PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

PG&E Advice Letter 4530-G/6412-E

January 12, 2022

Sidney Bob Dietz II
Director, Regulatory Relations
Pacific Gas and Electric
77 Beale Street, Mail Code B13U
PO Box 770000
San Francisco, CA 94177

Subject: Disposition approving PG&E Advice Letter 4530-G/6412-E on the Energy Savings Assistance (ESA) Program Pilot Plus and Pilot Deep Implementation Plan pursuant to Decision D.21-06-015.

Dear Mr. Dietz,

The Pacific Gas and Electric Company (PG&E) Advice Letter is approved effective December 19, 2021. Pursuant to CPUC Decision (D.)21-06-015 Ordering Paragraph (OP) 41, PG&E filed Advice Letter (AL) 4530-G/6412-E seeking approval of the Energy Savings Assistance (ESA) Program Pilot Plus and Pilot Deep Implementation Plan. The PG&E AL was timely filed on November 19, 2021.

I. Background

D.21-06-015 required the investor-owned utilities (IOUs) to allocate $104 million from the approved ESA budget to implement a deeper energy savings pilot program based on a 2020 Energy Division staff proposal. The pilot has a two-tiered approach, where the "Plus" tier would achieve between 5 and 15 percent energy savings per home, and the "Deep" tier would achieve between 15 to 50 percent energy savings per home, with higher average expenses per home. (This compares to the historical up to 5 percent energy savings per home, and $1,000 to $2,000 expenses per home). The IOUs and/or the implementers would design the program, including target customer segments, measures, and evaluation plan.

On November 19, 2021, PG&E submitted the AL regarding ESA program Pilot Plus and Pilot Deep Implementation Plan as directed in OP 41 of D.21-06-015:

Decision 21-06-015, OP 41 states:

> "41. Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company and San Diego Gas & Electric Company must each file a Tier 2 advice letter no later than 90 days after the first pilot workshop detailing the Pilot Plus and Pilot Deep program implementation

plan."

Decision 21-06-015 also includes Attachment 2, Guidance of the Energy Savings Assistance Program's Pilot Plus and Pilot Deep Program (Program Year 2021-2026), and includes the following instructions:

> Advice Letter Criteria: Each IOU shall file a Tier 2 advice letter by no later than 90 days after the first pilot workshop detailing the pilot implementation plan with the information below. Energy Division staff will review each advice letter and dispose of it accordingly.
>
> - Pilot Workshop Summary: The IOUs shall provide a summary of the workshop, including how workshop lessons were incorporated into their pilot implementation plan.
> - Pilot Budget: The IOUs shall provide an annual budget with detail for each of the categories listed above.
> - Customer Targeting: Based on the options listed above, the IOUs shall describe which customer segments it will target, and how it plans to target the groups for each of the Pilot Plus and Pilot Deep packages.
> - Pilot Measures: The IOUs shall propose a list of measures for each of the Pilot Plus and Pilot Deep packages, with the consideration that the IOUs will be able to add, modify, or remove measures through the monthly reports.
> - Pilot Program Design: The IOUs shall discuss how they plan to design and implement the pilot, per the potential options listed above.
> - Evaluation Plan: The IOUs shall include a high-level evaluation plan, with the consideration that a specific evaluation study scope will be determined in conjunction with the ESA / CARE Study Working Group.
> - Pilot Standards: The IOUs shall supplement their pilot proposal advice letters with the additional information below:
>   - Lessons already learned from previous research and pilots, and how these past and potentially ongoing lessons will relate to the currently proposed pilot;
>   - Gaps in understanding that will be filled by the proposed pilot, and the logic for the specific pilot study design proposed;
>   - Whether the IOU intends to deploy the pilot at a larger scale, and if so, how the metrics and data collected will enable the IOU to decide whether to recommend a wider roll-out;
>   - Whether there are opportunities for learning on other, related issues.

II. Party Comments and Reply Comments

On December 9, 2021, The Utility Reform Network (TURN) filed a response to the PG&E AL. TURN's response notes that PG&E's high-level evaluation plan does not include the study of participant bill impacts, and TURN recommends that PG&E include participant bill impacts in their evaluation plan. On December 16, 2021, PG&E filed a reply to TURN's response, agreeing that participant bill impacts should be included in the evaluation plan; PG&E also filed on December 16, 2021 a substitute sheet to AL 4530-G/6412-E with the requested change.

III. Discussion

After considering TURN's response and PG&E's reply comments, staff finds that the PG&E substitute sheet filed addresses TURN's recommendation by additionally including evaluation of impacts to participants' bills. After reviewing the AL with regards to the guidance criteria, staff also determines that PG&E's AL for the Pilot Plus and Pilot Deep implementation plan does meet the guidance criteria.

Staff further requests PG&E adhere to the following in their pilot program design, solicitation, and implementation processes:

- Follow the solicitation process directives of D.21-06-015, and the requests from the January 7, 2022 letter from Energy Division Management to the IOUs on their ESA solicitation processes (provided to the A.19-11-003 service list).
- Provide periodic updates on program implementation progress via the monthly and annual reporting, and, as requested, the ESA working group meetings, including:
    - Achievement towards deeper energy savings, including the up to 50 percent energy savings per home program goal.
    - If and how program components can be incorporated into the main ESA program.
- Follow D.21-06-015, Attachment 2, guidance on pilot program administrative costs (no more than 10 percent to be spent on "General Administration").
- Follow D.21-06-015's intent to ensure the majority of program spending is used for customer in-home measures and other benefits.

Energy Division approves the PG&E AL, effective December 19, 2021.

Please contact Kapil Kulkarni of the Energy Division at kapil.kulkarni@cpuc.ca.gov if you have any questions.

Sincerely,

Simon Baker
Interim Deputy Executive Director for Energy & Climate Policy
California Public Utilities Division

cc: Service List A.19-11-003 et. al.
Pete Skala, Energy Division
Jennifer Kalafut, Energy Division
Alison LaBonte, Energy Division
Hayley Goodson, TURN

Pacific Gas and Electric Company

Sidney Bob Dietz II
Director
Regulatory Relations

Pacific Gas and Electric Company
77 Beale St., Mail Code B13U
P.O. Box 770000
San Francisco, CA 94177

Fax: 415-973-3582

November 19, 2021

Advice 4530-G/6412-E
(Pacific Gas and Electric Company U 39 M)

Public Utilities Commission of the State of California

Subject: **Pacific Gas &Electric Company Advice Letter Pursuant to Decision 21-06-015 for the Energy Savings Assistance Program Pilot Plus and Pilot Deep Implementation Plan**

Purpose

In accordance with Ordering Paragraph (OP) 41 of Decision (D. or Decision) 21-06-015, Pacific Gas and Electric Company (PG&E) hereby submits to the California Public Utilities Commission (Commission or CPUC) this Tier 2 Advice Letter (AL) detailing its Energy Savings Assistance (ESA) Program Pilot Plus and Pilot Deep (hereafter referred to as "Pilot Plus/Deep") implementation plan.[1]

Background

D.21-06-015 approves the Energy Division's ESA program redesign concept on a pilot basis; the ESA Pilot Plus/Deep. It is the Commission's expectation that the ESA Pilot Plus/Deep treatments will require a greater investment per customer household and will yield deeper energy savings with targets between 5 percent to 50 percent.[2]

Attachment 2 of D.21-06-015 sets forth the guiding principles of the Pilot Plus/Deep which include:

1. Deeper Energy Savings
    - Achieves between an estimated 5 percent and 15 percent savings through the Pilot Plus measure package.
    - Achieves between an estimated 15 percent and 50 percent savings through the Pilot Deep measure package.

[1] OP 41 of Decision directs IOUs to file a Tier 2 advice letter no later than 90 days after the first pilot workshop detailing the ESA Pilot Plus/Deep program implementation plan. The Investor Owned Utilities (IOUs) conducted the first pilot workshop on September 27, 2021.
[2] D.21-06-015, Attachment 2, Section 1.

2. Equity – While the focus of the program may be towards single-family, owner-occupied homes, the IOUs shall consider how to increase program participation opportunities to renters and whether landlord co-investment is reasonable, given the rent restrictions and landlord co-pays for the multifamily whole building programs, as described in Section 7.9.
3. Quality – Focus on capturing meaningful, deeper savings for low-income households. This means spending more on fewer households, and dramatically increasing the impact of the treatment.
4. Customer-centric – A seamless low-income program delivery for the recipient with as many services provided in as few visits as possible, and greater customer satisfaction.
5. Optimization – Reduction in program administration, duplicative costs, and burdens to ratepayers. Maximize total funding to go towards program measures that save energy and/or reduce ratepayer collection.

Discussion

Approved Budget:

On June 7, 2021, the Commission adopted D.21-06-015 authorizing the IOUs' ESA Programs and budgets for the 2021-2026 program cycle. Among other things, the Commission adopted Energy Division's ESA Program redesign concept —the ESA Pilot Plus/Deep —as a pilot with implementation to begin July 2022, subject to the AL approval by the Energy Division. The IOUs' budget for the ESA Pilot Plus and Pilot Deep is approximately $104 million for the 2022-2026 cycle, of which PG&E's allocation is approximately $43.9 million for the cycle. The Decision directs the approved budget shall fund assessment and measure installations, independent evaluation, inspections, marketing and outreach, regulatory compliance, and general administration.[3] In addition, the Decision sets forth fund shifting provisions for the ESA Pilot Plus/Deep by allowing the IOUs to shift funds to the next year or borrow from a future program year within the cycle.[4]

Cost Effectiveness:

D.21-06-015 does not set a cost effectiveness threshold for this pilot, however it does direct the IOUs to track cost effectiveness of the measure treatments.[5]

[3] D.21-06-015, Attachment 2, Section 3.
[4] D.21-06-015, Section 10.5.8.2. at 429.
[5] D.21-06-015, Attachment 2, Section 4.

Customer Targeting and Protections:

D.21-06-015 directs the IOUs to target those customers that are deemed the neediest and have the ability and opportunity to achieve the specified percent savings per household as identified under the guiding principles.[6]

Proposed Measures:

D.21-06-015 directs the ESA Pilot Plus/Deep to complement and build upon the IOUs' "Basic and Plus" ESA Program measures described in Attachment 3 of Decision and filed on September 1, 2021 in the Joint IOU AL 3842-E/3012-G detailing the ESA Program Design and Delivery of the Measure Treatment Tiers for Program Years 2022-2026 .[7]

D.21-06-015 reaffirmed "the original Staff Proposal measure suggestions as a starting point for workshop discussion and pilot inclusion. The Pilot Plus package will offer certain equipment and appliance replacements and load shifting technologies, including electrification measures, in addition to any IOU basic package measures not already installed, that will reduce annual energy usage by 5 to 15 percent. The Pilot Deep package will offer the more advanced, and likely more expensive measures that will achieve a 15 to 50 percent reduction in annual energy usage, in addition to any Basic and Plus package measures not already installed."[8]

D.21-06-015 also reaffirmed that "the minor home repair allowance per household to facilitate measure package installation; additionally, pest or mold mitigation may be included if needed to facilitate the installation of efficiency measures or create a safe working environment for contractors."[9]

Lastly, D.21-06-015 provided "a potential list of measures for the two packages, Pilot Plus and Pilot Deep, as a starting point with additional measures discussed at the workshop and in this advice letter."[10]

PG&E plans to solicit the design and implementation to third-party for its ESA Pilot Plus/ Deep to ensure that all the innovative measures that the market has to offer are considered. Therefore, the full list of measures is undetermined at this time.

[6] D.21-06-015, Attachment 2, Section 5..
[7] AL PG&E Advice 4482-G/6314-E.
[8] D.21-06-015, Attachment 2, Section 6.
[9] Ibid.
[10] Ibid.

Pilot Program Design:

D.21-06-015 allows the IOUs to consider a variety of program design options for the Pilot Plus/Pilot Deep. With the design options, PG&E has decided to utilize a third-party to design and implement this pilot. As directed in D.21-06-015, PG&E will adhere to the contracting directives of section 6.10 of the decision, including "Open Competitive Bidding" as well as "Requirements for All Solicitation Processes." PG&E expects to begin implementation[11] of the program starting July 2022, subject to Energy Division staff approval of its advice letters.

Advice Letter Criteria

In D.21-06-015, the Commission provided the criteria under which the Energy Division will review and dispose of the IOUs' Tier 2 AL.[12] The AL must meet the following criteria:

1. Pilot Workshop Summary: The IOUs shall provide a summary of the workshop, including how workshop lessons were incorporated into their pilot implementation plan.
2. Pilot Budget: The IOUs shall provide an annual budget with detail for each of the categories listed above.
3. Customer Targeting: Based on the options listed above, the IOUs shall describe which customer segments it will target, and how it plans to target the groups for each of the Pilot Plus and Pilot Deep packages.
4. Pilot Measures: The IOUs shall propose a list of measures for each of the Pilot Plus and Pilot Deep packages, with the consideration that the IOUs will be able to add, modify, or remove measures through the monthly reports.
5. Pilot Program Design: The IOUs shall discuss how they plan to design and implement the pilot, per the potential options listed above.
6. Evaluation Plan: The IOUs shall include a high-level evaluation plan, with the consideration that a specific evaluation study scope will be determined in conjunction with the ESA / CARE Study Working Group.
7. Pilot Standards: The IOUs shall supplement their pilot proposal advice letters with the additional information below:
    - Lessons already learned from previous research and pilots, and how these past and potentially ongoing lessons will relate to the currently proposed pilot;

[11] "Program launch" is defined as beginning with an executed contract.
[12] D.21-06-015 Attachment 2, Section 10.

- Gaps in understanding that will be filled by the proposed pilot, and the logic for the specific pilot study design proposed;
- Whether the IOU intends to deploy the pilot at a larger scale, and if so, how the metrics and data collected will enable the IOU to decide whether to recommend a wider roll-out;
- Whether there are opportunities for learning on other, related issues.

Accordingly, PG&E timely submits this AL and provides information consistent with the above listed criteria in its Appendices.

Protests

*****Due to the COVID-19 pandemic and the shelter at home orders, PG&E is currently unable to receive protests or comments to this advice letter via U.S. mail or fax. Please submit protests or comments to this advice letter to EDTariffUnit@cpuc.ca.gov and PGETariffs@pge.com*****

Anyone wishing to protest this submittal may do so by letter sent via U.S. mail, facsimile or E-mail, no later than **December 9, 2021**, which is 20 days after the date of this submittal. Protests must be submitted to:

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

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

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

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

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

Facsimile: (415) 973-3582

E-mail: PGETariffs@pge.com

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

Effective Date

Pursuant to General Order (GO) 96-B, Rule 5.2, (and OP 41 of D.21-06-015), this advice letter is submitted with a Tier 2 designation. PG&E requests that this **Tier 2** advice submittal become effective on regular notice, **December 19, 2021**, which is 30 calendar days after the date of submittal.

Notice

In accordance with General Order 96-B, Section IV, a copy of this advice letter is being sent electronically and via U.S. mail to parties shown on the attached list and the parties on the service list for **A.19-11-003 et. al**. Address changes to the General Order 96-B service list should be directed to PG&E at email address PGETariffs@pge.com. For changes to any other service list, please contact the Commission's Process Office at (415) 703-2021 or at Process_Office@cpuc.ca.gov. Send all electronic approvals to PGETariffs@pge.com. Advice letter submittals can also be accessed electronically at: http://www.pge.com/tariffs/.

