

National Symposium on Market Transformation

"Minding the Gap: Can Residential EE Programs and ENERGY STAR Keep Pace with the Market?"

Jan Berman, Sr. Director, PG&E



April 22, 2015

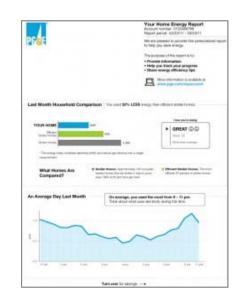


Mind the Gap

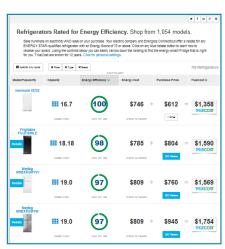










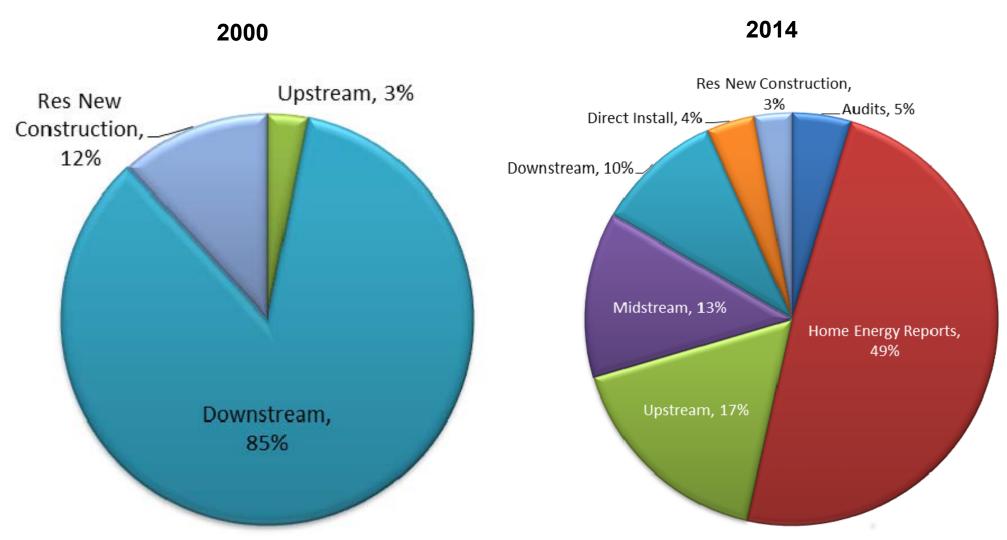




Residential Approach Evolves



Residential Electrical Savings by Delivery Type

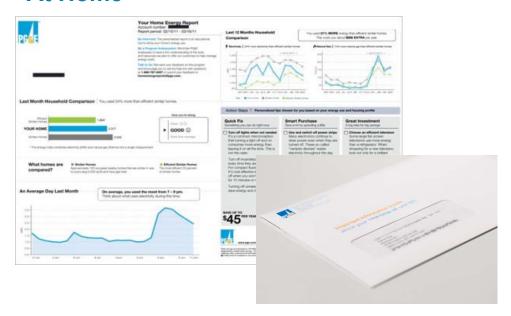


Source: PG&E internal data



Full Surround Market Intervention

At Home



