

PUBLIC UTILITIES COMMISSION
505 Van Ness Avenue
San Francisco CA 94102-3298



Pacific Gas & Electric Company
ELC (Corp ID 39)
Status of Advice Letter 6631E
As of April 17, 2023

Subject: Measurement and Evaluation Study Proposal and Budget for PG&E's E-ELEC Rate,
Pursuant to D.21-11-016

Division Assigned: Energy

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PUBLIC UTILITIES COMMISSION
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June 30, 2022

Advice 6631-E

(Pacific Gas and Electric Company ID U 39 E)

Public Utilities Commission of the State of California

**Subject: Measurement and Evaluation Study Proposal and Budget for PG&E's
E-ELEC Rate, Pursuant to D.21-11-016**

Purpose

The purpose of this advice letter (AL) is to submit Pacific Gas and Electric Company's (PG&E) proposed plan and budget for the measurement and evaluation (M&E) study of the E-ELEC rate.¹

This AL also outlines a proposed timeline of deliverables including a proposal to extend the delivery date of the M&E study from 14 months to 18 months due to the requirement in Decision (D.) 21-11-016 (or "Decision") to consider an ex ante sensitivity analysis and to address additional research topics introduced during the M&E workshop process.

Background

On November 18, 2021, the California Public Utilities Commission (CPUC or Commission) issued the Decision in PG&E's 2020 General Rate Case Phase II (GRC II) proceeding.² In the Decision, the Commission approved the Residential Rate Design Settlement Agreement (Settlement).³ As part of this settlement, Settling Parties agreed to the development of a formal M&E study connected to the launch of Schedule E-ELEC that would provide key information regarding customers who engage in electrification efforts, which could then be used to inform both programmatic enhancements and rate design adjustments.⁴ As described in the Settlement, the Settling Parties agreed to have

¹ As mentioned in PG&E's July 16, 2020 proposed Schedule E-ELEC Rate Design (A.19-11-019), "E-ELEC" is the interim name for this un-tiered TOU rate with a fixed charge. PG&E intends to rename this schedule upon completion of customer research around meaningful rate plan names.

² Decision Adopting Marginal Cost Revenue Allocation, and Rate Design for PG&E, A.19-11-019, November 18, 2021

³ D.21-11-016, OP 16, p. 168

⁴ Motion of PG&E for Adoption of Residential Rate Design Supplemental Settlement Agreement, March 29, 2021. The Settling Parties are PG&E, The Utility Reform Network (TURN), Public

a workshop within 90 days of the effective date of the Decision to define the size, scope, and deliverables of the M&E study. Moreover, the Decision required that the workshop also discuss and consider an *ex ante* sensitivity analysis.⁵ The Decision also directed PG&E to propose an M&E plan and budget through a Tier 3 Advice Letter after the workshop.⁶

A. PG&E's February 16, 2022 E-ELEC M&E Workshop ("M&E Workshop")

As described in the Decision, the Settlement proposed that PG&E host two workshops with the following timeline and objectives:

- Workshop #1: Within 90 days of the effective date of the Decision,⁷ a workshop will be held to define the size, scope, and deliverables of the M&E study (e.g., study objectives, number of customers to be included in the sample, potential control group). The workshop should also discuss and consider an *ex ante* sensitivity analysis plan.
- Workshop #2: Approximately one year and 90 days after the implementation of Schedule E-ELEC, a workshop will be held to discuss the results of the proposed M&E study and assess what changes (if any) could be implemented to E-ELEC along with the appropriate mechanism (e.g., increase the fixed charge and lower the volumetric charges via a Rate Design Window or another GRC proceeding).⁸

On February 16, 2022, PG&E hosted the first M&E Workshop.⁹ In attendance were representatives from Energy Division, Cal Advocates, NRDC, TURN, San Diego Gas & Electric (SDG&E), and Technology and Equipment for Clean Heating (TECH). The agenda of the workshop included the following:

- Workshop objectives and timeline
- Near-term M&E study actions¹⁰
- Discussion of the five M&E settlement topics:

Advocates Office (Cal Advocates), Center for Accessible Technology (CforAT), Western Manufactured Housing Communities Association (WMA), Joint Community Choice Aggregators (Joint CCAs), Natural Resource Defense Council (NRDC), Sierra Club, Solar Energy Industries Association (SEIA), and California Solar and Storage Association (CALSSA).

⁵ D.21-11-016, p. 112

⁶ D.21-11-016, p. 116.

⁷ The Decision was effective on 11/18/2021. The workshop took place February 16, 2022, exactly 90 days from the effective date of the Decision.

⁸ As discussed further in this advice letter (Section C. Timeline and Deliverables), PG&E proposes to hold Workshop #2 19 months after full implementation of E-ELEC.

⁹ Appendix, Attachment 1, PG&E's E-ELEC External Stakeholders' Workshop Notice and Considerations for the 5 M&E topics, February 10, 2022

¹⁰ During the workshop, PG&E presented a slide with four action steps in the near term prior to filing the Tier 3 advice letter: 1) Align on the research questions, 2) Confirm the data source and its availability to PG&E, 3) Assign timeline and deliverables, and 4) File an Advice Letter.

- 1) Percentage of customers on building electrification rate (E-ELEC) and other available rates for electrification customers (EV2-A, E-ELEC, and E-TOU-C with all electric baseline), delineating CARE vs. Non-CARE customers
 - 2) Percentage of customers who participated in incentive programs (e.g., BUILD/TECH, SGIP, fuel “switching” through other energy efficiency programs)
 - 3) Which technologies customers are installing and whether installation pre- or post-dated taking service on E-ELEC
 - 4) Load shapes of customers that are on E-ELEC or participate in electrification programs; and
 - 5) Average bill impacts (gas and electricity), pre- vs. post–electrification
- Additional M&E topics: Load impacts and ex ante sensitivity analysis
 - Questions and feedback

The primary objectives of the M&E Workshop were to review PG&E’s approach regarding the five M&E settlement topics and solicit feedback from the participants. During the workshop, participants were mostly in agreement with PG&E’s proposed approach for the M&E study. PG&E received follow-up questions to clarify the scope of the M&E study, such as whether PG&E’s M&E study would include information on other topics like the treatment of Real-Time Pricing (RTP) customers. PG&E addressed these questions and more as described in the Workshop recap sent to the service list on February 16, 2022.¹¹ Moreover, PG&E agreed to address certain topics in its Tier 3 advice letter. These topics are discussed in greater detail in the sections below and include:

- a. Whether the E-ELEC M&E study will be used for RTP and how RTP customers will be treated.
- b. Reporting out on customers with multiple electrification technologies.
- c. Studying load impacts and profiles across other rates besides E-ELEC.
- d. Studying customers that purchase an EV and the overall impact of moving off gasoline while seeing increased electricity costs.
- e. Whether electrifying technologies impact the grid if people are using them during peak times.

Additionally, PG&E provided the participants with a tentative timeline for the implementation of E-ELEC, which includes a June 2022 date for filing this Tier 3 advice letter outlining the M&E plan. PG&E also requested participants to provide any additional comments and feedback by March 15, 2022, but none were received.

¹¹ Appendix, Attachment 2, Email Recap of 2/16 Workshop, Presentation Deck, and Meeting Notes, February 18, 2022.

B. M&E Study Proposal

As described in the Settlement, the goal of this M&E study is to (1) collect key information regarding customers who engage in electrification efforts and to (2) provide this information to interested stakeholders and the Commission, which could then be used to inform both programmatic enhancements and rate design adjustments.

The following section discusses the research objectives outlined in the Settlement as well as additional research objectives proposed by PG&E. Each objective outlines potential research questions, data collection requirements, and additional considerations on evaluation parameters. PG&E also includes a discussion on workshop feedback relative to identified topics. PG&E will put forth the best effort to execute research activities outlined in this plan but acknowledges that evaluation outcomes will be contingent on E-ELEC rate adoption and data availability.

In the M&E Workshop, stakeholders requested information on how PG&E's E-ELEC M&E plan will treat customers who enroll on the Real Time Pricing (RTP) Pilot version of the rate.¹² For M&E purposes, PG&E plans to exclude E-ELEC customers that participate in the residential E-ELEC RTP pilot. This will help PG&E to better quantify and isolate findings specific to the E-ELEC rate and electrification efforts.

Research Objective 1: Percentage of Customers on Building Electrification Rates

This objective will measure the percentages of customers on the building electrification rate (E-ELEC) and other available rates for electrification customers (EV2-A, E-ELEC, E-TOU-C and E1 with all electric baseline). This will inform adoption trends for E-ELEC and customers' interest in E-ELEC as an electrification rate compared to other available single-family residential rates. To the extent possible, PG&E will also analyze the distribution of customers in various subgroups (e.g., Electric Vehicles (EV), Net-Energy-Metering (NEM) for solar only or solar & storage, stand-alone storage, Community Choice Aggregators (CCA), disadvantaged communities, baseline territories, and California Alternate Rates for Energy Program (CARE)).

- a. Main Research Questions:
 - i. What is the overall adoption of E-ELEC, and how does this compare to other open residential electric rates?
 - ii. What is the percentage breakdown of customers on E-ELEC vs. other rates, as well as subgroups within the PG&E territory?
- b. Data Collection—Data elements to be collected and analyzed for this objective may include, but are not limited to:

¹² In the RTP track of A.19-11-019, a joint party settlement agreement has approved an RTP Pilot for residential customers that will offer a version of E-ELEC with fluctuating hourly generation prices. A proposed decision adopting the settlement agreement was issued June 23, 2022. The settlement agreement anticipates an October 2023 start date for the E-ELEC RTP Pilot.

- i. Customers enrolled on the E-ELEC, EV2-A, E-TOU-C all-electric baseline, and E-1 all-electric baseline rate plans
 - ii. Customer subgroup characteristics described above
- c. Additional Considerations:
 - i. Although not specifically called out in the Settlement, PG&E proposes to include all-electric baseline E-1 as an additional group for comparison purposes. This information will provide a more complete view of the number of customers who are receiving an all-electric baseline.

