

BECC 2013

Business Energy Reports

What it is, how it works, and more...



Michael J. Seelig
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



- **Represents about 22% of the U.S. electric usage** ¹
- **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...

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Business Energy Reports

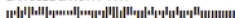
An Emerging Technologies Pilot



Pacific Gas and Electric Company
P.O. Box 770080, MC 932
San Francisco, CA 94177-0001

ATTN: GENERAL MANAGER
ABC BURGER STOP
1234 MAIN ST
SAN JOSE CA 95111-1111

5071



November 15, 2013

Business Energy Report

Reporting period: **Nov 2013** Account #: **1111111111**

Report for:
ABC BURGER STOP
1234 MAIN ST
SAN JOSE CA 95111-1111

Meter #: **1111111111**

For more information:
www.pge.com/ber 1-877-667-6457



RESTAURANTS

Energy performance timeline: Nov 2013

Are you spending **+MORE** or **-LESS** than the **average** for restaurants with similar characteristics?



Nov 2013	Electricity use Your electricity costs are higher than the average for similar restaurants. Ensure that refrigeration equipment is well-maintained and consider upgrading to more efficient models. \$489 +MORE	Natural gas use Your natural gas costs are lower than the average for similar restaurants. It looks like you are using your equipment efficiently. Keep it up! \$83 -LESS

Energy cost comparison

1411 BIRD AVE STE G

\$1,504

Average restaurants

\$1,098

The comparison is tailored specifically to match your business's square footage, operating hours, utility rate and climate.



ENERGY EFFICIENCY FINANCING

Planning to spend \$5,000 or more on equipment upgrades? For a limited time, 0% financing is available. Find out more at www.pge.com/ber/ef.



Cost of lighting:

- About **17%** of your energy bill is electricity used for lighting.
- You currently spend about **\$2,500/year** on electricity for lighting.

More efficient lighting:

- Has a longer lifespan
- Requires less maintenance
- Improves aesthetics
- Produces less heat
- Is quieter, with no flickering
- Creates a more pleasant work environment

Lighting

17%
of annual energy cost



We've analyzed your restaurant's energy use and recommend the following actions:

Dimmer switches



Dimmer switches allow you **better control** over lighting levels.

They can **improve the aesthetics** of your restaurant, while also **reducing energy waste** from over-lighting and prolonging the life of your bulbs.

The amount of energy you save will depend on the type of bulbs you have and how much and how long you dim the lights.

NEXT STEP:

Contact a lighting retailer.

Exterior lighting retrofit



Replacing standard HID outdoor lighting with more energy-efficient technology should **save you 25-42%** on your outdoor lighting costs.

More **efficient options** include: LED, induction, Pulse-Start Metal Halide (PSMH), or Ceramic Metal Halide (CMH) lighting.

NEXT STEP:

Contact a lighting specialist.

\$ Rebates available

Details at www.pge.com/ber

CUT ENERGY COSTS BY UP TO

\$340/YEAR

CUT ENERGY COSTS BY UP TO

\$180/YEAR

CUT ENERGY COSTS BY UP TO

\$120/YEAR

Take action

Want help removing excess lighting? Download a guide at www.pge.com/berguides.

In your next report:



In your mailbox:
Feb 2014



©2013 Pulse Energy Inc. The comparisons and dollar savings displayed here are estimated for typical premises. In the PG&E service area and your actual savings may vary. PG&E and Pulse Energy Inc. cannot guarantee the amount of money or energy you may save by implementing the recommended actions. "PG&E" refers to Pacific Gas and Electric Company, a subsidiary of PG&E Corporation. These offerings are funded by California utility customers and administered by PG&E under the auspices of the California Public Utilities Commission.



