

# BECC 2013

## Home Inventories Identify Savings Drivers from Home Energy Reports



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# Agenda



What we'll be talking about today...

- Home Energy Reports at PG&E
- Home Inventories to Identify Savings Drivers
- Results from the Inventories and Surveys
- Implications of Results



# HER Program in Place at PG&E Since 2011



## Your Home Energy Report

Account number: [REDACTED]  
Report period: 02/15/11 - 03/15/11

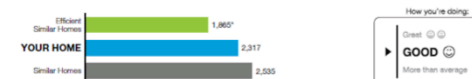
**Be informed:** This personalized report is an educational tool to show your home's energy uses.

**Be a Program Ambassador:** We'd like PG&E employees to have a firm understanding of the tools and resources we plan to offer our customers to help manage energy costs.

**Talk to Us:** We want your feedback on this program and encourage you to call the help line with questions at 1-866-767-6457 or submit your feedback to [homeenergyreports@pge.com](mailto:homeenergyreports@pge.com).

### Last Month Household Comparison

You used 24% more than efficient similar homes.



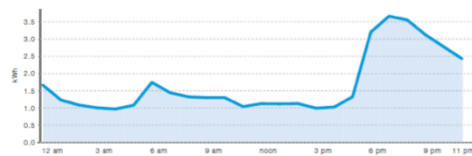
\* This energy index combines electricity (kWh) and natural gas (therms) into a single measurement.

### What homes are compared?

- Similar Homes**  
Approximately 150 occupied nearby homes that are similar in size to yours (avg 4,250 sq ft) and have gas heat
- Efficient Similar Homes**  
The most efficient 20 percent of similar homes

### An Average Day Last Month

On average, you used the most from 7 - 9 pm. Think about what uses electricity during this time.

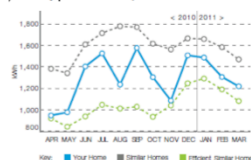


Turn over for savings →

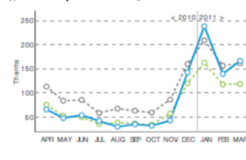
### Last 12 Months Household Comparison

You used **21% MORE** energy than efficient similar homes. This costs you about **\$886 EXTRA** per year.

**Electricity** | 24% more electricity than efficient similar homes



**Natural Gas** | 15% more natural gas than efficient similar homes



### Action Steps | Personalized tips chosen for you based on your energy use and housing profile

#### Quick Fix

Something you can do right now

- Turn off lights when not needed**  
It's a common misconception that turning a light off and on consumes more energy than leaving it on all the time. This is not the case.

Turn off incandescent lights every time they are not needed. For compact fluorescent lights, it's cost effective to turn them off when you won't need them for 15 minutes or more.

Turning off unneeded lights can save energy and money.

#### Smart Purchase

Save a lot by spending a little

- Use and switch off power strips**  
Many electronics continue to draw power even when they are turned off. These so-called "vampire devices" waste electricity throughout the day.

To save energy and money, plug devices into power strips — and then when you're not using them, turn off the strips. Power strips are convenient because they allow you to control multiple products at once and can be easier to reach than the outlet. Look for other time- and energy-saving features, such as programming ability.

#### Great Investment

A big idea for big savings

- Choose an efficient television**  
Some large flat-screen televisions use more energy than a refrigerator. When shopping for a new television, look not only for a brilliant resolution but also the ENERGY STAR® label.

Televisions qualified to earn the ENERGY STAR® label use 30% less energy than similar non-labeled models without any sacrifice in picture quality.

Before moving your old TV to another room, consider its energy costs — recycling it may be a better option.

SAVE UP TO **\$45** PER YEAR

SAVE UP TO **\$85** PER YEAR

SAVE UP TO **\$55** PER YEAR



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runs on OPOWER®

Data source: energy audits by OPOWER for typical households in the PG&E service area. Actual savings may vary from household to household. PG&E has not independently verified these savings. "PG&E" refers to Pacific Gas and Electric Company, a subsidiary of PG&E Corporation. Energy efficiency programs are funded by California utility customers and administered by PG&E under the auspices of the California Public Utilities Commission. © PG&E prints its materials on recycled paper. This report is printed with soy-based inks.

