

**SOUTHERN CALIFORNIA GAS COMPANY  
ADVANCED METER  
SEMIANNUAL REPORT**

August 31, 2016

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## **Southern California Gas Company Advanced Meter Semiannual Report**

### **Introduction**

This is the seventh Semiannual Report (“Report”) regarding the progress of Southern California Gas Company’s (“SoCalGas”) Advanced Meter project. In Decision (“D.”) 10-04-027, the California Public Utilities Commission (“CPUC” or “Commission”) authorized the project. Ordering Paragraph 5 required the following reporting requirements for SoCalGas:

“Southern California Gas Company shall establish a system to track and attribute program costs and projected savings from conservation. Based on this tracking system, Southern California Gas Company shall submit a report to the Director of the Commission’s Energy Division semiannually, tracking the gas conservation impacts of the advanced metering infrastructure project to date. These reports shall serve as a forum to adjust, as necessary the elements laid out in the final outreach plan described above. We expect that customer outreach, education and communications will continue to evolve and improve as SoCalGas conducts customer research, monitors customer reaction to new AMI technology and various customer usage presentation tools, and incorporates feedback from these activities into its AMI outreach and education activities. If the report shows that the company is falling short of its projections, it shall submit revisions to its conservation plan to increase awareness, participation, and durability of conservation actions among its customers. The semiannual reports and any revisions to the advanced metering infrastructure outreach and conservation plan shall be submitted to the director of the Commission’s Energy Division and served on the most recent service list for this proceeding. Additional costs incurred in order to improve conservation response will be funded out of contingency funds, or otherwise subject to the risk sharing mechanism authorized in Ordering Paragraph 2.”

### **Chapter 1 - Project Overview and Summary**

In addition to the specific requirements identified in D.10-04-027, this Report provides overall status of SoCalGas’ Advanced Meter project through June 30, 2016 and builds upon previous Reports by highlighting project changes and activities that have taken place since January 1, 2016. Previous Report filings may be accessed on SoCalGas’ website.<sup>1</sup>

The Advanced Meter infrastructure consists of three primary components – a meter transmission unit (“MTU” or “module”) attached to SoCalGas meters; a communications network consisting of data collection units (“DCU”) installed across the SoCalGas service territory; and associated back-office software systems, including the “Head End” system and “Meter Data Management Software,” which securely receive and process Advanced Meter

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<sup>1</sup> <http://www.socalgas.com/regulatory/A0809023.shtml>.

data. Data from the modules is communicated to the DCUs and then transmitted to SoCalGas' back-office systems.

Operational highlights as of June 30, 2016 include:

- About 379 SoCalGas employees installing modules.
- Over 5.4 million meter modules installed representing 90% of the total meters to be upgraded.
- 3,722 data collector units (DCUs) installed and functioning On-Air representing nearly 81% of the estimated 4,600 DCUs required. These DCUs are fully or partially installed in 171 of the 221 cities and counties located within SoCalGas' service territory (77% of total).
- Approximately 97 percent of the installed modules have been deemed 'Billing Ready' and are now used or ready for billing customers.

SoCalGas also completed its third targeted heating season conservation campaign leveraging Advanced Meter-enabled usage data. The conservation campaign launched in November 2015 and extended through the heating season, with most treatments concluding in March 2016. It was the third in the series of four conservation "Test and Learn" campaigns to be conducted over the course of the Advanced Meter project. It incorporated the lessons learned and key findings from the prior two heating season campaigns which were conducted from October 2013 through March 2014 and from November 2014 through March 2015.

The goals of these consecutive conservation campaigns are demonstrating how to best meet the one percent energy savings goal<sup>2</sup> associated with the Advanced Meter rollout and tracking the resulting conservation savings. **Of significance in this most recent campaign was that every one of the thirteen new conservation treatments tested produced statistically significant gas savings.**<sup>3</sup>

These new treatments resulted in savings of over 1.4% total during the 2015-2016 fall/winter period. This is an increase in savings vs. total first year savings rates for the successful<sup>4</sup> treatments tested in the two prior heating season campaigns, and shows continued progress towards the conservation goal. Additional savings of nearly 1.7% were also realized for three of the treatments initially tested during the 2014-2015 campaign and repeated in the 2015-2016 campaign. Continued savings effects were also realized for a few treatments initially tested during the 2013-2014 campaign. **Overall, the new and continued successful treatments produced gas savings of almost 1.5% during the 2015-2016 fall/winter period.** The persistence and sustainability of these conservation results demonstrates the durability of conservation actions as outlined in Ordering Paragraph 5 above.

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<sup>2</sup> This energy savings goal specifically refers to 1% of total *residential* gas usage.

<sup>3</sup> Four out of seven treatments tested during the 2014-2015 heating season campaign generated savings of about one percent total. Four out of eleven treatments tested during the 2013-2014 heating season campaign generated savings of about 1.3 percent.

<sup>4</sup> Successful treatments are comprised of the subset of treatments tested that were successful in producing statistically significant usage reductions.

The Advanced Meter project is currently meeting its schedule, budget and major project milestones; however, continued permitting and construction challenges impede completing the network in accordance with D.10-04-027. SoCalGas has implemented a proactive public outreach strategy to educate and inform impacted residents, businesses, and municipalities of network installation to help mitigate potential concerns. As noted in previous Reports, despite extensive engagement, select municipalities continue to require SoCalGas to secure discretionary permits refuting the CPUC’s preemptory jurisdiction over utility facilities. This discretionary permitting process provides municipalities the unilateral right to significantly modify the planned location or design of the DCUs and even precludes the installation of DCUs by the utility.

Although there has been progress in select areas, by continuing to assert their position municipalities are considerably delaying or preventing the network installation timeline for approximately 150 DCUs or 3% of a total of 4,600 required DCUs. The inability to deploy the necessary infrastructure in these jurisdictions will likely result in SoCalGas having to maintain separate meter reading, communications, data processing and billing systems functions for longer than was anticipated in D.10-04-027 and will negatively impact expected customer, safety, operational and conservation benefits pursuant to Sections 3.C, 3.D and 9 of this report.

## Chapter 2 - Module Installation and Network Construction Status

### 2.A Module Installation Status

SoCalGas has installed 5,435,846 modules through the end of June 2016, with its first installation dating back to October 2012. Table 1 displays the installations performed by Advanced Meter Mass Install personnel and identifies installations completed by other SoCalGas personnel.

Appendix A provides the latest timeline of planned warehouse opening and closings.

**Table 1**  
**Module Installations by Personnel Group**

	<b>Module Only</b>	<b>Meter Change w/Module</b>	<b>Total</b>
Advanced Meter Installations	3,959,301	1,111,515	5,070,816
Other SoCalGas Personnel		365,030	365,030
<b>Total Installations</b>	<b>3,959,301</b>	<b>1,476,545</b>	<b>5,435,846</b>

About 93 percent of the modules are being installed by Advanced Meter personnel, with approximately 7 percent being installed by other SoCalGas personnel. Other SoCalGas personnel are involved when the installation requires extensive modifications to the existing meter configuration, such as installing the modules on complex industrial and commercial

meters; replacing existing curb meters with new curb meters containing a pre-installed module; and when meters are changed through the normal course of business.

As Table 1 displays, nearly 73 percent of the modules were installed on existing meters, while 27 percent of the time, the meter was replaced with a new meter with a module already installed.

Installation teams work out of warehouses leased specifically for the Advanced Meter project. As of June 30, 2016, there were 379 installers employed. Table 2 provides an overview of the installation workforce for each of the warehouses open through June 2016.

**Table 2**  
**SoCalGas Installation Workforce by Warehouse**

<b>Warehouse</b>	<b>Number of Employees</b>
Oakley	34
Rancho Cucamonga	50
LAX	60
Statham	50
South Gate	38
Los Angeles	48
Mission Viejo	54
Anaheim	45
<b>Total</b>	<b>379</b>

Throughout the project, the Advanced Meter team has experienced some injuries and incidents. Table 3 displays safety results from January through June 2016. SoCalGas aspires to have zero incidents and has taken a proactive approach in providing its Advanced Meter team with additional safety and training resources. SoCalGas continues to have an additional day dedicated to safety in the installer training curriculum and as part of its “Safe and Sound” Safety Campaign, SoCalGas continues to create and share short safety films to promote safe behavior at the workplace and at home.

**Table 3**  
**Advanced Meter Safety Incidents**  
**January 1, 2016 through June 30, 2016**

Incident Type	Number of Incidents	Rate*
Occupational Safety & Health Administration (“OSHA”)	19	5.2
Controllable Motor Vehicle Incidents (“CMVI”)	18	5.0
Lost Time Incidents (“LTI”)	4	1.1

\*OSHA Rate is the number of incidents per 200,000 hours worked

\*CMVI Rate is the number of incidents per million miles driven

\*LTI Rate is per 100 workers

**2.B Communication Network Construction Status**

The communications network of the Advanced Meter system is designed to ensure that SoCalGas customers receive their hourly consumption data. It consists of DCUs deployed across the SoCalGas service territory that receive the meter reading data from the modules installed on each meter. Most modules transmit twelve hourly meter reads four times a day with at least three DCUs. Each module communicates for less than two minutes per year. The data is encrypted and transmitted across a licensed frequency from the module to the DCU.

SoCalGas continues to refine the network to improve system performance and based on the latest propagation study provided by Aclara, the technology vendor, the project will install nearly 4,600 DCUs. The actual number of DCUs to be installed is determined by a two-step process:

1. The specific DCU locations, referred to as design points, are determined based on the propagation study which takes into account the location of the modules on the six million meters, the topography of the surrounding area, and the influence of the environment on the transmission of the radio signal. The DCUs can be placed within a 500 foot radius of the design point.
2. After these DCUs are installed, SoCalGas evaluates the performance of the network and identifies gaps in the network. SoCalGas then installs additional DCUs to remediate these deficiencies in performance.

SoCalGas’ plan is to install DCUs prior to the scheduled module installation so that data can be received soon after the module is installed. Overall, SoCalGas has achieved this goal. Table 4 displays the status of the SoCalGas network as of June 30, 2016.



**Table 4**  
**Status of DCUs through June 30, 2016**

<b>DCU Status</b>	<b>Number of DCUs</b>	<b>Percent of DCUs</b>
Installed	3,724	81%
<i>On – Air</i>	3,722	80.9%
Ready to Construct	12	0.3%
Negotiating with Local Governments/Other Third Parties <sup>5</sup>	626	13.6%
Not Started	238	5.2%
<b>Total To Be Installed</b>	<b>4,600</b>	<b>100%</b>

81 percent of the network has been constructed or is ready to construct. By June 30, 2016, SoCalGas has installed 3,724 DCUs with an additional 12 DCUs ready for construction. Of the 3,724 installed, 3,722 DCUs have been commissioned on-air and are receiving reads from installed MTUs. SoCalGas continues to negotiate with local governments and third parties to install the remaining DCUs in the network. Table 5 displays the locations of installed DCUs to date.

**Table 5**  
**Location of Installed DCUs**

<b>DCU Location</b>	<b>Installed DCUs</b>
<b>SoCalGas Owned Poles in</b>	
SoCalGas Facilities	65
Public Right of Way	2,534
Caltrans Right of Way	30
Private Easement	21
Total	2,650
<b>Attached to Third Party Assets</b>	
Los Angeles Bureau of Street Lighting	407
SCE Street Lights	335
PG&E Street Lights	27
SDG&E Street Lights	41
Other Cities Street Lights	236
Other Public/Private Assets	28
Total	1,074
<b>Total DCUs Installed</b>	<b>3,724</b>

<sup>5</sup> Includes municipalities refuting the CPUC’s preemptory jurisdiction over utility facilities.

To date SoCalGas has installed DCUs on a SoCalGas owned pole in the public right of way under its franchise 71 percent of the time. The second most common method has been to install DCUs on local government-owned street lights.

When a DCU is attached to a third party owned asset, SoCalGas negotiates a contract with the asset owner which usually includes:

- Fees to lease the space on the asset; and,
- Energy rates for the electricity to power the DCU.

SoCalGas has executed contracts with the City of Los Angeles Bureau of Street Lights (“BSL”), Pacific Gas & Electric Company (“PG&E”), Southern California Edison Company (“SCE”), San Diego Gas & Electric Company (“SDG&E”), and has reached contract agreements with 143 cities and 6 counties.<sup>6</sup>

Of the 12 counties and 211 cities in the SoCalGas service territory, SoCalGas has finished installing DCUs in 7 counties and in 144 cities/communities.<sup>7</sup> SoCalGas is in active negotiations with several cities and counties to continue installing the remaining DCUs. A limited number of cities and counties have been reopened due to network optimization.<sup>8</sup> To ensure area coverage, the project has reassessed cities and counties that have been completed with the original design and added DCUs where necessary.

With 3,724 DCUs constructed, SoCalGas has received 180 complaints and 79 inquiries, including concerns about the DCUs aesthetics, glare, or location. In each case, SoCalGas contacted the complaining party to resolve the complaint. As a result of customer concerns, SoCalGas has relocated 71 DCUs. Otherwise, the concerns have been resolved without relocating the DCU.

Where the DCU design point falls entirely within private property, SoCalGas negotiates easements with the private property owner(s). Installations of this type usually require a contract to secure the right to locate on the third party property.

When SoCalGas installs a DCU on its own pole, the DCU is solar-powered. When installed on a street light, the DCU is most often powered by electricity from the street light. Given the preponderance of new poles, most of the DCUs are solar powered. Table 6 shows the breakdown between solar and A/C powered DCUs.

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<sup>6</sup> Pursuant to Commission Resolution ESRB-1 dated May 10, 2013 (SCE), Resolution ESRB-2 dated June 27, 2013 (SDG&E) and Resolution ESRB-3 dated June 27, 2013 (PG&E) SoCalGas is able to permanently attach the DCUs to these electric utilities’ street lights.

<sup>7</sup> Appendix B provides a list of the counties and cities with fully installed DCUs as of June 30, 2016.

<sup>8</sup> Appendix C provides a list of the counties and cities that have been reopened.

**Table 6  
Power Source for DCUs**

<b>Installed DCUs</b>	<b>Solar Powered</b>	<b>AC Powered</b>
3,724	2,721	1,003

**Chapter 3 - System Performance**

Two key indicators of the overall Advanced Meter system performance are the performance of the network with respect to the delivery of hourly data for billing and online presentation purposes, and the resulting billing data-related performance. Additional improvements to SoCalGas’ service delivery are also being realized as a result of meter read automation and enhanced data analytics capabilities enabled by the Advanced Meter system. Extended uses of the Advanced Meter system through a network sharing capability also have the potential to provide additional operational and conservation benefits to water agencies and their customers within SoCalGas’ service territory.

**3.A Network Performance**

The most basic measure of system performance is to measure the data delivered as a percentage of the expected data to be delivered. This has direct impacts to both billing and the presentment of hourly gas consumption data to customers. In a perfect system, SoCalGas would receive data for every customer for every hour, each day of the year. To provide this data, the modules must communicate with the DCUs and the DCUs must transmit the data to SoCalGas back office systems 100 percent of the time.

Table 7 displays the breakdown of modules that have successfully communicated with SoCalGas’ back office systems.

**Table 7  
Module Communication Status**

<b>Module Communication Status</b>	<b>Modules Installed</b>	<b>Percent Installed With Network</b>
Total Modules Installed	5,435,846	-
Modules Installed – Incomplete Network	50,519	0.9
Modules Installed with Complete Network <sup>9</sup>	5,385,327	99.1
Delivering 100 Percent of Expected Reads	4,404,706	81.8
Missing 1-12 Reads	719,719	13.4
Missing More Than 12 Reads <sup>10</sup>	226,937	4.2
Missing All Reads	33,965	0.6

About 99 percent of the modules have been installed where network has been completed and only about 1 percent of modules are installed where the network is incomplete. SoCalGas generally installs modules where the network is available; however, some exceptions to installing outside of an available network include instances when new business meters are connected and routine meter changes are being performed. Additionally, when a meter fails in the field, it is replaced with an integrated meter and module, regardless of whether the network is installed or not.

As illustrated in Table 7, approximately 82 percent of the installed modules within a completed network are successfully communicating all of a customer’s hourly data on a monthly basis. About 13 percent of the modules are missing 1-12 reads, which means that they have had only 1 or 2 unsuccessful communications per month. That is, one or two six-hour periods have not been successfully communicated to the SoCalGas back office systems. SoCalGas does not consider a module performing at this level to be problematic for billing as enough hourly data is being received for these purposes.

About 4 percent of the modules are missing more than 12 reads but have communicated at least one read. SoCalGas continues to examine module modifications and network enhancements to improve the performance of these modules.

**3.B Billing Data Performance**

The Advanced Meter modules replace the manual reads with an automated read, with the expectation that the system will produce more accurate reads (no data entry mistakes) and fewer estimated reads (meter access problems are largely eliminated).

Table 8 displays the progression of modules from installation to actual use for billing.

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<sup>9</sup> Number of modules installed within full DCU coverage; full DCU coverage indicates that all planned DCUs for a given area are operational.

<sup>10</sup> Missing more than 12 reads but at least one read has been communicated.

**Table 8  
Advanced Meters Utilized for Billing**

Modules Installed as of June 30, 2016	5,435,846
Modules in 'Billing Ready' Status	5,296,738
Advanced Meter Reads Requested for Billing	5,190,823
Billing Data Provided by Advanced Meter	5,178,544
Billing Data Not Provided by Advanced Meter	12,279
Percent Provided by Advanced Meter – Actual Read	99.6%
Percent Provided by Advanced Meter – Estimated Read	0.1%
Percent Not Provided by Advanced Meter	0.2%

Approximately 97 percent of the installed modules have been deemed 'Billing Ready' and are now used or ready for billing customers. Of the remaining three percent, most are still in the process of completing one of the test elements needed to become 'Billing Ready.' Others are located in areas with incomplete DCU coverage, or are located in areas with insufficient module density to support conversion to Advanced Meter billing.

Modules in areas with network coverage which do not pass the 'Billing Ready' tests are monitored and, if necessary, replaced. They may also point to insufficient network coverage or DCU problems, which are then remediated.<sup>11</sup>

For the Billing Ready modules, the system provides a high percentage of actual reads. The system also provided 0.12 percent of reads which were 'estimated reads' based substantially on reads received earlier in the month, rather than on a particular designated day. Only about 0.24 percent of the reads could not be provided by the Advanced Meter system.

In July 2013, SoCalGas implemented software that enabled the utilization of automated reads for the initiation of new service. With Advanced Meter automation, a field visit to collect a customer's starting read was no longer necessary for turn-on orders that did not require entry into the home. SoCalGas' Customer Service Field organization has seen a reduction of over 1,646,740 orders since the implementation of the automated reads for the initiation of new service.

### **3.C Service Delivery Enhancements resulting from Enhanced Data Analytics**

As the Commission articulated in the AMI decision,<sup>12</sup> the Advanced Meter system "provides [a] system-wide technology platform with the ability to expand operating benefits as new applications emerge." In areas where the communications network is fully deployed, SoCalGas is leveraging Advanced Meter-enabled data analytics and technology by integrating data to develop algorithms that support the continued safe and reliable delivery of natural gas to its

<sup>11</sup> As referenced in Chapter 2, additional DCUs may have to be added to improve system performance.

<sup>12</sup> D. 10-04-027, page 40.

customers. These enhanced data analytics enable identification of unusual gas consumption patterns at customer facilities.

Though in the exploratory phase, this new and more granular awareness of energy data utilization is uncovering new opportunities and benefits potential. Leveraging the Advanced Meter network could result in faster identification of abnormally high gas usage, which enables SoCalGas to identify, investigate, and respond to potential safety situations quicker. By discovering abnormally high gas usage and notifying customers, SoCalGas can reduce methane emissions at customer facilities saving energy, improving air quality while also reducing the financial burden on customers from higher usage.

The Advanced Meter team assesses unusual consumption patterns on closed accounts using a Per Day Average and in some cases will look at the hourly reads to conduct further research. During the exploratory phase of SoCalGas’ enhanced data analytics, the following results have been achieved. Table 9 summarizes the results of the 1103 exploratory service orders fielded through June 30, 2016.

**Table 9  
Gas consumption data analytics results through June 30, 2016**

<b>Findings from completed field visits (project to date)</b>	<b>Number of field visits</b>	<b>Percent</b>
<b>Total field visits generated by consumption analytics awareness</b>	<b>2056</b>	
Gas services closed by SoCalGas field technician due to excessive registration. Resolution takes place at the time of the follow-up field visit to reinstate gas usage.	835	40.6
Gas or hot water leaks corrected by the customer as a result of SoCalGas field visit	445	21.6
Hot water leaks where the hot water heater was in continuous demand	416	20.2
Gas leak found by SoCalGas field technician	322	15.7
Abnormal gas usage resulting from an appliance in use for an extended period of time (e.g., forgotten pool heater left on).	38	1.8

Leveraging Advanced Meter consumption analytics is a component of a more comprehensive set of processes and inspections aimed at ensuring public safety and SoCalGas expects that, as it continues to build out enhanced analytics capabilities enabled by the Advanced Meter system, further customer service and safety benefits will accrue to its customers. More rapid detection and resolution of gas and hot water leaks provides enhanced safety for customers and their communities, as well as provides energy and financial savings, reduced greenhouse gas emissions, and conservation of our increasingly scarce water supplies.

### **3.D Extending the Use of the Advanced Meter Network**

As articulated in our AMI Application, SoCalGas recognizes the State’s priority and urgency in encouraging and enabling water conservation and as such included the requirement for an AMI technology capable of reading water meters. This network sharing capability has the potential to provide significant operational and conservation benefits to water agencies and their customers within SoCalGas’ service territory.

In order to operationally evaluate the feasibility of the “Shared Network” concept, SoCalGas has established one-year pilots to be conducted by Aclara and SoCalGas with a limited number of water utilities. Three municipal water utilities are participating in this pilot, and as of June 30, 2016 there were approximately 1,400 water MTUs successfully transmitting data from water utility MTUs over the SoCalGas Advanced Meter Network.

SoCalGas, along with the other Energy IOUs in California, were asked to develop pilot proposals<sup>13</sup> to identify technical issues with a Commission-regulated water corporation “piggybacking” on electric corporation and/or gas corporation AMI infrastructure,<sup>14</sup> or to structure new pilots to explore different questions if pilots on AMI were already underway.<sup>15</sup> As part of this effort, SoCalGas submitted a proposal which in addition to network sharing, includes the identification and evaluation of potential hot water leaks based on analytics of both gas and water AMI data, as well a study of the potential benefits associated with hot water leak detection and resolution. This proposal was approved by the CPUC on June 9, 2016 with D.16-06-010, and SoCalGas has begun work with a technology vendor (Aclara), a 3<sup>rd</sup> party analytics vendor (Valor Water Analytics), and two separate Commission-regulated water utilities (San Gabriel Valley Water Company, California American Water) on this effort.<sup>16</sup>

In addition to the Advanced Meter network being shared by external water utilities, other groups within SoCalGas are leveraging the network. As part of a pilot project by the Pipeline Safety Enhancement Plan (PSEP) group, data from a sensor device to detect, measure and monitor methane in the area near a transmission pipeline is being transmitted over the Advanced Meter network. As of June 30, 2016, twelve of these methane sensor devices have been installed in the field and are successfully communicating over the Advanced Meter network with the ability to provide remote alarm registration and processing when the methane-in-air concentration, as measured by the sensors, exceeds limits established for our testing period.

## **Chapter 4 - Financial Status**

To track expenses during the project, Ordering Paragraph 7 of the D.10-04-027, stated:

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<sup>13</sup> D.15-09-023, p. 46.

<sup>14</sup> D.15-09-023, p. 47.

<sup>15</sup> D.15-09-023, p. 47.

<sup>16</sup> SoCalGas Advice No. 5014 and SoCalGas Advice No. 4992.

“Southern California Gas Company shall file an advice letter no later than 30 days from the effective date of this decision, establishing a balancing account and detailing the cost recovery mechanism in conformance with this decision. Southern California Gas Company is authorized to recover deployment costs up to \$1.0507 billion in this account, plus additional amounts, if any, consistent with the terms and conditions of the Risk Sharing Mechanism approved in Ordering Paragraph 2.”

On August 4, 2010, the CPUC approved AL 4110, effective April 8, 2010, which established the Advanced Meter Infrastructure Balancing Account.

The CPUC approved budget of \$1,050 million for the SoCalGas Advanced Meter project was augmented by re-directing \$13.5 million of previously approved General Rate Case funding for a Remote Automated Meter Reading (“RAMR”) project. SoCalGas halted the implementation of its RAMR project, a drive-by meter reading system, when its Advanced Metering Infrastructure (“AMI”) application was submitted, and in the AMI application requested that this funding be re-directed to the Advanced Meter project. In D.10-04-027, the CPUC approved this request.<sup>17[1]</sup> The total budget for the SoCalGas Advanced Meter project is \$1,064 million, which included a contingency fund of \$68.7 million.

The sequencing of the spending to date is typical of the pattern for many major projects. The early years of the project were spent organizing the large project team; developing new business processes; and building and implementing the information systems that support the construction of the DCUs and installation of the modules. SoCalGas’ plan contemplated that the DCUs would be constructed prior to the installation of the modules so that the modules would be effective in delivering benefits to customers. As indicated in Chapter 2, SoCalGas began installing its DCUs in June 2012 and its modules in October 2012.

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<sup>17</sup> A.08-09-023, Prepared Direct Testimony of Edward Fong, page 15.



**Table 10**  
**Financial Results (in \$Thousands)**  
**Recorded 2010 through June 2016**

	2010	2011	2012	2013	2014	2015	YTD 2016	Project to Date
<b>Project Management Office</b>	2,619	6,477	6,634	4,945	4,023	3,415	1,663	29,776
<b>Meters, Modules &amp; Installation</b>	120	3,718	28,067	116,030	183,117	170,210	38,721	539,983
<b>Network</b>	777	3,744	14,429	23,805	18,796	15,306	6,586	83,443
<b>Information Technology</b>	6,011	16,873	21,931	16,015	10,491	11,108	2,545	84,974
<b>Customer Outreach</b>	324	1,027	2,085	5,502	5,195	4,786	1,926	20,845
<b>Employee Awareness</b>	65	3,078	3,732	2,088	1,051	1,087	407	11,509
<b>Support Organizations<sup>18</sup></b>	303	-	1,162	3,576	4,517	4,684	4,357	18,599
<b>Overheads &amp; AFUDC<sup>19</sup></b>	2,382	10,828	23,663	33,812	40,499	32,135	16,562	159,879
<b>Total</b>	<b>12,601</b>	<b>45,745</b>	<b>101,594</b>	<b>205,746</b>	<b>268,807</b>	<b>242,732</b>	<b>72,768</b>	<b>949,008</b>

Table 10 displays the Advanced Meter spending through June 30, 2016, by the major project activities. The purchase and installation of meters and modules continue to be the primary source of spending at approximately \$540 million project to date. The next large areas of spend are in information systems and the construction of the communication network with approximately \$85 and \$83 million in spend, respectively. Although the project has fully absorbed the authorized contingency SoCalGas believes the project will be delivered within the approved budget.

### Chapter 5 - Meter Reading Work Force Impacts

The Meter Reading work force is the most significantly impacted by the Advanced Meter project as Meter Reading positions will all but be eliminated by the project.<sup>20</sup> Both SoCalGas and the CPUC are concerned about these impacts. The Commission specifically addressed this concern. Ordering Paragraph 1 of the D.10-04-027 states:

<sup>18</sup> Support organizations are comprised of SoCalGas departments outside of Advanced Meter that are funded by the project for project related work or for work identified in business case.

<sup>19</sup> Overheads are the indirect costs associated with the work being performed (e.g. payroll taxes, benefits, general and administrative expenses). AFUDC is the net cost for borrowed funds used for construction purposes. The calculation of these costs is in accordance with the FERC Code of Federal Regulations.

<sup>20</sup> Some personnel may continue to manually read meters in support of the CPUC authorized Opt-Out program.

“Southern California Gas Company shall supplement by \$1 million, its funding for workforce retention and retraining. This fund is established to better protect the employment interests of Southern California Gas Company’s meter reading workforce and should be used to extend severance, vocational training, and other transitional opportunities to employees affected by the decision to pursue advanced metering infrastructure.”

In response to this direction, SoCalGas set aside funding in its Enhanced Educational Assistance Fund specifically to support the Meter Reading personnel in place in April 2010. As of June 30, 2016, meter readers had been reimbursed approximately \$103,000 through this fund.

While meter readers have been active in seeking employment opportunities within SoCalGas the fund has not been heavily utilized, so as part of our continuing efforts to support our employees’ transition to potential job opportunities, SoCalGas has expanded the retention and retraining efforts to include skills orientation workshops. These workshops are designed to familiarize employees with the mechanical and technical skills associated with piping, tools usage, natural gas appliance and distribution system construction work. The workshops are voluntary and are offered on Saturdays.

The orientation workshops offer transitional skills that could be applied toward job opportunities within and outside of SoCalGas. The target employee group has also been expanded to include all current meter reading employees as well as AMI Field Representatives. All of these employees will be affected when Advanced Meter implementation is completed in 2017.

SoCalGas has allocated \$42,400 from the authorized funding from 4<sup>th</sup> Quarter 2014 through 2016 to provide these workshops for employees. SoCalGas will continue to offer enhanced educational assistance reimbursement to the remaining eligible meter reading employees.

Table 11 displays the current status of those Meter Reading personnel who were employed in April 2010, when the project was approved by the CPUC.

**Table 11  
Status of Meter Reading Personnel Employed in April 2010**

<b>Meter Reading Personnel</b>	<b>Work Force in April 2010</b>	<b>Remain in Meter Reading June 30, 2016</b>	<b>Left Company</b>	<b>Transition Within Company</b>
Full-time	166	13	19	749
Part-time	818	21	182	
Management	46	12	8	26
<b>Total</b>	<b>1,030</b>	<b>46</b>	<b>211</b>	<b>773</b>
<b>Percent of Work Force</b>	<b>100%</b>	<b>4.5%</b>	<b>20.25%</b>	<b>75.25%</b>

As Table 11 shows, 773 employees (75 percent of the Meter Reading personnel from April 2010) have transitioned to another position within SoCalGas. Twenty percent of those employed in 2010 have left SoCalGas and 46 employees (4.5 percent) remain in the Meter Reading organization.

SoCalGas continues to encourage Meter Reading employees to explore all company opportunities outside of the Meter Reading organization.

## **Chapter 6 – Community Education and Outreach**

SoCalGas personnel perform an array of outreach activities to inform customers about Advanced Meter project activity. SoCalGas developed a local stakeholder education and community outreach program to ensure every city and county SoCalGas serves is addressed. During the network construction process, outreach is done at the city level with initial city briefings to the city manager and staff including informational presentations to city councils as well as any other sub-committees as necessary. Outreach to the community includes, but is not limited to: one-on-one customer meetings, door knocking, and meetings with homeowner associations, community/neighborhood councils, community groups, and mailings. These efforts include briefing local elected officials, media outreach, community town hall events and local speaking engagements.

### **6.A Outreach Organizations and Events**

To date, we have participated in over 3,080 events. In the time frame of January 1, 2016 through June 30, 2016, SoCalGas completed over 300 public outreach activities, including briefings, presentations, exhibit booths, door-to-door, public service announcements, etc.

Outreach efforts are complemented by a number of local organizations who simultaneously perform outreach activities under contract to SoCalGas. First quarter of 2016 was the last group of organizations brought on board to assist SoCalGas with outreach efforts. SoCalGas continued to partner with GeM Communications (GeM) to manage the solicitation and implementation for local organizations to perform community outreach on behalf of SoCalGas. GeM manages the request for proposal (RFP) process and contracts with community- and faith-based organizations (CBOs, FBOs), disability agencies, Chambers of Commerce, and business organizations that conduct outreach to sensitive communities and customers in specific Advanced Meter installation areas. As of June 2016, nearly 150 organizations have been contracted to support outreach activities for the project with seven active during the time period of this report. Due to the Advanced Meter project ramping down, SoCalGas will no longer be bringing on board organizations through this RFP process. Appendix D provides a list of organizations contracted through GeM.

## Chapter 7 - Customer Awareness and Satisfaction

SoCalGas monitors the impact of its outreach activities in the areas of customer awareness and customer satisfaction as it relates to the Advanced Meter project. SoCalGas utilizes a variety of market research diagnostics to monitor the “pulse” of customers pertaining to the Advanced Meter installation process, customer communications, new programs and services, and customer attitudes and motivational drivers to behavioral change.

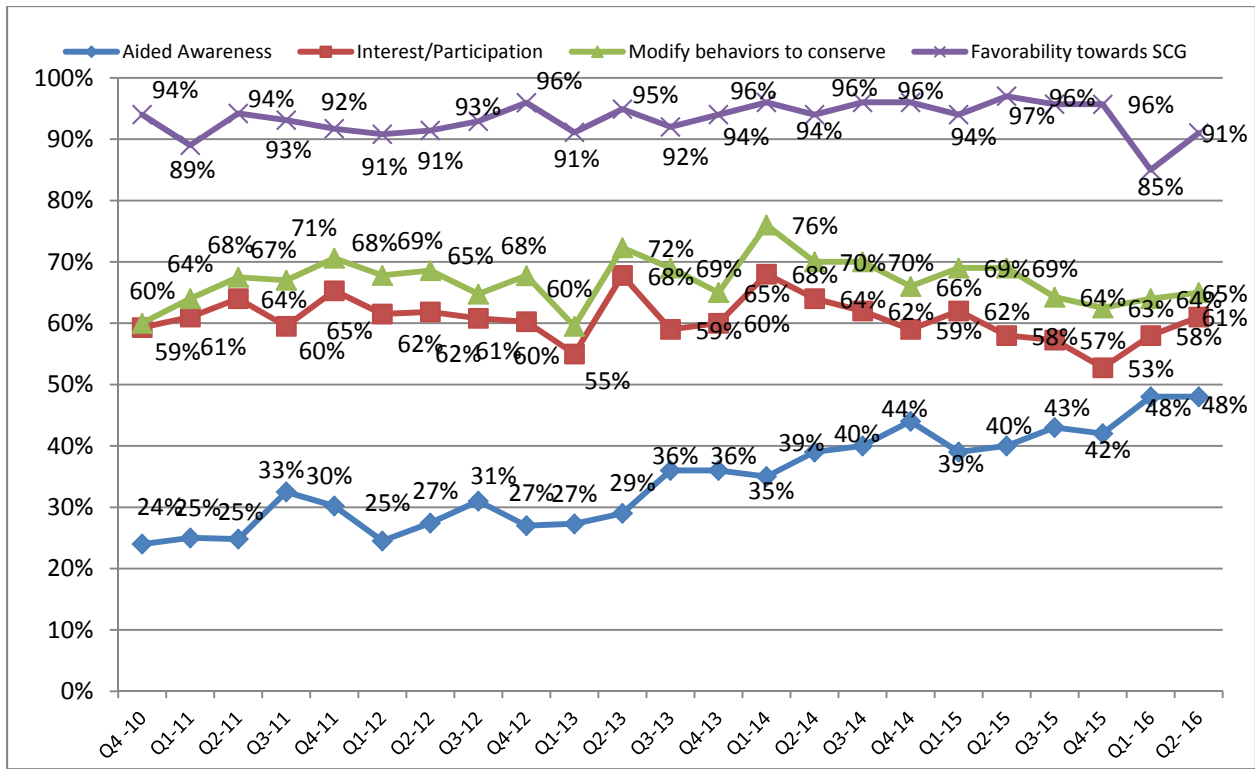
For purposes of monitoring overall customer awareness and perceptions, SoCalGas uses the Customer Insight Study (“CIS”)<sup>21</sup> which is administered by Davis Research. CIS is SoCalGas' public opinion tracking study. It is a phone survey measuring residential (quarterly) and business (semiannually) customer opinion across several factors: favorability, price and value, safety, reliability and reputation. The survey is administered to a representative sample of SoCalGas' customer base, including customers for whom an Advanced Meter has not yet been installed.