Research Objective 2: Percentage of Customers Who Participated in Incentive Programs

This objective seeks to understand customer uptake of incentive programs that encourage electrification efforts. While incentive programs exist to break down barriers for customer electrification, PG&E would like to understand how often these incentive programs are leveraged and how participation overlaps with E-ELEC and other residential rates. As defined in the Settlement, electrification-related incentive programs will include, at a minimum, Technology and Equipment for Clean Heating (TECH), Self-Generation Incentive Program (SGIP), and fuel substitution though energy efficiency programs. Subject to data availability and relevancy to E-ELEC electrification efforts, PG&E may include additional incentive programs that become known as the rate is implemented. Additionally, PG&E plans to deploy customer surveys to understand electrification costs incurred by customers that are not recovered through incentives. Survey efforts will occur under budget restrictions defined in Section D Table 2 below. Insights from this research can inform future ME&O activities on electrification programs and rates.

- a. Main Research Questions:
 - i. What is the percentage breakdown of customers who participate in electrification-focused incentive programs and what percentage of those customers are enrolled in E-ELEC vs. other residential rates?
 - ii. What costs do customers incur in the electrification process that aren't covered by incentives? What are the total costs of electrification projects to customers (e.g., cost of purchasing technology and installation/renovation costs)?
- b. Data Collection—Data elements to be collected and analyzed for this objective may include, but are not limited to:
 - i. Customer enrollment in incentive programs
 - ii. To the extent possible, types of technology adopted by customers in incentive programs
 - iii. Customer rate data
- c. Additional Considerations:
 - i. Fuel substitution:

- The analysis will focus on fuel “substitution” programs rather than fuel “switching.”¹³ Per CPUC guidance, fuel substitution measures involve projects where all or a portion of the existing energy use is converted from one CPUC-regulated fuel to another CPUC-regulated fuel.¹⁴ Fuel switching measures involve non-utility fuels such as propane or fuel oil.
 - Separately, as no party has identified a specific fuel substitution program, PG&E defines this question as customers who received a rebate from PG&E’s Residential Rebates Program for either electric heat technologies for water and space heating or battery storage.¹⁵
- ii. Self-Generation Incentive Program (SGIP): SGIP provides financial incentives for installations of behind-the-meter (BTM) distributed generation and energy storage technologies to meet customer’s electricity needs. Eligible SGIP technologies currently include storage and various generation technologies (e.g., fuel cells and turbines). Heat pump water heaters (HPWH) are also expected to be eligible around 2023. For this study, SGIP participation will be limited to residential customers who received an incentive for storage and/or a HPWH.
 - iii. Building Initiative for Low Emissions Development (BUILD): The BUILD program¹⁶ is designed to provide technical assistance and incentives for new all-electric low-income residential buildings that reduce GHG emissions. This incentive program focuses on new construction projects but does so at a macro level rather than being equipment specific. Under the BUILD program design, it’s likely that the applicants who initiated renovation and electrification efforts are not the “end users” of the home. Moreover, BUILD projects that require significant remodel or renovations will likely experience significant changes to customer bill and usage patterns as a result of construction efforts and design alterations, in addition to electrifying technologies. For these reasons, PG&E proposes to exclude BUILD.

¹³ The exception to this approach involved determining proxy savings when switching to an electric vehicle from a gasoline vehicle as addressed in more detail below.

¹⁴ <https://www.cpuc.ca.gov/about-cpuc/divisions/energy-division/building-decarbonization/fuel-substitution-in-energy-efficiency>

¹⁵ PG&E is developing a new site to offer residential rebates that will replace the existing PG&E Marketplace.

¹⁶ BUILD incentives are available only to residential buildings that are new construction, a remodel or renovation with 50% or more of the exterior removed or demolished, or an existing building repurposed for housing that was not originally residential. Applicants for this program must have 5 years of development experience and be a private, nonprofit, tribal government, California tribal organization, or public owner or developer of an eligible residential building.

- iv. In response to workshop feedback, PG&E will attempt to analyze technology types and rate adoption across customers in various incentive programs, subject to data availability and incentive program subscription.

Research Objective 3: Technologies Customers Are Installing and Whether Installation Occurred “Pre-” or “Post-” Dated Taking Service on E-ELEC

This objective will summarize the types of technologies customers are installing in the E-ELEC enrollment process as well as the installation timeline. During the workshop, stakeholders expressed interest in understanding customer adoption of multiple electrification technologies. PG&E agrees that some customers will adopt multiple technologies and will attempt to capture this data to the extent possible. However, the same customer may be adopting technologies during different timeframes and may or may not be participating in incentive programs. PG&E underscores the inherent challenges in identifying the specific technologies and installation timeline outside of incentive participation and the E-ELEC enrollment process. Limited customer surveys, within the \$50,000 budget provided in Section D Table 2 below, may also be utilized to further understand the customer journey through technology installation and E-ELEC enrollment.

- a. Main Research Questions:
 - i. What E-ELEC eligible technologies are customers installing?
 - ii. When did customers install E-ELEC eligible technologies and how does that overlap with their E-ELEC enrollment timeline?
- b. Data Collection—Data elements to be collected and analyzed for this objective may include, but are not limited to:
 - i. Technologies used by E-ELEC customers
 - ii. Technology installation dates
- c. Additional Considerations:
 - i. This objective will focus only on technologies that are applicable to the E-ELEC rate (i.e., HPWH, heat pump space heating, battery storage, EVs).
 - ii. PG&E plans to capture technology data and installation date at the time of E-ELEC enrollment. PG&E again notes that it will only be aware of technology installation that occurs “post” E-ELEC enrollment if the customer interacts with PG&E in a way that provides this data (e.g., after enrollment on E-ELEC for having an eligible non-EV electrification technology, the customer later applies to PG&E for an EV charging rebate after purchasing an EV). Customer surveys may also be leveraged to more fully understand this information.

Research Objective 4: Load Shapes (Electricity Load Patterns) of Customers That Are On E-ELEC or Participate in Electrification Programs

This objective will provide insights on customer load patterns for those on E-ELEC or other electrification programs identified in Objective #2. Due to significant overlaps between this research topic and the load impact analysis, PG&E proposes to combine this topic with the load impacts analysis (discussed below in the “Additional Proposed M&E Activities” section).

- a. Main Research Questions:
 - i. What are the load shapes of E-ELEC customers?
 - ii. What are the load shapes of customers identified through electrification programs in Objective #2?
- b. Data Collection—Data elements to be collected and analyzed for this objective may include, but are not limited to:
 - i. Hourly interval data
 - ii. Customer rates and characteristics data
 - iii. Weather data
- c. Additional Considerations:
 - i. Given sufficient sample sizes, PG&E will analyze load profiles at the subgroup level, including varying technologies and customer segments

Research Objective 5: Average Bill Impacts (Gas and Electricity), pre- vs. post-Electrification

This objective will analyze weather-adjusted customer bill impacts before and after adoption of E-ELEC eligible technologies. During the M&E Workshop, stakeholders expressed the need to quantify former gasoline costs for customers who purchased EVs as part of pre-electrification costs. PG&E agrees that while this is a valid point, it will be difficult to measure the exact gasoline costs customers experienced. A potential approach is to utilize existing proxy data such as regional gas prices and miles per gallon metrics to quantify savings on gasoline and subsequent increase in electricity costs due to EV charging. Per workshop feedback, there’s also interest in analyzing price sensitivity associated with E-ELEC customer usage and fixed charges, detailed in the “Additional Proposed M&E Activities” section below. Due to synergies in data collection and analysis, PG&E proposes to combine the bill impacts and price sensitivity analysis.

- a. Main Research Questions:
 - i. What is the bill impact (gas and electric) to customers who’ve adopted E-ELEC eligible electrification technologies?
 - ii. What is the average bill impact after electrification for customers under different rate schedules and technologies from Objective #2?
- b. Data Collection—Data elements to be collected and analyzed for this objective may include, but are not limited to:

- i. Customer billing data
 - ii. Technology installation dates
- c. Considerations:
 - i. “Post-electrification” is defined as after the installation date of any one of the technologies,¹⁷ if the date can be effectively captured.
 - ii. For EV customers, it will be challenging to measure the pre-electrification fuels costs associated with gasoline. Per feedback from the workshop, PG&E will consider proxy data such as regional gas prices and miles per gallon metrics to quantify savings on gasoline.
 - iii. For customers not in E-ELEC or EV2-A, it will be challenging to identify when/what technologies are installed. Therefore, PG&E proposes to rely solely on information that is readily available, for example, a receipt of incentive, as defined in Research Objectives 2 and 3 above.
 - iv. To account for seasonality and completeness, PG&E proposes to analyze a full year of weather-normalized pre- and post-electrification billing data. If available data is limited, PG&E proposes to include customers with at least of nine¹⁸ months of consecutive pre- and post-electrification data.

Additional Proposed M&E Activities: Load impacts analysis and a sensitivity analysis for E-ELEC customers

As described in this section, PG&E received additional requests during the M&E Workshop to assess the impact of E-ELEC on electric grid load (Load Impact Analysis) and to conduct a sensitivity analysis on the E-ELEC rate to understand how bill impacts may differ if the fixed charge was changed (Price Sensitivity Analysis). PG&E describes its approach for both requests below.

a. Load Impact Analysis:

PG&E proposes to conduct a load impact analysis of the E-ELEC rate in accordance with CPUC-approved Load Impact Protocols.¹⁹ The analysis will estimate *ex post* historical load impacts to inform the load response to

¹⁷ For the purpose of this study, PG&E defines electrification as any instance where a household has adopted at least one E-ELEC eligible technology.

¹⁸ In the February 16, 2022 workshop, PG&E initially proposed a minimum 6 months of consecutive data. Upon further consideration, a minimum of 9 months of billing data is more appropriate to cover seasonal differences. For instance, under the 6-month criteria, a customer who adopts electrification technology in May 2023 will require pre-electrification data from Nov 2022- Apr 2023, while post-electrification data will include May 2023 – Oct 2023. The pre-electrification bill impacts will reflect mostly winter charges and will not be comparable to post-electrification bill impacts which will cover mostly summer charges.