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## Residential Customers in Treatment Conditions:

2011: 58,000

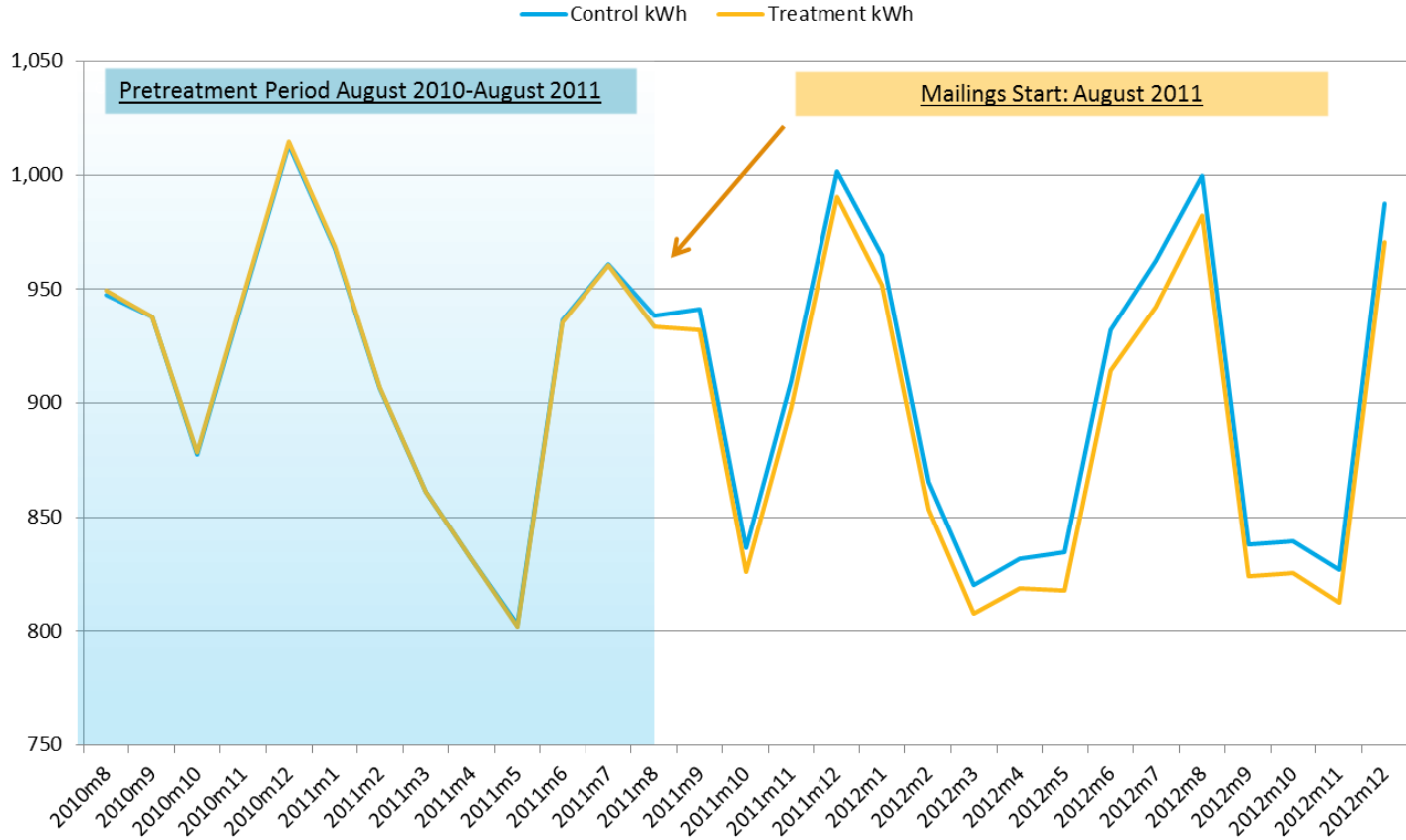
2012: 637,000

2013: 1,000,000

2014: 1,400,000 (est.)

