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**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Concerning
Energy Efficiency Rolling Portfolios, Policies,
Programs, Evaluation, and Related Issues.

Rulemaking 13-11-005
(Filed November 14, 2013)

**COMMENTS OF PACIFIC GAS AND ELECTRIC
COMPANY (U 39 M) REGARDING ENERGY
EFFICIENCY POTENTIAL AND GOALS FOR 2018 AND
BEYOND IN RESPONSE TO ADMINISTRATIVE LAW
JUDGE'S RULING DATED MAY 1, 2019**

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Dated: May 21, 2019

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I. INTRODUCTION

Pacific Gas and Electric Company (PG&E) submits these comments in accordance with the Administrative Law Judge’s Ruling Inviting Comments on Draft Potential and Goals Study (Ruling), dated May 1, 2019.

The Ruling seeks comments on a DRAFT 2019 Energy Efficiency Potential and Goals Study (Navigant Study) prepared by Navigant Consulting, Inc. (Navigant), for the California Public Utilities Commission (Commission or CPUC) staff and, through a series of questions, invited parties to comment on the Navigant Study.¹

¹ Ruling, at 1.

Questions 1 through 4 concern the Navigant Study.² Question 5 concerns the impact of reduced energy savings goals.³ Question 6 concerns potential changes to the required components of annual budget advice letters (ABALs) due from the program administrators in September 2019.⁴ The Ruling also permits parties to offer any other thoughts in their comments in response to the Navigant Study.⁵

In brief, PG&E respectfully recommends the following:

- A. The Reference Scenario is the most appropriate to inform 2020-2030 energy efficiency goals because it aligns with Commission policy for portfolio cost-effectiveness requirements.
- B. Navigant should reevaluate certain assumptions for behavioral, retrocommissioning, and operational (BRO) programs, Whole Building, and Low-Income used in the Navigant Study.
- C. The Commission should continue its current approach and not adopt goals that include energy savings potential from the low-income sector because key components specific to the Energy Savings Assistance (ESA) program were not included in determining the potential.
- D. The Commission should continue its Home Energy Reports (HERs) impact evaluations and broaden their scope to look more comprehensively at programs that target BRO measures.
- E. In general, reduced savings goals could lead to smaller budgets, but the Commission should continue to approve portfolio budgets through the Energy Efficiency Business Plan and ABAL Processes.
- F. PG&E requests relief from submitting its 2020 ABAL in September 2019 due to the significant overhaul of its portfolio.

² Ruling, at 3-5.

³ Ruling, at 5.

⁴ Ruling, at 5.

⁵ Ruling, at 5.

PG&E's responses to each of the ALJ's questions and these issues are provided in Section II below.

II. DISCUSSION

A. The Reference Scenario is the most appropriate to inform 2020-2030 goals because it aligns with Commission policy for portfolio cost-effective requirements.

ALJ Question 1: *"Commission staff proposed five scenarios that attempt to capture a reasonable range of energy efficiency potential for 2020-2030. Which scenario – either in the Navigant study or an alternative recommendation – is most appropriate to inform 2020 – 2030 goals? Justify your recommendation."*

PG&E recommends the Reference Scenario inform 2020-2030 savings goals because it aligns with Commission policy of a 1.0 overall portfolio Cost Effectiveness (C-E) threshold.⁶

Previous Potential & Goals studies set the C-E measure screening threshold at 0.85, which overestimated the savings potential that investor-owned utilities (IOUs) could realistically claim.⁷ This was acceptable in part because of the existence of highly cost-effective measures, such as lighting, that counterbalanced the impact of lower Total Resource Cost (TRC) measures.

IOUs can only claim savings that exceed Codes & Standards. With recent changes to lighting standard practice baselines and upcoming Title 20 code changes to residential general service lamps, these high-TRC measures are now limited or have transitioned entirely to Codes & Standards. Therefore, transitioning to a C-E measure screening threshold of at least 1.0 would more accurately reflect the ability of the IOUs to achieve portfolios with TRCs greater than 1.0 to (1) meet policy mandates and (2) ensure that the Navigant Study informs goals that will drive cost-effective energy efficiency that will be beneficial to ratepayers.

⁶ Decision (D.)18-05-041, Ordering Paragraph (OP) 13 at 185.

⁷ Energy Efficiency Potential and Goals Study for 2018 and Beyond. Navigant, September 25, 2017, available at http://ftp.cpuc.ca.gov/gopher-data/energy_division/EnergyEfficiency/DAWG/2018_Potential_and_Goals_Study_Final_Report_092517.pdf.

Alternate Scenario 2 is similar to the Reference Scenario except that it applies a 1.25 C-E measure screening threshold.⁸ While PG&E is supportive of Alternate Scenario 2, PG&E recommends a more gradual transition to the higher C-E screening threshold of 1.25 because of the current transition to comply with the CPUC mandate to achieve overall portfolio TRCs of 1.25 or greater in 2023. Furthermore, a gradual transition will allow for a ramp-up period for new programs and re-balanced portfolios to achieve overall cost effectiveness given the (1) Commission's order for utility administrators to transition at least 60 percent of portfolios to third parties,⁹ and (2) uncertainty of the portfolio measure mix going into 2020, which is highly dependent on both the outcome of PG&E's 2019 Request for Proposal (RFP) process, and the associated cost-effectiveness of new programs submitted by third-party implementers.

B. Navigant should reevaluate certain assumptions for BRO programs, Whole Building, and Low-Income used in the Navigant Study.

ALJ Question 2: *“Do you recommend alternative values for any of the inputs or modeling used in the Navigant study? If so, specify the particular input or modeling (with section or page references, if applicable) and your recommendation for alternative values. Justify your recommendation and provide references. In particular, we invite responses regarding the following specific assumptions used in the Navigant study: ...”*

PG&E recommends modifications to measure level inputs, including the removal of some measures entirely from the savings potential, used in the Navigant Study. PG&E recommends the following:

- Remove residential lighting measures. Starting January 1, 2020, the residential lighting measures included as part of the savings potential will be governed by Title 20 code and therefore should not be included in the market potential.
- Update the inputs for commercial lighting savings potential. PG&E agrees that commercial lighting potential should be reduced. To do so, PG&E suggests that

⁸ Navigant Study, Table ES-1 at 3.

