BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations.	Rulemaking 12-06-013 (Filed June 21, 2012)

SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E) QUARTERLY REPORT ON PROGRESS OF RESIDENTIAL RATE REFORM (PRRR)

John Pacheco
Attorney for
SAN DIEGO GAS & ELECTRIC COMPANY

8330 Century Park Court
San Diego, CA 92123
Telephone: (619) 699-5136
Facsimile: (619) 699-5027
Email: jpacheco@semprautilities..com

November 1, 2019

TABLE OF CONTENTS

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations.	Rulemaking 12-06-013 (Filed June 21, 2012)

SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E) QUARTERLY REPORT ON PROGRESS OF RESIDENTIAL RATE REFORM (PRRR)

I. Introduction

Pursuant to Decision (D.) 15-07-001, "Decision on Residential Rate Reform for Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company and Transition to Time-of-Use Rates" (the Decision), that the California Public Utilities Commission (Commission or CPUC) issued on July 13, 2015, San Diego Gas & Electric Company (SDG&E) files this quarterly report.

This Decision provides for the implementation of Residential Rate Reform during the years of 2015 to 2020 and a transition to Time-of-Use (TOU) rates for residential customers. The Decision also requires the Investor-Owned Utilities (IOUs) to provide the Commission and interested parties with regular updates on the progress of understanding TOU rates and other rate reform impacts. These updates, or Progress on Residential Rate Reform (PRRR), are reported on a quarterly basis.

This report is the seventeenth progress update SDG&E has submitted, with previous reports having been submitted on the following dates:

- 2015: November 2
- 2016: February 2, May 2, August 1, November 1
- 2017: February 1, May 1, August 1, November 1
- 2018: February 1, May 1, August 1, November 1
- 2019: February 1, May 1, August 1

II. Marketing, Education & Outreach (ME&O)

A. ME&O Plan

On February 8, 2018, the Commission adopted Resolution E-4910 approving with modifications SDG&E's ME&O Plan filed by Advice Letter (AL) 2992-E submitted on November 1, 2016 and supplemental AL 2992-E-A submitted on March 15, 2017. On March 30, 2018, SDG&E filed AL 3207-E with updated information related to its ME&O Plan in compliance with Ordering Paragraph 2 of the Resolution. Subsequently, SDG&E filed supplemental AL 3207-E-A on August 16, 2018 that outlined some slight revisions to its ME&O Plan after learning more about the developing Statewide campaign. SDG&E's local mass media strategy will integrate statewide messaging where possible.

On April 12, 2019, SDG&E filed AL 3352-E to update its ME&O budget by requesting an additional $5.53 million for ME&O activities. Key drivers for the budget update include communications development, general and digital media, direct marketing and labor activities. Additionally, the AL addresses $9.61 million in incremental residential TOU labor costs requested in SDG&E's 2019 General Rate Case (GRC) Application (A.) 17-10-007. SDG&E indicated in its GRC that an AL would be filed to add the incremental costs to its ME&O budget

and record them in the Rate Reform Memorandum Account (RRMA). Upon disposition of AL 3352-E, SDG&E will adjust its budget accordingly.

B. Community Outreach and Engagement

i. SDG&E's Energy Solutions Partner Network (Community Based Organizations)

SDG&E's Energy Solutions Partner Network is a key resource in communicating with its underserved and hard-to-reach customers. The network of nearly 190 grassroots, diverse, community-based organizations throughout SDG&E's service area help to engage customers in energy-saving solutions, including enrollment in applicable programs, services, tools and pricing plan options. As part of Rate Reform outreach and education, this network helps educate its constituents about SDG&E's TOU pricing plans, as well as energy management tools such as My Account, My Pricing Plan, My Energy Survey and Goals & Alerts.

In collaboration with its partners, SDG&E conducts various activities highlighting Rate Reform, TOU plans, and energy management solutions throughout the year. This year, outreach activities have included:

- **371 events** reaching more than 57,000 people
- **134 presentations** reaching more than 3,500 people
- **1,348 online activities** (social media posts, e-blasts, website posts) reaching more than 600,000 people

During Q3 alone, outreach activities included:

- **162 events** reaching more than 19,000 people
- **60 presentations** reaching more than 2,900 people

- **126 online activities** (social media posts, e-blasts, website posts) reaching more than 340,000 people

During the 162 outreach events in Q3, SDG&E's outreach staff connected customers with a variety of energy saving solutions including TOU plans, home upgrade programs like Energy Savings Assistance (ESA), Energy Management Tools, Goals and Alerts, Reduce Your Use Rewards, programmable thermostats and more. The team also continued to use the Whendell-themed outreach booth and materials at events where TOU was promoted. The Whendell mascot was at 17 events throughout the quarter drawing significant attention to the 4 p.m. to 9 p.m. on-peak messaging.

SDG&E Fire Safety Fairs

During Q3, SDG&E hosted a series of Wildfire Safety Fairs in the high fire risk areas of its service territory. Customers in these areas are often more remote or in drier, more wooded areas, leaving them at a higher risk of fire danger. The three events were hosted on August 10 in Valley Center, August 24 in Ramona and September 14 in Alpine. In addition to fire safety, SDG&E had over a dozen booths teaching customers about Public Safety Power Shut-off and how to be prepared in the event of a fire or other emergencies. One of the booths focused on educating customers about TOU and the significance of the 4 p.m. to 9 p.m. on-peak period. Collectively, these events reached over 1,000 customers in the high fire risk communities.

Whendell and Smokey Bear at the Ramona Safety Fair

KAABOO Del Mar

Whendell at the KAABOO Del Mar Festival

On September 13-15, SDG&E's Customer Programs Outreach team participated in KAABOO, a 3-day music festival including top musical acts, specialty foods, and a variety of vendors to the Del Mar Fairgrounds. The event attracts 30,000 daily attendees. The booth reinforced environmental messaging around TOU by featuring a hedge wall with one side reading "Keep San Diego Beautiful" and the other side featuring a large clock showing the "Shift to Save" 4 p.m. to 9 p.m. image. Customer Care team members also staffed the booth to provide assistance to SDG&E customers who had specific questions about their bills.

Customers had the opportunity to write messages on a whiteboard to share why they love San Diego. Most comments mentioned weather, beaches, mountains and entertainment. Several also included positive notes about SDG&E. Over the course of the 3-day festival, visitors to the SDG&E booth commented that it was their favorite because it provided a place to sit down, escape the heat, and try to win a prize. Customers also appreciated the face-to-face interaction with SDG&E Customer Care team members as they received time-of-use information and had the opportunity to have their questions answered. In addition to the SDG&E booth at the event, SDG&E was the main sponsor of the event's portable, pre-charged battery phone charger giveaway. Patrons were not only able to use the chargers during the 3-

day festival, but were able to keep the chargers and encouraged to use them to charge their devices between 4 p.m. and 9 p.m.

ii. Critical Customer Groups Outreach

MANA de San Diego Outreach

TOU Education Booth at SeaWorld

MANA de San Diego empowers Latinas through education, leadership development, community service and advocacy and is an SDG&E Energy Solutions Partner. On July 17, MANA hosted an event at SeaWorld for more than 200 people during which TOU was the main topic of discussion. SDG&E hosted a booth at the event and distributed information on TOU plans and potential impact to customers and tools and solutions for success on TOU. TOU messaging also looped on various video monitors throughout the event.

Foundation for Senior Care Staff On August 7, the SDG&E Outreach Team presented TOU pricing plans to 24 people as part of the Foundation for Senior Care office staff, CARE Advocates, drivers and members. The Foundation for Senior Care provides services and resources for seniors to live independently and age at


TOU Presentation to the Foundation for Senior Care

home. Services offered include transportation, day care, computer learning, volunteer opportunities and advocacy.

Along with TOU, SDG&E presented information outlining assistance programs, Level Pay Program, tips and tools. The group was very engaged and asked questions regarding TOU and the transition process. Many in attendance felt Level Pay, in particular, was a good offering to their clients and that they would encourage people to enroll. CARE advocates expressed interest and concern for clients who are shut-ins and do not have the ability to shift to TOU pricing plans since many of them live in mobile home parks.

C. Combining IDSM with TOU: CARE PCT TOU Pilot

On May 3, 2018, SDG&E received approval of AL 3197-E/2655-G for the Programmable Communicating Thermostat (PCT or smart thermostat) TOU Pilot, ordered in D.17-12-009. The goal of the pilot is to explore and evaluate whether a PCT paired with a mobile application impacts the behavior of high usage customers as they transition to TOU. The Pilot has a treatment group, which received a smart thermostat and transitioned to TOU, and a control group, which transitioned to TOU but did not receive a thermostat. All customers were asked to complete three surveys as part of the pilot and will be compensated for their participation. The current control group contains 89 customers, and there are 48 customers in the treatment group.

In early July, SDG&E's PCT vendor, Ecobee, notified the SDG&E team that the smart thermostats installed as part of this PCT pilot were not operating with the Peak Relief functionality designed to help customers optimize the TOU rates. While issues were identified

during the installation of the thermostats, resolutions appeared to be identified and SDG&E believed the thermostats were operating with Peak Relief, as intended. However, in mid-July, it was determined that there were still issues with the PCT functionality. Ecobee began pushing request notifications to customers to update the thermostat firmware to the latest version, "Eco+". The notifications occurred through the thermostats as well as email. Additional notifications were sent in August to customers who had not upgraded their devices with the new firmware.

As of September, 39 of the 49 thermostats installed (accounts for 48 customers; 1 customer had 2 thermostats) had been updated with the latest Eco+ firmware. Based on the challenges with the Ecobee firmware, SDG&E and the IOUs are working with the pilot evaluator to adjust the second customer survey, scheduled for the end of October. The second survey was adjusted to focus on participants' experiences and opinions of how the smart thermostat impacted their usage, especially during TOU periods. Additionally, they will be asked demographic, behavioral, attitudinal, and knowledge-based questions to help contextualize the findings in the load impact analysis. Moving forward, the program evaluator is modifying the research plan to address the firmware issues and additional updates on the status of the survey and overall study will be provided next quarter.

D. Elected Official Briefings

On September 9, Regional Public Affairs presented to some 30 people including City Managers, Mayors and Councilmembers from across the county providing an update on the TOU transition and summer educational efforts underway to ensure customers are prepared to combat high bills with SDG&E programs, solutions and tools.

E. Earned Media

SDG&E's Q3 earned media efforts were largely reactionary compared to previous quarters. TOU and the larger TOU transition have been discussed several times this year, and SDG&E plans to continue to communicate and educate customers through this channel as news stories and subjects call for it. For example, SDG&E responded to a media inquiry by KPBS on August 15 regarding how many customers have opted-out of TOU as part of the larger TOU transition. The story was positive and mentioned the benefits of TOU. SDG&E is also continuing to coordinate with the statewide TOU education campaign and plans to utilize earned media as a means to further educate customers about TOU in this space moving forward.

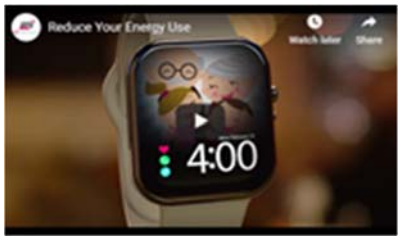
F. Advertising and Paid Media

SDG&E's advertising and paid media strategy evolved throughout the first three quarters of the year. Q1 focused predominantly on introducing Whendell, providing general awareness and understanding of TOU, explaining why TOU is being introduced, informing customers where to go for more information and providing support for the targeted communications customers were starting to receive. The focus in Q2 shifted to emphasize customer choice and control and to reinforce understanding of TOU time periods, especially between 4 p.m. and 9 p.m.: "When you use energy matters." Q3 focused on helping TOU customers be successful on their new plans, especially during the summer months.

During the Q1 and Q3, mass media tactics included TV and radio spots, DJ endorsements, print ads, out-of-home advertising, and digital advertising (paid search, paid

social, display) and included Asian-language digital and print advertising as well as Spanish-language Radio spots and DJ endorsements, print and digital advertising, and out-of-home.

During Q3, SDG&E continued all mass media tactics deployed in the prior quarter and added new creative tactics with messaging that focused on tips to help customers be successful on TOU, especially during the summer months. Media activities included TV spots, radio spots and DJ endorsements, print ads, out-of-home advertising, and digital advertising (paid search, paid social, display). The tactics are specifically for critical customer groups also continued and included Asian-language digital and Spanish-language print, radio, and digital advertising.



TV Spots

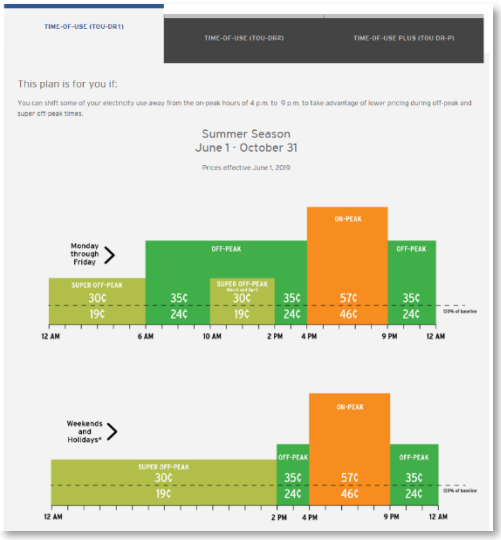
Print Ads

Sprinter/Train Wrap

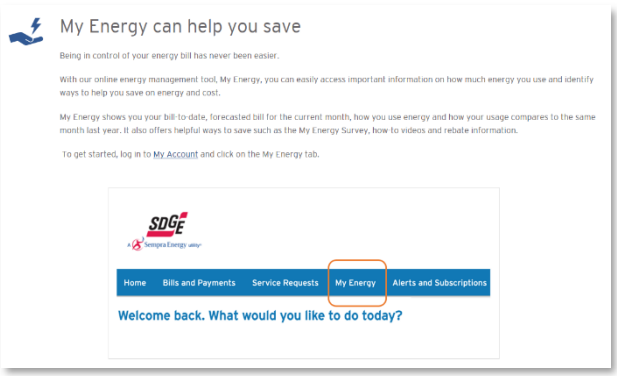
During Q3, SDG&E's marketing campaigns achieved a total of 193.5M impressions (~69M from digital advertising; 124.5M impressions with traditional mass media tactics). This year, these campaigns have generated more than 400M total impressions (~100M from digital advertising; ~300M from traditional mass media tactics).

G. Updated TOU Landing Page

The dedicated TOU landing page, sdge.com/whenmatters, received continual updates in Q3 including the addition of user-friendly, side-by-side pricing plan tables featuring three TOU pricing plans (TOU-DR1, TOU-DR2 and TOU-DR-P); individual plan details; as well as current rates and peak period updates. In addition, SDG&E added a new section to the page promoting My Energy, an online tool in My Account where customers have a personalized look at how and when they use energy most. This page also provides customers with an opportunity to complete an online Energy Survey, which results in generation of personalized tips to help manage their energy use. Updates were consistent across all in-language-versions of the page (English, Spanish, Chinese, and Vietnamese). Lastly, videos were moved from a dedicated section and instead embedded into the FAQs section, where appropriate to a question, which simplified navigation for customers and provided videos to explain more complex topics within the section where customers look for answers.



New Pricing Plan Comparison Charts



New My Energy Section

During Q3, sdge.com/whenmatters received ~315,600 total page views, ~272,800 unique page views and customers spent an average of 2 minutes and 45 seconds on the page.

Web activity continued to increase throughout the year. Total page views in Q3 increased 23% over Q2 and 163% over Q1.

H. Targeted Summer Communications

i. Summer Preparedness: 2018 High Bill Callers

Beginning in June, SDG&E launched a summer preparedness campaign including direct mail and email notifications to residential customers who made a high bill inquiry in 2018. Customers were segmented based on their Net Energy Metering (NEM) or non-NEM status, whether they incurred a High Usage Charge in the past or were currently on a TOU pricing plan. To avoid any potential confusion in messaging, this campaign excluded any customer actively on the TOU transition path within the Initial Default TOU Migration (IDTM).

Among other summer preparedness saving tips and solutions, TOU pricing plans were suggested to customers (if they were not already on them) as a potential solution to avoid a High Usage Charge and help manage summer bills.

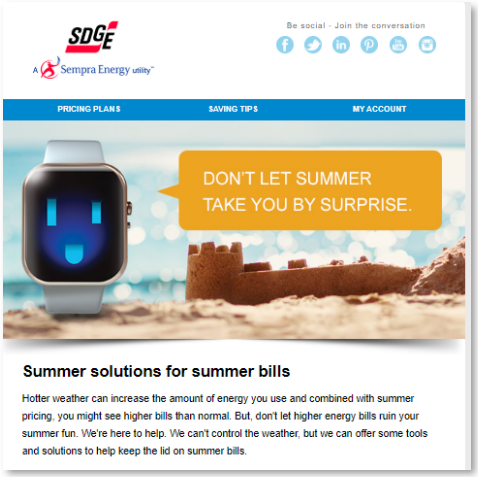
In July, for the segment of residential customers who made a high bill inquiry in 2018, SDG&E sent a direct mail postcard to help support them heading into the summer months. The messaging began with understanding and empathy with high bill challenges faced last summer and continued by providing potential tools

Summer Preparedness – Direct Mail Postcard

and solutions to help customers avoid similar scenarios again this year. Based upon a customer's NEM or non-NEM status, these postcards included promotion of SDG&E's Level Pay plan, My Account and other summer energy tips. SDG&E sent ~15,500 postcards as part of this campaign (~2,300 non-NEM; ~13,200 NEM). Samples can be found in Appendix B below.

ii. Summer Preparedness: First Summer on TOU-DR1 or TOU-DR2

During August and September, SDG&E conducted an additional summer preparedness campaign designed to connect with customers experiencing their first summer on one of two new TOU plans, TOU-DR1 and TOU-DR2. This population included those who were enrolled in TOU as an opt-in customer and those who were transitioned as part of the larger, TOU Transition effort (excluding only those who were the Default Pilot population since this was their second summer on TOU).



Summer High Bill Email

Targeted emails were sent to approximately 135,000 new TOU-DR1 and TOU-DR2 customers whose consumption reached 75%-125% more than their usage during the same period in 2018. The objective of the campaign was to help customers succeed during their first summer on TOU and specifically addressed potential seasonal bill volatility while providing helpful solutions and tips for energy savings. The emails also directed customers to additional online tools including as the summer solutions web page (sdge.com/summer). At the end of the

campaign, emails recevied a 29% open rate and 1.2% click through rate. Overall, neither summer campaign resulted in many calls for clairty, confusion or complaints to SDG&E's Customer Care Center.

III. High Usage Charge (HUC)

On November 1, 2017, SDG&E implemented the High Usage Charge applied to customers who use more than four times their baseline allowance. The table represents the number of customers who incurred this charge by month in the third quarter of 2019.

High Usage Charge Impacted Customers Q3 2019	
July	11,807
August	23,051
September	27,119

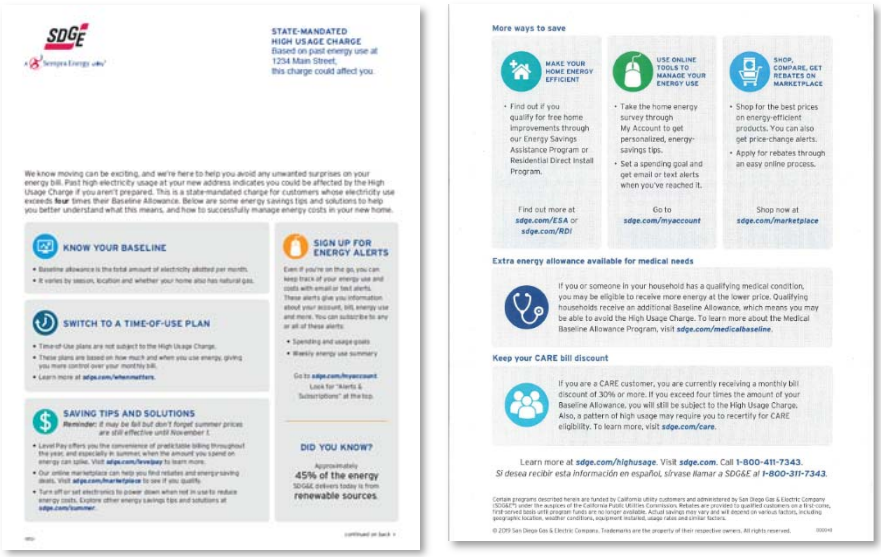
SDG&E notifies customers who approach (350% of baseline allowance) and exceed (400% of baseline allowance) the High Usage Charge threshold. Customers not enrolled in SDG&E's High Usage Charge alert in My Account receive direct mail notification the first time they exceed 350% and 400% of their baseline. Customers who would like to receive ongoing High Usage Charge notifications can enroll in the High Usage Charge SMS (text) and/or email alerts available in My Account.

CARE customers receive targeted information through direct mail and email to inform them about CARE high usage thresholds (400% threshold for post-enrollment verification; 600% disallowance). Messaging includes tips and resources to help CARE Customers lower energy use and continue receiving the discount. CARE customers who had been auto-enrolled in Q1 to receive the standard High Usage Charge notification were unenrolled in Q3 now that they are receiving the targeted CARE high usage messaging. CARE customers who opt-in to the standard HUC alerts continue to receive those test/and or email messages.

At the end of Q3, there were approximately 30,000 subscriptions for HUC alerts. High Usage Charge notifications include tips and resources to customers who approach and reach the High Usage Charge thresholds. The following table outlines SDG&E's current High Usage Charge alert notification distribution.

High Usage Charge Notifications Distributed between July and September 2019			
	350% of Baseline Allowance	400%+ of Baseline Allowance	Total Notifications
Direct Mail	5,969	3,673	9,642
Email	17,192	10,849	28,041
Text (SMS)	12,027	7,730	19,757

Additionally, SDG&E sent an educational communication to 359 new customers who moved during Q3 into a home/apartment that has a history of exceeding 350% of baseline allowance. T he objective of the piece is to educate these customers on the High Usage Charge and how it may apply to them at their new home. The communication provides tools and resources to help customers avoid the High Usage Charge and suggests TOU pricing plans as a potential solution as these are not subject to this charge. The Q3 communication also included tips for energy savings, some of which were specific to summer as seasonal pricing was effective until November 1.



General High Usage Education – Direct Mail

Samples of all the High Usage Charge communications sent to customers this quarter can be found in Appendix B.

The High Usage Charge landing page at *sdge.com/highusage* also provides education about baseline allowance and solutions to avoid the charge. The page was updated to provide additional clarifying information and frequently asked questions earlier in Q2 with additional updates as needed.

sdge.com/highusage

In Q3, the page received 10,110 views with 8,431 unique page views. Viewers spent an average of 2 minutes and 5 seconds on the page. This is consistent with previous quarterly results.

IV. 2018 Residential TOU Default Pilot

A. Peek™ Device

In conjunction with the end of their first year on TOU, in April, SDG&E sent randomly-selected Default Pilot customers a Peek™ device. Peek, a product of Ceiva Logic Inc., is a disc-shaped plug-in device that can help customers build awareness of TOU time periods along with its corresponding mobile app. Color-coded lights on the Peek device inform customers whether they are currently in on-, off-, or super off-peak TOU time periods with a 12-hour view of upcoming time periods. The mobile app provides pricing information for each period in the TOU-DR1 pricing plan and allows for SDG&E to send notifications and messaging to Peek app users.

Peek Device and Mobile App

The Peek study focuses on both communication channel effectiveness as well as device uptake and effectiveness. Approximately 1,350 customers received unsolicited direct mail packages including a Peek device, letter, and activation insert (English and Spanish versions). In addition, approximately, 1,300 customers received an email offer which included a link to a redemption website (English and Spanish email and microsite versions). Successful completion of the redemption form triggered the process for customers to receive the direct mail package. The email had a 56% open rate and 16% click through rate.

Peek Direct Mail Letter and Activation Instructions

Of the customers receiving the email, 150 redeemed the offer and received the mailing; therefore, a total of approximately 1,500 customers were sent a Peek device.

Peek app landing page

During Q3, SDG&E sent a follow-up postcard to customers who had received but not yet activated their Peek devices. At the end of the third quarter, 296 customers had activated their Peek devices and downloaded the mobile app. Also during the quarter, SDG&E leveraged the Peek app to send notifications to customers. The Peek app functionality provides for a notification containing a brief message to appear on a customer's mobile device asking customers to click for more information. Clicking on the notification brings a customer to an app landing page providing more information as well as a link to an SDG&E web page. SDG&E sent heat alert notifications in July and September ahead of local heat waves. The landing pages for each alert provided tips and resources to manage rising temperatures (July) and tips and solutions for summer bills (September). Both the July and September landing pages contained links to SDG&E's dedicated summer webpage, sdge.com/summer. Approximately 59% of customers receiving the notifications clicked through to the app landing page.

B. TOU Default Pilot Load and Bill Measurement and Evaluation

In accordance with D.15-07-001, SDG&E conducted a TOU Default Pilot in 2018 designed to study how residential customers would perform on one of two new TOU pricing plans (TOU-

DR1 and TOU-DR2), and how their experience was impacted by the series of communications they received throughout the process. A key objective of the pilot was to develop insights that would help guide SDG&E's approach to implementation of default TOU pricing for the majority of its residential electricity customers and inform the CPUC's policy decisions regarding default pricing.

Resolution E-4848 instructed SDG&E to provide load and bill impacts from the first summer of the TOU Default Pilot by fall 2018, and its final Default Pilot load and bill impacts in its November 1, 2019 PRRR report. Results from customers' first summer on TOU were approved to be presented at the January 28, 2019 TOU ME&O Working Group meeting. The full report is attached in Appendix D: *Default Time-of-Use Pricing Pilot Interim Evaluation*. Final Default Pilot load and bill impacts, as well as final load impact tables, are fully detailed in Appendices E and F: *Default Time-of Use Pricing Pilot Final Evaluation*.

i. Interim Evaluation

a. Pilot Design

The Interim Default TOU Evaluation provides background on SDG&E's pilot design, and overall findings from the first summer of this study (June through October 2018). The report also contains detailed background information on the pilot, describes the pilot design and the evaluation methodology used for analysis, discusses SDG&E's pilot implementation and treatments, and presents load impacts, bill impacts, and opt-out findings covering the 2018 summer period.

The pilot tested two different TOU pricing plan options: TOU-DR1 which has a 3-period TOU pricing structure and TOU-DR2 which has only 2-periods. Both plans share the same on-peak pricing period of 4 p.m. to 9 p.m. and an off peak period; however, only TOU-DR1 includes a super-off peak period. Also, both plans have pricing which adjusts between seasons (summer and winter). Approximately 141,000 households were assigned to one of the two TOU plans, and an additional 169,000 were retained in the study on the standard tiered plan (DR) to act as a control group. Through the transition process, customers received a series of pre-transition communications as well as targeted aftercare communications based on their individual segment within the pilot design.

Evaluation of the pilot focused on a number of key research objectives including:

- Assessing SDG&E's operational readiness to default large numbers of customers onto TOU rates over a short time in preparation for a larger Mass Transition period in 2019.
- Determining the impact of different ME&Ostrategies on customers' awareness of rate options, opt-out rates, engagement with the TOU plans, perceptions while on a TOU plan, and load and bill impacts overall.
- Estimating the average peak and off-peak change in energy usage by customers enrolled on each default plan (TOU-DR1 and TOU-DR2).
- Determining the opt-out rate for customers defaulted onto each rate under each notification treatment.

SDG&E's TOU Default Pilot was structured as a randomized encouragement design (RED) experiment. With a RED, different randomly selected samples of customers are offered different experimental treatments (in this case, a different TOU plan or different content or messaging in the recruitment materials) and another random group of customers is not offered

anything (e.g., the control group). Some who are offered the treatment take it and some do not. Because each sample is a statistical clone of the other due to the random selection (especially in this case where sample sizes are quite large), comparing the behavior of the encouraged group with that of the control group allows for an unbiased assessment of the impact of the treatment. Based on pre-treatment validations it was determined that an error had occurred in the pilot implementation and the control groups were not statistically equivalent to the treatment groups. Without pre-treatment statistical equivalence between the treatment and control groups, the RED analysis framework was no longer valid. SDG&E selected a revised control group for each rate from the original pool of eligible customers. The revised control group for TOU-DR2 was statistically equivalent to the treatment group. However, the TOU-DR1 control group was not. As a result, statistical matching was implemented to select a revised control group for the TOU-DR1 population. Statistical matching involves selecting customers from a population of customers who were not subject to default notification that are most similar to the participant population based on observable variables (primarily load shape).

Load and bill impacts were estimated for three different climate regions in SDG&E's service territory (hot, moderate, and cool). For the moderate and cool climate regions, estimates were also made for two customer segments, California Alternative Rates for Energy (CARE) and Family Electric Rate Assistance (FERA) customers and Non-CARE/FERA customers. CARE/FERA customers in the hot climate region were not allowed to be enrolled on TOU tariffs using default recruitment. As such, comparisons across the hot and two more moderate regions not only reflect differences in climate but also differences in the mix of customers.

The difference in bills on the TOU rates compared with bills under the otherwise applicable tariff (OAT) are comprised of two components: differences due simply to the plans (holding behavior constant) and differences due to changes in behavior as a result of the difference in price signals. The Interim report presents information on structural bill impacts for summer, winter and an entire year based on pretreatment data.

b. Default Pilot Interim Evaluation Overall Findings

- Overall, load impacts were generally in the expected range established during the default pilot design planning stages.
- Both plans have similar distributions of structural benefiters, non-benefiters, and customers in the neutral bill impact category of ±$3/month.[1] In all regions and customer segments, the proportion of benefiters is a slightly higher on TOU-DR1 than TOU-DR2, but there are also more non-benefiters on TOU-DR1 than on TOU-DR2.
- The structural bill impacts were generally as expected for a comparison of seasonally differentiated TOU plans. A majority of customers (73% on TOU-DR1 and 80% on TOU-DR2) are in the neutral bill impact category and are neither structural benefiters nor non-benefiters on an annual basis. In the winter months, more than 97% of customers across rates, CARE/FERA status, and climate regions fell into the neutral category.
- On average, customers on both plans produced small, but statistically significant, peak-period load reductions. Peak period load reductions averaged roughly 1.5% for TOU-DR1 and 2.0% for TOU-DR2. Survey evidence indicates that ongoing education and outreach could lead to greater load reductions.

[1] Nexant used +/- $3 a month as the threshold for defining neutral bill impacts in the Opt-In TOU Pilot evaluation as well as the Default Pilot evaluation. It was later determined that Non-benefiters (NB) are customers that see $10 or more a month of bill increases.

- Both surveys showed that approximately 60% of customers were aware their household was transitioned to a TOU plan and roughly 50% were aware they were on a TOU plan.
- Load reductions were greater for TOU-DR2 than TOU-DR1, despite having the same peak period time period (4 p.m. to 9 p.m.) and despite TOU-DR1 having higher peak-period prices than TOU-DR2.
- Increases in net daily electricity consumption was driven by statistically significant increases in electricity usage during the off-peak and super off-peak periods. Customer surveys found that 32% of customers stated they shifted their electricity usage compared to 18% of customers stating they reduced electricity usage, indicating that load shifting was a driver of the off-peak load increases. Another possible explanation for the estimated increase in daily usage is the fact that control customers were subject to a HUC for monthly usage exceeding a certain threshold whereas TOU customers were not.
- Absolute peak period load reductions were largest in the hot climate region, but these segments did not include CARE/FERA customers. Absolute impacts were smallest in the cool climate region, which included CARE/FERA and Non-CARE/FERA customers.
- The incremental peak period impact among most households that received programmable thermostat education compared to households that did not was not statistically significant.
- Of the segments that received tailored post-enrollment messaging, only Non-CARE/FERA customers in the hot climate region had significant incremental load reductions of 0.05 kW compared to standard education customers. In the cool climate region, Non-CARE/FERA customers who received tailored messaging had smaller load reductions relative to standard education customers.
- A direct comparison of TOU-DR1 versus TOU-DR2 opt-out rates overall would not be appropriate because of differences in the notification treatments across the plans. When comparing the opt-out rates between TOU-DR1 and TOU-DR2 cells with identical notification treatments, the outcome changes based on the opt-out definition used. When opt out is defined as choosing the OAT rather than the default plan offered, there

is a stronger preference for TOU-DR2. When opt-out is defined as taking any action other than accepting the offered plan, there a preference for TOU-DR1.

- Customers notified through both direct mail and emails were found to be slightly more likely to opt out of the default rate (21.4%) compared to customers who only received direct mail (19.8%).
- Post-enrollment opt-out rates were very small and fell between 0.8% and 1.7% for CARE/FERA and Non-CARE/FERA customers in all climate regions, indicating the vast majority of customers stay on a TOU rate once they are enrolled.

ii. Final Evaluation

a. Pilot Design

SDG&E's Default Time-of-Use Pricing Pilot Final Evaluation was completed on October 29, 2019. The pilot's design was similar to that of the Interim Evaluation.

b. Default Pilot Final Evaluation Overall Findings

- Overall, load impacts were generally in the expected range established during the Default Pilot design planning stages.
- A majority of customers (73% on TOU-DR1 and 80% on TOU-DR2) are in the neutral bill impact category and are neither structural benefiters nor non-benefiters on an annual basis. This accounts for a change in bills of ±$3/month.[2] In all regions and customer segments, the proportion of benefiters is a slightly higher on TOU-DR1 than on TOU-DR2, but there are also more non-benefiters on TOU-DR1 than TOU-DR2 in this study. Total bill impacts were generally very small (decreases of $0.48 and $1.22 per month, on average, for TOU-DR1 and TOU-DR2, respectively).

[2] Nexant used +/- $3 a month as the threshold for defining neutral bill impacts in the Opt-In TOU Pilot evaluation as well as the Default Pilot evaluation. It was later determined that Non-benefiters (NB) are customers that see $10 or more a month of bill increases.

- Total bill impacts in the summer months showed statistically significant bill decreases in the overall population and cool climate regions on TOU-DR1 and TOU-DR2. Total bill impacts in the winter months were not statistically significant for the TOU-DR1 and TOU-DR2 populations as a whole and in nearly all customer segments.
- Similar to the interim evaluation, on average, default customers on both TOU-DR1 and TOU-DR2 produced small, but statistically significant, peak-period load reductions in the summer months. Annually though, customers did not show annual conservation effects compared to the control group. Customers on TOU-DR1 had annual electricity consumption increases of 60.4 kWh or 0.8%, while customers on TOU-DR2 had annual increases of 43.3 kWh or 0.6%.

- In the summer months, load reductions were greater for TOU-DR2 than for TOU-DR1, despite having the same peak period time period (4 p.m. to 9 p.m.) and despite TOU-DR1 having higher peak-period prices than TOU-DR2. In the winter months, impacts were very similar between the two plans.
- At the territory level, customers on TOU-DR1 increased their net daily electricity consumption on average weekdays and weekends in the summer and winter. In the summer months, the increases were small but statistically significant. Daily usage increases were larger in the winter.
- Increases in net daily electricity consumption were driven by statistically significant increases in electricity usage during the off-peak and super off-peak periods. Customer surveys found that 32% of customers stated they shifted their electricity usage compared to 18% of customers stating they reduced electricity usage, indicating that load shifting was a driver of the off-peak load increases.
- Survey evidence indicates that ongoing education and outreach could lead to greater load reductions.
- Customers notified through both direct mail and emails were found to be slightly more likely to opt out of the default rate (21.4%) compared to customers that only received direct mail (19.8%).

- Post-enrollment opt-out rates were very small and fell between 1.3% and 3.5% for CARE/FERA and Non-CARE/FERA customers in all climate regions. This indicates the vast majority of customers stay on a TOU rate once they are enrolled. Opt-out rates picked up slightly after the summer months.
- The incremental peak period impact among most households that received programmable thermostat education compared to households that did not was not statistically significant.
- The offer to customers to enroll on the Level Pay Plan as a way of managing bill volatility across months and seasons was only taken up by a very small number of customers.
- Identification of the correct peak hours was also much higher among Non-CARE/FERA customers (69.4%)[3] versus CARE/FERA customers (58.2%).

V. Pricing Plan (Rates) Renaming Initiative

Earlier this year, SDG&E began researching the nomenclature customers use to describe the company's different rate options and identify potential naming conventions for the pricing plan renaming initiative.

SDG&E completed three focus groups in April 2019 to explore current and potential names. The focus group insights were used to develop new names to test among a larger group of customers in June 2019. The primary objective of the survey with 307 customers was to test potential new names on several attributes including fit, clarity and appeal. From the research, SDG&E learned that customers prefer descriptive, simple names that clearly state the benefit or when they should use energy. SDG&E will continue to refine names through 2019 before finalizing in 2020.

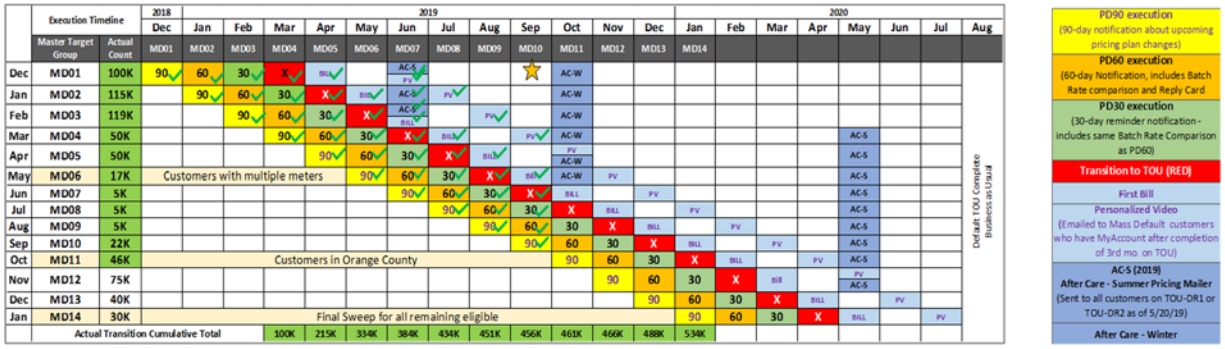
[3] This value represents the average percent of customers that correctly identified each of the peak period hours as in the peak period.

SDG&E will use 2020 to prepare to update the names in all systems, update web pages and collateral materials, and train internal teams and outreach partners on the new names and implications. SDG&E expects to be prepared for a full rollout of updated pricing plan names to all customers in Q1 2021 in conjunction with the launch of the new customer information system.

VI. 2019 Residential Mass Default to TOU (IDTM)

A. Mass Default Rollout Update

Throughout 2019, SDG&E is transitioning approximately 750,000 residential customers on a rolling monthly cadence to the TOU (TOU-DR1) pricing plan. Up to 3.7 million communications are expected to be sent to approximately 14 different target groups. Pre-transition communication for the first target group began in December 2018.



Mass Default (IDTM) Rollout Schedule

For each target group, customer communication begins with an awareness postcard sent approximately 90 days prior to the scheduled transition date. The 90-day awareness postcard is followed first by a 60-day notification letter, which includes personalized plan

comparison information and a reply card, and then a reminder letter with a TOU quick reference card approximately 30 days prior to the scheduled transition date. During their transition month, customers receive Welcome information and will receive continued support through After Care communications, including a Personalized Video email as well as Summer and Winter Pricing mailers. The communications series concludes with notification after 10 months on the TOU plan of customers' bill protection ending. Email versions of all direct mail communications are also sent if the customer is registered through SDG&E's online account portal, My Account.

Mass Default (IDTM) Rollout Communications Overview

SDG&E customizes transitions communications by language (English or Spanish), as well as by the following segmentation:

- 60-day notification letter and 30-day reminder letter:
    - Non-NEM and NEM

Benefiter Definitions

Category	Est. Avg. Monthly Bill Impact*
Benefiters	Save at least $10
Neutral Benefiters	Save up to $10
Neutral Non-Benefiters	Increase up to $10
Non-Benefiters	Increase at least $10

**Based on last 12 months of energy consumption*

- Benefiter category based on the last 12 months of energy consumption (Benefiter, Neutral Benefiters, Neutral Non-Benefiters, Non-Benefiters)
- Multiple meter (i.e. property management companies; HOAs)

90-day Awareness Postcard

60-day Notification Letter

30-day Reminder Letter

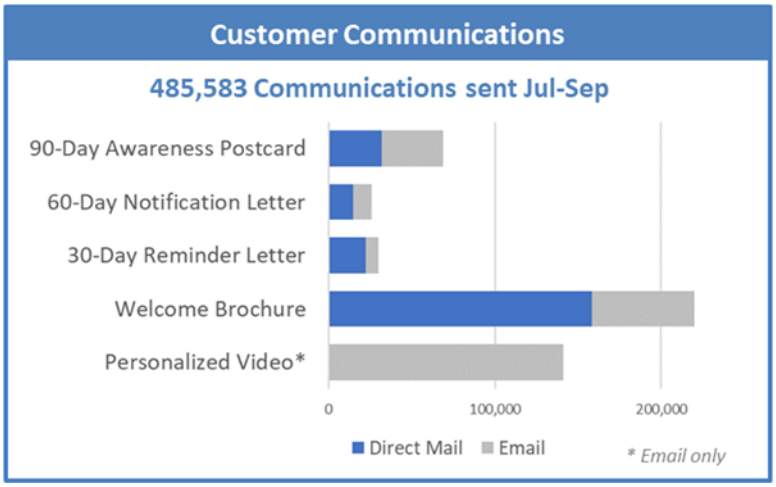
- Welcome Brochure:
  - Pricing plan (TOU-DR1 or TOU-DR2)
  - Bill protection or no bill protection (for new customers not part of IDTM)

- Personalized Video was developed with seven versions customized by:
  - On-peak use data and messaging based on customers' percentage of electricity use during the on-peak period (<15%, <25% or >25%)
  - Non-NEM and NEM
  - Generic version for web use

During the quarter, SDG&E slowed transitions during the summer months of July and August to approximately 5K customers per month. Transitions increased to 25K in September.

SDG&E sent approximately 68,700 90-day awareness direct mail postcards and emails; 25,700

60-day notification direct mail letters and emails; 29,800 30-day reminder letters and emails; 220,000 welcome letters and emails; and 141,300 personalized videos via email.



Email open and click through rates continue to be notably strong for the Mass Default pre-transition communications, decreasing slightly for post-transition communication pieces. During Q3, the overall open rate was 54.1% with a click through rate of 6.6%. As shown in the following table, engagement rates for the 60-day notification remained the highest compared to other pre- and post-transition emails.

Q3 Pre- and Post-Transition Communication Email Engagement

	Communication	Open Rate	Click Through Rate
Pre-Transition	PD90 Awareness Postcard	48.3%	3.9%
	PD60 Notification Letter	65.4%	12.8%
	PD30 Reminder Letter	56.4%	7.3%
	Welcome to new plan	62.8%	7.5%
	Personalized Video	37.5%	1.3%

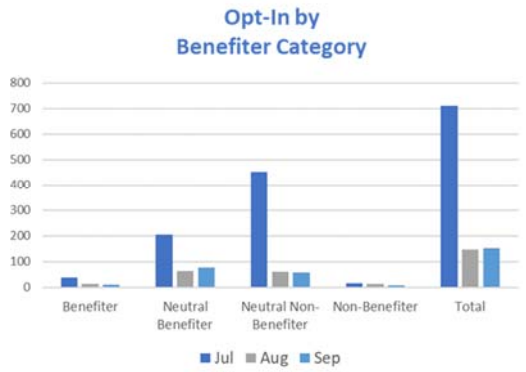
By the end of Q3, approximately 3,589,000 total Mass Default communications had been sent to a total of 571,000 customers, 283,000 of whom had been transitioned to TOU-

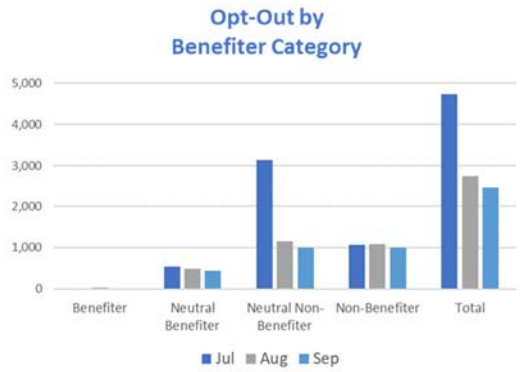
DR1. The table below shows the status of all customers who have received the 90-day notification letter.

Mass Default Customer Selections
After Receiving 90-Day Awareness Postcard (PD-90)

	Active			Pending						
	Transitioned to TOU-DR1	Opt-in to TOU-DR1	Opt-in to TOU-DR2	Transitioning to TOU-DR1	Opt-in to TOU-DR1	Opt-in to TOU-DR2	Opt-out to non-TOU (DR)	Chose another TOU plan	Attrition	All
Total	282,968	12,396	4,794	63,623	70	20	69,403	12,295	76,439	522,008
% of Customers	54.21%	2.37%	0.92%	12.19%	0.01%	0.00%	13.30%	2.36%	14.64%	100.00%

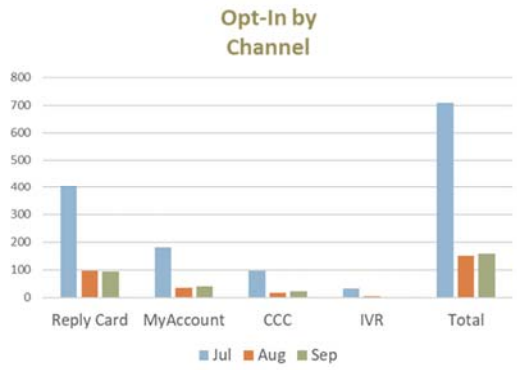
Approximately 56% of customers opting in to TOU-DR1 during Q3 were customers categorized as Neutral Non-Benefiters. Neutral Non-Benefiters were also the most active group to opt out.

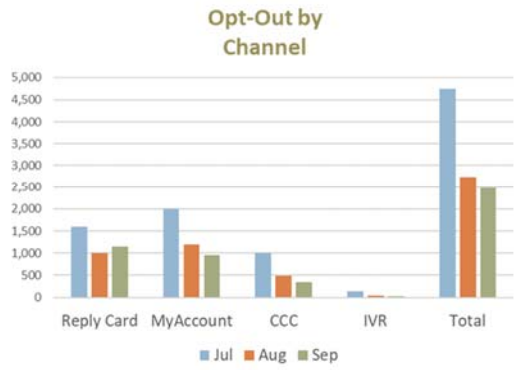




During Q3, the preferred opt-out channel switched from using reply card to using MyAccount online. Approximately 42% of customers opting out used MyAccount and approximately 38% of used the reply card. Customers called the customer care center or used IVR approximately 19% and 2%, respectively. Reply card remained the most used channel by customers opting in. Approximately 58% of customers used the reply card to opt in, and

approximately 25% of customers used MyAccount. Approximately 13% of opt-ins were through the customer care center, and approximately 4% were by IVR.

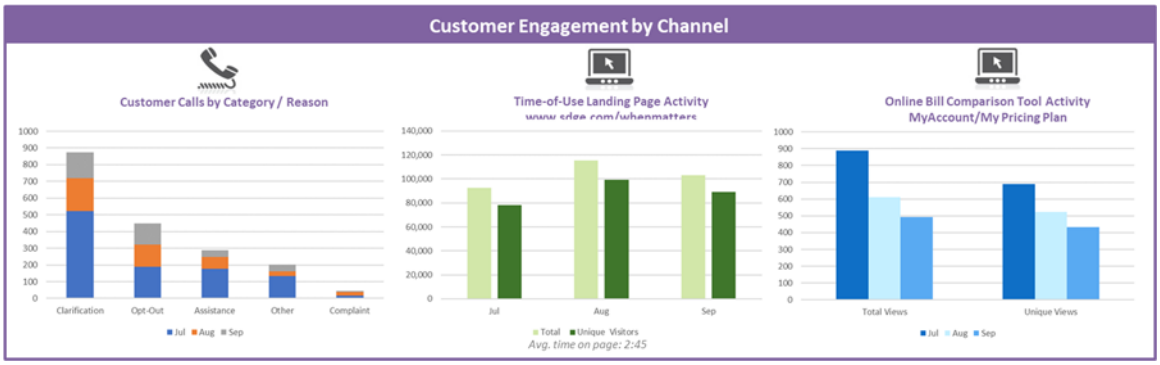




Feedback from customers who chose to opt out remained consistent with Q2. Approximately 46% of customers opting out simply prefer to keep their current plan. Approximately 17% of customers shared that they cannot shift energy use away from 4 p.m. – 9 p.m., and another 17% indicated that they don't see enough savings to make a change. Almost 4% of customers chose to enroll in a TOU plan other than the TOU-DR1 default plan.

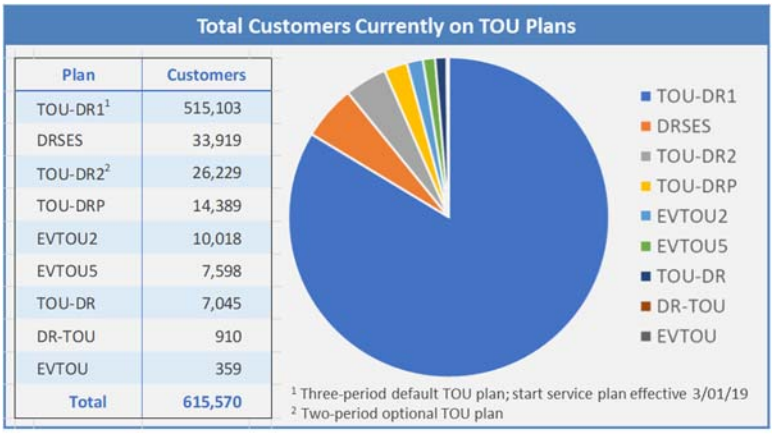
B. Customer Engagement

During Q3, of the approximately 1,900 TOU-related calls to the customer care center, approximately 47% were for clarification and 24% were to opt out. Customer calls in Q3 decreased 35% from Q2. Online visits to the dedicated TOU webpage continued to increase through the quarter and totaled approximately 316,000 visits with 273,000 unique visitors. Use of the online bill comparison tool decreased approximately 15% in Q3, totaling approximately 2,000 visits with 1,600 unique visitors. The decrease was expected concurrent with the reduced rate of transitions during the quarter.



C. Residential Customers on TOU Pricing Plans

Beginning March 1, 2019, new accounts begin service on TOU-DR1 if the customer does not choose another plan. By the end of Q3, SDG&E had more than 615,570 residential customers on one of nine TOU pricing plans.



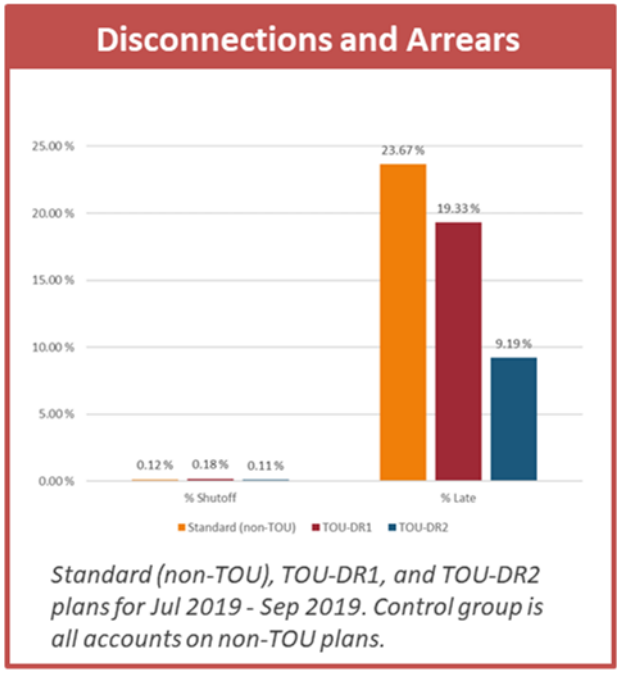
As it did with Default Pilot, SDG&E compares forecasted bills to actual bills for IDTM customers. The table below shows that in Q3, more customers benefitted on TOU than originally projected.

Estimated vs. Actual Benefiter Categories

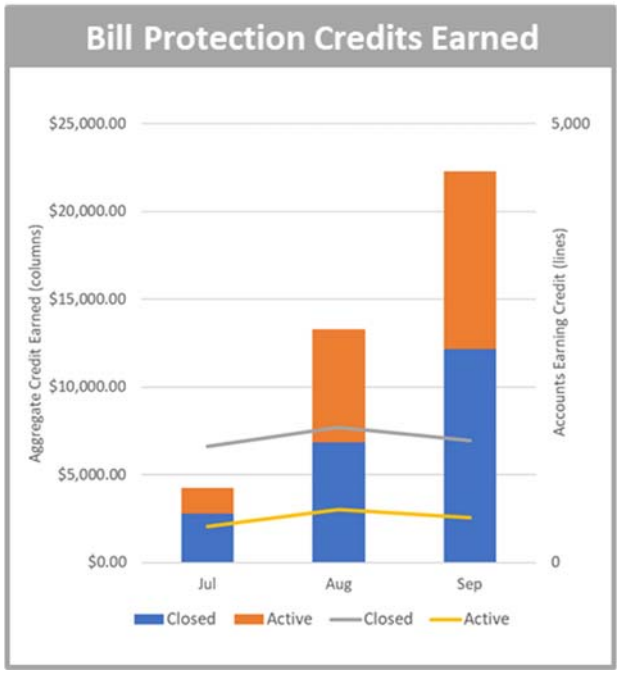
Based on bills from Jul 2019 to Sep 2019

Benefiter Category	Estimated	Actual	Estimated	Actual
Benefiter	27,442	26,033	9.3 %	8.9 %
Neutral Benefiter	157,958	181,088	53.8 %	61.7 %
Neutral Non-Benefiter	86,136	72,020	29.3 %	24.5 %
Non-Benefiter	22,074	14,469	7.5 %	4.9 %
Total	293,610	293,610	100%	100%

SDG&E also continues to monitor whether TOU impacts the number of customers in arrears or were shut off due to non-payment. The chart below compares customers in the mass default population compared to customers enrolled on the standard tiered plan (DR/DRLI). During Q3, the rate of shut offs due to non-payment and percentage in arrears were similar to Q2.



In Q3, $39,811 in bill protection credit was issued to 5,776 customers. 4,251 customers closed accounts and received an average bill protection credit of $5.12. In addition, 1,525 customers switched back to the tiered Standard plan (DR/DRLI) and received an average credit of $11.83.



VII. Customer Research and Insights

A. TOU Default Customer Experience Survey

In May, SDG&E began surveying customers who recently transitioned to a TOU pricing plan. Each survey group (two-month groupings) is surveyed twice until the TOU transition period is completed in 2020. The first survey occurs shortly after transition, and the second occurs six to seven months afterward. Like the Default TOU Pilot research, the surveys are conducted by Hiner & Partners using a mixed-mode methodology (100 phone, ~200 online). The first survey measures awareness of the transition, understanding of plan choices,

knowledge of peak hours, awareness of 1-year no-risk pricing, recall of specific communications, and awareness of where customers can get more information from SDG&E. The second survey addresses customer satisfaction on TOU, engagement in shifting energy usage, and impressions of their bill.

To date, a total of 642 customers have completed the first survey of the two surveys, 309 in the first wave (those who transitioned in March/April) and 333 in the second wave (May/June). Results overall have shown an upward trend in comparison to the Default Pilot, with significant increases in recall of SDG&E advertising, and the number of customers correctly able to name the peak time period of 4 p.m. to 9 p.m. The third wave was recently completed in late September with results expected in mid-October, the analysis of which will be completed during Q4. Below is a chart depicting these results across the first two waves in more detail.

Key Measures	Pilot (May '18) n=3292	Group 1 (Mar-Apr) n=309	Group 2 (May-Jun) n=333	Answer Choice
General Awareness				
Household was part of transition	61%	76%	74%	%yes
Aware that you have the choice to select a different TOU plan or choose to stay on current plan	79%	86%	80%	%yes
Aware of no risk pricing	27%	33%	37%	%yes
Correctly chose which hours are the most expensive to use based on current plan	21%	36%	51%↑	%correct
Recall of Communications/Advertising				
Recently seen/heard advertising sponsored by SDG&E	NA	36%	44%↑	%yes
Letter/e-mail regarding automatic transition to TOU	58%	77%	77%	%yes
Personalized rate plan comparison letter/e-mail	53%	60%	55%	%yes
Letter or e-mail welcoming you to your new TOU pricing plan	51%	70%	71%	%yes

VIII. Updates on Other Proceedings Impacting Residential Rate Reform and Next Steps for Rate Reform

Other current proceedings impacting activities related to the implementation of Residential Rate Reform are provided in this section.

A. 2018 Residential Rate Design Window (RDW) Application

Phase IIA is complete. On December 21, 2018, the Commission issued a final decision (D.18-12-004) for RDW Phase IIA. The final decision approved, among other things, SDG&E's ME&O and implementation plans, its proposed 3-period tiered TOU rate as the default rate, and its proposed 2-period tiered TOU rate as an optional rate for residential customers. SDG&E filed AL 3325-E and supplemental AL 3325-E-A on December 21, 2018 and January 10, 2019, respectively, to revise its tariffs in accordance the final decision. SDG&E received a Commission disposition letter on January 15, 2019, approving AL-3225 and AL 3325-E-A effective January 1, 2019.

Phase IIB, focusing primarily on SCE's and PG&E's TOU rollout plan plus common IOU issues including Community Choice Aggregation (CCA) and Greenhouse Gas (GHG) calculations, is also complete. Hearings were held early-January 2019. A decision was issued on July 11, 2019 requiring no action from SDG&E. The decision ordered PG&E and SCE to begin defaulting applicable residential customers to TOU rates in October 2020.

Briefings for Phase III were submitted in October 2019 and a draft decision addressing the introduction of a residential fixed charge and higher minimum bill is expected to be issued in the first quarter of 2020.

B. Application to Eliminate Seasonality from Residential Rates

On September 23, 2019, SDG&E filed an application requesting to eliminate summer/winter seasonal differentiation in all of its residential electric rates, including all TOU plans. If approved, SDG&E's application will reduce summer season rates and increase winter season rates, so residential customers will experience a single set of rates year-round. This proposal will help to reduce summer bills and bill volatility overall associated with increased usage during the summer. SDG&E's proposal will not affect residential baseline allowances (allowed kWh consumption at the lowest tier), which will still vary by season. SDG&E's single-issue application requests an expedited procedural schedule consistent with Commission direction, in order to implement before Summer of 2020.

C. Rate Reform OIR Next Steps (R.12-06-013)

The current status and procedural schedule to move forward in addressing the next steps in the proceeding are as follows:

- Glidepath – On August 1, 2019, SDG&E filed Advice Letter 3413-E for approval of its final glidepath adjustment to increase the tier 1 cap to RAR +5% resulting in 1:1.26 ratio between Tier 1 & 2 ratio with an effective date of November 1, 2019. On October 11, 2019, the CPUC energy division approved the request.
- Statewide ME&O – At the Commission's direction, in D.17-12-023, SDG&E continues to coordinate with the statewide agencies including the ME&O Coordinator (Coleman Inc.), IPSOS, OMD and the DDB Group. As needed, SDG&E and DDB share the latest earned and paid media tactics and results in the San Diego market.

- Phase 4 – An Assigned Commissioner's Scoping Memo and Ruling was issued to address the following: 1) PG&E's "Proposal to Recover 2015-2016 Costs Recorded in the Residential Rate Reform Memorandum Account"; 2) whether the Commission should adopt a proposal to restructure the California Alternate Rates for Energy (CARE) program; 3) the continuing role of the working groups; and 4) modification or elimination of reporting requirements. No further working groups or actions have been taken in this phase this quarter.

IX. Expenditures

Pursuant to Ordering Paragraph 12 of D.15-07-001, SDG&E filed a Tier 1 AL 2769-E on July 31, 2015 to establish the RRMA. The RRMA will be used to track verifiable incremental costs in the following categories: (i) TOU pilots, (ii) TOU studies, including hiring of a consultant or consultants to assist in developing study parameters, (iii) ME&O costs associated with the rate changes approved in this decision, and (iv) other reasonable expenditures as required to implement this decision.

IT costs related to system changes required to implement Residential Rate Reform that are not TOU pilot related are funded through the SDG&E base capital budget and will be excluded from the RRMA. These costs, along with other ME&O costs not included in the RRMA, are reflected in the "Non-RRMA" section of the following table.

The following table summarizes costs incurred from August 2015 through September 2019. See Appendix A for expenditure details.

Rate Reform Expenditures Summary

Rate Reform Costs Aug 2015 - Sept 2019*

RRMA: Time-Of-Use (in 000's)	Aug - Dec 2015	Q1 - 2016	Q2 - 2016	Q3 - 2016	Q4 - 2016	Q1 - 2017	Q2 - 2017	Q3 - 2017	Q4-2017	Q1-2018	Q2-2018	Q3-2018	Q4-2018	Q1-2019	Q2-2019	Q3-2019	Total PTD Spend	Total Budget	% PTD Spent of Budget
TOU Mass Default Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 41	$ 208	$ 208	$ 401	$ 1,101	$ 2,708	$ 5,596	$ 4,398	$ 14,661	$ 19,374	75.7%
TOU Default Pilot Total	$ -	$ -	$ -	$ -	$ -	$ 225	$ 372	$ 324	$ 868	$ 2,782	$ 1,193	$ 1,579	$ 1,422	$ 1,105	$ 76	$ 45	$ 9,992	$ 11,864	84.2%
TOU Opt-In Pilot Total	$ -	$ -	$ 452	$ 2,092	$ 617	$ 697	$ 503	$ 1,606	$ 500	$ 377	$ 9	$ 22	$ 14	$ -	$ (2)	$ 1	$ 6,888	$ 9,020	76.4%
Statewide Campaign	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1	$ 23	$ 84	$ 79	$ 48	$ 5,237	$ 5,538	$ 2,868	$ 13,879	$ 11,900	116.6%
Bill Protection	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 0	$ 2	$ 22	$ 36	$ 894	$ -	$ -	$ 954	$ 7,665	12.4%
TOU Total	**$ -**	**$ -**	**$ 452**	**$ 2,092**	**$ 617**	**$ 923**	**$ 875**	**$ 1,931**	**$ 1,410**	**$ 3,391**	**$ 1,495**	**$ 2,104**	**$ 2,621**	**$ 9,943**	**$ 11,208**	**$ 7,311**	**$ 46,374**	**$ 59,823**	77.5%

RRMA: General Rate Reform (in 000'	Aug - Dec 2015	Q1 - 2016	Q2 - 2016	Q3 - 2016	Q4 - 2016	Q1 - 2017	Q2 - 2017	Q3 - 2017	Q4-2017	Q1-2018	Q2-2018	Q3-2018	Q4-2018	Q1-2019	Q2-2019	Q2-2019	Total PTD Spend	Total Budget	% PTD Spent of Budget
Marketing, Education, & Outreach	$ -	$ 72	$ 420	$ 325	$ (447)	$ 6	$ 24	$ 20	$ 197	$ 1	$ 1	$ 1	$ (127)	$ -	$ -	$ -	$ 494		
Information Technology	$ -	$ 51	$ 130	$ 81	$ (216)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 46		
Other	$ -	$ -	$ 6	$ 9	$ 19	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 34		
General Rate Reform Total	**$ -**	**$ 123**	**$ 556**	**$ 415**	**$ (644)**	**$ 6**	**$ 24**	**$ 20**	**$ 197**	**$ 1**	**$ 1**	**$ 1**	**$ (127)**	**$ -**	**$ -**	**$ -**	**$ 574**		
Total to RRMA	**$ -**	**$ 123**	**$ 1,008**	**$ 2,507**	**$ (27)**	**$ 929**	**$ 899**	**$ 1,951**	**$ 1,607**	**$ 3,392**	**$ 1,496**	**$ 2,105**	**$ 2,494**	**$ 9,943**	**$ 11,208**	**$ 7,311**	**$ 46,948**		

Non-RRMA (in 000's)	Aug - Dec 2015	Q1 - 2016	Q2 - 2016	Q3 - 2016	Q4 - 2016	Q1 - 2017	Q2 - 2017	Q3 - 2017	Q4-2017	Q1-2018	Q2-2018	Q3-2018	Q4-2018	Q1-2019	Q2-2019	Q2-2019	Total PTD Spend	Total Budget	% PTD Spent of Budget
Marketing, Education, & Outreach	$ 251	$ -	$ -	$ -	$ 148	$ 193	$ 97	$ 698	$ 210	$ 203	$ 177	$ 951	$ 1,140	$ 352	$ 411	$ 538	$ 5,370		
Information Technology	$ 437	$ 536	$ 755	$ 662	$ 1,137	$ 1,190	$ 3,574	$ 2,834	$ 4,838	$ 1,813	$ 2,273	$ 5,683	$ 4,435	$ 3,077	$ 1,800	$ 47	$ 35,091		
Non-RRMA Total	**$ 688**	**$ 536**	**$ 755**	**$ 662**	**$ 1,285**	**$ 1,382**	**$ 3,672**	**$ 3,532**	**$ 5,048**	**$ 2,016**	**$ 2,450**	**$ 6,634**	**$ 5,575**	**$ 3,429**	**$ 2,211**	**$ 585**	**$ 40,460**		
Grand Total (RRMA + Non-RRMA)	**$ 688**	**$ 659**	**$ 1,764**	**$ 3,169**	**$ 1,258**	**$ 2,311**	**$ 4,571**	**$ 5,483**	**$ 6,655**	**$ 5,409**	**$ 3,946**	**$ 8,739**	**$ 8,069**	**$ 13,372**	**$ 13,419**	**$ 7,897**	**$ 87,409**		

Guidelines and charge numbers have been established to ensure that the costs charged to the RRMA are appropriate and incremental and that they are tracked accordingly. All costs that are charged to the RRMA are reviewed and verified on a quarterly basis, at minimum.

** Any required corrections/adjustments are reported herein and supersede information provided in prior reports and may reflect year-to-date adjustments*

X. Conclusion

SDG&E is pleased to report its second quarter (July - September) 2019 efforts to the Commission and stakeholders. SDG&E looks forward to continued collaboration with the other IOUs, Energy Division and the ME&O Working Group members to develop plans and best practices that will contribute to a successful implementation of Residential Rate Reform and transition to TOU pricing plans for residential customers.

Respectfully submitted,

/s/ John Pacheco
John Pacheco
Attorney for
SAN DIEGO GAS & ELECTRIC COMPANY

November 1, 2019

Appendix A: Rate Reform Costs August 2015 - September 2019

A. Mass Default

Rate Reform Costs Aug 2015 - Sept 2019*																			
RRMA: Time-Of-Use Mass Default (in 000's)	**Aug - Dec 2015**	**Q1 - 2016**	**Q2 - 2016**	**Q3 - 2016**	**Q4 - 2016**	**Q1 - 2017**	**Q2 - 2017**	**Q3 - 2017**	**Q4 - 2017**	**Q1 - 2018**	**Q2 - 2018**	**Q3 - 2018**	**Q4 - 2018**	**Q1 - 2019**	**Q2 - 2019**	**Q3 - 2019**	**Total**	**Total Budget**	**% PTD Spent of Budget**
Overall Plan - TOU Awareness	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 41**	**$ (16)**	**$ 7**	**$ -**	**$ 836**	**$ 1,732**	**$ 2,839**	**$ 2,757**	**$ 8,194**	**$ 10,957**	**74.8%**
Communications Development	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 1	$ 340	$ 622	$ 710	$ 1,673	$ 1,050	159.3%
General (Bill Inserts, Media, Radio, TV, Social	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 41	$ (16)	$ 7	$ -	$ 731	$ 906	$ 1,310	$ 1,900	$ 4,879	$ 6,790	71.9%
Digital Media	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ -			$ -	$ 420	0.0%
Direct (Email & SMS)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 103	$ 486	$ 907	$ 146	$ 1,642	$ 2,397	68.5%
Web Development (Inclusive of all activities)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ -			$ -	$ 300	0.0%
Customer Research	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 150**	**$ -**	**$ -**	**$ 49**	**$ -**	**$ -**	**$ 57**	**$ 255**	**$ 873**	**29.3%**
Overall	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 150	$ -	$ -	$ -	$ -	$ -		$ 150	$ 225	66.7%
Qualitative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ 57	$ 57	$ 200	28.4%
Quantitative	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 49	$ -	$ -		$ 49	$ 448	10.8%
Community Based Organizations	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 61**	**$ 98**	**$ 202**	**$ 361**	**$ 1,200**	**30.1%**
Energy Solutions Partner Activities	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ 51	$ 23	$ 31	$ 105	$ 225	46.5%
Event Sponsorships - Targeted Zip Codes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ 6	$ 12	$ 135	$ 152	$ 750	20.3%
Engagement Materials (brochures, etc.)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ 5	$ 63	$ 36	$ 104	$ 225	46.1%
Marketing Automation	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4**	**$ -**	**$ 1**	**$ 6**	**$ 11**	**$ 450**	**2.5%**
High Usage Charge (HUC)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 600**	**0.0%**
Labor (FTE & Contract)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 74**	**$ 201**	**$ 401**	**$ 213**	**$ 915**	**$ 2,658**	**$ 1,376**	**$ 5,839**	**$ 5,294**	**110.3%**
TOU Mass Default Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 41**	**$ 208**	**$ 208**	**$ 401**	**$ 1,101**	**$ 2,708**	**$ 5,596**	**$ 4,398**	**$ 14,661**	**$ 19,374**	**75.7%**
Guidelines and charge numbers have been established to ensure that the costs charged to the RRMA are appropriate and incremental																			
and that they are tracked accordingly. All costs that are charged to the RRMA are reviewed and verified on a quarterly basis, at minimum.																			
** Any required corrections/adjustments are reported herein and supersede information provided in prior reports and may reflect year-to-date adjustments*																			

B. Default Pilot

RRMA: Time-Of-Use Default Pilot (in 000's)	Aug - Dec 2015	Q1 - 2016	Q2 - 2016	Q3 - 2016	Q4 - 2016	Q1 - 2017	Q2 - 2017	Q3 - 2017	Q4- 2017	Q1- 2018	Q2- 2018	Q3- 2018	Q4- 2018	Q1- 2019	Q2- 2019	Q3- 2019	Total	Total Budget	% PTD Spent of Budget
Planning & Design	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 205**	**$ 347**	**$ 296**	**$ 303**	**$ 1,351**	**$ 190**	**$ 754**	**$ 315**	**$ 245**	**$ -**	**$ -**	**$ 4,007**	**$ 4,268**	**93.9%**
Nexant Implementation Support	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ 68	0.0%
Staff Augmentation	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 205**	**$ 347**	**$ 296**	**$ 303**	**$ 1,351**	**$ 190**	**$ 754**	**$ 315**	**$ 245**	**$ -**	**$ -**	**$ 4,007**	**$ 4,200**	**95.4%**
Program Management / Employee Training	$ -	$ -	$ -	$ -	$ -	$ 205	$ 347	$ 296	$ 303	$ 1,351	$ 190	$ 754	$ 315	$ 245	$ -	$ -	$ 4,007	$ 4,200	95.4%
Measurement & Evaluation	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 14**	**$ 18**	**$ 32**	**$ 78**	**$ 57**	**$ 57**	**$ 21**	**$ 40**	**$ 317**	**$ 400**	**79.2%**
Load Impacts	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 14	$ 41	$ 32	$ 51	$ 21	$ 40	$ 200	$ 200	99.8%
Staff Augmentation	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 14**	**$ 18**	**$ 18**	**$ 36**	**$ 25**	**$ 7**	**$ -**	**$ -**	**$ 117**	**$ 200**	**58.7%**
Electric Load Analysis	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 14	$ 18	$ 18	$ 36	$ 25	$ 7	$ -	$ -	$ 117	$ 200	58.7%
Customer Insight & Research	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 72**	**$ 54**	**$ 70**	**$ 72**	**$ 160**	**$ 121**	**$ -**	**$ -**	**$ 549**	**$ 1,809**	**30.3%**
Design Thinking Focus Group	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 175	0.0%
Message/Communications Testing	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 65	$ 13	$ -	$ -	$ -	$ -	$ -	$ -	$ 77	$ 75	103.2%
Opt-Out Focus Groups	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 150	0.0%
Qualitative Research	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 38	$ -	$ -	$ -	$ -	$ -	$ 38	$ 100	38.4%
Segmentation Deeper Dive	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 105	$ -	$ -	$ 105	$ 120	87.3%
Surveys	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22	$ -	$ 57	$ 117	$ 1	$ -	$ -	$ 196	$ 600	32.7%
Staff Augmentation	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 8**	**$ 20**	**$ 31**	**$ 15**	**$ 43**	**$ 15**	**$ -**	**$ -**	**$ 132**	**$ 589**	**22.4%**
Customer Data Analytics & Research	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8	$ 20	$ 31	$ 15	$ 43	$ 15	$ -	$ -	$ 132	$ 589	22.4%
Marketing, Education, & Outreach	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 20**	**$ 26**	**$ 24**	**$ 423**	**$ 708**	**$ 640**	**$ 34**	**$ 355**	**$ 72**	**$ 55**	**$ 5**	**$ 2,361**	**$ 4,477**	**52.7%**
Material Development	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 357**	**$ (55)**	**$ 95**	**$ 6**	**$ 230**	**$ 1**	**$ 6**	**$ 5**	**$ 645**	**$ 800**	**80.7%**
Energy Efficiency Component for Welcome Package	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6	$ 76	$ 1	$ 6	$ 5	$ 94	$ 30	312.1%
Material Development	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 200	$ (77)	$ 49	$ -	$ -	$ -	$ -	$ -	$ 172	$ 200	86.0%
Smart App	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 300	0.0%
Video Bill	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 39	$ -	$ 45	$ -	$ 154	$ -	$ -	$ -	$ 238	$ 160	148.6%
Website	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 119	$ 22	$ 1	$ -	$ -	$ -	$ -	$ -	$ 142	$ 110	129.0%
Pre-Transition Communications	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 37**	**$ 257**	**$ 126**	**$ -**	**$ 13**	**$ -**	**$ -**	**$ -**	**$ 433**	**$ 320**	**135.3%**
BRC Card & Processing	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 98	$ -	$ -	$ -	$ -	$ -	$ 98	$ 98	100.0%
Early Awareness Communication	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10	$ 60	16.2%
Rate Comparison via direct mail	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 26	$ 252	$ 16	$ -	$ 8	$ -	$ -	$ -	$ 302	$ 162	186.3%
Rate Comparison via email	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1	$ 6	$ 12	$ -	$ 5	$ -	$ -	$ -	$ 23	$ -	no budget
Post-Transition Communications	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 5**	**$ 279**	**$ 23**	**$ 29**	**$ 24**	**$ 49**	**$ -**	**$ 408**	**$ 1,895**	**21.5%**
Bill Protection	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,480	0.0%
End of Bill Protection Communication	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3	$ 23	$ 49	$ -	$ 75	$ 40	187.8%
Extreme Non-Benefiter calls	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 100	$ -	$ -	$ -	$ -	$ -	$ 100	$ 28	362.3%
Level Pay Plan Information	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10	$ -	$ -	$ -	$ -	$ -	$ 10	$ 40	24.0%
Pricing Plan Confirmation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4	$ 5	$ 5	$ 4	$ 1	$ -	$ -	$ 19	$ -	no budget
Programmable Thermostat	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 44	$ -	$ -	$ -	$ -	$ -	$ 44	$ 40	109.8%
Summer Rate Information	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 47	$ 14	$ 1	$ -	$ -	$ -	$ 62	$ 40	155.5%
Welcome Package via direct mail	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 73	$ -	$ 8	$ -	$ -	$ -	$ 81	$ 188	43.3%
Welcome Package via email	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 0	$ -	$ -	$ -	$ -	$ -	$ -	$ 0	$ 0	240.0%
Winter Rate Information	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3	$ 13	$ -	$ -	$ -	$ 17	$ 40	41.5%
Staff Augmentation	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 20**	**$ 26**	**$ 24**	**$ 29**	**$ 502**	**$ 139**	**$ 5**	**$ 84**	**$ 46**	**$ -**	**$ -**	**$ 874**	**$ 1,462**	**59.8%**
Customer Communication	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3	$ 467	$ 103	$ 4	$ 41	$ 19	$ -	$ -	$ 636	$ 1,262	50.4%
Customer Outreach & Engagement	$ -	$ -	$ -	$ -	$ -	$ 20	$ 26	$ 24	$ 26	$ 35	$ 36	$ 2	$ 43	$ 27	$ -	$ -	$ 238	$ 200	119.0%
Operations & Production Support	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 4**	**$ 56**	**$ 652**	**$ 262**	**$ 641**	**$ 535**	**$ 610**	**$ -**	**$ -**	**$ 2,759**	**$ 910**	**303.2%**
Advanced Metering Operations	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4	$ 56	$ 64	$ 157	$ 139	$ 150	$ 139	$ -	$ -	$ 710	$ 240	295.6%
Branch Offices	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7	$ 31	$ 40	$ 114	$ 34	$ -	$ -	$ 225	$ 40	562.3%
Customer Contact Center	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 580	$ 74	$ 461	$ 271	$ 438	$ -	$ -	$ 1,825	$ 630	289.6%
TOU Default Pilot Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 225**	**$ 372**	**$ 324**	**$ 868**	**$ 2,782**	**$ 1,193**	**$ 1,579**	**$ 1,422**	**$ 1,105**	**$ 76**	**$ 45**	**$ 9,992**	**$ 11,864**	**84.2%**

Guidelines and charge numbers have been established to ensure that the costs charged to the RRMA are appropriate and incremental and that they are tracked accordingly. All costs that are charged to the RRMA are reviewed and verified on a quarterly basis, at minimum.

** Any required corrections/adjustments are reported herein and supersede information provided in prior reports and may reflect year-to-date adjustments*

C. Other

RRMA: Time-Of-Use Opt-In Pilot (in 000's)	Aug - Dec 2015	Q1 - 2016	Q2 - 2016	Q3 - 2016	Q4 - 2016	Q1 - 2017	Q2 - 2017	Q3 - 2017	Q4- 2017	Q1- 2018	Q2- 2018	Q3- 2018	Q4- 2018	Q1- 2019	Q2- 2019	Q3- 2019	Total	Total Budget	% PTD Spent of Budget
Planning & Design	$ -	$ -	$ -	$ 550	$ (483)	$ 20	$ 7	$ -	$ 97	$ 221	$ 2	$ 47	$ 14	$ -	$ (1)	$ -	$ 475		
Measurement & Evaluation	$ -	$ -	$ 11	$ -	$ -	$ -	$ 1	$ 0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11		
Customer Insight	$ -	$ -	$ 46	$ -	$ 67	$ 1	$ 58	$ 151	$ -	$ -	$ -	$ 1	$ -	$ -	$ (1)	$ 1	$ 324		
Recruitment	$ -	$ -	$ 395	$ 1,228	$ 640	$ 60	$ 1	$ 844	$ 2	$ 0	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,171		
Customer Support	$ -	$ -	$ -	$ 105	$ 142	$ 148	$ 225	$ 314	$ 263	$ 146	$ 6	$ (23)	$ -	$ -	$ (0)	$ -	$ 1,325		
Outreach & Education	$ -	$ -	$ -	$ 210	$ 172	$ 66	$ 17	$ 15	$ 9	$ -	$ -	$ 0	$ -	$ -	$ -	$ -	$ 490		
Technology	$ -	$ -	$ -	$ -	$ 78	$ 83	$ 36	$ 32	$ 34	$ (1)	$ -	$ (6)	$ -	$ -	$ (0)	$ -	$ 254		
Technology Operations Support	$ -	$ -	$ -	$ -	$ 1	$ 319	$ 158	$ 250	$ 96	$ 11	$ -	$ 3	$ -	$ -	$ 0	$ -	$ 838		
TOU Opt-In Pilot Total	**$ -**	**$ -**	**$ 452**	**$ 2,092**	**$ 617**	**$ 697**	**$ 503**	**$ 1,606**	**$ 500**	**$ 377**	**$ 9**	**$ 22**	**$ 14**	**$ -**	**$ (2)**	**$ 1**	**$ 6,888**	**$ 9,020**	**76.4%**
RRMA: General Rate Reform (in 000's)	**Aug - Dec 2015**	**Q1 - 2016**	**Q2 - 2016**	**Q3 - 2016**	**Q4 - 2016**	**Q1 - 2017**	**Q2 - 2017**	**Q3 - 2017**	**Q4- 2017**	**Q1- 2018**	**Q2- 2018**	**Q3- 2018**	**Q4- 2018**	**Q1- 2019**	**Q2- 2019**	**Q3- 2019**	**Total**	**Total Budget**	**% PTD Spent of Budget**
Marketing, Education, & Outreach	$ -	$ 72	$ 420	$ 325	$ (447)	$ 6	$ 24	$ 20	$ 197	$ 1	$ 1	$ 1	$ (127)	$ -	$ -	$ -	$ 494		
Information Technology	$ -	$ 51	$ 130	$ 81	$ (216)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 46		
Other	$ -	$ -	$ 6	$ 9	$ 19	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 34		
General Rate Reform Total	$ -	$ 123	$ 556	$ 415	$ (644)	$ 6	$ 24	$ 20	$ 197	$ 1	$ 1	$ 1	$ (127)	$ -	$ -	$ -	$ 574		
Total to RRMA	**$ -**	**$ 123**	**$ 1,008**	**$ 2,507**	**$ (27)**	**$ 929**	**$ 899**	**$ 1,951**	**$ 1,607**	**$ 3,392**	**$ 1,496**	**$ 2,105**	**$ 2,494**	**$ 9,943**	**$ 11,208**	**$ 7,311**	**$ 46,948**		
Non-RRMA (in 000's)	**Aug - Dec 2015**	**Q1 - 2016**	**Q2 - 2016**	**Q3 - 2016**	**Q4 - 2016**	**Q1 - 2017**	**Q2 - 2017**	**Q3 - 2017**	**Q4- 2017**	**Q1- 2018**	**Q2- 2018**	**Q3- 2018**	**Q4- 2018**	**Q1-2019**	**Q2-2019**	**Q3- 2019**	**Total**		
Marketing, Education, & Outreach	$ 251	$ -	$ -	$ -	$ 148	$ 193	$ 97	$ 698	$ 210	$ 203	$ 177	$ 951	$ 1,140	$ 352	$ 411	$ 538	$ 5,370		
Information Technology	$ 437	$ 536	$ 755	$ 662	$ 1,137	$ 1,190	$ 3,574	$ 2,834	$ 4,838	$ 1,813	$ 2,273	$ 5,683	$ 4,435	$ 3,077	$ 1,800	$ 47	$ 35,091		
Non-RRMA Total	$ 688	$ 536	$ 755	$ 662	$ 1,285	$ 1,382	$ 3,672	$ 3,532	$ 5,048	$ 2,016	$ 2,450	$ 6,634	$ 5,575	$ 3,429	$ 2,211	$ 585	$ 40,460		
Grand Total (RRMA + Non-RRMA)	**$ 688**	**$ 659**	**$ 1,764**	**$ 3,169**	**$ 1,258**	**$ 2,311**	**$ 4,571**	**$ 5,483**	**$ 6,655**	**$ 5,409**	**$ 3,946**	**$ 8,739**	**$ 8,069**	**$ 13,372**	**$ 13,419**	**$ 7,897**	**$ 87,409**		

Guidelines and charge numbers have been established to ensure that the costs charged to the RRMA are appropriate and incremental and that they are tracked accordingly. All costs that are charged to the RRMA are reviewed and verified on a quarterly basis, at minimum.

** Any required corrections/adjustments are reported herein and supersede information provided in prior reports and may reflect year-to-date adjustments*

Appendix B: Customer Communications July - September 2019

Communications	Description	Spanish	Direct Mail	Email
Targeted Summer Preparedness	Consists of summer preparedness messaging for customers in 2 segments: 1. TOU Transition plans (TOU-DR1 and TOUDR-2) and 2. Customers on other pricing plans.		X	X
Summer is Here – 2018 High Bill Caller Postcard- Non-NEM			X	
Summer is Here – 2018 High Bill Caller Postcard - NEM			X	
Summer is Here – TOU DR1 and DR2, higher consumption vs 2018				X
High Usage Charge General Education	Explanation of High Usage Charge; tools and solutions		X	
High Usage Charge 350% of Baseline	Approaching High Usage Charge		X	X
High Usage Charge 400% of Baseline	High Usage Charge Incurred		X	X
Peek – Default Pilot	Plug-in Device sent to or promoted to Default Pilot customers to build awareness of on-peak pricing periods.			
Peek Reminder Postcard	Reminder to activate PEEK device and application	x	x	
Mass Default PD-90 Postcard	Provides awareness of upcoming changes to pricing plan	X	X	X
Mass Default PD-60 with Reply Card (versions listed below)	60-day notification letter containing personalized plan comparison; includes reply card	X	X	X

Communications	Description	Spanish	Direct Mail	Email
Non-NEM Benefiter				
Non-NEM Neutral				
Non-NEM Non-Benefiter				
NEM Benefiter				
NEM Neutral				
NEM Non-Benefiter				
Mass Default Reply Card	Allows customers to make pricing plan selections		X	
Multiple Meter 60-Day Email	Alerts customers to watch for a Multiple Meter PD-60 mailer			X
Multiple Meter 60-Day Mailer with Reply Form	Mailer providing customers with multiple meters a chance to make plan changes.		X	
Mass Default PD-30 with Insert (versions listed below)	30-day reminder notification letter containing personalized plan comparison; mailing includes quick reference card insert	X	X	X
Non-NEM Benefiter				
Non-NEM Neutral				
Non-NEM Non-Benefiter				
NEM Benefiter				
NEM Neutral				
NEM Non-Benefiter				
Mass Default PD-30 Insert	Quick reference card with tips for success on TOU; included in all PD-30 mailings	X	X	

Communications	Description	Spanish	Direct Mail	Email
Mass Default Welcome Brochure	Brochure welcoming consumers to TOU with details of their individual plan. Mailers included a magnet (Beginning in May) Emails were sent beginning in June	X	X	X
TOU-DR1 Mass Default with Bill Protection	Sent with summer pricing beginning in June			
TOU-DR2 Mass Default with Bill Protection	Sent with summer pricing beginning in June			
TOU-DR1 Turn On with No Bill Protection	Sent with summer pricing beginning in June			
TOU-DR2 Turn On with No Bill Protection	Sent with summer pricing beginning in June			
Mass Default Personalized Video	Emails including a personalized video were sent to customers in the Mass Transition target groups			X
Bill Protection Ending	Notification that bill protection is coming to an end. Sent to Mass Default and opt-in customers beginning in May.		X	

2018 High Bill Caller Postcard
Non-NEM

We haven't forgotten about your concerns from last summer.

We're here to help you plan and prepare for your summer energy bill.

One way to avoid energy bill spikes and enjoy more predictable payment amounts throughout the summer and beyond is by signing up for Level Pay. Sign up online at ***sdge.com/levelpay***.

Summer Energy Tip

Did you know heating water can be the second-largest energy expense in your home after air conditioning? Turn down your water heater's thermostat a few degrees to save.

Visit ***sdge.com/summer*** for more tips to help you beat the heat.

52176_VILP-0719

SDGE
A Sempra Energy utility®

San Diego Gas & Electric Company
P.O. Box 129831
San Diego, CA 92112-9831

PRESORTED
STANDARD
U.S. POSTAGE
PAID
SAN DIEGO, CA
PERMIT #213

<Name>
<Co>
<Address 1>
<Address 2>
<City>, <State>, <Zip>

2018 High Bill Caller Postcard
NEM

We haven't forgotten about your concerns from last summer.

We're here to help you plan and prepare for your summer energy bill.

One way to take control is to sign up for alerts. With a solar system, it is critical to know how much energy you're generating versus how much you're using. Keep track of your usage and costs with email and text alerts when you sign up for Energy Use Alerts at ***sdge.com/myaccount***.

Summer Energy Tip

Did you know heating water can be the second-largest energy expense in your home after air conditioning? Turn down your water heater's thermostat a few degrees to save.

Visit ***sdge.com/summer*** for more tips to help you beat the heat.

52177_V2AL-0719

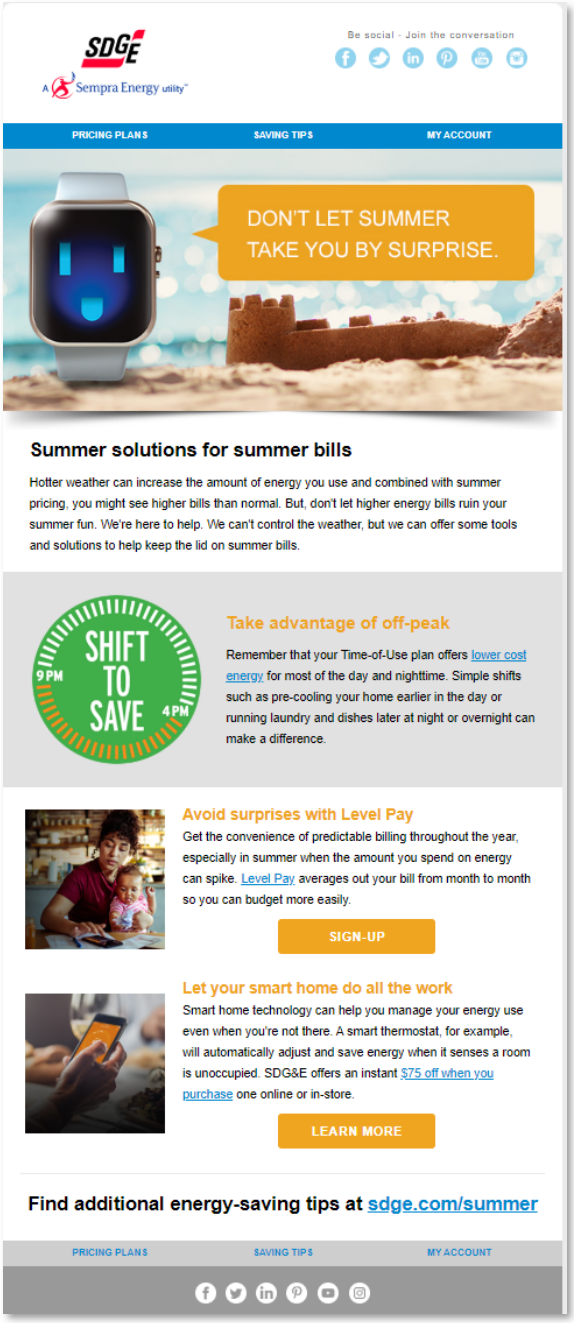
SDGE
A Sempra Energy utility®

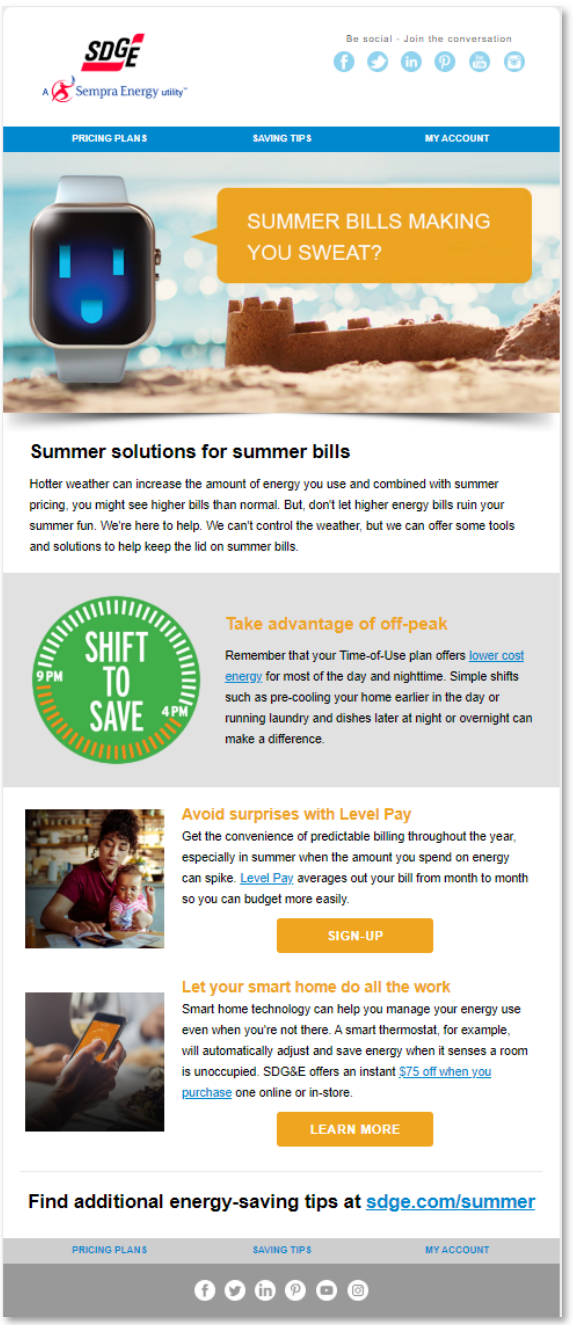
San Diego Gas & Electric Company
P.O. Box 129831
San Diego, CA 92112-9831

PRESORTED
STANDARD
U.S. POSTAGE
PAID
SAN DIEGO, CA
PERMIT #213

<Name>
<Co>
<Address 1>
<Address 2>
<City>, <State>, <Zip>

2019 Summer High Bill Email





SDGE
A Sempra Energy utility®

STATE-MANDATED HIGH USAGE CHARGE
Based on past energy use at 1234 Main Street, this charge could affect you.

We know moving can be exciting, and we're here to help you avoid any unwanted surprises on your energy bill. Past high electricity usage at your new address indicates you could be affected by the High Usage Charge if you aren't prepared. This is a state-mandated charge for customers whose electricity use exceeds **four** times their Baseline Allowance. Below are some energy savings tips and solutions to help you better understand what this means, and how to successfully manage energy costs in your new home.

KNOW YOUR BASELINE

- Baseline allowance is the total amount of electricity allotted per month.
- It varies by season, location and whether your home also has natural gas.

SWITCH TO A TIME-OF-USE PLAN

- Time-of-Use plans are not subject to the High Usage Charge.
- These plans are based on *how much* and *when* you use energy, giving you more control over your monthly bill.
- Learn more at ***sdge.com/whenmatters***.

SAVING TIPS AND SOLUTIONS

Reminder: *It may be fall but don't forget summer prices are still effective until November 1.*

- Level Pay offers you the convenience of predictable billing throughout the year, and especially in summer, when the amount you spend on energy can spike. Visit ***sdge.com/levelpay*** to learn more.
- Our online marketplace can help you find rebates and energy-saving deals. Visit ***sdge.com/marketplace*** to see if you qualify.
- Turn off or set electronics to power down when not in use to reduce energy costs. Explore other energy savings tips and solutions at ***sdge.com/summer***.

SIGN UP FOR ENERGY ALERTS

Even if you're on the go, you can keep track of your energy use and costs with email or text alerts. These alerts give you information about your account, bill, energy use and more. You can subscribe to any or all of these alerts:

- Spending and usage goals
- Weekly energy use summary

Go to ***sdge.com/myaccount***.
Look for "Alerts & Subscriptions" at the top.

DID YOU KNOW?

Approximately
45% of the energy
SDG&E delivers today is from
renewable sources.

continued on back ▸

‹SEQ›

More ways to save

MAKE YOUR HOME ENERGY EFFICIENT

- Find out if you qualify for no-cost home improvements through our Energy Savings Assistance Program or Residential Direct Install Program.

Find out more at ***sdge.com/ESA*** or ***sdge.com/RDI***

USE ONLINE TOOLS TO MANAGE YOUR ENERGY USE

- Take the home energy survey through My Account to get personalized, energy-savings tips.
- Set a spending goal and get email or text alerts when you've reached it.