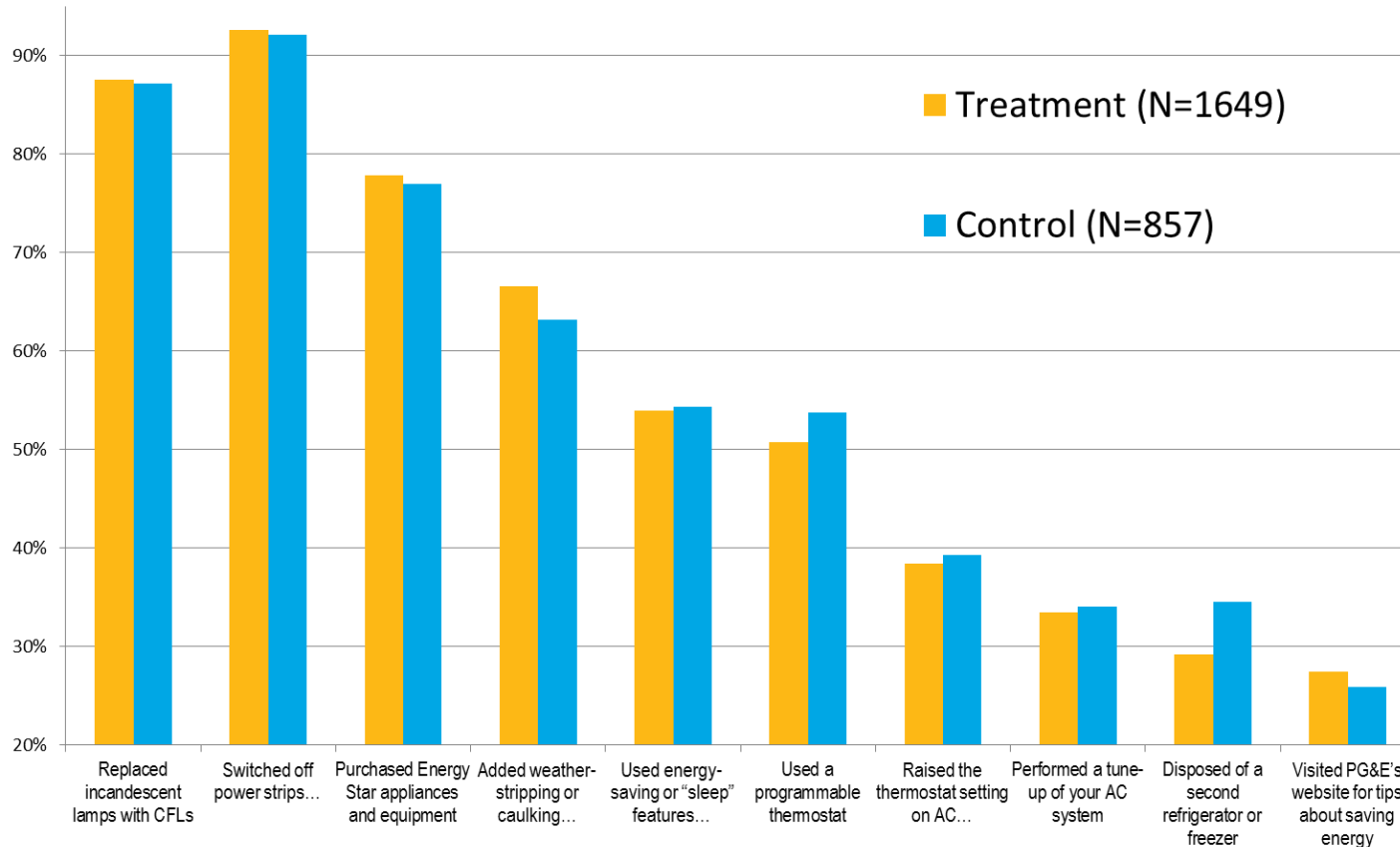


# HERs at PG&E Produce Energy Reductions





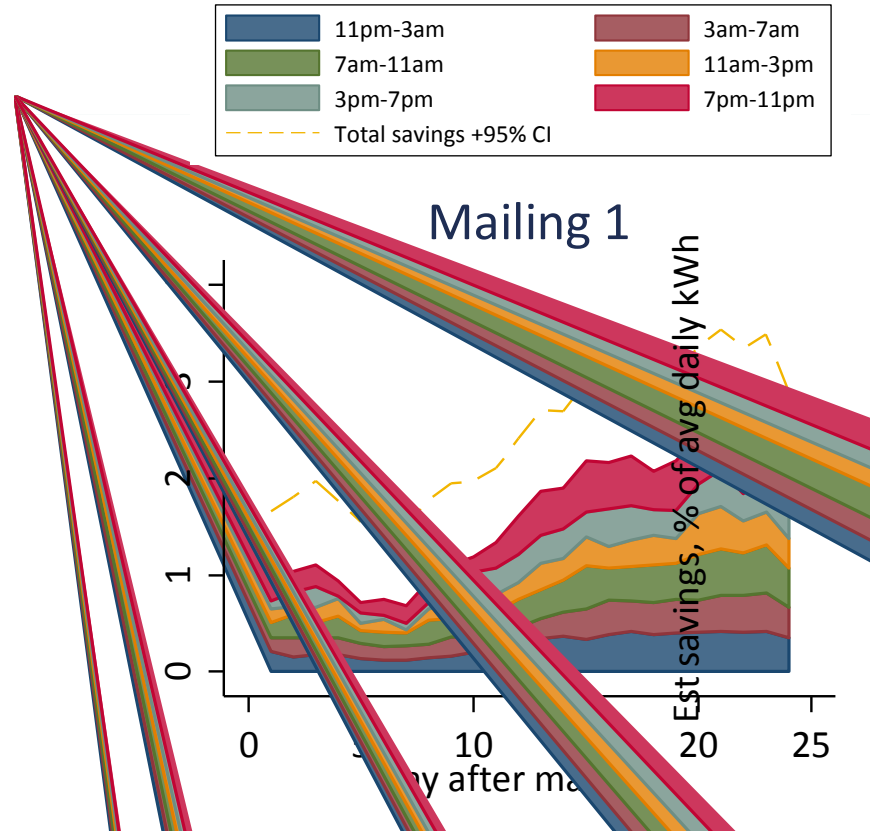
# But How Are HER Customers Saving Energy?





# New Insights from LBNL's Interval Data Analysis

- **Even though customers may not be able to report it, savings are observable in interval data after the first mailing is received**
- **Savings are observable across all hours**