/S/
Sidney Bob Dietz II
Director, Regulatory Relations

Attachments:

Appendix A_PP PD Workshop Summary
Appendix A_Attachment 1_PP PD Workshop Q and A
Appendix A_Attachment 2_HEA Comments on PP PD Program
Appendix A_Attachment 3_TURN Comments on PP PD Proposal
Appendix A_Attachment 4_Workshop Comments PGE Response
Appendix B_Pilot Implementation Plan Final

cc: Service List A.19-11-003 et. al

California Public Utilities Commission

ADVICE LETTER SUMMARY

ENERGY UTILITY

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

Company name/CPUC Utility No.: Pacific Gas and Electric Company (U 39 M)

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

Contact Person: Stuart Rubio
Phone #: (415) 973-4587
E-mail: PGETariffs@pge.com
E-mail Disposition Notice to: SHR8@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) #: 4530-G/6412-E

Tier Designation: 2

Subject of AL: Pacific Gas &Electric Company Advice Letter Pursuant to Decision 21-06-015 for the Energy Savings Assistance Program Pilot Plus and Pilot Deep Implementation Plan

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.21-06-015

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

Summarize differences between the AL and the prior withdrawn or rejected AL: N/A

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: 12/19/21

No. of tariff sheets: 0

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 proposed[1]: N/A

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

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

Clear Form

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

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

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

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

Clear Form

APPENDIX A

Pilot Workshop Summary

An Energy Savings Assistance (ESA) Pilot Plus/Deep workshop was held on September 27, 2021 from 1PM to 4 PM, led by the IOUs in coordination with Energy Division staff. The purpose of the workshop was for the low-income energy program administrators (PAs) for ESA programs to discuss proposed implementation plans to achieve the objectives of the Energy Division staff proposal on Pilot Plus/Deep adopted in D.21-06-015. The workshop allowed participants to ask clarifying questions about the IOUs' proposed pilot designs and covered a wide range of topics that included customer targeting methodologies, implementer requirements, and differences between Pilot Plus/Deep and the main ESA program. The workshop was attended by approximately 170 participants representing a diverse group of stakeholders, many with decades of experience in interacting with low-income programs and communities, including but not limited to: consumer advocates, contractors, energy consultants, regulators and IOUs.

The questions posed by stakeholders ranged in subject-matter, from pilot program eligibility, to proposed measures, program design components and the relationship between the pilots and the main ESA program. Because each IOU plans to utilize third party solicitations in various ways to fulfill aspects of program implementation, several questions about the planned solicitations, program implementers and inclusion of contractors were also included. The IOUs provided responses to stakeholder questions throughout the course of the workshop. Additional written comments were also received. Items that are addressable at this stage of the plan are incorporated throughout the attached Implementation Plan (Appendix B).

The workshop slide deck can be found and downloaded at the EnergyDataWeb link below:

Joint Investor Owned Utilities (IOU) Energy Savings Assistance (ESA) Program Plus and Deep Pilot Workshop Presentation (published to EnergyDataWeb), September 27, 2021

Downloadable HERE

For details of the workshop and stakeholder comments, see the following attachments to Appendix A.

Appendix A_PP_PD Workshop Summary
Appendix A_Attachment 1_Joint IOU ESA Pilot Plus and Pilot Deep Workshop QandA_Final
Appendix A_Attachment 2_HEA Comments on ESA Pilot Programs
Appendix A_Attachment 3_A19-11-003-et-al_TURN_InformalCmts_IOU-Pilot Plus+Pilot Deep Proposals_10-11-21
Appendix A_Attachment 4_Workshop Comments PGE Response

Appendix A

Attachment 1 - PP PD Workshop Q and A

Joint Investor Owned Utilities (IOU) Energy Savings Assistance (ESA) Program Plus and Deep Pilot Workshop Q&A

Final Version with minor corrections, posted to EnergyDataWeb October 5, 2021.

Notes taken on IOUs' September 27, 2021 workshop regarding their Preliminary Implementation Plans (PIPs) for their respective Pilots Plus and Deep.

147 attending at the beginning of the workshop.

Questions on Southern California (SCE) & Southern California Gas (SoCalGas) Joint Presentation

Q: Do you need high gas and high electric to join the Pilot?

A: SoCalGas and SCE are currently analyzing whether there are enough joint households which are "high" users of both fuels to provide sufficient number of homes for EM&V purposes. Factors such as willingness to participate are being considered. If not, then plan will be revised to determine how to select households which are high users of just one fuel. (Answer provided after workshop.)

Q: How to coordinate services with other programs, and any special consideration for homes which have well water, and maybe prioritizing solar power to those properties?

A: RFP with implementer will require coordination proposal. Will look at well water (new issue).

Q: Definition of Single-Family (SF) homes? 1-4 units?

A: We will do so if measures can reduce usage in quadplexes. (SoCalGas and SCE confirmed after workshop that SF will be 1-4 units.)

Q: What is your vision of the role of the implementer?

A: Coordinating with IOUs as well as with contractors. Help provide training, ensure contractors are eligible to provide the required services. Implementer should also be able to install measures.

Q: How will you decide 15% savings overall when you have both gas and electric savings?

A: Determined based on the onsite audit.

Q: Will you be using the EnergyPro outputs to calculate % savings, or doing it on a BTU basis, or percent of each?
A: Specific energy modeling software has not been selected. Energy Pro is just an example. The tool will be used to determine which treatment path each home will receive (core ESA Program, Pilot Plus, or Deep). Tool will also be used to calculate savings after Deep installations are completed. Electric and gas energy use will need to be combined/converted to a common unit such as BTU.

Q: I did not notice any fuel substitution measures on the measure list. Were they considered for this pilot?
A: Given that this is a joint pilot between SoCalGas and SCE, the decision was made not to offer BE measures in the pilot. SCE will offer some BE measures in its new core ESA Program at the Enhanced/Plus level, as well as in the BE SF Retrofit pilot which will over an even wider array of BE measures as its primary focus.

Q: For renters, will you be requiring owners not to increase rents.
A: Yes, this pilot will implement rent increase protection similar to what is being done in the San Joaquin Valley (SJV) Disadvantaged Communities (DAC) pilot.

Q: Does the evaluation also include the ESA Program Building Electrification Pilot and Clean Energy Homes pilot (in addition to the Plus and Deep Pilot)? If not, will there be separate contracts?
A: The IOUs are considering issuing one RFP for all three pilots, but the plan is to issue three separate contracts due to the different scopes of work required for each evaluation.

Q: Have you decided on the type of audit to be conducted?

A: Test in and test out audit using energy modeling software and blower door testing. May also sample some homes for infrared testing to check for thermal leakage locations.

Q: How to estimate 15% savings if, for example, one is below that level and the other is above?
A: Energy units (Therms and kWh) will need to be converted to common unit, e.g.: BTU, and analyzed as a whole.

Q: Regarding slide 19, what is the prospect to provide training for contractors? How do you take the mystery out of working with the utilities to respond to the RFPs?

A: The IOUs have filed a communication with the service list regarding their RFP plans. As art of that the plan is to provide some sort of training, a workshop, etc., to educate prospective bidders on each individual utility's respective RFP process. This pilot was part of that communication.

Q: For the targeted area, will the contractor be given a list of customers for outreach?

A: The IOUs will provide the list of high potential customers for outreach. IOUs will analyze potential candidates' usage and identify which customer segments they fall into in order to characterize their needs.

Q: For the energy savings from 15% to 50%, can you talk about relationship between savings versus cost of treatment?

A: Pilot focuses on higher energy users because if you want to save a lot of energy, you have to be using a lot of energy. Investing in the high usage homes will provide the biggest bang for the buck. Customers who have an inefficient central AC they have not been using much, would not see much – or any – savings if the Pilot replaced their system. Systems cost the same to replace regardless of how much they are used. For this pilot, we will experiment within the guidelines and see what savings and cost effectiveness is truly obtained.

Q: Will there be 1-2 contractors from each utility location to be included in the RFP analysis? E.g.: the feasibility and boots on the ground approach?
A: The implementer will either have the expertise or subcontract out to perform required work. The subcontractors may but will not be required to be part of the existing ESA Program contractor base. Proposals will be reviewed for a holistic approach from the points of view of the customer, implementer, subcontractors, and administrators of the ESA Program.

Q: I think above question is asking contractors to be part of the review committee.
A: There is no PRG for this pilot, if that's what is meant SoCalGas and SCE will jointly develop the RFP and jointly score proposals based on their technical merits.

Q: Will the same TRC be used as in the greater ESA Program?
A: IOUs have not yet determined which cost effectiveness metric will be used to analyze the CE of the pilot. TRC may be most appropriate but to be determined.

Q: Scope of work for the inspector role vs the implementer role. Will the inspector do the initial assessment and routing projects to core ESA Program and Plus/Deep Pilot? Or will they be doing more of a post-installation QA/QC?
A: The inspector will be doing QA/QC after the installation

Q: Will the implementor do the audit?
A: Yes, the implementor or their subcontractor, whoever is at the home.

Q: Do all the contractors need to be ESA Program contractors?
A: [Post workshop correction: The Pilot Program Implementer (and subcontractors) will also need to be able to provide core ESA Program services the customer may be eligible for. This will help streamline the process for the customer to minimize visits and increase customer satisfaction.]

Q: Do you anticipate issuing multiple implementer contracts by region, or one master PO (with a bunch of subs)?
A: Question was apparently missed during workshop, no answer provided. Answer: SoCalGas and SCE plan on contracting with one implementor who can subcontract as necessary to provide the required range of services.

Questions on Pacific Gas & Electric (PG&E) and San Diego Gas & Electric (SDG&E) Joint Presentation

Q: Will you be letting administrator to select non-current ESA Program contractors to implement the program? Also, SB756 just changed ESA Program income. Encourage you to follow Edison and SoCal Gas use of current ESA Program contractors
A: It will be an open RFP, so will be allowing any potential bidder to submit a bid including their use of contractors.

Q: (Comment): Encourage you to follow Edison and SoCal Gas use of current ESA Program contractors
A: N/A

Q: Just to be clear, the Pilot does not mean you will be part of the ESA Program?
A: This pilot will be separate from the ESA Program. Customer will participate in one or the other. Pilot costs, benefits, and processes will be evaluated separately from the ESA Program. ESA Program measures will be offered via the Pilot.

Q: Will you have contractor use energy modeling software to determine which path each customer will take, similar to what SoCalGas and SCE have proposed?
A: The pilot needs to identify opportunities for high energy savings. Over the past year PG&E launched Load disaggregation reports for customers participating in ESA Program, which would be a good opportunity to identify high users and high potential for savings. [Post-workshop addendum: PG&E will be looking for the bidders to propose use of software or not. SDG&E will look to the bidders to propose solutions to identify savings potential.]

Q: Can the same contractor apply to do both the ESA Program and the pilot?
A: Yes, same contractor can apply for both.

Q: Will the evaluation criteria of this pilot follow the current ESA Program evaluation?
A: (PG&E) Pilot evaluations will be separate from the ESA Program evaluations.

Q: Same question as for SCE/SoCalGas: How will you be calculating % savings?
A: (PG&E): Bidders will propose an energy saving calculation methodology, which may be custom, or NMEC. SDG&E concurred.

Q: Just to confirm - unlike SCE/SoCalGas, the PG&E/SDG&E plan is to have the pilots be separate from the ESA Program? So in this case, will the same customer be likely approached by both ESA and pilot programs?
A: Plan is to develop customer targeting process so customer is not approached for both the regular ESA Program and Pilot. Bidders will be asked to provide input a solution to this issue. [Post workshop addendum: (PG&E) ESA Program measures will be offered via the Pilot.]

Q: How will you be evaluating implementers background in low income etc. Will you use checklists? Further investigation re: quality of past work, customers who are satisfied. A deeper dive into how the implementer is selected into quality of contractors' work history. Pilot program is governed by the low-income regulation. Pilot program must follow these rules (i.e., connected to the low-income community). There are a lot of new players coming into the low-income program to serve. PG&E

should look at customer satisfaction results as an assessment criterion for RFP. Experience would encourage you use ESA Program contractors especially if the larger goal is to make this part of the current program.
A: Yes, will be including questions re: experience in low income, and will consider an investigative approach into customer satisfaction history. PG&E plans to adhere to all rules in existence governing ESA Program and will be seeking to encourage all parties who have the expertise and ability to drive towards the end in mind of deeper energy savings. To achieve aggressive goals, we will need to embrace and be open to all innovative ideas and bidders with the expertise to take us where we have never gone - 50% savings in homes. [Post workshop addendum: SDG&E: The RFP will require bidders to provide a detailed set of qualifications including experience with implementing programs for the low-income population and evaluations of those programs.]

Q: How will the evaluations be different than the evaluations ESA Program has used in the past?
A: Some of the higher-level aspects of the evaluation will be the same, for example process and impact evaluations. More details on evaluation will be provided via the Pilot Implementation Plan to be submitted within 90 days of this workshop. But pilot evaluation design will be tailored to the needs of the Pilot. [Post workshop addendum: SDG&E: The pilot evaluations will be designed to assess the success of the pilot's objectives including energy savings, effectiveness of delivery strategies, and customer experience. Detailed work scopes for the pilots will be developed at a later date.]

Q: How will you determine eligibility for electrification? How many customers do you anticipate switching to electric space heating in the pilot?
A: Will be requesting input from bidders in terms of eligibility and opportunities in that space. [Post workshop addendum: The Pilot focus is on energy saving.]

Q: Are the customers selected limited to those who use PG&E (or SDG&E) services only? May they take service from another source as well?
Subsequent redirect: What if customer only uses one fuel from the IOU? Still eligible for the Pilot?
A: Customer must be customers of PG&E or SDG&E. If only uses one fuel, may participate in Pilot, depending on energy savings potential.

Q: If the plan is to let bidders largely develop the program, will the program plans come back to stakeholders such as people on this call to review and make comments on before implementation?
A: Yes, there is a plan to bring that plan to this group for more input. [Post workshop addendum: PG&E: Following the bid selection process the proposed implementation plan will be shared for awareness. SDG&E: We will take that into consideration for inclusion in the RFP.]

Q: It sounds that the bidder will design the entire program which sounds very different from SCE and SoCalGas.
A: Our pilots are proposed to be very different than SoCalGas and SCE, are looking for more input from the bidders. [Post workshop addendum: We will need to embrace and be open to all innovative ideas and bidders with the expertise to take us where we have never gone - 50% savings in homes.]

Q: Will ESA Program customers be eligible for stacking incentives from TECH, SGIP, RENs?
Q: Please (PG&E and SDG&E) clarify stacking and how you define it. There may be multiple incentive and measures installed. PG&E is thinking about leveraging and coordinating the measure. Please be explicit about coordinating with the different scenarios (to avoid double counting). Who gets to claim energy savings when you are coordinating and leveraging measures and share cost.

A: No stacking incentives have been considered but programs may be leveraged at the project level, based on program eligibility criteria. Ideas and proposals regarding stacking or leveraging will be considered in the RFP and bids. [Includes minor post workshop clarification.]

Q: What is the timeline for the rollout? When do you anticipate the entire bidding process to be completed?
A: PG&E looking to issue RFP targeting late Q4 of 2021/early Q1 of 2022, with an executed contract in Q3 of 2022. [Post workshop addendum: SDG&E will follow a similar timeline and expects to launch the pilot in Q3 of 2022, as directed in D.21-06-015.]