Online



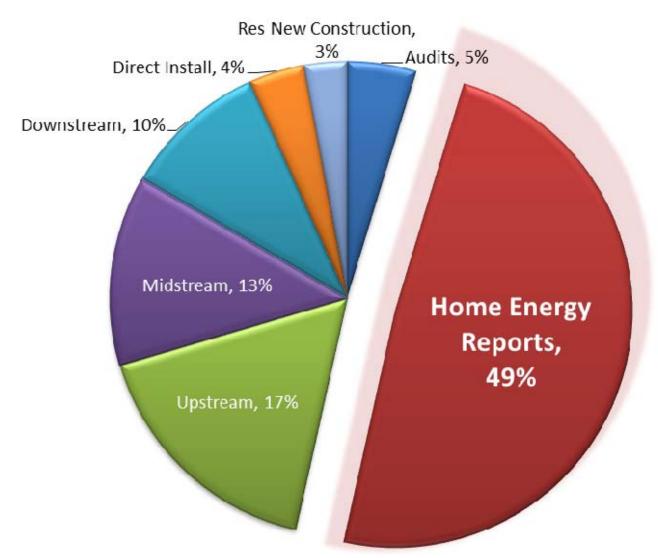
In Stores



Trade Pros

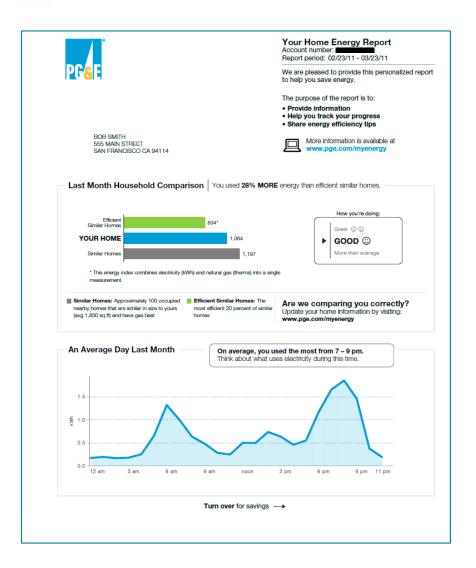


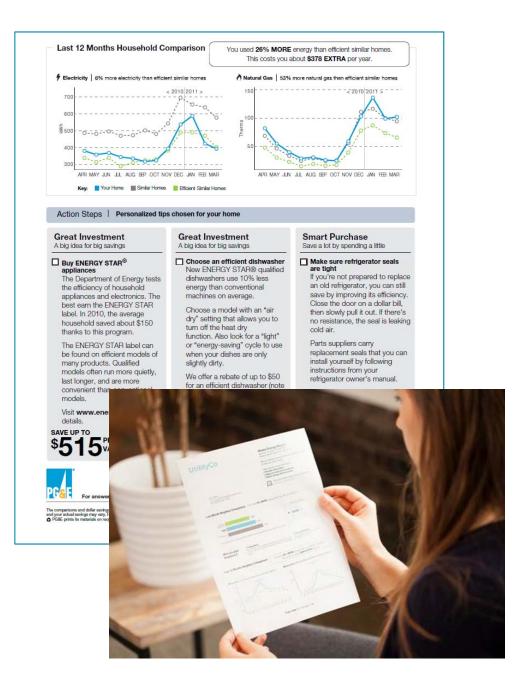
Residential Electrical Savings by Delivery Type 2014



Source: PG&E internal data

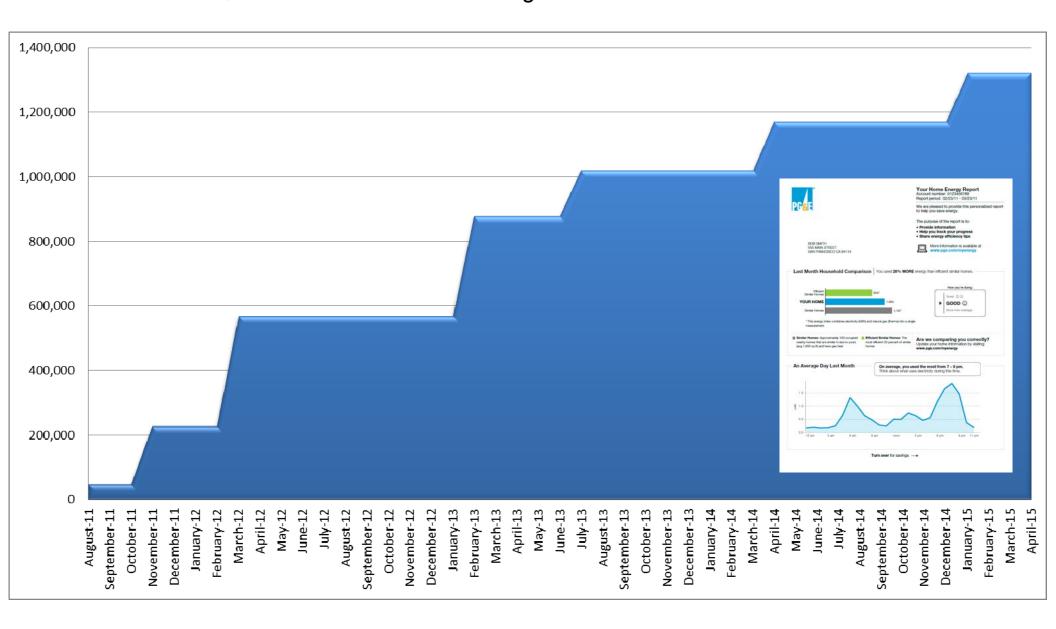
At Home



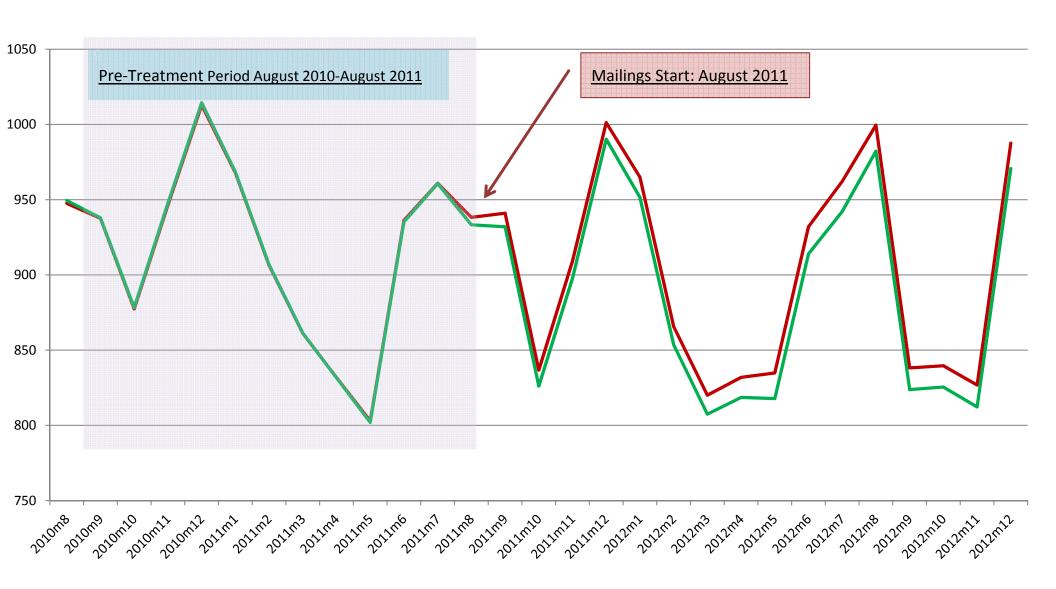




- ➤ More than 500 GWh saved overall (equivalent to powering nearly 75,000 homes for one year)
- More than \$50 million in customer savings







Source: PG&E Interval Data

Where do the savings come from?