Go to ***sdge.com/myaccount***

SHOP, COMPARE, GET REBATES ON MARKETPLACE

- Shop for the best prices on energy-efficient products. You can also get price-change alerts.
- Apply for rebates through an easy online process.

Shop now at ***sdge.com/marketplace***

Extra energy allowance available for medical needs

If you or someone in your household has a qualifying medical condition, you may be eligible to receive more energy at the lower price. Qualifying households receive an additional Baseline Allowance, which means you may be able to avoid the High Usage Charge. To learn more about the Medical Baseline Allowance Program, visit ***sdge.com/medicalbaseline***.

Keep your CARE bill discount

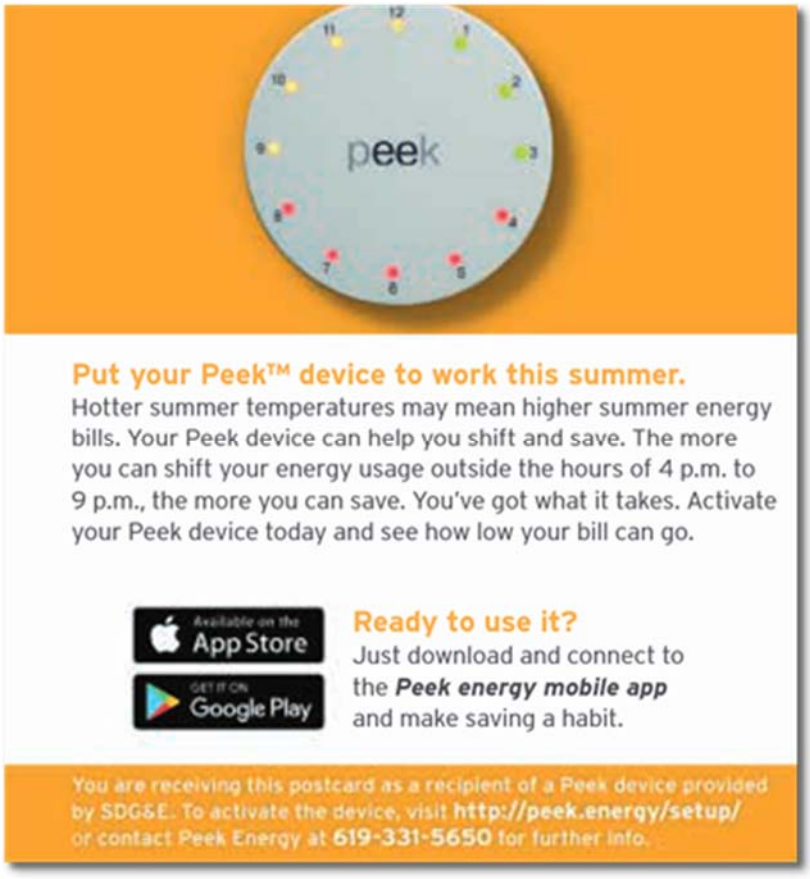
If you are a CARE customer, you are currently receiving a monthly bill discount of 30% or more. If you exceed four times the amount of your Baseline Allowance, you will still be subject to the High Usage Charge. Also, a pattern of high usage may require you to recertify for CARE eligibility. To learn more, visit ***sdge.com/care***.

Learn more at ***sdge.com/highusage***. Visit ***sdge.com***. Call **1-800-411-7343**.
Si desea recibir esta información en español, sírvase llamar a SDG&E al ***1-800-311-7343***.

Certain programs described herein are funded by California utility customers and administered by San Diego Gas & Electric Company (SDG&E®) under the auspices of the California Public Utilities Commission. Rebates are provided to qualified customers on a first-come, first-served basis until program funds are no longer available. Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

<SEO>

Peek – Default Pilot
Reminder Direct Mail English



Peek – Default Pilot
Reminder Direct Mail Spanish

Mass Default PD-90 Postcard

SOON YOUR BILL WON'T JUST BE BASED ON *HOW MUCH* ENERGY YOU USE, BUT ALSO *WHEN*.

Throughout California, customers are switching to Time-of-Use pricing plans. These plans give you more choice and control for managing your energy use. Be on the lookout for more details in the mail on changes to your pricing plan.

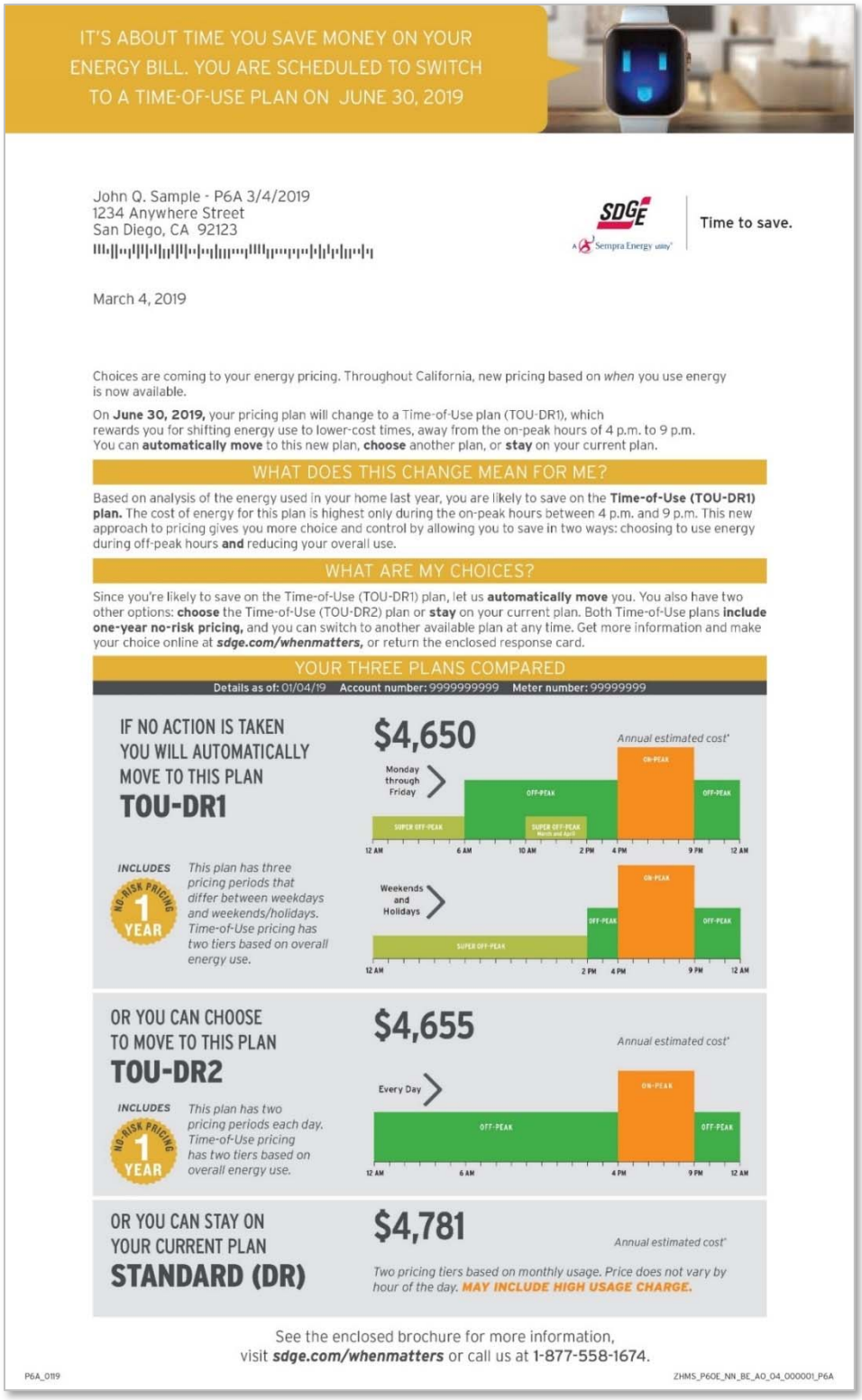
You can find out more about Time-of-Use plans at ***sdge.com/whenmatters***.

SDGE
A Sempra Energy utility

San Diego Gas & Electric Company
P.O. Box 129831
San Diego, CA 92112-9831

PRESORTED
FIRST-CLASS MAIL
U.S. POSTAGE
PAID
SAN DIEGO, CA
PERMIT #213

John Doe
123 Any Street
San Diego, CA 92101



IT'S ABOUT TIME YOU SAVE MONEY ON YOUR ENERGY BILL. YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 30, 2019

John Q. Sample - P6A 3/4/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE A Sempra Energy utility | Time to save.

March 4, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 30, 2019,** your pricing plan will change to a Time-of-Use plan (TOU-DR1), which rewards you for shifting energy use to lower-cost times, away from the on-peak hours of 4 p.m. to 9 p.m. You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

Based on analysis of the energy used in your home last year, you are likely to save on the **Time-of-Use (TOU-DR1) plan.** The cost of energy for this plan is highest only during the on-peak hours between 4 p.m. and 9 p.m. This new approach to pricing gives you more choice and control by allowing you to save in two ways: choosing to use energy during off-peak hours **and** reducing your overall use.

WHAT ARE MY CHOICES?

Since you're likely to save on the Time-of-Use (TOU-DR1) plan, let us **automatically move** you. You also have two other options: **choose** the Time-of-Use (TOU-DR2) plan or **stay** on your current plan. Both Time-of-Use plans **include one-year no-risk pricing,** and you can switch to another available plan at any time. Get more information and make your choice online at ***sdge.com/whenmatters,*** or return the enclosed response card.

YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$4,650 *Annual estimated cost**

INCLUDES NO-RISK PRICING 1 YEAR

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$4,655 *Annual estimated cost**

INCLUDES NO-RISK PRICING 1 YEAR

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$4,781 *Annual estimated cost**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See the enclosed brochure for more information, visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P6A_0119 ZHMS_P6OE_NN_BE_AO_04_000001_P6A

WHAT DO I DO NOW?

The choice is yours. You have three options:

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 30, 2019
2. Choose the **Time-of-Use (TOU-DR2)** pricing plan by returning the reply card or contacting us
3. Stay on your current **Standard (DR)** pricing plan by returning the reply card or contacting us

Since you're likely to save on the Time-of-Use (TOU-DR1) pricing plan, you can make the switch early. Complete and return the reply card or log in to My Account at ***sdge.com/planenroll*** before June 30, 2019.

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan, we will credit you the difference.

WHAT IS THE BENEFIT OF SWITCHING TO TIME-OF-USE?

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering energy can increase. By shifting some of your usage to lower-priced off-peak hours, you'll help decrease demand on the power grid, which benefits the environment, as well as your monthly bill.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

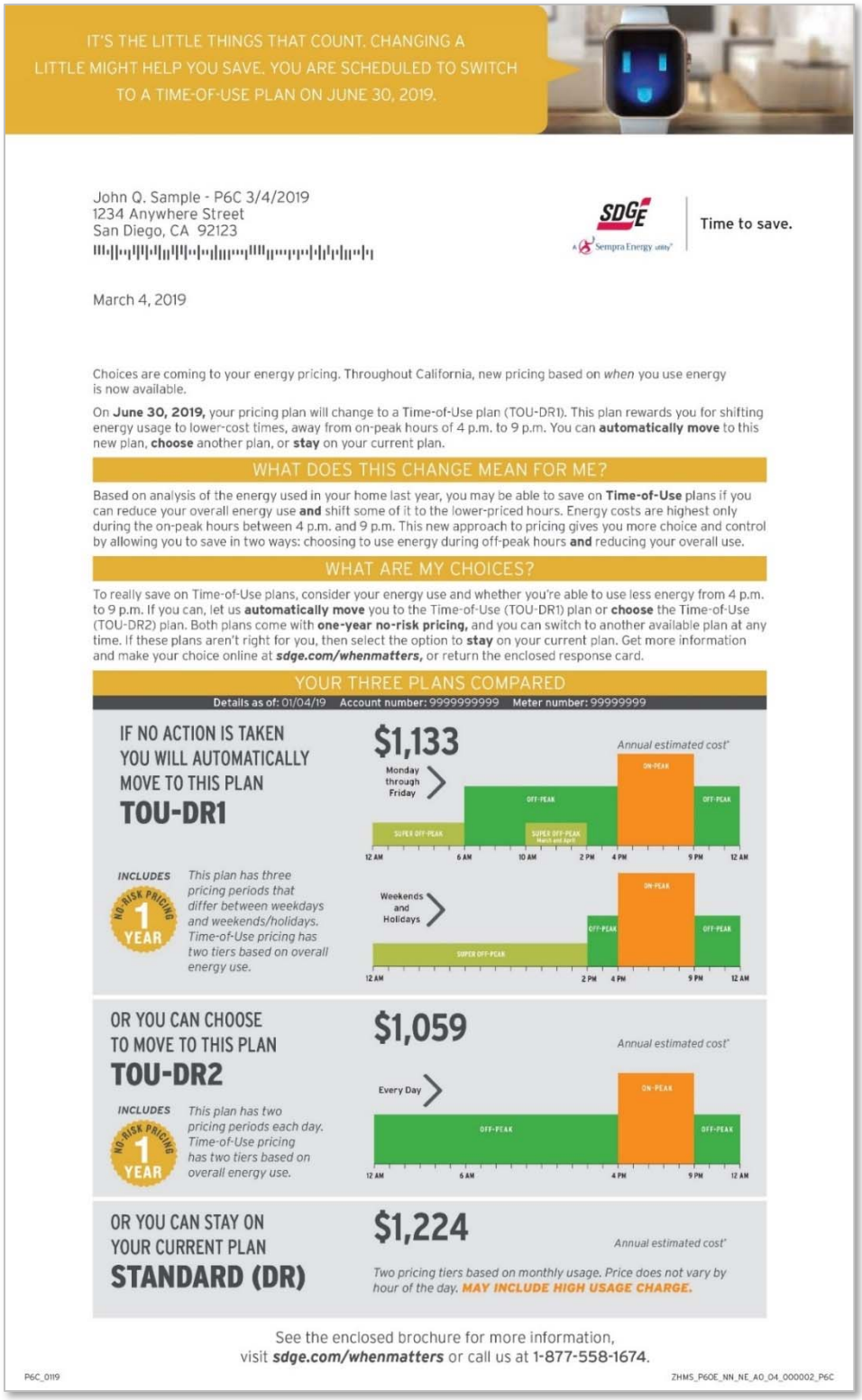
No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, a little earlier or later. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed brochure and see just how easy it is to save even more.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P6A_0119

ZHMS_P6OE_NN_BE_A0_04_000001_P6A



IT'S THE LITTLE THINGS THAT COUNT. CHANGING A LITTLE MIGHT HELP YOU SAVE. YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 30, 2019.

John Q. Sample - P6C 3/4/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE A Sempra Energy utility | Time to save.

March 4, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 30, 2019,** your pricing plan will change to a Time-of-Use plan (TOU-DR1). This plan rewards you for shifting energy usage to lower-cost times, away from on-peak hours of 4 p.m. to 9 p.m. You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

Based on analysis of the energy used in your home last year, you may be able to save on **Time-of-Use** plans if you can reduce your overall energy use **and** shift some of it to the lower-priced hours. Energy costs are highest only during the on-peak hours between 4 p.m. and 9 p.m. This new approach to pricing gives you more choice and control by allowing you to save in two ways: choosing to use energy during off-peak hours **and** reducing your overall use.

WHAT ARE MY CHOICES?

To really save on Time-of-Use plans, consider your energy use and whether you're able to use less energy from 4 p.m. to 9 p.m. If you can, let us **automatically move** you to the Time-of-Use (TOU-DR1) plan or **choose** the Time-of-Use (TOU-DR2) plan. Both plans come with **one-year no-risk pricing,** and you can switch to another available plan at any time. If these plans aren't right for you, then select the option to **stay** on your current plan. Get more information and make your choice online at ***sdge.com/whenmatters,*** or return the enclosed response card.

YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$1,133 *Annual estimated cost**

INCLUDES NO-RISK PRICING 1 YEAR

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$1,059 *Annual estimated cost**

INCLUDES NO-RISK PRICING 1 YEAR

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$1,224 *Annual estimated cost**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See the enclosed brochure for more information, visit ***sdge.com/whenmatters*** or call us at **1-877-558-1674.**

P6C_0119 ZHMS_P6OE_NN_NE_AO_04_000002_P6C

WHAT DO I DO NOW?

The choice is yours. You have three options:

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 30, 2019
2. Choose the **Time-of-Use (TOU-DR2)** pricing plan by returning the reply card or contacting us
3. Stay on your current **Standard (DR)** pricing plan by returning the reply card or contacting us

You can get more information by going to sdge.com/whenmatters. Or make your choice now. Complete and return the reply card or log in to My Account at ***sdge.com/planenroll*** before June 30, 2019.

INCLUDES

NO-RISK PRICING 1 YEAR

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan, we will credit you the difference.

WHAT IS THE BENEFIT OF SWITCHING TO TIME-OF-USE?

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering energy can increase. By shifting some of your usage to lower-priced off-peak hours, you'll help decrease demand on the power grid, which benefits the environment, as well as your monthly bill.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, a little earlier or later. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed brochure and see just how easy it is to start saving.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P6C_0119

ZHMS_P6OE_NN_NE_A0_04_000002_P6C

YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 30, 2019.

John Q. Sample - P6E 3/4/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE
A Sempra Energy utility

Time to save.

March 4, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 30, 2019,** your pricing plan is scheduled to change to a Time-of-Use plan (TOU-DR1).
You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

Based on analysis of the energy used in your home last year, if you continue to use energy the same way, **Time-of-Use** plans may not be right for you. To save on these plans (TOU-DR1 or TOU-DR2), you'll need to reduce your overall energy use **and** shift some use to lower-priced hours. Energy costs are highest only during the on-peak hours between 4 p.m. and 9 p.m. Time-of-Use plans include **one-year no-risk pricing,** so you can try it out and see if it's right for you.

WHAT ARE MY CHOICES?

Consider your energy use and whether you're able to use less energy and shift some away from 4 p.m. to 9 p.m. If you can, let us **automatically move** you to the Time-of-Use (TOU-DR1) plan or **choose** the Time-of-Use (TOU-DR2) plan. Both plans come with **one-year no-risk pricing,** and you can switch to another available plan at any time. If Time-of-Use plans aren't right for you, then select the option to **stay** on your current plan. Get more information and make your choice online at ***sdge.com/whenmatters,*** or return the enclosed response card.

YOUR THREE PLANS COMPARED

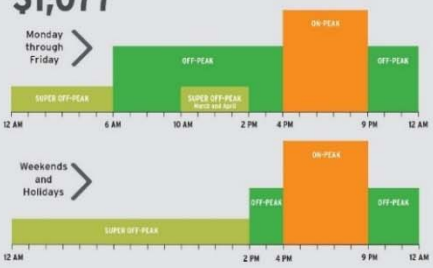
Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

INCLUDES NO-RISK PRICING 1 YEAR

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

$1,077 *Annual estimated cost**

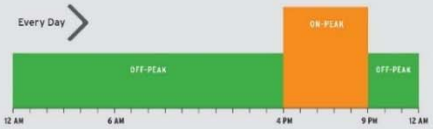


OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

INCLUDES NO-RISK PRICING 1 YEAR

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

$1,087 *Annual estimated cost**



OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$659 *Annual estimated cost**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See the enclosed brochure for more information,
visit ***sdge.com/whenmatters*** or call us at **1-877-558-1674.**

P6E_0119

ZHMS_P60E_NN_NB_A0_04_000003_P6E

WHAT DO I DO NOW?

The choice is yours. You have three options:

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 30, 2019
2. Choose the **Time-of-Use (TOU-DR2)** pricing plan by returning the reply card or contacting us
3. Stay on your current **Standard (DR)** pricing plan by returning the reply card or contacting us

You can get more information by going to sdge.com/whenmatters. Or make your choice now. Complete and return the reply card or log in to My Account at ***sdge.com/planenroll*** before June 30, 2019.

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan, we will credit you the difference.

WHAT IS THE BENEFIT OF SWITCHING TO TIME-OF-USE?

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering energy can increase. By shifting some of your usage to lower-priced off-peak hours, you'll help decrease demand on the power grid, which benefits the environment, and possibly your monthly bill.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

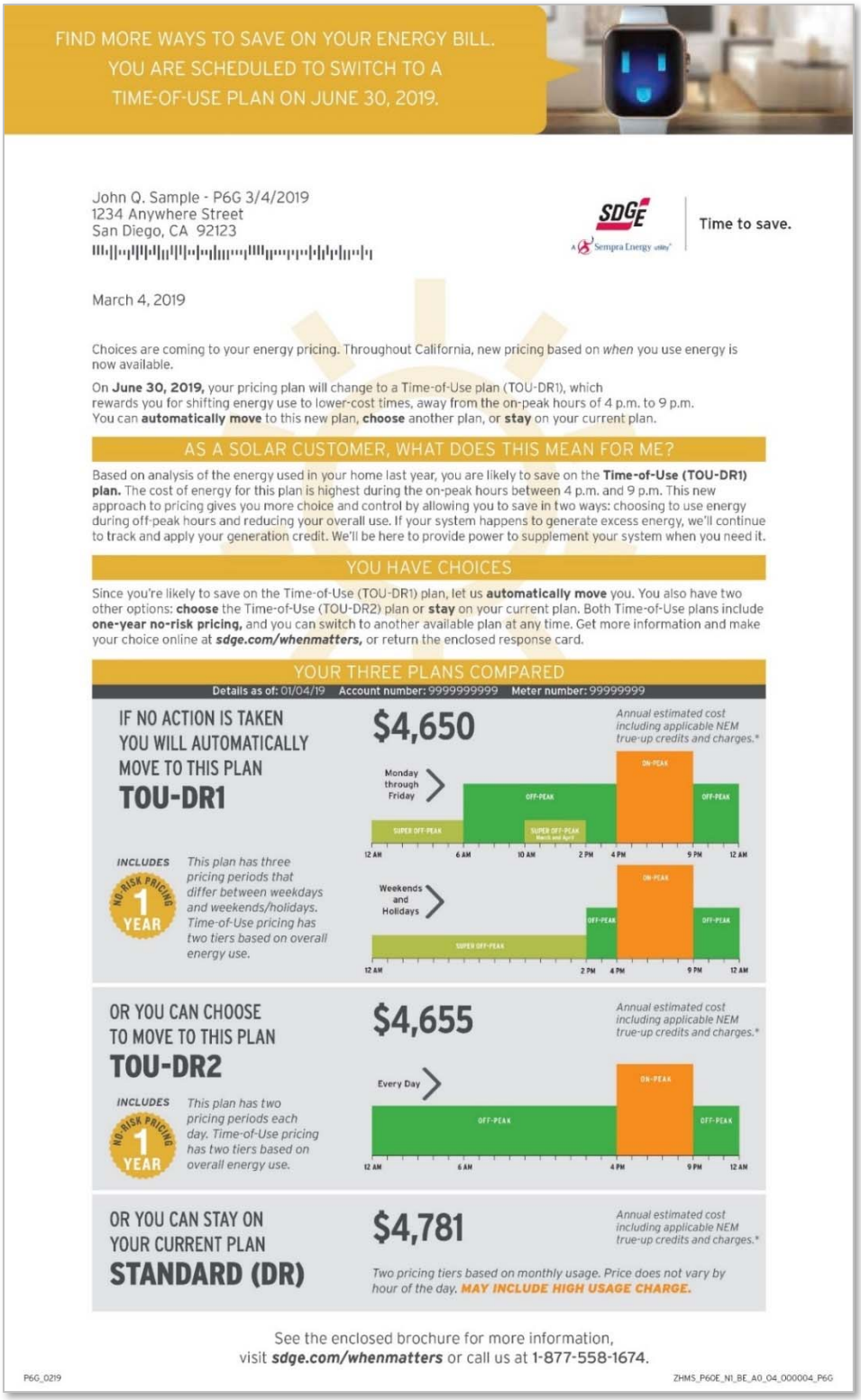
No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, a little earlier or later. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed brochure.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P6E_0119

ZHMS_P60E_NN_NB_AO_04_000003_P6E



FIND MORE WAYS TO SAVE ON YOUR ENERGY BILL.
YOU ARE SCHEDULED TO SWITCH TO A
TIME-OF-USE PLAN ON JUNE 30, 2019.

John Q. Sample - P6G 3/4/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE
A Sempra Energy utility

Time to save.

March 4, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 30, 2019,** your pricing plan will change to a Time-of-Use plan (TOU-DR1), which rewards you for shifting energy use to lower-cost times, away from the on-peak hours of 4 p.m. to 9 p.m. You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

AS A SOLAR CUSTOMER, WHAT DOES THIS MEAN FOR ME?

Based on analysis of the energy used in your home last year, you are likely to save on the **Time-of-Use (TOU-DR1) plan.** The cost of energy for this plan is highest during the on-peak hours between 4 p.m. and 9 p.m. This new approach to pricing gives you more choice and control by allowing you to save in two ways: choosing to use energy during off-peak hours and reducing your overall use. If your system happens to generate excess energy, we'll continue to track and apply your generation credit. We'll be here to provide power to supplement your system when you need it.

YOU HAVE CHOICES

Since you're likely to save on the Time-of-Use (TOU-DR1) plan, let us **automatically move** you. You also have two other options: **choose** the Time-of-Use (TOU-DR2) plan or **stay** on your current plan. Both Time-of-Use plans include **one-year no-risk pricing,** and you can switch to another available plan at any time. Get more information and make your choice online at ***sdge.com/whenmatters,*** or return the enclosed response card.

YOUR THREE PLANS COMPARED

Details as of: 01/04/19 **Account number:** 9999999999 **Meter number:** 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$4,650

*Annual estimated cost including applicable NEM true-up credits and charges.**

INCLUDES NO-RISK PRICING 1 YEAR

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$4,655

*Annual estimated cost including applicable NEM true-up credits and charges.**

INCLUDES NO-RISK PRICING 1 YEAR

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$4,781

*Annual estimated cost including applicable NEM true-up credits and charges.**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See the enclosed brochure for more information,
visit ***sdge.com/whenmatters*** or call us at **1-877-558-1674.**

P6G_0219

ZHMS_P60E_N1_BE_A0_04_000004_P6G

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 30, 2019
2. Enroll now in **Time-of-Use (TOU-DR1), Time-of-Use (TOU-DR2)** or another available pricing plan
3. Stay on your current **Standard (DR)** pricing plan

Since you're likely to save on the Time-of-Use (TOU-DR1) pricing plan, consider making the switch early. Complete and return the reply card or log in to My Account at ***sdge.com/planenroll*** before June 30, 2019.

INCLUDES

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHY THE SWITCH TO TIME-OF-USE?

Thanks to customers like you who are committed to a cleaner, greener future, there's more renewable energy generated earlier in the day. Because of these changes in energy production patterns, on-peak hours have shifted to 4 p.m. to 9 p.m.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, earlier in the day when you are generating energy or later in the evening after on-peak hours. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed brochure.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P6G_0219

ZHMS_P60E_N1_BE_A0_04_000004_P6G

IT'S THE LITTLE THINGS THAT COUNT. CHANGING A LITTLE MIGHT HELP YOU SAVE. YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 30, 2019.

John Q. Sample - P6I 3/4/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE
A Sempra Energy utility

Time to save.

March 4, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 30, 2019,** your pricing plan will change to a Time-of-Use plan (TOU-DR1). This plan rewards you for shifting energy usage to lower-cost times, away from on-peak hours of 4 p.m. to 9 p.m. You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

AS A SOLAR CUSTOMER, WHAT DOES THIS MEAN FOR ME?

Based on analysis of the energy used in your home last year, you may be able to save on Time-of-Use plans if you can reduce your overall energy use **and** shift some of it to the lower-priced hours. Energy costs are highest during the on-peak hours between 4 p.m. and 9 p.m. This new approach to pricing gives you more choice and control by allowing you to save in two ways: choosing to use energy during off-peak hours and reducing your overall use. If your system happens to generate excess energy, we'll continue to track and apply your generation credit. We'll be here to provide power to supplement your system when you need it.

YOU HAVE CHOICES

To really save on Time-of-Use plans, consider whether you're able to use less energy from 4 p.m. to 9 p.m. If you can, let us **automatically move** you to the Time-of-Use (TOU-DR1) plan or **choose** the Time-of-Use (TOU-DR2) plan. Both plans come with **one-year no-risk pricing,** and you can switch to another available plan at any time. If these plans aren't right for you, then select the option to **stay** on your current plan. Get more information and make your choice online at ***sdge.com/whenmatters,*** or return the enclosed response card.

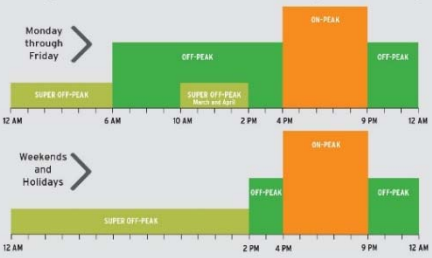
YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$7,133

*Annual estimated cost including applicable NEM true-up credits and charges.**



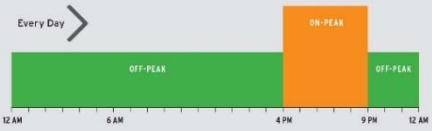
INCLUDES 1 YEAR NO-RISK PRICING

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$7,059

*Annual estimated cost including applicable NEM true-up credits and charges.**



INCLUDES 1 YEAR NO-RISK PRICING

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$7,224

*Annual estimated cost including applicable NEM true-up credits and charges.**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See the enclosed brochure for more information,
visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P6I_0219

ZHMS_P60E_NI_NE_A0_04_000005_P6I

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 30, 2019
2. Enroll now in **Time-of-Use (TOU-DR1), Time-of-Use (TOU-DR2)** or another available pricing plan
3. Stay on your current **Standard (DR)** pricing plan

You can get more information by going to sdge.com/whenmatters. Or make your choice now. Complete and return the reply card or log in to My Account at ***sdge.com/planenroll*** before June 30, 2019.

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHY THE SWITCH TO TIME-OF-USE?

Thanks to customers like you who are committed to a cleaner, greener future, there's more renewable energy generated earlier in the day. Because of these changes in energy production patterns, on-peak hours have shifted to 4 p.m. to 9 p.m.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

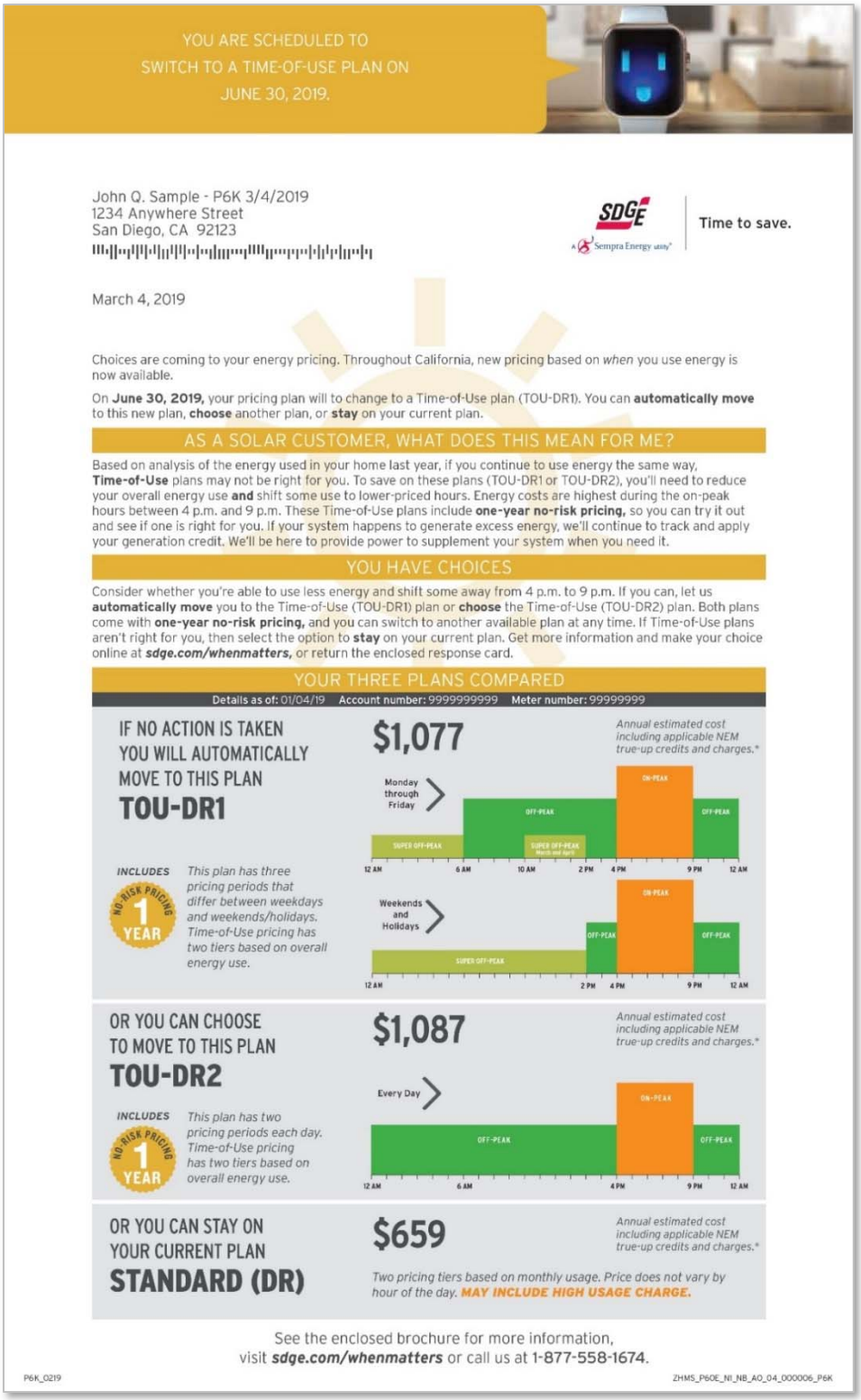
No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, earlier in the day when you are generating energy or later in the evening after on-peak hours. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed brochure.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P6I_0219

ZHMS_P60E_N1_NE_A0_04_000005_P6I



YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 30, 2019.

John Q. Sample - P6K 3/4/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE A Sempra Energy utility

Time to save.

March 4, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 30, 2019,** your pricing plan will to change to a Time-of-Use plan (TOU-DR1). You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

AS A SOLAR CUSTOMER, WHAT DOES THIS MEAN FOR ME?

Based on analysis of the energy used in your home last year, if you continue to use energy the same way, **Time-of-Use** plans may not be right for you. To save on these plans (TOU-DR1 or TOU-DR2), you'll need to reduce your overall energy use **and** shift some use to lower-priced hours. Energy costs are highest during the on-peak hours between 4 p.m. and 9 p.m. These Time-of-Use plans include **one-year no-risk pricing,** so you can try it out and see if one is right for you. If your system happens to generate excess energy, we'll continue to track and apply your generation credit. We'll be here to provide power to supplement your system when you need it.

YOU HAVE CHOICES

Consider whether you're able to use less energy and shift some away from 4 p.m. to 9 p.m. If you can, let us **automatically move** you to the Time-of-Use (TOU-DR1) plan or **choose** the Time-of-Use (TOU-DR2) plan. Both plans come with **one-year no-risk pricing,** and you can switch to another available plan at any time. If Time-of-Use plans aren't right for you, then select the option to **stay** on your current plan. Get more information and make your choice online at ***sdge.com/whenmatters,*** or return the enclosed response card.

YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$1,077

*Annual estimated cost including applicable NEM true-up credits and charges.**

INCLUDES 1 YEAR NO-RISK PRICING

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$1,087

*Annual estimated cost including applicable NEM true-up credits and charges.**

INCLUDES 1 YEAR NO-RISK PRICING

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$659

*Annual estimated cost including applicable NEM true-up credits and charges.**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See the enclosed brochure for more information, visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P6K_0219

ZHMS_P6OE_NI_NB_AO_04_000006_P6K

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 30, 2019
2. Enroll now in **Time-of-Use (TOU-DR1), Time-of-Use (TOU-DR2)** or another available pricing plan
3. Stay on your current **Standard (DR)** pricing plan

You can get more information by going to sdge.com/whenmatters. Or make your choice now. Complete and return the reply card or log in to My Account at ***sdge.com/planenroll*** before June 30, 2019.

INCLUDES

NO-RISK PRICING 1 YEAR

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHY THE SWITCH TO TIME-OF-USE?

Thanks to customers like you who are committed to a cleaner, greener future, there's more renewable energy generated earlier in the day. Because of these changes in energy production patterns, on-peak hours have shifted to 4 p.m. to 9 p.m.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, earlier in the day when you are generating energy or later in the evening after on-peak hours. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed brochure.

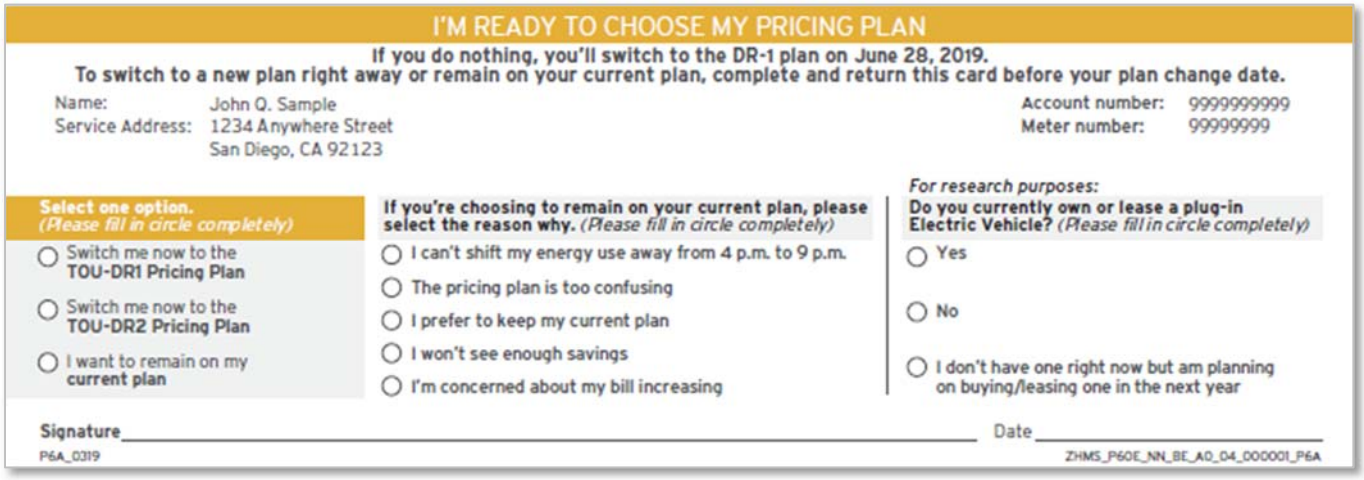
*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P6K_0219

ZHMS_P6OE_N1_NB_A0_04_000006_P6K

Mass Default Reply Card included with PD-60 mailings



I'M READY TO CHOOSE MY PRICING PLAN

If you do nothing, you'll switch to the DR-1 plan on June 28, 2019.
To switch to a new plan right away or remain on your current plan, complete and return this card before your plan change date.

Name: John Q. Sample
Service Address: 1234 Anywhere Street
San Diego, CA 92123

Account number: 9999999999
Meter number: 99999999

Select one option. *(Please fill in circle completely)*

- ○ Switch me now to the **TOU-DR1 Pricing Plan**
- ○ Switch me now to the **TOU-DR2 Pricing Plan**
- ○ I want to remain on my **current plan**

If you're choosing to remain on your current plan, please select the reason why. *(Please fill in circle completely)*

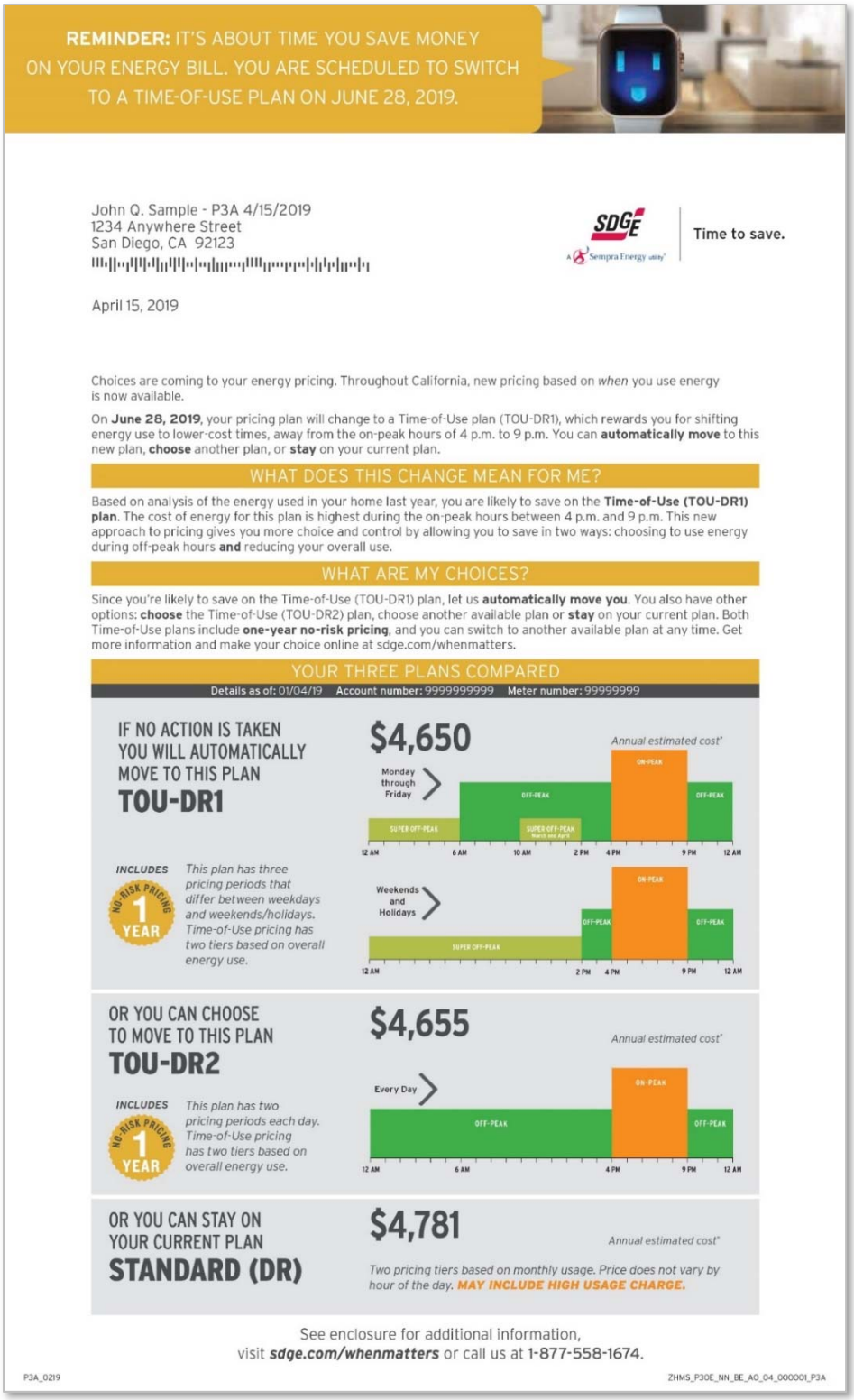
- ○ I can't shift my energy use away from 4 p.m. to 9 p.m.
- ○ The pricing plan is too confusing
- ○ I prefer to keep my current plan
- ○ I won't see enough savings
- ○ I'm concerned about my bill increasing

For research purposes:
Do you currently own or lease a plug-in Electric Vehicle? *(Please fill in circle completely)*

- ○ Yes
- ○ No
- ○ I don't have one right now but am planning on buying/leasing one in the next year

Signature _____ Date _____

P6A_0319 ZHMS_P60E_NN_BE_A0_04_000001_P6A



REMINDER: IT'S ABOUT TIME YOU SAVE MONEY ON YOUR ENERGY BILL. YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 28, 2019.

John Q. Sample - P3A 4/15/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE A Sempra Energy utility | Time to save.

April 15, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 28, 2019**, your pricing plan will change to a Time-of-Use plan (TOU-DR1), which rewards you for shifting energy use to lower-cost times, away from the on-peak hours of 4 p.m. to 9 p.m. You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

Based on analysis of the energy used in your home last year, you are likely to save on the **Time-of-Use (TOU-DR1) plan**. The cost of energy for this plan is highest during the on-peak hours between 4 p.m. and 9 p.m. This new approach to pricing gives you more choice and control by allowing you to save in two ways: choosing to use energy during off-peak hours **and** reducing your overall use.

WHAT ARE MY CHOICES?

Since you're likely to save on the Time-of-Use (TOU-DR1) plan, let us **automatically move you**. You also have other options: **choose** the Time-of-Use (TOU-DR2) plan, choose another available plan or **stay** on your current plan. Both Time-of-Use plans include **one-year no-risk pricing**, and you can switch to another available plan at any time. Get more information and make your choice online at sdge.com/whenmatters.

YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$4,650 *Annual estimated cost**

Monday through Friday: SUPER OFF-PEAK, OFF-PEAK, SUPER OFF-PEAK (March and April), ON-PEAK, OFF-PEAK
12 AM 6 AM 10 AM 2 PM 4 PM 9 PM 12 AM

Weekends and Holidays: SUPER OFF-PEAK, OFF-PEAK, ON-PEAK, OFF-PEAK
12 AM 2 PM 4 PM 9 PM 12 AM

INCLUDES NO-RISK PRICING 1 YEAR

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$4,655 *Annual estimated cost**

Every Day: OFF-PEAK, ON-PEAK, OFF-PEAK
12 AM 6 AM 4 PM 9 PM 12 AM

INCLUDES NO-RISK PRICING 1 YEAR

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$4,781 *Annual estimated cost**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See enclosure for additional information,
visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P3A_0219 ZHMS_P30E_NN_BE_AO_04_000001_P3A

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 28, 2019.
2. Enroll now in **Time-of-Use (TOU-DR1)**, **Time-of-Use (TOU-DR2)** or another available pricing plan.
3. Stay on your current **Standard (DR)** pricing plan.

Since you're likely to save on the Time-of-Use (TOU-DR1) pricing plan, consider making the switch early. Log in to My Account at **sdge.com/planenroll** or call us at 1-877-558-1674 before June 28, 2019.

INCLUDES

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHAT IS THE BENEFIT OF SWITCHING TO TIME-OF-USE?

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering energy can increase. By shifting some of your usage to lower-priced off-peak hours, you'll help decrease demand on the power grid, which benefits the environment, as well as your monthly bill.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, a little earlier or later. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed insert and see just how easy it is to save even more.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P3A_0219

ZHMS_P3OE_NN_BE_AO_04_000001_P3A

REMINDER: IT'S THE LITTLE THINGS THAT COUNT. CHANGING A LITTLE MIGHT HELP YOU SAVE. YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 28, 2019.

John Q. Sample - P3C 4/15/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE
A Sempra Energy utility

Time to save.

April 15, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 28, 2019**, your pricing plan will change to a Time-of-Use plan (TOU-DR1). This plan rewards you for shifting energy usage to lower-cost times, away from on-peak hours of 4 p.m. to 9 p.m. You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

Based on analysis of the energy used in your home last year, you may be able to save on **Time-of-Use** plans if you can reduce your overall energy use **and** shift some of it to the lower-priced hours. Energy costs are highest during the on-peak hours between 4 p.m. and 9 p.m. This new approach to pricing gives you more choice and control by allowing you to save in two ways: choosing to use energy during off-peak hours **and** reducing your overall use.

WHAT ARE MY CHOICES?

To really save on Time-of-Use plans, consider your energy use and whether you're able to use less energy from 4 p.m. to 9 p.m. If you can, let us **automatically move** you to the Time-of-Use (TOU-DR1) plan. You also have other options: **choose** the Time-of-Use (TOU-DR2) plan, choose another available plan or **stay** on your current plan. Both Time-of-Use plans include **one-year no-risk pricing**, and you can switch to another available plan at any time. Get more information and make your choice online at sdge.com/whenmatters.

YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

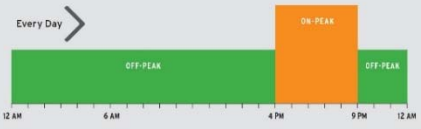
$1,133 *Annual estimated cost**

INCLUDES NO RISK PRICING 1 YEAR

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$1,059 *Annual estimated cost**



INCLUDES NO RISK PRICING 1 YEAR

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$1,224 *Annual estimated cost**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See enclosure for additional information,
visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P3C_0219 ZHMS_P3OE_NN_NE_A0_04_000002_P3C

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 28, 2019.
2. Enroll now in **Time-of-Use (TOU-DR1)**, **Time-of-Use (TOU-DR2)** or another available pricing plan.
3. Stay on your current **Standard (DR)** pricing plan.

You can get more information by going to sdge.com/whenmatters. Or make your choice now. Call us at 1-877-558-1674 or log in to My Account at ***sdge.com/planenroll*** before June 28, 2019.

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHAT IS THE BENEFIT OF SWITCHING TO TIME-OF-USE?

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering energy can increase. By shifting some of your usage to lower-priced off-peak hours, you'll help decrease demand on the power grid, which benefits the environment as well as your monthly bill.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

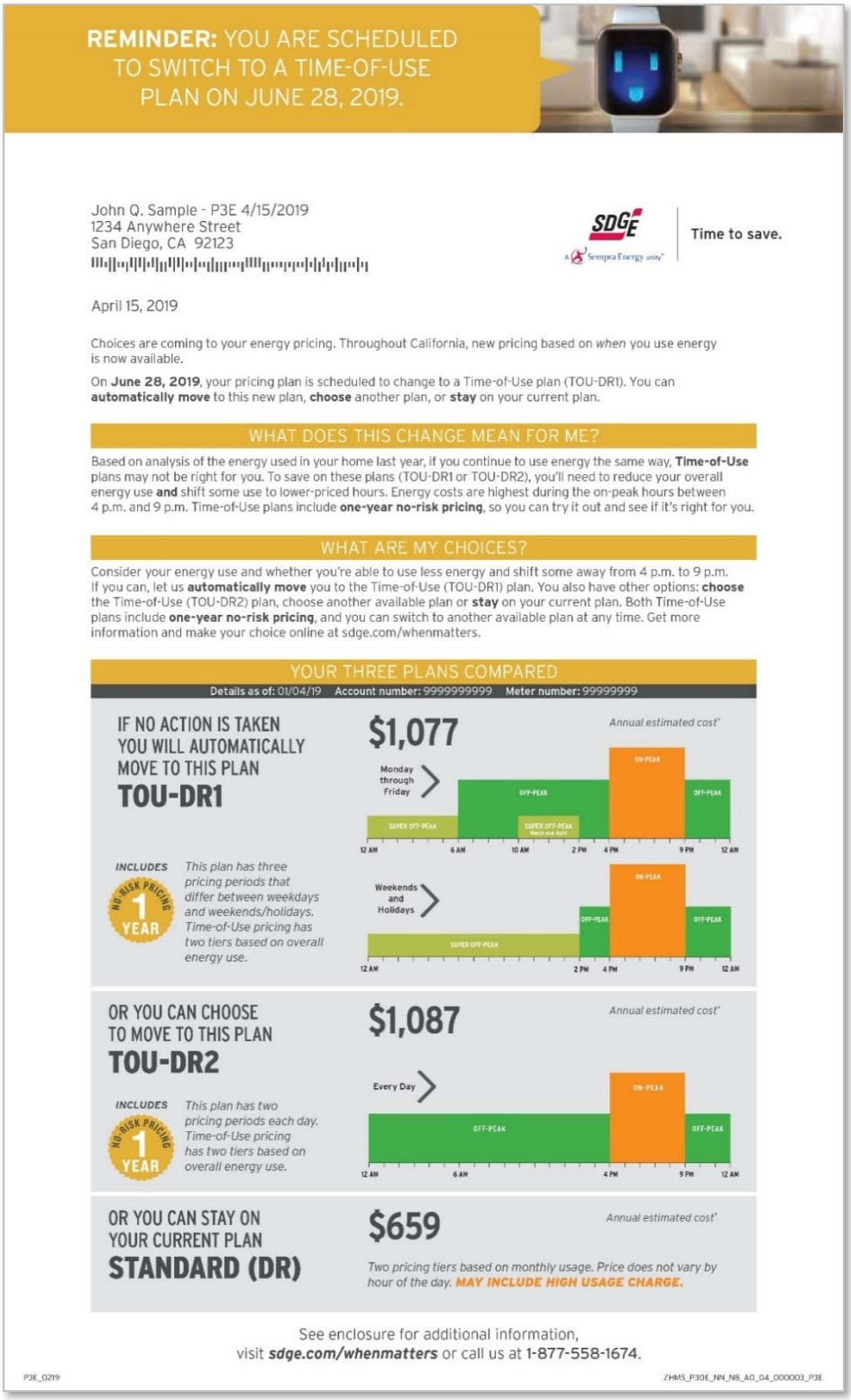
No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, a little earlier or later. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed insert and see just how easy it is to start saving.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P3C_0219

ZHMS_P30E_NN_NE_A0_04_000002_P3C



REMINDER: YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 28, 2019.

John Q. Sample - P3E 4/15/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE a Sempra Energy utility

Time to save.

April 15, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 28, 2019**, your pricing plan is scheduled to change to a Time-of-Use plan (TOU-DR1). You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

Based on analysis of the energy used in your home last year, if you continue to use energy the same way, **Time-of-Use** plans may not be right for you. To save on these plans (TOU-DR1 or TOU-DR2), you'll need to reduce your overall energy use **and** shift some use to lower-priced hours. Energy costs are highest during the on-peak hours between 4 p.m. and 9 p.m. Time-of-Use plans include **one-year no-risk pricing**, so you can try it out and see if it's right for you.

WHAT ARE MY CHOICES?

Consider your energy use and whether you're able to use less energy and shift some away from 4 p.m. to 9 p.m. If you can, let us **automatically move** you to the Time-of-Use (TOU-DR1) plan. You also have other options: **choose** the Time-of-Use (TOU-DR2) plan, choose another available plan or **stay** on your current plan. Both Time-of-Use plans include **one-year no-risk pricing**, and you can switch to another available plan at any time. Get more information and make your choice online at sdge.com/whenmatters.

YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$1,077 *Annual estimated cost**

INCLUDES NO-RISK PRICING 1 YEAR

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$1,087 *Annual estimated cost**

INCLUDES NO-RISK PRICING 1 YEAR

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$659 *Annual estimated cost**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See enclosure for additional information,
visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P3E_0219

ZHMS_P3OE_NN_NB_A0_04_000003_P3E

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 28, 2019.
2. Enroll now in **Time-of-Use (TOU-DR1)**, **Time-of-Use (TOU-DR2)** or another available pricing plan.
3. Stay on your current **Standard (DR)** pricing plan.

You can get more information by going to sdge.com/whenmatters. Or make your choice now. Call us at 1-877-558-1674 or log in to My Account at ***sdge.com/planenroll*** before June 28, 2019.

INCLUDES NO-RISK PRICING 1 YEAR

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHAT IS THE BENEFIT OF SWITCHING TO TIME-OF-USE?

SHIFT TO SAVE 9PM 4PM

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering energy can increase. By shifting some of your usage to lower-priced off-peak hours, you'll help decrease demand on the power grid, which benefits the environment, and possibly your monthly bill.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, a little earlier or later. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed insert.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-Year No-Risk Pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P3E_0219

ZHMS_P3OE_NN_NB_AO_04_000003_P3E

REMINDER: FIND MORE WAYS TO SAVE ON YOUR ENERGY BILL. YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 28, 2019.

John Q. Sample - P3G 4/15/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE
A Sempra Energy utility

Time to save.

April 15, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 28, 2019,** your pricing plan will change to a Time-of-Use plan (TOU-DR1), which rewards you for shifting energy use to lower-cost times, away from the on-peak hours of 4 p.m. to 9 p.m. You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

AS A SOLAR CUSTOMER, WHAT DOES THIS MEAN FOR ME?

Based on analysis of the energy used in your home last year, you are likely to save on the **Time-of-Use (TOU-DR1) plan.** The cost of energy for this plan is highest during the on-peak hours between 4 p.m. and 9 p.m. This new approach to pricing gives you more choice and control by allowing you to save in two ways: choosing to use energy during off-peak hours and reducing your overall use. If your system happens to generate excess energy, we'll continue to track and apply your generation credit. We'll be here to provide power to supplement your system when you need it.

YOU HAVE CHOICES

Since you're likely to save on the Time-of-Use (TOU-DR1) plan, let us **automatically move** you. You also have other options: **choose** the Time-of-Use (TOU-DR2) plan, choose another available plan, or **stay** on your current plan. Both Time-of-Use plans include **one-year no-risk pricing,** and you can switch to another available plan at any time. Get more information and make your choice online at ***sdge.com/whenmatters***.

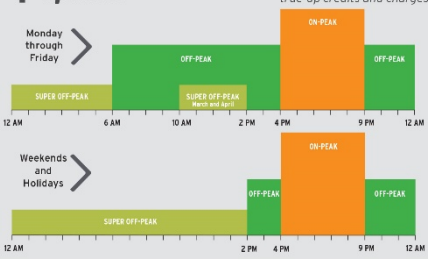
YOUR THREE PLANS COMPARED

Details as of: 01/04/19 **Account number:** 9999999999 **Meter number:** 99999999

IF NO ACTION IS TAKEN
YOU WILL AUTOMATICALLY
MOVE TO THIS PLAN
TOU-DR1

$4,650

*Annual estimated cost including applicable NEM true-up credits and charges.**



INCLUDES 1 YEAR NO-RISK PRICING

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE
TO MOVE TO THIS PLAN
TOU-DR2

$4,655

*Annual estimated cost including applicable NEM true-up credits and charges.**

INCLUDES 1 YEAR NO-RISK PRICING

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON
YOUR CURRENT PLAN
STANDARD (DR)

$4,781

*Annual estimated cost including applicable NEM true-up credits and charges.**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See enclosure for additional information,
visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P3G_0219

ZHMS_P3OE_N1_BE_A0_04_000004_P3G

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 28, 2019.
2. Enroll now in **Time-of-Use (TOU-DR1), Time-of-Use (TOU-DR2)** or another available pricing plan.
3. Stay on your current **Standard (DR)** pricing plan.

Since you're likely to save on the Time-of-Use (TOU-DR1) pricing plan, consider making the switch early. Log in to My Account at ***sdge.com/planenroll*** before June 28, 2019.

INCLUDES

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHY THE SWITCH TO TIME-OF-USE?

Thanks to customers like you who are committed to a cleaner, greener future, there's more renewable energy generated earlier in the day. Because of these changes in energy production patterns, on-peak hours have shifted to 4 p.m. to 9 p.m.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, earlier in the day when you are generating energy or later in the evening after on-peak hours. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed insert and see just how easy it is to save even more.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-year no-risk pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P3G_0219

ZHMS_P3OE_N1_BE_A0_04_000004_P3G

REMINDER: IT'S THE LITTLE THINGS THAT COUNT. CHANGING A LITTLE MIGHT HELP YOU SAVE. YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 28, 2019.

John Q. Sample - P3I 4/15/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE
A Sempra Energy utility

Time to save.

April 15, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 28, 2019,** your pricing plan will change to a Time-of-Use plan (TOU-DR1). This plan rewards you for shifting energy usage to lower-cost times, away from on-peak hours of 4 p.m. to 9 p.m. You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

AS A SOLAR CUSTOMER, WHAT DOES THIS MEAN FOR ME?

Based on analysis of the energy used in your home last year, you may be able to save on Time-of-Use plans if you can reduce your overall energy use **and** shift some of it to the lower-priced hours. Energy costs are highest during the on-peak hours between 4 p.m. and 9 p.m. This new approach to pricing gives you more choice and control by allowing you to save in two ways: choosing to use energy during off-peak hours **and** reducing your overall use. If your system happens to generate excess energy, we'll continue to track and apply your generation credit. We'll be here to provide power to supplement your system when you need it.

YOU HAVE CHOICES

To really save on Time-of-Use plans, consider whether you're able to use less energy from 4 p.m. to 9 p.m. If you can, let us **automatically move** you to the Time-of-Use (TOU-DR1) plan. You also have other options: **choose** the Time-of-Use (TOU-DR2) plan, choose another available plan, or **stay** on your current plan. Both plans come with **one-year no-risk pricing,** and you can switch to another available plan at any time. Get more information and make your choice online at ***sdge.com/whenmatters***.

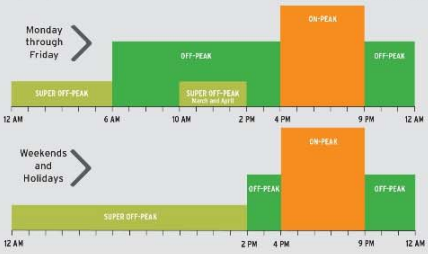
YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$1,133

*Annual estimated cost including applicable NEM true-up credits and charges.**



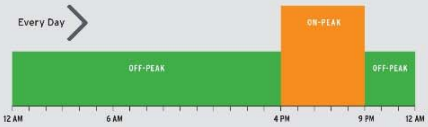
INCLUDES NO-RISK PRICING 1 YEAR

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$1,059

*Annual estimated cost including applicable NEM true-up credits and charges.**



INCLUDES NO-RISK PRICING 1 YEAR

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$1,224

*Annual estimated cost including applicable NEM true-up credits and charges.**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See enclosure for additional information,
visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P3I_0219

ZHMS_P3OE_N1_NE_AO_04_000005_P3I

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 28, 2019.
2. Enroll now in **Time-of-Use (TOU-DR1), Time-of-Use (TOU-DR2)** or another available pricing plan.
3. Stay on your current **Standard (DR)** pricing plan.

You can get more information by going to sdge.com/whenmatters. Or make your choice now. Call us at 1-877-558-1674 or log in to My Account at ***sdge.com/planenroll*** before June 28, 2019.

INCLUDES

NO-RISK PRICING 1 YEAR

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHY THE SWITCH TO TIME-OF-USE?

Thanks to customers like you who are committed to a cleaner, greener future, there's more renewable energy generated earlier in the day. Because of these changes in energy production patterns, on-peak hours have shifted to 4 p.m. to 9 p.m.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, earlier in the day when you are generating energy or later in the evening after on-peak hours. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed insert and see just how easy it is to start saving.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-year no-risk pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

P3I_0219

ZHMS_P3OE_NI_NE_A0_04_000005_P3I

REMINDER: YOU ARE SCHEDULED TO SWITCH TO A TIME-OF-USE PLAN ON JUNE 28, 2019.

John Q. Sample - P3K 4/15/2019
1234 Anywhere Street
San Diego, CA 92123

SDGE
A Sempra Energy utility

Time to save.

April 15, 2019

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available.

On **June 28, 2019,** your pricing plan will change to a Time-of-Use plan (TOU-DR1). You can **automatically move** to this new plan, **choose** another plan, or **stay** on your current plan.

AS A SOLAR CUSTOMER, WHAT DOES THIS MEAN FOR ME?

Based on analysis of the energy used in your home last year, if you continue to use energy the same way, **Time-of-Use** plans may not be right for you. To save on these plans (TOU-DR1 or TOU-DR2), you'll need to reduce your overall energy use **and** shift some use to lower-priced hours. Energy costs are highest during the on-peak hours between 4 p.m. and 9 p.m. Time-of-Use plans include **one-year no-risk pricing,** so you can try it out and see if one is right for you. If your system happens to generate excess energy, we'll continue to track and apply your generation credit. We'll be here to provide power to supplement your system when you need it.

YOU HAVE CHOICES

Consider your energy use and whether you're able to use less energy and shift some away from 4 p.m. to 9 p.m. If you can, let us **automatically move** you to the Time-of-Use (TOU-DR1) plan. You also have other options: **choose** the Time-of-Use (TOU-DR2) plan, choose another available plan, or **stay** on your current plan. Both Time-of-Use plans include **one-year no-risk pricing,** and you can switch to another available plan at any time. Get more information and make your choice online at ***sdge.com/whenmatters***.

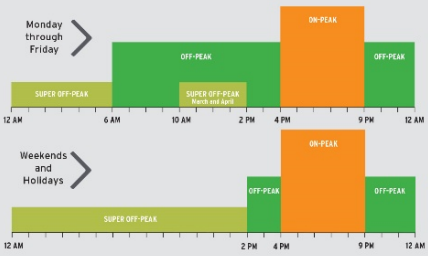
YOUR THREE PLANS COMPARED

Details as of: 01/04/19 Account number: 9999999999 Meter number: 99999999

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN
TOU-DR1

$1,077

*Annual estimated cost including applicable NEM true-up credits and charges.**



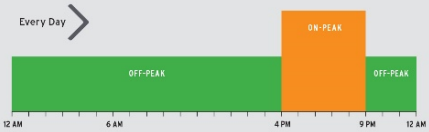
INCLUDES 1 YEAR NO-RISK PRICING

This plan has three pricing periods that differ between weekdays and weekends/holidays. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN
TOU-DR2

$1,087

*Annual estimated cost including applicable NEM true-up credits and charges.**



INCLUDES 1 YEAR NO-RISK PRICING

This plan has two pricing periods each day. Time-of-Use pricing has two tiers based on overall energy use.

OR YOU CAN STAY ON YOUR CURRENT PLAN
STANDARD (DR)

$659

*Annual estimated cost including applicable NEM true-up credits and charges.**

Two pricing tiers based on monthly usage. Price does not vary by hour of the day. ***MAY INCLUDE HIGH USAGE CHARGE.***

See enclosure for additional information,
visit ***sdge.com/whenmatters*** or call us at 1-877-558-1674.

P3K_0219

ZHMS_P3OE_N1_NB_AO_04_000006_P3K

WHAT DO I DO NOW?

The choice is yours. You're in control.

1. Do nothing, and we'll automatically move you to the **Time-of-Use (TOU-DR1)** pricing plan on June 28, 2019.
2. Enroll now in **Time-of-Use (TOU-DR1), Time-of-Use (TOU-DR2)** or another available pricing plan.
3. Stay on your current **Standard (DR)** pricing plan.

You can get more information by going to sdge.com/whenmatters. Or make your choice now. Call us at 1-877-558-1674 or log in to My Account at ***sdge.com/planenroll*** before June 28, 2019.

TRY IT RISK-FREE

Enjoy bill protection. You can try a new Time-of-Use pricing plan risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference.

WHY THE SWITCH TO TIME-OF-USE?

Thanks to customers like you who are committed to a cleaner, greener future, there's more renewable energy generated earlier in the day. Because of these changes in energy production patterns, on-peak hours have shifted to 4 p.m. to 9 p.m.

DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

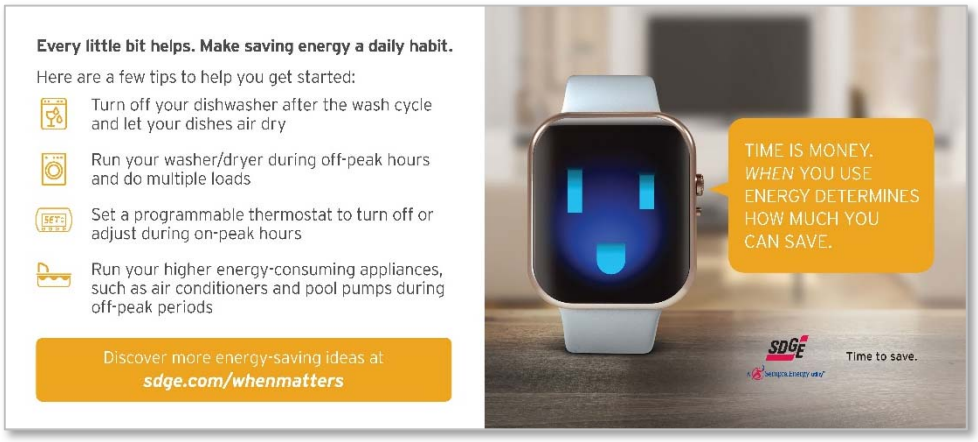
No, you do not. With Time-of-Use pricing plans, it can be as simple as shifting some of your household activities, like running the dishwasher or doing laundry, earlier in the day when you are generating energy or later in the evening after on-peak hours. Little changes can add up to big savings over the long run. For additional tips, check out the enclosed insert.

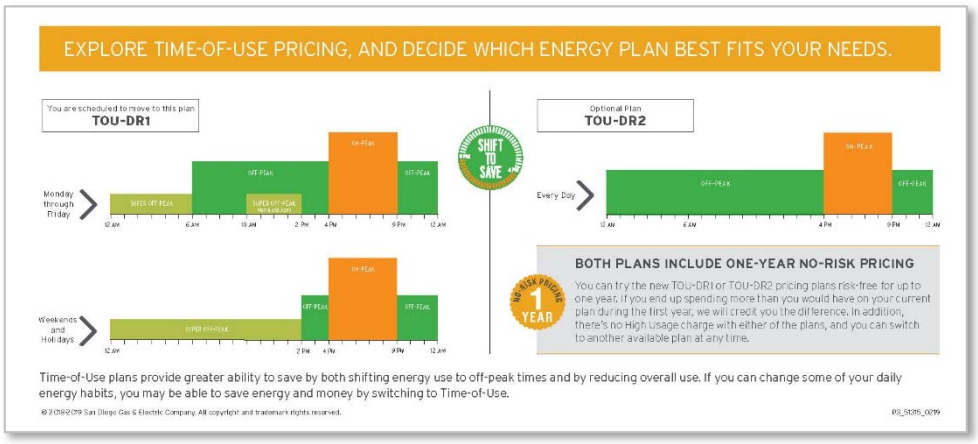
*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One-year no-risk pricing is applicable for up to 12 months while on TOU-DR1 or TOU-DR2 and does not apply to customers with NEM-ST.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

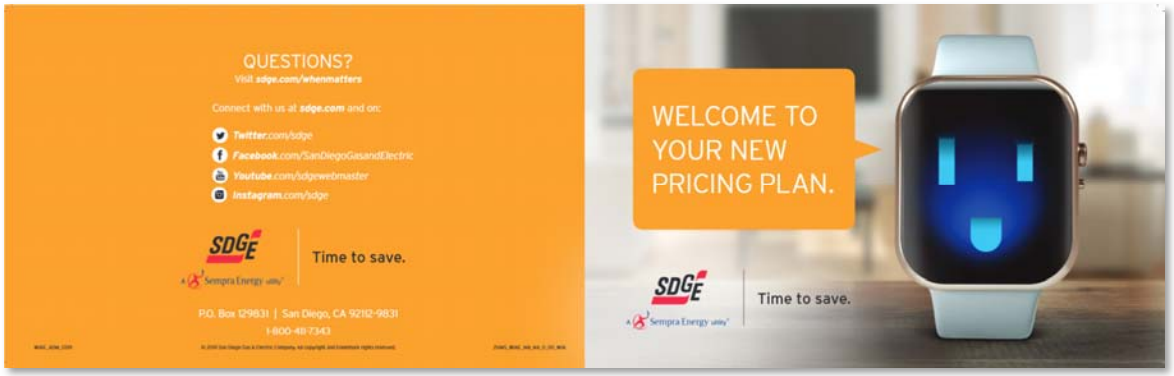
P3K_0219

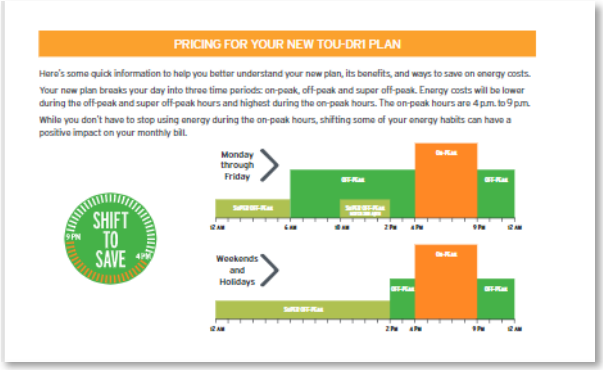
ZHWS_P30E_NI_NB_A0_04_000006_P3K

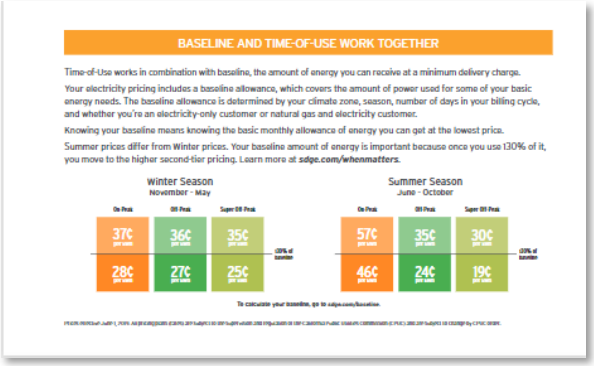

Every little bit helps. Make saving energy a daily habit.
Here are a few tips to help you get started:
Turn off your dishwasher after the wash cycle and let your dishes air dry
Run your washer/dryer during off-peak hours and do multiple loads
Set a programmable thermostat to turn off or adjust during on-peak hours
Run your higher energy-consuming appliances, such as air conditioners and pool pumps during off-peak periods
Discover more energy-saving ideas at sdge.com/whenmatters
TIME IS MONEY. WHEN YOU USE ENERGY DETERMINES HOW MUCH YOU CAN SAVE.
SDGE
Time to save.

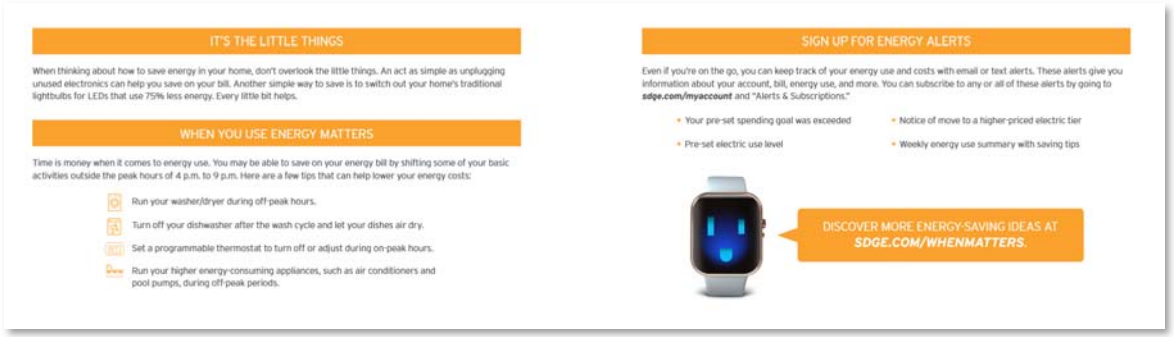

EXPLORE TIME-OF-USE PRICING, AND DECIDE WHICH ENERGY PLAN BEST FITS YOUR NEEDS.
You are scheduled to move to this plan
TOU-DR1
Monday through Friday
Weekends and Holidays
SHIFT TO SAVE
Optional Plan
TOU-DR2
Every Day
BOTH PLANS INCLUDE ONE-YEAR NO-RISK PRICING
You can try the new TOU-DR1 or TOU-DR2 pricing plans risk-free for up to one year. If you end up spending more than you would have on your current plan during the first year, we will credit you the difference. In addition, there's no High Usage charge with either of the plans, and you can switch to another available plan at any time.
NO-RISK PRICING 1 YEAR
Time-of-Use plans provide greater ability to save by both shifting energy use to off-peak times and by reducing overall use. If you can change some of your daily energy habits, you may be able to save energy and money by switching to Time-of-Use.

Mass Default – Welcome Brochure
TOU-DR1 with Bill Protection – English (Mailer) Sent beginning in June

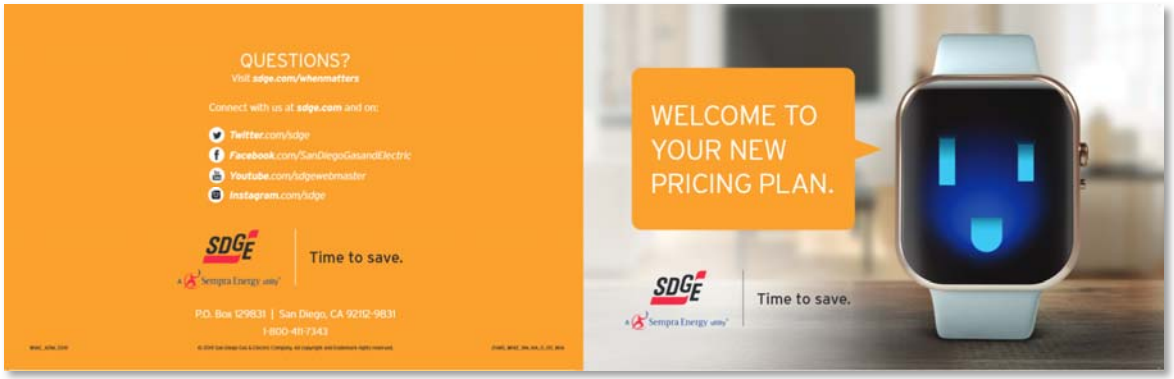


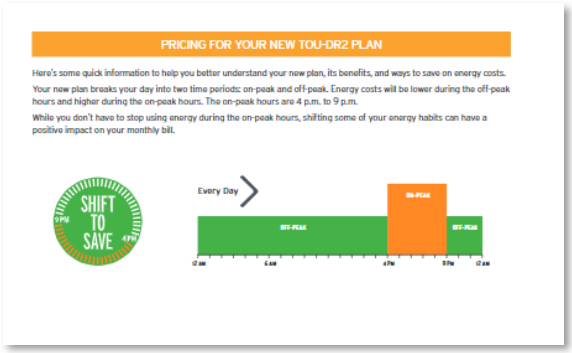


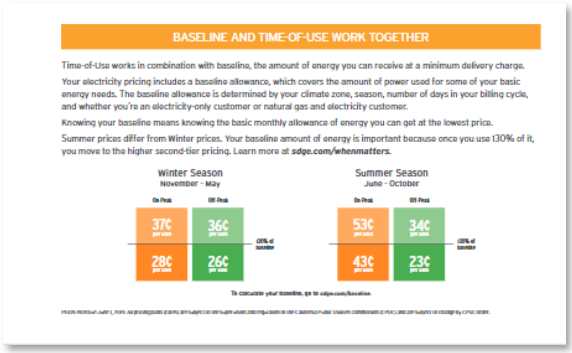


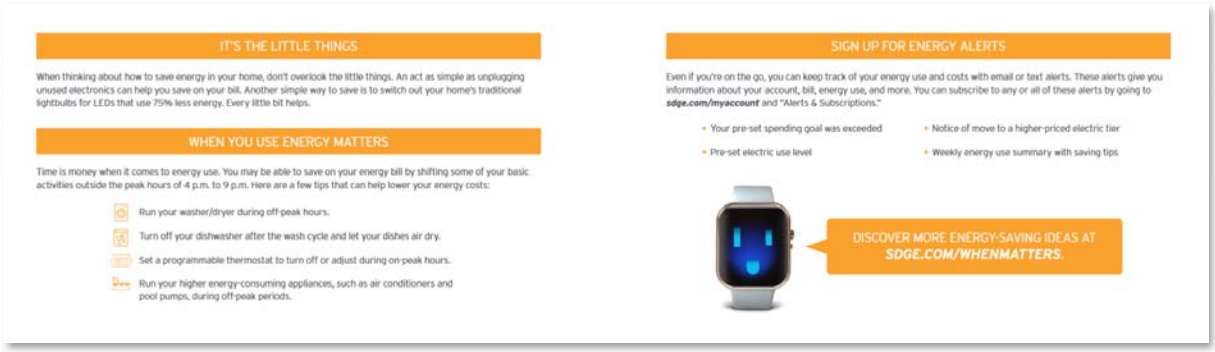


Mass Default – Welcome Brochure
TOU-DR2 with Bill Protection – English (Mailer) Sent beginning in June









Mass Default – Welcome Brochure
TOU-DR1 with no Bill Protection – English (Mailer) Sent beginning in June

QUESTIONS?
Visit sdge.com/whenmatters
Connect with us at sdge.com and on:
Twitter.com/sdge
Facebook.com/SanDiegoGasandElectric
Youtube.com/sdgewebmaster
Instagram.com/sdge
Time to save.
P.O. Box 129831 | San Diego, CA 92112-9831
1-800-411-7343

WELCOME TO YOUR NEW PRICING PLAN.
Time to save.

YOUR NEW TIME-OF-USE PLAN IS ALL ABOUT *WHEN*

Throughout California, new pricing based on when you use energy is being implemented. You are now on a Time-of-Use pricing plan.

With your new plan, your energy costs will be based not only on how much energy you use, but also when you use it. Your energy prices will be lower all day, except between the on-peak hours of 4 p.m. and 9 p.m. when prices are higher.

This new approach to pricing gives you more choice and control over your energy costs. Your new plan allows you to save in two ways: You can shift some of your energy use to the lower-priced off-peak hours, and you can save by reducing your overall use.

By shifting your energy use to off-peak hours, you'll help decrease demand on the power grid, which benefits the environment and can save you money.

YOUR ON-PEAK HOURS ARE 4 P.M. TO 9 P.M.

WHY IS THE ON-PEAK 4 P.M. TO 9 P.M.?

For many years, the on-peak time for energy use was in the middle of the day. Now, because of an increase in renewable energy, the on-peak time for energy has shifted to later in the day when the sun starts to go down and renewable energy production drops.

On-peak hours are now 4 p.m. to 9 p.m. when demand for energy is highest.

The less energy everyone uses during those on-peak hours, the less non-renewable energy will be used overall. It's great for the environment and good for your budget.

IT'S TIME TO THINK ABOUT ENERGY DIFFERENTLY.

PRICING FOR YOUR NEW TOU-DR1 PLAN

Here's some quick information to help you better understand your new plan, its benefits, and ways to save on energy costs.

Your new plan breaks your day into three time periods: on-peak, off-peak and super off-peak. Energy costs will be lower during the off-peak and super off-peak hours and highest during the on-peak hours. The on-peak hours are 4 p.m. to 9 p.m.

While you don't have to stop using energy during the on-peak hours, shifting some of your energy habits can have a positive impact on your monthly bill.

SHIFT TO SAVE

Monday through Friday

Weekends and Holidays

BASELINE AND TIME-OF-USE WORK TOGETHER

Time-of-Use works in combination with baseline, the amount of energy you can receive at a minimum delivery charge.

Your electricity pricing includes a baseline allowance, which covers the amount of power used for some of your basic energy needs. The baseline allowance is determined by your climate zone, season, number of days in your billing cycle, and whether you're an electricity-only customer or natural gas and electricity customer.

Knowing your baseline means knowing the basic monthly allowance of energy you can get at the lowest price.

Summer prices differ from Winter prices. Your baseline amount of energy is important because once you use 130% of it, you move to the higher second-tier pricing. Learn more at *sdge.com/whenmatters*.

Winter Season
November - May

On-Peak	Off-Peak	Super Off-Peak
37¢	36¢	35¢
28¢	27¢	25¢

Summer Season
June - October

On-Peak	Off-Peak	Super Off-Peak
57¢	35¢	30¢
46¢	24¢	19¢

IT'S THE LITTLE THINGS

When thinking about how to save energy in your home, don't overlook the little things. An act as simple as unplugging unused electronics can help you save on your bill. Another simple way to save is to switch out your home's traditional lightbulbs for LEDs that use 75% less energy. Every little bit helps.

WHEN YOU USE ENERGY MATTERS

Time is money when it comes to energy use. You may be able to save on your energy bill by shifting some of your basic activities outside the peak hours of 4 p.m. to 9 p.m. Here are a few tips that can help lower your energy costs:

- Run your washer/dryer during off-peak hours.
- Turn off your dishwasher after the wash cycle and let your dishes air dry.
- Set a programmable thermostat to turn off or adjust during on-peak hours.
- Run your higher energy-consuming appliances, such as air conditioners and pool pumps, during off-peak periods.

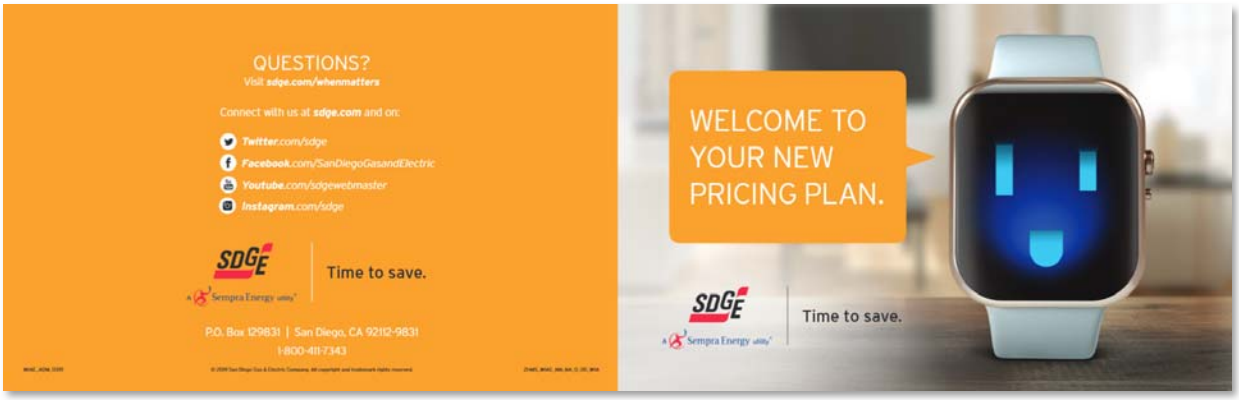
SIGN UP FOR ENERGY ALERTS

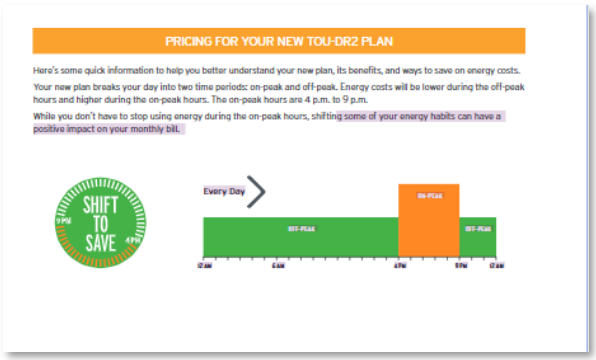
Even if you're on the go, you can keep track of your energy use and costs with email or text alerts. These alerts give you information about your account, bill, energy use, and more. You can subscribe to any or all of these alerts by going to **sdge.com/myaccount** and "Alerts & Subscriptions."

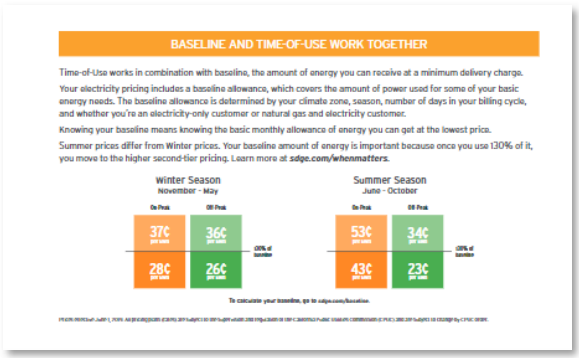
- Your pre-set spending goal was exceeded
- Pre-set electric use level
- Notice of move to a higher-priced electric tier
- Weekly energy use summary with saving tips

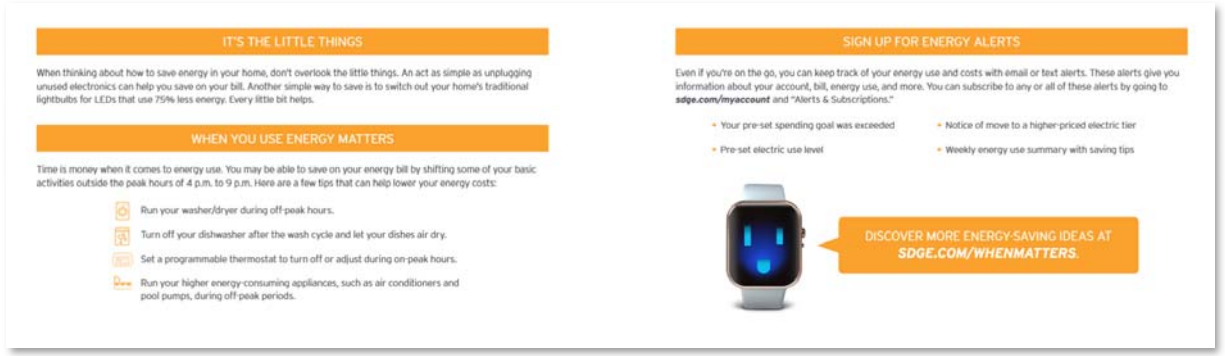
DISCOVER MORE ENERGY-SAVING IDEAS AT *SDGE.COM/WHENMATTERS*.

Mass Default – Welcome Brochure
TOU-DR2 with no Bill Protection – English (Mailer) Sent beginning in June



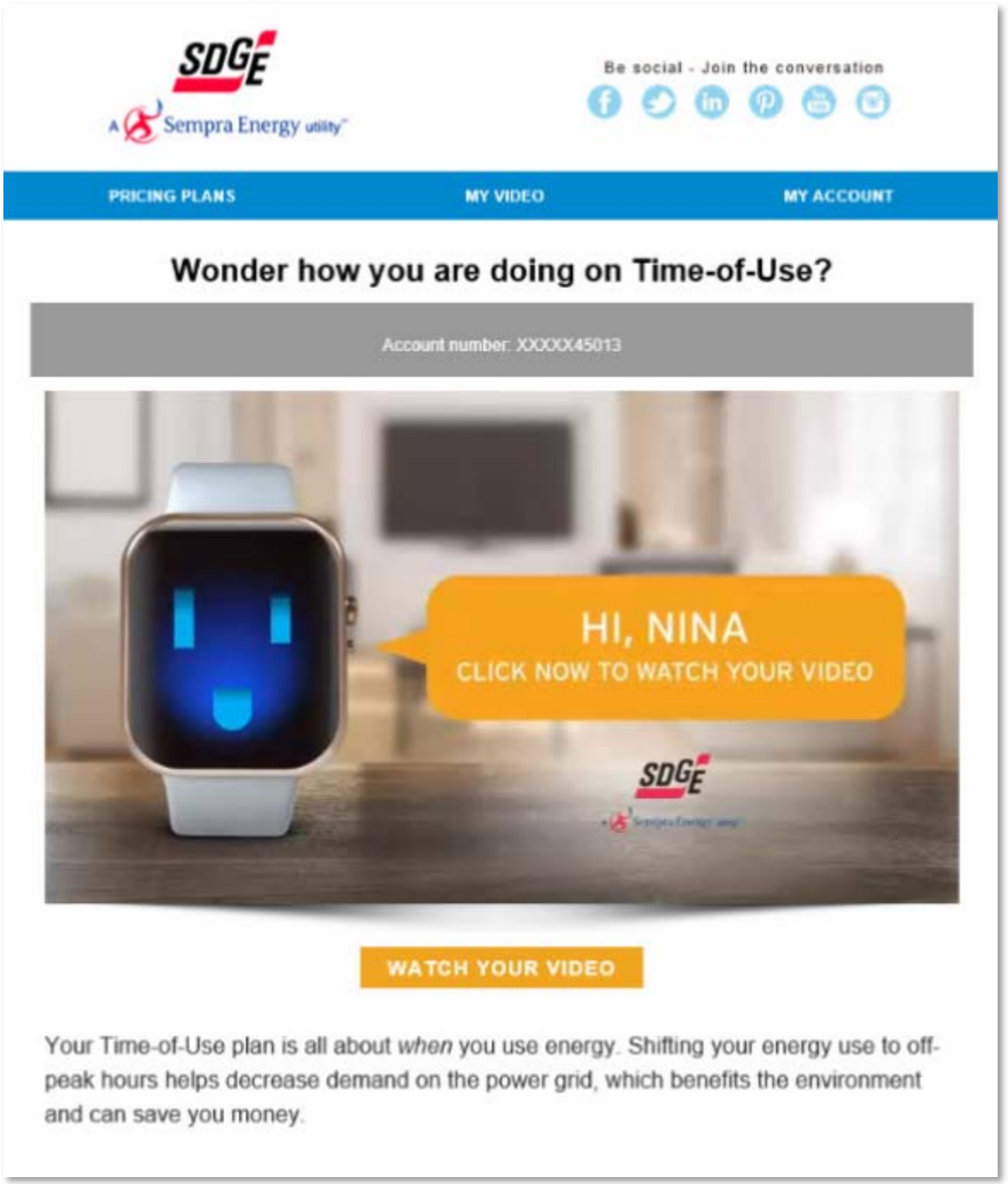






Mass Default – Welcome Brochure Magnet
English

Mass Default – Personalized Video



ONE-YEAR NO-RISK PRICING FOR YOUR TIME-OF-USE PLAN WILL SOON END.

NAME
CO
ST2
ST
CITY, STA ZIP10

SDGE
A Sempra Energy utility®

Time to save.

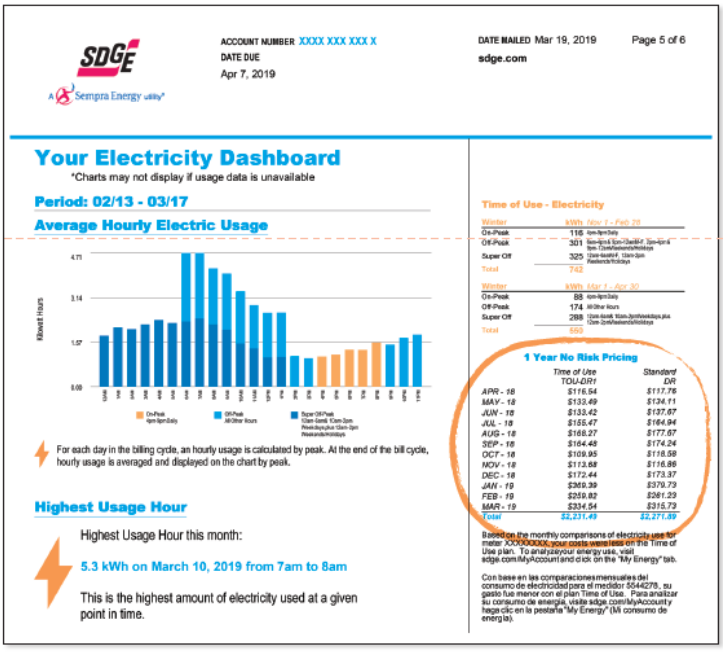
Mail Date - English

Did you know that there are only a few weeks left on the one-year no-risk pricing offer that came with your current Time-of-Use plan(s)? This means you will soon know whether you saved money during your first 12 months of trying out Time-of-Use. If you end up spending more than you would have on your former Standard (DR) plan, you will automatically receive a one-time bill credit for the difference.

Please note your current plan will remain in effect unless you choose to switch to another available plan.

HOW DID I DO ON TIME-OF-USE?

Look for "Your Electricity Dashboard" on your monthly bill. That page includes a one-year no-risk pricing chart comparing your actual bills to date on Time-of-Use with what you would have spent on your former Standard (DR) plan.



SDGE
A Sempra Energy utility®

ACCOUNT NUMBER XXXX XXX XXX X
DATE DUE
Apr 7, 2019

DATE MAILED Mar 19, 2019
sdge.com

Page 5 of 6

Your Electricity Dashboard

*Charts may not display if usage data is unavailable

Period: 02/13 - 03/17

Average Hourly Electric Usage

kWh

For each day in the billing cycle, an hourly usage is calculated by peak. At the end of the bill cycle, hourly usage is averaged and displayed on the chart by peak.

