

CALFLEXHUB SYMPOSIUM

SEPTEMBER 24 | 8am-6pm PT



ANDREW MCALLISTER



MARY ANN PIETTE



RAM NARAYANAMURTHY



SVEN MUMME



ACHINTYA MADURRI

KEYNOTE SPEAKERS: Andrew McAllister, Commissioner, California Energy Commission;

Mary Ann Piette, Associate Lab Director, Berkeley Lab;

Ram Narayanamurthy, Deputy Director, Building Technologies Office, U.S. Department of Energy;

Sven Mumme, Supervisor and Technology Manager, U.S. Department of Energy;

Achintya Madurri, Senior Regulatory Analyst, CPUC



2024

Welcome to the
California Load Flexibility
Research and Deployment Hub
Symposium 2024



Goals of CalFlexHub

Support California's 7 GW Load Flex Goal

- Identify, evaluate, develop, and demonstrate pre-commercial, load flexible technologies for buildings and EVs
- Support use of standardized communication for dynamic price and GHG signals
- Ensure equity and affordability



Clean Energy



Affordability

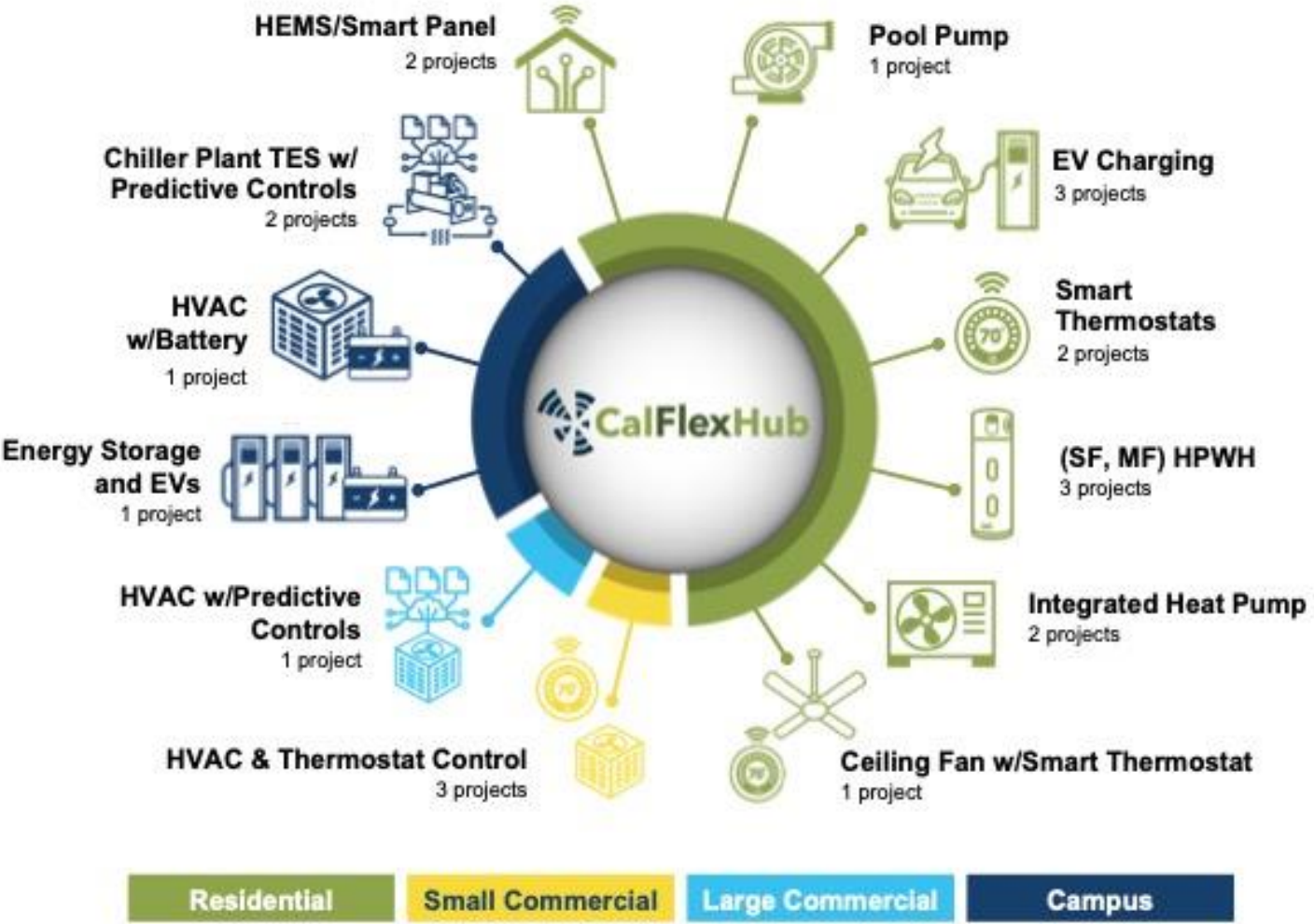


Reliability

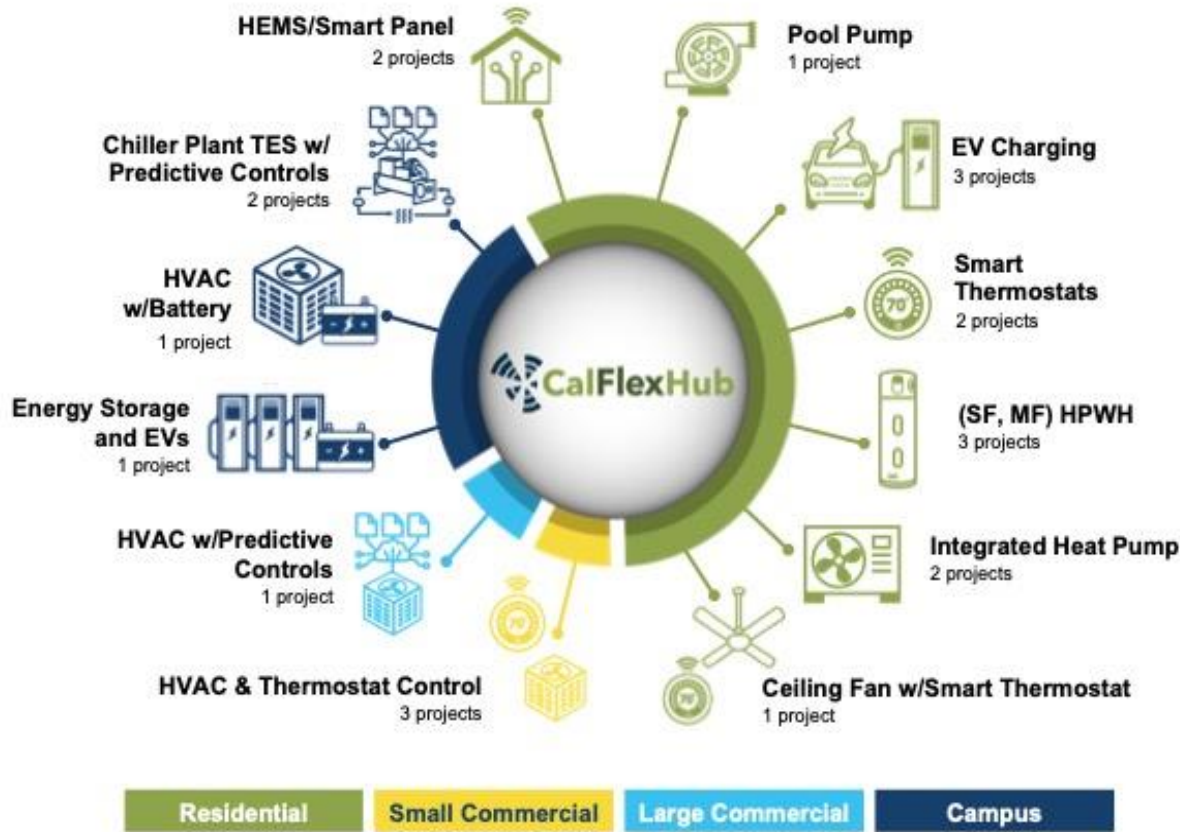


Resiliency

CalFlexHub Technology Portfolio



CalFlexHub Technology Portfolio

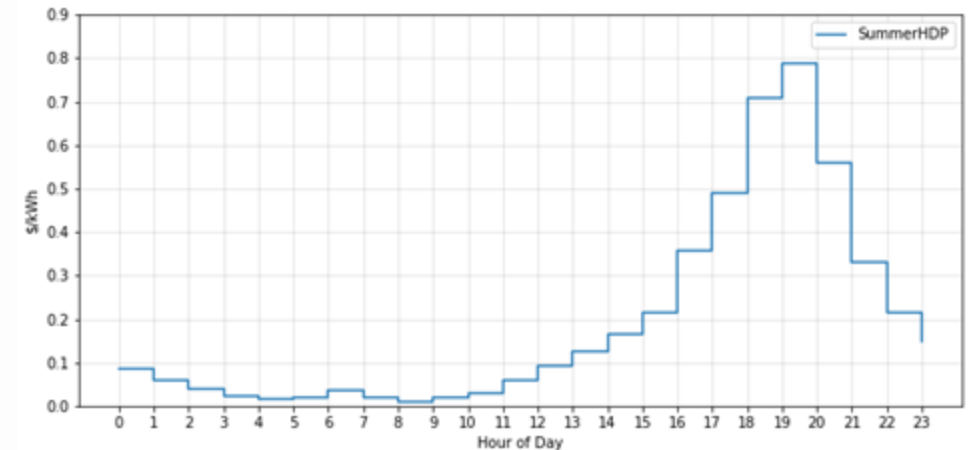
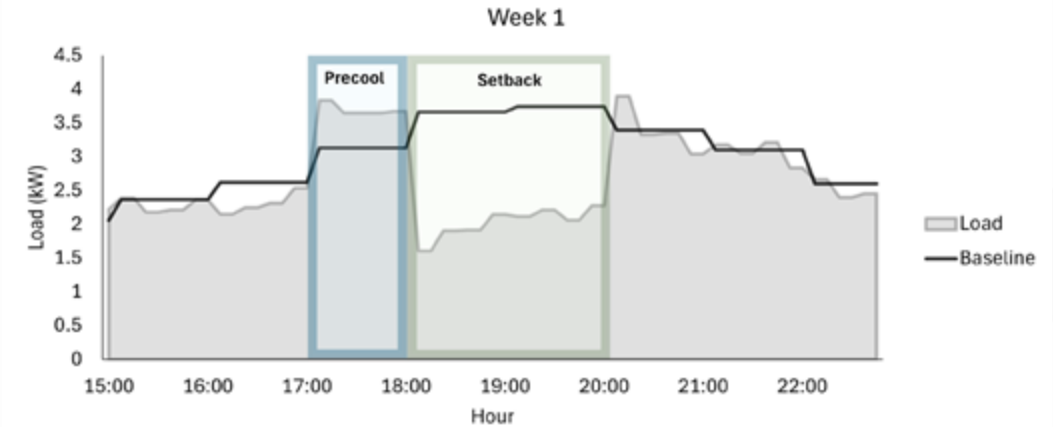


- **90 existing** test sites
- **9 new sites** (MF, SC)
- **Hundreds** of EVs planned

Single Family	68
Multifamily	9
Small Commercial	8
Large Commercial	1
Campus	4
EVSE	28