⁹ D.16-08-019, OP 12 at 111.

Navigant review the recently approved, non-residential lighting workpapers with baseline methodology updates that include linear Light Emitting Diode (LED) replacement lamps as part of the LED technology baseline because it may inform modifications to the measure level inputs. These detailed comments on proposed measure level inputs are provided in the Appendix.

PG&E responds to the subparts of ALJ Question 2 below.

1. ALJ Question 2a: *Do you agree with the cost assumptions used in the Navigant study? Explain why or why not, and (if applicable) provide references to alternative sources of information for specific cost assumptions used in the Navigant study.*

PG&E respectfully disagrees with the cost assumptions used in the Navigant Study because the cost assumptions do not accurately portray program costs. PG&E recommends Navigant revisit some cost assumptions as described below.

The levelized costs (i.e., \$/kWh) for BRO programs presented by Navigant seem extremely high compared to historical values. At the levelized costs presented by Navigant, it is unlikely that many of the interventions exceeding \$0.20/kWh would be cost-effective because \$0.20/kWh exceeds PG&E's TRC costs at the portfolio level and for all sectors. Navigant should reevaluate the potential for these programs based on cost-effectiveness criteria. For reference, PG&E provides the following table of sector-level TRC costs from 2018:

Table 1
PG&E Sector-Level TRC Costs

Sector	TRC \$/KWH	TRC \$/Thm
Portfolio Level (PL) – all sectors	0.09	0.83
Residential – multi-family (RMF)	0.17	1.10
Residential single family (RSF)	0.10	0.69
Commercial (C)	0.09	0.92
Public (P)	0.17	0.37
Industrial (I)	0.05	0.56
Agricultural (A)	0.14	1.59

(a) Values obtained from the 2018 Metrics Compliance Filing table (T-9) submitted with PG&E's 2018 Energy Efficiency Annual Report filed May 1, 2019.

2. ALJ Question 2b: *Do you agree with the assumptions used in the BROs section of the Navigant study? Explain why or why not, and (if applicable) provide specific references to alternative sources of information for specific assumptions used in the Navigant study. In particular: ...*

PG&E respectfully disagrees with the assumptions used in the BRO section of the Navigant Study because they overstate the savings potential as described below.

- a. ALJ Question 2b(i): *HERs represent a significant amount of incremental electric savings in 2020. Do you agree with the assumptions used to forecast HERs energy savings in this study?*

PG&E respectfully disagrees with the assumptions used to forecast HERs energy savings in the Navigant Study. PG&E believes the Navigant Study overestimates the savings potential for the following four reasons.

First, Navigant's model of HERs savings growth fails to consider that new customers added to PG&E, Southern California Edison, and San Diego Gas & Electric HER programs will have less ability to save energy as compared to customers currently enrolled in HER programs. The reason future customers added to HER programs will save less energy on average is because current HER programs include the customers with the highest savings potential. Additional customers added will have lower savings per customer on average than Navigant's model

assumes, thus slowing the growth rate for the program overall.

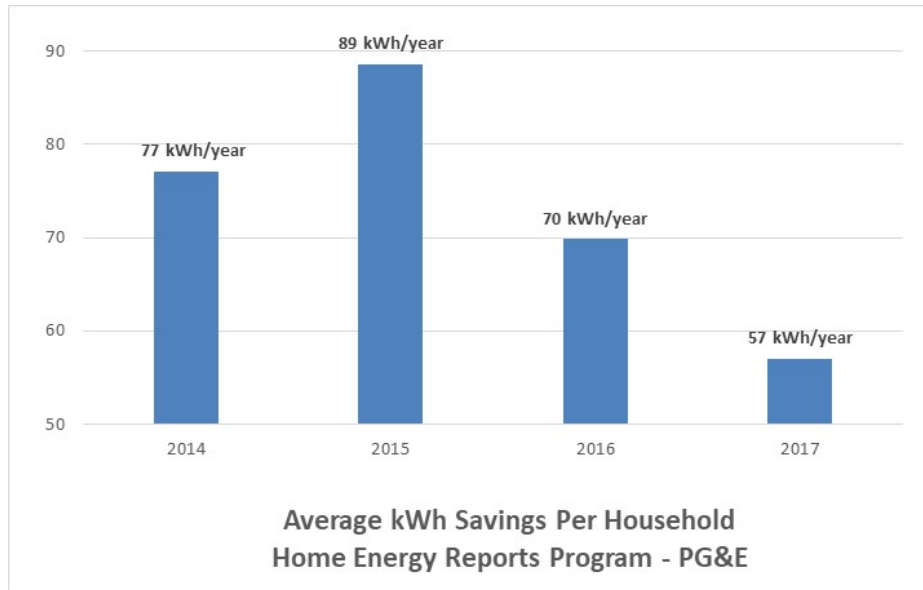
Second, there are relatively few customers available that are eligible to add to PG&E's HER program as it is currently designed. In 2017, PG&E had 2,804,632 customers participate in HER treatment and control groups.¹⁰ This represents approximately 58 percent of PG&E's 4.8 million residential customer base.¹¹ The majority of customers not currently participating in HER treatment: (i) are in the lowest quartile of energy usage, (ii) live in master- metered buildings, (iii) have opted out of receiving non-bill and non-emergency communications from PG&E, (iv) do not have sufficient billing history to qualify for HER, (v) are medically vulnerable, or (vi) are otherwise ineligible to participate.