Highest Usage Hour

Highest Usage Hour this month:

5.3 kWh on March 10, 2019 from 7am to 8am

This is the highest amount of electricity used at a given point in time.

Time of Use - Electricity

Winter	kWh Nov 1 - Feb 28
On-Peak	116
Off-Peak	301
Super Off	325
Total	742

Winter	kWh Mar 1 - Apr 30
On-Peak	88
Off-Peak	174
Super Off	288
Total	550

1 Year No Risk Pricing

	Time of Use TOU-DR1	Standard DR
APR - 18	$116.54	$117.76
MAY - 18	$133.49	$134.11
JUN - 18	$133.42	$137.67
JUL - 18	$165.47	$164.94
AUG - 18	$168.27	$177.67
SEP - 18	$164.48	$174.24
OCT - 18	$109.95	$118.58
NOV - 18	$113.68	$116.86
DEC - 18	$172.44	$173.37
JAN - 19	$369.39	$370.73
FEB - 19	$259.82	$261.23
MAR - 19	$234.54	$316.73
Total	$2,231.49	$2,271.39

Based on the monthly comparisons of electricity use for meter XXXXXXXX, your costs were less on the Time of Use plan. To analyzeyour energy use, visit sdge.com/MyAccount and click on the "My Energy" tab.

Con base en las comparaciones mensuales del consumo de electricidad para el medidor 5544278, su gasto fue menor con el plan Time of Use. Para analizar su consumo de energía, visite sdge.com/MyAccount y haga clic en la pestaña "My Energy" (Mi consumo de energía).

If you saved, you've chosen the plan that's best for you.

If you're close to saving, see if you can identify a few more ways to shift your energy use to lower-cost hours.

If you decide you're not able to save, you may benefit by switching to another plan.

Make the choice that's best for you.

BPE-A_0519

ZHMS_MBPE_G1_NA_0_00_ANDSEQ#

WHAT ARE MY CHOICES?

1. Do nothing, and you'll stay on your current Time-of-Use plan.
2. Switch to another available plan by logging in to My Account at ***sdge.com/MyAccount***.

Have a question? See our FAQs at ***sdge.com/whenmatters***
or contact us at **1-800-411-7343**.

HOW CAN I SAVE MORE ON TIME-OF-USE?

Time-of-Use plans are all about timing. Since energy costs are highest between 4 p.m. and 9 p.m., identifying which of your higher energy-consuming activities you can shift to off-peak hours is key. Some of the best ways to save energy and lower your bill are the easiest ways. Here are some tips to get you started. No doubt you'll come up with many more.

- Run your washer/dryer during off-peak hours.
- Turn off your dishwasher after the wash cycle and let your dishes air dry.
- Set a programmable thermostat to turn off or adjust during on-peak hours.
- Run your higher energy-consuming equipment, such as pool pumps, and charge your electric vehicle during off-peak periods.

YOU DESERVE THE BEST.

You're in control of your energy habits. You know best what changes you can make to take advantage of off-peak savings. To review your current plan and compare it with other options, log in to My Account at ***sdge.com/MyAccount***. If you still have questions, give us a call at **1-800-411-7343**.

The one-year, no-risk pricing offer that came with your current Time-of-Use plan(s) is ending soon for the following accounts and meters:

Account Number	Meter Number	Meter Address	Plan Name
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)
1234567890	12345678	1234 Any St.	Time of Use (TOU-DR1)

One-year no-risk pricing is applicable for up to 12 months and requires continuous service at your current location while on the TOU-DR1 or TOU-DR2 plan, and does not apply to NEM-ST customers or accounts opened after 2/28/19.

Actual savings may vary and will depend on various factors, including geographic location, weather conditions, equipment installed, usage rates and similar factors.

BPE-A_0519

ZHMS_MBPE_GI_NA_0_00_ANDSEQ#

Appendix C: Q3 2019 Dashboard

2019 Residential Mass Default to TOU Dashboard

Program Goal: SDGE to transition ~750,000 customers in 2019 to three-period TOU plan (TOU-DR1) leveraging lessons learned from 2018 default pilot transition of ~141,000 customers.

Cumulative Reporting Period: 7/01/2019-9/30/2019
Report Date: 10/15/2019

Mass Default (IDTM)

Key Insights

- **~3,589,000** total mass default communications sent
- **~517,000** total customers have received transition communications
- **~283,000** total transitioned customers active on TOU-DR1
- **~17,000** total customers opted in early to TOU-DR1 or TOU-DR2

~99% of Transitioned Customers Staying on TOU

MyAccount Replaced Reply Card in Q3 as Preferred Opt-Out Channel

MyAccount	42%	CCC	19%
Reply Card	38%	IVR	2%

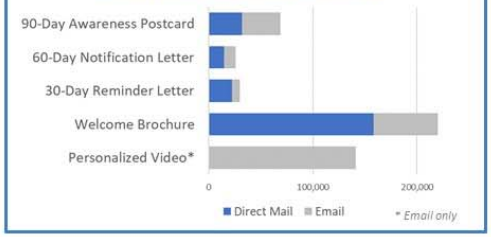
Although transitions slowed through July and August (5K/month), media and outreach remained robust: Q3 **customer calls dropped ~35%** from Q2 and **web traffic increased ~25%**. Transitions increased to 22K in September.

615,570 residential customers now on Time-of-Use plans

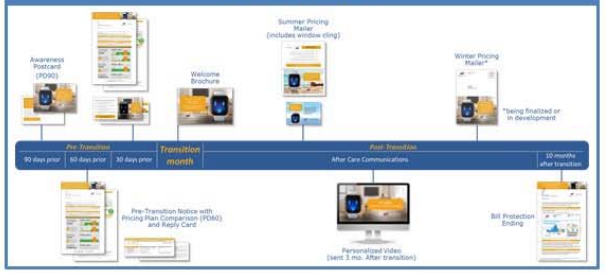
Rollout Schedule

Customer Communications

485,583 Communications Sent Jul-Sep



Customer Journey



Customer Outreach

Q2 Community Based Organization Outreach Results	Customers Reached
162 events	>19,000
60 presentations	>2,900
126 online activities	>340,000

Mass Media

Traditional Media: 124.5M impressions

TV+OTT: 62M
Ratio: 34M
Print: 5.5M
Outdoor: 23M

Digital Media: 69M impressions

Includes display, pre-roll, native, YouTube, paid search and paid social


English

Spanish

Customer Engagement by Channel

Any required corrections/adjustments are reported herein and supersede information provided in prior reports

Appendix C: Q3 2019 Dashboard

2019 Residential Mass Default to TOU Dashboard

Program Goal: SDGE to transition ~750,000 customers in 2019 to three-period TOU plan (TOU-DR1) leveraging lessons learned from 2018 default pilot transition of ~141,000 customers.

Cumulative Reporting Period: 7/01/2019-9/30/2019
Report Date: 10/15/2019

Customer Status

Mass Default Customer Selections After Receiving 90-Day Awareness Postcard (PD-90)

	Active			Pending						
	Transitioned to TOU-DR1	Opt-in to TOU-DR1	Opt-in to TOU-DR2	Transitioning to TOU-DR1	Opt-in to TOU-DR1	Opt-in to TOU-DR2	Opt-out to non-TOU (DR)	Chose another TOU plan	Attrition	All
Total	282,968	12,396	4,794	63,623	70	20	69,403	12,295	76,439	522,008
% of Customers	54.21%	2.37%	0.92%	12.19%	0.01%	0.00%	13.30%	2.36%	14.64%	100.00%

Post-Default Status

	Remain on Default Plan (TOU-DR1)	Closed	Switched to other TOU	Return to non-TOU plan	Total
Total	282,870	15,425	1,634	3,105	303,034
% of Customers Transitioned	93.35%	5.09%	0.54%	1.02%	100.00%

Estimated vs. Actual Benefiter Categories

Based on bills from Jul 2019 to Sep 2019

Benefiter Category	Estimated	Actual	Estimated	Actual
Benefiter	27,442	26,033	9.3 %	8.9 %
Neutral Benefiter	157,958	181,088	53.8 %	61.7 %
Neutral Non-Benefiter	86,136	72,020	29.3 %	24.5 %
Non-Benefiter	22,074	14,469	7.5 %	4.9 %
Total	293,610	293,610	100%	100%

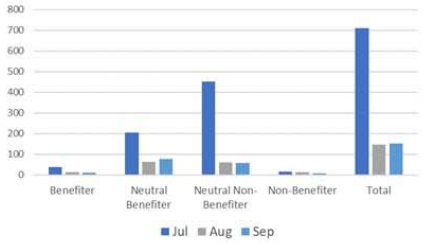
Benefiter Definitions

Category	Est. Avg. Monthly Bill Impact*
Benefiters	Save at least $10
Neutral Benefiters	Save up to $10
Neutral Non-Benefiters	Increase up to $10
Non-Benefiters	Increase at least $10

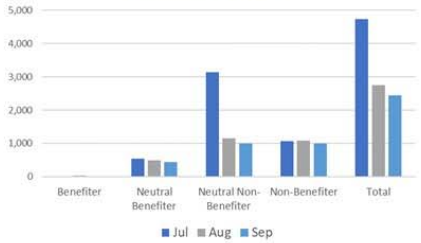
*Based on last 12 mo. energy consumption

Customer Selections

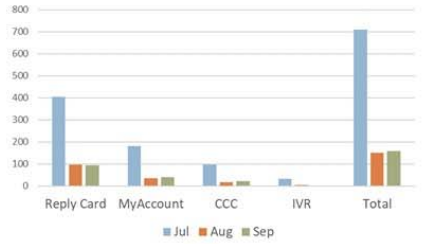
Opt-In by Benefiter Category



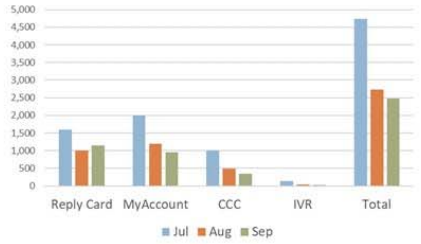
Opt-Out by Benefiter Category



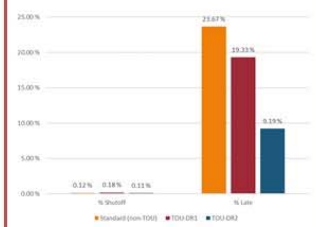
Opt-In by Channel



Opt-Out by Channel

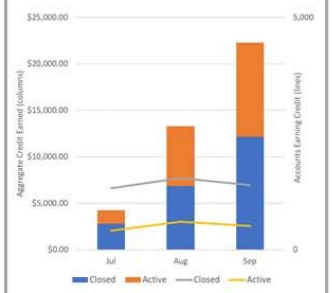


Disconnections and Arrears



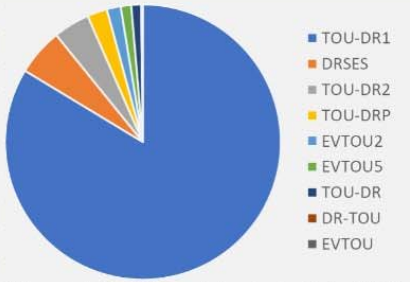
Standard (non-TOU), TOU-DR1, and TOU-DR2 plans for Jul 2019 - Sep 2019. Control group is all accounts on non-TOU plans.

Bill Protection Credits Earned



Total Customers Currently on TOU Plans

Plan	Customers
TOU-DR1[1]	515,103
DRSES	33,919
TOU-DR2[2]	26,229
TOU-DRP	14,389
EVTOU2	10,018
EVTOU5	7,598
TOU-DR	7,045
DR-TOU	910
EVTOU	359
Total	**615,570**



[1] Three-period default TOU plan; start service plan effective 3/01/19
[2] Two-period optional TOU plan

Any required corrections/adjustments are reported herein and supersede information provided in prior reports

Appendix D: TOU Default Pricing Pilot Interim Evaluation

REPORT

Nexant

Reimagine tomorrow.

Default Time-of-Use Pricing Pilot Interim Evaluation

Submitted to San Diego Gas & Electric, Co.

April 1, 2019

Principal authors:

Stephen George, Ph.D., Senior Vice President Eric Bell, Ph.D., Principal
Aimee Savage, Consultant II
Tyler Lehman, Project Analyst

CALMAC ID: SDG0318.01

Contents

I. 1 Executive Summary

This document constitutes the interim evaluation report for San Diego Gas & Electric Company's residential default time-of-use (TOU) pricing pilot. This pilot was implemented in

response to California Public Utilities Commission (CPUC) Decision 15-07-001. A key objective of the pilot is to develop insights that will help guide SDG&E's approach to implementation of default TOU pricing for the majority of residential electricity customers and the CPUC's policy decisions regarding default pricing.

Findings from the first summer—June through October 2018—are documented in this report. This report also contains detailed background information on the pilot, describes the pilot design and the evaluation methodology used for analysis, discusses SDG&E's pilot implementation and treatments, and presents load impacts, bill impacts, and opt-out findings covering the 2018 summer period.

The pilot tested two different TOU rate options. Figure 1-1 and Figure 1-2 show the timing of the rate periods for Rates 1 and 2 and the prices[1] in each period. Rate 1 is a three-period rate in summer and winter. Prices are the same on weekdays and weekends but weekends have a longer super off-peak period relative to weekdays. The peak period in both summer and winter is from 4 to 9 PM. The rate structure for winter is the same as summer except for the months of March and April where there is an additional super off-peak period from 11 AM to 2 PM. The peak-to-super-off-peak price ratio in summer is 1.9:1 for usage above the baseline quantity. In winter, the peak and off-peak prices are very similar, as super off-peak prices are nearly 5% lower than peak-period prices. The structure of Rate 2 is simpler compared to Rate 1 as there are only two rate periods that don't vary throughout the year or on weekdays or weekends. The peak period is the same as Rate 1 (4 PM to 9 PM) and the remaining period is an off-peak period from 9 PM to 4 PM.

a) Figure 1-1: Default Pilot Rate 1

Day Type	Season	Hour Ending																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Weekday	Summer	Super Off-Peak (36¢)						Off-Peak (42¢)										Peak (67¢)							
	Winter	Super Off-Peak (39¢)						Off-Peak (40¢)										Peak (41¢)							
	March - April	Super Off-Peak (39¢)						Off-Peak (40¢)					Super Off-Peak (39¢)					Peak (41¢)							
Weekend	Summer	Super Off-Peak (36¢)																Peak (67¢)							
	Winter	Super Off-Peak (39¢)																Peak (41¢)							

b) Figure 1-2: Default Pilot Rate 2

Day Type	Season	Hour Ending																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Weekday	Summer	Off-Peak (41¢)																Peak (64¢)							
	Winter	Off-Peak (40¢)																Peak (41¢)							
Weekend	Summer	Off-Peak (41¢)																Peak (64¢)							
	Winter	Off-Peak (40¢)																Peak (41¢)							

Approximately 141,000 households were assigned to one of the two TOU rates, and an additional 169,000 were retained in the study on the standard tiered rate to act as a control group for those who were placed on the new tariffs. After receiving multiple notifications

[1] Prices do not reflect the baseline credit of $0.20 per kWh for electricity usage up to 130% of the customer's baseline allocation.

regarding the fact that their rate will change if they did not take action by a certain date, customers had the choice of staying on their otherwise applicable tariff or selecting an alternative TOU rate plan. If a customer took no action, they were placed on the default rate associated with their assigned group. The initial default notifications are described in detail in Section 2.2. These notifications included a rate analysis comparing each customer's bill based on the new TOU rate and at least one other TOU rate with their bill under the otherwise applicable tariff using historical customer data. The notifications also included additional education and outreach (E&O) material.

1.1 Pilot Design & Evaluation

Evaluation of the default pilot focused on a number of important research objectives, including:

- Assessing SDG&E's operational readiness to default large numbers of customers onto TOU rates over a short time. Relevant metrics include call volume, billing exception processing, database capabilities, tracking systems, rate change and bill processing, system enhancements, and bill protection processing.

- Determining the impact of different marketing, education and outreach (ME&O) strategies on awareness of rate options, opt-out rates, engagement with the TOU rate and customer perceptions while on a TOU rate. Specific ME&O options examined included variation in communications channel and the type of structural bill information provided in conjunction with the default notifications, and different format and contentfor post-enrollment education materials.

- Estimating the average peak and off-peak change in energy usage by customers enrolled on each default rate (referred to as Rate 1 and Rate 2).

- Estimating the bill impacts for customers enrolled onto each rate.

- Determining the opt-out rate for customers defaulted onto each rate under each notification treatment.

- Determining the impact of options such as programmable thermostats education, tailored messaging, and the offer of level payment plans (LPP) on customer retention on each rate as well as on load and bill impacts and customer perceptions while on their default TOU rate.

An assessment of operational readiness is not included in this report. Survey-related metrics such as awareness, customer satisfaction, and others have been obtained through two surveys and are reported elsewhere.[2]

The pilot was structured as a randomized encouragement design (RED) experiment. With an RED, different randomly selected samples of customers are offered different experimental treatments (in this case, a TOU rate or different content or messaging in the recruitment

[2] SDG&E "Default TOU Pilot Survey 1, Working Group Report" presented to the TOU Working Group on June 13, 2018 SDG&E

"Default TOU Pilot Survey 2 Report" presented to the TOU Working Group on January 28, 2019

materials) and another random group of customers is not offered anything (e.g., the control group). Some who are offered the treatment take it and some do not. Because each sample is a statistical clone of the other due to the random selection (especially in this case where sample sizes are quite large), comparing the behavior of the encouraged group with that of the control group allows for an unbiased assessment of the impact of the treatment. This analysis requires a two-step process in order to isolate the impact of the encouragement (e.g., the offer of a treatment) from the treatment itself, as explained more fully in Section 3.

Based on pre-treatment validations it was determined that an error had occurred in the pilot implementation and the control groups were not statistically equivalent to the treatment groups. Without pre-treatment statistical equivalence between the treatment and control groups, the RED analysis framework was no longer valid. SDG&E selected a revised control group for each rate from the original pool of eligible customers. The revised control group for Rate 2 was statistically equivalent to the treatment group. However, the Rate 1 control group was not. As a result, statistical matching was implemented to select a revised control group for the Rate 1 population. Statistical matching involves selecting customers from a population of customers who were not subject to default notification that are most similar to the participant population based on observable variables (primarily load shape). The approach to selecting a matched control group is described in Section 3.

Load and bill impacts were estimated for three different climate regions in SDG&E's service territory (hot, moderate, and cool). For the moderate and cool climate regions, estimates were also made for two customer segments, CARE/FERA customers and Non-CARE/FERA customers. CARE/FERA customers in the hot climate region were not allowed to be enrolled on TOU tariffs using default recruitment. As such, comparisons across the hot and two more moderate regions not only reflect differences in climate but also differences in the mix of customers. Also, differences in load impacts across customer segments at the service territory level reflect not just differences across segments, but also differences in the mix of customers across climate regions for each segment. These differences must be kept in mind when making comparisons across segments and climate regions.

The difference in bills on the TOU rates compared with bills under the otherwise applicable tariff (OAT) are comprised of two components – differences due simply to the rates, holding behavior constant, and differences due to changes in behavior as a result of the difference in price signals. The first type of difference is known as a structural bill impact and can be computed based on usage data prior to customers enrolling on the new rate. Because bill impacts can vary rather significantly across seasons, and since this report is based only on usage for the summer season, it does not present behavioral impacts or total bill impacts. Those will be presented after customers have been on the new tariffs for a full year. This report presents information on structural bill impacts for summer, winter and an entire year based on pretreatment data.

In addition to load and bill impacts, another important metric is customer opt-out rates. Comparisons of pre-enrollment opt-out rates across rate options are indicators of the relative preferences of customers for each rate option. Comparisons of enrollment rates across notification content and messaging treatments within a rate option can provide insights about the relative effectiveness of these notification alternatives. Comparisons across customer segments and climate regions reflect the influence of these factors on customer acceptance. In

this report, pairwise comparisons of opt-out rates are presented by rate, the granularity and number of rate comparisons, and email versus direct mail channels. Finally, post-enrollment opt-out rates are presented by rate, CARE/FERA status, climate region, and post-enrollment treatment.

1.2 Overall Findings

The first summer of SDG&E's default TOU pilot has produced a large amount of information that will help guide SDG&E's approach to implementation of default TOU pricing. However, it must be kept in mind that these load impact findings are based on only the summer months. Load impacts are going to differ significantly during winter months and the actions of TOU pilot participants may be quite different over the course of a full year.

As described above, differences in load and bill impacts and opt-out rates across customer segments at the service territory level reflect not just differences across segments, but also differences in the mix of customers across climate regions. CARE/FERA customers in the hot climate region were not allowed to be enrolled on TOU tariffs using default recruitment. Comparisons between CARE/FERA and Non-CARE/FERA customers are valid for the moderate and cool climate regions and comparisons across all three climate regions are valid for Non-CARE/FERA customers. However, comparisons across segments at the service territory level reflect both differences in behavior across segments as well as differences in the participation of segments across climate regions.

1.2.1 Load Impacts

Table 1-1 presents the average weekday peak period load reduction for each pilot rate. Key findings for load impacts are summarized in following the table.

c) Table 1-1: Peak Period Load Reductions on Average Weekday

Utility	Metric	Rate 1	Rate 2
SDG&E	Peak Period Hours	4-9 PM	4-9 PM
	% Impact	1.50%	2.00%
	Absolute Impact (kW)	0.01 kW	0.02 kW
	Customer Count[3]	88,169	20,781

- On average, default customers on both Rates 1 and 2 produced small, but statistically significant, peak-period load reductions. Peak period load reductions averaged roughly 1.5% for Rate 1 and 2.0% for Rate 2. Survey evidence indicates that ongoing education and outreach could lead to greater load reductions. Two surveys were conducted, one shortly after enrollment and one after customers were on the rate for the summer period.

[3] This value reflects the average number of customers enrolled on each rate during the summer season. These customer counts may differ from other tables in the report based on the time period being presented.

Both surveys showed that only about 60% of customers were aware that their household was transitioned to a TOU rate and an even smaller share, roughly 50%, were aware that they are on a TOU rate. Also, among aware customers, only about two thirds accurately identified peak period hours. Roughly 15% of customers thought 8 AM to noon were the peak hours and another 20% identified the hours from noon to 4 PM as peak hours. Efforts to increase awareness and to educate customers about the peak period could lead to higher load reductions during peak hours.

- Load reductions were greater for Rate 2 than for Rate 1, despite having the same peak period time period (4 PM to 9 PM) and despite Rate 1 having higher peak-period prices than Rate 2. While the difference between Rate 1 and Rate 2 impacts are statistically significant, it is important to keep in mind that the estimates were calculated using different estimation techniques and the populations are not equivalent due to the exclusion of NEM customers from Rate 2.
- At the territory level, customers on Rate 1 increased their net daily electricity consumption on average summer weekdays and weekends. The increases were small but statistically significant. Similarly, customers on Rate 2 increased their daily consumption on the average summer weekend by a statistically significant amount at the territory level and on the average weekday and weekend in the moderate climateregion.
- Increases in net daily electricity consumption were driven by statistically significant increases in electricity usage during the off-peak and super off-peak periods. Customer surveys found that 32% of customers stated they shifted their electricity usage compared to 18% of customers stating they reduced electricity usage, indicating that load shifting was a driver of the off-peak load increases. Another possible explanation for the estimated increase in daily usage is the fact that control customers were subject to a High Usage Charge (HUC) for monthly usage exceeding a certain threshold whereas TOU customers were not. 2018 was the first summer in which the HUC was in effect. This difference could cause some control customers to reduce usage, thus producing a downward bias in the reference load. If this bias is large enough, it could lead to an estimated increase in daily usage that might otherwise have shown up as no change or a decline in daily usage had both treatment and control customers been treated the same
- The pattern of load reductions across climate regions in absolute terms was consistent between the two rates but was slightly different in percentage terms. Absolute peak period load reductions were largest in the hot climate region, but these segments did not include CARE/FERA customers. Absolute impacts were smallest in the cool climate region, which included CARE/FERA and Non-CARE/FERA customers.
- In the moderate and cool climate regions, Non-CARE/FERA customers typically had statistically significantly greater absolute peak-period impacts compared to CARE/FERA customers. Survey findings help explain some of this difference. After being on the rate for the full summer, 58% of Non-CARE/FERA customers reported that they were on a TOU rate while only 38% of CARE/FERA customers identified their current rate plan as a TOU rate. Identification of the correct peak hours was also much higher among Non-

CARE/FERA customers (69.4%)[4] versus CARE/FERA customers (58.2%). Efforts to more effectively educate CARE/FERA customers regarding their TOU rate plan could improve load reductions for this customer segment.

- The SDG&E pilot tested a post-enrollment educational treatment that offered to help customers with programmable thermostats (PT) program them to align with the TOU rate periods. The treatment was designed to test whether the educational campaign would help customer use existing technology to increase peak period load reductions. With one exception, the incremental peak period impact among households who received PT education compared to households that did not was not statistically significant. In other words, the additional messaging did not increase peak period impacts. The PT education group for CARE/FERA customers in the cool climate region had incrementally smaller load impacts of 0.01 kW relative to the non-PT education group.
- Another treatment compared the effectiveness of post-enrollment educational material that was tailored to persona segments with messaging that was not tailored. Of the segments that received tailored post-enrollment messaging, only Non-CARE/FERA customers in the hot climate region that received tailored messaging had significant incremental load reductions of 0.05 kW compared to standard education customers. In the cool climate region, Non-CARE/FERA customers who received tailored messaging had smaller load reductions relative to standard education customers.
- The offer to customers to enroll on the Level Pay Plan as a way of managing bill volatility across months and seasons was only taken up by a very small number of customers.

Overall, the load impacts were generally in the expected range established during the default pilot design planning stages. The impacts are half or less than those estimated in the 2016 opt-in TOU pilots[5] even though those pilots were designed in a way to be more reflective of opt-out enrollment conditions by using the "pay-to-play" recruitment strategy. In spite of the opt-in pilot design, it was still expected that load impacts would be lower under default conditions due to potentially lower customer awareness rates and the inherent selection bias of an opt-in recruitment strategy where engaged customers are more likely to enroll. As indicated above, the level of awareness is around 60% and only about 50% of customers know they are on a TOU rate. This means that the average load impacts for all customers enrolled under default conditions are impacted by the fact that only about half the enrolled population even knows that peak period prices are higher than at other times of the day, and only about two thirds of these customers can accurately identify the peak period. Given this, the average impact for those who are aware of being on the rate and the correct peak period may be as high as what was observed for the opt-in pilot. In addition, the finding of a small increase in average daily usage rather than a decrease may be an artifact of the fact that control customers were subject to high prices in the HUC tier whereas TOU customers were not.

1.2.2 Structural Bill Impacts

Structural bill impacts were estimated for summer, winter and the year as a whole. Key findings include the following:

[4] This value represents the average percent of customers that correctly identified each of the peak period hours as in the peak period.

[5] http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442453144

- Rate 1 and Rate 2 have similar distributions of structural benefiters, non-benefiters, and customers in the neutral bill impact category of ±$3/month.[6] In all regions and customer segments, the proportion of benefiters is a slightly higher on Rate 1 than on Rate 2, but there are also more non-benefiters on Rate 1 than on Rate 2. In the moderate climate region and for the service territory as a whole, roughly 10% more Rate 2 customers fall into the neutral category compared with Rate 1 customers.
- A majority of customers (73% on Rate 1 and 80% on Rate 2) are in the neutral bill impact category and are neither structural benefiters nor non-benefiters on an annual basis.
- On Rate 1, 17% of Non-CARE/FERA customers are structural non-benefiters on an annual basis while 5% of CARE/FERA customers fall into the same category. However, the CARE/FERA group does not include customers in the hot climate region where bill increases under the TOU rates are more likely to occur. The distributions were similar for Rate 2.
- Over 35% of customers in the hot climate region are structural non-benefiters on an annual basis for both rates. In the summer months, about 44% of customers in the hot region are structural non-benefiters while between 30% and 41% fall into the neutral category, depending on the rate.
- Over 60% of CARE/FERA customers in the moderate and cool climate regions had summer structural bill impacts in the neutral category. In the winter months, over 97% of customers across rates, CARE/FERA status, and climate regions fell into the neutral category.

The structural bill impacts were generally as expected for a comparison of seasonally differentiated TOU rates with a seasonally differentiated OAT. A large portion of the population was in the neutral category on an annual basis (73% on Rate 1 and 80% on Rate 2).

1.2.3 Customer Attrition

Customer participation rates were tracked separately for the pre-enrollment period and the post enrollment period. During the pre-enrollment period, customers notified that they would be defaulted onto either Rate 1 or Rate 2 could choose to stay on their current rate, could select an alternative TOU rate, or take no action and be enrolled on the assigned TOU pilot rate. Opt-out rates were defined in two ways. One definition defined opt-out as choosing the OAT rather than the default rate offered. By this definition, customers who were offered Rate 1 but chose Rate 2 were not considered to have opted out. The second definition counted as opt outs customers who made any choice other than accepting the default rate offered to them. That is, customers who were offered Rate 1 but chose Rate 2 or who were offered Rate 2 but chose Rate 1 were considered to have opted out.

During the post enrollment period customer attrition is driven by three very different factors. One is customers who move, referred to as customer churn. Another is customers who become

[6] On some rates a significant portion of the customers exhibited differences that were close to zero. As such, it could appear that a large share of customers were structural benefiters or non-benefiters even when bill impacts for a large number of customers are quite small. To address this, a neutral category of +/- $3 per month was defined. The neutral category helps ensure that the assignment to the structural benefiter or non-benefiter category is more meaningful and not overly influenced by customers who would experience a difference in bills of only a few dollars.

ineligible as a result of factors such as installing solar, going onto medical baseline,[7] or switching to service from a Community Choice Aggregator (CCA). The final factor is customers who consciously opt out of the rate because they are unhappy being on a TOU rate.

Key findings concerning customer attrition include the following:

- Opt-out rates can reveal customer preferences for the two rates, but comparisons must be done on an apples to apples basis. A direct comparison of Rate 1 versus Rate 2 opt- out rates overall is not appropriate because of differences in the notification treatments across the rates. When comparing the opt-out rates between Rate 1 and Rate 2 cells with identical notification treatments, the outcome changes based on the opt-out definition used. When opt out is defined as choosing the OAT rather than the default rate offered, 20.5% of Rate 1 and 19.0% of Rate 2 customers opted out, and this difference was statistically significant. When opt-out is defined as taking any action other than accepting the offered rate, the opt-out rate was 21.8% for Rate 1 and 22.9% for Rate 2, and the difference was also statistically significant. Under the first definition, there is a stronger preference for Rate 2, but in the second definition there a preference for Rate1.

- The percent of customers who were offered Rate 2 but selected Rate 1 was statistically significantly greater than the percent of customers who were offered Rate 1 and chose Rate 2. This appears to be largely driven by customers switching to the lowest cost rate based on the rate analysis included with the notification materials. However, on a percentage basis, more customers switched from Rate 1 even when it was the lowest cost option than did customers who switched from Rate 2. This could be due to Rate 2 being the simpler of the two rates or the lower peak period price.

- The highest pre-enrollment opt-out rate was in the hot climate region, followed by the moderate and cool climate regions. Opt-out rates for CARE/FERA and Non-CARE/FERA populations varied by climate region and did not have a consistenttrend.

- SDG&E proactively contacted customers who were identified as likely to experience bill increases of greater than 10%, or $120 annually. This outreach likely contributed to higher opt-out rates across the territory.[8]

- Customers notified through both direct mail (DM) and emails (EM) were found to be slightly more likely to opt out of the default rate (21.4%) compared to customers that only received direct mail (19.8%). Customers that only received email communication were significantly less likely to opt out than those that received direct mail only or both email and direct mail and the difference between the DM and EM channels is statistically significant. There are two possible explanations for this difference. One is that level of awareness of the default process was less for customers who only received email communications (54%) compared to customers that got direct mail only (62%) or both direct mail and email (67%). The second possible explanation for the lower opt-out rate for email only customers is that these customers were only allowed to opt-out online and they had to be enrolled in the MyAccount program to do so. Direct mail customerscould

[7] SDG&E does not default Medical Baseline customers, but they are still eligible for the rates and can remain on after defaulting and then go onto Medical Baseline.

[8] More than 12% of the hot climate region customers were in this category.

opt out using a business reply card or by calling SDG&E. These differences in opt-out channels almost certainly explain part of the lower opt out rate for email only customers.

- Customers in the DM sub-population that were provided rate comparisons at the seasonal and annual level were slightly more likely to opt-out of the default rate compared to customers that received annual rate comparisons or annual and monthly rate comparisons. The differences were statistically significant and equal to about two percentage points. Providing differing rate comparison information to customers in the EM sub-population did not yield statistically significant differences in overall opt-out rates.

- In the DM sub-population, customers who received 3 rate comparisons were over two percentage points more likely to opt out of their default rate compared to customers who received 4 rate comparisons in their notification materials. This difference was statistically significant. In the EM sub-population, opt-out rates were nearly identical for the two rate comparison types.

- Post-enrollment opt-out rates were very small and fell between 0.8% and 1.7% for CARE/FERA and Non-CARE/FERA customers in all climate regions. This indicates the vast majority of customers stay on a TOU rate once they are enrolled.

II. 2 Introduction

In Decision 15-07-001, the California Public Utilities Commission (CPUC or the Commission) ordered California's three investor owned utilities (IOUs) to conduct certain "pilot" programs and studies of residential Time-of-Use (TOU) electric rate designs (TOU Pilots and Studies) beginning in 2016, and to file applications no later than January 1, 2018 proposing default TOU rates for residential electric customers. The IOUs were also directed to form a working group (TOU Working Group) to address issues regarding the TOU pilots and to hire one or more qualified independent consultants to assist with the design and implementation of the TOU Pilots and Studies. The TOU Working Group (WG) was comprised of 37 entities and included almost 100 people. Nexant, Inc. was engaged as the independent consultant.

Although the primary focus of the TOU pilots was to provide insights that would guide default implementation, customers were not allowed to be defaulted onto TOU rates prior to January 2018. As such, in 2016, the IOUs implemented pilots based on opt-in enrollment. The pilots, based on a "pay-to-play" randomized control trial,[9] were designed in a way intended to be more reflective of opt-out enrollment conditions. The pilot design and results from these pilots are documented in a number of reports and insights from these pilots were used to guide the design of the default pilots that are the focus of this evaluation.[10]

In late 2016, Nexant worked with the TOU Working Group to develop designs for the default pilots. The design report[11] was used as input to Advice Letter filings by SDG&E and the two other IOUs. On December 16, 2016 SDG&E submitted Advice Letter 3020-E[12] detailing the proposal for the default TOU pilot. Based on direction received during the Prehearing Conference on February 6, 2017, SDG&E submitted Advice Letter 3020-E-A[13] on February 24, 2017 as a supplemental filing to provide additional information on the original Proposed Default

Time-of-Use (TOU) Pilot plan. On March 10, 2017 SDG&E filed Advice Letter 3020-E-B[14]

[9] Pay to Play refers to customers being solicited to participate in the pilot with a promise to be compensated.

[10] George, S., Sullivan, M., Potter, J., & Savage, A. (2015). Time-of-Use Pricing Opt-in Pilot Plan. *Nexant, Inc.* (hereafter referred to as the TOU Pilot Design Report).

SCE: Advice Letter 3335-E; PG&E: Advice Letter 4764-E; and SDG&E: Advice Letter 2835-E. SCE:

Resolution E-4761; PG&E: Resolution E-4762; and SDG&E: Resolution E-4769.

The First Interim Report can be found here: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442453144 Additional related documents on the CPUC website can be found here: http://www.cpuc.ca.gov/General.aspx?id=12154

The Second Interim Report is contained in two volumes, one authored by Nexant covering the load and bill impact analysis and the second, authored by Research Into Action covering the second survey.

The Nexant report can be found at the following link: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442455573 The RIA report can be found at: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442455572

The Final Report can be found here: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442457172 Additional related documents on the CPUC website can be found here: http://www.cpuc.ca.gov/General.aspx?id=12154

[11] http://regarchive.sdge.com/tm2/pdf/3020-E.pdf (See Attachment H, Appendix F, starting on Page 266 of the document)

[12] http://regarchive.sdge.com/tm2/pdf/3020-E.pdf

[13] http://regarchive.sdge.com/tm2/pdf/3020-E-A.pdf

[14] http://regarchive.sdge.com/tm2/pdf/3020-E-B.pdf

providing additional details regarding bill volatility analysis requested, along with updated budget estimates. The CPUC issued Resolution E-4848[15] on May 25, 2017 approving the pilot plans contained in Advice Letters 3020-E, 3020-E-A, and 3020-E-B and established that SDG&E's default pilot will gather information on the following objectives:

1. Assessing SDG&E's operational readiness to default large numbers of customers onto TOU rates over a short time. Relevant metrics include call volume, billing exception processing, database capabilities, tracking systems, rate change and bill processing, system enhancements, and bill protection processing.

2. Determining the impact of different marketing, education and outreach (ME&O) strategies on awareness of rate options, opt-out rates, engagement with the TOU rate and customer perceptions while on a TOU rate. Specific ME&O options examined included variation in communications channel and the type of structural bill information provided in conjunction with the default notifications, and different format and contentfor post-enrollment education materials.

3. Estimating the average peak and off-peak change in energy usage by customers enrolled on each default rate (referred to as Rate 1 and Rate 2).

4. Estimating the bill impacts for customers enrolled onto each rate.

5. Determining the opt-out rate for customers defaulted onto each rate under each

notification treatment.

6. Determining the impact of options such as programmable thermostats education, tailored messaging, and the offer of level payment plans (LPP) on customer retention on each rate as well as on load and bill impacts and customer perceptions while on their default TOU rate.

An assessment of operational readiness— objective 1— is not included in this evaluation. Survey-related metrics such as awareness, customer satisfaction, and others—objective 2— are largely being addressed through a separate contract with a survey firm. However, key findings from the surveys are included here to the extent that they help explain observed differences in load impacts, bill impacts or opt-out rates across treatments. This evaluation report focuses primarily on estimating load and bill impacts and opt-out rates for various treatments – objectives 3 through 6.

The remainder of this section summarizes the pilot design and the specific rate and other treatments included in the pilot. Section 3 provides an overview of the analysis methods that were used to estimate load and bill impacts and to analyze opt-out rates. Sections 4, 5 and 6 present the analysis results for load impacts, bill impacts and opt-out rates, respectively. Finally, key findings for objectives 3 through 6 above are presented in Section 7.

[15] http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M188/K449/188449503.PDF

2.1 Experimental Design

A key objective of any pilot or experiment is to establish a causal link between the experimental treatments (e.g., TOU rates, messaging strategy, etc.) and the outcomes of interest (e.g., load impacts, changes in bills, customer satisfaction, etc.). The best way to do this is through strict adherence to a rigorous experimental design that isolates the treatments of interest from other factors that might influence impacts of interest. To meet this standard, the pilot was designed as a randomized encouragement design (RED) experiment.[16] With an RED, different randomly selected samples of customers are offered different experimental treatments (in this case, a TOU rate or different content or messaging in the recruitment materials) and another random group of customers is not offered anything (e.g., the control group). Some who are offered the treatment take it and some do not. Because each sample is a statistical clone of the other due to the random selection (especially in this case where sample sizes are quite large), comparing the behavior of the encouraged group with that of the control group allows for an unbiased assessment of the impact of the treatment. This analysis requires a two-step process in order to isolate the impact of the encouragement (e.g., the offer of a treatment) from the treatment itself (e.g., enrolling on the TOU rate), as explained in Section 3.

In this pilot, two random samples of customers of roughly 170,000 households each were drawn. One group was assigned to treatment and the other was not offered any new rate option. Approximately 140,000 of the customers in the treatment group ultimately received default notifications (the encouragement). The primary factors underlying the difference in the initial sample size and the number of customers receiving notifications include customer churn between when the sample was drawn and when notifications were sent along with the application of screens to remove customers with specific customer characteristics.[17] Within the encouraged group, random samples of households of various sizes received different rate offers (Rate 1 or Rate 2) and varying structural bill comparisons as explained more fully in Section 2.2.

2.1.1 Pretreatment Validation

Initial validation tests comparing treatment and control customers showed that the initial control groups selected for the pilot were not statistically equivalent to the Rate 1 and Rate 2 treatment groups. These differences were not due to sampling error but resulted from the application of different screens applied to the treatment and control groups. Without pre-treatment statistical equivalence between the treatment and control groups, the RED analysis framework was no longer valid. To address this situation, SDG&E selected a revised control group for each rate from the original pool of eligible customers. Subsequent validation test showed that the revised control group for Rate 2 was statistically equivalent to the treatment group. However, the Rate 1 control group was not. As a result, Nexant developed a matched control group using a method known as propensity score matching. With propensity score matching, each treatment customer is matched to a control group customer based on similarities in observable characteristics such as load shape, location, and demographics. The matched control group customers were selected out of a larger pool of potential control group customers that have not received the treatment or encouragement. Once the matches are established, the set of matched customers

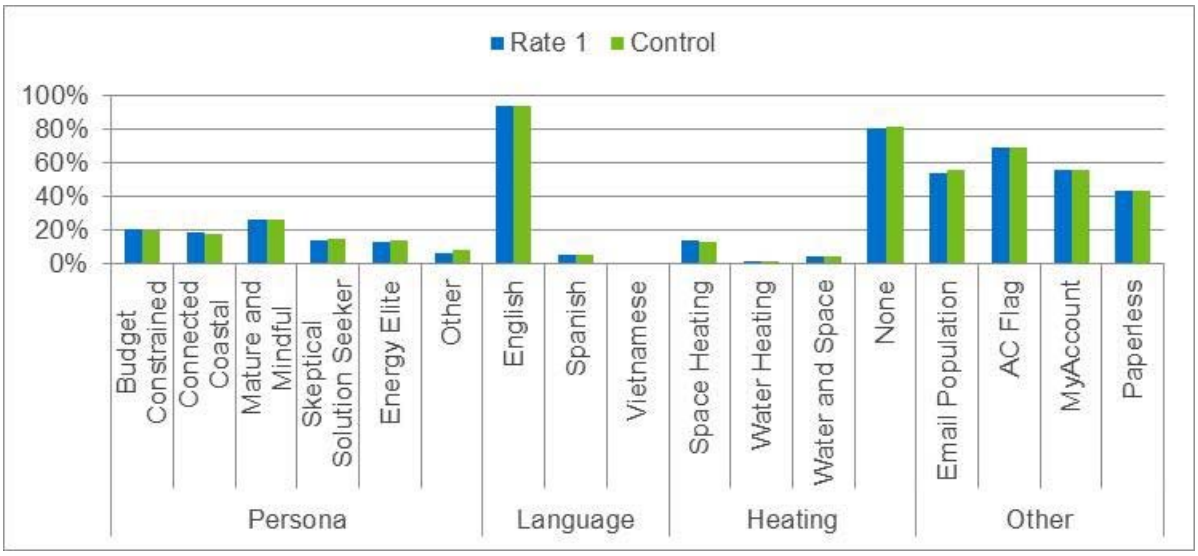
[16] As discussed below, implementation challenges led to a change in the underlying methodology for Rate 1.

[17] Documentation regarding the specific screening criteria applied was notavailable.

is then used as the control group for the analysis. More details about this procedure can be found in Section 3.

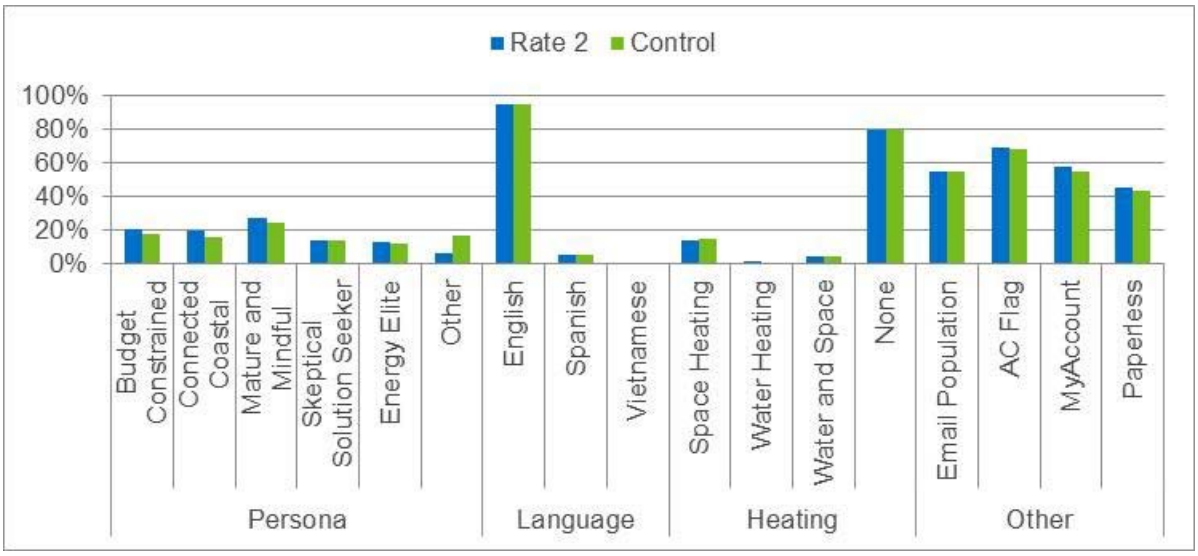
A comparison of pretreatment load shapes and other observable characteristics available for all customers shows how the final control groups compare to the treatment groups for each rate. Figure 2-1 and Figure 2-2 show a comparison of customer characteristics between each rate treatment group and the control group and Figure 2-3 and Figure 2-4 show a comparison of average weekday load shapes for the rate treatment and control groups based on pretreatment data. As seen, there is very little difference in any of these characteristics between the treatment and control groups, which ensures that the load and bill impacts and opt-out rates reported in subsequent sections of this report are unbiased and have a very high degree of internal validity.

a) *Figure 2-1: Control Group Demographics Validation – Rate 1*[18]



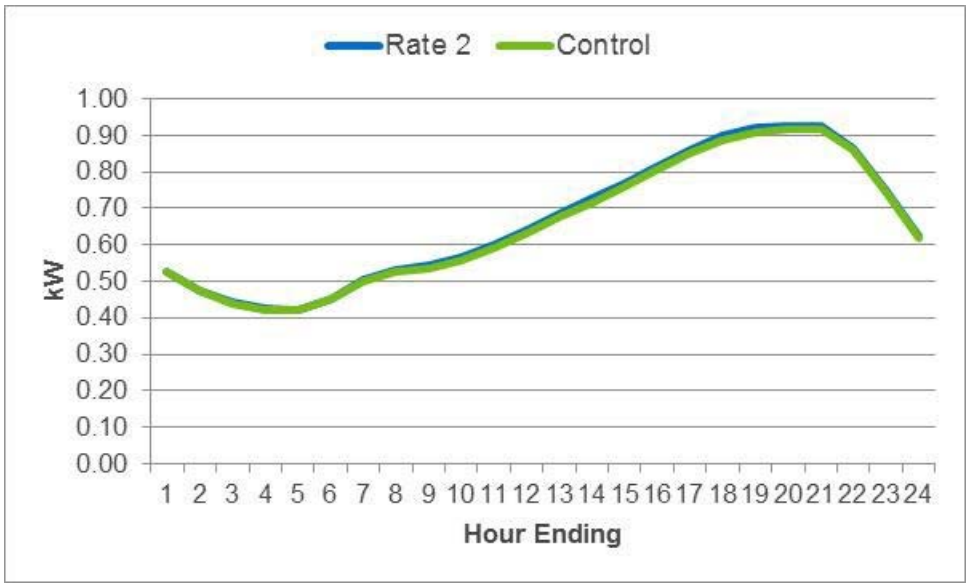
[18] For Rate 1, Nexant developed a unique control group for each day type (average weekday, average weekend, monthly system peak day) and season. The control group presented here is for the average summerweekday.

b) *Figure 2-2: Control Group Demographics Validation – Rate 2*



c) *Figure 2-3: Control Group Load Profile Validation – Rate 1*

d) Figure 2-4: Control Group Load Profile Validation – Rate 2



The pilot population includes customers in three climate regions: hot, moderate, and cool. Customers enrolled in the California Alternate Rates for Energy (CARE) and Family Electric Rate Assistance (FERA) programs in the moderate and cool climate region were eligible for default TOU but CARE/FERA customers in the hot climate region were excluded from default notification.

2.2 Pilot Treatments

2.2.1 Rate Treatments

Figure 2-5 and Figure 2-6 show the timing of the rate periods for Rates 1 and 2 and the prices[19] in each period. Rate 1 is a three-period rate in summer and winter. Prices are the same on weekdays and weekends but weekends have a longer super off-peak period relative to weekdays. The peak period in both summer and winter is from 4 to 9 PM. The rate structure for winter is the same as summer except for the months of March and April where there is an additional super off-peak period from 11 AM to 2 PM. The peak-to-super-off-peak price ratio in summer is 1.9:1 for usage above the baseline quantity. In winter, the peak and off-peak prices are very similar, as super off-peak prices are nearly 5% lower than peak-period prices. The structure of Rate 2 is simpler compared to Rate 1 as there are only two rate periods that don't vary throughout the year or on weekdays or weekends. The peak period is the same as Rate 1 (4 PM to 9 PM) and the remaining period is an off-peak period from 9 PM to 4 PM.

e) Figure 2-5: Default Pilot Rate 1

Day Type	Season	Hour Ending																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Weekday	Summer	Super Off-Peak (36¢)						Off-Peak (42¢)										Peak (67¢)							
	Winter	Super Off-Peak (39¢)						Off-Peak (40¢)										Peak (41¢)							
	March - April	Super Off-Peak (39¢)						Off-Peak (40¢)										Peak (41¢)							
Weekend	Summer	Super Off-Peak (36¢)																Peak (67¢)							
	Winter	Super Off-Peak (39¢)																Peak (41¢)							

[19] Prices do not reflect the baseline credit of $0.20 per kWh for electricity usage up to 130% of the customer's baseline allocation.

f) Figure 2-6: Default Pilot Rate 2

Day Type	Season	Hour Ending																					
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Weekday	Summer	Off-Peak (41¢)																Peak (64¢)							
	Winter	Off-Peak (40¢)																Peak (41¢)							
Weekend	Summer	Off-Peak (41¢)																Peak (64¢)							
	Winter	Off-Peak (40¢)																Peak (41¢)							

The primary analysis objectives for the rate treatments include:

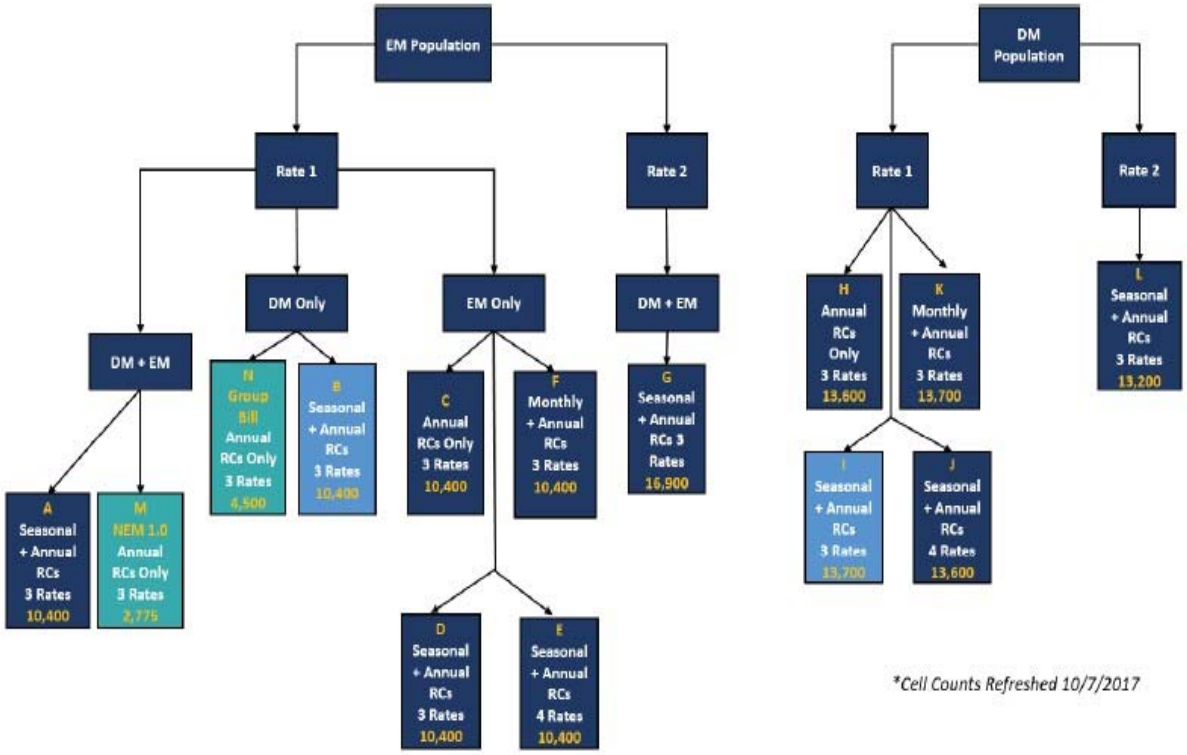
- Estimation and comparison of load impacts for Rates 1 and 2;
- Comparison of structural bill impacts for Rates 1 and 2; and
- Comparison of opt-out rates for Rates 1 and 2.

Approximately 140,000 residential customers received default notifications. Of these, nearly 113,000 customers were defaulted onto Rate 1 while the rest were defaulted onto Rate 2.

2.2.2 Notification Treatments

In addition to examining differences in load and bill impacts and opt-out rates across rate treatments, the pilot was designed to assess the impact of different notification treatments on opt-out rates. Figure 2-7 summarizes the default notification treatments that were tested in the pilot. Customers were divided into two sub-populations, referred to as the "Email" (EM) and "Direct Mail" (DM) groups. The Email population is comprised of customers who are enrolled in My Account, SDG&E's online portal. The Direct Mail population is made up of customers without My Account logins.

g) Figure 2-7: Original Default Notification Treatment Design



The primary objectives of the notification tests were to determine if opt-out rates differed when notifications were sent using different communication channels, when notifications differed with respect to differences in the granularity of structural bill comparisons across rates and also with differences in the number of rate comparisons provided.

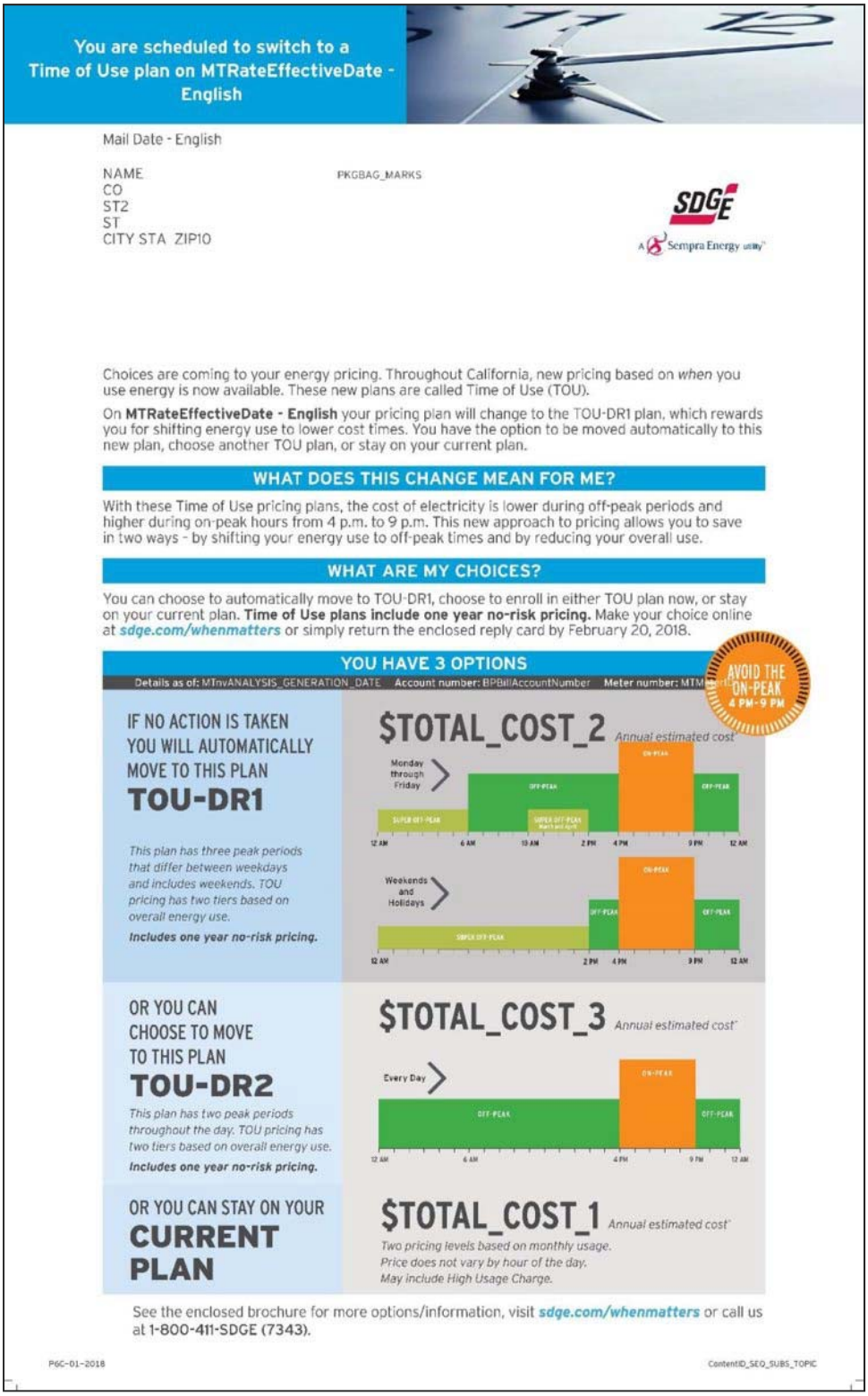
With respect to the communication channel tests, all DM customers received only DM communications but EM customers were divided into three groups, with one receiving only DM notifications, another receiving only EM notifications and the third receiving both. In addition, customers on each rate received structural bill information comparing their bills on the default rate and on the otherwise applicable tariff (OAT) on an annual basis or a combination of an annual and seasonal or annual and monthly basis. Finally, a majority of customers received a comparison of three rates (the OAT, their default rate, and the alternate pilot rate) while a smaller number received comparison with and additional rate. In addition to the information treatments outlined in Table 2-1, SDG&E proactively contacted customers who were identified as likely to experience bill increases of greater than 10%, or $120 annually. Table 2-1presents the default notification treatments in a table format, and also includes the actual number of customers in each sample cell. The customer count differences between Figure 2-7 and Table 2-1 are due to screens[17] that were applied to the initially selected treatment groups.

h) *Table 2-1: Default Notification Treatments*

Notification Cell	Sub-Population	Rate Offered	Communication Channel	Rate Comparison Granularity	Number of Rates in Comparison	Sample Size
A	Email	Rate 1	DM + EM	Seasonal + Annual	3 Rates	9,662
B			DM	Seasonal + Annual	3 Rates	9,698
C			EM	Annual	3 Rates	9,611
D				Seasonal + Annual	3 Rates	9,556
E					4 Rates	9,597
F				Monthly + Annual	3 Rates	9,550
G		Rate 2	DM + EM	Seasonal + Annual	3 Rates	15,591
H	Direct Mail	Rate 1	DM	Annual	3 Rates	12,988
I				Seasonal + Annual	3 Rates	12,991
J					4 Rates	12,935
K				Monthly + Annual	3 Rates	13,056
L		Rate 2		Seasonal + Annual	3 Rates	12,641
M	Other (Email)	Rate 1	DM + EM	Annual	3 Rates	2,666
N			DM	Annual	3 Rates	233

Figure 2-8 through Figure 2-11 contain examples of four default notification letters. Figure 2-8 is a letter with an annual rate comparison while Figure 2-9 and Figure 2-10 include annual and seasonal comparisons and Figure 2-11 includes annual and monthly comparisons. All of the examples shown below contain three rate comparisons except for Figure 2-10 which shows four comparisons. Each notification presented below is for a customer defaulted onto Rate 1, but the Rate 2 notifications are nearly identical to Figure 2-9.

i) Figure 2-8: Default Notification – Rate 1 – Annual Rate Comparison – 3 Rates



You are scheduled to switch to a Time of Use plan on MTRateEffectiveDate - English

Mail Date - English

NAME
CO
ST2
ST
CITY STA ZIP10

PKGBAG_MARKS

SDGE
A Sempra Energy utility

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available. These new plans are called Time of Use (TOU).

On **MTRateEffectiveDate - English** your pricing plan will change to the TOU-DR1 plan, which rewards you for shifting energy use to lower cost times. You have the option to be moved automatically to this new plan, choose another TOU plan, or stay on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

With these Time of Use pricing plans, the cost of electricity is lower during off-peak periods and higher during on-peak hours from 4 p.m. to 9 p.m. This new approach to pricing allows you to save in two ways - by shifting your energy use to off-peak times and by reducing your overall use.

WHAT ARE MY CHOICES?

You can choose to automatically move to TOU-DR1, choose to enroll in either TOU plan now, or stay on your current plan. **Time of Use plans include one year no-risk pricing.** Make your choice online at **sdge.com/whenmatters** or simply return the enclosed reply card by February 20, 2018.

YOU HAVE 3 OPTIONS

Details as of: MTnvANALYSIS_GENERATION_DATE Account number: BPBillAccountNumber Meter number: MTM

AVOID THE ON-PEAK 4 PM - 9 PM

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN

TOU-DR1

This plan has three peak periods that differ between weekdays and includes weekends. TOU pricing has two tiers based on overall energy use.

Includes one year no-risk pricing.

$TOTAL_COST_2 *Annual estimated cost*

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN

TOU-DR2

This plan has two peak periods throughout the day. TOU pricing has two tiers based on overall energy use.

Includes one year no-risk pricing.

$TOTAL_COST_3 *Annual estimated cost*

OR YOU CAN STAY ON YOUR

CURRENT PLAN

$TOTAL_COST_1 *Annual estimated cost*

Two pricing levels based on monthly usage.
Price does not vary by hour of the day.
May include High Usage Charge.

See the enclosed brochure for more options/information, visit **sdge.com/whenmatters** or call us at 1-800-411-SDGE (7343).

PGC-01-2018 ContentID_SEQ_SUBS_TOPIC

WHAT DO I DO NOW?

Excellent question. Right now, you have three options to choose from:

PRICING PLAN OPTIONS

A Do nothing – you'll be switched to the **TOU-DR1** plan

B Enroll now in either the **TOU-DR1** or **TOU-DR2** plan

C Select to stay on your **current plan**

1 YEAR NO RISK PRICING

You can try a new TOU pricing plan risk-free for up to one year. If you end up spending more than you did on your current plan, you'll receive a bill credit for the difference.

You have up to 12 months of bill protection.

You can enroll in a new pricing plan now by going to ***sdge.com/whenmatters***. Or complete and return the enclosed reply card before February 20, 2018. The sooner you enroll, the sooner your opportunity to save.

WHAT IS THE BENEFIT OF SWITCHING TO TIME OF USE?

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering electricity can increase. By shifting some of your usage to off-peak hours, you'll help us decrease demand on the electric grid, which benefits the environment, as well as your monthly bill.

SO, DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

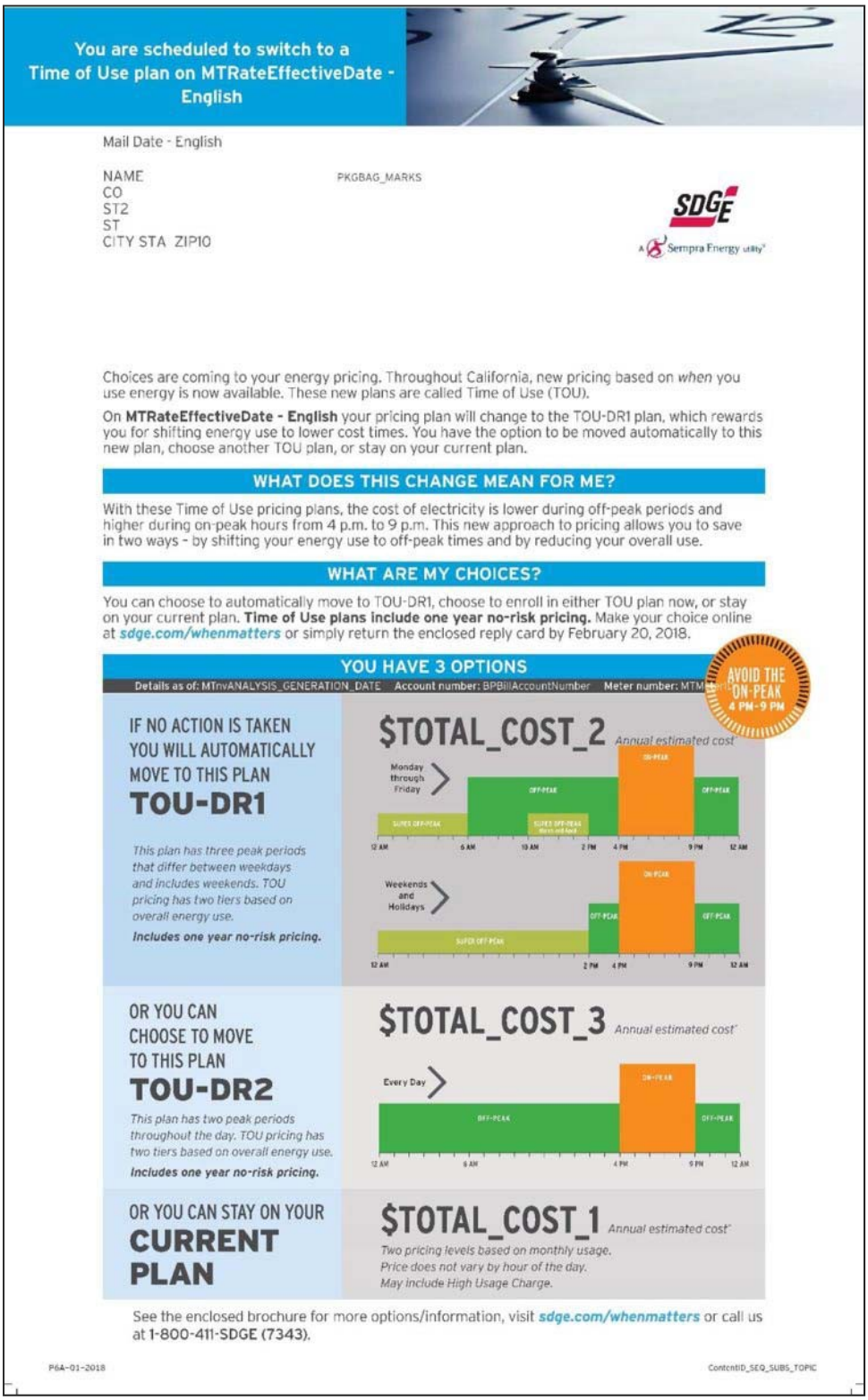
No, you do not. While shifting your energy use to off-peak hours will help lower your energy costs, even small adjustments during on-peak hours can help as well. For example, running your dishwasher before 4 p.m. or after 9 p.m. can make a difference in your bill. For other simple tips look at the enclosed brochure.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One Year No Risk Pricing is applicable for up to 12 months and requires continuous service at your current location while on TOU-DR1 or TOU-DR2.

P6C-01-2018

ContentID_SCD_SUDS_TOPIC

j) *Figure 2-9: Default Notification – Rate 1 – Annual and Seasonal Rate Comparison – 3 Rates*



You are scheduled to switch to a Time of Use plan on MTRateEffectiveDate - English

Mail Date - English

NAME
CO
ST2
ST
CITY STA ZIP10

PKGBAG_MARKS

SDGE
A Sempra Energy utility

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available. These new plans are called Time of Use (TOU).

On **MTRateEffectiveDate - English** your pricing plan will change to the TOU-DR1 plan, which rewards you for shifting energy use to lower cost times. You have the option to be moved automatically to this new plan, choose another TOU plan, or stay on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

With these Time of Use pricing plans, the cost of electricity is lower during off-peak periods and higher during on-peak hours from 4 p.m. to 9 p.m. This new approach to pricing allows you to save in two ways - by shifting your energy use to off-peak times and by reducing your overall use.

WHAT ARE MY CHOICES?

You can choose to automatically move to TOU-DR1, choose to enroll in either TOU plan now, or stay on your current plan. **Time of Use plans include one year no-risk pricing.** Make your choice online at **sdge.com/whenmatters** or simply return the enclosed reply card by February 20, 2018.

YOU HAVE 3 OPTIONS

Details as of: MTnvANALYSIS_GENERATION_DATE Account number: BPBillAccountNumber Meter number: MTM

AVOID THE ON-PEAK 4 PM - 9 PM

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN

TOU-DR1

This plan has three peak periods that differ between weekdays and includes weekends. TOU pricing has two tiers based on overall energy use.

Includes one year no-risk pricing.

$TOTAL_COST_2 *Annual estimated cost*

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN

TOU-DR2

This plan has two peak periods throughout the day. TOU pricing has two tiers based on overall energy use.

Includes one year no-risk pricing.

$TOTAL_COST_3 *Annual estimated cost*

OR YOU CAN STAY ON YOUR

CURRENT PLAN

$TOTAL_COST_1 *Annual estimated cost*

Two pricing levels based on monthly usage.
Price does not vary by hour of the day.
May include High Usage Charge.

See the enclosed brochure for more options/information, visit **sdge.com/whenmatters** or call us at 1-800-411-SDGE (7343).

P6A-01-2018

ContentID_SEQ_SUBS_TOPIC

PLAN COMPARISON BY SEASON*

Estimated costs by the two seasonal periods. Prices are higher in the summer, when electricity is used the most.

	TOU-DR1 PLAN	TOU-DR2 PLAN	CURRENT PLAN
SUMMER June 1 to October 31	$Season1_ Cost		
WINTER November 1 to May 31	$Season2_ Cost		
Yearly Total	$Season_		

See the enclosed brochure for more options/information or visit ***sdge.com/whenmatters.***

WHAT DO I DO NOW?

Excellent question. Right now, you have three options to choose from:

PRICING PLAN OPTIONS

A Do nothing – you'll be switched to the **TOU-DR1** plan

B Enroll now in either the **TOU-DR1** or **TOU-DR2** plan

C Select to stay on your **current plan**

1 YEAR NO RISK PRICING

You can try a new TOU pricing plan risk-free for up to one year. If you end up spending more than you did on your current plan, you'll receive a bill credit for the difference.

You have up to 12 months of bill protection.

You can enroll in a new pricing plan now by going to ***sdge.com/whenmatters.*** Or complete and return the enclosed reply card before February 20, 2018. The sooner you enroll, the sooner your opportunity to save.

WHAT IS THE BENEFIT OF SWITCHING TO TIME OF USE?

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering electricity can increase. By shifting some of your usage to off-peak hours, you'll help us decrease demand on the electric grid, which benefits the environment, as well as your monthly bill.

SO, DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

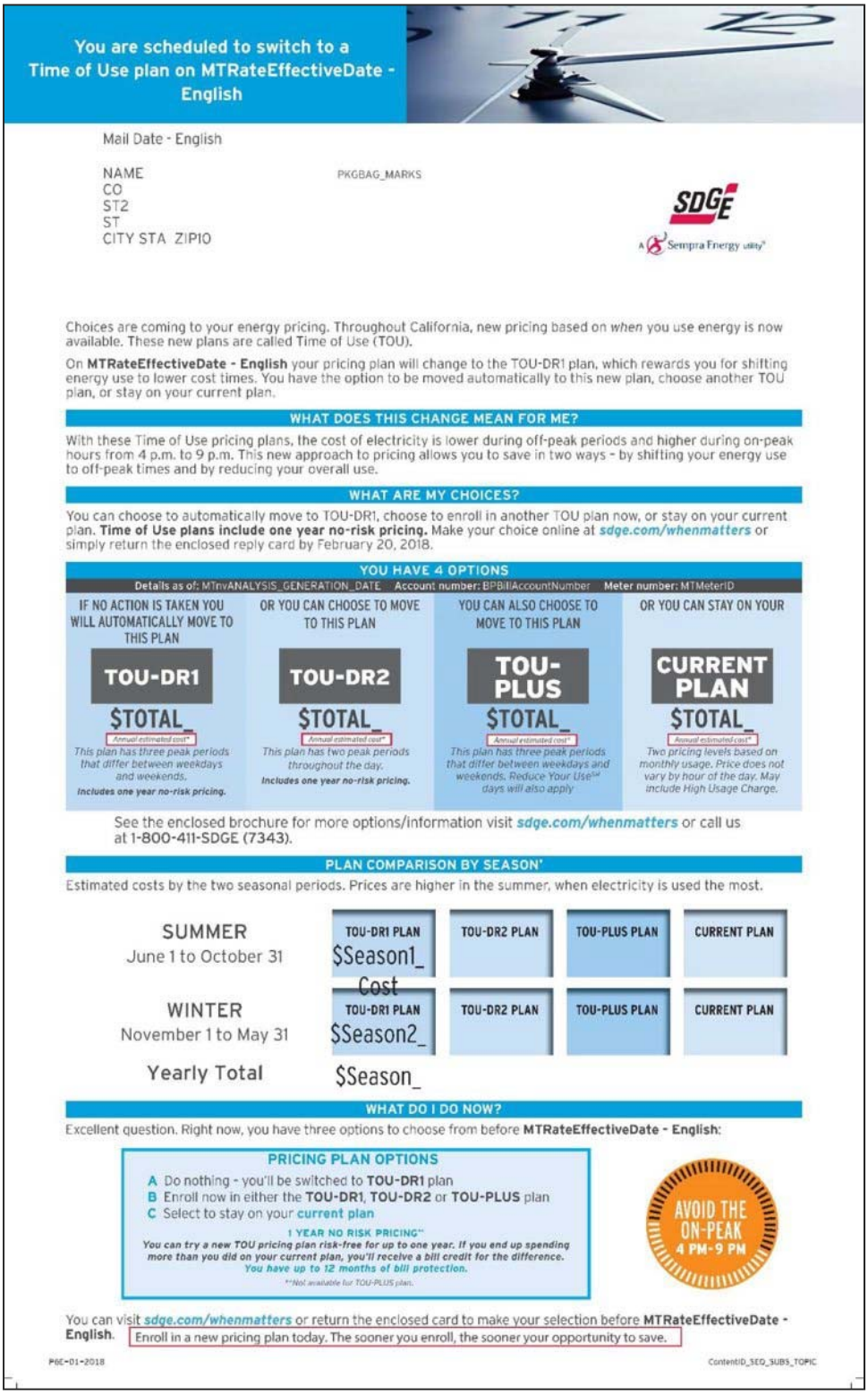
No, you do not. While shifting your energy use to off-peak hours will help lower your energy costs, even small adjustments during on-peak hours can help as well. For example, running your dishwasher before 4 p.m. or after 9 p.m. can make a difference in your bill. For other simple tips look at the enclosed brochure.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One Year No Risk Pricing is applicable for up to 12 months and requires continuous service at your current location while on TOU-DR1 or TOU-DR2.

P6A-01-2018

ContentID_SCO_SUDS_TOPIC

k) *Figure 2-10: Default Notification – Rate 1 – Annual and Seasonal Rate Comparison – 4 Rates*



You are scheduled to switch to a Time of Use plan on MTRateEffectiveDate - English

Mail Date - English

NAME
CO
ST2
ST
CITY STA ZIP10

PKGBAG_MARKS

SDGE
A Sempra Energy utility

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available. These new plans are called Time of Use (TOU).

On **MTRateEffectiveDate - English** your pricing plan will change to the TOU-DR1 plan, which rewards you for shifting energy use to lower cost times. You have the option to be moved automatically to this new plan, choose another TOU plan, or stay on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

With these Time of Use pricing plans, the cost of electricity is lower during off-peak periods and higher during on-peak hours from 4 p.m. to 9 p.m. This new approach to pricing allows you to save in two ways - by shifting your energy use to off-peak times and by reducing your overall use.

WHAT ARE MY CHOICES?

You can choose to automatically move to TOU-DR1, choose to enroll in another TOU plan now, or stay on your current plan. **Time of Use plans include one year no-risk pricing.** Make your choice online at ***sdge.com/whenmatters*** or simply return the enclosed reply card by February 20, 2018.

YOU HAVE 4 OPTIONS

Details as of: MTnvANALYSIS_GENERATION_DATE Account number: BPBillAccountNumber Meter number: MTMeterID

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN	OR YOU CAN CHOOSE TO MOVE TO THIS PLAN	YOU CAN ALSO CHOOSE TO MOVE TO THIS PLAN	OR YOU CAN STAY ON YOUR
TOU-DR1	**TOU-DR2**	**TOU-PLUS**	**CURRENT PLAN**
$TOTAL_ Annual estimated cost*	$TOTAL_ Annual estimated cost*	$TOTAL_ Annual estimated cost*	$TOTAL_ Annual estimated cost*
This plan has three peak periods that differ between weekdays and weekends. **Includes one year no-risk pricing.**	*This plan has two peak periods throughout the day.* **Includes one year no-risk pricing.**	*This plan has three peak periods that differ between weekdays and weekends. Reduce Your Use℠ days will also apply*	*Two pricing levels based on monthly usage. Price does not vary by hour of the day. May include High Usage Charge.*

See the enclosed brochure for more options/information visit ***sdge.com/whenmatters*** or call us at 1-800-411-SDGE (7343).

PLAN COMPARISON BY SEASON*

Estimated costs by the two seasonal periods. Prices are higher in the summer, when electricity is used the most.

	TOU-DR1 PLAN	TOU-DR2 PLAN	TOU-PLUS PLAN	CURRENT PLAN
SUMMER June 1 to October 31	$Season1_ Cost			
WINTER November 1 to May 31	$Season2_			
Yearly Total	$Season_			

WHAT DO I DO NOW?

Excellent question. Right now, you have three options to choose from before **MTRateEffectiveDate - English:**

PRICING PLAN OPTIONS

A Do nothing - you'll be switched to **TOU-DR1** plan
B Enroll now in either the **TOU-DR1**, **TOU-DR2** or **TOU-PLUS** plan
C Select to stay on your **current plan**

1 YEAR NO RISK PRICING**

You can try a new TOU pricing plan risk-free for up to one year. If you end up spending more than you did on your current plan, you'll receive a bill credit for the difference. You have up to 12 months of bill protection.

**Not available for TOU-PLUS plan.

AVOID THE ON-PEAK 4 PM-9 PM

You can visit ***sdge.com/whenmatters*** or return the enclosed card to make your selection before **MTRateEffectiveDate - English.** Enroll in a new pricing plan today. The sooner you enroll, the sooner your opportunity to save.

P6E-01-2018 ContentID_SEQ_SUBS_TOPIC

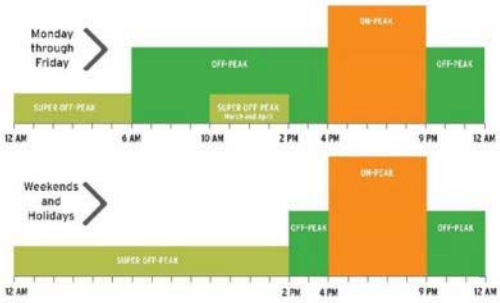
WHAT IS THE BENEFIT OF SWITCHING TO TIME OF USE?

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering electricity can increase. By shifting some of your usage to off-peak hours, you'll help us decrease demand on the electric grid, which benefits the environment, as well as your monthly bill.

WHEN IS THE PEAK ON TIME OF USE PLANS?

TOU-DR1
YOUR NEW PLAN

AVOID THE ON-PEAK 4 PM-9 PM

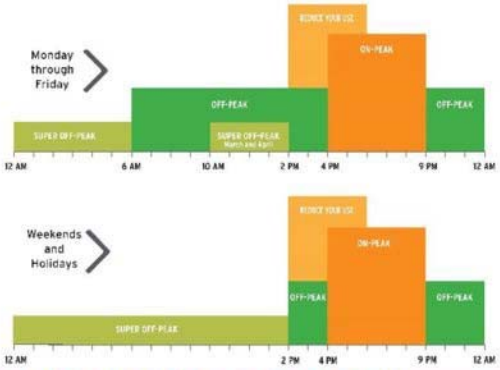


TOU-DR2
OPTIONAL PLAN

AVOID THE ON-PEAK 4 PM-9 PM

TOU-PLUS
OPTIONAL PLAN

AVOID THE ON-PEAK 4 PM-9 PM



SO, DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. While shifting your energy use to off-peak hours will help lower your energy costs, even small adjustments during on-peak hours can help as well. For example, running your dishwasher before 4 p.m. or after 9 p.m. can make a difference in your bill. For other simple tips look at the enclosed brochure.

WHAT ARE REDUCE YOUR USE DAYS?

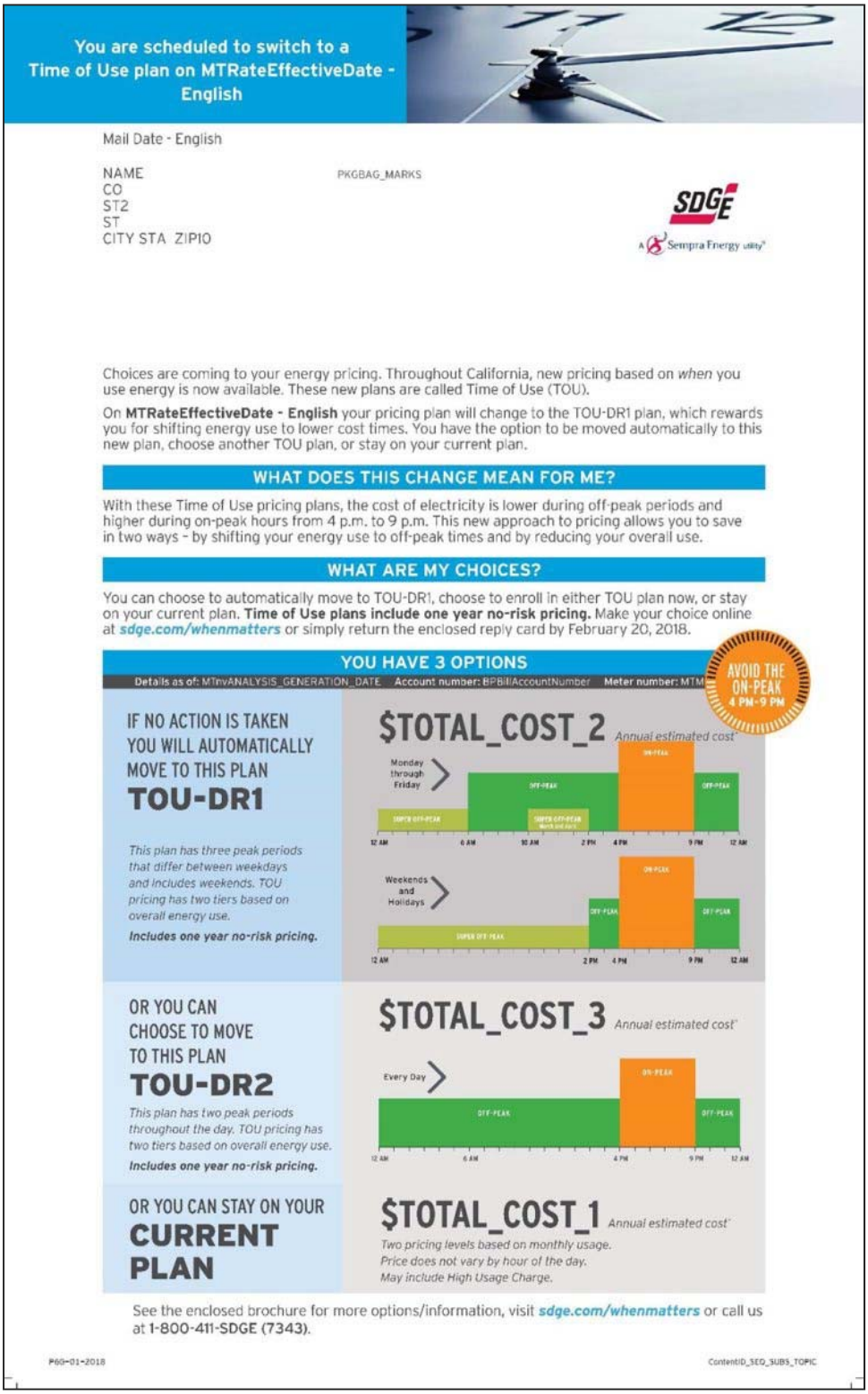
TOU-PLUS provides lower prices in exchange for your commitment to reduce electricity use during Reduce Your Use days which may be called to lessen the strain on the power grid on high energy demand days. No more than 18 days (5 on average) will be called in a calendar year. On those days, pricing from 2 p.m. to 6 p.m. will be significantly higher. You need to be able to receive Reduce Your Use alerts to participate on those days.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. TOU-PLUS estimate is based on the average number of Reduce Your Use days called over the last five years. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One Year No Risk Pricing is applicable for up to 12 months and requires continuous service at your current location while on TOU-DR1 or TOU-DR2.

P6L-U1-2018

ContentID_SLD_SUDS_TOPIC

l) *Figure 2-11: Default Notification – Rate 1 – Annual and Monthly Rate Comparison – 3 Rates*



You are scheduled to switch to a Time of Use plan on MTRateEffectiveDate - English

Mail Date - English

NAME
CO
ST2
ST
CITY STA ZIP10

PKGBAG_MARKS

SDGE
A Sempra Energy utility

Choices are coming to your energy pricing. Throughout California, new pricing based on *when* you use energy is now available. These new plans are called Time of Use (TOU).

On **MTRateEffectiveDate - English** your pricing plan will change to the TOU-DR1 plan, which rewards you for shifting energy use to lower cost times. You have the option to be moved automatically to this new plan, choose another TOU plan, or stay on your current plan.

WHAT DOES THIS CHANGE MEAN FOR ME?

With these Time of Use pricing plans, the cost of electricity is lower during off-peak periods and higher during on-peak hours from 4 p.m. to 9 p.m. This new approach to pricing allows you to save in two ways - by shifting your energy use to off-peak times and by reducing your overall use.

WHAT ARE MY CHOICES?

You can choose to automatically move to TOU-DR1, choose to enroll in either TOU plan now, or stay on your current plan. **Time of Use plans include one year no-risk pricing.** Make your choice online at **sdge.com/whenmatters** or simply return the enclosed reply card by February 20, 2018.

YOU HAVE 3 OPTIONS

Details as of: MTnvANALYSIS_GENERATION_DATE Account number: BPBillAccountNumber Meter number: MTM

AVOID THE ON-PEAK 4 PM - 9 PM

IF NO ACTION IS TAKEN YOU WILL AUTOMATICALLY MOVE TO THIS PLAN

TOU-DR1

This plan has three peak periods that differ between weekdays and includes weekends. TOU pricing has two tiers based on overall energy use.

Includes one year no-risk pricing.

$TOTAL_COST_2 *Annual estimated cost*

OR YOU CAN CHOOSE TO MOVE TO THIS PLAN

TOU-DR2

This plan has two peak periods throughout the day. TOU pricing has two tiers based on overall energy use.

Includes one year no-risk pricing.

$TOTAL_COST_3 *Annual estimated cost*

OR YOU CAN STAY ON YOUR

CURRENT PLAN

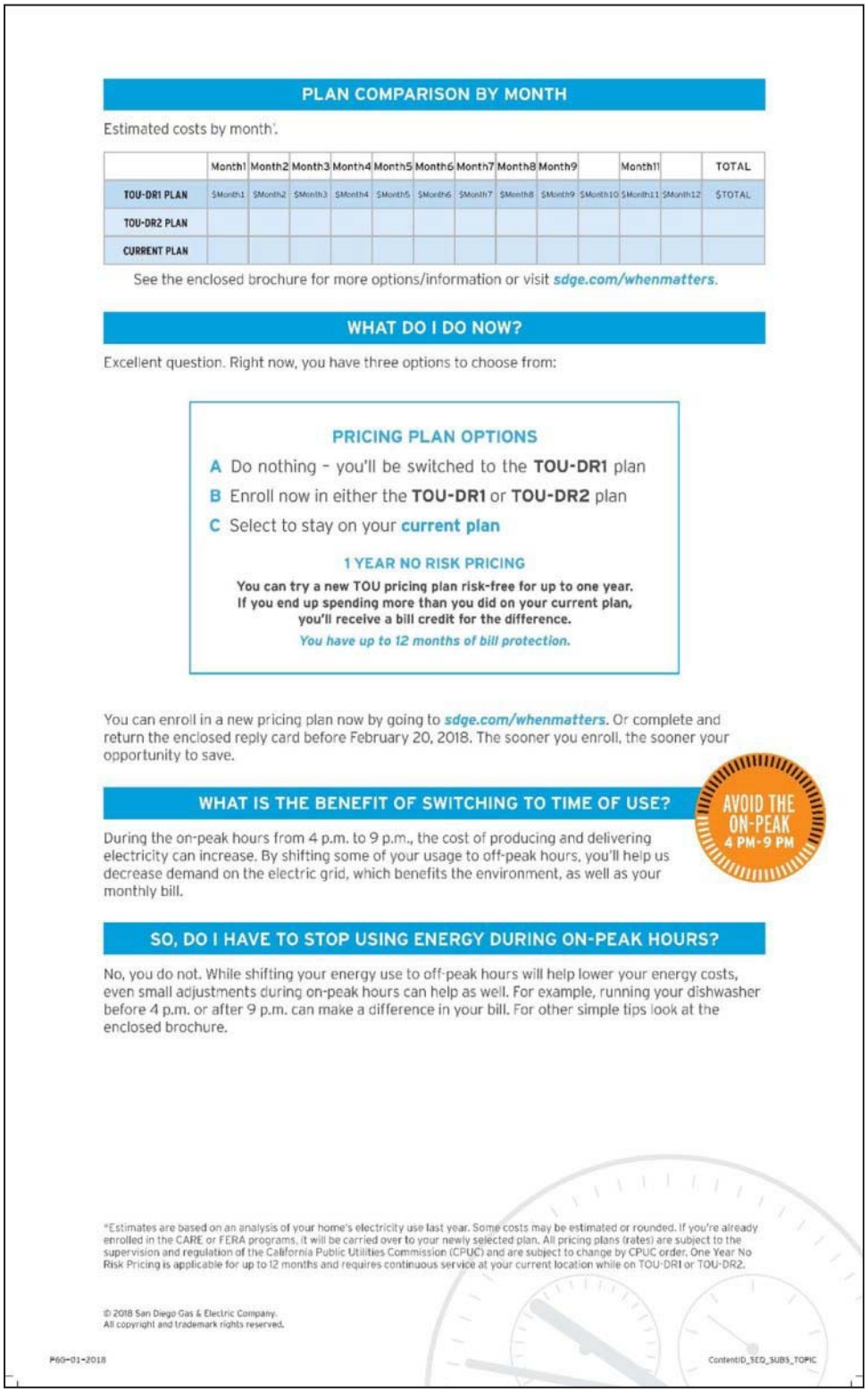
$TOTAL_COST_1 *Annual estimated cost*

Two pricing levels based on monthly usage.
Price does not vary by hour of the day.
May include High Usage Charge.

See the enclosed brochure for more options/information, visit **sdge.com/whenmatters** or call us at 1-800-411-SDGE (7343).

P6D-01-2018

ContentID_SEQ_SUBS_TOPIC



PLAN COMPARISON BY MONTH

Estimated costs by month*.

	Month1	Month2	Month3	Month4	Month5	Month6	Month7	Month8	Month9		Month11		TOTAL
TOU-DR1 PLAN	$Month1	$Month2	$Month3	$Month4	$Month5	$Month6	$Month7	$Month8	$Month9	$Month10	$Month11	$Month12	$TOTAL
TOU-DR2 PLAN													
CURRENT PLAN													

See the enclosed brochure for more options/information or visit sdge.com/whenmatters.

WHAT DO I DO NOW?

Excellent question. Right now, you have three options to choose from:

PRICING PLAN OPTIONS

A Do nothing – you'll be switched to the **TOU-DR1** plan

B Enroll now in either the **TOU-DR1** or **TOU-DR2** plan

C Select to stay on your **current plan**

1 YEAR NO RISK PRICING

You can try a new TOU pricing plan risk-free for up to one year. If you end up spending more than you did on your current plan, you'll receive a bill credit for the difference.

You have up to 12 months of bill protection.

You can enroll in a new pricing plan now by going to sdge.com/whenmatters. Or complete and return the enclosed reply card before February 20, 2018. The sooner you enroll, the sooner your opportunity to save.

WHAT IS THE BENEFIT OF SWITCHING TO TIME OF USE?

AVOID THE ON-PEAK 4 PM-9 PM

During the on-peak hours from 4 p.m. to 9 p.m., the cost of producing and delivering electricity can increase. By shifting some of your usage to off-peak hours, you'll help us decrease demand on the electric grid, which benefits the environment, as well as your monthly bill.

SO, DO I HAVE TO STOP USING ENERGY DURING ON-PEAK HOURS?

No, you do not. While shifting your energy use to off-peak hours will help lower your energy costs, even small adjustments during on-peak hours can help as well. For example, running your dishwasher before 4 p.m. or after 9 p.m. can make a difference in your bill. For other simple tips look at the enclosed brochure.

*Estimates are based on an analysis of your home's electricity use last year. Some costs may be estimated or rounded. If you're already enrolled in the CARE or FERA programs, it will be carried over to your newly selected plan. All pricing plans (rates) are subject to the supervision and regulation of the California Public Utilities Commission (CPUC) and are subject to change by CPUC order. One Year No Risk Pricing is applicable for up to 12 months and requires continuous service at your current location while on TOU-DR1 or TOU-DR2.