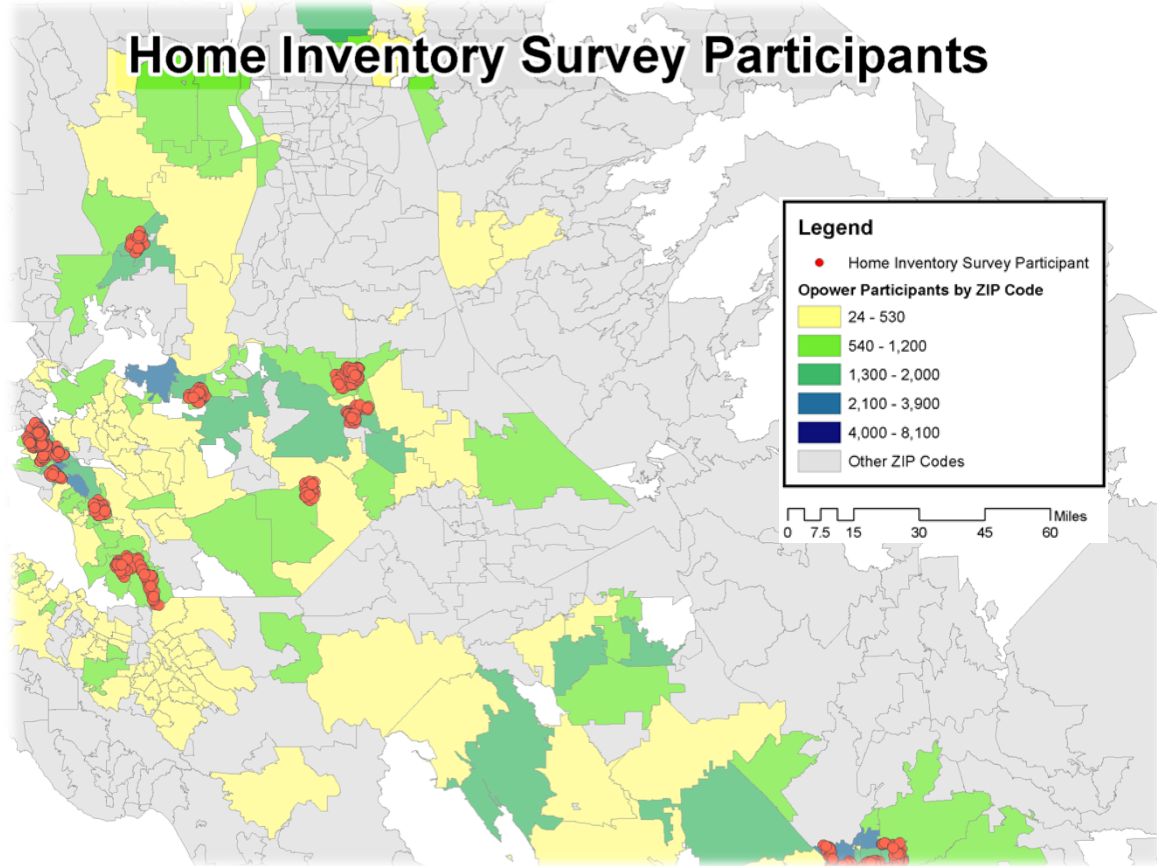
# In-home Inventories and Surveys

## **Do HER customers purchase more rebated electric appliances than non-HER customers?**

- **No data on participation of upstream CFL and televisions exist**
- **In-home inventories can reveal more rebated CFL and TV purchases**
- **A survey can shed light on behaviors**



# Study Designed to Minimize Non-response



- Budget for 800 inventories on the basis of cluster sampling
- 3 months planning and stakeholder engagement
- Minimizing non-response bias was paramount





# Successfully Engaging Participants



Dear Customer:

Pacific Gas and Electric Company (PG&E) and the California Public Utilities Commission (CPUC) are co-sponsoring an important study regarding home energy use in your area. We are writing to request your household's participation in the study. Participation is very simple and you will receive \$50 as a token of our appreciation. The findings from this study will help us better plan to meet your energy needs and improve electricity service in our state.

You may call the telephone number below and schedule an appointment, and our interviewer from Population Research Systems (PRS) will meet you at your home, at the above address, to interview you. However, an appointment is not necessary – in the next few days our interviewer will be in your area and will visit your home to conduct the interview. The topic of the interview is how your household uses electricity. We will not be asking for confidential information. The interviewer will be carrying proper picture identification and will be respectful of your home. Please be assured the PG&E-authorized interviewer has passed a stringent background check.

The appointment will take about 15-25 minutes. During that time, our interviewer will ask you some questions and will also give you a short survey form for you to complete on your own. After that, the interviewer will count a few types of appliances, such as televisions and light bulbs, in your home. He or she will have shoe covers and will gladly put them on before stepping into your home.

We strongly encourage you to call and schedule an appointment, especially if you are away from your home during the day – evening and weekend appointments are popular. Please call and schedule an appointment as soon as possible in order to secure the most favorable appointment for you.

We look forward to your participation in the PG&E/CPUC Home Energy Use Study and supporting our effort to continuously improve our service. To learn more or to schedule an appointment, please call PRS at **1-877-932-0611**. Your reference ID is **13-01-010**.