Comment on above answer: That is a very aggressive timeline based on experience with the IOU bidding process. Encourage PG&E/SDG&E to be very thoughtful about it rather than trying to meet an arbitrary timeline.
A: Timeline was developed based on the Decision directive(s).

Q: Will you be leveraging NMEC to calculate actual metered savings, and do you anticipate ongoing customer engagement post installation.
A: Will be looking to propose an ex ante platform, and could be deemed, custom, NMEC. Anticipate there will be pre and post install satisfaction surveys. Depending on the program design, the post install survey may vary, for example if the program is very heavy in behavioral intervention, then customer engagement post install would be critical to sustain some of those energy savings. [Post workshop addendum: SDG&E: Per the requirements of Commission Decision 21-06-015, Attachment 2, a specific evaluation study scope will be determined in conjunction with the ESA / CARE Study Working Group.]

Q: What is your anticipated target geographic area(s)? Are you going to have multiple target areas?
A: To be determined based on RFP/Bidder proposals.

Comment: SB756 increases ESA Program eligibility to 250% of federal poverty level, new legislation, Eligibility change takes effect July 1, 2022. CPUC/ED will be looking to provide guidance on this to the IOUs.

Q: What are total budgets for all IOUs?
A: See Slide 45, for all IOUs.

Q: What steps and process will PG&E and SDG&E go through to make sure the Pilot RFP reaches as wide an audience as possible, not just existing contractors?
A: PG&E will be rolling out communication to reach expanded bidder pool. SDG&E plan to use multiple channels of communicate to reach current and new ESA Program contractors. The communication will be through PEMA, ESA Program website. See RFP plan filed in August.
SDG&E will use several channels top notify potential bidders. PEPMA, posting solicitation on SDG&E ESA Program website, and others, similar to what's done for general EE program solicitations.

General Q&A

Q: For SoCalGas and SCE: I addition to lists of customers to be sent to the Pilot contractors, what other type of marketing support is planned?
A: SCE & SoCalGas at this time do not have more detail. We may have brochures and events, but that will be determined in the solicitation process.

Q: Current ESA Program contractors must meet many requirements, such as training for NGAT, bonding, insurance, PG&E requires ISNET, other requirements which are meant to ensure quality of services delivered. Caution against unequal systems between Pilot and core ESA Program contractor requirements.
A: Bidder requirements will be outlined in the bidder criteria, PG&E does not expect requirements to be unequal.

Q: For PG&E: In the RFP will you indicate if you have a preference for a single or multiple program implementers? One geographic area vs disparate areas?
A: PG&E does not currently have a preference, will look for input from bidders through their proposal(s).

Q: The IOUs are taking different approaches. SCE and SoCalGas has designed the program inhouse and plan to put out to bid the implementation, inspection, and evaluation functions. PG&E and SDG&E opted to allow bidders offer innovative ideas to design the pilot in addition to the implementation all together. How did the IOUs arrive at their respective approaches?

A: SDG&E: Wanted to give opportunity for parties to provide different ideas for the pilot.

SCE: SCE and SoCalGas feel they need to determine how do we ensure the ambitious energy savings 5-15% and 15-50% savings. We can't do this with SCE only. It was never our intent to outsource the program completely. During our RFP phase, we will encourage innovation and open to new ideas from CBOs, non-profits, current ESA Program contractors, and other contractors. For the RFP process, we are providing a little more structure, but will be seeking more innovation. Areas for additional improvement include marketing & outreach, such as how to design continuous engagement after project completion. Other areas for bidder input include how to project and measure energy savings. Set of measures can also be modified via bidding process.

PG&E: Similar to SDG&E, looking for open & innovative ideas that the market may present, particularly because some of the contractors that may be bidding on this have expertise in deep energy savings that we may not have.

Q: What are the opportunities to continue coordination given the IOUs' different approaches? What would the IOUs do to encourage idea sharing and learning from each other over the program cycle?

A: The IOUs talk to each other frequently in standing and ad hoc meetings. ESA Program working group is another forum to exchange ideas and lessons learned, including with other stakeholders. The process evaluation is another avenue for sharing best practices.

Q: What is the criteria for ranking bids?
A: SDG&E: Have not yet determined the criteria for ranking bids. That will be included in the solicitation. PG&E same.

Q: PG&E, in your RFP will you indicate if you have a preference for a single program implementor or multiple? One geographic area vs. disparate areas?
A: Looking for input from the bidders. Both PG&E and SDG&E.

Q: Market Rate bidder solicitation, there is a process to allow bidders to opt-in or partner together. Contractor new to the low income field may not be ready to be a prime contractor. A prime may have a gap in their skill set for which they would want to subcontract out. Is this something that the IOUs are thinking about? The important thing is for the IOUs to encourage the bidders to form team as appropriate. Allow bidders to find out who else is interested so they may build stronger teams and create better responses.
A: PG&E is currently talking to the EE and diversification team to tie-in to these processes. SDG&E is doing the same. SCE is promoting all the solicitations using the EE processes. SCE also set up a webpage on sce.com specifically for these new low income related solicitations. The goal is to cast a wide net to attract as many bidders as possible. SoCalGas is also leveraging experience from EE solicitation side.

SCE webpage mentioned above pasted into chat box:
https://www.sce.com/partners/ESA-solicitations

Q: SoCalGas and SCE, have you determined criteria for ranking bids? If so, what are the criteria?
A: SCE has not determined that yet. SoCalGas and SCE will work jointly to develop this.

Q: Have the IOUs created any joint metrics for existing ESA Program measure?
A: Is the question about the deemed savings values the IOUs report on for the core ESA Program? Savings are different across climate zones, and different across IOUs. SCE/SoCalGas – 5-15% and 15%+ savings coming from ESA Program core measures plus Pilot-Plus program measures, combined, assuming the household went on the Deep path. Costs and benefits must stay together, credited to the same program or pilot. If savings are determined via energy modeling software, that may capture interactive effects between different measures installed in the same home, whereas deemed per-measure savings are simply summed together as is done in the ESA Program.

Q: What did we achieve in energy savings previously when the ESA Program spent about $1000 per home treated?
A: 1-5% energy savings from the most recent ESA Program impact evaluation for 2015-2017. The average overall has been about 3% savings per home treated.

Q: To Roberto's question: for previous ESA Program customers, would the savings target be based on the original customer baseline (pre-ESA install), or are we measuring savings from the as-is baseline (that is, post ESA install)?
A: The baseline will be based on the test-in results. We are not looking specifically for previous ESA Program participants.

Q: Would participants in the Pilots be allowed to also participate in other major programs, such as DAC-SASH or SGIP, etc.?
A: SCE/SoCalGas will leverage these programs. PG&E and SDG&E concur.

Q: In the advice letter the CET scores are provided, however is there somewhere the savings by CZ can be found?

A: SCE: savings are in the workpapers, [or in ex ante results from Impact Evaluation.]

Q: Is the pilot program non-resource?
A: Number one goal of pilot is to provide deep energy savings. But there will be some non-resource services provided in order to allow installation of resource measures, similar to Minor Home Repair in the core ESA Program, plus mold abatement, and others. [Post workshop addendum: SDG&E does not intend to include abatement as part of the Pilot measures.]

Q: Is the 15% goal in addition to the 3% or a total of 15% including the current %3 historical savings?
A: The 3% is not relevant for the discussion. The test-in process will establish the pilot savings baseline, regardless of what was done in the home before the pilot. All measures installed in the pilot will count toward the savings goal, just as they will all be billed to the pilot. The pilot program is providing a new program design to achieve a higher energy savings.

Q: PG&E & SDG&E: Since the Pilots are to evaluate for future ESA Program use, will you require all bidders' contractors to meet the same standards as required of the ESA Program contractors?
A: The utilities will require bidders to meet ESA Program contractor requirements, including all appropriate certifications and licenses.

Q: How would you weigh HSC benefits when they are counter-productive to overall electric savings? The obvious example would be an exhaust fan for moisture issues. I assume HSC would be prioritized, yes?
A: SCE has not yet assessed how which HSC measures will be installed. One approach might be to ensure the home is brought up to current building code as much as feasible using available Health, Comfort, and Safety measures/services.

A: Alice Napoleon, I wanted to amend my comment for SDG&E - Evaluation information will be in the Solicitation but not how they are ranked

Advice 4530-G/6412-E
November 19, 2021

Appendix A

Attachment 2 - HEA Comments on PP PD Program

Comments from Home Energy Analytics regarding proposed ESA Pilot Plus/Deep Pilot Program as presented at the 9/27 workshop.

On June 29, 2015 HEA submitted "COMMENTS OF HOME ENERGY ANALYTICS ADDRESSING ADMINISTRATIVE LAW JUDGE'S RULING REQUIRING RESPONSES TO ADDITIONAL QUESTIONS REGARDING CARE AND ESA PROGRAMS" under A.14-11-007. The summary from that document is as true now as then:

> *The most glaring and inexplicable omission in the modifications proposed by the IOUs to the CARE and ESA programs is their disregard of promising new technologies, which could lead to greater overall energy reductions at lower cost. In particular, the IOUs do not propose to take advantage of advanced analysis techniques utilizing smart meter data.*

Pilot Plus/Pilot Deep would achieve far greater savings at a lower cost if they were designed based on the following three principals:

1. Each home is different. Energy analysis using AMI data identifies both the potential for savings and the most cost effective routes to savings.

   Pilot Plus/Deep Pilot programs recognize there are different conditions and opportunities for energy savings across homes, which is a step forward. But they do not go far enough in employing analysis to tailor interventions specifically for individual homes. PG&E's P4P HomeIntel program has been successfully employing analytics to recommend low cost interventions to achieve persistent energy savings.

2. Energy savings should be measured, not deemed.

   There is no incentive to pick the most cost effective interventions for a home when savings are measured by adding more items to the project from a pick list. By analyzing the energy use in a home prior to intervening it is possible to determine the areas of energy waste and potential energy and cost savings that can be achieved by the intervention. Program dollars will go farther and have greater effect if they are spent wisely on each home.

3. Interactive follow up will maintain savings.

   No home is static. Residents: add new appliances and devices; change the thermostat settings; turn their water heater up by 20 degrees; decide to leave a door open for their pet in the middle of winter, etc. There is no end of small and big changes occupants can and will make. Residents need frequent, consistent feedback to maintain savings. AMI data can be used to provide accurate, monthly energy reports to encourage residents to make good decisions on energy usage.

Appendix A

Attachment 3 - TURN Comments on PP PD Proposal

TURN
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Lower bills. Livable planet.

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Hayley Goodson, Managing Attorney

Comments of The Utility Reform Network on the Joint IOUs' Preliminary Implementation Plans for the ESA Pilot Plus and Pilot Deep Program

Submitted to pda.energydataweb.com on October 11, 2021

The Utility Reform Network (TURN) submits these comments on the Preliminary Implementation Plans presented by Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and Southern California Gas Company (SoCalGas) (collectively, the "IOUs") during the ESA Pilot Plus and Pilot Deep Workshop held via webinar on September 27, 2021.

I. Background

The Commission in D.21-06-015 directed the IOUs to develop implementation plans for the Pilot Plus and Pilot Deep program to test strategies for significantly deepening savings per household from ESA treatment. As the Commission explained,

> Through this pilot, the IOUs will gather data on the feasibility of strategic measures delivery, including electrification measures, the level of investment required for such deep energy retrofits, the realized savings (energy savings and bill impacts) to the household, the long term benefits of these treatments (including non-energy benefits), and the cost effectiveness of each treatment tier. (D.21-06-015, Attachment 2, p. 1).

The Commission adopted energy savings targets of 5-15% for the Pilot Plus measure package and 15-50% for the Pilot Deep measure package, while also directing the IOUs to address in their pilot designs (1) equity for renters, (2) treatment quality (spending more on fewer households but dramatically increasing the impact of the treatment), (3) customer-centric delivery (minimizing visits and improving customer satisfaction), and (4) optimization of the expenditure of ratepayer funds (reducing administrative costs and maximizing the portion of funding going towards energy saving measures). (D.21-06-015, Attachment 2, p. 1).

Further, the Commission required the IOUs to address certain issues in their pilot proposal advice letters to ensure that the Pilot Plus and Pilot Deep program provides appropriate value. These issues include:

- relevant lessons learned from previous research and pilots;

- gaps in understanding to be filled by the pilot and logic for the pilot study design;
- how the metrics and data collected by the pilot will enable the IOU to decide whether to recommend a wider roll-out, if under consideration; and
- opportunities for learning on other related issues. (D.21-06-015, Attachment 2, p. 9).

Last but not least, the Commission indicated its expectation that the IOUs will begin implementation of the Pilot Plus and Pilot Deep program "starting July 2022" and include a status update in their Joint Mid-Cycle Progress Report, due by December 31, 2023. (D.21-06-015, Attachment 2, p. 7; pp. 420-421 (mid-cycle update)). Similarly, the Commission directed that the Mid-Cycle Program Assessment required by D.21-06-015 should include consideration of whether preliminary results from the various pilots authorized in that decision, including but not limited to the Pilot Plus and Pilot Deep program, warrant updates to ESA for the remainder of the program cycle. (D.21-06-015, pp. 420-421).

With these requirements and guidelines in mind, TURN offers the following comments.

II. SCE & SoCalGas Joint-Pilot

A. EM&V

SCE and SoCalGas indicate that they are considering including an impact evaluation, process evaluation, and QA/QC audit effectiveness review in the EM&V plan. (Slide 21). They propose a schedule and milestones for their Joint-Pilot EM&V that includes "initiating" the 2023-2024 impact evaluation from 2023-2026 and "initiating" the 2024-2025 impact evaluation from 2025-2026. (Pilot Plus and Pilot Deep Workshop Presentation, Slide 23).

TURN offers three recommendations regarding their preliminary EM&V plan.

First, the preliminary EM&V plan should be expanded to confirm that it will address the pilot questions outlined by the Commission in D.21-06-015, including:

- the feasibility of strategic measures delivery, including electrification measures;
- the level of investment required for such deep energy retrofits;
- the realized savings (energy savings and bill impacts) to the household;
- the long term benefits of these treatments (including non-energy benefits); and
- the cost effectiveness of each treatment tier.

Second, the EM&V plan should support alignment of the pilot with the "Pilot Standards" set forth by the Commission in D.21-06-015, Attachment 2. It should include the incorporation of lessons learned by other, related pilot programs to support mid-cycle pilot adjustments and otherwise ensure that the pilot is filling knowledge gaps. It should likewise provide any other

information necessary to inform the IOUs' and Commission's consideration of whether to expand the pilot program mid-cycle or in the next program cycle.

Third, the EM&V schedule should be expedited to support at least some degree of meaningful review during the Mid-Cycle Review Process. Moreover, sufficient EM&V results must be available in time to inform ESA program design beyond 2026, when this program cycle ends. The IOUs will need meaningful impact and process evaluation results during 2024 to support planning for the post-2026 application cycle. Indeed, the purpose of this pilot program is to test whether ESA should be further redesigned in the future, beyond the program modifications adopted in D.21-06-015. Delaying the Pilot Plus and Pilot Deep EM&V milestones will frustrate this purpose and undermine the usefulness of the program, to the detriment of low-income customers and ratepayers.