P60-01-2018

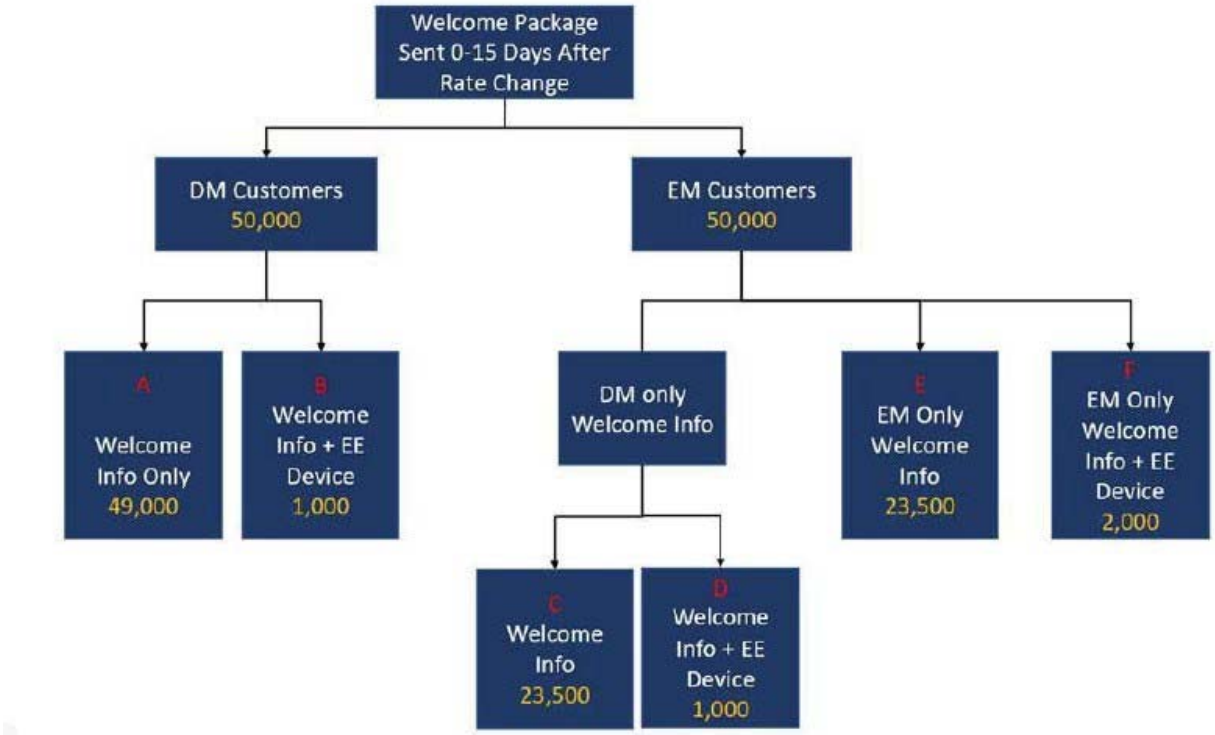
ContentID_SEQ_SUBS_TOPIC

2.2.3 Welcome Package Treatments

Figure 2-12 and Table 2-2 summarize the tests that were to be done concerning Welcome Package materials. The figure provides the original design specification, and the table provides the final customer counts in each treatment cell. The objective of these test was to determine

whether delivery channel (EM or DM) for EM customers or providing a low cost energy efficiency device (e.g., an LED light bulb)[20] along with the welcome package impacted opt-out rates, increased readership of the welcome material, increased awareness, improved customer education about rates and actions they can take, or increased customer satisfaction. Other than observing variation in opt-out rates over time, the primary metrics of interest for these tests were survey-based estimates of customer satisfaction, customer understanding of rate features and actions to take, reported behavior changes, etc. These metrics were addressed in a separate report. The welcome packages were assessed via the survey; and variation in load impacts and bill impacts across welcome package treatments was not assessed.

m) *Figure 2-12: Original Welcome Package Test Plan*



[20] SDG&E plans to test the EE device treatment during the second summer.

n) Table 2-2: Welcome Package Treatments

Welcome Package Cell	Sub-Population	Communication Channel	Welcome Package Materials	Sample Size (Rate 1)	Sample Size (Rate 2)
A	Direct Mail	DM	Welcome Info Only	40,869	10,118
B			Welcome Info + EE Device	875	0
C	Email	DM	Welcome Info Only	15,595	12,115
D			Welcome Info + EE Device	905	0
E		EM	Welcome Info Only	30,836	0
F			Welcome Info + EE Device	1,933	0

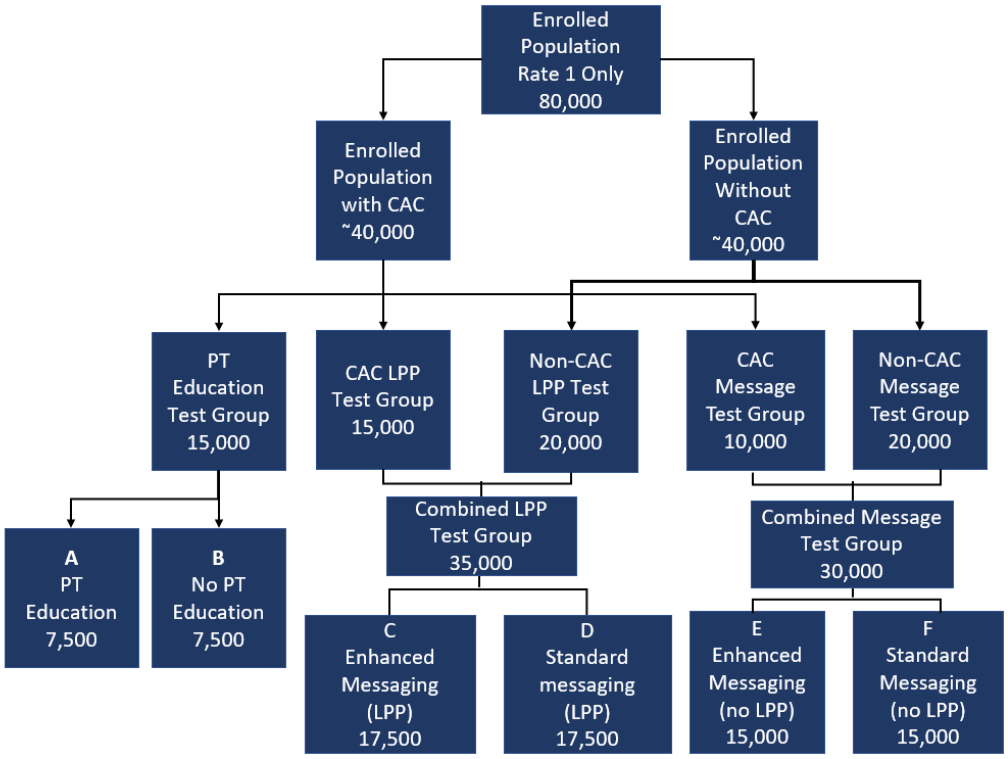
2.2.4 Post-Enrollment Treatments

Figure 2-13 summarizes the various treatments that were examined for aftercare education and outreach. Three primary treatments were tested in the post-enrollment phase:

- An educational campaign designed to encourage the use of existing technology, namely programmable thermostats (PTs), for managing energy use and bills amonghouseholds with a high likelihood of owning central air conditioning (as determined by a likelihood index that SDG&E uses to segment customers);
- An educational and outreach campaign that compared the effect of content tailored to the interests of SDG&E's recently developed personas with a campaign that did not provide tailored content; and
- A level pay plan (LPP) that would reduce bill volatility acrossmonths.

The effectiveness of tailoring the content of the educational materials was tested both with respect to recruitment onto LPP (comparing opt-out rates for test cells C and D) as well as with respect to customer satisfaction, customer understanding and customer actions, measured both through surveys (e.g., reported actions) as well as through comparisons of load impacts for those who receive tailored versus standard messaging. The aftercare plan also allowed for a determination of whether load impacts vary across groups that receive education on the use of programmable thermostats in conjunction with TOU rates (test cells A and B).

o) *Figure 2-13: Original Aftercare Treatment Design*[21]



The primary analysis objectives for the post-enrollment treatments include estimation of incremental load impacts for the following treatments:

- Programmable Thermostat Education Campaign;
- Tailored content; and
- Level Payment Plan.[22]

[21] In this diagram, "Enhanced Messaging" is equivalent to "Tailored Content". CAC is defined as customers likely to have Central Air Conditioning.

[22] Enrollment in the level pay plan was not sufficient to conduct a load impactevaluation.

Table 2-3 presents the post-enrollment treatments in a table format and also includes the final customer counts in each treatment cell.

p) Table 2-3: Post-Enrollment Treatments

Aftercare Treatment Cell	Rate	Aftercare Group	LPP Offer	Programmable Thermostat Education	Sample Size
A	Rate 1	PT Education Test Group	No LPP Offer	PT Education	9,742
B				No PT Education	9,687
C		LPP Test Group	LPP Offer	Tailored Materials	17,734
D				Non-tailored Materials	17,726
E		Combined Message Test Group	No LPP Offer	Tailored Materials	16,888
F				Non-tailored Materials	16,879

Figure 2-14 through Figure 2-18 show examples of post-enrollment postcards and letters. Figure 2-14 shows the PT education post-enrollment postcard, which includes a URL for further tips. Figure 2-15 and Figure 2-16 are examples of post-enrollment postcards with the LPP offer. The first is an example of a targeted message for the “Budget Constrained” persona and the second is the standard messaging that is not tailored for a specific customer group. Similarly, Figure 2-17 and Figure 2-18 show an example of a tailored content letter for the “Connected Coastal” persona and standard content letter without the LPP offer). The primary difference in the tailored letters is in the topics covered and the order of topics covered in the letter.

q) Figure 2-14: Post-Enrollment Treatment - PT Education

With your new Time of Use pricing plan, *when* you use energy matters.

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

AVOID THE ON-PEAK 4 PM-9 PM

If you have a programmable thermostat, consult the owner's manual to learn how to adjust the setting on your air conditioner (A/C) to use less between the hours of 4 and 9 pm.

Another solution? Consider pre-cooling your home so you can turn off your A/C during on-peak times.

For more thermostat tips, products and available rebates, and other money-saving ideas, visit the website below.

Get started now at *sdge.com/thermostattips*

SDGE
A Sempra Energy utility®

San Diego Gas & Electric®
P.O. Box 129831
San Diego, CA 92112-9831

PRSRT STD
U.S. POSTAGE
PAID
SAN DIEGO CA
PERMIT NO.
213

r) *Figure 2-15: Post-Enrollment Treatment – LPP Offer – Tailored Messaging*[23]

Surprises can be fun, unless they appear on your energy bill.

Our free Level Pay Plan gives you a more predictable energy bill that makes managing your budget easier.

AVOID THE ON-PEAK 4 PM-9 PM

With Level Pay, your monthly payment amount stays the same for three months at a time, with adjustments made quarterly based on your energy use.

When you combine Level Pay with your new Time of Use pricing plan, it's a simple way to get a more predictable bill each month.

Enroll now at *sdge.com/lpp-balance*

SDGE
A Sempra Energy utility®

San Diego Gas & Electric®
P.O. Box 129831
San Diego, CA 92112-9831

PRSRT STD
U.S. POSTAGE
PAID
SAN DIEGO CA
PERMIT NO.
213

[23] This postcard was sent to customers with the "Budget Constrained" persona. Examples for other personas can be found in Appendix A.

s) Figure 2-16: Post-Enrollment Treatment – LPP Offer – Standard Messaging

Surprises can be fun, unless they appear on your energy bill.

Our free Level Pay Plan gives you more peace of mind.

AVOID THE ON-PEAK 4 PM-9 PM

With Level Pay, your monthly payment amount stays the same for three months at a time, with adjustments made quarterly based on your energy use.

Combining Level Pay with your new Time of Use pricing plan is a great way to manage your bills. It will help even out monthly highs and lows, so you can plan your budget more easily.

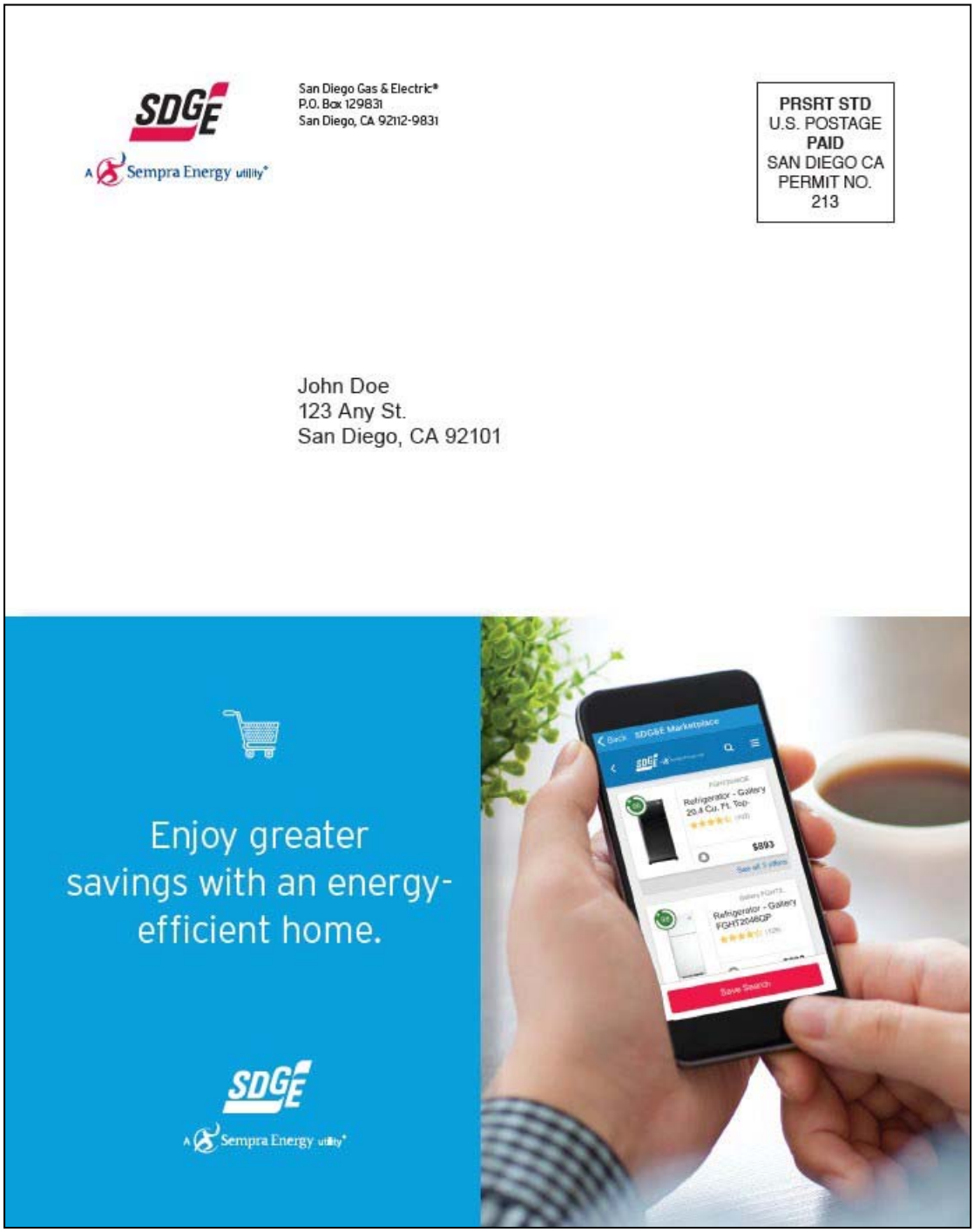
Enroll now at *sdge.com/lpp-steady*

SDGE
A Sempra Energy utility®

San Diego Gas & Electric®
P.O. Box 129831
San Diego, CA 92112-9831

PRSRT STD
U.S. POSTAGE
PAID
SAN DIEGO CA
PERMIT NO.
213

t) *Figure 2-17: Post-Enrollment Treatment – No LPP Offer – Tailored Messaging*[24]



[24] This letter was sent to customers with the "Connected Coastal" persona. Examples for other personas can be found in Appendix A.

With your new Time of Use pricing plan, *when* you use energy matters.

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

AVOID THE ON-PEAK 4 PM-9 PM

But Time of Use isn't the only way to save. Here are a few more ways you can help lower your monthly bill and benefit the environment:

Marketplace allows you to do your online shopping to find smart home devices and TVs. Get detailed product information, price comparisons, available rebates and the option to purchase directly from participating retailers.

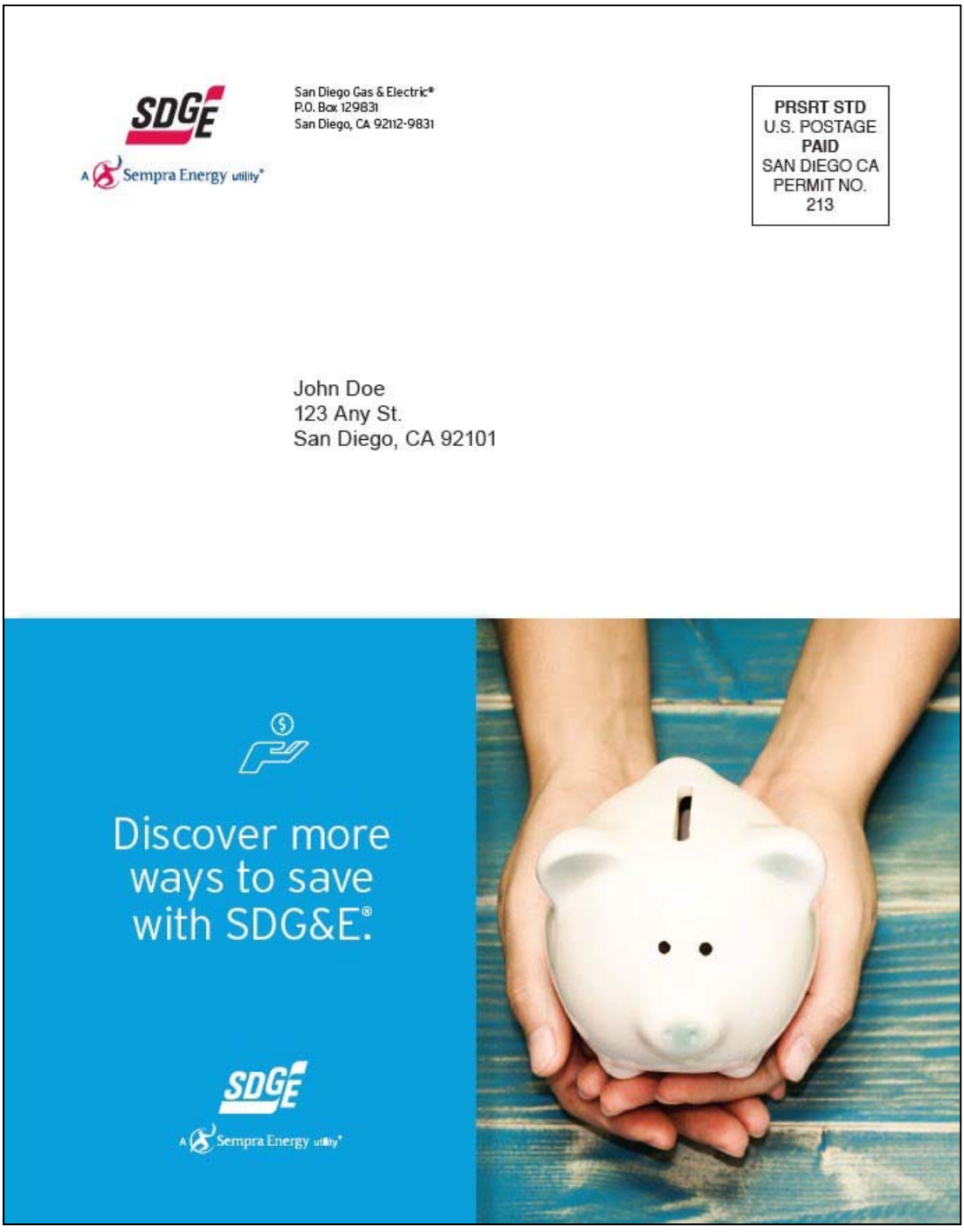
My Account is the one-stop location for your detailed energy use. Sign up for weekly alerts on energy use or complete a home energy survey for customized savings tips. Signing up takes five minutes or less (have your account number ready).

Customer Assistance programs help households with CARE bill discounts and energy-efficient home upgrades based on income or medical need.

Learn more at *sdge.com/whenmatters-environ*

SDGE
A Sempra Energy utility

u) Figure 2-18: Post-Enrollment Treatment – No LPP Offer – Standard Messaging



With your new Time of Use pricing plan, *when* you use energy matters.

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

AVOID THE ON-PEAK 4 PM-9 PM

But Time of Use isn't the only innovative way to save...

Marketplace allows you to do your online shopping to find energy-efficient home appliances. Get detailed product information, price comparisons, available rebates and the option to purchase directly from participating retailers.

My Account is the one-stop location for your detailed energy use. Sign up for weekly alerts on energy use, or complete a home energy survey for customized savings tips. And it only takes five minutes or less (have your account number ready).

Customer Assistance programs help households with CARE bill discounts and energy-efficient home upgrades based on income or medical need.

Smart Thermostat use helps control your heating and A/C and savings are available through a $50 rebate.

Learn more at *sdge.com/whenmatters-programs*

SDGE
A Sempra Energy utility

3 Methodology

This report provides load impacts for the initial summer period of the pilot (June 1 through October 31, 2018), and structural bill impacts for each of the two rate treatments tested at SDG&E for various customer segments and climate regions. The incremental load impacts for the post-enrollment treatments were also estimated. Opt-out rates for various rate and notification treatments are also reported in Section 6. This section summarizes the methodological approaches used to estimate the metrics of interest for each pilot treatment. The discussion is organized into three broad sections summarizing the approach for estimating load impacts, structural bill impacts, and opt-out rates.

3.1 Load Impacts

The estimation of load impacts by rate period and changes in annual and seasonal energy use for each pilot rate are key pilot objectives. Also of interest is how load impacts vary across climate regions and customer segments (e.g., Non-CARE/FERA customers and CARE/FERA customers) for two of the three climate regions, since CARE/FERA customers could not be defaulted in the hot climate region. The approaches used to estimate load impacts are summarized below.

3.1.1 Rate 1 Matched Control Group Methodology

As discussed in Section 2, the initial and revised control groups selected by SDG&E were not statistically equivalent to the Rate 1 treatment group during the pretreatment period. In order to have a valid comparison group for Rate 1, Nexant developed a matched control group using propensity score matching. In this procedure, a probit model is used to estimate a score for each customer based on a set of observable variables. A probit model is a regression model designed to estimate probabilities – in this case, the probability that a customer would be assigned to Rate 1 for the default TOU pilot. The propensity score can be thought of as a summary variable that includes all the relevant information in the observable variables about whether a customer would be part of the treatment group. Each customer in the Rate 1 population was matched with a customer in the eligible (but untreated) population that has the closest propensity score.

Nexant performed the match within specific customer segments: climate zone, CARE/FERA status, and My Account enrollment status. Because the hot climate zone segment is so small, it was not separated by CARE/FERA status or My Account enrollment status. A control group was developed for each season (summer and winter) and day type (average weekday, average weekend, and monthly system peak day). Matches were based on a set of variables that characterize load shape and the magnitude of electricity use on each day type for each season. Relevant variables include kW demand in the hours ending 4 AM, 8 AM, 12 PM, 4 PM, 8 PM, and 12 AM.

Each treatment customer on Rate 1 was matched to one control customer for each day type and season, but each control customer could be matched to multiple treatment customers. Load impacts for each segment were estimated using a difference-in-differences (DiD) methodology following the completion and validation of the matching assignments. This method estimates

impacts by subtracting treatment customers' loads from control customers' loads in each hour or time period after the treatments are in place and subtracts from this value the difference in loads between treatment and control customers for the same time period in the pretreatment period. Subtracting any difference between treatment and control customers prior to the treatment going into effect adjusts for any difference between the two groups that might occur due to inaccuracies in the matching algorithms.

The DiD calculation can be done arithmetically using simple averages or can be done using regression analysis. Customer fixed effects regression analysis allows each customer's mean usage to be modeled separately, which reduces the standard error of the impact estimates without changing their magnitude. Additionally, regression software allows for the calculation of standard errors, confidence intervals, and significance tests for load impact estimates that correctly account for the correlation in customer loads over time.[25] Implementing a DiD through simple arithmetic would yield the same point estimate but it would not generate confidence intervals.

A typical regression specification for estimating impacts is shown below:

$$kWh_{i,t} = \alpha_i + \delta \text{treat}_i + \gamma \text{post}_t + \beta(\text{treatpost})_{i,t} + v_i + \varepsilon_{i,t}$$

In the above equation, the variable $kW_{i,t}$ equals electricity usage during the time period of interest, which might be each hour of the day, peak or off-peak periods, daily usage or some other period. The index i refers to customers and the index t refers to the time period of interest. The estimating database would contain electricity usage data during both the pretreatment and post-treatment periods for both treatment (encouraged) and control group customers. The variable treat is equal to 1 for treatment customers and 0 for control customers, while the variable post is equal to 1 for days after the TOU rate has been implemented and a value of 0 for days during the pretreatment period. The treat post term is the interaction of treat and post and its coefficient β is a difference-in-differences estimator of the treatment effect that makes use of the pretreatment data. The primary parameter of interest is β, which provides the estimated demand impact during the relevant period. The parameter a_i is equal to mean usage for each customer for the relevant time period (e.g., hourly, peak period, etc.). The v_i term is the customer fixed effects variable that controls for unobserved factors that are time-invariant and unique to each customer

3.1.2 Rate 2 Randomized Encouragement Design

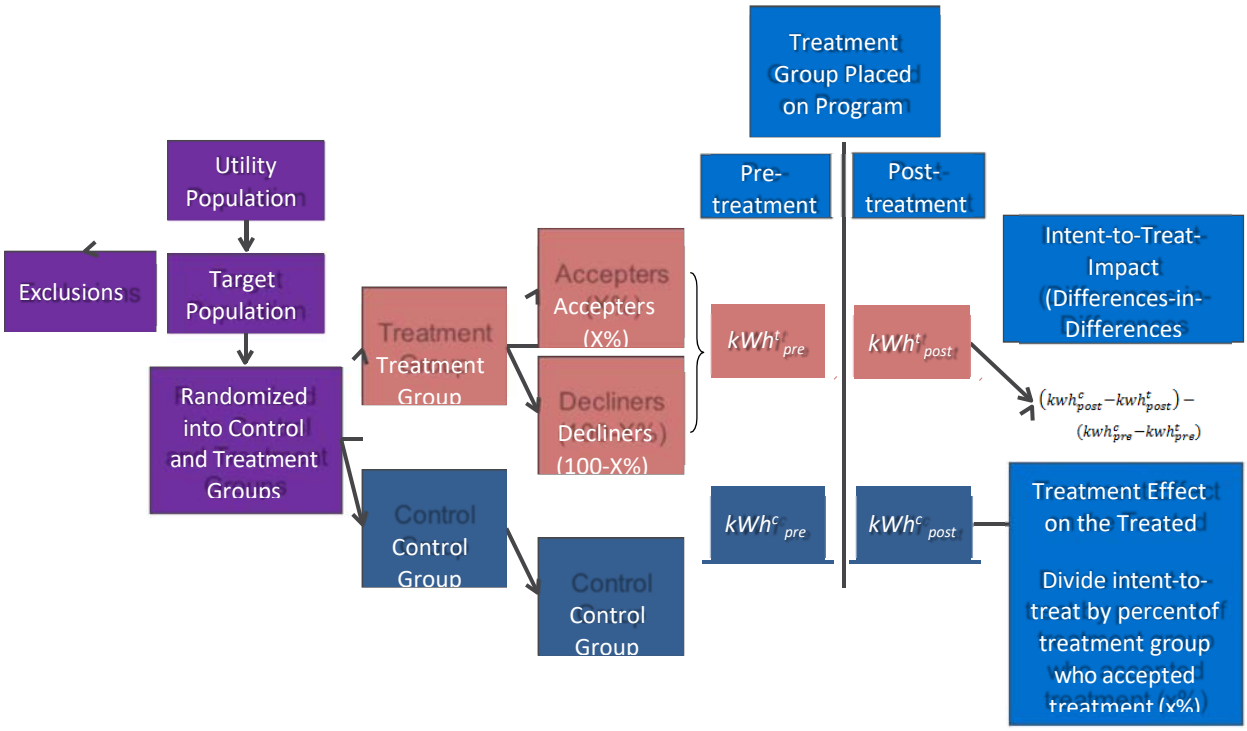
As discussed in Section 2, the pilot was designed as a randomized encouragement experimental design. Rate 1 was analyzed via a matched control group due to the pilot implementation challenges, but Rate 2 was analyzed as a RED. With a RED structure involving a single rate treatment of interest (for simplicity), the study sample is randomly divided into two groups. One group is offered the treatment and the other is not. The group offered the treatment is referred to as the encouraged group and the group not offered the treatment is referred to as the control group. Some people in the encouraged group will accept the treatment and others will not. With a RED, impacts for those who accept the treatment offer are estimated through a

[25] More accurately, they account for the correlation in regression errors within customers over time.

two-step process. In the first step, loads by time period for the encouraged group are subtracted from loads for the control group.

As stated above, the encouraged group includes both those who accept the encouragement (that is, those who enroll on the new rate) and those who do not. The estimated load impact based on these two groups of customers is referred to as the intention-to-treat (ITT) effect. In the second analysis step, the ITT estimate is divided by the percent of the encouraged group who take up the treatment offer. This value represents the impact for those who took the treatment (referred to as the impact of the treatment on the treated).[26] For Rate 2, the first stage ITT impact was estimated using the same DiD analysis used for Rate 1. A conceptual overview of the RED design and analysis for estimating load impacts is shown in Figure 3-1.

v) *Figure 3-1: Design and Analysis Schematic for a RED Experiment*



Customer attrition is an important factor to address in the load impact analysis. Customer attrition stems from four factors; customers who move (referred to as churn); customers who become ineligible after enrolling in the pilot; customers who opted out before the pilot began, and customers who dropped off the rate after enrollment because they were unhappy being on the TOU rate. Customer churn and changes in eligibility should be the same for both treatment and control customers. As such, dropping customers from both treatment and control groups due to churn and changes in eligibility does not introduce selection effects.

[26] This second stage calculation relies on an assumption that decliners are not influenced by the fact that they received an offer. If, for example, decliners shifted load simply because they received an offer to go on a new rate, load impact estimates for non- decliners would be biased upward.

3.1.3 Load Impact Reporting

The majority of load impact estimates reported in Section 4 are based on a comparison of loads between each treatment group and the control group. Estimates for customer segments and climate regions are developed by first partitioning the treatment and control groups into samples for each climate region and/or customer segment of interest and then applying the analysis method outlined above to the partitioned data. An exception to this approach occurs when examining the incremental impact of the post-enrollment treatment options summarized in Section 2.2. For this analysis, data for the two treatment groups (e.g., standard and tailored messaging treatments) are combined. The standard treatment acts as a control group for the tailored treatment and the estimated impact represents the incremental impact of the tailored treatment

The load impact estimates reported here conform to the requirements for ex post evaluation of non-event based demand response resources as indicated in California's Demand Response Load Impact Protocols.[27] These protocols require that load impacts in each hour be developed for the average weekday and monthly system peak days for each month of the year. Although not explicitly required by the protocols, load impacts for the average weekend day are also developed for each month of the year given that the TOU rates are also effective on the weekends. As this is an ex post evaluation, average weekday impacts are based on the observed customer load pooled across the weekdays in each month, and similarly for weekend days. Monthly system peak day impacts are estimated based on loads that occur on the historical monthly system peak days. Weather normalized results, such as those conducted for demand response ex ante load impacts, are not currently in scope for this evaluation. Load impacts are presented in both nominal (kWh) and proportional (%) terms.

Figure 3-2 displays an image from an Excel spreadsheet containing the output that is produced for each rate treatment, customer segment, climate region, day type, and month covered by this interim analysis. These Excel spreadsheets are available upon request through the CPUC. Pull down menus in the upper left hand corner of the spreadsheet allow users to select different customer segments, climate regions, day types (e.g., weekdays, weekends, monthly peak day) and time period (individual months or the average of June, July, August, September and October). In this written report, tables and graphs are presented that report estimated load impacts by treatment, rate period, customer segment, and day type for the summer period.

As discussed in Section 2 the experimental design and sampling were constructed so that load impacts and other metrics can be reported for selected customer segments and climate regions. For the segments around which the pilots were designed, load impacts are estimated independently by segment and climate region (for both treatment and control customers). These estimates are internally valid by virtue of the DiD analysis implemented in both the matched control group for Rate 1 and RED analysis for Rate 2.

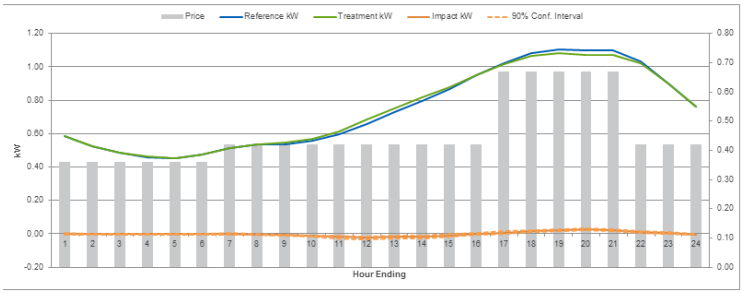
[27] http://www.calmac.org/events/FinalDecision_AttachementA.pdf

w) *Figure 3-2: Average Hourly Load Impact Estimates for Rate 1*

Rate	Rate 1
Segment	All
Time Period	Summer
Day Type	Monthly System Peak

Period	Control N	Treated	Reference kW	Treatment kW	Impact kW	90% Conf. Interval		% Impact
Peak	59,266	88,169	1.08	1.06	0.02	0.02	0.02	1.8%
Off-Peak	59,266	88,169	0.73	0.73	-0.01	-0.01	-0.01	-1.1%
Super Off-Peak	59,266	88,169	0.50	0.50	0.00	0.00	0.00	-0.3%
Day	**59,266**	**88,169**	**17.82**	**17.84**	**-0.02**	**-0.04**	**0.01**	**-0.1%**

(kwh) > >



Hour	Period	Reference kW	Treatment kW	Impact kW	90% Conf. Interval		% Impact	Price
1	Super Off-Peak	0.53	0.53	0.00	0.00	0.00	-0.2%	0.36
2	Super Off-Peak	0.52	0.52	0.00	0.00	0.00	-0.2%	0.36
3	Super Off-Peak	0.48	0.49	0.00	-0.01	0.00	-0.5%	0.36
4	Super Off-Peak	0.46	0.46	0.00	0.00	0.00	-0.4%	0.36
5	Super Off-Peak	0.45	0.46	0.00	0.00	0.00	-0.4%	0.36
6	Super Off-Peak	0.47	0.47	0.00	0.00	0.00	-0.3%	0.36
7	Off-Peak	0.51	0.51	0.00	0.00	0.00	0.0%	0.42
8	Off-Peak	0.53	0.54	0.00	-0.01	0.00	-0.7%	0.42
9	Off-Peak	0.54	0.55	-0.01	-0.01	0.00	-1.5%	0.42
10	Off-Peak	0.56	0.57	-0.01	-0.02	-0.01	-2.4%	0.42
11	Off-Peak	0.60	0.61	-0.02	-0.03	-0.01	-3.2%	0.42
12	Off-Peak	0.66	0.68	-0.02	-0.03	-0.02	-3.7%	0.42
13	Off-Peak	0.73	0.75	-0.02	-0.03	-0.01	-2.6%	0.42
14	Off-Peak	0.80	0.82	-0.02	-0.03	-0.01	-2.4%	0.42
15	Off-Peak	0.87	0.88	-0.01	-0.02	0.00	-1.2%	0.42
16	Off-Peak	0.95	0.95	0.00	-0.01	0.01	0.0%	0.42
17	Peak	1.02	1.02	0.01	0.00	0.02	0.8%	0.67
18	Peak	1.08	1.07	0.02	0.01	0.02	1.6%	0.67
19	Peak	1.11	1.08	0.02	0.01	0.03	2.0%	0.67
20	Peak	1.10	1.07	0.03	0.02	0.03	2.6%	0.67
21	Peak	1.10	1.07	0.02	0.02	0.03	2.2%	0.67
22	Off-Peak	1.03	1.02	0.01	0.00	0.01	0.9%	0.42
23	Off-Peak	0.90	0.90	0.00	0.00	0.01	0.5%	0.42
24	Off-Peak	0.76	0.76	0.00	-0.01	0.00	-0.4%	0.42

3.2 Structural Bill Impacts

The impact of TOU rates on customers' bills is an important metric of interest to stakeholders, and a primary objective of the evaluation. When customers are transitioned to TOU rates, their bills can change in two ways. The first is due simply to the change in the pricing structure, holding behavior constant. The second is due to changes in behavior as a result of the difference in price signals. The first change is known as a structural bill impact, and can be computed based on usage data prior to customers enrolling on the new rate. Factoring in the impact of behavior change in response to the new prices requires analysis of post-enrollment loads for both treatment and control customers in order to control for changes that might be due to factors other than differences in prices. Because bill impacts can vary rather significantly across seasons, and since this report is based only on usage for the summer season, this evaluation does not present behavioral impacts or total bill impacts. Those will be presented after customers have been on the new tariffs for a full year.

Structural bill impacts were estimated for the summer, winter, and annual time periods using pretreatment data for the treatment group for each rate and relevant customer segment. Annual impacts are based on monthly bill estimates from December 2016 to November 2017. This time period was selected to ensure that customer energy use was as close to the present time as possible, but wasn't significantly influenced by SDG&E's communications with customers about the pilot. Summer impacts are based on June through October 2017 and winter impacts are based on December 2016 through May 2017 and November 2017.

Average monthly bills for each treatment group customer on the OAT and TOU rate were provided by SDG&E. The difference in bills on the TOU rate and the OAT will identify whether a customer was a structural benefiter or non-benefiter, as shown in the equation below:

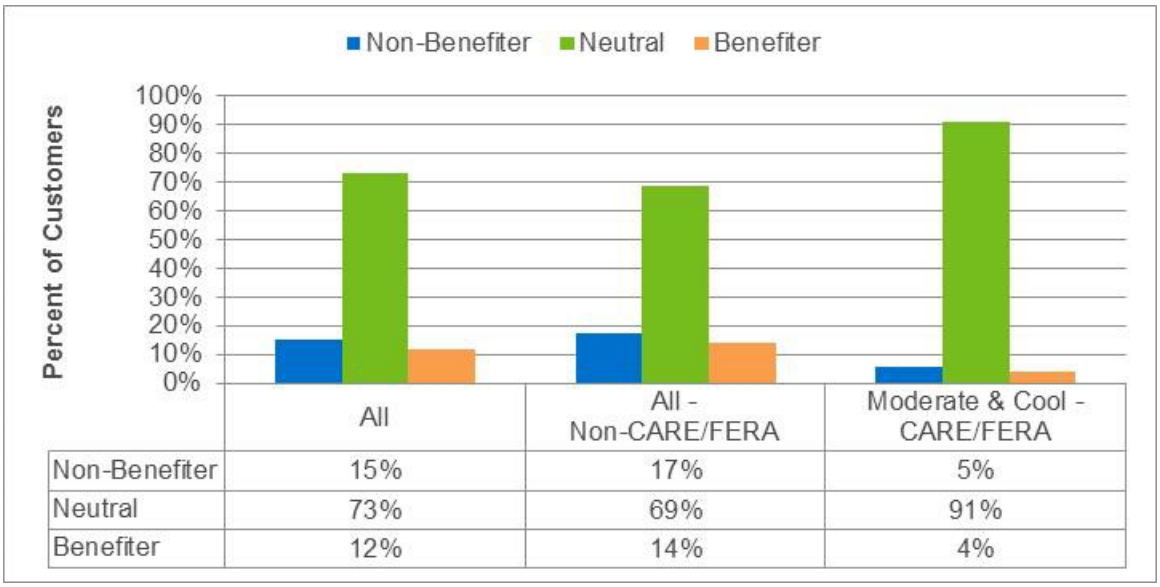
$$\text{SSSSSSSSSSSSSSSSSS BBBBSSSS IIIIIIIIIIII}$$
$$= (\text{bbBBSSSS SSSSSSSSSSSSSSSccccc wwBBSSh IISSccSSSSccSSSSIIccppSS SSuuSSuucc oopp TTTTTT SSSSSSccc})$$
$$- (\text{bbBBSSSS SSSSSSSSSSSSSSSccccc wwBBSSh IISSccSSSSccSSSSIIccppSS SSuuSSuucc oopp TTOOTT})$$

Many customers experienced structural bill impacts that were close to zero. As such, it could appear that a large share of customers were structural benefiters or non-benefiters even when bill impacts for a large number of customers are quite small. To address this, a neutral category

of +/- $3 per month was defined. The neutral category helps ensure that the assignment to the structural benefiter or non-benefiter category is more meaningful and not overly influenced by customers who would experience a difference in bills of only a few dollars.

The final results from the structural benefiter / non-benefiter analysis are presented in column graphs and shown as percentages for the each season and on an annual basis. An example is shown in Figure 3-3. For each rate and relevant segment, the percentage of customers who are non-benefiters, neutral (+/- $3), or benefiters based on their average monthly bills for the time period of interest are shown as individual columns. The three columns within each rate and segment combination total 100%, thus showing the distribution of structural benefiters and non-benefiters for each rate and segment of interest.

x) *Figure 3-3: Example of Structural Bill Impact Results (Annual, Rate 1)*



	All	All - Non-CARE/FERA	Moderate & Cool - CARE/FERA
Non-Benefiter	15%	17%	5%
Neutral	73%	69%	91%
Benefiter	12%	14%	4%

3.3 Opt-Out Analysis

Analysis of customer opt-out rates provides useful insights concerning relative customer preferences among the rate options and may also help predict what opt-out rates might be under full scale roll out of default TOU pricing. Comparisons of pre-enrollment opt-out rates across rate options are indicators of the relative preferences of customers for each rate option and comparisons across notification content and messaging within a rate option can provide insights about the relative effectiveness of these notification alternatives. Comparisons across customer segments and climate regions reflect the influence of these factors on customer acceptance.

In this report, customer attrition was measured in two key time periods: pre-enrollment and post-enrollment. A series of t-tests were used to determine if there were statistically significant differences in pairwise comparisons of pre-enrollment opt-out rates across the two TOU options and differences in the structural bill comparison information provided as part of the notification (e.g., annual versus annual plus seasonal). T-tests were also used to identify any statistically significant differences in post-enrollment opt-out rates by rate, CARE/FERA status, climate region, and post-enrollment treatment. A t-test is a statistical test that is used to determine if the

mean values of two populations differ – in this case the mean opt-out rate for the notification cells was examined. If they key output of the t-test, the p-value, is below 0.100 then the difference in opt-out rates is determined to be statistically significant at the 90% confidence level.

4 Load Impacts

This section summarizes the load impact estimates for the two rate treatments tested by SDG&E. For each rate, load impacts are reported for the peak and off-peak rate periods and for the day as a whole for the following customer segments and climate regions:

- For all customers in each climate region (hot, moderate, and cool)
- For Non-CARE/FERA customers for the pilot as a whole and for each climate region (hot, moderate, and cool) and for CARE/FERA customers in the moderate and cool climate regions.

Load impacts are reported for each rate period for the average weekday, average weekend, and the average monthly peak day for the summer months of June, through October. In addition to the above, Nexant estimated incremental load impacts for customers that received the Programmable Thermostat and Tailored Messaging treatments for each rate and for each climate region.

As discussed above, it's imperative that comparisons across climate regions are cognizant of the differences in the mix of customers across regions. That is, because CARE/FERA customers are not included in the hot climate region, comparisons of load impacts across the hot and two cooler regions reflect not only differences due to climate but also differences in the mix of customers, with both CARE/FERA and Non-CARE/FERA customers in the moderate and cool regions and only Non-CARE/FERA customers in the hot region. Similarly, comparisons across customer segments for the service territory as a whole do not just reflect differences in behavior between CARE/FERA and Non-CARE/FERA customers but also differences in the mix of customers across climate regions. The "All Utility" impacts are representative of what SDG&E can expect at the service territory level for full roll out of the rates because CARE/FERA customers will not be defaulted in the hot climate regions for full roll out. But it is not appropriate to claim that a difference of, say, 50% between CARE/FERA and Non-CARE/FERA customers at the service territory level accurately reflects a difference in behavior between the two groups of customers, all other factors held constant.

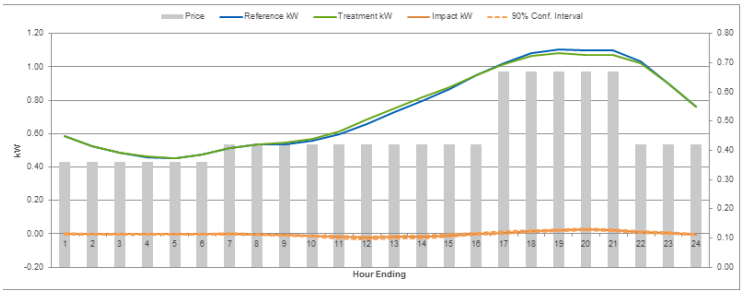
Underlying the values presented in the report are electronic tables that contain estimates for each hour of the day for each day type, segment and climate region for the summer and for each month separately. These values are contained in Excel spreadsheets that are available upon request through the CPUC. Figure 4-1 shows an example of the content of these tables for SDG&E Rate 1 for all eligible customers in the service territory. Pull down menus in the upper left hand corner allow users to select different climate regions, day types (e.g., weekdays, weekends, monthly peak day) and time period (individual months or the average of June through October).

y) Figure 4-1: SDG&E Pilot Rate 1 (Summer 2018)

Rate	Rate 1
Segment	All
Time Period	Summer
Day Type	Monthly System Peak

Period	Control N	Treated	Reference kW	Treatment kW	Impact kW	90% Conf. Interval		% Impact
Peak	59,266	88,169	1.08	1.06	0.02	0.02	0.02	1.6%
Off-Peak	59,266	88,169	0.73	0.73	-0.01	-0.01	-0.01	-1.1%
Super Off-Peak	59,266	88,169	0.50	0.50	0.00	0.00	0.00	-0.3%
Day	**59,266**	**88,169**	**17.82**	**17.84**	**-0.02**	**-0.04**	**0.01**	**-0.1%**

(kwh) > >



Hour	Period	Reference kW	Treatment kW	Impact kW	90% Conf. Interval		% Impact	Price
1	Super Off-Peak	0.53	0.53	0.00	0.00	0.00	-0.2%	0.36
2	Super Off-Peak	0.52	0.52	0.00	0.00	0.00	-0.2%	0.36
3	Super Off-Peak	0.48	0.49	0.00	-0.01	0.00	-0.5%	0.36
4	Super Off-Peak	0.46	0.46	0.00	0.00	0.00	-0.4%	0.36
5	Super Off-Peak	0.45	0.46	0.00	0.00	0.00	-0.4%	0.36
6	Super Off-Peak	0.47	0.47	0.00	0.00	0.00	-0.3%	0.36
7	Off-Peak	0.51	0.51	0.00	0.00	0.00	0.0%	0.42
8	Off-Peak	0.53	0.54	0.00	-0.01	0.00	-0.7%	0.42
9	Off-Peak	0.54	0.55	-0.01	-0.01	0.00	-1.5%	0.42
10	Off-Peak	0.56	0.57	-0.01	-0.02	-0.01	-2.4%	0.42
11	Off-Peak	0.60	0.61	-0.02	-0.03	-0.01	-3.2%	0.42
12	Off-Peak	0.66	0.68	-0.02	-0.03	-0.02	-3.7%	0.42
13	Off-Peak	0.73	0.75	-0.02	-0.03	-0.01	-2.6%	0.42
14	Off-Peak	0.80	0.82	-0.02	-0.03	-0.01	-2.4%	0.42
15	Off-Peak	0.87	0.88	-0.01	-0.02	0.00	-1.2%	0.42
16	Off-Peak	0.95	0.95	0.00	-0.01	0.01	0.0%	0.42
17	Peak	1.02	1.02	0.01	0.00	0.02	0.8%	0.67
18	Peak	1.08	1.07	0.02	0.01	0.02	1.6%	0.67
19	Peak	1.11	1.08	0.02	0.01	0.03	2.0%	0.67
20	Peak	1.10	1.07	0.03	0.02	0.03	2.6%	0.67
21	Peak	1.10	1.07	0.02	0.02	0.03	2.2%	0.67
22	Off-Peak	1.03	1.02	0.01	0.00	0.01	0.9%	0.42
23	Off-Peak	0.90	0.90	0.00	0.00	0.01	0.5%	0.42
24	Off-Peak	0.76	0.76	0.00	-0.01	0.00	-0.4%	0.42

The remainder of this section is organized by rate treatment—that is, load impacts are presented for each relevant climate region and each customer segment for each of the two rates. Following this discussion, incremental impacts of various post-enrollment E&O treatments are presented. Finally, comparisons of load impacts across the two TOU rates are made for the peak period from 4 to 9 PM and for the average weekday as a whole.

4.1 Summary of Pilot Rates

Figure 2-5 and Figure 2-6 in Section 2 summarized the rate periods and prices for Rates 1 and 2. Importantly, the prices shown in those figures and discussed below do not reflect the baseline credit of 20¢/kWh that applies to each rate for usage below 130% of the baseline quantity.

Rate 1 has three rate periods on summer and winter weekdays. The peak period on Rate 1 is the same all year long and runs from 4 PM to 9 PM on weekdays and weekends. The off-peak and super off-peak periods are the same all year as well. On weekdays, the off-peak (or shoulder) period runs from 6 AM to 4 PM and 9 PM to midnight and the super off-peak period lasts from midnight to 6 AM. The peak to super off-peak price ratio (ignoring the baseline credit) is 1.9 to 1 in summer and the peak to super off-peak ratio is 1.1 to 1 in winter. The months of March and April have an additional super off-peak period from 10 AM to 2 PM.

The peak period for average weekends is the same as on weekdays (4 PM to 9 PM). The super off-peak period is longer for average weekends as it extends from 12 AM to 2 PM and that leaves the remaining time periods of 2 PM to 4 PM and 9 PM to 12 AM as off-peak periods.

SDG&E's Rate 2 rate structure is simpler than Rate 1 as it has two rate periods for average weekdays and average weekends during the summer and winter seasons. Rate 2 has the same peak period duration as Rate 1, from 4 PM to 9 PM, but it has a slightly lower peak price in summer months (64¢/kWh for Rate 2 versus 67¢/kWh for Rate 1) and the same peak price in winter months (41¢/). The off-peak price for Rate 2 is 41¢/kWh during the summer months which represents a peak to off-peak price ratio of 1.6 to 1.The winter season for both rates runs from is November 1 through May 31.

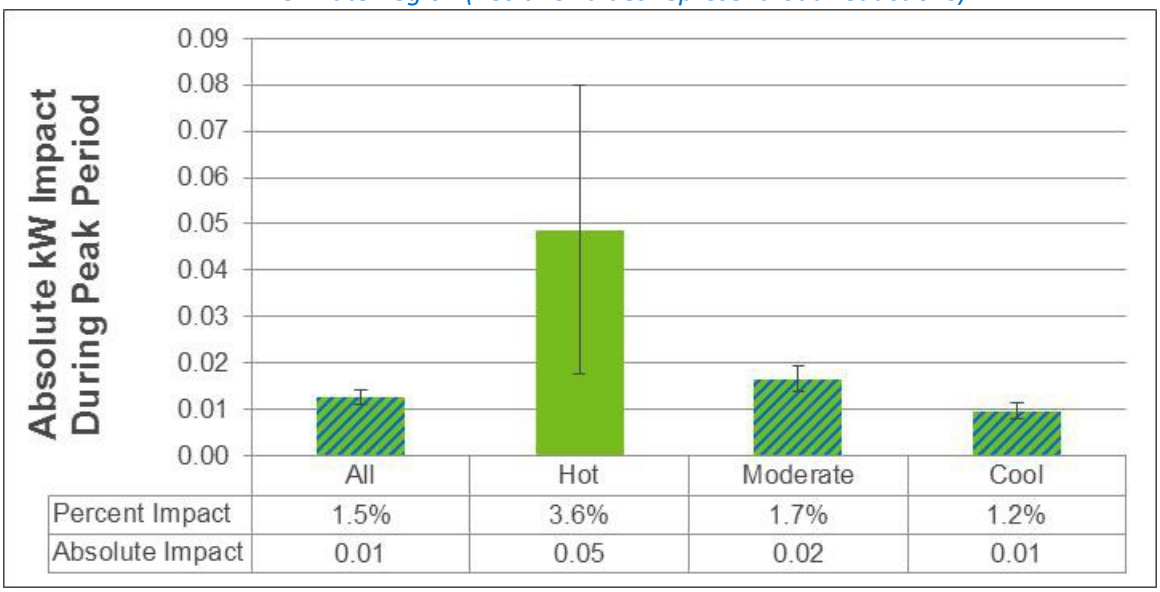
4.2 Rate 1

Figure 4-2 shows the average peak-period load reduction in absolute terms for Rate 1 for

SDG&E's service territory as a whole and for each climate region. The lines bisecting the top of each bar in the figures show the 90% confidence band for each estimate. If the confidence band includes 0, it means that the estimated load impact is not statistically different from 0 at the 90% level of confidence. If the confidence bands for two bars do not overlap, it means the observed difference in the load impacts is statistically significant. If they do overlap, it does not necessarily mean that the difference is not statistically significant.[28] In these cases, t-tests were calculated to determine whether the difference is statistically significant.[29]

Bars with blue and green stripes indicate that the segment includes a combination of CARE/FERA customers and Non-CARE/FERA customers, while solid green bars represent segments that are Non-CARE/FERA only. Solid blue bars represent segments that are CARE/FERA customers only. However, it is important to note that the "All" category includes Non-CARE/FERA customers from all climate regions but CARE/FERA customers only from the moderate and cool climate regions. As a result, the "All" estimates cannot be directly compared to the "Moderate" and "Cool" estimates.

z) *Figure 4-2: Average Peak Period Load Impacts for SDG&E Rate 1 by Climate Region (Positive values represent load reductions)*



	All	Hot	Moderate	Cool
Percent Impact	1.5%	3.6%	1.7%	1.2%
Absolute Impact	0.01	0.05	0.02	0.01

As seen in Figure 4-2, the average peak-period load impact for the service territory as a whole and for each climate region is statistically significant at the 90% level of confidence. On average, default pilot participants across SDG&E's service territory on Rate 1 reduced peak-period electricity use by 1.5%, or 0.01 kW, across the five hour peak period from 4 PM to 9 PM. Keeping in mind that differences across regions reflect both differences in climate and the presence or absence of CARE/FERA customers, the average peak-period load reduction

[28] For further discussion of this topic, see https://www.cscu.cornell.edu/news/statnews/stnews73.pdf.

[29] The test was applied at the 90% confidence level which means that a t-value exceeding 1.65 indicates statistical significance.

ranges from a high of 3.6% and 0.05 kW in the hot climate region to a low of about 1.2% and 0.01 kW in the cool climate region. The difference in absolute impacts between the moderate and cool climate regions is statistically significant but the difference in absolute impacts across the hot and moderate climate regions is not. The primary driver for the lack of statistically significant differences in load impacts between the hot climate region and the other climate regions is the small sample size in the hot climate region.

Table 4-1 shows the average percent and absolute load impacts for Rate 1 for each rate period for average weekdays, average weekends, and for the average monthly system peak day for the SDG&E service territory as a whole and for the participant population in each climate region. The percent reduction equals the load impact in absolute terms (kW) divided by the reference load. Shaded cells in the table contain load impact estimates that are not statistically significant at the 90% confidence level. The percentage and absolute values in the first row of Table 4-1 which represent the load impacts in the peak period on the average weekday, equal the values shown in Figure 4-2, discussed above.

aa) *Table 4-1: Average Hourly Load Impacts by Climate Region, Rate Period and Day Type for SDG&E Rate 1*

bb) *(Positive values represent load reductions, negative values represent load increases)*

Rate 1														
Day Type	Period	Hours	All			Hot			Moderate			Cool		
			Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact
Average Weekday	Peak	4 PM to 9 PM	0.86	0.01	1.5%	1.34	0.05	3.6%	0.98	0.02	1.7%	0.78	0.01	1.2%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.62	-0.01	-1.2%	0.84	0.00	0.0%	0.66	-0.01	-1.5%	0.59	-0.01	-1.1%
	Super Off-Peak	12 AM to 6 AM	0.48	0.00	-0.4%	0.61	0.05	8.0%	0.51	0.00	-0.3%	0.46	0.00	-0.6%
	Day	All Hours	0.63	0.00	-0.3%	0.89	0.02	2.5%	0.69	0.00	-0.3%	0.59	0.00	-0.4%
Average Weekend	Peak	4 PM to 9 PM	0.89	0.01	1.3%	1.30	0.02	1.4%	1.01	0.02	1.5%	0.81	0.01	1.2%
	Off-Peak	2 PM to 4 PM and 9 PM to 12 AM	0.77	0.00	-0.4%	1.01	0.02	1.6%	0.86	0.00	-0.6%	0.72	0.00	-0.3%
	Super Off-Peak	12 AM to 2 PM	0.56	-0.01	-1.6%	0.73	0.01	1.1%	0.59	-0.01	-1.9%	0.53	-0.01	-1.3%
	Day	All Hours	0.67	0.00	-0.5%	0.91	0.01	1.3%	0.73	0.00	-0.6%	0.63	0.00	-0.4%
Monthly System Peak	Peak	4 PM to 9 PM	1.08	0.02	1.8%	1.60	0.06	4.0%	1.27	0.03	2.3%	0.95	0.01	1.4%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.73	-0.01	-1.1%	1.03	0.00	0.1%	0.80	-0.01	-1.2%	0.67	-0.01	-1.1%
	Super Off-Peak	12 AM to 6 AM	0.50	0.00	-0.3%	0.62	0.04	5.9%	0.54	0.00	-0.3%	0.47	0.00	-0.4%
	Day	All Hours	0.74	0.00	-0.1%	1.05	0.02	2.2%	0.83	0.00	0.1%	0.68	0.00	-0.3%

* A shaded cell indicates estimate is not statistically significant

The reference loads shown in Table 4-1 represent estimates of what customers on the TOU rate would have used if they had not responded to the price signals contained in the TOU tariff. As seen in the table, average hourly usage during the peak period is roughly 0.86 kW for the SDG&E territory as a whole, and around 0.63 kW for the 24 hour average weekday. In the hot climate region the average usage during the peak period is higher (1.34 kW) than in the moderate climate region (.98 kW) or cool climate region (0.78 kW). However, the cool and moderate climate regions include CARE/FERA customers while the hot climate region does not.

The monthly system peak day estimates represent the average across the five weekdays, one in each summer month, when SDG&E's system peaked in 2018. Peak period reference loads are higher on these days than on the average weekday. In the hot climate region, both the percent and absolute impacts were largest on the average monthly system peak day.

As seen in Table 4-1, peak-period load reductions were statistically significant for all climate regions and day types, except for the hot climate region on the average weekend. In the off-peak (or shoulder period), which varied in timing and length between weekdays and weekends, load reductions were quite modest in some climate regions and day types. However, the moderate and cool climate regions produced statistically significant load increases on the average weekday. In the super off-peak period, which runs from midnight to 6 AM, for the moderate and cool regions, there were also statistically significant load increases on both the average weekday and average system peak day.

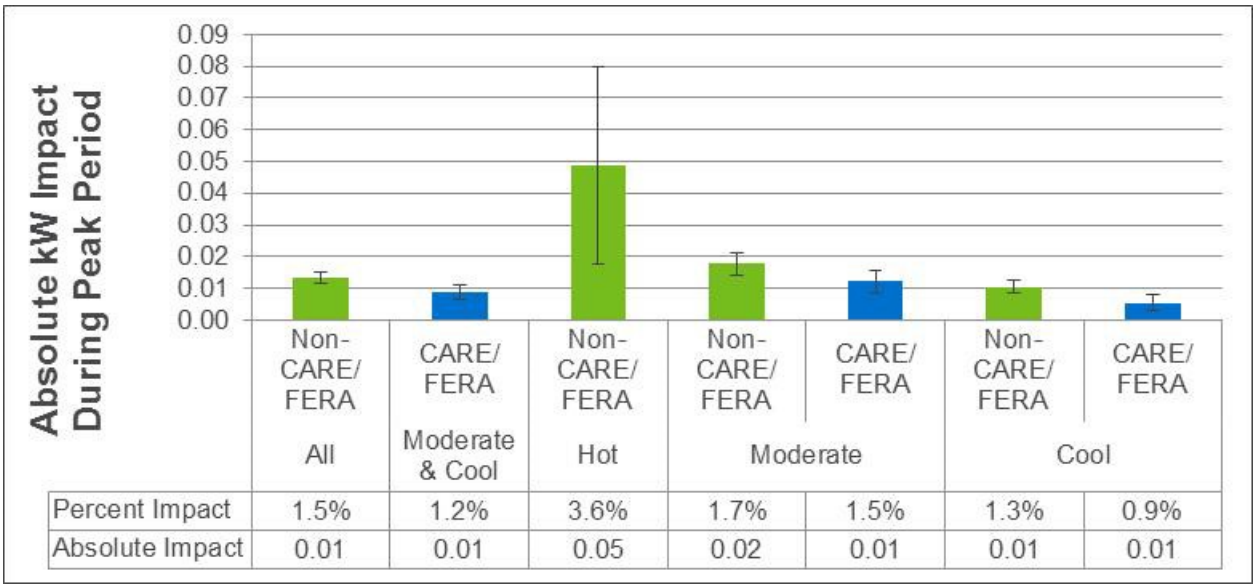
For the SDG&E service territory as a whole, there was an observed increase of 0.3% in daily electricity use on the average weekday. Similarly, on the average weekend there was an increase of 0.5% in total electricity consumption. These increases were seen in both the moderate and cool climate regions, which represent the vast majority of the SDG&E customer base. These increases are small but statistically significant and differ from the results seen in SCE's service territory, where small but statistically significant reductions in average daily usage are observed. One partial explanation for the difference in impacts between SDG&E and SCE is that survey data[30] shows that roughly equal percentages of customers at SCE indicated they either shifted load (21%) or reduced load (19%) whereas the many more customers at SDG&E (32%) said they shifted load compared with those who reported reducing load (18%).

Another possible explanation for the estimated increase in load at SDG&E is the fact that control customers were subject to very high prices if they reached the high usage charge (HUC) tier whereas treatment customers were not subject to HUC pricing. This is also true at SCE, but the HUC charge at SDG&E was 13 cents/kWh (31%) higher than at SCE. Summer 2018 was the first summer in which the HUC charge was in effect at SDG&E and there were numerous complaints about high bills and also negative articles in the press during the summer period related to the HUC pricing. A possible outcome from the HUC pricing (and the widespread publicity) is that some high use customers in the control group could have been driven to reduce usage in order to avoid reaching the HUC tier or at least to minimize usage above that threshold. This would bias the reference load downward not only for daily usage but also for peak period usage, thus reducing the estimated impacts and, perhaps, even making what would have been a small average reduction in daily usage had their not been this bias into a small increase in usage for the treatment group relative to the reference load.

Figure 4-3 shows the absolute-peak period load impacts for Rate 1 for CARE/FERA and Non-CARE/FERA customers for the service territory as a whole and for each climate region. Non-CARE/FERA segments are shaded in green while CARE/FERA segments are shaded in blue. In the combined regions and in the moderate and cool regions, both the percent and absolute load impacts were greater for Non-CARE/FERA customers than for CARE/FERA and the differences were statistically significant. The greatest load reductions came from Non-CARE/FERA customers in the hot climate region, at 3.6% and 0.05 kW. The smallest load reductions in turn are from the CARE/FERA customers in the cool climate region with 0.9% and 0.01 kW.

[30] SDG&E "Default TOU Pilot Survey 2 Report" presented to the TOU Working Group on January 28, 2019

cc) Figure 4-3: Average Peak Period Impacts for SDG&E Rate 1 by Climate Region & CARE/FERA Status
dd) (Positive values represent load reductions)



Percent Impact	1.5%	1.2%	3.6%	1.7%	1.5%	1.3%	0.9%
Absolute Impact	0.01	0.01	0.05	0.02	0.01	0.01	0.01

Table 4-2 shows the estimated load impacts for each rate period and day type for the service territory as a whole and by climate region for Non-CARE/FERA customers and Table 4-3 shows the impacts for CARE/FERA customers. The hot climate region in Table 4-3 displays NA values as there were are no CARE/FERA customers in the hot region.

For the moderate and cool climate regions, Non-CARE/FERA customers have greater peak-period demand than CARE/FERA customers. For example, on the average weekday in the moderate and cool climate regions, peak period demand is equal to 1.03 kW and 0.82 kW for Non-CARE/FERA customers and 0.80 kW and 0.58 kW for CARE/FERA customers, respectively.

CARE/FERA and Non-CARE/FERA customers both showed statistically significant load reductions during peak periods across the territory as a whole and in each climate region on the average weekday, average weekend, and monthly system peak. The exception was for Non-CARE/FERA customers in the hot climate region on the average weekend where the estimated load reduction was not statistically significant. CARE/FERA customers in the default pilot population showed statistically significant increases in off-peak and super off-peak demand for each day type, leading to overall daily increases in usage, equal to about 0.4%.

ee) Table 4-2: Average Hourly Load Impacts by Rate Period and Day Type for SDG&E Rate 1 by Climate Region – Non-CARE/FERA

ff) (Positive values represent load reductions, negative values represent load increases)

Rate 1														
Day Type	Period	Hours	All - Non-CARE/FERA			Hot - Non-CARE/FERA			Moderate - Non-CARE/FERA			Cool - Non-CARE/FERA		
			Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact
Average Weekday	Peak	4 PM to 9 PM	0.90	0.01	1.5%	1.34	0.05	3.6%	1.03	0.02	1.7%	0.82	0.01	1.3%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.64	-0.01	-1.5%	0.84	0.00	0.0%	0.68	-0.01	-1.9%	0.61	-0.01	-1.3%
	Super Off-Peak	12 AM to 6 AM	0.50	0.00	-0.4%	0.61	0.05	8.0%	0.53	0.00	-0.4%	0.48	0.00	-0.6%
	Day	All Hours	0.66	0.00	-0.4%	0.89	0.02	2.5%	0.72	0.00	-0.5%	0.62	0.00	-0.4%
Average Weekend	Peak	4 PM to 9 PM	0.94	0.01	1.4%	1.30	0.02	1.4%	1.07	0.02	1.6%	0.85	0.01	1.2%
	Off-Peak	2 PM to 4 PM and 9 PM to 12 AM	0.81	0.00	-0.5%	1.01	0.02	1.6%	0.90	-0.01	-0.7%	0.75	0.00	-0.3%
	Super Off-Peak	12 AM to 2 PM	0.58	-0.01	-1.8%	0.73	0.01	1.1%	0.62	-0.01	-2.3%	0.56	-0.01	-1.5%
	Day	All Hours	0.70	0.00	-0.6%	0.91	0.01	1.3%	0.77	-0.01	-0.8%	0.66	0.00	-0.5%
Monthly System Peak	Peak	4 PM to 9 PM	1.14	0.02	1.9%	1.60	0.06	4.0%	1.35	0.03	2.5%	1.01	0.01	1.4%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.76	-0.01	-1.3%	1.03	0.00	0.1%	0.84	-0.01	-1.3%	0.70	-0.01	-1.2%
	Super Off-Peak	12 AM to 6 AM	0.52	0.00	-0.2%	0.62	0.04	5.9%	0.55	0.00	-0.2%	0.49	0.00	-0.4%
	Day	All Hours	0.78	0.00	-0.1%	1.05	0.02	2.2%	0.87	0.00	0.1%	0.71	0.00	-0.3%

* A shaded cell indicates estimate is not statistically significant

gg) Table 4-3: Average Hourly Load Impacts by Rate Period and Day Type for SDG&E Rate 1 by Climate Region – CARE/FERA

hh) (Positive values represent load reductions, negative values represent load increases)

Rate 1														
Day Type	Period	Hours	Moderate & Cool - CARE/FERA			Hot - CARE/FERA			Moderate - CARE/FERA			Cool - CARE/FERA		
			Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact
Average Weekday	Peak	4 PM to 9 PM	0.69	0.01	1.2%	N/A	N/A	N/A	0.80	0.01	1.5%	0.58	0.01	0.9%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.51	0.00	0.2%	N/A	N/A	N/A	0.58	0.00	0.3%	0.45	0.00	0.0%
	Super Off-Peak	12 AM to 6 AM	0.39	0.00	-0.3%	N/A	N/A	N/A	0.43	0.00	-0.2%	0.35	0.00	-0.5%
	Day	All Hours	0.52	0.00	0.4%	N/A	N/A	N/A	0.59	0.00	0.5%	0.45	0.00	0.2%
Average Weekend	Peak	4 PM to 9 PM	0.68	0.01	1.2%	N/A	N/A	N/A	0.79	0.01	1.2%	0.58	0.01	1.2%
	Off-Peak	2 PM to 4 PM and 9 PM to 12 AM	0.62	0.00	0.1%	N/A	N/A	N/A	0.72	0.00	-0.1%	0.54	0.00	0.2%
	Super Off-Peak	12 AM to 2 PM	0.46	0.00	-0.4%	N/A	N/A	N/A	0.51	0.00	-0.6%	0.41	0.00	-0.2%
	Day	All Hours	0.54	0.00	0.1%	N/A	N/A	N/A	0.61	0.00	0.0%	0.47	0.00	0.3%
Monthly System Peak	Peak	4 PM to 9 PM	0.82	0.01	1.3%	N/A	N/A	N/A	0.99	0.01	1.5%	0.66	0.01	1.0%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.59	0.00	-0.5%	N/A	N/A	N/A	0.69	0.00	-0.6%	0.50	0.00	-0.4%
	Super Off-Peak	12 AM to 6 AM	0.41	0.00	-0.7%	N/A	N/A	N/A	0.47	0.00	-0.9%	0.36	0.00	-0.5%
	Day	All Hours	0.59	0.00	0.0%	N/A	N/A	N/A	0.70	0.00	0.0%	0.50	0.00	0.0%

* A shaded cell indicates estimate is not statistically significant

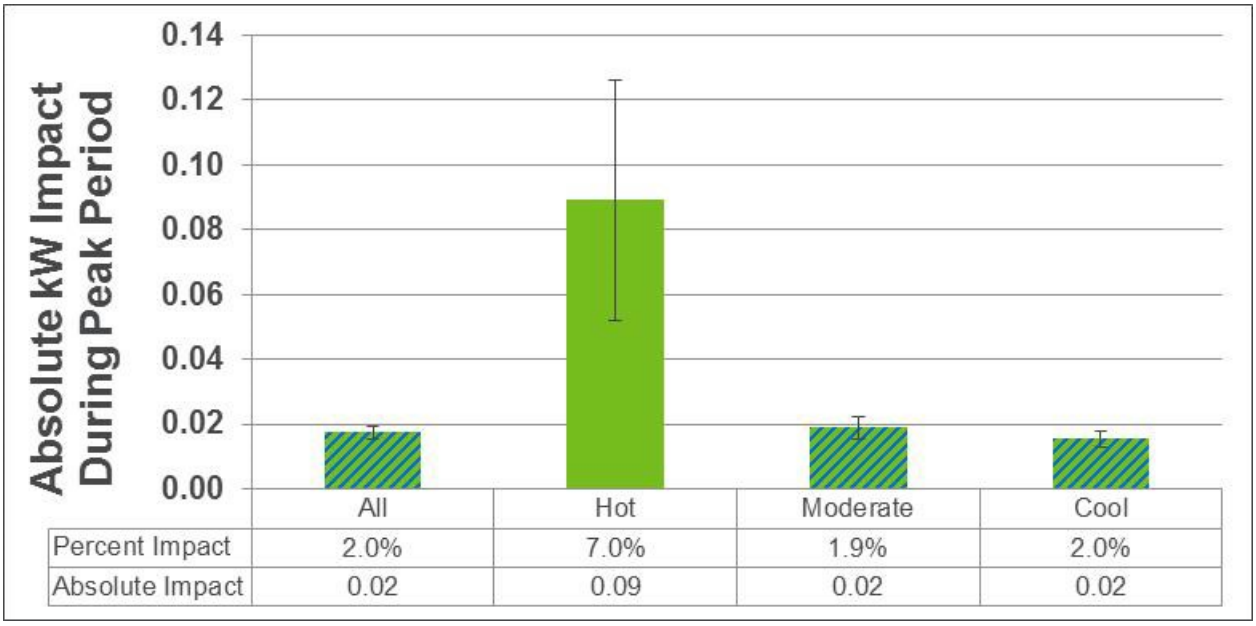
4.3 Rate 2

SDG&E's Rate 2 differs from Rate 1 as it is a two-period rate, rather than a three-period rate. Like Rate 1, the peak period is from 4 PM to 9 PM on weekdays and weekends. In summer, for

electricity usage above 130% of the baseline quantity, prices equal 64 ¢/kWh in the peak period and 41 ¢/kWh in the off-peak period. Like Rate 1, a credit of 20 ¢/kWh is applied to usage below 130% of the baseline quantity.

Figure 4-4 shows the absolute load impacts for the weekday peak period for Rate 2 for SDG&E's service territory as a whole and for each climate region. The load reductions for the SDG&E territory as a whole, 2.0% or 0.02 kW, are larger than those for Rate 1 (1.5% or 0.01 kW) and the difference in both absolute and percentage terms is statistically significant. The difference in average hourly peak-period load reductions is statistically significant in both absolute and percentage terms. Like Rate 1, customers in the hot climate region had the largest peak period load impacts of 7.0% or 0.08 kW. Impacts in the hot climate region are statistically significantly greater than those in the cool and moderate climate regions but this segment also only contains Non-CARE/FERA customers, while the moderate and cool regions include CARE/FERA customers in addition to Non-CARE/FERA customers. The load impacts in the moderate and cool climate regions were both statistically significant and nearly identical in percentage and absolute terms; 1.9% or 0.02 kW and 2.0% or 0.02 kW respectively.

ii) *Figure 4-4: Average Peak Period Load Impacts for SDG&E Rate 2 by*



Climate Region (Positive values represent load reductions)

Table 4-4 presents estimates of load impacts for all relevant rate periods and day types for Rate 2 at the service territory and climate region level. Average reference load usage was 0.87 kW at the full pilot level during the peak period on the average weekday. The highest demand estimates were observed in the hot climate region on monthly system peak days during the peak period with a reference load of 1.54 kW.

For the average weekday, average weekend, and monthly system peak days, there were statistically significant load reductions during the peak period in every climate region and at the service territory level, except for the hot region on the average weekend. Similar to Rate 1, there were off-peak load increases in the moderate and cool climate regions for the average weekday, average weekend, and monthly system peak days. This led to net daily load increases in the moderate climate region on the average weekday and average weekend.

The largest load reduction of 16.1%, or 0.25 kW, occurred in the hot climate region during the peak period on the average monthly system peak day. However, the sample size of customers enrolled on Rate 2 in SDG&E's hot climate region is very small (131 treatment customers) so the confidence bands on this estimate are wide and this load impact estimate is highly uncertain.

jj) *Table 4-4: Average Hourly Load Impacts by Climate Region, Rate Period and Day Type for SDG&E Rate 2*

kk) *(Positive values represent load reductions, negative values represent load increases)*

Rate 2													
Day Type	Period	Hours	All			Hot			Moderate			Cool		
			Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact
Average Weekday	Peak	4 PM to 9 PM	0.87	0.02	2.0%	1.27	0.09	7.0%	0.99	0.02	1.9%	0.79	0.02	2.0%
	Off-Peak	9 PM to 4 PM	0.58	-0.01	-1.0%	0.75	0.04	5.1%	0.62	-0.01	-1.6%	0.55	0.00	-0.7%
	Day	All Hours	0.64	0.00	-0.1%	0.86	0.05	5.7%	0.70	0.00	-0.5%	0.60	0.00	0.0%
Average Weekend	Peak	4 PM to 9 PM	0.91	0.02	1.8%	1.31	0.02	1.6%	1.03	0.02	1.6%	0.82	0.02	2.0%
	Off-Peak	9 PM to 4 PM	0.62	-0.01	-1.0%	0.83	0.01	1.1%	0.67	-0.01	-1.4%	0.58	0.00	-0.8%
	Day	All Hours	0.68	0.00	-0.2%	0.93	0.01	1.2%	0.75	0.00	-0.5%	0.63	0.00	0.0%
Monthly System Peak Day	Peak	4 PM to 9 PM	1.11	0.03	2.3%	1.54	0.25	16.1%	1.30	0.03	2.7%	0.97	0.02	1.7%
	Off-Peak	9 PM to 4 PM	0.66	0.00	-0.8%	0.90	0.11	12.4%	0.73	-0.01	-0.8%	0.61	-0.01	-1.0%
	Day	All Hours	0.75	0.00	0.2%	1.03	0.14	13.6%	0.85	0.00	0.3%	0.68	0.00	-0.2%

* A shaded cell indicates estimate is not statistically significant

Figure 4-5 shows the peak-period load reductions on weekdays for Non-CARE/FERA and CARE/FERA customers. Non-CARE/FERA customers in the service territory as a whole had greater percent impacts (2.2% and 0.02 kW) than the combined moderate and cool climate region for CARE/FERA (0.7% and 0.00 kW[31]) and these differences are statistically significant in both absolute and percentage terms, as seen in Figure 4-5. CARE/FERA customers also had smaller load impacts in the cool and moderate climate regions, compared to the Non-CARE/FERA segments; however, the CARE/FERA impacts were not statistically significant in the cool region.

[31] At the third decimal the impact is 0.005 kW

ll) Figure 4-5: Average Peak Period Impacts for SDG&E Rate 2 by Climate Region & CARE/FERA Status
mm) (Positive values represent load reductions)

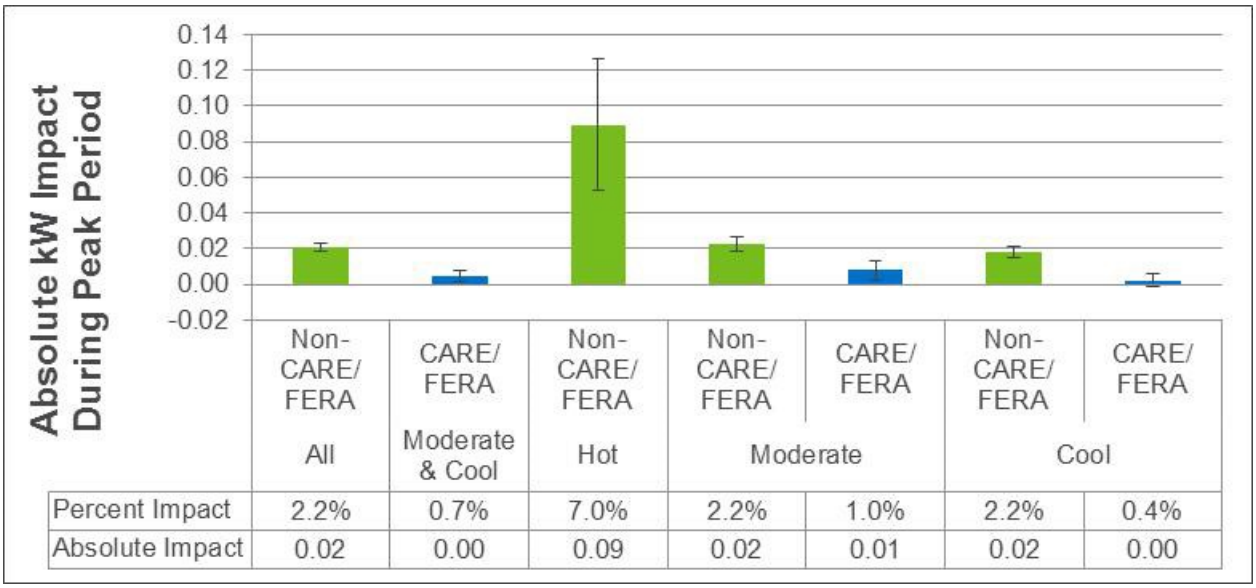


Table 4-5 and Table 4-6 show the load impacts for each rate period and day type for Rate 2 at the service territory level and across climate regions for Non-CARE/FERA and CARE/FERA customers, respectively. Non-CARE/FERA customers had higher average load and load reductions during peak periods across all climate regions on average weekdays, weekends and monthly system peak days.

Non-CARE/FERA customers had statistically significant load increases during the off-peak periods for the service territory as a whole and for the moderate and cool climate regions on average weekdays, weekends, and monthly system peak days. This was true for CARE/FERA customers in the combined cool and moderate climate regions as well on average weekdays and weekends. At the service territory level and in the moderate climate region, Non-CARE/FERA customers showed statistically significant daily load increases. However, the impacts on daily electricity usage were not statistically significant for CARE/FERA customers.

nn) *Table 4-5: Average Hourly Load Impacts by Rate Period and Day Type for SDG&E Rate 2 by Climate Region – Non-CARE/FERA*

oo) (Positive values represent load reductions, negative values represent load increases)

Rate 2														
Day Type	Period	Hours	All - Non-CARE/FERA			Hot - Non-CARE/FERA			Moderate - Non-CARE/FERA			Cool - Non-CARE/FERA		
			Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact
Average Weekday	Peak	4 PM to 9 PM	0.91	0.02	2.2%	1.27	0.09	7.0%	1.04	0.02	2.2%	0.83	0.02	2.2%
	Off-Peak	9 PM to 4 PM	0.60	-0.01	-1.1%	0.75	0.04	5.1%	0.64	-0.01	-1.9%	0.57	0.00	-0.7%
	Day	All Hours	0.66	0.00	-0.1%	0.86	0.05	5.7%	0.72	0.00	-0.7%	0.63	0.00	0.1%
Average Weekend	Peak	4 PM to 9 PM	0.95	0.02	1.9%	1.31	0.02	1.6%	1.09	0.02	1.6%	0.86	0.02	2.2%
	Off-Peak	9 PM to 4 PM	0.65	-0.01	-1.1%	0.83	0.01	1.1%	0.70	-0.01	-1.7%	0.61	0.00	-0.7%
	Day	All Hours	0.71	0.00	-0.2%	0.93	0.01	1.2%	0.78	-0.01	-0.7%	0.66	0.00	0.1%
Monthly System Peak Day	Peak	4 PM to 9 PM	1.16	0.03	2.7%	1.54	0.25	16.1%	1.38	0.04	3.1%	1.02	0.02	2.0%
	Off-Peak	9 PM to 4 PM	0.69	-0.01	-0.8%	0.90	0.11	12.4%	0.76	-0.01	-1.0%	0.64	-0.01	-1.1%
	Day	All Hours	0.79	0.00	0.3%	1.03	0.14	13.6%	0.89	0.00	0.3%	0.72	0.00	-0.2%

* A shaded cell indicates estimate is not statistically significant

pp) *Table 4-6: Average Hourly Load Impacts by Rate Period and Day Type for SDG&E Rate 2 by Climate Region –CARE/FERA*

qq) (Positive values represent load reductions, negative values represent load increases)

Rate 2														
Day Type	Period	Hours	Moderate & Cool - CARE/FERA			Hot - CARE/FERA			Moderate - CARE/FERA			Cool - CARE/FERA		
			Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact	Ref. kW	Impact kW	% Impact
Average Weekday	Peak	4 PM to 9 PM	0.69	0.00	0.7%	N/A	N/A	N/A	0.81	0.01	1.0%	0.58	0.00	0.4%
	Off-Peak	9 PM to 4 PM	0.47	0.00	-0.3%	N/A	N/A	N/A	0.54	0.00	-0.2%	0.41	0.00	-0.5%
	Day	All Hours	0.52	0.00	0.0%	N/A	N/A	N/A	0.59	0.00	0.1%	0.45	0.00	-0.2%
Average Weekend	Peak	4 PM to 9 PM	0.69	0.01	1.0%	N/A	N/A	N/A	0.81	0.01	1.5%	0.58	0.00	0.3%
	Off-Peak	9 PM to 4 PM	0.50	0.00	-0.3%	N/A	N/A	N/A	0.58	0.00	0.1%	0.43	0.00	-0.8%
	Day	All Hours	0.54	0.00	0.0%	N/A	N/A	N/A	0.63	0.00	0.5%	0.46	0.00	-0.5%
Monthly System Peak Day	Peak	4 PM to 9 PM	0.84	0.01	0.7%	N/A	N/A	N/A	1.02	0.01	1.2%	0.66	0.00	0.2%
	Off-Peak	9 PM to 4 PM	0.53	0.00	0.1%	N/A	N/A	N/A	0.62	0.00	0.2%	0.45	0.00	0.3%
	Day	All Hours	0.60	0.00	0.3%	N/A	N/A	N/A	0.71	0.00	0.5%	0.49	0.00	0.3%

* A shaded cell indicates estimate is not statistically significant

4.4 Post-enrollment Treatments

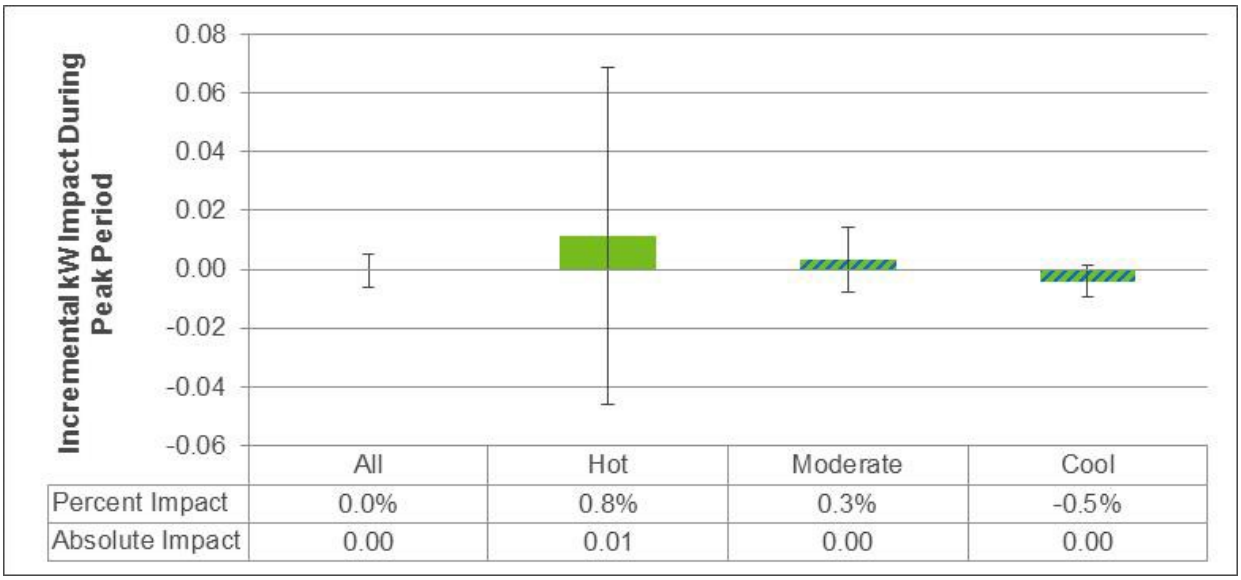
4.4.1 Programmable Thermostat Education

A sample of Rate 1 customers with a high likelihood of owning central air conditioning was selected to receive an educational campaign designed to encourage the use of existing technology, namely programmable thermostats (PTs), for managing energy use and bills. An equivalent sample of Rate 1 customers received standard education materials without the PT portion. Figure 4-6 shows the incremental load impacts for Rate 1 customers who received the additional education by climate region. Positive values correspond to load reductions for

customers with additional thermostat education relative to those who didn't receive the materials. The largest impacts can be seen in the hot climate region. However, none of the segments have statistically significant incremental impacts, indicating that those who received additional PT information did not produce larger peak period load reductions compared to customers who did not receive additional PT information.

Figure 4-7 shows the incremental load impacts for Rate 1 who received PT education by CARE/FERA status. The majority of segments do not have statistically significant incremental load impacts. The exceptions are CARE/FERA customers in the combined cool and moderate climate regions and CARE/FERA customers in the cool climate region separately. In these two cases, the sample that received PT educational information used more energy during the peak period compared to the standard education group.

rr) *Figure 4-6: Incremental Thermostat Impacts for Rate 1 by Climate*



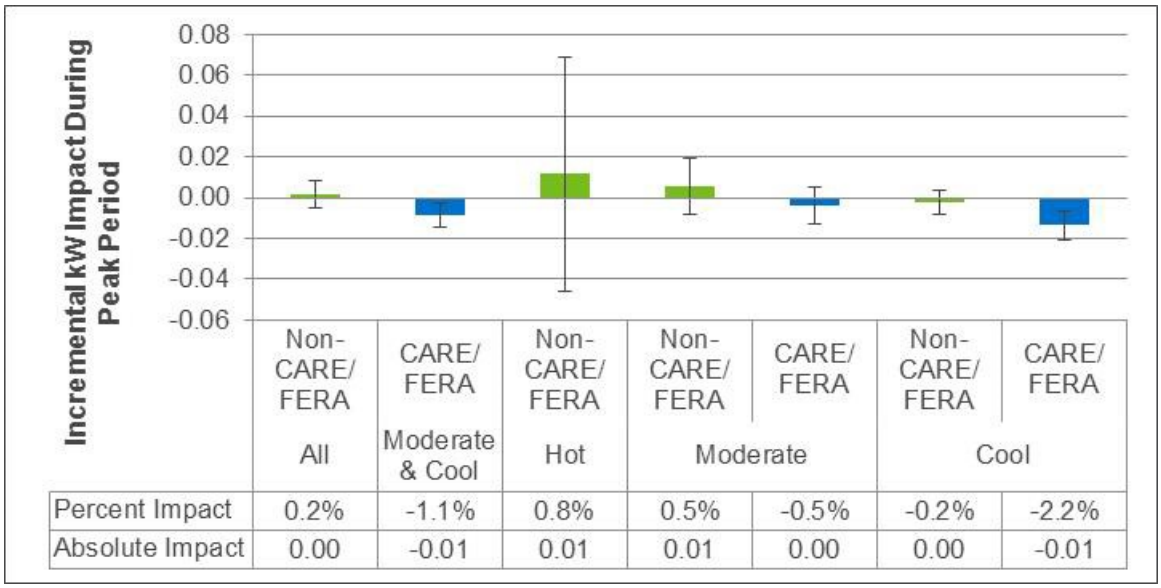
	All	Hot	Moderate	Cool
Percent Impact	0.0%	0.8%	0.3%	-0.5%
Absolute Impact	0.00	0.01	0.00	0.00

Region (Positive values represent load reductions)

ss) *Figure 4-7: Incremental Thermostat Impacts for Rate 1 by CARE/FERA and Non-*

tt) *CARE/FERA Status*

uu) *(Positive values represent load reductions)*



4.4.2 Tailored Messaging

As discussed in Section 2.2.1, load impacts of an educational and outreach campaign with tailored messaging based around SDG&E's recently developed personas were compared with a campaign that did not provide tailored messages or content across segments. Customers who received tailored messaging are those assigned to the "Tailored Messaging" group while their comparison group (also on Rate 1), were assigned to the "Standard Messaging" group. Figure 4-8 shows the average incremental impact attributable to the tailored messaging at the aggregate level and for each climate region for Rate 1. Positive values in the figure indicate an incremental increase in load reductions (e.g., load reductions are larger with tailored messaging) while a negative value means load reductions were smaller for the tailored messaging group relative to the less frequent communication.

At the territory level, the incremental load impact during the peak period between the two groups was not statistically significant. Customers that received tailored materials in the hot climate region had large and significant incremental load reductions of 0.05 kW during the peak period, relative to standard education customers – however the confidence bands are very wide due to small sample sizes. In the cool climate region, customers that received tailored messaging had small but statistically significantly smaller load reductions compared to standard messaging customers.

vv) Figure 4-8: Rate 1 Incremental Load Impacts from Tailored Messaging Treatment by Climate Region

ww) (Positive values represent larger load reductions for Tailored Messaging customers relative to Standard E&O Customers)

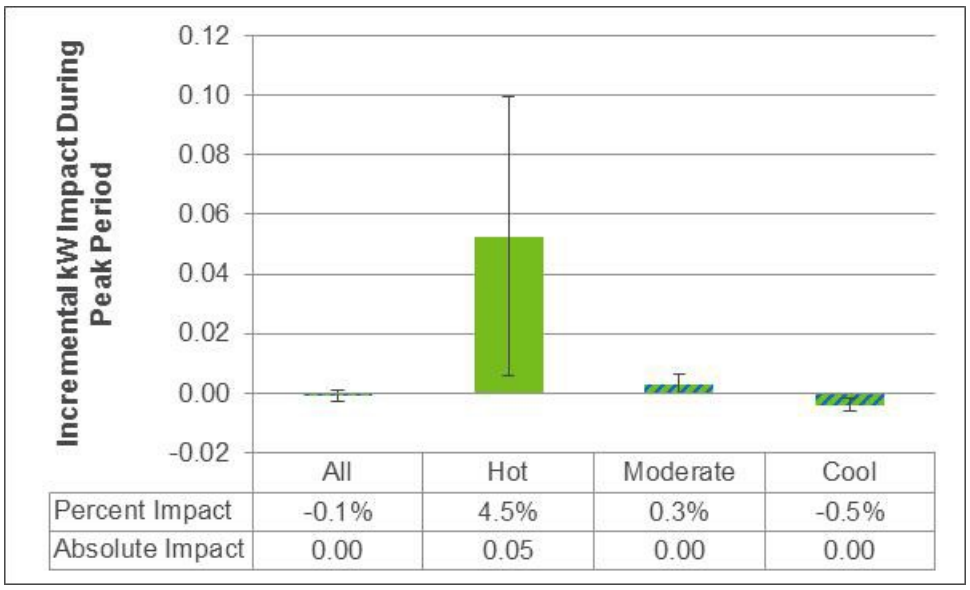
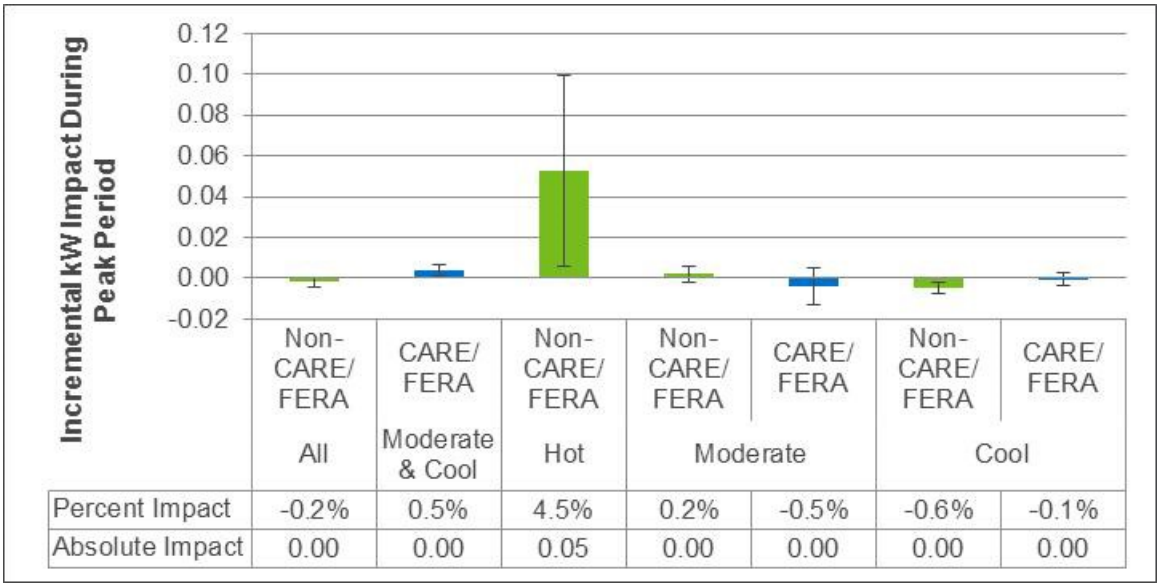


Figure 4-9 shows the average incremental peak period impact attributable to the tailored education by CARE/FERA status for each climate region for Rate 1. With two exceptions, there are no discernible differences in impacts between the tailored and standard groups as the estimates shown are both negative and positive with almost no segments' estimate being statistically significant. One exception is Non-CARE/FERA customers in the cool climate region where the tailored education group experienced statistically significantly smaller load reductions relative to the non-tailored group. The other exception is the incremental load impact for the hot climate region which is seen in Figure 4-8 and is discussed above.

xx) Figure 4-9: Rate 1 Incremental Peak Period Load Impacts from Tailored Messaging Treatment yy) by Climate Region & CARE/FERA Status zz) (Positive values represent larger load reductions for Tailored Messaging customers relative to Standard E&O customers)



	Non-CARE/FERA	CARE/FERA	Non-CARE/FERA	Non-CARE/FERA	CARE/FERA	Non-CARE/FERA	CARE/FERA
	All	Moderate & Cool	Hot	Moderate		Cool	
Percent Impact	-0.2%	0.5%	4.5%	0.2%	-0.5%	-0.6%	-0.1%
Absolute Impact	0.00	0.00	0.05	0.00	0.00	0.00	0.00

4.4.3 Level Payment Plan

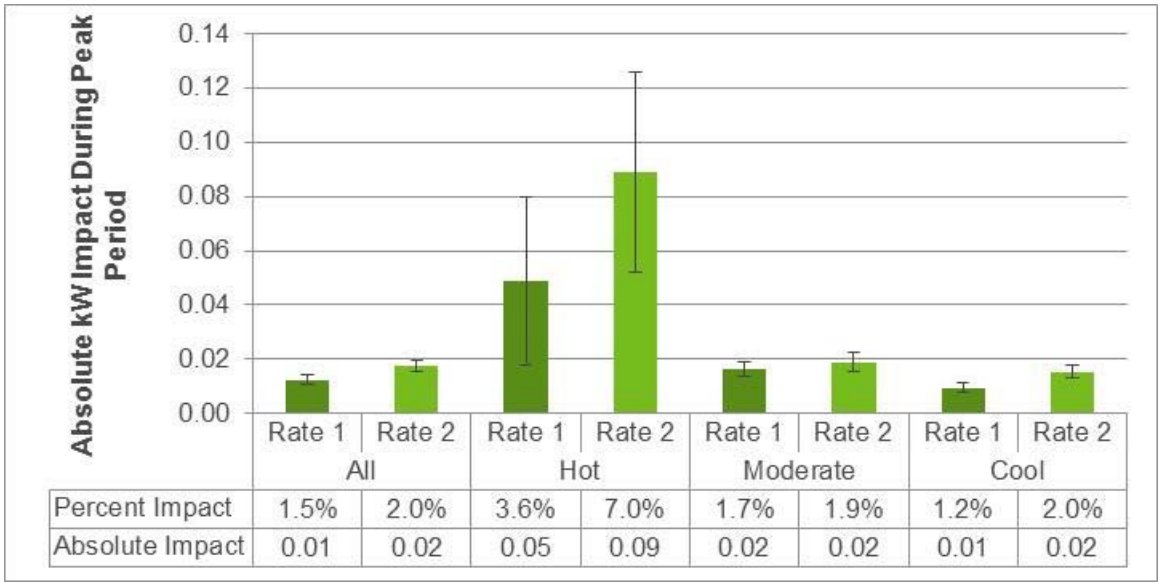
As discussed in Section 2, a portion of the enrolled population on each of the default rates was segmented into two groups, with one group receiving information on SDG&E's Level Payment Plan (LPP) as a means of managing month-to-month bill volatility. The other group did not receive LPP messaging.

