



Using Evaluation Research and Results to Design Better Programs

**Case Study:
SoCalGas® Advanced Meter
Conservation Campaign**

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Background

- SoCalGas, the nation's largest natural gas distribution utility, is in the midst of its Advanced Meter (AM) deployment.
- Through this project, SoCalGas is upgrading approximately 5.8 million existing natural gas meters with a communications device that automatically reads and securely transmits hourly gas usage information on a “next day” basis.
- SoCalGas' AM rollout includes a 1% energy savings goal* based on enhanced energy usage information feedback options for its customers.
- SoCalGas contracted with Nexant for program design and evaluation support to help demonstrate how to achieve its 1% energy savings goal in a cost effective manner.
- The SoCalGas-specific information included in this presentation is available within the “Southern California Gas Company Advanced Meter Semi-Annual Report” (reference “Exhibit E,” prepared by Nexant) filed with the CPUC in August 2014 and publicly available at <http://www.socalgas.com/regulatory/A0809023.shtml>.
- Josh Schellenberg is a representative of Nexant, and is not speaking on behalf of SoCalGas. This presentation is based on publicly reported results from SoCalGas, and does not constitute an endorsement of Nexant or their presentation by SoCalGas.

* This energy savings goal specifically refers to 1% of total residential gas usage.

Presentation overview

- Objectives – SoCalGas Conservation “Test & Learn” Strategy
- Overview of information feedback options
- Research design and methodology
- Customer acceptance
- Key findings
- Proposed 2014-2015 conservation “Test & Learn” plan
- How to accelerate innovation in the utility industry

Objectives – SoCalGas Conservation “Test & Learn” Strategy

- **Meet the SoCalGas Advanced Meter California Public Utility Commission Decision* requirements to track and attribute the conservation impacts of the rollout and to report measured savings every six months**
 - Requires rigorous adherence to research design principles (experimental design for residential, matched control group for small/medium business customers (SMB) due to small population in initial meter footprint)
 - Large sample sizes to detect expected impacts
- **Help demonstrate how SoCalGas can achieve its 1% energy savings goal in a cost-effective manner**
 - Implement a multi-year, conservation “test & learn” campaign strategy that identifies marketing strategies, information feedback options and customer segments that are most cost-effective

* D.10-04-027



Overview of information feedback options

2013-2014 Conservation Campaign tested two information feedback options

- **Home energy reports (HERs)**
 - Provided by Opower
 - Test group of 50,000 residential customers on a default basis
- **Bill alerts**
 - SoCalGas developed a bill alert service called Bill Tracker Alert (BTA)
 - Service provides a weekly report to customers through email and/or text message that describes the cost of gas they have consumed since receiving their last bill, as well as a forecast of what their bill would be at the end of the billing period
 - Also features information comparing a customer's projected next bill to their actual bill for the prior month and for the same month in the prior year
 - Tested on an opt-in and default basis
 - Opt-in and default customers also received informational letters and emails providing cost saving tips and promoting SoCalGas.com, My Account "Ways to Save" tools
- **These two information feedback options were chosen because they have the highest potential to:**
 - Reach large numbers of consumers in a manner that can be accurately measured
 - Demonstrate how to cost-effectively meet the 1% energy savings goal

Features and timeline of residential HER treatments

(October 2013 through March 2014)

	Non-My Account Customers Paper-only HER 25,000 customers					My Account Customers Paper & Email HER 12,500 customers					My Account Customers Email HER 12,500 customers							
	Oct	Nov	Dec	Jan	Feb	Mar	Oct	Nov	Dec	Jan	Feb	Mar	Oct	Nov	Dec	Jan	Feb	Mar
Paper HER																		
Welcome Insert																		
Door Hanger																		
Email HER																		

★ Welcome message for Group 3 was included in module on Home Energy Report

Email and text message weekly BTA notifications



The screenshot shows a web-based SoCalGas Bill Tracker Notification. At the top left is the SoCalGas logo with the text "Southern California Gas Company" and "A Sempra Energy utility". The main title is "SoCalGas® Bill Tracker Notification". Below it is a section titled "Your Bill Tracker Update" with the sub-instruction "Use this weekly update to help manage your monthly natural gas bill." A table follows, containing the following data:

Account Number:	<last 5 digits ****67890>
Bill to Date:	amount in \$\$ (up to \$99,999)
Projected Next Bill:	in \$\$ (up to \$99,999)
Days remaining in the current billing cycle:	(e.g., 23)
Days elapsed in the current billing cycle:	(e.g., 5) [Email alerts only]
Last Month's Bill:	in \$\$ (up to \$99,999) [SCG CIS Data]
Last Year, Same Month's Bill:	(current bill cycle month) in \$\$ (up to \$9,999)

Below the table, a note says "Log in to My Account to set up a savings goal by visiting [Ways to Save](#)" – our personalized interactive tool. A "Log In »" button is present. At the bottom, social media links for Twitter and Facebook are shown, along with website links for [socalgas.com](#), [Bill Assistance](#), and [Rebate Programs](#).