Beginning in the fourth quarter of 2012, SoCalGas added three Advanced Meter related questions to the tracking survey. Figure 1 displays the CIS results for the general awareness questions about Advanced Meter for residential customers while Figure 2 displays the results for business customers.

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<sup>21</sup> Formerly called iTracker Customer Perception Study.

**Figure 1**  
**Customer Insight Study – Residential Customers**



Questions:

IM1. How would you rate SoCalGas overall on a scale of 1 to 7 where 1 means very unfavorable and 7 means very favorable?

AM1. Are you aware of a new gas meter that transmits natural gas usage information remotely and more frequently from the meter to SoCalGas?

AM2a. Having access to your daily natural gas usage (therms/dollars) information would make you interested in viewing it more than once a month? (% Agree)

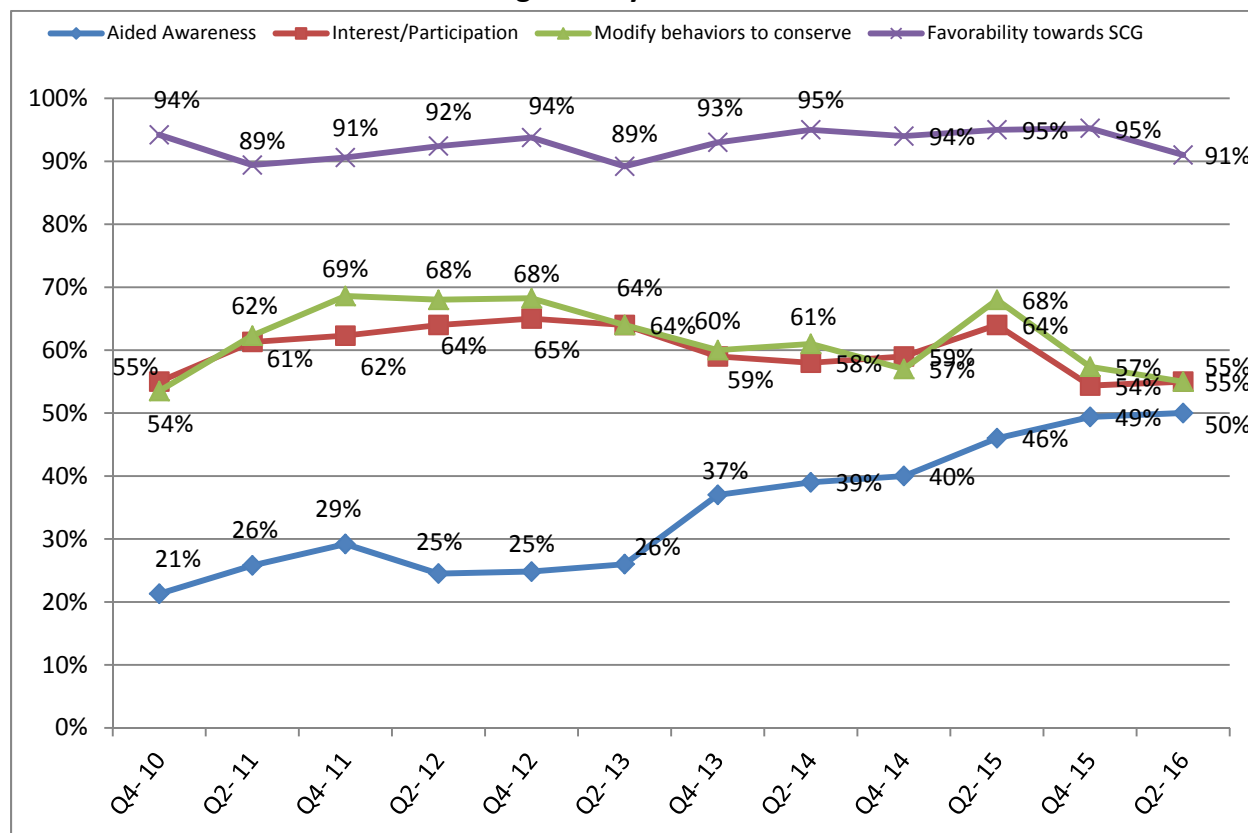
AM2b. Having access to your daily natural gas usage (therms/dollars) information would cause you to modify your behaviors to conserve natural gas? (% Agree)

By Q2 2016 almost half of SoCalGas residential customers surveyed were aware of the Advanced Meter project. This 48 percent level of awareness is a new all-time high for CIS and represented a significant increase compared to Q4 2015. This general upward trend over the past several years seems to reflect the increased volume of customer communications about the project as well as an increase in installations. Of those customers who were aware of the project, 36 percent mentioned bill inserts or newsletters as their source, and 25 percent mentioned that a meter had been installed at their home.

Customer ratings for help answering billing questions and giving them information to control usage remained the highest rated motivators with 74% and 73% respectively. Customers' interest in viewing consumption data has been experiencing an upward trend for three straight

quarters from 53 percent in Q4 2015 to 61 percent in Q2 2016. Additionally, the interest in conserving natural gas has maintained constant levels for the past three quarters.

**Figure 2**  
**Customer Insight Study – Business Customers**



Questions:

IM1. How would you rate SoCalGas overall on a scale of 1 to 7 where 1 means very unfavorable and 7 means very favorable?

AM1. Are you aware of a new gas meter that transmits natural gas usage information remotely and more frequently from the meter to SoCalGas?

AM2a. Having access to your daily natural gas usage (therms/dollars) information would make you interested in viewing it more than once a month? (% Agree)

AM2b. Having access to your daily natural gas usage (therms/dollars) information would cause you to modify your behaviors to conserve natural gas? (% Agree)

Advanced Meter awareness among business customers edged up to 50 percent in the second quarter of 2016, reaching its highest level to date. Despite the directional increase in awareness, business customers’ interest in viewing the hourly consumption data has decreased to 55 percent after spiking to 64 percent Q2 2015. Similarly, intent to modify behaviors to conserve also experienced a directional decline to 55 percent, back to the levels seen prior to the Q2 2015 spike.

## **Chapter 8 – Elevated Customer Inquiries and Deferral/Opt-Out Program Enrollments**

SoCalGas customers may inquire about the Advanced Meter project by contacting either the SoCalGas Customer Contact Center (“CCC”) or the Advanced Meter Customer Information Center (“CIC”). The CCC addresses customer inquiries about any subject while the CIC typically makes appointment arrangements with customers to have their Advanced Meter installed. Advanced Meter “opt-out” requests are processed by the CCC.

Some customer inquiries were not routinely resolved and were escalated to Advanced Meter Customer Experience staff. There have been about 8,202 inquiries since the project’s inception. The number of escalated customer inquiries is very low, considering the volume of Advanced Meter communications that have been distributed to SoCalGas customers. Through June 2016, over five million pre-installation letters were mailed to customers. The most common cause of the escalated inquiries is requests to defer/opt-out of the installation of the Advanced Meter communications module.

Although customers can call either the CCC or the CIC to have their deferral/opt-out requests recorded, some ask to speak to the Advanced Meter Customer Experience staff. Their questions usually revolve around safety and privacy concerns, as well as comments on the Advanced Meter Opt-Out Program fees.

Table 12 displays a breakdown of enrollment status for the Advanced Meter Opt-Out Program as of June 30, 2016.

**Table 12**  
**Advanced Meter Opt-Out Program Enrollment**

Inquiry Type	Number Received	Explanation
Active customer-requested Opt-Out Program enrollments <sup>22</sup>	6,804	The number of customers actively enrolled and being billed for Opt-Out Program fees and charges. <sup>23</sup>
Active customers defaulted in to the Opt-Out Program	17,416	The number of customers that have been default enrolled <sup>24</sup> and are being billed for Opt-Out Program fees and charges.
<b>Total Active Opt-Out Program enrollments</b>	<b>24,220(0.4%)</b>	
Customer Opt-Out Program requests to “opt back in” to Advanced Meter installation	34,884	The number of customers that requested to be removed from the Opt-Out Program (includes customers in both an “Active” and “Pending Enrollment” Opt-Out Program status).

In March 2014, SoCalGas’ Opt-Out Program became effective and the project team initiated efforts to inform employees of the Opt-Out Program and revised any impacted company communication materials. The interim opt-out fees approved by the Commission were consistent with those previously adopted for the other California Investor-Owned Utilities (“IOUs”).<sup>25</sup> SoCalGas’ Advanced Meter Opt-Out Program interim fees for residential customers were as follows:

- Non-CARE Customers: Initial fee of \$75.00 and \$10.00/month ongoing cost
- CARE Customers: Initial fee of \$10.00 and \$5.00/month ongoing cost

In December 2014, the Commission issued D.14-12-078 regarding the Smart Meter Opt-Out Phase 2 proceeding; this decision reiterated approval of the interim opt-out fees and charges

<sup>22</sup> “Active” includes only those customers who are enrolled in the Opt-Out Program and are currently being billed associated Opt-Out Program fees. Many customers in a “Pending” status, once presented with final communications regarding Opt-Out Program fees, elect to terminate their prior request for enrollment in the Opt-Out Program. Similarly, customers about to be default-enrolled due to repeated installation/access attempts sometimes contact SoCalGas to schedule an installation prior to being actively enrolled.

<sup>23</sup> SoCalGas implemented its Advanced Meter Opt-Out Program effective March 19, 2014, pursuant to D.14-02-019. These customers either requested to defer from an Advanced Meter module installation prior to March 19, 2014, or subsequent to March 19, 2014, requested to enroll in the Advanced Meter Opt-Out Program.

<sup>24</sup> These customers were defaulted (automatically enrolled) into the Opt-Out Program due to several unsuccessful attempts by SoCalGas to contact the customers to provide access for the installation of the Advanced Meter.

<sup>25</sup> D.12-02-014 (PG&E), D.12-04-018 (SCE), and D.12-04-019 (SDG&E).



and adopted them as permanent opt-out fees and charges for residential customers for each of the California IOUs.

In April 2015, pursuant to the Commission's Phase 1 and Phase 2 Opt-Out decisions, SoCalGas implemented modifications to its billing system to begin charging opt-out fees to Opt-Out Program participants, including customers who were defaulted into the program. Additionally, information regarding key new features introduced in the Phase 2 decision was incorporated into existing customer talking points and all relevant Advanced Meter customer and external communications materials.

SoCalGas still expects the total percentage of customers who will eventually opt-out to be within the planning assumption of 0.5 percent (0.4% as of June 2016).

## **Chapter 9 - Conservation Outreach Campaigns**

D.10-04-027 set a goal for SoCalGas to reduce residential gas consumption by one percent and placed reporting requirements on SoCalGas which are referenced in the introduction to this report.<sup>26</sup>

In November 2015, SoCalGas initiated the third heating season campaign of a multi-year outreach campaign aimed at demonstrating how to best drive behavior change to reach the Advanced Meter one percent conservation goal. This campaign followed a "Test and Learn" approach and generally ran through March 2016.<sup>27</sup> The overall strategy for the 2015-2016 conservation campaign design was to incorporate lessons learned from the prior two heating season campaigns conducted in 2013-2014 and 2014-2015, with a goal towards increasing engagement levels in order to achieve behavioral change that would drive energy conservation of one percent or more. SoCalGas will continue to incorporate the lessons learned from each consecutive heating season campaign and adjust campaigns in future years to focus on the most promising customer segments and communication channels.

SoCalGas has continued to team with Nexant on several aspects of its conservation campaign implementations and post-campaign evaluations. The primary objectives were as follows:

- 1) Develop comprehensive conservation outreach plans incorporating a "Test and Learn" program development strategy with a focus on continuous assessment and improvement in the performance of feedback programs;
- 2) Perform evaluations of each year's conservation campaign results, as well as evaluating any continued conservation effects resulting from the prior years' campaigns; and
- 3) Provide recommendations and guidance for the next heating season's proposed "Test and Learn" plan, as well as associated follow-on evaluation of campaign results.

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<sup>26</sup> This energy savings goal specifically refers to 1% of total *residential* gas usage.

<sup>27</sup> A few treatments tested also included year-round elements.

## 9.A Conservation Customer Engagement and Results

The major features of the 2015-2016 conservation campaign were:

- Given the cost-effectiveness of its delivery via electronic channels (email and text), a new, enhanced version of the default weekly “Bill Tracker Alert” (BTA) email featuring a more graphical data display was tested vs. the existing text and data-intensive version of the BTA email;
- Default BTAs with and without associated informational materials were tested in the same population to conclusively determine whether these costly supplemental materials are necessary for achieving significant reductions from BTAs;
- Innovative new behavioral methods that more fully leverage AM data were tested, including weather sensitivity-based reports (“Seasonal Energy Update” reports) and alerts targeted to customers identified through AM-enabled analytics as those with gas usage habits most sensitive to colder weather;
- The Opower Home Energy Report HER was tested on a new treatment population and with focused thermostat messaging and income-based segmentation with the goal of improving performance;
- Aclara HERs (“Home Energy Update”) treatments from the 2014-2015 campaign were discontinued in their current form; a redesigned Aclara-facilitated HER campaign that builds on key lessons learned relative to the Aclara HER campaigns may be incorporated into the final 2016-2017 campaign;
- A Spanish language paper Opower HER and welcome materials were tested in lieu of the English language materials to customers in areas with high rates of Latino population who had indicated a Spanish language preference to determine whether providing English-only materials creates a language barrier for Spanish speakers; and
- Treatments continued to be tested with the top two usage quartiles of customers since they both produce measurable therm savings.

**Of significance in this most recent campaign was that every one of the thirteen new conservation treatments tested produced statistically significant gas savings.<sup>28</sup>**

As shown in Table 13, **these new treatments resulted in savings of over 1.4% total during the 2015-2016 fall/winter period.** This is an increase in savings vs. total first year savings rates for the successful<sup>29</sup> treatments tested in the two prior heating season campaigns, and shows continued progress towards the conservation goal.

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<sup>28</sup> Four out of seven treatments tested during the 2014-2015 heating season campaign generated savings of about one percent total. Four out of eleven treatments tested during the 2013-2014 heating season campaign generated savings of about 1.3 percent.

<sup>29</sup> Successful treatments are comprised of the subset of treatments tested that were successful in producing statistically significant usage reductions.

**Additional savings of nearly 1.7% were also realized for three of the treatments initially tested during the 2014-2015 campaign and repeated in the 2015-2016 campaign.** Continued savings effects were also realized for a few treatments initially tested during the 2013-2014 campaign.

**Table 13  
Percent Reduction in Fall/Winter 2015-2016 Gas Usage  
for Residential Conservation Treatments**

<b>Treatment</b>	<b>Percentage Reduction</b>
13 New Treatments	1.42%
3 Repeated 2014-2015 Treatments	1.67%
Continued Effects from 2013-2014 Treatments	1.38%
<b>Overall % Reduction</b>	<b>1.48%</b>

**Overall, the new and continued successful treatments produced gas savings of almost 1.5% during the 2015-2016 fall/winter period.** The persistence and sustainability of these conservation results demonstrates the durability of conservation actions as outlined in Ordering Paragraph 5 included on page 4 of this Report.

Please refer to Appendix E, **“Evaluation of Southern California Gas Company’s 2015-2016 Conservation Campaign, August 2016”** provided by Nexant for a comprehensive evaluation of the results of this conservation campaign, as well as recommendations for SoCalGas’ 2016-2017 conservation “Test and Learn” campaign approach.

As outlined in the recommendations contained within Nexant’s report, for the 2016-2017 conservation campaign, high performing program design options from the first three campaigns will be retained and enhanced. Additionally, new program design alternatives and segmentation approaches will be tested and re-tested. The goal is that, over the course of the Advanced Meter project, the most effective means for encouraging energy savings from information feedback will be identified and offered to customers. Underperforming customer segments have been excluded from the 2015-2016 campaign and going forward in order to allocate resources towards segments that have a higher propensity to change behavior and conserve energy.

Though some customers may be excluded from future targeted conservation campaigns, every SoCalGas customer receives a letter within 60 days of becoming Advanced Meter “Billing Ready” that outlines all the new energy information feedback options available to them enabled by an Advanced Meter. Customers who are “My Account” customer portal users also

receive an email and a notification message within the My Account portal highlighting the new functionality.

In addition to the conservation “Test and Learn” campaign treatments and outcomes described above, following is an update regarding related customer engagement metrics and indicators for the 2015-2016 customer conservation programs and associated Advanced Meter-enabled energy presentation and analysis tools.

## 9.B Conservation Campaign Update

### 9.B.1 Opower Home Energy Reports

As outlined above, given the success of Opower’s Home Energy Reports in generating conservation savings in the prior two campaigns, SoCalGas contracted with Opower to implement numerous treatments for the 2015-2016 campaign. This included continuation into a second heating season for the three 2014-2015 Opower HER test cell treatments. Eight new test cells were also assigned to Opower HER treatments to test out variations of the HER approaches. These included further evaluation of their effectiveness for CARE and Non-CARE customers, for Spanish-language customers, and for alternative, Thermostat-focused messaging.

The Opower HER contains personalized usage information that is designed to help customers save energy and money. This report engages customers primarily through the “Neighbor Comparison” information. A customer’s current gas usage is compared to approximately 100 nearby occupied homes with similar characteristics- such as square footage and heating system. These comparisons, along with personalized energy saving tips, can help customers understand how they can conserve natural gas.

A total of 587,157 paper HERs and 465,963 e-HERs (emailed HERs) have been sent from November 2015 through June 2016.

**Table 14**  
**Nov. 2015 - June 2016 New and Continuing Opower Home Energy Reports**

Paper HERs	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Continuing	72,545	59,579	57,962	57,350	0	0	0	0	247,436
New Treatments	107,740	82,562	75,943	73,476	0	0	0	0	339,721
<b>Total Paper Report Sent</b>	<b>180,285</b>	<b>142,141</b>	<b>133,905</b>	<b>130,826</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>587,157</b>
e-HERs									
Total eHERs Sent	12,088	33,856	71,114	72,417	72,402	67,544	68,418	68,124	465,963

As of June 30, 2016, 1,171 (0.6 percent) Opower HER program enrollees opted-out of receiving further Opower HERs during the current campaign. A total of 15,151 e-HERs have been opened from November 2015 through June 2016, an average of 1,894 per month. E-HERs delivered an average open rate of about 36.5% percent, and 3.0 percent of all e-HERs opened have resulted in click-through activity.

Customer acceptance of the Opower treatments remains strong as indicated by both the low opt-out rate for recipients of these reports, coupled with the findings of customer satisfaction research performed with a sampling of the recipients of the reports from the 2014-2015 campaign as reported in the August 2015 Report.

### **9.B.2 SoCalGas (Aclara-facilitated) “Seasonal Energy Update” Reports**

As outlined in section 9.A, in the 2015-2016 campaign, SoCalGas tested innovative behavioral methods that more fully leverage AM data. In collaboration with Aclara, SoCalGas developed energy reports targeted to customers based on their individual weather sensitivity, called “Seasonal Energy Update” reports. The Seasonal Energy Update report campaign included paper reports and companion cold weather period alerts targeted to customers identified through AM-enabled analytics as those with gas usage habits most sensitive to colder weather.

Two test cells were assigned to these Aclara-facilitated treatments and include the following: Test Cell 1 customers received four paper reports, one Welcome Letter/Frequently Asked Questions, three Frequently Asked Questions inserts, one Repositionable Thermostat Setting Reminder Decal,<sup>30</sup> and three Cold Weather Email Alerts. Test Cell 2 customers received four paper reports, one Welcome Letter/Frequently Asked Questions, three Frequently Asked Questions Insert and one Repositionable Thermostat Setting Reminder Decal.

The Aclara-facilitated Seasonal Energy Update reports contained personalized usage information to help customers understand their home energy usage when temperatures get cold and to offer tips on how to save energy. Each monthly report provided three pieces of information: 1) Comparison to Neighbors during cold weather; 2) Normal Day vs Cold Day Usage Comparison; and 3) Savings Tips. Customers were also encouraged to lower their thermostat settings to 58 degrees when they’re away and 68 degrees when they’re at home.

A total of 168,212 paper Seasonal Energy Update reports were mailed and 51,963 Cold Weather Alert emails were sent from November 2015 through February 2016.

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<sup>30</sup> Note: Some customers might have received the repositionable thermostat setting reminder decal twice. The decal was intended to go out in the December mailing, but due to some printing issues, not all customers received the decal in their mailing. In order to ensure that all customers received the decal, it was mailed in the January mailing as well.

**Table 15**  
**Aclara Home Energy Update Reports**

	Nov	Dec	Jan	Feb
<b>Paper Seasonal Energy Updates</b>	42,619	42,535	41,849	41,209
<b>Emailed Alerts</b>	No Alert	17,713	17,356	16,894

As of June 30, 2016, 262 (0.61 percent) of program enrollees opted-out of receiving further Seasonal Energy Update reports. For the emailed alerts delivered November 2015 through February 2016, on average, 40 percent of the email alerts have been opened and one percent of all email alerts opened have resulted in click-through activity.

Customer acceptance of the Seasonal Energy Update report treatments was also strong as indicated by both the very low opt-out rate for recipients of these reports, coupled with the findings of customer satisfaction research performed with a sampling of the recipients of the reports from the 2015-2016 campaign as reported in Appendix E.

### **9.B.3 Bill Tracker Alerts Enrollment**

SoCalGas Bill Tracker Alerts (BTAs) offer several key features to help customers maintain a high level of energy usage awareness and engagement with SoCalGas. They help customers maintain “top of mind” awareness of their natural gas consumption which is critical to creating the ongoing behavioral change necessary to achieve energy conservation.

Bill Tracker Alerts provide “Advanced Meter Billed” customers with the following information on a weekly basis and are sent alerts via email and/or mobile phone SMS text message:

- Bill-to-Date (\$)
- Projected Next Bill (\$)
- Last year, Same Month Bill Amount (\$) [Seasonal comparison]
- Days Remaining in the Current Billing Cycle (#)
- Last Month’s Bill Amount (\$)\*
- Days Elapsed in the Current Billing Cycle (#)\*
- Choice of weekly email and/or SMS text messages

*\* provided via email only, due to 160 character text limitation*

As outlined in Section 9.A, given continued proven savings results coupled with the cost-effectiveness of BTA delivery via electronic channels (email and text), the SoCalGas 2015-2016 “Test and Learn” campaign treatments included continued testing of different BTA options and approaches. Treatments included testing the existing default (auto-enrolled) BTA, as well as a new, enhanced BTA. The new, enhanced version of the default weekly BTA email features a more graphical data display, vs. the existing text and data-intensive version of the BTA email.

The 2015-2016 campaign also incorporated testing the two versions of the BTAs with and without associated informational materials in the same population to conclusively determine whether these costly supplemental materials are necessary for achieving significant reductions from BTAs. Samples of both the current and enhanced weekly Bill Tracker Alert emails, as well as the associated supplemental paper and email communications, may be found in Appendix E.

Through June 30, 2016, 306,489 SoCalGas customers are actively enrolled in Bill Tracker Alerts (see Table 16 below, which provides cumulative enrollments-to-date). These enrollments support the Advanced Meter project conservation savings goal as well as SoCalGas’ 2013-2016 Energy Efficiency behavior change program household participation goals.<sup>31</sup>

**Table 16**  
**SoCalGas Bill Tracker Alerts Enrollment**

Item	Count through June 30, 2016
<b>Total Subscriptions</b>	<b>377,795</b>
Auto Enrollment	306,192
Microsite – Online @ billtracker.socalgas.com	13,516
Microsite – Business Response Cards	7,611
Microsite – Hard-to-Reach Events	724
My Account/CSR – “Manage Alerts”	49,752
<b>Total Unsubscriptions<sup>32</sup></b>	<b>71,306</b>
By Customer (subscribed via Microsite/Auto Enrollment)	8,127
By Customer (subscribed via My Account)	1,995
By System (i.e., Account Closed)	61,184
<b>Total Active Subscriptions</b>	<b>306,489</b>

The BTAs retention rate continues to remain high at 81 percent. Eighty-five percent of the “unsubscribes” are due to system factors, such as customer account closures, which results in a customer-initiated unsubscribe rate of less than two percent since the program’s inception.

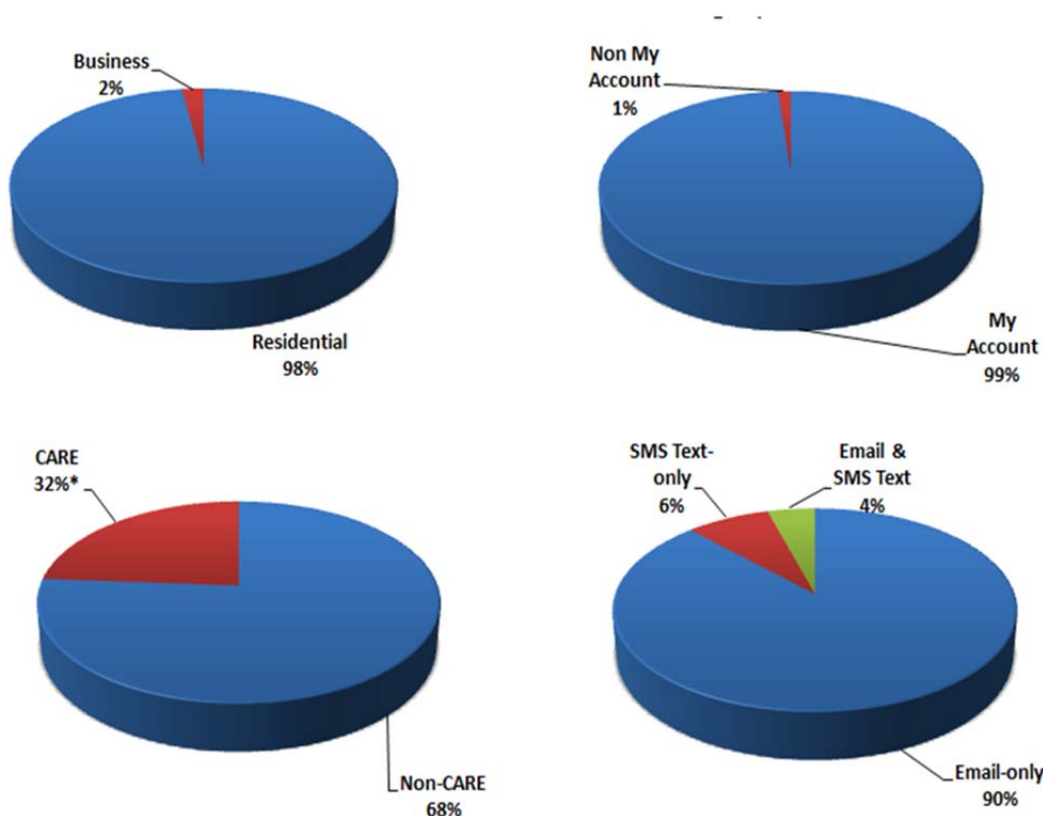
<sup>31</sup> Pursuant to D.12-11-015, SoCalGas is also utilizing its Advanced Meter project to support its Energy Efficiency non-resource behavior goals, which contain a 5% behavioral target for residential households. This five percent behavioral target remains in place through current Energy Efficiency program cycles as outlined in D.14-10-046.

<sup>32</sup> The majority of cancelled subscriptions are system-related (e.g., Account closures); currently 2% are due to customers unsubscribing.

This is a strong indicator that customers value weekly email and/or SMS text messages that keep them apprised of their bill-to-date, projected next bill, last month’s bill, last year’s same month bill, and the number of days remaining in their current billing cycle.

Figure 3 displays some of the customer characteristics of customers enrolled in Bill Tracker Alerts as of June 30, 2016.

**Figure 3**  
**SoCalGas Bill Tracker Alert Characteristics as of June 30, 2016**



\* As of June 30, 2016, California Alternative Rates for Energy (“CARE”) customers accounted for approximately 28.05% of percent of SoCalGas’ residential customer base.

### 9.C My Account “Ways to Save” Tool Utilization

Another key indicator of enhanced customer engagement enabled or stimulated by Advanced Meter includes customer utilization of the SoCalGas.com, My Account-based “Ways to Save” online tools.

As described in prior Reports, SoCalGas has implemented energy presentation and analysis tools within its My Account customer portal, as well as within the SoCalGas Mobile App. Through June 30, 2016, a total of 442,794 residential My Account users (both new and returning users) have engaged with the Ways to Save tool “My Savings Plan” web page from



which users could view their personal energy use profile and initiate a savings plan, as well as navigate to view their hourly and daily gas usage and other energy usage and bill-related information.

For further details regarding the Advanced Meter-enabled online energy information feedback options rolled out to customers, please refer to prior Reports.

## Appendices

### Appendix A - Mass Install Timeline

This timeline represents above ground installation work only. Warehouses assigned to perform curb meter work may require extensions.

Note: Planned warehouse closure dates are subject to change. Advanced Meter deployment will continue into 2017. Warehouse closures may be modified based on project close activities including transition to regular operations and workforce availability amongst Mass Installation and other SoCalGas personnel to perform remaining installations.

ADVANCEDmeter		Mass Installation Timeline							
		2016				2017			
Staging Location		1	2	3	4	1	2	3	4
Area A	Sun Valley	Completed 10/2014				(C)	(C)		
	Northridge	Completed 10/2015				(C)	(C)		
	LAX**				(C)	(C)	(C)		
	Bakersfield	Completed 11/2013				(C)	(C)		
	Visalia	Completed 7/2014				(C)	(C)		
	Valencia	Completed 10/2015				(C)	(C)		
	Statham (Oxnard)				(C)	(C)	(C)		
	Ward (Goleta)			(C)	(C)	(C)	(C)		
	Oakley (Santa Maria)					(C)	(C)		
Area B	Irwindale	Completed 12/2014				(C)	(C)		
	Rancho Cucamonga								
Area C	South Gate**								
	Los Angeles**					(C)	(C)		
Area D	El Centro	Completed 5/2013				(C)	(C)		
	Indio	Completed 11/2013				(C)	(C)		
	Hemet	Completed 8/2014				(C)	(C)		
	Perris	Completed 2/2015				(C)	(C)		
	Mission Viejo**				(C)	(C)	(C)		
	Anaheim**					(C)	(C)		

*Installation Clean Up & Closure*

\*\* This timeline represents Above Ground Installation work only. Curb assigned warehouses may require warehouse extension.

### Appendix B - List of Cities and Counties with Fully Installed DCUs

Adelanto	Diamond Bar	Lake Elsinore	Rosemead
Arroyo Grande	Dinuba	Lake Forest	San Bernardino
Azusa	Duarte	Lakewood	San Bernardino County
Baldwin Park	Eastvale	Lancaster	San Dimas
Banning	El Centro	Lawndale	San Gabriel
Beaumont	El Segundo	Lemoore	San Jacinto
Bell Gardens	Fillmore	Loma Linda	San Luis Obispo
Beverly Hills	Fontana	Lomita	Santa Fe Springs
Blythe	Fresno County	Lompoc	Santa Maria
Bradbury	Gardena	Los Alamitos	Santa Monica
Brawley	Goleta	Lynwood	Seal Beach
Brea	Grand Terrace	Manhattan Beach	Shafter
Buellton	Grover Beach	Menifee	Simi Valley
Buena Park	Guadalupe	Mission Viejo	Solvang
Calexico	Hanford	Monrovia	South Gate
California City	Hemet	Montclair	South Pasadena
Calimesa	Hermosa Beach	Montebello	Taft
Calipatria	Highland	Moorpark	Temecula
Camarillo	Holtville	Moreno Valley	Torrance
Carpinteria	Imperial	Murrieta	Tulare
Carson	Imperial County	Norco	Tulare County
Cathedral City	Indian Wells	Palm Springs	Tustin
Cerritos	Indio	Palmdale	Twentynine Palms
Chino	Industry	Paramount	Upland
Chino Hills	Irwindale	Paso Robles	Ventura
Claremont	Jurupa Valley	Perris	Vernon
Coachella	Kern County	Pismo Beach	Villa Park
Colton	Kings County	Placentia	Visalia
Commerce	La Canada Flintridge	Pomona	Walnut
Compton	La Habra	Port Hueneme	Wasco
Corcoran	La Habra Heights	Porterville	West Covina
Corona	La Mirada	Rancho Cucamonga	Westminster
Costa Mesa	La Palma	Rancho Mirage	Westmorland
Covina	La Puente	Redlands	Wildomar
Cudahy	La Quinta	Reedley	Yorba Linda
Culver City	La Verne	Rialto	Yucaipa
Delano	Laguna Hills	Riverside County	Yucca Valley
Desert Hot Springs	Laguna Niguel	Rolling Hills Estates	

**Appendix C - List of Cities and Counties that are no longer Fully Installed due to increased number of sites needed for Network Optimization**

Agoura Hills  
Alhambra  
Aliso Viejo  
Artesia  
Bakersfield  
Bell  
Burbank  
Cypress  
El Monte  
Fountain Valley  
Garden Grove  
Hawaiian Gardens  
Maywood  
Norwalk  
Ontario  
Pico Rivera  
San Fernando  
South El Monte  
Stanton  
West Hollywood

**Appendix D – Community Based Organizations, Business Organizations and Chambers**

Active January 1 – June 30, 2016

Caregivers

El Centrito Learning Centers

Manna Conejo Valley Food Distribution Center

Mixteco/Indigena Community Organizing Project (MICOP)

Ojai Chamber of Commerce

United Way of Ventura

Ventura Chamber of Commerce

**Appendix E - Evaluation of Southern California Gas Company's 2015-2016 Conservation  
Campaign, August 2016  
Prepared by Nexant**



# Evaluation of Southern California Gas Company's 2015–2016 Conservation Campaign

August 31, 2016

**Prepared for**  
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## 1 Executive Summary

Southern California Gas Company (SoCalGas®) began deploying “Advanced Meters”<sup>1</sup> (AM) in its service territory in late 2012, pursuant to California Public Utilities Commission (CPUC) Decision (D.)10-04-027. These meters are capable of providing enhanced information services that can help customers better manage and control their energy costs. By rigorously evaluating these types of information services, SoCalGas can demonstrate how to meet its 1% energy savings goal that is associated with its AM rollout.<sup>2</sup> Each year of the AM rollout, SoCalGas implements a Conservation Campaign that is designed to test various enhanced information programs. This document summarizes the evaluation of the third Conservation Campaign, which primarily ran from November 2015 through March 2016.<sup>3</sup> This document also includes results on continuation and persistence of energy savings from the first and second Campaigns that occurred during the same time period the previous two years.

Unlike the first two campaigns, the 2015–2016 Conservation Campaign (third Campaign) tested three information feedback options—Bill Tracker Alerts (BTAs), Seasonal Energy Updates (SEUs), and Home Energy Reports (HERs). These three information feedback options were chosen because they have the potential to reach large numbers of customers and demonstrate how to meet the 1% energy savings goal in a cost-effective manner. SEUs were introduced for the first time in the third Campaign. They were designed by SoCalGas specifically for customers with natural gas usage that is highly weather sensitive, which means that their usage increases substantially under cold weather conditions. This information feedback option leveraged AM data to target the most weather sensitive customers and also to present cold day usage patterns to customers.