The Pilot plan called for estimating the incremental enrollments in LPP that occurred as a result of the additional messaging and, if enrollment was large enough, to determine if load impacts differed between customers who were and were not on the LPP. However, among the group of approximately 36,000 pilot treatment customers who were deemed most impacted by bill volatility, only 78 enrolled in LPP after the launch of the pilot. As such, participation is not large enough to determine any differences in load impacts between LPP and non-LPP participants.

4.5 Comparison Across Rates

Figure 4-10 shows the average weekday peak-period impact for Rate 1 and Rate 2 in the summer months. The peak period covers the same hours for each rate (4 PM to 9 PM) and the peak-period price is slightly higher for Rate 1 (67 ¢/kWh) compared with Rate 2 (64 ¢/kWh). The difference in load impacts at the service territory level is statistically significant, but is driven by the statistically significant difference in the cool climate region. There are no statistically significant differences between Rate 1 and Rate 2 in the hot or moderate climate regions. Recall that there were different estimation methods used for each rate due to the complications with the treatment and control population assignments. Furthermore, Net Energy Metering (NEM) customers were allowed to enroll on Rate 1, but excluded from Rate 2. Accordingly, these differences should be taken into consideration when comparing the results.

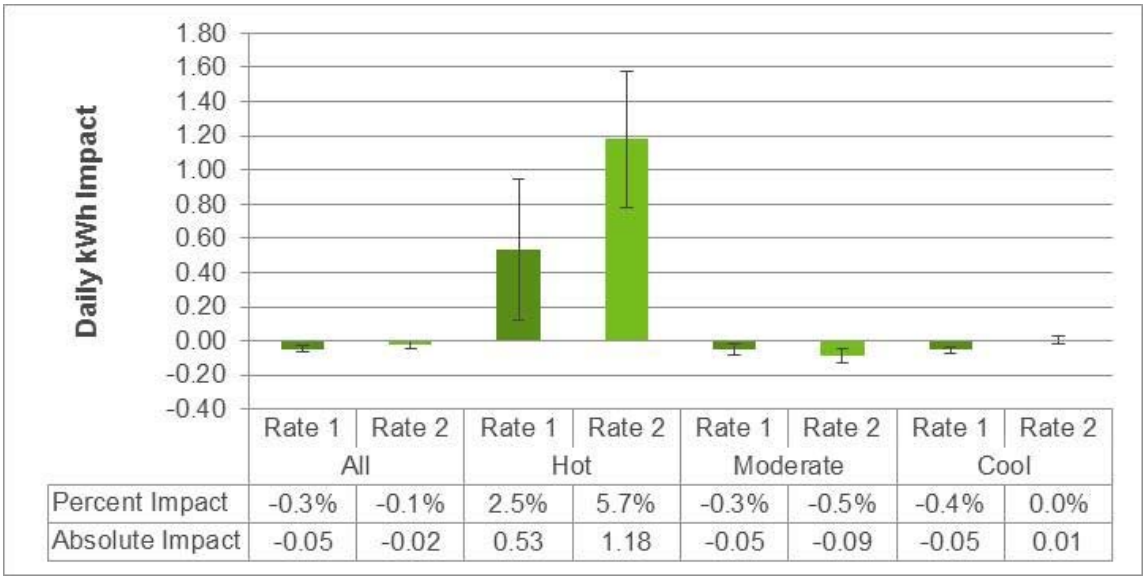
Figure 4-10: Average Peak Period Impacts form 4 PM to 9 PM Across Rates



	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
	All		Hot		Moderate		Cool	
Percent Impact	1.5%	2.0%	3.6%	7.0%	1.7%	1.9%	1.2%	2.0%
Absolute Impact	0.01	0.02	0.05	0.09	0.02	0.02	0.01	0.02

Figure 4-11 shows the average daily kWh impact during the summer period for Rate 1 and Rate 2. At the territory level, customers on both rates showed average daily kW usage increases. The hot region had large daily usage reductions for Rates 1 and Rates 2 that are not statistically significantly different from each other. The moderate and cool climate regions had similar impacts across Rates 1 and 2 as both climate regions had daily impact increases or insignificant impacts on the average weekday.

aaa) Figure 4-11: Average Daily kWh Impacts Across Rates
(Positive values represent load reductions)



	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
	All		Hot		Moderate		Cool	
Percent Impact	-0.3%	-0.1%	2.5%	5.7%	-0.3%	-0.5%	-0.4%	0.0%
Absolute Impact	-0.05	-0.02	0.53	1.18	-0.05	-0.09	-0.05	0.01

Structural Billing Analysis

This section summarizes the bill impact estimates for the two rate treatments tested by SDG&E. As discussed in Section 3.2, the impact of TOU rates on customers' bills is an important metric of interest to stakeholders, and a primary objective of the evaluation. Because bill impacts can vary rather significantly across seasons, and since this report is based only on usage for the summer season, this evaluation does not present behavioral impacts or total bill impacts. Those will be presented after customers have been on the new tariffs for a full year.

Structural bill impacts were estimated for the average month in summer, winter, and for the entire pretreatment year. The proportions of structural benefiters, non-benefiters and customers in the neutral category (e.g., ±$3/month) are presented for each rate for CARE/FERA and Non-CARE/FERA customers by climate region and for the pilot as a whole.

5.1 Rate 1

The structural benefiter analysis was conducted for the summer, winter and annual periods using pretreatment data from the treatment group for each rate and relevant customer segment. Annual impacts were based on monthly bill estimates from December 1, 2016 through November 30, 2017. Summer impacts were based on June 1, 2017 through October 31, 2017. Winter impacts were based on December 1, 2016 through May 31, 2017 and November 1 through 30, 2017. Monthly bills for each treatment customer on their OAT and default TOU rate were provided by SDG&E. The difference in bills based on the TOU rate and the OAT determines if a customer is a structural benefiter, a structural non-benefiter, or falls in a neutral range defined as having a structural bill impact between ±$3.[32]

Results from the structural benefiter / non-benefiter analysis are presented in column graphs and shown as percentages for the summer season, winter season, and on an annual basis. For each rate and relevant segment, the percentage of customers who are non-benefiters, neutral (+/- $3), or benefiters based on their average monthly bills for the time period of interest are shown as individual columns. The three columns within each rate and segment combination total to 100%, thus showing the distribution of structural benefiters and non-benefiters for each rate and segment of interest.

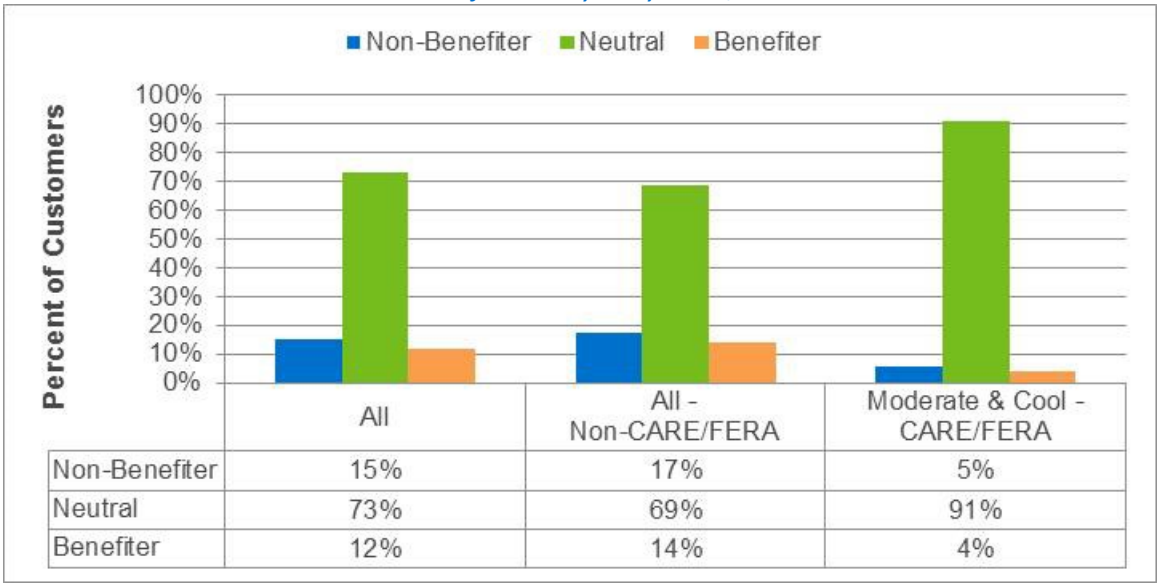
Figure 5-1 presents the outcome of the structural benefiter analysis for Rate 1 at the annual aggregate level across all climate regions for all customers as well as for CARE/FERA and Non-CARE/FERA groups. Figure 5-2 and Figure 5-3 present the same data for the summer and winter rate periods.

At the annual level, 73% of all customers were in the neutral category while the proportion that were non-benefiters and benefiters was similar, at 15% and 12%, respectively. Over 90% of CARE/FERA consumers were in the neutral category. Non-CARE/FERA customers had a larger share of non-benefiters compared to the CARE/FERA segments (17% versus 5%).

[32] See Section 3 for additional details on the methodology.

bbb)

Figure 5-1: Rate 1 – Annual Structural Benefiter / Non-Benefiter Analysis by CARE/FERA Status[33]

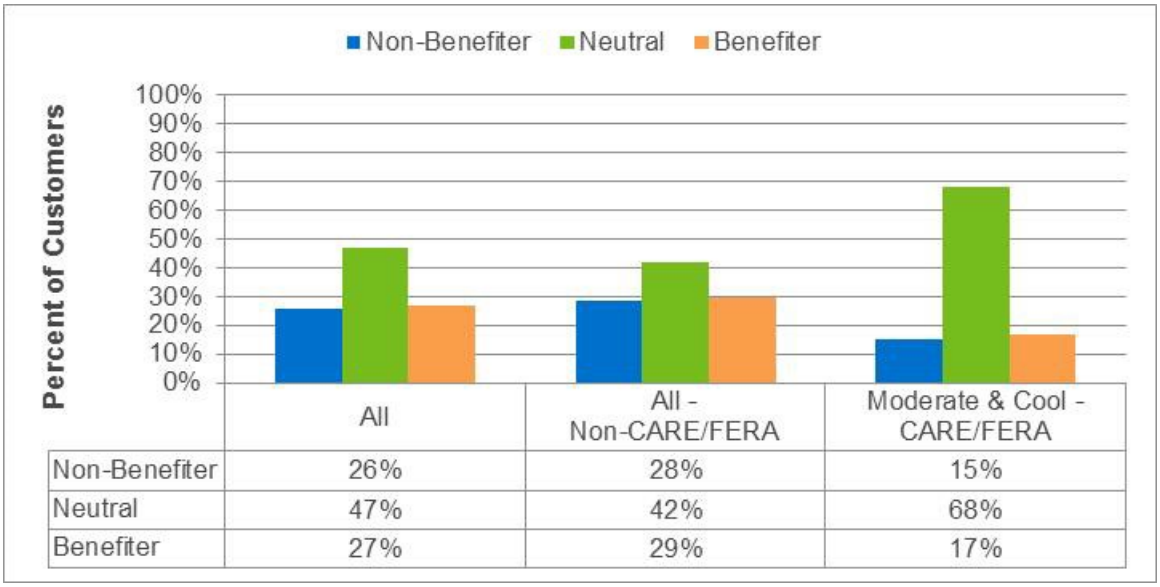


	All	All - Non-CARE/FERA	Moderate & Cool - CARE/FERA
Non-Benefiter	15%	17%	5%
Neutral	73%	69%	91%
Benefiter	12%	14%	4%

As seen in Figure 5-2, in summer, the largest proportion of customers also fall into the neutral category but that share is much smaller in summer than annually. Indeed, in summer, only 42% of Non-CARE/FERA customers are in the neutral category whereas almost 70% fall into this category on an annual basis. The share of customers that are benefiters and non-benefiters is fairly balanced across the segments. However, Non-CARE/FERA customers have a higher proportion of benefiters (29%) and non-benefiters (28%) and lower proportion of neutral customers (42%) compared to CARE/FERA customers, with 68% in the neutral category and 17% and 15% in the benefiter and non-benefiter categories, respectively. It should be noted the Non-CARE/FERA population includes the hot climate region, whereas the CARE/FERA population does not.

[33] The percentage values in the tables may not add up to 100% due to rounding in this and the following figures.

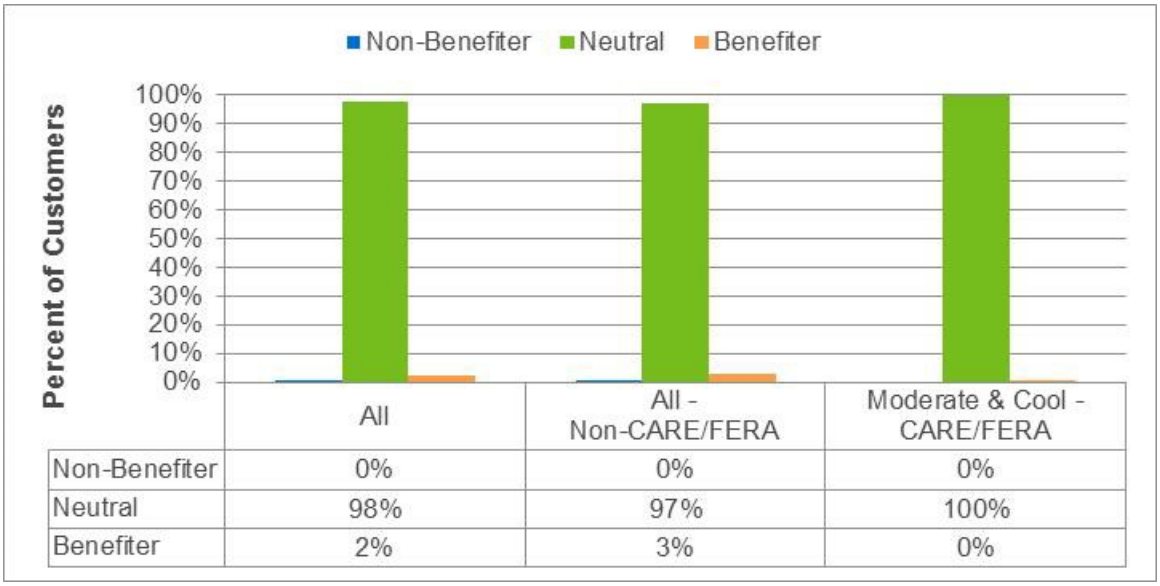
ccc) *Figure 5-2: Rate 1 – Summer Structural Benefiter / Non-Benefiter Analysis by CARE/FERA Status*



	All	All - Non-CARE/FERA	Moderate & Cool - CARE/FERA
Non-Benefiter	26%	28%	15%
Neutral	47%	42%	68%
Benefiter	27%	29%	17%

The winter season had the highest rates of neutral customers at the aggregate level and by CARE/FERA status for Rate 1. All three segments had over 97% of customers in each segment in the neutral category with the CARE/FERA group approaching nearly 100%. Roughly 3% of Non-CARE/FERA customers are benefiters during the winter period.

ddd) *Figure 5-3: Rate 1 – Winter Structural Benefiter / Non-Benefiter Analysis by CARE/FERA Status*



	All	All - Non-CARE/FERA	Moderate & Cool - CARE/FERA
Non-Benefiter	0%	0%	0%
Neutral	98%	97%	100%
Benefiter	2%	3%	0%

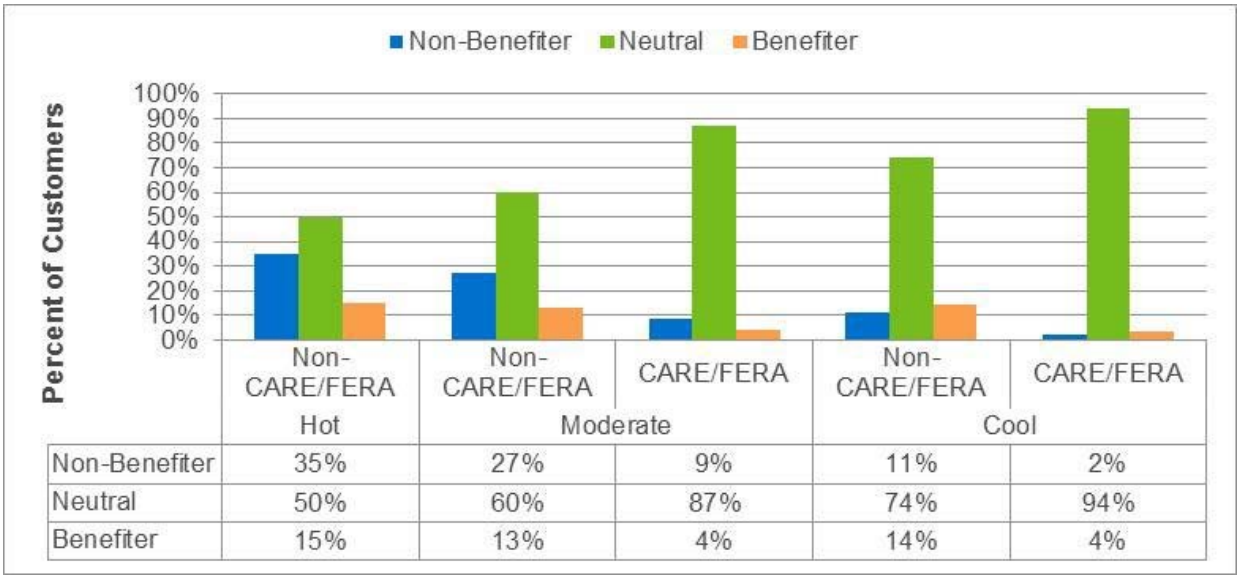
Figure 5-4 through Figure 5-6 present the outcomes of the structural benefiter analysis for Rate 1 for CARE/FERA status level by climate region in the annual, summer, and winter time periods, respectively. As with the above figures, there are no estimates for CARE/FERA customers in the hot climate region as this segment was not included in the pilot.

The findings are consistent with the aggregate results as a majority of customers are neutral in the annual time frame. The Non-CARE/FERA group in the hot climate region had the highest proportion of non-benefiters (35%) as well as the highest rate of benefiters (15%), as seen in Figure 5-4. CARE/FERA customers in the moderate and cool climate regions had higher rates of structurally neutral customers and lower proportions of customers in the non-benefiter and benefiter categories compared to the Non-CARE/FERA groups. In the same vein, the moderate climate region segments had higher proportions of non-benefiters and benefiters contrasted with the cool climate regions accounting for CARE/FERA status.

During the summer season (Figure 5-5), the hot climate region for Non-CARE/FERA had the highest distribution of non-benefiters at 43% while the cool climate region for CARE/FERA customers had the lowest rate of non-benefiters with 9%. The cool climate region had a larger proportion of benefiters and smaller proportion of non-benefiters compared to the moderate climate region for both CARE/FERA and Non-CARE/FERA segments. This result is consistent with expected behavior as the proportion of structural non-benefiters increases as the climate regions move from cool to warmer.

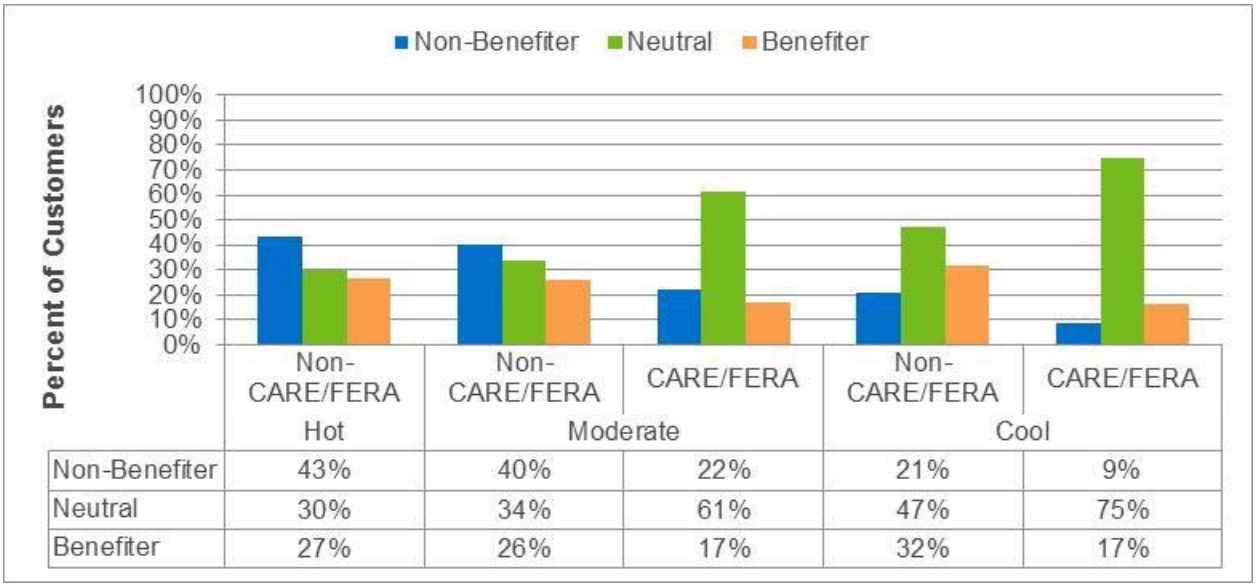
The vast majority of customers for the winter season in both CARE/FERA and Non-CARE/FERA groups were structurally neutral across all of the climate regions, as seen in Figure 5-6. While the Non-CARE/FERA segments had a small proportion of the group as structural benefiters in the hot, moderate and cool climate regions, nearly 100% of the customers in the CARE/FERA segments in the moderate and cool regions were neither benefiters nor non-benefiters.

eee) *Figure 5-4: Rate 1 – Annual Structural Benefiter / Non-Benefiter Analysis by Climate Region & CARE/FERA Status*



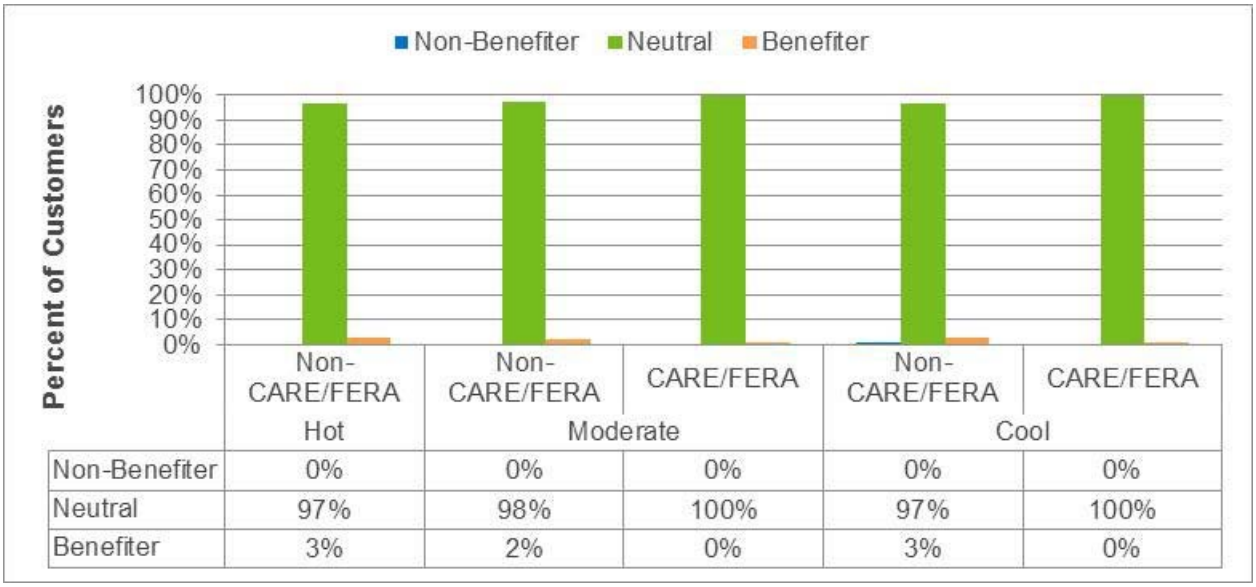
	Non-CARE/FERA (Hot)	Non-CARE/FERA (Moderate)	CARE/FERA (Moderate)	Non-CARE/FERA (Cool)	CARE/FERA (Cool)
Non-Benefiter	35%	27%	9%	11%	2%
Neutral	50%	60%	87%	74%	94%
Benefiter	15%	13%	4%	14%	4%

fff) Figure 5-5: Rate 1 – Summer Structural Benefiter / Non-Benefiter Analysis by Climate Region & CARE/FERA Status



	Non-CARE/FERA (Hot)	Non-CARE/FERA (Moderate)	CARE/FERA (Moderate)	Non-CARE/FERA (Cool)	CARE/FERA (Cool)
Non-Benefiter	43%	40%	22%	21%	9%
Neutral	30%	34%	61%	47%	75%
Benefiter	27%	26%	17%	32%	17%

ggg) Figure 5-6: Rate 1 – Winter Structural Benefiter / Non-Benefiter Analysis by Climate Region & CARE/FERA Status



	Non-CARE/FERA (Hot)	Non-CARE/FERA (Moderate)	CARE/FERA (Moderate)	Non-CARE/FERA (Cool)	CARE/FERA (Cool)
Non-Benefiter	0%	0%	0%	0%	0%
Neutral	97%	98%	100%	97%	100%
Benefiter	3%	2%	0%	3%	0%

5.2 Rate 2

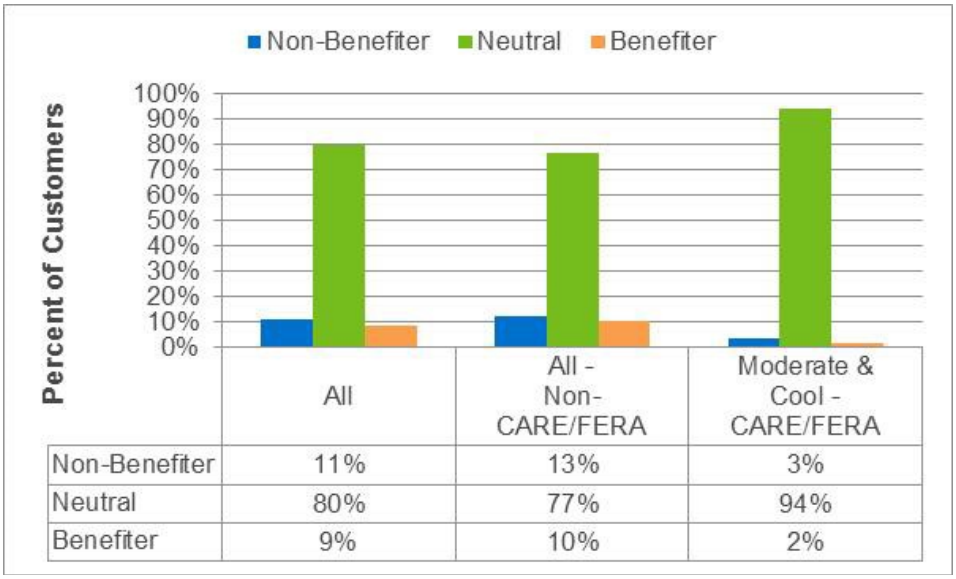
Figure 5-7 presents the outcome of the annual structural benefiter analysis for Rate 2 at the aggregate level across climate regions while Figure 5-8 and Figure 5-9 present the summer and winter structural benefiter analysis for Rate 2 at the aggregate level across climate regions.

SDG&E's Rate 2 differs from Rate 1 in several ways. Rate 1 has three rate periods on summer weekdays while Rate 2 has two rate periods. Both rates have the same peak period, from 4 PM

to 9 PM, but the Rate 1 peak prices is higher (67 ¢/kWh) compared with the Rate 2 peak period ($64 ¢/kWh). Overall, the general pattern of structural benefiters, non-benefiters, and neutrals is similar between Rate 1 and Rate 2. A majority of customers in the service territory are neutral (structural bill impact between ±$3) on an annual basis.

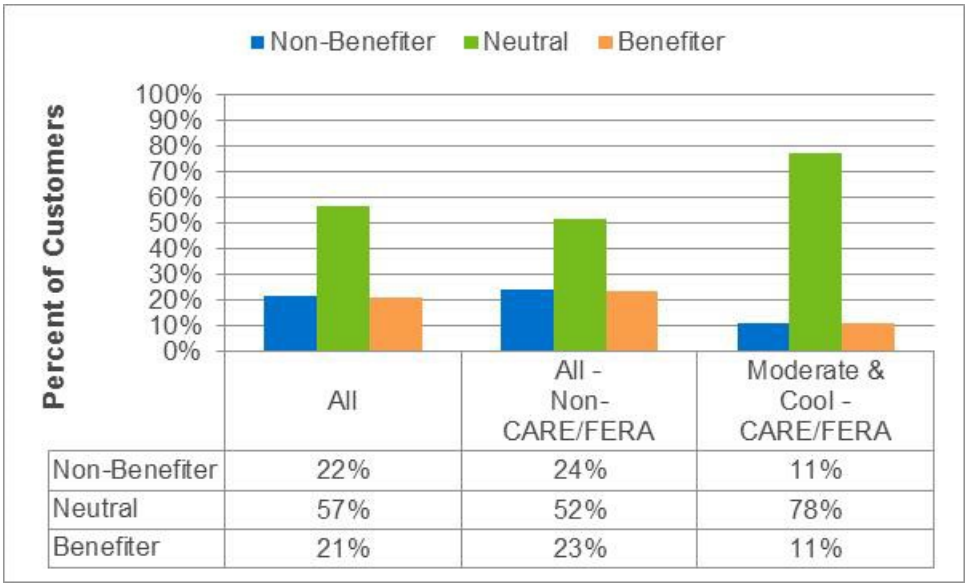
In the summer season the proportion of benefiters was nearly equivalent to the proportion of non-benefiters (22% versus 21%) at the service territory level. Nearly 80% of CARE/FERA customers in the moderate and cool climate regions were in the neutral bill impact category in the summer. Like Rate 1, nearly all customers assigned to Rate 2 fell into the neutral bill impact category in the winter months.

hhh) *Figure 5-7: Rate 2 – Annual Structural Benefiter / Non-Benefiter Analysis by CARE/FERA Status*



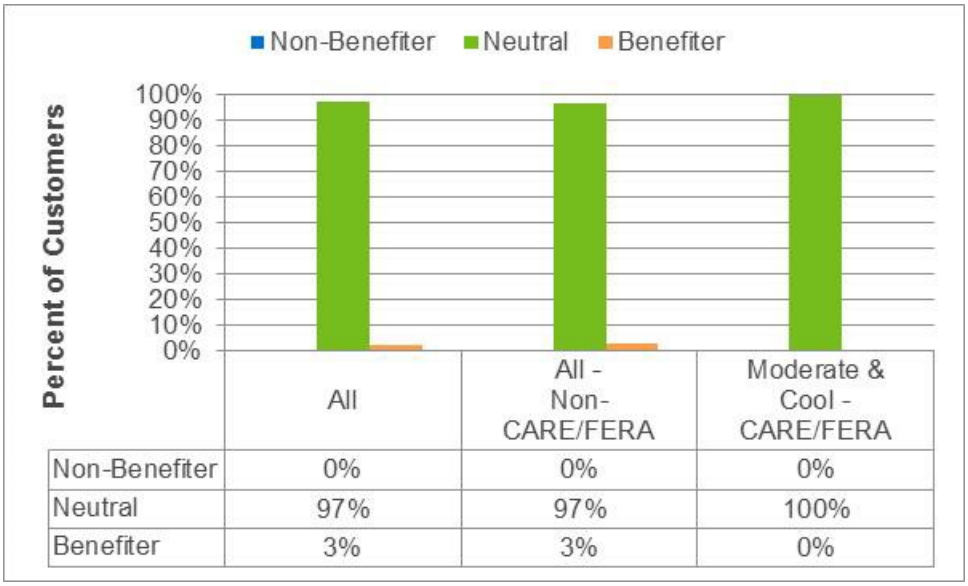
	All	All - Non-CARE/FERA	Moderate & Cool - CARE/FERA
Non-Benefiter	11%	13%	3%
Neutral	80%	77%	94%
Benefiter	9%	10%	2%

iii) *Figure 5-8: Rate 2 – Summer Structural Benefiter / Non-Benefiter Analysis by CARE/FERA Status*



	All	All - Non-CARE/FERA	Moderate & Cool - CARE/FERA
Non-Benefiter	22%	24%	11%
Neutral	57%	52%	78%
Benefiter	21%	23%	11%

jjj) *Figure 5-9: Rate 2 – Winter Structural Benefiter / Non-Benefiter Analysis by CARE/FERA Status*



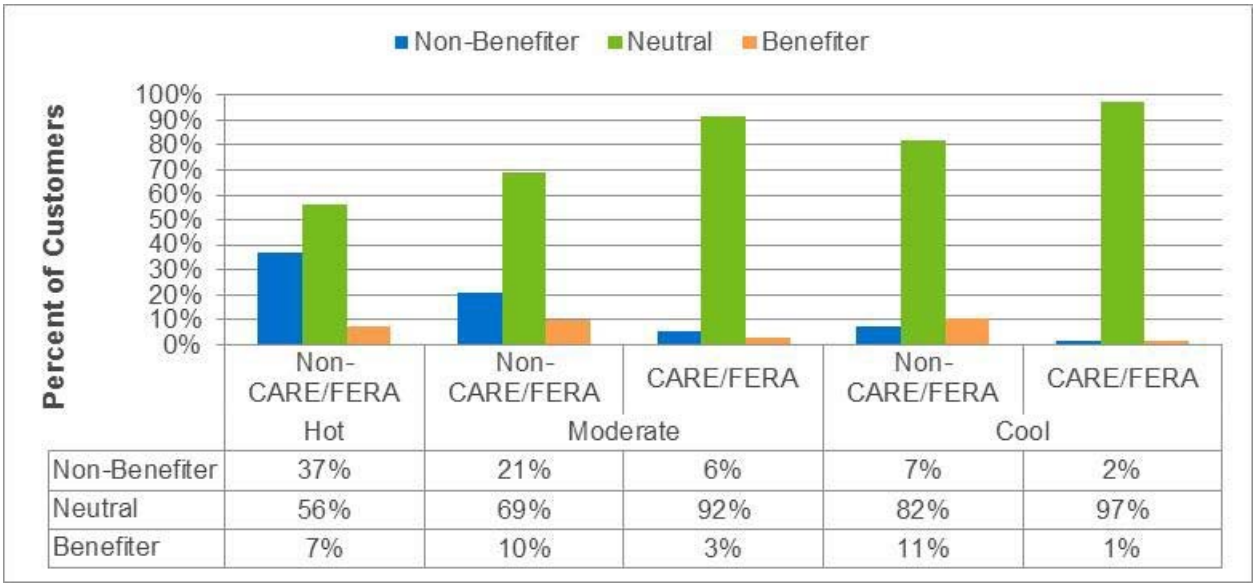
	All	All - Non-CARE/FERA	Moderate & Cool - CARE/FERA
Non-Benefiter	0%	0%	0%
Neutral	97%	97%	100%
Benefiter	3%	3%	0%

Figure 5-10 through Figure 5-12 display the annual, summer and winter structural benefiter distributions for Rate 2 for the CARE/FERA and Non-CARE/FERA groups across the different climate regions. Overall, the distributions of structural benefiters and non-benefiters for Rate 2 are similar to the estimates found for Rate 1.

The CARE/FERA group also had fewer non-benefiters and more participants in the neutral category compared to Non-CARE/FERA in the moderate and cool climate regions throughout the year. Non-CARE/FERA customers in the hot climate region have a larger proportion of non-benefiters at the summer and annual levels compared to the cool and moderate climate regions. The structural bill impact distribution during the winter season for Rate 2 was similar to

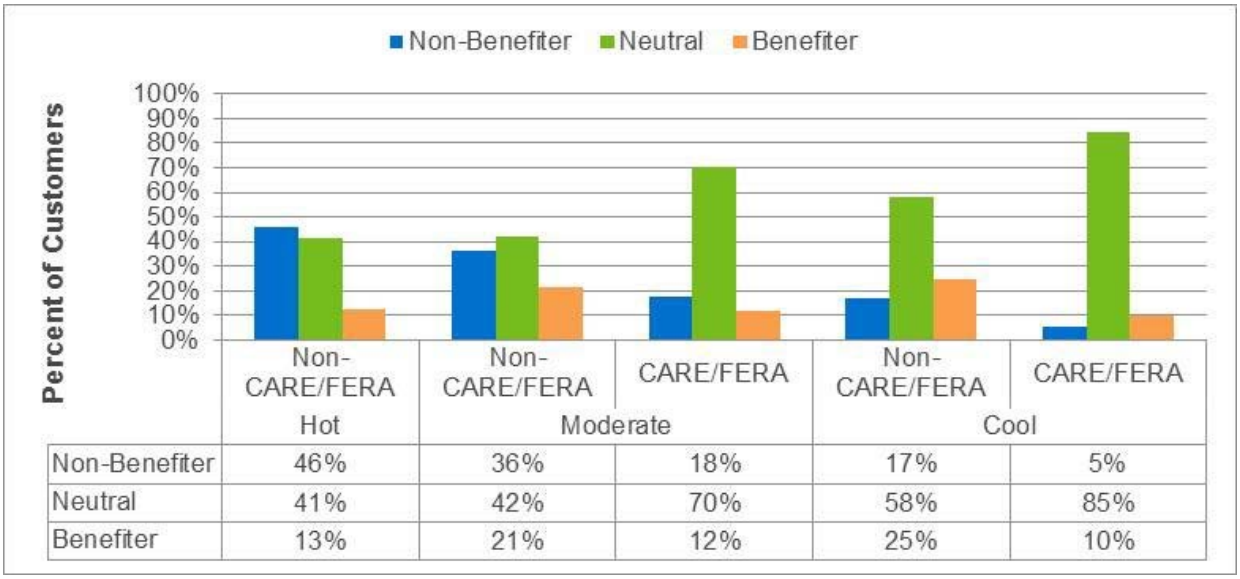
as almost every customer falls into the neutral category across CARE/FERA status and by climate region with a low of 97% in Non-CARE/FERA moderate and cool climate regions to 100% in CARE/FERA moderate and cool climate regions.

kkk) *Figure 5-10: Rate 2 – Annual Structural Benefiter / Non-Benefiter Analysis by Climate Region & CARE/FERA Status*



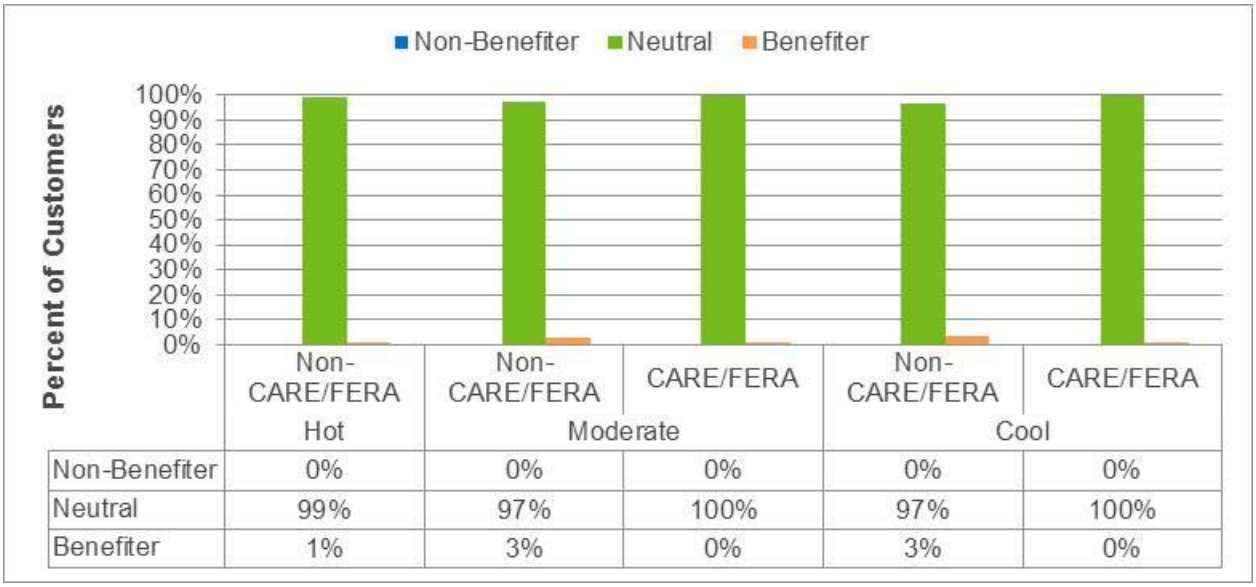
	Non-CARE/FERA Hot	Non-CARE/FERA Moderate	CARE/FERA Moderate	Non-CARE/FERA Cool	CARE/FERA Cool
Non-Benefiter	37%	21%	6%	7%	2%
Neutral	56%	69%	92%	82%	97%
Benefiter	7%	10%	3%	11%	1%

lll) *Figure 5-11: Rate 2 – Summer Structural Benefiter / Non-Benefiter Analysis by Climate Region & CARE/FERA Status*



	Non-CARE/FERA Hot	Non-CARE/FERA Moderate	CARE/FERA Moderate	Non-CARE/FERA Cool	CARE/FERA Cool
Non-Benefiter	46%	36%	18%	17%	5%
Neutral	41%	42%	70%	58%	85%
Benefiter	13%	21%	12%	25%	10%

mmm) *Figure 5-12: Rate 2 – Winter Structural Benefiter / Non-Benefiter Analysis by Climate Region & CARE/FERA Status*

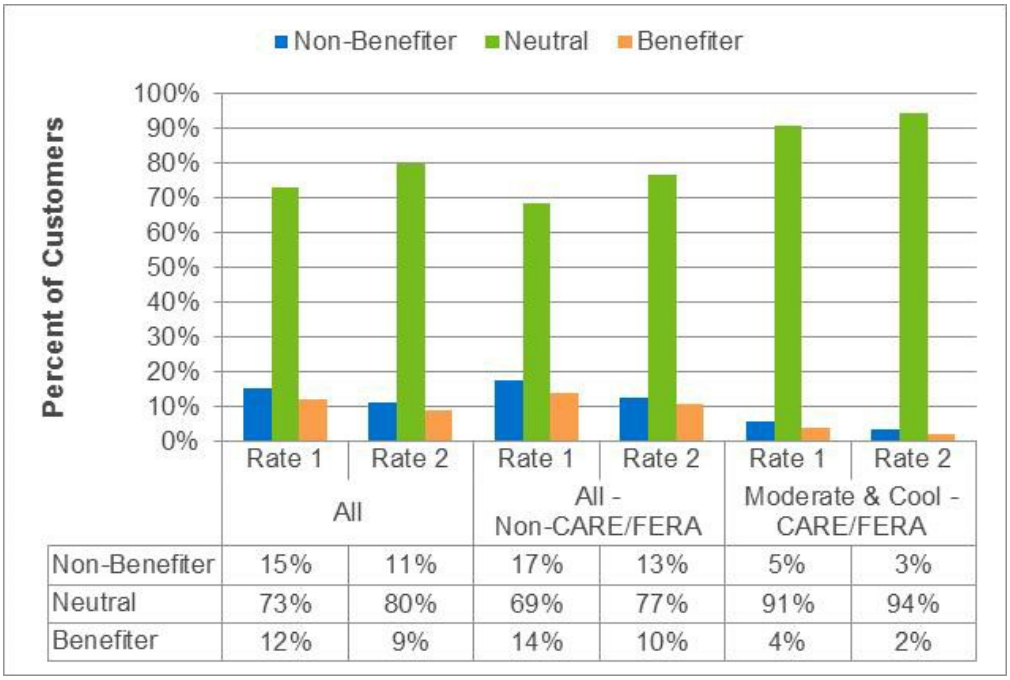


	Hot	Moderate		Cool	
	Non-CARE/FERA	Non-CARE/FERA	CARE/FERA	Non-CARE/FERA	CARE/FERA
Non-Benefiter	0%	0%	0%	0%	0%
Neutral	99%	97%	100%	97%	100%
Benefiter	1%	3%	0%	3%	0%

5.3 Comparison Across Rates

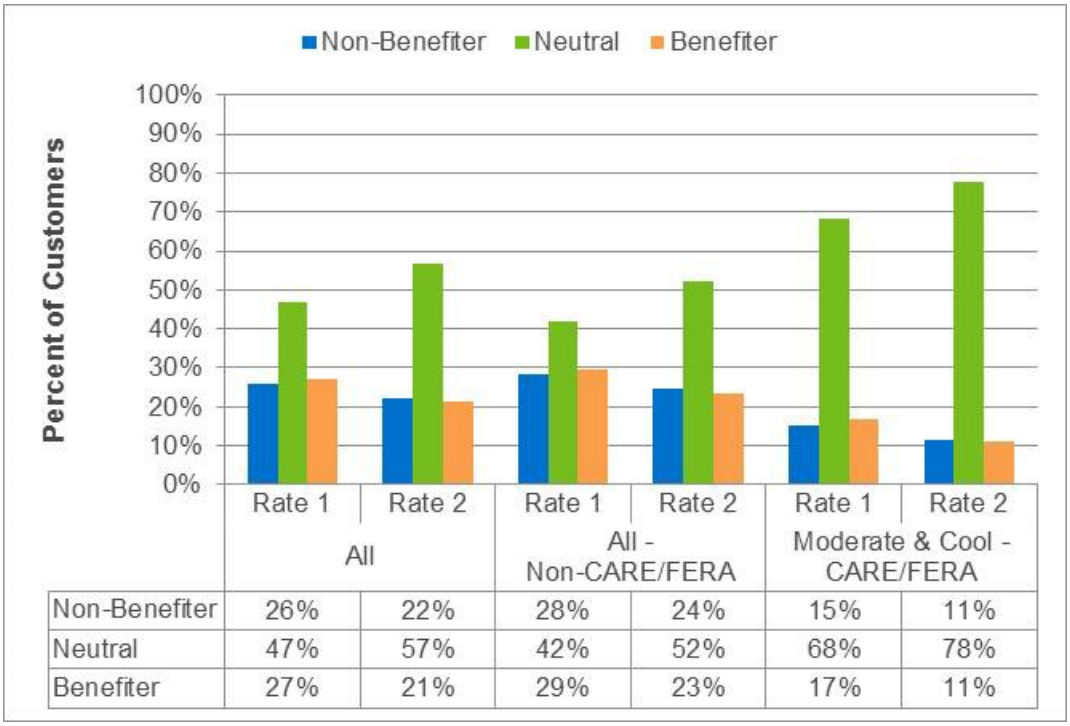
Figure 5-13 through Figure 5-15 present the results of the structural bill impact analysis for each rate side-by-side. In all regions and customer segments, there is a slightly higher proportion of benefiters on Rate 1 than on Rate 2, but also more non-benefiters on Rate 1 than on Rate 2. In the moderate climate region and for the service territory as a whole, roughly 10% more Rate 2 customers fall into the neutral category compared with Rate 1 customers.

nnn) *Figure 5-13: Annual Structural Benefiter / Non-Benefiter Analysis by Rate*



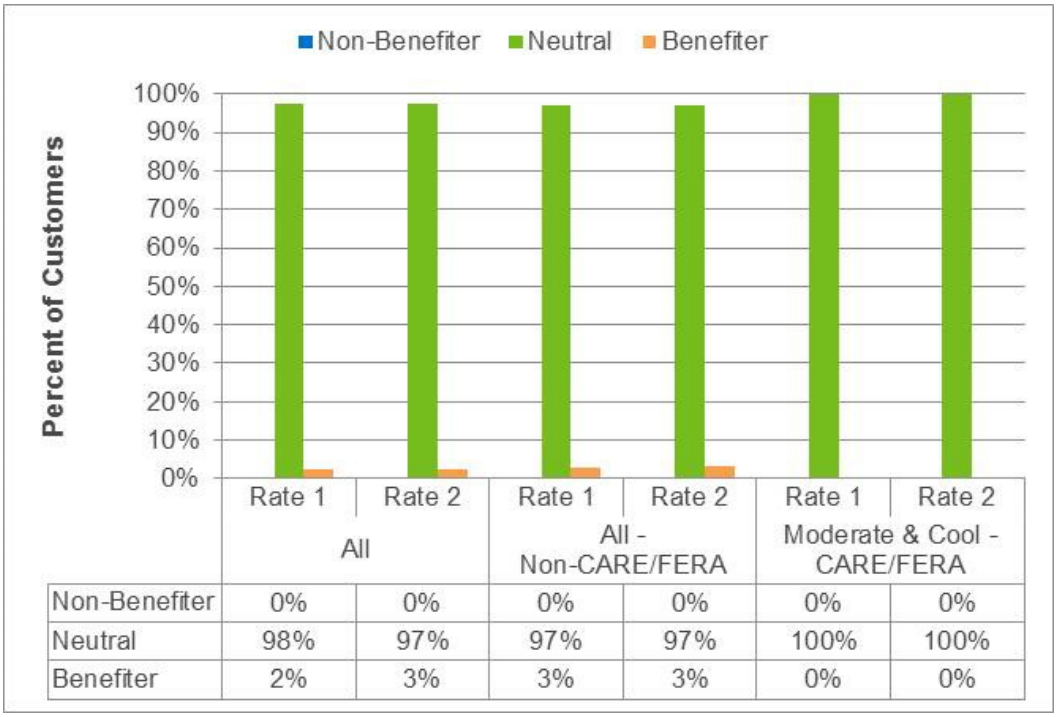
	All		All - Non-CARE/FERA		Moderate & Cool - CARE/FERA	
	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
Non-Benefiter	15%	11%	17%	13%	5%	3%
Neutral	73%	80%	69%	77%	91%	94%
Benefiter	12%	9%	14%	10%	4%	2%

ooo) *Figure 5-14: Summer Structural Benefiter / Non-Benefiter Analysis by Rate*



	All		All - Non-CARE/FERA		Moderate & Cool - CARE/FERA	
	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
Non-Benefiter	26%	22%	28%	24%	15%	11%
Neutral	47%	57%	42%	52%	68%	78%
Benefiter	27%	21%	29%	23%	17%	11%

ppp) *Figure 5-15: Winter Structural Benefiter / Non-Benefiter Analysis by Rate*



	All		All - Non-CARE/FERA		Moderate & Cool - CARE/FERA	
	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
Non-Benefiter	0%	0%	0%	0%	0%	0%
Neutral	98%	97%	97%	97%	100%	100%
Benefiter	2%	3%	3%	3%	0%	0%

Customer Attrition

This section summarizes customer attrition and opt-out rates for each rate and informational treatment tested by SDG&E. As discussed in Section 3.3, an analysis of customer opt-out rates can provide useful insights concerning relative customer preferences among the rates. Comparing opt-out rates across notification treatment options reveals whether seasonal or monthly bill impact information or alternative messaging impacts customer acceptance of the rate offer. Findings for these and related metrics are discussed in this section, which is organized around pre- and post-enrollment periods.

5.4 Pre-enrollment Opt-outs

During the pre-enrollment notification period, customers could take one of the following actions:

- Opt out to their OAT instead of enrolling on the default rate that was offered to them;
- Select a different TOU rate option than the one they were scheduled to be default onto (including switching from Rate 1 to Rate 2 or vice versa);
- Enroll on their default rate early;
- Do nothing, which would enroll them on the default rate that was offered to them.

Figure 6-1 shows the percent of customers who chose to remain on the OAT for each rate option and customer segment. As seen, for this metric, there is a slight difference in opt-out rates between Rates 1 and 2. For the service territory as a whole, the opt-out rate for Rate 1 was 18.5% while the value for Rate 2 was 20.5%. The observed difference between the two is statistically significant. Figure 6-2 presents a similar story about customer preferences. However, the opt-out rates in this figure also include customers who rejected the default rate option in favor of either the OAT or the alternative TOU rate. Opt-out rates can reveal customer preferences for the two rates, but comparisons must be done on an apples to apples basis. A direct comparison of Rate 1 versus Rate 2 opt-out rates overall is not appropriate because of differences in the notification treatments across the rates. Figure 6-1 through Figure 6-4 are included to document the actual outcomes from the pre-enrollment period. A comparison between Rate 1 and Rate 2 opt-out rates for cells with similar notification treatments are presented in Table 6-5.

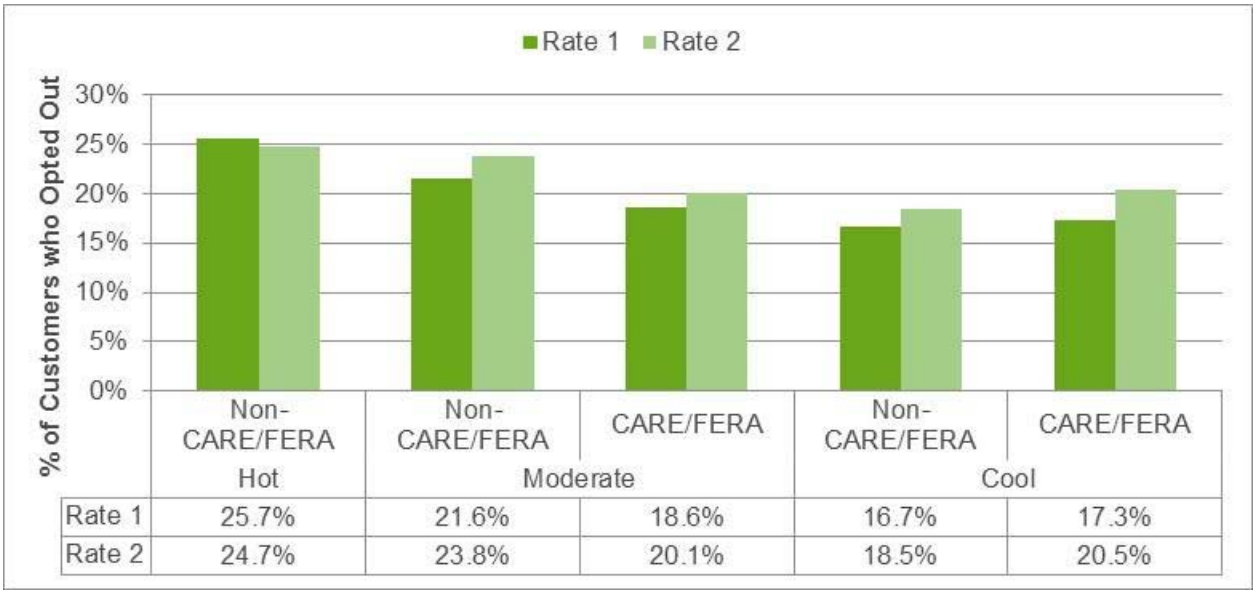
qqq) *Figure 6-1: Pre-Enrollment Opt-Out Rates by CARE/FERA Status (Customers Choosing the OAT Rather than the Default Rate)*

rrr) *Figure 6-2: Pre-Enrollment Opt-Out Rates by CARE/FERA Status (Customers Choosing the OAT or an Alternative TOU Rate Rather than the DefaultRate)*

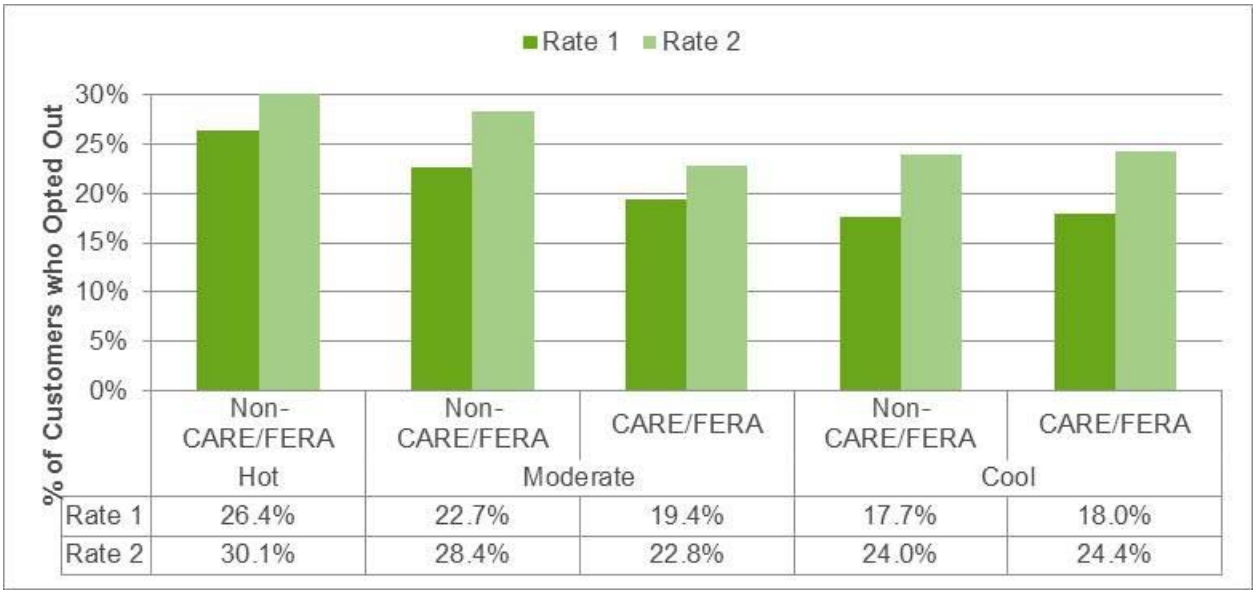
Figure 6-3 and Figure 6-4 show the pre-enrollment opt-out rates by default pilot rate, climate region, and CARE/FERA status for the two types of opt-out actions (e.g., opt out to the OAT or opt out to the OAT plus the alternative TOU rate). As seen, opt-out rates are lowest in the cool climate region and highest in the hot region under both definitions of opt-out. For Non-CARE/FERA customers, there is a nine percentage point difference, or a difference of nearly 53%, in opt-out rates between the cool region and the hot climate regions for both rates using the OAT opt-out definition. Using the other opt-out definition, the difference across regions was similar. Given that customers in the hot regions are more likely to see bill increases on the TOU rate compared to the OAT than are customers in the cool region, it would appear that the

structural bill comparison information provided as part of the notifications was read by many and had the intended effect of alerting customers in the hotter regions that the new rate could lead to bill increases.

sss) *Figure 6-3: Pre-Enrollment Opt-Out Rates by Climate Region and CARE/FERA Status (Customers Choosing the OAT Rather than the Default Rate)*



ttt) *Figure 6-4: Pre-Enrollment Opt-Out Rates by Climate Region and CARE/FERA Status (Customers Choosing the OAT or an Alternative TOU Rate Rather than the Default Rate)*



Another important question is whether types of communication channels or the granularity and number of the structural bill comparisons provided had a material impact on opt-out rates. Table 6-1 summarizes the fourteen different notification treatment cells across the two sub-populations that were tested in the pilot.[34] The cells differ with respect to the default rate offered (Rate 1 or

[34] See Section 2.2.2 for a detailed explanation of the default notification treatments.

Rate 2), the granularity of the bill comparisons presented (monthly, seasonally, or annually), and the number of rates provided in the comparisons. Except for cells M and N, each cell contained between 9,000 and 15,000 customers.

uuu) Table 6-1: Default Notifications

Notification Cell	Sub-Population	Rate Offered	Communication Channel	Rate Comparison Granularity	Number of Rates in Comparison	Sample Size
A	Email	Rate 1	DM + EM	Seasonal + Annual	3 Rates	9,662
B			DM	Seasonal + Annual	3 Rates	9,698
C			EM	Annual	3 Rates	9,611
D				Seasonal + Annual	3 Rates	9,556
E					4 Rates	9,597
F				Monthly + Annual	3 Rates	9,550
G		Rate 2	DM + EM	Seasonal + Annual	3 Rates	15,591
H	Direct Mail	Rate 1	DM	Annual	3 Rates	12,988
I				Seasonal + Annual	3 Rates	12,991
J					4 Rates	12,935
K				Monthly + Annual	3 Rates	13,056
L		Rate 2		Seasonal + Annual	3 Rates	12,641
M	Other (Email)	Rate 1	DM + EM	Annual	3 Rates	2,666
N			DM	Annual	3 Rates	233

Table 6-2 and the following two tables report statistics for three types of actions. The column labeled “Chose Alternate TOU Rate” refers to customers offered Rate 1 who chose Rate 2 or who were offered Rate 2 and chose Rate 1. The column labeled “Opted Out to OAT” refers to customers who did not accept either the rate offered or the alternative pilot rate. Finally, to answer the question “How many customers did not accept the rate they were offered?” the percentages reported in the previous two columns can be added together. Those percentages are shown in the final two columns labeled “Opted Out of Default Rate.” Cells shaded in gray indicate that there is no statistically significant difference between treatment cells at the 90% confidence level (a p-value greater than 0.100)

Table 6-2 shows the difference in pre-enrollment opt-out rates between three different communication channels in the default pilot Email sub-population. Customers notified through direct mail (DM) and emails (EM) were found to be slightly more likely to opt out of the default rate (21.4%) compared to customers that only received direct mail (19.8%). Customers that only received email communication were significantly less likely to opt out than those that received direct mail only or both email and direct mail and the difference between the DM and EM channels is statistically significant. There are two possible explanations for this difference. One is that level of awareness of the default process was less for customers who only received email communications compared to customers that get direct mail only or both direct mail and email. The first survey done by SDG&E shortly after enrollment showed that email only customers had an awareness level of 54% whereas direct mail customers had an awareness level of 62% and 67% percent of those that got both email and direct mail communications said they were aware that their rate had changed.

The second possible explanation for the lower opt-out rate for email only customers is that these customers were only allowed to opt-out online and they had to be enrolled in the MyAccount program to do so. Direct mail customers could opt out using a business reply card or by calling SDG&E. These differences in opt-out channels almost certainly explain part of the lower opt out rate for email only customers.

vvv) Table 6-2: Effect of Communication Channel on Pre-enrollment Opt-outs (Email vs. Direct Mail vs. Email & Direct Mail)

Comparison	Notification Cell	Communication Channel	Population	Chose Alternate TOU Rate		Opted Out to OAT		Opted Out of Default Rate	
				%	P-value	%	P-value	%	P-value
A vs. B	A	DM+EM	9,593	1.1%	0.108	20.3%	0.017	21.4%	0.006
	B	DM	9,628	0.9%		18.9%		19.8%	
A vs. D	A	DM+EM	9,593	1.1%	0.000	20.3%	0.000	21.4%	0.000
	D	EM	9,509	0.4%		13.0%		13.5%	
B vs. D	B	DM	9,628	0.9%	0.000	18.9%	0.000	19.8%	0.000
	D	EM	9,509	0.4%		13.0%		13.5%	

Table 6-3 compares pre-enrollment opt-out rates for customers who received annual rate comparisons, those who received seasonal and annual rate comparisons, and those who received monthly and annual rate comparisons in their default notification materials. In all instances for the treatment cells in the Email sub-population; cells C, D, and F, the differences in opt-out rates were very small and were not statistically significant. The treatment cells in the direct mail subpopulation; H, I, and K however saw small but statistically significant differences in opt-out rates. The opt-out rates for treatment cell I which received rate comparisons at the season and annual level had the highest total opt-out rate with 21.8%. Next in order of highest pre-enrollment opt-out rates was the segment that received monthly and annual rate comparisons (20.9%) followed by the group that received the annual rate comparison information (19.8%). These estimates indicate that the granularity of rate comparisons did not affect the pre-enrollment opt-out rates for the Email sub-population but the type of rate comparisons did have an impact on the pre-enrollment opt-out rates for the Direct Mail sub-population.

The additional steps required for the Email sub-population to opt-out resulted in lower opt-out rates for that sub-population, and may have affected the statistical significance of the outcomes for that group. However, there still appears to be a general trend of the annual with seasonal or monthly information treatments resulting in higher opt-out rates than the stand-alone annual rate comparison. When comparing the annual with seasonal or the annual with monthly rate comparison, the annual with seasonal comparison has slightly more opt-outs in the direct mail group, and the difference is statistically significant.

www) Table 6-3: Effect of Granularity of Rate Comparison Information on Pre-enrollment Opt-outs xxx) (Annual vs. Seasonal + Annual vs. Monthly + Annual)

Comparison	Notification Cell	Granularity of Rate Comparison	Population	Alternate TOU Rate		OAT		Default Rate	
				%	P-value	%	P-value	%	P-value
	C	Annual	9,556	0.4%		12.6%		13.0%	
C vs. D					0.549		0.410		0.356
	D	Seasonal + Annual	9,509	0.4%		13.0%		13.5%	
	C	Annual	9,556	0.4%		12.6%		13.0%	
C vs. F					0.297		0.197		0.142
	F	Monthly + Annual	9,496	0.5%		13.3%		13.7%	
	D	Seasonal + Annual	9,509	0.4%		13.0%		13.5%	
D vs. F					0.657		0.641		0.585
	F	Monthly + Annual	9,496	0.5%		13.3%		13.7%	
	H	Annual	12,946	1.3%		18.5%		19.8%	
H vs. I					0.781		0.000		0.000
	I	Seasonal + Annual	12,937	1.4%		20.5%		21.8%	

	H	Annual	12,946	1.3%		18.5%	19.8%	
H vs. K					0.669		0.019	0.031
	K	Monthly + Annual	13,005	1.3%		19.6%	20.9%	
	I	Seasonal + Annual	12,937	1.4%		20.5%	21.8%	
I vs. K					0.481		0.078	0.055
	K	Monthly + Annual	13,005	1.3%		19.6%	20.9%	

Table 6-4 displays the effect that the number of rate comparisons provided in conjunction with the default communications had on the pre-enrollment opt-out rates. Similar to the findings in Table 6-3, customers in the direct mail sub-population had total opt-out rate differences that were statistically significant while the email sub-population had nearly identical opt-out rates. Customers who received information on three rates in the direct mail category opted-out at a higher rate of 21.8% compared to customers that received information on four rates (19.3%).

yyy)

Table 6-4: Effect of Number of Rates Offered on Pre-enrollment Opt-outs (3 Rates vs. 4 Rates)

Comparison	Notification Cell	Number of Rate Comparisons	Population	Chose Alternate TOU Rate		Opted Out to OAT		Opted Out of Default Rate	
				%	P-value	%	P-value	%	P-value
D vs. E	D	3 Rates	9,509	0.4%	0.058	13.0%	0.576	13.5%	0.880
	E	4 Rates	9,547	0.6%		12.8%		13.4%	
I vs. J	I	3 Rates	12,937	1.4%	0.021	20.5%	0.000	21.8%	0.000
	J	4 Rates	12,878	1.0%		18.2%		19.3%	

Finally, Table 6-5 shows the difference in opt-out rates between customers offered Rate 1 and those offered Rate 2. There is little difference in the percent of customers who opted out to the OAT – in fact the difference is not statistically significant between cells A and G (Direct Mail + Email). When comparing cells I and L (Direct Mail only), the difference is statistically significant and slightly more customers opted out of Rate 1 than Rate 2. However, when switching from the default rate to the alternative rate is factored into the definition, customers switched from Rate 2 to Rate 1 at a statistically significantly higher rate. The percent of customers who were offered Rate 2 but chose the alternate rate was about 4.6% while the percent of customers who were offered Rate 1 and chose the alternate rate was closer to 1.3%. This is interesting due to the fact that Rate 1 had a slightly higher peak price and more complex rate structure.

In order to better understand potential drivers for the higher prevalence of customers switching to Rate 1, we evaluated the individual customer decisions based on the structural bill analysis presented to the customers. We found that the majority of customers (approximately 75%) who were initially assigned to Rate 2 but switched to Rate 1 did so because Rate 1 was presented as their lowest cost rate option. However, of the customers who were initially assigned to Rate 1 and switched to Rate 2, Rate 2 was the lowest cost option for only about 36% of the customers. In other words, more customers switched from Rate 1 even when it was the lowest cost option than did customers who switched from Rate 2. This could be due to Rate 2 being the simpler of the two rates or the lower peak period price.

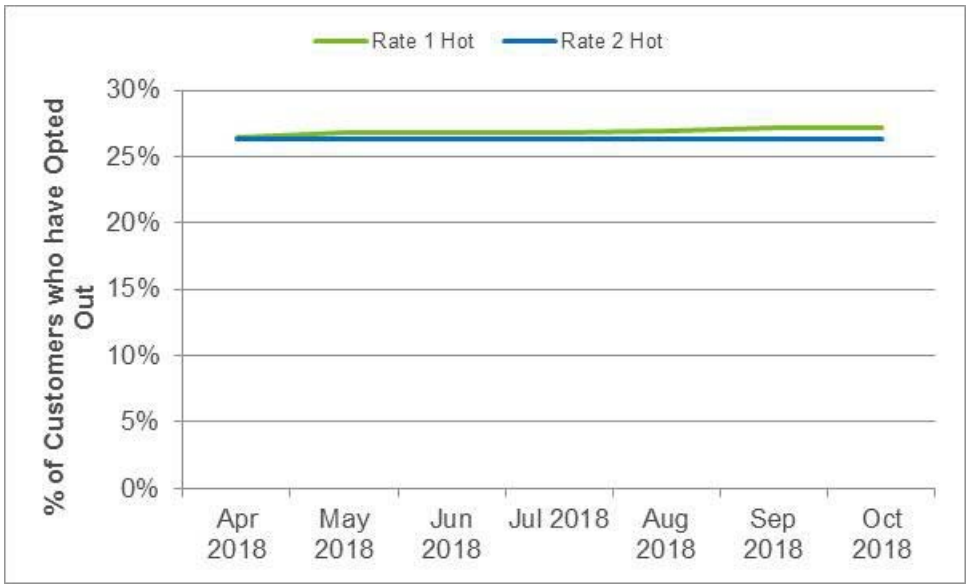
zzz) *Table 6-5: Effect of Rate Offered on Pre-enrollment Opt-outs (Rate 1 vs. Rate 2)*

Comparison	Notification Cell	Rate	Population	Chose Alternate TOU Rate		Opted Out to OAT		Opted Out of Default Rate	
				%	P-value	%	P-value	%	P-value
A vs. G	A	Rate 1	9,593	1.1%	0.000	20.3%	0.323	21.4%	0.000
	G	Rate 2	15,499	5.3%		20.8%		26.1%	
I vs. L	I	Rate 1	12,937	1.4%	0.000	20.5%	0.003	21.8%	0.045
	L	Rate 2	12,603	3.9%		19.0%		22.9%	

5.5 Post-enrollment Opt-Outs

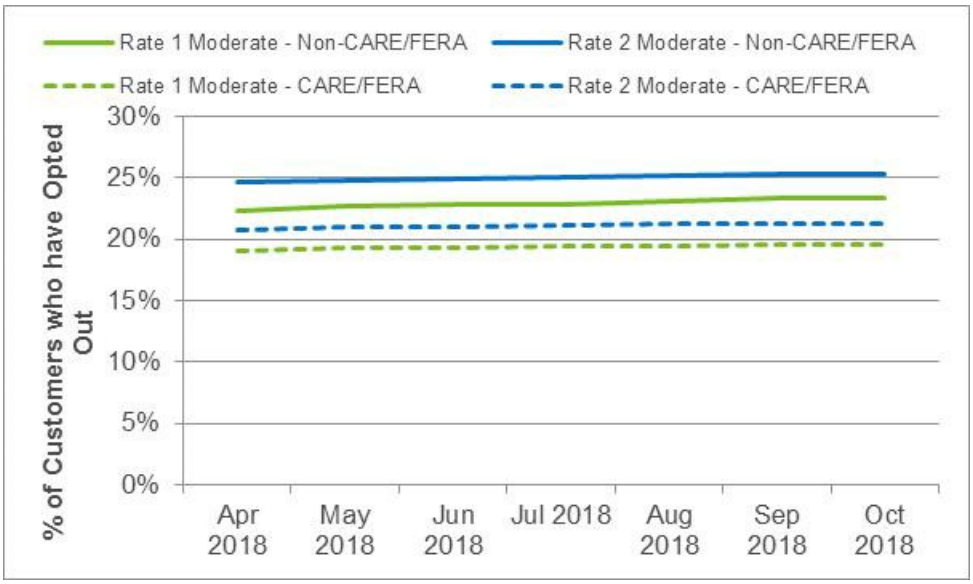
Post-enrollment opt-out rates were very small during the period following enrollment through the end of the summer (October 2018). Cumulative opt-out rates are presented for the post-enrollment period for each climate region and CARE/FERA status in Figure 6-5 through Figure 6-7. Generally any difference in cumulative opt-out rates between segments occurred during the pre-treatment period. Post-enrollment opt-out rates for all customer segments were between 0.8% and 1.7%. Post enrollment opt-out rates are lowest in the cool climate region and highest in the hot region. Within the moderate climate region, Rate 1 customers show a slightly lower opt-out rate than Rate 2 customers.

aaaa) *Figure 6-5: Cumulative Opt-Out Rates for Hot Climate Region*[35]

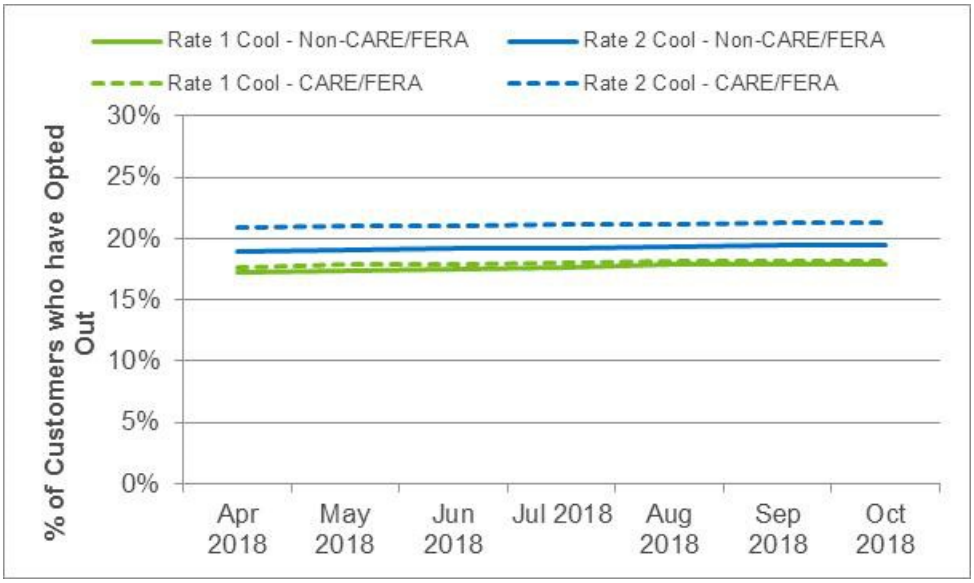


[35] Opt-out rates here present customers who opted out to the OAT, not those who opted out into the alternate rate.

bbbb) Figure 6-6: Cumulative Opt-Out Rates for Moderate Climate Region



cccc) Figure 6-7: Cumulative Opt-Out Rates for Cool Climate Region



Also of interest are post-enrollment opt-out rates by aftercare treatment cell. Table 6-6 and Table 6-7 summarizes the various treatments that were examined after customers enrolled on the new TOU rates and the sample sizes for each treatment group. Among the welcome package cells, only cells C (direct mail) and E (email) were compared as SDG&E plans to test the EE device treatment during the second summer.

dddd) *Table 6-6: Welcome Package Treatments*[36]

Welcome Package Cell	Sub-Population	Communication Channel	Welcome Package Materials	Sample Size (Rate 1)	Sample Size (Rate 2)
A	Direct Mail	DM	Welcome Info Only	40,869	10,118
B			Welcome Info + EE Device	875	0
C	Email	DM	Welcome Info Only	15,595	12,115
D			Welcome Info + EE Device	905	0
E		EM	Welcome Info Only	30,836	0
F			Welcome Info + EE Device	1,933	0

eeee) *Table 6-7: Post-Enrollment Treatments*[37]

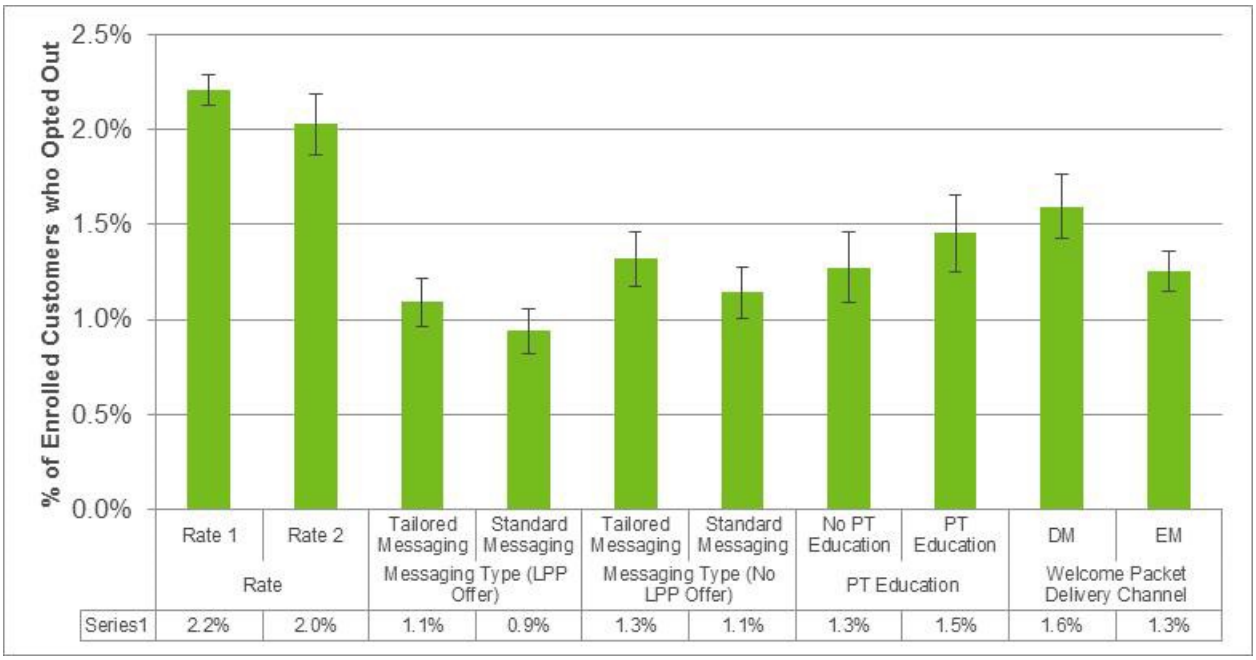
Aftercare Treatment Cell	Rate	Aftercare Group	LPP Offer	Messaging	Sample Size
A	Rate 1	PT Education Test Group	No LPP Offer	PT Education	9,742
B				No PT Education	9,687
C		LPP Test Group	LPP Offer	Tailored Messaging	17,734
D				Standard Messaging	17,726
E		Combined Message Test Group	No LPP Offer	Tailored Messaging	16,888
F				Standard Messaging	16,879

Figure 6-8 shows cumulative post-enrollment opt-out rates for the various aftercare treatment cells and Table 6-8 shows similar information along with the results of a series of t-tests. There were no statistically significant differences in opt-out rates between the different messaging types with one exception. Customers who received welcome packages via direct mail were statistically significantly more likely to opt out. However, the difference is very small and not material.

[36] See Section 2.2.3 for a detailed explanation of the welcome package treatments.

[37] See Section 2.2.4 for a detailed explanation of the post-enrollment treatments.

ffff) *Figure 6-8: Cumulative Post-Enrollment Opt-Out Rates by Aftercare Treatment*



gggg) *Table 6-8: Cumulative Post-Enrollment Opt-Out Rates by Aftercare Treatment*

Rate	Comparison	Aftercare Treatment	Number of Customers	Post-enrollment Opt-Out Rate	P-value
Both	Rate	Rate 1	91,120	2.2%	0.106
		Rate 2	21,202	2.0%	
Rate 1	Messaging Type (LPP Offer)	Tailored Messaging	17,687	1.1%	0.154
		Standard Messaging	17,675	0.9%	
	Messaging Type (No LPP Offer)	Tailored Messaging	16,838	1.3%	0.139
		Standard Messaging	16,830	1.1%	
	PT Education	No PT Education	9,660	1.3%	0.282
		PT Education	9,706	1.5%	
	Welcome Package Delivery Channel	DM	15,043	1.6%	0.003
		EM	30,105	1.3%	

7 Key Findings

The first summer of SDG&E's default TOU pilot summarized above has produced a large amount of information that will help guide SDG&E's approach to implementation of default TOU pricing. However, it must be kept in mind that these load impact findings are based on only the summer months. Load impacts will differ significantly during winter months and the actions of TOU pilot participants may be quite different over the course of a full year.

Differences in load and bill impacts and opt-out rates across customer segments at the service territory level reflect not just differences across segments, but also differences in the mix of customers across climate regions. CARE/FERA customers in the hot climate region were not

allowed to be enrolled on TOU tariffs using default recruitment. As such, comparisons across the hot and two more moderate regions not only reflect differences in climate but also differences in the mix of customers. These differences must be kept in mind when making comparisons across segments and climate regions.

7.1 Load Impacts

Key findings pertaining to load impacts from the SDG&E pilots include:

- On average, default customers on both Rates 1 and 2 produced small, but statistically significant, peak-period load reductions. Peak period load reductions averaged roughly 1.5% for Rate 1 and 2.0% for Rate 2. Survey evidence indicates that ongoing education and outreach could lead to greater load reductions. Two surveys were conducted, one shortly after enrollment and one after customers were on the rate for the summer period. Both surveys showed that only about 60% of customers were aware that their household was transitioned to a TOU rate and an even smaller share, roughly 50%, were aware that they are on a TOU rate. Also, among aware customers, only about two thirds accurately identified peak period hours. Roughly 15% of customers thought 8 AM to noon were the peak hours and another 20% identified the hours from noon to 4 PM as peak hours. Efforts to increase awareness and to educate customers about the peak period could lead to higher load reductions during peak hours.
- Load reductions were greater for Rate 2 than for Rate 1, despite having the same peak period time period (4 PM to 9 PM) and despite Rate 1 having higher peak-period prices than Rate 2. While the difference between Rate 1 and Rate 2 impacts are statistically significant, it is important to keep in mind that the estimates were calculated using different estimation techniques and the populations are not equivalent due to the exclusion of NEM customers from Rate 2.
- At the territory level, customers on Rate 1 increased their net daily electricity consumption on average summer weekdays and weekends. The increases were small but statistically significant. Similarly, customers on Rate 2 increased their daily consumption on the average summer weekend by a statistically significant amount at the territory level and on the average weekday and weekend in the moderate climateregion.
- Increases in net daily electricity consumption were driven by statistically significant increases in electricity usage during the off-peak and super off-peak periods.Customersurveys found that 32% of customers stated they shifted their electricity usage compared to 18% of customers stating they reduced electricity usage, indicating that load shifting was a driver of the off-peak load increases. Another possible explanation for the estimated increase in daily usage is the fact that control customers were subject to a High Usage Charge (HUC) for monthly usage exceeding a certain threshold whereas TOU customers were not. 2018 was the first summer in which the HUC was in effect.
- This difference could cause some control customers to reduce usage, thus producing a downward bias in the reference load. If this bias is large enough, it could lead to an estimated increase in daily usage that might otherwise have shown up as no change or a decline in daily usage had both treatment and control customers been treated the same
- The pattern of load reductions across climate regions in absolute terms was consistent between the two rates but was slightly different in percentage terms. Absolute peak period load

reductions were largest in the hot climate region, but these segments did not include CARE/FERA customers. Absolute impacts were smallest in the cool climate region, which included CARE/FERA and Non-CARE/FERA customers.

- In the moderate and cool climate regions, Non-CARE/FERA customers typically had statistically significantly greater absolute peak-period impacts compared to CARE/FERA customers. Survey findings help explain some of this difference. After being on the rate for the full summer, 58% of Non-CARE/FERA customers reported that they were on a TOU rate while only 38% of CARE/FERA customers identified their current rate plan as a TOU rate. Identification of the correct peak hours was also much higher among Non- CARE/FERA customers (69.4%)[38] versus CARE/FERA customers (58.2%). Efforts to more effectively educate CARE/FERA customers regarding their TOU rate plan could improve load reductions for this customer segment.
- The SDG&E pilot tested a post-enrollment educational treatment that offered to help customers with programmable thermostats (PT) program them to align with the TOU rate periods. The treatment was designed to test whether the educational campaign would help customer use existing technology to increase peak period load reductions. With one exception, the incremental peak period impact among households who received PT education compared to households that did not was not statistically significant. In other words, the additional messaging did not increase peak period impacts. The PT education group for CARE/FERA customers in the cool climate region had incrementally smaller load impacts of 0.01 kW relative to the non-PT education group.
- Another treatment compared the effectiveness of post-enrollment educational material that was tailored to persona segments with messaging that was not tailored. Of the segments that received tailored post-enrollment messaging, only Non-CARE/FERA customers in the hot climate region that received tailored messaging had significant incremental load reductions of 0.05 kW compared to standard education customers. In the cool climate region, Non-CARE/FERA customers who received tailored messaging had smaller load reductions relative to standard education customers.

[38] This value represents the average percent of customers that correctly identified each of the peak period hours as in the peak period.

- The offer to customers to enroll on the Level Pay Plan as a way of managing bill volatility across months and seasons was only taken up by a very small number of customers.

7.2 Structural Bill Impacts

Key findings pertaining to bill impacts include:

- Rate 1 and Rate 2 have similar distributions of structural benefiters, non-benefiters, and customers in the neutral bill impact category of ±$3/month. In all regions and customer segments, the proportion of benefiters is a slightly higher on Rate 1 than on Rate 2, but there are also more non-benefiters on Rate 1 than on Rate 2. In the moderate climate region and for the service territory as a whole, roughly 10% more Rate 2 customers fall into the neutral category compared with Rate 1 customers.
- A majority of customers (73% on Rate 1 and 80% on Rate 2) are in the neutral bill impact category and are neither structural benefiters nor non-benefiters on an annual basis.
- On Rate 1, 17% of Non-CARE/FERA customers are structural non-benefiters on an annual basis while 5% of CARE/FERA customers fall into the same category. However, the CARE/FERA group does not include customers in the hot climate region where bill increases under the TOU rates are more likely to occur. The distributions were similar for Rate 2.
- Over 35% of customers in the hot climate region are structural non-benefiters on an annual basis for both rates. In the summer months, about 44% of customers in the hot region are structural non-benefiters while between 30% and 41% fall into the neutral category, depending on the rate.
- Over 60% of CARE/FERA customers in the moderate and cool climate regions had summer structural bill impacts in the neutral category. In the winter months, over 97% of customers across rates, CARE/FERA status, and climate regions fell into the neutral category.

7.3 Customer Attrition

Key findings pertaining to the opt-out analysis include:

- Opt-out rates can reveal customer preferences for the two rates, but comparisons must be done on an apples to apples basis. A direct comparison of Rate 1 versus Rate 2 opt- out rates overall is not appropriate because of differences in the notification treatments across the rates. When comparing the opt-out rates between Rate 1 and Rate 2 cells with identical notification treatments, the outcome changes based on the opt-out definition used. When opt out is defined as choosing the OAT rather than the default rate offered, 20.5% of Rate 1 and 19.0% of Rate 2 customers opted out, and this difference was statistically significant. When opt-out is defined as taking any action other than accepting the offered rate, the opt-out rate was 21.8% for Rate 1 and 22.9% for Rate 2, and the difference was also statistically significant. Under the first definition, there is a stronger preference for Rate 2, but in the second definition there a preference for Rate 1.

- The percent of customers who were offered Rate 2 but selected Rate 1 was statistically significantly greater than the percent of customers who were offered Rate 1 and chose Rate 2. This appears to be largely driven by customers switching to the lowest cost rate based on the rate analysis included with the notification materials. However, on a percentage basis, more customers switched from Rate 1 even when it was the lowest cost option than did customers who switched from Rate 2. This could be due to Rate 2 being the simpler of the two rates or the lower peak period price.
- The highest pre-enrollment opt-out rate was in the hot climate region, followed by the moderate and cool climate regions. Opt-out rates for CARE/FERA and Non-CARE/FERA populations varied by climate region and did not have a consistenttrend.
- SDG&E proactively contacted customers who were identified as likely to experience bill increases of greater than 10%, or $120 annually. This outreach likely contributed to higher opt-out rates across the territory.
- Customers notified through both direct mail (DM) and emails (EM) were found to be slightly more likely to opt out of the default rate (21.4%) compared to customers that only received direct mail (19.8%). Customers that only received email communication were significantly less likely to opt out than those that received direct mail only or both email and direct mail and the difference between the DM and EM channels is statistically significant. There are two possible explanations for this difference. One is that level of awareness of the default process was less for customers who only received email communications (54%) compared to customers that got direct mail only (62%) or both direct mail and email (67%). The second possible explanation for the lower opt-out rate for email only customers is that these customers were only allowed to opt-out online and they had to be enrolled in the MyAccount program to do so. Direct mail customers could opt out using a business reply card or by calling SDG&E. These differences in opt-out channels almost certainly explain part of the lower opt out rate for email only customers.
- Customers in the DM sub-population that were provided rate comparisons at the seasonal and annual level were slightly more likely to opt-out of the default rate compared to customers that received annual rate comparisons or annual and monthly rate comparisons. The differences were statistically significant and equal to about two percentage points. Providing differing rate comparison information to customers in the EM sub-population did not yield statistically significant differences in overall opt-out rates.
- In the DM sub-population, customers who received 3 rate comparisons were over two percentage points more likely to opt out of their default rate compared to customers who received 4 rate comparisons in their notification materials. This difference was statistically significant. In the EM sub-population, opt-out rates were nearly identical for the two rate comparison types.
- Post-enrollment opt-out rates were very small and fell between 0.8% and 1.7% for CARE/FERA and Non-CARE/FERA customers in all climate regions. This indicates the vast majority of customers stay on a TOU rate once they are enrolled.

7.4 A Note About Comparing Default and Opt-in Results

If comparisons are made between results from this default pilot and the prior opt-in pilot, it is important to note a few considerations:

- The first summer for the opt-in pilot covered July through October, while the default pilot estimates presented in this report include June through October. The omission of June, which is often a cooler month, from the opt-in pilot could affect the size of the average impacts from the first summer.

- The peak periods for Rate 1 and Rate 2 in the opt-in pilots 4 PM to 9 PM, which are the same peak periods for Rate 1 and Rate 2 in the default pilot.

- The peak period prices and price ratios also changed between the opt-in and default pilot. The summer peak period price for Rate 1 was $0.57 during the peak period for the opt-in pilot compared to $0.67 for Rate 1 in the default pilot. The summer peak period price for Rate 2 in the opt-in pilot ($0.57/kWh) was lower than for Rate 2 in the default pilot ($0.64/kWh).

- The opt-in pilot did not include any customers in the hot region for Rate 1 while the default pilot includes Non-CARE/FERA customers in the hot climate region. The opt-In pilot included CARE/FERA customers in each climate region for Rate 2 whereas the default pilot does not include CARE/FERA customers in the corresponding hot climate region for either rate.

In summary, the months included in the evaluation, peak-period prices, and inclusion of CARE/FERA customers all changed between the opt-in and default pilots. Therefore, the differences observed between the pilots are not solely a difference in customer response to opt-in versus default enrollment strategies.