Upstream

· Primarily lighting incentives

Midstream

- Home upgrades
- Pool pumps
- Multifamily EE rebates

Downstream

 Appliance rebates (fridges, washers)

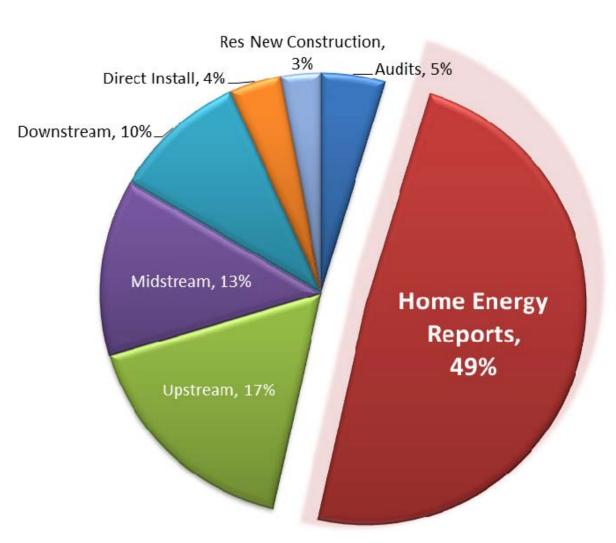
Direct Install

- Government partnership programs and third parties
- "Modest income" programs

Audits

 Residential customer surveys (mail, e-mail, phone, in-person)

Residential Electrical Savings by Delivery Type 2014



Source: PG&E internal data

Personas

Customer groups who think, act, and believe similarly are personalized. Everyone has a "persona" designation and belongs to a group.

Gadget Family



- •Affluent, established with large homes
- Above normal energy usage given their requirements
- Community-involved, Greenminded, Time-starved

Heart & Home



- Low-to-moderate income in smaller homes
- Do-it-yourselfers
- Traditional channels

Eco-active Go Getters



- A mix of renters and homeowners who move frequently
- Bay Area and North Coast
- Green-minded, Energy Efficient, and Low Usage



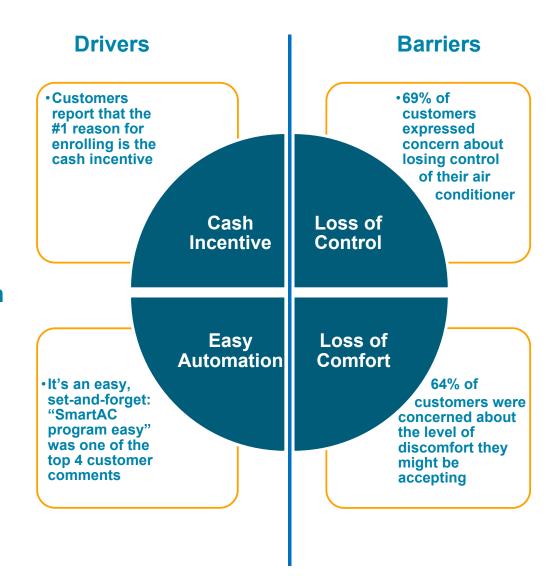
Smart AC Targeting: Key Insights

Current Customers Leading Personas

- Way Wired 31%
- Heart & Home 23%
- Gadget Family 11%

Customers Targeted for Acquisition #1 Growth Persona

Living for Today



Smart AC: Acquisition - Communication Overview

E-mail Web



An easy way to help California.



MY HOME MY BUSINESS BUSINESS TO BUSINESS

My Bill & Account | Service Requests | Outages | Find Ways to Save

ed Base Plan d My Best Plan

e Changes

rgy Alerts

artAC™

artRate™

e of Use Plan

e Money Saver

nas & Rebate

tance Programs

gy Savings Tips

r Resources

n Energy CA

In Electric Vehicles

e Analysis & Alerts

rand Renewables

Energy Metering

Additional Services

With the PG&E SmartAC™ program you can help protect your community's energy supply while keeping the power grid strong. Plus, you can help yourself to \$50. Best of all, you can opt out for any reason, at any time, with no penalty.2

Here's how it works:

- PG&E will install a free SmartAC device on your central air conditioner.
- . On hot summer days, when the demand for electricity is the highest, PG&E may send a signal to your SmartAC device, allowing your air conditioner to use less power.3
- The SmartAC program season runs from May 1 October 31.
- Your system fan will continue to circulate air, keeping you comfortable.⁴ These event days are infrequent, and last from one to six hours.4

Enroll now to help keep the power grid strong and prevent interruptions. To learn more, visit pge.com/SmartAC or call 1-866-908-4916.

Sign Up



Easy and rewarding.

There's no appointment necessary.5 A few weeks after your device is installed, we'll send you a one-time check for \$50.

Enroll Now

You're in control.

Opt out at any time-just call 1-866-908-4916 or visit pge.com/SmartAC to restore your previous AC settings.2

Learn More

SmartAC™ Is an Easy \$50 for You

...and an easy way to help California.

Enroll Now

It's a win-win opportunity.

Sign up for our SmartAC program and we'll install a free SmartAC device on your air conditioner and give you \$50 for participating. Then, if there is an energy shortage between May 1 and October 31, PG&E will send a signal to your SmartAC device directing your air conditioner to run at a lower capacity. Reducing your energy usage will help prevent power interruptions for you and your neighbors.

Learn More »

Joining is simple and free.

Signing up is easy, costs nothing and pays you a reward—plus you'll be helping prevent power interruptions during the time when the power grid is typically under the most strain.

Check Your Eligibility »

Now sit back and relax.

You stay comfortable and in control. The SmartAC device automatically does all the work. There is nothing you need to remember. If a SmartAC event is called at a time that's inconvenient for you, you can easily return your air conditioner (AC) to its normal settings.

Learn More » Enroll Now »

Already Enrolled?

 Manage your device. Go to SmartAC Manager »

SmartAC Tech Support

Call 1-866-908-4916 or email us SmartAC.





Online







Driving Toward a Cleaner Future

If all goes as planned, PG&E will install 25,000 new electric vehicle chargers in commercial and public places throughout California.

