PUBLIC UTILITIES COMMISSION
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December 30, 2019

Advice Letter 5496-E

Erik Jacobson
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Pacific Gas and Electric Company
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SUBJECT: Proposed Bill Protection Approach to Implement in Phase 2 of the San Joaquin Valley Disadvantaged Communities Pilot Proceeding.

Dear Mr. Jacobson:

Advice Letter 5496-E is effective as of December 19, 2019.

Sincerely,

Edward Randolph

Edward Randolph
Deputy Executive Director for Energy and Climate Policy/
Director, Energy Division

Pacific Gas and Electric Company

Erik Jacobson
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March 18, 2019

Advice 5496-E
(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

Subject: **Proposed Bill Protection Approach to Implement in Phase 2 of the San Joaquin Valley Disadvantaged Communities Pilot Proceeding**

Purpose

Pursuant to California Public Utilities Commission (CPUC or Commission) Decision (D.) 18-12-015, Ordering Paragraph (OP) 15d, Pacific Gas and Electric Company (PG&E) submits this Tier 2 Bill Protection Advice Letter (AL) with a bill protection proposal for the Commission to approve for the three-year San Joaquin Disadvantaged Communities (SJVDAC) pilots in PG&E's service territory effective upon the date of approval of this advice letter. PG&E and SCE (collectively, IOUs) are directed by Decision (D.) 18-12-015 to submit nearly identical ALs, and have collaborated heavily on this AL[1].

Background

In 2015, the Commission initiated a rulemaking to identify disadvantaged communities in the San Joaquin Valley, and then to evaluate the feasibility of options to improve access to affordable energy in these communities.[2] To assist in addressing these goals, D.18-12-015 approved pilots in eleven (11) SJVDACs.

D.18-12-015, OP 15d, directed PG&E, Southern California Edison Company (SCE), and Southern California Gas Company (SoCalGas) to:

- File Tier 2 Bill Protection Advice Letters that address the issues identified in Section 11.2 of this decision within 45 days of the Bill Protection workshop, detailing their planned approaches to ensuring pilot participants' energy cost savings.

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[1] Decision (D.) 18-12-015 pg 79, Section 11.2)

[2] Order Instituting Rulemaking to Identify Disadvantaged Communities in the San Joaquin Valley and Provide Economically Feasible Options for Affordable Energy, R. 15-10-030, p. 2 (April 3, 2015).

Request

PG&E requests the Commission to adopt its bill protection proposal detailed below.

PG&E and SCE Identical Advice Letter

IOUs agree on the same overall approach to bill protection; however, given that the IOUs have two different billing systems, the application of the credit to participants' bills may differ. The result for the customer will be the same, with a monthly billing adjustment ensuring the same level of bill protection.

Commission Decision Requirements

The following is a summary of PG&E's approach to address the D. 18-12-015's requirements:

Commission Decision Requirements[3]	**IOU's Proposed Approach**[4]
Should **incorporate monthly bill protection, and, as appropriate, annual true-up,** mechanisms and **must aim to avoid any monthly "bill shock" for participants**	Credits will be applied to monthly bills and will be sized based on season. Seasonal variation is intended to mitigate potential bill shocks in the months with the highest expected bill increase.
Should **consider all pre- and post- pilot implementation energy costs** (propane, wood, as feasible; and, as appropriate, natural gas and electricity costs)	To the greatest extent feasible, IOUs will collect non-electric energy costs from pilot participants to perform customer level energy cost impact analysis.
May **consider a higher baseline allowance and/or a waiver of the Super User Electric Surcharge**	IOUs do not propose a waiver of the Super User Electric Surcharge. IOUs propose to place electrified customers on the all-electric version of their rate to receive a higher baseline allowance.
Must be **standardized across PG&E and SCE, who must collaborate and propose the same approach and present this in nearly identical advice letters**	IOUs propose to apply monthly electric bill credits per the following annual breakdown for all pilot participants receiving electric appliances, beginning at the time appliances are installed: First Year Total: $288 Second Year Total: $140 Third Year Total: $72

[3] D.18-12-015, p. 79 (emphasis added).

[4] Though PG&E and SCE are filing separate advice letters, SCE has reviewed and approved of the contents of this table. PG&E understands the same table will be included in the SCE advice filing.

Will not require presentation of individual customer propane and/or wood bills as an eligibility criteria, but rather **will be based on modeled customer costs and generalized assumptions, which may be reviewed and updated periodically to adjust the approach, as needed**	IOUs will not require customers to provide their pre-electrification non-electric energy costs in order to be electrified. To support the proposal above, the IOUs use a highly conservative $500 per year cost estimate for propane and/or wood bills. IOUs will continue to work with the CBOs to gather actual customer propane & wood cost data, and IOUs may review and update the approach.
Will be **offered for an initial period of three years to each household receiving appliance upgrades, with a cost of $500 per household as a starting point**;	The IOUs will provide $500 to electrified customers over the course of three years.
Will **consider likely rebound effects and comfort needs, particularly amongst the poorest households that may have severely curtailed propane usage** for water and/or space heating due to high costs	IOUs use conservative estimates to arrive at a post electrification bills for customers; IOUs base their bill protection approach on the lowest propane savings and highest electric cost increase to ensure that participants, including curtailers see a savings.

Introduction

The Commission has approved bill protection in various instances, including the residential Time of Use (TOU) pilots, SmartRate, Peak Day Pricing, and Excess Supply pilot. In most cases, bill protection is a means of providing a level of security for customers in their first year of participation in newly approved programs. While the same idea applies to the SJVDAC electrification pilots, there are some key differences that make bill protection in these pilots unique. Unlike rate and demand response (DR) programs, the electrification treatments of these pilots cannot easily be reversed. When appliances are installed, they cannot be uninstalled with the same effort as “un-enrolling” from a program. The second key difference is the method of bill protection. In the TOU pilot, for example, P&GE compares customers’ electric bills under their previous rate schedule and new TOU rate schedule for one year post enrollment. If customers have paid more on the new TOU rate, they are credited the difference. With the SJVDAC bill protection approach, CPUC guidance is to consider all pre and post pilot energy costs (i.e. the summation of electric usage <u>plus non-electric energy sources</u> such as propane and wood.), which are less readily available to the pilot administrators. The permanency of appliance installations, and the dissimilarity between required energy cost data and availability necessitates that parties approach this proposal differently from bill protection measures currently in place.

In the SJVDAC pilots, bill protection will serve as a compliment to the cost savings the typical customer is expected to see post electrification. Cost savings in this context reflects the expected overall energy cost reduction due to the replacement of wood and propane appliances with electric. While efficient electric appliances present an affordable alternative energy option, most pilot participants will experience an increase in their annual electric energy costs. This increase in electric costs will impact customers differently. IOUs expect that most pilot community residents use propane like an average gas customer, and for them, the electric cost increase will be outweighed by the non-electric energy cost savings. However, it was shared in community meetings that some residents reduce their propane usage because of its high cost.