Throughout the 2013-2014 Conservation Campaign, opt-in and default BTA customers also received informational letters and emails that provided cost saving tips and promoted the SoCalGas.com, My Account-based *Ways to Save* online tools

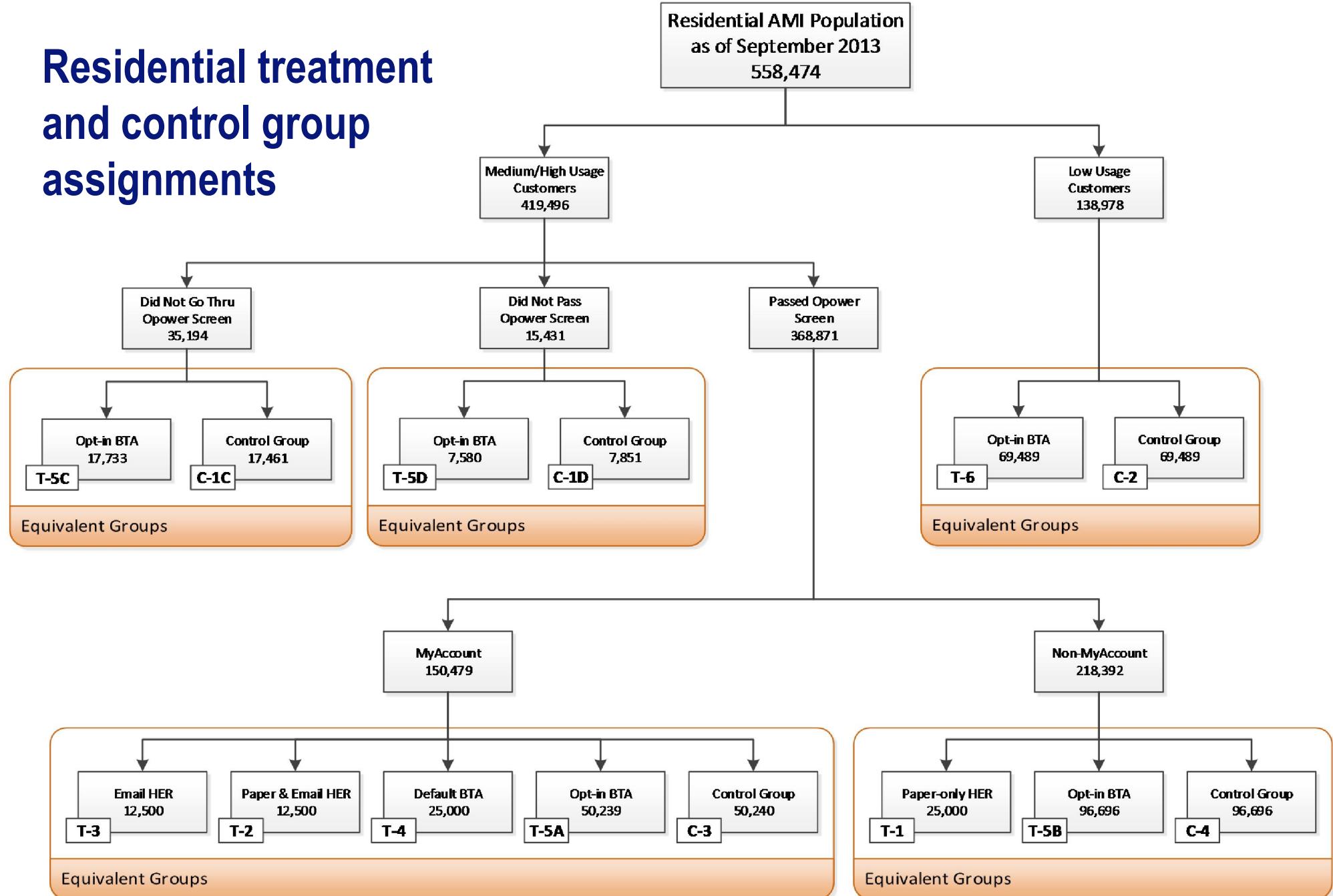


Research design and methodology

Initial test and learn strategy

- **Information feedback options**
 - Home energy reports (HER) – provided by outside vendor
 - Bill Tracker Alerts (BTA) – developed and implemented by SoCalGas
- **Both incorporated program elements that are designed to induce behavior change, such as current energy usage compared to prior year**
- **Customer segments**
 - Medium/high usage (top three quartiles) and low usage – concentrate more on customers that are likely to deliver larger impacts
 - My Account and non-My Account (split for medium/high usage only) for customers that passed the Opower eligibility screen – allows for direct comparison of default options
- **Two enrollment options for My Account Customers**
 - Default and opt-in
- **Different channel options for HER**
 - Email, paper & email, paper-only

Residential treatment and control group assignments



The gold standard of experimental designs is a randomized control trial (RCT) or randomized encouragement design (RED)

- With RCT, Customers are randomly assigned to treatment and control conditions, so the only difference between the groups (except for random chance) is the treatment itself
- Impacts are calculated as the difference between usage for the treatment and control groups after the treatment goes into effect minus the difference between the two groups before the treatment goes into effect (to eliminate any small difference due to chance)

	Pretreatment	Post Treatment
Treatment Group (T) (HER or BTA)	Monthly Therms pre	Monthly Therms post
Control Group (C)	Monthly Therms pre	Monthly Therms post

$$\begin{aligned} \text{Impact} &= \text{Difference-in-difference} \\ &= (T_{\text{post}} - C_{\text{post}}) - (T_{\text{pre}} - C_{\text{pre}}) \end{aligned}$$



