting Minutes

## DRAFT

- C.2 Amendments to Power Purchase Agreements with CES Electron Farm One, LLC
- C.3 Third Amended and Restated Scheduling Services Agreements with ZGlobal, Inc.

Chair Murphy opened the public comment period and there were no comments.

Action: It was M/S/C (Perkins/Martinez) to **approve Consent Calendar C.1-C.3.** Motion carried by unanimous roll call vote. (Absent: Directors Dawson and Gioia).

### 6. MCE Solar Billing Plan Tariff (Discussion/Action)

Justin Kudo, Senior Strategic Analysis and Rates Manager, and Zae Perrin, Director of Customer Operations, presented this item and addressed questions from Committee members.

Chair Murphy opened the public comment period and there were comments from member of the public, Howdy Goudey.

Action: It was M/S/C (Perkins/Martinez) **that the Technical Committee approve the proposed Solar Billing Plan tariff included in Attachment A, as well as the proposed Export Rate methodology.** Motion carried by unanimous roll call vote. (Absent: Directors Dawson and Gioia).

### 7. Update on MCE's Green Hydrogen Activities (Discussion)

Alexandra McGee, Director of Strategic Initiatives, presented this item and addressed questions from Committee members.

Chair Murphy opened the public comment period and there were comments from members of the public, Bob Miller and Howdy Goudey.

Action: No action required.

### 8. Committee Matters & Staff Matters (Discussion)

There were no comments.

### 9. Adjournment

Chair Murphy adjourned the meeting at 11:56 a.m. to the next scheduled Technical Committee Meeting on November 3, 2023.

DRAFT

---

Devin Murphy, Chair

Attest:

---

Dawn Weisz, Secretary

# Virtual Power Plant Ten Year Vision

April 2024



## VISION

Lead California to an equitable, clean, affordable, and reliable energy economy by serving as a model for community-based renewable energy, energy efficiency, and cutting-edge clean-tech products and programs.

## MISSION

Confront the climate crisis by eliminating fossil fuel greenhouse gas emissions, producing renewable energy, and creating equitable community benefits.

## VALUES

**Innovation:** We fight climate change with leading edge, community-centered programs and policies.

**Equity:** We prioritize environmental and economic justice for communities of concern.

**Accessibility:** We serve our communities and customers through open and transparent engagement.

**Inclusivity:** We celebrate diverse identities at work and in our communities.

**Sustainability:** We strive for a sustainable workplace, community, and planet.

**Fiscal Responsibility:** We maintain financial strength to deliver sustainable programs and rates.

# Market Challenges

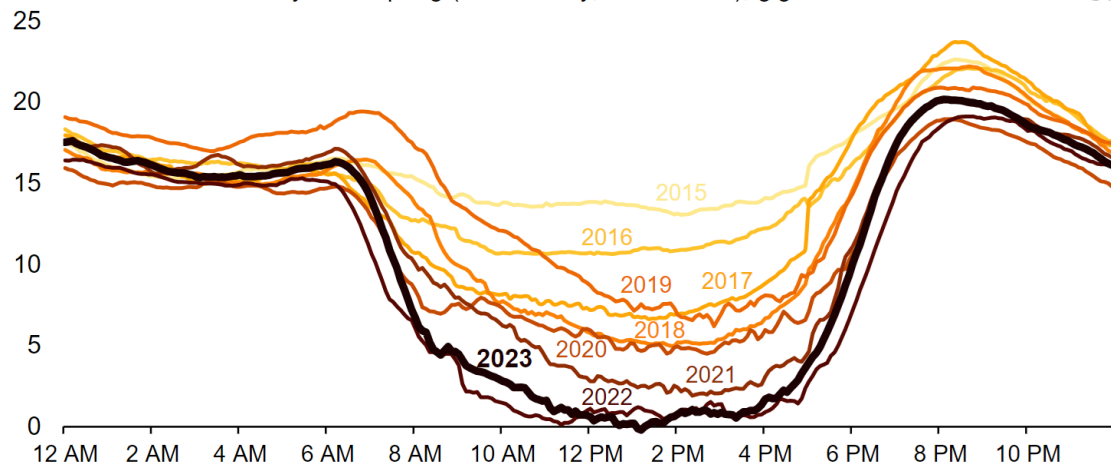
MCE's **'peaky load'** results from widespread solar, causing customer demand spikes in late afternoon to early evening as solar power ramps down and household electricity use surges.