Figure A-6: LPP Offer – Skeptical Solution Seeker

Appendix A Post-Enrollment Treatment Examples

hhhh) Figure A-1: LPP Offer – Generic

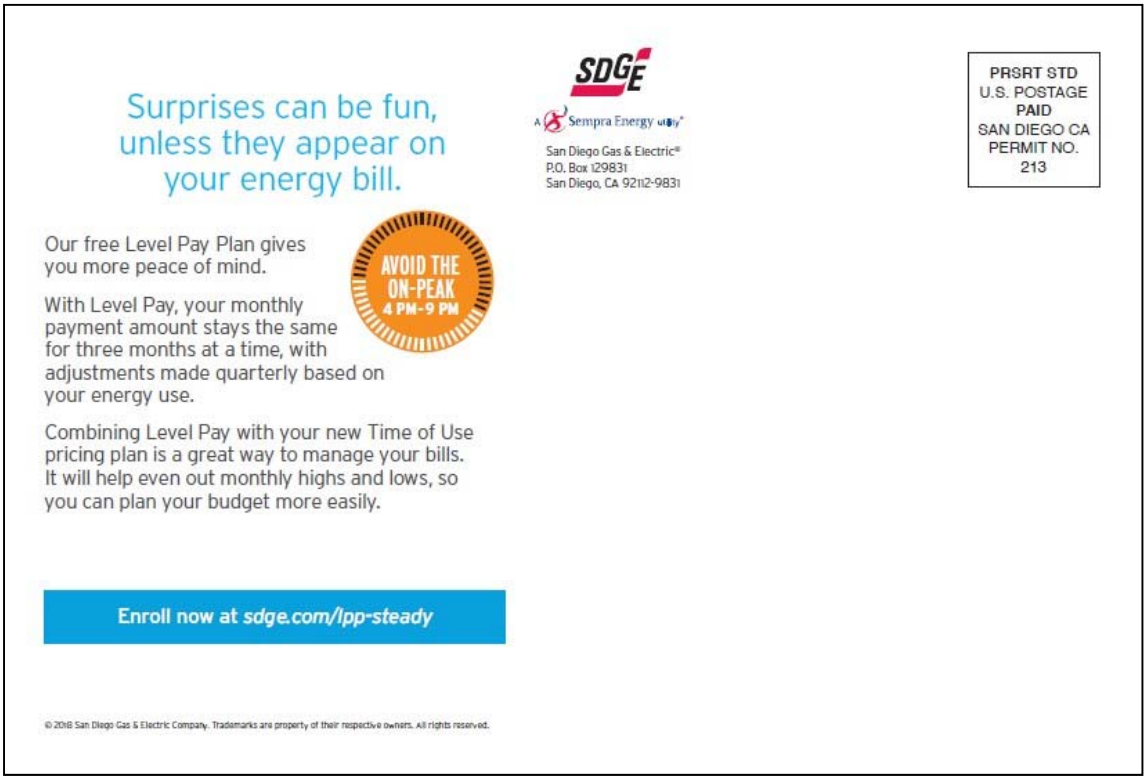


Figure A-6: LPP Offer – Skeptical Solution Seeker

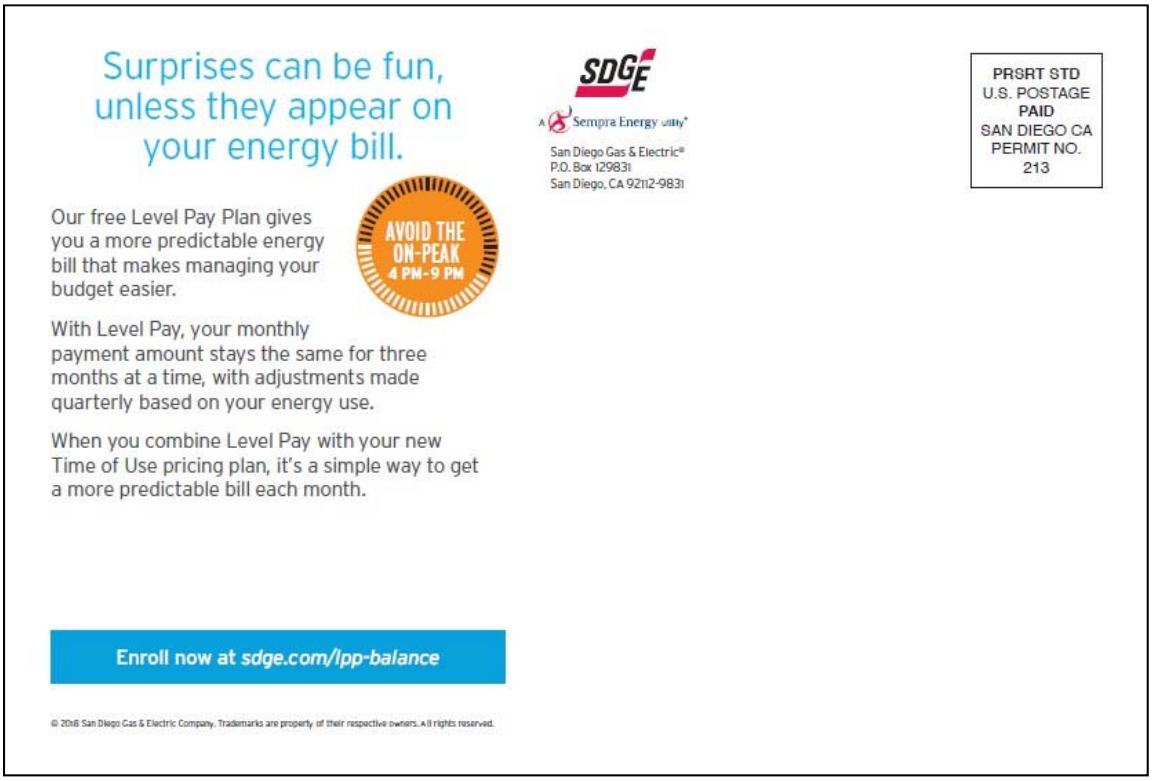


Figure A-6: LPP Offer – Skeptical Solution Seeker

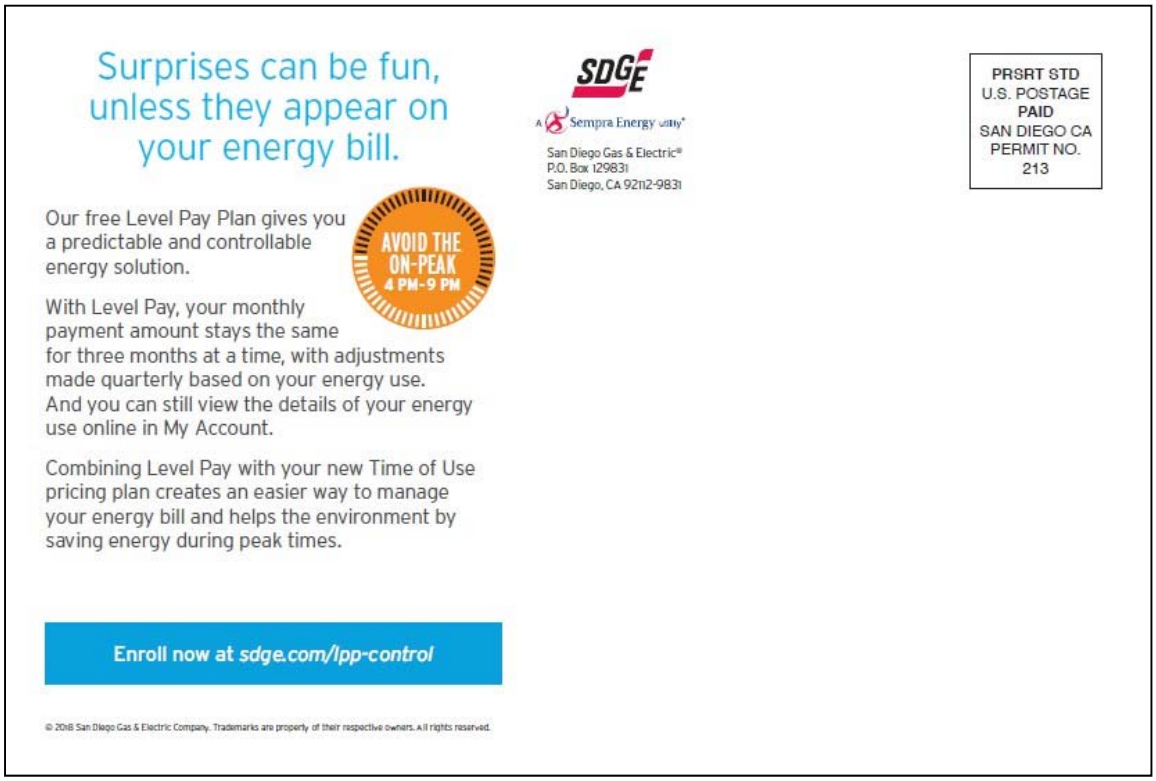
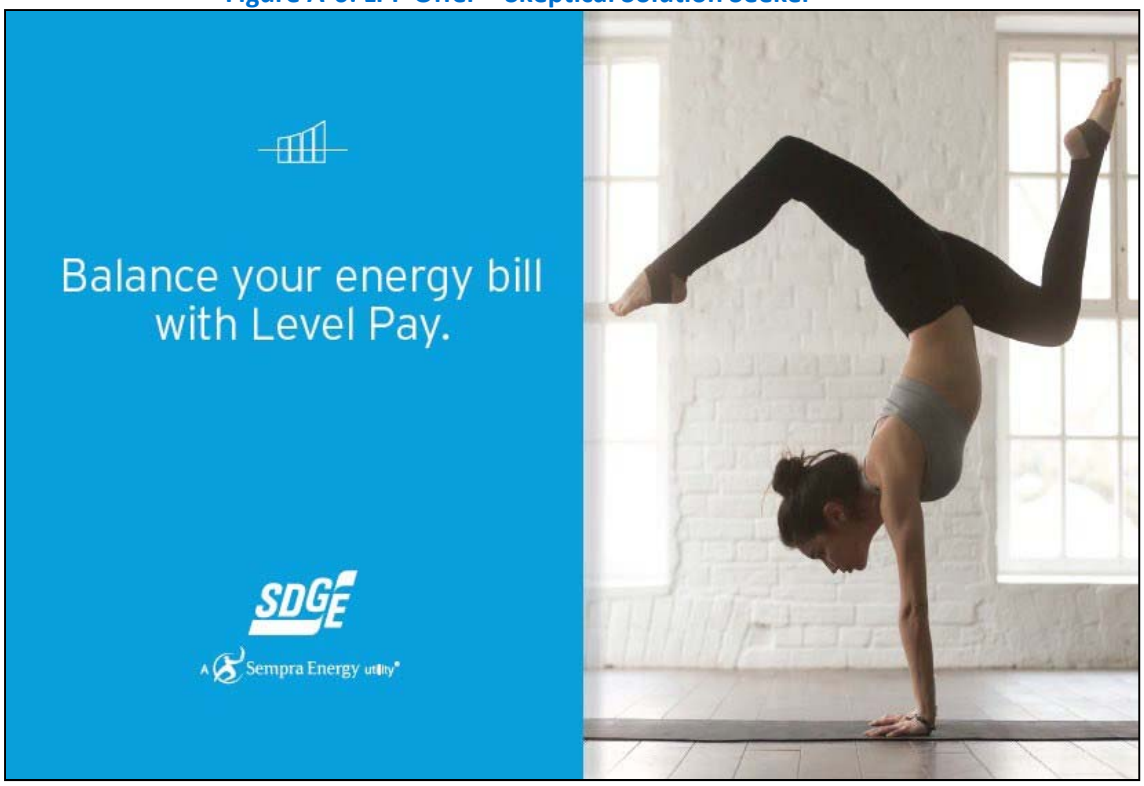


Figure A-6: LPP Offer – Skeptical Solution Seeker



The Level Pay Plan gives you more time to focus on the things you care about.

With our free Level Pay Plan, your monthly payment amount stays the same for three months at a time, with adjustments made quarterly based on your energy use. Plus, you can view the details of your energy use online in My Account.

AVOID THE ON-PEAK 4 PM-9 PM

Combining the Level Pay with your new Time of Use pricing plan can simplify your energy bill.

Enroll now at *sdge.com/lpp-evenout*

SDGE
A Sempra Energy utility®

San Diego Gas & Electric®
P.O. Box 129831
San Diego, CA 92112-9831

PRSRT STD
U.S. POSTAGE
PAID
SAN DIEGO CA
PERMIT NO.
213

Figure A-6: LPP Offer – Skeptical Solution Seeker

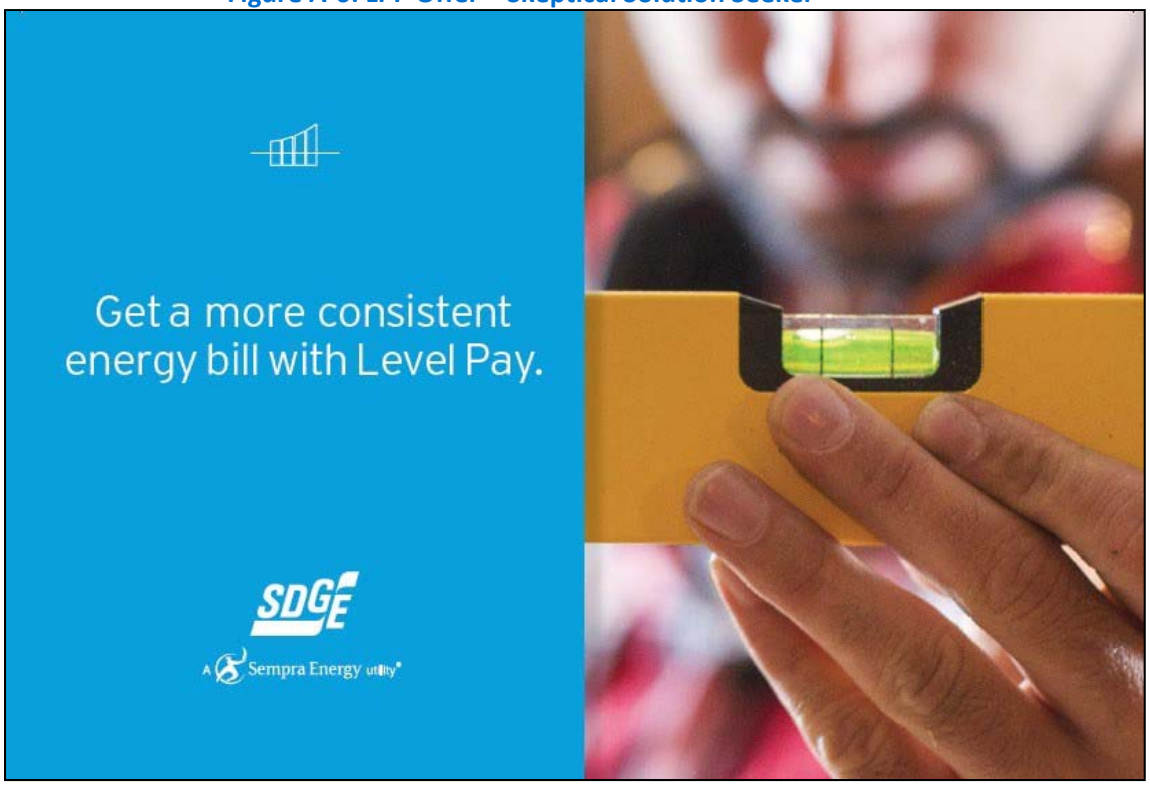
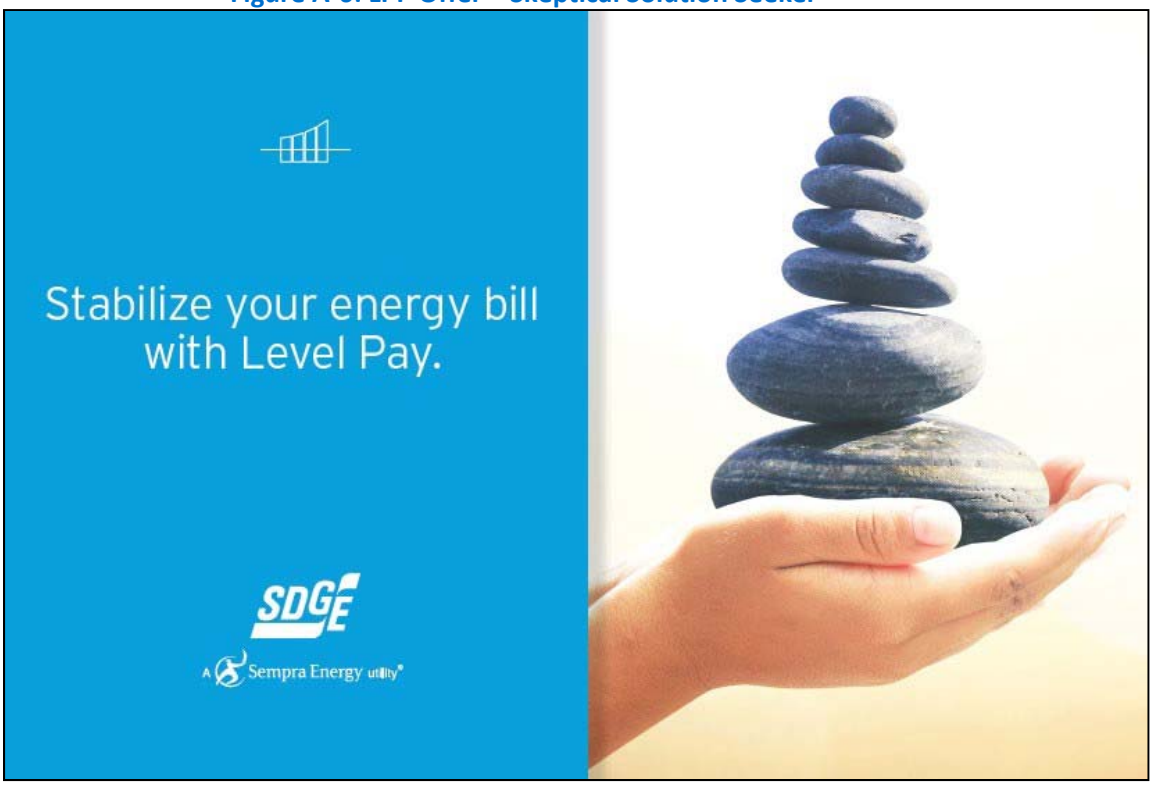
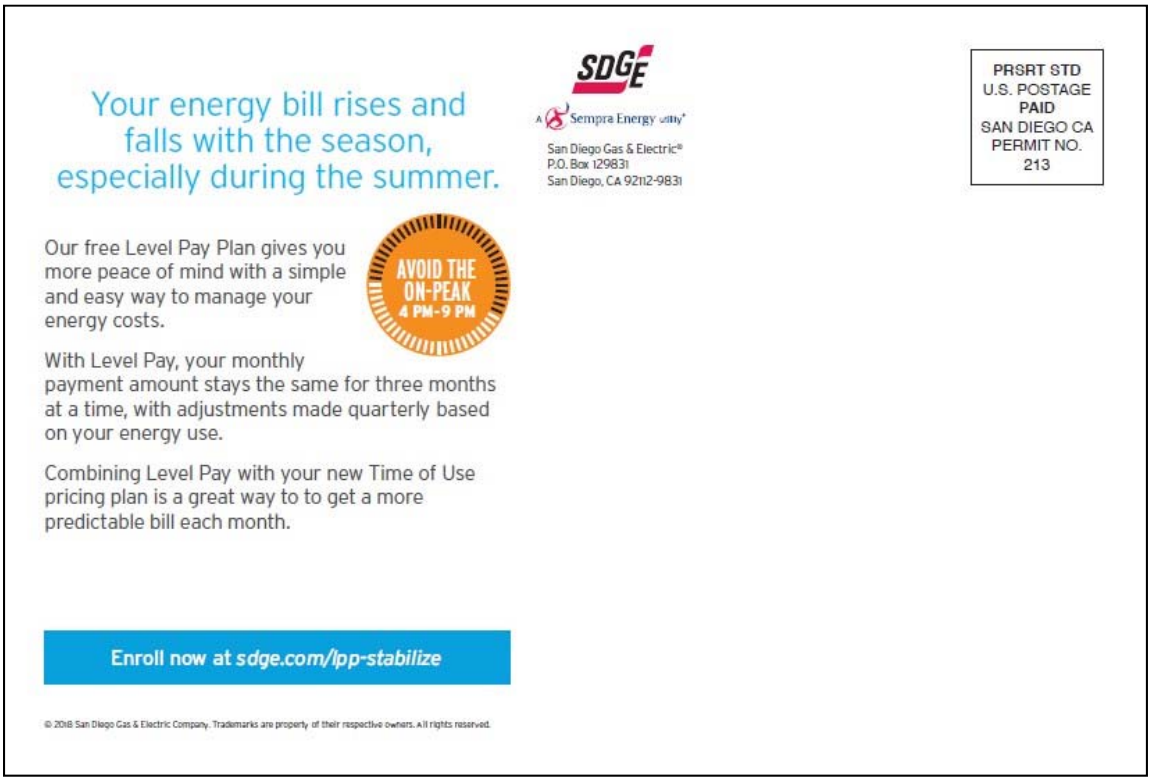
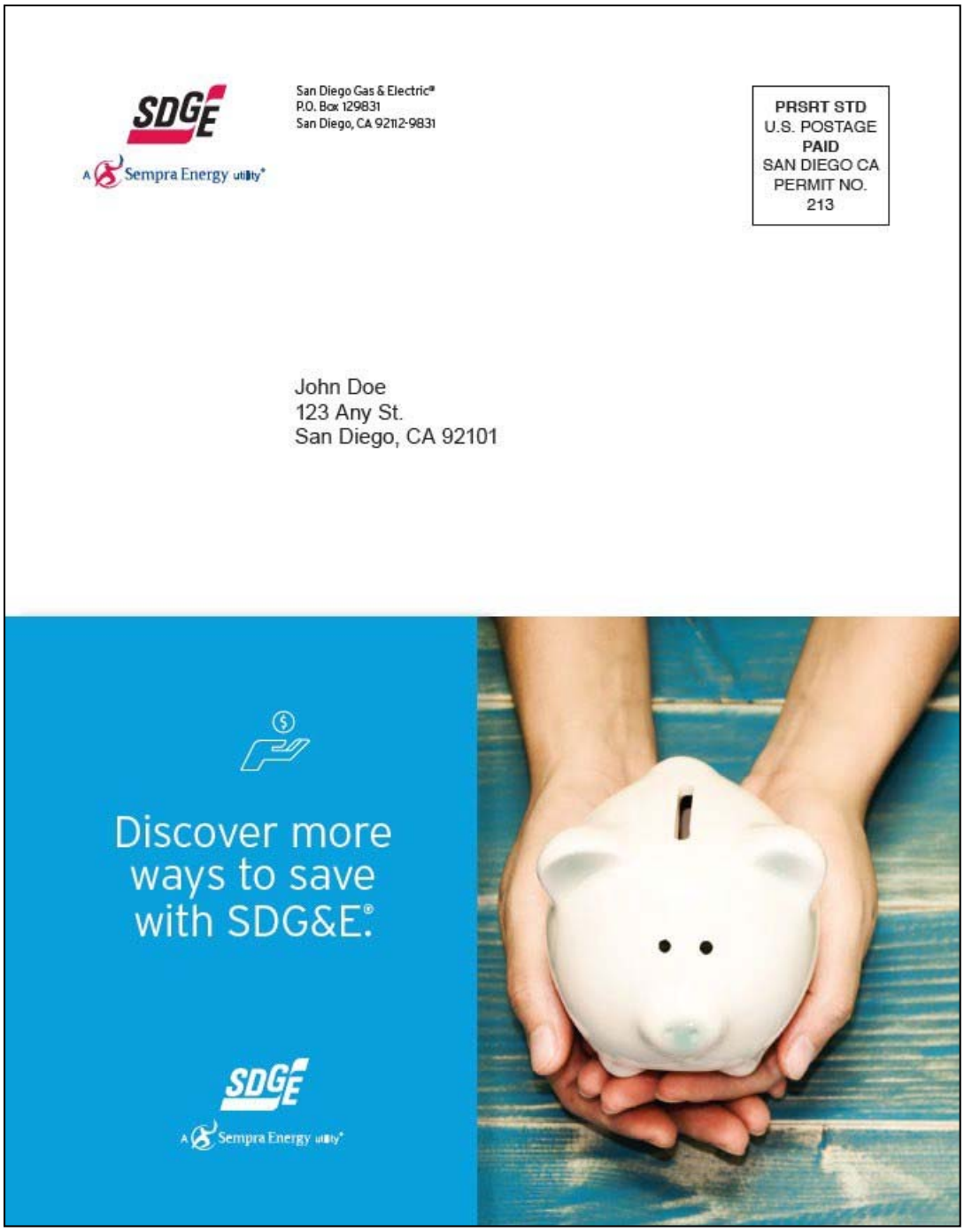


Figure A-6: LPP Offer – Skeptical Solution Seeker





iiii) Figure A-7: No LPP Offer – Generic



With your new Time of Use pricing plan, *when* you use energy matters.

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

AVOID THE ON-PEAK 4 PM-9 PM

But Time of Use isn't the only innovative way to save...

Marketplace allows you to do your online shopping to find energy-efficient home appliances. Get detailed product information, price comparisons, available rebates and the option to purchase directly from participating retailers.

My Account is the one-stop location for your detailed energy use. Sign up for weekly alerts on energy use, or complete a home energy survey for customized savings tips. And it only takes five minutes or less (have your account number ready).

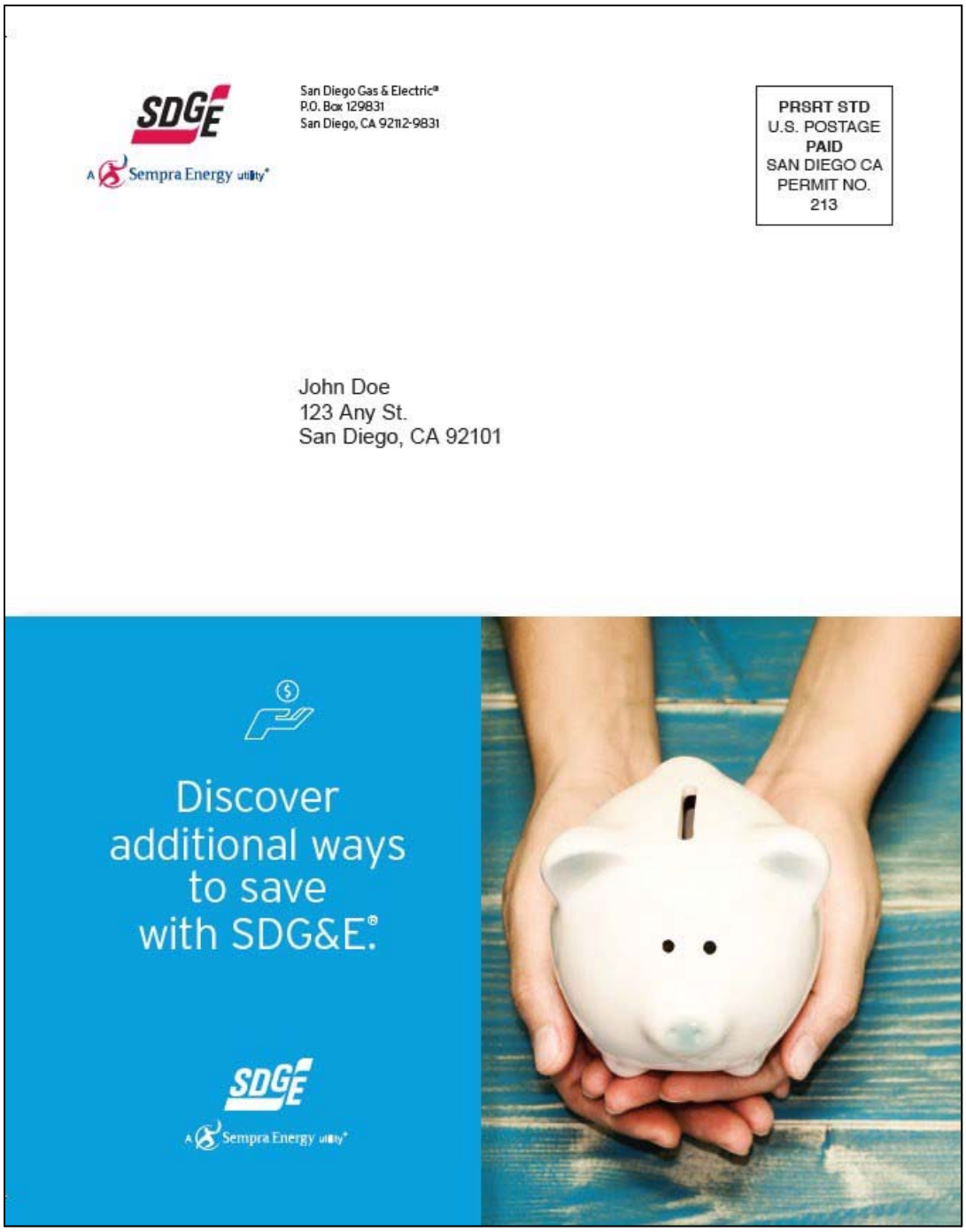
Customer Assistance programs help households with CARE bill discounts and energy-efficient home upgrades based on income or medical need.

Smart Thermostat use helps control your heating and A/C and savings are available through a $50 rebate.

Learn more at *sdge.com/whenmatters-programs*

SDGE
A Sempra Energy utility

jjjj) Figure A-8: No LPP Offer – Budget Constrained



With your new Time of Use pricing plan, *when* you use energy matters.

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

AVOID THE ON-PEAK 4 PM - 9 PM

But Time of Use isn't the only way to save...

Customer Assistance programs help households with CARE bill discounts and energy-efficient home upgrades based on income or medical need.

Smart Thermostat savings are available through our $50 rebate. This device helps control your heating and A/C use.

My Account is the easy-to-enroll, one-stop location for your detailed energy use. Sign up for paperless billing and weekly alerts on your energy use. And it only takes five minutes or less (have your account number ready).

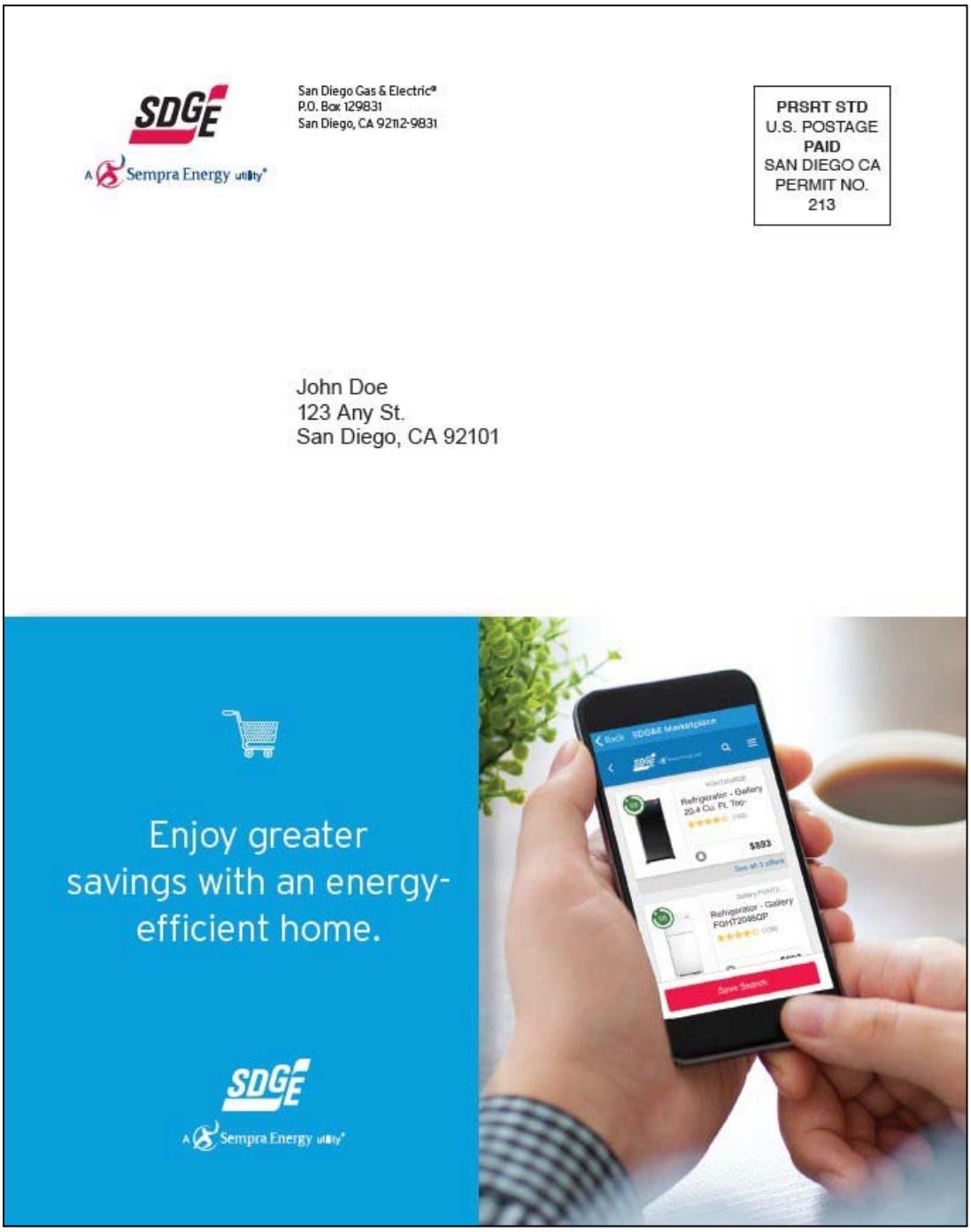
Marketplace allows you to do your online shopping to find energy-efficient home appliances and products, like smart strips and light bulbs. Some products have rebates as well.

Learn more at *sdge.com/whenmatters-assist*

SDGE

A Sempra Energy utility

kkkk) *Figure A-9: No LPP Offer – Connected Coastal*



With your new Time of Use pricing plan, *when* you use energy matters.

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

AVOID THE ON-PEAK 4 PM - 9 PM

But Time of Use isn't the only way to save. Here are a few more ways you can help lower your monthly bill and benefit the environment:

Marketplace allows you to do your online shopping to find smart home devices and TVs. Get detailed product information, price comparisons, available rebates and the option to purchase directly from participating retailers.

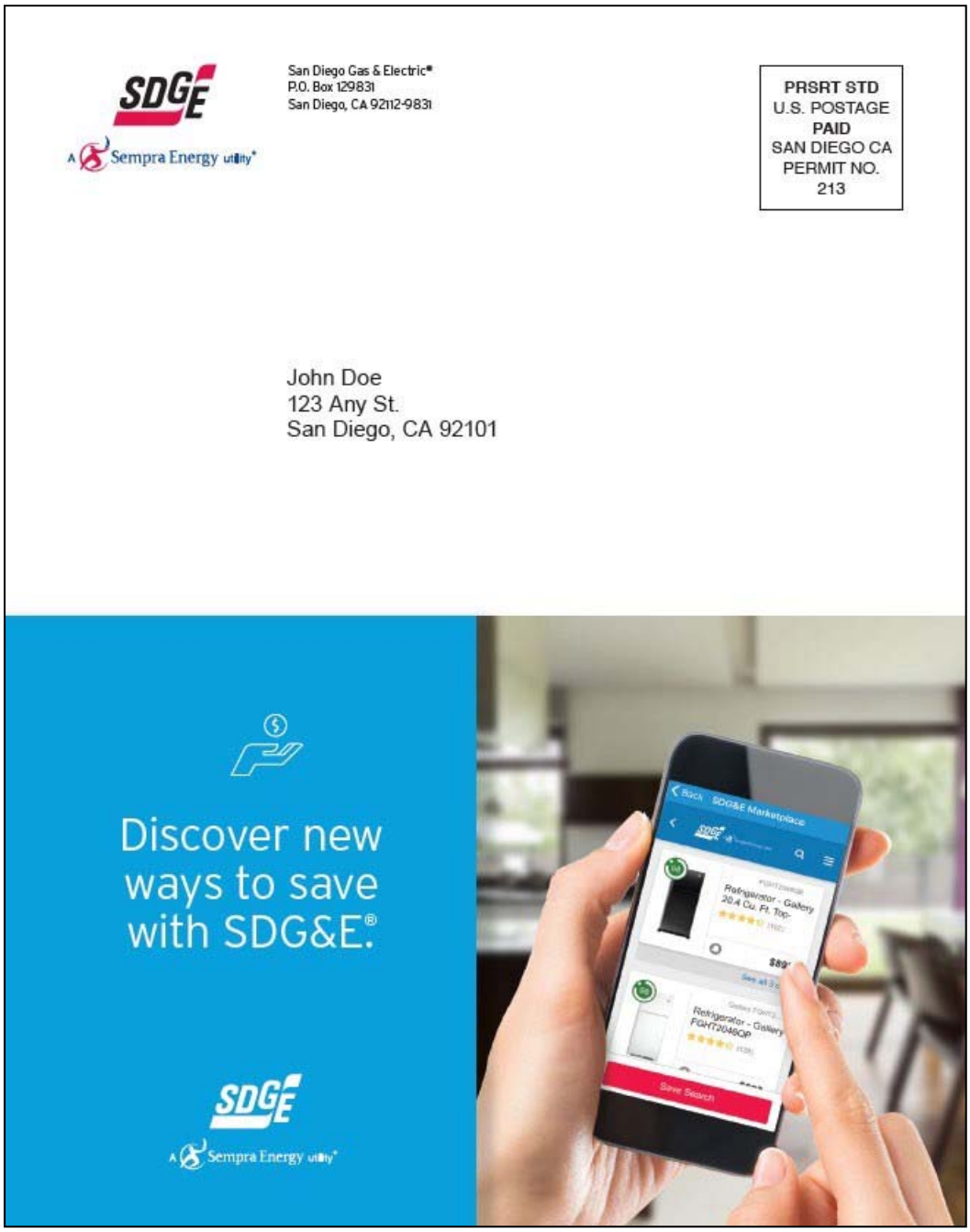
My Account is the one-stop location for your detailed energy use. Sign up for weekly alerts on energy use or complete a home energy survey for customized savings tips. Signing up takes five minutes or less (have your account number ready).

Customer Assistance programs help households with CARE bill discounts and energy-efficient home upgrades based on income or medical need.

Learn more at *sdge.com/whenmatters-environ*

SDGE
A Sempra Energy utility

llll) *Figure A-10: No LPP Offer – Energy Elite*



With your new Time of Use pricing plan, *when* you use energy matters.

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

But Time of Use isn't the only innovative way to save. Increasing your home's energy efficiency can show big returns on your monthly energy bill as well.

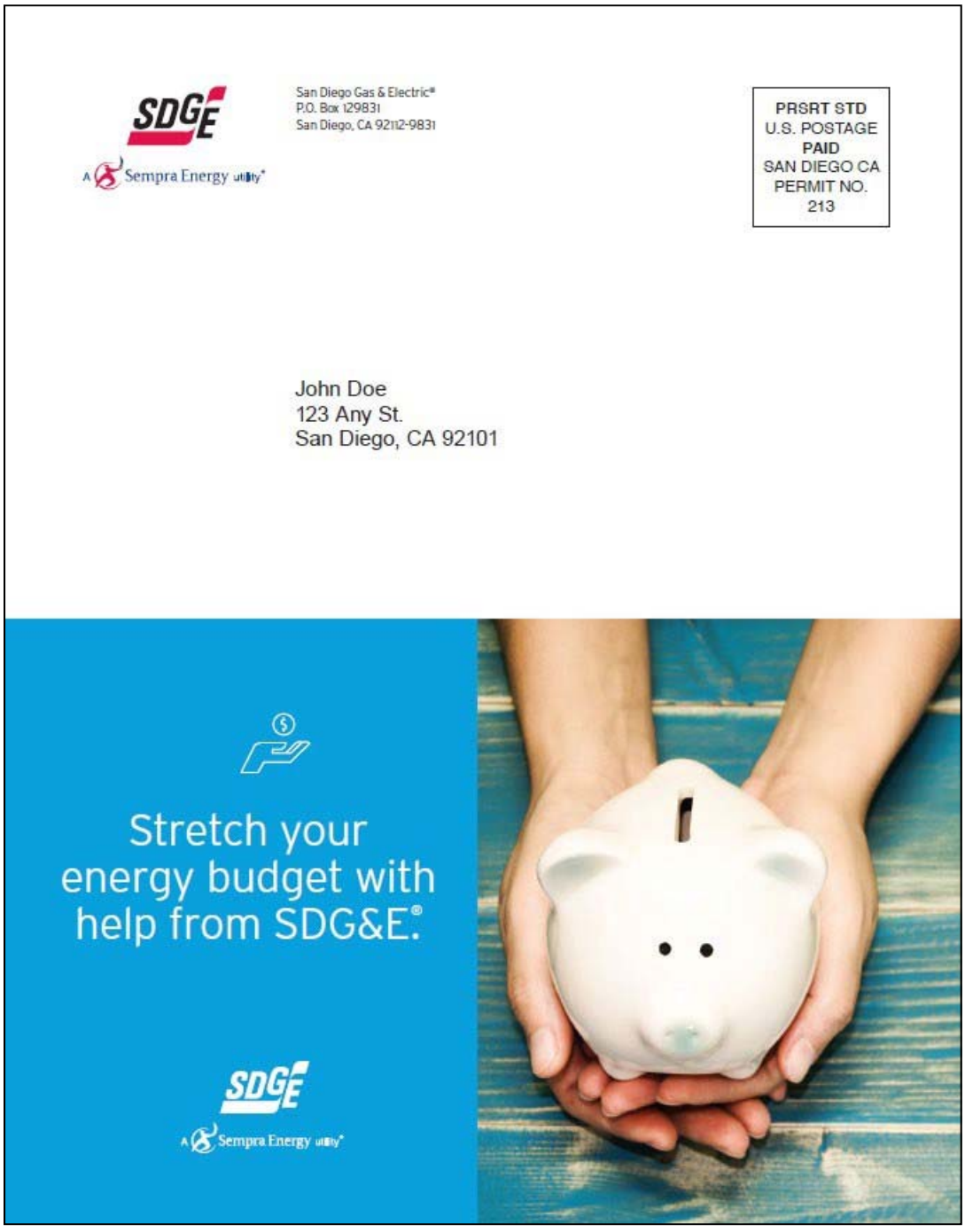
Marketplace allows you to do your online shopping to find energy-efficient home appliances and smart thermostats. Get detailed product information, price comparisons, available rebates and the option to purchase directly from participating retailers.

My Account is the one-stop location for your detailed energy use. Complete a home energy survey to get customized savings tips. Signing up takes five minutes or less (have your account number ready).

Learn more at *sdge.com/whenmatters-digital*

SDGE
A Sempra Energy utility

mmmm) *Figure A-11: No LPP Offer – Mature and Mindful*



With your new Time of Use pricing plan, *when* you use energy matters.

AVOID THE ON-PEAK 4 PM-9 PM

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

But Time of Use isn't the only way to save, especially if you're on a fixed income.

My Account is the easy-to-use, one-stop location for your detailed energy use and customized saving tips. Sign up for weekly alerts on energy use. And it only takes five minutes or less (have your account number ready).

Customer Assistance programs help households with CARE bill discounts and energy-efficient home upgrades based on income or medical need.

Marketplace allows you to do your online shopping to find energy-efficient home appliances and programmable thermostats. Get detailed product information, price comparisons, available rebates and the option to purchase directly from participating retailers.

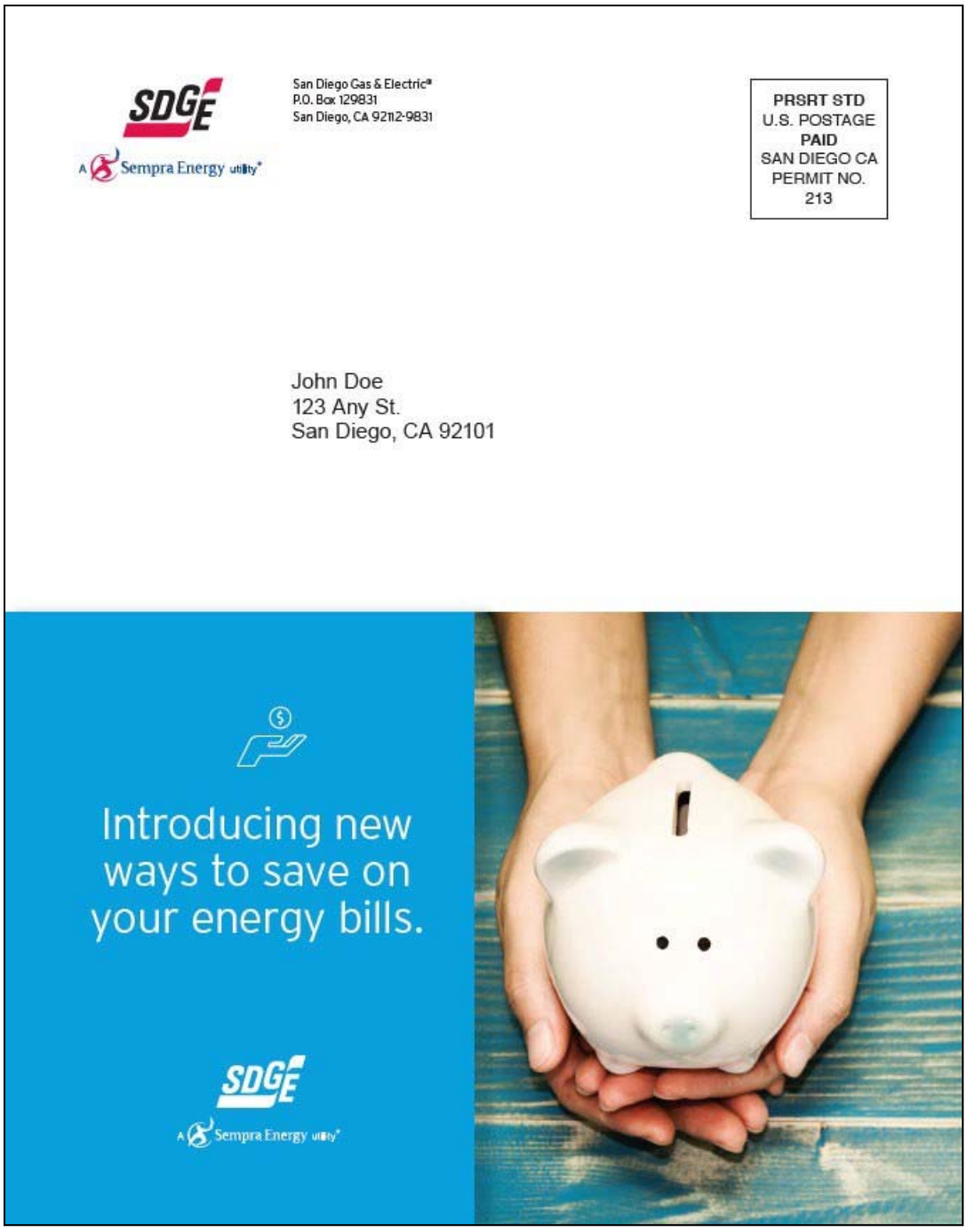
Smart Thermostat savings are available through our $50 rebate. This device helps control your heating and A/C use.

Learn more at *sdge.com/whenmatters-budget* or call *1-800-411-7343*

SDGE

A Sempra Energy utility

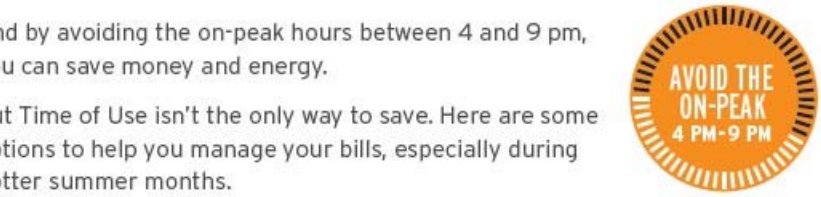
nnnn) Figure A-12: No LPP Offer – Skeptical Solution Seeker



With your new Time of Use pricing plan, *when* you use energy matters.

And by avoiding the on-peak hours between 4 and 9 pm, you can save money and energy.

But Time of Use isn't the only way to save. Here are some options to help you manage your bills, especially during hotter summer months.



Marketplace allows you to do your online shopping to find energy-efficient home appliances and smart thermostats. Get detailed product information, price comparisons, available rebates and the option to purchase directly from participating retailers.

My Account is the one-stop location for your detailed energy use. Sign up for weekly alerts on energy use or complete a home energy survey for customized savings tips. And it only takes five minutes or less (have your account number ready).

Smart Thermostat savings are through our $50 rebate. This device helps control your heating and A/C use.

Learn more at *sdge.com/whenmatters-save*

SDGE
A Sempra Energy utility®

oooo) *Figure A-13: Thermostat Education*

Nexant

Headquarters

101 2nd Street, Suite 1000

San Francisco CA 94105-3651

Tel: (415) 369-1000

Fax: (415) 369-9700

www.nexant.com

Appendix E: TOU Default Pricing Pilot Final Evaluation

REPORT

Nexant

Reimagine tomorrow.

Default Time-of-Use Pricing Pilot Final Evaluation

Submitted to San Diego Gas & Electric, Co.

November 1, 2019

Principal authors:

Stephen George, Ph.D., Senior Vice President Eric Bell, Ph.D., Principal

Aimee Savage, Consultant II
Tyler Lehman, Project Analyst II

CALMAC ID: SDG0318.02

Contents

III. 1 Executive Summary

This document constitutes the final evaluation report for San Diego Gas & Electric Company's residential default time-of-use (TOU) pricing pilot. This pilot was implemented in response to California Public Utilities Commission (CPUC) Decision 15-07-001. A key objective of the pilot is to develop insights that will help guide SDG&E's approach to implementation of default TOU pricing for the majority of residential electricity customers and the CPUC's policy decisions regarding default pricing.

Findings from the first summer-June through October 2018-are documented in the "Default Time-Of-Use Pricing Pilot Interim Evaluation" dated April 1, 2019 (hereafter referred to as the Interim Report). The Interim Report contains detailed background information on the pilot, describes the pilot design and the load impact evaluation methodology, discusses SDG&E's pilot implementation and treatments, and presents load impacts for the first summer period. It also presents structural bill impacts and summarizes pre-enrollment opt-out rates. This Final Report contains a brief summary of findings documented in more detail in the prior report, but focuses primarily on load impacts from the winter period in 2018 and 2019 as well as bill impacts for the first full-year of the pilot.

The winter results provide load impacts for the entire winter rate period of October 2018 through May 2019. Behavioral bill impacts and total bill impacts are provided for the full first year of the pilot, from June 2018 through May 2019 in addition to the summer and winter seasons. Customer attrition throughout the year is also included in this report.

The pilot tested two different TOU rate options. Approximately 141,000 households were assigned to one of the two TOU rates, and an additional 169,000 were retained in the study on the standard tiered rate to act as a control group for those who were placed on the new tariffs. After receiving multiple notifications regarding the fact that their rate will change if they did not take action by a certain date, customers had the choice of staying on their otherwise applicable tariff or selecting an alternative TOU rate plan. If a customer took no action, they were placed on the default rate associated with their assigned group. The initial default notifications are described in detail in Section 2.2 of the Interim Report. These notifications included a rate analysis comparing each customer's bill based on the new TOU rate and at least one other TOU rate with their bill under the otherwise applicable tariff using historical customer data. The notifications also included additional education and outreach (E&O) material.

Figure 1-1 and Figure 1-2 show the timing of the rate periods for Rates 1 and 2 and the prices[1] in each period. Rate 1 is a three-period rate in summer and winter. Prices are the same on weekdays and weekends but weekends have a longer super off-peak period relative to weekdays. The peak period in both summer and winter is from 4 to 9 PM. The rate structure for winter is the same as summer except for the months of March and April where there is an additional super off-peak period from 10 AM to 2 PM. The peak-to-super-off-peak price ratio in summer is 1.7:1 for usage above the baseline quantity. In winter, the peak and off-peak prices are very similar, as super off-peak prices are nearly 6% lower than peak-period prices. The

[1] Prices do not reflect the baseline credit of $0.10 per kWh for electricity usage up to 130% of the customer's baseline allocation.

structure of Rate 2 is simpler compared to Rate 1 as there are only two rate periods that don't vary throughout the year or on weekdays or weekends. The peak period is the same as Rate 1 (4 PM to 9 PM) and the remaining period is an off-peak period from 9 PM to 4 PM. Appendix A shows the prices that were in effect throughout the analysis period, including the otherwise applicable tariff (OAT). These are the rates that were used for the bill impact analysis.

a) *Figure 1-1: Default Pilot Rate 1*[2]

Day Type	Season	Hour Ending																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Weekday	Summer	Super Off-Peak (28¢)						Off-Peak (33¢)										Peak (55¢)							
	Winter	Super Off-Peak (34¢)						Off-Peak (35¢)										Peak (36¢)							
	March - April	Super Off-Peak (34¢)						Off-Peak (35¢)										Peak (36¢)							
Weekend	Summer	Super Off-Peak (28¢)																Peak (55¢)							
	Winter	Super Off-Peak (34¢)																Peak (36¢)							

b) *Figure 1-2: Default Pilot Rate 2*

Day Type	Season	Hour Ending																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Weekday	Summer	Off-Peak (32¢)																Peak (52¢)							
	Winter	Off-Peak (34¢)																Peak (36¢)							
Weekend	Summer	Off-Peak (32¢)																Peak (52¢)							
	Winter	Off-Peak (34¢)																Peak (36¢)							

1.1 Pilot Design & Evaluation

Evaluation of the default pilot focused on a number of important research objectives, including:

- Assessing SDG&E's operational readiness to default large numbers of customers onto TOU rates over a short time. Relevant metrics include call volume, billing exception processing, database capabilities, tracking systems, rate change and bill processing, system enhancements, and bill protection processing.

- Determining the impact of different marketing, education and outreach (ME&O) strategies on awareness of rate options, opt-out rates, engagement with the TOU rate and customer perceptions while on a TOU rate. Specific ME&O options examined included variation in communications channel and the type of structural bill information provided in conjunction with the default notifications, and different format and content for post-enrollment education materials.

- Estimating the average peak and off-peak change in energy usage by customers enrolled on each default rate (referred to as Rate 1 and Rate 2).

- Estimating the bill impacts for customers enrolled onto each rate.

- Determining the opt-out rate for customers defaulted onto each rate under each notification treatment.

- Determining the impact of options such as programmable thermostats education, tailored messaging, and the offer of level payment plans (LPP) on customer retention on

[2] Rates effective May 1, 2019, and do not reflect the baseline credit of approximately .10 cents kWh for usage up to 130% of baseline.

each rate as well as on load and bill impacts and customer perceptions while on their default TOU rate.

An assessment of operational readiness is not included in this report. Survey-related metrics such as awareness, customer satisfaction, and others have been obtained through two surveys and are reported elsewhere.[3]

The pilot was structured as a randomized encouragement design (RED) experiment. With an RED, different randomly selected samples of customers are offered different experimental treatments (in this case, a TOU rate or different content or messaging in the recruitment materials) and another random group of customers is not offered anything (e.g., the control group). Some who are offered the treatment take it and some do not. Because each sample is a statistical clone of the other due to the random selection (especially in this case where sample sizes are quite large), comparing the behavior of the encouraged group with that of the control group allows for an unbiased assessment of the impact of the treatment. This analysis requires a two-step process in order to isolate the impact of the encouragement (e.g., the offer of a treatment) from the treatment itself, as explained more fully in Section 3 of the Interim Report.

Approximately 141,000 residential customers received default notifications. Of these, nearly 113,000 customers were defaulted onto Rate 1 while the rest were defaulted onto Rate 2. Detailed descriptions of notification materials can be found in Section 2 of the Interim Report.

Based on pre-treatment validations it was determined that an error had occurred in the pilot implementation and the control groups were not statistically equivalent to the treatment groups. Without pre-treatment statistical equivalence between the treatment and control groups, the RED analysis framework was no longer valid. SDG&E selected a revised control group for each rate from the original pool of eligible customers. The revised control group for Rate 2 was statistically equivalent to the treatment group. However, the Rate 1 control group was not. As a result, statistical matching was implemented to select a revised control group for the Rate 1 population. Statistical matching involves selecting customers from a population of customers who were not subject to default notification that are most similar to the participant population based on observable variables (primarily load shape). The approach to selecting a matched control group is described in Section 3 of the Interim Report.

Load and bill impacts were estimated for three different climate regions in SDG&E's service territory (hot, moderate, and cool). For the moderate and cool climate regions, estimates were also made for two customer segments, CARE/FERA customers and Non-CARE/FERA customers. CARE/FERA customers in the hot climate region were not allowed to be enrolled on TOU tariffs using default recruitment. As such, comparisons across the hot and two more moderate regions not only reflect differences in climate but also differences in the mix of customers. Also, differences in load impacts across customer segments at the service territory level reflect not just differences across segments, but also differences in the mix of customers across climate regions for each segment. These differences must be kept in mind when making comparisons across segments and climate regions.

[3] SDG&E "Default TOU Pilot Survey 1, Working Group Report" presented to the TOU Working Group on June 13, 2018 SDG&E

"Default TOU Pilot Survey 2 Report" presented to the TOU Working Group on January 28, 2019

The difference in bills on the TOU rates compared with bills under the otherwise applicable tariff (OAT) are comprised of two components – differences due simply to the rates, holding behavior constant, and differences due to changes in behavior as a result of the difference in price signals. The first type of difference is known as a structural bill impact and can be computed based on usage data prior to customers enrolling on the new rate. Structural Bill Impacts were presented in Section 5 of the Interim Report. Customers have now been on the new tariffs for a full year, and so this report presents information on behavioral and total bill impacts for summer, winter and an entire year based on pretreatment and post-treatment data.

In addition to load and bill impacts, another important metric is customer opt-out rates. Comparisons of pre-enrollment opt-out rates across rate options are indicators of the relative preferences of customers for each rate option. Comparisons of enrollment rates across notification content and messaging treatments within a rate option were documented in the Interim Report, as were comparisons across customer segments and climate regions. In this report, post-enrollment opt-out rates are presented by rate, CARE/FERA status, climate region, and post-enrollment treatment.

1.2 Overall Findings

The first year of SDG&E's default TOU pilot has produced a large amount of information that helped to guide SDG&E's approach to implementation of default TOU pricing. As described above, differences in load and bill impacts and opt-out rates across customer segments at the service territory level reflect not just differences across segments, but also differences in the mix of customers across climate regions. CARE/FERA customers in the hot climate region were not allowed to be enrolled on TOU tariffs using default recruitment. Comparisons between CARE/FERA and Non-CARE/FERA customers are valid for the moderate and cool climate regions and comparisons across all three climate regions are valid for Non-CARE/FERA customers. However, comparisons across segments at the service territory level reflect both differences in behavior across segments as well as differences in the participation of segments across climate regions.

1.2.1 Load Impacts

Table 1-1 presents the average weekday peak period load reduction for each pilot rate. Key findings for load impacts are summarized in following the table.

c) Table 1-1: Peak Period Load Reductions on Average Weekday

Utility	Metric	Rate 1		Rate 2	
		Summer	Winter	Summer	Winter
SDG&E	Peak Period Hours	4-9 PM		4-9 PM	
	% Impact	1.50%	0.50%	2.00%	0.60%
	Absolute Impact (kW)	0.01 kW	<0.01 kW	0.02 kW	<0.01 kW
	Customer Count[4]	88,169	78,153	20,781	19,067

[4] This value reflects the average number of customers enrolled on each rate during the summer season. These customer counts may differ from other tables in the report based on the time period beingpresented.

Key findings pertaining to load impacts from the SDG&E pilots include:

- On average, default customers on both Rates 1 and 2 produced small, but statistically significant, peak-period load reductions in the summer months. Peak period load reductions averaged roughly 1.5% for Rate 1 and 2.0% for Rate 2. Peak-period load impacts were smaller (but still statistically significant) in the winter and averaged about 0.5% for Rate 1 and 0.6% for Rate 2.
- Survey evidence indicates that ongoing education and outreach could lead to greater load reductions. Two surveys were conducted, one shortly after enrollment and one after customers were on the rate for the summer period. Both surveys showed that only about 60% of customers were aware that their household was transitioned to a TOU rate and an even smaller share, roughly 50%, were aware that they are on a TOU rate. Also, among aware customers, only about 67% accurately identified peak period hours. Roughly 15% of customers thought 8 AM to noon were the peak hours and another 20% identified the hours from noon to 4 PM as peak hours. Efforts to increase awareness and to educate customers about the peak period could lead to higher load reductions during peak hours.
- In the summer months, load reductions were greater for Rate 2 than for Rate 1, despite having the same peak period time period (4 PM to 9 PM) and despite Rate 1 having higher peak-period prices than Rate 2. While the difference between Rate 1 and Rate 2 impacts are statistically significant, it is important to keep in mind that the estimates were calculated using different estimation techniques and the populations are not equivalent due to the exclusion of NEM customers from Rate 2. In the winter months, impacts were very similar between the two rates.
- At the territory level, customers on Rate 1 increased their net daily electricity consumption on average weekdays and weekends in the summer and winter. In the summer months, the increases were small but statistically significant. Daily usage increases were larger in the winter. Similarly, customers on Rate 2 increased their daily consumption on the average summer weekend by a statistically significant amount at the territory level. In the winter months, customers on Rate 2 increased their daily consumption by a statistically significant amount on the average weekend and the average weekday by roughly 1.4%.
- Increases in net daily electricity consumption were driven by statistically significant increases in electricity usage during the off-peak and super off-peak periods. Customer surveys found that 32% of customers stated they shifted their electricity usage compared to 18% of customers stating they reduced electricity usage, indicating that load shifting was a driver of the off-peak load increases. Another possible explanation for the estimated increase in daily usage is the fact that control customers were subject to a High Usage Charge (HUC) for monthly usage exceeding a certain threshold[5] whereas TOU customers were not. 2018 was the first summer in which the HUC was in effect.

[5] Non-Care/FERA customers on SDG&E's Schedule DR (tiered) rates were charged a "High User Charge" for any usage over 400% of their baseline is charged at $0.55 a kWh during summer and $0.47 a kWh during the winter. These rates were effective as of January 1st 2018. CARE/FERA customers also experienced the HUC, but the price was approximately $0.35/kWh in the summer and $0.30 in the winter.

This difference could cause some control customers to reduce usage, thus producing a downward bias in the reference load. If this bias is large enough, it could lead to an estimated increase in daily usage that might otherwise have shown up as no change or a decline in daily usage had both treatment and control customers been treated the same.

- Customers did not show annual conservation effects (overall savings) on either rate during the first full year of the pilot relative to the control group. Customers on Rate 1 had annual electricity consumption increases of 60.4 kWh or 0.8%, while customers on Rate 2 had annual increases of 43.3 kWh or 0.6%. Both of these estimates were statistically significant.
- In the summer months, the pattern of load reductions across climate regions in absolute terms was consistent between the two rates but was slightly different in percentage terms. Absolute peak period load reductions were largest in the hot climate region, but these segments did not include CARE/FERA customers. Absolute impacts were smallest in the cool climate region, which included CARE/FERA and Non-CARE/FERA customers.
- In the winter months, absolute load reductions were less than 0.01 kW in each climate region, with the exception of the hot climate region on Rate 2. However, peak load impacts were not statistically significant in the hot climate region on either rate. On both rates, average weekday peak impacts were between 0.4% and 0.6% in the service territory as a whole and in the moderate and cool climate regions separately, on both rates.
- In the moderate and cool climate regions in the summer, Non-CARE/FERA customers typically had statistically significantly greater absolute peak-period impacts compared to CARE/FERA customers. Survey findings help explain some of this difference. After being on the rate for the full summer, 58% of Non-CARE/FERA customers reported that they were on a TOU rate while only 38% of CARE/FERA customers identified their current rate plan as a TOU rate. Identification of the correct peak hours was also much higher among Non-CARE/FERA customers (69.4%)[6] versus CARE/FERA customers (58.2%). Efforts to more effectively educate CARE/FERA customers regarding their TOU rate plan could improve load reductions for this customer segment.
- For Rate 1, the pattern was different in the winter months, where CARE/FERA customers had greater peak impacts than Non-CARE/FERA customers on the average weekday in the moderate and cool climate regions separately and combined. CARE/FERA customers on Rate 2 did not have statistically significant peak load reductions. In fact, CARE/FERA customers in the moderate climate region showed peak load increases that were statistically significant and equal to roughly 1.0% or 0.01 kW.
- The SDG&E pilot tested a post-enrollment educational treatment that offered to help customers with programmable thermostats (PT) program them to align with the TOU rate periods. The treatment was designed to test whether the educational campaign would help customer use existing technology to increase peak period load reductions. In the summer, with one exception, the incremental peak period impact among households

[6] This value represents the average percent of customers that correctly identified each of the peak period hours as in the peak period.

who received PT education compared to households that did not was not statistically significant. In other words, the additional messaging did not increase peak period impacts. The PT education group for CARE/FERA customers in the cool climate region had incrementally smaller load impacts of 0.01 kW relative to the non-PT education group. In the winter months, customers who received the PT education used slightly more during the peak period than the non-PT education group – except in the hot climate region where there was no difference in peak period impacts between the two groups.

- Another treatment compared the effectiveness of post-enrollment educational material that was tailored to persona segments with messaging that was not tailored. Of the segments that received tailored post-enrollment messaging, only Non-CARE/FERA customers in the hot climate region that received tailored messaging had significant incremental load reductions of 0.05 kW compared to standard education customers in the summer months. In the cool climate region in the summer, Non-CARE/FERA customers who received tailored messaging had statistically significantly smaller load reductions relative to standard education customers. In the winter months, customers who received tailored messaging had greater peak impacts than those who did not in the service territory as a whole and in the hot and moderate climate regions separately (this finding was also statistically significant). In the cool climate region, there was no difference in peak period impacts between the two groups.
- The offer to customers to enroll on the Level Pay Plan as a way of managing bill volatility across months and seasons was only taken up by a very small number of customers.

Overall, the load impacts were generally in the expected range established during the default pilot design planning stages. The impacts are half or less than those estimated in the 2016 opt-in TOU pilots[7] even though those pilots were designed in a way to be more reflective of opt-out enrollment conditions by using the "pay-to-play" recruitment strategy. In spite of the opt-in pilot design, it was still expected that load impacts would be lower under default conditions due to potentially lower customer awareness rates and the inherent selection bias of an opt-in recruitment strategy where engaged customers are more likely to enroll. As indicated above, the level of awareness is around 60% and only about 50% of customers know they are on a TOU rate. This means that the average load impacts for all customers enrolled under default conditions are impacted by the fact that only about half the enrolled population even knows that peak period prices are higher than at other times of the day, and only about two thirds of these customers can accurately identify the peak period. Given this, the average impact for those who are aware of being on the rate and the correct peak period may be as high as what was observed for the opt-in pilot. In addition, the finding of a small increase in average daily usage rather than a decrease may be an artifact of the fact that control customers were subject to high prices in the HUC tier whereas TOU customers were not.

[7] http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442453144

1.2.2 Bill Impacts

Key findings pertaining to bill impacts include:

- Rate 1 and Rate 2 have similar distributions of structural benefiters, non-benefiters, and customers in the neutral bill impact category of ±$3/month.[8] In all regions and customer segments, the proportion of benefiters is a slightly higher on Rate 1 than on Rate 2, but there are also more non-benefiters on Rate 1 than on Rate 2. In the moderate climate region and for the service territory as a whole, roughly 10% more Rate 2 customers fall into the neutral category compared with Rate 1 customers.
- A majority of customers (73% on Rate 1 and 80% on Rate 2) are in the neutral bill impact category and are neither structural benefiters nor non-benefiters on an annual basis.
- On Rate 1, 17% of Non-CARE/FERA customers are structural non-benefiters on an annual basis while 5% of CARE/FERA customers fall into the same category. However, the CARE/FERA group does not include customers in the hot climate region where bill increases under the TOU rates are more likely to occur. The distributions were similar for Rate 2.
- Over 35% of customers in the hot climate region are structural non-benefiters on an annual basis for both rates. In the summer months, about 44% of customers in the hot region are structural non-benefiters while between 30% and 41% fall into the neutral category, depending on the rate.
- Over 60% of CARE/FERA customers in the moderate and cool climate regions had summer structural bill impacts in the neutral category. In the winter months, over 97% of customers across rates, CARE/FERA status, and climate regions fell into the neutral category.
- Total bill impacts (bill impacts that reflect structural differences in the rate and changes in behavior) were generally very small (decreases of $0.48 and $1.22 per month, on average, for Rate 1 and Rate 2, respectively). On an annual basis and at the climate zone level, total bill impacts were not statistically significant in several customer segments. Exceptions include the full population and customers in the cool climate region on Rate 2, who saved money on the TOU rate. The other exception was customers in the moderate climate region on Rate 1, who had higher bills on the TOU rate.
- Total bill impacts in the summer months showed statistically significant bill decreases in the overall population and cool climate regions on Rate 1 and 2. Total bill impacts in the winter months were not statistically significant for the Rate 1 and Rate 2 populations as a whole and in nearly all customer segments. Exceptions included CARE/FERA customers in the moderate climate region and in the moderate and cool climate regions combined on Rate 2. Customers in these segments experienced small bill increases in the winter months.

[8] Nexant used +/- $3 a month as the threshold for defining neutral bill impacts in the Opt-In TOU Pilot evaluation as well as the Default Pilot evaluation. It was later determined that Extreme Non-benefiters (ENB) are customers that see $10 or more a month of bill increases.

- On an annual basis, behavioral bill impacts were not statistically significant for most climate regions or for the full pilot populations, with two exceptions. Customers in the moderate and cool climate regions on Rate 1 increased their bills by small but statistically significant amounts through changes in behavior.

- In the summer months, customers did not reduce their bills through changes in behavior. Behavioral bill reductions were not statistically significant for the Rate 1 and Rate 2 populations as a whole and in all customer segments. The opposite was true in the winter months, where customers on both rates increased their bills through changes in behavior when prices were lower. Although these behavioral bill impacts were statistically significant at the pilot level, they were very small (less than $2.00 per month, on average).

The structural bill impacts were generally as expected for a comparison of seasonally differentiated TOU rates with a seasonally differentiated OAT. A large portion of the population was in the neutral category on an annual basis (73% on Rate 1 and 80% on Rate 2). Total bill impacts were generally very small.

1.2.3 Customer Attrition

Key findings pertaining to the opt-out analysis include:

- Opt-out rates can reveal customer preferences for the two rates, but comparisons must be done on an apples to apples basis. A direct comparison of Rate 1 versus Rate 2 opt- out rates overall is not appropriate because of differences in the notification treatments across the rates. When comparing the opt-out rates between Rate 1 and Rate 2 cells with identical notification treatments, the outcome changes based on the opt-out definition used. When opt out is defined as choosing the OAT rather than the default rate offered, 20.5% of Rate 1 and 19.0% of Rate 2 customers opted out, and this difference was statistically significant. When opt-out is defined as taking any action other than accepting the offered rate, the opt-out rate was 21.8% for Rate 1 and 22.9% for Rate 2, and the difference was also statistically significant. Under the first definition, there is a stronger preference for Rate 2, but in the second definition there a preference for Rate 1.

- The percent of customers who were offered Rate 2 but selected Rate 1 was statistically significantly greater than the percent of customers who were offered Rate 1 and chose Rate 2. This appears to be largely driven by customers switching to the lowest cost rate based on the rate analysis included with the notification materials. However, on a percentage basis, more customers switched from Rate 1 even when it was the lowest cost option than did customers who switched from Rate 2. This could be due to Rate 2 being the simpler of the two rates or the lower peak period price.

- The highest pre-enrollment opt-out rate was in the hot climate region[9], followed by the moderate and cool climate regions. Opt-out rates for CARE/FERA and Non-CARE/FERA populations varied by climate region and did not have a consistent trend.

[9] SDG&E conducted an outbound call campaign to default pilot customers who were projected to have an increase of at least $10 per month or a 10% annual increase if transitioned to a TOU pricing plan. 4,185 customers were identified as Extreme Non Benefiters (ENB) and 123 of those were in SDG&E's hot climate region. Up to 3 call attempts were required, meaning that ESS

- SDG&E proactively contacted customers who were identified as likely to experience bill increases of greater than 10%, or $120 annually. This outreach likely contributed to higher opt-out rates across the territory.

- Customers notified through both direct mail (DM) and emails (EM) were found to be slightly more likely to opt out of the default rate (21.4%) compared to customers that only received direct mail (19.8%). Customers that only received email communication were significantly less likely to opt out than those that received direct mail only or both email and direct mail and the difference between the DM and EM channels is statistically significant. There are two possible explanations for this difference. One is that level of awareness of the default process was less for customers who only received email communications (54%) compared to customers that got direct mail only (62%) or both direct mail and email (67%). The second possible explanation for the lower opt-out rate for email only customers is that these customers had to be enrolled in the My Account program to opt out online (however, they were able to call to opt out). Direct mail customers could opt out using a business reply card or by calling SDG&E. These differences in opt-out channels almost certainly explain part of the lower opt out rate for email only customers.

- Customers in the DM sub-population that were provided rate comparisons at the seasonal and annual level were slightly more likely to opt-out of the default rate compared to customers that received annual rate comparisons or annual and monthly rate comparisons. The differences were statistically significant and equal to about two percentage points. Providing differing rate comparison information to customers in the EM sub-population did not yield statistically significant differences in overall opt-out rates.

- In the DM sub-population, customers who received 3 rate comparisons were over two percentage points more likely to opt out of their default rate compared to customers who received 4 rate comparisons in their notification materials. This difference was statistically significant. In the EM sub-population, opt-out rates were nearly identical for the two rate comparison types.

- Post-enrollment opt-out rates were very small and fell between 1.3% and 3.5% for CARE/FERA and Non-CARE/FERA customers in all climate regions. This indicates the vast majority of customers stay on a TOU rate once they are enrolled. Opt-out rates picked up slightly after the summer months.

could attempt to contact a customer up to 2 times in one day. An average of 2 calls were made per customer. 38% were contacted, (27% were not reached, and 35% had taken action before the call so they were excluded). Of those contacted: 71% of the recorded sentiment was positive (e.g. customer appreciated the call), 11% chose to try the rate risk-free (did not opt-out).

2 Introduction

In Decision 15-07-001, the California Public Utilities Commission (CPUC or the Commission) ordered California's three investor owned utilities (IOUs) to conduct certain "pilot" programs and studies of residential Time-of-Use (TOU) electric rate designs (TOU Pilots and Studies) beginning in 2016, and to file applications no later than January 1, 2018 proposing default TOU rates for residential electric customers. The IOUs were also directed to form a working group (TOU Working Group) to address issues regarding the TOU pilots and to hire one or more qualified independent consultants to assist with the design and implementation of the TOU Pilots and Studies. The TOU Working Group (WG) was comprised of 37 entities and included almost 100 people. Nexant, Inc. was engaged as the independent consultant.

Although the primary focus of the TOU pilots was to provide insights that would guide default implementation, customers were not allowed to be defaulted onto TOU rates prior to January 2018. As such, in 2016, the IOUs implemented pilots based on opt-in enrollment. The pilots, based on a "pay-to-play" randomized control trial,[10] were designed in a way intended to be more reflective of opt-out enrollment conditions. The pilot design and results from these pilots are documented in a number of reports and insights from these pilots were used to guide the design of the default pilots that are the focus of this evaluation.[11]

In late 2016, Nexant worked with the TOU Working Group to develop designs for the default pilots. The design report[12] was used as input to Advice Letter filings by SDG&E and the two other IOUs. On December 16, 2016 SDG&E submitted Advice Letter 3020-E[13] detailing the proposal for the default TOU pilot. Based on direction received during the Prehearing Conference on February 6, 2017, SDG&E submitted Advice Letter 3020-E-A[14] on February 24, 2017 as a supplemental filing to provide additional information on the original Proposed Default Time-of-Use (TOU) Pilot plan. On March 10, 2017 SDG&E filed Advice Letter 3020-E-B[15]

---

[10] Pay to Play refers to customers being solicited to participate in the pilot with a promise to be compensated.

[11] George, S., Sullivan, M., Potter, J., & Savage, A. (2015). Time-of-Use Pricing Opt-in Pilot Plan. *Nexant, Inc.* (hereafter referred to as the TOU Pilot Design Report).

SCE: Advice Letter 3335-E; PG&E: Advice Letter 4764-E; and SDG&E: Advice Letter 2835-E. SCE:

Resolution E-4761; PG&E: Resolution E-4762; and SDG&E: Resolution E-4769.

The First Interim Report can be found here: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442453144 Additional related documents on the CPUC website can be found here: http://www.cpuc.ca.gov/General.aspx?id=12154

The Second Interim Report is contained in two volumes, one authored by Nexant covering the load and bill impact analysis and the second, authored by Research Into Action covering the second survey.

The Nexant report can be found at the following link: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442455573 The RIA report can be found at: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442455572

The Final Report can be found here: http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442457172 Additional related documents on the CPUC website can be found here: http://www.cpuc.ca.gov/General.aspx?id=12154

[12] http://regarchive.sdge.com/tm2/pdf/3020-E.pdf (See Attachment H, Appendix F, starting on Page 266 of the document)

[13] http://regarchive.sdge.com/tm2/pdf/3020-E.pdf

[14] http://regarchive.sdge.com/tm2/pdf/3020-E-A.pdf

[15] http://regarchive.sdge.com/tm2/pdf/3020-E-B.pdf

providing additional details regarding bill volatility analysis requested, along with updated budget estimates. The CPUC issued Resolution E-4848[16] on May 25, 2017 approving the pilot plans contained in Advice Letters 3020-E, 3020-E-A, and 3020-E-B and established that SDG&E's default pilot will gather information on the following objectives:

1. Assessing SDG&E's operational readiness to default large numbers of customers onto TOU rates over a short time. Relevant metrics include call volume, billing exception processing, database capabilities, tracking systems, rate change and bill processing, system enhancements, and bill protection processing.

2. Determining the impact of different marketing, education and outreach (ME&O) strategies on awareness of rate options, opt-out rates, engagement with the TOU rate and customer perceptions while on a TOU rate. Specific ME&O options examined included variation in communications channel and the type of structural bill information provided in conjunction with the default notifications, and different format and content for post-enrollment education materials.

3. Estimating the average peak and off-peak change in energy usage by customers enrolled on each default rate (referred to as Rate 1 and Rate 2).

4. Estimating the bill impacts for customers enrolled onto each rate.

5. Determining the opt-out rate for customers defaulted onto each rate under each notification treatment.

6. Determining the impact of options such as programmable thermostats education, tailored messaging, and the offer of level payment plans (LPP) on customer retention on each rate as well as on load and bill impacts and customer perceptions while on their default TOU rate.

An assessment of operational readiness— objective 1— is not included in this evaluation. Survey-related metrics such as awareness, customer satisfaction, and others—objective 2— are largely being addressed through a separate contract with a survey firm. However, key findings from the surveys are included here to the extent that they help explain observed differences in load impacts, bill impacts or opt-out rates across treatments. This evaluation report focuses primarily on estimating load and bill impacts and opt-out rates for various treatments – objectives 3 through 6.

Findings from the first summer-June through October 2018-are documented in the "Default Time-Of-Use Pricing Pilot Interim Evaluation" dated April 1, 2019 (hereafter referred to as the Interim Report). The Interim Report contains detailed background information on the pilot, describes the pilot design and the load impact evaluation methodology, discusses SDG&E's pilot implementation and treatments, and presents load impacts for the first summer period. It also presents structural bill impacts and summarizes pre-enrollment opt-out rates. This Final Report contains a brief summary of findings documented in more detail in the prior report, but

[16] http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M188/K449/188449503.PDF

focuses primarily on load impacts from the winter period in 2018 and 2019 as well as bill impacts for the first full-year of the pilot.

A brief summary of the pilot design and evaluation approach is contained in the Executive Summary (Section 1.1). The remainder of this report is organized as follows Sections 3, 4 and 5 present the analysis results for load impacts, bill impacts and opt-out rates, respectively. Finally, key findings for objectives 3 through 6 above are presented in Section 6.

The Interim Report contained detailed background information on the pilot, a detailed load impact methodology section, and a detailed description of SDG&E's pilot implementation and treatments. Readers interested in this background information are encouraged to review the Interim Report as this information is not repeated here. The IOU advice letters and the CPUC resolutions may also contain information of interest.

IV. 3 LoadImpacts

This section summarizes the load impact estimates for the two rate treatments tested by SDG&E. For each rate, load impacts are reported for the peak and off-peak rate periods and for the day as a whole for the following customer segments and climate regions:

- For all customers in each climate region (hot, moderate, and cool)
- For Non-CARE/FERA customers for the pilot as a whole and for each climate region (hot, moderate, and cool) and for CARE/FERA customers in the moderate and cool climate regions.

Load impacts are reported for each rate period for the average weekday, average weekend, and the average monthly peak day for the winter months of November 2018 through May 2019. The annual conservation effect and super off-peak rate period in March and April were also explored. Impacts are reported for each rate, climate region and customer segment summarized above. Additionally, Nexant estimated incremental load impacts for customers that received the Programmable Thermostat and Tailored Messaging treatments for each rate and for each climate region. The methodological approach for estimating load impacts can be found in the Interim Report.

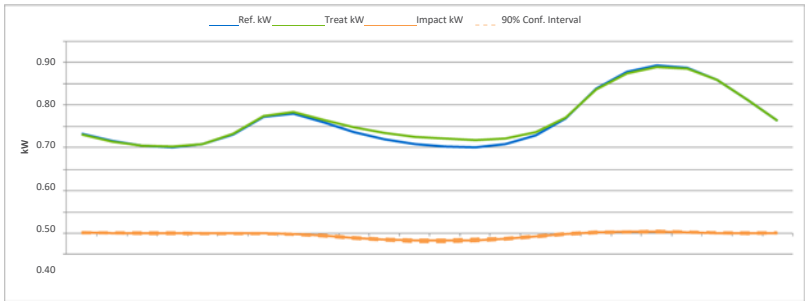
As discussed above, it's imperative that comparisons across climate regions are cognizant of the differences in the mix of customers across regions. That is, because CARE/FERA customers are not included in the hot climate region, comparisons of load impacts across the hot and two cooler regions reflect not only differences due to climate but also differences in the mix of customers, with both CARE/FERA and Non-CARE/FERA customers in the moderate and cool regions and only Non-CARE/FERA customers in the hot region. Similarly, comparisons across customer segments for the service territory as a whole do not just reflect differences in behavior between CARE/FERA and Non-CARE/FERA customers but also differences in the mix of customers across climate regions. The "All Utility" impacts are representative of what SDG&E can expect at the service territory level for full roll out of the rates because CARE/FERA customers will not be defaulted in the hot climate regions for full roll out. But it is not appropriate to claim that a difference of, say, 50% between CARE/FERA and Non-CARE/FERA customers at the service territory level accurately reflects a difference in behavior between the two groups of customers, all other factors held constant.

Underlying the values presented in the report are electronic tables that contain estimates for each hour of the day for each day type, segment and climate region for the winter and for each month separately. These values are contained in Excel spreadsheets that are available upon request through the CPUC. Figure 3-1 shows an example of the content of these tables for SDG&E Rate 1 for all eligible customers in the service territory. Pull down menus in the upper left hand corner allow users to select different climate regions, day types (e.g., weekdays, weekends, monthly peak day) and time period (individual months or the average of November through May)

a) *Figure 3-1: SDG&E Pilot Rate 1 (Winter 2018-2019)*

Select Options Below:	
Rate:	Rate 1
Segment:	All
Time Period:	Winter
Day Type:	Average Weekday

Period	Control Customers	Treatment Customers	Ref. kW	Treat kW	Impact kW	90% Conf. Interval		% Impact
Peak	58,198	88,086	0.71	0.70	0.00	0.00	0.00	0.5%
Off-Peak	58,198	88,086	0.50	0.52	-0.02	-0.02	-0.02	-3.3%
Super Off-Peak	58,198	88,086	0.43	0.43	0.00	0.00	0.00	0.0%
Day	**58,198**	**88,086**	**12.61**	**12.81**	**-0.20**	**-0.22**	**-0.18**	**-1.6%**



Hour	Period	Ref. kW	Treat kW	Impact kW	90% Conf. Interval		% Impact
1	Super Off-Peak	0.46	0.46	0.00	0.00	0.00	0.4%
2	Super Off-Peak	0.43	0.43	0.00	0.00	0.00	0.3%
3	Super Off-Peak	0.41	0.41	0.00	0.00	0.00	0.1%
4	Super Off-Peak	0.40	0.40	0.00	0.00	0.00	0.0%
5	Super Off-Peak	0.41	0.42	0.00	0.00	0.00	-0.2%
6	Super Off-Peak	0.46	0.46	0.00	0.00	0.00	-0.4%
7	Off-Peak	0.54	0.55	0.00	0.00	0.00	-0.3%
8	Off-Peak	0.56	0.57	-0.01	-0.01	0.00	-0.9%
9	Off-Peak	0.52	0.53	-0.01	-0.02	-0.01	-2.4%
10	Off-Peak	0.47	0.50	-0.02	-0.03	-0.02	-4.8%
11	Off-Peak	0.44	0.47	-0.03	-0.04	-0.03	-6.9%
12	Off-Peak	0.42	0.45	-0.03	-0.04	-0.03	-8.3%
13	Off-Peak	0.40	0.44	-0.04	-0.04	-0.03	-8.8%
14	Off-Peak	0.40	0.44	-0.03	-0.04	-0.03	-8.3%
15	Off-Peak	0.41	0.44	-0.03	-0.03	-0.02	-6.3%
16	Off-Peak	0.46	0.47	-0.02	-0.02	-0.01	-3.6%
17	Peak	0.54	0.54	0.00	-0.01	0.00	-0.8%
18	Peak	0.68	0.67	0.00	0.00	0.01	0.5%
19	Peak	0.76	0.75	0.01	0.00	0.01	0.7%
20	Peak	0.79	0.78	0.01	0.00	0.01	0.9%
21	Peak	0.78	0.77	0.01	0.00	0.01	0.7%
22	Off-Peak	0.72	0.72	0.00	0.00	0.00	0.2%
23	Off-Peak	0.62	0.62	0.00	0.00	0.00	0.0%
24	Off-Peak	0.53	0.53	0.00	0.00	0.00	0.1%

The remainder of this section is organized by rate treatment—that is, load impacts are presented for each relevant climate region and each customer segment for each of the two rates. Following this discussion, incremental impacts of various post-enrollment E&O treatments are presented. Finally, comparisons of load impacts across the two TOU rates are made for the peak period from 4 to 9 PM and for the average weekday as a whole.

3.1 Summary of Pilot Rates

Figure 3-2 and Figure 3-3 summarize the rate periods and prices for Rates 1 and 2. Importantly, the prices shown in those figures and discussed below do not reflect the baseline credit of 10 ¢/kWh for summer months, and 9.5 ¢/kWh for winter months - that applies to each rate for usage below 130% of the baseline quantity.

b) *Figure 3-2: Default Pilot Rate 1*[17]

Day Type	Season	Hour Ending																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Weekday	Summer	Super Off-Peak (28¢)						Off-Peak (33¢)										Peak (55¢)							
	Winter	Super Off-Peak (34¢)						Off-Peak (35¢)										Peak (36¢)							
	March - April	Super Off-Peak (34¢)						Off-Peak (35¢)										Peak (36¢)							
Weekend	Summer	Super Off-Peak (28¢)																Peak (55¢)							
	Winter	Super Off-Peak (34¢)																Peak (36¢)							

c) *Figure 3-3: Default Pilot Rate 2*

Day Type	Season	Hour Ending																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Weekday	Summer	Off-Peak (32¢)																Peak (52¢)							
	Winter	Off-Peak (34¢)																Peak (36¢)							
Weekend	Summer	Off-Peak (32¢)																Peak (52¢)							
	Winter	Off-Peak (34¢)																Peak (36¢)							

Rate 1 has three rate periods on summer and winter weekdays. The peak period on Rate 1 is the same all year long and runs from 4 PM to 9 PM on weekdays and weekends. The off-peak and super off-peak periods are the same all year as well. On weekdays, the off-peak (or shoulder) period runs from 6 AM to 4 PM and 9 PM to midnight and the super off-peak period lasts from midnight to 6 AM. The peak to super off-peak price ratio (ignoring the baseline credit)

[17] Rates effective May 1, 2019, and do not reflect the baseline credit of approximately .10 cents kWh for usage up to 130% of baseline.

is 1.9 to 1 in summer and the peak to super off-peak ratio is 1.1 to 1 in winter. The months of March and April have an additional super off-peak period from 10 AM to 2 PM.

The peak period for average weekends is the same as on week days (4 PM to 9 PM). The super off-peak period is longer for average weekends as it extends from 12 AM to 2 PM and that leaves the remaining time periods of 2 PM to 4 PM and 9 PM to 12 AM as off-peak periods.

SDG&E's Rate 2 rate structure is simpler than Rate 1 as it has two rate periods for average weekdays and average weekends during the summer and winter seasons. Rate 2 has the same peak period duration as Rate 1, from 4 PM to 9 PM, but it has a slightly lower peak price in summer months (52¢/kWh for Rate 2 versus 55¢/kWh for Rate 1[18]) and the same peak price in winter months (36¢/). The off-peak price for Rate 2 is 32¢/kWh during the summer months which represents a peak to off-peak price ratio of 1.6 to 1.The winter season for both rates runs from is November 1 through May 31.

3.2 Rate 1

(1) *Winter Load Impacts*

Figure 3-4 shows the average peak-period load reduction in absolute terms for Rate 1 for SDG&E's service territory as a whole and for each climate region for the winter months. The lines bisecting the top of each bar in the figures show the 90% confidence band for each estimate. If the confidence band includes 0, it means that the estimated load impact is not statistically different from 0 at the 90% level of confidence. If the confidence bands for two bars do not overlap, it means the observed difference in the load impacts is statistically significant. If they do overlap, it does not necessarily mean that the difference is not statistically significant.[19] In these cases, t-tests were calculated to determine whether the difference is statistically significant.[20]

Bars with blue and green stripes indicate that the segment includes a combination of CARE/FERA customers and Non-CARE/FERA customers, while solid green bars represent segments that are Non-CARE/FERA only. Solid blue bars represent segments that are CARE/FERA customers only. However, it is important to note that the "All" category includes Non-CARE/FERA customers from all climate regions but CARE/FERA customers only from the moderate and cool climate regions. As a result, the "All" estimates cannot be directly compared to the "Moderate" and "Cool" estimates.

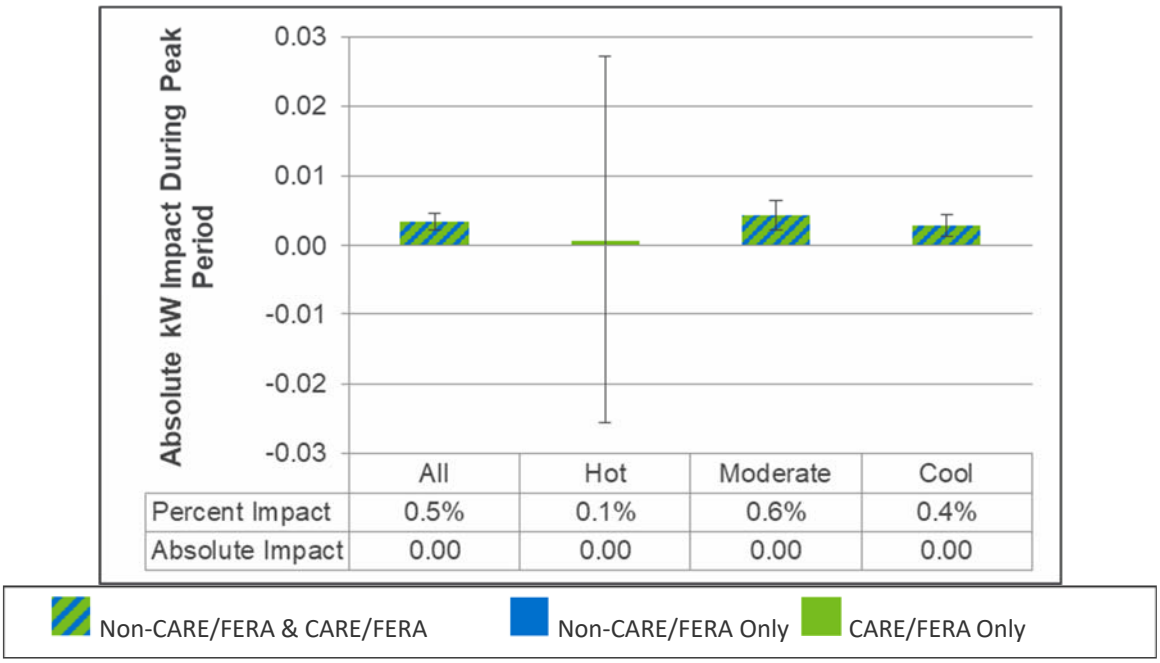
[18] Rates effective May 1, 2019

[19] For further discussion of this topic, see https://www.cscu.cornell.edu/news/statnews/stnews73.pdf.

[20] The test was applied at the 90% confidence level which means that a t-value exceeding 1.65 indicates statistical significance.

d) *Figure 3-4: Average Winter Peak Period Load Impacts for SDG&E Rate 1 by Climate Region*

e) *(Positive values represent load reductions)*



As seen in Figure 3-4, the average peak-period load impact for the service territory as a whole and for each climate region is statistically significant at the 90% level of confidence, with the exception of the hot climate region. On average, default pilot participants across SDG&E's service territory on Rate 1 reduced peak-period electricity use by 0.5%, or less than 0.01 kW, across the five hour peak period from 4 PM to 9 PM. Keeping in mind that differences across regions reflect both differences in climate and the presence or absence of CARE/FERA customers, the average peak-period load reduction ranges from a high of 0.6% and less than 0.01 kW in the moderate climate region to a low of about 0.1% and less than 0.01 kW in the hot climate region (which is not statistically significant). The difference in absolute impacts between the moderate and cool climate regions is not statistically significant.

Table 3-1 shows the average percent and absolute load impacts for Rate 1 for each rate period for average weekdays, average weekends, and for the average monthly system peak day for the SDG&E service territory as a whole and for the participant population in each climate region. The percent reduction equals the load impact in absolute terms (kW) divided by the reference load. Shaded cells in the table contain load impact estimates that are not statistically significant at the 90% confidence level. The percentage and absolute values in the first row of Table 3-1 which represent the load impacts in the peak period on the average weekday, equal the values shown in Figure 3-4, discussed above.

f) Table 3-1: Average Winter Hourly Load Impacts
g) by Climate Region, Rate Period and Day Type for SDG&E Rate 1
h) (Positive values represent load reductions, negative values represent load increases)

Rate 1													
Day Type	Period	Hours	All			Hot			Moderate			Cool		
			Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact
Average Weekday	Peak	4 PM to 9 PM	0.71	<0.01	0.5%	0.99	<0.01	0.1%	0.73	<0.01	0.6%	0.69	<0.01	0.4%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.50	-0.02	-3.3%	0.72	-0.03	-4.8%	0.50	-0.02	-4.0%	0.49	-0.01	-2.9%
	Super Off-Peak	12 AM to 6 AM	0.43	<0.01	0.0%	0.66	-0.02	-3.2%	0.46	>-0.01	-0.3%	0.41	<0.01	0.3%
	Day	All Hours	0.53	-0.01	-1.6%	0.76	-0.02	-3.1%	0.54	-0.01	-1.9%	0.51	-0.01	-1.3%
Average Weekend	Peak	4 PM to 9 PM	0.71	0.01	0.8%	1.03	0.04	4.1%	0.73	0.01	0.8%	0.69	<0.01	0.7%
	Off-Peak	2 PM to 4 PM and 9 PM to 12 AM	0.57	-0.01	-1.4%	0.81	0.02	2.0%	0.59	-0.01	-1.8%	0.56	-0.01	-1.3%
	Super Off-Peak	12 AM to 2 PM	0.47	-0.01	-2.7%	0.72	>-0.01	-0.1%	0.49	-0.02	-3.4%	0.46	-0.01	-2.3%
	Day	All Hours	0.54	-0.01	-1.5%	0.80	0.01	1.4%	0.56	-0.01	-1.9%	0.53	-0.01	-1.3%
Monthly System Peak	Peak	4 PM to 9 PM	0.79	0.01	0.7%	1.06	-0.03	-2.4%	0.83	0.01	0.8%	0.76	0.01	0.7%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.55	-0.01	-2.5%	0.72	-0.04	-5.9%	0.56	-0.02	-2.9%	0.54	-0.01	-2.2%
	Super Off-Peak	12 AM to 6 AM	0.45	>-0.01	-0.4%	0.70	-0.01	-1.6%	0.49	>-0.01	-0.6%	0.43	>-0.01	-0.3%
	Day	All Hours	0.58	-0.01	-1.2%	0.79	-0.03	-4.0%	0.60	-0.01	-1.4%	0.56	-0.01	-1.0%

* A shaded cell indicates estimate is not statistically significant

The reference loads shown in Table 3-1 represent estimates of what customers on the TOU rate would have used if they had not responded to the price signals contained in the TOU tariff. As seen in the table, average hourly usage during the peak period is roughly 0.71 kW for the SDG&E territory as a whole, and around 0.53 kW for the 24 hour average weekday. In the hot climate region the average usage during the peak period is higher (0.99 kW) than in the moderate climate region (0.73 kW) or cool climate region (0.69 kW). However, the cool and moderate climate regions include CARE/FERA customers while the hot climate region does not.

The monthly system peak day estimates represent the average across the seven weekdays, one in each winter month, when SDG&E's system peaked in 2018 and 2019. Peak period reference loads are higher on these days than on the average weekday. In the moderate and cool climate regions, both the percent and absolute impacts were larger on the average monthly system peak day than on the average weekday.