Third, Navigant's model of HERs savings growth fails to consider that the average per-household savings of customers enrolled in HER programs has been slowing over time. The chart below illustrates this phenomenon. PG&E's HER program began in late 2011 and is now relatively mature. The CPUC's most recent impact evaluations of PG&E's HER program show that per-household adjusted kWh savings (savings that can be directly attributed to HERs) peaked in 2015 and declined in 2016 and 2017. No other recent impact evaluations are available.¹²

¹⁰ In 2017, 2,139,366 customers were in HER treatment, and 665,266 were in control conditions and were factored into the savings calculations. Table 2-1, *Impact Evaluation Report – Home Energy Reports – Residential Program Year 2017* (2019). DNV GL on behalf of the CPUC, CalMAC ID CPU0194.01.

¹¹ PG&E 2018 Corporate Sustainability and Responsibility Report, available at www.pgecorp.com/sustainability.

¹² Average per-household kWh savings is computed from reported average number of treatment participants and total adjusted program savings. Statistics taken from the following reports: *Review and Validation of 2014 Pacific Gas and Electric Home Energy Reports Program Impacts* (2016). DNV GL on behalf of the CPUC, CalMAC ID CPU0123.01; *Review and Validation of 2015 Pacific Gas and Electric Home Energy Reports Program Impacts Final Report* (2017). DNV GL on behalf of the CPUC, CalMAC ID CPU0155.01; *Impact Evaluation Report, Home Energy Reports – Residential Program Year 2016* (2019). DNV GL on behalf of the CPUC, CalMAC ID CPU0190.01; *Impact Evaluation Report – Home Energy Reports – Residential Program Year 2017* (2019). DNV GL on behalf of the CPUC, CalMAC ID CPU0194.01.



Fourth, energy reports and similar behavioral programs may be becoming less effective over time due to the success of California’s other energy efficiency initiatives. An indicator of success is the Codes & Standards Program to support local energy efficiency ordinances and to influence codes and standards-setting organizations to strengthen energy efficiency codes and regulations. A second indicator of the success of California’s energy efficiency investments is that California ranks 48th in energy consumption per capita in the U.S.¹³ From 2000 to 2017, growth in electricity consumption has lagged both job growth and gross state consumption in the state.¹⁴ A side effect of this success may be that it is becoming more challenging for households to identify more opportunities to save.

- b. ALJ Question 2b(ii): *The Navigant study includes new items in BROs forecasting, which indicate significant savings potential. Do you agree with the building benchmarking and universal audit tool assumptions used to calculate BROs savings?*

PG&E respectfully disagrees with the building benchmarking and universal audit tool (UAT) assumptions used to calculate BROs savings potential because the Navigant Study

¹³ U.S. Energy Information Administration (2016), available at <https://www.eia.gov/state/rankings/>

¹⁴ California Energy Commission-Tracking Progress (2018), available at https://www.energy.ca.gov/renewables/tracking_progress/documents/statewide_energy_demand.pdf.

overestimates their savings potential.

Regarding the potential in the forecast for building benchmarking, PG&E respectfully disagrees with Navigant’s assumptions for applicability given that the IOUs are disallowed to claim savings for benchmarking activities that are already required by law.¹⁵ Many buildings in the population used in the Navigant Study already report benchmarking information to the California Energy Commission (CEC) through the State of California’s Building Energy Use Benchmarking and Public Disclosure Program. The IOUs cannot claim savings for benchmarking activities in these buildings. Buildings that meet the CEC criteria should be removed from the calculation of potential from building benchmarking. The Navigant Study mentions San Francisco’s benchmarking ordinance¹⁶ but should also remove buildings that are subject to other local benchmarking and public disclosure programs that have received exemptions from the CEC.¹⁷ Additionally, the act of benchmarking a building on its own may not yield savings unless actions are taken because of benchmarking information.

With respect to the savings estimates for UAT, PG&E sees a large potential for double-counting with real-time feedback and—especially—with HERs. The Navigant Study states that their forecasts in the BRO sector are “the result of professional [judgment] based on program operations”¹⁸ and that the research team “adjusted penetration and applicability to avoid the double counting of savings.”¹⁹

However, PG&E believes that it will be necessary to limit the number of BRO programs that rely on providing “usage feedback” (e.g., HER, web presentment, online audits) to optimize customer experience and facilitate evaluation. PG&E does not believe these types of BRO

¹⁵ Assembly Bill 802 (Chapter 590, Statutes 2015) directed the Energy Commission to create a state-wide building energy use benchmarking and public disclosure program for certain buildings (buildings 50,000+ square feet of gross floor area that have either no residential utility accounts or 17 or more residential utility accounts).

¹⁶ Navigant Study, at C-19.

¹⁷ California Energy Commission Building Energy Benchmarking Program, available at <https://www.energy.ca.gov/benchmarking/>

¹⁸ Navigant Study, at 68.

¹⁹ Navigant Study, at 27.

programs can be so easily compartmentalized for attribution purposes. For example, PG&E has found that HER program participants are more likely to participate in online audits than similar customers, and (2) because customers must create online accounts to participate in online audits, customers participating in online audits have the opportunity to be exposed to energy usage feedback and other information similar to that in HER reports while they are completing an audit. Based on the foregoing, PG&E believes that disaggregating the impacts between HER, online audits, and web presentment will be difficult. More generally, research conducted by DNV GL highlights that BRO-type programs may be less effective among customers that are made aware of their energy use by other programs (such as usage alerts, bill alerts, and HERs).²⁰ The research suggests that HERs and online audits could affect the impact of other BRO-type programs (such as competitions) and that BRO programs might interact, could result in less savings when double-counting is considered, and should not be evaluated separately.²¹

Given the potential for customer confusion and dissatisfaction, program administrators may need to restrict the number of BRO programs offered within their jurisdiction that use similar outreach channels, which may constrain their potential. If program administrators do not restrict the number of BRO programs, the result may be customer confusion, customer dissatisfaction, and assessment challenges. For example, having multiple implementers launch energy use competitions within a jurisdiction simultaneously might cause customers being exposed to multiple Marketing, Education, and Outreach (ME&O) campaigns for each initiative. Aside from the potential for negative customer experience, apportioning credit to similar BRO-type programs equitably would be challenging.