Customers who curtail their energy usage (i.e. “Energy Curtailers”), have reduced their energy costs by going without heating, cooling, and possibly other energy services. Energy Curtailers are at a higher risk of overall energy cost increase as their propane savings will be considerably smaller than the typical user. This increase in electric energy costs, and in some cases overall energy costs, will be experienced by the customer on each monthly post electrification electric bill, especially months with high heating demand. This change is what IOUs understand to be the “bill shock” for which the Commission is requiring a bill protection approach to mitigate.

Super User Surcharge and SJVDAC Baseline

The IOUs do not propose to increase baseline allowance or a waiver of the Super User Electric Surcharge (also known as the High Usage Surcharge (HUS) for pilot customers. As detailed in earlier comments,[5] the baseline allowance for eligible all-electric customers increases based on an estimate of average electric usage for electric heating customers specific to their climate zone. For example, a basic (non all-electric) customer in Seville in zone W receives an electric baseline allowance of 5,064 kWh/year, charged at the lowest price, compared to 7,739 kWh/year for an all-electric customer. The HUS is triggered at 400% of baseline in any billing period, for usage that exceeds four times the baseline allowance. For an all-electric Seville customer in zone W in January, this trigger would be 2,480 kWh (31 days x 20 kWh/day x 4), compared to 1,327 for a basic (non all-electric) customer. The additional baseline allowance for all-electric customers significantly reduces the potential for triggering a High Usage surcharge.

Only 11% of customers across all 8 PG&E communities included in the pilot hit the High Usage Surcharge in any month in 2018. These customers likely hit the High Usage Surcharge due to factors that will be eliminated through participation in the pilot, such as the use of inefficient electric appliances (e.g. space heaters), not being eligible for or aware of the all-electric baseline, and a lack of building insulation. Given the efficiency of the new electric appliances, the tightening of the building shell and the education initiatives of the Community Energy Navigators, IOUs believe the above issues can be

[5] Pacific Gas and Electric Company’s Opening Comments on Proposed Decision Approving Disadvantaged Communities Pilot Projects, November 29, 2018.

resolved. This is further supported by PG&E's post electrification electric bill modeling that revealed a significant reduction in the percentage of customers expected to trigger the surcharge after receiving all four appliances and being moved onto the all-electric baseline.

Proposal

PG&E & SCE jointly propose the following three-year bill protection electric bill credit for all pilot participants receiving new electric appliances. This proposal is based on the Commission's approved bill protection budget of $500 over the course of 3 years. The allocation of the bill credit is greater for year one of the three-year period to give a safety net to account for acclimation to new appliances. The credit scales down in years two and three as customers grow more familiar with the appliances and energy conservation techniques.

First Year Total: $288
Second Year Total: $140
Third Year Total: $72

The analysis below is used to support this approach by showing that the majority of both CARE and Non-CARE customers will have savings.

Data & Modeling

The IOUs arrived at the credit breakdown by:

1. Determining a distribution of expected electric bill increase and non-electric bill savings for both CARE and non-CARE customers
2. Determining the most extreme potential energy cost increase for CARE customers by subtracting the highest expected Electric Bill Increase from the lowest expected Non-Electric Bill Savings for CARE customers
3. Comparing this most extreme case to the proposed bill protection credit to ensure a positive energy cost impact (i.e. overall energy cost savings)

This method requires reliable estimates of both post-electrification electric costs and pre-electrification non-electric energy costs. The credit is the result of a comparison of extreme cases of propane curtailment and electric cost increase. This comparison determines pilot participants' overall energy cost impact as summarized below.

	Pre Electrification Data	**Post Electrification Data**
Electric	Pre Customer Electric bills	Post Customer Electric bills
Non electric (propane, wood)	Propane/wood bills	Propane/wood bills

[Post Electric Bills]
– [Pre Electric Bills]
Electric Bill Increase

[Pre Non-Electric Bills]
– [Post Non-Electric Bills]
Non-Electric Bill Savings

Energy Cost Impact = Non-Electric Bill Savings – Electric Bill Increase [6]

The following data points are essential to determining the impact of electrification on participant energy cost and hence the need for a bill credit.

Non Electric Bill Savings for CARE and Non-CARE

Both PG&E & SCE advocate that propane & wood costs are critical elements to determining a customer's energy cost impacts. The data and methodology described in PG&E's Electric Pilot Proposals yielded an average assumed annual propane cost of $1,350 across all eight PG&E electric pilot communities. To model the extreme curtailer, the IOUs used generalized assumptions as allowed in the Decision. The IOUs use $500 as the yearly cost of propane for the extreme curtailer. This number is based on anecdotal evidence collected in workshops, and is the most conservative estimate the IOUs have heard to date. For purposes of validation, PG&E calculated another conservative estimate based on a customer who uses no propane for heating—$836[7]. While the $500 estimate is based on anecdotal evidence, and the $836 on analysis, the IOUs elected to use the more conservative of the two. Post-electrification residual propane and wood usage is assumed to be zero, hence for both CARE and non-CARE participants the median non-electric bill savings is estimated at $1,350 while the minimum is estimated at $500.

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[6] Joint IOU Workshop Presentation.

[7] Sum of $80 annual tank rental fee, annual cooking usage of 39 gallons @ $3/gallon and annual hot water usage of 213 gallons @ $3/gallon. Propane consumption is calculated by converting 2009 RASS therms of usage for cooking and hot water for single family homes.

<u>Electric Bill Increase</u>

Both IOUs have full access to customers' current electric bills and usage. This data is critical in developing a pre-pilot customer consumption baseline to which the incremental consumption of the electric appliances will be added.

Prior to the Bill Protection workshop, utility parties agreed to a common methodology to model customers' post-electrification bills. This methodology required gathering the following information:

- Customer current level usage, bill, & electric rate
- Incremental Usage of Appliances

PG&E gathered customer level usage and bill data for all known PG&E SJVDAC Pilot Community customers with full 2017 and 2018 history (429 CARE customers and 206 Non-CARE customers). Immediate findings revealed that most customers were on the tiered E-1 rate, with usage hovering primarily in the Tier 2 range. This data served as a baseline upon which the incremental usage of appliances was added to arrive at a post electrification estimate. The appliances in consideration are:

Appliance	Incremental Usage
Heat Pump Space Conditioning	3500 kWh/yr
Heat Pump Water Heater	1004 kWh/yr
Heat Pump Dryer	310 kWh/yr
Electric Cooktop/Oven	150 kWh/yr

The incremental usages of the electric appliances were gathered from Table 2-11 of the 2009 Residential Appliance Saturation Study (RASS) and adjusted as described in PG&E's Electric Pilot Proposal with two new changes:

- Heat Pump Space Conditioning usage is increased substantially
- Electric Dryer usage is decreased to represent newly available heat pump dryers

In its original proposals, PG&E only included Heat Pump Space Heating usage at 831 kWh/year. In this analysis, PG&E added both the "Unit Energy Consumption" (UEC) for heating the Heat Pump (HP) space conditioner plus Central Air Conditioning (CAC) usage to model both heating and cooling consumption of the heat pumps. This sum yields a total usage of 2,190 kWh/year. PG&E increased that usage further to 3,500 to account for the high air conditioning loads in a couple pilot communities that border Climate Zone 7. The incremental usage of the Electric cooktop was taken from Table 2-5[8] of the study, and the Electric dryer was adjusted based on newly available heat pump dryers[9].