¹⁹ Defined in D.08-04-050

E-ELEC as a Time-of-Use (TOU) rate. Results will indicate whether E-ELEC customers shifted load from the prescribed peak hours to off-peak hours in response to peak charges. Since analyses of customer load profiles will be embedded in the load impacts analysis, findings will also inform the research questions defined in Objective #4 above. Additionally, load impact evaluations conducted in accordance with CPUC Load Impact Protocols typically includes *ex post* and *ex ante* estimates. However, it is PG&E's understanding that *ex ante* load impacts, which includes an 11-year forecast under pre-defined utility and CAISO peak weather conditions, are not a requirement for the E-ELEC M&E study. To confirm, the *ex ante* "impacts" described in this section are different than the *ex ante* "sensitivity analysis" described in the next section. If impacts are expected to be meaningful, PG&E's annual residential TOU load impact reports²⁰ will include E-ELEC *ex ante* "impacts".

Considerations from Workshop:

1. Per workshop feedback, stakeholders are also interested in studying load impacts and profiles across other rates besides E-ELEC. While the current residential TOU load impact evaluation includes other TOU rates, the challenge will be in identifying customers who adopted electrification enabling technologies but are not on the E-ELEC rate. In alignment with this proposed M&E plan, PG&E will identify and include customers who participate in electrification-focused incentive programs to the extent possible.
2. Workshop stakeholders were also interested in understanding whether electrifying technologies will impact the grid and if customers are using the technology during peak times. Since the load impacts analysis will be conducted using meter-level data, it will not be practical to parse out individual technology's load. Although, peak usage for specific technologies will not be available, the M&E analysis will estimate total load impacts during peak hours in response to the TOU rate. As noted in Objective #4, PG&E will attempt to analyze load profiles at the subgroup level, including varying technologies and customer segments, subject to data availability and statistically significant sample sizes.

b. Price Sensitivity Analysis

²⁰ Produced according to CPUC-approved Load Impact Protocols defined in D.08-04-050 and filed annually in April.

Per the Decision and comments from the February 2022 workshop, CPUC also expressed interest in an *ex ante* sensitivity study. PG&E interprets this sensitivity study to be an analysis of the variability in customer net bill savings under various fixed charge scenarios (i.e., would the customer experience cost savings if the fixed charge on E-ELEC were to increase or decrease). As an extension of the bill impacts analysis, the observed usage data from customers on E-ELEC can be used to model customer net bill savings under higher or lower fixed charge rates. These findings will inform future rate design adjustments such as whether the fixed charge might need to be modified. To confirm, this analysis is separate and distinct from the *ex ante* load impacts discussed in the above “Load Impact Evaluation” section, which focuses on forecasting customer load impacts rather than price sensitivity.

In addition, PG&E will attempt to analyze net bill impacts of electrification customers who are not enrolled in E-ELEC rate and compare their post-electrification bills with the expected bills as if E-ELEC were chosen. This will help PG&E understand whether E-ELEC is the optimal rate for electrification customers. Where possible, PG&E will conduct the analysis by technology types to understand if cost impacts vary by technology adoption.

C. Timeline and Deliverables

Pursuant to CPUC Rule 16.6, PG&E plans to submit a formal extension request to the Executive Director by July 8, 2022. On June 22, 2022, PG&E notified the Settling Parties of its intent to submit a formal extension request. For completeness, this section discusses timeline and deliverables for the M&E study including an extension of the original 14-month timeline proposed in the Settlement. See Table 1 below.

Per the Settlement, the results from the M&E study were estimated to be available approximately one year and 60 days (14 months) after E-ELEC is available. Additionally, a second workshop was estimated to take place approximately one year and 90 days (15 months) after E-ELEC is available. The purpose of the second workshop will be to discuss the results of the M&E study and assess what programmatic or rate-related changes (if any) could be implemented, along with the appropriate mechanism (e.g., increase the fixed charge and lower the volumetric charges via a Rate Design Window or another GRC proceeding). However, in light of both the requirement from the Decision “to discuss and consider an *ex ante* sensitivity analysis” and the request from interested stakeholders that resulted in the development of the additional M&E activities described above, PG&E plans to request to extend the M&E deliverables timeline such that M&E results will be made available 18 months after the E-ELEC is fully

implemented (4-month extension). Subsequently, the second workshop would take place approximately 19 months after E-ELEC is fully implemented.

While PG&E expects that findings on Objectives 1-3 can be made available to stakeholders within the 1 year and 60-day timeline (as described in the Settlement), the combined topics of Objective 4 (load profiles) and 5 (bill impacts) with load impacts and price sensitivity require much more time to complete given the more complex data analysis and modeling. Moreover, to address the additional considerations from the M&E Workshop on these topics, account for seasonality in billing and load data, and allow sufficient time for a complete analysis, PG&E believes 18 months is needed to deliver meaningful findings on load impacts, bill impacts, and price sensitivity. Rather than splitting the deliverables, PG&E proposes to deliver all M&E findings at the 18th month mark to provide stakeholders with a holistic view. Additionally, extending this timeline will also enable the M&E study to better capture informative results with more statistically significant sample sizes, especially considering the interest in subgroups and technology-specific findings.

Additionally, PG&E expects to deliver the E-ELEC rate in two phases.²¹ In Phase 1, the base rate (i.e., standalone E-ELEC) is scheduled to be available in Q4 of 2022. In Phase 2, the remaining components of E-ELEC (e.g., E-ELEC with existing NEM and NEM2 rates) is scheduled to be available in Q4 of 2023.²² PG&E believes that the effectiveness of the M&E study is contingent on the E-ELEC rate being implemented with the existing NEM and NEM2 rates, and therefore proposes to start the data collection for the M&E study after the completion of Phase 2.²³

²¹ PG&E notes that this timeline may be impacted by other regulatory proceedings and Commission decisions and will keep interested stakeholders and the Commission apprised.

²² This implementation is being split into two phases due to the constraints resulting from the volume of changes to the billing system that are needed due to recent and pending Commission decisions combined with the constraints due to PG&E's multi-year billing system upgrade program. PG&E has briefed Energy Division staff on these constraints. The Residential Settlement agreement states: "PG&E will begin and complete the programming of this new rate as soon as practicable, given the large number of rate changes already scheduled and expected to be in progress at the time a decision is issued. The parties agree that this settlement shall not preclude any party's right to solicit action from the Commission to address unreasonable delays in implementation of rate changes. Prior to contacting the Commission regarding the timing of PG&E's implementation of the rate changes, Parties agree to meet and confer with PG&E on the status of implementation and discuss options for resolution." P.13.

²³ At this time, it is unclear when E-ELEC with the forthcoming Net Billing Tariff (NBT) will be available, but PG&E anticipates that E-ELEC with NBT will become available no earlier than 12 months from the NBT final decision. However, PG&E plans to commence the data collection for the M&E study once E-ELEC with the existing net energy metering tariffs (i.e., NEM and NEM2) have been fully implemented in PG&E's billing system.

Table 1: Approximate Timeline for E-ELEC M&E Study Activities

	Activity	Settlement Timeline	New Proposed Timeline	Change
1	Data Collection	1 full year (12 months) following rate implementation	1 full year (12 months) following full rate implementation ^(a)	n/a
2	M&E report becomes available	1 year + 60 days (14 months) after rate implementation	18 months After full rate implementation	Extend by 4 months
3	2 nd M&E workshop to discuss findings	1 year + 90 days (15 months) after rate implementation	19 months after full rate implementation	Extend by 4 months
(a) As described above, PG&E proposes to start the data collection for the M&E study after Phase 2 of E-ELEC is implemented.				

D. M&E Study Proposed Budget

The table below outlines the cost estimates for M&E activities as required by the Settlement as well as additional research topics. PG&E notes that it intends to utilize existing GRC funding to support these activities. Moreover, the budget outlined below serves as an estimate and should not be considered final. The final costs are contingent on the final scope of the M&E study (as determined through this advice letter process), the retention of a 3rd party evaluation consultant, and the development of customer surveys.

Table 2: Estimated costs for E-ELEC M&E Study

	Activity	Estimates
1	3rd Party Evaluator Costs (includes Settlement Topics #1-5, Load impacts, and Price Sensitivity Analysis)	\$175,000.00
2	Internal PG&E Labor Costs (M&E)	\$75,000.00
3	Customer Survey Development and Execution	\$50,000.00
Total M&E Related Costs		\$300,000.00

E. Conclusion

PG&E's E-ELEC M&E study aims to collect key insights on the overall landscape of customer electrification and E-ELEC rate-specific findings after the first year of E-ELEC availability. The study objectives defined by the Settlement and additional research on load impacts and price sensitivity will inform adoption trends, customer

load patterns, customer bill impacts, and rate design adjustment needs. For comprehensive and informative results, PG&E is proposing to extend the M&E report delivery timeline to 18 months after full rate implementation. A second workshop discussing key insights will then be held 19 months after implementation.

Protests

Anyone wishing to protest this submittal may do so by letter sent electronically via E-mail, no later than July 20, 2022, which is 20 days after the date of this submittal. Protests must be submitted to:

CPUC Energy Division
ED Tariff Unit
E-mail: EDTariffUnit@cpuc.ca.gov

The protest shall also be electronically sent to PG&E via E-mail at the address shown below on the same date it is electronically delivered to the Commission:

Sidney Bob Dietz II
Director, Regulatory Relations
c/o Megan Lawson
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 and 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

Pursuant to General Order (GO) 96-B, Rule 5.3, and OP 16 of D.21-11-016, this advice letter is submitted with a Tier 3 designation. PG&E requests that this Tier 3 advice submittal become effective upon Commission approval.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically to parties shown on the attached list and the parties on the service list for A.19-11-019. 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 SUMMARY



ENERGY UTILITY

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

Company name/CPUC Utility No.: Pacific Gas and Electric Company (ID U39 E)

Utility type:

- ELC GAS WATER
 PLC HEAT

Contact Person: Annie Ho

Phone #: (415) 973-8794

E-mail: PGETariffs@pge.com

E-mail Disposition Notice to: AMHP@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) #: 6631-E

Tier Designation: 3

Subject of AL: Measurement and Evaluation Study Proposal and Budget for PG&E's E-ELEC Rate, Pursuant to D.21-11-016

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.21-11-016

Does AL replace a withdrawn or rejected AL? If so, identify the prior AL:

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:

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: N/A

Service affected and changes proposed¹: N/A

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

¹Discuss in AL if more space is needed.