²⁰ *Auto Bill Pay and Budget Billing Impact Evaluation – Residential* (2017). DNV GL for the CPUC. CalMAC ID CPU163.01.

²¹ *Auto Bill Pay and Budget Billing Impact Evaluation – Residential* (2017). DNV GL for the CPUC. CalMAC ID CPU163.01.

3. ALJ Question 2c: *Whole Building rebate programs represent a significant portion of potential savings. Whole Building rebate programs encompass elements from multiple technology types and construction measures. Do you agree with the assumptions used in the Whole Building section of the Navigant study? Explain why or why not, and (if applicable) provide specific references to alternative sources of information for specific assumptions used in the Navigant study.*

PG&E respectfully disagrees with several assumptions used in the Whole Building section of the Navigant Study, particularly for Commercial and Residential Zero Net Energy (ZNE) measures. Savings potential attributed to new construction should be removed from the Whole Building section as Residential and Non-Residential ZNE measures should not have passed C-E screening thresholds of 1.0 or greater—Residential and Non-Residential New Construction programs have not historically achieved TRCs greater than 1.0. Table 2 shows PG&E's 2019 ABAL filing and 2018 Annual Claims (AC) submission for Residential New Construction, California New Homes Multifamily, and Savings by Design.

Table 2
PG&E Residential & Non-Residential New Construction TRCs

Program	2019 ABAL TRC^(a)	2018 Annual Claim^(b)
Residential New Construction	0.55	0.51
California New Homes Multifamily	0.31	0.46
Savings by Design	0.95	0.75

^(a) PG&E's 2019 Energy Efficiency ABAL (Advice 4011-G-B/5375-E-B).

^(b) PG&E's 2018 Annual Claims Data, available at <https://cedars.sound-data.com/>.

4. ALJ Question 2d: *Do you agree with the assumptions used in the Low-Income section of the Navigant study? Explain why or why not, and (if applicable) provide specific references to alternative sources of information for specific assumptions used in the Navigant study.*

PG&E respectfully disagrees with the assumptions used in the Low-Income section of the Navigant Study. The Navigant Study does not account for the policies and methodologies required by the CPUC for the IOUs' low-income program, Energy Savings Assistance (ESA) program. Specifically:

1. The Navigant Study does not account for the IOUs' ESA programs having its own Commission-approved Policy and Procedures Manual and Installation Standards Manual, both of which have been developed and approved specifically for ESA.²² Policies and procedures governing non-low-income energy efficiency programs differ from those developed for the low-income programs. By failing to consider the Commission's policies for low-income programs, the Navigant Study ignores program limitations and overestimates the true potential in the low-income customer segment.
2. The Navigant Study assumes incorrectly cost effectiveness does not apply to the Low-Income segment and therefore does not include it.²³ The CPUC has authorized two cost effectiveness tests to be used for the ESA program: (1) Energy Savings Assistance Cost-Effectiveness Test (ESACET) and (2) Resource Test.²⁴ These cost effectiveness tests differ from the TRC used for Energy Efficiency programs and therefore need to be considered because ESA covers 100 percent of installation costs for measures. There is no specific cost effectiveness threshold for the ESA portfolio, however, the overall

²² California Statewide Energy Savings Assistance Program 2017-2020 Cycle Policy and Procedures Manual, available at <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442457425> and Energy Savings Assistance Program California Installation Standards (2018). Richard Heath and Associates (RHA). A copy may be requested by contacting RHA, 1390 Ridgewood Drive, Suite 10, Chico, CA. 95973.

²³ Navigant Study, at 25.

²⁴ D.14-08-030, OP 43 at 121-122. The Resource Test was formerly called the "Resource Measure Cost Test" or the "Resource TRC," but this name has been changed to avoid confusion with the TRC test.

portfolio seeks to be as cost effective as possible. A key difference for determining ESA cost effectiveness is the use of Non-Energy Benefits (NEBs) in the ESACET.

3. The Navigant Study assumes ESA utilizes the same energy savings methodology as other Energy Efficiency programs, which is not the case. None of the documents listed in the Navigant Study “Hierarchy of Data Sources for Energy Use Information” are primary ESA resources.²⁵ ESA relies on measure savings determined from impact evaluations authorized by the CPUC and only uses savings from Database for Energy Efficiency Resources (DEER) or workpapers for measures not included in ESA impact evaluations. Most ESA measure savings are from impact evaluations. The Impact Evaluation Report published in April 2019 caps savings per home rather than verifying measure savings on an individual measure basis.²⁶ For PG&E, the savings caps are 127 kWh/home and 8 therms/home.²⁷
4. In Navigant Study Table 3-19 “Fraction of Households Considered Low Income,” the methodology that Navigant uses to estimate the fraction of households living in multifamily (MF) homes considered to qualify for low-income programs results in an overestimate.²⁸ Instead, ESA uses CPUC-approved methodology for determining the estimate of eligible low-income households. This census-based estimate of the California Alternate Rates for Energy Program (CARE) low income-eligible population is updated annually and filed by Compliance Filing.²⁹ Using the same Commission-approved census-based methodology used to update its annual low-income estimates, PG&E

²⁵ Navigant Study, Table 3-10 at 44.

²⁶ *Energy Savings Assistance (ESA) Program Impact Evaluation Program years 2015-2017*. DNV-GL for SoCalGas, PG&E, SDG&E, and SCE. (April 26, 2017), available at: <https://pda.energydataweb.com/#!/documents/2173/view>.

²⁷ *Id.*, at 39-40 and 47-48.

²⁸ Navigant Study, at 54.

²⁹ *Compliance Filing of Pacific Gas and Electric Company (U 39-M), on behalf of itself, Southern California Gas Company (U 904-G), San Diego Gas & Electric Company (U 902-M), and Southern California Edison Company (U 338-E) Regarding Annual Estimates of CARE Eligible Customers and Related Information*, February 8, 2019.

estimates 37.9 percent of its residential customers residing in multifamily homes with five or more units are low-income customers and 20.2 percent of its residential single-family customers are low-income customers.