Rebound effects

[8] https://www.energy.ca.gov/2010publications/CEC-200-2010-004/CEC-200-2010-004-V2.PDF.
[9] https://www.energystar.gov/most-efficient/me-certified-clothes-dryers/

PG&E did not explicitly model rebound effects as a separate incremental value to be applied to post electrification usage. Instead, PG&E relies on multiple layers of conservative estimations that are included in the post-electrification calculation:

- Did not model changes in customer underlying usage due to elimination of inefficient electric appliances, especially electric space heaters and window air conditioners
- Did not model savings due to other Energy Efficiency treatments (e.g. ESA lighting improvements)
- Used a significantly higher space conditioning consumption than in the 2009 RASS study
- Did not model the improved efficiency of electric appliances since the 2009 RASS study
- Used incremental consumption data of single-family homes for all households, even though RASS consumption data is lower for mobile homes and multifamily units.

Customers are expected to benefit considerably from these factors post electrification; however these were not incorporated into the analysis, resulting in a cushion in its usage estimate and resulting bill protection offering. The IOUs do commit to monitoring for any unforeseen “rebounding” or usage increases that may transpire post appliance installation.

Discounts & Complimentary programs

PG&E & SCE will encourage enrollment in any discount program for which the customer may be eligible. If eligible, customers can enroll in the following programs.

Program	**Bill Discount**
All Electric Baseline	Varies by Baseline Territory
California Alternative Rates for Energy Program (CARE)	36%
Disadvantaged Communities (DAC)-Green Tariff Program	20%
DAC-Community Solar (when a solar program is built)	20%

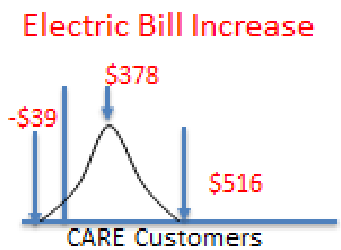
Family Electric Rate Assistance (FERA)	18%

These discounts and additional baseline allowances were applied in addition to bill protection. This is the order in which they were applied to the customers' post electrification bills with a typical annual example provided:

Discount	Annual Bill
1. All-Electric Baseline	$1,200 → $1,000
2. CARE/FERA	$1,000 @ 36% discount = $640
3. DAC-GT/CS	$640 @ 20% discount = $512
4. Bill Protection	$512 - 288 Bill Protection credit = $224

As indicated above, customers who leverage existing programs will receive a significant discount on their final electric bill.

CARE Results



[10]

Expected Electric bill increase

Based on the methodology presented, the analysis revealed that the median CARE customer will see an annual increase of $378 in their electric energy costs as seen in Figure 10. There are also a handful of customers that see a decrease (1.4 %) as a result of the switch to an all-electric baseline and the DAC-GT discount. The highest annual electric bill increase in this analysis was $516. This is the value that both IOUs will use as the worst case electric bill increase scenario.

Overall Energy Cost Impact

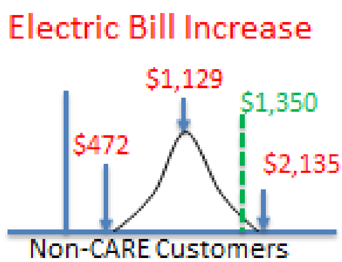
As summarized below, a comparison of the worst case non-electric energy costs and the worst case electric bill increase reveals a negative energy cost impact of $16. This finding suggests that customers in the most extreme case may see an energy cost increase. PG&E and SCE propose the before-mentioned credit breakdown to deliver a higher credit in the first year of post-electrification when the customer is taking on a risk. The credit then scales down as customers acclimate to the new appliances.

[10] Joint IOU Proposal.

	Pre Electrification Data	**Post Electrification Data**
Electric	Pre Customer Electric bills	Post Customer Electric bills ($516 increase)
Non electric (propane, wood)	Propane/wood bills ($500)	Propane/wood bills (Informed Assumptions)

Energy Cost Impact = Non-Electric Bill Savings – Electric Bill Increase
Most extreme energy cost impact = [$500] – [$516] = $16 energy cost increase

NON CARE Results



[11]

Non CARE Customer Analysis

The IOUs acknowledge that some Non-CARE customers may be more likely to see an overall energy cost increase, because they do not qualify for CARE or DAC-GT. However, the IOUs believe that there is a strong correlation between income and energy usage, especially at higher levels of income. In other words, since Non-CARE customers have a relatively higher income, they may also have more typical annual propane bills. A higher propane bill would result in greater savings for the participant post electrification.

PG&E estimates that on average, Non-CARE customers have an annual propane bill of $1,350 as shown in figure 11. Assuming the customer takes all four appliances, post electrification modeling indicates that median Non-CARE customers will see an annual electric bill increase of $1,129. In this case, the energy cost impact would be approximately $221 annual savings. This annual savings would be increased by the proposed bill protection approach of $288, $140, and $72 over three years. Only 1.4%

[11] Joint IOU Presentation.

of customers in this analysis had an electric bill increase that exceeded that amount. In other words, 98.6% of Non-CARE customers are expected to see an energy cost decrease before the bill protection credits.

Figure 12 below is an example of the savings a typical Non-CARE customer will see over three years during the pilot. There are extreme cases of a handful of Non-CARE customers seeing an increase of over $2,000, but those are outliers for whom any bill protection approach might not be sufficient. These customers may have unique circumstances (e.g. two homes on the same meter) or may require additional interventions to ensure energy cost savings.