Learn More »



Save up to 20% with SmartRate™

Enroll in the optional SmartRate Plan, and you could see savings on your summer electric bills. It's risk free to try with Bill Protection.

Learn More »



Tips to Save Your Business Money

Learn how California businesses can lower their energy use and utility bills with these helpful howto's and guides.

Get the Resources »

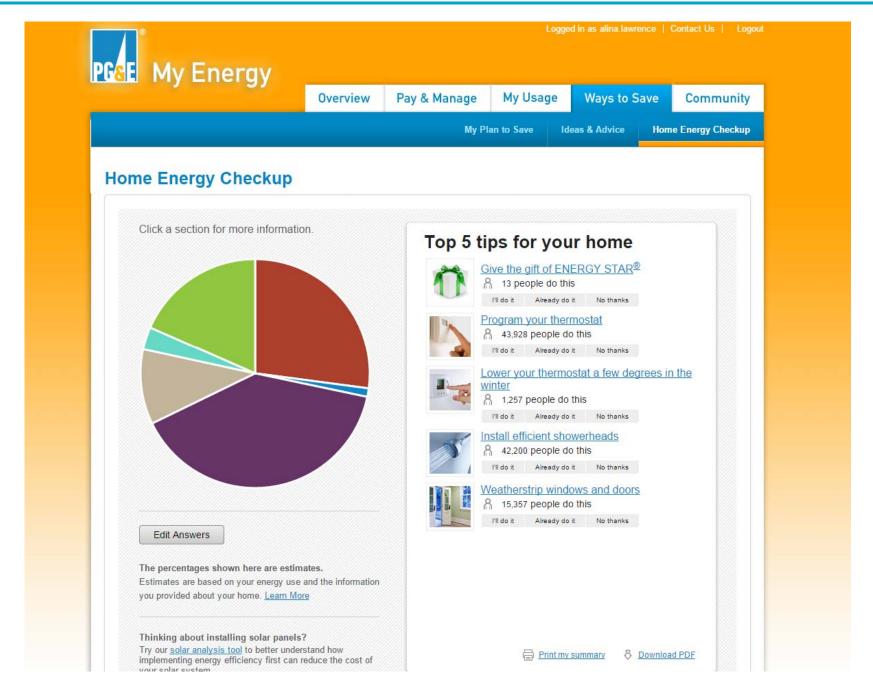








Home Energy Check-Up





Webrooming VS. Showrooming

Webrooming = 69%



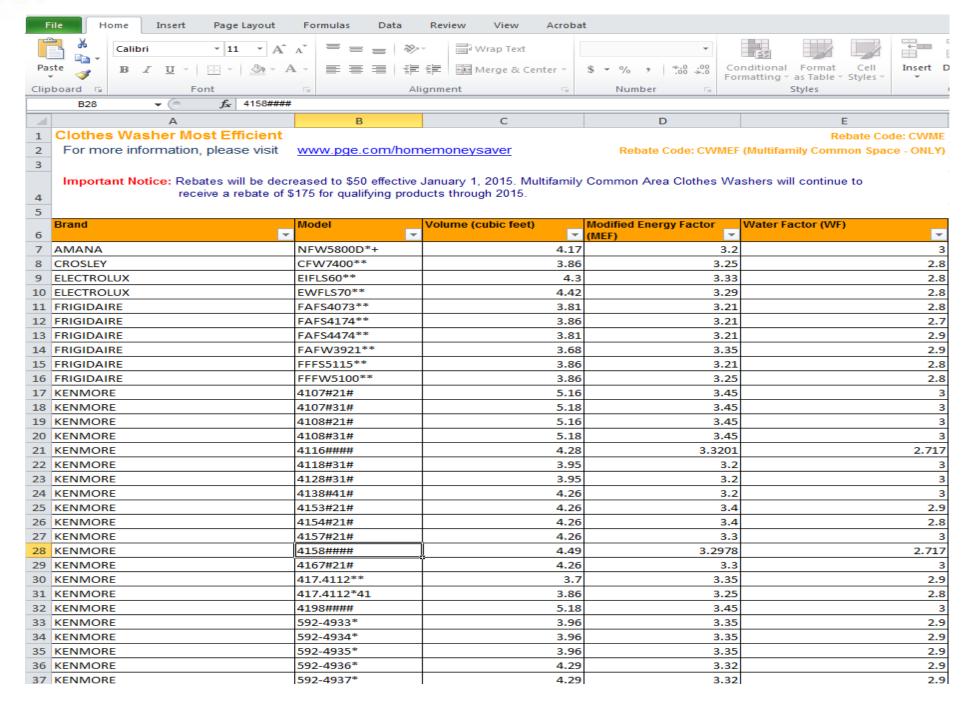
Showrooming = 46%



Connected in-store experiences leverage both online and offline

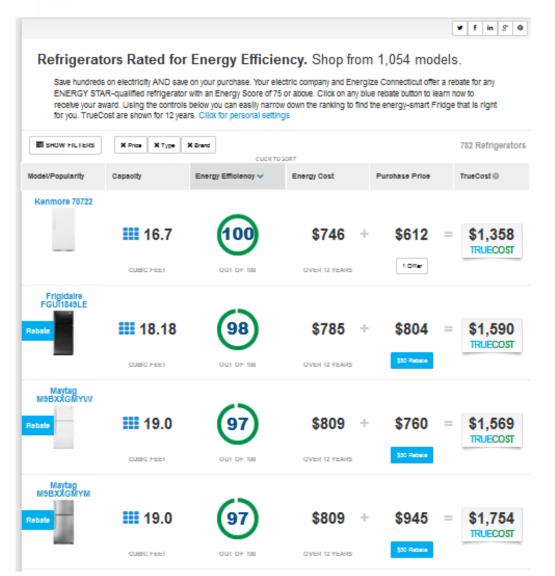