Sincerely,

Peter Franzese  
CPUC Energy Division  
Regulatory Analyst

Janice Berman  
Senior Director,  
Energy Efficiency Strategy and Market Development, PG&E

- Dual signatories announcement by mail
- Appointments accommodated
- All appeals were face-to-face

## Balance safety of interviewers and comfort of interviewee

- Background check
- PG&E contractor badge
- PRS uniform
- Friendly, neat and courteous interviewers



# Preparing the Field Team



- **23 interviewers** hired
- **Full day of training** including interviewing practice and inventory practice at friendly homes
- Important **2-week pretest** in four clusters
  - Incentive OK?
  - Public vs. private rooms?
  - Completion time?
  - Instruments OK?

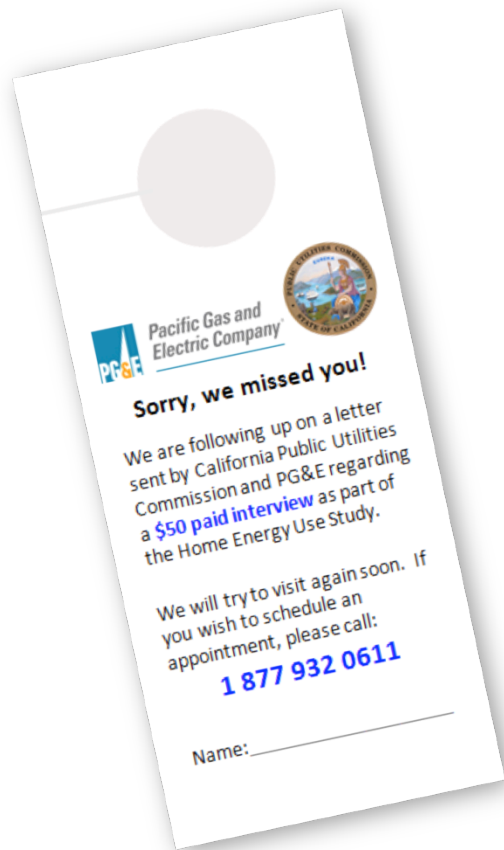


# Study Participants' Experience

- In-person interview with visual aids
- Survey
- Inventory
- Thank you and give incentive
- QA contact with PRS



# Achieving a High Completion Rate



- **Required interviewers' flexibility** with respect to timing (DOW and TOD) of visit
- Protocol was to **make up to 10 attempts** before assigning non-response
- **High-performing interviewers took over the most difficult clusters**, converting refusals to completes in many cases



# HEUS Achieved a High Response Rate

**Interviewers attempted 1,194 inventories and successfully completed 702. 77 attempts were deemed invalid, yielding a net 63% response rate**

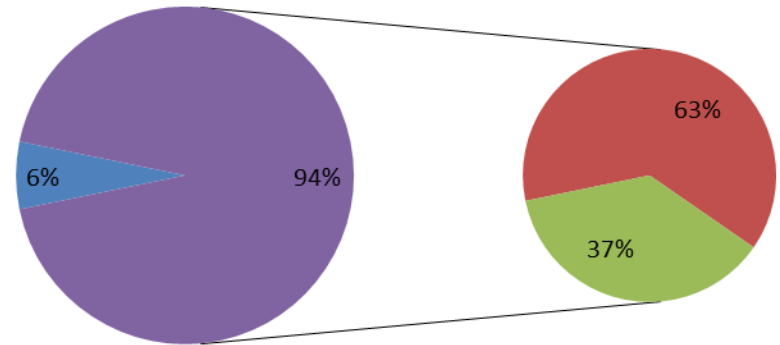
- No non-response bias evident

## *Lessons learned...*

- Economy was on the upswing
- Gated communities
- Non-English speaking homes
- Summer timing would have been best

