Efficiency at the Meter

Using AMI data to unlock new value in EE





- Policy Context
- Current implementation:
 - Advanced Home Upgrade
 - On-Bill Financing
 - Residential Pay for Performance
- Future use cases...

Where we are headed...

SB 350 (2015) and Governor Brown's goals:

• Double the efficiency of existing buildings by 2030

AB 802 (2015):

- Capture 'stranded potential' energy savings from to-code measures and begin using Smart Meter data for savings calculations
- High Opportunity Projects and Programs (HOPPs):
 - On-Bill Finance without incentives
 - Residential Pay for Performance



California Policy Context: Diablo Canyon Nuclear Power Plant (DCPP)

PG&E has proposed to retire DCPP by 2025



Committed to replacing with GHG-free sources including 2,000 GWH of Energy Efficiency between 2018 and 2024



California Policy Context: Supply and Demand

And then there's this...

California Independent System Operator net generation, March 11, 2017 gigawatthours

éia



We need Energy Efficiency to be:

Scalable

Doubling the efficiency of existing buildings without a proportional increase in costs will require targeted programs with feedback loops based on real performance. Pay for performance ensures we get what we pay for.

Reliable

Using meter data for customer targeting and post-project monitoring. Ensuring EE is where and when we need it.

Innovative

Opening program design and implementation to third parties allows for innovation. Metering allows for real-time performance evaluation.

Current Implementation



Advanced Home Upgrade Whole-House Retrofit Program



Normalized Metered Savings



Source: Open EE Meter, CalTRACK analysis of 2015 Advanced Home Upgrade projects. http://openeemeter.org/



Advanced Home Upgrade Whole-House Retrofit Program

With this data we can:

Workforce Development

Share performance data with contractors so they can see how they're doing and improve.

Random Sampling

Focus inspections on projects that are not performing well and identify contractors in need of training.

Program Optimization

Select and develop new measures, update program requirements, and target customers based on real performance to improve savings and cost-effectiveness.



Residential Pay for Performance (P4P)

A new approach to residential EE



- Aggregators bid to provide EE savings through programs they design/implement
- Pay for normalized metered energy consumption savings after 1 year, 2 years
- Lack of upfront incentives means financing is key



Residential Pay for Performance (P4P)

Flexibility to pursue a range of improvements

Retrofit

- Whole House
- HVAC
- Lighting
- Outdoor/Pool Deck

Operational

- Smart Thermostats
- Home Energy Management Systems
- Smart Appliances

Behavioral

- Homeowner Incentives
- Demand Response
- Other specially designed programs











On-Bill Financing

Scaling EE through financing



 Metered savings allows us to offer standalone financing for energy efficiency projects, further leveraging our revolving loan fund

- Adoption of Investor Confidence
 Project protocols
- Require ongoing M&V using tools like PG&E ShareMyData

Average loan size: \$44,219 All Participants \$26,378 SMB \$132,906 Government



Future Implementation



EE as a Distributed Energy Resource



Opportunities for new programs

CPUC Decision 16-08-019

 Orders California Investor Owned Utilities to turn to third parties to propose, design, and deliver 60% of programs by 2020

Distributed Resources Planning

 Current RFO for Huron Substation distribution resources includes EE

Diablo Canyon Replacement

• 2,000 GWH of incremental EE procurement

Thank you

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