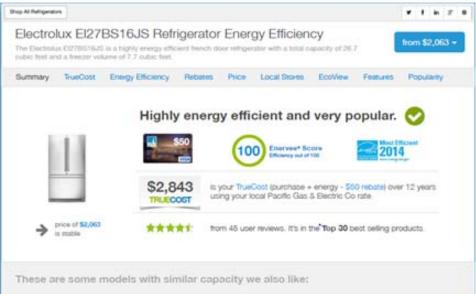
Creating New Tools

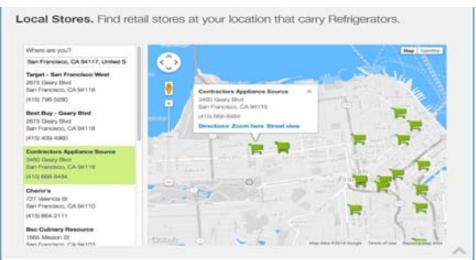




Marketplace



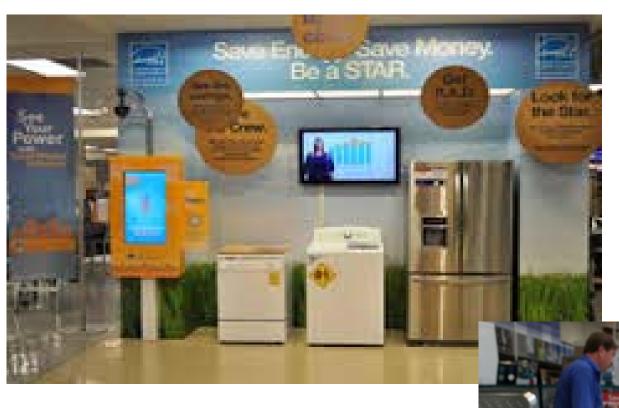




An Experience Customers Know and Prefer



In Stores







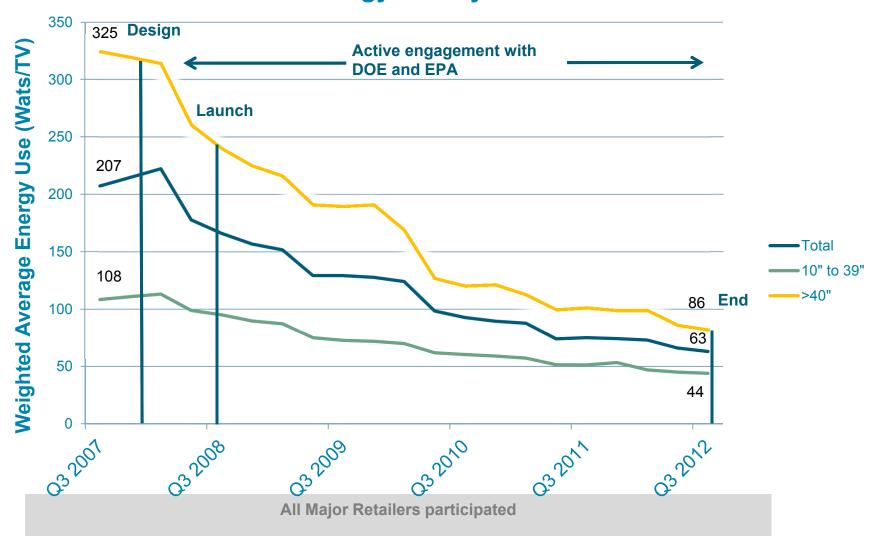
Flexible Retail Strategies





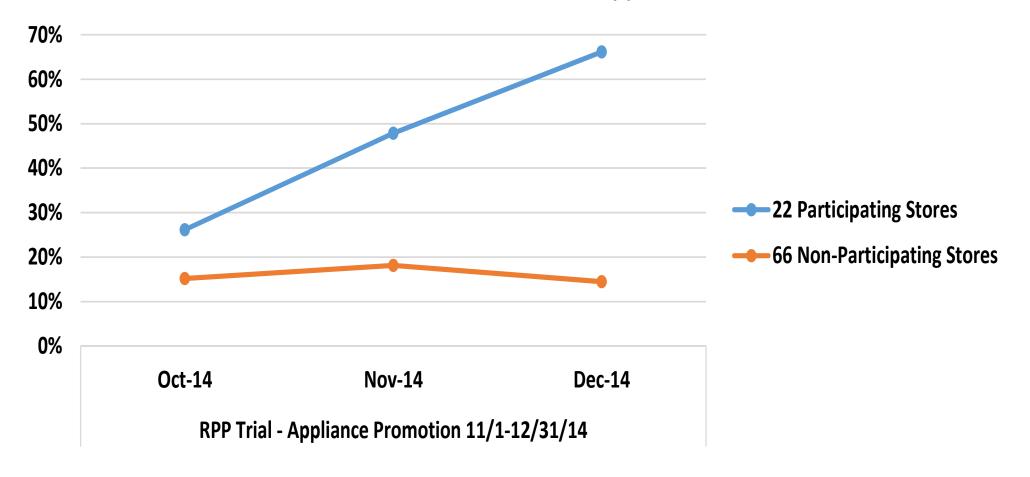
Midstream Collaboration: 2008-2012 TV Pilot

Estimated Energy Use by Size for New TVs



Validate program operation, evaluation and performance

Market Share of Qualified Appliances





Retail Plug Load Platform with EPA













Home-Theaters-ina-Box/Sound Bars (ES + 15%)



Air Cleaners



Dryers



Room Acs?