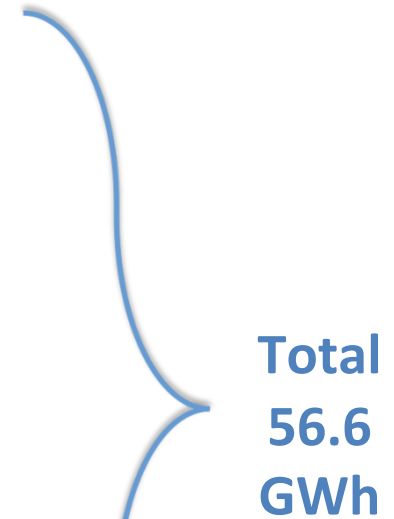
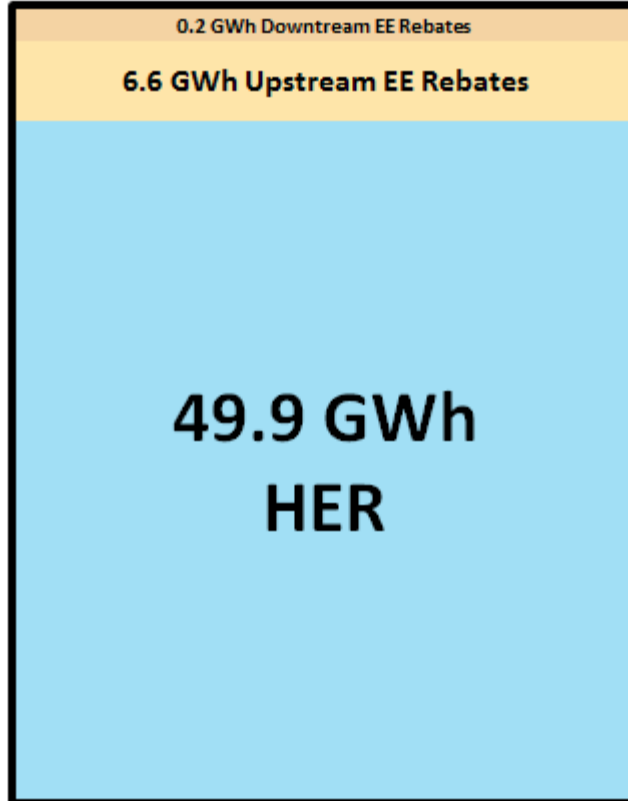
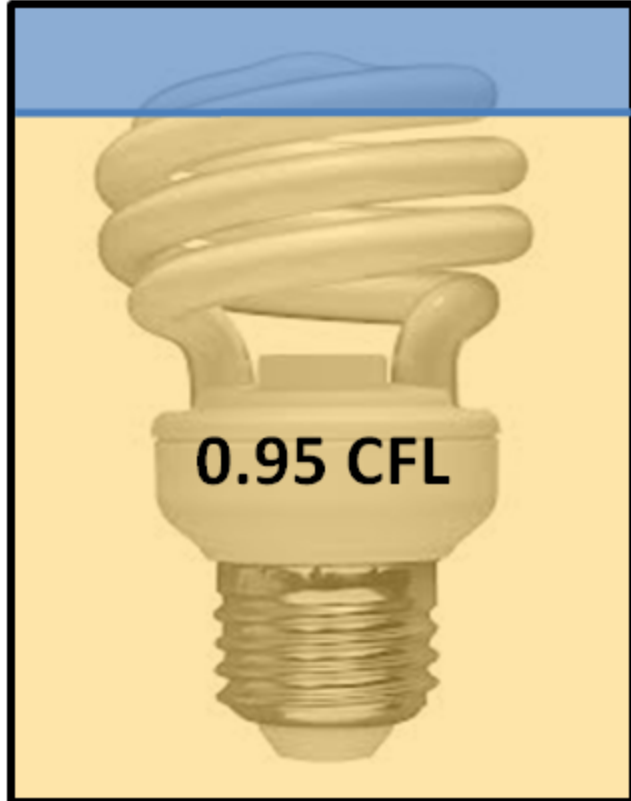
## Completion Rate