This is what we call the "duck's neck."

## Addressing the Over-Generation of Solar Energy

### California's duck curve is getting deeper

CAISO lowest net load day each spring (March–May, 2015–2023), gigawatts





# Market Challenges

‘**Settlement**’ in energy markets is the process of reconciling all transactions between electricity suppliers and customers, ensuring accurate payment to generators and billing for customers.

Settlement processes can vary in frequency, from hourly to daily, and involve complex calculations.

## Evolving Settlement Requirements

- Managing energy in **shorter time frames** requires faster controls to keep up with supply and demand changes.
- Resource matching for **24x7 settlement** to ensure energy supply matches the energy demand on a continuous basis, every day of the week, all year round.
- As California retires natural gas power plants, we need new tools so grid operators can **match load / supply on a 4 second basis**.

# Market Challenges



## Managing Rising Costs

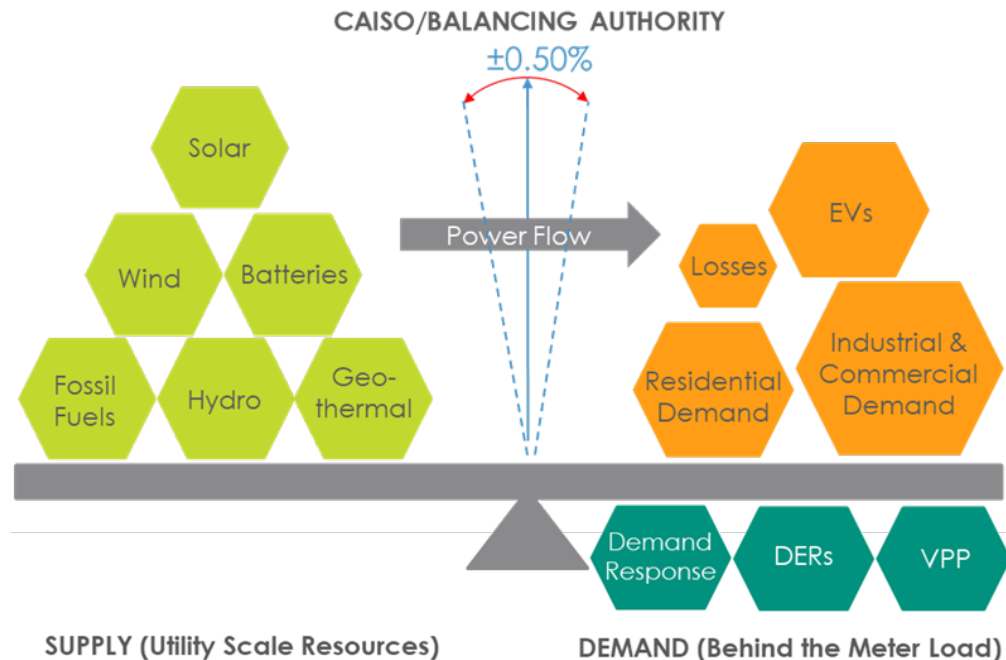
- New purchasing rules, or **procurement mandates**, mean that suppliers can keep their prices artificially high since they know we're required to buy it. Without a limit on what they can charge, prices can go up significantly for securing reliable energy sources.
- We face **increased expenses** for maintaining energy reliability (resource adequacy) while **intense competition** for green energy sources is intensifying.
- The process to connect to the energy network (**interconnection**) is becoming longer, impacting our ability to bring new sources online efficiently.

# What is a Virtual Power Plant

Instead of an industrial power plant taking up a lot of land, this connects many smaller **physical assets** throughout a community.

A VPP taps into **existing distributed energy resources** - solar, smart thermostats, smart plugs, batteries, electric vehicles - and sends them **digital signals** to charge up or release power to the grid at strategic times.

It quietly and invisibly creates **pockets of power** to support and decarbonize the grid.



## Keeping the Balance

# All Inclusive Solution

## Virtual Power Plant



PeakFlex

Demand  
Response

Energy  
Efficiency  
(non-dispatchable)

Dispatchable  
Resources

In 10 years, build a new paradigm of  
**⚡ People Power ⚡**

Weave together MCE's incredible programs to create a "spectrum of controllability."

Community members engage at various levels to optimize value through controllable devices and behavior change.