B. Budget

SCE and SoCalGas provide a preliminary budget for the Joint-Pilot that includes 50/50 sharing of many budget categories but different levels of contribution to the following cost elements: Direct Installation – Material, Performance Incentive, and General Administration. (Slide 19). They present the share of total Joint-Pilot budget for each cost element but not the share of each IOU's total budget. TURN calculated these percentages (relative to each IOU's total pilot budget), which are as follows:

- Direct Installation – Material: 33% for SCE, 49% for SoCalGas
- Performance Incentive: 25% for SCE, 19% for SoCalGas
- General Administration: 6% for SCE, 10% for SoCalGas

TURN is concerned about the lack of transparency regarding the reasoning for these non-50/50 budget allocations. TURN appreciates that SCE and SoCalGas have very different total budgets for the pilot per D.21-06-015 ($19,424,318 for SCE and $32,552,726 for SoCalGas), but it is unclear, for instance, why SoCalGas's General Administration costs would comprise 10% of its total pilot budget, but only 6% for SCE. Similarly, it is unclear why SoCalGas would need to spend almost three times as much on General Administration as SCE for a joint pilot ($3,255,273 versus $1,165,460), particularly given the "optimization" guiding principle for the pilot.

TURN recommends that SCE and SoCalGas provide additional information about the basis for their Joint-Pilot budget that explains the different budget allocations for the three cost elements without 50/50 cost sharing.

C. Measures

SCE and SoCalGas provide the preliminary list of Joint-Pilot electric and gas measures. (Slide 18). TURN offers two comments regarding pilot measures.

First, TURN understands from the workshop Q&A discussion that SCE and SoCalGas will not include electrification measures in the Joint-Pilot to accommodate the interests of both utilities. On the other hand, SCE explained that it will offer some Building Electrification measures in its new core ESA Program at the Enhanced/Plus level, as well as in the Building Electrification Single Family Retrofit pilot authorized by D.20-06-015. TURN is concerned about using ratepayer funds to lock Joint-Pilot participants into long-lived gas burning equipment, when they might benefit from and prefer to receive an electrification measure through another ESA channel if eligible.

To ensure that the Joint-Pilot adheres to the "customer-centric" guideline, TURN recommends that customers who are candidates for gas water heater and/or gas HVAC measure replacement through the Joint-Pilot receive education about opportunities for heat pump water heater and/or heat pump HVAC measures offered by other ESA channels before pilot enrollment. SCE and SoCalGas should be required to obtain customer informed consent before replacing gas water heaters or gas HVAC measures with new gas measures in lieu of alternative electrification ESA offerings. Customers opting instead for electrification measures should be referred to the appropriate ESA channel for treatment.

TURN recognizes that SCE and SoCalGas anticipate challenges in identifying pilot participants with sufficient energy savings potential to satisfy the Pilot Plus and Pilot Deep savings targets, and that gas HVAC and domestic hot water measures are the only gas measures proposed for the Deep Pilot. TURN's "informed consent" approach could further challenge pilot enrollment efforts, assuming that potential pilot participations would also be eligible for ESA electrification measures. At the same time, it would appropriately center decision-making in the customers who will live with the near- and longer-term economic and environmental impacts of ESA treatment for many years. On balance, TURN urges SCE and SoCalGas to afford their low-income customers with comprehensive information about available ESA electrification offerings before replacing long-lived gas-burning measures with new gas measures through the Joint-Pilot.

Second, TURN is confused by which gas HVAC measures are proposed for Pilot Plus and which for Pilot Deep (and why). It appears that High Efficiency Forced Air Unit (HE FAU) "early replacement" and "replacement on burnout" are Pilot Plus and Pilot Deep measures, while HE FAU "repair/replace" is only a Pilot Deep measure. TURN recommends that SCE and SoCalGas explain the basis for the classification of the various gas HVAC measures and clearly distinguish those proposed for Pilot Plus versus Pilot Deep treatment.

III. SDG&E and PG&E Pilots

A. EM&V

PG&E and SDG&E appear ready to engage the EM&V firm early on with the development of "Program Logic and Tracking Metrics" but provide little information about the scope of evaluation to be undertaken. They also provide no timeline for EM&V results. (Slide 33).

Similar to TURN's recommendations for SCE and SoCalGas, TURN recommends that PG&E and SDG&E expand the summary of key activities for the EM&V contractor to confirm that all of the pilot questions outlined by the Commission in D.21-06-015 will be addressed (cost, energy savings, bill impacts, long-term program impacts, cost-effectiveness, etc.). PG&E's and SDG&E's EM&V plans should likewise support alignment with the "Pilot Standards" set forth by the Commission in D.21-06-015, Attachment 2. Last but not least, the EM&V timeline should be expedited to support at least some degree of meaningful review during the Mid-Cycle Review Process and to inform ESA program design beyond 2026 (which requires EM&V deliverables well before the end of this program cycle).

Respectfully submitted,

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Appendix A

Attachment 4 - Workshop Comments PGE Response

Attachment 4

Workshop Comments: PG&E Responses

PG&E Responses to:

- **Home Energy Analytics comments on Pilot Plus/Pilot Deep, October 7, 2021 (Appendix A, Attachment 3) – Available HERE**
- **TURN Comments on Joint IOU Pilot Plus + Pilot Deep Preliminary Implementation Plans, October 11, 2021 (Appendix A, Attachment 4) – Available HERE**

1) (TURN) All IOUs: EM&V Plan should confirm that requirements in Decision will be addressed:
   a) the feasibility of strategic measures delivery, including electrification measures;
   b) the level of investment required for such deep energy retrofits;
   c) the realized savings (energy savings and bill impacts) to the household;
   d) the long term benefits of these treatments (including non-energy benefits); and
   e) the cost effectiveness of each treatment tier.

PG&E's EM&V plan will include requirements stated in D.21-06-015. The specific evaluation study scope will be determined in conjunction with the ESA/CARE Study Working Group.

2) (TURN) All IOUs: EM&V plan should support alignment of the pilot with the "Pilot Standards" from the Decision:
   a) Lessons already learned from previous research and pilots, and how these past and potentially ongoing lessons will relate to the currently proposed pilot;
   b) Gaps in understanding that will be filled by the proposed pilot, and the logic for the specific pilot study design proposed;
   c) Whether the IOU intends to deploy the pilot at a larger scale, and if so, how the metrics and data collected will enable the IOU to decide whether to recommend a wider roll-out;
   d) Whether there are opportunities for learning on other, related issues.

PG&E's EM&V plan will include requirements stated in D.21-06-15. The specific evaluation study scope will be determined in conjunction with the ESA/CARE Study Working Group.

3) (TURN) All IOUs: EM&V schedule should be expedited to support at least some degree of meaningful review during the Mid-Cycle Review Process.

The IOUs will submit a joint mid-cycle progress report, in consultation with the ESA Working Group, to the Commission and the service list of this proceeding or a successor proceeding by December 31, 2023. Included in the progress report will be a discussion of the status of the Pilot Plus and Pilot Deep program. Any available data, including preliminary results of pilots, will be shared and discussed by the working group.

4) (TURN) All IOUs: EM&V results must be available in time to inform ESA program design beyond 2026

The IOUs will submit a joint mid-cycle progress report, in consultation with the ESA Working Group, to the Commission and the service list of this proceeding or a successor proceeding by December 31, 2023. Included in the progress report will be a discussion of the status of the Pilot Plus and Pilot Deep program. Any available data, including preliminary results of pilots, will be shared and discussed by the working group.

5) (TURN) PG&E and SDG&E: Provide little information about the scope of evaluation to be undertaken. They also provide no timeline for EM&V results. (Slide 33).

SDG&E and PG&E have chosen to outsource the design and delivery of the Pilot in its entirety. Therefore, the approach and strategies for customer targeting, enrollment, assessment, installation, inspection, education and customer communications are unknown at this time. As a result, the preliminary evaluation plan included in Appendix B can only provide a high-level outline of an expected evaluation approach and is subject to change when the Pilot design is established. When a Pilot implementation plan detailing these components is available, this evaluation plan will be updated with a more detailed approach and methodology, in consultation with the ESA/CARE Study Working Group.

6) (HEA) All IOUs: Pilot should employ AMI data analysis to identify both the potential for savings and the most cost effective routes to savings.

SDG&E and PG&E have chosen to outsource the design and delivery of the Pilot in its entirety. Therefore, the approach and strategies for customer targeting, enrollment, assessment, installation, inspection, education and customer communications, among other design elements, are unknown at this time. PG&E will take this comment into consideration for inclusion in the implementer RFP. Refer to the "Customer Targeting" section of the pilot implementation plan for current customer identification parameters and objectives.

7) (HEA) All IOUs: Energy savings should be measured, not deemed. No incentive to pick the most cost effective interventions for a home when savings are measured by adding more items to the project from a pick list.

SDG&E and PG&E have chosen to outsource the design and delivery of the Pilot in its entirety. Therefore, the approach and strategies for customer targeting, enrollment, assessment, installation, inspection, education and customer communications, among other design elements, are unknown at this time. PG&E will take this comment into consideration for inclusion in the implementer RFP. Refer to the "Measures" section of the pilot implementation plan for current measure package parameters and objectives.

8) (HEA) All IOUs: Interactive follow up will maintain savings. AMI data can be used to provide accurate, monthly energy reports to encourage residents to make good decisions on energy usage.

SDG&E and PG&E have chosen to outsource the design and delivery of the Pilot in its entirety. Therefore, the approach and strategies for customer targeting, enrollment, assessment, installation, inspection, education and customer communications, among other design elements, are unknown at this time. PG&E will take this comment into consideration for inclusion in the implementer RFP. Refer to the "Customer Targeting" section of the pilot implementation plan for current customer identification parameters and objectives.

Appendix B

Pilot Implementation Plan Final

APPENDIX B

PG&E ESA Pilot Plus and Pilot Deep Program Implementation Plan

Contents

Program Overview

Introduction

This Implementation Plan describes how Pacific Gas and Electric Company (PG&E) plans to design and execute the Pilot Plus and Pilot Deep treatment tiers (together referred to as "Pilot Plus/Deep") in accordance with the California Public Utilities Commission's (CPUC) Decision 21-06-015 (D. 21-06-015). The California Investor Owned Utilities Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company and Southern California Gas Company (together referred to as "the IOUs") have been directed to begin implementation of Pilot Plus/Deep starting July 2022, subject to CPUC Energy Division staff approval of a Tier 2 advice letter.[1] PG&E submits Advice Letter 4530-G/6412-E, Pursuant to Decision 12-06-015 for the ESA Program Pilot Plus and Pilot Deep Implementation Plan (hereafter referred to as "Pilot Advice Letter"), on November 19, 2021.

As stated in D. 21-06-015, the CPUC's intent in approving Pilot Plus/Deep is for the IOUs to gather data on the feasibility of strategic measures delivery, including electrification measures, the level of investment required for such deep energy retrofits, the realized savings (energy savings and bill impacts) to the household, the long term benefits of these treatments (including non-energy benefits), and the cost-effectiveness of each treatment tier.[2] This Implementation Plan represents PG&E's high-level strategy to pursue these objectives as an effort to inform future Energy Savings Assistance (ESA) program design.

A detailed history of the legislative and procedural activity leading to these pilots is provided in D. 21-06-015 and not repeated here; however, PG&E does provide the Commission's stated goals and objectives for these pilots.[3] The guiding principles used to develop Pilot Plus/Deep include:

Primary Goal:

- Deeper Energy Savings
    - Achieves between an estimated 5 percent and 15 percent savings through the Pilot Plus measure package.
    - Achieves between an estimated 15 percent and 50 percent savings through the Pilot Deep measure package.

Secondary Goals:

- Equity – While the focus of the program may be towards single-family, owner-occupied homes, the IOUs should consider how to increase program participation opportunities to renters and whether landlord co-investment is reasonable.
- Quality – Focus on capturing meaningful, deeper savings for low-income households. This means spending more on fewer households, and dramatically increasing the impact of the treatment.

[1] D. 21-06-015, Attachment 2, Guidance of the ESA Program Pilot's Plus and Pilot Deep Program (PY2021-2026), Section 7, Pilot Program Design.
[2] D. 21-06-015, Section 6.2.3.2., p. 128.
[3] D. 21-06-015, Attachment 2, Guidance of the ESA Program Pilot's Plus and Pilot Deep Program (PY2021-2026), Section 2, Pilot Guiding Principles.

- Customer-centric – A seamless low-income program delivery for the recipient with as many services provided in as few visits as possible, and greater customer satisfaction.
- Optimization – Reduction in program administration, duplicative costs, and burdens to ratepayers. Maximize total funding to go towards program measures that save energy and/or reduce ratepayer collection.

Workshop Summary

An ESA Pilot Plus/Deep workshop was held on September 27, 2021 from 1PM to 4 PM, led by the IOUs in coordination with Energy Division staff. The purpose of the workshop was for the low-income energy program administrators (PAs) for ESA programs to discuss proposed implementation plans to achieve the objectives of the Energy Division staff proposal on Pilot Plus/Deep adopted in D.21-06-015. The workshop allowed participants to ask clarifying questions about the IOUs' proposed pilot designs and covered a wide range of topics that included customer targeting methodologies, implementer requirements, and differences between Pilot Plus/Deep and the main ESA program. The workshop was attended by approximately 170 participants representing a diverse group of stakeholders, many with decades of experience in interacting with income-qualified programs and communities, including but not limited to: consumer advocates, contractors, energy consultants, regulators and IOUs.

The questions posed by stakeholders ranged in subject-matter, from pilot program eligibility, to proposed measures, program design components and the relationship between the pilots and the main ESA program. Because each IOU plans to use third party solicitations in one form or another to fulfill aspects of program implementation, several questions about the planned solicitations, program implementers and inclusion of contractors were also included. The IOUs provided responses to stakeholder questions throughout the course of the workshop. Additional written comments were also received. Items that are addressable at this stage of the plan are incorporated throughout this document. For details of the workshop and stakeholder comments, see "Appendix A_PP_PD Workshop Summary" of the Pilot Advice Letter.

Additionally, several of the questions posed by stakeholders pertaining to program design could not be answered by PG&E as PG&E plans to hold a full third-party solicitation process covering both design and implementation of the pilot. However, to provide additional clarity on the intent of the pilot and expectations of the solicitation process, PG&E plans to incorporate a bidders' conference into the solicitation timeline if feasible to do so. The solicitation timeframe, presented in greater detail in the Pilot Timeline section, is subject to CPUC Energy Division approval of the Pilot Advice Letter. Together with the other IOUs, PG&E also intends to offer a general ESA solicitations workshop on December 13, 2021 for prospective bidders interested in learning about the various solicitations and how to participate.

Pilot Implementation Model

D. 21-06-015 provided the IOUs several options to design and implement Pilot Plus/Deep, listed below:[4]

[4] D. 21-06-015, Attachment 2, Guidance of the ESA Program Pilot's Plus and Pilot Deep Program (PY2021-2026), Section 7, Pilot Program Design.

- IOU designed, third-party implemented, (modified third-party solicitation process) similar to ESA multifamily whole building program, with or without an independent evaluator and peer review group.
- Statewide program with or without third-party, with funding allocated to each IOU.
- Full third-party solicitation process, including design and implementation, with or without statewide implementation.
- Regional implementation, particularly shared service for SCE and SoCalGas, similar to ESA multifamily whole building program.