Savings Summary:
Yr 1 Energy Cost Impact = $1,350 – $1,129 = $221 savings/yr + 288 Credit = $ 509 savings
Yr 2 Energy Cost Impact = $1,350 – $1,129 = $221 savings/yr + 144 Credit = $ 365 savings
Yr 3 Energy Cost Impact = $1,350 – $1,129 = $221 savings/yr + 72 Credit = $ 293 savings
Yr 4 Energy Cost Impact = $1,350 – $1,129 = $221 savings/yr + 0 Credit = $221 savings [12]

Heat Pump Water & Space Heater Minimum Requirement

Propane appliances for home heating and water heating require the largest amount of propane to fuel the appliance. These two appliances are also the largest consumers of electric consumption of the four electric appliances proposed in the PG&E and SCE electrification pilots. SCE conducted an analysis limiting electrification to only the water heating appliance. The results of the analysis indicated a reduction in energy savings between 6% and 10% for non-CARE and CARE customers, respectively. The energy costs for customers in Multifamily (MF) and Mobile Home (MH) dwelling types increased between 5% and 4%, respectively. This reduction in savings, and increase in energy costs runs contrary to the objective of the pilot, to provide a more affordable energy option.

PG&E and SCE recommend against installing only one of these appliances. Instead, the IOUs recommend that in order to be electrified, pilot participants must agree to receive both electric space conditioning and water heating appliances.

Operationalization

PG&E & SCE reiterate their overall alignment in approach and customer feel. The IOUs are aligned that the credits will be provided on the customers' monthly bill. However, there will be slight differences in the operational elements of bill protection. The IOUs interpret the Commission's requirement of the IOUs to serve "nearly identical" advice letters to be regarding the bill protection credit calculation. PG&E & SCE have two very different billing systems, and IT requirements prohibit them from synching

[12] Joint IOU Presentation.

operationalization. PG&E ensures that from a customer experience perspective, pilot participants will receive the same credit amount throughout the pilot duration.

Analysis Refinement

All customers will receive the same bill protection credit based on the analysis mentioned above. In parallel, both IOUs will collect the following information from customers during and after enrollment:

- Propane and wood costs
- Dwelling type
- Dwelling size
- Number of occupants

This data will be used to analyze pre, and post electrification costs to ensure that all participants receive adequate protection post electrification. The results of this analysis will be provided in an aggregated fashion in the required quarterly bill impact reports per the decision.

Assessment Period

Pursuant to Section 11.2 of the decision, the IOUs may review and update the approach as needed; however adjustment to the bill protection approach must be balanced with equity concerns for customers who may enroll under two different approaches.

Quarterly Reports & Workshop

The Decision requires IOUs to file aggregated quarterly reports on bill impacts post electrification beginning Q1 of 2020. The Decision also requires that IOUs work with Commission staff to host and facilitate a workshop to discuss the bill data results 30 days after filing the first report. In addition to the energy cost data, IOUs propose to discuss, to the extent that data is available, the questions listed below related to bill savings and affordability.

- How does the customer energy cost impact analysis compare to the bill protection credit?
- Has bill protection proposal helped or hindered enrollments?
- How many pilot participants have been electrified?
- Is there a need for a true-up (e.g. based on residual propane usage)?
- How has the pilot impacted customer arrearages?
- Can parties make the decision of whether to course correct now or do they need to re-evaluate later-if so, when?

The IOUs may review and update the Bill Protection approach based on the workshop discussion. However, adjustment to the bill protection approach must be balanced with equity concerns for customers who may enroll under two different approaches.

Related Topics

Bill Shock

The Decision requires IOUs to consider "bill shock" in the bill protection approach. PG&E interprets "bill shock" to mean a significantly larger than expected monthly electric bill increase. IOUs propose that credits be applied to monthly bills and will be sized based on season. Seasonal variation is intended to mitigate potential bill shocks in the months with the highest expected bill increase. PG&E is also exploring the integration of monthly credits with existing programs that can also mitigate bill shock such as Budget Billing and Payment Plans.

Budget

The IOUs current proposal does not require alteration of the budget amount allotted in the decision. Adjustment to the proposed approach may require adjustment to the budget amount or flexibility to allocate current budget differently across customer types. As required in D.18-12-015, PG&E provides the following bill protection budget breakdown:

	PG&E Electric Pilot Communities			*3rd Party Electric Pilot Communities (Shown for completeness)*					
	ALLENS-WORTH CDP	**CANTUA CREEK CDP**	**SEVILLE CDP**	*ALPAUGH CDP*	*FAIRMEAD CDP*	*LA VINA CDP*	*LANARE CDP*	*LE GRAND CDP*	**Notes**
Estimated Number of Households Treated	**106**	**106**	**104**	*46*	*253*	*84*	*17*	*502*	Per D.18.12.015 Table 25
Bill Protection Credits	**$ 53,000**	**$ 53,000**	**$ 52,000**	*$ 23,000*	*$ 126,500*	*$ 42,000*	*$ 8,500*	*$ 251,000*	Per D.18.12.015 Table 24, calculated as number of households*$500
Bill Protection IT		**$ 25,944**				*$ 74,056*			Estimated total $100,000 allocated according to number of households
Bill Protection Credit Processing		**$ 33,624**				*$ 95,976*			Estimated total $129,600 allocated according to number of households
Bill Protection Total		$ 217,568				$ 621,032			$ 838,600

Frequency

The Decision provides a list of guiding principles for Utility and Non-Utility parties to consider, and in some cases, incorporate into the development of a Bill Protection approach. Pursuant to Section 11.2 of the decision:

"Bill Protection and Affordability advice letters… Should incorporate monthly bill protection, and, as appropriate, annual true-up, mechanisms and must aim to avoid any monthly "bill shock" for participants;"[13]

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[13] Decision 18-12-015 (pg. 79).

The IOUs interpret this excerpt to mean that bill protection should be provided with some regularity to ensure adequate protection from “bill shock” for participants. Both PG&E and SCE have assessed the operational feasibility of the frequencies offered in the decision, and at workshops—monthly, quarterly, annually. PG&E appreciates the feedback provided by the pilot team that given the seasonal nature of residents’ work, anything other than a monthly credit would be difficult for participants to budget for. Therefore, PG&E & SCE will provide a monthly bill credit to customers for the duration of the pilot.

Transparency & Simplicity

PG&E and SCE commit to a simple and transparent bill protection approach. In workshops we discussed more complicated approaches based on collected data and modeling; however Parties voiced concern about the complexity and lack of transparency of those approaches. Both IOUs agree with this and the proposed approach reflects that feedback.

Customers in Arrears

Both PG&E and SCE commit to leveraging all applicable and existing utility programs to get customers who are in arrears in good standing by the start of the pilot. Since pilot participants who are in arrears would see an increase in electric bills post-electrification, it can be surmised that they may fall further into arrears as a result. PG&E acknowledges this argument but recognizes that these customers may be in arrears because they have not had access to affordable energy options. PG&E proposes to not restrict customers with arrears from enrolling in the pilot. Instead, PG&E proposes to require potential participants to subscribe to a PG&E Payment Plan before enrolling. This will ensure that they are on a path to good standing heading into the pilot. If customers with arrearages are able to pay down their balance and pay for current service post-electrification, it will be a key learning for Phase 3.

