Workshop for the Energy Management Action Network

Applying technology to demand-side policy

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Technology is the key to unlocking underutilized demand side resources

A broad view of technology...
Technology is more than structural improvements like batteries or heat pumps.

Applied to existing resources...
High-impact organizations like retail suppliers have a wealth of data that can benefit from new tools.

Can drive meaningful change.
Technology, when paired thoughtfully with behavioral science, can measurably change behavior.
Energy consumers are a complex, but underutilized, resource
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Demand side programs often reach only the most engaged energy users.

Less engaged energy users deserve the benefits of technology - and can benefit the grid.

Technology makes it possible to increase adoption of current programs and change energy usage habits for every energy user.
Personalization is the key to driving measurable changes in energy behavior.
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Available Tools

- End Use Disaggregation
- Applied Behavioral Science
- Multivariate Recommendation Engines
- Personalized Cost Calculators

Single Family Homeowner
With an electric vehicle

Limited Income Renter
Who isn’t very engaged digitally

... And the same personalization for every energy user
There is a proven formula for driving demand side behavioral change
Opower has helped utilities and governments meet demand-side goals

Since 2007, Opower has served 175+ utilities in 12 different countries
Opower has helped utilities and governments meet demand-side goals

- Saved with Behavioral Energy Efficiency: >36 TWh
- Lower Peak Demand Capacity Resource: 418 MW
- Faster Product & Program Adoption: up to 5X
- Customer Bill Savings: +$2.7B
- Satisfied Customers: up to 95%
Opower has helped utilities and governments meet demand-side goals

Change energy usage habits for every energy user...

>36 TWh Saved with Behavioral Energy Efficiency

Increase adoption of current programs...

418 MW Lower Peak Demand Capacity Resource

up to 5X Faster Product & Program Adoption
Thoughtfully applied technology is not limited by borders

Opower worked with the Japanese Ministry of the Environment and retailers on an energy-efficiency focused program

Opower’s solutions prevented the emission of >100,000 tons of CO2 during that time

Average energy efficiency savings per household across Japan >2%

5 retailers

Provided data for a program funded by the Ministry of the Environment
But for technology to succeed, policy must create a nurturing environment

- Align Stakeholder Goals
- Encourage Measurements & Rewards
- Support Scalability
But for technology to succeed, policy must create a nurturing environment

**Align Stakeholder Goals**
Retail utilities have household level relationships.
T&D utilities benefit from demand-side programs.
Governments can bridge the gap.

**Encourage Measurements & Rewards**
Scalable demand-side programs often lack measurement mechanisms.
Randomized control trials are one way to accurately measure impact.

**Support Scalability**
Digital programs increase reach and impact.
Opt-out programs (or clever opt-in design) serve even the least-engaged customers.
Thank You
Opower has a wealth of experience saving energy in Europe

Case Study: E.On Sweden

Program Length | Opower Efficiency Solutions | Electric Savings Rate | Total Electric Savings
---|---|---|---
2013-2014 | HER – Print and Email | 1.12% | 12.8 GWH

Customer Satisfaction Surveys

Impact on E.On Sweden Brand

- E.On provides the best value for me: +7%**
- E.On has good programs to help me save money: +14%***
- E.On wants to help me reduce my energy use: +17%***
- E.On is a trustworthy source of energy efficiency information: +9%***

Results taken from 2014 qualitative survey of E.On Sweden customers.

*** 95% significant difference
** 90% significant difference
A New Model: Opower & MoE approach to Japanese Energy Crisis

- 2017-2021 programme
- 300,000 households
- Five retailers participated
- Behavioral energy efficiency Home Energy Reports

- Ministry of Energy (MoE) provided funding
- Individual retailers shared data
- Opower delivered home energy report program via retailer

- 2% average energy efficiency saving
- 2.8% max savings
- 47,000 tons of CO2