Share value of a suite of DERs with MCE customers while competing against for-profit 3rd parties to:

- alleviating pressure on MCE power procurement
- creating bill savings for customers
- creating value for MCE
- promoting local grid health with smart devices



# Direct MCE Benefits

## Cost benefits:

- Smaller up front investment than large power plants
- Allows for distributed and incremental solutions to closely match demand growth
- Mitigates the risk of transmission or distribution (T&D) bottlenecks where significant power is locked behind congested T&D corridors
- Use power where it's needed - tap into inherent benefits of co-location of demand and supply
- Closed loop of value - customer generates and shares value with MCE which then returns to the customer



# Direct MCE Benefits

## Settlement benefits:

- Access real-time device data
- Facilitates time-sensitive peak load reductions
- Reduces associated procurement & resource adequacy obligations



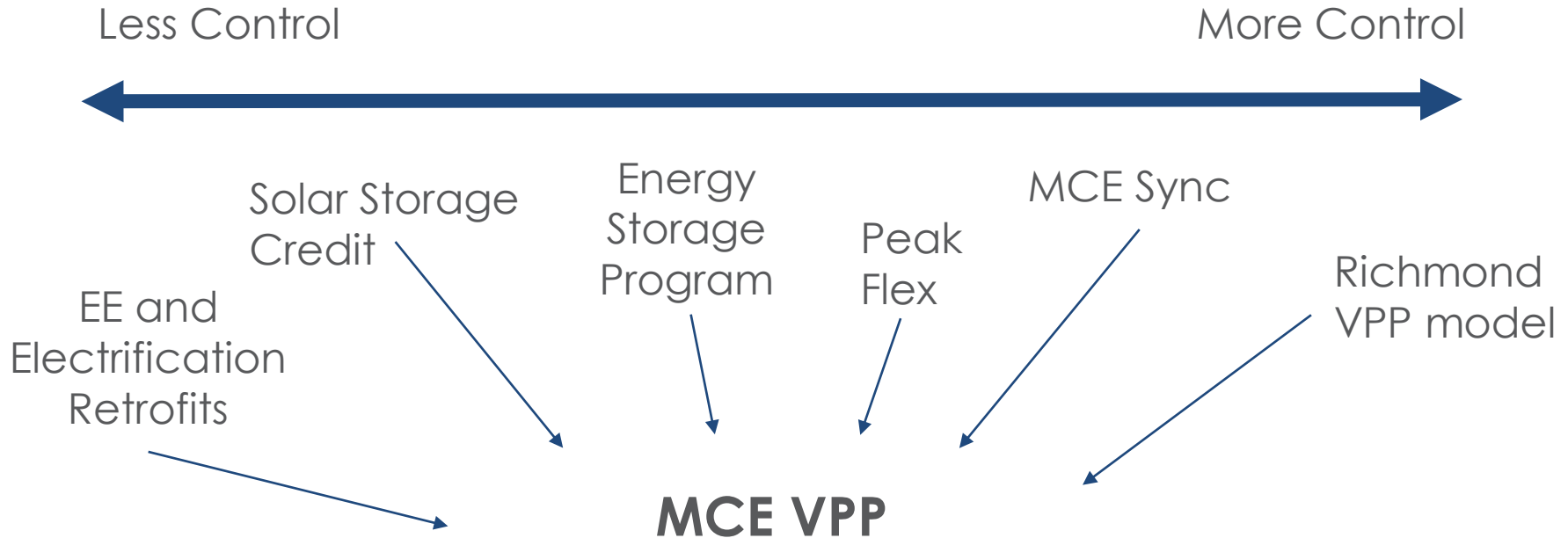


# Direct Community Benefits

- **A decade of MCE programs** means our communities have years of upgrades that can be integrated into the VPP to generate additional value for the customer
- **Lots of install jobs**, especially important in Disadvantaged Communities (DAC)
- **Modernized building stock**, including with energy **resilience**
- Reduce demand for polluting peaker plants
- **Reduce emissions** of entire system due to localized usage of power
- Value sharing tariff transforms passive consumers into a **active agents of grid health**
- Increased customer awareness and participation in the energy system
- **Cost savings** from more efficient usage as well as from bill credits

# Implementation

**“No customer left behind” - Multiple strategies - Meet people where they are**



# Next Steps (part 1)

## **Richmond VPP:**

- 1.5MW Flex Load + 1 MW Solar + 2MWh batteries
- Use OpenADR DERMS to monitor and dispatch
- Bid Capacity and Energy into Day Ahead Markets