Disconnection

IOUs will use all available programs and tools to ensure that customers are not disconnected during the pilot. Disconnection would limit learnings, discourage potential participants from enrolling, and adversely impact the livelihood of pilot participants.

Bill Protection Timing

The Decision did not provide guidance regarding when the three year duration of Bill Protection begins. In section 11.2, the Commission states that bill protection “will be offered for an initial period of three years to each household receiving appliance upgrades…"[14], but this does not mention logistical items such as: start, end, nor which appliance install triggers bill protection. The question regarding which appliance install triggers bill protection is one that has not been previously discussed. The reality is that, while ideal, the installment of all four new electric appliances may not occur at the same time. Technical or scheduling challenges may delay installment of appliances. In the interest of gaining clarity, the IOUs proposes that bill protection begin 3 years from the installation of the electric heating appliance. This proposed trigger aligns with the eligibility trigger of the all-electric baseline allowance.

Duration

PG&E proposes that the Commission consider hosting a workshop in Quarter 2 of the Pilot's last year where parties discuss an extension of bill protection for in case of pilot participants whose energy costs are projected to increase based on customer level data and analysis.

PG&E recognizes Grid Alternatives' intentions in their request for Bill Protection. However, the budget allotted in the decision for bill protection only provides enough funding for 3 years[15], and the decision explicitly states in Section 11.2 that the proposed $500/household will be offered for an initial period of three years. Without a modification to the decision, the IOUs have only the approved budget, and as described in this filing the IOUs believe this budget is sufficient for bill protection based on current customer, data, informed assumptions, and modeling.

Conclusion

PG&E & SCE appreciate the opportunity to offer this proposal for consideration to the Commission and looks forward to further collaboration.

Protests

Anyone wishing to protest this submittal may do so by letter sent via U.S. mail, facsimile or E-mail, no later than April 8, 2019, which is 21 days[16] after the date of this submittal. Protests must be submitted to:

CPUC Energy Division
ED Tariff Unit
505 Van Ness Avenue, 4th Floor
San Francisco, California 94102

[14] Decision 18-12-015 (pg. 79 section 11.2).
[15] Decision 18-12-015 (pg. 66 Table 24).
[16] The 20-day protest period concludes on a weekend, therefore, PG&E is moving this date to the following business day.

Facsimile: (415) 703-2200
E-mail: EDTariffUnit@cpuc.ca.gov

Copies of protests also should be mailed to the attention of the Director, Energy Division, Room 4004, at the address shown above.

The protest shall also be sent to PG&E either via E-mail or U.S. mail (and by facsimile, if possible) at the address shown below on the same date it is mailed or delivered to the Commission:

Erik Jacobson
Director, Regulatory Relations
c/o Megan Lawson
Pacific Gas and Electric Company
77 Beale Street, Mail Code B13U
P.O. Box 770000
San Francisco, California 94177

Facsimile: (415) 973-3582
E-mail: PGETariffs@pge.com

Any person (including individuals, groups, or organizations) may protest or respond to an advice letter (General Order 96-B, Section 7.4). The protest shall contain the following information: specification of the advice letter protested; grounds for the protest; supporting factual information or legal argument; name, telephone number, postal address, and (where appropriate) e-mail address of the protestant; and statement that the protest was sent to the utility no later than the day on which the protest was submitted to the reviewing Industry Division (General Order 96-B, Section 3.11).

Effective Date

PG&E requests that this Tier 2 advice submittal become effective on regular notice, April 17, 2019 which is 30 calendar days after the date of submittal.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list and the parties on the service list for R.15-03-010. Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter submittals can also be accessed electronically at: http://www.pge.com/tariffs/.

/S/

Erik Jacobson
Director, Regulatory Relations

Attachments

cc: Service List R.15-03-010

California Public Utilities Commission

ADVICE LETTER SUMMARY

ENERGY UTILITY

MUST BE COMPLETED BY UTILITY (Attach additional pages as needed)

Company name/CPUC Utility No.: Pacific Gas and Electric Company (ID U39E)

Utility type:
- ☑ ELC
- ☐ GAS
- ☐ WATER
- ☐ PLC
- ☐ HEAT

Contact Person: Yvonne Yang
Phone #: (415)973-2094
E-mail: PGETariffs@pge.com
E-mail Disposition Notice to: Yvonne.Yang@pge.com

EXPLANATION OF UTILITY TYPE

ELC = Electric	GAS = Gas	WATER = Water
PLC = Pipeline	HEAT = Heat	

(Date Submitted / Received Stamp by CPUC)

Advice Letter (AL) #: 5496-E

Tier Designation: 2

Subject of AL: Proposed Bill Protection Approach to Implement in Phase 2 of the San Joaquin Valley Disadvantaged Communities Pilot Proceeding

Keywords (choose from CPUC listing): Compliance

AL Type: ☐ Monthly ☐ Quarterly ☐ Annual ☑ One-Time ☐ Other:

If AL submitted in compliance with a Commission order, indicate relevant Decision/Resolution #:
D.18-12-015

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL: No

Summarize differences between the AL and the prior withdrawn or rejected AL:

Confidential treatment requested? ☐ Yes ☑ No

If yes, specification of confidential information:
Confidential information will be made available to appropriate parties who execute a nondisclosure agreement. Name and contact information to request nondisclosure agreement/ access to confidential information:

Resolution required? ☐ Yes ☑ No

Requested effective date: 4/17/19

No. of tariff sheets: N/A

Estimated system annual revenue effect (%): N/A

Estimated system average rate effect (%): N/A

When rates are affected by AL, include attachment in AL showing average rate effects on customer classes (residential, small commercial, large C/I, agricultural, lighting).

Tariff schedules affected:

Service affected and changes proposed[1]: N/A

Pending advice letters that revise the same tariff sheets: N/A

[1]Discuss in AL if more space is needed.