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

California Public Utilities Commission
Energy Division Tariff Unit Email:
EDTariffUnit@cpuc.ca.gov

Contact Name: Sidnev Bob Dietz II. c/o Megan Lawson
Title: Director, Regulatory Relations
Utility/Entity Name: Pacific Gas and Electric Company

Telephone (xxx) xxx-xxxx: (415)973-2093
Facsimile (xxx) xxx-xxxx: (415)973-3582
Email: PGETariffs@pge.com

Contact Name:
Title:
Utility/Entity Name:

Telephone (xxx) xxx-xxxx:
Facsimile (xxx) xxx-xxxx:
Email:

CPUC
Energy Division Tariff Unit
505 Van Ness Avenue
San Francisco, CA 94102

Clear Form

Attachment 1

**PG&E's E-ELEC External Stakeholders' Workshop
Notice and Considerations for the 5 M&E topics,
February 10, 2022**

From: [Lam, Joshua](#)

To: [JArmstrong@seia.org](#); [Douglass@EnergyAttorney.com](#); [William.K.Briggs@sce.com](#); [SLCohen@SDGE.com](#); [KernTax@KernTaxPayers.org](#); [Paula.Fernandez@sfcityattv.org](#); [jtv@cpuc.ca.gov](#); [Matthew@TURN.org](#); [Rita.Liotta@navy.mil](#); [AMejia-Cunningham@nrdr.org](#); [Jennifer@UtilityAdvocates.org](#); [TLindl@KeyesFox.com](#); [NSheriff@Buchalter.com](#); [LRafii@Buchalter.com](#); [john@ohmconnect.com](#); [EPoole@adplaw.com](#); [Slocum, Gail \(LAW\)](#); [SSMyers@att.net](#); [Dan@CalSLA.org](#); [Katherine.Ramsey@SierraClub.org](#); [service@cforat.org](#); [CESA_Regulatory@StorageAlliance.org](#); [cmkehrrein@ems-ca.com](#); [Brad@calssa.org](#); [RL@esLawFirm.com](#); [KMills@cbf.com](#); [ATrowbridge@DayCarterMurphy.com](#); [ATrowbridge@DayCarterMurphy.com](#); [ATrowbridge@DayCarterMurphy.com](#); [Barbara.Barkovich](#); [cmw@cpuc.ca.gov](#); [Schlemer, Erica \(LAW\)](#); [Fred@NWEnergy.org](#); [regulatory@mceCleanEnergy.org](#); [Paul@BarkovichAndYap.com](#); [Ryan.Mann@Enel.com](#); [MRW@MRWassoc.com](#); [khojasteh.davoodi@navy.mil](#); [larry.r.allen5.civ@us.navy.mil](#); [CPUCdockets@EQ-research.com](#); [bdickman@newgenstrategies.net](#); [JSchlesinger@KeyesFox.com](#); [samantha.reifer@scalemicrogridsolutions.com](#); [Case.Admin@sce.com](#); [Hank.Elgin](#); [priscilla.medrano@sce.com](#); [DCheng@TURN.org](#); [ANHammer@sdge.com](#); [CentralFiles@SempraUtilities.com](#); [gmorien@sdge.com](#); [kbarlow@sdge.com](#); [RFulton@SDGE.com](#); [CentralFiles@SempraUtilities.com](#); [Malowney, Brittany A](#); [JWan@PeninsulaCleanEnergy.com](#); [MRutherford@PeninsulaCleanEnergy.com](#); [Marc.Monbouquette@enel.com](#); [Poonum.Agrawal@SVCleanEnergy.org](#); [pmu@cpuc.ca.gov](#); [ase@cpuc.ca.gov](#); [bg3@cpuc.ca.gov](#); [cs8@cpuc.ca.gov](#); [ch6@cpuc.ca.gov](#); [dbp@cpuc.ca.gov](#); [jmo@cpuc.ca.gov](#); [lt3@cpuc.ca.gov](#); [mf5@cpuc.ca.gov](#); [myg@cpuc.ca.gov](#); [nc4@cpuc.ca.gov](#); [pvo@cpuc.ca.gov](#); [pwl@cpuc.ca.gov](#); [rys@cpuc.ca.gov](#); [tgz@cpuc.ca.gov](#); [wr1@cpuc.ca.gov](#); [xl2@cpuc.ca.gov](#); [JKantor@KeyesFox.com](#); [Smith, Brian Arthur](#); [Buckley, Catherine](#); [McRoberts, Chris](#); [Wu, Josephine](#); [Alcantara, Karen \(Law\)](#); [Phung, Sarah](#); [Woo, shirley \(law\)](#); [Maria@OhmConnect.com](#); [Rick.Brown@TerraVerde.energy](#); [VidhyaPrabhakaran@dwt.com](#); [manal@caliberstrat.com](#); [Pabst@WestRoadStrategies.com](#); [RegRelCPUCCases](#); [Law CPUCCases](#); [proceedings@mail.com](#); [tedmister@ebce.org](#); [Alison@LTMuniConsultants.com](#); [cathy@barkovichandyp.com](#); [ssoldavini@mcecleanenergy.org](#); [SChen@mceCleanEnergy.org](#); [philm@scdenery.com](#); [klc@alcantar-law.com](#); [Carmen@Recurve.com](#); [lisa.harrison@cco.sccgov.org](#); [Luisa.Elkins@SanJoseCa.gov](#); [Taylor.knecht@sanjoseca.gov](#); [Berlin@SusieBerlinLaw.com](#); [Christina.Jaworski@vta.org](#); [NReardon@SonomaCleanPower.org](#); [mccann@mcubed-econ.net](#); [Alexiar@PioneerCommunityEnergy.ca.gov](#); [chermel@politico.com](#); [ehv@cpuc.ca.gov](#); [MBoccardo@WestCoastAdvisors.com](#); [Regulatory@BraunLegal.com](#); [blaising@braunlegal.com](#); [Steven@Moss.net](#); [KJohnston@cbf.com](#); [mw7@cpuc.ca.gov](#); [Pham, Natalie](#); [Starks, Justin](#); [Moseley, Susan](#)

Subject: PG&E's E-ELEC External Stakeholders" Workshop Notice

Date: Thursday, February 10, 2022 4:54:12 PM

Attachments: [Settlement Study 5 Topics.pdf](#)

Settling Parties,

In preparation for the E-ELEC M&E Study Workshop next Wednesday 2/16, please note the following:

1. **ACTION: REPLY** to confirm your attendance by **COB Monday, 2/14**.
2. We've provided considerations for each of the 5 topics from the Settlement (see attached) and would like to have you review and have your feedback ready for discussion at the workshop.



Thanks,

Joshua Lam

Rate Case Coordinator | Regulatory Affairs

Pacific Gas and Electric Company
77 Beale Street, San Francisco, CA 94105
510.917.0582 | JKLU@pge.com

From: Lam, Joshua

Sent: Tuesday, February 1, 2022 4:01 PM

To: JArmstrong@seia.org; Douglass@EnergyAttorney.com; William.K.Briggs@sce.com; SLCohen@SDGE.com; KernTax@KernTaxPayers.org; Paula.Fernandez@sfcityatty.org; jtv@cpuc.ca.gov; Matthew@TURN.org; Rita.Liotta@navy.mil; AMejia-Cunningham@nrdc.org; Jennifer@UtilityAdvocates.org; TLindl@KeyesFox.com; NSheriff@Buchalter.com; LRafii@Buchalter.com; john@ohmconnect.com; EPoole@adplaw.com; Slocum, Gail (LAW) <GLSg@pge.com>; SSMyers@att.net; Dan@CalSLA.org; Katherine.Ramsey@SierraClub.org; service@cforat.org; CESA_Regulatory@StorageAlliance.org; cmkehrrein@ems-ca.com; Brad@calssa.org; RL@esLawFirm.com; KMills@cfbf.com; ATrowbridge@DayCarterMurphy.com; ATrowbridge@DayCarterMurphy.com; ATrowbridge@DayCarterMurphy.com; barbara@barkovichandyap.com; cmw@cpuc.ca.gov; Schlemer, Erica (LAW) <EJSX@pge.com>; Fred@NWEnergy.org; regulatory@mceCleanEnergy.org; Paul@BarkovichAndYap.com; Ryan.Mann@Enel.com; MRW@MRWassoc.com; khojasteh.davoodi@navy.mil; larry.r.allen5.civ@us.navy.mil; CPUCdockets@EQ-research.com; bdickman@newgenstrategies.net; JSchlesinger@KeyesFox.com; samantha.reifer@scalemicrogridsolutions.com; Case.Admin@sce.com; hank.elgin@sce.com; priscilla.medrano@sce.com; DCheng@TURN.org; ANHammer@sdge.com; CentralFiles@SempraUtilities.com; gmorien@sdge.com; kbarlow@sdge.com; RFulton@SDGE.com; CentralFiles@SempraUtilities.com; BMalowney@sdge.com; JWaen@PeninsulaCleanEnergy.com; MRutherford@PeninsulaCleanEnergy.com; Marc.Monbouquette@enel.com; Poonum.Agrawal@SVCleanEnergy.org; pmu@cpuc.ca.gov; ase@cpuc.ca.gov; bg3@cpuc.ca.gov; cs8@cpuc.ca.gov; ch6@cpuc.ca.gov; dbp@cpuc.ca.gov; jmo@cpuc.ca.gov; lt3@cpuc.ca.gov; mf5@cpuc.ca.gov; myg@cpuc.ca.gov; nc4@cpuc.ca.gov; pvo@cpuc.ca.gov; pwl@cpuc.ca.gov; rys@cpuc.ca.gov; tgz@cpuc.ca.gov; wr1@cpuc.ca.gov; xl2@cpuc.ca.gov; JKantor@KeyesFox.com; Smith, Brian Arthur <B2SG@pge.com>; Buckley, Catherine <yxt5@pge.com>; McRoberts, Chris <C7MO@pge.com>; josephine.wu@pge.com; Lam, Joshua <JKLU@pge.com>; karen.alcantara@pge.com; Phung, Sarah <S9PA@pge.com>; Shirley.Woo@pge.com; Maria@OhmConnect.com; Rick.Brown@TerraVerde.energy; VidhyaPrabhakaran@dwt.com; manal@caliberstrat.com; Pabst@WestRoadStrategies.com; RegRelCPUCcases <RegRelCPUCcases@pge.com>; CPUCcases@pge.com; proceedings@mail.com; tedmister@ebce.org; Alison@LTMuniConsultants.com; cathy@barkovichandyap.com; ssoldavini@mcecleanenergy.org; SChen@mceCleanEnergy.org; philm@scdenergy.com; klc@alcantar-law.com; Carmen@Recurve.com; lisa.harrison@cco.sccgov.org; Luisa.Elkins@SanJoseCa.gov; Taylor.knecht@sanjoseca.gov; Berlin@SusieBerlinLaw.com; Christina.Jaworski@vta.org; NReardon@SonomaCleanPower.org; mccann@mcubed-econ.net; Alexiar@PioneerCommunityEnergy.ca.gov; cbermel@politico.com; ehv@cpuc.ca.gov; MBoccardo@WestCoastAdvisors.com; Regulatory@BraunLegal.com; blaising@braunlegal.com; Steven@Moss.net; KJohnston@cfbf.com; mw7@cpuc.ca.gov; Pham, Natalie <NNN1@pge.com>; Starks, Justin <JN18@pge.com>; Moseley, Susan <S4MR@pge.com>