5. As a direct install program, ESA measure costs cover the full material and installation costs of measures, not just 100 percent of equipment costs.³⁰ ESA's costs for covering the full material and installation costs of measures are provided in the IOUs' Annual Reports. In addition, implementation of some measures can face additional barriers or incur additional expenses that add to obstacles for adopting them. For example, wall insulation requires a large quantity of holes to install the insulation appropriately into the walls. Assuming low-income customers do not have the resources to address the large quantity of holes left in their walls, these customers would either need to accept leaving their walls dotted with spackle or the ESA program would need to cover the additional cost of repainting following installation of wall insulation. This can be an obstacle for adopting Energy Efficiency measures in the low-income program.
6. The Navigant Study states that all ESA participants "starting in 2021 would be retreatments."³¹ This is incorrect. Rather, the post-2020 ESA program will treat customers that have previously participated as well as new customers. Although PG&E anticipates achieving its ESA 2020 goal of having offered ESA to all willing and feasible customer households, there will still be new customers to treat due to customer movement and customer unwillingness to participate. PG&E continues to work to reduce barriers to participation. Assuming that all ESA customers will be retreatments is a significant misunderstanding of how the ESA program works that affects the Navigant Study's overall assessment of low-income programs.

³⁰ Navigant Study, at 25.

³¹ Navigant Study, at 25.

7. The Navigant Study assumes incorrectly that ESA uses the same measure list as Residential Energy Efficiency and does not use ESA's measures and feasibility criteria as defined in the ESA Policy and Procedures Manual and the ESA Installation Standards.³² While there is some overlap between the two measure sets, the competing goals of ESA to both increase energy efficiency and provide non-energy comfort, health and safety benefits that may result in *negative* energy savings require a different set of measures to serve the unique needs of a low-income population.
8. To account for cost effectiveness, PG&E respectfully disagrees with many of the measure recommendations that Navigant recommends for the ESA program. Specifically, when ESA rules are considered, PG&E recommends that the final Navigant Study:
 - a. Remove Compact Fluorescent (CFL) Fixtures. CFLs were retired from the ESA program in 2017 and were replaced with Light Emitting Diodes (LEDs).
 - b. Remove Efficient Clothes Washers Tier 2 and 3. The ESA program is replacing existing pre-2004 clothes washers with ENERGY STAR® models and covering the full cost of materials and labor associated with both removal and installation.
 - c. Remove Packaged/Split Heat pump and Packaged/Split System Air Conditioning above Seasonal Energy Efficiency Ratio (SEER) 14. The ESA program is replacing existing Heating Ventilation and Air Conditioning (HVAC) systems with SEER 14 and covering the full cost of materials and labor associated with both removal and installation.
 - d. Revisit cost and potential adoption barriers associated with the wall insulation measure. Costs associated with repainting walls and the incidence of customers refusing the measure due to the wall condition post measure should be factored in the projections.

³² California Statewide Energy Savings Assistance (ESA) Program 2017-2020 Cycle Policy and Procedures Manual and Energy Savings Assistance Program California Installation Standards (2018).

- e. Remove all measures with zero potential. Including such measures in the report adds unnecessary confusion and length to the report.
 - f. Add high efficiency furnaces (greater than or equal to 95 percent Annual Fuel Utilization Efficiency (AFUE)), weather stripping, thermostatic shower valves, thermostatic tub spout/tub diverters to the list of existing ESA measures, and pool pumps to the list of ESA measures to be added starting in 2021.
- C. The Commission should continue its current approach and not adopt goals that include energy savings potential from the low-income sector because key components specific to the ESA program were not included in determining the potential.**

ALJ Question 3: *Should the Commission adopt goals that include energy savings potential from the low-income sector? Explain why or why not.*

Currently the Commission directs the IOUs to include ESA annual and lifecycle savings as part of the total savings accomplishments, but to exclude ESA benefits and costs when calculating the TRC and PAC. The Commission also does not use the savings potential determined for ESA in the Navigant Study to determine EE savings goals. PG&E recommends the Commission continue these approaches for the following reasons:

First, the number of homes that ESA must treat is mandated by the Commission and the IOUs are mandated to install all feasible measures, whether they: (1) are cost effective or not using EE cost-effectiveness tests, (2) exceed (or meet) code, and (3) provide energy savings or non-energy benefits.

Second, the Navigant Study does not account for ESA having its own Policy and Procedures approved by the CPUC that differs from Energy Efficiency, or the Statewide ESA Installation Standards Manual, also approved by the CPUC.³³

³³ California Statewide Energy Savings Assistance (ESA) Program 2017-2020 Cycle Policy and Procedures Manual and Energy Savings Assistance Program California Installation Standards Manual.

Third, funding is separately determined for Low-Income program efforts and Energy Efficiency program efforts. It is not interchangeable between the program categories.

As discussed in PG&E's comments to ALJ question 2d, key components specific to the ESA program were not included in determining the potential. For these same reasons, PG&E recommends the Commission remove the requirement for the ESA program to use the Navigant Study to develop its Program Year 2021-2026 ESA Program Application.³⁴

D. The Commission should continue its HER impact evaluations and broaden their scope to look more comprehensively at programs that target BRO measures.