As seen in Table 3-1, peak-period load reductions were statistically significant for the moderate and cool climate regions for all day types. In the off-peak (or shoulder period), which varied in timing and length between weekdays and weekends, customers in all climate regions and in the territory as a whole increased their consumption. In fact, in the SDG&E service territory, customers increased their off-peak consumption by 3.3% or 0.02 kW. There was no change in consumption in the super off-peak period on the average weekday.

For the SDG&E service territory as a whole, there was an observed increase of 1.6% in daily electricity use on the average weekday. Similarly, on the average weekend there was an increase of 1.5% in total electricity consumption. These increases were seen in the individual climate regions as well. These increases are small but statistically significant and differ from the results seen in SCE's service territory, where small but statistically significant reductions in average daily usage are observed. One partial explanation for the difference in impacts between

SDG&E and SCE is that survey data[21] shows that roughly equal percentages of customers at SCE indicated they either shifted load (21%) or reduced load (19%) whereas the many more customers at SDG&E (32%) said they shifted load compared with those who reported reducing load (18%). This pattern of daily load increases due to increased usage during the mid-day off-peak periods with lower prices is consistent with the patterns observed during the summer. The Interim Report explores some of the possible explanations for this observed behavior including the newly implemented high usage charge (HUC) for control group customers.

Figure 3-5 shows the absolute-peak period load impacts for Rate 1 for CARE/FERA and Non-CARE/FERA customers for the service territory as a whole and for each climate region. Non-CARE/FERA segments are shaded in green while CARE/FERA segments are shaded in blue. In the combined regions and in the moderate and cool regions, both the percent and absolute load impacts were greater for CARE/FERA customers than for Non-CARE/FERA but the differences were not statistically significant in the cool climate region. The greatest load reductions came from CARE/FERA customers in the moderate climate region, at 1.4% and 0.01 kW. The smallest load reductions in turn are from the Non-CARE/FERA customers in the hot climate region, who did not have statistically significant impacts. The CARE/FERA impacts being larger than the Non-CARE/FERA impacts is an anomaly that was only observed in the winter season on Rate 1. It appears the CARE/FERA impacts are similar between summer and winter in percentage terms. However, the Non-CARE/FERA impacts are notably smaller in the winter. With such a small price signal, the difference between peak and off-peak pricing being only $0.01, it is likely the impacts and observed differences between segments are driven more by outreach and messaging and less by the actual price signal.

[21] SDG&E "Default TOU Pilot Survey 2 Report" presented to the TOU Working Group on January 28, 2019

i) *Figure 3-5: Average Winter Peak Period Impacts for SDG&E Rate 1 by Climate Region & CARE/FERA Status*

j) *(Positive values represent load reductions)*

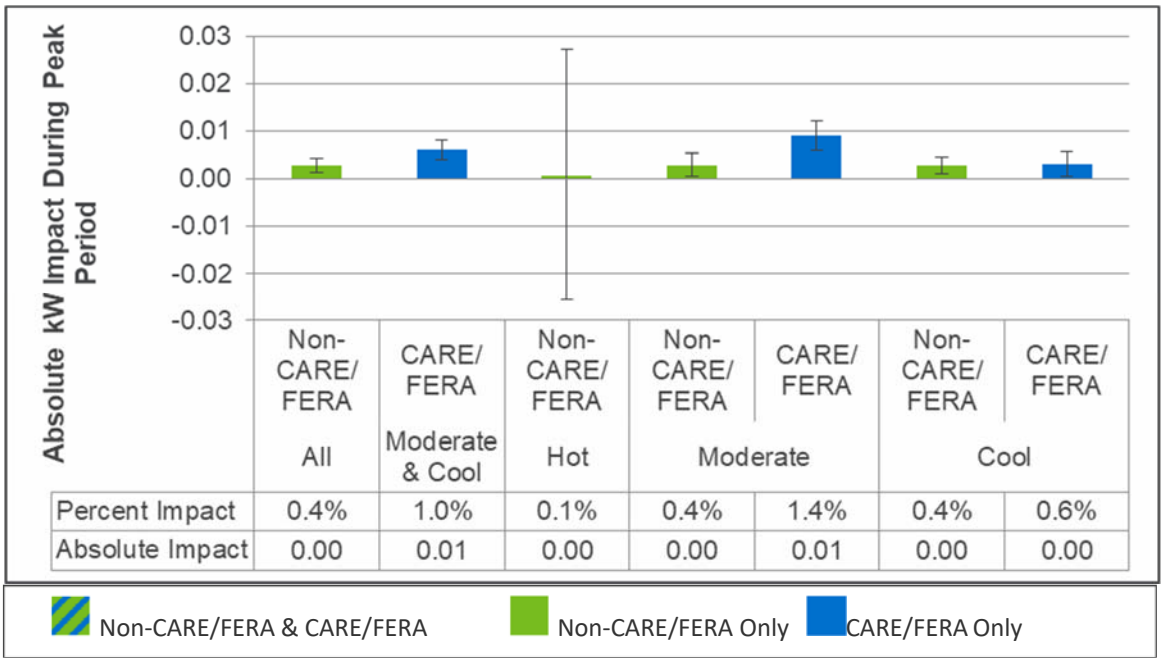


Table 3-2 shows the estimated load impacts for each rate period and day type for the service territory as a whole and by climate region for Non-CARE/FERA customers and Table 3-3 shows the impacts for CARE/FERA customers. The hot climate region in Table 3-3 displays NA values as there were no CARE/FERA customers in the hot region.

For the moderate and cool climate regions, Non-CARE/FERA customers have greater peak-period demand than CARE/FERA customers. For example, on the average weekday in the moderate and cool climate regions, peak period demand is equal to 0.76 kW and 0.71 kW for Non-CARE/FERA customers and 0.64 kW and 0.54 kW for CARE/FERA customers, respectively.

CARE/FERA and Non-CARE/FERA customers both showed statistically significant load reductions during peak periods across the territory as a whole and in the majority of the climate regions on the average weekday, average weekend, and monthly system peak. The exceptions were Non-CARE/FERA customers in the hot climate region on the average weekday and CARE/FERA customers in the cool climate region on the average weekend where the estimated load reduction was not statistically significant. Non-CARE/FERA customers in the default pilot population showed statistically significant increases in off-peak demand for each day type, leading to overall daily increases in usage, equal to about 1.9%.

k) Table 3-2: Average Winter Hourly Load Impacts by Rate Period and Day Type for SDG&E Rate 1 by Climate Region – Non-CARE/FERA

l) (Positive values represent load reductions, negative values represent load increases)

Rate 1													
Day Type	Period	Hours	All - Non-CARE/FERA			Hot - Non-CARE/FERA			Moderate - Non-CARE/FERA			Cool - Non-CARE/FERA		
			Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact
Average Weekday	Peak	4 PM to 9 PM	0.73	<0.01	0.4%	0.99	<0.01	0.1%	0.76	<0.01	0.4%	0.71	<0.01	0.4%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.51	-0.02	-4.0%	0.72	-0.03	-4.8%	0.51	-0.03	-5.2%	0.51	-0.02	-3.2%
	Super Off-Peak	12 AM to 6 AM	0.45	<0.01	0.1%	0.66	-0.02	-3.2%	0.48	>-0.01	-0.5%	0.43	<0.01	0.5%
	Day	All Hours	0.54	-0.01	-1.9%	0.76	-0.02	-3.1%	0.55	-0.01	-2.6%	0.53	-0.01	-1.5%
Average Weekend	Peak	4 PM to 9 PM	0.74	0.01	0.7%	1.03	0.04	4.1%	0.77	<0.01	0.6%	0.72	0.01	0.7%
	Off-Peak	2 PM to 4 PM and 9 PM to 12 AM	0.59	-0.01	-1.7%	0.81	0.02	2.0%	0.60	-0.01	-2.1%	0.57	-0.01	-1.4%
	Super Off-Peak	12 AM to 2 PM	0.49	-0.02	-3.1%	0.72	>-0.01	-0.1%	0.51	-0.02	-4.0%	0.48	-0.01	-2.6%
	Day	All Hours	0.56	-0.01	-1.7%	0.80	0.01	1.4%	0.58	-0.01	-2.3%	0.55	-0.01	-1.4%
Monthly System Peak	Peak	4 PM to 9 PM	0.81	0.01	0.6%	1.06	-0.03	-2.4%	0.86	0.01	0.7%	0.78	<0.01	0.6%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.57	-0.02	-3.1%	0.72	-0.04	-5.9%	0.58	-0.02	-3.8%	0.56	-0.01	-2.6%
	Super Off-Peak	12 AM to 6 AM	0.47	>-0.01	-0.4%	0.70	-0.01	-1.6%	0.51	>-0.01	-0.7%	0.45	>-0.01	-0.1%
	Day	All Hours	0.59	-0.01	-1.5%	0.79	-0.03	-4.0%	0.62	-0.01	-1.9%	0.58	-0.01	-1.2%

* A shaded cell indicates estimate is not statistically significant

m) Table 3-3: Average Winter Hourly Load Impacts by Rate Period and Day Type for SDG&E Rate 1 by Climate Region – CARE/FERA

n) (Positive values represent load reductions, negative values represent load increases)

Rate 1													
Day Type	Period	Hours	Moderate & Cool - CARE/FERA			Hot - CARE/FERA			Moderate - CARE/FERA			Cool - CARE/FERA		
			Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact
Average Weekday	Peak	4 PM to 9 PM	0.59	0.01	1.0%	N/A	N/A	N/A	0.64	0.01	1.4%	0.54	<0.01	0.6%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.44	<0.01	0.0%	N/A	N/A	N/A	0.48	<0.01	0.6%	0.40	>-0.01	-0.6%
	Super Off-Peak	12 AM to 6 AM	0.35	>-0.01	-0.3%	N/A	N/A	N/A	0.38	<0.01	0.4%	0.32	>-0.01	-0.9%
	Day	All Hours	0.45	<0.01	0.2%	N/A	N/A	N/A	0.49	<0.01	0.8%	0.41	>-0.01	-0.3%
Average Weekend	Peak	4 PM to 9 PM	0.57	0.01	1.0%	N/A	N/A	N/A	0.62	0.01	1.4%	0.53	<0.01	0.5%
	Off-Peak	2 PM to 4 PM and 9 PM to 12 AM	0.49	>-0.01	-0.3%	N/A	N/A	N/A	0.53	>-0.01	-0.5%	0.46	>-0.01	0.0%
	Super Off-Peak	12 AM to 2 PM	0.40	>-0.01	-0.6%	N/A	N/A	N/A	0.43	>-0.01	-0.7%	0.37	>-0.01	-0.5%
	Day	All Hours	0.46	>-0.01	-0.1%	N/A	N/A	N/A	0.49	>-0.01	-0.1%	0.42	>-0.01	-0.1%
Monthly System Peak	Peak	4 PM to 9 PM	0.67	0.01	1.4%	N/A	N/A	N/A	0.73	0.01	1.3%	0.62	0.01	1.5%
	Off-Peak	6 AM to 4 PM and 9 PM to 12 AM	0.48	<0.01	0.1%	N/A	N/A	N/A	0.52	<0.01	0.3%	0.45	>-0.01	0.0%
	Super Off-Peak	12 AM to 6 AM	0.37	>-0.01	-0.7%	N/A	N/A	N/A	0.41	>-0.01	-0.1%	0.34	-0.01	-1.5%
	Day	All Hours	0.49	<0.01	0.3%	N/A	N/A	N/A	0.53	<0.01	0.5%	0.46	<0.01	0.1%

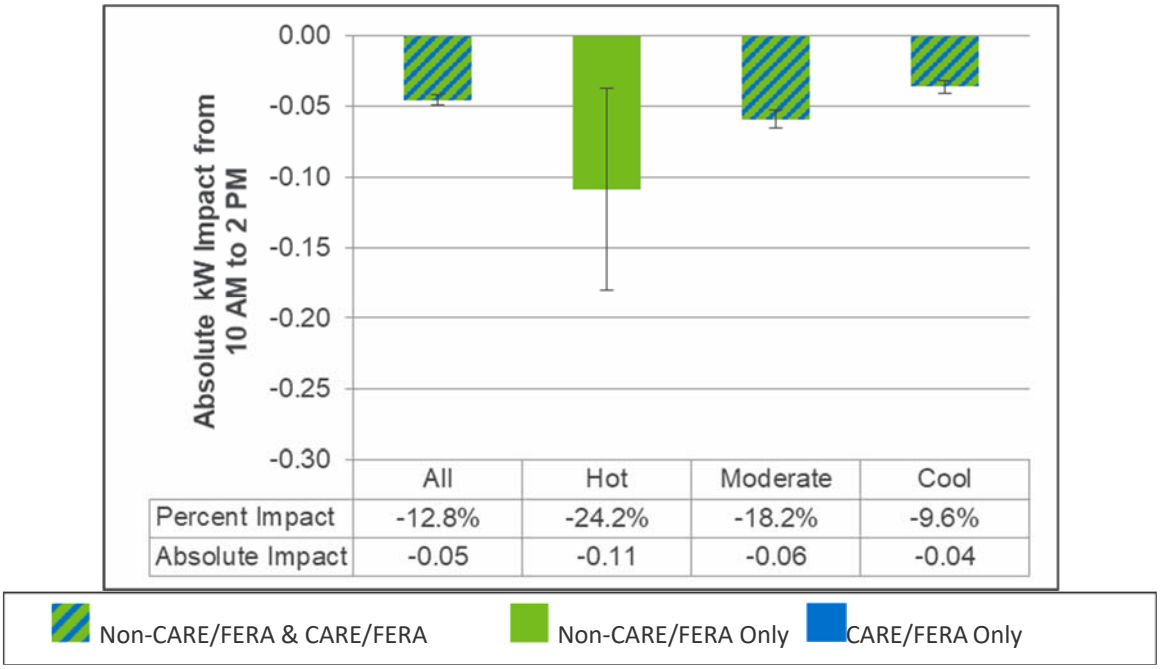
* A shaded cell indicates estimate is not statistically significant

(1) *Spring Load Impacts*

Rate 1 has an additional super off-peak period from 10 AM to 2 PM in March and April. Impacts for this period are presented in Figure 3-6 and Figure 3-7. For the pilot as a whole, customers increased their consumption by nearly 13% during this period in March and April. The increase in load is greatest in the hot climate region, where the impact was equal to 24.2% or 0.11 kW. The load increases during this period were greater in March and April compared to nearby months. In February, the increase in demand from 10 AM to 2 PM was equal to 7.2% and in May it was 10.9%. It should be noted that the price differential between the off-peak and super off-peak is very small at only $0.01. So, it may be the concept or messaging around the super off-peak that is driving this outcomes more than the actual price differential.

o) Figure 3-6: Average Spring Super Off-Peak Period Impacts for SDG&E Rate 1 by Climate Region

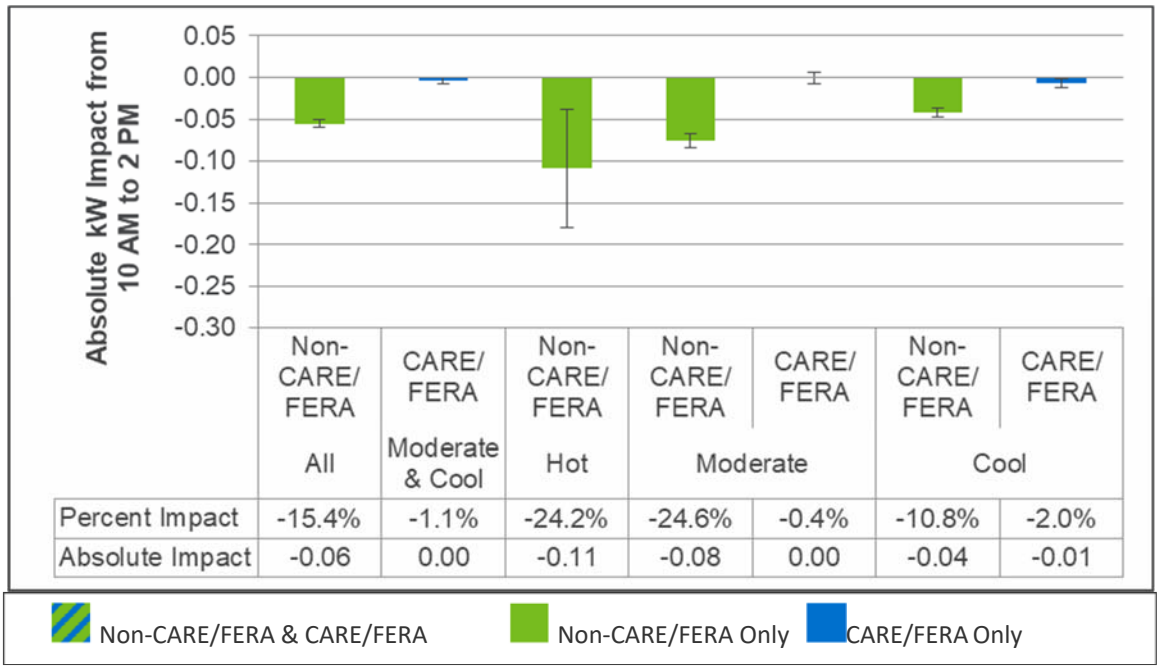
p) (Positive values represent load reductions)



Super off-peak load increases were statistically significant in the non-CARE/FERA segments in all climate regions separately and combined. This was not the case for CARE/FERA customers (with the exception of the cool climate region, where load increases were barely statistically significant).

q) *Figure 3-7: Average Spring Super Off-Peak Period Impacts for SDG&E Rate 1 by Climate Region & CARE/FERA Status*

r) *(Positive values represent load reductions)*



(1) *Annual Conservation Effect*

Figure 3-8 shows the annual conservation effect for customers in each climate region on Rate 1. The conservation effect is the sum of the net daily usage impacts across the first year of the pilot (June 2018 through May 2019). Each region except the hot climate region showed statistically significant increases in annual energy use. On average, customers increased their consumption by 0.8% or 60.4 kWh per customer during the first full year of the pilot. Those in the cool climate region saw the smallest, but still statistically significant, increase of 0.7% or 52.3 kWh. These impacts are in line with what was presented in Table 3-1. During the winter months (seven months out of the year) customers increased their daily usage on the average weekdays and average weekends.

s) Figure 3-8: Average Annual Conservation Effect for SDG&E Rate 1 by Climate Region (Positive values represent load reductions)

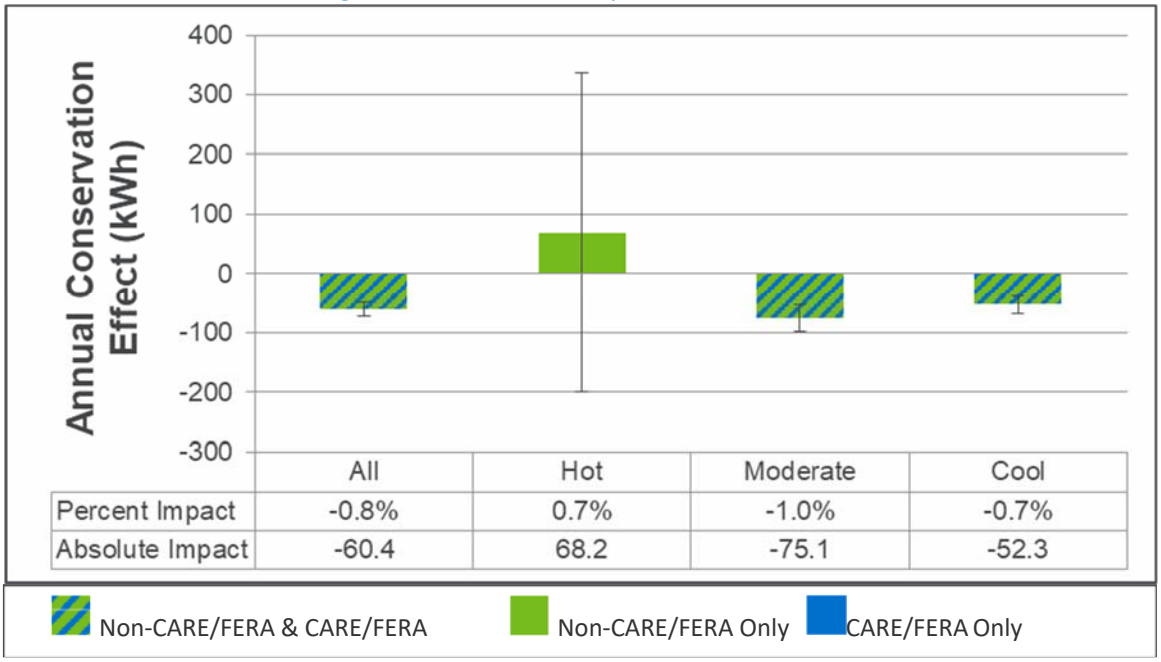
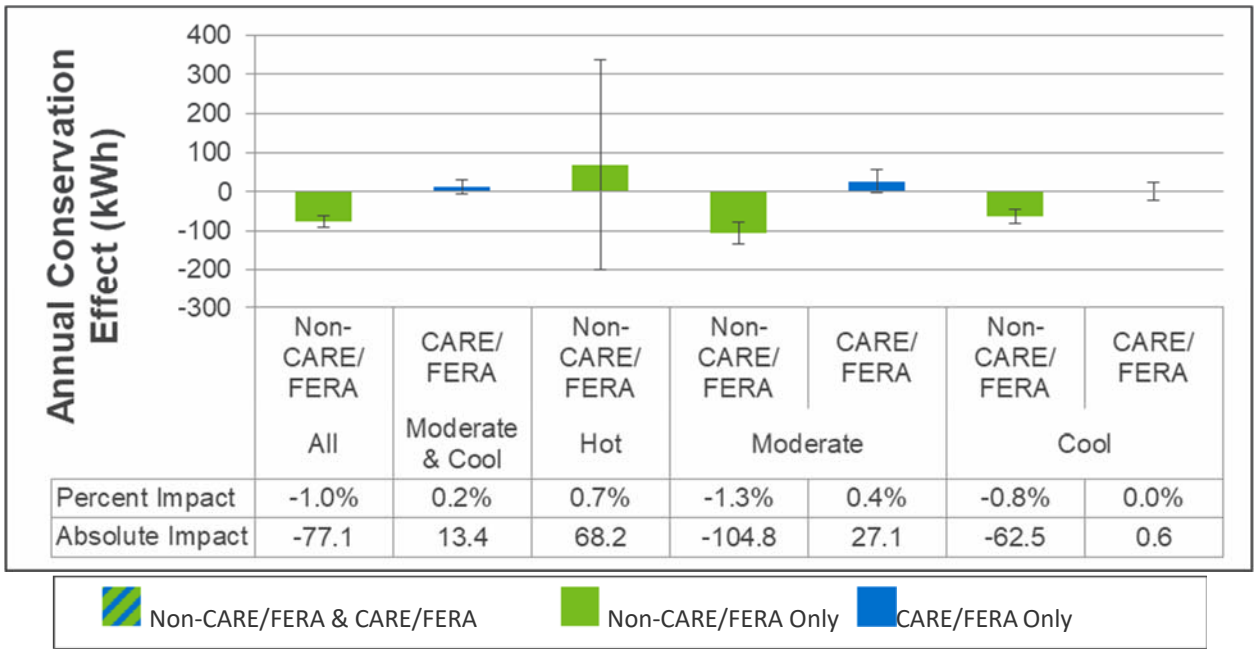


Figure 3-9 shows annual energy impacts for Rate 1 for CARE/FERA and non-CARE/FERA customers for the pilot as a whole and for each climate region. Annual increases were statistically significant for non-CARE/FERA customers in the pilot as a whole and in the moderate and cool climate regions. The conservation effect was not statistically significant for CARE/FERA customers in any climate region (separately or combined).

t) Figure 3-9: Average Annual Conservation Effect for SDG&E Rate 1 by Climate Region & CARE/FERA Status

u) (Positive values represent load reductions)



3.3 Rate 2

SDG&E's Rate 2 differs from Rate 1 as it is a two-period rate, rather than a three-period rate. Like Rate 1, the peak period is from 4 PM to 9 PM on weekdays and weekends. In winter, for electricity usage above 130% of the baseline quantity, prices equal 36 ¢/kWh in the peak period and 32 ¢/kWh in the off-peak period. Like Rate 1, a credit of 10 ¢/kWh is applied to usage below 130% of the baseline quantity.[22]

(1) *Winter Load Impacts*

Figure 3-10 shows the absolute load impacts for the weekday peak period for Rate 2 for SDG&E's service territory as a whole and for each climate region. The load reductions for the SDG&E territory as a whole, 0.6% or less than 0.01 kW, are similar to those for Rate 1 (0.5% or less than 0.01 kW) and the difference in both absolute and percentage terms is not statistically significant. Like Rate 1, peak period impacts in the hot climate region were not statistically significant. Impacts in the moderate and cool climate region were very similar (0.5% and 0.6%, respectively). This small difference is not statistically significant.

v) Figure 3-10: Average Winter Peak Period Load Impacts for SDG&E Rate 2 by Climate Region

w) (Positive values represent load reductions)

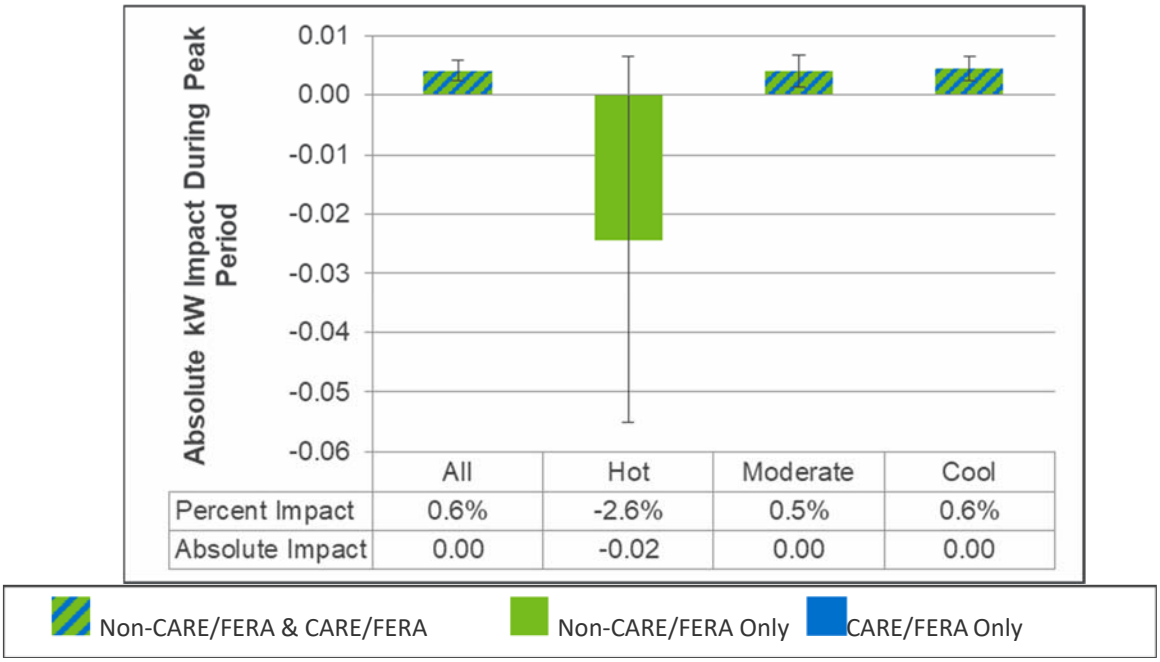


Table 3-4 presents estimates of load impacts for all relevant rate periods and day types for Rate 2 at the service territory and climate region level. Average reference load usage was 0.70 kW at the full pilot level during the peak period on the average weekday. The highest demand estimates were observed in the hot climate region on monthly system peak days during the peak period with a reference load of 1.08 kW.

[22] Rates effective May 1, 2019, and do not reflect the baseline credit of approximately .10 cents kWh for usage up to 130% of baseline.

For the average weekday, average weekend, and monthly system peak days, there were statistically significant load reductions during the peak period in every climate region and at the service territory level, except for the hot region on all day types. Similar to Rate 1, there were off-peak load increases in the moderate and cool climate regions for the average weekday, average weekend, and monthly system peak days. This led to net daily load increases in the on all day types.

The largest load reduction of 1.9%, or 0.02 kW, occurred in the hot climate region during the peak period on the average weekend day. However, the sample size of customers enrolled on Rate 2 in SDG&E's hot climate region is very small (128 treatment customers) so the confidence bands on this estimate are wide and this load impact estimate is highly uncertain.

x) Table 3-4: Average Winter Hourly Load Impacts
y) by Climate Region, Rate Period and Day Type for SDG&E Rate 2
z) (Positive values represent load reductions, negative values represent load

Rate 2														
Day Type	Period	Hours	All			Hot			Moderate			Cool		
			Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact
Average Weekday	Peak	4 PM to 9 PM	0.70	<0.01	0.6%	0.94	-0.02	-2.6%	0.72	<0.01	0.5%	0.69	<0.01	0.6%
	Off-Peak	9 PM to 4 PM	0.48	-0.01	-2.2%	0.66	-0.06	-8.7%	0.49	-0.02	-3.4%	0.47	-0.01	-1.4%
	Day	All Hours	0.53	-0.01	-1.4%	0.72	-0.05	-7.1%	0.54	-0.01	-2.3%	0.52	>-0.01	-0.8%
Average Weekend	Peak	4 PM to 9 PM	0.71	<0.01	0.7%	0.96	0.02	1.9%	0.73	<0.01	0.6%	0.69	<0.01	0.7%
	Off-Peak	9 PM to 4 PM	0.50	-0.01	-2.1%	0.72	-0.03	-3.6%	0.51	-0.02	-3.0%	0.49	-0.01	-1.4%
	Day	All Hours	0.55	-0.01	-1.3%	0.77	-0.02	-2.2%	0.56	-0.01	-2.0%	0.53	>-0.01	-0.9%
Monthly System Peak Day	Peak	4 PM to 9 PM	0.79	0.01	0.7%	1.08	0.01	1.3%	0.82	0.01	0.9%	0.76	<0.01	0.6%
	Off-Peak	9 PM to 4 PM	0.52	-0.01	-2.0%	0.74	-0.07	-9.7%	0.53	-0.02	-3.0%	0.51	-0.01	-1.2%
	Day	All Hours	0.58	-0.01	-1.2%	0.81	-0.05	-6.7%	0.59	-0.01	-1.8%	0.56	>-0.01	-0.7%

* A shaded cell indicates estimate is not statistically significant

Figure 3-11 shows the peak-period load reductions on weekdays for Non-CARE/FERA and CARE/FERA customers. Non-CARE/FERA customers had peak period impacts equal to 0.8% or 0.01 kW. CARE/FERA customers did not have statistically significant peak impacts in the moderate and cool climate regions combined. In fact, CARE/FERA customers in the moderate climate region showed statistically significant peak period increases of 1.0% or 0.01 kW. Non-CARE/FERA customers in the hot climate region and CARE/FERA customers in the cool climate region did not have statistically significant peak period load reductions.

aa) Figure 3-11: Average Winter Peak Period Impacts for SDG&E Rate 2 by Climate Region & CARE/FERA Status

bb) (Positive values represent load reductions)

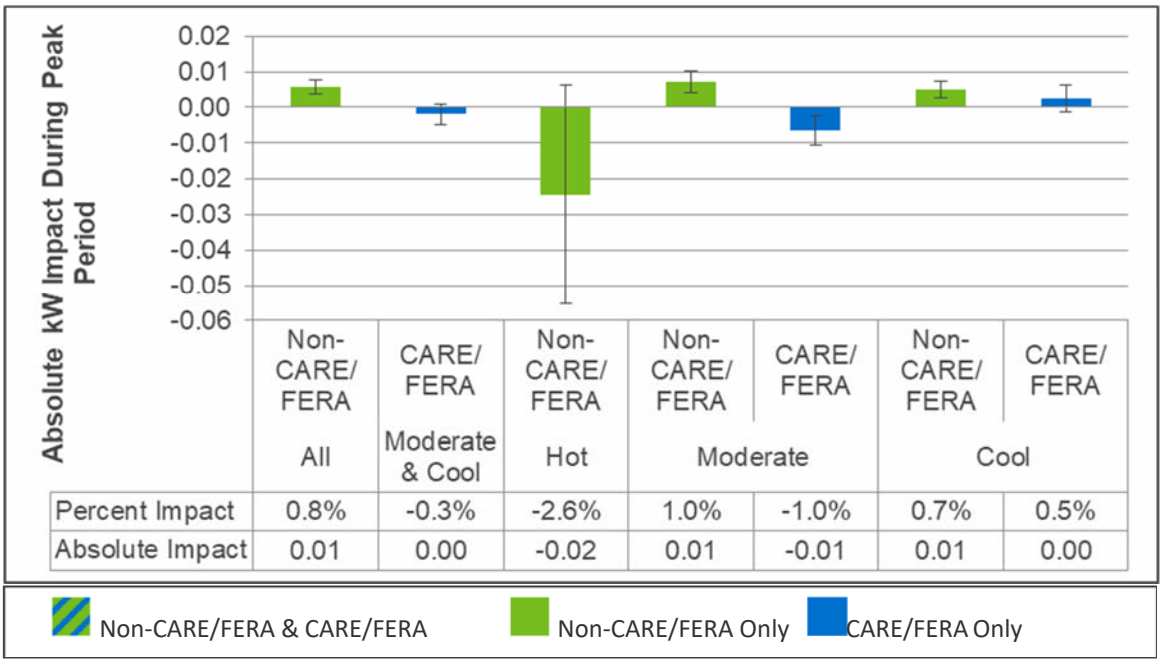


Table 3-5 and Table 3-6 show the load impacts for each rate period and day type for Rate 2 at the service territory level and across climate regions for Non-CARE/FERA and CARE/FERA customers, respectively. Non-CARE/FERA customers had higher average peak loads than CARE/FERA customers on the average weekday. Non-CARE/FERA customers had statistically significant load impacts on all day types and in all climate regions, with the exception of the hot climate region.

Non-CARE/FERA customers had statistically significant load increases during the off-peak periods for the service territory as a whole and for all climate regions on average weekdays, weekends, and monthly system peak days. This was true for CARE/FERA customers in the combined cool and moderate climate regions and the separated moderate climate region as well. Nearly all customer segments showed statistically significant daily load increases in all climate regions and most day types, with CARE/FERA customers in the cool climate region being the main exception.

cc) Table 3-5: Average Winter Hourly Load Impacts by Rate Period and Day Type for SDG&E Rate 2 by Climate Region – Non-CARE/FERA

dd) (Positive values represent load reductions, negative values represent load increases)

Rate 2														
Day Type	Period	Hours	All - Non-CARE/FERA			Hot - Non-CARE/FERA			Moderate - Non-CARE/FERA			Cool - Non-CARE/FERA		
			Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact
Average Weekday	Peak	4 PM to 9 PM	0.73	0.01	0.8%	0.94	-0.02	-2.6%	0.75	0.01	1.0%	0.71	0.01	0.7%
	Off-Peak	9 PM to 4 PM	0.50	-0.01	-2.4%	0.66	-0.06	-8.7%	0.50	-0.02	-3.8%	0.49	-0.01	-1.4%
	Day	All Hours	0.54	-0.01	-1.5%	0.72	-0.05	-7.1%	0.55	-0.01	-2.5%	0.54	>-0.01	-0.8%
Average Weekend	Peak	4 PM to 9 PM	0.74	0.01	0.9%	0.96	0.02	1.9%	0.76	0.01	1.1%	0.72	0.01	0.7%
	Off-Peak	9 PM to 4 PM	0.52	-0.01	-2.2%	0.72	-0.03	-3.6%	0.53	-0.02	-3.3%	0.51	-0.01	-1.5%
	Day	All Hours	0.56	-0.01	-1.3%	0.77	-0.02	-2.2%	0.58	-0.01	-2.1%	0.55	>-0.01	-0.9%
Monthly System Peak Day	Peak	4 PM to 9 PM	0.81	0.01	0.9%	1.08	0.01	1.3%	0.84	0.01	1.4%	0.79	<0.01	0.5%
	Off-Peak	9 PM to 4 PM	0.54	-0.01	-2.1%	0.74	-0.07	-9.7%	0.55	-0.02	-3.2%	0.52	-0.01	-1.4%
	Day	All Hours	0.59	-0.01	-1.3%	0.81	-0.05	-6.7%	0.61	-0.01	-1.9%	0.58	>-0.01	-0.8%

* A shaded cell indicates estimate is not statistically significant

ee) Table 3-6: Average Winter Hourly Load Impacts by Rate Period and Day Type for SDG&E Rate 2 by Climate Region –CARE/FERA

ff) (Positive values represent load reductions, negative values represent load increases)

Rate 2														
Day Type	Period	Hours	Moderate & Cool - CARE/FERA			Hot - CARE/FERA			Moderate - CARE/FERA			Cool - CARE/FERA		
			Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact	Ref. kW	Im pact kW	% Im pact
Average Weekday	Peak	4 PM to 9 PM	0.59	>-0.01	-0.3%	N/A	N/A	N/A	0.63	-0.01	-1.0%	0.54	<0.01	0.5%
	Off-Peak	9 PM to 4 PM	0.40	>-0.01	-0.9%	N/A	N/A	N/A	0.44	-0.01	-1.3%	0.37	>-0.01	-0.5%
	Day	All Hours	0.44	>-0.01	-0.7%	N/A	N/A	N/A	0.48	-0.01	-1.2%	0.41	>-0.01	-0.2%
Average Weekend	Peak	4 PM to 9 PM	0.57	>-0.01	-0.5%	N/A	N/A	N/A	0.62	-0.01	-1.3%	0.53	<0.01	0.4%
	Off-Peak	9 PM to 4 PM	0.42	>-0.01	-1.2%	N/A	N/A	N/A	0.46	-0.01	-1.7%	0.39	>-0.01	-0.6%
	Day	All Hours	0.45	>-0.01	-1.0%	N/A	N/A	N/A	0.49	-0.01	-1.6%	0.42	>-0.01	-0.3%
Monthly System Peak Day	Peak	4 PM to 9 PM	0.67	<0.01	0.2%	N/A	N/A	N/A	0.73	-0.01	-0.9%	0.61	0.01	1.5%
	Off-Peak	9 PM to 4 PM	0.44	>-0.01	-1.0%	N/A	N/A	N/A	0.48	-0.01	-1.8%	0.40	>-0.01	-0.1%
	Day	All Hours	0.49	>-0.01	-0.6%	N/A	N/A	N/A	0.53	-0.01	-1.5%	0.45	<0.01	0.4%

* A shaded cell indicates estimate is not statistically significant

(1) *Annual Conservation Effect*

Figure 3-12 shows the annual conservation effect for customers in each climate region on Rate 2. The full pilot population and customers in the moderate climate region showed statistically significant increases in annual energy use. On average, Rate 2 customers increased their consumption by 0.6% or 43.3 kWh per customer during the first full year of the pilot. Those in the moderate climate region had annual increases of 1.1% or 87.1 kWh.

gg) Figure 3-12: Average Annual Conservation Effect for SDG&E Rate 2 by

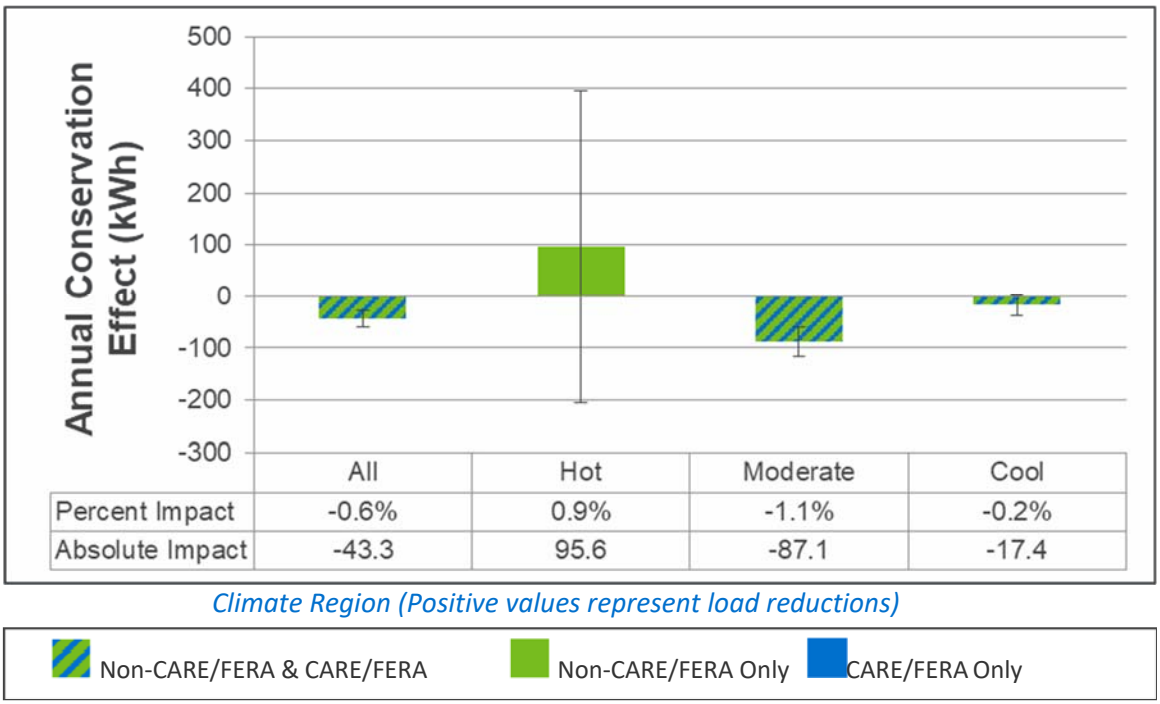
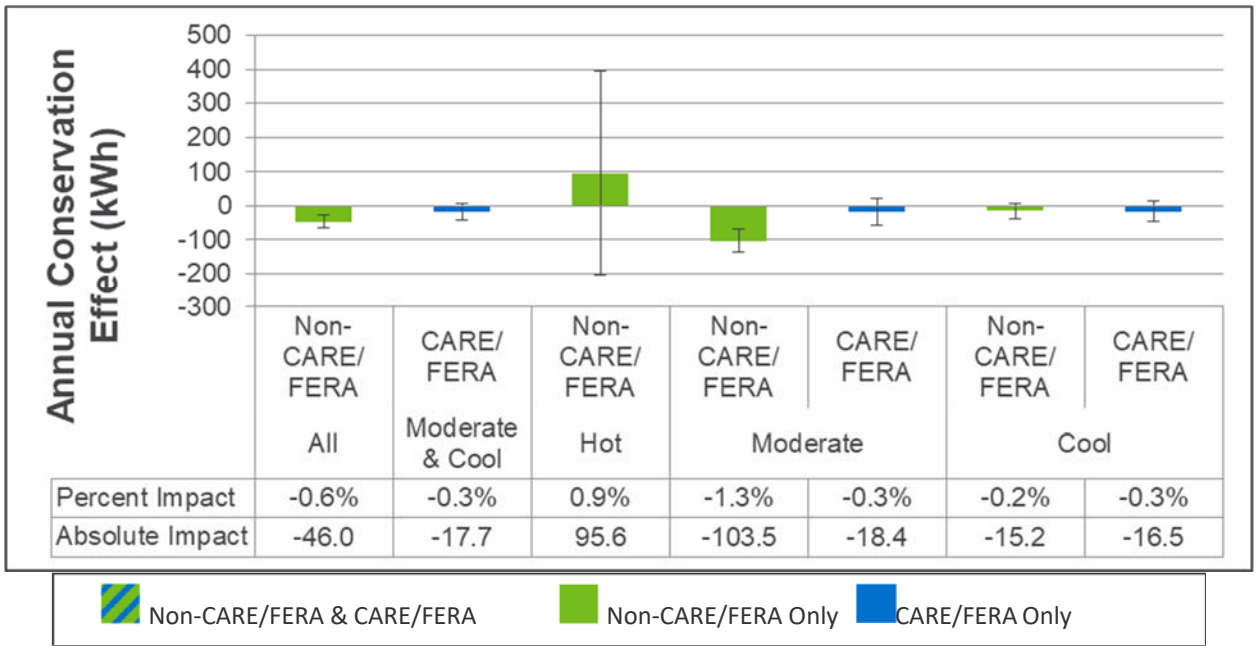


Figure 3-13 shows the annual conservation effects for CARE/FERA and non-CARE/FERA customers. Most customer segments did not show statistically significant load increases across the first full year of the pilot. The exceptions were non-CARE/FERA customers in the full pilot population and in the moderate climate region. Non-CARE/FERA customers increased their total consumption by 0.6% or 46 kWh across the year.

hh) Figure 3-13: Average Annual Conservation Effect for SDG&E Rate 2 by Climate Region & CARE/FERA Status

ii) (Positive values represent load reductions)



3.4 Post-enrollment Treatments

3.4.1 Programmable Thermostat Education

A sample of Rate 1 customers with a high likelihood of owning central air conditioning was selected to receive an educational campaign designed to encourage the use of existing technology, namely programmable thermostats (PTs), for managing energy use and bills. An equivalent sample of Rate 1 customers received standard education materials without the PT portion. Figure 3-14 shows the incremental load impacts for Rate 1 customers who received the additional education by climate region. Positive values correspond to load reductions for customers with additional thermostat education relative to those who didn't receive the materials. The only positive impacts can be seen in the hot climate region. However, this estimate is not statistically significant. In the service territory as a whole and the moderate and cool climate regions, customers in the thermostat education group showed statistically significant peak period demand increases. It should be noted that these estimates are just barely statistically significant. It is likely that the additional thermostat education did not cause customers to increase their peak consumption in a meaningful way and the statistical significance is due to the large sample sizes in Rate 1.

jj) Figure 3-14: Incremental Thermostat Impacts for Rate 1 by Climate Region (Positive values represent load reductions)

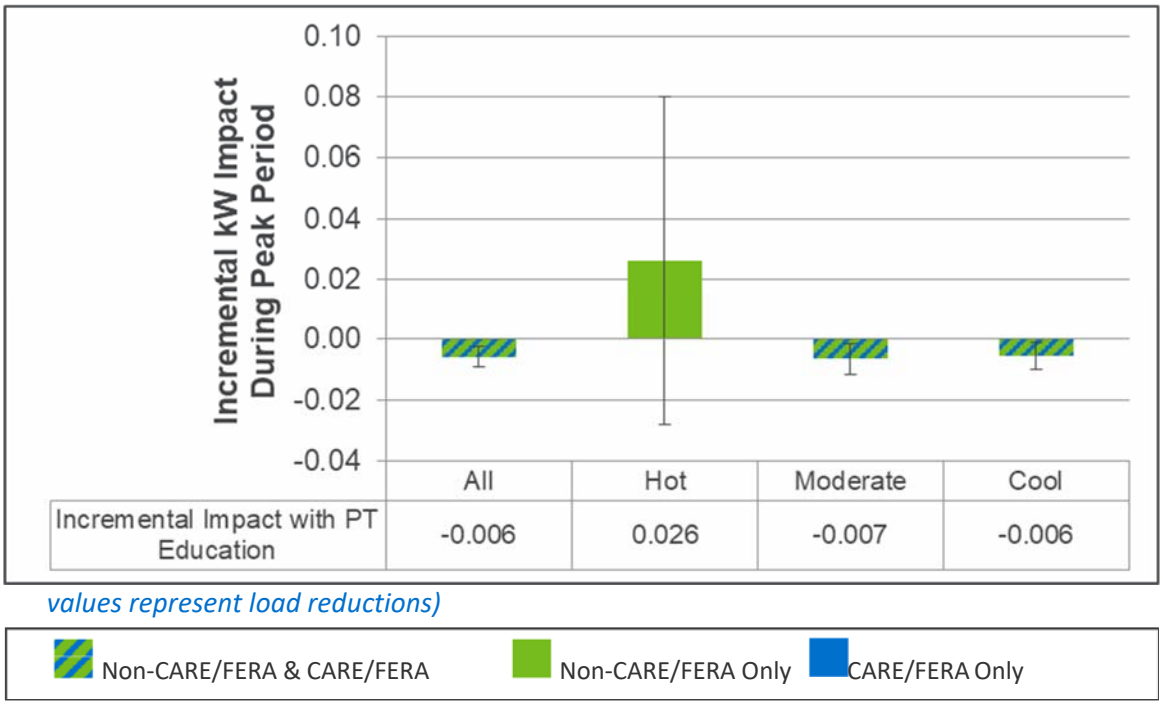


Figure 3-15 shows the load impacts for the group who did not receive PT education and those who did. As indicated in the figure above, customers who received the PT education had smaller peak period load impacts in the winter months versus those who did not (with the exception of the hot climate region).

kk) Figure 3-15: Rate 1 Load Impacts for Customers without and with PT Education by Climate Region

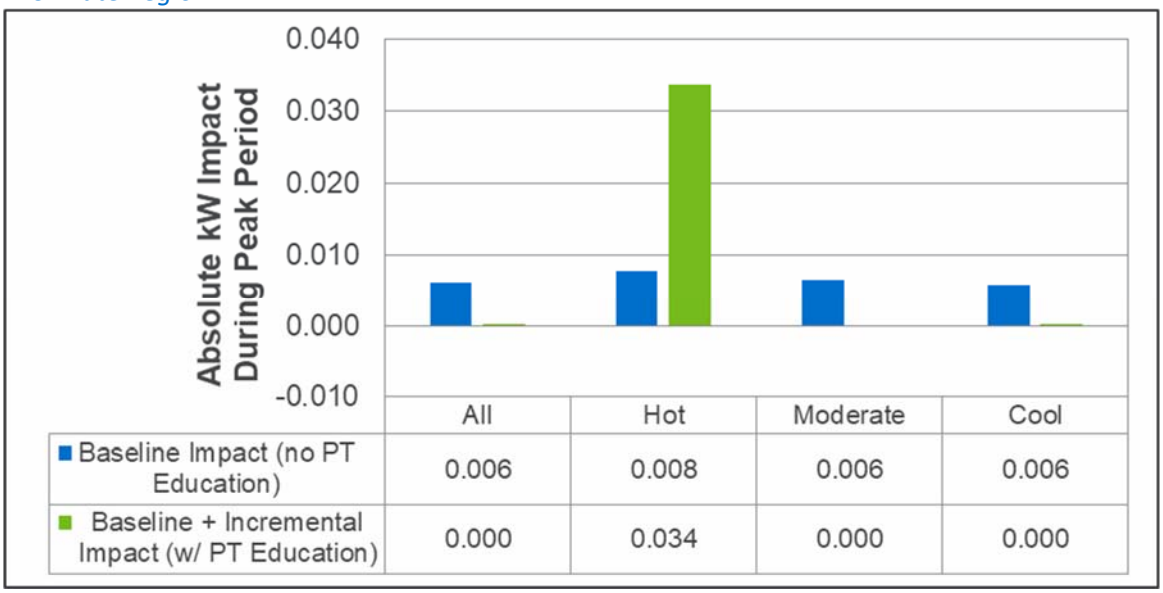


Figure 3-16 shows the incremental load impacts for Rate 1 who received PT education by CARE/FERA status. Four segments do not have statistically significant incremental load changes. The exceptions are Non-CARE/FERA customers in the combined climate regions and

moderate climate region and CARE/FERA customers in the cool climate region. In these three cases, the sample that received PT educational information used more energy during the peak period compared to the standard education group.

ll) Figure 3-16: Incremental Thermostat Impacts for Rate 1 by CARE/FERA and Non-CARE/FERA Status (Positive values represent load reductions)

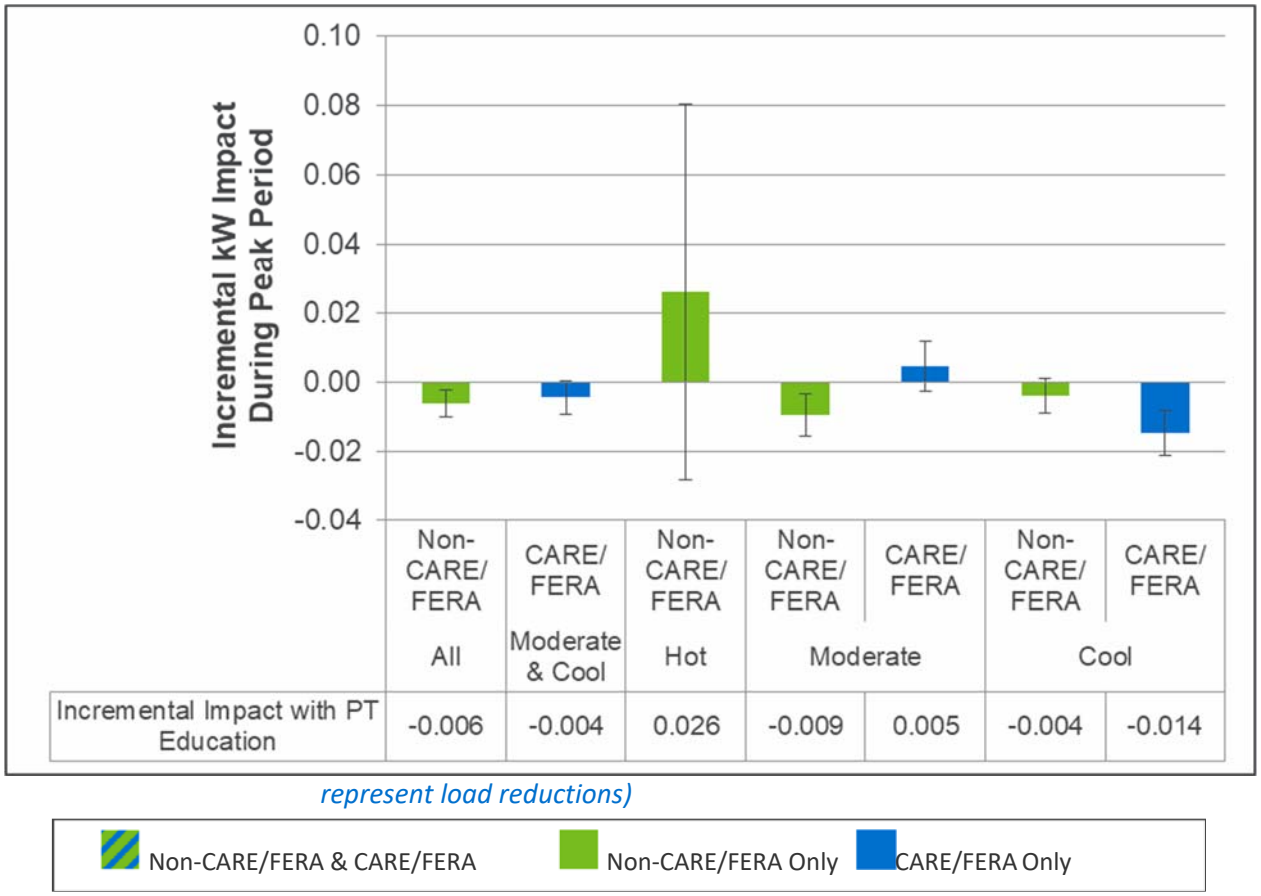
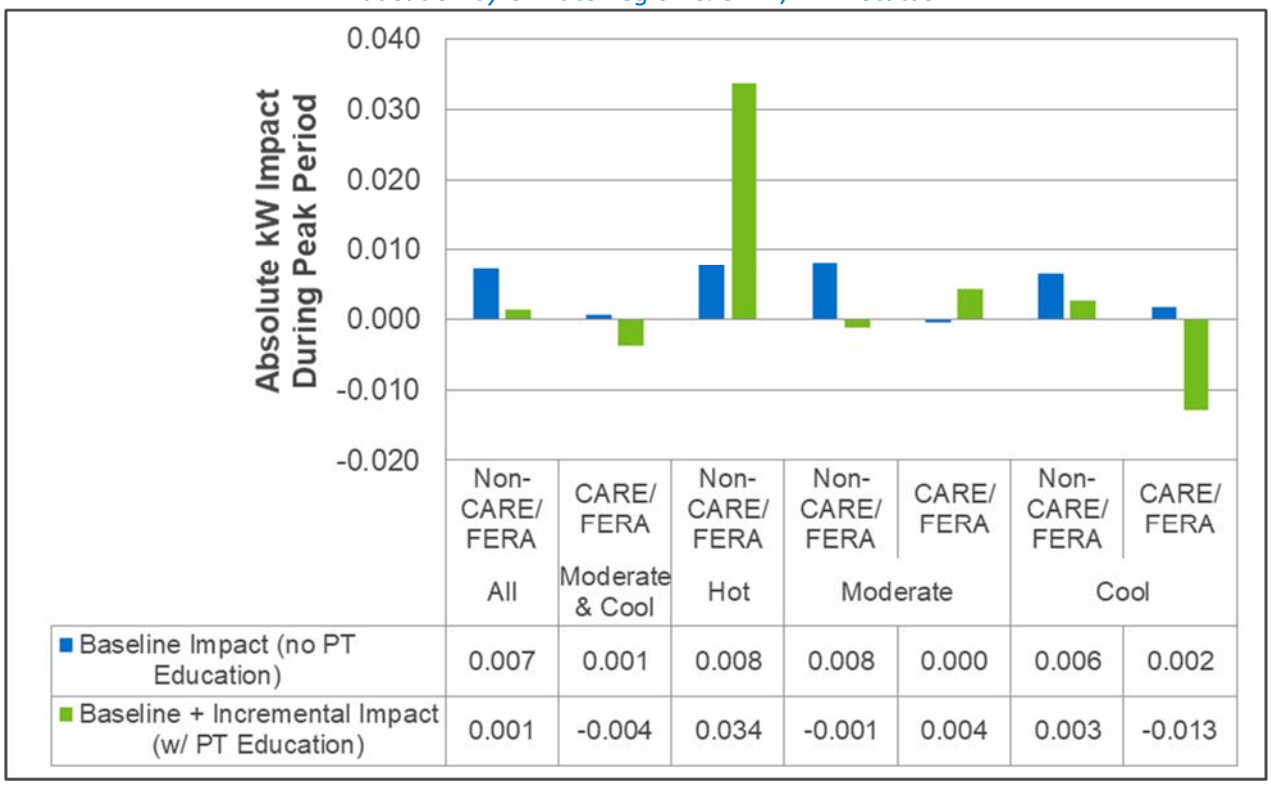


Figure 3-17 presents the load impacts for customers who did and did not receive PT education, by climate region and CARE/FERA status. In some cases, customers who received PT education had peak period load increases during the winter months. This was not the case in the summer months.

mm)

Figure 3-17: Rate 1 Load Impacts for Customers without and with PT Education by Climate Region & CARE/FERA Status



	Non-CARE/FERA	CARE/FERA	Non-CARE/FERA	Non-CARE/FERA	CARE/FERA	Non-CARE/FERA	CARE/FERA
	All	Moderate & Cool	Hot	Moderate		Cool	
Baseline Impact (no PT Education)	0.007	0.001	0.008	0.008	0.000	0.006	0.002
Baseline + Incremental Impact (w/ PT Education)	0.001	-0.004	0.034	-0.001	0.004	0.003	-0.013

3.4.2 Tailored Messaging

As discussed in Section 2.2.1 of the Interim Report, load impacts of an educational and outreach campaign with tailored messaging based around SDG&E's recently developed personas were compared with a campaign that did not provide tailored messages or content across segments. Customers who received tailored messaging are those assigned to the "Tailored Messaging" group while their comparison group (also on Rate 1), were assigned to the "Standard Messaging" group. Figure 3-18 shows the average incremental impact attributable to the tailored messaging at the aggregate level and for each climate region for Rate 1. Positive values in the figure indicate an incremental increase in load reductions (e.g., load reductions are larger with tailored messaging) while a negative value means load reductions were smaller for the tailored messaging group relative to the less frequent communication.

At the territory level, the incremental load impact during the peak period between the two groups was small but statistically significant (less than 0.01 kW). Customers that received tailored materials in the hot climate region had large and statistically significant incremental load reductions of 0.052 kW during the peak period, relative to standard education customers – however the confidence bands are very wide due to small sample sizes. In the moderate climate region, customers that received tailored messaging had small but statistically significantly larger load reductions compared to standard messaging customers.

nn) Figure 3-18: Rate 1 Incremental Load Impacts from Tailored Messaging Treatment by Climate Region

oo) (Positive values represent larger load reductions for Tailored Messaging customers relative to Standard E&O Customers)

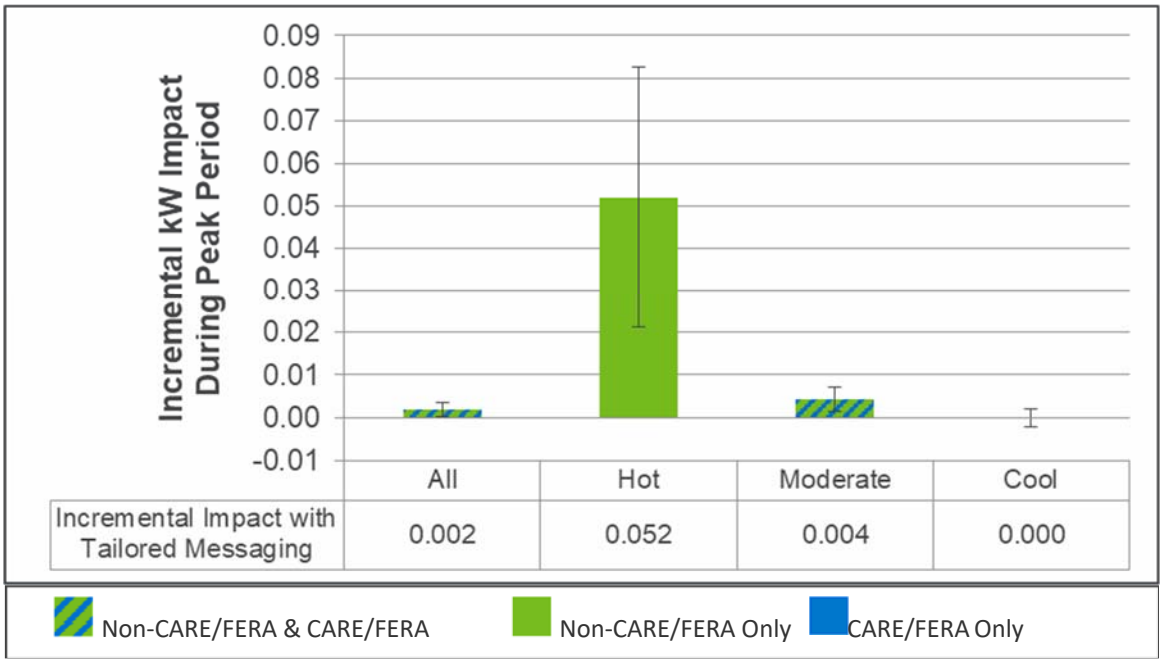
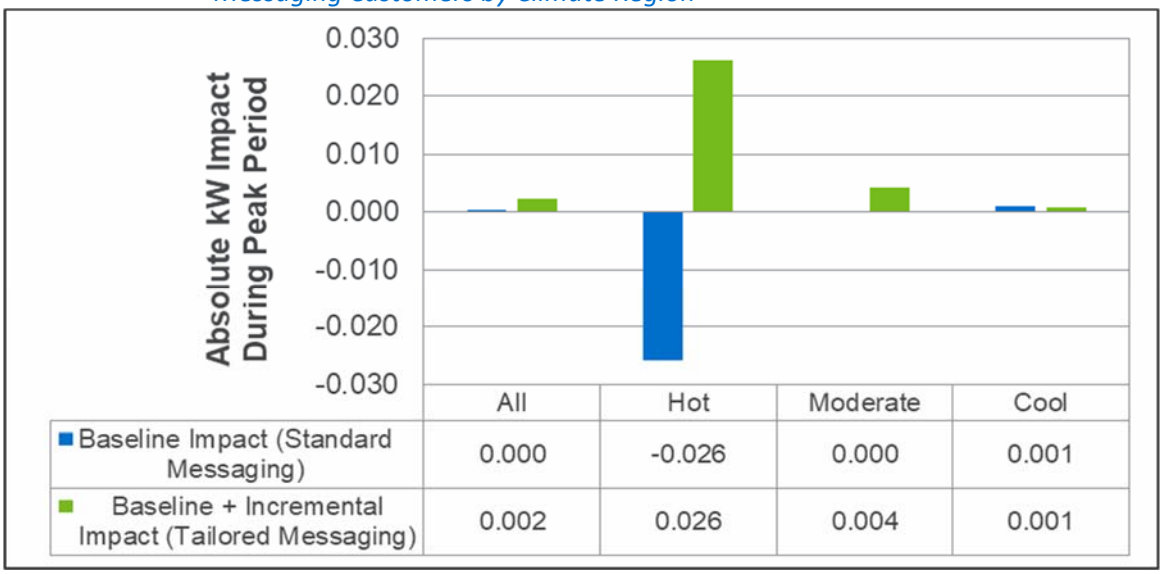


Figure 3-19 presents the total peak load impacts for the standard messaging and tailored messaging groups. As indicated in the graph above, tailored messaging customers had greater peak load impacts compared to those who received standard messaging.

pp) Figure 3-19: Rate 1 Load Impacts for Standard E&O and Tailored Messaging Customers by Climate Region[23]



[23] Similar values in the hot climate region are due to rounding. Standard messaging customers did not have load increases that were identical to the load reductions in the tailored messaging group.

Figure 3-20 shows the average incremental peak period impact attributable to the tailored education by CARE/FERA status for each climate region for Rate 1. There are no discernible differences in impacts between the tailored and standard groups in the non-CARE/FERA population. CARE/FERA customers in the combined climate region group and moderate climate region showed small but statistically significant incremental load impacts in the tailored education groups.

qq) Figure 3-20: Rate 1 Incremental Peak Period Load Impacts from Tailored Messaging Treatment

rr) by Climate Region & CARE/FERA Status

ss) (Positive values represent larger load reductions for Tailored Messaging customers relative to Standard E&O customers)

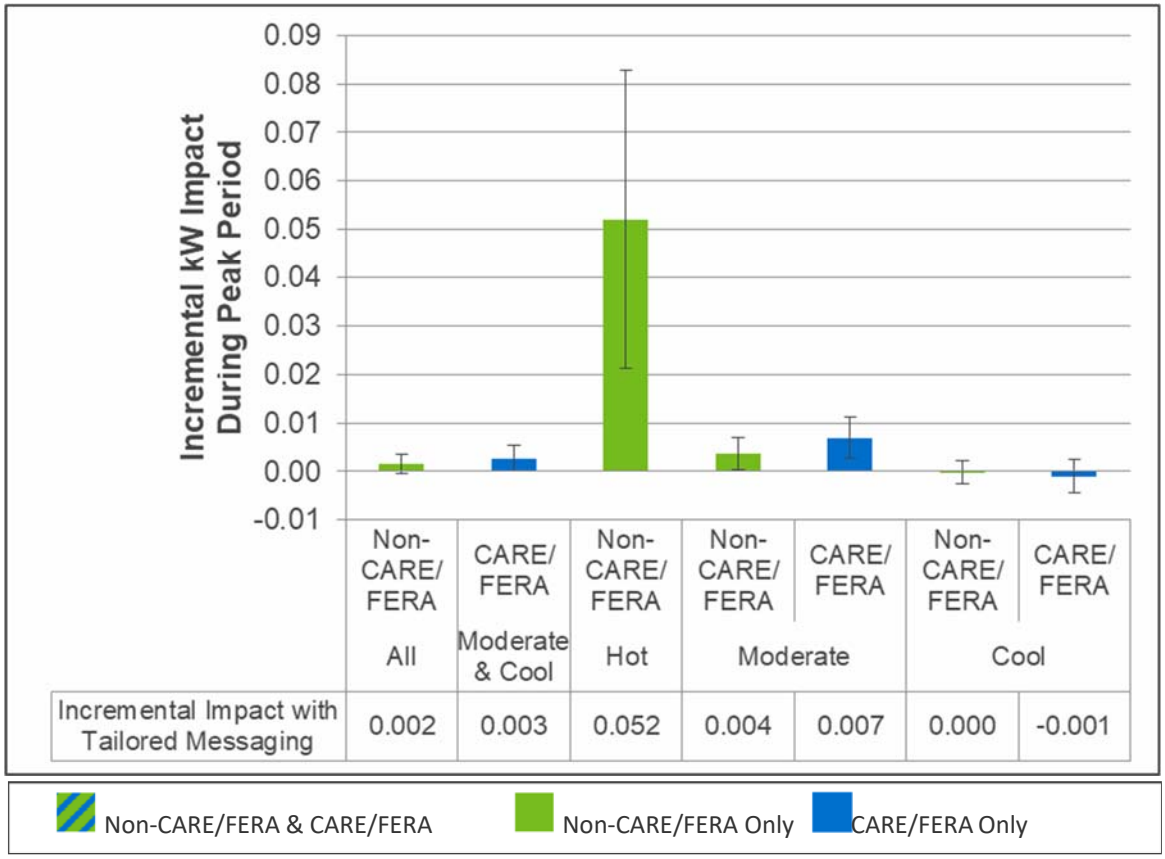
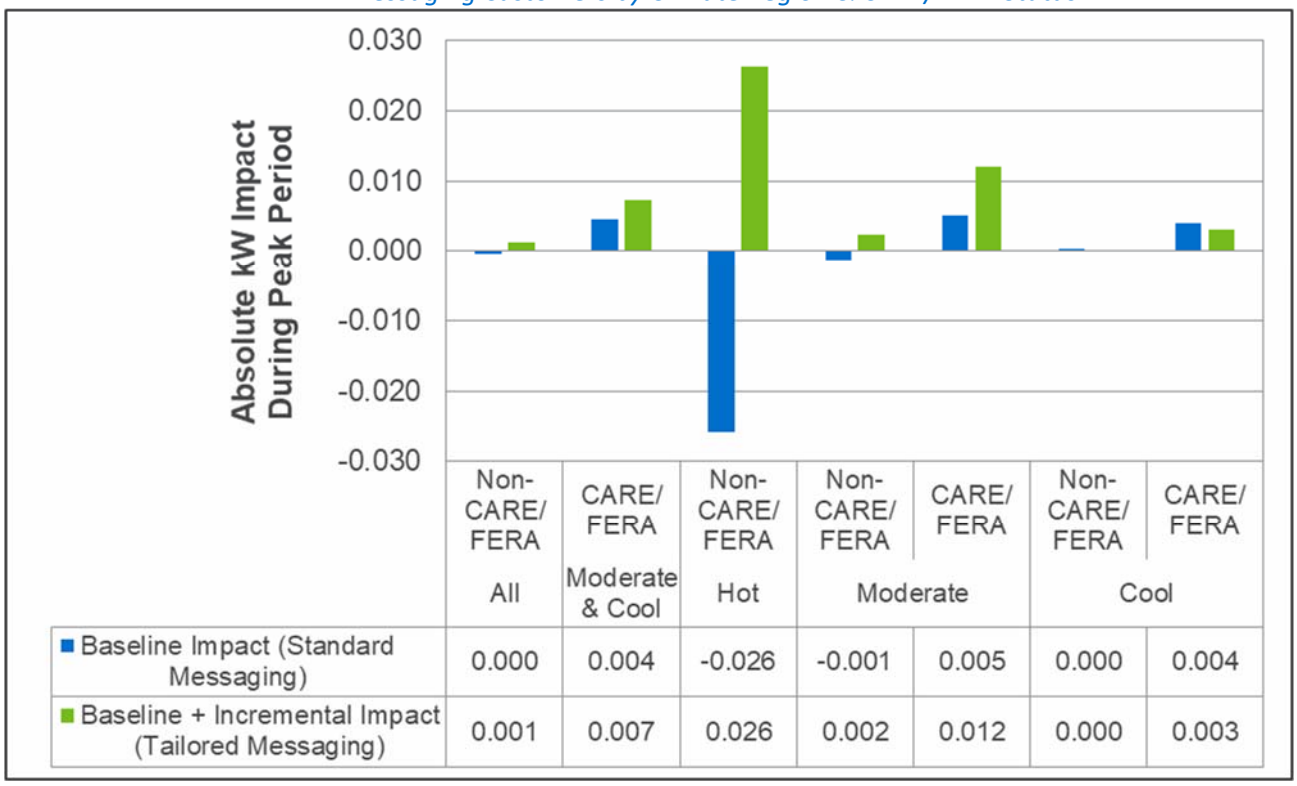


Figure 3-21 presents the winter peak load impacts for customers receiving each type of messaging. Generally speaking, customers who received tailored messaging had slightly greater load impacts than those who did not. However, as indicated in the previous figure, the incremental impacts were only statistically significant for CARE/FERA customers in the moderate climate region and combined moderate and cool climate regions and for non-CARE/FERA customers in the hot climate region.

tt) *Figure 3-21: Rate 1 Load Impacts for Standard E&O and Tailored Messaging Customers by Climate Region & CARE/FERA Status*



3.4.3 Level Payment Plan

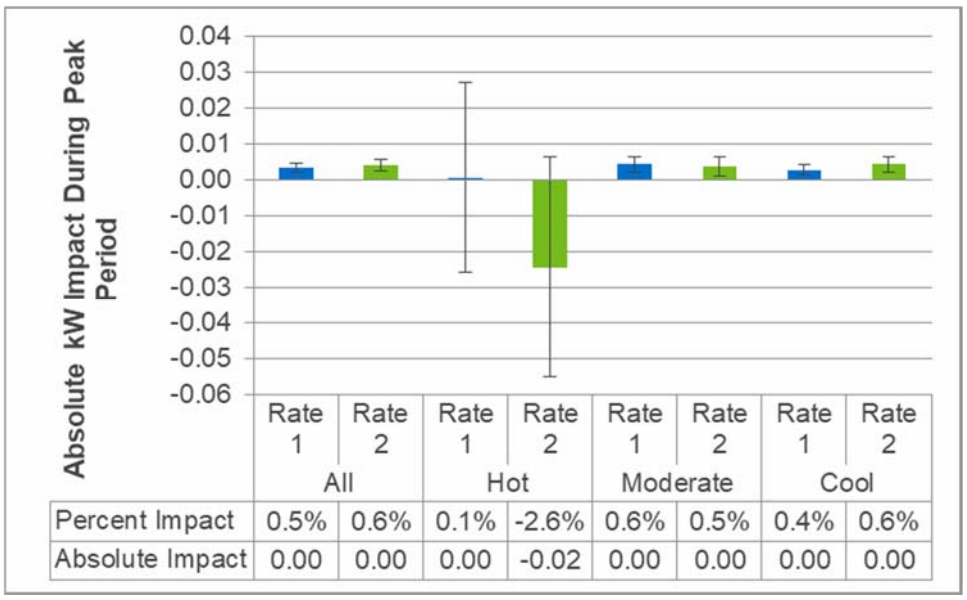
As discussed in Section 2 of the Interim Report, a portion of the enrolled population on each of the default rates was segmented into two groups, with one group receiving information on SDG&E's Level Payment Plan (LPP) as a means of managing month-to-month bill volatility. The other group did not receive LPP messaging.

The Pilot plan called for estimating the incremental enrollments in LPP that occurred as a result of the additional messaging and, if enrollment was large enough, to determine if load impacts differed between customers who were and were not on the LPP. However, among the group of approximately 36,000 pilot treatment customers who were deemed most impacted by bill volatility, only roughly 100 enrolled in LPP after the launch of the pilot. As such, participation is not large enough to determine any differences in load impacts between LPP and non-LPP participants.

3.5 Comparison across Rates

Figure 3-22 shows the average weekday peak-period impact for Rate 1 and Rate 2 in the winter months. The peak period covers the same hours for each rate (4 PM to 9 PM) and the peak-period price is the same across the two rates (36 ¢/kWh). The difference in load impacts at the service territory level is not statistically significant. There are no statistically significant differences between Rate 1 and Rate 2 in any of the climate regions.

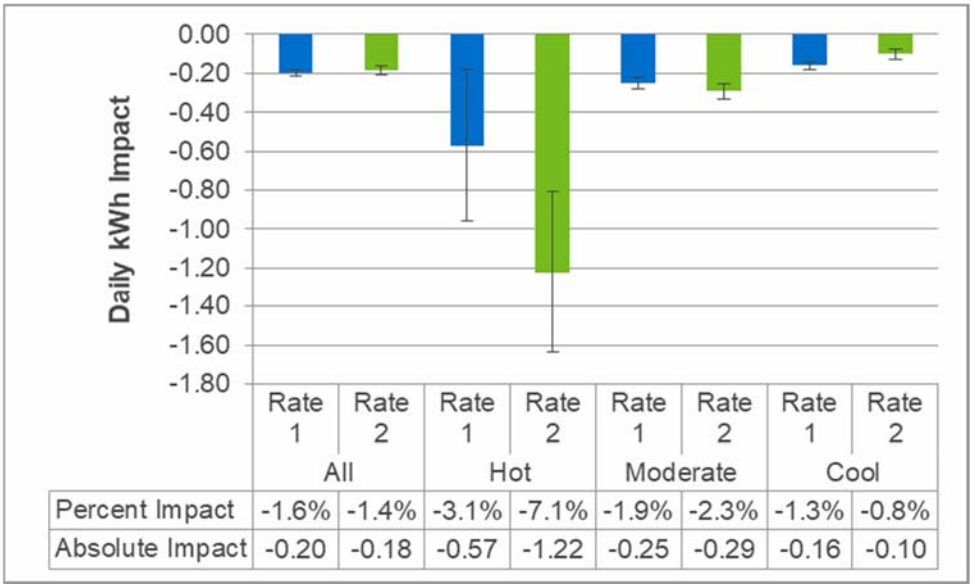
uu) Figure 3-22: Average Winter Peak Period Impacts form 4 PM to 9 PM across Rates (Positive values represent load reductions)



	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
	All		Hot		Moderate		Cool	
Percent Impact	0.5%	0.6%	0.1%	-2.6%	0.6%	0.5%	0.4%	0.6%
Absolute Impact	0.00	0.00	0.00	-0.02	0.00	0.00	0.00	0.00

Figure 3-23 shows the average daily kWh impact during the winter period for Rate 1 and Rate 2. At the territory level and in all climate regions, customers on both rates showed average daily kWh usage increases. The hot region had large daily usage increases for Rates 1 and Rates 2 that are not statistically significantly different from each other.

vv) Figure 3-23: Average Winter Daily kWh Impacts Across Rates (Positive values represent load reductions)



	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
	All		Hot		Moderate		Cool	
Percent Impact	-1.6%	-1.4%	-3.1%	-7.1%	-1.9%	-2.3%	-1.3%	-0.8%
Absolute Impact	-0.20	-0.18	-0.57	-1.22	-0.25	-0.29	-0.16	-0.10

3.6 Comparison across Seasons

Figure 3-24 presents a comparison of peak period impacts for the summer and winter average weekday for customers on Rate 1. In each segment presented below, impacts were larger in the summer than the winter. For example, in the pilot population as a whole summer impacts were equal to 1.5% and winter impacts were equal to 0.5%. This difference is statistically significant.

ww) *Figure 3-24: Average Peak Period Load Impacts for SDG&E Rate 1 (Summer vs. Winter)*

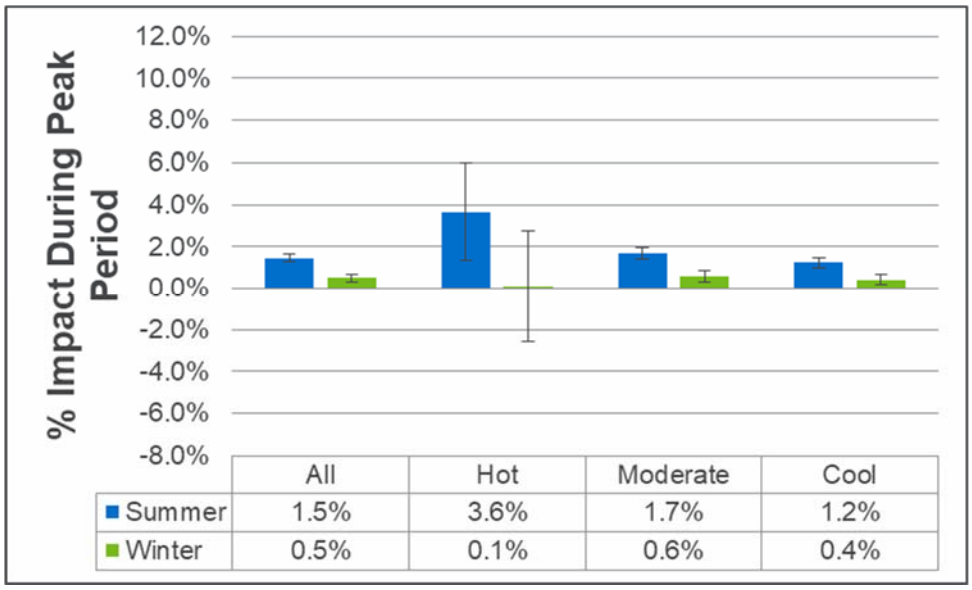


Figure 3-25 presents the comparison of peak period impacts across seasons for customers on Rate 2. Like Rate 1, summer impacts were greater than winter impacts. In fact, the summer impacts were more than twice as large as those in the winter months in all climate regions. This result is not surprising considering the stronger price signal in the summer.

xx) *Figure 3-25: Average Peak Period Load Impacts for SDG&E Rate 2 (Summer vs. Winter)*

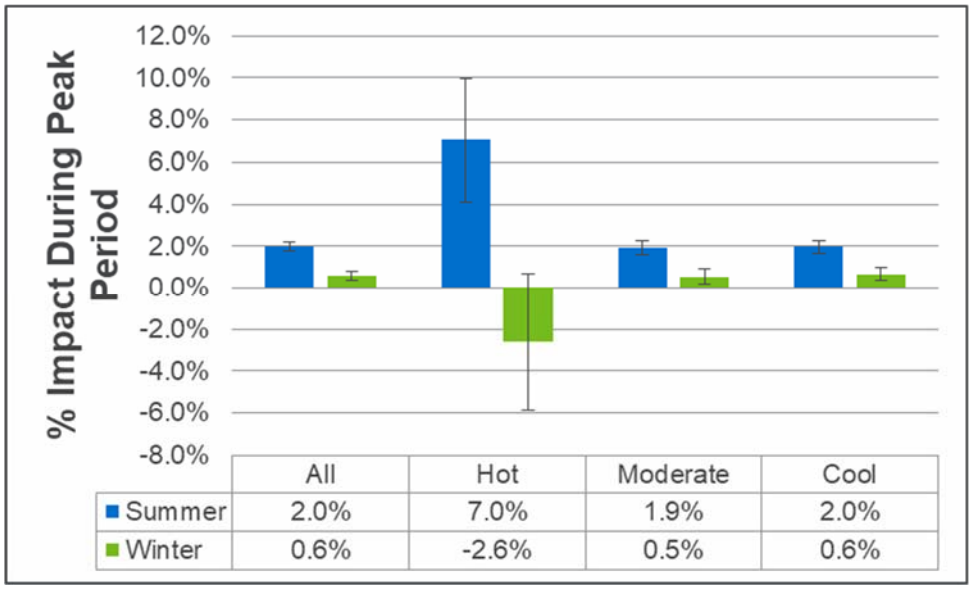
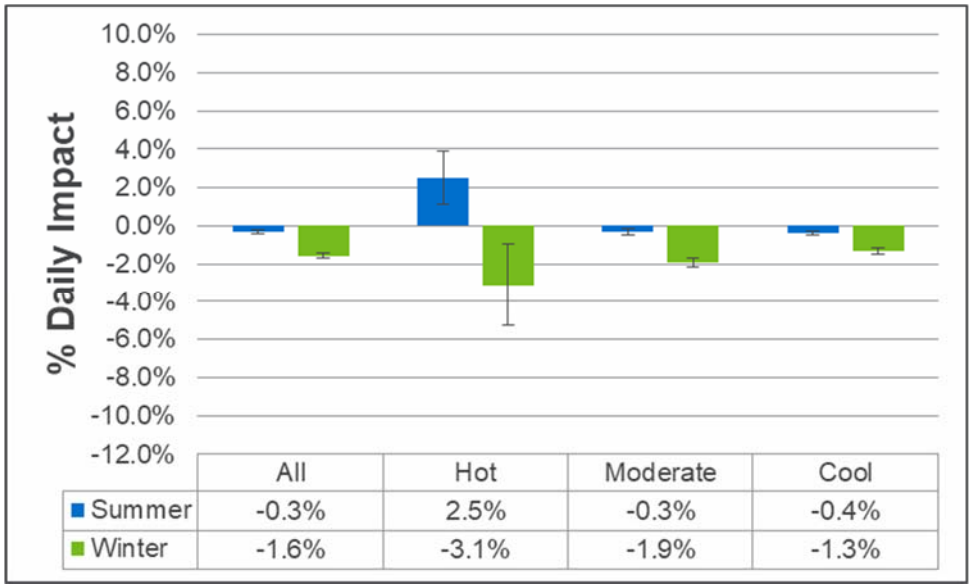


Figure 3-26 presents the average weekday conservation effect for Rate 1 for the summer and winter seasons. For Rate 1 customer as a whole, customers used 0.3% more electricity during the day (compared to the control group). In the winter, the energy usage increase effect was greater, about 1.6%. This pattern was similar in the cool and moderate climate regions. In the hot climate region, customers saved energy on the average summer weekday, but used more energy than the comparison group in the winter months.

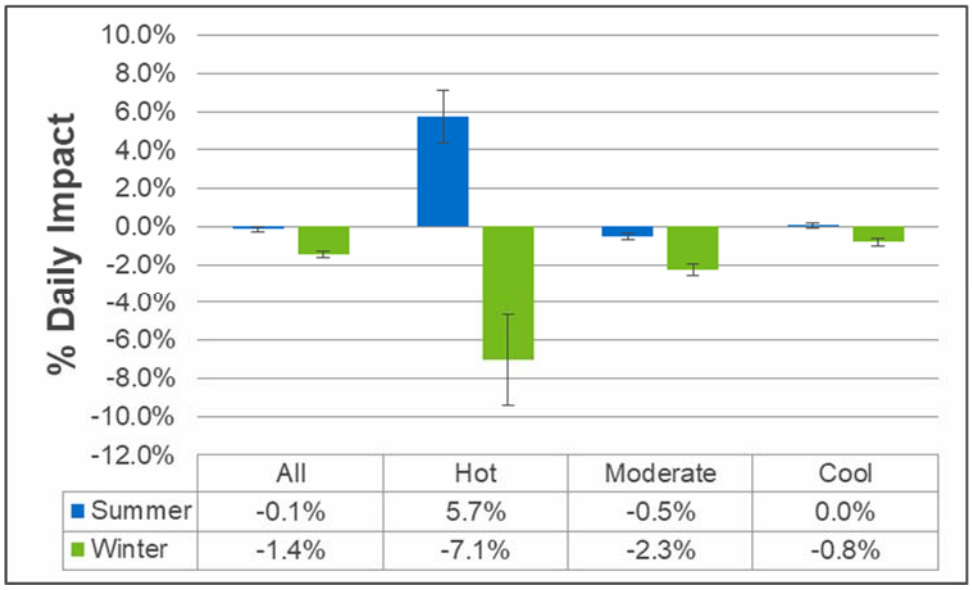
yy) *Figure 3-26: Average Daily Load Impacts for SDG&E Rate 1 (Summer vs. Winter)*



	All	Hot	Moderate	Cool
Summer	-0.3%	2.5%	-0.3%	-0.4%
Winter	-1.6%	-3.1%	-1.9%	-1.3%

Figure 3-27 shows the difference in net daily usage impacts between summer and winter weekdays for customers on Rate 2. The pattern is very similar to Rate 1 – in most cases, customers had greater net usage increases in the winter versus the summer. In the hot climate region, treatment customers saved energy in the summer but used more energy in the winter.

zz) *Figure 3-27: Average Daily Load Impacts for SDG&E Rate 2 (Summer vs. Winter)*



	All	Hot	Moderate	Cool
Summer	-0.1%	5.7%	-0.5%	0.0%
Winter	-1.4%	-7.1%	-2.3%	-0.8%

4 Bill ImpactAnalysis

This section summarizes the bill impact estimates for the two rate treatments tested by SDG&E. The impact of TOU rates on customers' bills is an important metric of interest to stakeholders, and a primary objective of the evaluation. This evaluation presents behavioral impacts and total bill impacts, as customers have now been on the new tariffs for a full year. The Interim Report presents structural bill impacts based on pretreatment data. Bill impacts were estimated for the average month in summer, winter, and for the entire year.

4.1 Bill Impact Methodology

The impact of TOU rates on customers' bills is an important metric of interest to multiple stakeholders. From a policy standpoint, what is of primary interest is how much individual customers' bills change as a result of being placed on a TOU rate after they adjust their behavior (or choose not to) in response to the time-varying price signals associated with the rate. However, it is not valid to compare an individual's bill before and after they are placed on a TOU rate because there are a myriad of reasons why such bills might change that have nothing to do with the new rate. A specific household might have gained or lost a household member, had a teenager go away to (or return from) college, made an addition to the house, purchased an electric vehicle, changed one or more appliances, or made any of a number of other changes that could cause very significant changes to usage and bills that have nothing to do with the rate change. As such, a key challenge is determining how best to answer the key policy questions associated with bill impacts without relying on "before-and-after" comparisons of bills for individual customers.

The basic approach used to examine bill impacts is similar to the differences-in-differences approach used in the load impact analysis outlined in Section 3 of the Interim Report, but rather than estimating changes in electricity demand, this analysis focuses on changes in customer bills. The bill impacts experienced by customers on a TOU rate can be broken into three components:

- **Structural Bill Impacts:** This represents the change in customer bills based solely on the change in the underlying structure of the rate - structural bill impacts were presented in the Interim Report
- **Behavioral Bill Impacts:** This represents how customers change their energy usage in response to the new pricing structure of the rate, which includes higher prices in the afternoon and evening and lower prices at other times of day
- **Total Bill Impacts:** This is the combination of structural and behavioral bill impacts - in other words, it is equal to the structural bill impact mitigated by a change in behavior (or lack thereof)

Structural bill impacts can be estimated using pretreatment data and were presented in Section 5 of the Interim Report. Now that treatment customers have been enrolled in TOU rates for a full year, this report focuses on behavioral and total bill impacts in the post-treatment period. Separate analysis databases were developed to estimate each type of bill impact. Each

contains monthly bills in the pretreatment and post-treatment periods for control and treatment customers, but the tariffs used to estimate the bills in each database differs by the type of bill

impact being estimated.

The main output from these analyses are average monthly bill estimates across the first year of the pilot (June 2018 through May 2019) and average monthly bill estimates for winter and spring. Three different bills were calculated for each customer segment and season:

- **[1] No Change in Behavior or Tariff:** This represents what the treatment group bills would ave been in the post-treatment period if they were on the OAT and had not changed their behavior
- **[2] No Change in Behavior, Change in Tariff:** This represents what the treatment group bills would have been in the post-treatment period if they were on the TOU rate and had not changed their behavior
- **[3] Change in behavior and in Tariff:** This represents what the treatment group bills were in the post-treatment period on the TOU rate with a change in behavior

The difference between [1] and [2] is the structural bill impact (based on post-treatment usage after adjusting for any pretreatment differences between control and treatment customers). The difference between [2] and [3] is the amount customers were able to reduce their bills by changing their behavior. Finally, the difference between [1] and [3] is the bill impact due to structural differences in the rates, but mitigated by changes in behavior. This is the total bill impact.

Due to the complexity of estimating two reference bills (those without both a change in behavior and tariff), the bill impact analysis does not rely on the RED design of the pilots. Instead, customers who opted out in the pre-enrollment period were removed from the analysis databases completely, along with a group of similar control customers selected using propensity score matching. Each treatment customer who opted out of the pilot was matched to one control customer based on pretreatment average daily load profiles. This process was done separately for summer and winter, and control customers could only be matched to one treatment customer for each season.

The following subsections provide detailed descriptions of the analysis databases and methods used to estimate bill impacts due to behavior change and total bill impacts.

4.1.1 Bill Impacts due to Behavior Change

Table 4-1 shows which rates were used to develop the behavioral bill impact analysis database for each period (pretreatment or post-treatment) and customer group. The average bill impact attributable to customers changing their behavior in response to the TOU rates is estimated by first calculating bills for both the treatment and control group under the TOU rate during the pre- and post-treatment periods. The control group bill calculated on the TOU rate represents the bill that would be expected if a customer was billed on the TOU rate, but didn't change their energy use behavior. The bill for the treatment group customers on the TOU rate reflects any behavioral changes in response to being on the TOU rate. By subtracting the treatment group's average bill from the control group's average bill—and removing any pre-existing differences—we are able estimate the average bill impact attributable to the treatment group's change in behavior resulting from exposure to the pilot rate, after controlling for exogenous factors.

aaa) Table 4-1: Rates Used to Estimate Customer Bills for Behavioral Bill Impact Analysis Database

Time Period	Group	Rate Used
Pretreatment	Control	TOU
	Treatment	TOU
Post-treatment	Control	TOU
	Treatment	TOU

A difference-in-differences (DiD) fixed effects model, similar to that used for estimating load impacts, is then used to estimate the average bill impact for the rate and segment of interest. The regression specification for estimating bill impacts is shown below:

$$bill_{i,t} = \alpha_i + \delta \text{treat}_i + \gamma \text{post}_t + \beta(\text{treatpost})_{i,t} + v_i + \varepsilon_{i,t}$$

In simplified terms, the estimated impact (β) equals the difference between the control group and the treatment group bills calculated on the TOU rate using post-treatment usage minus any pre-existing differences between the control and treatment group bills based on pretreatment usage. It should be noted that small bill impacts do not necessarily indicate that customers did not change their behavior. Bill impacts depend on the combination of changes in usage in each rate period. Customer may reduce use during the peak period but increase it in the off-peak period not just due to load shifting but also due to increased end-use activity. Depending on the relative magnitude of these changes and the rate differentials, significant behavior changes could lead to minimal changes in the total bill.

4.1.2 Total Bill Impacts

The total bill impact experienced by customers is the impact a customer faces with a change in tariff and after change in energy usage behavior (or lack thereof). For example, during the summer period, some customers experienced a structural increase in their bills due to transitioning to the TOU rate. However, customers also had an opportunity to offset that increase by changing their energy use behavior in response to the new price signals. It is the combination of the structural and behavioral impacts that produces the total bill impact experienced by the average study participant. Table 4-2 summarizes the tariffs used to develop the total bill impact analysis database. In this case, the post-treatment control customer bills are estimated using the OAT. This represents what a customer's bill would be in the absence of the pilot (with no change in tariff or behavior). The post-treatment TOU bill for treatment customers represents the bills experienced by customers enrolled in the pilot. The pre-treatment bills estimated under the OAT are meant to control for pre-existing differences between the two groups.

bbb) Table 4-2: Rates Used to Estimate Customer Bills for Total Bill Impact Analysis Database

Time Period	Group	Rate Used
Pretreatment	Control	OAT
	Treatment	OAT
Post-treatment	Control	OAT
	Treatment	TOU

The same model used to estimate behavioral bill impacts was used to estimate total bill impacts. The only difference is the underlying analysis database. The final output of this analysis is a series of bar graphs. Each bar represents the average customer's monthly bill under different conditions: no change in tariff or behavior, a change in tariff but no change in behavior, or a change in tariff and in behavior. The differences between each bill represent the structural bill impact, the behavior bill impact, and the total bill impact.

In the bill impact analysis, a major policy question is to better understand the relationship between the structural bill impacts and how customers were able to respond. The outcome of this relationship is presented by the "Total Bill Impact" and "Percent Bill Impact" shown in the data table at the bottom of the figures below. These values represent the final outcome incorporating the structural change, and the customers' behavioral response. Results are organized by rate, climate region, and segment. For each rate, results are presented for the first year of the pilot, followed by summer and winter estimates.