Of the options, both PG&E and SDG&E opted for the full third-party solicitation process. While PG&E and SDG&E will similarly seek bids for a full program design and implementation model, the IOUs will release two separate solicitations and will implement separate pilots. Through the solicitation, PG&E aims to foster innovative ideas from the advanced energy industry, and to manage cost through competitive pricing. PG&E will adhere to the directives in D. 21-06-015 governing contracting, open competitive bidding, and solicitation processes.[5] Additional information about PG&E's vendor sourcing plans are outlined in the Program Design section.

Pilot Timeline

PG&E plans to launch Pilot Plus/Deep by the beginning of the third quarter of 2022. PG&E defines "launch" as beginning with contract execution, and taking active steps to begin enrollment. To meet this milestone, PG&E plans to initiate the third-party solicitation process immediately following CPUC Energy Division staff approval of the Pilot Advice Letter. PG&E is filing the advice letter five weeks in advance of the time allotted in D. 21-06-015,[6] as to allow sufficient time to initiate and administer an effective solicitation. Figure 1 summarizes the major stages and proposed timeline for the solicitation to occur. All dates are subject to CPUC Energy Division staff approval of the Pilot Advice Letter by December 19, 2021, thirty days after filing.

Figure 1
ESA Pilot Plus/Deep Program Design and Implementation Third Party Solicitation Timeline[7]

Year	2021			2022								
Quarter	Q4			Q1			Q2			Q3		
Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
ESA Pilot Plus/Deep		RFP Prep			RFP		RFP Interview and Negotiation		Execute Contra-ct	Program Launch		

The directive of this pilot represents a more extreme savings goal than both the previous ESA program model and those proposed by the IOUs in the 2021-2026 program cycle.[8] The objectives envision a

[5] D. 21-06-015, Section 6.14.8., pp. 294-297.
[6] D. 21-06-015 Ordering Paragraph 40 directs the IOUs to introduce their preliminary implementation plans and seek input from stakeholders at a public workshop within 120 days after approval of the decision, and Ordering Paragraph 41 requires each IOU to submit a Tier 2 advice letter no later than 90 days after the workshop.
[7] Date ranges are approximations for illustrative purposes. Dates are subject to change. Figure 1 schedule is subject to CPUC Energy Division staff approval of Advice Letter 4530-G/6412-E.
[8] D. 21-06-015, Section 6.2.3.1., pp. 127-128.

thoughtful, customer-centric delivery model, while also striving for deeper energy savings per household. To facilitate innovative ideas capable of addressing these objectives, and to offer bidders information necessary to participate in the solicitation, PG&E plans to build time into the solicitation timeline for the following pivotal steps:

1. Active bidding period: Denoted as "RFP" in Figure 1 above. This is the time allotted to prospective bidders to generate and submit proposals to be considered in the solicitation. It includes the opportunity to submit questions to PG&E about the solicitation process and scope of work, and for PG&E to respond. This period, time permitting, may include a bidders' conference, providing bidders additional information about the Pilot Plus/Deep implementer solicitation, such as how to submit questions, contract terms, and scope of work details.
2. Evaluation and selection: Included in "RFP Interview and Negotiation" in Figure 1 above. This is the time allotted by PG&E to review proposals, score each against the criteria established for the solicitation, and to select the successful proposal. PG&E intends to conduct bidder interviews, followed by a second round of scoring, to better inform PG&E's evaluation, time permitting.
3. Negotiation and contract execution: Spans "RFP Interview and Negotiation" and "Contract Execution" in Figure 1 above. This period allows for the successful bidder and PG&E to align on specific contract terms and scope of work, and for the successful bidder to conduct PG&E supplier onboarding tasks, such as contractor safety and cybersecurity review.

Pilot Plus/Deep is intended to run through the end of the 2021-2026 program cycle. A more detailed timeline of the full pilot period, including phasing implementation or installation across the pilot's two treatment tiers, will be developed in consultation with PG&E's pilot implementer, once selected.

Pilot Standards

D. 21-06-015 directed the IOUs to adopt a new set of standards to help shape Pilot Plus/Deep and potentially other pilots in the future. These include identifying lessons learned from previous research and pilots, anticipating pilot learnings, addressing the intent to deploy the pilot at larger scale, and identifying additional opportunities for learning.

Lessons Learned from Previous Research and Pilots

PG&E plans to leverage lessons learned from recent pilots and program implementation to inform the design and implementation of Pilot Plus/Deep. The following section highlights several pilots, programs and relevant lessons learned, along with possible applications to the pilot. These include: the Main ESA Program for single family, multifamily and mobile homes; the San Joaquin Valley Disadvantaged Communities (SJV DAC) Pilots; and the Smart Thermostat Time-of-Use (TOU) Pilot.

Program	***Lesson Learned***	***Potential Application***
ESA Program	Property owner authorization can impede home treatment, particularly when property management companies are involved.	Streamline Property Owner Authorization process to minimize barriers.

	Some qualifications can cause confusion impacting participation.	Clearly define participation and measure feasibility criteria.
San Joaquin Valley Disadvantaged Communities Pilots	Multiple visits to customer homes can be burdensome to residents.	Define customer journey to minimize home visits.
	Limited customer availability during business hours.	Build outreach and implementation strategy to allow for evening and/or weekend home visits.
	Limited qualified workforce available for advanced measures.	Coordination between IOU, implementer, contractor or other partnerships to define training requirements, accessibility, and availability of workforce.
	Implementer contract should include enforceable key performance indicators (KPIs).	Inclusion of metrics aligned with pilot objectives, and trackable, enforceable KPIs in implementer contract.
	Obtaining a permit for work on mobile homes without a permanent foundation can be difficult when homeowners do not have a certificate of title.	The California Department of Housing and Community Development was willing to forego this information if it was noted within the permit application that the project is part of the SJV DAC Pilot. A similar exception would need to be granted for a different pilot.
	Workers find different work when contractors are not scheduling consistent jobs, causing intermittent workforce shortages, resulting in delays in program delivery.	Coordination between implementer and contractors to establish steady, consistent project pipeline and schedule.
	Implementer and/or contractor serving as existing service provider to leverageable program(s).	Inquire of bidders if they are existing service providers with leverageable programs, and if so, how they can leverage to achieve deeper energy savings. If not existing service providers, outline how they can partner with service providers, or more effectively access offerings by leverageable programs.

Pacific Gas and Electric Company's (PG&E) Smart Thermostat Time-of-Use (TOU) Pilot	One of the driving factors behind the TOU pilot was research[9] concluding income-constrained customers were much more interested in manufacturer or utility-implemented programs that automatically change thermostat set points during peak periods compared to the rest of the study participants.	Inclusion of system controls and energy management systems in pilot measure packages.

Anticipated Pilot Learnings

The purpose of Pilot Plus/Deep is to demonstrate how to achieve the savings amounts and whether it is cost-effective for the IOUs to deliver treatment packages achieving energy savings between 5-15% (Pilot Plus) and 15-50% (Pilot Deep). For the pilot to be successful, it must yield data allowing for evaluation of the following factors:

- Measure delivery model (i.e. deemed, calculated or other),
- Level of investment required to perform retrofits deeper than the main ESA program,
- Cost effectiveness of each treatment tier (i.e. Pilot Plus, Pilot Deep),
- Savings to the household (i.e. actual energy savings and bill impacts attributable to the pilot), and
- Long term benefits of the treatments to the household (i.e. new non-energy benefits/NEBs not currently tracked in the main ESA program)
- Impact of electrification on overall program savings and cost-effectiveness

The inclusion of KPIs, including but not limited to data tracking, in the third-party pilot program implementer's scope of work, as well as the EM&V plan established in this plan, are intended to establish the data record and evaluation processes to address gaps in current understanding of the ESA program's ability to achieve deep energy savings.

Intent to Deploy Pilot at Larger Scale

The EM&V plan established in this Pilot Implementation Plan is intended to inform PG&E's ability to deploy the pilot treatment packages, or new measures, at a larger scale, and whether it is cost-effective to do so. A status update on the pilot will be provided in the mid-cycle assessment and progress report, in consultation with the ESA Working Group.

PG&E or its vendors will track the necessary data to inform future ESA program design, as well as lessons learned from this pilot.

Additional Opportunities for Learning

The exploration of new, deeper energy saving measures through Pilot Plus/Deep may potentially include education and behavior change strategies, subject to bidder proposals. While PG&E has piloted behavior change initiatives and is currently implementing a residential pay-for-performance program with behavior change and education components, PG&E has yet to apply these techniques in a focused

[9] Pacific Gas & Electric Company Ethnographic Smart Thermostat Research Winter 2016 - 2017 & Summer 2017, published January 2018, available at http://pgera.azurewebsites.net/Regulation/ValidateDocAccess?docID=436533

manner in income-qualified and disadvantaged communities. Should the pilot incorporate new education or behavior change measures, the resulting evaluation of such measures will help determine if they are successful and scalable in a cost-effective manner in income-qualified programs.

The intended inclusion of electrification measures among other common ESA measures and new, deeper energy saving measures in Pilot Plus/Deep provides an opportunity for understanding how electrification measures can be incorporated into the main ESA program on an as-needed, or cost-effective basis. While the San Joaquin Valley Disadvantaged Communities Pilots have performed partial electrification of homes in instances where whole-home electrification was not feasible, Pilot Plus/Deep will measure energy savings and associated cost-effectiveness as well, yielding deeper insights into both the feasibility and cost-effectiveness of electrification measures from an energy savings lens.

The third-party pilot program implementer's proposed measure packages, and the associated workforce strategy used to install the measures, will likely provide insights into the level of skill, education, training, licensing, and certifications required to install deeper energy saving measures in the main ESA program. The ability to replicate pilot results at scale may require further understanding of the available workforce in relation to the demand of the ESA program and other income-qualified and disadvantaged community programs in PG&E service territory.

The opportunities or obstacles to incorporate clean energy programs and resources into Pilot Plus/Deep, and their contribution to achieving deeper energy savings, will provide valuable insights into the feasibility of incorporating broader integrated demand-side management (IDSM) strategies into residential income-qualified and disadvantaged community programs.

Pilot Budget

Budget Guidelines

D. 21-06-015 authorized $43,913,036 for PG&E to implement Pilot Plus/Deep between 2022-2026, or roughly $8,782,607 per year.

The following direction provided in D. 21-06-015[10] will guide the funding allocations between various components of the pilot:

- Energy efficiency and other measure delivery – Most of the pilot funds shall go towards assessment and installation of Pilot Plus and Deep measure packages.
- Study/ Evaluation – An independent evaluation of the pilot shall be conducted. As part of the evaluation, the IOUs and evaluator shall study energy use patterns and billing costs of a comparison group of non-participants to further understand the usefulness of the pilot.
- Inspections –Inspections of treatments shall be conducted.
- Marketing and Outreach – Minimal funds may be allocated for marketing and outreach efforts specific to this pilot only.
- Regulatory Compliance – Minimal funds may be allocated for compliance efforts specific to this pilot only.

[10] D. 21-06-015, Attachment 2, Guidance of the ESA Program Pilot's Plus and Pilot Deep Program (PY2021-2026), Section 3, Budget.

- General Administration – Funds may be allocated for administration of the pilot, not to exceed 10 percent of the pilot budget.

Budget Estimates

The selection of the third-party pilot program implementer will influence the budget allocation between the pilot components listed above. Due to the timing of the third-party pilot program implementer solicitation process in relation to the date required to file the Pilot Advice Letter, PG&E is providing high level budget estimates based on recent pilots and ESA program implementation. Budget estimates are subject to change and will be updated in annual reports.

Estimated budget amounts and percentages by component are shown in Table 1 below:

Table 1
Total Budget Amount and Percentage by Category

	Total Pilot Budget	Percent by Category
Implementation	**$39,741,298**	**90.5%**
Measure Delivery	*$30,958,691*	*70.5%*
Implementation, non-measure delivery	*$8,782,607*	*20.0%*
Administration	**$4,171,738**	**9.5%**
Marketing & Outreach	*$262,948*	*0.6%*
Evaluations	*$988,043*	*2.3%*
Regulatory Compliance	*$137,424*	*0.3%*
Inspections	*$457,805*	*1.0%*
General Administration[11]	*$2,325,518*	*5.3%*
TOTAL	**$43,913,036**	**100.0%**

Given the third-party pilot program implementer is expected to be onboard for a portion of 2022, and assuming implementation will gradually ramp up from the start of the contract, PG&E estimates utilizing less than the authorized annual budget amount in 2022, and will roll over the unspent funds into subsequent program years during the 2021-2026 cycle, with the intent to expend fully the approved pilot budget over the course of the program cycle.[12]

Estimated budget amounts by year, including Implementation and Administration allocations, are detailed in Table 2 below. PG&E will adhere to the guidelines in D. 21-06-015 not to exceed the 10%

[11] General Administration includes estimates of costs for PG&E to oversee the pilot program, such as contractor technical training administered by PG&E, data gathering or analysis for customer targeting or energy savings, and PG&E personnel costs, among other costs.

[12] While D. 21-06-015 Attachment 2, Section 7 states the IOUs are expected to expend fully the set-aside of funding each year, Ordering Paragraph 181 also provides the IOUs flexibility for pilot fund shifting from year to year to allow for flexibility (see Changes to Pilot Budget section below).

Administration cost cap. The majority of funds will be dedicated to pilot program implementation. All estimates are subject to change.

Table 2
Budget Amounts by Year

	2021	2022	2023	2024	2025	2026	Total
Implementation	N/A[13]	$3,221,021	$8,082,194	$9,847,499	$9,847,499	$8,743,085	**$39,741,298**
Administration	$51,000	$783,880	$930,060	$885,509	$845,427	$675,862	**$4,171,738**
TOTAL	**$51,000**	**$4,004,901**	**$9,012,254**	**$10,733,008**	**$10,692,926**	**$9,418,947**	**$43,913,036**
Approved Pilot Budget	-	**$8,782,607**	**$8,782,607**	**$8,782,607**	**$8,782,607**	**$8,782,607**	**$43,913,036**

Other Budgeting Considerations

Given one of the stated objectives of Pilot Plus/Deep is to determine the cost-effectiveness of each treatment tier, budget allocation decisions will be informed by data collected and lessons learned over the course of the pilot. Regular and careful cost monitoring, savings analysis, and adherence to key performance indicators (KPIs) and/or service-level agreements (SLAs), are all approaches expected to support identifying if there is a path to cost-effective pilot implementation.

PG&E will also adhere to the minor home repair cost cap of $2,500 per home, newly increased in D. 21-06-015, and monitor associated costs.[14] The higher cost cap allows for minor repairs to facilitate measure installation, as well as pest or mold mitigation, if needed to facilitate installation in a safe working environment. PG&E appreciates the ability to exceed the previous cap given the average per home cost for Pilot Plus/Deep will likely exceed that of typical ESA treatments.

Changes to Pilot Budget

While fund shifting is generally not allowed between program years for public purpose program expenditures, Pilot Plus/Deep was granted an exception in D. 21-06-015 Ordering Paragraph 181, allowing funds to be rolled over to the next program year or borrowed from a future program year within the cycle. PG&E appreciates the flexibility this exception grants, given the possibility of change over the course of the pilot.

Fund shifting between the budget categories above, or between program years, will be reported in the ESA Annual Report per the new directives on the use of unspent funds in D. 21-06-015.[15] If necessary, PG&E will request fund shifting in and out of Pilot Plus/Deep via a Tier 2 advice letter. PG&E will also report fund shifting activities to the Low-Income Oversight Board (LIOB) via quarterly LIOB reports.

