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CenterPoint® Energy

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18 December 2023

Filing Clerk
Public Utility Commission of Texas
1701 N. Congress Ave.
Austin, Texas 78711

RE: PUCT Project No. 53911, *Aggregate Distributed Energy Resource (ADER) ERCOT Pilot Project*

Enclosed for filing in the above-referenced project are notes of the ADER Task Force meeting that took place on December 15, 2023.

Regards,

Jason M. Ryan
Chair, ADER Task Force

Enclosure

CHAIR'S NOTES FROM THE
MEETING OF THE
AGGREGATED DISTRIBUTED ENERGY RESOURCE (ADER) TASK FORCE

FRIDAY, DECEMBER 15, 2023, 1:00 PM
COMMISSIONERS' HEARING ROOM
7TH FLOOR, WILLIAM B. TRAVIS BUILDING

1. Welcome, Antitrust Compliance Reminder and Logistics

The meeting was called to order by the Chair at approximately 1 p.m. and participants were reminded of the following antitrust admonition:

Section 4 of the Charter provides:

"The Commission strictly prohibits members of the Task Force and their employees and other entities or persons that may participate in Task Force activities from using their participation in Task Force activities as a forum for engaging in practices or communications that violate applicable antitrust laws."

The Task Force representatives and their member organizations are committed to full compliance with federal and state antitrust laws and to maintaining the highest ethical standards in the way we conduct our activities.

2. Introductions and Roll Call

Attendance of the Task Force members is reflected in the chart below:

Member	Company	Proxy	Present / Absent
Jason Ryan	CenterPoint Energy		P
Alejandro Ramirez	AEP		P
Wayne Callender	CPS Energy		P
John Padalino	Bandera Electric Co-op		P
Martha Henson	Oncor		P
Arushi Sharma Frank	Tesla	Greg Thurnher	P
Jaden Crawford	David Energy		P
Rajiv Shaw	Octopus Energy		P
Ned Bonskowski	Vistra		P
Resmi Surendran	Shell		A
Amy Heart	SunRun		P
J.T. Thompson	Generac		A
Joel Yu	Enchanted Rock		P

Member	Company	Proxy	Present / Absent
John Bonnin	AutoGrid		P
Micalah Spenrath	Texas Advanced Energy Business Alliance (TAEBA)		P
Carmen Best	Recurve		P
Erik Ela	Electric Power Research Institute (EPRI)		A
Margo Weisz	Texas Energy Poverty Research Institute (TEPRI)		P
Miroslav Begovic	Texas A&M University		P
Scott Hinson	Pecan Street		P

3. Update from ERCOT on Status of Phase 1 of Pilot Program

ERCOT provided an update on the status of Phase 1 of the pilot project.[1] As of December 14, 2023, there were 8 total ADER registrations pending for the Houston, North, and South load zones, as reflected in the figure below. Those 8 registrations proposed ADERs to provide 12.5MW of energy and 4.3MW of non-spin ancillary services.[2] Of those 8 registrations, 2 have been qualified to participate since late August 2023, totaling 9.4MW of energy and 3.1MW of non-spin.

Of the 80MW of energy available in Phase 1, the 12.5MW submitted so far represents 16% of the limit. Of the 40MW of available non-spin available in Phase 1, the 4.3MW submitted represents 11% of the limit.

ERCOT also discussed the following five items related to Phase 2:[3]

a. Changes to telemetry validation processes and requirements (which would require a Governing Document change);
b. Expanding ancillary service product eligibility to include ERCOT Contingency Reserve Service (ECRS) (which would also require a Governing Document change);
c. Continued review of compliance metrics for ADERs;
d. Alternative participation models for ADERs; and
e. Alternatives to dispatch using Load Zone shift factors.

4. Follow-up from recent workshops (October 26 and November 10)

[1] That update was filed in this project on December 14, 2023.
[2] This compares to 7 ADER registrations representing 10.1MW of energy and 3.3MW of non-spin as of June 27, 2023.
[3] These items were included in the filing made by ERCOT in this project on December 14, 2023.

The Task Force members had follow-up discussions on the topics of interoperability and density. Regarding interoperability, there was discussion of the Task Force submitting comments in PUC Project No. 54233. And the Chair reminded parties of the importance of individual companies weighing in with comments in that project, given the Task Force may not reach consensus on the solution to the interoperability issue.

Regarding achieving density to fully understand ADER impact on the distribution system, SunRun and Recurve gave presentations, which are attached to these notes. The utility group on the Task Force raised a number of considerations to be addressed as solutions to this issue are discussed.

The Chair proposed that a workshop be convened in Q1 2024 for Task Force members to achieve consensus on the interoperability and density issues. The Chair will circulate draft comments for Project No. 54233 for consideration.

The Task Force agreed that the topics of other ancillary services and changes to caps would continue to be discussed in future workshops and meetings, but that no additional recommendations were needed at this time on those topics.