Customer acceptance

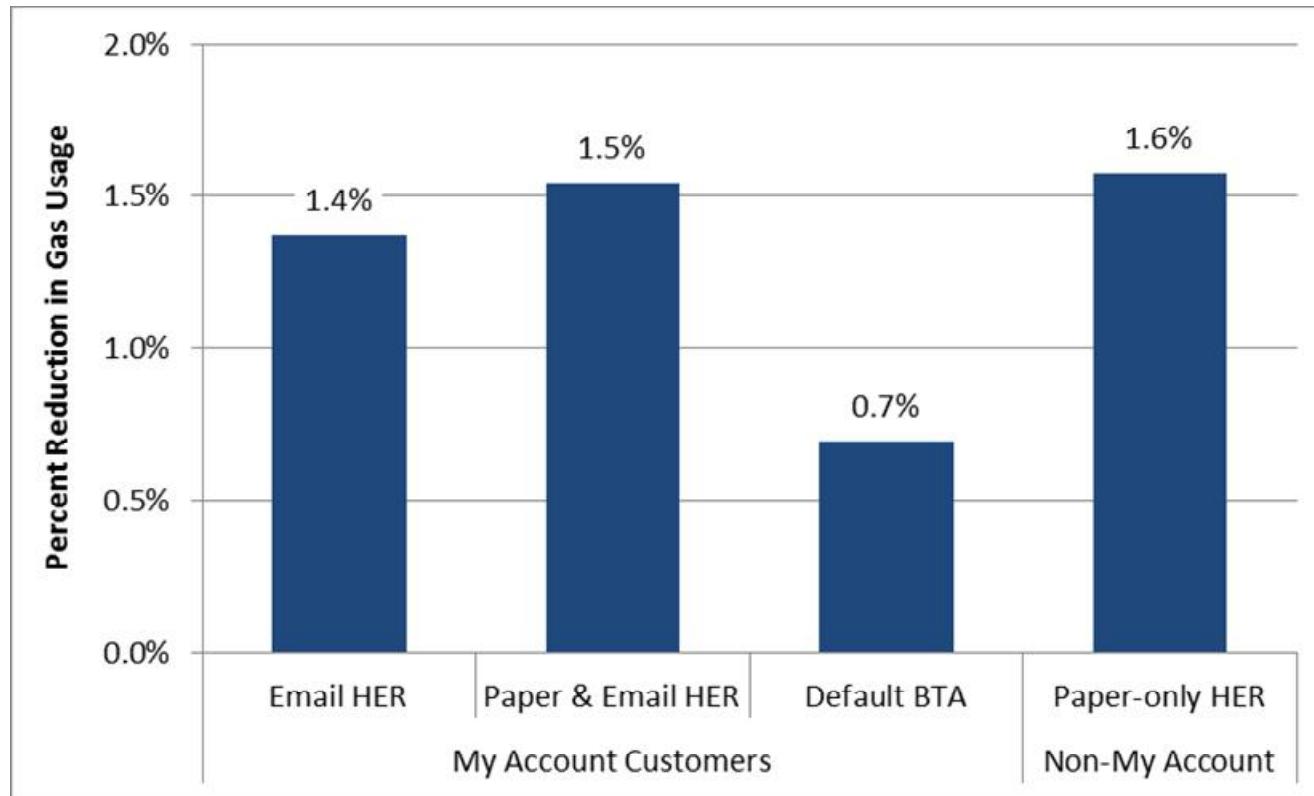
Retention rates for default treatments were high

- **Opower reported a retention rate of 99.6% for HERs, which is in line with the Opower average**
- **Retention rates were also quite high for default BTA – at the end of the conservation campaign:**
 - 99% of residential default BTA customers (T-4) were still enrolled
 - 96% of SMB default BTA customers (T-7A) were still enrolled
- **Note: BTA retention rates exclude accounts that closed**
- **As for opt-in BTA, enrollment rates were relatively low and the customer acquisition cost was high, so the remainder of this presentation focuses on the default treatments**