[13] Only administration costs are anticipated for 2021 as PG&E prepares to select an implementer through a third-party solicitation. Implementation costs are not forecast to begin until program launch in 2022.
[14] D. 21-06-015, Section 6.5.8.9, pp. 197-198 and Ordering Paragraph 68, p. 486.
[15] D. 21-06-015, Section 10.5.8.1, pp. 428-429.

Customer Targeting

At a minimum, pilot participants must be income-qualified[16] and PG&E utility customers. Beyond this, the identification of potential participants in the pilot will be guided by two primary criteria: customer need state and high energy usage. PG&E plans to inquire of potential bidders how their proposed program design will identify and select customers who are deemed most in need, up to and including those who meet a combination of both criteria. PG&E expects to consider a full range of customer targeting strategies, from data or analytics-based to direct contact, in evaluating bidder proposals. However, traditional marketing and outreach expenditures are planned to be low, in alignment with guidance received in D.21-06-015 (see Pilot Budget section). By turning to the advanced energy industry to solicit ideas for customer targeting, PG&E intends to drive innovation in this aspect of the pilot program design.

The following sections describe in further detail the primary criteria and considerations for participation in Pilot Plus/Deep.

Customer Need State

PG&E plans to select customers that are deemed the neediest, based on several criteria, which may include demographic, financial, geographic, and health factors. Table 3 below details specific sub-categories that may be considered in evaluating customer need state:

Table 3
Proposed Need States and Sub-Categories

Demographic	Financial	Location	Health Condition
Single family owners and renters	CARE	Targeted Climate Zones	Medical Baseline
New participants	Disconnected	Rural	Disabled
Select previous participants	Arrearages	Tribal	
Senior	High Usage		

Through the third-party pilot program implementer solicitation process, PG&E seeks to identify innovative, cost-effective, scalable, and feasible strategies to identify customers by need state. For instance, the utilization of existing customer enrollment data (i.e. CARE, Medical Baseline, Arrearages Management Program) and other available information indicating need state (i.e. rural, tribal, new participants), is subject to availability of information, customer privacy regulations, and cybersecurity considerations, among other feasibility factors. PG&E plans to inquire of potential bidders what criteria they deem indicative of assessing need state, and how they plan to assess and track such information.

High Energy Usage

High energy usage is a critical factor in determining whether a customer in need can be served through Pilot Plus/Deep or the main ESA program. Meeting the primary objectives of the pilot – to achieve

[16] Income-qualified customers eligible for participation in the ESA program are customers with annual household incomes that are no greater than 200% of Federal Poverty Levels as of 2021. Eligibility for the main ESA program and these pilots is proposed to increase to 250% of the Federal Poverty Levels beginning July 1, 2022.

between 5-15% savings through the Pilot Plus measure package, and between 15-50% savings through the Pilot Deep measure package – will require focusing on customers who present the greatest opportunity for deep energy savings. Customers may be selected to participate in the pilot whether they receive both gas and electric service from PG&E, or just one fuel, but selection will ultimately be grounded in energy savings potential.

High energy use alone is not a guarantee of energy savings potential. Variations in household size and use of the home (i.e. work from home) can lead to necessarily high energy demand. Therefore, PG&E expects to work with the third-party pilot program implementer to identify the appropriate balance of data-driven customer identification (i.e. use of AMI[17] data), data-driven project scoping (i.e. use of ShareMyData platform), and in-person home assessments to confirm savings potential, feasibility and project scoping.

There are benefits to advance data-driven customer identification (i.e. prior to customer engagement). Applying advance selection criteria may contribute to a cost-effective pilot approach by maximizing installation of pilot-unique measure packages. Advance selection criteria may also help avoid customer confusion in instances where a customer presents lower energy saving potential relative to pilot goals, but is still eligible for the main ESA program. PG&E plans to inquire of potential bidders ideas to target customers in advance of customer engagement, subject to feasibility. Consistent with the main ESA program, PG&E plans to utilize Personalized Energy Reports (PERs) to help identify opportunities for energy savings unique to each participating household.[18] PG&E intends to encourage bidder proposals to incorporate this existing resource as an aspect of data-driven customer identification, or other aspects of program design. Bidders may also propose other data sources as a means of customer identification and other aspects of program design, such as customer follow-up.

Consistent with the main ESA program, in-person home assessments will yield further insights into potential for energy savings, and lead to better project scoping, planning, and scheduling. In-person assessments may be necessary to, at a minimum, determine feasibility of main ESA measure packages offered in combination with pilot measures. However, the extent of the assessment(s) in these pilots will be determined based on the proposed design and implementation model of the successful third-party pilot program implementer bid. Through the solicitation process, PG&E seeks to identify innovative, cost-effective, and scalable strategies to identify customers with the highest potential for deep energy savings, but which are also feasible to implement during the pilot period.

Pilot Measures

The primary objective of Pilot Plus/Deep is to assist income-qualified customers in achieving deeper energy savings through a comprehensive and innovative program approach. Specifically, the Pilot Plus package is intended to offer certain equipment and appliance replacements and load shifting technologies, including electrification measures, in addition to any of the main ESA program measure packages (Basic and Plus)[19] not already installed, that would reduce annual energy usage by 5 to 15

[17] AMI refers to Advanced Metering Infrastructure. AMI entails utilization of utility smart meter data to collect and manage energy usage data.

[18] PERs are customer energy solutions reports containing personalized usage information and recommendations for savings that are specific to the individual household. Customers enrolled in ESA and CARE are eligible to receive PERs.

[19] See Exhibit B for current ESA program measure tiers.

percent. The Pilot Deep package is intended to offer the more advanced, and likely more expensive measures that would achieve a 15 to 50 percent reduction in annual energy usage.

D. 21-06-015 includes a variety of potential measures for each of the two packages. This list serves as a starting point – with additional measures to be proposed by the IOUs, and in the case of PG&E, further proposed by the successful third-party bidder. See Figure 2 below.

Figure 2
D. 21-06-015 Attachment 2 Proposed Pilot Plus/Deep Measure Packages

	Equipment	Systems Management Devices & Monitoring Technologies	Building Envelope	Miscellaneous
Pilot Plus	Efficient Equipment, Efficient Appliances, Efficient Lighting (internal and external), Common Area Measures, including central boilers or similar	HVAC Controls, Energy Management Technologies, Demand Response measures with appropriate electric rate	Air Sealing, Duct Sealing	IOUs' Basic of Plus package measures not already installed, Opportunities for ESA to co fund other clean energy program measures such as battery installations, to ensure access and allow program partners to extend their budgets, Wildfire resiliency measures for households in fire threat zones, such as covering chimney, stovepipe, or vent openings with appropriate noncombustible screen materials
Pilot Deep	Replacing HVAC and Hot Water Systems, including heat pumps, to "right size" equipment for heating and cooling loads		Improvement or replacement of duct work, water pipes, and waste heat recovery, High Performance Attics, Cool Roofs or Cool Surfaces, Advanced Insulation, including walls, floor/slab, roof, attic, Efficient Windows and Insulated doors, Additional building shell upgrades	Pilot Plus package measures not already installed, Wildfire resiliency maintenance measures for households in fire threat zones (during Fire Season) such as clearing drain spouts

PG&E provides an initial set of proposed pilot measures in this plan (Exhibit A: Preliminary Pilot Plus / Pilot Deep Measure Package). Additionally, the main ESA program measures, which Pilot Plus/Deep is intended to compliment and build upon, were filed in Advice Letter 4482-G/6314-E on September 1, 2021. While the main ESA program utilizes deemed energy savings – savings prescribed to each measure based on established studies or work papers – it is unlikely the energy savings objectives of the pilot will be achieved through deemed savings alone. The pilot will likely rely on calculated or meter-based energy savings methodologies to better estimate to what extent deep energy savings in each treatment tier is feasible and cost-effective.

As PG&E plans a full third-party solicitation process to identify a pilot program implementer, the selection of a successful bidder will be the leading factor in determining the specific measures in the two pilot treatment packages. Third-party proposals must include the approved measures for the main ESA program, along with the proposed pilot measures, to be considered in the solicitation process. Proposals must also detail the energy savings method(s) proposed in their designs (i.e. deemed/prescriptive, custom/calculated, normalized meter-based energy consumption). Proposed energy saving methodology should align, to the greatest extent reasonable, with PG&E's established Energy Efficiency Resource Savings Rulebook, and disclose, with rationale, any recommended deviations from established methods.[20] Proposals will be encouraged to include electrification measures as well, and should specify

[20] PG&E publishes and maintains the Resource Savings Rulebook to inform market actors of the regulatory guidance necessary to design and deliver successful programs. The latest version (2.0) is available at: https://www.pge.com/pge_global/common/pdfs/for-our-business-partners/energy-efficiency-solicitations/PGE-Resource-Savings-Rulebook-V2.pdf

whether fuel substitution, fuel switching, or both approaches are being proposed.[21] All measure package proposals should take into consideration the $2,500 cost cap on minor home repairs.

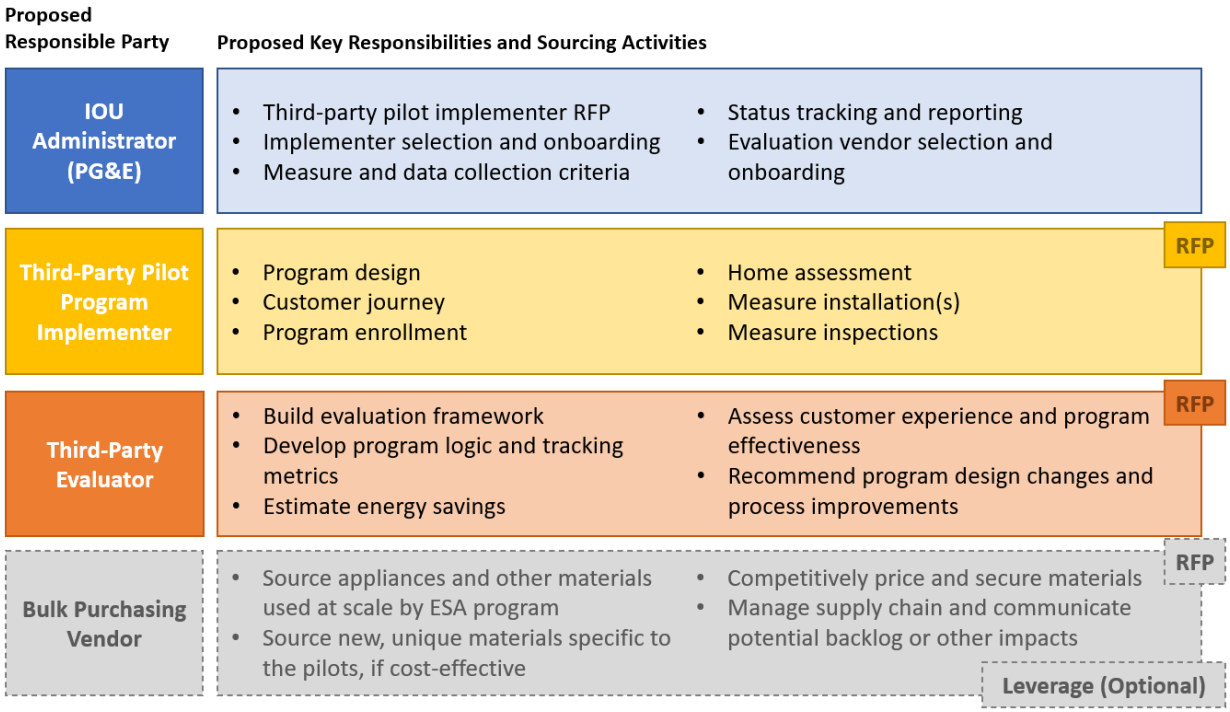
Pilot Program Design

PG&E aims to assist income-qualified customers in achieving deeper energy savings through a comprehensive and innovative program approach. D. 21-06-015 provided the IOUs several options to design and implement Pilot Plus/Deep.[22] Of the options, PG&E opted for a full third-party solicitation process to generate innovative ideas and manage cost through competitive pricing. PG&E has traditionally taken this approach for the main ESA program to manage costs and is hoping to realize the same kind of innovation seen in general Energy Efficiency programs when utilizing third party solicitations.

Vendor Sourcing

This section outlines the various roles that could contribute to different aspects of Pilot Plus/Deep, and major sourcing activities associated with vendor-implemented functions. See Figure 3 below for an overview:

Figure 3
Proposed Roles and Responsibilities for Pilot Plus/Deep Implementation



[21] CPUC Decision 19-08-009 established the Fuel Substitution Test. Fuel substitution refers to measures that result in fuel replacement (typically from gas to electric) where both fuels are provided by one or two CPUC-regulated utilities. Fuel switching, on the other hand, refers to measures that result in replacement of non-utility fuel commodities, such as wood or propane.

[22] D. 21-06-015, Attachment 2, Guidance of the ESA Program Pilot's Plus and Pilot Deep Program (PY2021-2026), Section 7, Pilot Program Design.

The utilization of the bulk purchasing vendor is optional, subject to several factors, including proposed pricing by third-party pilot program implementation bidders, and whether the bulk purchasing vendor can obtain competitive, bulk pricing discounts given the scale of Pilot Plus/Deep relative to the main ESA program.

Since PG&E is relying on the solicitation for the third-party pilot program implementer to drive innovation in the pilot program design, most of this section focuses on the key objectives, assumptions, and expectations of the successful implementer. High-level summaries of bulk purchasing vendor (optional) and third-party evaluator are provided later in this section.

Third-Party Pilot Program Implementer

Program Design Objectives

In evaluating third-party proposals for the design and implementation of Pilot Plus/Deep, PG&E plans to require bidders to:

- Incorporate all pilot guidelines within their proposed implementation plans,
- Describe pilot methodologies and strategies to reach energy savings goals, including proposed measure packages provided in the Pilot Measures section, and Exhibit A and B of this plan,
- Estimate total energy savings, proportion of Pilot Plus to Pilot Deep treatments, and number of homes to be served,
- Determine the level of investment required for each home to reach the energy savings goals, and
- Incorporate previous pilots' best practices as applicable.

The following section summarizes the key pilot guidelines and associated objectives to be included in proposals for design and implementation of Pilot Plus/Deep.

Deep energy savings:

- The proposed measures should go beyond the IOUs' approved ESA measure packages to achieve deeper energy savings.
- The proposed program design should identify which of the established energy savings methodologies the proposed measure mix will utilize to estimate energy savings. Proposed energy saving methodology should align, to the greatest extent reasonable, with PG&E's established Energy Efficiency Resource Savings Rulebook, and disclose, with rationale, any recommended deviations from established methods.[23]
- The proposed implementation plan should address the intended balance between Pilot Plus and Pilot Deep measure packages, and how the proposed model will provide both measure packages in enough volume (i.e. number of households participating) to substantiate a useful evaluation of each measure.
- The proposed implementation plan should include efforts to track implementation activities in such a way as to enable data collection and analysis of the measure delivery strategy, the level

[23] PG&E publishes and maintains the Resource Savings Rulebook to inform market actors of the regulatory guidance necessary to design and deliver successful programs. The latest version (2.0) is available at: https://www.pge.com/pge_global/common/pdfs/for-our-business-partners/energy-efficiency-solicitations/PGE-Resource-Savings-Rulebook-V2.pdf

of investment required to perform much deeper retrofits in both pilot treatment packages, and the actions taken to achieve savings, all of which is intended to support pilot evaluation.