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



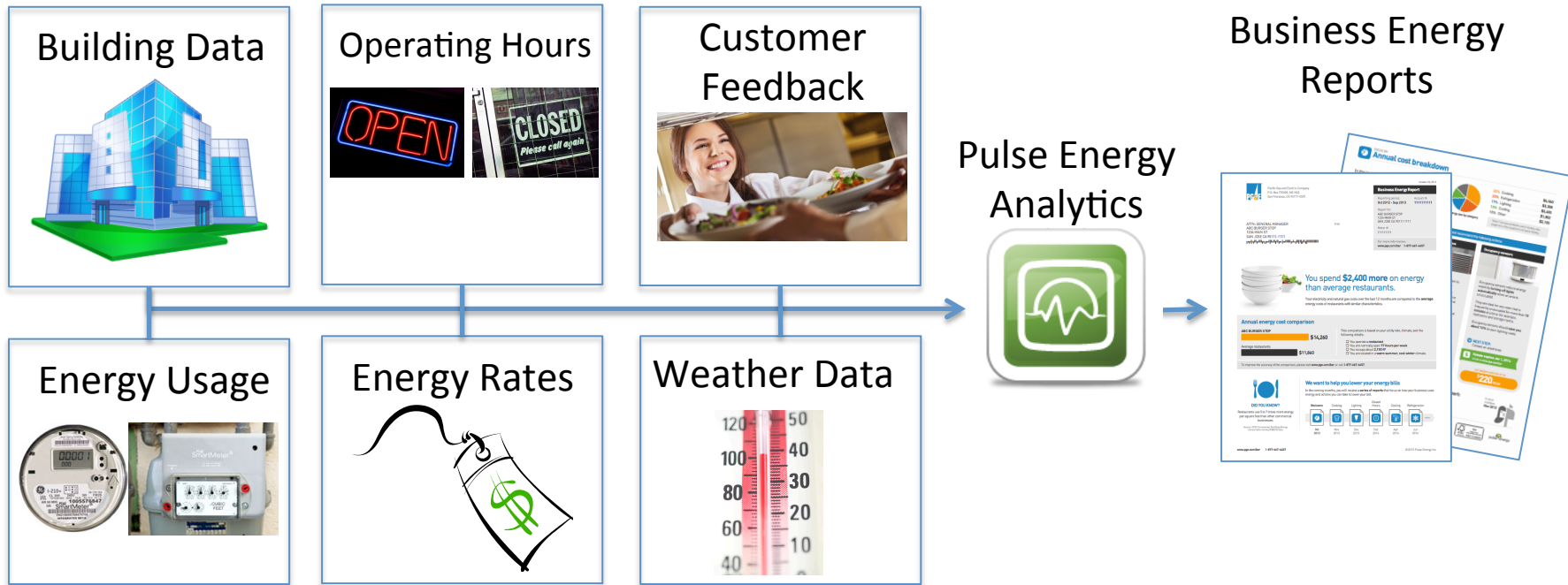
Why it works?

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Influencing customer behaviors to reduce energy, works!

Strategies	Short Description ²	Report Examples
Social Norming	When individuals learn what the commonly accepted ways of behaving in a group is, they tend to align their behavior closer to the norm.	Usage comparisons Cost comparisons Time-of-use comparisons
Feedback	When individuals receive information about actions taken they learn to modify their behavior in hopes of future success.	Performance tracking Building and account updates
Framing	Provide information to individuals in a manner that incorporates biases, heuristics, & metaphor to influence choices in a predictable way.	Custom energy saving plan Custom sector content
Follow-through	Providing timely reminders to individuals for completing any intended or committed actions.	Maintenance reminders Energy saving guides

² *Paving the Way for a Richer Mix of Behavior Programs, Enernoc Utility Solutions, May 2013*

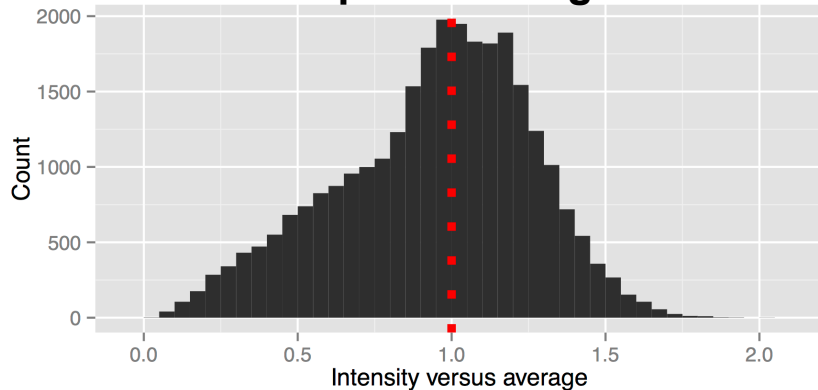


Why it works?