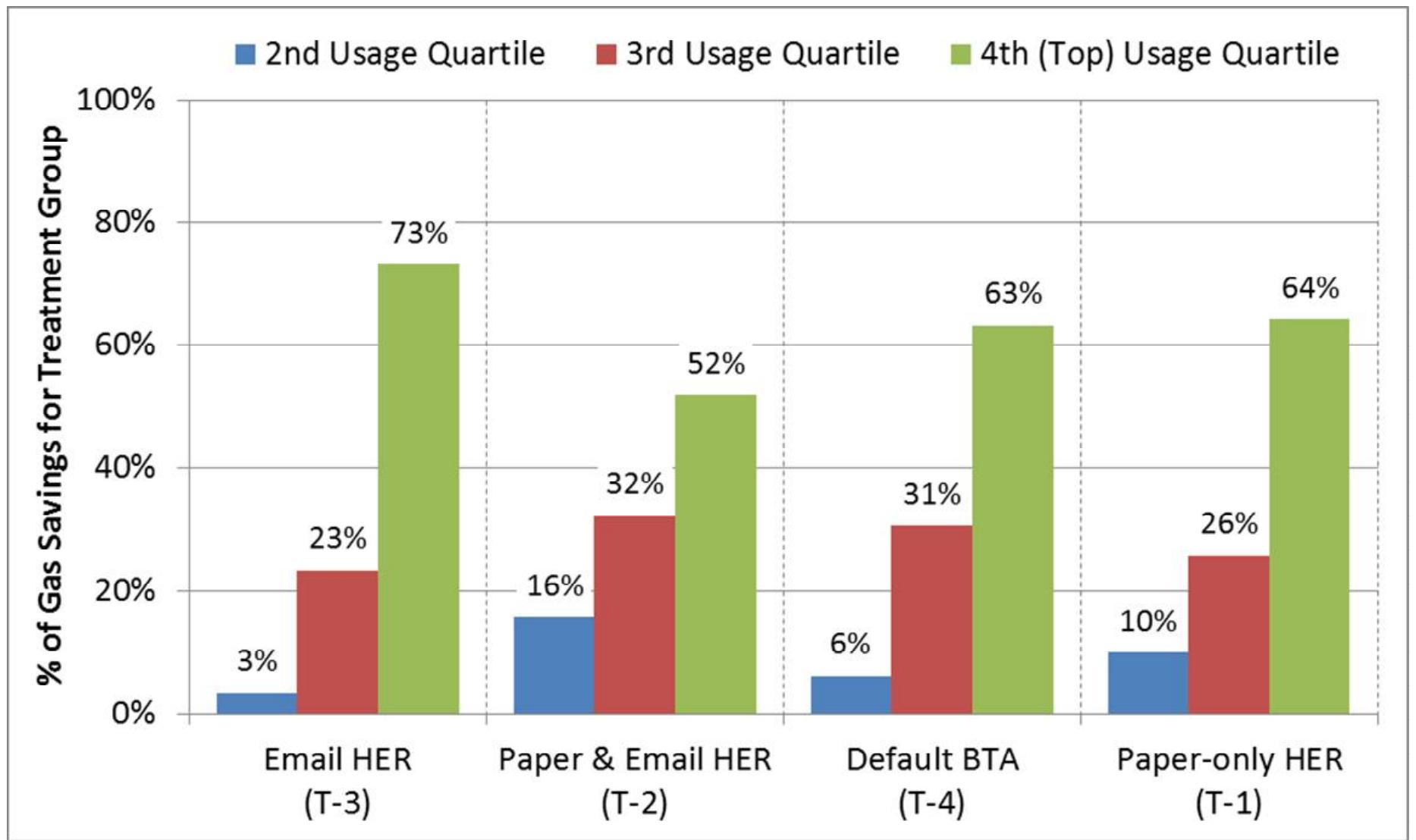
Key findings

All four residential default treatments produced measureable reductions in gas usage

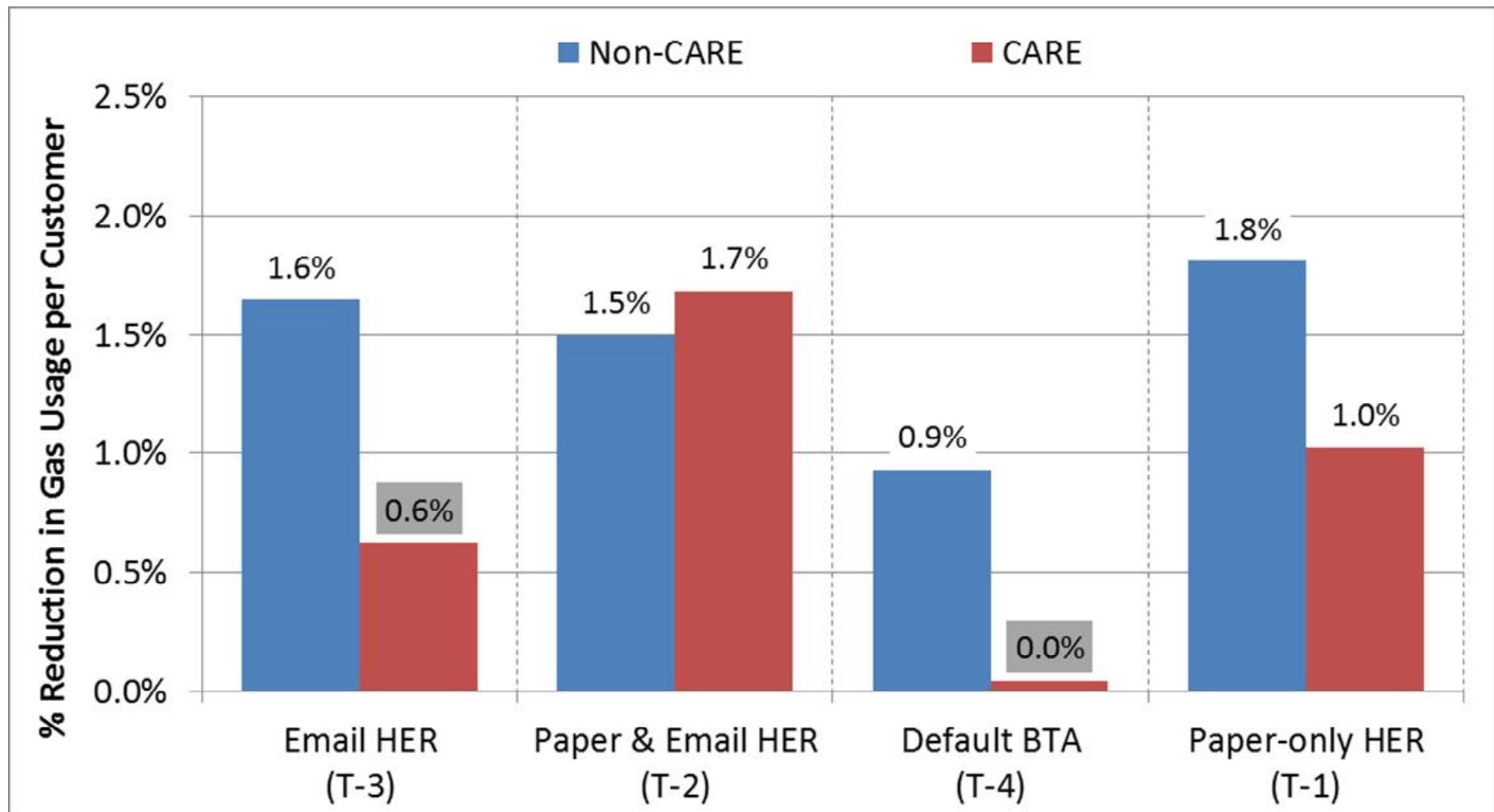


- All three HER treatments and the default BTA treatment produced measurable gas savings
- For SMB customers, BTA was tested on a default basis, but did not show a measurable reduction
- BTA was offered on an opt-in basis to four different residential segments and one SMB segment, but none of those tests showed a measureable reduction in gas usage