5. Discussion of Next Steps for Phase 1B/Phase 2

   ERCOT will provide for Task Force review a draft Governing Document for Phase 2. The Task Force will schedule a workshop to develop consensus on those changes.

6. Discussion of Q4 2023 Report

   The Chair advised that an updated draft Q4 2023 report would be circulated in the coming days and requested Task Force member feedback by the end of the first full week of January 2024 to enable an early January 2024 filing.

7. Task Force Member Announcements

   It was announced that ERCOT would be posting an updated version of the DOTA form to reflect clarifying language for column L on the Premise & Device Info tab for DUNS numbers to be entered with numbers only, no dashes.

8. Public Comment

   There were no formal public comments.

9. Date and Topics for Next Meeting

The Chair noted that the next official Task Force meeting date is to be determined, but will likely be in March 2024.

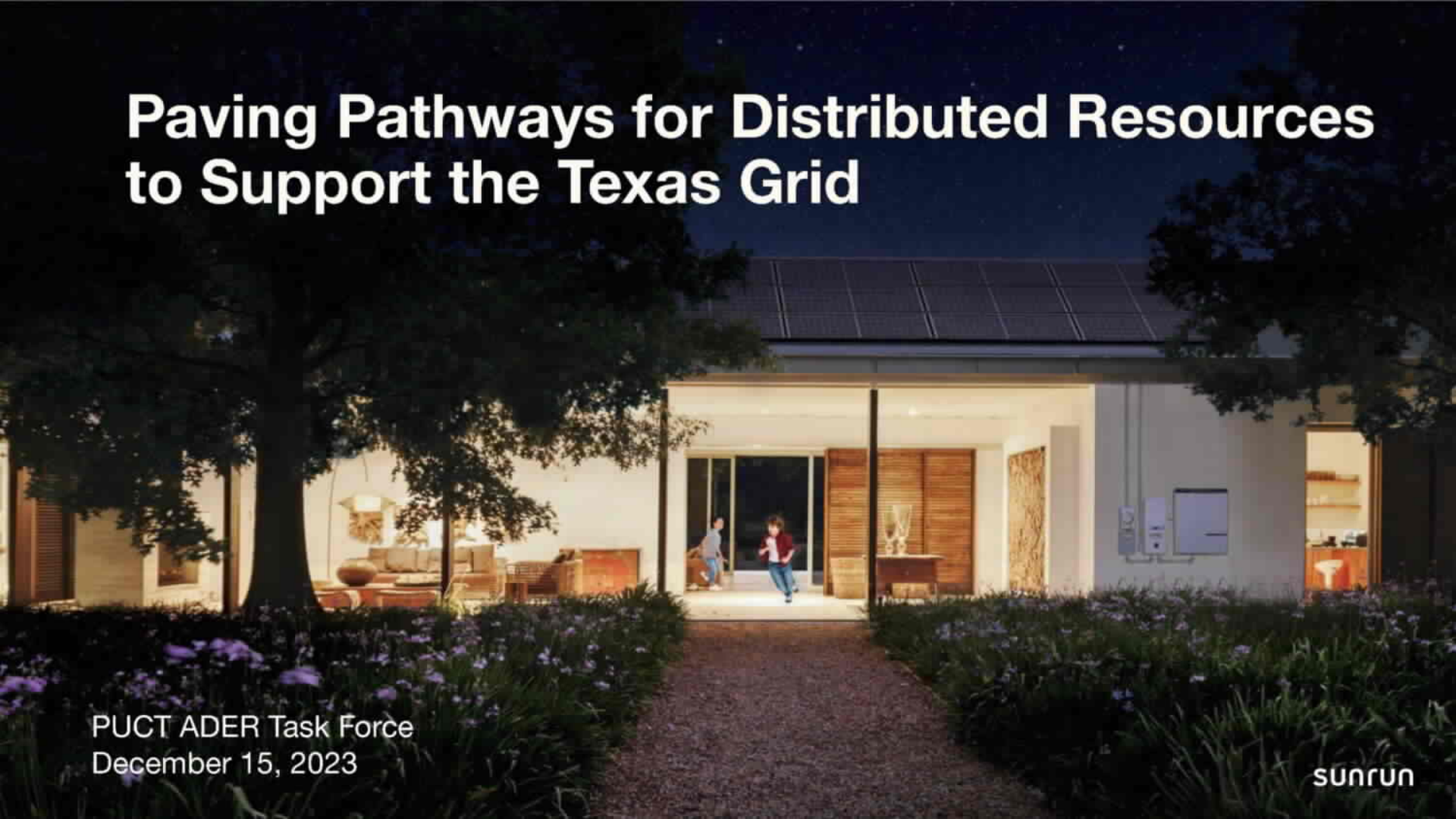
The Chair reported that the Task Force would continue to meet in Q1 2024 as needed, with a specific intent to meet in January regarding the Phase 2 Governing Document and the open items discussed under Item 4 of the agenda.

All workshop and official meeting dates and times will be posted in this project.

