

# Do They Care How Much Their Neighbors Use?

Lessons Learned from SMUD's Normative Messaging Pilot

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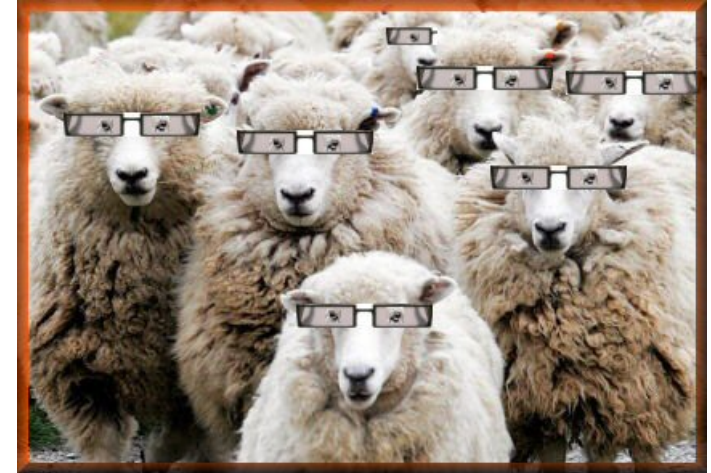
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# Leveraging Social Norms

- People have a strong tendency to conform to group patterns and expectations
- Peers' actions are most influential
- **The theory:** if we compare people's energy use to neighbors that use less, they will reduce their energy consumption



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# Why is SMUD Doing This?

- Recently increased EE goals by 2.5X (1.5% of system load per year)
- Cannot meet new goals with efficient widgets alone. Will need:
  - Efficient equipment
  - **Change operating behavior**
  - Accelerate advancement of codes and standards
  - Local government initiatives
  - Increased customer engagement
- Just one of several residential behavior change strategies that SMUD is exploring
  - **Home Energy Reports**
  - Energy cost meters
  - Social networking web site
  - Aggressive public awareness campaign
  - Community engagement effort



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# Report Description

- Each report is customized to the home receiving it
- Includes monthly energy consumption information and personal comparisons
- Neighborhood comparison to 100 like neighbors and the top 20% “efficient” neighbors
- Messaging, symbols and graphics were employed based on the results of other utility behavior studies
- Each household is targeted with appropriate recommendations based on housing, usage and demographic data



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# Report Format



Account number: 594860

## Home electricity report

bill period: 07/14/07 - 08/13/07

This home energy report is intended to help you understand and make choices about your electricity usage and costs. Each month you will see:

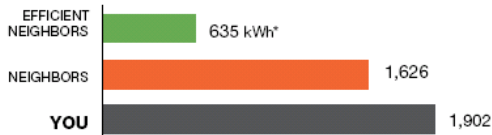
- A comparison of your use to your neighbors
- A comparison to your own use last year
- Personalized tips for reducing your cost

We hope this helps you manage your home electricity use!

Adam Smith  
1400 45th St.  
Sacramento, CA 95819

### Last Month Neighborhood Comparison

You used 17% MORE electricity than your neighbors last month.



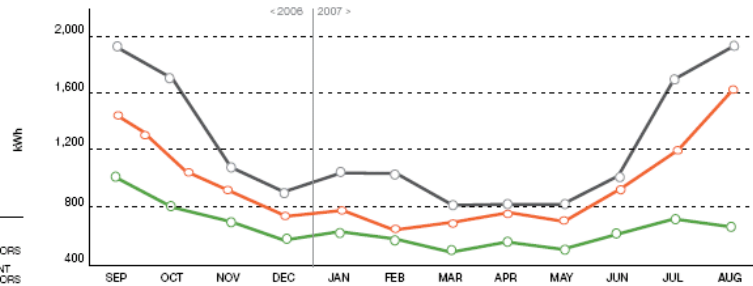
\*A 100-Watt bulb left on for 10 hours uses 1 kilowatt-hour (kWh).

