The Power of Data

BECC 2013
November 2013

Prateek Chakravarty
prateek@bidgely.com
Roadmap

- Data and technology
- Case studies
- How we engage consumers
- Results
A Tale of Two... Data

AMI/Green Button (GB)
15/60min interval data
24 hours delayed

Home Area Network (HAN)
10s – 1min interval data
Real Time
GB data mostly used for displays...

...And Bill Projection, Neighborhood Comparison, Tier Change Alerts
... but there is more

Heating/Cooling Insights
See how much users spent on HVAC

Cooling Energy Estimate

Efficiency Analysis
Evaluate potential savings
Introducing: Energy Disaggregation

Non-intrusive software-based pattern recognition technique

Thermostat set point

AC ran between 11am-9pm when a peak event in effect

Air Conditioner Use

Temp

Demand (kW)
Next Generation EM&V

AC usage without any Demand Response

AC usage with 50% cycling through Smart AC Residential DR

M&V analysis: 46% reduction in AC kWh compared to non DR days

Fast and accurate analysis to validate savings, load shift and load reduction
A Tale of Two Consumer Pilots

Behavior-based Energy Savings in California

Consumer Engagement in Deregulated Retail Market

Experimental design

Leverage GB and HAN

Make a case for open HAN

Target attrition in competitive market

Measure consumer interaction

Consumer Behavior
Real Time Interventions

Send mobile alerts when users turn on high load appliances during critical peak times of day.

Note: Peak rates apply between 12:00pm - 7:00pm. You can save $50 by running your dryer after 7:00pm.
Neighborhood Comparison at Appliance-level

Compare not only appliances ... 

... but broader insights

Loads of laundry per week

You can save: $5 / month

Show me how
Additional Consumption Insights

Your Heating Usage

- This Year
- Last Week
- Today

- Efficient
- Neighbour
- You

You can save:

$10 / month

Show me how

Your Projected Bill

Total Consumption: 2835

$92.50

Your Saving Potential is: $751
Lifestyle Choice

Get Solar… … and understand your generation

Should I get Solar?

- Yearly energy bill without solar: $2835
- Yearly cost of solar: $820

By getting solar, you can save: up to $2000 / year

Help me get solar
Positive Consumer Reaction to Energy Disaggregation

Consumers

- **14%** - Reduction in energy consumption
- **41%** - Discovered inefficiencies and changed behavior
- **86%** - Real-time Usage and Appliance Itemization as the features they like the most
- **86%** - Would recommend Bidgely – and Energy Disaggregation - to other users
- **90%** - Visited Bidgely platform at least once a week
Parting Thoughts

There is magic in the data
Initial pilots show 14% reduction in energy consumption and high consumer engagement

Cloud based solutions are powerful
Internet bandwidth and cloud storage are a commodity. Use them to collect, store, analyze, learn and compare the data.

Consumer Behavior has large untapped savings potential
Personalized energy insights. Real-time intervention and feedback.
Our Mission

Empower consumers and utilities by generating value out of data

Prateek Chakravarty | 415.350.7780 | prateek@bidgely.com

Bidgely (be-j-lee) means electricity in “Hindi” – natively spoken language in India
Introducing Energy Disaggregation

Extract appliance-level energy use using cloud-based signature analysis

Cloud + Big Data + Mobile + Machine Learning