The Smart Grid, Customer Benefits & Efficiency

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Opower

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Agenda

1. Introduction to Opower

2. Smart Meters & Customer Benefits

3. Behavioral Demand Response

4. Policy Recommendations
Opower: A big-data customer engagement platform for the world’s leading utilities

Company

» Working with 93 utilities in 8 countries
» Over 300 billion meter reads under analysis
» 40% of US household data under management
» 500 people in Tokyo, Singapore, London, San Francisco, and Arlington, VA (HQ)

DNA

» Behavioral science
» Big data analytics
» Consumer marketing
» User-centric design

Impact

» 1.5-3% reduction in per household consumption
» 4 TWh and 6B pounds of CO2 abated to date
» 5% reduction in peak demand
» 5% average increase in customer sentiment
» 50-100% increase in sales of new services and adoption of new tariffs (e.g., TOU)
Opower works with 93 utilities in 8 countries to engage 32 million customers with their energy use.
Product core: Applied Behavioral Science

Conservation messages printed on door hangers and left on homes

- **$$$:** Turn off AC & Turn on Fan
- **Environment:** Turn off AC & Turn on Fan
- **Citizenship:** Turn off AC & Turn on Fan
- **Neighbors:** Turn off AC & Turn on Fan

Zero Impact on Consumption

6% Drop in Consumption

Schultz & Cialdini (OPOWER Scientists)
Hewlett Foundation San Marcos Study
Home Energy Reports: Improving Energy Literacy; Driving Energy Savings

- Normative messaging and usage analysis
- Behavioral science and goal setting
- Education on local support
- Low-cost, high-impact targeted tips
- Program promotion
2% savings scale up to big numbers!

ENERGY SAVINGS: 3.14 TWh
Enough to power the city of Las Vegas
Behavioral efficiency has the potential to reach 79M homes, save 18 GWhs & $2.2B

Potential by the numbers

- **79 MM** cost effective households (out of 110 MM total households)
- **$2.2B** in annual customer bill savings
- **18 GWh** in annual energy savings
- **10 million tons** in annual CO2 emission reductions

Source: Opower; carma.org
What can $2 billion buy?

The Seattle Seahawks... twice.

As of August 2013 Forbes valued the team at just over $1 billion.
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Smart Meter deployment (circa 2015)

From IEE Report, August 2013. “Utility-Scale Smart Meter Deployments…”
Making AMI data useful

Can we use AMI data to help increase understanding of energy use?

Data from one AMI household
Insight requires 60 minute data or better
AMI enabled energy engagement

**Rates analysis tool**
Suggests best rate option based on historic and future AMI use

**Unusual usage alerts**
Give customer control over high bills

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**Weekly Progress E-mails**
Let you know how you're doing on a regular basis

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**This is not a bill: You're on budget billing**

**Unusual electric usage**

- Your last 8 days: $58
- Your costs this period could be $175*
  - May 22 – 29
  - Projected for May 22 – June 20

See your use each day

- Your typical June 2009 – 2010: $106

Based on your usage since May 22, you're headed towards usage that is 40% higher than what you normally use this time of year.

→ What this means for budget billing: This may increase your costs when your payment amount is adjusted.

**Steps to take**

- Turn off unused lights & devices
- Clean or replace air filters monthly
- Adjust your thermostat 3–5°

See more ways to save
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Behavioral Demand Response (BDR) provides Smart Meter-enabled peak reduction at scale

Traditional Demand Response

Behavioral Demand Response
BGE Smart Energy Rewards®

Evening before event

Event day

Day after event

$1.25/kWh
Result: Delighted customers

@MyBGE Your Smart Energy Rewards customer notifications are #bestpractices for #customerservice bit.ly/15DVGyD
11:23 PM - 22 Jul 2013

kiataroyale™
@kiataroyale
#BGE energy savings #motivation to save
instagram.com/p/b8dm3GHA1c/
3:50 AM - 19 Jul 2013

Yaw BlackStar
@YAWontheMOON
These new energy savings days from BGE are love
10:59 AM - 19 Jul 2013

Congratulations, you earned $3.50 for saving 2.8 kWh.
On the July 17 Energy Savings Day (1 pm – 7 pm), you used 2.8 kWh less energy than you typically use and earned $1.25 for each kWh you saved. Look for the credit on your bill.

Your Energy Savings Day earnings
-$4.25 Jul 10
-$3.50 Jul 17
Earned so far for reducing your energy use on Energy Savings Days: $7.75
Result: High participation and savings

Year 1: Priced-based incentives at BGE

- **3.2M** communications
- **93%** participation rate
- **$9** earnings/event
- **74%** of customers reported high satisfaction

Next step: What if behavior alone is enough?

- You used MORE than similar homes on the last peak day.
- Last peak day: Wednesday, June 12th 2–7pm
- Efficient Neighbors: 2 kWh
- All Neighbors: 5 kWh
- YOU: 10 kWh

- kW Savings
- Participation
- Satisfaction
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Recs for State Policymakers

➢ Consider Utility Incentives

Utilities are ultimately responsible to their shareholders, thus their choices are based upon the incentives established by regulations.

➢ Encourage Utilities to pursue Customer Benefits

When deploying AMI, utilities are focused upon operational gains. Policymakers can ensure they focus on customer benefits too.

➢ Use Efficiency to Comply with EPA regulations

Residential Efficiency, facilitated by the smart grid, can help utilities reduce emissions while saving customers money and creating jobs.
Thank you!

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