#### HOW YOU'RE DOING:

GREAT (3 stars)   
 GOOD (2 stars)   
 ROOM TO IMPROVE (1 star)

### 12 Month Neighborhood Comparison

In the last 12 months you used 32% MORE electricity than your neighbors. This cost you \$645.



**WHO ARE YOUR "NEIGHBORS"?** We're comparing your usage to 100 homes nearby and similar in size to yours (average 2340 square feet). Your most efficient neighbors are the top 20 in terms of energy efficiency.

- Personalized Action Steps
- Change your A/C filter
  - Upgrade to efficient A/C
  - Install solar panels

TURN OVER TO LEARN MORE

### Personal Comparison

How your energy use compares to last year

#### July Average kWh/day



Average Temperature  
July 2006: 67° | July 2007: 72°

You used 10% LESS this July.  
You earned a star!



#### STARS EARNED THIS YEAR\*

		★				★	?	?	?	?	?
J	F	M	A	M	J	J	A	S	O	N	D

\* You earn a star when you use less than last year.

So far this year, you're using 5% LESS than last year.

### ACTION STEPS

Personalized tips to reduce your electricity bill and environmental impact

#### Quick Fixes

Things you can do right now

- Reduce phantom loads

In the average home, 75% of electricity used to power home electronics is consumed while the products are turned off. That's a lot of wasted energy and cost!

Cell phone chargers, computers, and televisions are examples of devices which consume electricity when turned off. Eliminate this waste by unplugging the devices or using a powerstrip which can be turned off.

**\$100** SAVED OVER 1 YEAR

#### Smart Purchases

Save a lot by spending a little.

- Switch to Compact Fluorescent Bulbs (CFLs)

CFLs use 75% less energy and last up to 10 times longer than standard incandescent light-bulbs.

They greatly reduce energy usage and saves you money on electricity bills and replacement costs. Today's CFLs provide high-quality light output and are available in many sizes and shapes to fit most lighting fixtures.

Replace 5 bulbs and save up to:

**\$65** EACH YEAR

#### Reduce your Impact

Offset your emissions

- Enroll in SMUD's carbon offset program

Your electricity use for 2007 created **11.2 TONS** of carbon emissions. Your carbon output can be offset by funding carbon reduction programs.

You can offset the emissions from your electric use for: **\$4.51 a month!**

Order online at [livegreen.smud.org](http://livegreen.smud.org)

Don't forget your account number: 594860

**11** TONS OF CO2 SAVED



1-888-742-SMUD (7683)  
www.smud.org | info@smud.org



www.positiveenergyusa.com

PRINTED ON RECYCLED PAPER WITH SOY-BASED INK

# Project Objectives

- Find out potential impacts of normative messaging on
  - Energy savings (Goal: 2% avg. savings)
  - Lead generation for other programs
  - Customer satisfaction
  - Customer awareness of energy use, knowledge of ways to save
- Identify appropriate role in program portfolio and favorable target segments for future



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# Experimental Design

- Twelve month pilot (April 2008 thru March 2009)
- Randomly selected from within geographic pilot areas:
  - Control group: 50,000 residential customers
  - Test group: 35,000 residential customers
- Testing multiple report schemes
  - Monthly vs. quarterly
  - Graphical vs. text-weighted designs



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# Planned Research and Evaluation Efforts

- ☑ Baseline behavior and attitude customer survey to pilot & control groups (March, 2008)
  - ☑ Report design customer focus groups (May, 2008)
  - ☑ First quarter evaluation by Positive Energy (August, 2008)
  - ☑ Second quarter evaluation by Positive Energy (October, 2008)
  - ☑ Impact evaluation by SMUD Bus. Planning (October, 2008)
- Customer survey of actions taken (Jan, 2009)
- Final behavior and attitude customer survey (April, 2009)
- First-year evaluation by SMUD contractor (June, 2009)



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## Results of Impact Evaluations (May-Oct, 2008)

- Both control and test groups reduced energy use (due to economy, weather, other factors)
- Test group saved 1.75% (3GWh) more than control group
- Energy savings cannot be extrapolated through the rest of the year due to seasonality of energy usage, unknown persistence.