Table 1-1 summarizes the estimated natural gas savings for the 2015–2016 SoCalGas Conservation Campaign. As with the first two Campaigns, energy savings for the third Campaign were found to be in line with the 1% savings goal. Overall, the new and continued treatments produced gas savings of over 1.46 million therms, or almost 1.5% during the fall / winter period (November 2015 to March 2016) for the subset of treatments tested that were successful in producing statistically significant usage reductions.<sup>4</sup> Of these 1.46 million therm savings, nearly 972,000 therms were conserved as a result of the new treatments for the 2015–2016 Conservation Campaign, also representing a savings of nearly 1.5%.

Roughly 402,000 therms of energy savings conserved from November 2015 to March 2016 were the result of continued effects of the treatments in the 2014–2015 Conservation Campaign (second Campaign). The continuation of the effects of these treatments over spring and

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<sup>1</sup> The Advanced Meter infrastructure consists of two primary components—a meter transmission unit (communications module) attached to SoCalGas meters and a communications network consisting of data collection units installed across the SoCalGas service territory.

<sup>2</sup> This energy savings goal specifically refers to 1% of total residential gas usage.

<sup>3</sup> A few programs included a year-round email element that continued after March 2016.

<sup>4</sup> Gas savings are only calculated for the treatments that produced statistically significant usage reductions, which includes the default BTA and the Opower Paper & Email HER from the 2013–2014 Conservation Campaign, the three Opower treatments from the 2014–2015 Conservation Campaign, and all the treatments from the 2015–2016 Conservation Campaign.

summer 2015 (April through October) were also evaluated and found to be about 93,000 therms.

Roughly 91,000 therms of energy savings conserved from November 2015 to March 2016 were the result of continued effects of the treatments in the 2013–2014 Conservation Campaign (first Campaign). The first Campaign treatments did not produce measurable savings over spring and summer 2015 (April through October). In all, the effects of the new 2015–2016 treatments and the continued effects of the 2014–2015 and 2013–2014 treatments resulted in savings of about 1.5 million therms over the 12 month period from April 2015 to March 2016.

**Table 1-1: Estimated Gas Savings for the 2015–2016 SoCalGas Conservation Campaign**

Initial Treatment Year	Treatment	Group	Number of Treatment Customers	% Reduction	Aggregate Therms Saved (Nov-Mar)
2015-2016	Opower Email HER (1 paper HER +12 eHER)	T-16	13,086	0.86%	35,853
	Opower Email Thermostat HER (1 paper HER +12 eHER)	T-19	13,094	1.28%	53,364
	Paper & Email SEU (4 paper reports + Email alerts)	T-24	17,877	3.04% <sup>5</sup>	174,125
	Old BTA, w/supplemental materials	T-26	19,069	0.70%	42,602
	Old BTA, w/o supplemental materials	T-27	19,032	0.49%	30,416
	New BTA, w/supplemental materials	T-28	19,035	1.04%	59,864
	New BTA, w/o supplemental materials	T-29	19,062	0.86%	52,159
	Opower Paper-only HER (4 paper HER)	T-17	13,364	1.50%	62,422
	Opower Paper-only Thermostat HER (4 paper HER)	T-20	13,342	1.32%	56,253
	Paper-only SEU (4 paper reports)	T-25	23,494	3.08% <sup>5</sup>	225,147
	Opower Paper & Email CARE HER (4 paper HER + 12 eHER)	T-15	13,082	1.01%	38,220
	Opower Paper & Email Thermostat CARE HER (ESAP & Non-ESAP) (4 paper HER + 12 eHER)	T-18	26,205	1.53%	116,069
	Opower Spanish Paper-only HER (4 paper HER)	T-21	13,319	0.82%	25,187
<b>Overall for 2015-2016 treatments (fall / winter)</b>			<b>223,061</b>	<b>1.42%</b>	<b>971,680</b>
2014-2015	Opower Email HER (1 paper HER +12 eHER)	T-8	11,964	0.96%	38,479
	Opower Paper & Email HER (4 paper + 12 eHER)	T-10	12,000	1.38%	57,428
	Opower Paper-only HER (4 paper reports)	T-13	47,910	1.86%	306,621
<b>Overall for 2014-2015 treatments (fall / winter)</b>			<b>71,874</b>	<b>1.67%</b>	<b>402,529</b>
2013-2014	Opower Email HER (1 paper HER + 4 eHER)	T-3	9,167	1.59%	37,016
	Default BTA w/supplemental materials	T-4	18,461	1.28%	54,284
<b>Overall for 2013-2014 treatments (fall / winter)</b>			<b>27,628</b>	<b>1.38%</b>	<b>91,300</b>
<b>Overall for November 2015-March 2016</b>			<b>322,563</b>	<b>1.48%</b>	<b>1,465,508</b>
2014-2015	Opower Paper & Email HER (4 paper + 12 eHER)	T-10	12,367	1.35%	28,172
	Opower Paper-only HER (4 paper reports)	T-13	48,915	0.77%	64,571
<b>Overall for 2014-2015 treatments (spring / summer)</b>			<b>61,282</b>	<b>0.84%</b>	<b>92,743</b>
<b>Overall for April 2015-October 2015</b>			<b>61,282</b>	<b>0.84%</b>	<b>92,743</b>
<b>Overall for April 2015-March 2016</b>			<b>383,845</b>	<b>1.42%</b>	<b>1,558,251</b>

<sup>5</sup> This result is not directly comparable to the other results because the treatment population was selected differently than the rest of the treatments. The SEU treatment was only tested on the top 25% most weather sensitive customers.

## **1.1 Key Research Questions and Lessons Learned**

Lessons learned from the first and second Campaigns were incorporated into the program designs tested during the third Campaign, with the goal of answering six key research questions related to cost-effectiveness for information feedback programs. Table 1-2 summarizes the key research questions explored in the 2015–2016 Conservation Campaign as well as the findings identified.

**Table 1-2: Key Research Questions and Lessons Learned from the 2015–2016 Conservation Campaign**

Key Research Question	Key Lessons Learned
<p>How do energy savings vary for the Old vs. New version of the BTA?</p>	<p>The <u>New BTA performs better than the Old BTA</u>. The percent savings for both the New BTA with supplemental promotional materials and the New BTA without promotional materials were higher than both of the Old BTAs that were tested. The New BTA featured a more graphical design to convey information vs. the Old BTA, which was more text-based.</p>
<p>For the BTA treatments, does the addition of promotional materials to the treatment increase energy savings?</p>	<p>Although the BTA treatments with promotional materials produced slightly higher gas savings than the BTA treatments without those materials, <u>the difference was not statistically significant</u>. Given that sending printed promotional materials in the mail is relatively costly, it may not be cost-effective to send these materials in future BTA rollouts. However, the difference in savings for customers with and without promotional materials may become larger over time, so these treatments from the third Campaign will continue to be compared beyond March 2016 to reach a more definitive conclusion.</p>
<p>How do customers identified as highly weather sensitive respond to the SEU treatment?</p>	<p>The SEU treatment produced the highest percent reductions out of any of the treatments in the third Campaign. Both the Paper &amp; Email SEU and the Paper SEU produced a savings rate of over 3%. However, this treatment was only delivered to the top 25% most weather sensitive customers sampled, so these findings are not directly comparable to the other treatments that were delivered to all sampled customers.</p>
<p>How do Opower Thermostat HERs compare to the standard Opower HERs?</p>	<p>The Thermostat HERs differed from the standard Opower HER in that they featured thermostat-focused messaging, including how to set the thermostat when a customer is away or at home. The Thermostat HERs produced savings rates above 1.2% for each of the three treatments. As a group, the Thermostat HERs performed <u>slightly better than the standard HERs</u>. When comparing the three different types (Email, Paper-only, Paper and Email) individually, only the difference between the Thermostat and Standard version of the Paper and Email HERs is statistically significant.</p>

Key Research Question	Key Lessons Learned
How do CARE customers respond to treatment compared to Non-CARE customers?	In the third Campaign, CARE customers were segmented into their own treatment groups that were separate from the Non-CARE customers in the population. The two treatments tested in the CARE population were the Opower Paper and Email HER and the Opower Paper and Email Thermostat HER. <sup>6</sup> Both treatments produced comparable results to the Non-CARE customers. The Opower Paper and Email HER produced a percent reduction of 1% while the Opower Paper and Email Thermostat HER produced a percent reduction of 1.5%. However, there is not a direct comparison in the Non-CARE population as these exact treatments were not tested in the Non-CARE population.
Does the Opower Spanish Paper-only HER treatment produce comparable energy savings to the Opower [English] Paper-only HER?	Hispanic ethnicity customers (based on census block data) in the third Campaign receiving the Spanish HERs were those identified as preferring Spanish communications over English. This treatment produced a savings rate of 0.82% during the 2015–2016 winter. This was the <u>lowest savings rate of any of the Opower HER treatments</u> tested in the third Campaign. Furthermore, when compared against the Opower Paper-only [English] HER tested in the Third Campaign, the savings from the Spanish HER are <u>lower than the Opower Paper-only HER</u> . The Opower Paper-only HER was tested on a population that was selected for English language treatments (based on census block data) and customers that were Non-My Account customers.

## 1.2 Proposed 2016–2017 Conservation “Test & Learn” Plan

Throughout the AM rollout until the end of 2017, SoCalGas is implementing a cycle of innovation in which continuous assessment and improvement in the performance of feedback programs is the primary objective. This is referred to as the “test and learn” process, which is consistent with what the CPUC envisioned in D.10-04-027. The lessons learned from each testing cycle are a direct input to this process and will inform the research design for the 2016–2017 Conservation Campaign.

A fundamental tenant of the “test and learn” process is to continuously improve toward more cost-effective solutions. Therefore, to test ways of improving cost-effectiveness, the 2016-2017 Conservation Campaign may adjust the program offerings as follows:

- Continue to track savings for all customers receiving BTAs. Monitor any change in savings that occur once all customers currently receiving the Old BTA are transitioned to receiving the New BTA;

<sup>6</sup> The monthly Email HER was only sent to those CARE customers within the treatment group registered for SoCalGas’ My Account customer portal and with a valid email address



- Continue to explore ways to improve the BTA, as it has proven to be one of the most cost effective treatments for My Account customers. Test a new enhanced version of the New BTA with an additional view of usage patterns based on market research findings;
- Test the New BTA with and without seasonal savings tips in the same population to determine whether these tips increase savings;
- Explore how SEUs perform on CARE customers;
- Test new weatherization focused SEU on Non-CARE customers;
- Compare the Paper SEU treatments against the Opower Paper-only HER by ensuring that both treatments are tested on comparable populations;
- Retest Aclara Paper HERs;
- Develop an in-house paper HER to test against Aclara and Opower paper HERs;
- Test a combination of two different information feedback options, BTA with tips and Opower Paper HER, to see if there are incremental savings relative to other populations that only received the BTA treatment;
- Potentially test the impact of providing a Bilingual English-Spanish language paper HER and welcome materials in lieu of the either a single language English or Spanish HER for customers in areas with high rates of Latino population or to customers indicating a Spanish language preference. Test whether a self-comparison is more effective on this population than the neighborhood comparison used previously in the Spanish and English HERs;
- Continue to test treatments with the top two usage quartiles since they both produce measurable therm savings; and
- Test the BTA on Small and Medium Business (SMB) customers.

## 2 Introduction

SoCalGas began deploying AM in its service territory in late 2012. According to its meter deployment plan, AM will be fully deployed to SoCalGas' approximately 6 million customers by the end of 2017. These meters are capable of providing enhanced information services that can help customers better manage and control their energy costs. By rigorously evaluating these types of information services, SoCalGas can develop cost effective information feedback programs designed to meet its 1% energy savings goal that is associated with its AM rollout.<sup>7</sup> Each year of the AM rollout, SoCalGas is conducting a Conservation Campaign that is designed to test various enhanced information programs, primarily during the heating season from November through March.<sup>8</sup> In approving SoCalGas' AM application in D.10-04-027, the CPUC directed SoCalGas "to establish a system to track and attribute the conservation impacts of its AM rollout" and to report the measured savings every six months. This document is the third of the biannual reports to include impact results of the Conservation Campaign, which was implemented as outlined in prior semiannual reports.

### 2.1 Research Objectives and Design

This report addresses the following primary objectives:

- Meet the requirements of D.10-04-027 to track and attribute the conservation impacts of the AM rollout and to report measured savings every six months; and
- Help demonstrate how SoCalGas can achieve its 1% energy savings goal in a cost-effective manner.

Meeting the first objective requires a rigorous research strategy that conclusively determines whether or not information feedback provided by SoCalGas through various programs caused changes in gas usage. Usage varies significantly across months, seasons, and years. As a result, comparing usage before and after customers receive information treatments is not a suitable approach to estimating conservation effects. Instead, impacts must be estimated by comparing usage for two groups of customers that are identical except for the fact that one group receives information feedback (the treatment group) and the other does not (the control group).

Meeting the second objective requires adherence to a "test and learn" strategy that quickly identifies the marketing strategies and service options that are most cost-effective for achieving energy savings through information services. This strategy was envisioned by D.10-04-027, which stated, "we expect that customer outreach, education and communications will continue to evolve and improve as SoCalGas conducts customer research, monitors customer reaction to new AM technology and various customer usage presentation tools, and incorporates feedback from these activities into its AM outreach and education activities."

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<sup>7</sup> This energy savings goal specifically refers to 1% of total *residential* gas usage.

<sup>8</sup> Some treatments, such as the alert component of the default BTAs and the email HER component of the Opower treatments from the second and third Campaigns, are continued into the spring and summer months.

## 2.2 Overview of Information Services Tested

Unlike the previous two campaigns, the 2015–2016 Campaign tested three information feedback options—Bill Tracker Alerts (BTAs), Home Energy Reports (HERs), and Seasonal Energy Updates (SEUs). These three information feedback options were chosen because they have the potential to reach large numbers of customers and demonstrate how to cost effectively meet the 1% energy savings goal. As outlined in sections 2 and 2.1, variations to the segmentation, targeting, and messaging for each of these information feedback approaches were refined based on the findings and associated learnings from the 2013–2014 and 2014–2015 campaigns.

### 2.2.1 Home Energy Reports

As in the previous two campaigns, the 2015–2016 Campaign tested the standard Opower HERs, but this year two new variations of Opower HERs were also tested. These included a new thermostat-focused HER as well as a Spanish language HER. In the third Campaign, approximately 41,250 customers received standard Opower HERs, 55,000 received Opower Thermostat HERs, and 13,750 received Spanish Opower HERs throughout the fall/winter months. All customers receiving HERs were defaulted onto the service and received HERs either through direct mail, email, or a combination of direct mail and email (with varying frequencies of each in the different treatments tested). In addition to displaying comparisons of households' natural gas consumption with that of neighbors, and other self-comparative information, the HERs provided tips on how to reduce gas consumption.

Table 2-1 summarizes the features and timeline of the residential HER treatments that Opower began implementing in November 2015. In total, approximately 110,000 customers were sampled for HER treatments, split between the different types of Opower HERs. Of the 110,000 customers sampled for Opower HERs, one-quarter (27,500) were split evenly between the Email HER and the Thermostat Email HER for My Account customers;<sup>9</sup> one-fourth (27,500) were split evenly between the Paper HER and the Thermostat Paper HER for Non-My Account customers; one-eighth were sampled for the Opower Spanish HERs for Spanish Preference customers; and the remaining 41,250 were split between the Paper & Email HER (13,750) and the Paper & Email Thermostat HER (27,500) for CARE customers.<sup>9</sup> 18,656 of the “ESAP-eligible” CARE customers receiving the Paper & Email Thermostat HER received reports containing tips that encouraged Energy Savings Assistance Program (ESAP) participation.

#### *Treatment Schedule*


























All treatments began around the second week of November 2015 with an initial paper HER and welcome insert. The Paper-only and Paper & Email HER then included another three monthly paper HERs sent via direct mail between December 2015 and February 2016.<sup>10</sup> In addition, the Paper & Email HER treatment and the Email HER treatment included a total of 12 monthly HERs sent via email. This treatment schedule was slightly different from the treatment schedules in previous two campaigns.

---

<sup>9</sup> Targeted treatment cell sizes were grossed up initially during the research design phase to account for naturally occurring attrition over the campaign period due to customer account closures.

<sup>10</sup> Certain test cells did not receive a paper report in December due to data issues and received a report in March to account for the missing report.

**Table 2-1: Features and Timeline of Residential Opower HER Treatments (November 2015 through November 2016)**

		Opower HERs					
		Nov	Dec	Jan	Feb	Mar	Apr-Nov
Paper-only	Paper HER						
	Welcome Insert						
	Door Hanger						
	Email HER						
Email	Paper HER						
	Welcome Insert						
	Door Hanger						
	Email HER						
Paper & Email	Paper HER						
	Welcome Insert						
	Door Hanger						
	Email HER						

#### ***Opower Standard HER treatment overview***

Figure 2-1 and Figure 2-2 provide examples of the front and back sides of the Opower paper HER sent in November (additional HER materials are shown in Appendix A). These paper HERs were similar but not identical from month to month. They featured the following four sections that were for the most part consistently shown in each monthly report:

- Previous winter's natural gas usage (in initial HER) or previous month's gas usage compared with usage by similar neighbors, including an emoticon rating;
- Historical monthly gas usage compared with usage by similar neighbors (except January);
- Neighbor efficiency rank (except the initial November HER); and
- Personalized energy-saving tips.

In addition, the “Warm home. Cool savings.” module with visual conservation tips (shown in Figure 2-1) was included in the introductory November HER and a prior year comparison of personal usage from the current month was included in the January HER.

**Figure 2-1: Opower Paper November HER Example (Front)**

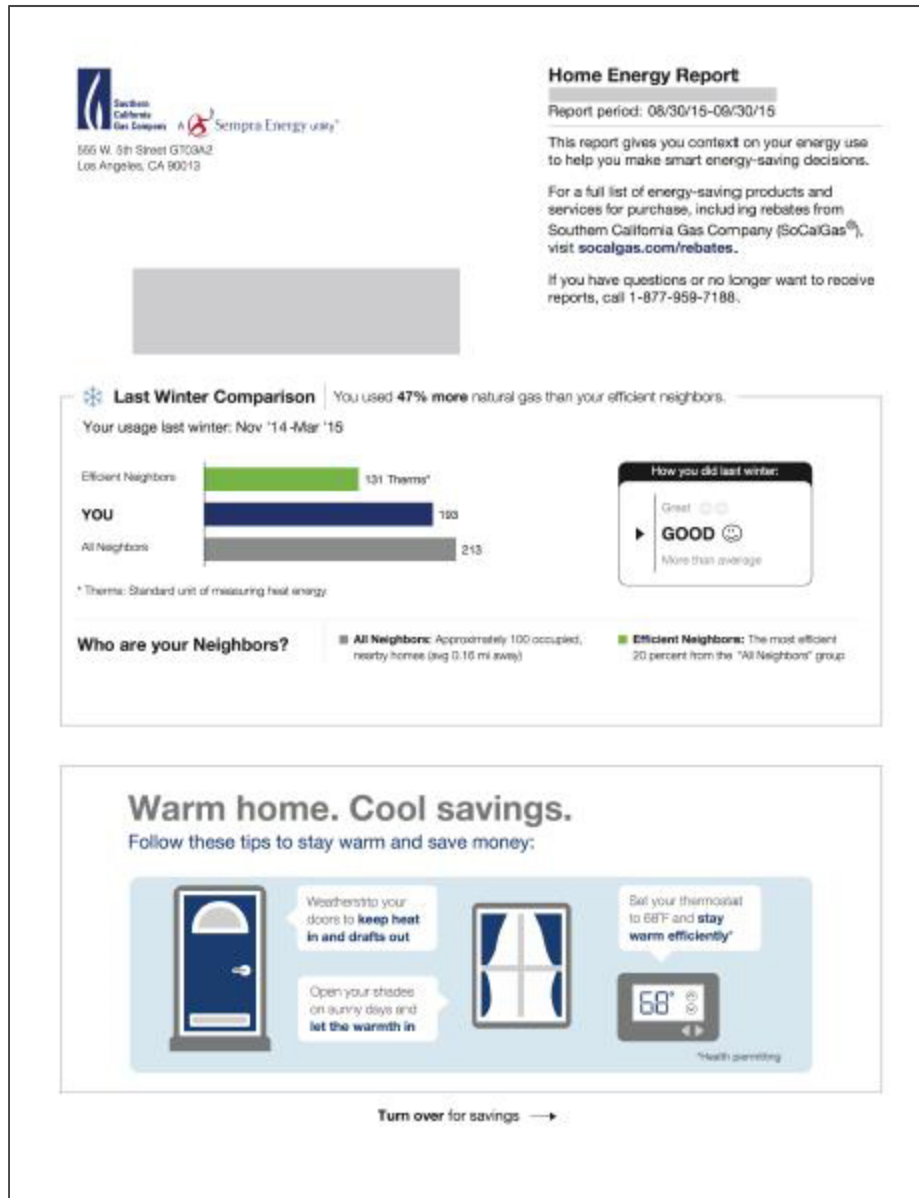


Figure 2-2: Opower November Paper HER Example (Back)

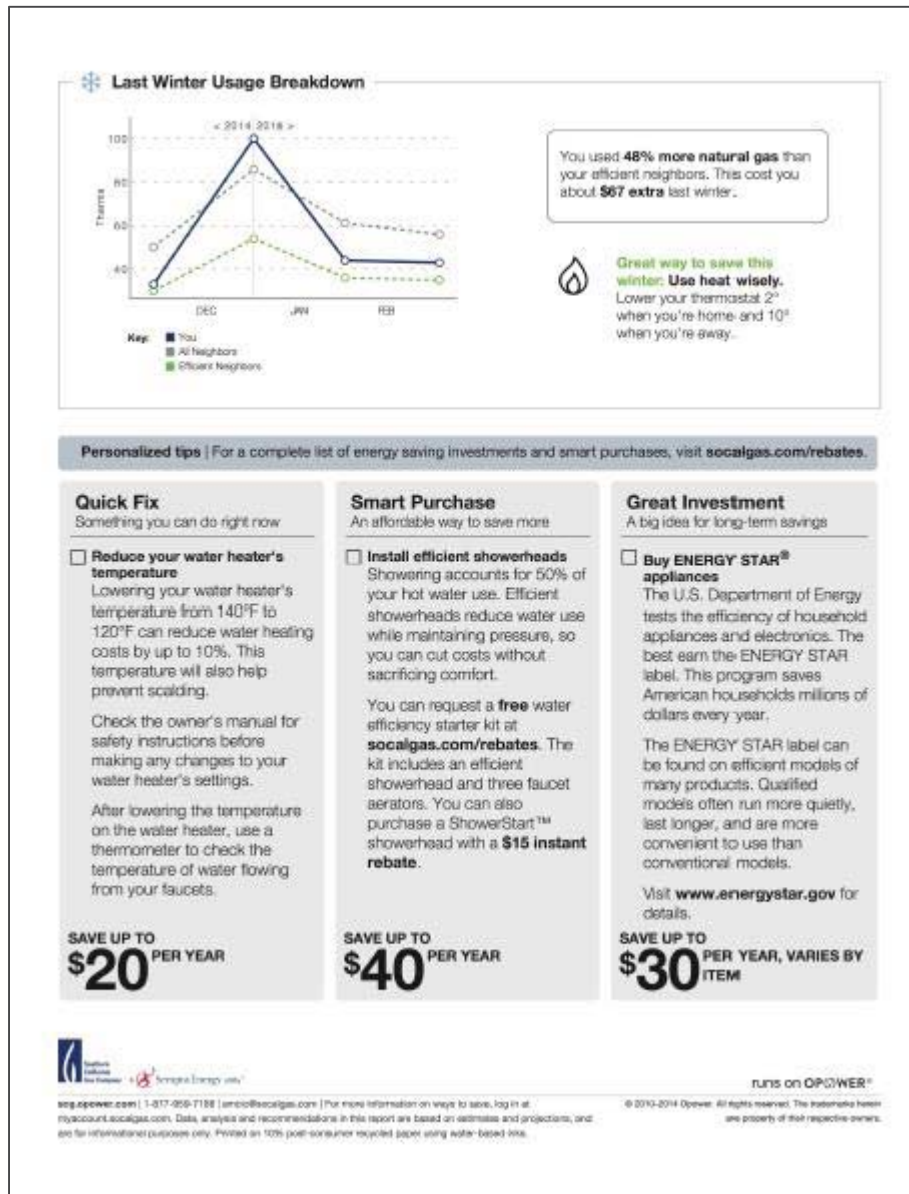


Figure 2-3 provides an example of the Opower email HER that was sent starting in December. The email HER was simpler than the paper HER and included just one main section—previous month’s/winter’s natural gas usage compared with similar neighbors—followed by several conservation tips. This comparison section is similar to the first section of the paper HER and was consistently shown in each monthly report. Examples of both HERs and the remaining materials that Opower sent—the welcome insert and the door hanger—are provided in Appendix A.

**Figure 2-3: Opower Email HER Example, December and Subsequent Months**

The screenshot displays an email interface for a Home Energy Report (HER) from SoCalGas and Sempra Energy. The header includes the account number '01112015' and the recipient name 'Hi Jane Doe, your Home Energy Report is here'. The main content area features the SoCalGas logo and an account ID 'Acc# \*\*\*\*\*00e1'. A key message states: 'You used 70% less than your efficient neighbors.' Below this, a performance chart shows three levels: 'Great' (smiley face icon, highlighted with a blue bar), 'Good' (neutral face icon), and 'Using more than average' (sad face icon). A table compares energy usage in therms:

<b>You</b>	<b>1 therms</b>
<b>Efficient Neighbors</b>	<b>5 therms</b>
<b>All Neighbors</b>	<b>12 therms</b>

The report covers the period 'Nov 29, 2015 - Jan 9, 2016' and notes that the comparison is based on approximately 100 nearby homes. A 'Learn more' link is provided. To the right, a 'Ways to Save' section lists three tips:
 

- Replace your old refrigerator:** Your refrigerator is on 24/7. As a result, it uses more electricity than any other appliance. You could save up to 40% on its energy costs when you replace a model manufactured before 2001 with an ENERGY STAR® unit.
- Replace your old clothes washer:** Consider buying a new ENERGY STAR® clothes washer — it can use about 20% less energy and 35% less water than conventional models by handling larger loads and leaving clothes less damp before they enter the dryer. Save up to \$10 per year.
- Replace your inefficient light bulbs:** Inefficient incandescent bulbs are costly to run and replace in the long term. Use compact fluorescent light (CFL) bulbs — they use 75% less energy and last at least ten times longer.

 A 'SEE MORE WAYS TO SAVE' button is located below these tips. At the bottom, there is a disclaimer: 'Please do not reply to this email. Mail sent to this address cannot be answered. For assistance, please visit scg.opower.com. Southern California Gas Company values your privacy. For more information, view our Privacy Policy and Privacy Notice.' and a copyright notice: '© 2010-2014 Opower. All rights reserved. The trademarks herein are property of their respective owners.'

### ***Opower Thermostat HER treatment overview***

Figure 2-4 provides an example of the front side of the Thermostat paper HER (all additional materials can be found in Appendix B). These paper HERs were similar but not identical from month to month. Similar to the standard HER, the Thermostat paper HERs featured the following four sections that were for the most part consistently shown in each monthly report:

- Previous winter’s natural gas usage (in initial HER) or previous month’s gas usage compared with usage by similar neighbors, including an emoticon rating;
- Historical monthly gas usage compared with usage by similar neighbors (except January);
- Neighbor efficiency rank (except the initial November HER); and
- Personalized energy-saving tips.

In addition to the features contained in the standard HER, the thermostat HER included thermostat-focused messaging and tips. The bottom half of each paper HER includes a

motivating message and how to set the thermostat when customers are home and when they are away. This message encouraged customers to set their thermostat to 68 degrees when they are home and 58 degrees when they are away. The back sides of the paper thermostat HERs were identical to the back sides of the standard paper HERs.

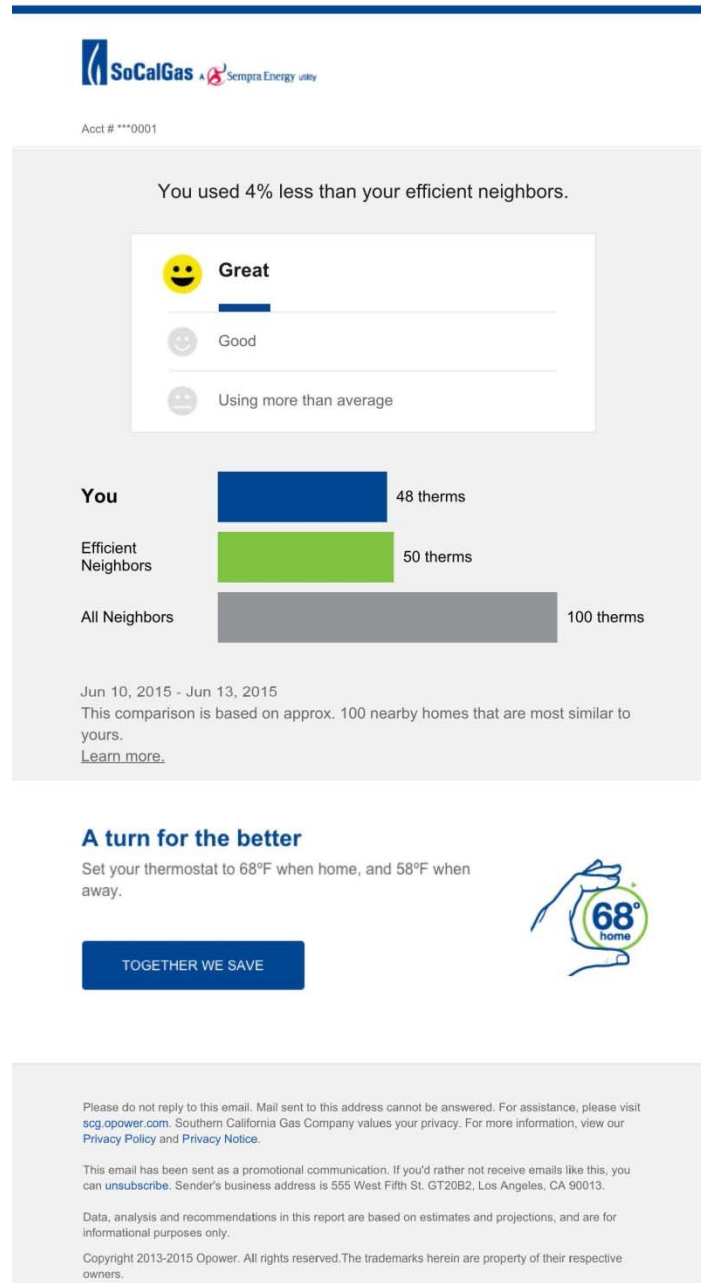
Figure 2-4: Opower Paper Thermostat HER Example (Front)





Figure 2-5 provides an example of the Opower email Thermostat HER. The email Thermostat HER included one additional section compared to the standard email HER. This section was almost identical to thermostat messaging contained on the bottom half of the paper Thermostat HER. Examples of both HERs and the remaining materials that Opower sent—the welcome insert and the door hanger—are provided in Appendix B.

**Figure 2-5: Opower Email Thermostat HER Example**



**Opower Spanish HER treatment overview**

Figure 2-6 and Figure 2-7 provide an example of the front and back sides of the Spanish paper HER sent in November (all additional materials can be found in Appendix C). The Spanish HERs were only sent in paper form (there were no email Spanish HERs). These paper HERs were similar but not identical from month to month. The Spanish paper HERs contain the same content as the standard Paper HERs except that text is written in Spanish. The Spanish paper HERs featured the following four sections that were for the most part consistently shown in each monthly report:

- Previous winter’s natural gas usage (in initial HER) or previous month’s gas usage compared with usage by similar neighbors, including an emoticon rating;
- Historical monthly gas usage compared with usage by similar neighbors (except January);
- Neighbor efficiency rank (except the initial November HER); and
- Personalized energy-saving tips.

**Figure 2-6: Opower November Spanish Paper HER Example (Front)**

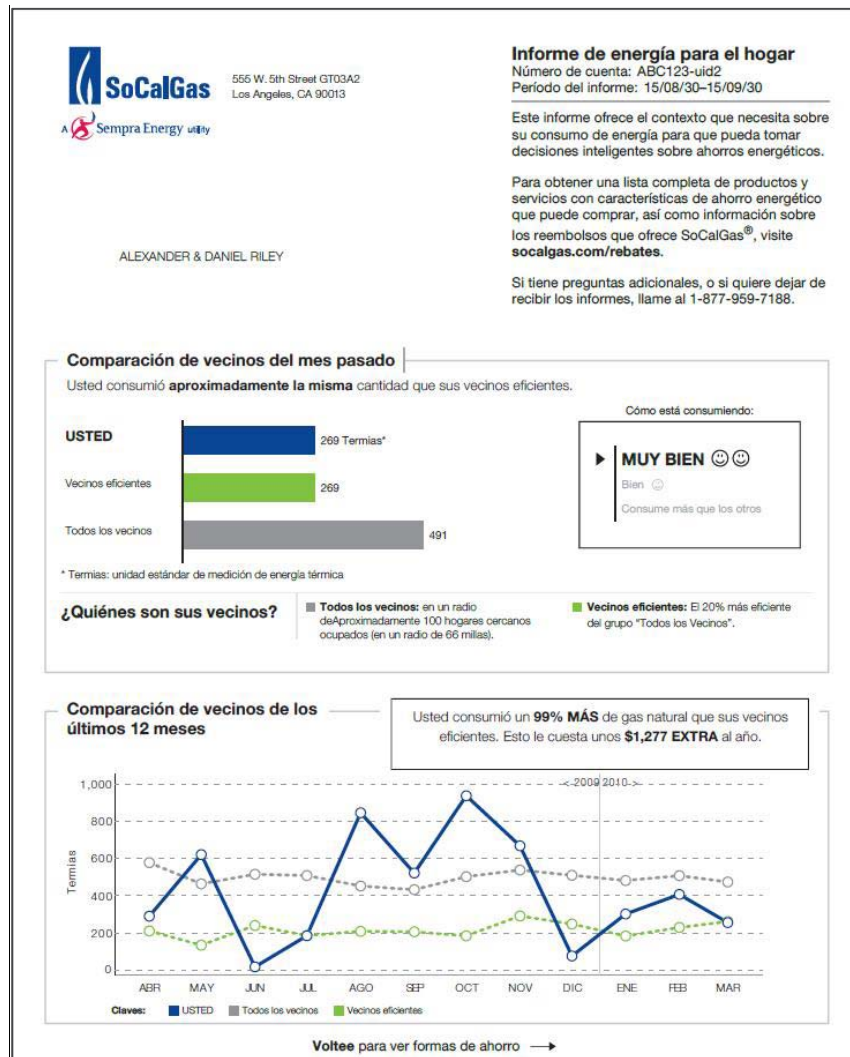
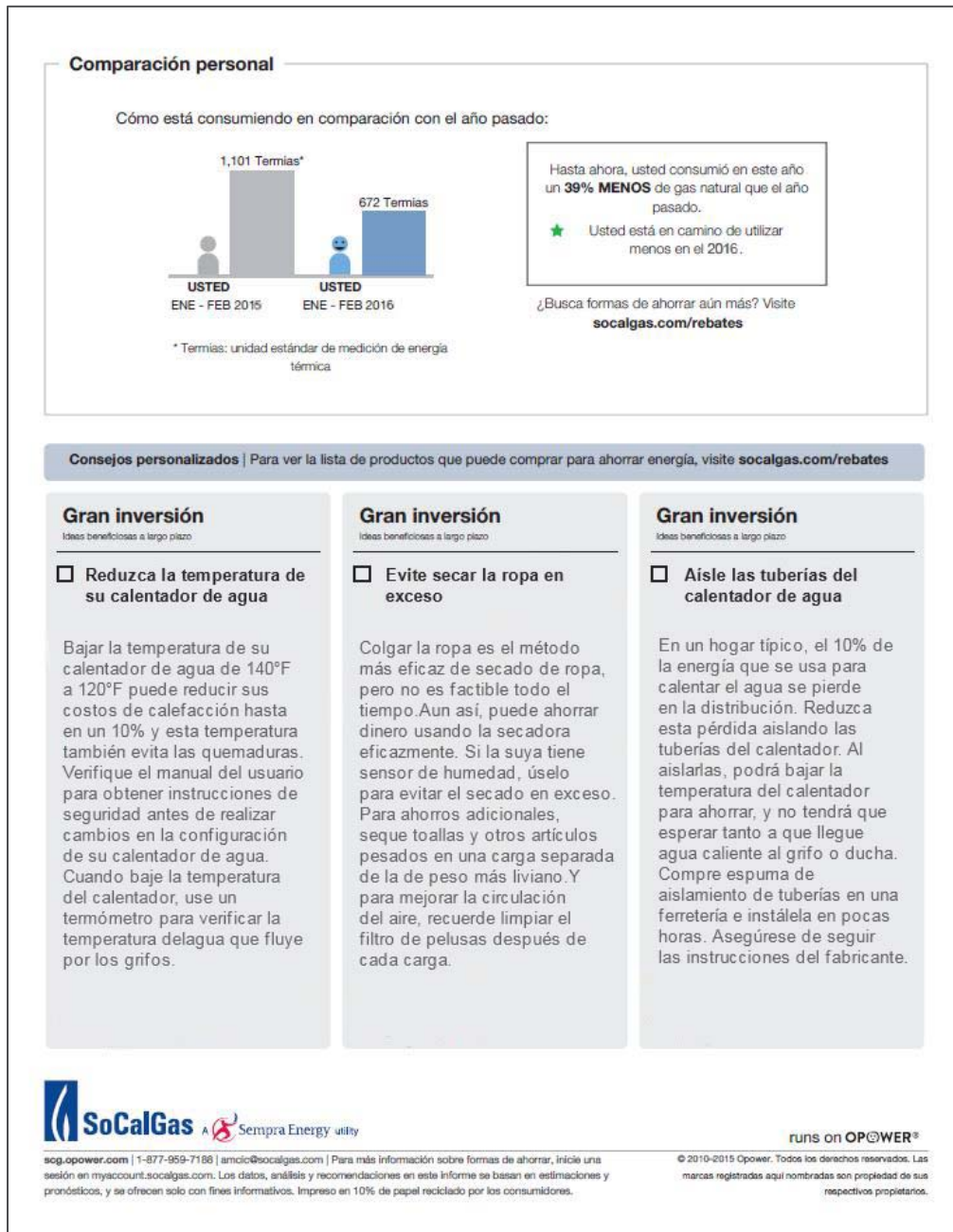


Figure 2-7: Opower November Spanish Paper HER Example (Back)



### 2.2.2 Bill Tracker Alerts (BTA)

BTAs are weekly reports developed and provided by SoCalGas to customers by email and/or text message. The reports describe the cost of the natural gas that customers have consumed since receiving their last bill. BTAs also provide a forecast of what a customer's gas bill will be at the end of the billing period if they continue to consume gas at the same rate. Customers are not able to set specific goals for daily or weekly gas consumption. BTAs are designed to raise customers' awareness of the amount of gas they are using and its impact on their bill.