For each default treatment, the top usage quartile accounted for the majority of savings

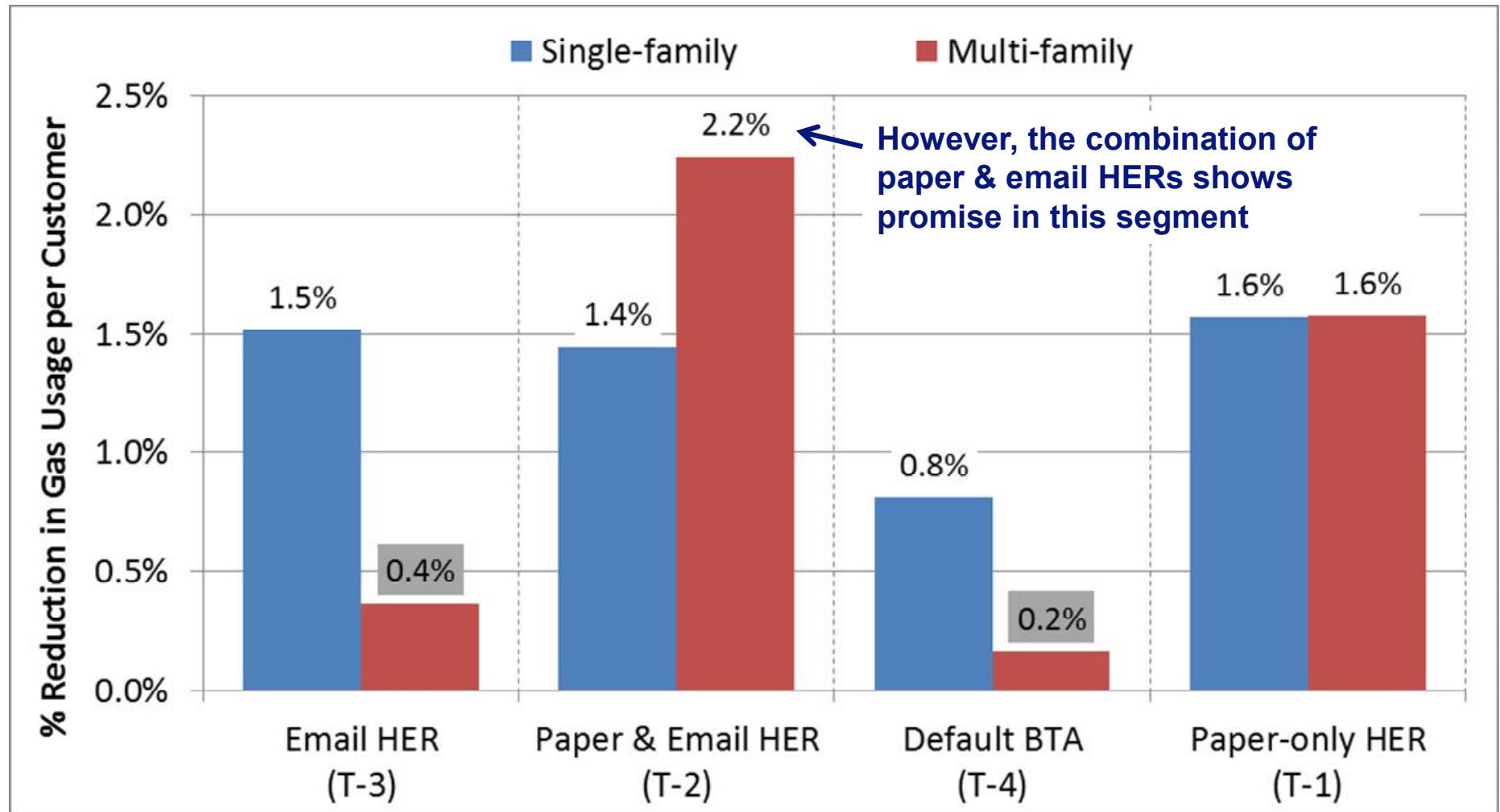


CARE customers were most responsive to paper & email HERs and paper-only HERs



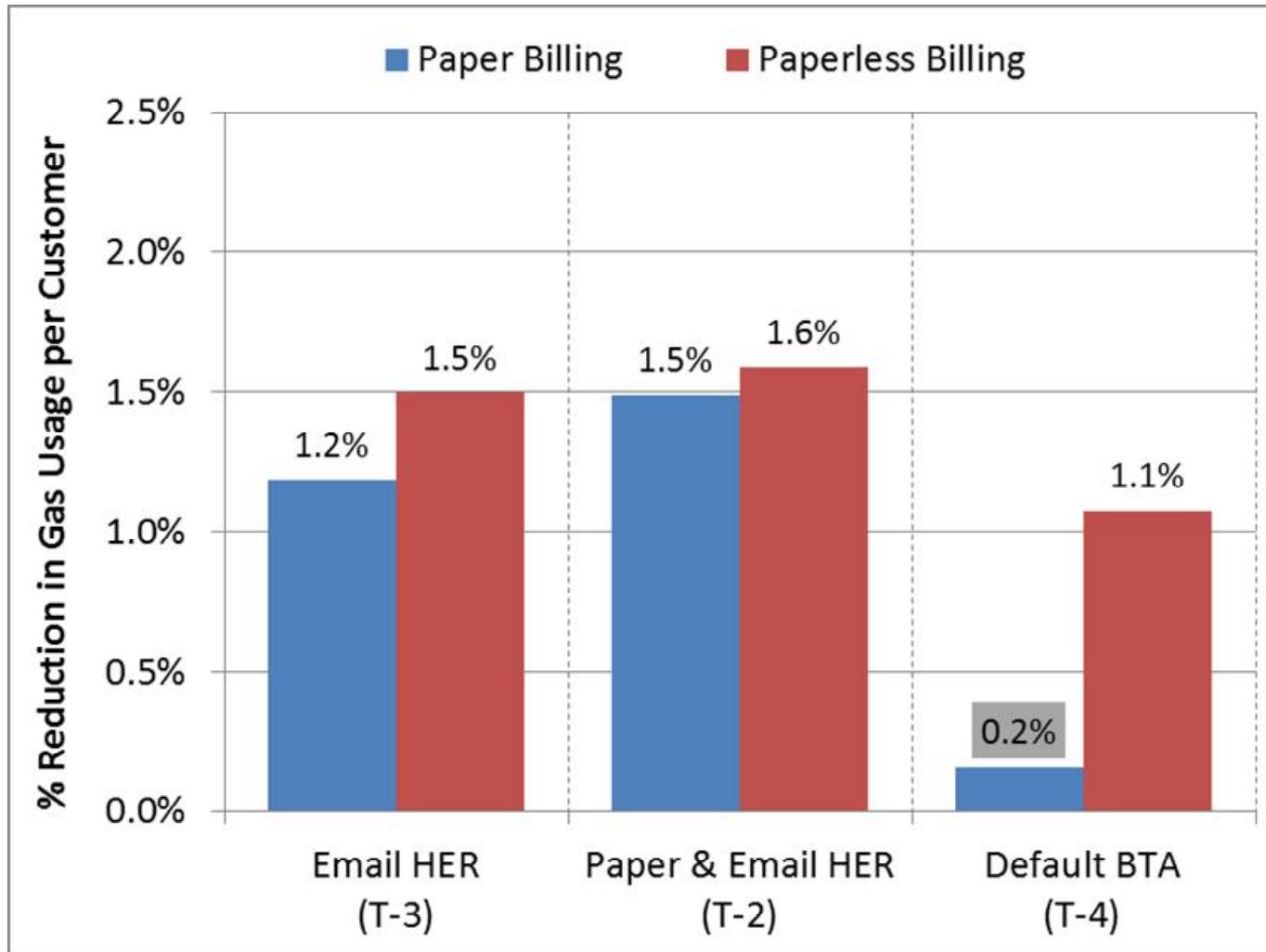
* Statistically insignificant results are in gray

Customers in multi-family homes were not as responsive to the non-paper treatments – email HER and default BTA



* Statistically insignificant results are in gray

Customers on paper billing did not show a statistically significant usage reduction for default BTA