	<b>SMUD</b>	<b>Positive Energy</b>
Monthly	1.95%	2.58%
Quarterly	0.76%	1.76%
Overall	1.75%	2.35%
Levelized Cost	3.6 ¢/kWh	2.7 ¢/kWh

\* Results differed due to different statistical methods employed



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# Preliminary breakdown of results

While there were insufficient data points to accurately quantify the impacts for smaller segments, some trends were clear:

- There were measureable savings across all ages, income brackets, and levels of energy use.
- Certain customers saved more than average
  - Large energy users
  - Green energy supporters
  - Lower income customers
  - Seniors
- Below-average energy users also saved (these customers are compared to “most efficient” neighbors)



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# Big Results From Customers Who Set Goals

- July, 2008 mailing included a reply card inviting customers to commit to reduce their energy use by 10%, 15% or 20%
- 177 Customers (0.5%) set goals in July, 2008
- August savings for this group:
  - 10% lower use than control group
  - 8% lower use than overall test group



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# What We **Don't** Yet Know

- What actions did people take to reduce energy use?
- How much of the savings resulted from participation in other SMUD programs?
- How, specifically, did the reports motivate them to save?
- For how long will savings persist?
- Who saved the most, and why? Can these segments be targeted?
- Who saved the least, and why? Can the reports be modified to induce more savings from these segments?



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# Feedback from Report Recipients

- 970 calls, letters, and emails (2.8% of test group)
- 579 Opt-outs (1.7%)
- Unlikely to be representative of entire test group, but can be very informative



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# Feedback from Report Recipients

*"I enjoy the monthly reports,  
and they are an incentive to do  
better."*

*"Thanks for the  
kick in the pants."  
(reduced usage 30%)*



*"This has been a  
compelling sales tool for  
selling my house."*



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# Themes in Positive Feedback

- Appreciated SMUD proactively sharing this information with them
- Wanted more information or help with their home's efficiency
- Increased interest in energy efficiency, Medical Rate and Low Income bill assistance programs



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# Feedback from Report Recipients

*"I resent being told I am below average. I pay my bill on time... leave me alone."*

*"Don't send this crap anymore!"*



*"Mind your own business."*

*"Build more plants and quit sending me these letters!"*



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# Common Themes from Negative Feedback

- Comparison is unfair because it fails to take lifestyle differences into account
- Some writers clearly fatigued by repeated negative feedback (feel “harassed”). This is compounded because 2-5% savings is imperceptible for those using 20-150% more than neighbor average.
- Reports are an invasion of privacy



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# Research Questions Suggested by Feedback

- What are the broader attitudes towards the reports? How do they vary by:
  - High vs. low energy users?
  - By market segment? (demographic, Prizm/Claritas cluster)
- How else can we improve positive feedback for high users that are making progress?
- For how many months is negative feedback effective before it turns counterproductive? Should report designs and messages be dynamic? Should we vary the frequency of the reports?



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# Research Questions Suggested by Feedback

- Would saying that the reports are completely anonymous improve attitudes?
- Would assuring recipients that they have a right to use energy however they want improve attitudes?
- Would either of these changes reduce the reports' effectiveness?



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# Recommendations to Organizations Considering New Behavior-Change Strategies

- Learn all you can from other fields
- Collaborate with other utilities and EE organizations
- Prepare your management
- Prepare your customer services staff
- Prepare your customers
- Start with a pilot designed around initial research results
- Integrate design with other program efforts
- Test alternative strategies
- Pay attention to all feedback
- Don't stop testing



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# Preliminary Conclusions

- While preliminary impact results are encouraging, we need at least a full year of data to be confident of impact
- Behavioral programs are a viable option (and a largely untapped resource)
- We will continue to refine the program to accommodate customer concerns and suggestions
- SMUD plans to continue the program beyond the pilot (specific design will depend on one-year impact analysis)



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