The BTA service was tested on an opt-in and default enrollment basis for residential and small/medium business (SMB) customers in the first Campaign (2013–2014). This service was also initially accompanied by a welcome letter and three monthly informational letters with various supporting materials sent via direct mail<sup>11</sup> and email.<sup>12</sup> All BTA customers from the first Campaign who did not opt out or otherwise choose to discontinue the BTA service continued to receive BTAs throughout year two but no longer received the additional informational materials. However, in 2014–2015 SoCalGas decided to forgo the supplemental direct mail and email communications that accompanied the BTAs in 2013–2014. This reduction in communications was meant to test whether comparable energy savings could be achieved without these additional communications, thereby improving cost-effectiveness.

In the second Campaign (2014–2015), enrollment in weekly BTAs was expanded to an additional 55,346 residential My Account customers on a default enrollment basis only.<sup>13</sup> These default BTA customers received an initial Welcome email followed by the weekly email BTA notifications, which included a link to SoCalGas.com My Account-based *Ways to Save* online tools.

In the third Campaign (2015–2016), SoCalGas introduced a new, graphically enhanced version of the BTA email. Enrollment in weekly BTAs was split into four different treatment groups, including a total of approximately 80,000 residential My Account customers enrolled on a default basis only. The 80,000 customers were evenly split between four different treatment categories: Old BTA with supplemental promotional materials; Old BTA without promotional materials; New BTA with supplemental promotional materials; and New BTA without promotional materials. The New BTA email featured a more graphic and less text based design. This treatment design was meant to test which version of the BTA produced the most energy savings and whether the addition of promotional materials to the BTAs produced additional energy savings.

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<sup>11</sup> A Welcome letter was sent in October; a letter with "3 Easy Ways to Save" insert was sent in November; a letter with a "Winter Savings Checklist" in January; and a letter with links to My Account *Ways to Save* in February. These materials were sent to all BTA participants in the first Campaign, both default and opt-in.

<sup>12</sup> A Welcome email was sent in October (to default customers only); an email titled "Save More This Winter" including links to My Account *Ways to Save* was sent in November; an email titled "How much more can you save" including links to My Account *Ways to Save* was sent in January; an email titled "Tools and Tips to help you save energy and money" including links to My Account *Ways to Save* was sent in February; and an email titled "Helping you save more" including links to My Account *Ways to Save* was sent in March.

<sup>13</sup> Of these 55,346 accounts selected for default enrollment into BTAs, 1,229 were suppressed from receiving BTAs because the accounts were in a collections status due to payments significantly past due. It is SoCalGas' procedure to not send BTAs to accounts undergoing collections activity.

Figure 2-8 shows the template for the Old BTA email notification, which was identical to the notification template used in the first and second Campaigns. The email BTAs feature the following information:

- Bill amount (\$) to date;
- Projected amount (\$) for next bill;
- Days remaining and days elapsed in the current bill cycle;
- Last month's bill amount (\$);
- Bill amount (\$) for same month in the prior year; and
- Links to the SoCalGas *Ways to Save* tool and rebate programs.

**Figure 2-8: Template for SoCalGas Old BTA Email Notification**

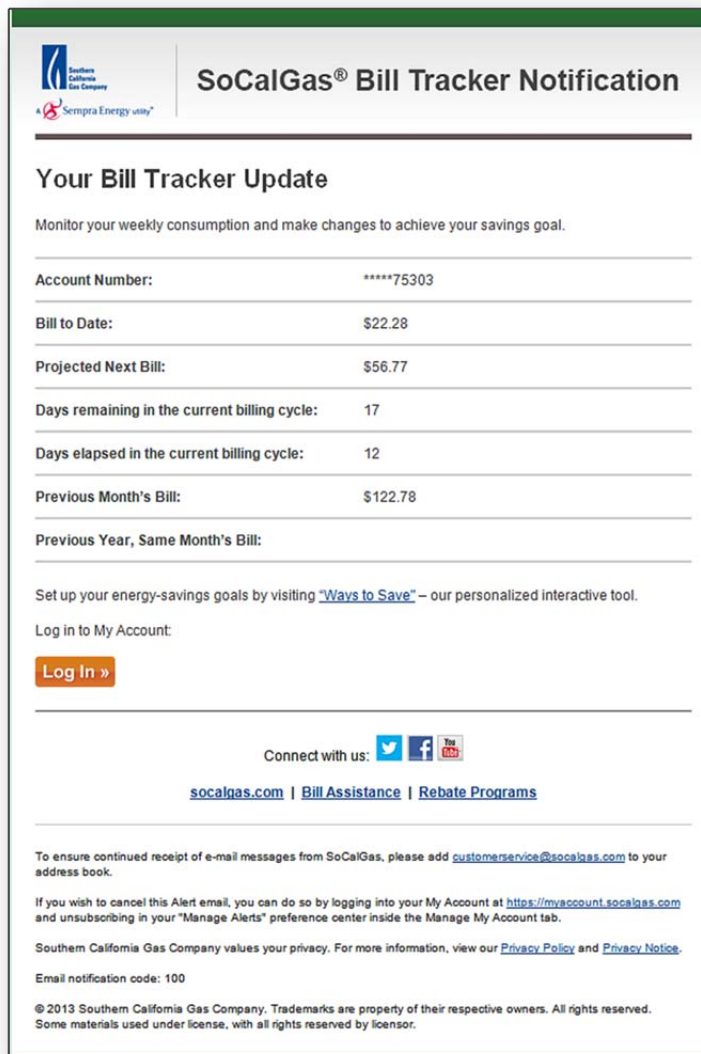


Figure 2-9 shows the template for the New BTA email notification. The New BTA emails featured the following information along with several graphic representations of these numbers:

- Bill amount (\$) to date;
- Projected amount (\$) for next bill;
- Days remaining and days elapsed in the current bill cycle;
- Last month's bill amount (\$);
- Bill amount (\$) for same month in the prior year; and
- Links to the SoCalGas *Ways to Save* tool and rebate programs.

**Figure 2-9: Template for SoCalGas New BTA Email Notification**

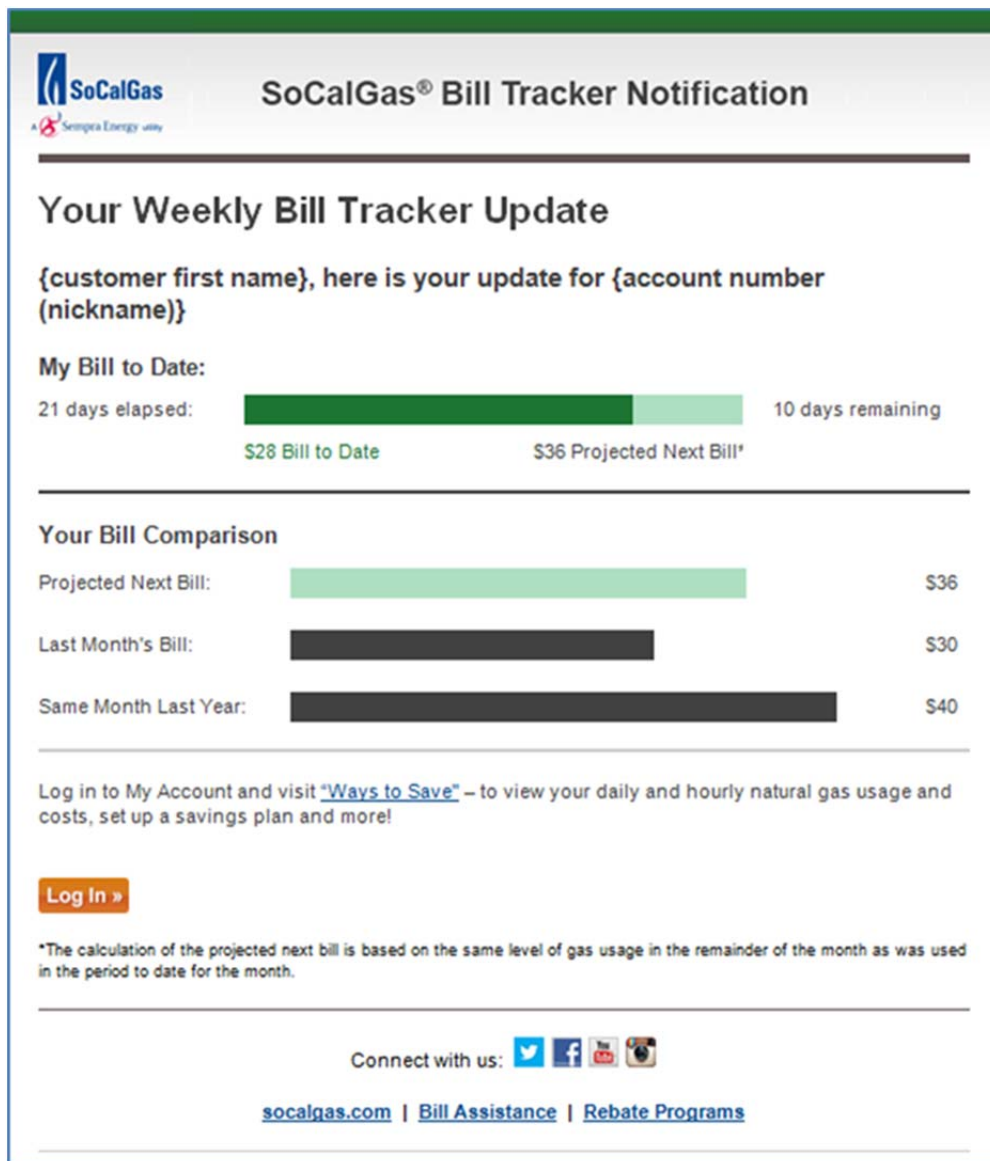


Figure 2-10 provides an example of a text message BTA notification, which is similar to the email BTA notification. However, due to limits on the number of characters that can be included in a single text message, links to the *Ways to Save* tool and rebate programs were not provided in the text message BTAs.

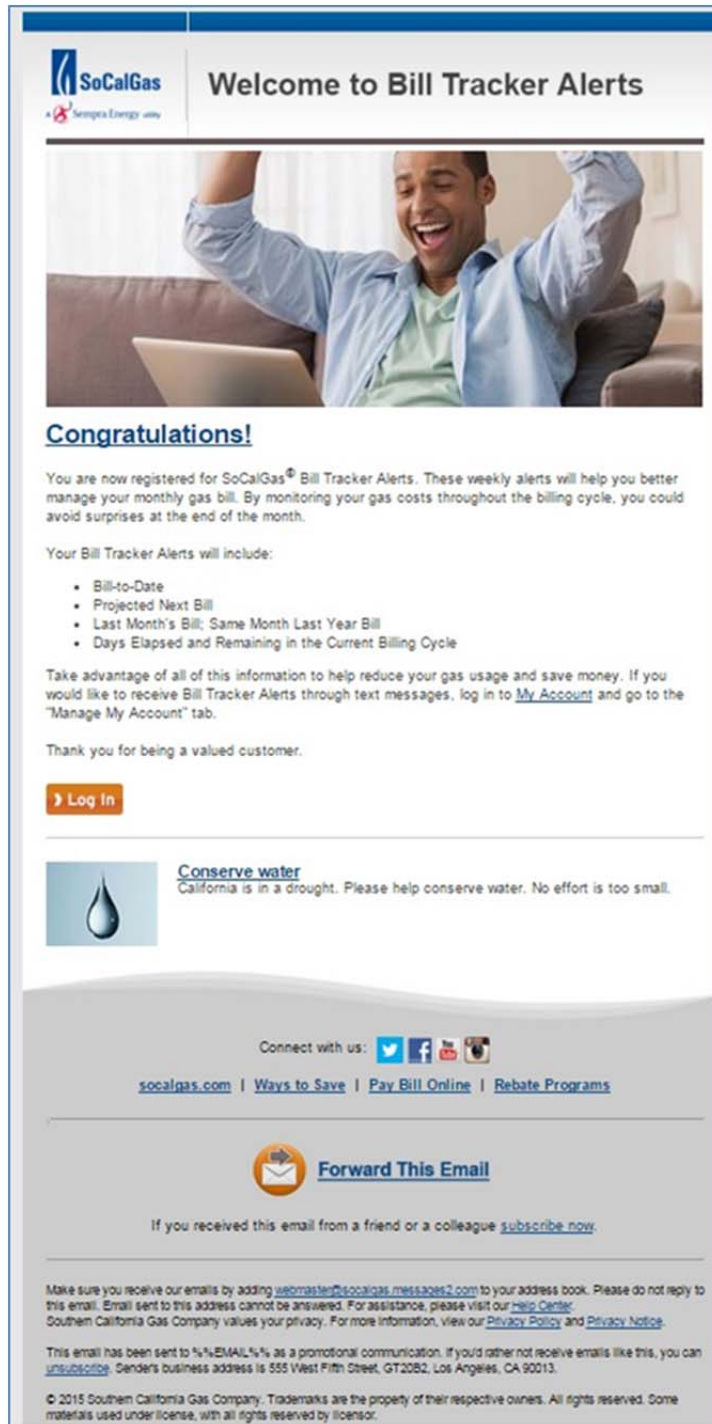
**Figure 2-10: Example SoCalGas Text Message BTA Notification**



#### ***Communications Sent to Default BTA Customers***

In mid-October 2015, approximately 80,000 residential customers were defaulted onto BTA and started automatically receiving BTAs through their primary My Account email address (non-My Account customers could not be defaulted onto BTA because SoCalGas does not have their email address). The default customers could also log into My Account and change their notification preferences to receive BTAs through text message, but the vast majority remained with the BTAs through email alone. In addition to the 15 or more weekly BTAs that these customers received throughout the 2015–2016 Conservation Campaign, SoCalGas sent a Welcome email as shown in Figure 2-11.

Figure 2-11: SoCalGas – November Bill Tracker Alert Welcome Email



### Supplemental Promotional Materials Sent to Customers

Two of the four BTA treatments tested in the Third Campaign included supplemental promotional materials customers received through email or direct mail in addition to the BTAs. The supplemental materials helped to introduce customers to the BTAs and provide additional information encouraging customers to access energy analysis tools within the My Account

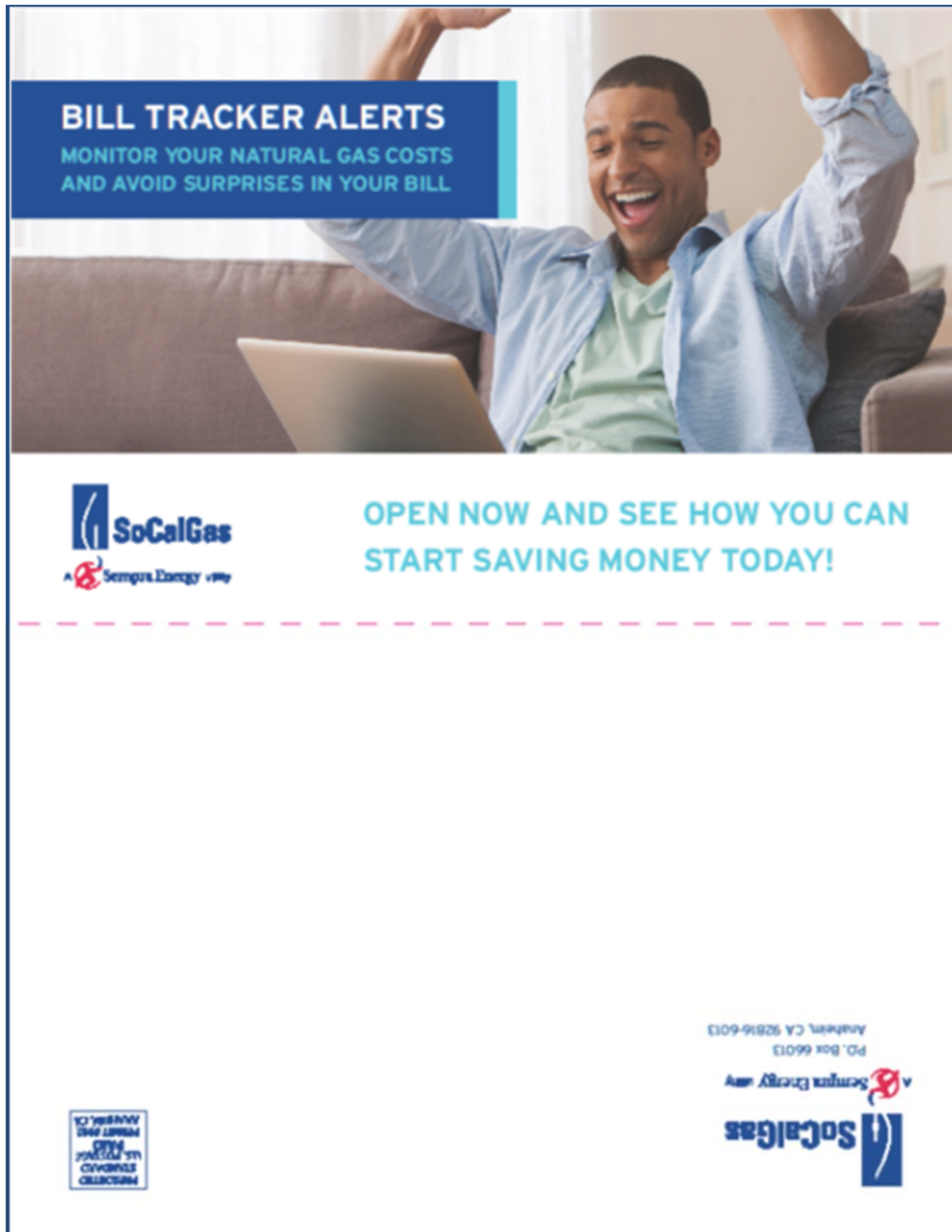


website. The November supplemental mailer can be seen in Figure 2-12 and Figure 2-13. Content in the supplemental materials varied slightly from month to month. (All additional materials can be found in Appendix D.)

**Figure 2-12: SoCalGas – November Bill Tracker Alert Supplemental Mailer (inside)**



Figure 2-13: SoCalGas – November Bill Tracker Alert Mailer (outside)



### 2.2.3 Seasonal Energy Updates (SEU)

SEUs are monthly energy reports that were developed based on data analytics provided by SoCalGas and implementation facilitated by Aclara. These reports are targeted to customers based on their individual sensitivity to colder weather as determined by their historical AM usage data. The SEU treatment included paper reports and email cold weather alerts. Using AM data, SoCalGas was able to measure how customers react to changes in temperature. Customers that are highly responsive to cold weather are called weather sensitive customers. SEUs are designed to target these weather sensitive customers and inform them on how to change their habits to reduce energy during colder weather periods.

SoCalGas developed SEUs based on learnings, insights, and hypotheses arising from the first two Campaigns, and first tested SEUs in the Third Campaign. Enrollment was split into two treatment groups, one containing My Account customers and the other containing Non-My Account customers. The treatment groups contained a large number of customers in comparison to the other treatment cells from the Third Campaign. However, only 25% of the customers in the treatment group received treatment (SEU reports). In the My Account treatment group there were 75,000 total customers, but only the top 25% most weather sensitive customers received reports (18,750). There were 96,600 total customers in the Non-My Account treatment group but only the top 25% most weather sensitive customers received reports (24,150). Customers selected to be in either of the SEU treatment groups were required to pass one additional filter of having historical AM bill data for at least one year prior to receiving treatment. This filter was applied so that SoCalGas could run a regression analysis to determine the weather sensitivity of customers.

The My Account customers in the SEU treatment received the following: four paper reports; one welcome letter/frequently asked questions; three frequently asked questions inserts; one repositionable thermostat setting reminder decal,<sup>14</sup> and three cold weather email alerts. The Non-My Account customers received four paper reports; one welcome letter/frequently asked questions; three frequently asked questions inserts; and one repositionable thermostat setting reminder decal.<sup>15</sup>

Figure 2-14 and Figure 2-15 provide examples of the front and back sides of the paper SEU sent in November (all additional materials can be found in Appendix E). The paper SEU featured the following information:

- Comparison to Neighbors during cold weather days;
- Normal Day vs. Cold Day Usage [self] Comparison; and
- Savings tips.

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<sup>14</sup> Some customers might have received the repositionable thermostat setting reminder decal twice. The decal was intended for inclusion in the December 2015 mailing, however due to unanticipated printing issues, not all customers received the decal in their mailing. In order to ensure that all customers received the decal, it was mailed again in the January 2016 mailing.

<sup>15</sup> Some customers might have received the repositionable thermostat setting reminder decal twice. The decal was intended for inclusion in the December 2015 mailing, however due to unanticipated printing issues, not all customers received the decal in their mailing. In order to ensure that all customers received the decal, it was mailed again in the January 2016 mailing.

Figure 2-14: Aclara/SoCalGas Paper SEU (Front)

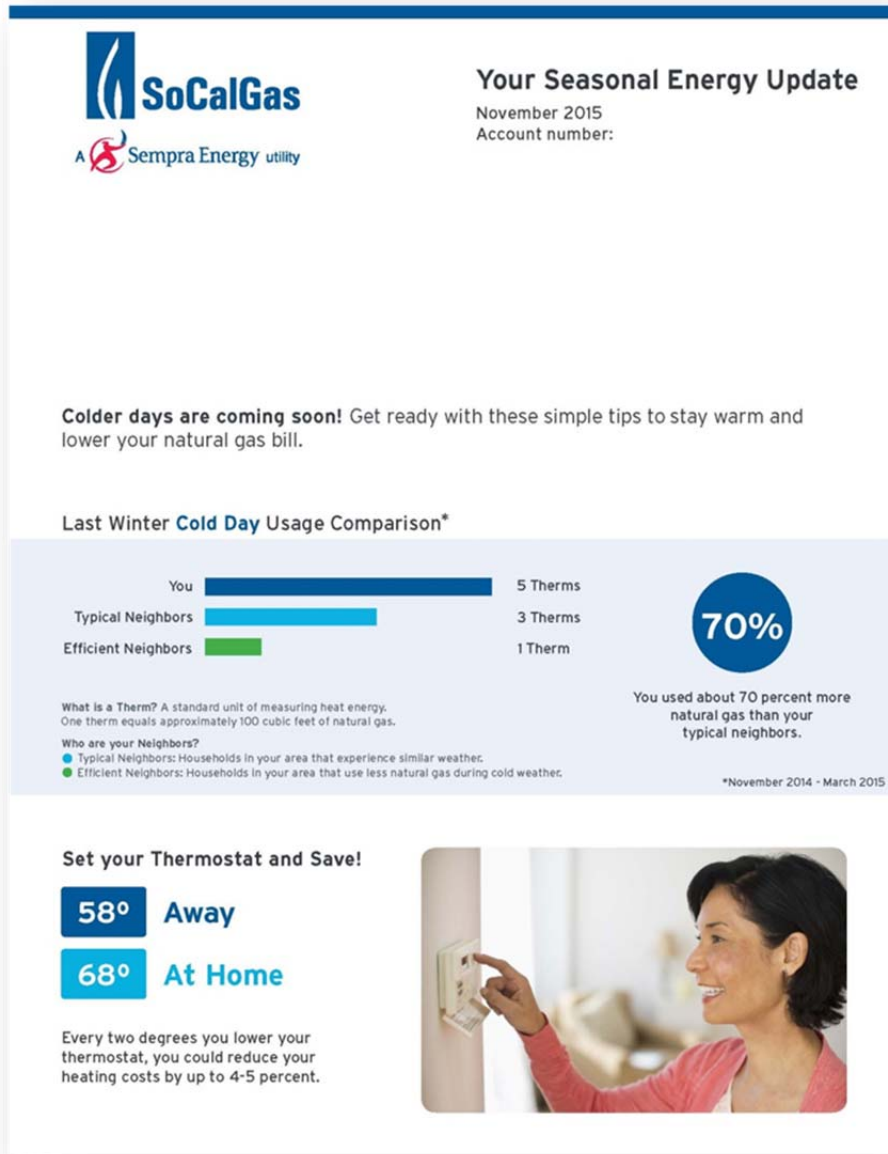


Figure 2-15: Aclara/SoCalGas Paper SEU (Back)

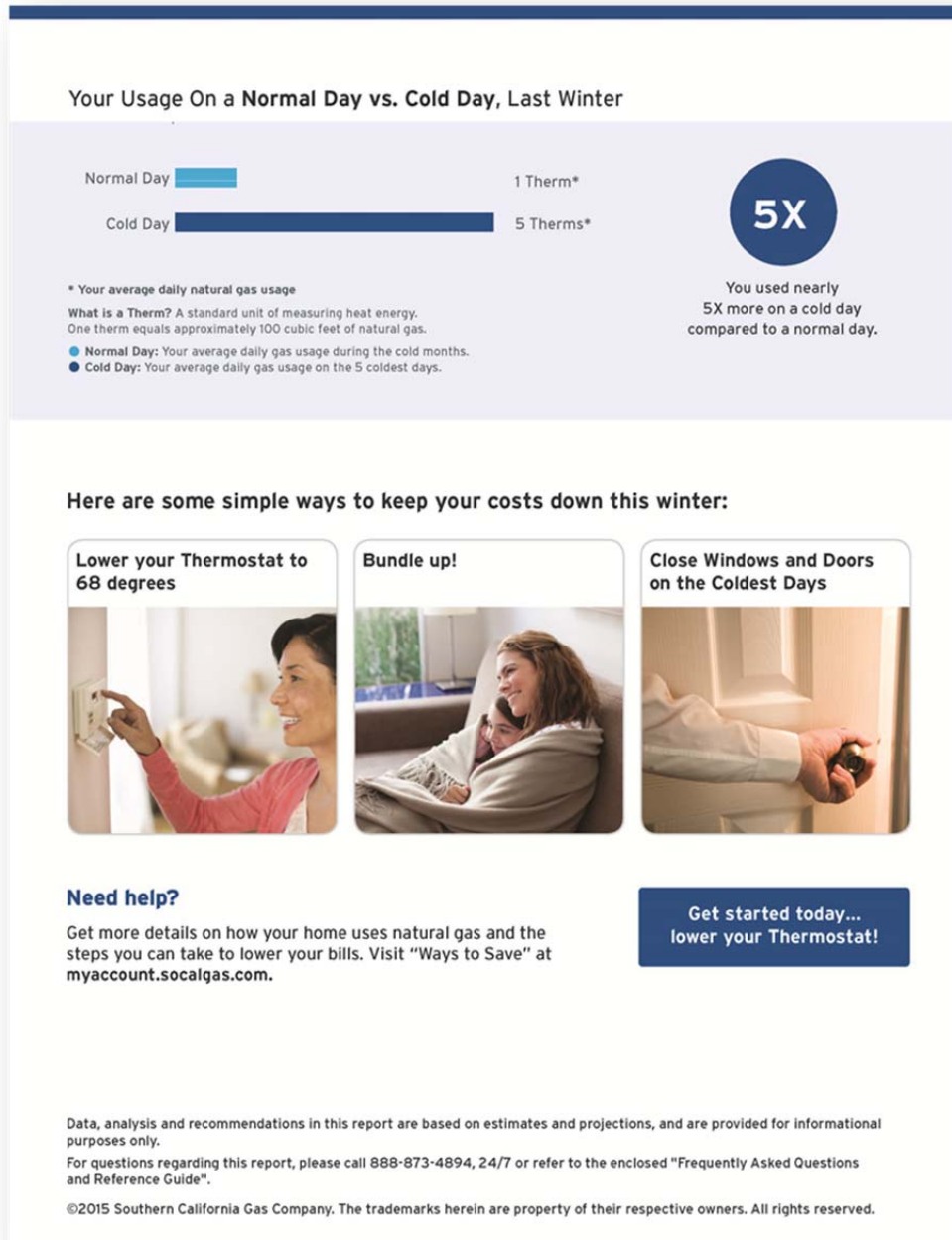



Figure 2-16 provides an example of the email SEU. The email SEU combines portions of the two sided paper SEU into the email format. It includes the last winter cold day usage neighbor comparison as well as tips to reduce energy costs during the winter. Examples of the remaining materials that Aclara/SoCalGas sent for the SEU treatment—the welcome letter, the cold weather alerts, the frequently ask questions insert, and the repositionable sticker—are provided in Appendix E.

Figure 2-16: Aclara/SoCalGas Email SEU

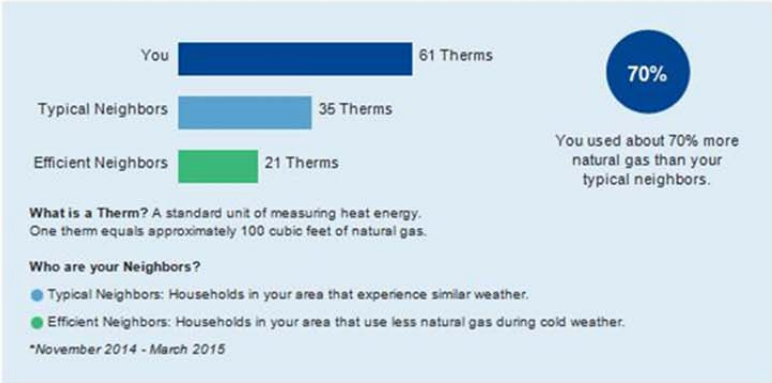
This message contains graphics. If you do not see the graphics, [click here to view](#)



**Cold Weather Alert**  
Tips to keep you warm

---

**Last Winter Cold Day Usage Comparison\*** Account Number: \*\*\*\*\*71879



Category	Usage (Therms)
You	61
Typical Neighbors	35
Efficient Neighbors	21

**70%**  
You used about 70% more natural gas than your typical neighbors.

**What is a Therm?** A standard unit of measuring heat energy. One therm equals approximately 100 cubic feet of natural gas.

**Who are your Neighbors?**

- Typical Neighbors: Households in your area that experience similar weather.
- Efficient Neighbors: Households in your area that use less natural gas during cold weather.


\*November 2014 - March 2015

**Here are some simple ways to keep your costs down this winter:**


**Lower your Thermostat to 68 Degrees**



**Install a Programmable Thermostat**



**Maintain your Heating System**



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Data, analysis and recommendations in this report are based on estimates and projections, and are provided for informational purposes only.

This email has been sent as a promotional communication. If you'd rather not receive emails like this, you can [unsubscribe](#). Sender's business address is 555 West Fifth Street, GT20B2, Los Angeles, CA 90013.

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## 2.3 Customer Acceptance of Information Services

This report focuses primarily on the energy savings impact of the information services described above. A related aspect of these services is customer experience. Two gauges of customer acceptance are available: participant opt-out rates and customer experience surveys. For the Third Campaign, SoCalGas administered customer experience surveys for SEU and BTA toward the end of the winter treatments in 2015–2016.

All treatments in the third Campaign were administered on a default basis but participants were able to opt-out of the service. For the 2015–2016 HER campaigns, as of June 30, 2016, a total of 602 (.5 percent) of Opower HER initial program enrollees opted-out of receiving further Opower HERs. For the same time period, a total of 452 (1%) of SEU initial program enrollees opted-out of receiving further SEUs. Additionally, since the inception of the Bill Tracker Alert offering in fall 2013, less than 2% of enrollees have unsubscribed. This implies that customer acceptance rates were quite high for all treatments.

The customer experience survey for the SEU treatment<sup>16</sup> reflected overall customer satisfaction with SoCalGas. However, SEU customers showed little difference in customer satisfaction, interest in reducing energy use, or lowered thermostat settings compared to the control group.

Other key findings included:

- The slight differences found between Treatment and Control groups suggests that the program has had a very little impact on customers overall views of SoCalGas and their self-reported actions to reduce energy usage;
- In general, customers from both the Treatment and Control groups are satisfied with SoCalGas and feel motivated or somewhat motivated to reduce their natural gas usage;
- The majority of Treatment group customers recall receiving the SEU report in the mail (81% of My Account customers and 70% of Non-My Account customers); and
- 79% of customers did not recall receiving Cold Weather Alerts via email. Upwards of 50% of customers clicked on the Cold Weather Alert email, so the low recall may be due to confusion regarding the name and description of the alert or an abundance of email messages in their inboxes causing low recall.