Electrification:

- The proposed measures should include electrification measures.
- The proposed program design should address whether fuel substitution, fuel switching, or both are intended. Fuel switching plans should address how non-utility fuels such as propane will be addressed, including safety considerations.[24]
- The proposed implementation plan should describe how costs unique to electrification (i.e. panel upgrade) will be assessed and tracked.
- The proposed implementation plan should describe the staffing and work scheduling plan to ensure qualified technicians are available to complete new and unique work associated with electrification, while presenting a seamless customer experience.

Equity:

- While the focus of the program may be towards single-family, PG&E plans to inquire of potential bidders how the proposed design and implementation model could increase program participation opportunities for renters, including whether landlord co-investment is reasonable.
- The RFP will require bidders to provide a detailed set of qualifications, including experience implementing programs for the low-income population.

Quality:

- The proposals must focus on capturing meaningful, deeper savings for income-qualified households. This means spending more on fewer households, and dramatically increasing the impact of the treatment.
- The proposed model should ensure positive-savings for each household treated, and how the potential for negative-savings will be avoided or mitigated.
- The proposed implementation plan should include efforts to track implementation activities in such a way as to enable data collection and analysis of long-term benefits of the treatments to the household.

Customer-centric:

- The successful bid should present innovative approaches to deliver a seamless, low-income, deep energy saving program for the recipient with as many services provided in as few visits as possible, and with greater customer satisfaction than the main ESA program. Bidders will be required to report the cost-effectiveness of their proposals.
- The proposed program design should address how all feasible direct-install measures will be installed in as few visits as possible, and discourage multiple treatments by different installers scoped to install different measure packages (i.e. the main ESA program measures, and the Pilot Plus or Pilot Deep measure packages).

[24] CPUC Decision 19-08-009 established the Fuel Substitution Test. Fuel substitution refers to measures that result in fuel replacement (typically from gas to electric) where both fuels are provided by one or two CPUC-regulated utilities. Fuel switching, on the other hand, refers to measures that result in replacement of non-utility fuel commodities, such as wood or propane.

- PG&E plans to inquire of bidders' strategies to avoid customers being contacted by both the main ESA program and Pilot Plus/Deep representatives, to minimize customer confusion and improve satisfaction.
- The successful bid will describe how the program will be delivered to participating households in a manner that minimizes their disruption and adds to an expedient treatment timeline.
- The proposed program design should address how Pilot Plus/Deep measure packages will be tailored to customer needs, based on customer data collected by PG&E (see Customer Targeting section).
- The proposed implementation plan should address how specifications and warranties will be administered, including ESA warranty requirements as documented in the ESA Program California Installation Standards Manual.[25]
- The proposals should detail the anticipated savings for each measure, as well as non-energy benefits accrued to the household because of treatment, if possible.

Optimization

- The successful bid should present innovative approaches to achieve program objectives while minimizing program administration, duplicative costs, and burdens to ratepayers. Innovative approaches and savings will be prioritized.
- PG&E anticipates evaluating proposals based in part on the total funding requested to go towards program measures that save energy and/or reduce ratepayer collection, as a proportion of overall proposed costs.

Key Assumptions

To accurately measure energy savings and associated investment per household, Pilot Plus/Deep will be implemented separately from the main ESA program. Customers will not participate in both the main ESA program and the pilot concurrently – customers will be targeted and enrolled into the pilot as outlined in the Customer Targeting section of this plan. However, D. 21-06-015 directs the IOUs to implement all feasible ESA measures packages for which the household is eligible; therefore, the third-party pilot program implementer shall be capable of installing all ESA basic and plus treatments, in addition to those proposed to reach deeper energy savings through this pilot.

Proposed Scope of Work Outline

As is typical in the competitive solicitation process, PG&E expects to provide a draft scope of work outlining the key requirements of the pilot program implementer unique to Pilot Plus/Deep. Table 4 below provides an outline of anticipated scope of work elements.

Table 4
Outline of Anticipated Implementer Scope of Work Elements

- General Program Management
- Program Design Approach
  - Customer Centric
  - Savings methodology
- Identify Potential Barriers and Challenges
- Key Performance Indicators (KPIs)
- Data Collection
  - Demographic

[25] ESA Program California Installation Standards Manual, Appendix F; warranty requirements are explicitly required for ESA measures.

    - Leveraging prior or similar program lessons learned
- Program Timeline
- Implementation Plan
- Processes and Procedures
- Implementation Operations
- Safety Risk Management Plan & Approach
- Proposed Measures
- Electrification Strategies
- Customer Journey
    - Financial
    - Geographic
    - Health
- Workforce Development and Training
- Communication & Collaboration
    - Workforce Development, Education and Training Partnerships
- Budget
- Pilot Energy Savings Goals
- Cost-effectiveness

Key Performance Indicators

One of the lessons learned by PG&E during the San Joaquin Valley Disadvantaged Communities Electrification Pilot[26] was to incorporate key performance indicators (KPIs) into the contracts with the pilot implementer. PG&E plans to work with the selected third-party pilot program implementer to establish reasonable metrics pursuant to the objectives of Pilot Plus/Deep, and to establish trackable, enforceable KPIs and/or service-level agreements (SLAs), as applicable, upon execution of the contract. Adherence to the KPIs/SLAs is expected to support identifying if there is a path to cost-effective pilot implementation.

Leveraging Existing Programs

Customers should be referred to other existing programs based on their needs and potential for alignment. Participation in such programs will be subject to program availability, eligibility/feasibility, and program capacity. The universal application envisioned by D. 21-06-015 may help streamline leveraged program enrollments; however, the universal application is only conceptual at this time, and is subject to resolution by the ESA Working Group. Nonetheless, PG&E will likely inquire of potential bidders how other programs, such as assistance programs, clean energy programs, or complimentary energy saving programs, will be leveraged in their program approach.

Based on observations in the San Joaquin Valley Disadvantaged Communities Electric Pilot, there may be some efficiency to the program and customers when implementer(s) and/or their subcontractor(s) are existing service providers with leverageable programs. For instance, enrollments can be done by the same party, education and qualification can be achieved in fewer visits or consultations with the customer, and existing service providers are more informed of program eligibility, feasibility, availability, and capacity. PG&E can consider inquiring of bidders whether they are existing service providers with leverageable programs, and if so, how they can leverage to achieve deeper energy savings. If not existing service providers, bidders can be asked to outline how they can partner with service providers, or more effectively access offerings by leverageable programs. These criteria may be evaluated in determining the successful bidder, but would not likely be a driving factor.

[26] D. 18-12-015 approved pilots in eleven (11) disadvantaged communities in the San Joaquin Valley. PG&E designed and is in the process of implementing three (3) of the pilots.

Marketing, Education and Outreach

Through D. 21-06-015, the IOUs are permitted minimal expense on marketing and outreach activities. PG&E plans to inquire of potential bidders for third-party pilot program implementation any projected marketing, education and outreach needs, and how they are complimentary to the customer targeting objectives outlined in the Customer Targeting section of this document. In reviewing the bidder proposals, PG&E expects to consider a full range of customer targeting and engagement strategies, including marketing, education and outreach approaches, but seeks to drive innovation in advance customer targeting strategies.

Since Pilot Plus/Deep is intended to install all available ESA measures, the pilot will leverage as much as is relevant from the main ESA program's marketing, education and outreach materials to minimize cost. Beyond this, it is anticipated that, at a minimum, an official pilot program flyer or other form of collateral will be helpful in legitimizing offers of deeper energy saving measure packages. As was observed in the San Joaquin Valley Disadvantaged Communities Pilots, customers can become skeptical of offers to receive so many services at no cost, leading some to believe the offers are too good to be true.

Contractor Technical Training, Education and Other Workforce Requirements

Through competitive solicitations, PG&E intends to select a pilot program implementor that can deploy a workforce (i.e. existing and new workers, subcontractors, etc.) qualified to perform the installation work associated with pilot measures. The baseline knowledge, skills and experience required to safely and effectively install program measures will vary; however, some measures will require specific licenses and/or certifications be obtained prior to installation (See Exhibit C).

PG&E intends to provide ongoing updates, information and basic education about pilot program goals, emerging initiatives, applicable policies, procedures, and other standards. PG&E may provide, if requested or deemed necessary, supplemental training on established standards, including but not limited to the ESA Policies and Procedures Manual, or the PG&E Resource Savings Rulebook, to ensure implementation aligns with standards. The pilot program implementer will be responsible for relaying this information to its network of workers and subcontractors.

PG&E will not provide contractor training on basic occupational health and safety, the requirements to attain licenses and registrations necessary for measure installation, how to install measures according to the ESA Program California Installation Standards Manual (CISM), or how to install appliances according to manufacturer specifications. Implementers, of their own ability or through partnership with contractors, will be expected to meet these requirements prior to the start of installation.

The pilot program implementer will be expected to create and maintain a plan that outlines details relating to contractor training and should reference the requirements as set forth in the scope of work, the CISM, state and local licensing or certification requirements, and other applicable requirements to perform the work scoped under Pilot Plus/Deep.

Recruitment, Retention and Worker Development Plan

Worker retention is highly dependent on a steady flow of projects coming to contractors, as observed in the San Joaquin Valley Disadvantaged Communities Pilots. The successful pilot program implementer will be responsible for scheduling projects, and preparing a plan to ensure steady, consistent work is scheduled to prioritize worker retention, while also ensuring accurate and reliable financial forecasts,

and streamlined individual customer journeys with as few site visits, and as little time from beginning to end of project, as possible. PG&E may introduce KPIs to track and enforce these objectives.

The pilot program implementer will be directed to create and maintain a plan that outlines details relating to ongoing worker recruitment, retention, and development strategies. This plan should include, at a minimum:

- Leveraging Workforce, Education and Training (WE&T) Energy Efficiency Training:
    - The implementer may utilize the public-facing, open enrollment offerings in the PG&E WE&T Technical Upskill training catalog[27] to the extent available training meets the needs of the ESA workforce. On occasions where modifications to the existing training catalog or schedule are desired, the implementer should coordinate with the WE&T Program Manager a minimum of 60 days in advance of the desired training date to discuss feasibility.
    - The implementer will be expected to submit a plan to PG&E, within 30 days of commencement of contract, outlining plans to leverage PG&E's WE&T Technical Upskill offerings[28] for existing and new ESA workers, as well as disadvantaged communities and communities in which the ESA program will operate.
- Other Training Enablement:
    - The implementer will be expected to promote employment and education opportunities to local and disadvantaged communities, including engagement with multiple local job training programs and community colleges, particularly local job training programs that work with disadvantaged workers.
- Worker Development:
    - The implementer will be expected to develop and submit to PG&E a Career Ladder Progression plan, including strategies and trackable metrics to support development of workers enabling access to advanced positions.
- Equitable Hiring:
    - The implementer will be encouraged to hire workers (subcontractors) from local, tribal, rural and disadvantaged communities. The implementer will be expected to track and report this data to PG&E. The intent of this requirement is to see progress and growth over time of local workforce access and participation in the ESA Program.
- Worker Services:
    - The implementer will be expected to develop and submit to PG&E a worker support services plan, including strategies and trackable metrics to support disadvantaged or underrepresented workers with job retention.
    - The implementer will be encouraged to develop and conduct an annual survey of ESA workers, and summarize results in a report to PG&E, detailing worker needs related to, and utilization of, career development and support services.

[27] The WE&T energy efficiency Technical Upskill catalog is available at www.pge.com/energyclasses
[28] WE&T Technical Training refers to the formal energy efficiency training provided pursuant to PG&E's Integrated Energy Education & Training (IEET) subprogram.

- The implementer will be encouraged to engage with the IOU statewide third-party Career Workforce Readiness (CWR) Program[29] Implementer to discuss opportunities to leverage CWR program offerings. The pilot program implementer would then develop a plan to leverage CWR program offerings in ways that the CWR Implementer deems complementary to and feasible for planned CWR implementation.

Safety Risk Management Plan & Approach

The safety of the public, employees and vendors is PG&E's highest priority. Safety considerations will be built into every point of the customer journey. The solicitation for the third-party pilot program implementer will ensure the selected bidder can administer a safety and risk management plan, overseeing their own work or subcontracted work, and coordinating with customers, PG&E or other entities as necessary to communicate and, if necessary, respond to safety concerns. Consistent with the main ESA program, some safety measures may render a customer ineligible for participation in Pilot Plus/Deep until remediated.

This section covers, at a minimum, the safety requirements that will be met by the pilot program implementer, their installers and other contractors who will be involved in the pilot before, during and after the treatment. This Safety Plan is inclusive of the protocols and procedures used PG&E's ESA program, and builds upon them in areas that are specific to the pilot, such as special considerations related to new measures unique to Pilot Plus/Deep.

Prior to Treatment

Lead, Asbestos and other Hazardous Materials

Consistent with the ESA program, and during the initial home assessment, the pilot program implementer will specifically assess whether the home has any lead, asbestos or other hazardous materials that would be exposed upon installation of new appliances or any other measures of the ESA program. This means that all installers, whether hired by the implementer or subcontracted, must have established rules and regulations governing these materials, and staff that has completed all required training and/or obtained licenses to do such work. The standards state that the installers shall abide by the various laws and regulations regarding these specific hazards. If any hazardous materials are identified, the practices described in the CISM will be followed, along with any other applicable requirements.[30]

Permits

Any work requiring city, county or other jurisdiction permits will require the permit be obtained by the pilot program implementer (or subcontractor) prior to installation. For example, this is the case for electrical work (i.e. panel upgrades) associated with multiple electrification measures, as has been observed in the San Joaquin Valley Disadvantaged Communities Pilots involving electrification measures. Documentation of the inspections and permit will be retained by the implementer. It is the responsibility of the implementer (or their subcontractor) to ensure this is completed, and that all installers are properly trained and certified to do the work. Should subcontractors be utilized by the implementer, the contract between the two parties may include provisions for incentives or penalties for noncompliance.

[29] Information on the CWR program can be found on the California Energy Efficiency Coordinating Committee (CAEECC) website (https://www.caeecc.org/pa-related-documents) as "SEI Energize Careers."

[30] See Exhibit C, Additional Workforce Education and Training Information.

Installation Standards

Installation standards are well-documented in the ESA Program California Installation Standards Manual (CISM). This is used for the main ESA program and is updated approximately every two years and will be modified or appended as needed. Since Pilot Plus/Deep must install all possible measures offered by the main ESA program, in addition to pilot-specific measures, the CISM will be adopted as the installation standard for Pilot Plus/Deep. To address the relative nascence of new, deeper energy saving measures unique to this pilot, additional chapters of the CISM will be developed to guide best practices for safe installation of those measures. These materials will serve as a guidebook for training new contractors. This may involve hiring an expert firm.

During Treatment

Combustion Appliance Testing

Under the main ESA program, a specific combustion appliance safety test called the Natural Gas Appliance Test (NGAT) is conducted to ensure there are no existing natural gas leaks in the home, which changing the air flow in the home could make more harmful to residents. PG&E will administer NGAT standards for Pilot Plus/Deep. NGATs or comparable Combustion Appliance Safety (CAS) testing will be performed by a qualified technician[31] in any instance where infiltration measures (e.g., gaskets, air sealing, etc.) are installed and where combustion appliances remain, and when repair or replacement occurs for combustion-fueled furnaces or water heaters.