Price Responsive Residential Thermostats Shift Load

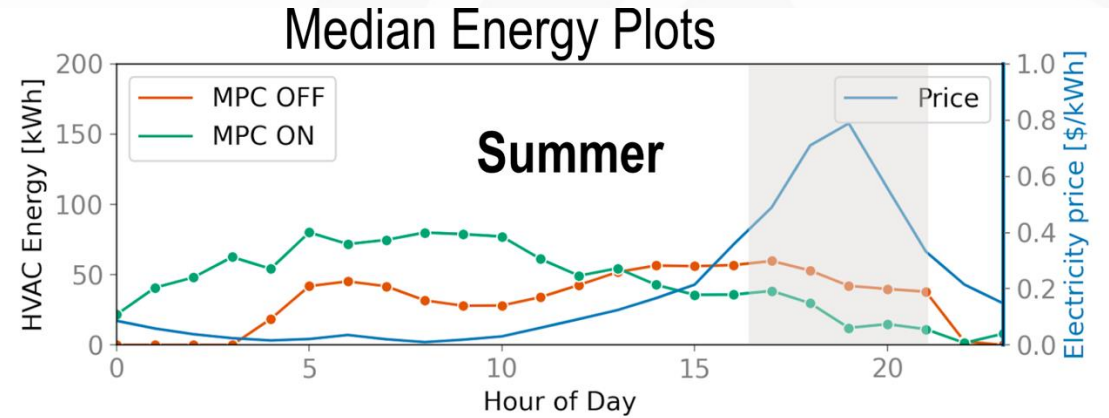
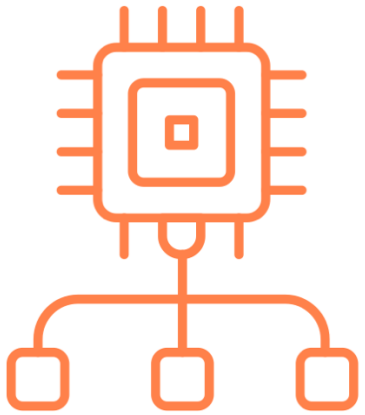
- Response to signals is strong.
- Delivery of ~2.7 kWh for 2-hour setup period with ~\$2.02 of direct bill savings w/dynamic rate, could provide hundreds of \$ each summer.



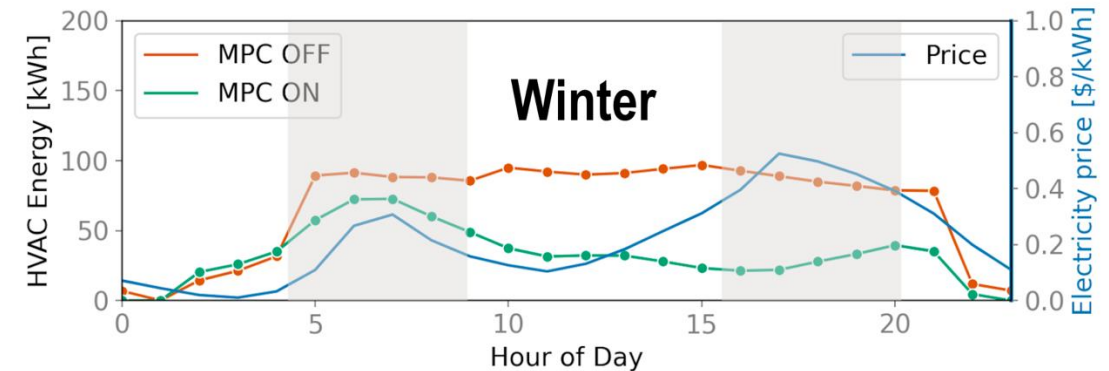
CalFlexHub Summer Price Profile

Price Responsive Predictive Commercial Controls Reduce Costs

Advanced predictive controller can consistently **shift load in all seasons** and with CFH prices **save more 50% energy costs**, while maintaining similar comfort levels.



Testing Period (7/1/23 to 8/26/23), MPC ON from (8/21 to 8/26), excluding weekends



Testing Period (12/1/23 to 2/29/24), MPC ON from (2/9 to 2/24), excluding weekends

Highlights

- Advanced controls **can** respond to prices and shift a significant amount of energy in all building types, but new control methods needed.
- Customers **want assurances** that price responsive tech are available, affordable, reliable, durable, interoperable, usable, with a good ROI.
- We **need to to reduce** risk to changes in bills, developing new business models, and leverage drivers such as electrification and storage incentives.