SoCalGas sent an email invitation to customers in the Third Campaign receiving the New and Old BTA treatment, as well as customers in the previous Campaigns receiving the BTA treatment, to participate in a brief survey about the alerts. The survey reflected that customers are reading their BTAs and that they find the BTAs easy to understand. Here are some of the key findings:

- The majority of the customers answered that they were currently receiving BTAs (88%);
- Over half of these customers responded they “always” read their BTA (67%);
- Approximately 87% of these customers agreed or strongly agreed that the BTAs were easy to understand; and
- Customers agreed or strongly agreed they were more aware of usage (77% agree or strongly agree).

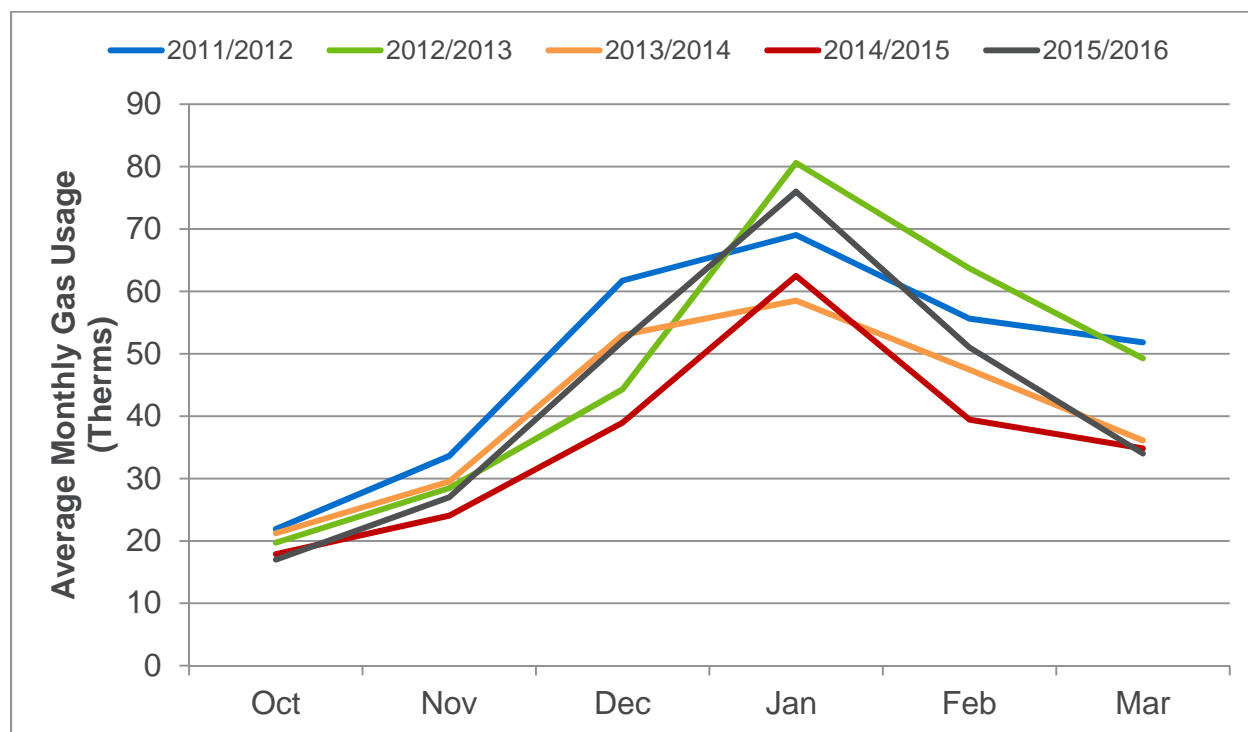
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<sup>16</sup> Opinion Dynamics, SoCalGas Customer Survey: Summary Results, March 2016.

## 2.4 2015–2016 Winter Weather Conditions

To fully interpret the energy savings that resulted from the 2015–2016 Conservation Campaign, it is important to consider the winter weather conditions. The winters of 2013–2014 and 2014–2015 were in turn the warmest on record in California.<sup>17,18</sup> Unlike the previous two years, the winter of 2015–2016 was not the record warmest but it was still above average. This is particularly relevant for all three Campaign winters as the analysis uses each year prior to the start of the Campaign as pretreatment data. This unseasonably warm weather for the first and second Campaign winters was reflected in the overall gas usage for residential SoCalGas customers in both years, as shown in Figure 2-17, which provides a comparison of residential gas usage over the past five winters. From October 2013 through December 2014, residential gas usage in the 2013 heating season was similar to gas usage in the prior two years. However, in January through March 2014, residential gas usage was substantially lower in 2014 than it was in the prior two years. Further, gas usage for the 2014–2015 heating season was the lowest in four years for all months except January 2015. The residential gas usage for the 2015–2016 heating season was substantially higher than the prior two years due to the relatively colder temperatures. The higher observed gas usage was also associated with higher percentage savings relative to the prior campaigns. This is reasonable given there are more opportunities to conserve when the usage is higher. Based on the weather and results observed to date, it would be reasonable to expect that in warmer years the conservation savings may be lower compared to years with relatively colder weather.

**Figure 2-17: Comparison of SoCalGas Residential Gas Usage over the Past Five Winters**



<sup>17</sup> <http://www.ncdc.noaa.gov/sotc/service/national/statewidetavgrank/201312-201402.gif>

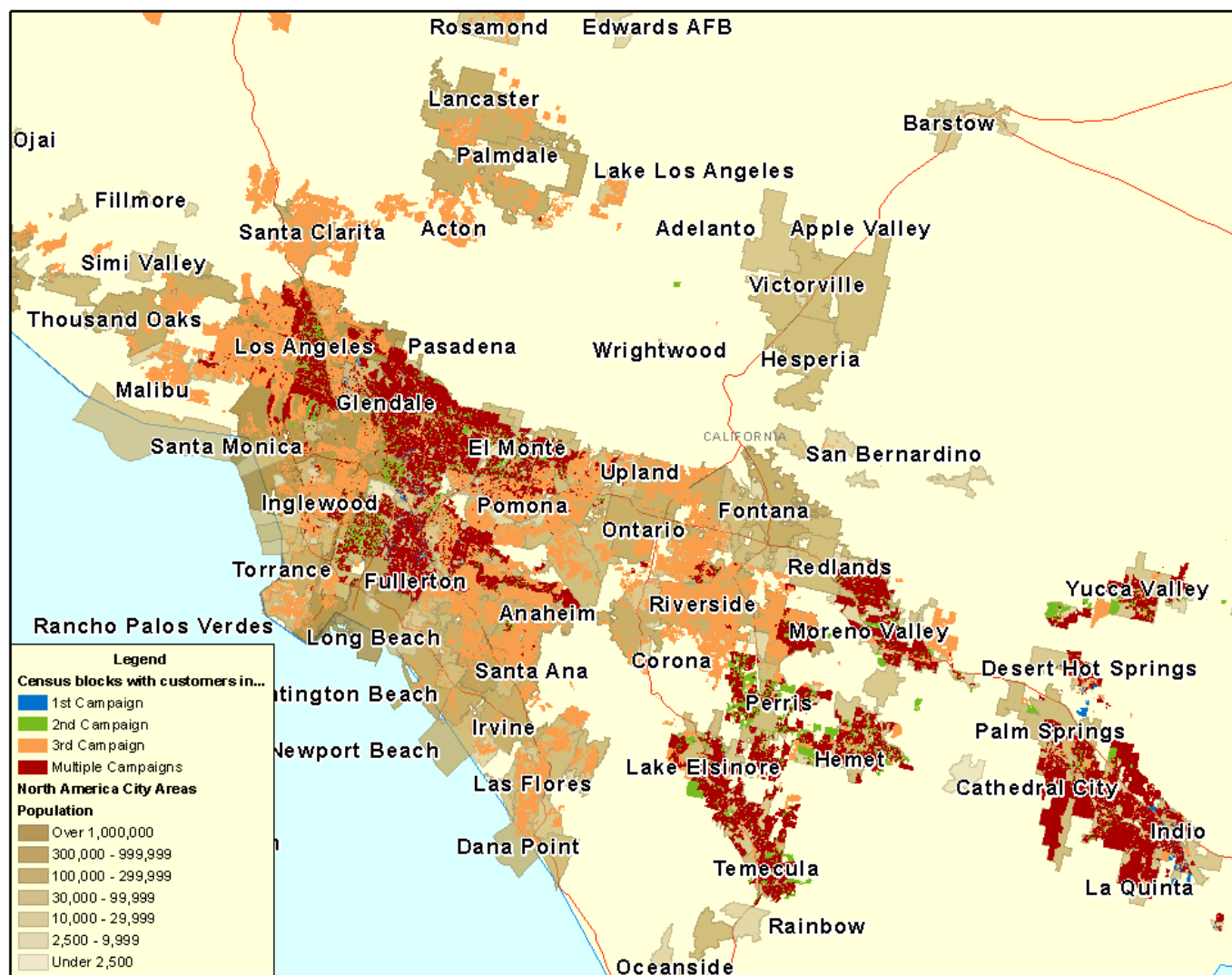
<sup>18</sup> <http://www.ncdc.noaa.gov/sotc/service/national/statewidetavgrank/201412-201502.gif>



## 2.5 Geographic Distribution of 2013–2014, 2014–2015, and 2015–2016 Conservation Campaigns

The customer populations for the all three Campaigns were significantly influenced by the geographic distribution of the SoCalGas advanced meter rollout. Figure 2-18 shows the geographic distribution of the populations from the first, second, and third Campaigns, highlighting the fact that the populations in the three Campaigns contained geographic overlap. This overlap is mainly due to the additions of customers in the third Campaign, as previously the first and second Campaigns were very geographically distinct. Census blocks that only contained customers in the first Campaign are blue; those only containing customers from the second Campaign are green. Census blocks that only contained customers in the third Campaign are orange; and finally, census blocks containing customers from more than one Campaign are red. While populations from the Campaigns were geographically diverse, the first Campaign was more concentrated in denser urban areas—Glendale, areas along the 605 corridor, central areas of Bakersfield and Palm Springs—while the second campaign was more of a mix of urban, suburban, and rural areas—the San Fernando Valley, outer edges of Riverside County, towns along I-5 near the Grapevine, etc.). The third Campaign was also more of a mix of urban, suburban, and rural areas—the Inland Empire, Northern Orange County, Eastern Los Angeles, the San Fernando Valley, and California’s Central Valley.

**Figure 2-18: SoCalGas Conservation Campaign Population Distribution by Year**



In addition to mapping out the geographic distribution of the sample populations for the three different campaigns, census block data was also used to analyze the extent to which populations for the three Campaigns varied demographically.

Table 2-2 summarizes certain customer characteristics and demographics for the populations included in the original sample for the three Campaigns. Similar to the second Campaign, the customers in the third Campaign show a lower representation from areas with high concentrations of renters<sup>19</sup> and a lower representation from areas with high population density.<sup>20</sup> The most notable difference for the customers in the third Campaign as compared to

<sup>19</sup> “High” defined as census block with rental rates above the 75<sup>th</sup> percentile among census blocks included in the first, second, or third campaign

<sup>20</sup> “High” defined as census block with densities above the 75<sup>th</sup> percentile among census blocks included in the first, second, or third campaign

the first and second campaigns is the lower representation from areas with high concentrations of Latino households.<sup>21</sup> This lower representation of areas with high concentrations of Latino households is mainly due to the initial segmentation that occurred during the sampling process to separate the customers into English-only and English + Spanish groups.<sup>22</sup> After the population was segmented into English-only and English + Spanish groups, only the customers who had indicated a Spanish language preference with SoCalGas (27% of English + Spanish group) were included in the treatment and control groups. The focus on specifically researching the customers with a Spanish language preference ultimately resulted in a smaller overall number of Latino households being included in the Third Campaign.

**Table 2-2: Comparison of Select Demographics for Customer Populations in the First, Second, and Third Campaigns<sup>23</sup>**

Segment	First Campaign (2013–2014)	Second Campaign (2014–2015)	Third Campaign (2015–2016)
% Areas with high concentrations of renters	34%	17%	18%
% Areas with high population density	35%	23%	19%
% Areas with high concentrations of Latino households	27%	16%	4%

These are all characteristics that may affect both the ability and the propensity of participants to respond to conservation efforts such as the SoCalGas Conservation Campaign. As such, one should not necessarily expect to find similar overall impacts from similar treatments in the three different campaigns. One may expect, however, for impacts from similar treatments within each demographic group to be more similar.

<sup>21</sup> “High” defined as census blocks with Latino populations above the 75<sup>th</sup> percentile among census blocks included in the first, second, or third campaign

<sup>22</sup> The English + Spanish group was formed with customers who resided in a census blocks with high concentrations of Latino households

<sup>23</sup> Based on 2010 Census Block demographics

## 2.6 Report Organization

The remainder of this report proceeds as follows:

- Section 3 describes the research design, including the treatment and control group assignments for residential customers;
- Section 4 summarizes the methodology used to evaluate energy conservation;
- Section 5 summarizes the energy conservation estimates for all of the treatments;
- Section 6 provides recommendations for the 2016–2017 SoCalGas Conservation Campaign; and
- Appendix A through Appendix E include additional example communications and informational materials for the treatments.

### 3 Research Design

In order to determine if the new information services made available by SoCalGas change energy use for consumers who have access to them, it is necessary to estimate what energy use would have been for those customers if they did not have access to the information. Conceptually, this can be accomplished by comparing usage before and after a group of customers receives the information, but other factors such as differences in weather or economic conditions can make such comparisons highly inaccurate. Side-by-side comparisons of customers that do (the treatment group) and don't (the control group) have access to the service of interest is the most robust approach, but only if the two groups of customers are identical except for the fact that one gets the information service and the other doesn't. Obtaining well matched treatment and control groups is the fundamental challenge to getting accurate impact estimates.

In the evaluation plan<sup>24</sup> for its 2013–2014 Conservation Campaign, SoCalGas considered the full spectrum of options before determining that a randomized control trial (RCT) design was the preferred option for these default programs. The evaluation plan provides a summary of the reasons why other options were rejected.

Finally, an important input into development of the evaluation plan was the size of the participant population and control groups required to estimate the effects of the planned information/behavioral treatments. The evaluation plan provided a detailed description of the process used for sample size determination and this will not be repeated here. However, it is relevant to note that sample sizes were adjusted upward in the second and third Campaigns to control for the effects of anticipated customer attrition.

#### 3.1 Residential Treatment and Control Group Assignments

Several factors were taken into consideration in assigning customers to test cells in the 2015–2016 Conservation Campaign and how the target market should be segmented.

The first important consideration is usage. Experience has shown that customers with low annual usage may not be interested in or respond to information feedback since their bills are so low that even significant percent changes in energy use would produce only very small economic benefit in the form of bill savings. Even if these customers produced above average savings relative to other customers (which, for reasons just mentioned, may be unlikely), their contribution to the target of 1% savings in aggregate for the overall population would be small and the implementation costs for these customers per therm conserved would be relatively high. In short, it is highly unlikely that low usage customers are cost-effective and almost certain that they would be less cost-effective than customers with larger usage. In fact, the 2013–2014 Campaign found that customers in the second usage quartile (the first quartile was excluded from default treatments in that testing cycle) delivered the lowest absolute and percent gas savings, relative to high users in the third and fourth usage quartiles. Therefore, considering that the 2015–2016 Conservation Campaign was able to take advantage of an expanded

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<sup>24</sup> Southern California Gas Company's Evaluation Plan for Estimating Conservation Effects from Information Feedback Services. August 9, 2013. (Included as Appendix O in the "Southern California Gas Company Advanced Meter Semi-Annual Report" filed with the CPUC on August 30, 2013).

footprint in terms of AM installations, SoCalGas had a sufficient amount of customers to improve its targeting strategy for the third Campaign as follows:

- Focus on the top two usage quartiles;
- Only include customers who have passed the Opower Screen; and
- Only include customers who have pretreatment data from October 2014 through March 2015.

Another important segmentation factor is whether customers are My Account users. My Account customers register with SoCalGas to receive a variety of online services, including receiving, viewing, and paying their bills online, accessing historical usage data, making payment arrangements, and service scheduling changes such as starting or stopping service. Given their demonstrated interest in online transactions, My Account customers may be more likely than non-My Account customers to take advantage of the new information available through BTAs or HERs. They also are a population for whom SoCalGas has email addresses and, thus, can receive email solicitations and information feedback through this inexpensive channel. For all of these reasons, the population of customers targeted for both BTAs and HERs was segmented into My Account and non-My Account customers in the all three Campaigns.

For the 2015-2016 Campaign there were two new segmentations used. The first segmentation was whether customers were English-only speaking customers or English and Spanish speaking customers. The customers who were in the English and Spanish segment were split between customers who had a confirmed Spanish Preference or a preference that was unknown. This segmentation was done to test how customers who preferred using Spanish performed when receiving a Spanish language HER.

The second new segmentation in 2015–2016 was between CARE (low income) and Non-CARE customers. The CARE population of customers may behave differently after receiving new information available through HERs.

An important distinction to note about the residential and control group assignments for the 2015–2016 campaign is that this population included carryover/leftover customers from the 2013–2014 campaign. These included customers from the Opt-in BTA treatments as well as the control groups that were no longer part of the study population. For the Third Campaign evaluation, the control groups from the First Campaign that passed the Opower Screen were cut down to 25,000 customers each. Similarly, the Non-My Account control group from the Second Campaign was reduced to 53,500 customers.

Figure 3-1 provides a summary of the population segmentation and treatment and control group assignments for residential customers in the 2015–2016 Conservation Campaign. The research sample for the third Campaign excluded customers in the lower two usage quartiles: customers who did not have 2014–2015 pretreatment data and who did not pass the Opower screen. About 781,000 customers remained after removing customers in these three groups.

The remaining customers were then split into English Only and English + Spanish groups based on census block data. The 32,729 customers in the English + Spanish group that were identified

as having a Spanish language preference by a call center were assigned to the Opower Spanish HER treatment (13,750) and its corresponding control group (18,798). The remaining 87,491 customers who had an unknown Spanish Preference were not used in the campaign.

Among the roughly 661,000 customers in the English Only segment, about 114,000 were CARE customers and about 547,000 were Non-CARE customers. In the CARE segment 13,750 customers were assigned to the Opower Paper and Email HER and 27,500 customers were assigned to the Opower Paper and Email Thermostat HER. The remaining 71,641 CARE customers were assigned to the control group.

The 547,000 Non-CARE customers were divided into the My Account or Non-My Account groups. Since SoCalGas did not have email addresses for the non-My Account customers, this group was assigned to test the paper-only treatments. The Opower standard Paper HER and the Opower Thermostat Paper HER were assigned to randomly selected groups of 13,750 each. The paper SEU contained 96,600 customers but only top 25% most weather customers received treatment.

Since SoCalGas had email addresses for the roughly 259,000 My Account customers, it used this group to test default BTAs, Email HERs, and SEUs. The four BTA treatments were assigned to randomly selected groups of 20,000 each. Both the Opower standard email HER and the Opower Thermostat email HER contained 13,750 customers. Of the remaining My Account Customers 75,000 customers were placed in the Email SEU treatment but only the top 25% most weather sensitive customers received treatment.

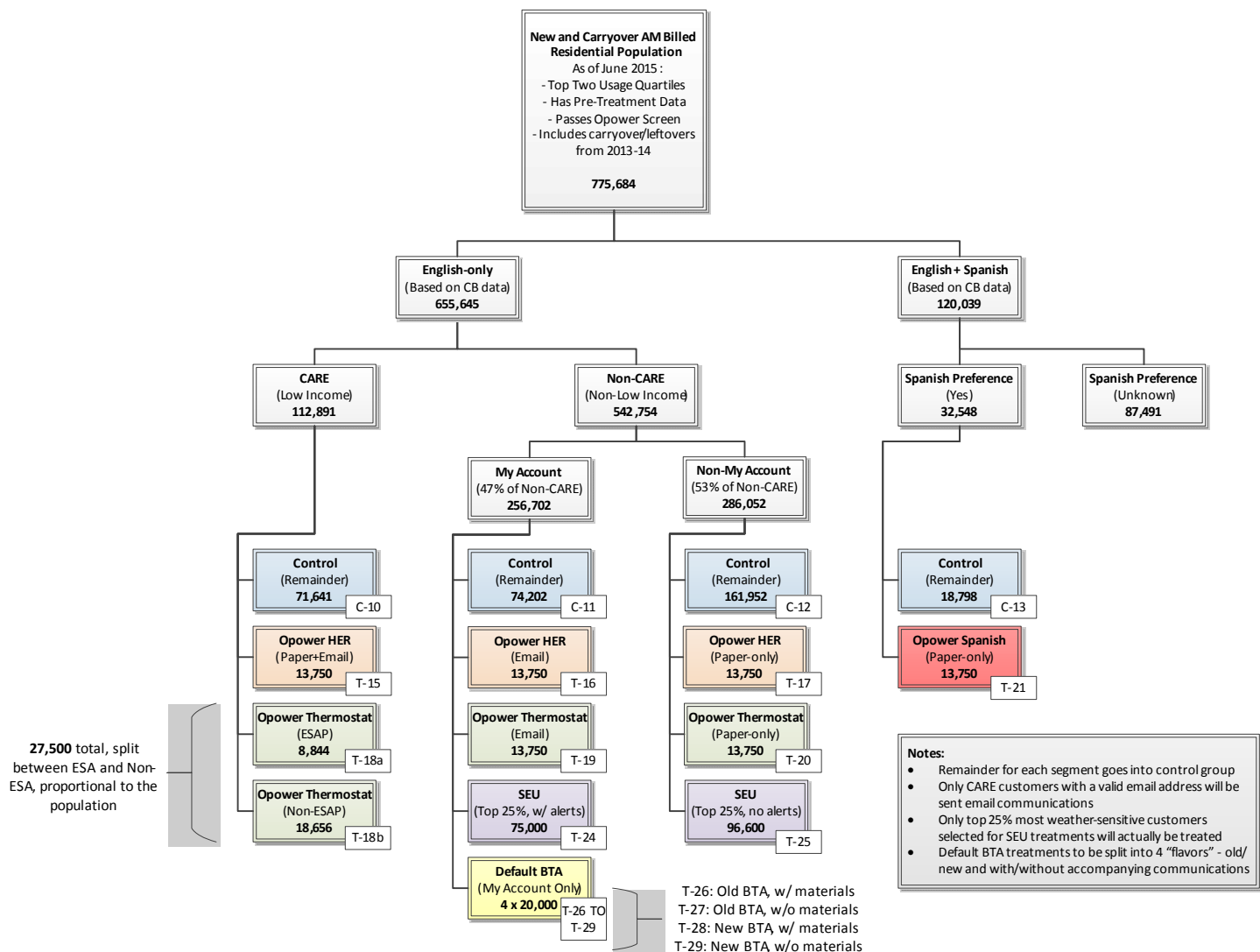
In summary, the 780,979 residential customers in the eligible AM population were allocated as follows:

1. **Default BTA:** 80,000 customers;
2. **Opower Paper-only HERs:** 41,250 customers (33% standard, 33% thermostat, 33% Spanish);
3. **Opower Email HERs:** 27,500 customers (50% standard email, 50% Thermostat email);
4. **Opower Paper & Email HERs:** 41,250 customers (33% standard paper & email, 66% thermostat paper & email);<sup>25</sup>
5. **SEUs:** 42,900 customers (44% email SEU, 56% paper SEU); and
6. **Control Group:** 326,593 customers.

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<sup>25</sup> The monthly Email HER was only sent to those CARE customers within the treatment group registered for SoCalGas My Account customer portal and with a valid Email address.

**Figure 3-1: Residential Treatment and Control Group Assignments for the 2015–2016 Conservation Campaign**



### 3.2 Residential Data Sources

In the analysis, Nexant used daily gas usage data in therms for the post-treatment period from November 1, 2015 through March 31, 2016. Monthly billing data from the same months a year prior was used as the pretreatment data because daily AM data was largely not available for customers in the sample.<sup>26</sup> These data sources yielded 10 months of gas usage data for the study period of interest—spanning from November 1, 2014 through March 31, 2016—with the 2014 non-heating months—April through October—omitted. For estimation purposes, October was dropped from the pre- and post-treatment period both because usage is quite low in

<sup>26</sup> As previously stated, only customers with pretreatment data were included, but this simply means that the sample was limited to customers who had active SoCalGas accounts in the pretreatment period, not explicitly limited to customers with pretreatment AMI data.



that month relative to the other “winter” months and also because treatments began in early November.<sup>27</sup> Thus, the impact estimates discussed in Section 5 span the five month period from November 1, 2015 through March 31, 2016.

In an RCT design that uses difference-in-differences to estimate the energy savings, customers must have a full panel of pre- and post-treatment usage data in order to be included in the analysis that assesses impacts and statistical significance across all months. Basically, customers that were not active SoCalGas accounts from November 1, 2014 through March 31, 2016 were excluded from the analysis of the overall impacts of the third Campaign. As long as the percentage of customers dropped is consistent between each treatment group and associated control group, this exclusion of customers from the analysis does not produce bias in the conservation estimates. To verify that the percentage of customers dropped is consistent within each segment, Table 3-1 shows the number of customers that were included in the analysis by treatment/control group, compared to the original number of customers that was sampled. All treatment and control groups retained around 96% of the customers that were originally sampled. Most importantly, the percentage of customers retained is highly consistent within each statistically equivalent group, which ensures that the integrity of the original sample design is held intact even though some customers had to be dropped from the analysis that assesses impacts and statistical significance across all months.<sup>28</sup>

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<sup>27</sup> In the first Campaign some customers began treatment in October but October was likewise excluded from the analysis for similar reasons.

<sup>28</sup> For the purposes of estimating whether the treatments produced a statistically significant reduction in overall gas usage throughout the 2015-2016 Conservation Campaign, these customers were dropped. However, once Nexant identifies a statistically significant usage reduction within a given test cell, the analysis can be done at the monthly level, which allows for the re-inclusion of some customers that may not have had usage data for every month, but do have data for some pre- and post-treatment months. Basically, when the analysis is conducted at the monthly level, as long as a customer has data for an individual pre- and post-treatment month, that customer can be included in the analysis for that month.

**Table 3-1: Residential Customers Included in Analysis by Treatment/Control Group**

Segment	My Account	Group	Number of Customers in Original Sample	Number of Customers in Analysis	% of Original Sample in Analysis
Non-CARE	Yes	C-11	74,202	70,797	95.41%
		T-16	13,750	13,086	95.17%
		T-19	13,750	13,094	95.23%
		T-24	75,000	71,418	95.22%
		T-26	20,000	19,069	95.35%
		T-27	20,000	19,032	95.16%
		T-28	20,000	19,035	95.18%
		T-29	20,000	19,062	95.31%
	No	C-12	161,952	157,117	97.01%
		T-17	13,750	13,364	97.19%
		T-20	13,750	13,342	97.03%
T-25		96,600	93,535	96.83%	
CARE	Yes/No	C-10	71,641	68,293	95.33%
		T-15	13,750	13,082	95.14%
		T-18a	8,844	8,509	96.21%
		T-18b	18,656	17,696	94.85%
Spanish		C-13	18,798	18,194	96.79%
	T-21	13,750	13,319	96.87%	
<b>All</b>		<b>Total</b>	<b>688,193</b>	<b>661,044</b>	<b>96.06%</b>

## 4 Gas Savings Impact Estimation Methodology

Nexant estimated models using panel data to determine energy savings. Panel data is a data structure in which multiple observations over time are present for multiple individuals. In the evaluation<sup>29</sup> for the 2013–2014 Conservation Campaign, Nexant took the opportunity to test three different model specifications for using panel data to estimate energy savings—a fixed-effects (FE) model, a random-effects (RE) model, and a lagged dependent variable (LDV) model. All models featured time-effect variables as well as error estimates clustered at the customer level. Each of these model specifications has merit under the appropriate circumstances, but they are fundamentally different approaches to estimating treatment effects. All three model specifications were carefully considered before determining that a LDV model was the preferred evaluation model. The evaluation of the first Campaign provides a summary of the reasons why the LDV model was chosen as the appropriate model for this evaluation.

The LDV model incorporates individual heterogeneity by explicitly including past values of an individual's energy consumption as control variables on the right-hand side of the regression equation. The LDV regression model as used in this evaluation is specified in this equation:

$$therms_{i,t} = a + b \cdot T_i + c \cdot u_t + d \cdot therms_{i,t-12} + \varepsilon_{it}$$

In this equation,  $t$  indexes months November 2015 through March 2016 and  $i$  indexes individuals. The intercept is the same for everyone and the term  $therms_{i,t-12}$  represents the energy consumption for individual  $i$  in a previous period (in this case, the same month from the prior year). This is akin to saying that what makes consumers unique is captured entirely by their past levels of consumption. The model variables are defined in Table 4-1. This model can be estimated using pooled OLS, provided that there is no serial correlation in the error term and that there are no omitted variables that are correlated with the treatment. The underlying identification assumption is that average consumption without the treatment would be the same for both treatment and control customers. Given that the research design features an RCT with random assignment to large treatment and control groups, this assumption is clearly valid in this case.

<sup>29</sup> Southern California Gas Company's Evaluation Plan for Estimating Conservation Effects from Information Feedback Services. August 9, 2013. (Included as Appendix O in the "Southern California Gas Company Advanced Meter Semi-Annual Report" filed with the CPUC on August 30, 2013).

**Table 4-1: Definition of Lagged Dependent Variable Model Variables**

Variable	Definition
$therms_{i,t}$	average daily gas consumption of participant $i$ during month $t$
$a$	estimated intercept
$b$	estimated treatment effect
$c$	estimated monthly time effect on treatment and control group
$d$	estimated effect of an individual's consumption in month $t - 12$
$T_i$	indicator of whether or not the participant is assigned to the treatment condition
$therms_{i,t-12}$	average daily gas consumption of participant $i$ during month $t - 12$
$u_t$	Time effects for each month that control for unobserved factors that are common to all treatment and control customers but unique to month $t$
$\varepsilon_{i,t}$	error for each participant and month

Nexant conducted an evaluation of impacts for the third Campaign using winter 2014–2015 as the pretreatment period ( $t - 12$ ). In addition, Nexant estimated the impacts for customers in the second Campaign including the Aclara HER customers who no longer received HERs and the Opower HER and Default BTA customers still receiving treatment. Nexant also estimated the persistence of energy savings for customers from the first Campaign—the Opower HER customers who no longer received HERs and the BTA customers who continued to receive BTAs in the absence of any promotional materials. For the first Campaign customers, the treatment period ( $t$ ) was 2015–2016 and pretreatment period was still 2012–2013 so that energy savings in the third year could be compared to energy savings in the first year. For the second Campaign customers, the treatment period ( $t$ ) was 2015–2016 and pretreatment period was still 2013–2014 so that energy savings in the second year could be compared to energy savings in the first year.

Due to only the top 25% of the SEU treatment groups receiving the treatment, one additional analysis step was required compared to the other treatments. While the other treatments are part of a RCT, the SEU treatment was technically a Randomized Encouragement Design (RED). A RED is similar to an RCT, and used when treatment cannot be delayed or denied, or when a known subset of treatment customers within an RCT receives a unique treatment—such as the SEU group. The observed treatment effect was measured by comparing the complete group of treatment customers—including the 75% not treated and 25% treated—against their corresponding control group. For the Paper SEU treatment group there were 96,600 customers originally selected to be part of the treatment cell and for the Email SEU treatment group there were 75,000 customers originally selected to be part of the treatment cell. However, only 24,150 customers (25%) received the Paper SEU treatment and 18,750 customers (25%) received the Email SEU treatment. There is no uncertainty that the remaining customers in either of the treatment cells did not receive treatment and would produce zero impacts. Therefore, in the resulting average impact per customer, it is known that only 25% of the customers were treated, so it needs to be adjusted to reflect that fact. To calculate the average

savings rate per treated customer, we scaled the measured impact by the % of customers who were actually treated, which was 25%. This resulted in the average impact per customer from the original difference between the full treatment and control group being multiplied by four. To calculate the reference load for the treated customers we take the scaled impact and add this to the observed load for customers that were treated.

This analysis also reflects the same data management protocols developed during the 2013–2014 and 2014–2015 Campaigns and agreed upon during a knowledge sharing meeting with SoCalGas and other stakeholders.

## **5 Energy Conservation Estimates**

This section begins with a summary of the results and conclusions for the 2015–2016 SoCalGas Conservation Campaign, followed by a detailed assessment of how gas savings vary by customer segment and a summary of the third year savings results for customers from the 2013–2014 and 2014-2015 Conservation Campaigns. At the end of the section, an estimate of the total 2015–2016 gas savings for all three groups is provided.

### **5.1 Percent Reductions for 2015–2016 Conservation Campaign**

Table 5-1 shows the estimated percent reductions in gas consumption for the 13 new residential treatments deployed for the 2015–2016 Conservation Campaign. Percent reductions were derived using the LDV regression model. P-values for the coefficient estimates from the regression models are also displayed. The data used for model estimation covers the months of November 2015 through March 2016 as compared to the pretreatment period (the months of November 2014 through March 2015). It only includes customers who were active for the full period.

All of the 13 treatments yielded statistically significant impacts. The Third Campaign was the first of the three Campaigns that yielded statistically significant results for all of the treatments that were tested. This reflects the value of the adaptive design process being utilized within the “test and learn” approach. The SEU treatments both produced the highest percent reductions—approximately 3%—for both the email and paper SEU. However, it is important to note that these treatment cells are not directly comparable to the other treatments as they only include customers identified as being highly sensitive to cold weather. Both of the Old BTA treatments produced the smallest savings rates.

The Opower Spanish Paper-only HER produced statistically lower savings than the Opower Paper-only HER. Besides the Opower Spanish HER, the two other Opower Paper-only HER treatments produced savings rate of at least 1.30%. This includes the Opower Paper-only HER (1.50%) and the Opower Paper-only Thermostat HER (1.32%). The Opower Thermostat Email HER and the Opower Email HER produced lower savings rates than the Paper-only treatments. The Opower Email HER produced a savings rate of .86% and the Opower Email Thermostat HER produced a rate of 1.28%. These results suggest that, at least for the Opower treatments, the Paper-only HER treatments were more effective than the Email HER treatments in this case.<sup>30</sup>

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<sup>30</sup> The Opower Email HER treatments include test cells T-16 and T-19. Customers in these treatments received 1 paper report and 12 email reports.

**Table 5-1: Estimates of Percent Reductions in Gas Energy Consumption for the 2015–2016 Conservation Campaign, November 2015 through March 2016**

Segment	My Account	Treatment	Group	Number of Treatment Customers	% Reduction	P-value
Non-CARE	Yes	Opower Email HER HER	T-16	13,086	0.86%	0.00
		Opower Email Thermostat HER	T-19	13,094	1.28%	0.00
		Paper & Email SEU	T-24	17,877	3.04%	0.00
		Old BTA, w/materials	T-26	19,069	0.70%	0.00
		Old BTA, w/o materials	T-27	19,032	0.49%	0.04
		New BTA, w/materials	T-28	19,035	1.04%	0.00
		New BTA, w/o materials	T-29	19,062	0.86%	0.00
	No	Opower Paper-only HER	T-17	13,364	1.50%	0.00
		Opower Paper-only Thermostat HER	T-20	13,342	1.32%	0.00
		Paper-only SEU	T-25	23,494	3.08%	0.00
CARE	Yes/No	Opower Paper & Email HER	T-15	13,082	1.01%	0.00
Opower Paper & Email Thermostat HER		T-18	26,205	1.53%	0.00	
Spanish		Opower Spanish Paper-only HER	T-21	13,319	0.82%	0.00



## 5.2 Comparison to 2013–2014 and 2014–2015 Percent Reductions

In 2014–2015 the second Campaign tested seven treatments, which included default BTAs and HERs. The two different varieties of HERs were implemented by Aclara and Opower. The three Opower HERs—Paper-only, Email, and Paper & Email—all produced statistically significant results while the Aclara Paper-only HER was the only Aclara HER that produced statistically significant results. The default BTA did not produce measurable savings. The Aclara treatments were stopped while the default BTA and Opower treatments continued into the third Campaign.