Freezers

















Trade Professionals



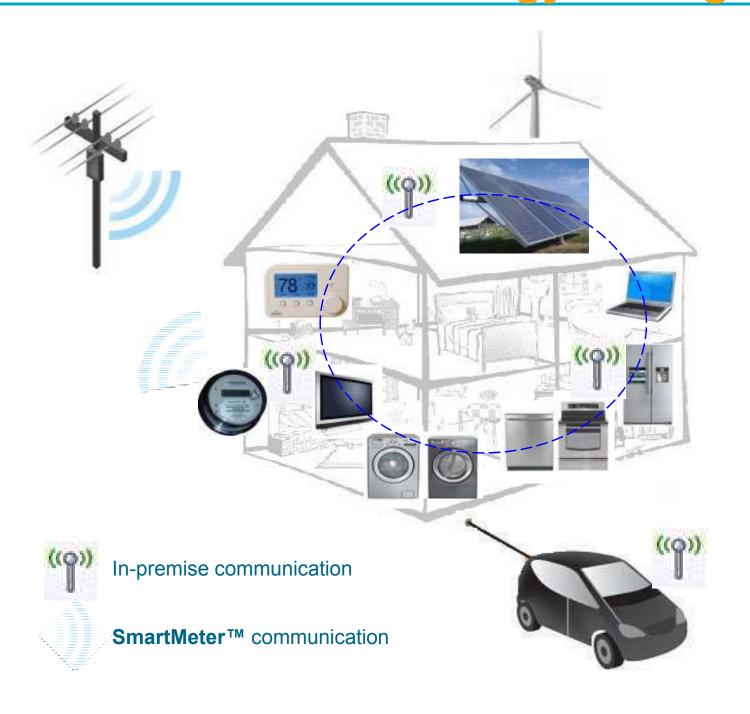


Trade Pros



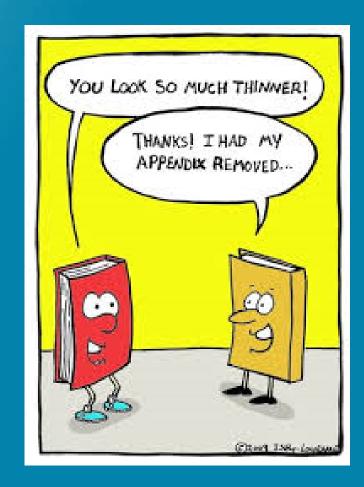


Future: Customer Energy Management ²⁶

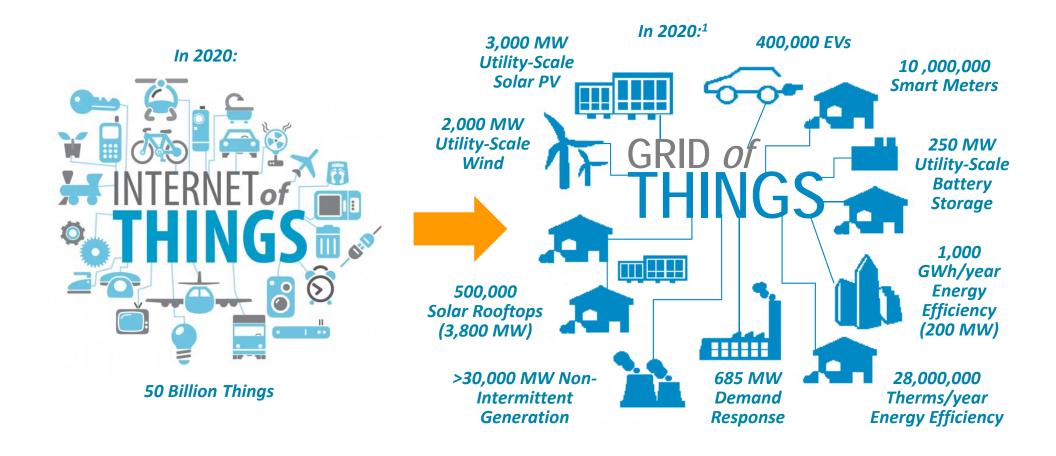


Appendix



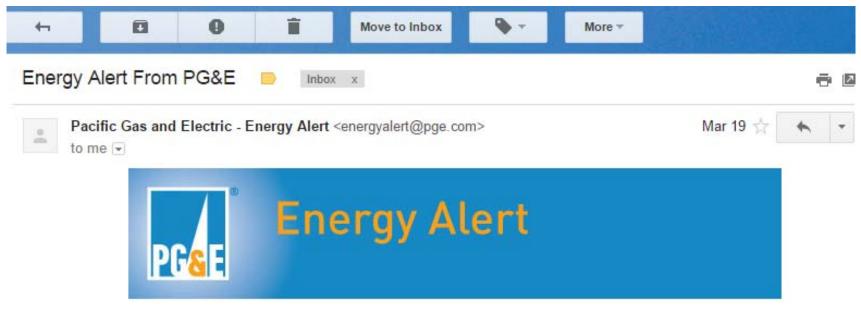


The Grid of Things: the always there, always on platform that enables all the products and services customers need to engage with and use energy



¹ Grid facts represent PG&E-specific, internal 2020 estimates for items in PG&E's service territory, excepting: 1) utility-scale solar and wind amounts, which include all resources under or expected to be under contract to PG&E in 2020; 2) utility-scale battery storage amounts, which use PG&E's transmission and distribution storage targets resulting from Assembly Bill 2514, assuming projects come online 2-3 years after the date procured; 3) energy efficiency estimates, which are based on 2014 PG&E goals; and 4) non-intermittent generation in PG&E's territory, which is sourced from the California Energy Commission's Energy Almanac (http://www.energyalmanac.ca.gov/powerplants/Power_Plants.xlsx).