ALJ Question 4: *In D.10-04-029, the Commission adopted a different process for crediting savings from comparative energy use (e.g., HERs) programs, prohibiting the utilities from submitting workpapers for ex ante numbers to project savings for these programs; instead, savings from these programs can only be credited after the Commission verifies them. Results from HERs program impact evaluations have been consistently high for the past several (approximately seven) years. [Footnote omitted] Should the Commission continue to evaluate home energy report behavior programs that have had consistent evaluation results for several years?*

PG&E encourages the Commission to continue its HERs impact evaluations. PG&E further requests that the Commission broaden its impact evaluations to look more comprehensively at BRO measures. The Commission's *Ruling Regarding High Opportunity Energy Efficiency Programs or Projects* led the way to the new category of BRO measures that have become commonplace throughout the state.³⁵ Current residential BRO programs include online audits (UAT), online presentment of energy usage (often called Customer Web Presentment), smart thermostat programs, and some usage alert programs. The usage alert

³⁴ A.14-11-007, et al., Proposed Decision (PD) *Issuing Guidance to Investor-Owned Utilities for California Alternate Rates for Energy/Energy Savings Assistance Program Applications for 2021-2016 and Denying Petition for Modification*, Attachment A at 6-7. Also see PG&E Comments to PD, May 20, 2019 at 1-5.

³⁵ Rulemaking 13-11-005, Assigned Commissioner and Administrative Law Judge's *Ruling Regarding High Opportunity Energy Efficiency Programs or Projects*, filed November 14, 2013.

programs considered BRO measures are those provided to customers whose energy usage is not linked to ongoing monetary feedback, when they elect to forego receiving paper bills in the mail, and/or when they pay the same amount for utilities each month through “balanced billing” plans.

There are three reasons for the Commission to continue to evaluate HERs and other BRO programs.

The first reason is to address the increasingly complicated issue of double-counting given the growing number of BRO programs in the residential energy efficiency environment. Given the number of BRO programs being offered, there is a significant risk of double-counting the savings attributable to BRO measures—both from customers participating in (a) multiple BRO programs and/or other downstream programs and (b) the upstream lighting program besides one or more BRO programs. The best way to address the unique contribution of BRO measures to energy savings is for the Commission to oversee an impact evaluation with the collaboration of the IOUs’ Evaluation, Measurement and Verification (EM&V) teams.

The second reason is that some IOUs have ceased early measurement and verification of HERs. If the Commission does not continue to evaluate HER programs, the sole source of savings estimates may be from the HERs vendor. This could create a gap in that no analyses of potential double-counting of savings from HERs, other downstream programs, and the upstream lighting program may occur.

The third reason is that as the IOUs move to a predominantly third-party implementation structure, California may likely witness new implementers offering programs similar to HERs and impact evaluations may uncover problems with program implementation.

E. In general, reduced savings goals could lead to smaller budgets, but the Commission should continue to approve portfolio budgets through the Energy Efficiency Business Plan and ABAL processes.

ALJ Question 5: What are the impacts of reduced energy savings goals, if adopted by the Commission? Should reduced energy savings goals result in smaller portfolio budgets, going forward? Explain why or why not, and (if applicable) how much smaller.

PG&E believes that, in general, reduced energy savings goals could lead to smaller portfolio budgets. However, not all expenditures would be reduced on a one-to-one basis. The cost of customer rebates is an example of an expenditure that could scale with program volume. There are also other expenditures less sensitive to savings or program volume that would not be as significantly affected by a reduction in goals.

Energy efficiency portfolio budgets for 2018-2025 were approved through D.18-05-041, which approved the IOUs' Business Plans.³⁶ The utilities are required to file an ABAL each year in September, requesting budget for the following year and forecasting portfolio savings and activities.³⁷ The Commission should continue to use business plans and/or budget advice letters to holistically assess the reasonableness of portfolio budgets, based not only on the goals but also the planned programs and measures that make up the forecasted portfolio.

F. PG&E requests relief from submitting its 2020 ABAL in September 2019 due to the significant overhaul of its portfolio.

ALJ Question 6: Given the changes in potential for 2020, should there be any changes to the required components of annual budget advice letters (ABALs) due from the PAs in September 2019, and/or to the process or criteria for reviewing the September 2019 ABALs (Sections 7.2 and 7.3 of D.18-05-041)? Explain why or why not. Any recommendations in response to this question should focus on new ideas and not repeat recommendations previously made and that the Commission has already dismissed.

PG&E recommends changes to the requirement that program administrators submit 2020 ABALs in September 2019. This recommendation is based on the changes in potential for 2020 and on the significant refresh expected for PG&E's 2020 portfolio.

In June 2019, PG&E will be releasing a Request for Proposal (RFP) that refreshes at least 25 percent of PG&E's Energy Efficiency portfolio, with those new programs beginning in early to mid-2020. PG&E's RFP covers all programs and sectors and therefore presents an

³⁶ D.18-05-041, OP 12 at 185.

³⁷ D.15-10-028, OP 4 at 123-124.

opportunity for a significant overhaul of the portfolio. The combination of the timing of that solicitation, and the fact that contracting will take place in the fourth quarter of 2019, means that measure-level data for PG&E's 2020 portfolio would not be available in time to complete and submit a 2020 ABAL in September 2019. Any forecast provided at that time would be inaccurate and misleading. In addition, which portions of PG&E's portfolio will or will not be implemented by third parties are dependent upon the results of the solicitations. Therefore, it would not be possible to provide a forecast with a placeholder for the results of the solicitations.

PG&E requests relief from the requirement to file a 2020 ABAL in September 2019. PG&E requests the Commission authorize PG&E and Commission staff to jointly determine the appropriate relief regarding PG&E's next ABAL submission. Alternatives could include, but are not limited to, PG&E (1) filing its 2020 ABAL in April 2020, or (2) submitting an updated Business Plan in April 2020 in lieu of a 2020 ABAL. PG&E believes the latter may be appropriate given the significant refresh expected in PG&E's portfolio starting in 2020 due to the third-party solicitations and the change in potential in the Navigant Study for 2020 and beyond.

III. CONCLUSION

PG&E appreciates the Commission's attention to this matter and the opportunity to file comments on the Navigant Study and respond to ALJ Kao's questions. For the foregoing reasons, PG&E's recommendations are:

- A. The Reference Scenario is the most appropriate to inform 2020-2030 energy efficiency goals because it aligns with Commission Policy for portfolio cost-effectiveness requirements.
- B. Navigant should reevaluate certain assumptions for BRO programs, Whole Building, and Low-Income used in the Navigant Study.
- C. The Commission should continue its current approach and not adopt goals that include energy savings potential from the low-income sector because key components specific to the ESA program were not included in determining the potential.