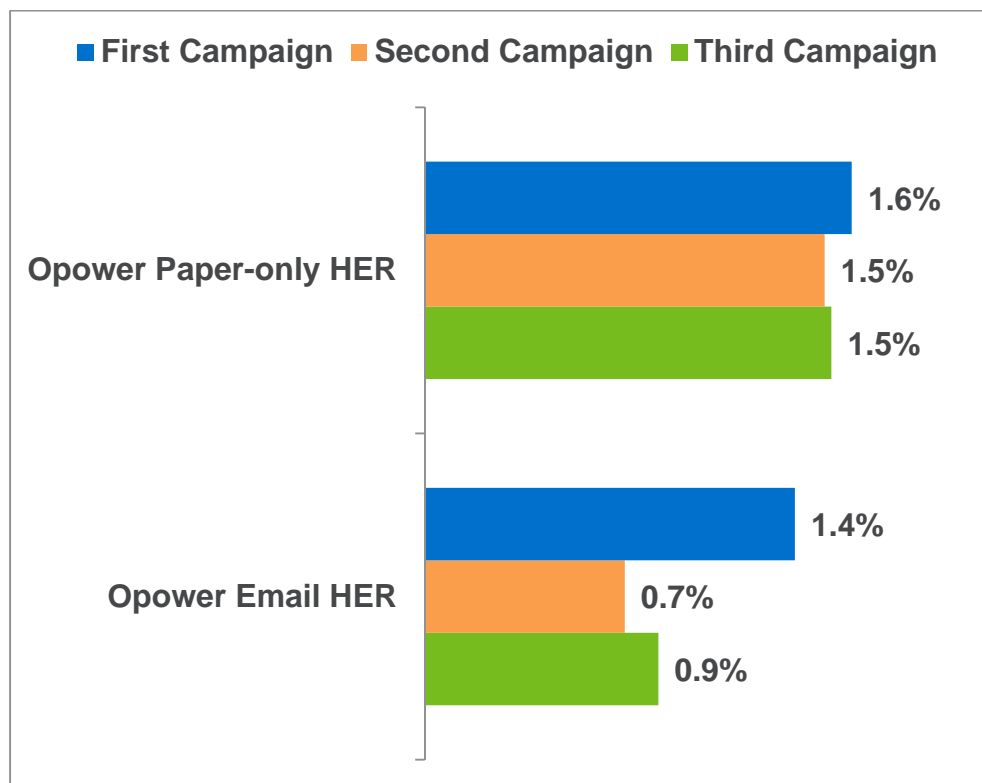
The four treatments from the first Campaign that produced statistically significant gas usage reductions were the default BTAs and three variations of the Opower HER reports—Paper-only, Email, and Paper & Email. The default BTA customers continued to receive treatment but the Opower treatments have not received reports since the first Campaign.

The treatments that produced measurable savings from the first and second Campaigns were also tested in the third Campaign. An important distinction to note is that the third Campaign tested two versions of the default BTA, the Old BTA and the New BTA. Moving forward, the default BTAs from the first and second campaign will be called the Old BTA as well.

However, to interpret the comparisons of the treatments from the three Campaigns it is important to note several key differences between the Campaigns. First, as discussed in Section 2.5, the research sample in each year was pulled from the population that received advanced meters in the year leading up to the summer before each Campaign. These meters were rolled out to different geographic areas each year and the underlying characteristics of the three different populations could bias the results from one year to next. In particular, the second and third Campaigns included geographic areas with lower population densities and lower rates of renters. Due to the process of sampling customers in the third Campaign, there are very few areas with high rates of a Latino population. Second, as explained in Section 3.1, the HERs eligibility screens applied in the second Campaign resulted in a much higher exclusion rate, with 35% of advanced meter customers being screened out in the second year versus only 4% in the first year. This large difference may have created systematic differences between the populations of the second Campaign and that of the first and third Campaigns, potentially biasing the comparison of results between the three Campaigns. Third, as described in Section 2.2, the implementation of the default BTAs differed in that the first and third Campaigns included several paper and email educational and promotional materials in addition to BTAs, whereas in the second Campaign, only an email welcome message was included in addition to the BTAs.

With these caveats considered, Figure 5-1 shows the comparison of results for the similar Opower HER treatments across the three Campaigns. The results shown in Figure 5-1 are the savings rates from the first year of treatment for each of the different Campaigns. The Opower Paper-only HER provides consistent measurable percent reductions for each of the Campaigns. The email HER produced lower percent reductions in the second and third Campaigns. These results indicate that the email HER percent reductions from the first Campaign are an anomaly rather than what we should expect to see from future treatments. The Opower Paper and Email HER is not included in this comparison because the treatment population in the third Campaign was dramatically different from the first two Campaigns as this treatment was only applied to CARE customers.

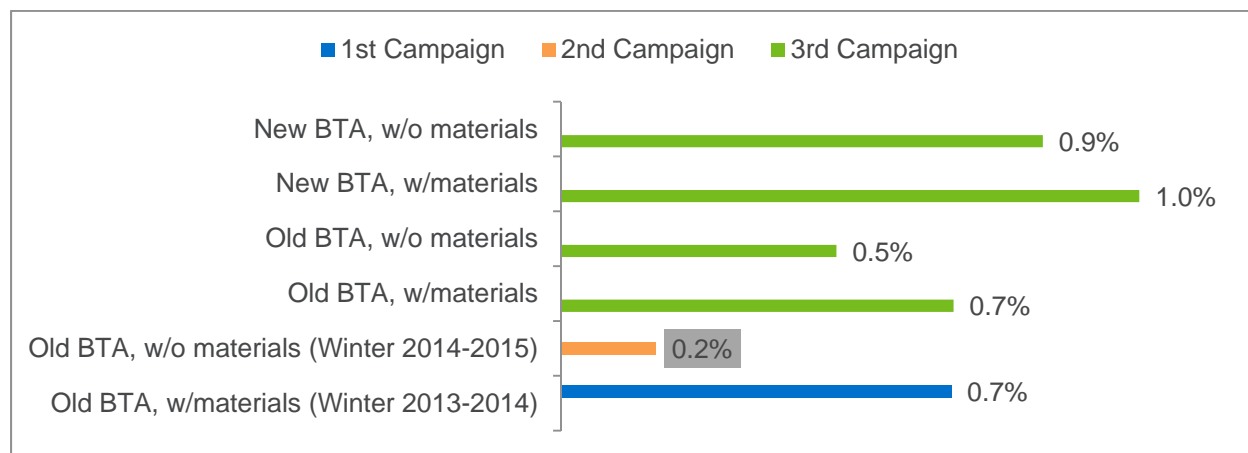
**Figure 5-1: Comparison of Opower Treatments Percent Reduction Estimates for the First, Second, and Third Campaigns**



The Opower Email HER treatment was virtually identical in all three Campaigns, meaning that a difference in treatment design does not explain the difference in impacts. This suggests that the difference in populations from one year to the next is a more plausible explanation for the difference in impacts for both the Email HERs.

Figure 5-2 shows the comparison of results for BTA treatments across the three Campaigns. The results shown in Figure 5-2 are the savings rates from the first year of treatment for each of the different Campaigns. The New BTA with supplemental promotional materials produced the highest savings rate of the default BTA treatments. Both BTA versions produce higher savings with promotional materials.<sup>31</sup> The difference in performance between the New BTA and the Old BTA was marginally statistically significant, with a P-value of 0.09.

**Figure 5-2: Comparison of BTA Treatments Percent Reduction Estimates for the First, Second, and Third Campaigns (Statistically Insignificant Results are in Gray)**



The Old BTA with materials produced almost identical results in the first and third Campaigns. The results from the four BTA treatments from the third Campaign showed that the New BTA outperforms the Old BTA. Although the percent reductions are higher for the BTA treatments with promotional materials the difference between including materials and not including materials is not statistically significant.

### 5.3 HER Gas Savings by Usage Quartile

As input into planning for next year’s Conservation Campaign, it is useful to examine how natural gas savings vary across customer segments. If some segments do not respond well to the information treatments and others do, it will be more cost-effective to focus future campaigns on segments that are more responsive to the information offerings.

One potentially useful segmentation scheme is by usage, grouped into quartiles. To put these usage quartiles in context, it is helpful to note their likely influence on the contents of a participant’s HER. A key component of HER messaging is the neighbor comparison component, which informs the participant whether their household gas usage is above, below, or in-line with usage for similar homes. Due to the nature of this comparison, top usage quartile customers are more likely to receive messages indicating that their usage is higher than usage for similar homes, thereby providing a signal to conserve. This segmentation was explored in the report for the first Campaign, leading to the conclusion

<sup>31</sup> The difference between the BTA treatments with promotional materials and the BTA treatments without promotional materials is not statistically significant.

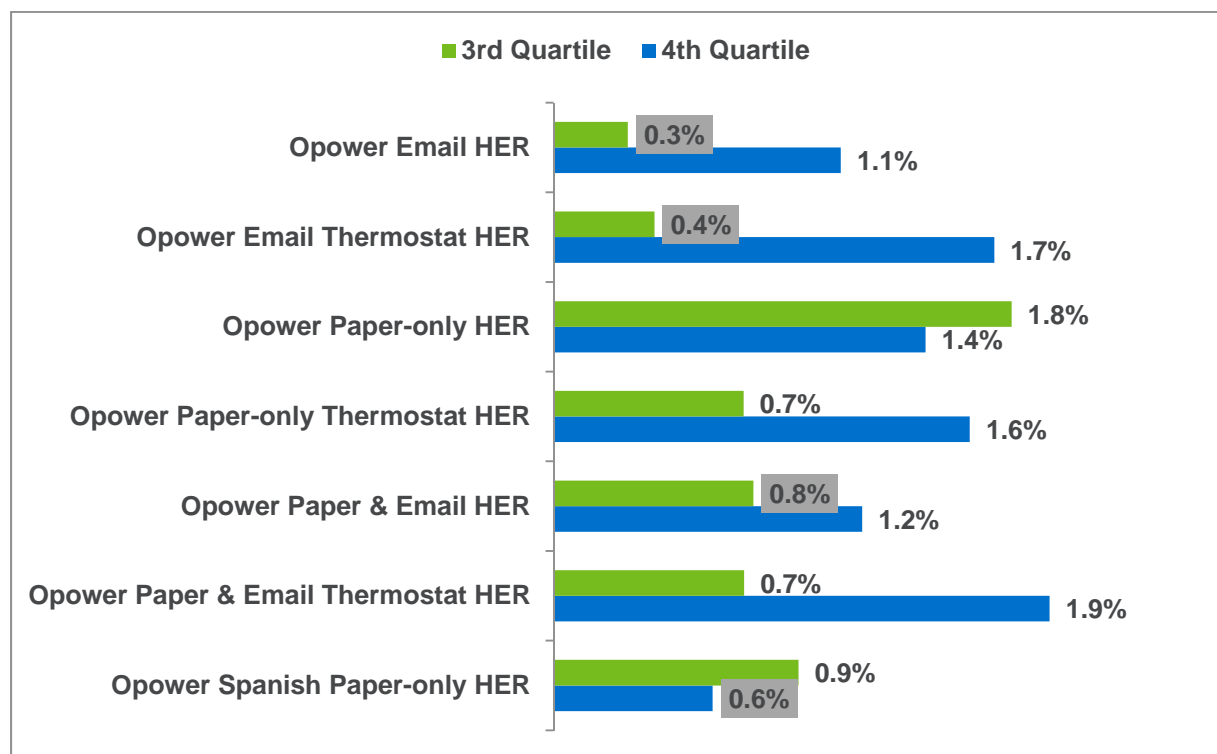
that “both the magnitude of savings and percent savings consistently increase as usage increases.”<sup>32</sup> This conclusion led to the decision to focus the second and third Campaigns on the top two usage quartiles only.

**Opower HER Gas Savings by Usage Quartile**

Figure 5-3 compares percent reductions for the top two quartiles for each of the Opower HER treatments in the third Campaign. As in the prior two campaigns, the HER treatments consistently show similar or higher reductions for the fourth usage quartile as compared to the third quartile. The only exceptions are the Spanish HER and the paper-only HER. In the previous Campaigns the third quartile usage was much lower than the fourth quartile usage for the paper-only HER. This suggests that for this population the participants were more responsive to paper-only HERs than in the past.

The second takeaway from Figure 5-3 is that the third quartile usage impacts for three of the treatments including email HERs were close to zero and statistically insignificant, whereas the fourth quartile impacts were comparable to those of the Opower treatments that featured several paper communications. For this sample population, this finding implies that Opower Email HERs were often not effective for the participants in the third usage quartile, leading to a substantial reduction in the overall savings as compared to the other Opower treatments.

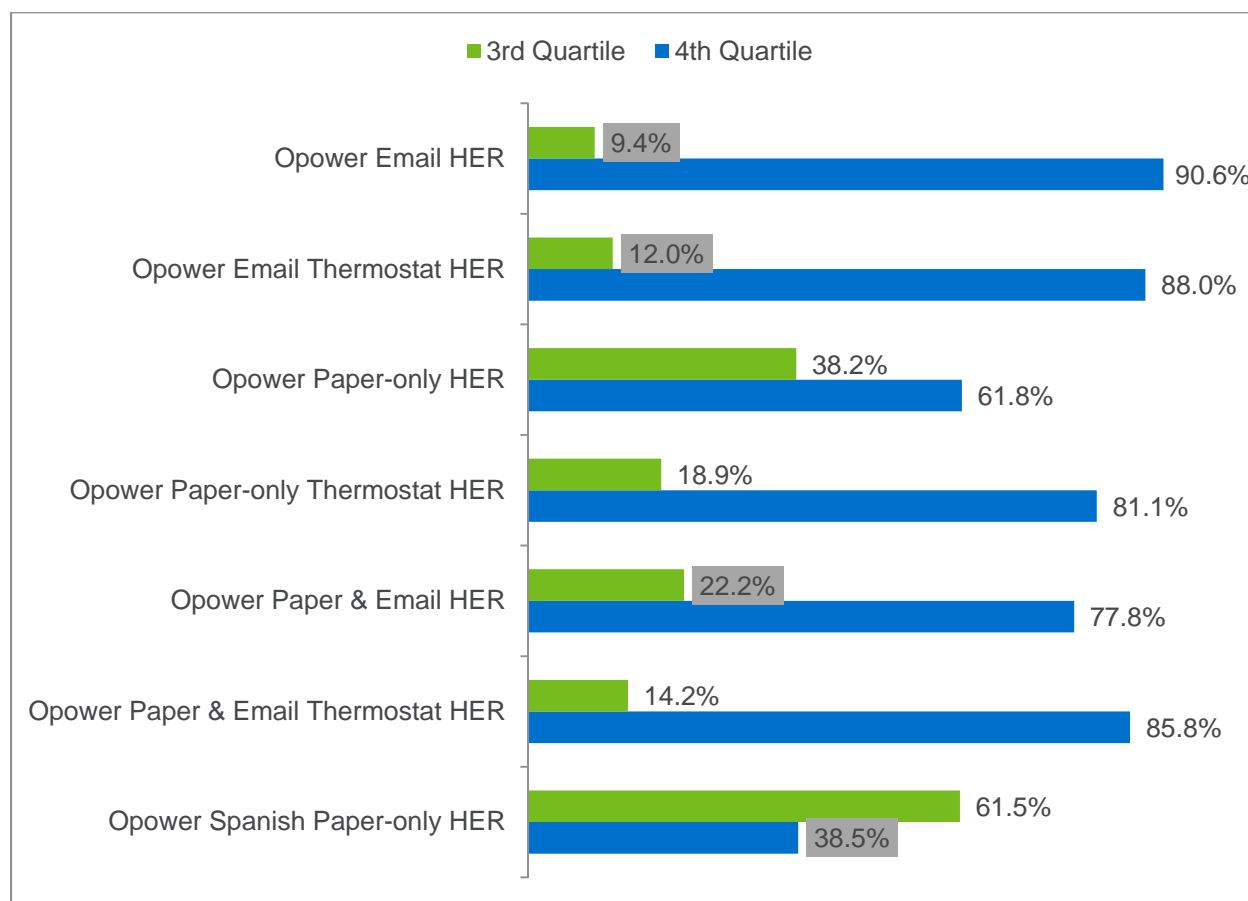
**Figure 5-3: Comparison of Opower HER Third Campaign Treatments by Quartile (Statistically Insignificant Results are in Gray)**



<sup>32</sup> For further details, refer to Exhibit E: “Evaluation of Southern California Gas Company’s 2013-14 Conservation Campaign,” included in the “Southern California Gas Company Advanced Meter Semi-Annual Report” filed with the CPUC on August 29, 2014.

Figure 5-4 shows the share of aggregate gas savings in therms attributable to the third versus the fourth usage quartile for each treatment. Even though customers in the third quartile account for one-half of each treatment group, the gas savings for those customers range from 9% to 60% of the overall savings across treatments. Besides the Spanish Paper-only HER, the rest of the Opower treatments have less than 50% of their aggregate savings come from the customers in the third quartile. As in the previous Campaigns, both the magnitude of savings and percent savings consistently increase as usage increases. For fourth usage quartile customers, high usage combined with larger impacts leads to a large percentage of the overall therm savings. Considering that customers in the top usage quartile consistently produce the largest share of therm savings, it may make sense for SoCalGas to further hone conservation efforts by focusing on customers in this group going forward.

**Figure 5-4: Percent of Gas Savings Attributable to Each Usage Quartile for Opower HER Treatments (Statistically Insignificant Results are in Gray)**



**SoCalGas BTA and SoCalGas/Aclara SEU Gas Savings by Usage Quartile**

Figure 5-5 compares percent reductions for the top two quartiles for each of the BTA and SEU treatments in the third Campaign. Both of the SEU treatments show higher reductions for the fourth usage quartile as compared to the third quartile. However, for the BTA treatments the percent reductions for the fourth quartile are very similar or lower to the percent reductions for the third quartile. This suggests that customers in the third and fourth quartiles are responsive to the BTA treatment.

**Figure 5-5: Comparison of BTA and SEU Third Campaign Treatments by Quartile (Statistically Insignificant Results are in Gray)**

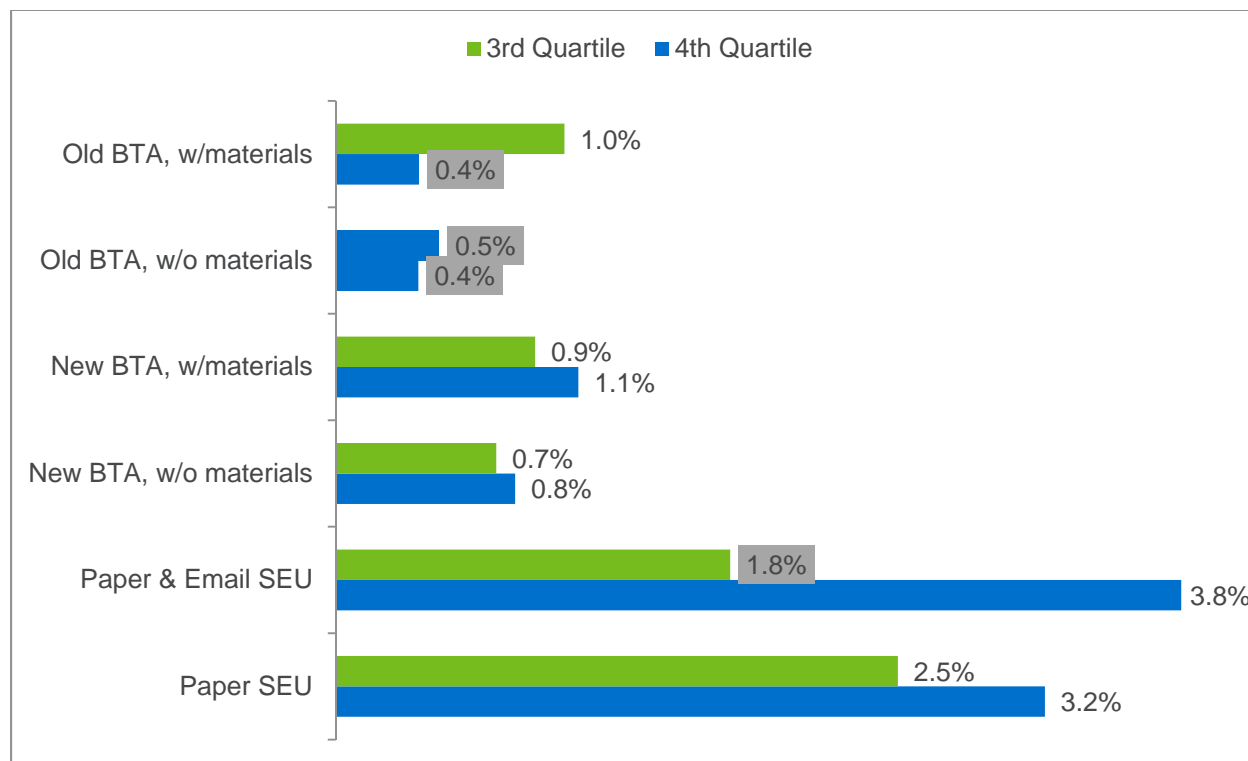
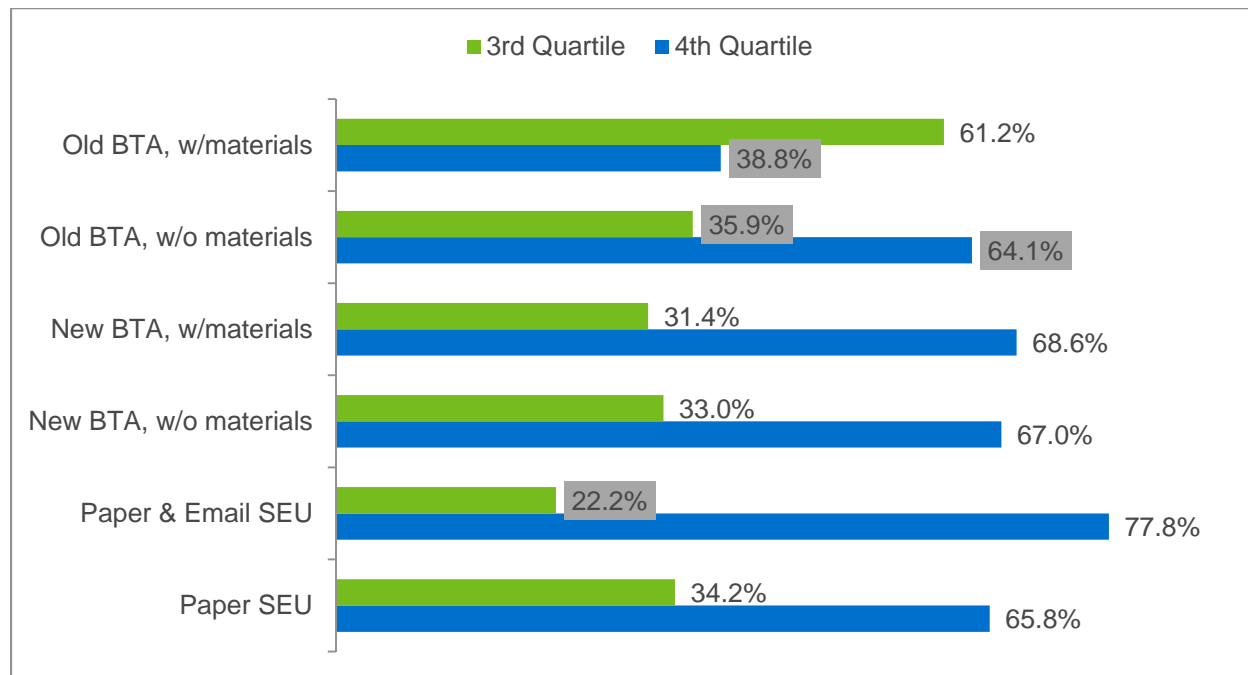


Figure 5-6 shows the share of aggregate gas savings in therms attributable to the third versus the fourth usage quartile for each treatment. Even though customers in the third quartile account for one-half of each treatment group, the gas savings for those customers range from 22% to 61% of the overall savings across treatments. Besides the Old BTA with materials, the rest of these treatments have less than 50% of their aggregate savings come from the customers in the third quartile. For fourth usage quartile customers, high usage combined with larger impacts leads to a large percentage of the overall therm savings.

**Figure 5-6: Percent of Gas Savings Attributable to Each Usage Quartile for BTA and SEU Treatments (Statistically Insignificant Results are in Gray)**



### Other Segmentations Analyzed

As with each treatment in the first two Conservation Campaigns, Nexant segmented the 2015-2016 gas savings results by several demographic variables using granular block-level data from the 2010 U.S. Census. However, there weren't any consistent trends in 2015-2016 gas savings to report here. Given that the test cell design of the third Campaign leveraged many segmentation-based insights from the first two Campaigns, consistent drivers of differences in gas savings across demographic characteristics have been accounted for in the segmentation of the treatment population. For example, gas savings for CARE customers were consistently lower in the first two Campaigns for email-based treatments, so the design for the 2015-2016 Campaign segmented those customers into a sub-population that received paper-based treatments. Similarly, gas savings for customers in census blocks with a high percentage of Latinos were also consistently lower, so those customers were segmented into a population that received a Spanish-language treatment instead. These data-driven improvements from one year to the next highlight the benefits of the adaptive "test and learn" strategy. The rigorous research design, data analysis and segmentations of the results yielded several quick insights that led to SoCalGas identifying the types of treatments that are most cost-effective for each segment of the population.

## 5.4 Percent Reductions in Second Year for 2014-2015 Conservation Campaign

Table 5-2 provides the estimated second year percent reductions for treatments from the second Campaign, shown alongside the impacts from the previous year (year 1) for these same treatments. The estimates were derived by using the LDV model to compare customer usage from November 2015 through March 2016 as compared to usage in the pretreatment period (November 2013 through March 2014). These reductions were for the most part slightly lower than the savings from those estimated for first year of the 2014–2015 Conservation Campaign, except the savings for Opower Email HER and the Opower Paper-only HER, which were somewhat higher.

**Table 5-2: Estimates of Percent Reductions in Gas Energy Consumption for Residential Treatments Initiated in 2014–2015, November 2015 through March 2016 (Statistically Insignificant Results are in Gray)**

My Account	Treatment	Group	Number of Treatment Customers	Year 2 results (LDV)		Year 1 results (LDV)	
				% Reduction	P-value	% Reduction	P-value
Yes	Opower Email HER	T-8	11,964	0.96%	0.02	0.74%	0.05
	Aclara Email HER	T-9	12,037	-0.35%	0.39	-0.04%	0.92
	Opower Paper & Email HER	T-10	12,000	1.38%	0.00	1.45%	0
	Aclara Paper & Email HER	T-11	11,967	-0.34%	0.42	0.04%	0.9
	Default BTA	T-12	48,333	0.08%	0.80	0.17%	0.51
No	Opower Paper-only HER	T-13	47,910	1.86%	0.00	1.48%	0
	Aclara Paper-only HER	T-14	47,940	0.34%	0.11	0.51%	0



Table 5-3 provides the estimated percent reductions during spring and summer of 2015 for the treatments from the second Campaign. The estimates were derived by using the LDV model to compare customer usage from April 2015 through October 2015 as compared to usage in the pretreatment period—April 2014 through October 2014. Reductions were only statistically significant for the Opower Paper-only HER treatment (.77%, less than half of the savings during the treatment period) and the Opower Paper and Email HER (1.35%, only slightly less than the savings during the treatment period). The Opower Email HER did not produce measurable savings during the spring / summer period. An interesting distinction between the Opower Email HER and the Opower Paper and Email HER in the second Campaign is that the latter received email reports during the non-winter period while the email-only group did not receive email reports during this time period.

**Table 5-3: Estimates of Percent Reductions in Gas Energy Consumption for Residential Treatments Initiated in 2014–2015, April 2015 through October 2015 (Statistically Insignificant Results are in Gray)**

My Account	Treatment	Group	Number of Treatment Customers	Year 1 spring / summer results (LDV)	
				% Reduction	P-value
Yes	Opower Email HER	T-8	12,332	0.37%	0.41
	Aclara Email HER	T-9	12,397	-0.49%	0.25
	Opower Paper & Email HER	T-10	12,367	1.35%	0.00
	Aclara Paper & Email HER	T-11	12,354	0.45%	0.26
	Default BTA	T-12	49,766	0.21%	0.50
No	Opower Paper-only HER	T-13	48,915	0.77%	0.00
	Aclara Paper-only HER	T-14	48,976	0.15%	0.52

## 5.5 Persistence of Percent Reductions in Third Year for 2013–2014 Conservation Campaign

Table 5-4 provides the estimated third year percent reductions for treatments from the first Campaign, shown alongside the impacts from the previous two years (year 1 and year 2) for these same treatments. The estimates were derived by using the LDV model to compare customer usage from November 2015 through March 2016 as compared to usage in the pretreatment period (November 2012 through March 2013). The results for the Opower Paper-only and the Opower Paper and Email HER were significantly lower than the prior two years. These two treatments stopped producing measurable savings in the third year. It is important to note that these customers have not received reports since winter 2013–2014. The Opower Email HER percent reductions persisted into the second year without treatment and actually increased from last year (1.6 in year 3 as compared to 1.3 in the previous year). The default BTA continued to produce statistically significant savings as well. For the default BTA, SoCalGas continued to send alerts in years 2 and 3.

**Table 5-4: Estimates of Percent Reductions in Gas Energy Consumption for Residential Treatments Initiated in 2013–2014, November 2015 through March 2016 (Statistically Insignificant Results are in Gray)**

My Account	Treatment	Group	Number of Treatment Customers	Year 3 results (LDV)		Year 2 results (LDV)		Year 1 results (LDV)	
				% Reduction	P-value	% Reduction	P-value	% Reduction	P-value
Yes	Opower Email HER	T-3	9,167	1.59%	0.00	1.33%	0	1.37%	0
	Opower Paper & Email HER	T-2	9,159	-0.08%	0.87	1.12%	0.01	1.54%	0
	Default BTA	T-4	18,461	1.28%	0.00	1.20%	0	0.70%	0.02
No	Opower Paper-only HER	T-1	20,214	0.29%	0.43	1.03%	0	1.58%	0

Table 5-4 illustrates that savings for these two treatments persisted into the second winter after the treatments began in first Campaign. Some savings also persisted into the spring and summer months (April through October) just after the treatments ended.<sup>33</sup> While gas usage is typically much lower in these months, understanding the level of percent savings will show to what extent savings persist immediately after treatment as well as begin to inform what relative level of savings can be achieved in months with lower underlying gas usage.

Table 5-5 provides the estimated percent reductions during spring and summer of 2015 for default treatments from the first Campaign. The estimates were derived by using the LDV model to compare customer usage from April 2015 through October 2015 as compared to usage in the

<sup>33</sup> Treatments ended in March 2014 for all groups but the BTA groups who continued to receive alerts.

pretreatment period (April 2013 through October 2013). Reductions were not statistically significant for any of the treatments for the second year of spring / summer results.

**Table 5-5: Estimates of Percent Reductions in Gas Energy Consumption for Residential Treatments Initiated in 2013–2014, April 2015 through October 2015  
(Statistically Insignificant Results are in Gray)**

My Account	Treatment	Group	Number of Active Customers	Year 2 spring / summer results (LDV)		Year 1 spring / summer results (LDV)	
				% Reduction	P-value	% Reduction	P-value
Yes	Opower Email HER	T-3	9,799	0.54%	0.31	0.87%	0.02
	Paper & Email HER	T-2	9,830	-0.34%	0.49	1.13%	0.00
	Default BTA	T-4	19,684	0.37%	0.36	0.32%	0.29
No	Paper-only HER	T-1	21,081	0.49%	0.21	0.47%	0.06

## 5.6 Estimated Gas Savings

Once a statistically significant usage reduction within a given test cell is identified, the analysis can be done at the monthly level, which allows for the re-inclusion of some customers that may not have had usage data for every month, but do have data for some pre- and post-treatment months.

Table 5-6 summarizes the estimated gas savings for the 2015–2016 SoCalGas Conservation Campaign, based on the monthly-level analysis. Gas savings are only calculated for the treatments that produced statistically significant usage reductions using the LDV model, which includes the Opower Email HER and the Default BTA treatments from the 2013–2014 Conservation Campaign, the three Opower treatments from the 2014–2015 Conservation Campaign, and all of the treatments from the 2015–2016 Campaign. Overall, the new and continued treatments produced gas savings of over 1.5 million therms between April 2015 and March 2016, or about 1.4%.

In total, approximately 971,000 therms were conserved as a result of the new treatments for the 2015–2016 Conservation Campaign, representing a savings of almost 1.5%. Roughly 41% of the 971,000 therms conserved came from the two SEU treatments.

The treatments initiated in the 2014–2015 Conservation Campaign conserved a total of almost 403,000 therms during the 2015–2016 winter. This was higher than the 359,000 therms estimated for the Campaign in its first year, though this could be due to a combination of factors including colder weather in the 2015–2016 winter. Roughly 76% of the 403,000 therms conserved came from the Opower Paper-Only HER, though this treatment had almost four times as many customers as the other two Opower treatments.

An additional almost 93,000 therms were saved over the summer / spring of 2015 as a result of treatments in the 2014–2015 Conservation Campaign with statistically significant reductions. Only the Opower Paper and Email HER and the Opower Paper-only HER produced measureable savings during this time period.

Roughly 91,000 therms were conserved during the winter as a result of the treatments in the 2013–2014 Conservation Campaign. This was somewhat lower than the nearly 142,000 therms estimated for the Campaign in its second year, however this is expected as it looks as though the persistence dropped off for the Opower HERs after two years of not receiving reports. Only the default BTA and the Opower Email HER continued to produce measureable savings in the third year. Roughly 59% of the 91,000 therms conserved came from treatment group default BTA, which had more than double the amount of customers in the Opower Email HER.

None of the first Campaign treatments produced measurable savings over the summer/spring of 2015.