* Statistically insignificant results are in gray

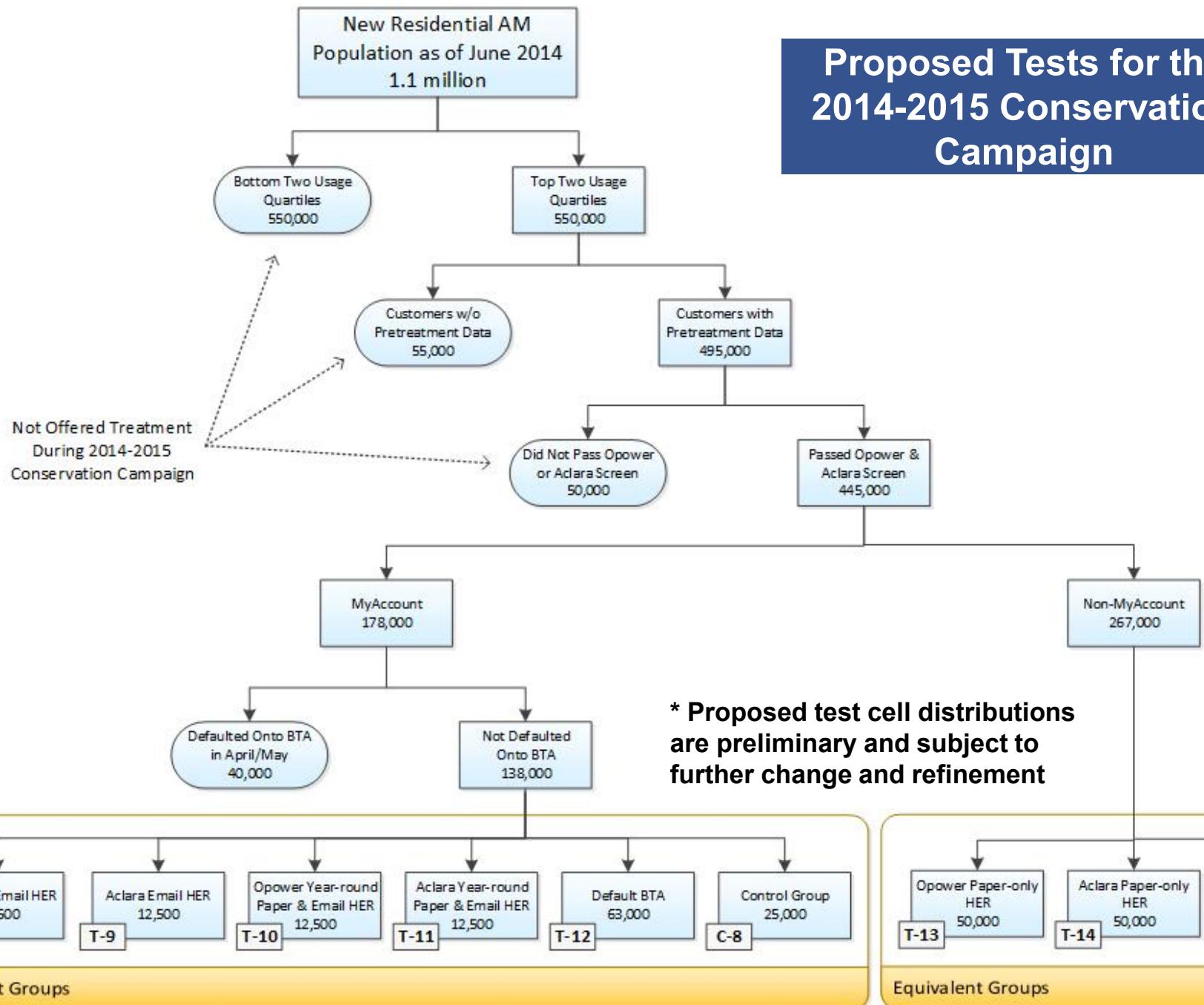


Proposed 2014-2015 conservation “Test & Learn” plan

To test ways of improving cost-effectiveness, the 2014-2015 Conservation Campaign will adjust the program offerings as follows:

- Continue and expand Opower HER treatments (current “Champion”), including some refinements and testing of a year-round option
- Include a test of Aclara HERs, which differ from the prior HERs offered by Opower in that they:
 - Include different conservation messages
 - Have more AM-specific content
 - Emphasize the SoCalGas.com, My Account-based Ways to Save online tools and other conservation/energy efficiency programs as appropriate
- Continue and expand default BTA, but with fewer direct mail communications, which are relatively costly
- No longer offer BTA on an opt-in basis, due to the high acquisition cost and relatively low enrollment rates
- For the 2013-2014 HER and BTA treatments, continue to track and measure energy savings in order to determine whether savings persist

Proposed Tests for the 2014-2015 Conservation Campaign



2014-2015 Conservation Campaign will be able to take advantage of an expanded AM footprint