- D. The Commission should continue its HER impact evaluations and broaden their scope to look more comprehensively at programs that target BRO measures.
- E. In general, reduced savings goals could lead to smaller budgets, but the Commission should continue to approve portfolio budgets through the Energy Efficiency Business Plan and ABAL processes.
- F. PG&E requests relief from submitting its 2020 ABAL in September 2019 due to the significant overhaul of its portfolio.

Respectfully Submitted,

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Appendix

As a follow-up to Ruling Question 2, PG&E provides the following recommendations for removal of some measures from the savings potential and alternate recommendations for measure level inputs.

1. PG&E recommends residential lighting savings potential attributed to LED General Service Lamps (GSLs) be removed from the Navigant Study.

The Navigant Study provides the following justification for including LEDs as part of the residential equipment rebate programs potential: “There is no CPUC policy suggesting LEDs are standard practice baseline in the residential sector (unlike non-residential applications).”¹ Starting January 1, 2020, Title 20 will adopt an expanded General Service Lamps (GSL) definition to include reflector and decorative lamp types. The majority of the residential lighting savings potential is from these types of lamps. A-Lamps are already subject to Title 20 and not supported by IOUs and per DEER Resolution E-4952: “We also note that due to recent code changes and pricing change it is not expected that LED A-lamps should remain in the energy efficiency portfolio after 2018.”²

The United States Department of Energy (DOE) adopted on January 19, 2017 two Final Rules that expanded the General Service Lamp (GSL) definition to include reflector, decorative, and other lamp types of varying shapes, effective January 1, 2020.³ This expands the January 1,

¹ Navigant Study, at 88.

² DEER Resolution E-4952 Approval of the Database for Energy-Efficient Resources updates for 2020 and revised version 2019 in Compliance with D.15-10-028, D.16-08-019, and Resolution E-4818 at A-39 (2018).

³ 82 C.F.R. Section 7276 (2017) and 82 C.F.R. Section 7322 (2017).

2020 national sales ban of low-efficacy lighting to these additional lamp types, as stated by U.S. DOE: “DOE acknowledges, of course, that a likely consequence of DOE's including additional lamps in the definition of GSL is that those lamps will be subject to energy conservation standards. DOE has the authority to impose standards for GSLs; and if it does not impose such standards or does not impose standards that meet a certain condition, then EPCA (Energy Policy and Conservation Act) specifies a minimum standard of 45 lm/W.”⁴ The information below illustrates the extensive support both within California and other states to expand the scope of the GSL definition and support California adopting this expanded GSL definition.

On August 3, 2018, the California Energy Commission (CEC) released a Draft Staff report to adopt the same definitions.⁵ In this draft report, the CEC stated: Staff proposes to expand the scope of ‘general service lamps’, which are subject to a minimum 45-lumens-per-watt efficacy standard in California, by aligning the Appliance Efficiency Regulations definition for general service lamps with the two DOE definitional final rules published in the Federal Register on January 19, 2017. The effective date for the definitions will occur at the same time in California as nationally, January 1, 2020, resulting in additional lamp types being subject to a 45 -lumens-per-watt efficacy standard in California.⁶

On May 3, 2019, the CEC publicly echoed their strong support for the expanded definitions.⁷ The CEC re-emphasized: “...DOE's January 19, 2017 final rules amending the definition of GSLs increased the number and types of lamps subject to the backstop standard...”⁸

On May 3, 2019, seventeen State Attorneys General, including California State Attorney General Xavier Becerra, wrote a public letter to U.S. DOE in support of the expanded GSL definitions and warned of legal ramifications should U.S DOE reverse course.⁹ In this letter, the

⁴ 10 CFR 430 (2017).

⁵ Draft Staff Report - Analysis of General Service Lamps (Expanded Scope), available at <https://efiling.energy.ca.gov/GetDocument.aspx?tn=224408&DocumentContentId=54683>.

⁶ *Id.*, at 14.

⁷ Comments on General Service Lamps NOPR, Docket No. EERE-2018-BT-STD-0010, available at <https://www.regulations.gov/document?D=EERE-2018-BT-STD-0010-0332>.

⁸ *Id.*, at 6.

⁹ Comments of Attorneys General of California, New York, New Jersey, Oregon, Colorado, Connecticut,

State Attorneys General clarified the applicability of the federal standard: “All lamps within the scope of the January 19, 2017 definition rules became subject to the 45 lm/w backstop upon DOE’s publication of the rules.”¹⁰

2. PG&E supports the reduction in Commercial Lighting potential and recommends that modifications to baseline methodologies be considered.

DEER2019 updates the standard practice baselines for all interior and exterior lighting for New Residential (NR), New Construction (NC), and Accelerated Replacement (AR) Measure Application Types, to be based on 100% LED technologies effective January 1, 2019. The exception is for categories covered in 2018 Phase 1 Dispositions for LED Highbay/Lowbay Lighting and LED Parking Garage Lighting, for which the standard practice baseline transitions to 100% LED technology on January 1, 2020.

Previously, standard practice baselines only contemplated full fixture replacements. PG&E submitted three non-residential lighting workpaper revisions that proposed updates to the NR baseline to include linear LED lamps as part of the LED technology baseline. The Energy Division approved these revisions via dispositions on May 13, 2019 with the updated baseline methodology that should enable additional cost-effective savings potential for LED Highbay/Lowbay Lighting and LED Linear Ambient Lighting. Preliminary cost effectiveness analysis of LED Parking Garage Lighting does not yield cost effective measures once the standard practice baseline fully transitions to 100% LED technology on January 1, 2020. PG&E recommends that Navigant discuss these methodology changes and review the approved workpapers on www.deeresources.net.