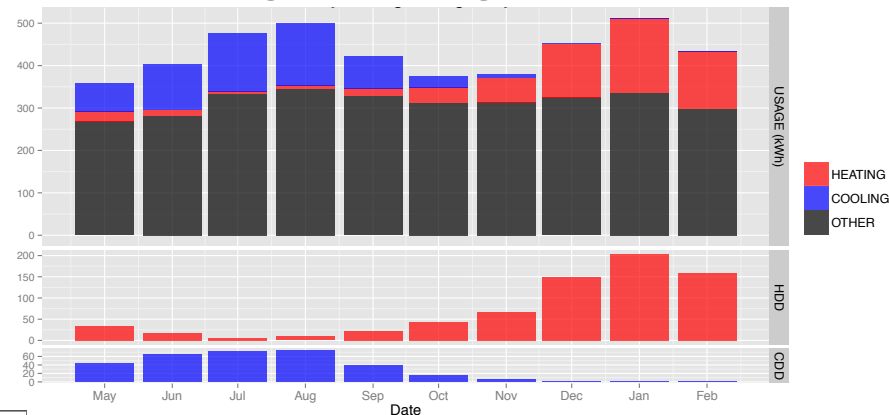
The Power behind BIG DATA!

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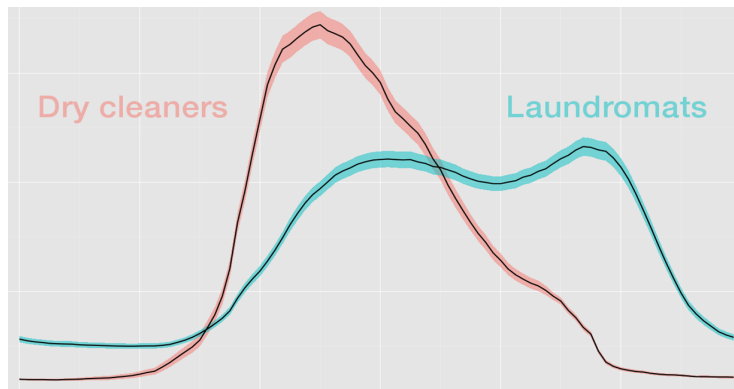
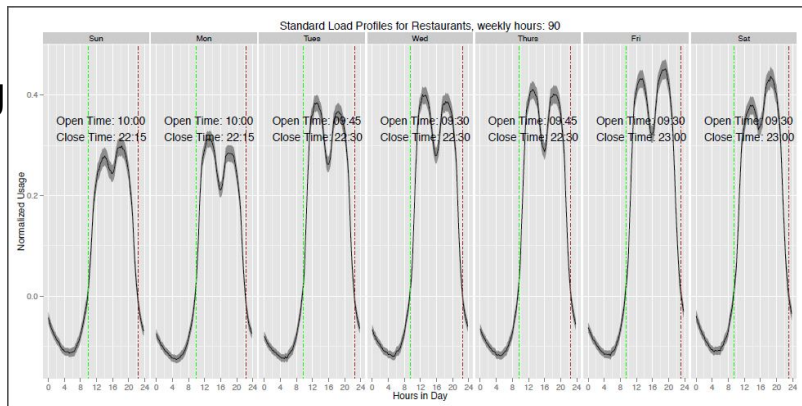
Square Footage



Heating & Cooling Detection



Operating Hours



- **Experimental Design**

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

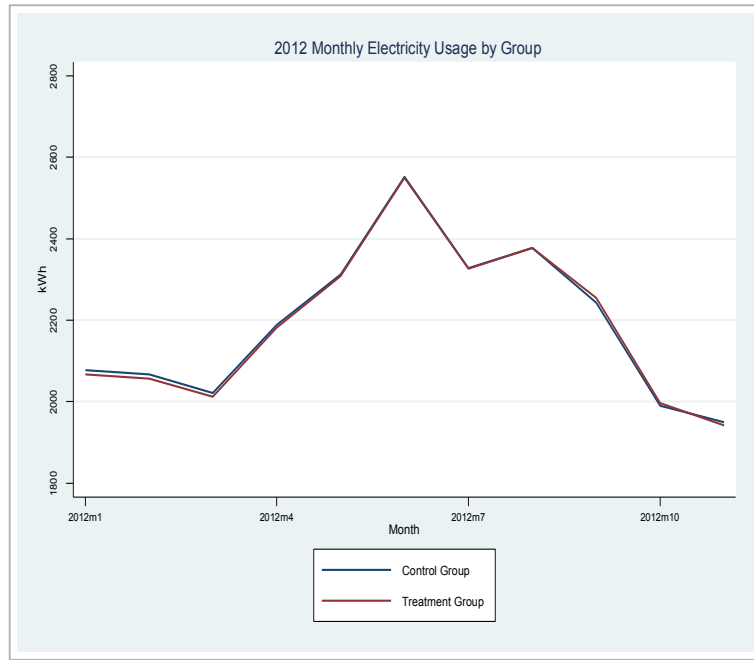
Formula:

$$\triangle \text{Control} - \triangle \text{Treatment} = \text{Energy Savings}$$