- **AM footprint now includes nearly 2 million residential customers (an incremental 1.4 million residential customers)**
- **Therefore, SoCalGas will have sufficient numbers of customers to improve its targeting strategy as follows:**
 - Focus on the top two usage quartiles
 - Only include customers who have pretreatment data from October 2013 through March 2014
- **Finally, SoCalGas will exclude SMB customers from upcoming Conservation Campaigns until there are sufficient numbers of customers to conduct a valid randomized controlled trial (RCT) of default treatments**
- **Trends for CARE, multi-family and paper billing customers will be monitored and factored into future Conservation Campaigns**



How to accelerate innovation in the utility industry*

* This section is solely based on the presenter's own opinions and is not attributed to SoCalGas.

Typical cycle of innovation in the utility industry (Step 1)



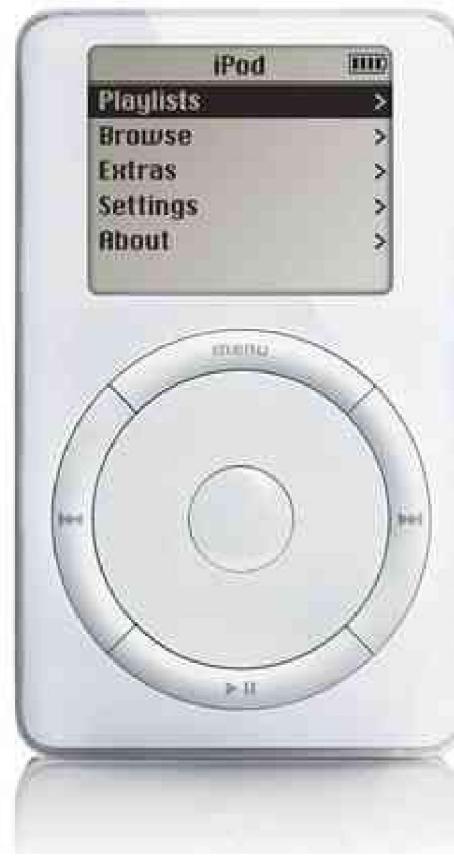
Step 1: Identify an opportunity (i.e., advanced meters create new opportunities for behavioral program offerings)

Typical cycle of innovation in the utility industry (Step 2)



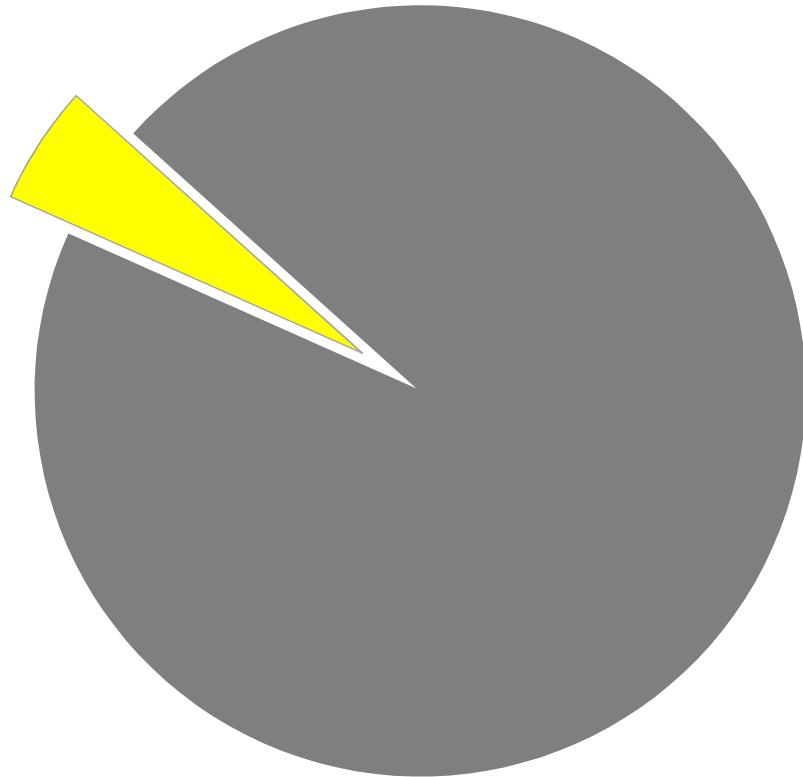
Step 2: After a lengthy stakeholder review process (and perhaps some market research), pick a single winning program offering and design