10. Adjourn

The meeting adjourned at approximately 3:03 p.m. A recording of the meeting can be viewed from the "Broadcasts" section of the PUC's website.

Paving Pathways for Distributed Resources to Support the Texas Grid



PUCT ADER Task Force
December 15, 2023

sunrun

A Customer-led, Flexible Energy Future

2007 Changed solar industry with solar-as-a-service model for home solar

2016 Batteries added as option to provide resiliency for homes & the grid

2018 Providing customer benefits (TOU management) and grid services

2019 Won bid for first residential virtual power plant in wholesale market

2021 Partnership to introduce V2H/V2G Ford Home Integration System

2023 Running VPPs across the country with tens of thousands of customers

OUR IMPACT

- **6.5+ GW** installed solar capacity, 1.1 GWh home storage capacity
- Installing **equivalent of 1 nuclear plant per year** starting in 2023
- Over **900,000+** customers; **76,000+** solar+storage systems
- **22 states** plus DC and Puerto Rico

ConnectedSolutions

Best-in-Class Model, Replicable for Texas Grid

- **Open Access, Peak Load Reduction**
- **Pay for Performance**
- *Discharge* energy during times of peak electricity demand to help balance out the grid. In ISO-NE, helps utility reduce capacity & transmission peak demand.
- Distribution utility-led programs
- Evolved from existing EE/DR program framework but compensated differently to account for different technology
- 2018: Piloted with MA National Grid, has grown since then. Other utilities in RI, CT, and elsewhere have implemented similar open-access programs.
- Not bi-lateral RFP for one service or one company. Open access for greatest diversity and robust enrollment

ConnectedSolutions

Best-in-Class Model, Replicable for Texas Grid

Program Highlights

- Open access to all eligible aggregators *and* single-site enrollment
- Compensation level to value battery export *and* drive enrollment
- Summer only open-access program which compensates VPP aggregators with a capacity payment for battery dispatch
- Compensation covers enrollment, performance value, and ongoing service considerations to ensure multi-season, multi-year performance once enrolled.
- Aggregators handle customer recruitment, enrollment, incentives payment, asset dispatch, and M&V.
- Simple technical integration; Separate from any rate designs
- Forward-price lock of 5-years, creating robust & reliable structure

ConnectedSolutions

Best-in-Class Model, Replicable for Texas Grid

MA Program [1]

- $275/kW-summer, locked in for five years
- 2-3 hours, between 3-8 PM, June 1 – Sept. 30; 30-60 events / season

RI Program [2]

- $400/kW-summer season (avg. per peak event), locked in for 5 years
- 3 hours, between 3-8 PM, June 1 – Sept. 30; Up to 60 events / season.

CT Program [3]

- Upfront Enrollment: $200/kWh (Standard), $300/kWh (Underserved), $400/kWh (Low-Income) for 10-year commitment.
- Performance Payment: $200/kW (summer), $25/kW (winter), ave.kW-AC contribution during season, determined by system performance in events. Passive Dispatch: 3-8 PM, Non-holiday weekdays June 1- Aug 31. Passive events canceled on days in which an active event is called. Active Dispatch: 1-3 hours between 12-9 PM, June 1 - Sept. 30, 30-60 events per summer season. 1-3 hours between 12-9 PM, Nov. 1 - March 31, 1-5 events per winter season.