## **MCE Sync:**

- 7,000 Vehicles by June 2025
- Shift 95% of EV Charging Load out of Peak Hours
- 1.2 MW of average daily peak load reduction
- Bid into Day Ahead Market
- Incorporate Dynamic Pricing Signals

## **Peak Flex:**

- Build on the 3MW of demand reduction achieved in 2022
- Focus on storage, building control systems, EV chargers

# Next Steps (part 2)

## **Energy Storage Program:**

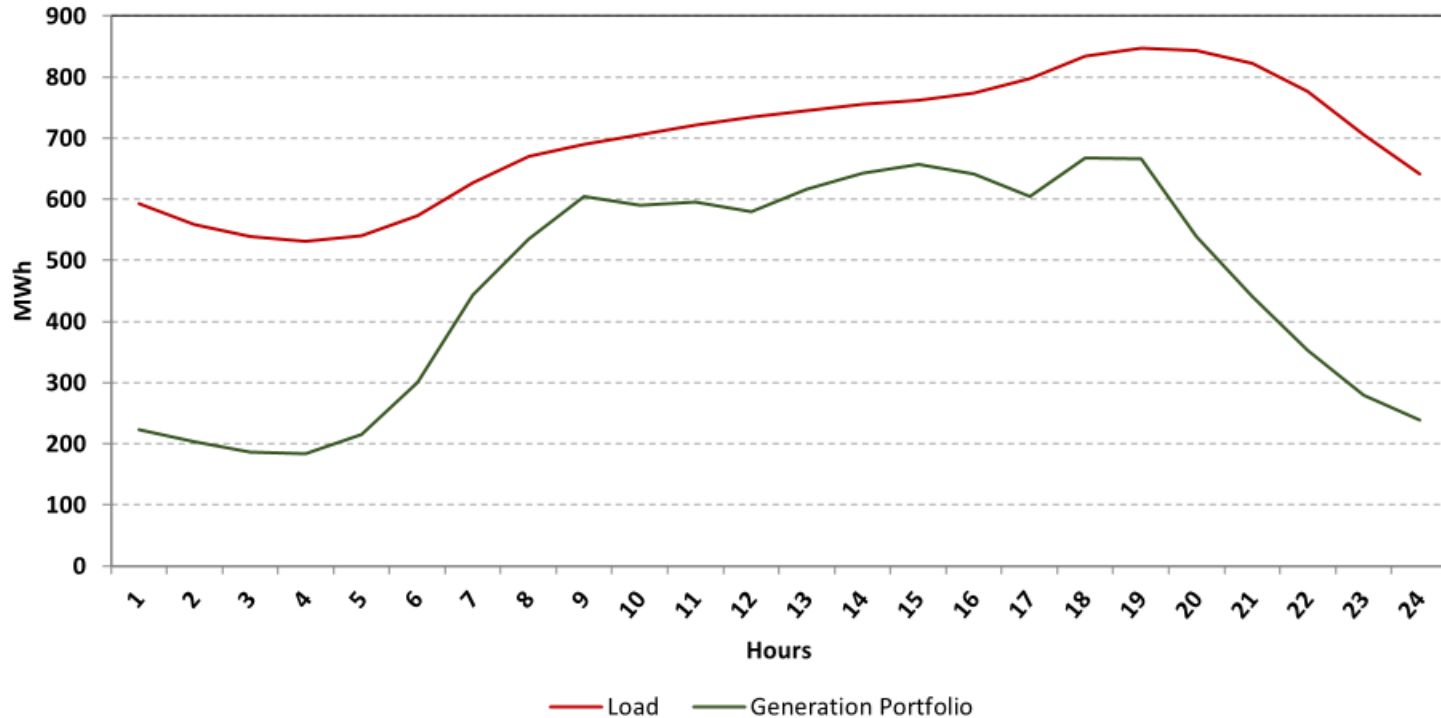
- Initial Launch: 1.2 MWh residential installs (complete) & 4.5 MWh batteries at Non-Res Critical Facilities. Collect usage data and issue performance payments
- Phase 2: 2.5 MWh batteries at C&I facilities, integrated into Open ADR DERMS to monitor and dispatch.

## **Energy Efficiency Programs:**

- Single family homes: Install 280 heat pump water heaters (HPWH), 100 smart thermostats, 300 HAN devices
- Build local capacity for HPWH installs through workforce training programs
- Multifamily Properties: 300+ HPWHs and 200 smart thermostats

# Future Portfolio Snapshot

2032 Average hourly profile



# Closing Remarks