Clear Form

Protests and all other correspondence regarding this AL are due no later than 20 days after the date of this submittal, unless otherwise authorized by the Commission, and shall be sent to:

CPUC, Energy Division
Attention: Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102
Email: EDTariffUnit@cpuc.ca.gov

Name: Erik Jacobson, c/o Megan Lawson
Title: Director, Regulatory Relations
Utility Name: Pacific Gas and Electric Company
Address: 77 Beale Street, Mail Code B13U
City: San Francisco, CA 94177
State: California Zip: 94177
Telephone (xxx) xxx-xxxx: (415)973-2093
Facsimile (xxx) xxx-xxxx: (415)973-3582
Email: PGETariffs@pge.com

Name:
Title:
Utility Name:
Address:
City:
State: District of Columbia Zip:
Telephone (xxx) xxx-xxxx:
Facsimile (xxx) xxx-xxxx:
Email:

Clear Form

Advice 5496-E
March 18, 2019

Attachment 1

Bill Protection Proposal

Bill Protection Proposal

Together, Building
a Better California

Agenda

1. Elements of Proposal
2. Initial Joint IOU Proposal
3. Key Data Elements
4. Framework & Results
5. Savings vs. Increase
6. Non-CARE customer analysis
7. Operationalization
8. Open Questions

Elements of Proposal

1. Customers receiving appliances will not be disconnected during the pilot time period
2. Customers in arrears can participate in the pilot
   - IOUs will leverage existing programs to get customers in good standing before the pilot begins
3. Customers must at least receive the electric heat pump water heater, and electric heat pump heating and cooling
4. Customers will be encouraged to enroll in any discount programs for which they are eligible
5. Initial Bill Protection results will be included with each quarterly energy cost impact report
6. Proposed Approach may be revisited during pilot

Initial Joint IOU Proposal

Provide flat bill credit over three years to customers that sign up as follows

Bill Protection Pilot

Year 1: $288

Year 2: $140

Year 3: $72

Total: $500/3 years

*Assuming no course correction

Key Data Elements

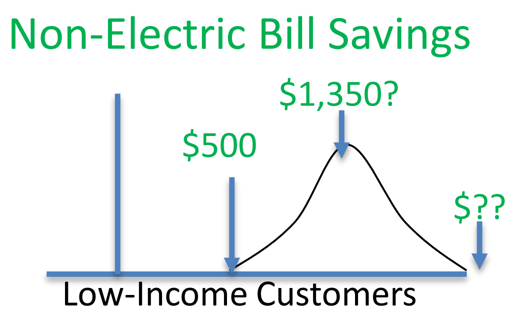
	Pre Electrification Data	Post Electrification Data
Electric	Pre Customer Electric bills	Post Customer Electric bills
Non electric (propane, wood)	Propane/wood bills	Propane/wood bills

[Post Electric Bills]
– [Pre Electric Bills]
Electric Bill Increase

[Pre Non-Electric Bills]
– [Post Non-Electric Bills]
Non-Electric Bill Savings

Energy Cost Impact = Non-Electric Bill Savings – Electric Bill Increase

Joint IOU Framework & Results: Propane Costs



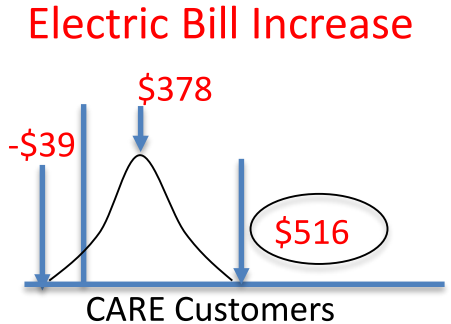
Goal: Keep propane assumptions <u>simple & consistent</u> initially

1. Modeled an "extreme curtailer" who uses no propane for heat to estimate the lowest non-electric bill savings based on 2009 RASS gas usage for single family home
   1. Annual tank rental fee: $80
   2. Annual cooking usage: 39 gallons @ $3/gallon = $117/yr
   3. <u>Annual hot water usage: 213 gallons @ $3/gallon </u>= $639/yr
   4. **Total propane cost for extreme curtailer: $836**
2. Propane rate of $3/gallon is below expected rate
   1. Customer and available data indicates rates more like $3.50
3. Conservative assumption of lowest annual propane cost savings of $500/yr

Joint IOU Framework: Post-Electrification Electric Costs

1. Gathered customer-level usage and bill data from all customers in PG&E & SCE communities who had a complete 2017 and 2018 history
2. Applied the following incremental usage to past usage
    - PG&E adjusted these incremental usages and applied them to 2018 usage
        - Heat Pump Space Conditioning
        - Heat Pump Electric Dryer
3. Re-calculated bills with incremental usage and the following rate changes
    1. All-electric baseline E1 rate with high user surcharge
    2. 20% DAC-GT/CS bill discount on top of CARE discount
4. Calculated the difference between pre & post install electric bills and total non- electric energy costs

Results: Post-Electrification Electric Costs



Analysis:

1. Gathered customer-level usage and bill data from all CARE-enrolled customers in 8 PG&E communities who had a complete 2017 and 2018 history (n=479)
2. Applied the following incremental usage to 2018 usage
    1. Heat Pump Space Conditioning: 3500 kWh/yr ***(change from prior analysis)***
    2. Heat Pump Water Heat: 1004 kWh/yr
    3. Electric Range: 310 kWh/yr
    4. Heat Pump Electric Dryer: 150 kWh/yr ***(change from prior analysis)***
3. Re-calculated 2018 bills with incremental usage and the following rate changes
    1. All-electric baseline E1 rate with high user surcharge
    2. 20% DAC-GT/CS bill discount on top of CARE discount
4. Calculate the difference between electric bills before and after

Savings vs. Increase

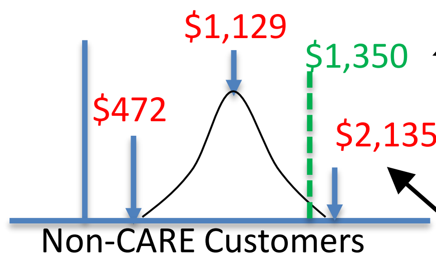
	Pre Electrification Data	**Post Electrification Data**
Electric	Pre Customer Electric bills	Post Customer Electric bills ($516 increase)
Non electric (propane, wood)	Propane/wood bills ($500)	Propane/wood bills (Informed Assumptions)

Energy Cost Impact = Non-Electric Bill Savings – Electric Bill Increase

Most extreme energy cost impact = [$500] – [$516] = $16 energy cost increase

Analysis Results – Non-CARE

Electric Bill Increase



98.6 % of Non-CARE customers' estimated electric bill increase is below expected propane cost of $1,350. These customers would save even without DAC-GT credits or bill protection.

There are extreme examples that must be identified and addressed prior to electrification. Bill protection will not help this customer.