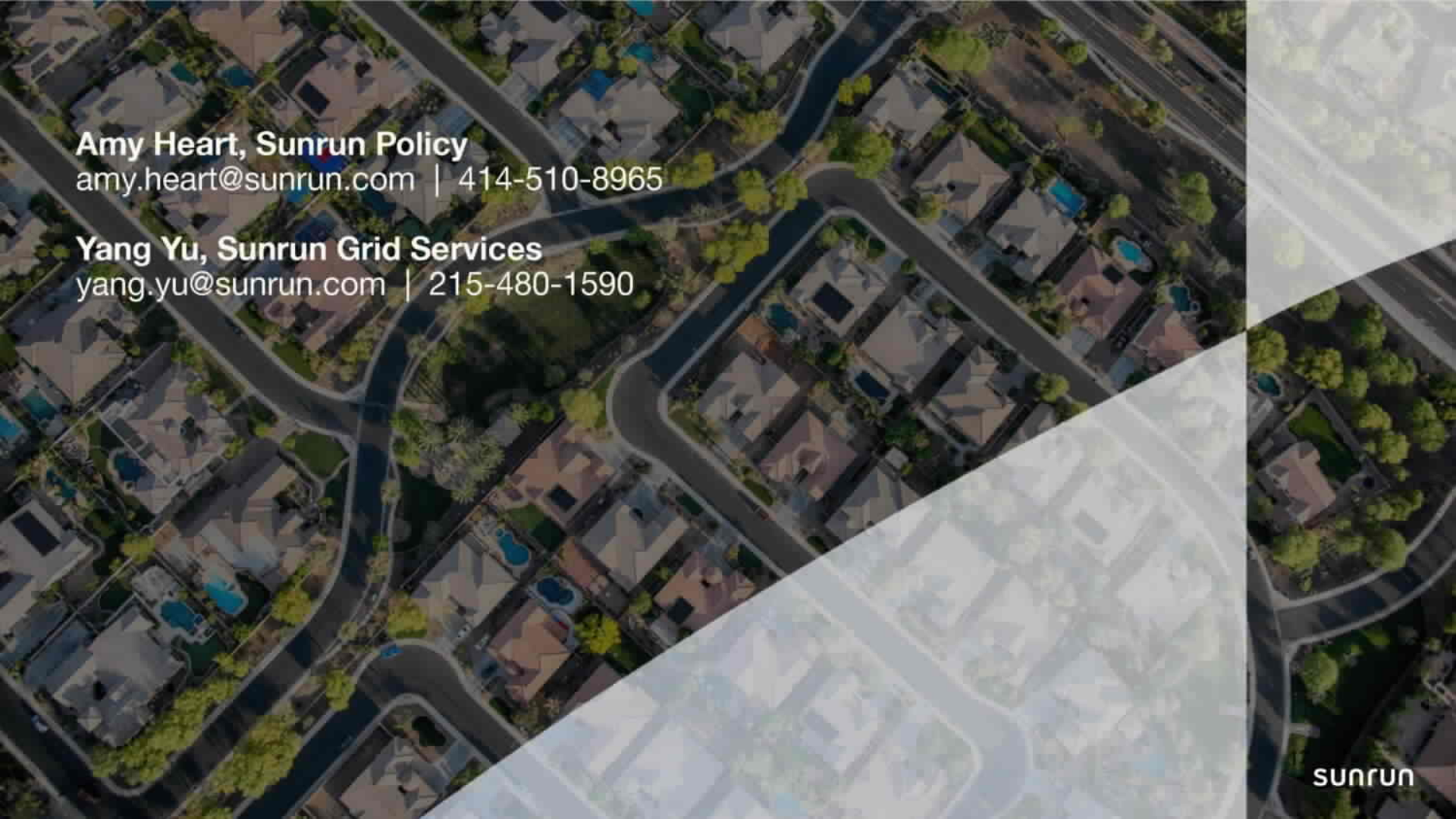
[1] https://www.masssave.com/en/residential/rebates-and-incentives/connectedsolutions-batteries
[2] https://www.rienergy.com/RI-Home/ConnectedSolutions/BatteryProgram
[3] https://energystorageact.com/contractor-resources

ConnectedSolutions

Best-in-Class Model, Replicable for Texas Grid

Considerations for Texas

- Separate summer and winter programs to address unique ERCOT needs.
- PUCT and ERCOT could allocate funding to existing EE or DR programs for TDUs to launch pilots to determine value, enrollment, geographic diversity.
- Evolve existing program structures to allow for battery grid export to be fairly compensated for performance in the program and drive enrollment
- Dispatchability can be tailored depending upon use cases. Current use case: Day-ahead dispatchability based on supply & demand forecast.
- Locational dispatchability (dispatching a group of batteries behind a single substation) could address local reliability needs. However, significant challenges exist to recruit and install batteries in limited geographical location. Best to consider *adders* to build on existing, stable program.
- Can be considered as pathway for municipal and cooperative utilities to leverage DERs to reduce 4CP and reduce existing ADER pilot barriers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sunrun