Dear Valued PG&E Customer,

We are sending this Energy Alert because you will likely move up to Tier 3 pricing for electricity use by the end of this billing period.

With Energy Alerts you can take steps to manage your energy use before receiving your monthly bill. Log on to My Energy at www.pge.com/myenergy to see your hourly electric usage up to the previous day, or change your notification preferences.

Under the PG&E tiered pricing structure, every residential customer starts in Tier 1, where electricity costs the least. As you use more electricity through the billing period, you move into Tier 2, Tier 3 and Tier 4. As you move into higher tiers, the cost for electricity increases.

If you have any questions about your bill or Energy Alerts, call us at 1-866-743-0263.

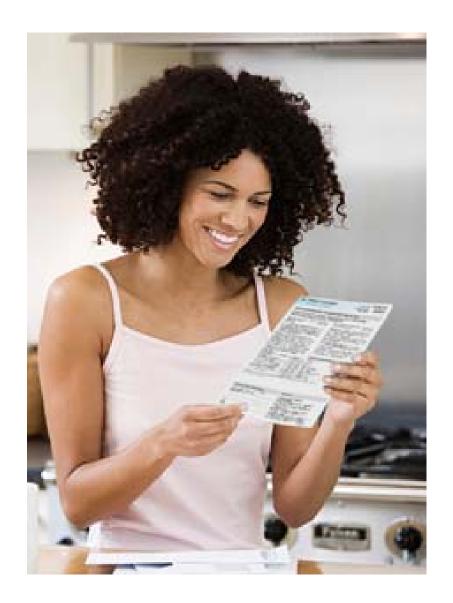
Customer Service Online Pacific Gas and Electric Company

This message is related to Service Agreement 6060828267

^{*} Please do not reply to this email.



Target Marketing



We listen to what customers are telling us about their needs and wants, and how they think.

We have a long tradition of encouraging customers to share their voice:

- Qualitative & Quantitative Studies (Programs, Products, Rates, Touchpoints)
- Customer Satisfaction Surveys
- Brand Health Tracking
- Social Listening

Customer Segmentation Approach

- Leverage Internal and External Data for Deeper Understanding
 - Go beyond the energy profile to uncover behavioral, attitudinal and personality characteristics along with corresponding emotional levers
- Strive for Customer Centricity
 - · Create representative "personas" for energy consumers and operationalize them throughout the organization
- Drive Results from Utilization of Personas
 - Develop more satisfying and efficient interactions
 - Influence and increase level of trust
 - Enable greater customer and business impact
 - Further our relationship/engagement opportunities using a holistic approach



Benefits of Persona Segmentation

Product Development



- Identify product gaps
- Understand customer impact
- Enhance existing products/tools

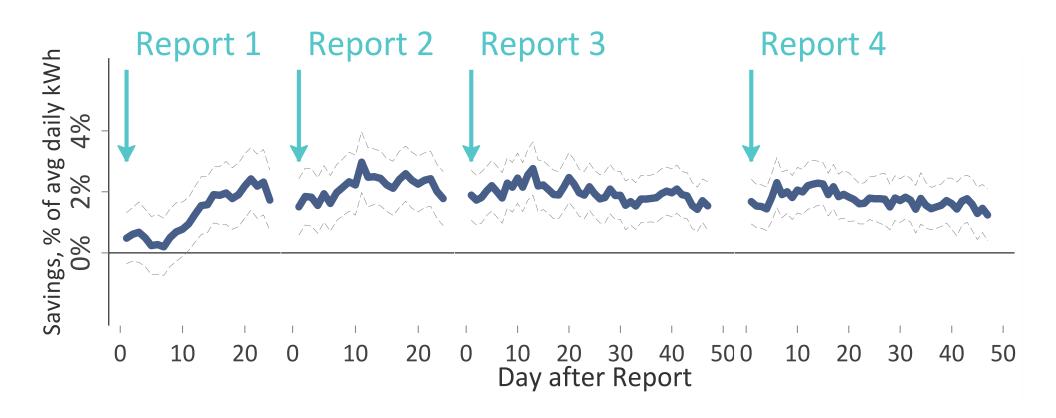
Operations



- Identify which segments drive higher cost
- Identify opportunities for efficiencies
- Gain insight into how processes fit with customer segments
- Assist evolving or developing processes



Insights from Smart Meter Data



PG&E's Smart Thermostat EE Assessment

Objective

Evaluate gross energy savings and effectiveness of EE facilitating features in multiple smart thermostats with focus on optimization software, occupancy sensing and geo-location.

Design

- Scaled Field Placement of multiple smart thermostats to evaluate effectiveness of EE facilitating features, such as occupancy sensing and geo-location.
- Targeting 1,000 units each
- Participation in this project requires manufacturer to provide subset of operating data (indoor temperature, set points, etc.)
- Incorporate existing customer data to keep cost down or as backup strategy for suboptimal participation, as feasible.

Potential Partners

- NEST
- Ecobee 3
- o EnergyHub/RTA CT80
- Honeywell Lyric
- Earth Networks/Emerson



On the Horizon: Supply-Side DR Pilot

In 2015 & 2016, PG&E is launching:

- Supply-Side DR pilot
 - Allows vendors to bid DR capacity into the wholesale market
- Excess Supply DR pilot
 - Address situations of over-generation on the grid) to help enable residential aggregation for vendors interested in this alternative business model



Smart AC: Creative Material

Help prevent power shortages. Help yourself to \$100.

The PG&E SmartAC™ program is designed to prevent power shortages for you and your neighbors.³ Enroll now and get \$100 for helping out.⁴

Take control of your comfort.