Analysis:

1. Gathered customer-level usage and bill data from all Non-CARE customers in 8 PG&E communities who had a complete 2017 and 2018 history (n=206)
2. Applied the following incremental usage to 2018 usage
    1. Heat Pump Space Conditioning: 3500 kWh/yr *(change from prior analysis)*
    2. Heat Pump Water Heat: 1004 kWh/yr
    3. Electric Range: 310 kWh/yr
    4. Heat Pump Electric Dryer: 150 kWh/yr *(change from prior analysis)*
3. Re-calculated 2018 bills with incremental usage and the following rate changes
    1. All-electric baseline E1 rate
    2. NO 20% DAC-GT/CS bill discount
4. Calculate the difference between electric bills before and after

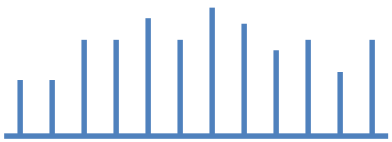
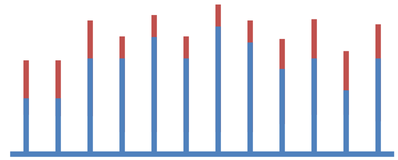
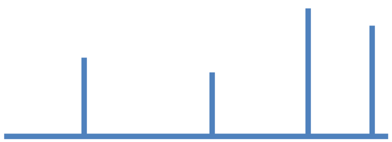
Bill Protection Operationalization

- **Delivery**
  - Both PG&E & SCE are committed to providing an **on bill** credit
- **Frequency**
  - Quarterly/Monthly credit is pending internal operational feasibility discussions
- **Other**
  - PG&E is exploring leveraging other existing programs in conjunction with the Bill Protection credit

Open Questions For Discussion

- How to define Phase 1, 2, and 3?
- Items parties will protest
- Items parties will advocate for (ex. Increased budget)
- What does course correction look like?

Appendix: Example Bill Forecast: Median Non-CARE

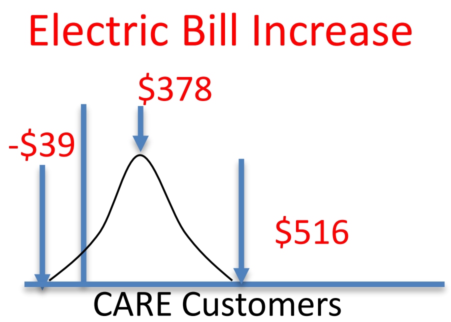
	Your last 12 months	After Electric Appliances
Electric	 Total: $1,870	 Total: $3,007
Non electric (propane, wood)	 Total: $1,350?	Total: $0

[$1,870]
– [$3,007]
$1,137 Increase

[$1,350]
– [$0]
$1,350 Savings

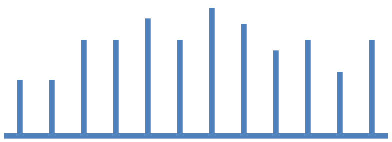
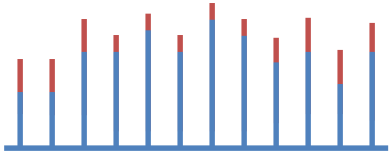
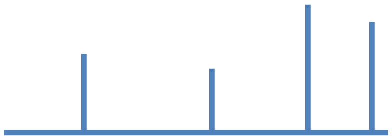
Savings Summary:
Yr 1 Energy Cost Impact = $1,350 – $1,129 = $221 savings/yr + 288 Credit = $ 509 savings
Yr 2 Energy Cost Impact = $1,350 – $1,129 = $221 savings/yr + 144 Credit = $ 365 savings
Yr 3 Energy Cost Impact = $1,350 – $1,129 = $221 savings/yr + 72 Credit = $ 293 savings
Yr 4 Energy Cost Impact = $1,350 – $1,129 = $221 savings/yr + 0 Credit = $221 savings

Appendix: PG&E Validating Analytical



1. Median "post electrification" usage and bill appears high compared to actuals:
    1. Median based on model is 12,606 kWh/yr and $3,007/yr
    2. Median actual 2018 electric usage and bill for all-electric la Vina and Fairmead Customers is 10,030 kWh/yr and $1,717
2. Validation of incremental Heat Pump Space Heat usage: 3500 kWh/yr
    1. 2009 RASS forecast CZ3 Heat Pump Heating (831) + Central AC (1,359 kWh)= 2,190 kWh/year
    2. Space heating/cooling usage from LBNL Tool is 2,369 + 1,558 = 3,927kWh/yr
        1. 1,500 SF house with attic insulation, air sealing and heat pump
    3. These represent normal usage (i.e. no curtailment)
3. Assuming underlying 2018 usage doesn't change is conservative:
    1. Many customers will stop using inefficient space heaters and a/c units
    2. Other energy efficiency measures will be installed (e.g. lighting)

Appendix: Example Bill Forecast: Median CARE

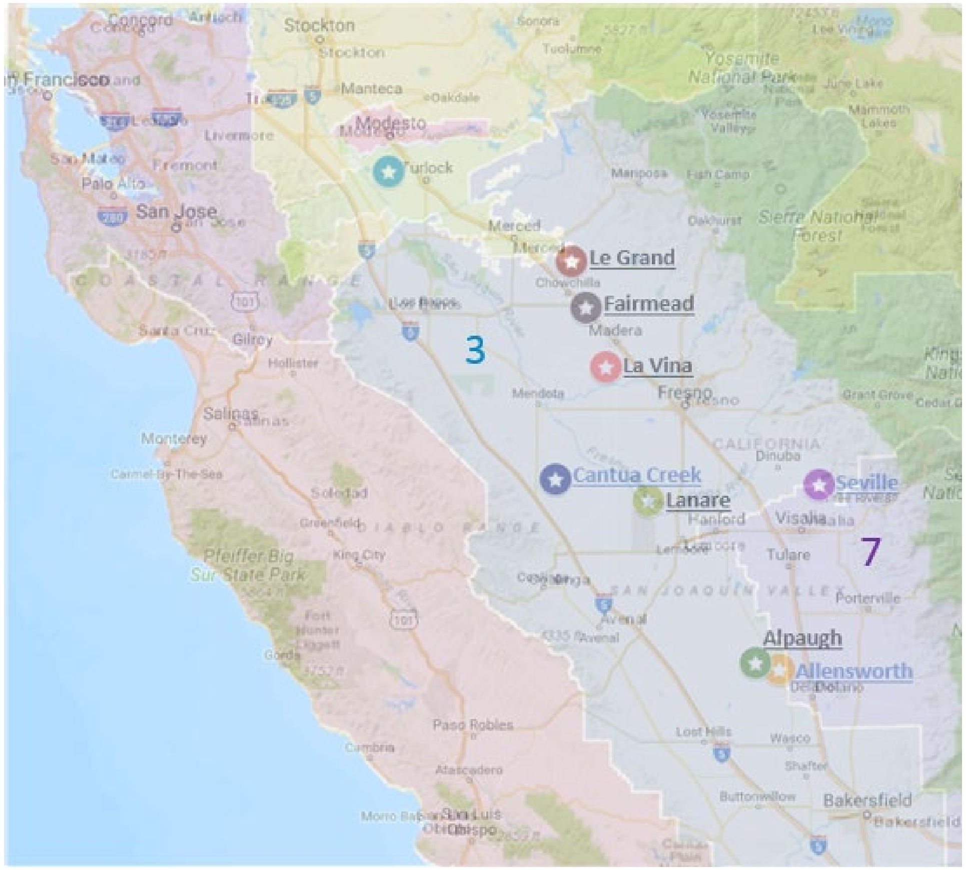
	Your last 12 months	After Electric Appliances + discounts
Electric	 Total: $1,021	 Total: $1,398
Non electric (propane, wood)	 Total: $1,300?	Total: $0