■ Invalid Attempts ■ Valid Attempts ■ Complete ■ Incomplete



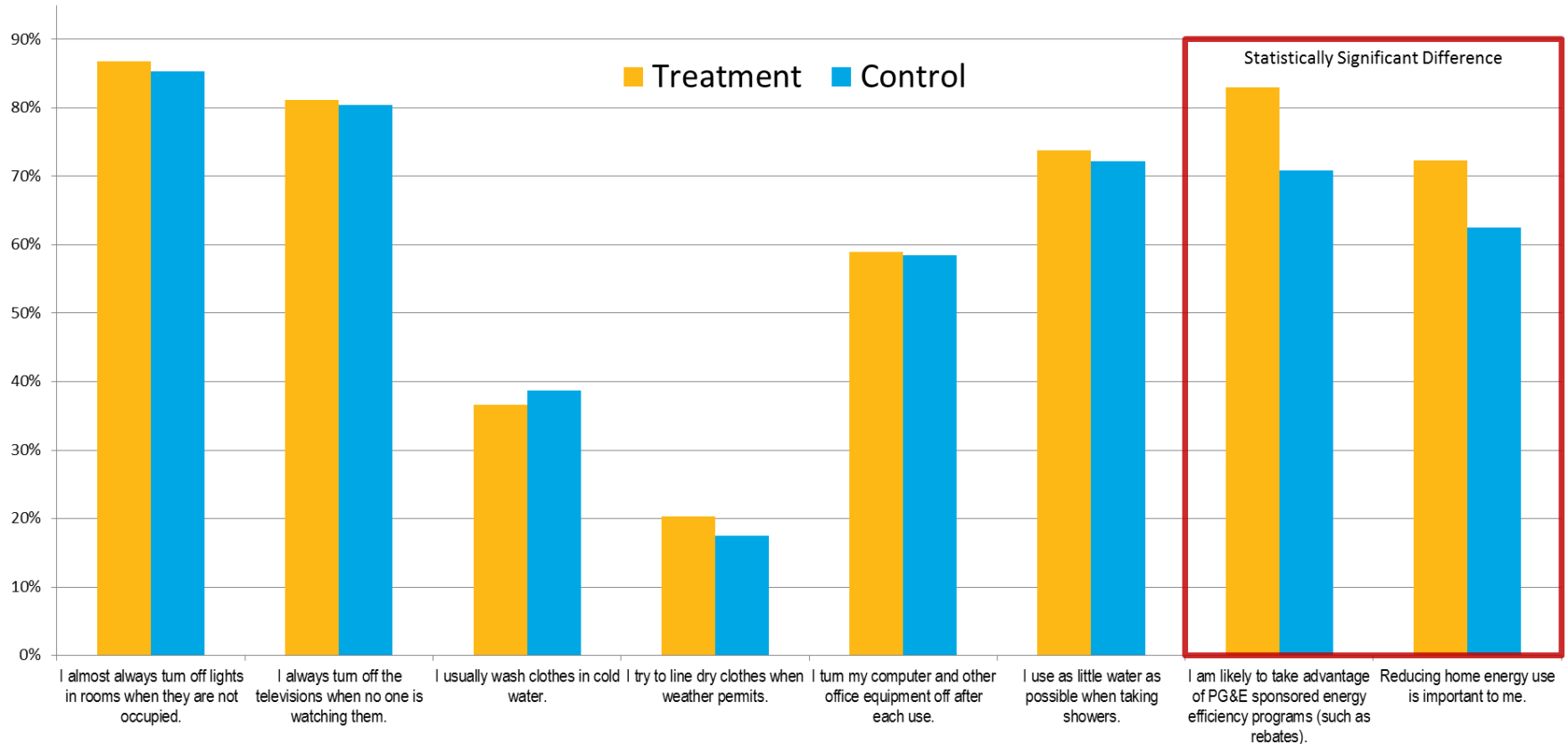


# Evidence of More CFLs in HER Homes





# In-Home Survey Results Deepen the Mystery





# What's Next?

- Field study provides **firm footing for PG&E's HER program savings claim**
- The same care that went into the inventories revealed that **whatever HERs inspire customers to do is been more subtle than has been assumed**
  - Need to **continue to rethink how we talk to the customer** about energy consumption behavior
  - Until we get that right, this study is further evidence that **neighbor-comparison report research that relies on customer self-reporting leaves much to be desired**



# Thank you!



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