- Enroll now and PG&E will install a SmartAC device on or near your central air conditioning unit. A few weeks later we'll send you a check for \$100.
- On the hottest days between May 1 and October 31, PG&E may send a signal to activate your SmartAC device, which allows your air conditioner to run at lower capacity to help avoid power interruptions.⁴
- If an event is called at an inconvenient time, you have the option to easily return your air conditioner to its normal settings.²

Here's how it works:

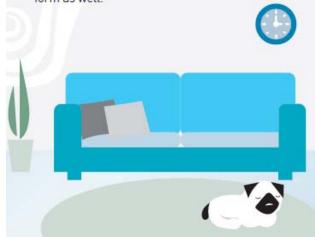
- For about 15 minutes of every half hour your air conditioner will operate normally. For the other 15 minutes your fan will run to circulate the air.
- These SmartAC events are infrequent and last between 1 and 6 hours.

The power to help California.

The SmartAC program helps PG&E avoid using less-efficient peak power plants. Help us protect the power supply and the environment. Join thousands of other Californians, and sign up for SmartAC.

Sign up now. It's easy.

Fill out the short form at the bottom of your letter, visit pge.com/smartac or call us at 1-877-932-0613. If you are a renter, please complete, sign and return the enclosed renter's form as well



Utility Factors My Energy (41%) Uses Rebates (40%) Medium Sized Bills (48%) Longer Term Customer (81% 5+ yrs)

Skew Toward SmartRate, SmartAC

Electronic Payments

Demographics

- Higher Income (58% >\$100k)
- White Collar, Higher Education
- Over 45 (82%)
- Homeowner
- Higher Value Homes (47% >\$500K)
- San Jose, East Bay, San Francisco



(58%)

<u>Lifestyle</u>

Community Involvement (74% Donate)

- Exercise, Outdoors
- Politically Involved
- High Internet Usage (40% in top 2 deciles)
- Frequent Purchases Of Electronics, Appliances
- Online And Mail Purchases
- Green Living (28%)

Theories/Observations

- Trends toward early, easy solution adoption
- Fairly energy efficient, with lower bills, temperate areas
- Could drive more products to this group, but impact on energy may be less
- Home automation, remote management could lower even more

Utility Factors

- Low My Energy Enrollment
- **Uses Rebates**
- More likely to use SmRate, SmAC
- Medium to Low Energy Bill (96%)
- Payments by Mail (49%) And In Person (25%)

Demographics

(34%)

(30%)

(64% 6+ yrs)

(18%)

- Low To Middle Income
- Detached Single Family Homeowners
- Smaller, Older Homes (82%)
- Somewhat Older Age (58% 55+ yrs)
- Singles or couples (62%)
- Only some with children (25%)
 - Higher Rate Of Hispanics (24%)



NOW GET

For a FREE pickup.

Lifestyle

- Longer Length of Residence
 - Higher Rate of Retirement
- 'Do It Yourself'ers
- Low Internet Usage
- Skew Republican
- Make timely regular payments

Theories/Observations

- This group is fairly energy efficient, with smaller homes and less elaborate lifestyles keeping bills low
- However, they show a higher level of programs that incentivize them across several solution types
- Rebates appear to be timed to needed upgrades
- They may modify behavior given the right up front offer

Utility Factors

- My Energy
- Uses Rebates
- Some Have Pools
- Longer Term Customer (80% 5+ yrs)
- Larger Homes
 - Energy Inefficient

Demographics

- · Higher Income
- · Likely Married/Partnered
- Older Children
- Homeowner
- Larger Higher Value Homes
- East Bay, San Jose, North Coast

(61% 100k+)



- Community Involvement
- Outdoors (boating, hunting, hiking)
- High Internet Usage
- Purchases Electronics, Appliances (50% p2y)
- Green Living

(73%)

(30%)

(48%)

(96%)

Theories/Observations

- Convenience May Be A Key Driver
- Engage When They Are Involved With Home Updates
- Could Be Early Adopter Of Certain Technologies
- Prospects For Integration And Bundling
- Good Group For New Product Pilots

My Energy (42%)Lower Income (39% <\$50k) Uses Rebates Multiple Adults in HH (27%)**Energy Inefficient** Middle Age or Older (98%)(24% 65+)Longer Term Customer (72% 5+ yrs) Homeowner Skew Toward SmartRate, SmartAC Larger, Older Homes (majority built before '84) High Bills Some Have Pools (24%)Stockton-Modesto, Fresno-Bakersfield, Sacramento BEYOND THEIR MEA Lifestyle Community Involvement (73%)Theories/Observations Outdoors (camping, hunting, hiking) Budget Is A Key Driver Health, Medical Interests Would Benefit From Energy Savings Measures On Bill Low Internet Usage (40% in bottom 5 deciles)

Demographics

But Struggle To Afford Upgrades

Could Take Advantage Of ESAP But Only Average Rate Of

CARE Participants Indicates May Be Averse To "Charity"

Multiple Payment Methods

Slight Skew Toward Retirees

Missed Payments

Utility Factors

(30%)

Few Rebates Frequent Mover CARE (41%)Younger (82%)Medium to High Bill Mix Of Renters & Homeowner (70%)Somewhat Energy Inefficient Some With Children (42%)(35%)Payments Both Electronic (55%) And In Person (48%) Stockton-Modesto, Fresno-Bakersfield **Higher Rate Of Hispanics** (27%)Lifestyle Migratory Lifestyle Theories/Observations Some Spanish Speakers (19%)While this group of customers shows a degree of being High School, Vocational School energy inefficient, they may lack the means to make Average Internet Usage significant upgrades

(20%)

(53%)

Demographics

Low To Middle Income

Lifestage transitions may create opportunities to engage

Sayings are a motivator if the solution is easy and doable

Utility Factors

My Energy

Missed Payments

Multiple Payment Methods