**Table 5-6: Estimated Gas Savings for the 2015–2016 SoCalGas Conservation Campaign**

Initial Treatment Year	Treatment	Group	Number of Active Customers per Month	Average Customer Total Usage for November-March			Aggregate Usage for November-March		
				Reference Therms	Observed Therms	Therms Saved	Reference Therms	Observed Therms	Therms Saved
2015-2016	Opower Email HER	T-16	13,086	314.2	311.5	2.7	4,111,884	4,076,032	35,853
	Opower Email Thermostat HER	T-19	13,094	312.6	308.6	4.1	4,093,756	4,040,393	53,364
	Paper & Email SEU	T-24	17,877	316.7	306.9	9.7	5,661,238	5,487,113	174,125
	Old BTA, w/materials	T-26	19,069	313.2	310.9	2.2	5,971,615	5,929,013	42,602
	Old BTA, w/o materials	T-27	19,032	313.5	311.9	1.6	5,966,453	5,936,037	30,416
	New BTA, w/materials	T-28	19,035	313.4	310.3	3.1	5,966,207	5,906,343	59,864
	New BTA, w/o materials	T-29	19,062	313.6	310.9	2.7	5,978,142	5,925,983	52,159
	Opower Paper-only HER	T-17	13,364	325.2	320.5	4.7	4,345,668	4,283,247	62,422
	Opower Paper-only Thermostat HER	T-20	13,342	324.1	319.9	4.2	4,323,997	4,267,745	56,253
	Paper-only SEU	T-25	23,494	312.5	302.9	9.6	7,342,636	7,117,488	225,147
	Opower Paper & Email CARE HER	T-15	13,082	294.6	291.7	2.9	3,854,234	3,816,014	38,220
	Opower Thermostat CARE HER (ESAP & Non-ESAP)	T-18	26,205	293.1	288.7	4.4	7,680,287	7,564,218	116,069
	Opower Spanish Paper-only HER	T-21	13,319	218.9	217.0	1.9	2,915,111	2,889,924	25,187
<b>Overall for 2015-2016 treatments (winter)</b>			<b>223,061</b>	<b>305.8</b>	<b>301.4</b>	<b>4.4</b>	<b>68,211,228</b>	<b>67,239,550</b>	<b>971,680</b>
2014-2015	Opower Email HER	T-8	11,964	326.7	323.5	3.2	3,908,946	3,870,467	38,479
	Opower Paper & Email HER	T-10	12,000	326.9	322.2	4.8	3,923,325	3,865,897	57,428
	Opower Paper-only HER	T-13	47,910	338.9	332.5	6.4	16,237,812	15,931,191	306,621
<b>Overall for 2014-2015 treatments (winter)</b>			<b>71,874</b>	<b>334.9</b>	<b>329.3</b>	<b>5.6</b>	<b>24,070,084</b>	<b>23,667,555</b>	<b>402,529</b>
2014-2015	Opower Paper & Email HER	T-10	12,367	179.8	177.5	2.3	2,223,411	2,195,239	28,172
	Opower Paper-only HER	T-13	48,915	179.6	178.2	1.3	8,783,175	8,718,603	64,571
<b>Overall for 2014-2015 treatments (spring/summer)</b>			<b>61,282</b>	<b>179.6</b>	<b>178.1</b>	<b>1.5</b>	<b>11,006,586</b>	<b>10,913,842</b>	<b>92,743</b>
2013-2014	Opower Email HER	T-3	9,167	240.2	236.1	4.0	2,201,611	2,164,595	37,016
	Default BTA	T-4	48,915	90.2	89.1	1.1	4,410,978	4,356,695	54,284
<b>Overall for 2013-2014 treatments (winter)</b>			<b>58,082</b>	<b>113.8</b>	<b>112.3</b>	<b>1.6</b>	<b>6,612,589</b>	<b>6,521,290</b>	<b>91,300</b>
<b>Overall</b>			<b>414,299</b>	<b>265.3</b>	<b>261.5</b>	<b>3.8</b>	<b>109,900,487</b>	<b>108,342,237</b>	<b>1,558,251</b>

## 6 Recommendations for 2016–2017 Conservation Campaign

Throughout the AM rollout until the end of 2017, SoCalGas is implementing a cycle of innovation in which continuous assessment and improvement in the performance of feedback programs is the primary objective. This is referred to as the “test and learn” process, which is consistent with what the CPUC envisioned in D.10-04-027. This decision approved SoCalGas’ AM application, as discussed in Section 2. As the implementation proceeds, high performing program design options will be retained and offered to an increasingly larger share of customers who receive advanced meters. At the same time, new program design alternatives will be tested based on the experiences gained from the prior round of implementation. Programs and program design features that are less effective will be abandoned or modified. In this way, over the course of the AM rollout, the most effective means for encouraging energy savings from information feedback will be identified and offered to customers.

SoCalGas also conducted market research to evaluate the 2015-2016 Campaign treatments. Additional qualitative research was conducted utilizing in-depth interviews to evaluate the current treatments from the 2015-2016 Campaign, including potential enhancements for the upcoming season. The outcomes from the research included the additional graphics for the BTA and the upcoming enhancements for the SEU, as described below.

As discussed in Section 2.4, the 2015-2016 winter was colder than the previous two winters. As a result, the residential gas usage was substantially higher than the prior two years. The higher observed gas usage was also associated with higher percentage savings relative to the prior campaigns. This is reasonable given there are more opportunities to conserve when the usage is higher. Based on the weather and results observed to date, it would be reasonable to expect that in warmer years the conservation savings may be lower compared to years with relatively colder weather.

Furthermore, a fundamental tenant of the “test and learn” process is to continuously improve toward more cost-effective solutions. The third Campaign was the first of the three Campaigns to have all treatments produce statistically significant results. However, it is still possible to produce comparable (or higher) energy savings at a lower cost. Therefore, to test ways of improving cost-effectiveness, the 2016-2017 Conservation Campaign may adjust the program offerings for residential customers as follows:

- Continue to track savings for all customers receiving BTAs. Monitor any change in savings that occur once all customers currently receiving the Old BTA are transitioned to receiving the New BTA;
- Continue to explore ways to improve the BTA, as it has proven to be one of the most cost effective treatments for My Account customers. Test a new enhanced version of the New BTA with an additional view of usage patterns based on market research findings;
- Test the New BTA with and without seasonal savings tips in the same population to determine whether these tips increase savings;
- Explore how SEUs perform on CARE customers;
- Test new weatherization focused SEU on Non-CARE customers;
- Compare the Paper SEU treatments against the Opower Paper-only HER by ensuring that both treatments are tested on comparable populations;

- Retest Aclara Paper HERs;
- Develop an in-house paper HER to test against Aclara and Opower paper HERs;
- Test a combination of two different information feedback options, BTA with tips and Opower Paper HER, to see if there are incremental savings relative to other populations that only received the BTA treatment;
- Potentially test the impact of providing a Bilingual English-Spanish language paper HER and welcome materials in lieu of the either a single language English or Spanish HER for customers in areas with high rates of Latino population or to customers indicating a Spanish language preference. Test whether a self-comparison is more effective on this population than the neighborhood comparison used previously in the Spanish and English HERs;
- Continue to test treatments with the top two usage quartiles since they both produce measurable therm savings; and
- Test the BTA on Small and Medium Business (SMB) customers.

### 6.1 Conservation Programs for Non-residential Customers

The first Campaign tested BTAs with SMB customers on both an opt-in and default basis. However, at the time of the first Campaign there were too few SMB customers with AM data to accommodate a randomized controlled trial. SoCalGas decided to exclude SMB customers from the second and third Conservation Campaigns until there were sufficient numbers with advanced meters.

SoCalGas has decided to start testing BTAs with SMB customers again in the 2016–2017 Conservation Campaign, enabled by the larger numbers of SMB customers that have advanced meters at this point. These SMB BTAs will target specific segments with higher interest and propensity to save, such as the restaurant / food industry. As SoCalGas explores these SMB options it will be important to factor known challenges into program design. Different methods will be tested to pick the best evaluation approach to estimate the expected small savings. As shown by the low BTA opt-in rates observed for the SMB segment in the 2013–2014 Campaign, it can be difficult to identify and contact the key decision makers for SMB customers. Similar behaviors have been observed in other “Business Energy Report” pilot programs.



## Appendix A Opower Home Energy Report Materials

Appendix A presents only the standard Opower HER materials. The thermostat Opower HER materials can be found in Appendix B and the Spanish Opower HER materials can be found in Appendix C.

In addition to the paper and email HER examples in Section 2.2, Opower also sent a HER welcome insert and a door hanger, which are included in this appendix. There were also differences between the paper HERs sent each month as well as a slight difference between the email HERs sent in the first month (November 2015) and in subsequent months. Samples of each are included in this appendix.

Figure A - 1 shows the front and back of the Opower HER welcome insert, which was delivered to nearly 13,750 Opower paper-only HER customers, 13,750 Opower paper & email HER customers, and 13,750 email HER customers in November 2015. Figure A - 2 shows the inside page of the HER welcome insert. Figure A - 3 displays the door hanger that was delivered to all of the Opower HER customers.


Figure A - 4 through Figure A - 11 show the front and back of the paper HER sent in each month. Figure A - 12 shows the email HER sent December and in subsequent months (January 2016 and after).

## A.1 Opower HER Welcome materials

Figure A - 1: November Opower HER Welcome Insert (Front and Back)




Figure A - 2: November Opower HER Welcome Insert (Inside Page)




## Introducing Your Home Energy Report


### About the Program

 **Your Personalized Report**


This report and others to come are part of a program designed to help you save energy and money. Millions of households are already enrolled in similar report programs nationwide. Collectively, these programs have saved hundreds of millions of dollars. If you're ready to start saving on your gas bill, this program is for you.

 **Your Neighbor Comparison**

In your reports, you can see your current gas use compared to approximately 100 nearby, occupied homes with similar characteristics — such as square footage and heating system. These homes represent your neighbors, but do not necessarily include the homes on your block or in your immediate neighborhood. These comparisons, along with personalized energy-saving tips, can help you better understand how you use gas.

 **Your Home Information**

The comparisons and tips in your reports are personalized for you by using publicly available information about your home size, home type and other characteristics. To find more information about your custom analysis and advice, visit [SCG.opower.com](http://SCG.opower.com).

 **Your Personal Information**

We only use your information to provide useful insights about your gas use. Your information is compiled anonymously and not shared with any of your neighbors. Only you can see your personal data.

Figure A - 3: Opower HER Door Hanger

**Front**

**Back**



## A.1 Opower Paper HERs

Figure A - 4: Opower Paper November HER Example (Front)

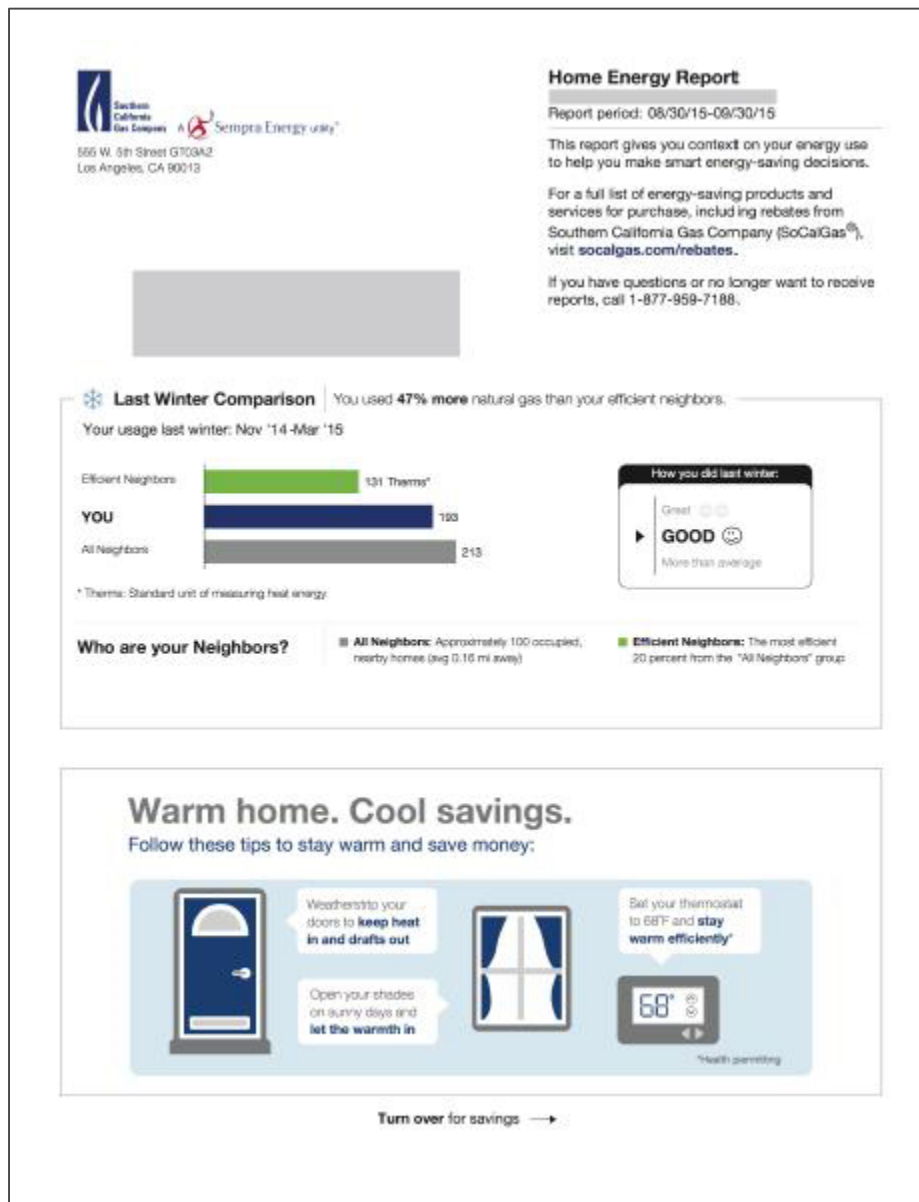


Figure A - 5: Opower November Paper HER Example (Back)

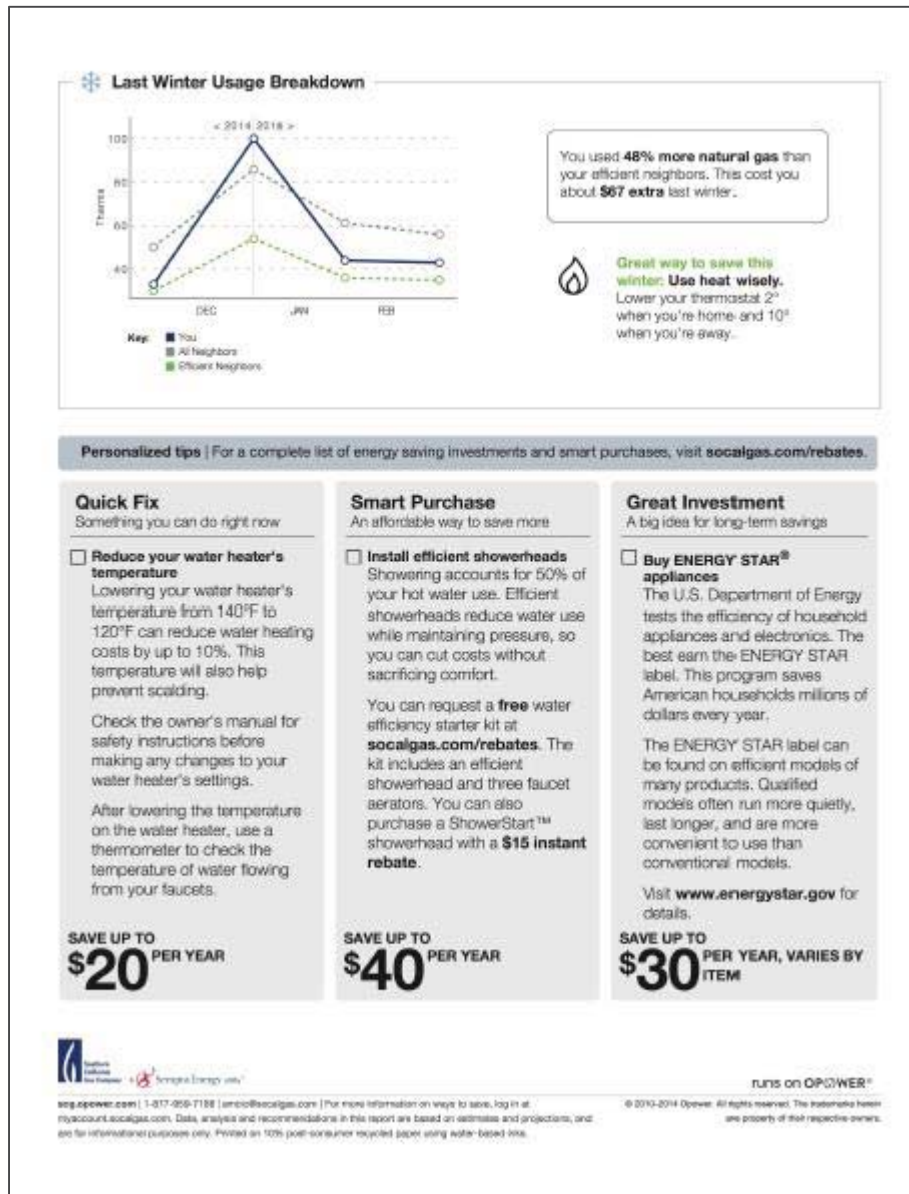


Figure A - 6: Opower Paper December HER Example (Front)

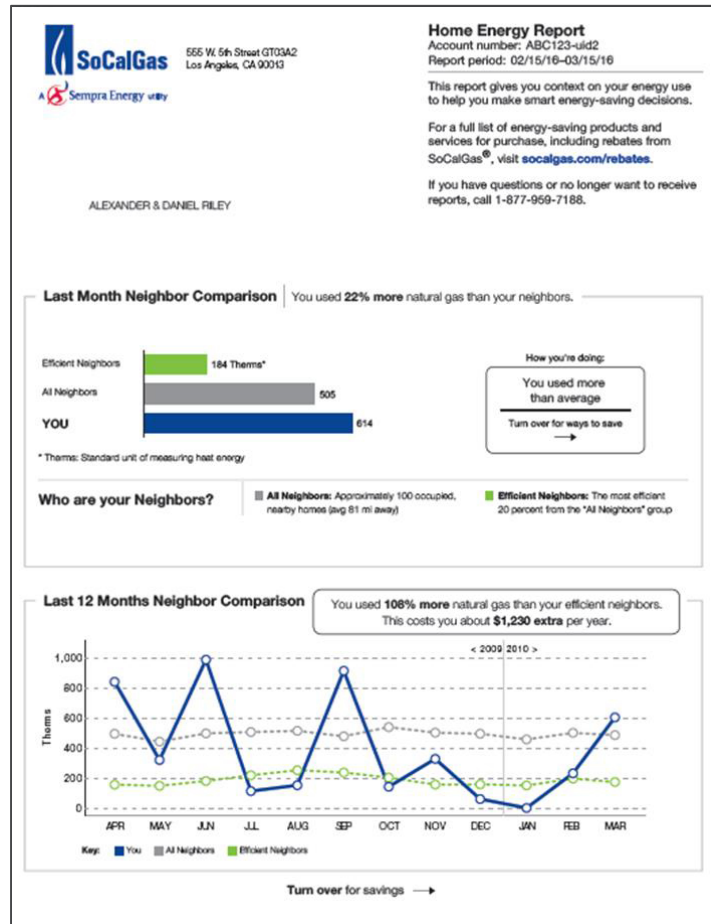


Figure A - 7: Opower December Paper HER Example (Back)

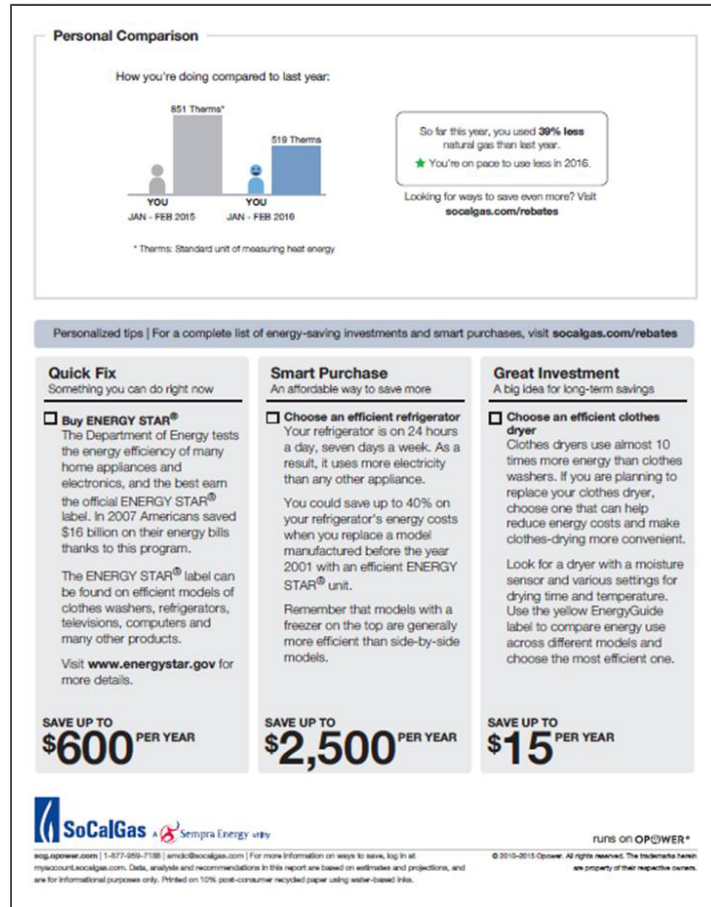




Figure A - 8: Opower Paper January HER Example (Front)

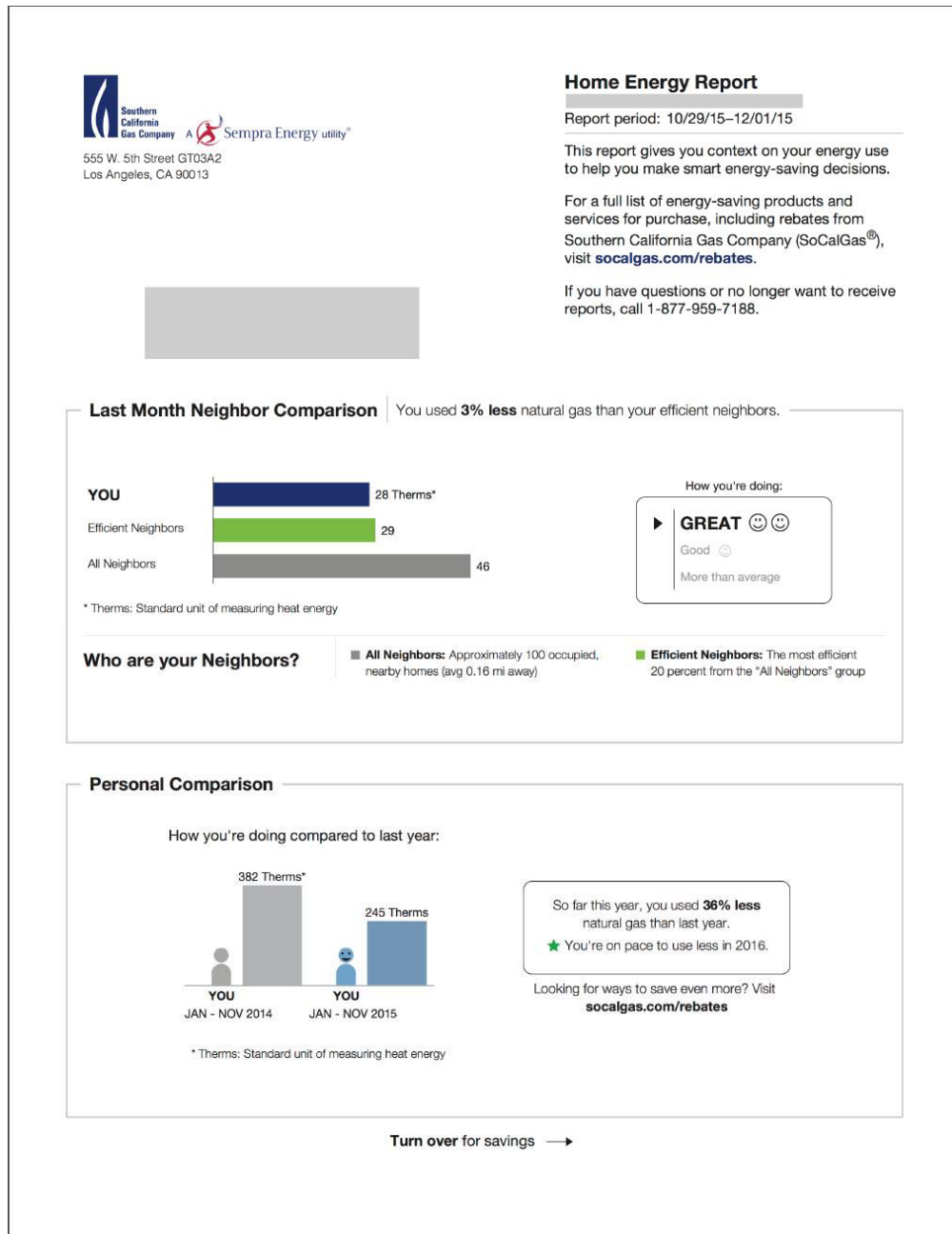
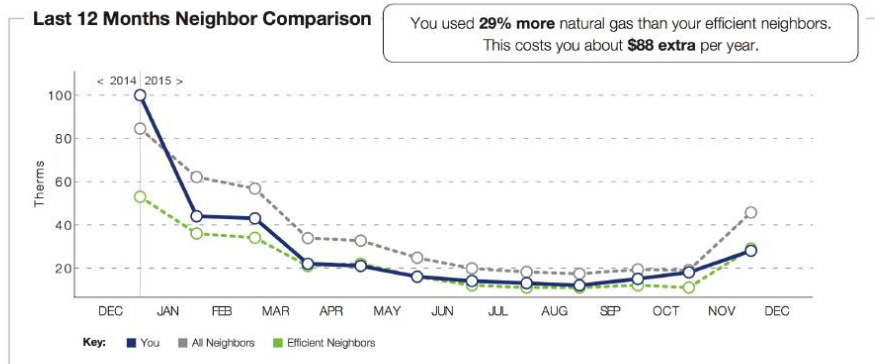


Figure A - 9: Opower January Paper HER Example (Back)



**Personalized tips** | For a complete list of energy saving investments and smart purchases, visit [socialgas.com/rebates](http://socialgas.com/rebates).

**Quick Fix**  
Something you can do right now

**Avoid over-drying clothes**  
Hang-drying is the most energy-efficient approach to drying clothes, but it may not be feasible all the time. By using your clothes dryer efficiently, you can still save money.

If your dryer has a moisture sensor, use it to prevent over-drying. For additional savings, dry your towels and other heavy items in a load separate from lighter-weight clothes.

Finally, remember to clean the lint filter after every load to improve air circulation.

**SAVE UP TO \$10 PER YEAR**

**Quick Fix**  
Something you can do right now

**Be smart about dishwashing**  
Save money when using your dishwasher by following these three steps:

- First, make sure you and other household members only run full loads.
- Next, instead of using the "heat dry" function, air-dry your dishes or use a towel.
- Finally, avoid special cycles such as "rinse-hold" or "pre-rinse," which increase the amount of energy and hot water the dishwasher uses.

**SAVE UP TO \$10 PER YEAR**

**Great Investment**  
A big idea for long-term savings

**Upgrade your gas storage water heater**  
Water heating is typically one of the largest energy expenses in your home, after heating and cooling. It is likely cost effective to replace your gas water heater if it was manufactured before 2000. Look for a model with an Energy Factor rating of 0.67 or higher and choose the right size for your home: you'll save more with a smaller tank.

You may be eligible for a rebate of **up to \$100** when you purchase an efficient gas water heater. For more information, visit [socialgas.com/rebates](http://socialgas.com/rebates).

**SAVE UP TO \$65 PER YEAR**




runs on OPOWER®


scg.opower.com | 1-877-959-7188 | amci@socialgas.com | For more information on ways to save, log in at myaccount.socialgas.com. Data, analysis and recommendations in this report are based on estimates and projections, and are for informational purposes only. Printed on 10% post-consumer recycled paper using water-based inks.

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Figure A - 10: Opower Paper February HER Example (Front)



555 W. 5th Street GT03A2  
Los Angeles, CA 90013

 Semptra Energy utility

### Home Energy Report

Account number: [REDACTED]  
Report period: 12/02/15-12/31/15

This report gives you context on your energy use to help you make smart energy-saving decisions.

For a full list of energy-saving products and services for purchase, including rebates from SoCalGas®, visit [socialgas.com/rebates](http://socialgas.com/rebates).

If you have questions or no longer want to receive reports, call 1-877-959-7188.

[REDACTED]

#### Last Month Neighbor Comparison

You used **57% more** natural gas than your efficient neighbors.

Category	Therms
Efficient Neighbors	46
<b>YOU</b>	72
All Neighbors	118

\* Therms: Standard unit of measuring heat energy

How you're doing:

Great 😊

**GOOD** 😊

More than average

#### Who are your Neighbors?

- All Neighbors:** Approximately 100 occupied, nearby homes that are similar in size to yours (avg 4,415 sq ft)
- Efficient Neighbors:** The most efficient 20 percent from the "All Neighbors" group

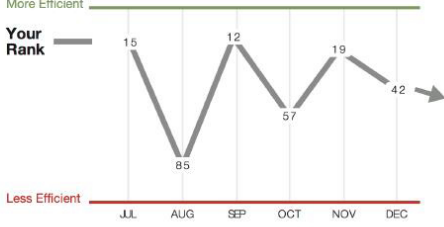
#### Neighbor Efficiency Rank

More Efficient —————

Your rank is declining.

Your rank **# 42**

Out of 100 neighbors  
#1 is the most efficient



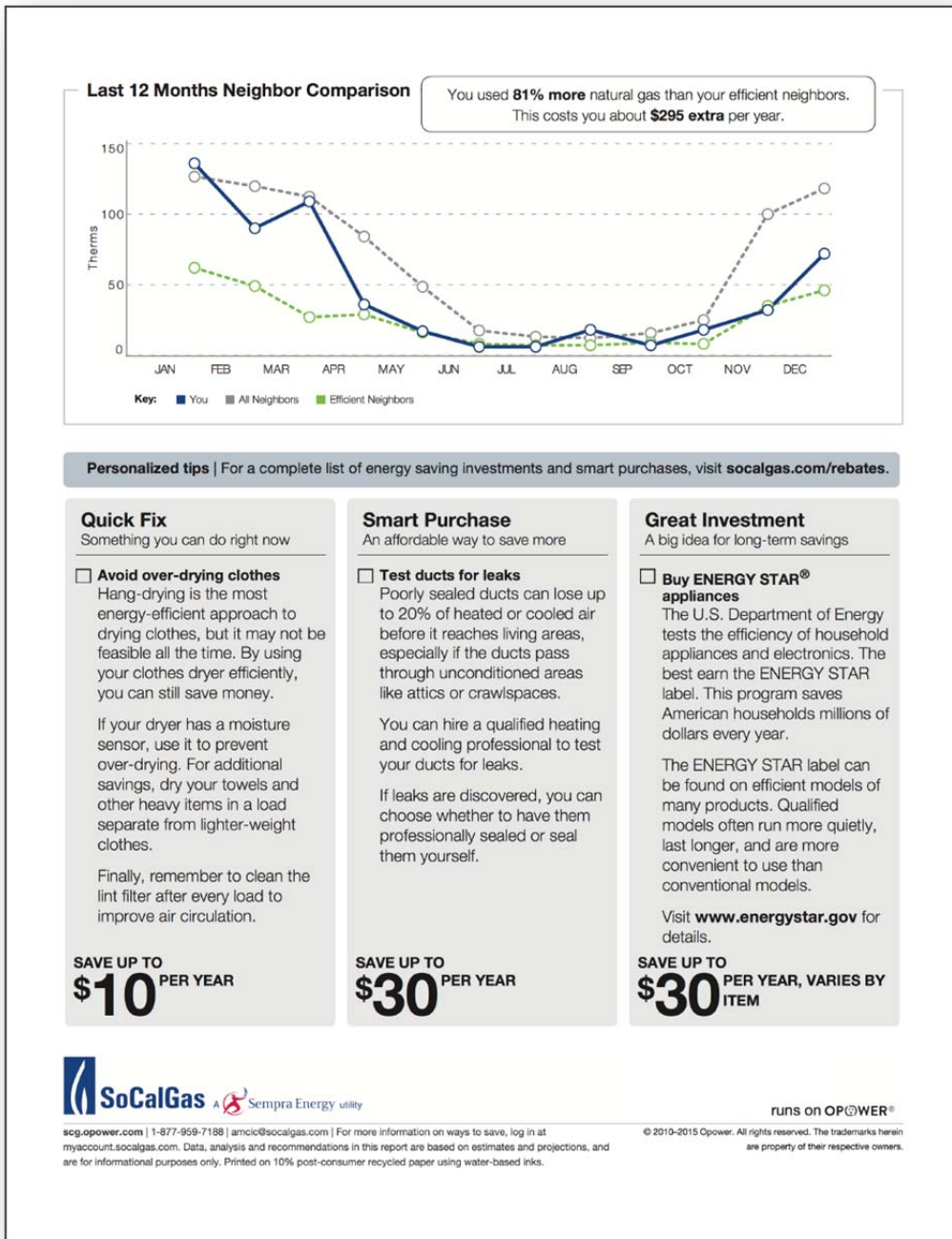
Less Efficient —————

Your rank is calculated each bill period.  
See the Neighbor Comparison section for details about your neighbors.

Looking for ways to improve?  
[socialgas.com/rebates](http://socialgas.com/rebates)

Turn over for savings →


Figure A - 11: Opower February Paper HER Example (Back)



## A.2 Opower Email HERs


Figure A - 12: Opower Email HER Example, December and subsequent months


8110205 Hi Jane Doe, your Home Energy Report is here


 SoCalGas Scenic Energy

Acct # \*\*\*\*\*00e1

You used 70% less than your efficient neighbors.

 **Great**


 Good


 Using more than average


<b>You</b>	<b>1</b> therms
<b>Efficient Neighbors</b>	<b>5</b> therms
<b>All Neighbors</b>	<b>12</b> therms

Nov 29, 2015 - Jan 9, 2016  
This comparison is based on approx. 100 nearby homes that are most similar to yours.  
[Learn more.](#)

### Ways to Save

 **Replace your old refrigerator**  
Your refrigerator is on 24/7. As a result, it uses more electricity than any other appliance. You could save up to 40% on its energy costs when you replace a model manufactured before 2001 with an ENERGY STAR® unit.

 **Replace your old clothes washer**  
Consider buying a new ENERGY STAR® clothes washer — it can use about 20% less energy and 35% less water than conventional models by handling larger loads and leaving clothes less damp before they enter the dryer.  
Save up to \$10 per year

 **Replace your inefficient light bulbs**  
Inefficient incandescent bulbs are costly to run and replace in the long term. Use compact fluorescent light (CFL) bulbs — they use 75% less energy and last at least ten times longer.

[SEE MORE WAYS TO SAVE](#)

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## Appendix B Opower Thermostat Home Energy Report Materials

This appendix contains all the Opower **Thermostat** HER materials. In addition to the paper and email HER examples in Section 2.2, Opower also sent a Thermostat HER welcome insert that was the same welcome insert that was sent to Opower standard HER customers and can be found in appendix A. Opower also sent a Thermostat HER door hanger which was slightly different from the standard HER door hanger.

Figure B-1 shows the Opower Thermostat HER door hanger, which was delivered to nearly 13,750 Opower paper-only HER customers, 27,500 Opower paper & email HER customers, and 13,750 email HER customers in November 2015 in addition to the welcome insert.

Figure B -1: November Opower Thermostat HER Welcome Insert (Front)

**Front**

**Back**



## **Appendix C      Opower Spanish Home Energy Report Materials**

In addition to the paper HER examples in Section 2.2, Opower also sent a HER welcome insert and a door hanger, which are included in this appendix.

Figure C – 1 shows the front of the Opower Spanish HER welcome insert, which was delivered to nearly 13,750 Spanish Opower paper-only HER customers in November 2015. Figure C – 2 shows the back of the HER welcome insert. Figure C – 3 displays the door hanger that was delivered to all of the Opower Spanish HER customers.



Figure C - 1: November Opower Spanish HER Welcome Insert (Front)



### Salude a su primer Informe de energía para el hogar

Averigüe el consumo de gas natural de su hogar, vea cómo se compara con sus vecinos y descubra formas de ahorrar dinero.