RECURVE

ADER Pilot Strategies to Address Density++

ADER Challenges & Opportunities in Phase II

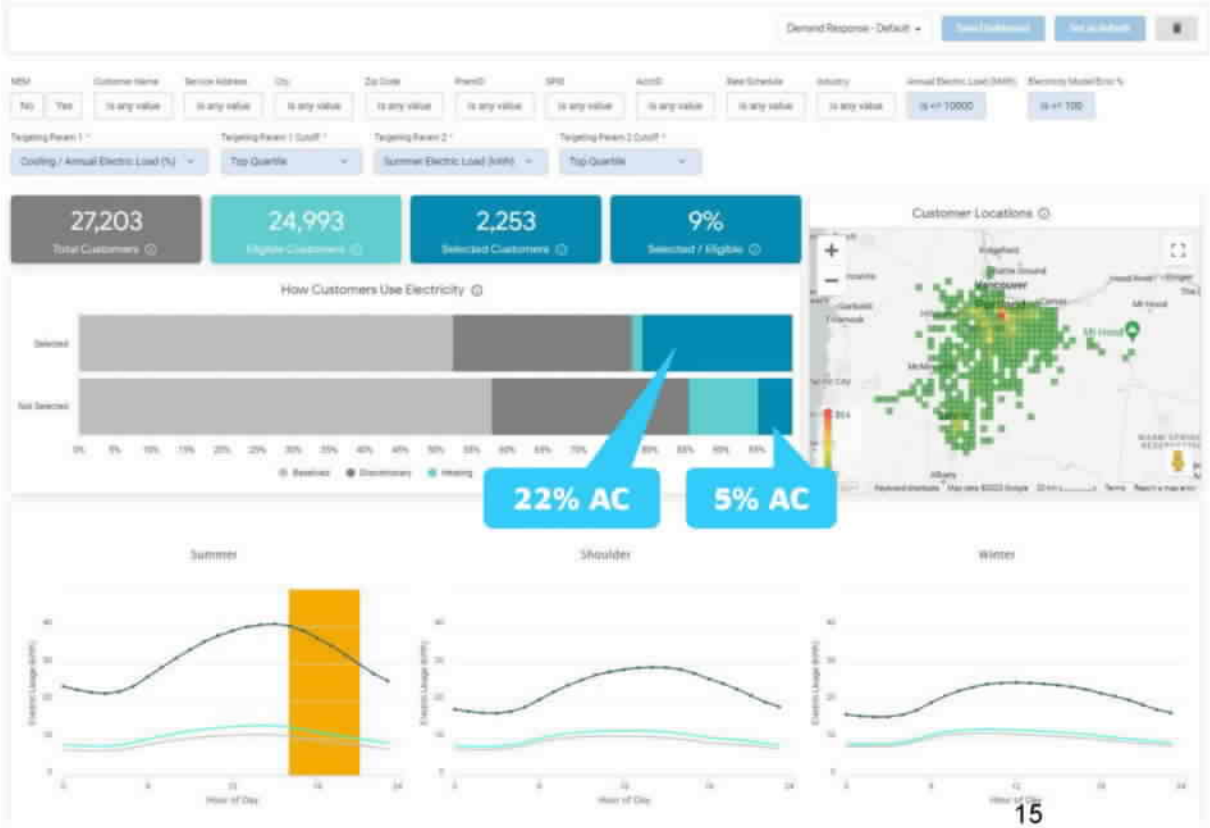
*Lack of **density** presents a challenge in understanding value of concentrated impact of ADERs. Energy efficiency programs could be leveraged to:*

- Conduct **geotargeting** analysis and fund incremental value of geo-located participation
- **Mitigate stranded potential** for prospective ADER participants with weatherization or equipment interventions and improve responsiveness.
- Quantify the **value of both permanent load reduction and event-based response** for participants to drive combined impacts

Density: Geotargeting Customers with Highest Potential

Challenge: Geographic density of participation in ADER

Opportunity: Conduct targeting and potential analysis with R&D funds and support incremental value for geographically concentrated participation.



Density: Preparing Customers to Enroll in ADER

Challenge: Stranded Potential for active ADER dispatch participation

Opportunity: Leverage efficiency program funding to prepare customers to enroll in active load managment

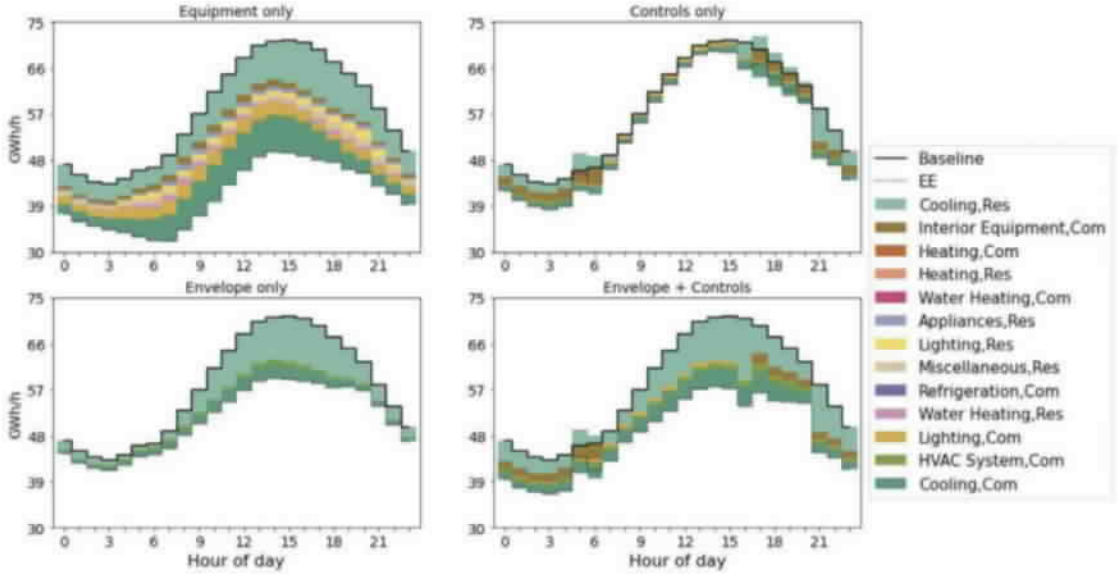


Fig. 3. Changes in the hourly system load shape induced by each EE measure portfolio, disaggregated by end use, for the example of ERCOT on the 2016 system peak day. Solid curves show the baseline system load shape, while dotted lines show the modified load shape that occurs in each EE scenario. Filled bars show the impact of EE savings from individual end uses. Bars that lie below the solid line in each panel are energy savings, while bars that lie above the solid line represent increases in consumption for that end use. The load shapes are presented in a stair step pattern to allow changes in individual end uses to be shown clearly as filled bars.