Illinois, Maine, Maryland, Michigan, Minnesota, North Carolina, Vermont, Washington, The Commonwealth of Massachusetts, The District of Columbia and The City of New York, available at <https://oag.ca.gov/system/files/attachments/press-docs/gslcomments-ags.may-3.2019.final-submission.pdf>

¹⁰ *Id.*, at 6.

3. Measure Removal

PG&E provides the following measure level comments with recommendations to remove measures from the savings potential across all scenarios. Removal recommendations are listed in order of priority.

Measure	Comment	Recommended Data Source
Commercial LED Display Case Lighting	Although an official Industry Standard Practice (ISP) study has not been conducted, per web research conducted by PG&E and discussions with manufacturers, refrigerated display cases and doors only come with one lighting technology option – LED.	
Commercial EC Motors on Walk-Ins	Should be removed from the savings potential because it is code per Title 20 and Title 24.	For less than 3000sf: T-20 2009 § 1605.1 (page 279) https://www.energy.ca.gov/2019publications/CEC-140-2019-002/CEC-140-2019-002.pdf For more than 3000sf: T-24 2013 (page 125) https://www.energy.ca.gov/2012publications/CEC-400-2012-004/CEC-400-2012-004-CMF-REV2.pdf
Residential Recycle Secondary Freezer	Should be removed from the savings potential. California IOU refrigerator recycling efforts ended at the end of 2015 due to poor cost-effectiveness. Additionally, JACO, the third-party vendor contracted to conduct the program for PG&E went bankrupt in November of 2015.	
Residential Recycle Secondary Refrigerator		
Residential CFL Fixture (Indoor - 17.5W)	Non-LED lighting technologies should be taken out of the savings potential given Title 20 code that will be effective January 1, 2020.	82 C.F.R. Section 7276 (2017) and 82 C.F.R. Section 7322 (2017)
Residential CFL Fixture (Outdoor - 28W)	Non-LED lighting technologies should be taken out of the savings potential given Title 20 code that will be effective January 1, 2020..	82 C.F.R. Section 7276 (2017) and 82 C.F.R. Section 7322 (2017)

Commercial Bi-Level Stairway Lighting	Should be removed from the study because it is required as part of Title 24 code.	T-24 2016: Section 130.1(c)7A
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4. Modifications to Measure Level Inputs

PG&E provides the following measure level comments with recommendations to modify measure level inputs across all scenarios. Modifications are listed in order of priority.

Measure	Comment	Recommended Data Source
Agriculture Low Pressure Irrigation	Please review 2015 Nonresidential Downstream ESPI Deemed Sprinkler Impact Evaluation, especially regarding 10% Net Realization Rate (Ex Post/Ex Ante) and NTG Ratio of 0.47 for net lifecycle kWh savings.	http://www.calmac.org/publications/SprinklerReport_2015_final_report_appendices.pdf
Residential LED Lamp (Various iterations)	Please see PG&E comments under Appendix regarding removal of LED GSLs. If it is decided to include LED Lamps in the savings potential, baseline and cost information should reflect current workpapers.	Workpapers: SCE17LG131.3 SCE17LG129.2 SCE17LG130.2
Low Income Smart Connected Power Strip	PG&E believes that low-income potential should not be included in the study. However, if it is included, please see Ex Ante Disposition SCE17CS014-R1 Detailed Review, dated June 1, 2018 for savings. <i>Disposition directs to use Work Paper WPSDGEREHE0004 Revision 1.1 Tier 2 Audio Visual (AV) Advanced Power Strip savings values after June 30, 2018.</i>	WPSDGEREHE0004 r1.1 Ex Ante Disposition SCE17CS014-R1 Detailed Review, dated June 1, 2018
Industrial Motor VFD – Efficient	Technology Lifetime discrepancy: Expected Useful Life (EUL) of a VFD has been 13 years although the motor EUL is 15 years. For Add-on Equipment (AOE) measure the EUL is the lesser of the Remaining Useful Life (RUL) of the host equipment or EUL of the measure. The EUL of the VSD is 13 years (Process Distribution - Motor Speed).	
Industrial Fan VFD – Efficient	Technology Lifetime discrepancy: For AOE measure the EUL is the lesser of the RUL of the host equipment or EUL of the measure. The RUL for the fan motor is 5 years which is 1/3 of the EUL of 15 years (EUL ID: Motors-fan). The EUL of the VSD is 13 years (ProcDist-	Workpaper: PGEACOAGR122

	Motor_Spd). Therefore, the proper RUL is 5 years for the VSD measure. Please see workpaper PGECOAGR122.	
Industrial Pump VFD – Efficient	Technology Lifetime discrepancy: EUL of a VFD has been 13 years although the motor EUL is 15 years. For AOE measure the EUL is the lesser of the RUL of the host equipment or EUL of the measure. The EUL of the VSD is 13 years (Process Distribution - Motor Speed).	
Residential Most Eff. Heat Pump Clothes Dryer	There were 143 heat pump dryers sold through ENERGY STAR Retail Products Platform (ESRPP) program in 2018 in PG&E territory. Therefore PG&E believes the market sizing is not appropriate. <i>NTG should be adjusted to 0.19 per PGECOAPP128.</i>	PGECOAPP128
Residential Heat Pump Water Heater (>= 2.0 EF - 50 Gal)	DEER 2017 raised the minimum efficiency from 2.0 EF to 3.0 EF. <i>Please use SCE17WH001 r2 savings and cost information.</i>	SCE17WH001 rev2
Commercial Demand Controlled Ventilation (DCV) Exhaust Hood	The measure application type for this workpaper was changed from Replace on Burnout/ Normal Replacement (ROB/NR) to Retrofit Add-on/Add-on Equipment (REA/AOE) and the measure costs were increased - the resulting offering is not cost effective per our calculations. (TRC <0.6 without administration, marketing and implementation costs (AMI)). Please review workpaper SWFS012-01 "Exhaust Hood DCV" for costs and measure application type.	SWFS012-01