- Can measure a change in energy usage of 0.1% with over 95% accuracy



Confirmed pre-experiment usage closely matches



How it works – Tiered Comparisons ¹¹

Driving Businesses Towards Energy Efficiency

Annual energy cost comparison

Above Average Auto Repair Shop

\$17,466

Average automotive repair shops

\$12,742

Annual energy cost comparison

Above Efficient Restaurant

\$14,103

Top 25% of restaurants

\$11,590

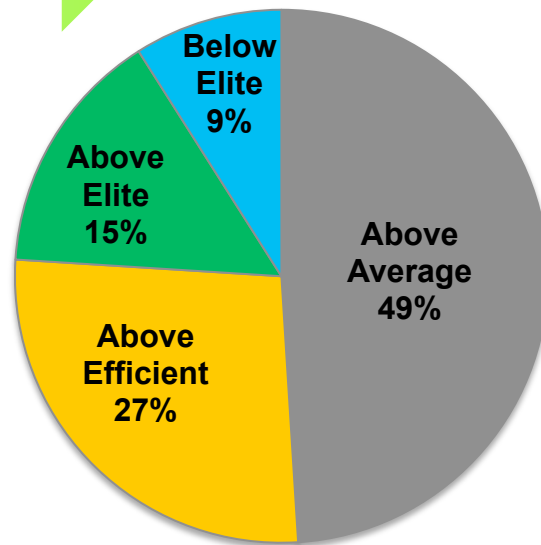
Annual energy cost comparison

Above Elite Religious Organization

\$5,832

Top 10% of religious organizations

\$4,605



- **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

FOCUS ON Energy use during closed hours

Closed hours

8%

of annual energy cost



Costs during closed hours:

- About **8%** of your energy bill is from energy used while your business is closed.
- You currently spend about **\$660/year** on energy used during closed hours.



x52

The amount of energy you use during closed hours each day is equivalent to leaving on
52 standard 60 Watt desk lamps during these times.

FOCUS ON Time-of-use: Summer

How do your peak rate charges compare to other full-service restaurants during May/Jun 2013?


36%
Abc Restaurant

32%
Average full-service restaurants

Abc Restaurant spends \$145 more per month in peak period charges than similar restaurants. By reducing electricity use in this period, you could save up to \$892/yr.

Peak rate period is from noon to 6pm, M-F except holidays.

■ Peak rate (\$0.486/kWh) ■ Partial-peak rate (\$0.237/kWh) ■ Off-peak rate (\$0.137/kWh)

Aug-Sep 2013

Open hour energy use

\$765 ↑MORE

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.

OPEN HOURS: 134 HOURS/WEEK

Closed hour energy use

\$55 ↑MORE

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

CLOSED HOURS: 34 HOURS/WEEK

Aug-Sep 2013

Peak rate electricity use

\$612 ↑MORE

Your restaurant uses more electricity during peak rate periods than the average of similar restaurants. Try pre-cooling your restaurant in the morning to reduce air conditioning costs during the peak rate period.

Peak period: Noon to 6pm, M-F

Partial-peak electricity use

\$128 ↑MORE

Your restaurant uses more electricity during partial-peak periods than the average of similar restaurants. Ensure that non-essential lighting is turned off before closing.

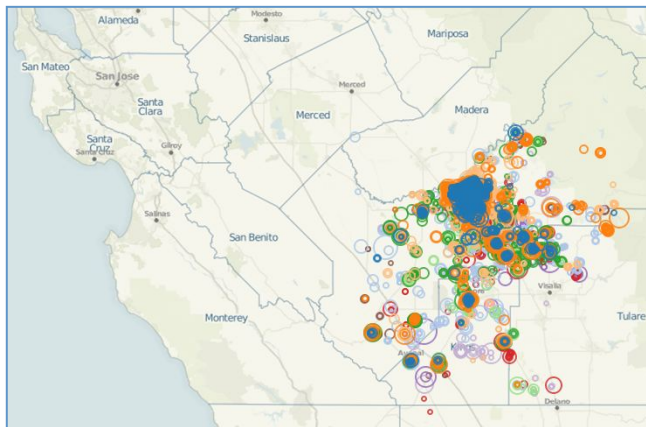
Partial-peak period: 8:30am to noon, 6pm to 9:30pm, M-F

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



PG&E
Customers



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

Thank You!



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