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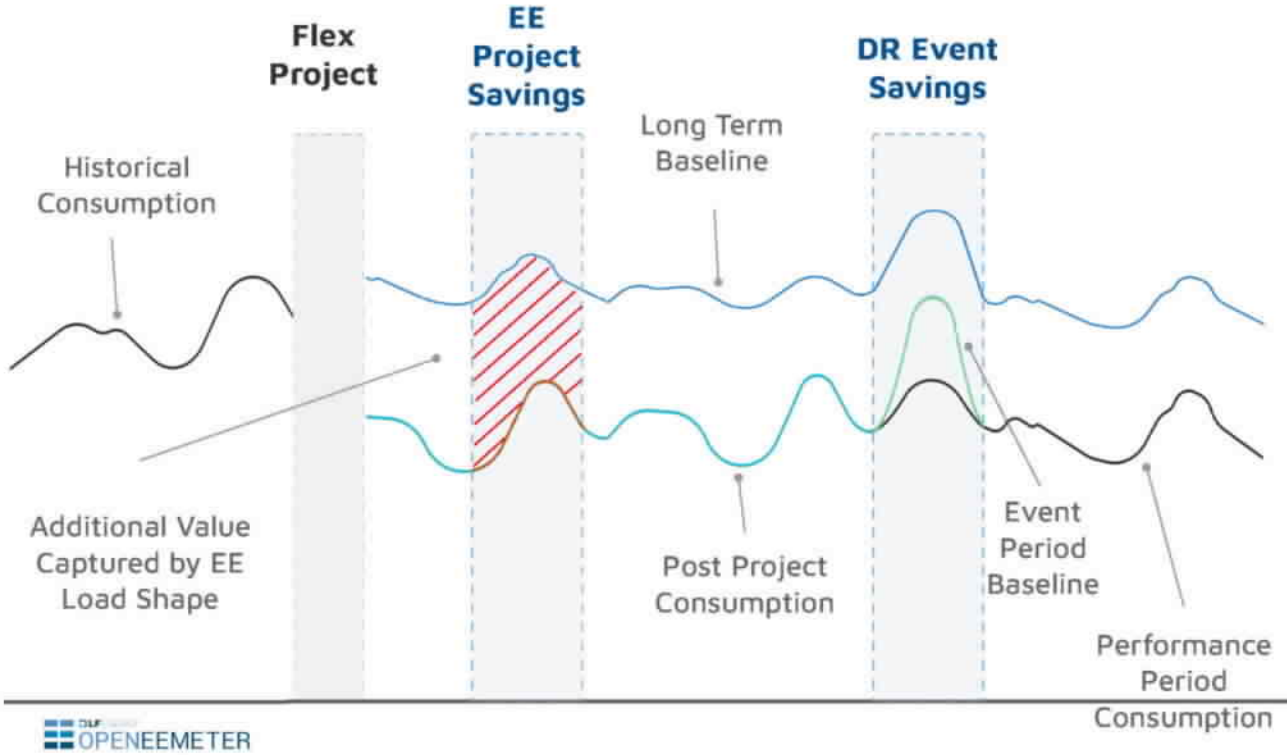
https://www.sciencedirect.com/science/article/pii/S2666792422000105

Density: Valuing Efficiency & Event-Based DR

Challenge: Variable value streams for permanent load reduction and event-based load reduction

Opportunity: Quantify each separately with site-level settlement; higher payment could help concentrate participation



