Business Energy Reports
What it is, how it works, and more...

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Pacific Gas and Electric Company
1. The SMB Challenge
2. What is it?
3. What we did?
4. Why it works?
5. How it works?
6. Findings
The SMB Challenge

• Represents about 22% of the U.S. electric usage

• Scalability
  – How do you engage over 330,000 customers?
  – How do you offer customized and meaningful info?
  – How do you track or manage success?

• Meeting Utility Goals
  – Consistent and incremental energy savings
  – Improving cost effectiveness of programs
  – Integrating behavior into programs
  – Integrated products (EE, DR and Pricing)

1 Consortium for Energy Efficiency, 2012 Annual Industry Report
Our Response...

Business Energy Reports
An Emerging Technologies Pilot
What is it?

Energy performance timeline: Nov 2013

Are you spending more on energy than the average for restaurants with similar characteristics?

<table>
<thead>
<tr>
<th>Month</th>
<th>Energy Use</th>
<th>Natural Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 2013</td>
<td>1402 kWh</td>
<td>$180</td>
</tr>
<tr>
<td>Nov 2013</td>
<td>1406 kWh</td>
<td>$180</td>
</tr>
<tr>
<td>Dec 2013</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Jan 2014</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Feb 2014</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Mar 2014</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Apr 2014</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>May 2014</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>Jun 2014</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

Total to date: $758

Energy cost comparison

<table>
<thead>
<tr>
<th>Restaurant</th>
<th>Energy Use</th>
<th>Natural Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1411 Bird Ave Ste 6</td>
<td>$1,504</td>
<td>$1,098</td>
</tr>
</tbody>
</table>

Average restaurants:

Energy Efficiency Financing

Making a change is simple. $500 worth of energy-efficient products can save you $2105 or more on energy costs. Visit pgw.com/efficiency for more information.

ENERGY EFFICIENCY FINANCING

Take action

More efficient lighting:

- Help a green hero
- Requires less maintenance
- Improves aesthetics
- Produces less heat
- Is brighter with the same lighting
- Creates a more pleasant work environment

LED Open sign:

- LED 'Open' signs are now available in the same styles and colors as traditional neon signs.
- They have a longer life span, with the same or better level of brightness, but use up to 10 times less energy.
- LEDs have an estimated useful life up to 10 years.
What we did?

1. Select your target population
2. Conduct focus groups and interview business owners
3. Establish the technology infrastructure
4. Create a measurement and evaluation plan
5. Soft launch
6. **Full-scale field placement pilot**
7. Measure results and define benefits
8. Scale to a program
Influencing customer behaviors to reduce energy, works!

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Short Description</th>
<th>Report Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Norming</td>
<td>When individuals learn what the commonly accepted ways of behaving in a group is, they tend to align their behavior closer to the norm.</td>
<td>Usage comparisons Cost comparisons Time-of-use comparisons</td>
</tr>
<tr>
<td>Feedback</td>
<td>When individuals receive information about actions taken they learn to modify their behavior in hopes of future success.</td>
<td>Performance tracking Building and account updates</td>
</tr>
<tr>
<td>Framing</td>
<td>Provide information to individuals in a manner that incorporates biases, heuristics, &amp; metaphor to influence choices in a predictable way.</td>
<td>Custom energy saving plan Custom sector content</td>
</tr>
<tr>
<td>Follow-through</td>
<td>Providing timely reminders to individuals for completing any intended or committed actions.</td>
<td>Maintenance reminders Energy saving guides</td>
</tr>
</tbody>
</table>

2 Paving the Way for a Richer Mix of Behavior Programs, Enernoc Utility Solutions, May 2013
Why it works?

- Building Data
- Operating Hours
- Customer Feedback
- Energy Usage
- Energy Rates
- Weather Data

Business Energy Reports

Pulse Energy Analytics
Why it works?

The Power behind BIG DATA!

Square Footage

Intuitively: it works!

Operating Hours

Heating & Cooling Detection

Monthly heating/cooling analysis

Heating & Cooling Detection

Standard Load Profiles for Restaurants, weekly hours: 90

Dry cleaners

Laundromats
How it works?

- **Experimental Design**
  - Randomized Control Trial (RCT)
  - 23 different business sectors
  - 15,266 in treatment and 14,812 in control

**Formula:**
\[ \Delta \text{Control} - \Delta \text{Treatment} = \text{Energy Savings} \]

- Can measure a change in energy usage of 0.1% with over 95% accuracy
Driving Businesses Towards Energy Efficiency

- **Average Usage**: Represents the 50% percentile of energy usage for a business type
- **Efficient Usage**: Represents the Top 25% of the most energy efficient businesses
- **Elite Usage**: Represents the Top 10% of the most energy efficient businesses
Driving Businesses Towards Energy Efficiency

How it works – Time-of-Use Comparisons

Energy use during closed hours
- Costs during closed hours:
  - About 8% of your energy bill is from energy used while your business is closed.
  - You currently spend about $680/year on energy used during closed hours.
- The amount of energy you use during closed hours each day is equivalent to leaving on 52 standard 60 Watt desk lamps during those times.

Open hour energy use
- Your energy costs during open hours are higher than the top 25%. Ensure that lights are turned off when they’re not needed and consider upgrading your lights.

Closed hour energy use
- Your energy costs during closed hours are higher than the top 25%. Ensure that non-essential lighting is turned off before closing.

Time-of-use: Summer
- How do your peak rate charges compare to other full-service restaurants during May/June 2013?

ABC Restaurant
- 36% of energy use during peak hours
- Peak rate ($0.68/kWh)
- Partial-peak rate ($0.33/kWh)
- Off-peak rate ($0.137/kWh)

Average full-service restaurant
- 32% of energy use during peak hours

How reducing peak energy usage
- Peak rate period: June 12-14, May 21-23
- Partial-peak period: May 9-12, May 24-26

And reducing peak energy usage
How it works - Personalization

Leveraging big data to target utility offers to qualified SMB customers

Fresno Heat Map

Fresno Audit Campaign

Pre-qualify customers

PG&E Customers
Future Findings

✓ Calculate behavioral energy saving results
✓ Evaluate engagement effectiveness
✓ Track marketing effectiveness
✓ Assess customer satisfaction
✓ Determine future scalability potential
Thank You!