Subject: PG&E's E-ELEC External Stakeholders' Workshop Notice

Dear Parties of PG&E's 2020 GRC Phase II:

Pursuant to Ordering Paragraph 16 of Decision 21-11-016 and the Residential Rate Design Settlement, PG&E is hosting a workshop on E-ELEC. This workshop is scheduled for Wednesday, February 16 at 1 PM – 3 PM. Call information is below.

As agreed in the Residential Rate Design Settlement, the objectives of this workshop are as follows:

- Purpose – To define the size, scope, and deliverables of the M&E study (e.g. study objectives, number of customers to be included in the sample, potential control group).
- Key Information to be Collected – To be determined at the workshop but may include information on: (a) the percentage of customers on building electrification rates (EV2, E-ELEC, and E-TOU-C with all electric baseline, CARE vs. Non-CARE); (b) the percentage of customers who participated in incentive programs (e.g. BUILD/TECH, SGIP, fuel “switching” through other energy efficiency programs); (c) what technologies customers are installing and whether installation pre- or post-dated taking service on E-ELEC; (d) load shapes of customers that are on E-ELEC or participate in electrification programs; and (e) average bill impacts (gas and electricity), pre- vs. post – electrification.

PG&E looks forward to the opportunity to foster discussion with parties at the workshop.

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Or call in (audio only)

[+1 415-906-0873,740699724#](tel:+14159060873740699724) United States, San Francisco

Phone Conference ID: 740 699 724#

[Find a local number](#) | [Reset PIN](#)

Thanks,

Joshua Lam

Rate Case Coordinator | Regulatory Affairs

Pacific Gas and Electric Company

77 Beale Street, San Francisco, CA 94105

510.917.0582 | JKLU@pge.com



Settlement Study: 5 Topics



#1: % of customers on building electrification rates (EV2-A, E-ELEC, and E-TOU-C with all electric baseline, CARE vs. Non-CARE)



#2: % of customers who participated in incentive programs (e.g., BUILD/TECH, SGIP, fuel switching through other energy efficiency programs)



#3: What technologies are customers installing and whether installation pre- or post-dated taking service on E-ELEC



#4: Load shapes of customers that are on E-ELEC or participate in electrification programs



#5: Average bill impacts (gas and electricity), pre- vs. post-electrification

Considerations for M&E Study (Per Each Study Topic)

- N/A
1. For SGIP eligibility, focus on customers who install storage and HPWH
 2. What are other “energy efficiency programs” or incentive programs beyond those called out in the Settlement?
 3. Apart from BUILD/TECH, focus on the information that customers provide directly to PG&E
1. Focus only on the eligible technologies specific to the E-ELEC rate
 2. For E-ELEC, capture date and technology installation information at the time of enrollment to address “pre” and “post” installation
1. For consistency, focus on the programs defined in topic #2 above to meet the definition of “electrification programs”
1. For E-ELEC, the starting point of the pre- vs. post analysis to be based on when customers state that they install technology, not when they enrolled in the rate
 2. For all other single-family rates beyond E-ELEC, utilize the customer information provided to identify or approximate date of installation (e.g., rebate information)

Advice 6631-E
June 30, 2021

Attachment 2

**Email Recap of 2/16 Workshop, Presentation Deck, and
Meeting Notes, February 18, 2022**

From: Lam, Joshua <JKLU@pge.com>
Sent: Friday, February 18, 2022 10:33 AM
To: JArmstrong@seia.org; Douglass@EnergyAttorney.com; William.K.Briggs@sce.com;
SLCohen@SDGE.com; KernTax@KernTaxPayers.org; Paula.Fernandez@sfcityatty.org;
jtv@cpuc.ca.gov; Matthew@TURN.org; Rita.Lioita@navy.mil; AMejia-Cunningham@nrdc.org;
Jennifer@UtilityAdvocates.org; TLindl@KeyesFox.com; NSheriff@Buchalter.com;
LRafii@Buchalter.com; john@ohmconnect.com; EPoole@adplaw.com; Slocum, Gail (LAW)
<GLSg@pge.com>; SSMyers@att.net; Dan@CalSLA.org; Katherine.Ramsey@SierraClub.org;
service@cforat.org; CESA_Regulatory@StorageAlliance.org; cmkehrrein@ems-ca.com;
Brad@calssa.org; RL@esLawFirm.com; KMills@cfbf.com; ATrowbridge@DayCarterMurphy.com;
ATrowbridge@DayCarterMurphy.com; ATrowbridge@DayCarterMurphy.com; Barbara Barkovich
<barbara@barkovichandyap.com>; cmw@cpuc.ca.gov; Schlemmer, Erica (LAW) <EJSX@pge.com>;
Fred@NWEnergy.org; regulatory@mceCleanEnergy.org; Paul@BarkovichAndYap.com;
Ryan.Mann@Enel.com; MRW@MRWassoc.com; khojasteh.davoodi@navy.mil;
larry.r.allen5.civ@us.navy.mil; CPUCdockets@EQ-research.com; bdickman@newgenstrategies.net;
JSchlesinger@KeyesFox.com; samantha.reifer@scalemicrogridsolutions.com; Case.Admin@sce.com;
hank.elgin@sce.com; priscilla.medrano@sce.com; DCheng@TURN.org; ANHammer@sdge.com;
CentralFiles@SempraUtilities.com; gmorien@sdge.com; kbarlow@sdge.com; RFulton@SDGE.com;
CentralFiles@SempraUtilities.com; BMalowney@sdge.com; JWaen@PeninsulaCleanEnergy.com;
MRutherford@PeninsulaCleanEnergy.com; Marc.Monbouquette@enel.com;
Poonum.Agrawal@SVCleanEnergy.org; pmu@cpuc.ca.gov; ase@cpuc.ca.gov; bg3@cpuc.ca.gov;
cs8@cpuc.ca.gov; ch6@cpuc.ca.gov; dbp@cpuc.ca.gov; jmo@cpuc.ca.gov; lt3@cpuc.ca.gov;
mf5@cpuc.ca.gov; myg@cpuc.ca.gov; nc4@cpuc.ca.gov; pvo@cpuc.ca.gov; pwl@cpuc.ca.gov;
rys@cpuc.ca.gov; tgz@cpuc.ca.gov; wr1@cpuc.ca.gov; xl2@cpuc.ca.gov; JKantor@KeyesFox.com;
Smith, Brian Arthur <B2SG@pge.com>; Buckley, Catherine <yxt5@pge.com>; McRoberts, Chris
<C7MO@pge.com>; Wu, Josephine <JWWd@pge.com>; Alcantara, Karen (Law) <KEA4@pge.com>;
Phung, Sarah <S9PA@pge.com>; Woo, shirley (law) <SAW0@pge.com>; Maria@OhmConnect.com;
Rick.Brown@TerraVerde.energy; VidhyaPrabhakaran@dwt.com; manal@caliberstrat.com;
Pabst@WestRoadStrategies.com; RegRelCPUCCases <RegRelCPUCCases@pge.com>; Law CPUC
Cases <LawCPUCCases@pge.com>; proceedings@mail.com; tedmister@ebce.org;
Alison@LTMuniConsultants.com; cathy@barkovichandyap.com; ssoldavini@mcecleanenergy.org;
SChen@mceCleanEnergy.org; philm@scdenergy.com; klc@alcantar-law.com;
Carmen@Recurve.com; lisa.harrison@cco.sccgov.org; Luisa.Elkins@SanJoseCa.gov;
Taylor.knecht@sanjoseca.gov; Berlin@SusieBerlinLaw.com; Christina.Jaworski@vta.org;
NRearson@SonomaCleanPower.org; mccann@mcubed-econ.net;
Alexiar@PioneerCommunityEnergy.ca.gov; cbermel@politico.com; ehv@cpuc.ca.gov;
MBoccardo@WestCoastAdvisors.com; Regulatory@BraunLegal.com; blaising@braunlegal.com;
Steven@Moss.net; KJohnston@cfbf.com; mw7@cpuc.ca.gov; Pham, Natalie <NNN1@pge.com>;
Starks, Justin <JN18@pge.com>; Moseley, Susan <S4MR@pge.com>
Subject: 1st E-ELEC Workshop for M&E Study: PPT Deck & Meeting Notes

Workshop Attendees and Interested Stakeholders,

Thank you to those who attended the 1st E-ELEC Workshop for the M&E Study on Wednesday, February 16th. Attached you will find the following:

1. The Workshop Presentation Deck
2. Meeting Notes (Questions and Comments)

As described during the workshop, the deadline to submit any final comments related to the 5 topics for the M&E study is **March 15, 2022**. Please send all comments and/or questions concerning the M&E Study directly to Natalie.Pham@pge.com.