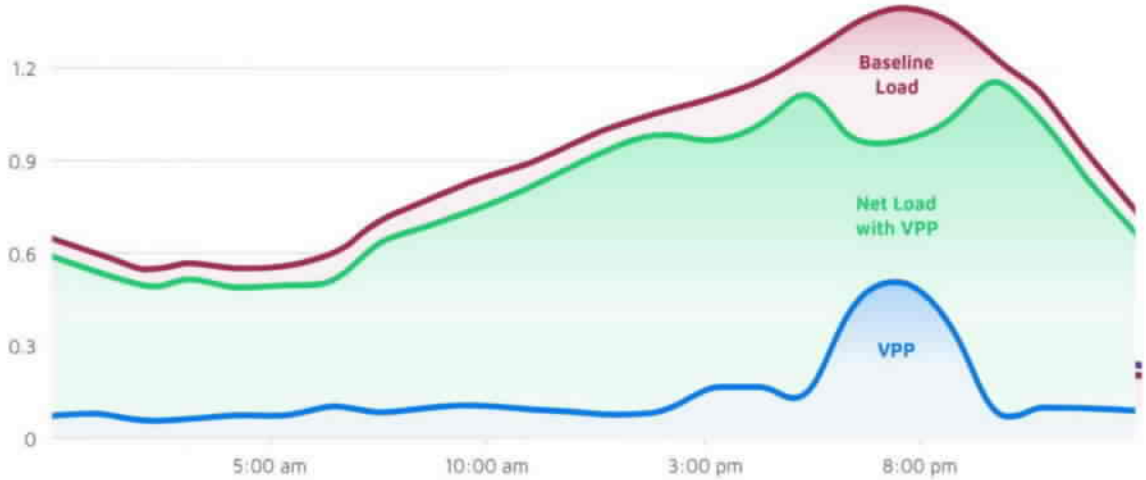
OPENEEMETER

Expanding Energy Efficiency Open-Source Measurement Methods to Incorporate Demand Response for Grid Stability, ACEEE Summer Study, 2022.

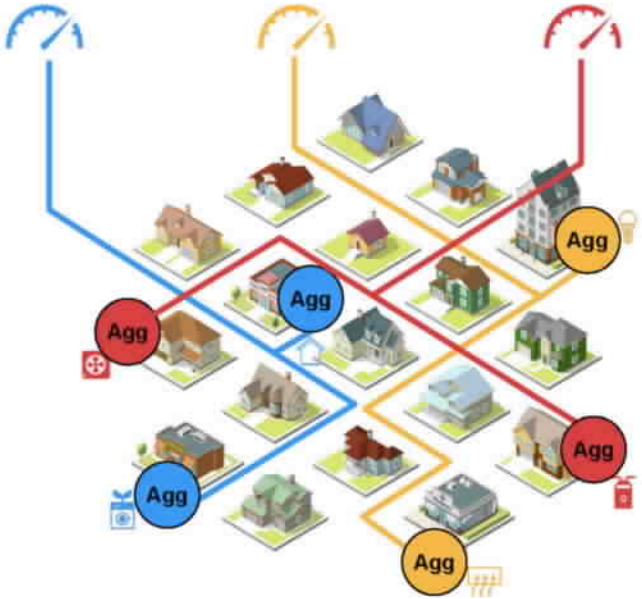
Density: Valuing Efficiency & Event-Based DR

Challenge: Variable value streams for permanent load reduction and event-based load reduction

Opportunity: Quantify each separately with site-level settlement; higher payment could help concentrate participation



Operationalize with FLEXmarket

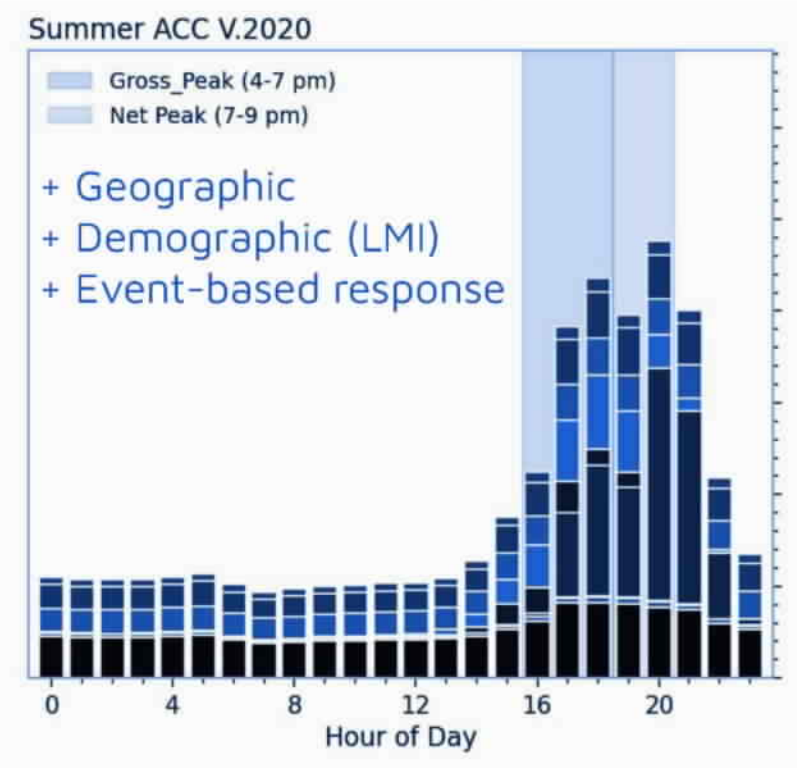


DEMAND FLEXMARKET

an open, pay-for-performance marketplace where aggregators receive incentive payments for saving customers energy at the meter.