Typical cycle of innovation in the utility industry (Step 3)



Step 3: Find out if customers like the offering and how they respond to it (including how response varies across customer segments)

Typical cycle of innovation in the utility industry (Step 4)

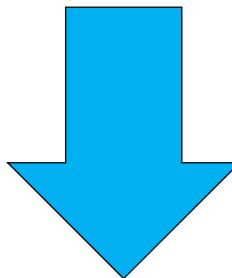


Step 4: Improve program by incorporating findings of a single program offering and design

“Test & Learn” process significantly accelerates learning and customer program optimization

Typical Cycle

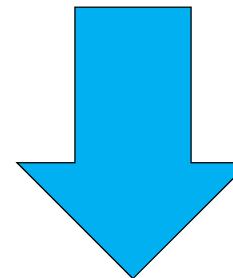
1. Identify an opportunity (6+ months)
2. Pick a winner (6+ months)
3. Test single offering (12+ months)
4. Improve program (12+ months)



Result: 3 or more years later, utility improves upon initial offering, but cost-effectiveness relative to competing offerings/designs is unknown

Accelerated “Test & Learn”

1. Identify an opportunity (6+ months)
2. Identify *viable* options (6+ months)
3. Test *multiple* offerings (12+ months)
4. Optimize program (12+ months)



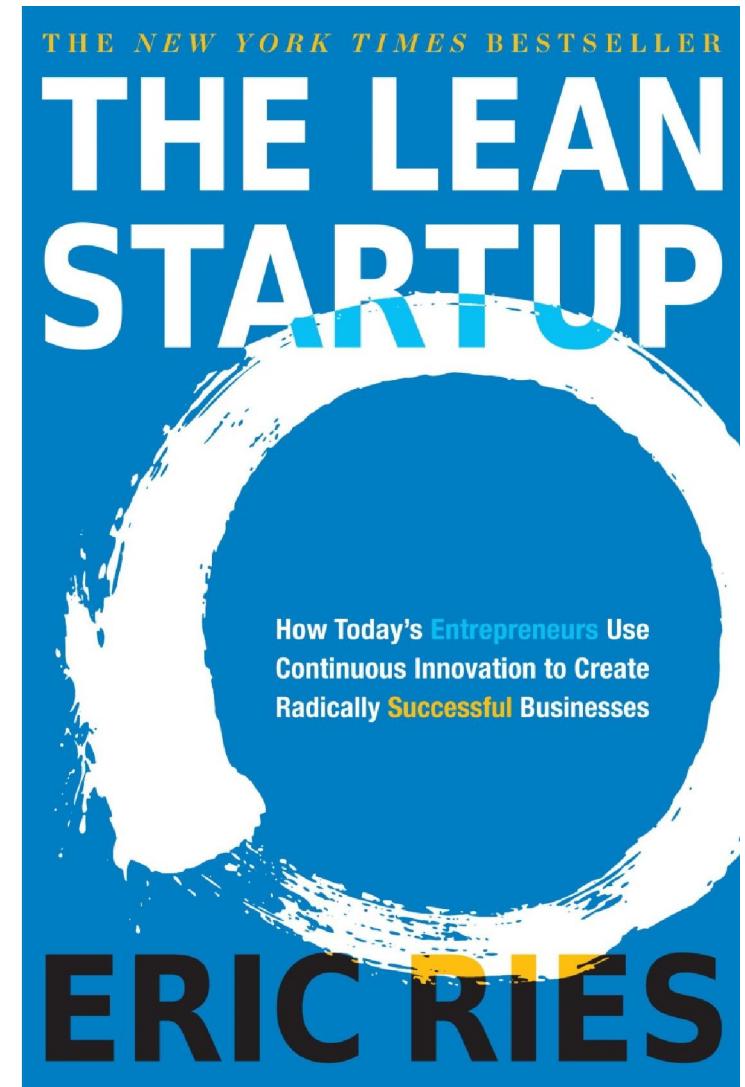
Result: 3 or more years later, utility maximizes cost-effectiveness by pursuing the optimal combinations of offerings/designs for each segment

And by the way... this is entirely consistent with the current thinking regarding innovation in Silicon Valley

“The only way to win is to learn faster than anyone else.”

“We must learn what customers really want, not what they say they want or what we think they should want.”

– Eric Reis



How to accelerate innovation in the utility industry

- Yes, conducting a randomized experiment (whenever possible) is important
- Yes, rigorous evaluation and market segmentation of results are critical
- But *most importantly*, utilities should use the extended program development and evaluation cycle as a *reason* for implementing an accelerated “Test & Learn” process, not as an excuse for not doing so
- Only way to learn faster is to offer multiple program offerings and designs simultaneously and then maximize cost-effectiveness by pursuing the optimal combinations of offerings/designs for each segment



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