Thanks,

Joshua Lam

Rate Case Coordinator | Regulatory Affairs

Pacific Gas and Electric Company

77 Beale Street, San Francisco, CA 94105

510.917.0582 | JKLU@pge.com

1ST E-ELEC WORKSHOP (DEFINING M&E STUDY) MEETING MINUTES

Location:	MS Teams
Date:	2/16/2022
Time:	1p – 3p
Facilitator:	Natalie Pham, PG&E

Roll Call¹

Residential Rate Design Settling Parties

PG&E - Present

The Utility Reform Network (TURN) - Present

Natural Resource Defense Council (NRDC) - Present

Public Advocates Office at the CPUC (Cal Advocates) - Present

Other Parties

Energy Division - Present

TECH - Present

SDG&E - Present

Meeting Notes/Recap²

Topic #1: % of customers on building electrification rates...

1. **Q:** What is the research population?

A: For this question, the focus is to provide a static number of all residential customers who are on the specified rates. Therefore, there is no specific research population.

2. **Q:** Will the E-ELEC M&E be used for Real-Time Pricing (RTP)? How will RTP customers be treated? Will we have that detail by June in the advice letter? Please include follow-up even if it is decided not to include it in the advice letter.

A: Thank you for the question. PG&E is working internally to ensure that the two M&E studies are bifurcated accordingly. PG&E will ensure that this is addressed to some degree in the E-ELEC M&E advice letter.

¹ This list is inclusive of only those who stated their presence during the roll call that occurred at the beginning of the meeting.

² Certain questions and responses have been slightly modified or combined for readability.

Topic #2: % of customers who participated in incentive programs...

1. **Q:** Will this question address what percentage of customers move to a new rate?

A: Yes, the goal of the question is to capture all residential customers on single-family rates who participated in an incentive program, irrespective of what electric rate they are on.

2. **Q:** Will the M&E study report out on customers with multiple technologies?

A: Ideally, yes since it is likely that customers will adopt multiple technologies. However, the result will be contingent on the customer selection (i.e., that they actually adopt multiple technologies) and the final M&E design.

3. **Q:** Will these customers, with the technology installed, be studied before and after?

A: Yes, as long as they have the eligible technology installed when they enrolled in the rate. For E-ELEC specifically, this is addressed in Research Topic #3.

Topic #3: What technologies are customers installing and whether installation “pre-” or “post-” dated taking service on E-ELEC

1. **Q:** Will we be comparing to a control group?

A: It is not necessary to use control groups for this research topic, but control groups will apply to research topics #4 and #5.

Topic #4: Load “shapes” of customers that are on E-ELEC or participate in electrification programs”

1. **Q:** Will we see the load impacts and profiles across other rates as well?

A: This research topic addresses both customers who are on the E-ELEC rate and customers on any rate that participate in electrification programs. Therefore, all residential single-family rates should be captured.

2. **Q:** Will it include separation of technologies?

A: We will research the customers who have the eligible technologies, but without sub-metering on each technology, it is not possible to parse out the individual loads. For the purposes of this study, we will be using only the hourly usage from the customer's meter.

3. **Q:** How will this information be used? What do you intend to learn from that?

A: As described in the Residential Settlement Agreement, the purpose of this M&E study is to obtain key information regarding customers who engage in electrification efforts and to provide that information to interested stakeholders and the Commission, which could then be used to inform both programmatic enhancements and rate design. As E-ELEC is the first rate of its kind (i.e., it has a fixed charge), Parties would like to understand items such as customer rate adoption and bill impacts. Depending on what we ultimately decide to require the customer to provide upon E-ELEC enrollment, we may even learn of things like whether the technologies are performing as the manufacturers intended or whether there is a demand

response module installed. However, we also need to be mindful of not creating an unintentional barrier by requiring the customer to complete a lengthy survey before they can enroll on the rate.

4. **Q:** Regarding peak load, if they now have a technology, are they impacting the peak load?

A: The data will be hourly from the customer's meter. However, we will likely not be able to pin down what technology impacted the load shape or profile.

Topic 5: Average bill impacts (gas and electricity), pre- vs. post-electrification

1. **Q:** When customers purchase an EV, they will be moving off gasoline but will see the utility cost going up. How will the M&E study not take into account for (the former car's) gasoline costs?

A: Thank you for the feedback. We will look into substituting Miles Per Gallon as a proxy for range and look at the impact on their load after electrification. PG&E has an existing EV calculator, which may help with getting the proxy data for savings on gasoline and increase in electricity costs.

2. **Q:** Do the electrifying technologies impact the grid if people are using the technology during peak times?

A: Our proposal to do a load impact study in response to the "Ex Ante Sensitivity Analysis" should be able to address this question.

3. **Q:** Can we calculate the change in GHG? If they switch from natural gas to an electric technology? The idea is that they might use off-peak and impact GHG.

A: This M&E study won't be able to specifically measure the impact of the E-ELEC rate vs. other rates on GHG.

Load Impacts & Ex Ante Sensitivity Analysis

1. **Q:** What sample size do you need for load impact analysis?

A: Generally speaking, a decent sample size is 1,000 customers. However, it will depend on the customer attributes (e.g., how varied or homogeneous they are) to make a final determination.

First E-ELEC Workshop (Defining M&E Study)

February 16, 2022





Earthquake

Know the safest places to duck, cover, and hold, such as under sturdy desks and tables.



Fire

Know your exits, escape routes, and evacuation plan. If safe to do so, use your compliant fire extinguisher. Exit the house and call 911.



Active Shooter

Get out, hide out, take out, and call 911.



Medical Emergency

Know who can perform first aid and CPR. Call 911 if you're alone or share your location with the call leader to send help. If you have an AED, ensure you and others in your household know where it's located and how to use it.



Psychological Safety

- ✓ I'm cared for.
- ✓ People have my back and I have theirs.
- ✓ It's safe to take risks.
- ✓ New ideas are welcome.
- ✓ I practice self-care.



Ergonomics

- ✓ Practice **30/30** (every 30 minutes, move & stretch for 30 seconds).
- ✓ Ensure proper ergonomics.
- ✓ Use and update RSI Guard.



Emergency Planning

- ✓ Update emergency contacts via *PG&E@Work for Me*.
- ✓ Create/update a personal emergency preparedness plan.



COVID-19

- ✓ Maintain at least 6' distance where possible.
- ✓ Wear your mask.
- ✓ Wash hands frequently.
- ✓ Visit COVID-19 employee site for latest updates and tips.



Roll Call

Settling Parties

- PG&E
- The Utility Reform Network (TURN)
- Public Advocates Office at the CPUC (Cal Advocates)
- Center for Accessible Technology (CforAT)
- Western Manufactured Housing Communities Association (WMA)
- Joint Community Choice Aggregators (Joint CCA)
- Natural Resource Defense Council (NRDC)
- Sierra Club
- Solar Energy Industries Association (SEIA)
- California Solar and Storage Association (CALSSA)

Other Parties?

- Please introduce yourself

Overview & Timeline





Overview of Settlement for E-ELEC

What is E-ELEC?

- E-ELEC is an optional Time-of-Use (TOU) rate schedule that is intended to encourage customers to adopt qualifying electric technologies
- E-ELEC would apply to the entirety of a residence's electric usage
- Residential customers would be eligible for E-ELEC if the customer uses electricity for any of:
 1. EV charging
 2. Energy storage charging
 3. Electric heat pumps used for
 - A) water heating and/or
 - B) space conditioning (i.e., heating or cooling)