Add Local Value To Concentrate Participation

Price Anchored in Hourly Avoided Cost

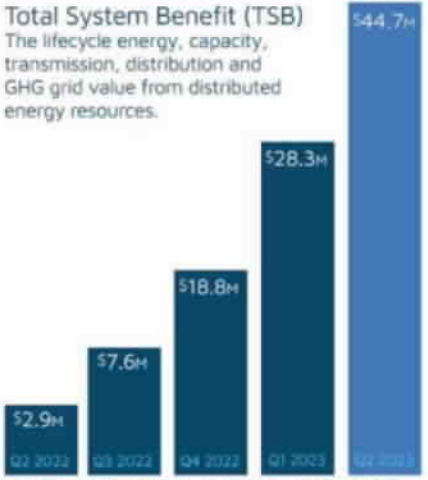


FLEXmarket + Market Access

JUNE 2023
CA MARKETS

508 GWh	$44.7M TSB	147K TONS
LIFETIME SAVINGS	GRID VALUE	CARBON SAVINGS

Total System Benefit (TSB)
The lifecycle energy, capacity, transmission, distribution and GHG grid value from distributed energy resources.



38%
INCREASE TO CALIFORNIA COMMERCIAL TSB

2X
TSB/MWh

$88 FLEXMARKET TSB/MWh SAVED

$40 CA COMMERCIAL EE TSB/MWh SAVED

102%
PERFORMANCE/ REALIZATION RATE

LIFETIME TOTAL SYSTEM BENEFIT
GAS AND ELECTRIC COMBINED TSB FORECAST VALUE

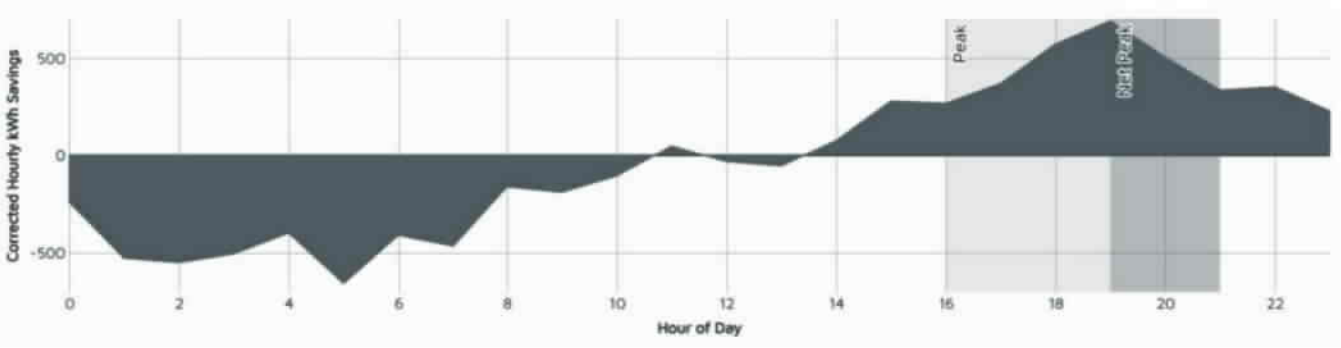
GWh include lifetime forecasted energy savings from gas and electric
www.demandflexmarket.com/june2023

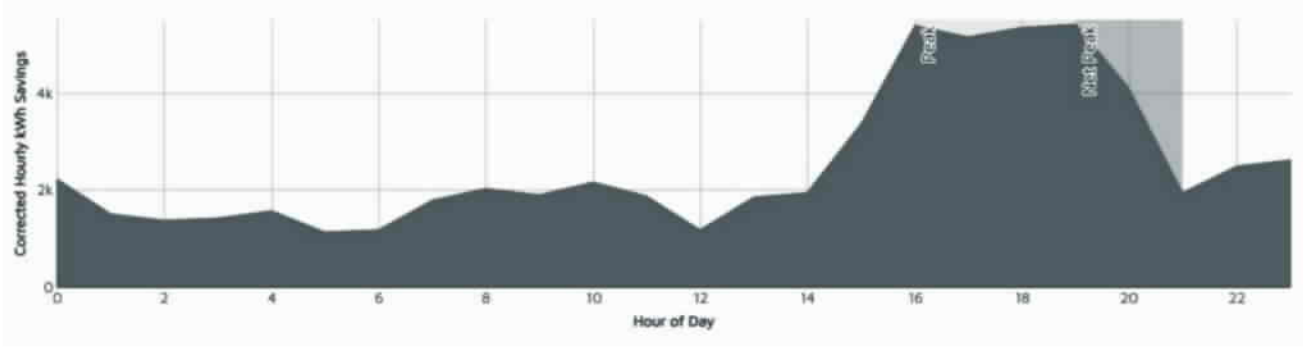
OPENEEMETER
POWERED BY RECURVE

20

Enable Range of Technology Agnostic Impacts

EV charging load shifts out of the evening peak





Smart thermostats reduce load across all hours, focusing on the peak

MCE Empowering Our Clean Energy Future
CONTRA COSTA | MARIN | NAPA | SOLANO

Summary and Discussion

What barriers or questions remain on enabling these potential opportunities to increase density?

- Conduct **geotargeting** analysis and fund incremental value of geo-located participation
- Coordinate weatherization interventions to **mitigate stranded potential** for prospective ADER participants and improve responsiveness.
- Quantify the **value of both permanent load reduction and event-based response** for participants to drive combined impacts between initiatves