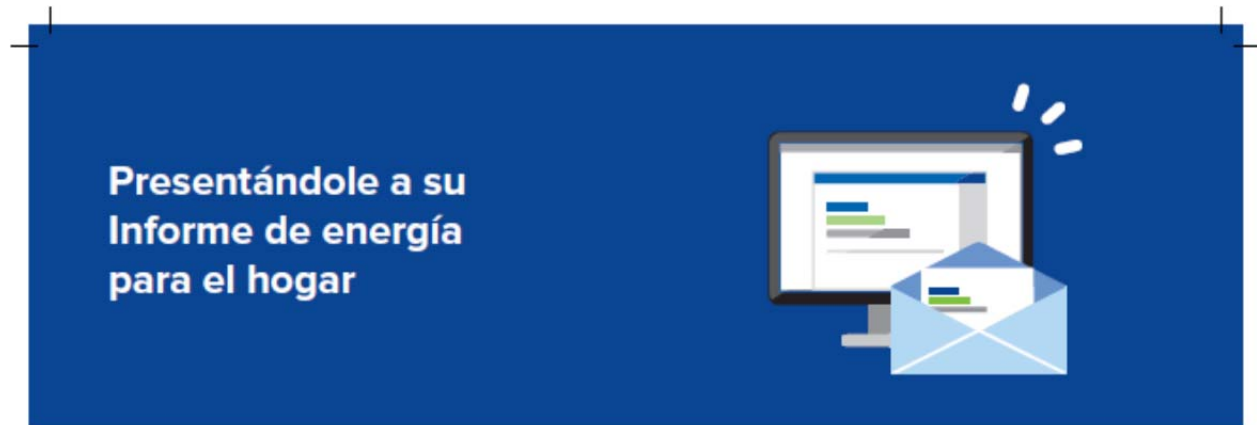
1-877-959-7188 | [amcic@socalgas.com](mailto:amcic@socalgas.com)

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SOQ\_0010\_WELCOME\_NE3



Figure C - 2: November Opower Spanish HER Welcome Insert (Back)



## Acerca del programa



### Su Informe personalizado

Este informe y otros que le van a llegar forman parte de un programa diseñado para ayudarle a conservar energía y ahorrar dinero. Ya se han inscrito millones de hogares en programas de informes similares en todo el país. En conjunto, estos programas han ahorrado cientos de millones de dólares. Si está listo para comenzar a ahorrar en su factura de gas natural, este programa es ideal para usted.



### Comparación con sus vecinos

En sus informes, puede ver su consumo actual de gas natural en comparación con aproximadamente 100 hogares cercanos, habitados y con características similares a las de su hogar, como son el tamaño en pies cuadrados y el tipo de sistema de calefacción. Estos hogares representan sus vecinos, pero no incluyen necesariamente los hogares en su cuadra o en su vecindad. Estas comparaciones, junto con los consejos para ahorro energético que se adapten mejor a sus necesidades, pueden ayudarlo a entender mejor cómo consume gas natural.



### Información acerca de su hogar

Las comparaciones y los consejos en sus informes se adaptan a las necesidades de su hogar usando información pública disponible sobre el tamaño de su residencia, el tipo de vivienda y otras características de su hogar. Para obtener más información acerca del análisis y los consejos personalizados para su hogar, visite [SCG.opower.com](http://SCG.opower.com).



### Su Información personal

Solo utilizamos su información para proporcionar perspectivas útiles sobre su consumo de gas natural. Sus datos se mantienen en completa anonimidad y no los compartimos con ninguno de sus vecinos. Usted es el único que puede ver sus datos personales.

Figure C - 3: Opower Spanish HER Door Hanger

Front

Back

The front of the door hanger features a blue background with a repeating pattern of white icons representing a house, a snowflake, a thermostat, and a piggy bank. A red circle highlights a thermostat icon in the upper left, with a dashed red line pointing to the temperature display. The temperature display shows **68°** in a white box. Below it, the text reads "cuando estoy **EN CASA**". A light blue horizontal band contains the text: "Para ahorrar mucho este Invierno, configure su termostato a 68°F cuando esté en su hogar.\*" and a smaller note: "\* si su estado de salud se lo permite". At the bottom, the SoCalGas and Sempra Energy utility logos are displayed, along with copyright information: "© 2010-2015 Opower. Todos los derechos reservados. Las marcas registradas que se mencionan aquí son propiedad de sus respectivos titulares." and the code "SOC\_0000\_DH\_WINTERS".

The back of the door hanger features the same blue background and icon pattern. A red circle highlights a thermostat icon in the upper left, with a dashed red line pointing to the temperature display. The temperature display shows **58°** in a white box. Below it, the text reads "cuando estoy **FUERA DE MI HOGAR**". A light blue horizontal band contains the text: "Baje su termostato a 58°F cuando esté fuera de su hogar. Al hacerlo, su calefacción descansará y usted ahorrará dinero." At the bottom, the SoCalGas and Sempra Energy utility logos are displayed.

## **Appendix D      SoCalGas Bill Tracker Alert Materials**

In addition to the New and Old email BTA, the text message notification, the November welcome email, and the November supplemental letter example in section 2.2, SoCalGas also sent additional supplemental letters, some of which included inserts and are included in this appendix. SoCalGas also sent additional supplemental emails in January and March. The supplemental materials in this appendix were only sent to customers in either the Old BTA with supplemental materials treatment group or the New BTA with supplemental materials treatment group.

Figure D – 1 shows the January supplemental letter. Figure D – 2 and Figure D – 3 show the front and back of the January insert that came with the January supplemental letter. Figure D – 4 shows the February supplemental letter. Figure D – 5 shows the supplemental email that was sent in January and March.

Figure D - 1: SoCalGas January BTA Supplemental Letter



January 23, 2016

Albert Johnstonson  
C/O SoCalGas  
GT20B2  
555 W 5th St.  
Los Angeles, CA 90013-1010



RE: Service Address

Dear First Name Last Name,

SoCalGas® is committed to helping you save.

To understand your usage even better, set up your energy-savings goals by visiting "Ways to Save" –our personalized interactive tool through [myaccount.socalgas.com](http://myaccount.socalgas.com).

- Set savings goals and get tips on how to achieve them.
- Create a personalized energy profile.
- View your daily and hourly gas usage.
- Analyze your monthly bill history to understand how different factors affect your natural gas usage.

Bill Tracker Alerts are also available via text message. Log in to [myaccount.socalgas.com](http://myaccount.socalgas.com) and go to the "Manage My Account" tab to change or add your preferences.

Sincerely,

Jeffery L. Walker  
Director, Advanced Meter Project

**ADVANCEDmeter**  
SAVING MORE IS WITHIN REACH  
VISIT MY ACCOUNT NOW



If you no longer want to receive Bill Tracker Alerts, simply log into your SoCalGas My Account or call 1-800-427-2200.

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NISCO 378 115 XX

Figure D - 2: SoCalGas January BTA Insert (Front)

The graphic is a vertical rectangular insert with a white background and a dark blue header. At the top left is the SoCalGas logo, which consists of a stylized flame icon and the text 'SoCalGas'. Below the logo is the text 'A Sempra Energy utility'. The header is a dark blue bar with the text '3 EASY WAYS TO SAVE THIS WINTER:' in white. Below the header are three numbered sections, each with a title and a list of bullet points. The first section is '1 HOME STRUCTURE' with two bullet points. The second section is '2 APPLIANCES' with three bullet points. The third section is '3 WINTERIZE YOUR HOME' with two bullet points. At the bottom right of the insert is the text '(Continued on back)'.

**SoCalGas**  
A Sempra Energy utility

## 3 EASY WAYS TO SAVE THIS WINTER:

- 1 HOME STRUCTURE**
  - Caulk cracks around windows, doors and other openings.
  - Identify and repair leaky or disconnected ducts.
- 2 APPLIANCES**
  - Perform routine maintenance recommended by the manufacturer, according to the owner's manual. This includes replacing dirty filters and cleaning intake screens, condenser coils, supply registers and return grills.
  - Have a qualified, licensed technician test, clean and adjust equipment.
  - If you're considering new natural gas equipment, SoCalGas® has rebates and other financial incentives available to help with your purchase.
- 3 WINTERIZE YOUR HOME**
  - Keep your programmable thermostat set to turn heating on 30 minutes before you arrive and off 30 to 60 minutes before you leave. Set it no higher than 68 degrees Fahrenheit during occupied periods in the winter.
  - Close curtains, shades and blinds at night and during unoccupied periods to help your home retain heat. Keep them open on sunny days.

(Continued on back)

Figure D - 3: SoCalGas January BTA Insert (Back)

**USE OUR NEW ONLINE TOOLS TO SAVE EVEN MORE!**

Visit **My Account Ways to Save**, your online savings tool.

- Set savings goals and get tips on how to achieve them.
- Create a personalized energy profile for your home.
- View your daily and hourly natural gas usage.

**Every plan starts with a GOAL!**

**Do-it-Yourself!**

- Replace your water heater
- Insulate your hot water pipes
- Properly maintain your heating system

**Compare to Your Neighbors**

Neighborhood	Usage
12345	100%
6789	120%
01234	80%

**Understand Your Usage**

Room	Usage
Living Room	40%
Kitchen	30%
Bedroom	30%

**New Ways to Save Tools**

Please visit [socialgas.com](http://socialgas.com).

[socialgas.com](http://socialgas.com) | 1-800-427-2000 |

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Figure D - 4: SoCalGas February BTA Supplemental Letter



SoCalGas  
A Sempra Energy utility

**ENERGY & MONEY SAVINGS  
ARE JUST A CLICK AWAY.**  
VISIT [SOCALGAS.COM](http://SOCALGAS.COM) TODAY.

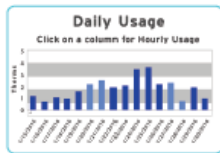
«Customer\_Name»  
«Customer\_Mailing\_Address»  
«Customer\_Mailing\_City\_State\_ZIP»  
«XXXXXXXXXXXXXXXXXXXXXXXXXXXX»

Dear «Customer Name»,

Along with your weekly **Bill Tracker Alerts** to help you monitor your natural gas usage costs, you also have several online tools available to help you save energy and money.

Visit [socialgas.com](http://socialgas.com), log into **My Account** and click on **Ways to Save where you can**:

- Set a savings goal and receive conservation tips to help achieve them.
- Discover where you might be able to save through our online energy survey.
- See how your home's usage compares to similar size homes in your neighborhood.
- Review your daily and hourly usage information.



**Daily Usage**  
Click on a column for Hourly Usage

Hour	Usage (therms)
12:00 AM	0.1
1:00 AM	0.1
2:00 AM	0.1
3:00 AM	0.1
4:00 AM	0.1
5:00 AM	0.1
6:00 AM	0.1
7:00 AM	0.1
8:00 AM	0.1
9:00 AM	0.1
10:00 AM	0.1
11:00 AM	0.1
12:00 PM	0.1
1:00 PM	0.1
2:00 PM	0.1
3:00 PM	0.1
4:00 PM	0.1
5:00 PM	0.1
6:00 PM	0.1
7:00 PM	0.1
8:00 PM	0.1
9:00 PM	0.1
10:00 PM	0.1
11:00 PM	0.1

My Account Daily Usage Sample




**Compare to Your Neighbors**  
Energy Comparison Community Savings

Category	Value
My Home	\$157
Similar Homes	\$182
Most Energy Efficient Homes	\$137

My Account Annual Cost Comparison

Get started saving energy and money today!

Sincerely,  
  
Jeffrey L. Walker  
Director, Advanced Meter Project



P.S. Bill Tracker Alerts are available via text message and email. If you'd like to receive alerts in your inbox as well as your wireless phone, log in to [myaccount.socialgas.com](http://myaccount.socialgas.com) and go to the Manage My Account tab to change your preferences.

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Figure D - 5: SoCalGas January/March BTA Supplemental Email



**Bill Tracker Alerts**

For account number: XXX-XXX-98564

**Tools and tips to help you save energy and money**

Weekly Bill Tracker Alerts help you monitor your natural gas usage costs and with our **Ways to Save** online tools, you'll have even more help saving energy and money.

Simply log into My Account.

- Set a savings goal and receive conservation tips to help achieve it.
- Take your quick online energy survey to discover new ways to save.
- Compare your home's usage to similar size homes in your neighborhood.

Get started saving energy and money today!

Log in to My Account and click on **Ways to Save**.

[Log In](#)

## **Appendix E      Aclara/SoCalGas Seasonal Energy Update Materials**

In addition to the paper SEU and email SEU examples in Section 2.2, Aclara/SoCalGas also sent a welcome letter, frequently asked questions insert, and a repositionable sticker, which are included in this appendix. Different SEU email updates were sent depending on if there was cold weather at the time. There was also a slightly different version of the paper SEU reports sent in January and February which is included in the appendix.

Figure E – 1 shows the front of the Aclara facilitated SEU welcome letter, which was delivered to nearly 42,900 SEU customers in November 2015. Figure E – 2 shows the back of the SEU welcome letter. Figure E – 3 displays the SEU frequently asked question insert. Figure E – 4 displays the repositionable sticker that was sent to all of the SEU customers. Figure E – 5 and Figure E – 6 show the front and back of the November paper SEU report. Figure E – 7 and Figure E – 8 show the front and back of the January paper SEU report. Figure E – 9 shows the “cold weather” email SEU update. Figure E – 10 shows the “no cold weather” email SEU update.

Figure E - 1: Aclara-Facilitated November SEU Welcome Letter (Front)

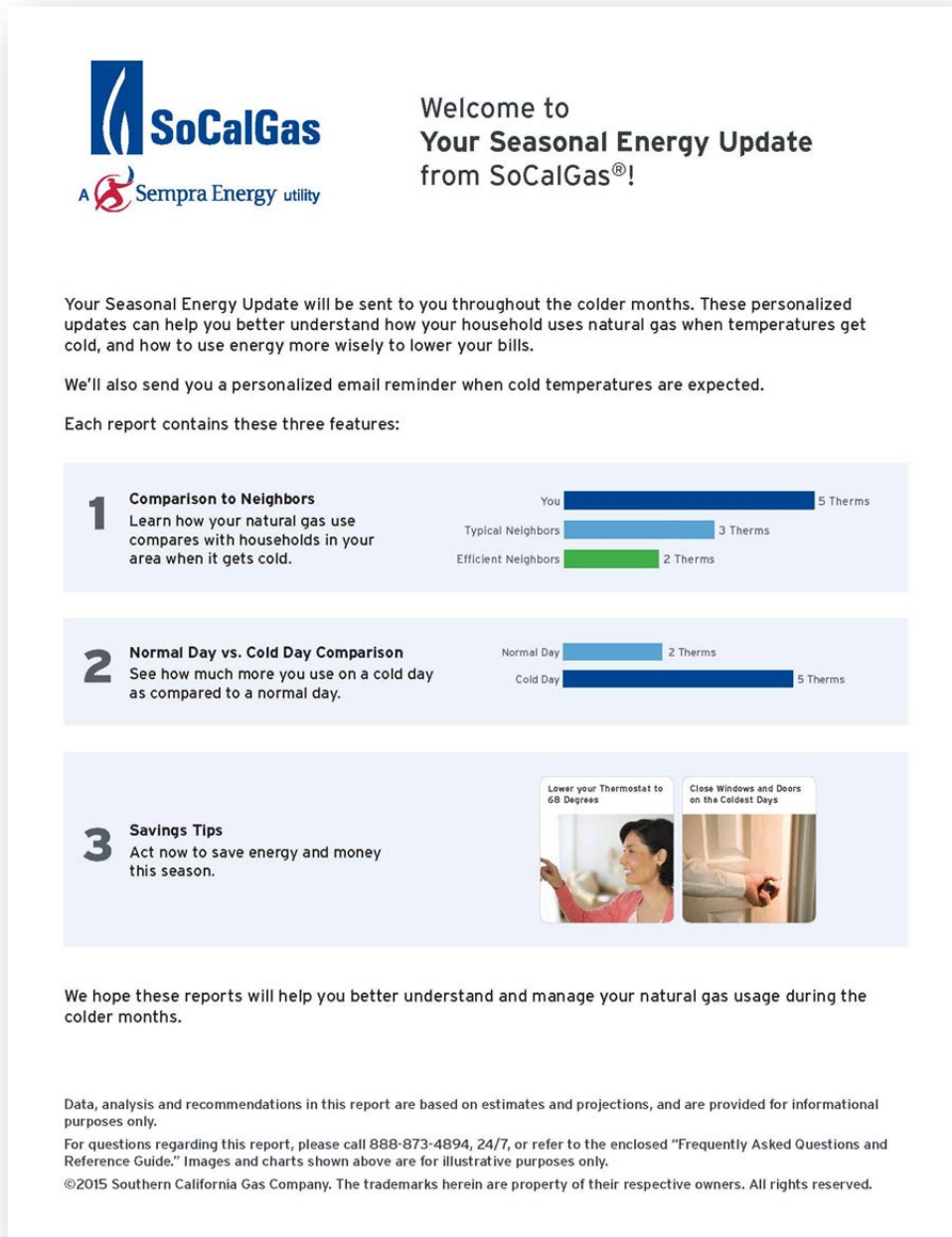



Figure E - 2: Aclara-Facilitated November SEU Welcome Letter (Back)



**SoCalGas**  
A Sempra Energy utility

## Seasonal Energy Update Frequently Asked Questions & Reference Guide

**Q. Why am I receiving this Seasonal Energy Update report?**  
A. The report you received is part of a pilot program from SoCalGas to help customers like yourself understand your seasonal energy usage patterns through the fall and winter months, and to discover opportunities where you might be able to save energy and reduce your gas bills. These reports are being distributed for a limited time to a select group of SoCalGas customers in the pilot program. The reports will then be evaluated before potentially offering them in subsequent years or expanding the number of customers who will receive them.

**Q. How was I selected to be part of this program?**  
A. You were selected for this program because you may have potential to save energy and money this winter. Based on historical data, your household gas usage has shown to be sensitive to cold weather and amongst those with highest average gas usage on cold days.

**Q. How many reports will I receive and how often will they be sent? What if I'd rather not receive them?**  
A. Program participants will receive four monthly paper reports, and for some participants who are enrolled in SoCalGas' My Account website, up to three email reminders. The reports are provided monthly from November 2015 through February 2016. You may call 888-873-4894, 24/7, if you would prefer to stop receiving these reports.

**Q. Which neighbors/households is my gas usage being compared to in the "Cold Day Usage Comparison" chart on the front side of the Seasonal Energy Update report?**  
A. Your household's average daily gas usage for the five coldest days last winter is compared to that of other households in your area that have similar usage levels and experience similar weather. For the first two monthly reports, the comparison period is last winter (November 2014 through March 2015). For the January 2016 and February 2016 monthly reports, the comparison period is the most recent two prior months.

- **"Households in your area that experience similar weather":** "Your area" refers to one of six SoCalGas-defined climate zones. These geographically defined climate zone areas are comprised of High Mountain, High Desert, Low Desert, Coastal, Valley and Inland Valley. They were developed by SoCalGas for purposes of factoring in regional weather conditions to forecast gas supply needs for SoCalGas' service territory.
- **Households with similar usage levels** are those households in your area that used average or greater than average gas usage during the comparison period.
- **Typical Neighbors:** The bar shown is approximately the average daily gas usage on the five coldest days during the comparison period for households in your area experiencing similar weather.
- **Efficient Neighbors:** The bar shown is the average daily gas usage for the 20% of households in your area that have the lowest average daily gas usage for the five coldest days during the comparison period.


**Q. Please provide further details for the "Your Usage on a Normal Day vs. Cold Day" chart on the back side of the Seasonal Energy Update report:**  
A. The comparison highlighted in this chart -- for the November 2015 and December 2015 reports -- is a comparison of your average daily gas usage for the five coldest days last November 2014 through March 2015, to your average daily gas usage during this same period. For reports dated January 2016, the comparison period is for the most recent two months, November 2015 through December 2015. For reports dated February 2016, the comparison period is for the most recent two months, December 2015 through January 2016.

**Q. Is my information kept confidential?**  
A. Yes, in accordance with SoCalGas' Privacy Policy and Privacy Notice, which may be viewed at [www.socalgas.com](http://www.socalgas.com).

For further information or questions regarding this report, please call 888-873-4894, 24/7, or visit: <http://pages.socalgas.aclara.com/WSFAQ/>

Data, analysis and recommendations in this report are based on estimates and projections, and are provided for informational purposes only.  
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Figure E - 3: Aclara-Facilitated SEU Frequently Asked Questions Insert



**Seasonal Energy Update**  
Frequently Asked Questions &  
Reference Guide

A Sempra Energy utility

**Q. Why am I receiving this Seasonal Energy Update report?**  
A. The report you received is part of a pilot program from SoCalGas to help customers like yourself understand your seasonal energy usage patterns through the fall and winter months, and to discover opportunities where you might be able to save energy and reduce your gas bills. These reports are being distributed for a limited time to a select group of SoCalGas customers in the pilot program. The reports will then be evaluated before potentially offering them in subsequent years or expanding the number of customers who will receive them.

**Q. How was I selected to be part of this program?**  
A. You were selected for this program because you may have potential to save energy and money this winter. Based on historical data, your household gas usage has shown to be sensitive to cold weather and amongst those with highest average gas usage on cold days.

**Q. How many reports will I receive and how often will they be sent? What if I'd rather not receive them?**  
A. Program participants will receive four monthly paper reports, and for some participants who are enrolled in SoCalGas' My Account website, up to three email reminders. The reports are provided monthly from November 2015 through February 2016. You may call 888-873-4894, 24/7, if you would prefer to stop receiving these reports.

**Q. Which neighbors/households is my gas usage being compared to in the "Cold Day Usage Comparison" chart on the front side of the Seasonal Energy Update report?**  
A. Your household's average daily gas usage for the five coldest days last winter is compared to that of other households in your area that have similar usage levels and experience similar weather. For the first two monthly reports, the comparison period is last winter (November 2014 through March 2015). For the January 2016 and February 2016 monthly reports, the comparison period is the most recent two prior months.

- **"Households in your area that experience similar weather":** "Your area" refers to one of six SoCalGas-defined climate zones. These geographically defined climate zone areas are comprised of High Mountain, High Desert, Low Desert, Coastal, Valley and Inland Valley. They were developed by SoCalGas for purposes of factoring in regional weather conditions to forecast gas supply needs for SoCalGas' service territory.
- **Households with similar usage levels** are those households in your area that used average or greater than average gas usage during the comparison period.
- **Typical Neighbors:** The bar shown is approximately the average daily gas usage on the five coldest days during the comparison period for households in your area experiencing similar weather.
- **Efficient Neighbors:** The bar shown is the average daily gas usage for the 20% of households in your area that have the lowest average daily gas usage for the five coldest days during the comparison period.

**Q. Please provide further details for the "Your Usage on a Normal Day vs. Cold Day" chart on the back side of the Seasonal Energy Update report:**  
A. The comparison highlighted in this chart -- for the November 2015 and December 2015 reports -- is a comparison of your average daily gas usage for the five coldest days last November 2014 through March 2015, to your average daily gas usage during this same period. For reports dated January 2016, the comparison period is for the most recent two months, November 2015 through December 2015. For reports dated February 2016, the comparison period is for the most recent two months, December 2015 through January 2016.

**Q. Is my information kept confidential?**  
A. Yes, in accordance with SoCalGas' Privacy Policy and Privacy Notice, which may be viewed at [www.socalgas.com](http://www.socalgas.com).

For further information or questions regarding this report, please call 888-873-4894, 24/7, or visit: <http://pages.socalgas.aclara.com/WSFAQ/>

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**Figure E - 4: Aclara-Facilitated SEU Repositionable Sticker**



Figure E - 5: Aclara-Facilitated November SEU Paper Report (Front)

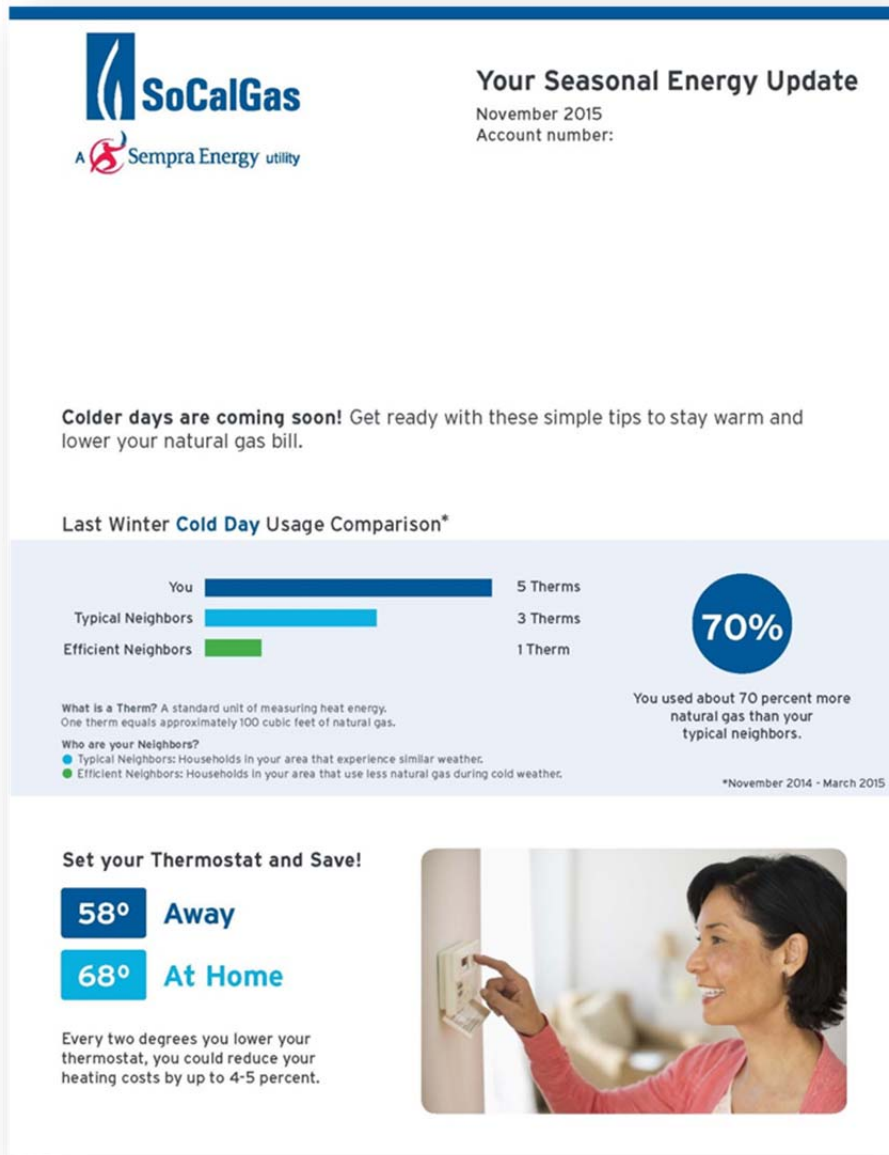


Figure E - 6: Aclara-Facilitated November SEU Paper Report(Back)





Figure E - 7: Aclara-Facilitated SEU January Paper Report (Front)

**SoCalGas**  
A Sempra Energy utility

**Your Seasonal Energy Update**  
January 2016  
Account number:

\*\*\*\*\*AUTO\*\*5-DIGIT 90620 T1 P1 4

**Colder days are coming soon!** Get ready with these simple tips to stay warm and lower your natural gas bill.

**This Winter Cold Day Usage Comparison\***

You	4 Therms
Typical Neighbors	3 Therms
Efficient Neighbors	1 Therm

**30%**  
You used about 30 percent more natural gas than your typical neighbors.

what is a Therm? A standard unit of measuring heat energy. One therm equals approximately 100 cubic feet of natural gas.  
who are your neighbors?  
● Typical neighbors: households in your area that experience similar weather.  
● Efficient neighbors: households in your area that use less natural gas during cold weather.

\*November 2015 - December 2015

**Set your Thermostat and Save!**

**58° Away**

**68° At Home**

Every two degrees you lower your thermostat, you could reduce your heating costs by up to 4-5 percent.

Figure E - 8: Aclara-Facilitated SEU January Paper Report (Back)

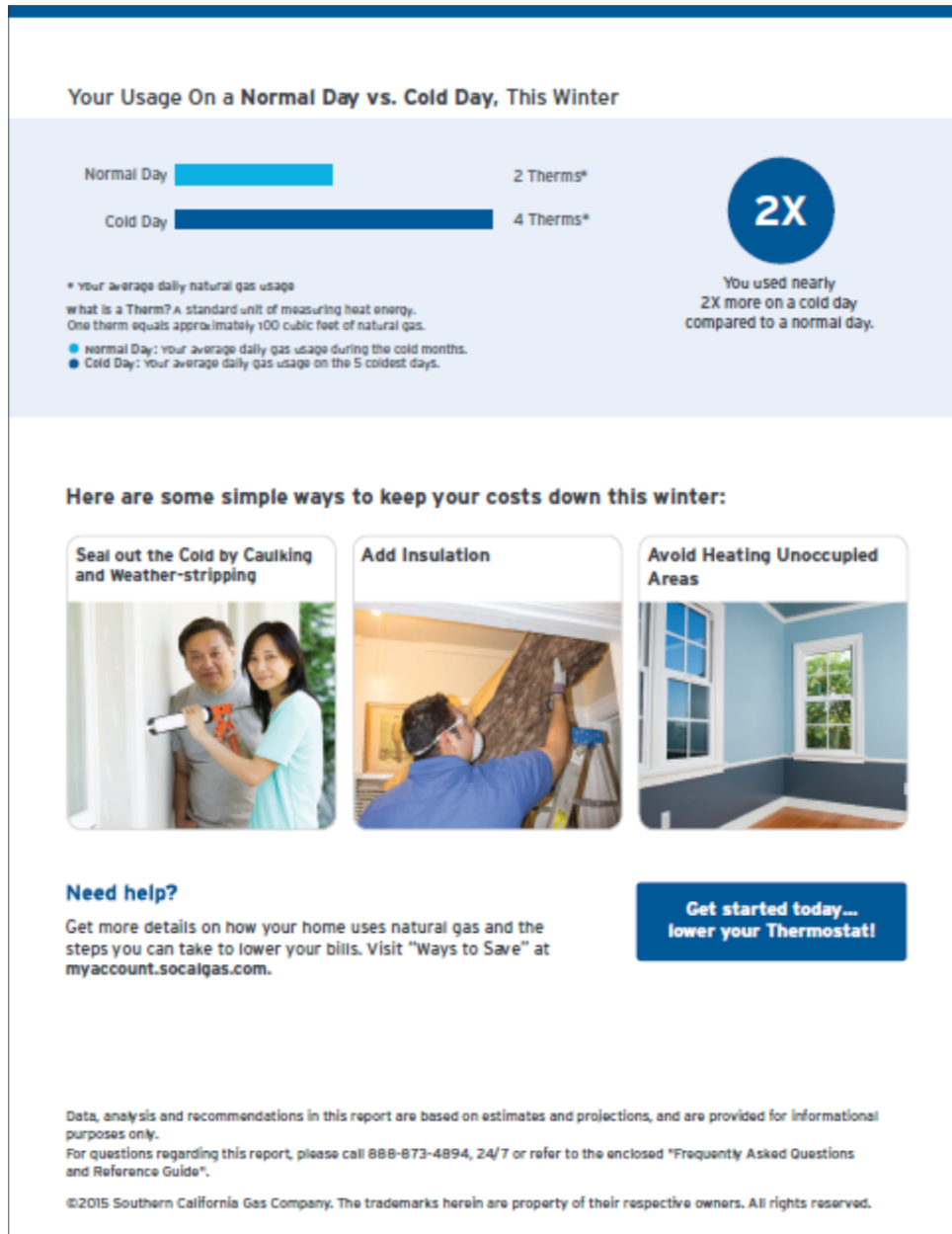


Figure E - 9: Aclara-Facilitated SEU Email Update – Cold Weather Alert

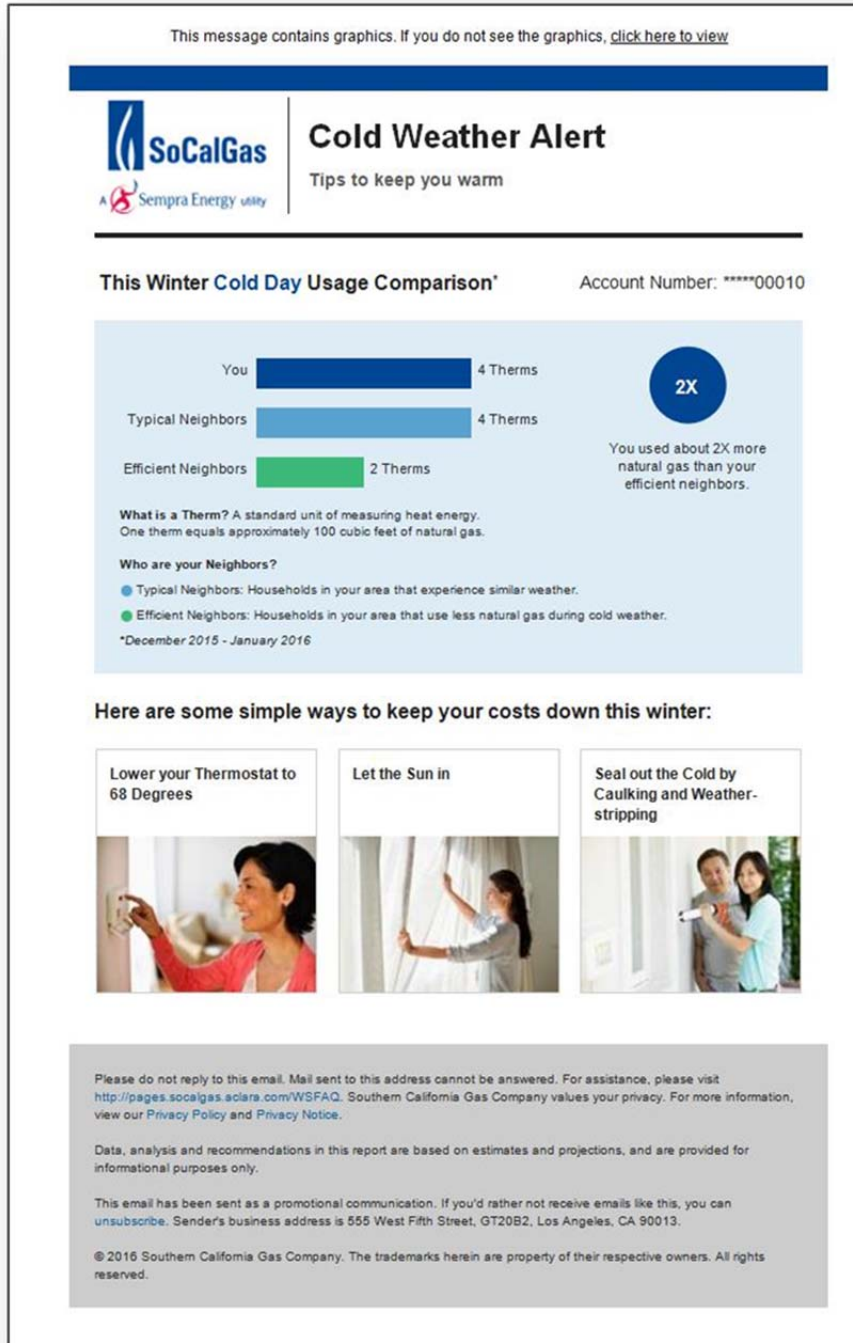


Figure E - 10: Aclara-Facilitated SEU Email Update – No Cold Weather Email