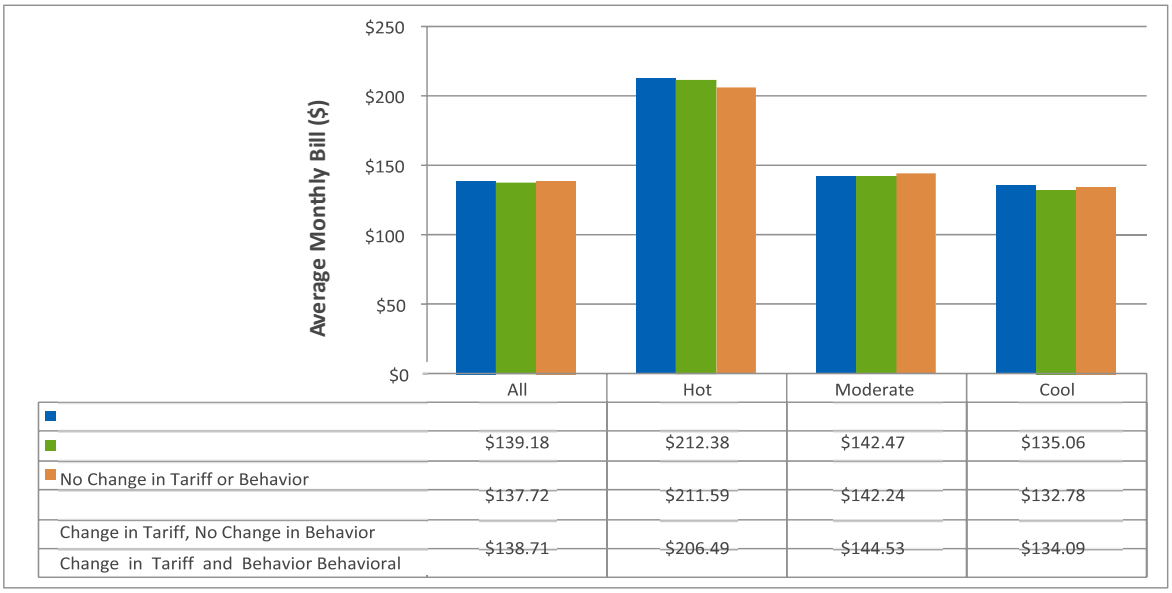
4.2 Rate 1

Figure 4-1 presents a set of three average monthly bill types for the twelve month period as defined above for all customers in the pilot and for each segment separately. The blue bar represents a typical average monthly bill for a customer still on the OAT and not responding to a TOU rate – noted as "No Change in Tariff or Behavior." For the average customer on Rate 1, this dollar amount was $139.18. The green bar represents what a typical cost would be for a customer who was billed on a TOU rate, but did not change their energy use behavior – noted as "Change in Tariff, No Change in Behavior." This dollar amount is 137.72 for the average Rate 1 customer. The difference between the two values, $1.46, is the average reduction a customer would see in their monthly bills by changing from the OAT to Rate 1, and not changing their energy use behavior; this is also referred to as the customer's structural bill impact. The orange bar represents the average Rate 1 customer's bill after factoring in the change in rate from the OAT to Rate 1, and then also taking into account any changes in energy use behavior – noted as "Change in Tariff and Behavior." This average monthly bill was $138.71 for the typical Rate 1 customer. Based off these values, it is possible to estimate the total change in bills including both the change in tariff and in behavior, which was a reduction of about $0.48 per month. The total change in bill is calculated by subtracting the orange ($138.71) from the blue ($139.18). This bill impact is not statistically significant.

Annual behavioral and total bill impacts were only statistically significant in the moderate climate region, where the average customer would pay $2.06 more per month even after changes in

behavior. This is an increase of 1.4%. Annual total bill impacts were not statistically significant in the territory as a whole or in the hot and cool climate regions.

ccc) Figure 4-1: Annual Bill Impacts for SDG&E Rate 1 by Climate Region

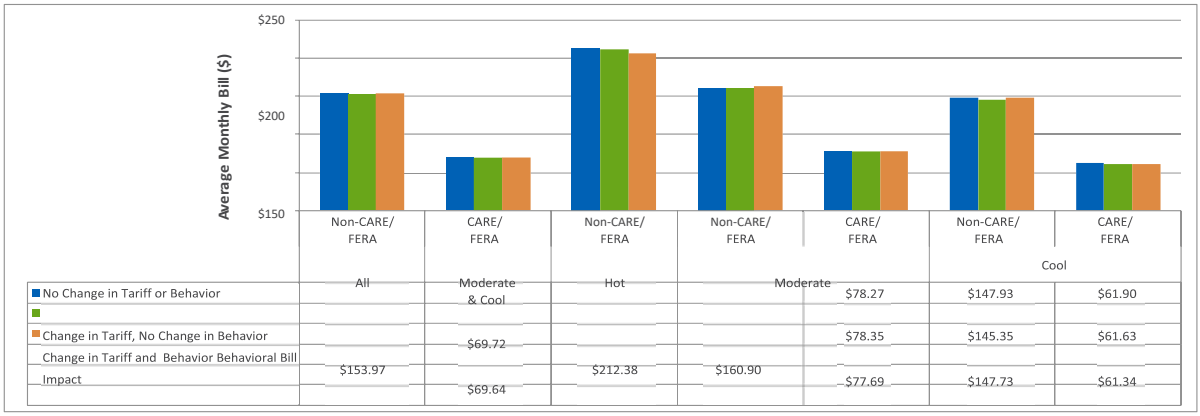


	All	Hot	Moderate	Cool
	$139.18	$212.38	$142.47	$135.06
No Change in Tariff or Behavior	$137.72	$211.59	$142.24	$132.78
Change in Tariff, No Change in Behavior	$138.71	$206.49	$144.53	$134.09
Change in Tariff and Behavior Behavioral				

* Indicates statistically significant bill impact

Figure 4-4-2 presents the three sets of average monthly bill types as defined above for the Non-CARE/FERA and CARE/FERA climate zones for the pilot as a whole and for each climate region. Generally, customers had very small bill impacts. In fact, many would save a small amount of money on Rate 1 even without changing their behavior. Both behavioral and total bill impacts were statistically significant for Non-CARE/FERA customers in the moderate climate region, where customers faced monthly bill increases of $2.73 or 1.7%, on average. Total bill impacts for all other customer segments were small and not statistically significant.

ddd) Figure 4-4-2: Annual Bill Impacts for SDG&E Rate 1 by Climate Region & CARE/FERA Status



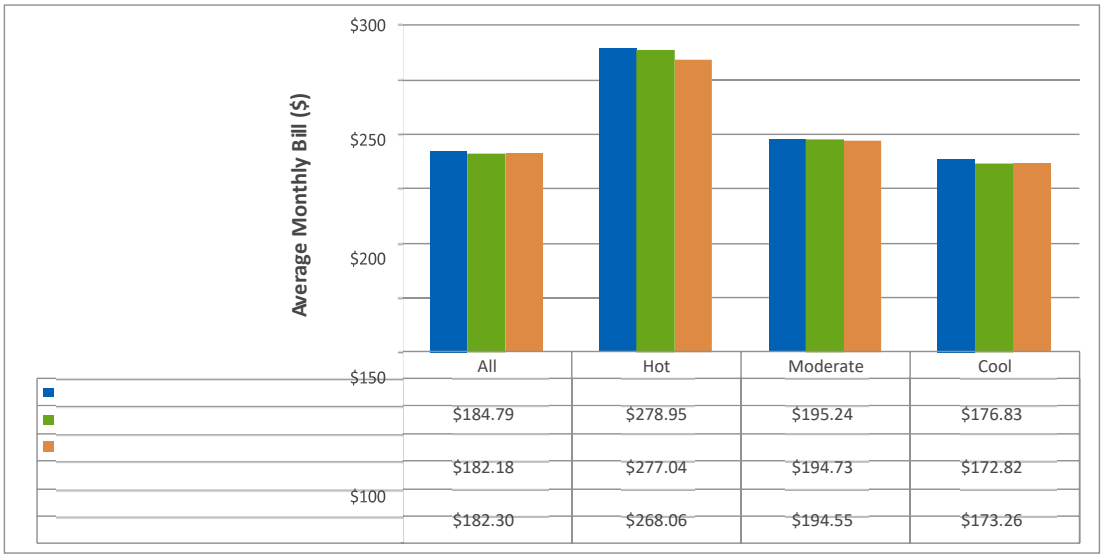
No Change in Tariff or Behavior					$78.27	$147.93	$61.90
Change in Tariff, No Change in Behavior		$69.72			$78.35	$145.35	$61.63
Change in Tariff and Behavior Behavioral Bill Impact	$153.97		$212.38	$160.90			
		$69.64			$77.69	$147.73	$61.34

* Indicates statistically significant bill impact

Figure 4-3 presents the three sets of average monthly bill types for all customers on Rate 1 during the summer period from June through October 2018. Customers on Rate 1 had structural

bill decreases equal to $2.61, on average. Customer bills were largely unaffected by changes in behavior (behavioral bill impacts were not statistically significant), and their total bill impact was equal to a decrease of $2.48 or 1.3% per month, on average. This impact was statistically significant. Customers in the cool climate region experienced statistically significant bill reductions of $3.57 per month, on average. Bill impacts were not statistically significant in the hot and moderate climate regions.

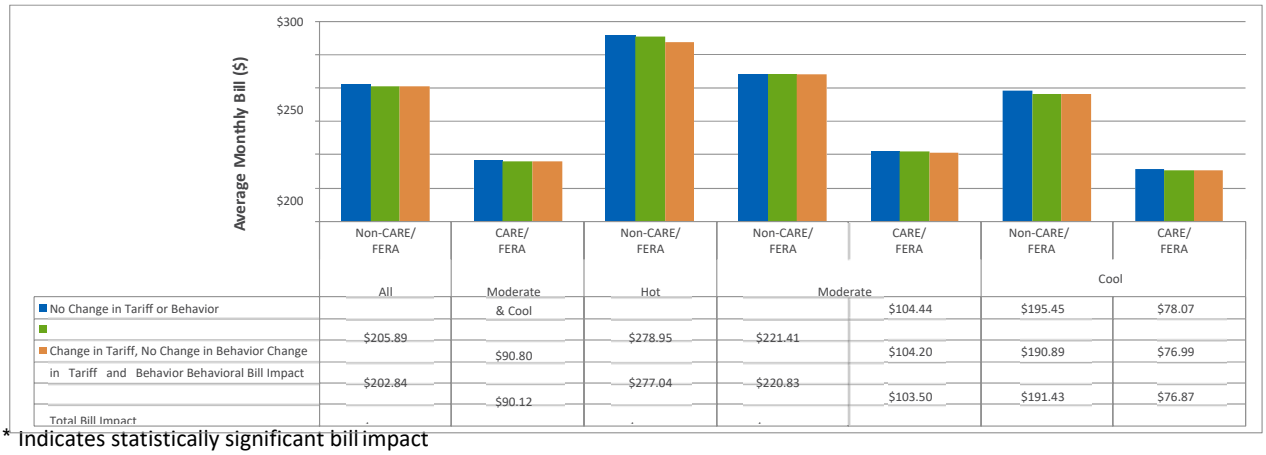
eee) *Figure 4-3: Summer Bill Impacts for SDG&E Rate 1 by Climate Region*



* Indicates statistically significant bill impact

Figure 4-4 presents the three average monthly summer bill types for customers on Rate 1 by climate region and CARE/FERA status. Behavioral bill impacts were not statistically significant in any segment, but total bill impacts in the summer months were statistically significant for both segments in the combined climate regions and in the cool climate region. Customers in each segment had structural gains in the summer months, with the largest being $4.56 per month for Non-CARE/FERA customers in the cool climate region. Customers in this segment did not reduce their bills further through changes in behavior, and had total bill reductions equal to $4.03 per month, on average, or 2.1%.

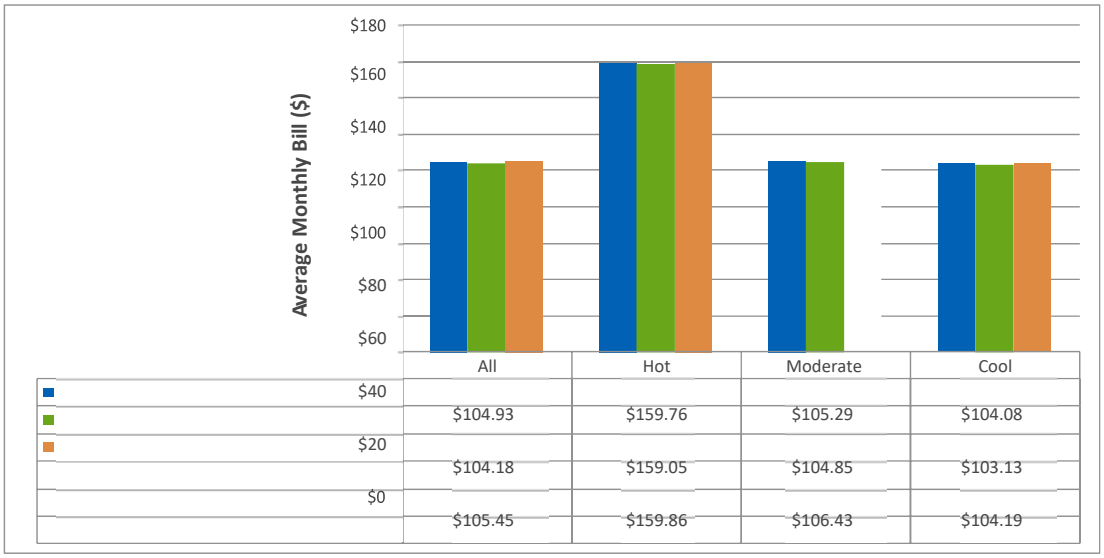
fff)Figure 4-4: Summer Bill Impacts for SDG&E Rate 1 by Climate Region & CARE/FERA Status



* Indicates statistically significant bill impact

Figure 4-5 presents winter bill impacts for the average month from November 2018 through May 2019 for customers on Rate 1. Overall, customers' bills increased by $0.51 per month, on average, however this estimate is not statistically significant. Total bill impacts were only statistically significant in the moderate climate region, where customers experienced monthly bill increases of $1.14, on average. Customers in this segment increased their bills through changes in behavior, as their structural impact was actually a bill reduction of $0.44 per month, on average.

ggg) *Figure 4-5: Winter Bill Impacts for SDG&E Rate 1 by Climate Region*

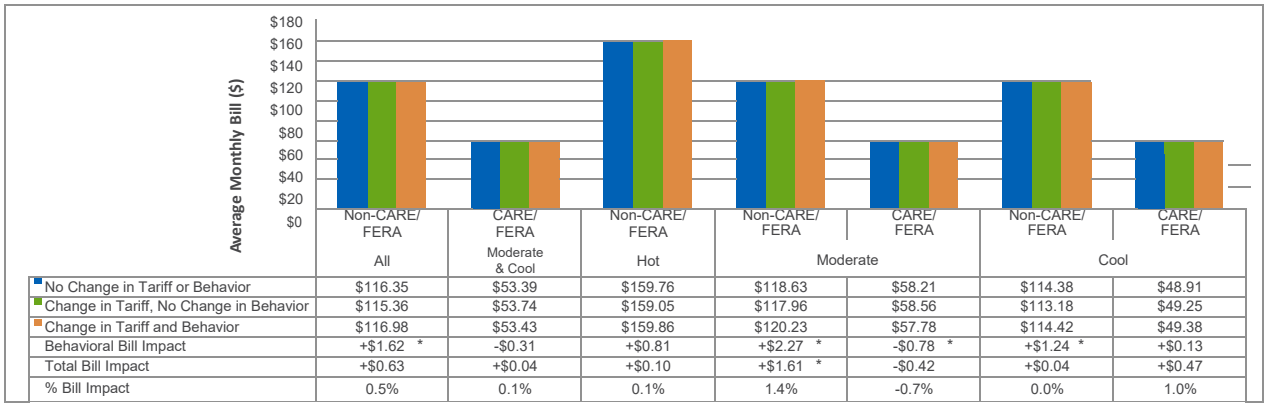


* Indicates statistically significant bill impact

Figure 4-6 shows Rate 1 bill impacts for the winter months by climate region and CARE/FERA status. Total bill impacts were not statistically significant for any customer segment, with one exception: Non-CARE/FERA customers in the moderate climate region, who had structural gains of $0.66 per month, had total bill increases of $1.61 per month, on average. This means

that customers' bills increased by $2.27 per month through changes in behavior (likely their large increases in consumption during the off-peak period).

hhh) Figure 4-6: Winter Bill Impacts for SDG&E Rate 1 by Climate Region & CARE/FERA Status



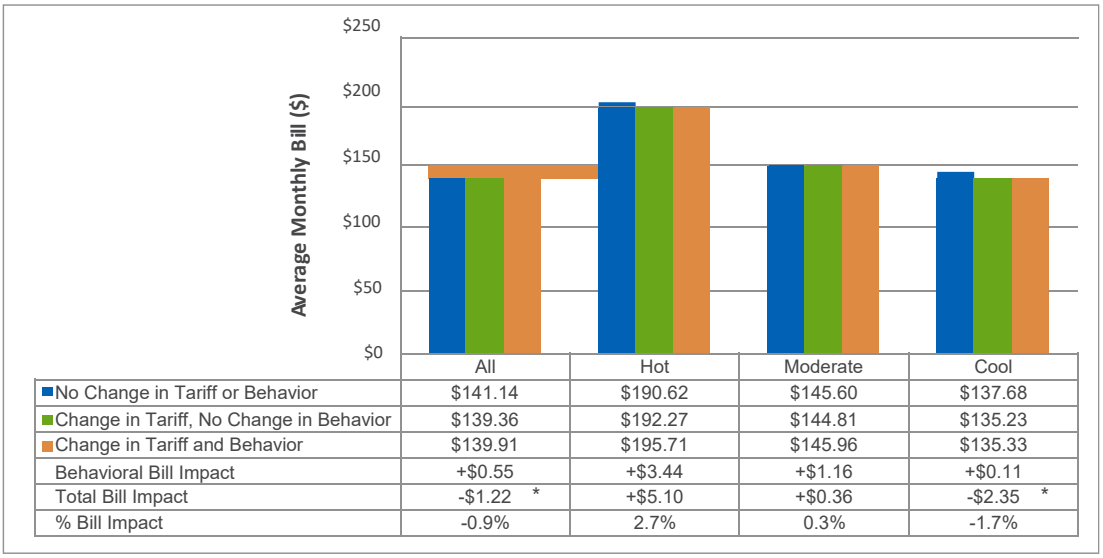
	Non-CARE/ FERA All	CARE/ FERA Moderate & Cool	Non-CARE/ FERA Hot	Non-CARE/ FERA Moderate	CARE/ FERA Moderate	Non-CARE/ FERA Cool	CARE/ FERA Cool
No Change in Tariff or Behavior	$116.35	$53.39	$159.76	$118.63	$58.21	$114.38	$48.91
Change in Tariff, No Change in Behavior	$115.36	$53.74	$159.05	$117.96	$58.56	$113.18	$49.25
Change in Tariff and Behavior	$116.98	$53.43	$159.86	$120.23	$57.78	$114.42	$49.38
Behavioral Bill Impact	+$1.62 *	-$0.31	+$0.81	+$2.27 *	-$0.78 *	+$1.24 *	+$0.13
Total Bill Impact	+$0.63	+$0.04	+$0.10	+$1.61 *	-$0.42	+$0.04	+$0.47
% Bill Impact	0.5%	0.1%	0.1%	1.4%	-0.7%	0.0%	1.0%

* Indicates statistically significant bill impact

4.3 Rate 2

Figure 4-7 presents the three sets of average monthly bill types for all customers on Rate 2 for the twelve month period from June 2018 through May 2019. Bill impacts were only statistically significant in the pilot population as a whole and in the cool climate region. Overall, customers on Rate 2 had annual structural gains of $1.78 per month, on average. Total bill impacts were equal to reductions of $1.22 per month, on average, or 0.9%. Customers in the cool climate region had greater bill reductions, equal to $2.35 or 1.7%, on average.

iii) Figure 4-7: Annual Bill Impacts for SDG&E Rate 2 by Climate Region



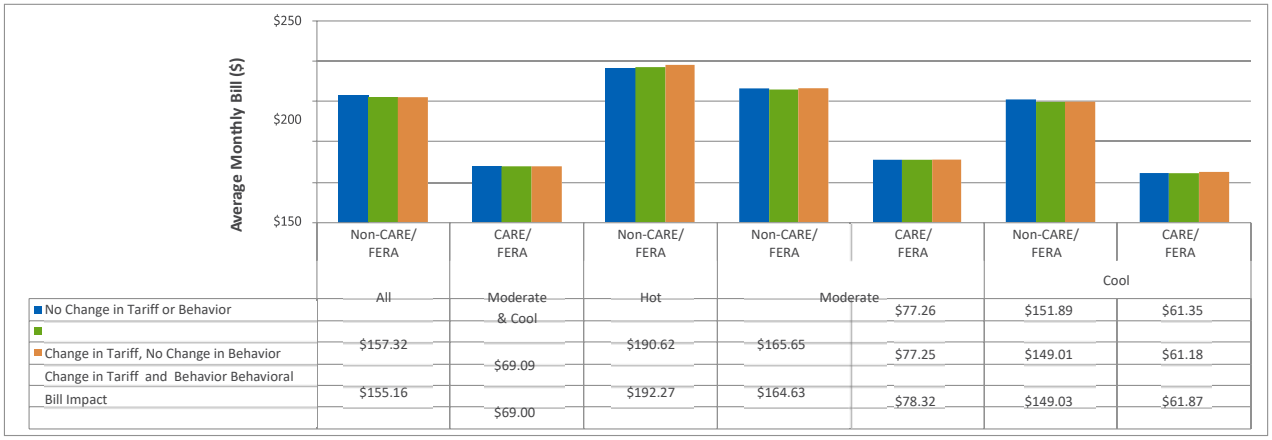
	All	Hot	Moderate	Cool
No Change in Tariff or Behavior	$141.14	$190.62	$145.60	$137.68
Change in Tariff, No Change in Behavior	$139.36	$192.27	$144.81	$135.23
Change in Tariff and Behavior	$139.91	$195.71	$145.96	$135.33
Behavioral Bill Impact	+$0.55	+$3.44	+$1.16	+$0.11
Total Bill Impact	-$1.22 *	+$5.10	+$0.36	-$2.35 *
% Bill Impact	-0.9%	2.7%	0.3%	-1.7%

* Indicates statistically significant bill impact

Figure 4-8 shows the three sets of annual average monthly bill types for all customers on Rate 2 by CARE/FERA status and climate region. CARE/FERA customers in the moderate and cool climate region combined had bill increases equal to $0.78 per month, on average. While this is statistically significant, this is equivalent to less than $10.00 per year. Non-CARE/FERA customers in the cool climate region also had statistically significant bill impacts, but in their case it was a bill savings of $2.87 or 1.9% per month, on average. Total bill impacts were not statistically significant in any other climate region on Rate 2.

jjj)

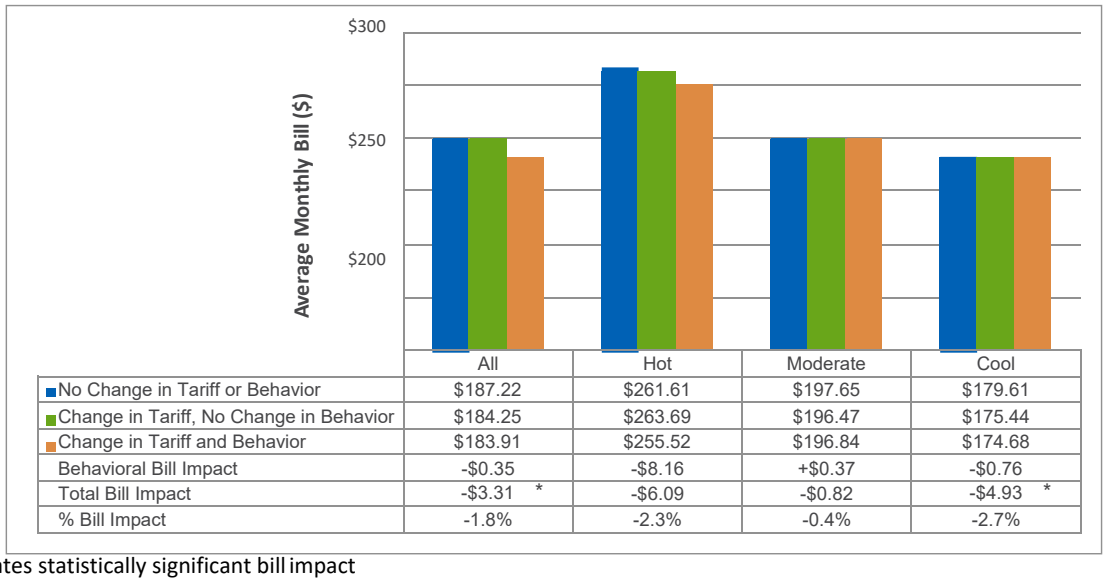
Figure 4-8: Annual Bill Impacts for SDG&E Rate 2 by Climate Region & CARE/FERA Status



* Indicates statistically significant bill impact

Figure 4-9 presents the three sets of average monthly bill types for all customers on Rate 2 during the summer period of June through October 2018. Customers on Rate 2 had structural bill decreases equal to $2.96, on average. Customer bills were largely unaffected by changes in behavior, and their total bill impact was equal to a decrease of $3.31 or 1.8%. This impact was statistically significant. Customers in the cool climate region experienced statistically significant bill reductions of $4.93 per month, on average. Bill impacts were not statistically significant in the hot and moderate climate regions – which was also the case for Rate 1

kkk) *Figure 4-9: Summer Bill Impacts for SDG&E Rate 2 by Climate Region*

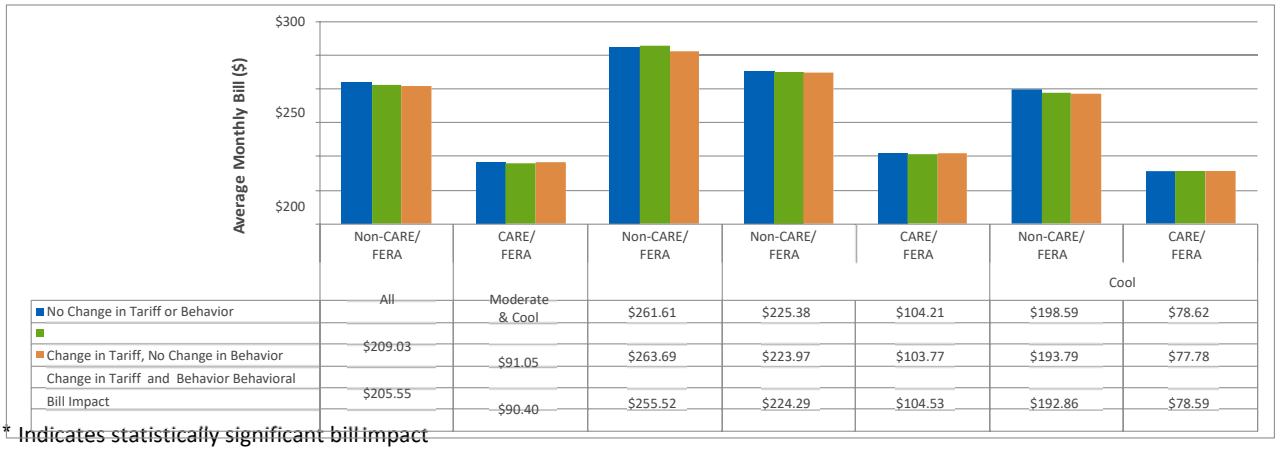


	All	Hot	Moderate	Cool
No Change in Tariff or Behavior	$187.22	$261.61	$197.65	$179.61
Change in Tariff, No Change in Behavior	$184.25	$263.69	$196.47	$175.44
Change in Tariff and Behavior	$183.91	$255.52	$196.84	$174.68
Behavioral Bill Impact	-$0.35	-$8.16	+$0.37	-$0.76
Total Bill Impact	-$3.31 *	-$6.09	-$0.82	-$4.93 *
% Bill Impact	-1.8%	-2.3%	-0.4%	-2.7%

* Indicates statistically significant bill impact

Figure 4-10 presents the three average monthly summer bill types for customers on Rate 2 by climate region and CARE/FERA status. Total bill impacts in the summer months were not statistically significant in most customer segments, with the exception of Non-CARE/FERA customers in the combined and cool climate regions. The customers in the combined climate region had structural gains of $3.49 per month, on average, and through changes in behavior reached a total bill reduction of $3.99 per month, on average (however, their behavior bill impact was not statistically significant).

lll) *Figure 4-10: Summer Bill Impacts for SDG&E Rate 2 by Climate Region & CARE/FERA Status*

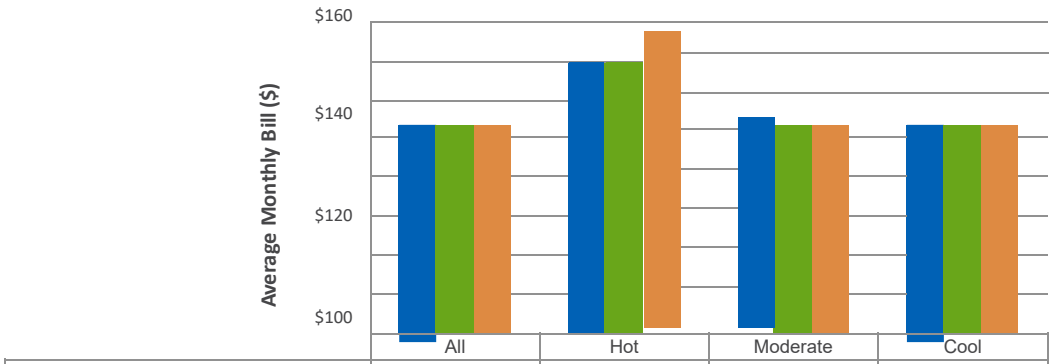


	All	Moderate & Cool					
No Change in Tariff or Behavior			$261.61	$225.38	$104.21	$198.59	$78.62
	$209.03						
Change in Tariff, No Change in Behavior		$91.05	$263.69	$223.97	$103.77	$193.79	$77.78
Change in Tariff and Behavior Behavioral Bill Impact	$205.55						
		$90.40	$255.52	$224.29	$104.53	$192.86	$78.59

* Indicates statistically significant bill impact

Figure 4-11 presents the three sets of bill types as defined above for the winter months for customers on Rate 2. Total monthly bill impacts were not statistically significant for any climate region or for the pilot population as a whole, however behavior bill impacts (increases) were statistically significant for the pilot as a whole and in the moderate climate region. Customers in the moderate climate region increased their bills by an additional $1.31 with changes in their behavior.

mmm) Figure 4-11: Winter Bill Impacts for SDG&E Rate 2 by Climate Region

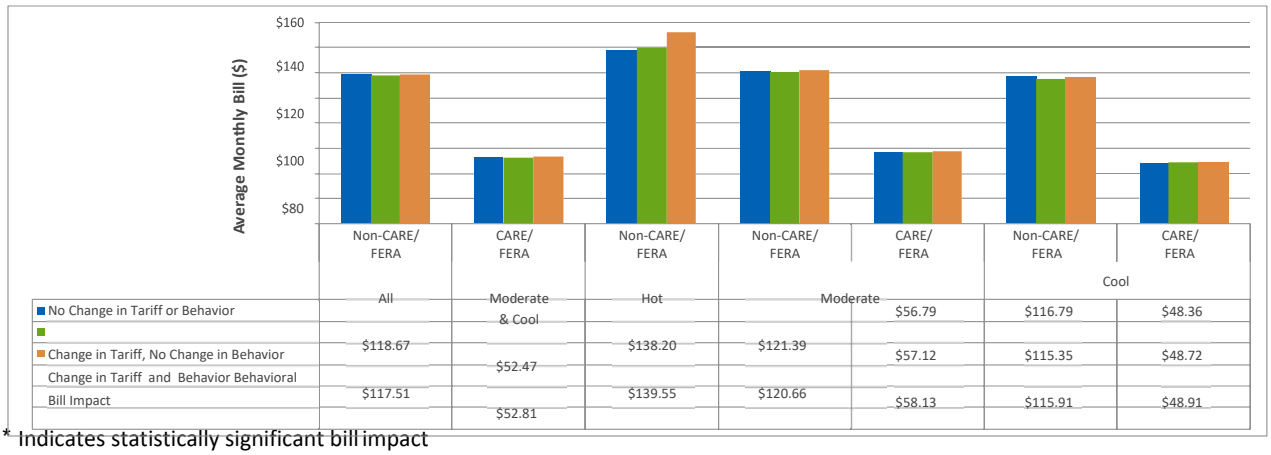


	All	Hot	Moderate	Cool
No Change in Tariff or Behavior	$106.57	$138.20	$106.79	$106.10
Change in Tariff, No Change in Behavior	$105.69	$139.55	$106.29	$104.93
Change in Tariff and Behavior	$106.63	$152.01	$107.60	$105.48
Behavioral Bill Impact	+$0.94 *	+$12.45	+$1.31 *	+$0.55
Total Bill Impact	+$0.05	+$13.81	+$0.81	-$0.61
% Bill Impact	0.1%	10.0%	0.8%	-0.6%

* Indicates statistically significant bill impact

Figure 4-12 presents Rate 2 winter bill impacts by climate region and CARE/FERA status. Behavior bill impacts were not statistically significant in any customer segment and total bill impacts were statistically significant in two segments: CARE/FERA customers in the combined moderate and cool climate regions and in the moderate climate region separately. In the combined climate regions, CARE/FERA customers had small structural losses equal to $0.34 per month and ultimately had total bill impacts equal to an increase of $0.93 or 1.8% per month, on average.

nnn) *Figure 4-12: Winter Bill Impacts for SDG&E Rate 2 by Climate Region & CARE/FERA Status*

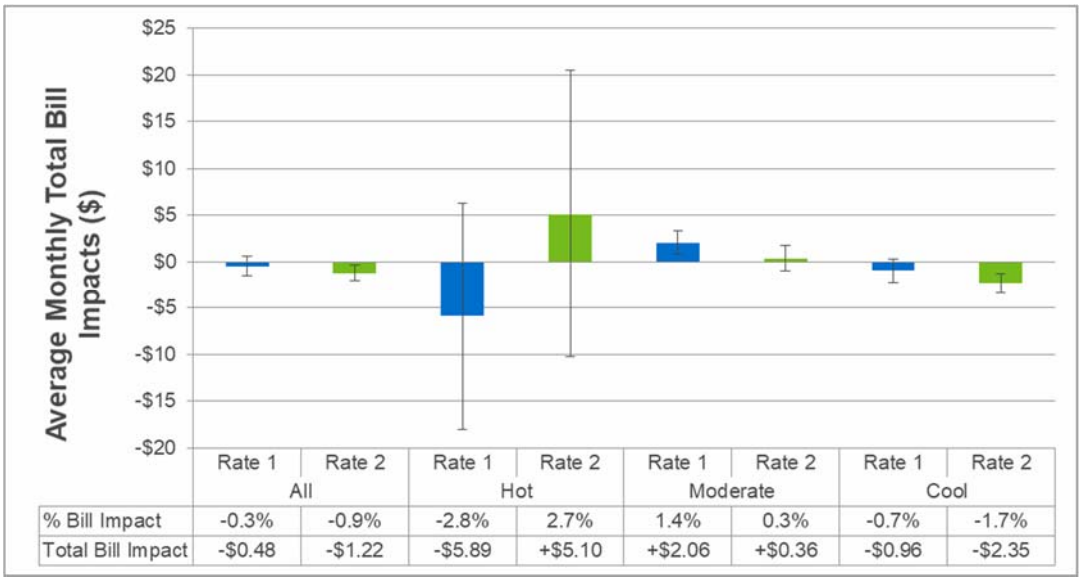


* Indicates statistically significant bill impact

4.4 Comparison across Rates

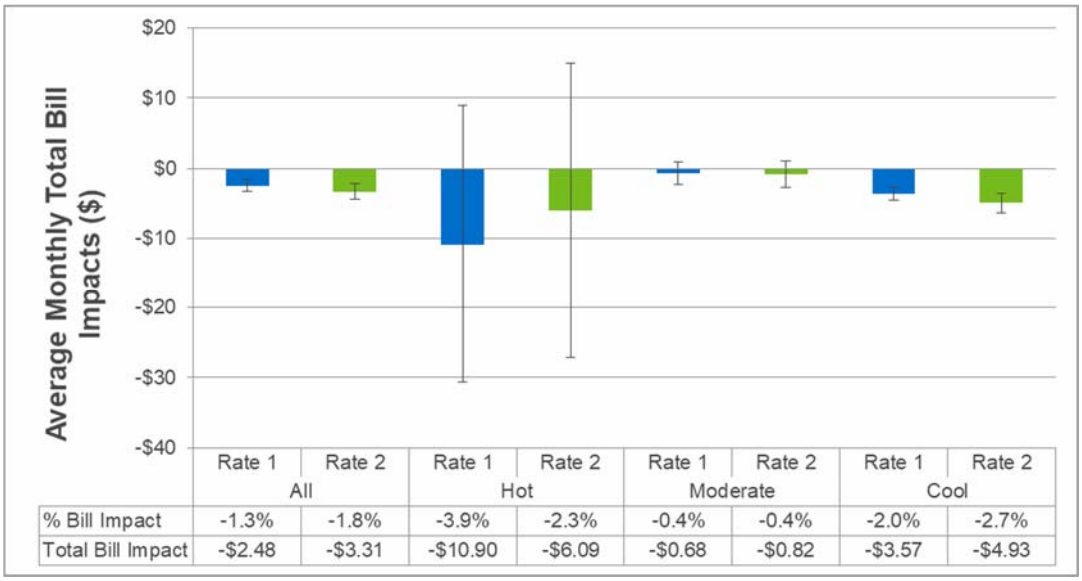
Figure 4-13 shows the average total monthly bill impacts for Rate 1 and Rate 2 for each climate region. Bill impacts were similar between the two rates across the full twelve-month analysis period and were not statistically significant in most cases.

ooo) *Figure 4-13: Annual Bill Impacts Across Rates*



The pattern of summer total bill impacts across climate regions for Rate 1 and Rate 2 are similar, as shown in Figure 4-14. In the pilot populations as a whole, customers experienced small but statistically significant bill reductions in the summer period. Bill impacts were not statistically significant in the hot and moderate climate regions for both rates.

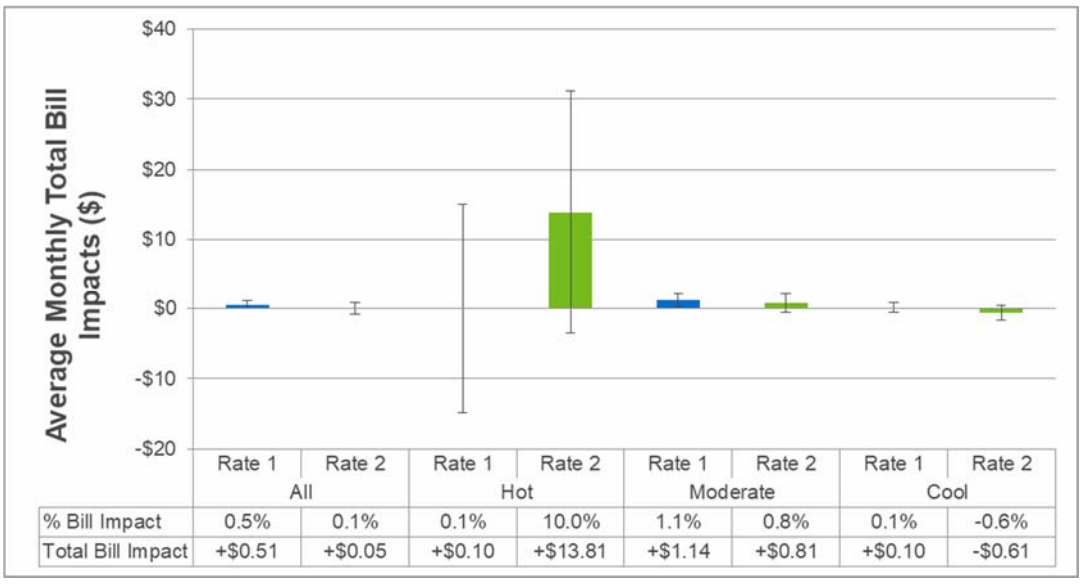
ppp) Figure 4-14: Summer Bill Impacts Across Rates



	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
	All		Hot		Moderate		Cool	
% Bill Impact	-1.3%	-1.8%	-3.9%	-2.3%	-0.4%	-0.4%	-2.0%	-2.7%
Total Bill Impact	-$2.48	-$3.31	-$10.90	-$6.09	-$0.68	-$0.82	-$3.57	-$4.93

Figure 4-15 shows winter bill impacts for each rate by climate region and for the pilot as a whole. Bill impacts were very small and not statistically significant, with the exception of customers in the moderate climate region on Rate 1, who experienced small bill increases in the winter.

qqq) Figure 4-15: Winter Bill Impacts Across Rates



	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2	Rate 1	Rate 2
	All		Hot		Moderate		Cool	
% Bill Impact	0.5%	0.1%	0.1%	10.0%	1.1%	0.8%	0.1%	-0.6%
Total Bill Impact	+$0.51	+$0.05	+$0.10	+$13.81	+$1.14	+$0.81	+$0.10	-$0.61

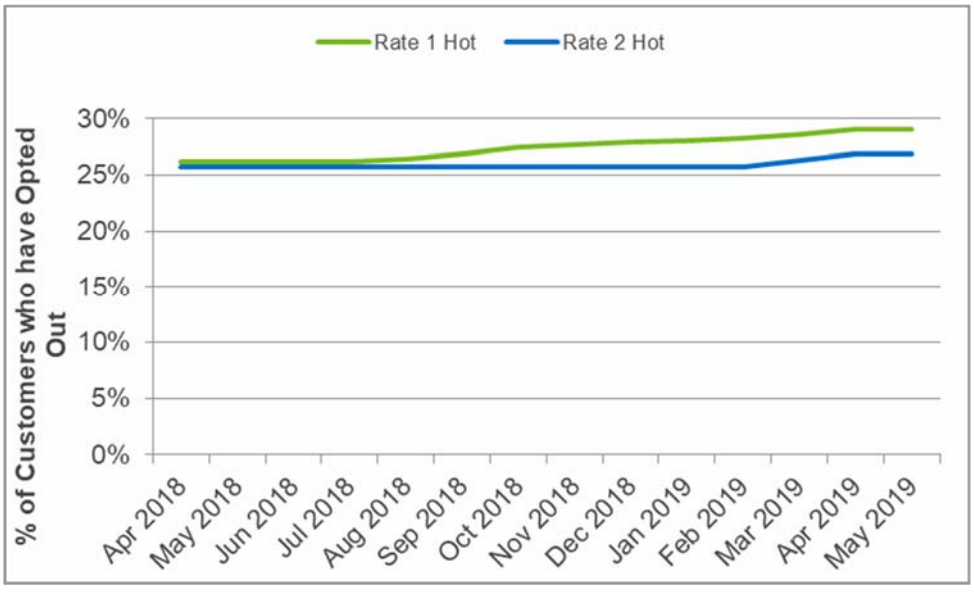
5 Customer Attrition

This section summarizes customer attrition and opt-out rates for each rate and informational treatment tested by SDG&E. As discussed in Section 3.3 of the Interim Report, an analysis of customer opt-out rates can provide useful insights concerning relative customer preferences among the rates.

5.1 Post-enrollment Opt-Outs

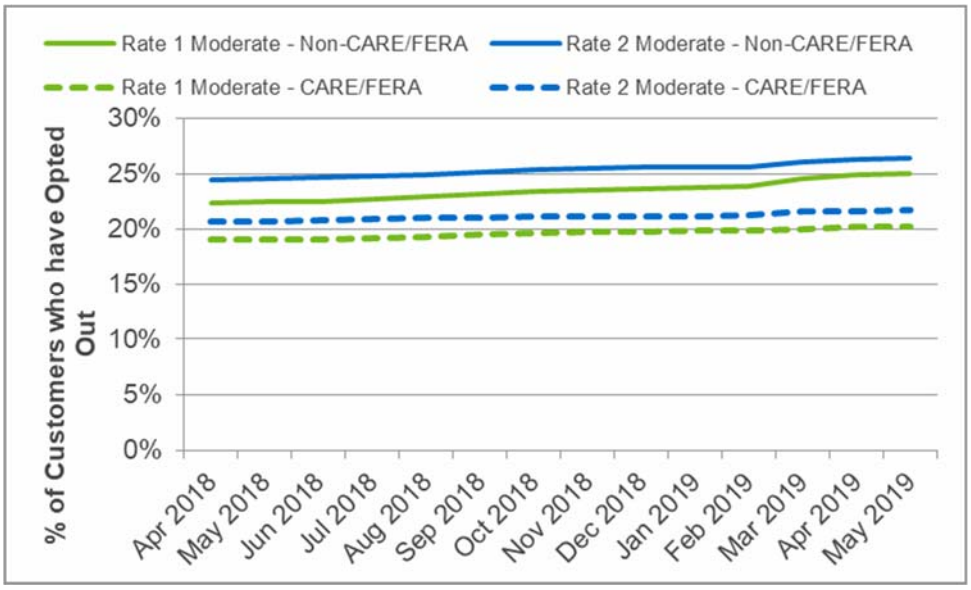
Post-enrollment opt-out rates were very small during the period following enrollment through the end of the summer (October 2018), and increased slightly throughout the winter months. Cumulative opt-out rates are presented for the post-enrollment period for each climate region and CARE/FERA status in Figure 5-1 through Figure 5-3. Generally any difference in cumulative opt-out rates between segments occurred during the pre-treatment period. Post-enrollment opt-out rates for all customer segments were between 1.3% and 3.5%. Post enrollment opt-out rates are lowest in the cool climate region and highest in the hot region. Within the moderate climate region, Rate 1 customers show a slightly lower opt-out rate than Rate 2 customers.

rrr) *Figure 5-1: Cumulative Opt-Out Rates for Hot Climate Region*[24]

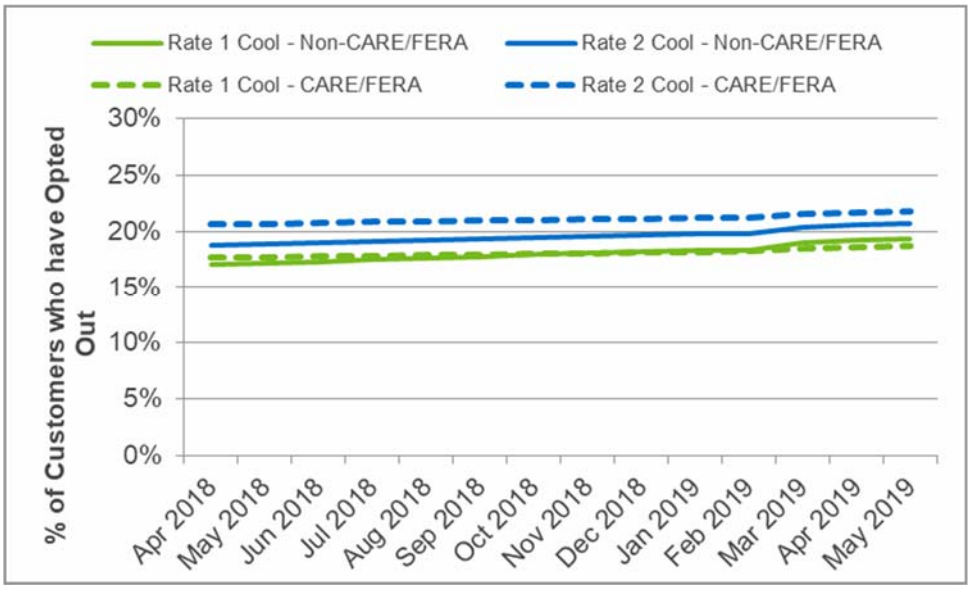


[24] Opt-out rates here present customers who opted out to the OAT, not those who opted out into the alternate rate.

sss) Figure 5-2: Cumulative Opt-Out Rates for Moderate Climate Region



ttt) Figure 5-3: Cumulative Opt-Out Rates for Cool Climate Region



Also of interest are post-enrollment opt-out rates by aftercare treatment cell. Table 5-1 and Table 5-2 summarizes the various treatments that were examined after customers enrolled on the new TOU rates and the sample sizes for each treatment group. Among the welcome package cells, only cells C (direct mail) and E (email) were compared as SDG&E planned to test the EE device treatment during the second summer.

uuu) Table 5-1: Welcome Package Treatments[25]

Welcome Package Cell	Sub-Population	Communication Channel	Welcome Package Materials	Sample Size (Rate 1)	Sample Size (Rate 2)
A			Welcome Info Only	40,869	10,118

B	Direct Mail	DM	Welcome Info + EE Device	875	0
C	Email	DM	Welcome Info Only	15,595	12,115
D			Welcome Info + EE Device	905	0
E		EM	Welcome Info Only	30,836	0
F			Welcome Info + EE Device	1,933	0

vvv) *Table 5-2: Post-Enrollment Treatments*[26]

Aftercare Treatment Cell	Rate	Aftercare Group	LPP Offer	Messaging	Sample Size
A	Rate 1	PT Education Test Group	No LPP Offer	PT Education	9,742
B				No PT Education	9,687
C		LPP Test Group	LPP Offer	Tailored Messaging	17,734
D				Standard Messaging	17,726
E		Combined Message Test Group	No LPP Offer	Tailored Messaging	16,888
F				Standard Messaging	16,879

Figure 5-4 shows cumulative post-enrollment opt-out rates for the various aftercare treatment cells and Table 5-3 shows similar information along with the results of a series of t-tests.
Customers enrolled on Rate 1 were more likely to opt out than those on Rate 2 (4.3% versus 3.8%). This difference was statistically significant. There were no statistically significant differences in opt-out rates between the different messaging types with one exception.

[25] See Section 2 of the Interim Report for a detailed explanation of the welcome package treatments.

[26] See Section 2 of the Interim Report for a detailed explanation of the post-enrollment treatments.

Customers who received welcome packages via direct mail were statistically significantly more likely to opt out. However, the difference is very small and not material.

www) Figure 5-4: Cumulative Post-Enrollment Opt-Out Rates by Aftercare Treatment

xxx) Table 5-3: Cumulative Post-Enrollment Opt-Out Rates by Aftercare Treatment

Rate	Comparison	Aftercare Treatment	Number of Customers	Post-enrollment Opt-Out Rate	P-value
Both	Rate	Rate 1	91,119	4.3%	0.006
		Rate 2	21,202	3.8%	
Rate 1	Messaging Type (LPP Offer)	Tailored Messaging	17,687	3.2%	0.063
		Standard Messaging	17,675	2.8%	
	Messaging Type (No LPP Offer)	Tailored Messaging	16,837	3.2%	0.373
		Standard Messaging	16,830	3.4%	
	PT Education	No PT Education	9,660	3.7%	0.382
		PT Education	9,706	3.9%	
	Welcome Packet Delivery Channel	DM	15,043	4.5%	0.004
		EM	30,104	4.0%	

6 Key Findings

This evaluation focused on the winter months of SDG&E's Default TOU pilot as well as post-enrollment bill impacts. In combination with The Interim Evaluation that focused on the summer months and pre-enrollment customer preferences, these reports have produced a large amount of information that will help guide SDG&E's approach to implementation of default TOU pricing. This section summarizes the findings from both evaluations.

Differences in load and bill impacts and opt-out rates across customer segments at the service territory level reflect not just differences across segments, but also differences in the mix of customers across climate regions. CARE/FERA customers in the hot climate region were not allowed to be enrolled on TOU tariffs using default recruitment. As such, comparisons across the hot and two more moderate regions not only reflect differences in climate but also differences in the mix of customers. These differences must be kept in mind when making comparisons across segments and climate regions.

6.1 Load Impacts

Key findings pertaining to load impacts from the SDG&E pilots include:

- On average, default customers on both Rates 1 and 2 produced small, but statistically significant, peak-period load reductions in the summer months. Peak period load reductions averaged roughly 1.5% for Rate 1 and 2.0% for Rate 2. Peak-period load impacts were smaller (but still statistically significant) in the winter and averaged about 0.5% for Rate 1 and 0.6% for Rate 2.
- Survey evidence indicates that ongoing education and outreach could lead to greater load reductions. Two surveys were conducted, one shortly after enrollment and one after customers were on the rate for the summer period. Both surveys showed that only about 60% of customers were aware that their household was transitioned to a TOU rate and an even smaller share, roughly 50%, were aware that they are on a TOU rate. Also, among aware customers, only about 67% accurately identified peak period hours. Roughly 15% of customers thought 8 AM to noon were the peak hours and another 20% identified the hours from noon to 4 PM as peak hours. Efforts to increase awareness and to educate customers about the peak period could lead to higher load reductions during peak hours.
- In the summer months, load reductions were greater for Rate 2 than for Rate 1, despite having the same peak period time period (4 PM to 9 PM) and despite Rate 1 having higher peak-period prices than Rate 2. While the difference between Rate 1 and Rate 2 impacts are statistically significant, it is important to keep in mind that the estimates were calculated using different estimation techniques and the populations are not equivalent due to the exclusion of NEM and group billed customers from Rate 2. In the winter months, impacts were very similar between the two rates.
- At the territory level, customers on Rate 1 increased their net daily electricity consumption on

average weekdays and weekends in the summer and winter. In the summer months, the increases were small but statistically significant. Daily usage increases were larger in the winter. Similarly, customers on Rate 2 increased their daily consumption on the average summer weekend by a statistically significant amount at the territory level. In the winter months, customers on Rate 2 increased their daily consumption by a statistically significant amount on the average weekend and the average weekday by roughly 1.4%.

- Increases in net daily electricity consumption were driven by statistically significant increases in electricity usage during the off-peak and super off-peak periods. Customer surveys found that 32% of customers stated they shifted their electricity usage compared to 18% of customers stating they reduced electricity usage, indicating that load shifting was a driver of the off-peak load increases. Another possible explanation for the estimated increase in daily usage is the fact that control customers were subject to a High Usage Charge (HUC) for monthly usage exceeding a certain threshold whereas TOU customers were not. 2018 was the first summer in which the HUC was in effect. This difference could cause some control customers to reduce usage, thus producing a downward bias in the reference load. If this bias is large enough, it could lead to an estimated increase in daily usage that might otherwise have shown up as no change or a decline in daily usage had both treatment and control customers been treated the same.
- Customers did not show annual conservation effects (overall savings) on either rate during the first full year of the pilot relative to the control group. Customers on Rate 1 had annual electricity consumption increases of 60.4 kWh or 0.8%, while customers on Rate 2 had annual increases of 43.3 kWh or 0.6%. Both of these estimates were statistically significant.
- In the summer months, the pattern of load reductions across climate regions in absolute terms was consistent between the two rates but was slightly different in percentage terms. Absolute peak period load reductions were largest in the hot climate region, but these segments did not include CARE/FERA customers. Absolute impacts were smallest in the cool climate region, which included CARE/FERA and Non-CARE/FERA customers.
- In the winter months, absolute load reductions were less than 0.01 kW in each climate region, with the exception of the hot climate region on Rate 2. However, peak load impacts were not statistically significant in the hot climate region on either rate. On both rates, average weekday peak impacts were between 0.4% and 0.6% in the service territory as a whole and in the moderate and cool climate regions separately, on both rates.
- In the moderate and cool climate regions in the summer, Non-CARE/FERA customers typically had statistically significantly greater absolute peak-period impacts compared to CARE/FERA customers. Survey findings help explain some of this difference. After being on the rate for the full summer, 58% of Non-CARE/FERA customers reported that they were on a TOU rate while only 38% of CARE/FERA customers identified their current rate plan as a TOU rate. Identification of the correct peak hours was also much

higher among Non-CARE/FERA customers (69.4%)[27] versus CARE/FERA customers (58.2%). Efforts to more effectively educate CARE/FERA customers regarding their TOU rate plan could improve load reductions for this customer segment.

- For Rate 1, the pattern was different in the winter months, where CARE/FERA customers had greater peak impacts than Non-CARE/FERA customers on the average weekday in the moderate and cool climate regions separately and combined. CARE/FERA customers on Rate 2 did not have statistically significant peak load reductions. In fact, CARE/FERA customers in the moderate climate region showed peak load increases that were statistically significant and equal to roughly 1.0% or 0.01 kW.
- The SDG&E pilot tested a post-enrollment educational treatment that offered to help customers with programmable thermostats (PT) program them to align with the TOU rate periods. The treatment was designed to test whether the educational campaign would help customer use existing technology to increase peak period load reductions. In the summer, with one exception, the incremental peak period impact among households who received PT education compared to households that did not was not statistically significant. In other words, the additional messaging did not increase peak period impacts. The PT education group for CARE/FERA customers in the cool climate region had incrementally smaller load impacts of 0.01 kW relative to the non-PT education group. In the winter months, customers who received the PT education used slightly more during the peak period than the non-PT education group – except in the hot climate region where there was no difference in peak period impacts between the two groups.
- Another treatment compared the effectiveness of post-enrollment educational material that was tailored to persona segments with messaging that was not tailored. Of the segments that received tailored post-enrollment messaging, only Non-CARE/FERA customers in the hot climate region that received tailored messaging had significant incremental load reductions of 0.05 kW compared to standard education customers in the summer months. In the cool climate region in the summer, Non-CARE/FERA customers who received tailored messaging had smaller load reductions relative to standard education customers. In the winter months, customers who received tailored messaging had greater peak impacts than those who did not in the service territory as a whole and in the hot and moderate climate regions separately. In the cool climate region, there was no difference in peak period impacts between the two groups.
- The offer to customers to enroll on the Level Pay Plan as a way of managing bill volatility across months and seasons was only taken up by a very small number of customers. Therefore, sample sizes were not large enough to determine any differences in load impacts between LPP and non-LPP participants.

[27] This value represents the average percent of customers that correctly identified each of the peak period hours as in the peak period.

6.2 Bill Impacts

Key findings pertaining to bill impacts include:

- Rate 1 and Rate 2 have similar distributions of structural benefiters, non-benefiters, and customers in the neutral bill impact category of ±$3/month.[28] In all regions and customer segments, the proportion of benefiters is a slightly higher on Rate 1 than on Rate 2, but there are also more non-benefiters on Rate 1 than on Rate 2. In the moderate climate region and for the service territory as a whole, roughly 10% more Rate 2 customers fall into the neutral category compared with Rate 1 customers.
- A majority of customers (73% on Rate 1 and 80% on Rate 2) are in the neutral bill impact category and are neither structural benefiters nor non-benefiters on an annual basis.
- On Rate 1, 17% of Non-CARE/FERA customers are structural non-benefiters on an annual basis while 5% of CARE/FERA customers fall into the same category. However, the CARE/FERA group does not include customers in the hot climate region where bill increases under the TOU rates are more likely to occur. The distributions were similar for Rate 2.
- Over 35% of customers in the hot climate region are structural non-benefiters on an annual basis for both rates. In the summer months, about 44% of customers in the hot region are structural non-benefiters while between 30% and 41% fall into the neutral category, depending on the rate.
- Over 60% of CARE/FERA customers in the moderate and cool climate regions had summer structural bill impacts in the neutral category. In the winter months, over 97% of customers across rates, CARE/FERA status, and climate regions fell into the neutral category.
- Total bill impacts (bill impacts that reflect structural differences in the rate and changes in behavior) were generally very small (decreases of $0.48 and $1.22 per month, on average, for Rate 1 and Rate 2, respectively). On an annual basis and at the climate zone level, total bill impacts were not statistically significant in several customer segments. Exceptions include the full population and customers in the cool climate region on Rate 2, who saved money on the TOU rate. The other exception was customers in the moderate climate region on Rate 1, who had higher bills on the TOU rate.
- Total bill impacts in the summer months showed statistically significant bill decreases in the overall population and cool climate regions on Rate 1 and 2. Total bill impacts in the winter months were not statistically significant for the Rate 1 and Rate 2 populations as a whole and in nearly all customer segments. Exceptions included CARE/FERA customers in the moderate climate region and in the moderate and cool climate regions combined on Rate 2. Customers in these segments experienced small bill increases in the winter months.

[28] Nexant used +/- $3 a month as the threshold for defining neutral bill impacts in the Opt-In TOU pilot as well as the Default Pilot. It was later determined that Extreme Non-benefiters (ENB) are customers that see $10 or more a month of bill increases.

- On an annual basis, behavioral bill impacts were not statistically significant for most climate regions or for the full pilot populations, with two exceptions. Customers in the moderate and cool climate regions on Rate 1 increased their bills by small but statistically significant amounts through changes in behavior.

- In the summer months, customers did not reduce their bills through changes in behavior. Behavioral bill reductions were not statistically significant for the Rate 1 and Rate 2 populations as a whole and in all customer segments. The opposite was true in the winter months, where customers on both rates increased their bills through changes in behavior when prices were lower. Although these behavioral bill impacts were statistically significant at the pilot level, they were very small (less than $2.00 per month, on average).

6.3 Customer Attrition

Key findings pertaining to the opt-out analysis include:

- Opt-out rates can reveal customer preferences for the two rates, but comparisons must be done on an apples to apples basis. A direct comparison of Rate 1 versus Rate 2 opt- out rates overall is not appropriate because of differences in the notification treatments across the rates. When comparing the opt-out rates between Rate 1 and Rate 2 cells with identical notification treatments, the outcome changes based on the opt-out definition used. When opt out is defined as choosing the OAT rather than the default rate offered, 20.5% of Rate 1 and 19.0% of Rate 2 customers opted out, and this difference was statistically significant. When opt-out is defined as taking any action other than accepting the offered rate, the opt-out rate was 21.8% for Rate 1 and 22.9% for Rate 2, and the difference was also statistically significant. Under the first definition, there is a stronger preference for Rate 2, but in the second definition there a preference for Rate 1.

- The percent of customers who were offered Rate 2 but selected Rate 1 was statistically significantly greater than the percent of customers who were offered Rate 1 and chose Rate 2. This appears to be largely driven by customers switching to the lowest cost rate based on the rate analysis included with the notification materials. However, on a percentage basis, more customers switched from Rate 1 even when it was the lowest cost option than did customers who switched from Rate 2. This could be due to Rate 2 being the simpler of the two rates or the lower peak period price.

- The highest pre-enrollment opt-out rate was in the hot climate region, followed by the moderate and cool climate regions. Opt-out rates for CARE/FERA and Non-CARE/FERA populations varied by climate region and did not have a consistent trend.

- SDG&E proactively contacted customers who were identified as likely to experience bill increases of greater than 10%, or $120 annually. This outreach likely contributed to higher opt-out rates across the territory.

- Customers notified through both direct mail (DM) and emails (EM) were found to be slightly more likely to opt out of the default rate (21.4%) compared to customers that only received direct mail (19.8%). Customers that only received email communication were significantly less likely to opt out than those that received direct mail only or both email

and direct mail and the difference between the DM and EM channels is statistically significant. There are two possible explanations for this difference. One is that level of awareness of the default process was less for customers who only received email communications (54%) compared to customers that got direct mail only (62%) or both direct mail and email (67%). The second possible explanation for the lower opt-out rate for email only customers is that these customers were only allowed to opt-out online and they had to be enrolled in the My Account program to do so. Direct mail customers could opt out using a business reply card or by calling SDG&E. These differences in opt-out channels almost certainly explain part of the lower opt out rate for email only customers.

- Customers in the DM sub-population that were provided rate comparisons at the seasonal and annual level were slightly more likely to opt-out of the default rate compared to customers that received annual rate comparisons or annual and monthly rate comparisons. The differences were statistically significant and equal to about two percentage points. Providing differing rate comparison information to customers in the EM sub-population did not yield statistically significant differences in overall opt-out rates.

- In the DM sub-population, customers who received 3 rate comparisons were over two percentage points more likely to opt out of their default rate compared to customers who received 4 rate comparisons in their notification materials. This difference was statistically significant. In the EM sub-population, opt-out rates were nearly identical for the two rate comparison types.

- Post-enrollment opt-out rates were very small and fell between 1.3% and 3.5% for CARE/FERA and Non-CARE/FERA customers in all climate regions. This indicates the vast majority of customers stay on a TOU rate once they are enrolled. Opt-out rates picked up slightly after the summer months.

6.4 A Note about Comparing Default and Opt-in Results

If comparisons are made between results from this default pilot and the prior opt-in pilot, it is important to note a few considerations, as summarized in Table 6-1 and in the text that follows.

yyy) Table 6-1: Comparison between Opt-In and Default Pilots

Metric	Opt-In Pilot				Default Pilot			
	Rate 1		Rate 2		Rate 1		Rate 2	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
First Summer Period	July through October				June through October			
Segments Excluded from Pilot	CARE/FERA and non-CARE/FERA customers in the hot climate region				CARE/FERA customers in the hot climate region			
Peak Period Hours	4-9 PM		4-9 PM		4-9 PM		4-9 PM	
Peak Price per kWh	$0.62	$0.41	$0.62	$0.41	$0.55	$0.36	$0.52	$0.36
Off-Peak Price per kWh	$0.38	$0.40	$0.36	$0.39	$0.33	$0.35	$0.32	$0.34
Peak-to-Off-Peak Ratio	1.6	1.0	1.7	1.1	1.7	1.0	1.6	1.1

Key differences between the two pilots include:

- The first summer for the opt-in pilot covered July through October, while the default pilot estimates presented in this report include June through October. The omission of June, which is often a cooler month, from the opt-in pilot could affect the size of the average impacts from the first summer.
- The opt-in pilot did not include any customers in the hot region for Rate 1 while the default pilot includes Non-CARE/FERA customers in the hot climate region. The opt-In pilot included CARE/FERA customers in each climate region for Rate 2 whereas the default pilot does not include CARE/FERA customers in the corresponding hot climate region for either rate.
- The peak periods for Rate 1 and Rate 2 in the opt-in pilots 4 PM to 9 PM, which are the same peak periods for Rate 1 and Rate 2 in the default pilot.
- The peak period prices and price ratios also changed between the opt-in and default pilot. The summer peak period price for Rate 1 was $0.62/kWh during the peak period for the opt-in pilot compared to $0.55/kWh for Rate 1 in the default pilot. The summer peak period price for Rate 2 in the opt-in pilot ($0.62/kWh) was higher than for Rate 2 in the default pilot ($0.52/kWh). In the winter, the peak price for Rate 1 and Rate 2 in the opt-in pilot was $0.41/kWh and the peak price in the default pilot was $0.36/kWh).

In summary, the months included in the evaluation, peak-period prices, and inclusion of CARE/FERA customers all changed between the opt-in and default pilots. Therefore, the differences observed between the pilots are not solely a difference in customer response to opt-in versus default enrollment strategies.

Appendix A Rates Used in Bill Impact Analysis

A.1 Baseline Allocations

San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 29294-E
Canceling Revised Cal. P.U.C. Sheet No. 29085-E

SCHEDULE DR Sheet 5

RESIDENTIAL SERVICE
(Includes Rates for DR-LI)

SPECIAL CONDITIONS (Continued)

2. Baseline Rates. Baseline rates are applicable only to separately metered residential usage.

3. Baseline Usage. The following quantities of electricity are to be billed at the rates for baseline usage:

	Baseline Allowance For Climatic Zones*				
	Coastal	Inland	Mountain	Desert	
Basic Allowance					
Summer (June 1 to October 31)	9.0	10.4	13.6	15.9	T
Winter (November 1 to May 31)	9.2	9.6	12.9	10.9	T
All Electric**					
Summer (June 1 to October 31)	8.3	10.1	16.5	18.5	T
Winter (November 1 to May 31)	13.5	15.8	26.0	20.0	T

* Climatic Zones are shown on the Territory Served, Map No. 1.

** All Electric allowances are available upon application to those customers who have permanently installed space heating or who have electric water heating and receive no energy from another source.

4. Medical Baseline Usage. Upon completion of an application and verification by a state-licensed physician or osteopath (Form 132-150), an additional baseline allowance of 16.5 kwhr per day will be provided for paraplegic, quadriplegic, hemiplegic, multiple sclerosis, or scleroderma patients, or persons being treated for a life-threatening illness or who have a compromised immune system.

Where it is established that the energy required for a life-support device (including an air conditioner or space heater) exceeds 16.5 kwhr per day, the additional allowance will be granted in increments of 16.5 kwhr per day until the estimated daily usage of the device is covered.

By granting the baseline allowances set forth above, the utility does not guarantee a continuous and sufficient supply of energy. The supply of all energy by the utility is subject to the provisions of Rule 14.

5. Voltage. Service under this schedule will be supplied at the standard lighting voltage.

6. Welder Service. Service under this schedule will be supplied to a welder load of 2.9 Kva or less at 240 volts, and to 0.5 Kva or less at 120 volts. Welders will be rated in accordance with Rule 2F-1.

7. Incidental Farm Service. Incidental farm service used in the production of farm crops and produce will be supplied under this schedule when combined with domestic service and supplied through the same meter as the domestic service for the farm operator's residence, provided the transformer capacity required for the combined load does not exceed twice the normal capacity required for the single-family domestic load of that residence.

(Continued)

5C9
Advice Ltr. No. 3130-E
Decision No. D.17-08-030
Issued by
Dan Skopec
Vice President
Regulatory Affairs
Date Filed Oct 16, 2017
Effective Dec 1, 2017
Resolution No.

A.2 Schedule DR

(1) *Analysis Period: Pretreatment through February 28, 2019*

SDGE
San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 29903-E
Canceling Revised Cal. P.U.C. Sheet No. 29682-E

Sheet 1

SCHEDULE DR

RESIDENTIAL SERVICE
(Includes Rates for DR-LI)

APPLICABILITY

Applicable to domestic service for lighting, heating, cooking, water heating, and power, or combination thereof, in single family dwellings, flats, and apartments, separately metered by the utility; to service used in common for residential purposes by tenants in multi-family dwellings under Special Condition 8; to any approved combination of residential and nonresidential service on the same meter; and to incidental farm service under Special Condition 7.

This schedule is also applicable to customers qualifying for the California Alternate Rates for Energy (CARE) Program and/or Medical Baseline, residing in single-family accommodations, separately metered by the Utility, and may include Non-profit Group Living Facilities and Qualified Agricultural Employee Housing Facilities, if such facilities qualify to receive service under the terms and conditions of Schedule E-CARE. The rates for CARE and Medical Baseline customers are identified in the rates tables below as DR-LI and DR-MB rates, respectively.

Customers on this schedule may also qualify for a semi-annual California Climate Credit $(33.50) per Schedule GHG-ARR. R

TERRITORY

Within the entire territory served by the Utility.

RATES

Total Rates:

Description - DR Rates	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate	
Summer:								
Up to 130% of Baseline Energy ($/kWh)	0.09311	I	0.00549		0.17244	R	0.27104	I
131% - 400% of Baseline ($/kWh)	0.29722	I	0.00549		0.17244	R	0.47515	I
Above 400% of Baseline ($/kWh)	0.37568	I	0.00549		0.17244	R	0.55361	I
Winter:								
Up to 130% of Baseline Energy ($/kWh)	0.15406	I	0.00549		0.07075	R	0.23030	I
131% - 400% of Baseline ($/kWh)	0.32748	I	0.00549		0.07075	R	0.40372	I
Above 400% of Baseline ($/kWh)	0.39415	I	0.00549		0.07075	R	0.47039	I
Minimum Bill ($/day)	0.329						0.329	

Description -DR-LI Rates	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate		Total Effective CARE Rate	
Summer – CARE Rates:										
Up to 130% of Baseline Energy ($/kWh)	0.09246	I	0.00000		0.17244	R	0.26490	I	0.16772	I
131% - 400% of Baseline ($/kWh)	0.29657	I	0.00000		0.17244	R	0.46901	I	0.29912	I
Above 400% of Baseline ($/kWh)	0.37503	I	0.00000		0.17244	R	0.54747	I	0.34963	I
Winter – CARE Rates:										
Up to 130% of Baseline Energy ($/kWh)	0.15341	I	0.00000		0.07075	R	0.22416	I	0.14150	I
131% - 400% of Baseline ($/kWh)	0.32683	I	0.00000		0.07075	R	0.39758	I	0.25314	I
Above 400% of Baseline ($/kWh)	0.39350	I	0.00000		0.07075	R	0.46425	I	0.29606	I
Minimum Bill ($/day)	0.164						0.164		0.164	

(Continued)

1H8
Advice Ltr. No. 3167-E
Decision No.

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Submitted Dec 29, 2017
Effective Jan 1, 2018
Resolution No.

(2) *Analysis Period: March 1, 2019 through May 31, 2019*

San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 31591-E
Canceling Revised Cal. P.U.C. Sheet No. 31261-E

Sheet 1

SCHEDULE DR

RESIDENTIAL SERVICE
(Includes Rates for DR-LI)

APPLICABILITY

Applicable to domestic service for lighting, heating, cooking, water heating, and power, or combination thereof, in single family dwellings, flats, and apartments, separately metered by the utility; to service used in common for residential purposes by tenants in multi-family dwellings under Special Condition 8; to any approved combination of residential and nonresidential service on the same meter; and to incidental farm service under Special Condition 7.

This schedule is also applicable to customers qualifying for the California Alternate Rates for Energy (CARE) Program and/or Medical Baseline, residing in single-family accommodations, separately metered by the Utility, and may include Non-profit Group Living Facilities and Qualified Agricultural Employee Housing Facilities, if such facilities qualify to receive service under the terms and conditions of Schedule E-CARE. The rates for CARE and Medical Baseline customers are identified in the rates tables below as DR-LI and DR-MB rates, respectively.

Customers on this schedule may also qualify for a semi-annual California Climate Credit $(31.32) per Schedule GHG-ARR.

TERRITORY

Within the entire territory served by the Utility.

RATES

Total Rates:

Description - DR Rates	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate	
Summer:								
Up to 130% of Baseline Energy ($/kWh)	0.09691	I	0.00503		0.15058	R	0.25252	R
131% - 400% of Baseline ($/kWh)	0.28707	R	0.00503		0.15058	R	0.44268	R
Above 400% of Baseline ($/kWh)	0.36017	R	0.00503		0.15058	R	0.51578	R
Winter:								
Up to 130% of Baseline Energy ($/kWh)	0.15202	I	0.00503		0.07682	I	0.23387	I
131% - 400% of Baseline ($/kWh)	0.32814	I	0.00503		0.07682	I	0.40999	I
Above 400% of Baseline ($/kWh)	0.39584	I	0.00503		0.07682	I	0.47769	I
Minimum Bill ($/day)	0.329						0.329	

Description -DR-LI Rates	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate		Total Effective CARE Rate	
Summer – CARE Rates:										
Up to 130% of Baseline Energy ($/kWh)	0.09623	I	0.00000		0.15058	R	0.24681	R	0.15582	R
131% - 400% of Baseline ($/kWh)	0.28639	R	0.00000		0.15058	R	0.43697	R	0.28018	R
Above 400% of Baseline ($/kWh)	0.35949	R	0.00000		0.15058	R	0.51007	R	0.32799	R
Winter – CARE Rates:										
Up to 130% of Baseline Energy ($/kWh)	0.15134	I	0.00000		0.07682	I	0.22816	I	0.14362	I
131% - 400% of Baseline ($/kWh)	0.32746	I	0.00000		0.07682	I	0.40428	I	0.25880	I
Above 400% of Baseline ($/kWh)	0.39516	I	0.00000		0.07682	I	0.47198	I	0.30308	I
Minimum Bill ($/day)	0.164						0.164		0.164	

(Continued)

1C14
Advice Ltr. No. 3346-E
Decision No. 18-12-004

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Submitted Feb 22, 2019
Effective Mar 1, 2019
Resolution No.

A.3 Rate 1

(3) *Analysis Period: Pretreatment through February 28, 2019*

San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 29953-E
Canceling Revised Cal. P.U.C. Sheet No. 29784-E

SCHEDULE TOU-DR1 Sheet 2

RESIDENTIAL TIME-OF-USE
(EXPERIMENTAL)

RATES

Total Rates:

Description – TOU DR1	UDC Total Rate	DWR-BC Rate	EECC Rate + DWR Credit	Total Rate
Summer:				
On-Peak	0.29722	0.00549	0.37023	0.67294
Off-Peak	0.29722	0.00549	0.11877	0.42148
Super Off-Peak	0.29722	0.00549	0.06065	0.36336
Winter:				
On-Peak	0.32748	0.00549	0.08054	0.41351
Off-Peak	0.32748	0.00549	0.07148	0.40445
Super Off-Peak	0.32748	0.00549	0.06144	0.39441
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.20411)			(0.20411)
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.17343)			(0.17343)
Minimum Bill ($/day)	0.329			0.329

Description – TOU DR1	UDC Total Rate	DWR-BC Rate	EECC Rate + DWR Credit	Total Rate	Total Effective Care Rate
Summer – CARE Rates:					
On-Peak	0.29657	0.00000	0.37023	0.66680	0.42646
Off-Peak	0.29657	0.00000	0.11877	0.41534	0.26457
Super Off-Peak	0.29657	0.00000	0.06065	0.35722	0.22716
Winter – CARE Rates:					
On-Peak	0.32683	0.00000	0.08054	0.40737	0.25944
Off-Peak	0.32683	0.00000	0.07148	0.39831	0.25361
Super Off-Peak	0.32683	0.00000	0.06144	0.38827	0.24714
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.20411)			(0.20411)	(0.13140)
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.17343)			(0.17343)	(0.11165)
Minimum Bill ($/day)	0.164			0.164	0.164

N

N

Note:
(1) Total Rates consist of UDC, Schedule DWR-BC (Department of Water Resources Bond Charge), and Schedule EECC (Electric Energy Commodity Cost) rates, with the EECC rates reflecting a DWR Credit.

(2) Total Rates presented are for customers that receive commodity supply and delivery service from Utility.

(3) DWR-BC charges do not apply to CARE customers.

(4) As identified in the rates tables, customer bills will also include line-item summer and winter credits for usage up to 130% of baseline to provide the rate capping benefits adopted by Assembly Bill 1X and Senate Bill 695.

(Continued)

2H10
Advice Ltr. No. 3167-E
Decision No.

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Submitted Dec 29, 2017
Effective Jan 1, 2018
Resolution No.

(4) *Analysis Period: March 1, 2019 through April 30, 2019*

San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 31620-E
Canceling Revised Cal. P.U.C. Sheet No. 31320-E

Sheet 2

SCHEDULE TOU-DR1
RESIDENTIAL TIME-OF-USE

RATES

Total Rates:

Description – TOU DR1	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate	
Summer:								
On-Peak	0.28707	R	0.00503		0.32325	R	0.61535	R
Off-Peak	0.28707	R	0.00503		0.10373	R	0.39583	R
Super Off-Peak	0.28707	R	0.00503		0.05299	R	0.34509	R
Winter:								
On-Peak	0.32814	I	0.00503		0.08745	I	0.42062	I
Off-Peak	0.32814	I	0.00503		0.07761	I	0.41078	I
Super Off-Peak	0.32814	I	0.00503		0.06671	I	0.39988	I
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.19016)	I					(0.19016)	I
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.17612)	R					(0.17612)	R
Minimum Bill ($/day)	0.329						0.329	

Description – TOU DR1	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate		Total Effective Care Rate	
Summer – CARE Rates:										
On-Peak	0.28639	R	0.00000		0.32325	R	0.60964	R	0.39311	R
Off-Peak	0.28639	R	0.00000		0.10373	R	0.39012	R	0.24954	R
Super Off-Peak	0.28639	R	0.00000		0.05299	R	0.33938	R	0.21636	R
Winter – CARE Rates:										
On-Peak	0.32746	I	0.00000		0.08745	I	0.41491	I	0.26575	I
Off-Peak	0.32746	I	0.00000		0.07761	I	0.40507	I	0.25932	I
Super Off-Peak	0.32746	I	0.00000		0.06671	I	0.39417	I	0.25219	I
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.19016)	I					(0.19016)	I	(0.12436)	I
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.17612)	R					(0.17612)	R	(0.11518)	R
Minimum Bill ($/day)	0.164						0.164		0.164	

Note:
(1) Total Rates consist of UDC, Schedule DWR-BC (Department of Water Resources Bond Charge), and Schedule EECC (Electric Energy Commodity Cost) rates, with the EECC rates reflecting a DWR Credit.
(2) Total Rates presented are for customers that receive commodity supply and delivery service from Utility.
(3) DWR-BC charges do not apply to CARE customers.
(4) As identified in the rates tables, customer bills will also include line-item summer and winter credits for usage up to 130% of baseline to provide the rate capping benefits adopted by Assembly Bill 1X and Senate Bill 695.

(Continued)

2C14
Advice Ltr. No. 3346-E
Decision No. 18-12-004

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Submitted Feb 22, 2019
Effective Mar 1, 2019
Resolution No.

(5) *Analysis Period: May 1, 2019 through May 31, 2019*

SCHEDULE TOU-DR1 Sheet 2

RESIDENTIAL TIME-OF-USE

RATES

Total Rates:

Description – TOU DR1	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate	
Summer:								
On-Peak	0.22282	R	0.00503		0.32325		0.55110	R
Off-Peak	0.22282	R	0.00503		0.10373		0.33158	R
Super Off-Peak	0.22282	R	0.00503		0.05299		0.28084	R
Winter:								
On-Peak	0.26389	R	0.00503		0.08745		0.35637	R
Off-Peak	0.26389	R	0.00503		0.07761		0.34653	R
Super Off-Peak	0.26389	R	0.00503		0.06671		0.33563	R
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.10042)	I					(0.10042)	I
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.09175)	I					(0.09175)	I
Minimum Bill ($/day)	0.338	I					0.338	I

Description – TOU DR1-CARE	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate		Total Effective Care Rate	
Summer – CARE Rates:										
On-Peak	0.22214	R	0.00000		0.32325		0.54539	R	0.35621	R
Off-Peak	0.22214	R	0.00000		0.10373		0.32587	R	0.21055	R
Super Off-Peak	0.22214	R	0.00000		0.05299		0.27513	R	0.17688	R
Winter – CARE Rates:										
On-Peak	0.26321	R	0.00000		0.08745		0.35066	R	0.22700	R
Off-Peak	0.26321	R	0.00000		0.07761		0.34082	R	0.22047	R
Super Off-Peak	0.26321	R	0.00000		0.06671		0.32992	R	0.21324	R
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.10042)	I					(0.10042)	I	(0.06663)	I
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.09175)	I					(0.09175)	I	(0.06088)	I
Minimum Bill ($/day)	0.169	I					0.169	I	0.169	I

Note:
(1) Total Rates consist of UDC, Schedule DWR-BC (Department of Water Resources Bond Charge), and Schedule EECC (Electric Energy Commodity Cost) rates, with the EECC rates reflecting a DWR Credit.
(2) Total Rates presented are for customers that receive commodity supply and delivery service from Utility.
(3) DWR-BC charges do not apply to CARE customers.
(4) As identified in the rates tables, customer bills will also include line-item summer and winter credits for usage up to 130% of baseline to provide the rate capping benefits adopted by Assembly Bill 1X and Senate Bill 695.

(Continued)

2H0

Advice Ltr. No. 3365-E
Decision No. 15-07-001

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Submitted Apr 12, 2019
Effective May 1, 2019
Resolution No. E-4988

A.4 Rate 2

(6) *Analysis Period: Pretreatment through February 28, 2019*

San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 29957-E
Canceling Revised Cal. P.U.C. Sheet No. 29790-E

SCHEDULE TOU-DR2 Sheet 2

RESIDENTIAL TIME-OF-USE
(EXPERIMENTAL)

RATES

Total Rates:

Description – TOU DR2	UDC Total Rate	DWR-BC Rate	EECC Rate + DWR Credit	Total Rate
Summer:				
On-Peak	0.26274	0.00549	0.37023	0.63846
Off-Peak	0.31042	0.00549	0.09675	0.41266
Winter:				
On-Peak	0.32748	0.00549	0.08054	0.41351
Off-Peak0.32683	0.32748	0.00549	0.06705	0.40002
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.20411)			(0.20411)
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.17343)			(0.17343)
Minimum Bill ($/day)	0.329			0.329

N

Description – TOU DR2	UDC Total Rate	DWR-BC Rate	EECC Rate + DWR Credit	Total Rate	Total Effective CARE Rate
Summer – CARE Rates:					
On-Peak	0.26209	0.00000	0.37023	0.63232	0.40426
Off-Peak	0.30977	0.00000	0.09675	0.40652	0.25889
Winter – CARE Rates:					
On-Peak	0.32683	0.00000	0.08054	0.40737	0.25944
Off-Peak	0.32683	0.00000	0.06705	0.39388	0.25076
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.20411)			(0.20411)	(0.13140)
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.17343)			(0.17343)	(0.11165)
Minimum Bill ($/day)	0.164			0.164	0.164

N

Note:

(1) Total Rates consist of UDC, Schedule DWR-BC (Department of Water Resources Bond Charge), and Schedule EECC (Electric Energy Commodity Cost) rates, with the EECC rates reflecting a DWR Credit.

(2) Total Rates presented are for customers that receive commodity supply and delivery service from Utility.

(3) As identified in the rates tables, customer bills will also include line-item summer and winter credits for usage up to 130% of baseline to provide the rate capping benefits adopted by Assembly Bill 1X and Senate Bill 695

(Continued)

2H10
Advice Ltr. No. 3167-E
Decision No.

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Submitted Dec 29, 2017
Effective Jan 1, 2018
Resolution No.

(7) *Analysis Period: March 1, 2019 through April 30, 2019*

San Diego Gas & Electric Company
San Diego, California

Revised Cal. P.U.C. Sheet No. 31623-E
Canceling Revised Cal. P.U.C. Sheet No. 31325-E

Sheet 2

SCHEDULE TOU-DR2
RESIDENTIAL TIME-OF-USE

RATES

Total Rates:

Description – TOU DR2	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate	
Summer:								
On-Peak	0.25697	R	0.00503		0.32325	R	0.58525	R
Off-Peak	0.29859	R	0.00503		0.08450	R	0.38812	R
Winter:								
On-Peak	0.32814	I	0.00503		0.08745	I	0.42062	I
Off-Peak	0.32814	I	0.00503		0.07281	I	0.40598	I
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.19016)	I					(0.19016)	I
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.17612)	R					(0.17612)	R
Minimum Bill ($/day)	0.329						0.329	

Description – TOU DR2	UDC Total Rate		DWR-BC Rate		EECC Rate + DWR Credit		Total Rate		Total Effective CARE Rate	
Summer – CARE Rates:										
On-Peak	0.25629	R	0.00000		0.32325	R	0.57954	R	0.37342	R
Off-Peak	0.29791	R	0.00000		0.08450	R	0.38241	R	0.24450	R
Winter – CARE Rates:										
On-Peak	0.32746	I	0.00000		0.08745	I	0.41491	I	0.26575	I
Off-Peak	0.32746	I	0.00000		0.07281	I	0.40027	I	0.25618	I
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.19016)	I					(0.19016)	I	(0.12436)	I
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.17612)	R					(0.17612)	R	(0.11518)	R
Minimum Bill ($/day)	0.164						0.164		0.164	

Note:

(1) Total Rates consist of UDC, Schedule DWR-BC (Department of Water Resources Bond Charge), and Schedule EECC (Electric Energy Commodity Cost) rates, with the EECC rates reflecting a DWR Credit.

(2) Total Rates presented are for customers that receive commodity supply and delivery service from Utility.

(3) As identified in the rates tables, customer bills will also include line-item summer and winter credits for usage up to 130% of baseline to provide the rate capping benefits adopted by Assembly Bill 1X and Senate Bill 695

(Continued)

2C14
Advice Ltr. No. 3346-E
Decision No. 18-12-004

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Submitted Feb 22, 2019
Effective Mar 1, 2019
Resolution No.

(8) *Analysis Period: May 1, 2019 through May 31, 2019*

SCHEDULE TOU-DR2 Sheet 2

RESIDENTIAL TIME-OF-USE

RATES

Total Rates:

Description – TOU DR2	UDC Total Rate		DWR-BC Rate	EECC Rate + DWR Credit	Total Rate	
Summer:						
On-Peak	0.19272	R	0.00503	0.32325	0.52100	R
Off-Peak	0.23434	R	0.00503	0.08450	0.32387	R
Winter:						
On-Peak	0.26389	R	0.00503	0.08745	0.35637	R
Off-Peak	0.26389	R	0.00503	0.07281	0.34173	R
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.10042)	I			(0.10042)	I
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.09175)	I			(0.09175)	I
Minimum Bill ($/day)	0.338	I			0.338	I

Description – TOU DR2	UDC Total Rate		DWR-BC Rate	EECC Rate + DWR Credit	Total Rate		Total Effective CARE Rate	
Summer – CARE Rates:								
On-Peak	0.19204	R	0.00000	0.32325	0.51529	R	0.33624	R
Off-Peak	0.23366	R	0.00000	0.08450	0.31816	R	0.20544	R
Winter – CARE Rates:								
On-Peak	0.26321	R	0.00000	0.08745	0.35066	R	0.22700	R
Off-Peak	0.26321	R	0.00000	0.07281	0.33602	R	0.21729	R
Summer Baseline Adjustment Credit up to 130% of Baseline	(0.10042)	I			(0.10042)	I	(0.06663)	I
Winter Baseline Adjustment Credit up to 130% of Baseline	(0.09175)	I			(0.09175)	I	(0.06088)	I
Minimum Bill ($/day)	0.169	I			0.169	I	0.169	I

Note:

(1) Total Rates consist of UDC, Schedule DWR-BC (Department of Water Resources Bond Charge), and Schedule EECC (Electric Energy Commodity Cost) rates, with the EECC rates reflecting a DWR Credit.

(2) Total Rates presented are for customers that receive commodity supply and delivery service from Utility.

(3) As identified in the rates tables, customer bills will also include line-item summer and winter credits for usage up to 130% of baseline to provide the rate capping benefits adopted by Assembly Bill 1X and Senate Bill 695

(Continued)

2H0

Advice Ltr. No. 3365-E

Decision No. 15-07-001

Issued by
Dan Skopec
Vice President
Regulatory Affairs

Submitted Apr 12, 2019

Effective May 1, 2019

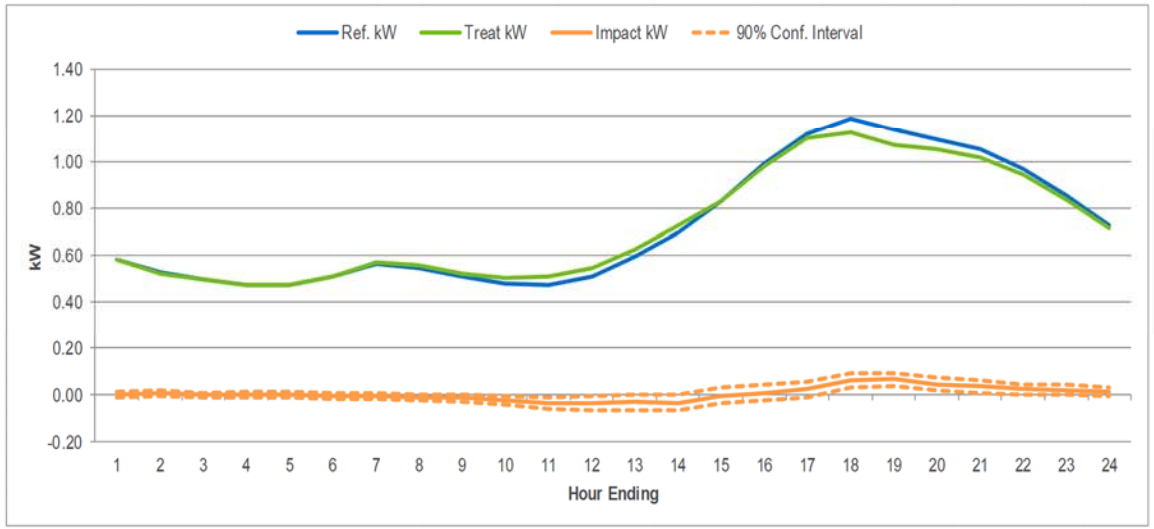
Resolution No. E-4988

Appendix F: Default TOU Pilot Final Evaluation Load Impact Tables

SDG&E Default TOU Pilot - Final Report

Select Options Below:	
Rate:	Rate 1
Segment:	Moderate - Non-CARE/FERA
Time Period:	September
Day Type:	Monthly System Peak

Period	Control Customers	Treatment Customers	Ref. kW	Treat kW	Impact kW	90% Conf. Interval		% Impact
Peak	18,491	26,882	1.12	1.07	0.05	0.03	0.06	4.2%
Off-Peak	18,491	26,882	0.67	0.68	-0.01	-0.02	0.00	-1.3%
Super Off-Peak	18,491	26,882	0.51	0.51	0.00	0.00	0.01	0.2%
Day	**18,491**	**26,882**	**34.89**	**34.65**	**0.24**	**0.08**	**0.40**	**0.7%**



Hour	Period	Ref. kW	Treat kW	Impact kW	90% Conf. Interval		% Impact
1	Super Off-Peak	0.59	0.58	0.00	-0.01	0.02	0.4%
2	Super Off-Peak	0.53	0.53	0.01	-0.01	0.02	1.1%
3	Super Off-Peak	0.50	0.50	0.00	-0.01	0.01	-0.2%
4	Super Off-Peak	0.48	0.47	0.00	-0.01	0.01	0.4%
5	Super Off-Peak	0.48	0.48	0.00	-0.01	0.01	0.2%
6	Super Off-Peak	0.51	0.51	-0.01	-0.02	0.01	-1.1%
7	Off-Peak	0.56	0.57	-0.01	-0.02	0.01	-0.9%
8	Off-Peak	0.55	0.56	-0.01	-0.02	0.00	-1.6%
9	Off-Peak	0.51	0.52	-0.01	-0.03	0.00	-2.2%
10	Off-Peak	0.48	0.50	-0.02	-0.04	0.00	-4.9%
11	Off-Peak	0.48	0.51	-0.04	-0.06	-0.01	-7.7%
12	Off-Peak	0.51	0.55	-0.03	-0.06	-0.01	-6.7%
13	Off-Peak	0.59	0.62	-0.03	-0.06	0.00	-5.2%
14	Off-Peak	0.70	0.73	-0.03	-0.07	0.00	-4.6%
15	Off-Peak	0.83	0.83	0.00	-0.04	0.03	-0.2%
16	Off-Peak	0.99	0.98	0.01	-0.02	0.04	1.0%
17	Peak	1.12	1.10	0.02	-0.01	0.06	2.1%
18	Peak	1.19	1.12	0.06	0.03	0.09	5.2%
19	Peak	1.14	1.07	0.07	0.04	0.09	5.8%
20	Peak	1.10	1.05	0.05	0.02	0.07	4.3%
21	Peak	1.06	1.02	0.04	0.01	0.06	3.4%
22	Off-Peak	0.97	0.95	0.02	0.00	0.05	2.4%
23	Off-Peak	0.86	0.84	0.02	0.00	0.04	2.6%
24	Off-Peak	0.73	0.72	0.01	-0.01	0.03	1.8%

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations.	Rulemaking 12-06-013 (Filed June 21, 2012)

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the foregoing **SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E) QUARTERLY REPORT ON PROGRESS OF RESIDENTIAL RATE REFORM (PRRR)** has been electronically mailed to each party of record on the service list in R.12-06-013. Any party on the service list who has not provided an electronic mail address was served by placing a copy in a properly addressed and sealed envelope and depositing such envelope in the United States Mail with first-class postage prepaid.

A hard copy has been sent via Federal Express to the Administrative Law Judges in this Docket.

Dated at San Diego, California, this 1st day of November, 2019.

/s/ Jenny Norin

Jenny Norin