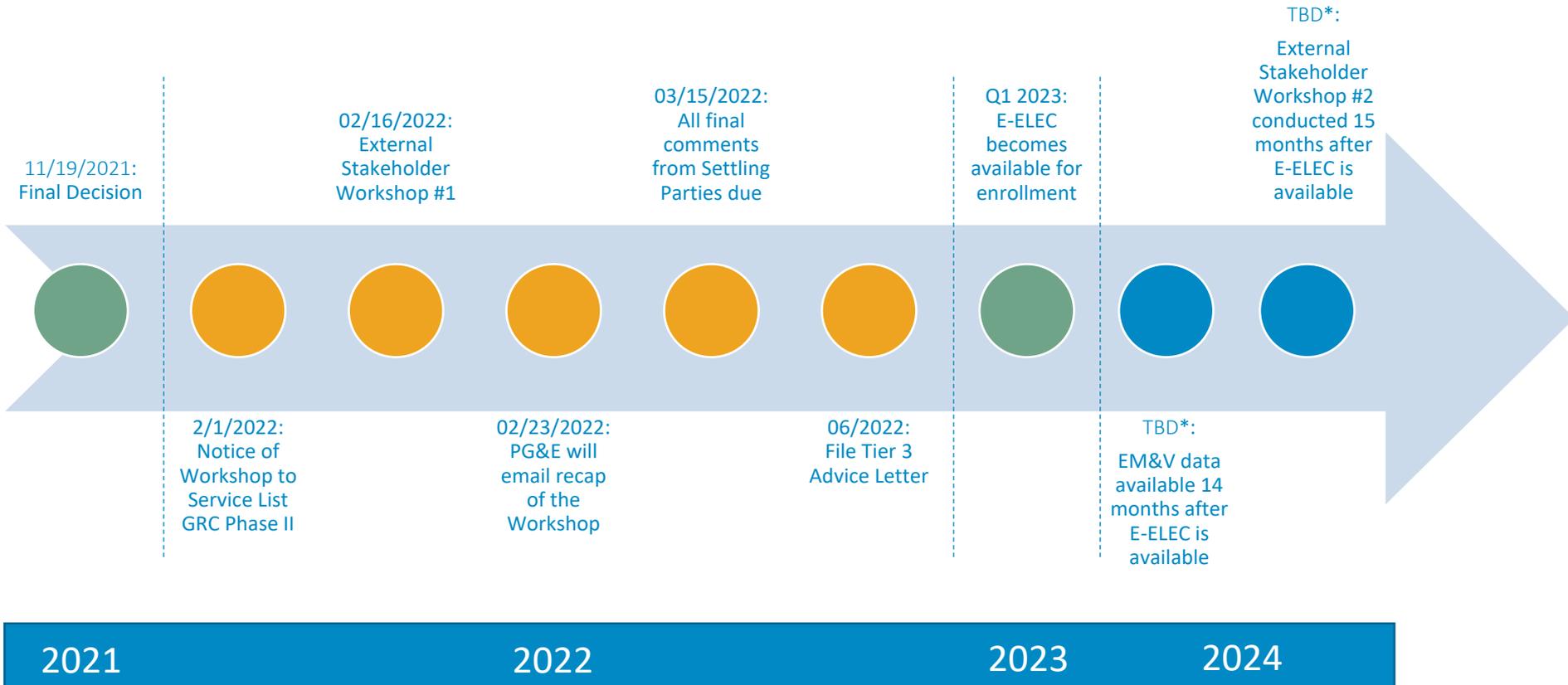
Settlement Approved with Modification

Decision (D.) 21-11-016

1. Requires that the First workshop discuss and consider an “ex ante” sensitivity analysis plan (p. 112)
2. Requires that PG&E file a Tier 3 advice letter that proposes a M&E plan and budget after the M&E plan has been developed by parties through the workshop process (p. 116)
 - *The Commission may approve, reject, or modify the proposed M&E plan and budget depending on the record developed during the consideration of PG&E’s Tier 3 advice letter*
 - *The Commission will dispose of the M&E plan advice letter through a Commission resolution prepared by the Commission’s Energy Division*



Tentative Timeline for E-ELEC



*Date is contingent on when E-ELEC is implemented and is also subject to the Commission's approval of PG&E's forthcoming Tier 3 Advice Letter



Workshop Objectives

Review

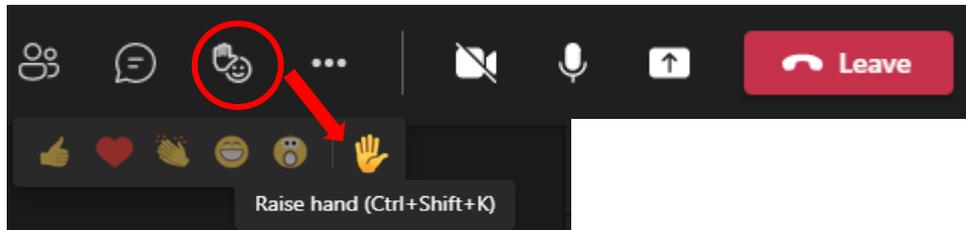
- **5 M&E Topics:** Settlement M&E study objectives

Discuss & Gather Feedback

- Gain understanding of 5 M&E Topics as a group
- PG&E's initial thoughts on each topic
- Solicit feedback topic-by-topic to inform the upcoming Tier 3 Advice Letter

- **Order**
 - Q&A will begin in chronological order of “raised hands”. We will call on you when it’s your turn.

- **Raise hand Function Button**



- **Reminders**
 - Before asking a question, please:
 1. Announce who you are
 2. Which party you speak for or represent



Agenda

Meeting Facilitator Natalie Pham

Note Recorder & Action Items Susan Moseley

Timekeeper & Stretch Reminders Natalie Pham

Topic	Time (in min)
Safety	5
Participant Roll Call, Overview & Timeline	15
Workshop Objectives & How to Ask a Question	5
Near-Term M&E Study Actions	5
Discussion of Settlement Topic #1	10
Discussion of Settlement Topic #2	10
BREAK	5
Discussion of Settlement Topic #3	10
Discussion of Settlement Topic #4	10
Discussion of Settlement Topic #5	10
Load Impacts & Ex Ante Sensitivity Analysis	5
Q&A	20
Conclusion & Next Steps	5

Review of the Five Settlement M&E Topics





Near-Term M&E Study Actions

Step 1: Align on the Research Questions

The methodology must remain flexible until the data is collected and assessed

For E-ELEC, these were pre-determined via the Settlement Agreement

Step 2: Confirm the data source and its availability to PG&E

A meaningful study is dependent on available data (e.g., captured in a system that PG&E can access)

Step 3: Assign timeline and deliverables

Recommendation: Collect data for 12 consecutive months following program implementation. Final report on research findings provided 3 months after data collection

Step 4: File an Advice Letter (ETA- June '22)

% of customers on building electrification rates:

- EV2-A
- E-ELEC
- E-TOU-C with all electric baseline



Considerations:

- Population for Denominator: all residential, single-family

Specific Area/Subgroup(s):

- Electric Vehicles
- NEM (solar only vs. solar-paired storage)
- Stand-alone storage
- CCA
- Climate Zones
- Disadvantaged Communities
- Care vs. Non-CARE

% of customers who participated in incentive programs e.g.:

- BUILD/TECH*
- SGIP
- Fuel *Substitution*** through other energy efficiency programs



*see Appendix slide 29 for more details

**Fuel Substitution is allowed but not Fuel Switching due to changing from regulated to non-regulated fuel

Considerations:

- Programs that do fuel “substitution”, not fuel “switching”
- Define SGIP as residential customers who have storage and/or HPWH

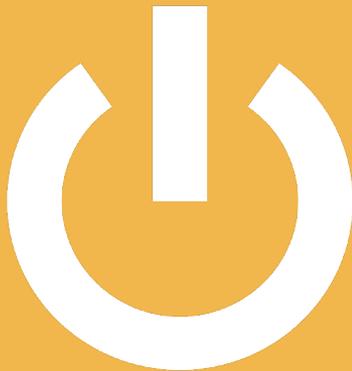
Specific Area/Subgroup(s):

- BUILD/TECH
- SGIP
- Customers who received a rebate for EV, storage or HPWH/HP space conditioning via PG&E Marketplace

Break



What technologies are customers installing and whether installation “pre-” or “post-”dated taking service on E-ELEC



Considerations:

- Focus only on the technologies that are applicable to the E-ELEC rate (i.e., HPWH, battery storage, and EVs)
- Capture the technology and date of installation at the time of enrollment ("pre-" data)
- Limited visibility to capture installation of additional technologies "post" enrollment

Specific Area/Subgroup(s):

- E-ELEC

Load “shapes” of customers that are on E-ELEC or participate in electrification programs



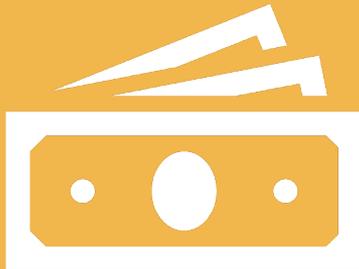
Considerations:

- Will use customer hourly interval data to estimate load profiles
- If sufficient data is available, consider load profiles for various technologies, customer segments, seasonality

Specific Area/Subgroup(s):

- All E-ELEC customers
- Customers who receive applicable rebates through PG&E Marketplace

Average bill impacts (gas and electricity), pre- vs. post-electrification



Considerations:

- To account for seasonality, we plan to only include customers with at least 6 months consecutive data
- “post-electrification” is defined as the date of the technology installation

Specific Area/Subgroup(s):

- Customers enrolled in E-ELEC
- Customers on any rate who install an eligible E-ELEC technology (e.g., received rebate from PG&E Marketplace)



Load Impacts & Ex Ante Sensitivity Analysis

Considerations:

- Provided sufficient sample is available, conduct an annual load impact evaluation in accordance with CPUC-approved Load Impact Protocols as required for TOU rates
- Include ex post (historical load impacts) and ex ante (11-year forecast)
- Based on data availability, an ex ante sensitivity analysis may be included considering:
 1. adoption of technologies
 2. enrollments onto the rate

Specific Area/Subgroup(s):

- Customers enrolled in E-ELEC

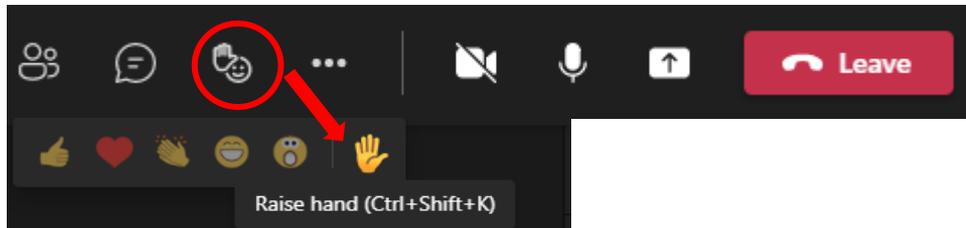
Q&A



- **Order**

- Q&A will begin in chronological order of “raised hands”. We will call on you when it’s your turn.