[$1,021]
– [$1,398]
$378 Increase

[$1,350]
– [$0]
$1,300 Savings

Savings Summary:
Yr 1 Energy Cost Impact = $1,300 – $378 = $922 savings/yr + 288 Credit = $ 1,210 savings
Yr 2 Energy Cost Impact = $1,300 – $378 = $922 savings/yr + 144 Credit = $ 1,066 savings
Yr 3 Energy Cost Impact = $1,300 – $378 = $922 savings/yr + 72 Credit = $ 994 savings
Yr 4 Energy Cost Impact = $1,300 – $378 = $922 savings/yr + 0 Credit = $ 922 savings

Appendix: Validating Space



1. 5 communities are in central CZ 3, three are near CZ 7 border

2. CZ3 is cooling dominated:
   2009 RASS forecast CZ3 Heat Pump Heating (831 kWh) + Central AC (1,359 kWh)= 2,190 kWh/year

3. CZ7 is heating dominated:
   2009 RASS forecast CZ7 Heat Pump Heating (5,509 kWh) + Central AC (1,169 kWh)= 6,678 kWh/year

4. Split system heat pump efficiencies continue to improve:

2006-8 Air-source Heat Pump Energy Star Requirements:

Table 1: TIER 1 Energy-Efficiency Criteria for Qualified Residential ASHPs and Central Air Conditioners

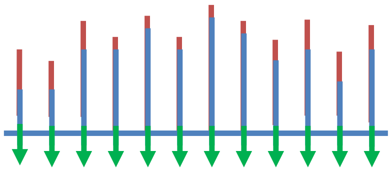
Product Type	SEER	EER	HSPF (for heat pumps only)
Split Systems	≥ 14	≥ 11.5	≥ 8.2
Single Package Equipment (including	≥ 14	≥ 11	≥ 8.0

Current Energy Star Requirements:

Equipment	Specification
Air-Source Heat Pumps	≥ 8.5 HSPF/ ≥15 SEER/ ≥12.5 EER* for split systems ≥ 8.2 HSPF ≥15 SEER/ ≥12 EER* for single package equipment

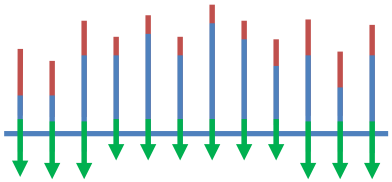
PG&E Billing Alternatives

1



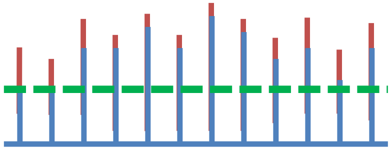
- Pay each monthly bill amount
- Receive flat monthly credit toward each payment

2



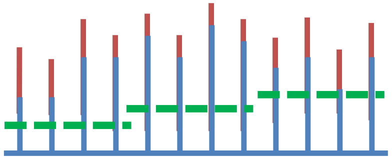
- Pay each monthly bill
- Receive monthly credit sized to offset potential bill shocks

3



- Pay estimated new average
- Credit applied at 12 months to offset any balance
- Unused credit rolls over

4



- Pay Average with 3 adjustments
- Credit applied to mitigate step ups
- Unused credit rolls over

Appendix: Analytical Framework

	Pre Electrification Data	Post Electrification Data
Electric	Pre Customer Electric bills	Post Customer Electric bills
Non electric (propane, wood)	Propane/wood bills	Propane/wood bills

[Post Electric Bills]
– [Pre Electric Bills]
Electric Bill Increase

[Pre Non-Electric Bills]
– [Post Non-Electric Bills]
Non-Electric Bill Savings

Energy Cost Impact = Non-Electric Bill Savings – Electric Bill Increase

PG&E Proposal:

1. Examine the worst case for CARE customers to determine risk of energy cost increase: highest expected Electric Bill Increase and the lowest expected Non-Electric Bill Savings
2. Based on potential energy cost increase determine a bill protection credit to ensure beneficial energy cost impact during pilot and enable transition to all-electric appliances

Appendix: SJV DAC Pilots Decision

The IOU bill protection workshop proposals and the IOU's Bill Protection and Affordability advice letters:

- Should **incorporate monthly bill protection, and, as appropriate, annual true-up,** mechanisms and **must aim to avoid any monthly "bill shock" for participants**;
- Should **consider all pre- and post- pilot implementation energy costs** (propane, wood, as feasible; and, as appropriate, natural gas and electricity costs);
- May **consider a higher baseline allowance and/or a waiver of the Super User Electric Surcharge**;
- Must be **standardized across PG&E and SCE, who must collaborate and propose the same approach and present this in nearly identical advice letters**;
- Will not require presentation of individual customer propane and/or wood bills as an eligibility criteria, but rather **will be based on modeled customer costs and generalized assumptions, which may be reviewed and updated periodically to adjust the approach, as needed**;
- Will be **offered for an initial period of three years to each household receiving appliance upgrades, with a cost of $500 per household as a starting point**; and
- Will **consider likely rebound effects and comfort needs, particularly amongst the poorest households that may have severely curtailed propane usage** for water and/or space heating due to high costs.

PG&E Gas and Electric
Advice Filing List
General Order 96-B, Section IV

AT&T
Albion Power Company
Alcantar & Kahl LLP

Alta Power Group, LLC
Anderson & Poole

Atlas ReFuel
BART

Barkovich & Yap, Inc.
P.C. CalCom Solar
California Cotton Ginners & Growers Assn
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Los Angeles County Integrated Waste Management Task Force
Los Angeles Dept of Water & Power
MRW & Associates
Manatt Phelps Phillips
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Modesto Irrigation District
Morgan Stanley
NLine Energy, Inc.
NRG Solar

Office of Ratepayer Advocates
OnGrid Solar
Pacific Gas and Electric Company

Pioneer Community Energy
Praxair
Regulatory & Cogeneration Service, Inc.
SCD Energy Solutions

SCE
SDG&E and SoCalGas

SPURR
San Francisco Water Power and Sewer
Seattle City Light
Sempra Utilities
Southern California Edison Company
Southern California Gas Company
Spark Energy
Sun Light & Power
Sunshine Design
Tecogen, Inc.
TerraVerde Renewable Partners
Tiger Natural Gas, Inc.

TransCanada
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Western Manufactured Housing Communities Association (WMA)
Yep Energy