- **Raise hand Function Button**



- **Reminders**

- Before asking a question, please:
 1. Announce who you are
 2. Which party you speak for or represent

Next Steps





Next Steps

- Follow Up & “Parking Lot” items
- Send out meeting notes to Attendees

Thank You

Residential Products

Natalie Pham | Principal | Natalie.Pham@pge.com

Susan Moseley | Sr. Product Manager | Susan.Moseley@pge.com



Appendix





Final Decision: Recommended Workshop Parameters

Final Decision 21-11-016 November 18, 2021, p. 111

7.2.4. New Schedule E-ELEC

- The parties to the residential rate design settlement believed that key information regarding customers who engage in electrification efforts “should be collected and provided to interested stakeholders and the Commission, which could then be used to inform both programmatic enhancements and rate design. The information would be provided as part of a formal Measurement and Evaluation (M&E) study that has predefined size, scope, and deliverables, and would be determined via a workshop setting to take place no more than 90 days after PG&E’s 2020 GRC Phase [2] Decision is issued.”
- Workshop #1: Within 90 days of the effective date of this decision, a workshop will be held to define the size, scope, and deliverables of the M&E study (e.g., study objectives, number of customers to be included in the sample, potential control group). The workshop should also discuss and consider an ex ante sensitivity analysis plan.
- Workshop #2: Approximately one year and 90 days after the implementation of Schedule E-ELEC, a workshop will be held to discuss the results of a proposed M&E study and assess what changes (if any) could be implemented to E-ELEC along with the appropriate mechanism (e.g., increase the fixed charge and lower the volumetric charges via a Rate Design Window or another GRC proceeding).



New Tier 3 Advice Letter Requirement

Decision 21-11-016 November 18, 2021, p. 115

7.2.6. Measurement and Evaluation of E-ELEC

- The residential rate design settlement proposed that an M&E plan should be developed and executed for Schedule E-ELEC. This decision approves the residential rate design settlement, and therefore does not reject the concept of an M&E plan outright. However, there is little record to support the development and execution of an M&E plan for Schedule E-ELEC other than the apparent interest of the parties in conducting such a study. This decision does not approve a particular budget or scope for the M&E plan. Once the M&E plan is developed by the parties through their workshop process, PG&E should propose an M&E plan and budget for the Commission to consider via a Tier 3 advice letter. The Commission may approve, reject, or modify the proposed M&E plan and budget depending on the record developed during the consideration of PG&E's Tier 3 advice letter. The Commission will dispose of the M&E plan advice letter through a Commission resolution prepared by the Commission's Energy Division.



BUILD & TECH Programs

SB 1477 – D:20-03-027 (TECH & BUILD)

- **B.U.I.L.D.**- Building Initiative for Low Emissions Development
 - Low-income new construction incentives
 - likely to be focused on Multi-family housing but also open to single family. Incentives shall target an entire building, project, or subdivision rather than specific equipment.
- **T.E.C.H.** – Technology and Equipment for Clean Heating
 - Upstream & midstream incentives to install low-emission space and water heating equipment



Background: Fuel Substitution

Include Fuel Substitution Programs (vs. Fuel Switching)

- Fuel *Substitution* is allowed but not Fuel *Switching* due to changing from regulated to non-regulated fuel
 - Fuel substitution involves **converting all or a portion of existing energy use from one fuel type to another with the goal of reducing** Greenhouse Gas (GHG) emissions.
 - Substituting existing fuel with electricity is called ***electrification***
 - In the context of energy efficiency programs, fuel substitution measures involve projects where all or a portion of the existing energy use is converted from one CPUC-regulated fuel to another CPUC-regulated fuel. ... Fuel switching measures involve non-utility fuels such as propane or fuel oil.
- Energy Efficiency funding is allowed for customers going from regulated fuel to regulated fuel (i.e., gas to electric)
- CPUC on Fuel Substitution: [LINK](#)



Heat Pump Water Heater Study

(CPUC) Decision (D.) 21-11-002

The Study:

As described in the California Public Utility Commission's (CPUC) Decision (D.) 21-11-002, the substitution of electricity for natural gas as a fuel can aid the state's electrification efforts and reduce overall emissions. One way in which this can occur is if residential customers replace their gas water heaters with more energy-efficient electric heat pump water heaters (HPWH). Such replacements necessarily reduce a customers' gas usage, while at the same time increasing their electric usage. In this study, submitted in compliance with Ordering Paragraph 4 of D.21-11-002, PG&E evaluates and reports on the overall impact on their bills from these reductions in their gas usage and increases in their electric usage resulting from replacing their household's natural gas water heater with an electric HPWH. PG&E's Study looks at a number of alternative scenarios, that take into account different climate zones, gas and electric rate schedules, and types of water heating equipment.

Structure of the Study:

As noted above, the basic structure of PG&E's evaluation is to calculate the net dollar effect on a customer's combined gas and electric bills if their household were to replace its gas water heater with an electric HPWH to support California's decarbonization goals. This Study utilizes the following key input data:

- Residential gas water heater and HPWH usage profile
- Residential gas and electric rates
- Residential gas total usage by month and electric usage by hour

Tags

- Fuel Substitution
- Bill impacts
- Questions 2,3, and 5

Advice Letter filed

- In compliance with Ordering Paragraph #4, PG&E Submitted Advice 4571-G/6497-E ([ELEC_6497-E.pdf \(pge.com\)](#))



2022 Electrification Incentives

PG&E Marketplace: [LINK](#)



ENERGY STAR®
High-Efficiency Electric
Heat Pump Storage
Water Heater

\$300 REBATE PER UNIT
REBATE CODES: BW114 and BW115

REQUIREMENTS:

- Select rebate code BW114 if your qualified Energy Star Electric Heat Pump Water Heater replaces a 35 to 45 gallon water heater.
- Select rebate code BW115 if your qualified Energy Star Electric Heat Pump Water Heater replaces a 46 to 55 gallon water heater.
- Electric heat pump water heater must be ENERGY STAR certified at time of purchase and have a Uniform Energy Factor (UEF) of 3.09 or greater
 - Must have a capacity greater than 40 gallons and less than or equal to 55 gallons.
 - Must be new and meet or exceed all applicable local, state and federal standards.
 - New electric heat pump water heater must replace an existing electric-powered water heater.
- For qualifying models, download the [qualifying product list](#). Visit [marketplace.pge.com](#) for online offers.
- Check with your contractor for installation requirements as regulations vary across California.
- Installation address must have an electric account with PG&E.*

EXCLUSIONS:

- Instantaneous or tankless water heaters do not qualify.
- New construction (residential development projects, e.g. subdivisions) installations do not qualify.
- Thermal efficiency (TE)-rated households do not qualify; only UEF-rated households are eligible for rebates.
- Gas water heater replacement does not qualify for a rebate.

*Customers who are part of a Community Choice Aggregation (CCA) or Direct Access (DA) program also qualify as long as all other eligibility requirements are met.

SGIP-Battery Storage: [LINK](#)

Is battery storage right for you?

Battery storage can provide you additional control over powering your home, allowing you to keep essential devices (such as medical equipment, refrigeration, air conditioning, electric heating, lighting, and electric well pumps) powered during outages. Due to PG&E's need to mitigate wildfire risk through [Public Safety Power Shutoff](#) (PSPS) events, customers may experience outages more frequently. PG&E is here to provide guidance on whether battery storage is right for you and how to invest in storage for your home.

You may be eligible for incentives

Through the Self-Generation Incentive Program (SGIP), PG&E provides incentives when you install a battery storage system and offers increased incentives if you are more vulnerable during power outages (as long as program funds are available). Incentives can cover up to the full cost of a battery if you live in a [High Fire-Threat District](#) or have been shut off in a PSPS event more than two times AND meet one of the following eligibility criteria:

Have incentives reserved in the income-qualified solar programs [ISASH](#) or [DAC-SASH](#)

Use medical life support equipment

Meet income-qualified eligibility standards

Rely on an electric well pump for water

[LEARN ABOUT THE SELF-GENERATION INCENTIVE PROGRAM](#)

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

AT&T
Albion Power Company

Alta Power Group, LLC
Anderson & Poole

Atlas ReFuel
BART

Barkovich & Yap, Inc.
Braun Blasing Smith Wynne, P.C.
California Cotton Ginners & Growers Assn
California Energy Commission

California Hub for Energy Efficiency
Financing

California Alternative Energy and
Advanced Transportation Financing
Authority
California Public Utilities Commission
Calpine

Cameron-Daniel, P.C.
Casner, Steve
Center for Biological Diversity

Chevron Pipeline and Power
City of Palo Alto

City of San Jose
Clean Power Research
Coast Economic Consulting
Commercial Energy
Crossborder Energy
Crown Road Energy, LLC
Davis Wright Tremaine LLP
Day Carter Murphy

Dept of General Services
Don Pickett & Associates, Inc.
Douglass & Liddell

East Bay Community Energy Ellison
Schneider & Harris LLP
Engineers and Scientists of California

GenOn Energy, Inc.
Goodin, MacBride, Squeri, Schlotz &
Ritchie
Green Power Institute
Hanna & Morton
ICF
International Power Technology

Intertie

Intestate Gas Services, Inc.
Kelly Group
Ken Bohn Consulting
Keyes & Fox LLP
Leviton Manufacturing Co., Inc.

Los Angeles County Integrated
Waste Management Task Force
MRW & Associates
Manatt Phelps Phillips
Marin Energy Authority
McClintock IP
McKenzie & Associates

Modesto Irrigation District
NLine Energy, Inc.
NRG Solar

OnGrid Solar
Pacific Gas and Electric Company
Peninsula Clean Energy

Pioneer Community Energy

Public Advocates Office

Redwood Coast Energy Authority
Regulatory & Cogeneration Service, Inc.
SCD Energy Solutions
San Diego Gas & Electric Company

SPURR
San Francisco Water Power and Sewer
Sempra Utilities

Sierra Telephone Company, Inc.
Southern California Edison Company
Southern California Gas Company
Spark Energy
Sun Light & Power
Sunshine Design
Stoel Rives LLP

Tecogen, Inc.
TerraVerde Renewable Partners
Tiger Natural Gas, Inc.

TransCanada
Utility Cost Management
Utility Power Solutions
Water and Energy Consulting Wellhead
Electric Company
Western Manufactured Housing
Communities Association (WMA)
Yep Energy