This testing will not be needed for projects where all natural gas-fueled, or other combustion-fueled, appliances are removed prior to the installation of infiltration measures. Any proposed program designs that intend to serve homes with other combustion-fueled appliances, such as propane or wood, should address similar safety standards, such as how to test for combustion gas leaks after infiltration measures are installed but combustion appliances remain, or how to address safety risk associated with fuel infrastructure that remains, such as propane tanks.

Contractor Safety and Qualifications

PG&E's Contractor Safety Program[32] establishes the minimum requirements for contractor safety management and communicates PG&E's health and safety expectations for work performed on behalf of PG&E. All contractors (both prime and subcontractors) doing work on behalf of PG&E are required to meet PG&E's Contractor Safety requirements, which will be vetted during the sourcing process.

Contractors performing medium and high-risk work (which includes anything involving electrical appliances) are required to be pre-qualified in ISNetworld (ISN). In ISN, contractors are required to complete a safety, health and environment (SHE) questionnaire and provide SHE statistics, written safety programs and a programmatic safety plan, among other requirements.

PG&E plans to select contractors that are deemed to be the most qualified to complete the work included in Pilot Plus/Deep, and additional training may be conducted for contractor staff as described earlier. These contractor safety requirements are subject to change.

[31] See Exhibit C, Additional Workforce Education and Training Information.

[32] More information available here: https://www.pge.com/en_US/for-our-business-partners/purchasing-program/suppliers/suppliers.page

After Treatment

Inspections

PG&E will leverage its existing Central Inspection Program (CIP) to audit new appliance installations and ensure NGAT procedures are followed, where applicable. CIP exists to assure that contractors install measures in accordance with program rules and standards and to assure contractor billing is accurate. PG&E may coordinate inspection scheduling with the pilot program implementer to reduce customer burden. The CIP standard requires inspections within 30 days of installation. Additionally, if a permit has been pulled under the scope of pilot treatments, the permitting agency may send an inspector as well.

Bulk Purchasing Vendor (Optional)

PG&E plans to encourage third party pilot program implementation bidders to consider whether Pilot Plus/Deep could leverage the same vendor used by the main ESA program to source appliances and other materials used in program implementation. Doing so could allow PG&E to manage material expense more effectively, thereby improving cost-effectiveness of the measure packages. However, the utilization of the bulk purchasing vendor is subject to two key considerations. First, it is unclear whether the vendor will be capable of obtaining competitive, bulk pricing discounts given the smaller scale of Pilot Plus/Deep relative to the main ESA program. Centralized bulk purchasing is not used in every utility program. Second, should the successful bidder for the third-party pilot program implementer provide competitive pricing for select appliances and other measure-related material, or present a unique and compelling reason why they can source materials unique to the pilot more effectively than a centralized bulk purchasing model (i.e. to simplify the customer experience), PG&E can consider the proposals in pursuit of pilot objectives.

PG&E rebids its ESA program bulk purchasing vendor on a regular basis to ensure the best and most competitive prices, and to encourage new ideas and innovation in the bulk purchasing model. PG&E has scheduled the next rebid to occur throughout 2022, with the new contract planned to be in place by Q4. With a planned overlap in service between the current bulk purchasing vendor's contract term and the start of the new term, this rebid schedule is not expected to delay the Pilot Plus/Deep implementation timetable. At the least, the staggered timeframe may allow for the inclusion of pilot measures in the bulk purchasing RFP process.

Third-Party Evaluator

As directed in D. 21-06-015, an evaluation of Pilot Plus/Deep shall be conducted by an independent evaluator.[33] As is typical in evaluation studies, a third-party solicitation will be conducted to select an independent evaluator. As part of the evaluation, the IOUs and evaluator will study energy use patterns and billing costs of a comparison group of non-participants to further understand the usefulness of the pilot. Furthermore, PG&E intends to provide both pilot measure packages in enough volume (i.e. number of households participating) to substantiate a useful evaluation of each measure package at the end of the pilot period. A high-level evaluation plan is presented in the following section, subject to approval of the Pilot Advice Letter, input from the ESA/CARE Study Working Group, and the results of the solicitation process.

[33] D. 21-06-015, Attachment 2, Guidance of the ESA Program Pilot's Plus and Pilot Deep Program (PY2021-2026), Section 3 and Section 10.

Evaluation Plan

Overview

PG&E has chosen to outsource the design and delivery of Pilot Plus/Deep in its entirety. Therefore, the approach and strategies for customer targeting, enrollment, assessment, installation, inspection, education, and customer communications are currently unknown. As a result, this preliminary evaluation plan can only provide a high-level outline of an expected evaluation approach and is subject to change when the pilot design is established. When a pilot design detailing these components is available, a specific evaluation study scope will be determined in conjunction with the ESA/CARE Study Working Group. Evaluation results are expected to be available in time to inform ESA program design beyond the PY 2021-26 program cycle.

The evaluation plan includes data collection and analysis to understand the overall impact and effectiveness of Pilot Plus/Deep. PG&E plans to select evaluators to perform an Evaluability Assessment, Impact Evaluation, and Process Evaluation, respectively. Components of the EM&V plan will be implemented coincident with program implementation. To strengthen the credibility of program savings calculation and transparency in data management, coordination between pilot evaluation and implementation is necessary early in the Pilot implementation process. This approach can mitigate the challenges of collecting data retroactively, and serve to incorporate best practices and corrective actions while implementation is ongoing. The following touchpoints will be included in the final implementation plan and will require the third-party Evaluator's support and coordination with the pilot program implementer:

- Determine data requirements and document sampling plan as part of the pilot's impact evaluation.
- Collect on-site data for pilot evaluation and performance assessment purposes.
- Develop survey and interview instruments.

Objectives

PG&E expects the Pilot Plus/Deep evaluation to include the following objectives, which are further described below. Time schedule and details in the frameworks are subject to change during contracting and implementation, based on available budget and pilot progress.

1. Evaluability Assessment
2. Document pilot processes and recommend process improvements.
3. Measure average household energy savings for the Plus and Deep packages.
4. Evaluate pilot costs and non-energy impacts.
5. Assess customer experience and satisfaction.
6. Implications of Pilot Findings to ESA Program

High Level Approach

Objective 1 – Evaluability Assessment: The goal of the evaluability assessment is to ensure that sufficient and accurate data are collected as part of pilot implementation, to support subsequent process and impact evaluations. The early pilot assessment facilitates more useful and accurate evaluations by identifying specific processes and tracking data to consider collecting before, during and

after measures are implemented. The assessment also serves to refine pilot implementation approaches and strategies and improve overall pilot effectiveness.

The evaluability assessment should identify what tracking data and metrics are needed to assess performance and success as defined by the pilot objectives, as well as to support whether a wider roll-out should be warranted. In addition, program logic model and theory should be developed to clearly define expected inputs, outputs, and outcomes of the pilot, and identify causal relationships between pilot activities and desired outcomes. Furthermore, the Evaluator will develop recommended impact evaluation approaches and methodologies, and specific data requirements needed to support a robust energy saving analysis.

Objective 2 - Process Documentation and Recommendations: The evaluation will document processes followed by implementer and installation contractors and recommend improvements to finetune existing processes. These will include the areas of customer targeting and outreach, enrollment, audits or home assessments, measure selection and supporting structural requirements (e.g. repairs, venting, hazard abatements), inspection strategies, education and customer communications. The Evaluator will assess what is working well and what requires improvements to meet Pilot Plus/Deep objectives.

Objective 3 - Measure Savings: The Evaluator will perform a billing analysis to estimate average household energy savings for both the Plus and Deep packages, which includes analyzing the energy use patterns and billing costs of a comparison group of non-participants to further understand the usefulness of the pilot. The goal is to assess Pilot effectiveness at achieving deep energy savings, and in conjunction with process related findings, determine which pilot components and factors may attribute to delivering energy savings. As part of the measure saving analysis, the Evaluator should incorporate best practices and barriers identified in past ESA evaluations.

Objective 4 - Costs and Benefits: The Evaluator will review installation costs per home and assess average dollar spent per kWh savings and dollar per therm savings for both Plus and Deep packages. The Evaluator will also interview the implementer and treated customers to assess non-energy impacts. In conjunction with findings on measure savings, the Evaluator should assess the cost effectiveness of pilot treatments.

Objective 5 - Customer Feedback: The Evaluator will survey customer participants to assess their experience and satisfaction including interaction with implementer and installation contractors, overall positive and negative experiences, hardship caused by number of home visits, intrusiveness of installation requirements, and perceptions of resulting energy and non-energy impacts. Collected data will be synthesized to refine the pilot's marketing, outreach, and education approaches and customer journey.

Objective 6 – Implications of Pilot Findings to ESA Program: As part of the overall evaluation, the Evaluator will assess how well the pilot has achieved its goals, and how the findings could be incorporated to improve the design of the ESA program. Based on the assessment of pilot progress and achievements, the Evaluator should also provide recommendations whether the pilot should sunset in PY 2026 as planned, or be extended to meet specific objectives.

Changes to Implementation Plan

This Implementation Plan represents PG&E's best information and current plans; however, it is subject to change. Since PG&E plans a full third-party solicitation process to identify a pilot program implementer, the selection of a successful bidder will likely be a significant driver of change to this Implementation Plan. PG&E anticipates that the pilot program design, pilot measure packages, and detailed budget, including the targeted number of homes treated by each measure package, will be heavily influenced by the pilot program implementer.

Other changes to the Implementation Plan are likely to arise in areas where PG&E seeks to contract with third party service providers. First, pilot evaluation research questions and metrics are to be coordinated with PG&E, SDG&E, and the as-yet uncontracted third-party evaluator.[34] Second, it is possible that bulk purchasing for the main ESA program could be shared with the pilot through a single vendor. Including those entities in full alignment and coordination can't occur until they are under contract. The bulk purchasing vendor is targeted to be under contract by Q4 2022, while the data gathering consultant should be contracted by the launch of the pilot.

Finally, Implementation Plan revisions may also arise from CPUC and stakeholder feedback, learnings from the process of sourcing a pilot program implementer, feedback from pilot participants and improved information about their households, and other unanticipated causes. PG&E will communicate updates to this Implementation Plan, as they arise, in monthly and annual reports. PG&E plans to engage the ESA Working Group on changes to this implementation plan.

[34] Both PG&E and SDG&E have opted for program design and implementation through full third-party solicitations. While separate solicitations will occur, the guiding principles will remain the same across each IOU. Further, it is expected that research questions and metrics can be established consistently across each IOU pilot, regardless of program design.

Exhibit A: Preliminary Pilot Plus / Pilot Deep Measure Package

Pilot Plus (Est. 5% to 15% savings)		**Pilot Deep (Est. 15% to 50% savings) -- Pilot Plus + New Measures**
Showerheads and Faucet Aerators	Smart Thermostat	New measures to be proposed by 3rd party which may also incorporate the following:
Thermostatic Shower Valve (TSV)	Central A/C Replacement	Load Shifting
TS Tub Sprout/Diverter	Central Heat Pump A/C	Demand Response
LED Lamps	Room A/C Replacement	Flexible Demand Appliances
Tier 2 Advanced Power Strip	Whole House Fan	Smart Home System
Refrigerator	Efficient Fan Controller	Electrification
HE Washer	Attic Insulation	
Clothes Dryer	Pool Pump	
Exterior LED Fixtures	Minor Home Repairs	
Gas Furnace Repair/Replace	Floor Insulation (Need State)	
Water Heater Tank and Pipe Insulation	Diagnostic Air Sealing (Need State)	
Heat Pump Water Heater	Portable A/C (Need State)	
Duct Sealing	Air Purifier (Need State)	
Envelope/Air Sealing	Cold Storage (Need State)	

Exhibit B: Current ESA Program Measure Tiers

Utility	PG&E		SDG&E		SCE		SoCalGas		All
Measure [1]	***Proposed Tier* [2]**	***Is Self Certification?***	***Proposed Tier***	***Is Self Certification?***	***Proposed Tier***	***Is Self Certification?***	***Proposed Tier***	***Is Self Certification?***	***Consistent?***
Faucet Aerators Showerheads, Shower Valves	Basic	Y	Basic	Y	Basic	Y	Basic	Y	Y
Thermostatic Tub Spout/Diverter	Basic	Y	Basic	Y		N/A	Basic	Y	Y
LED A-lamp Bulbs	Basic	Y	Basic	Y	Basic	Y	N/A	N/A	Y
Power Strips[3]	Basic	Y	Basic	Y	Basic	y	N/A	N/A	Y
LED Reflector Downlights	Plus	N	Plus	Y	Basic	Y	N/A	N/A	N
Exterior Hard Wired LED Fixtures	Plus	N	N/A	N/A	Basic	N	N/A	N/A	N
Refrigerators[3]	Plus	N	Plus	N	Basic	N	N/A	N/A	N
Smart Thermostat[3]	Plus	N	Basic	N	Basic	N	Plus	N	N
Special Segment Measures	Plus	N	Plus	N	Plus	N	Plus	N	Y

[1] Inclusive of multifamily in-unit measures for 2022 and is subject to change once the Multi-family Whole Building (MFWB) program is implemented.
[2] Additional Plus measures include HVAC and Water Heater repair, Replacement measures, Air Sealing, including Minor Home Repair, floor and attic insulation, and other utility specific proposed appliances and maintenance measures.
[3] Measures requiring modifications to dwellings, which includes grounding, such as refrigerators, portable air conditioners, and smart thermostats and exterior hard- wired fixtures are exempt from this requirement to be provided to self-certifying customers. The IOUs will only provide Power Strips to Basic customers that do not require grounding.

Exhibit C: Additional Workforce Education and Training Information

Table A – Recommended License and/or Registration to Install Pilot Measures

Measure	Recommended License and/or Certification
Hot Water Appliances	
Heat Pump Water Heater (Including grid responsive and hybrid types)	C-20, or C-36
Solar Hot Water System	C-36
Electric Resistance Water Heater	C-36
Space Conditioning	
Heat Pump Space Heater (Including central split or multi-zone system)	C-20
Mini-Split Ductless System	C-20
Central Split System with Ducting (Including grid responsive type)	C-20
Other Appliances	
Standard Electric Range	EAR (BHGS)
Energy Star Electric Dryer	
Ceramic-top Electric Range	
Induction Electric Range	
Weatherization	
Various Measures	B, C-2, or D-65
Electrical Upgrades	
Various Measures	C-10
Common Area Measures	
Central Boilers	C-4
Central Hot Water Heating	
Steam Fitting	
Other	
Miscellaneous advanced electrical or wiring repairs (Including panel upgrade, knob and tube replacement)	C-10
Natural Gas Appliance Test / Combustion Appliance Safety Assessment	• Prior NGAT certificate from a PG&E-administered training, or • Prior CAS certificate from a California Department of Community Services (CSD)-administered training or approved training center, or • Building Performance Institute (BPI) Infiltration and Duct Leakage certificate.

Table B – Selection of California License Types

License and/or Registration Details	
Class "B"	General Building Contractor
Class "C"	Specialty Contractor (see below for selection of relevant Class "C" licenses)
C-2	Insulation and Acoustical Contractor
C-10	Electrical Contractor
C-20	Warm-Air Heating, Ventilating and Air-Conditioning Contractor
C-36	Plumbing Contractor
C-61 "D" Subcategories	Limited Specialty Classifications Subcategorized by "D" Class
D-65	Weatherization and Energy Conservation
Source: California Contractors State Licensing Board, Description of Classifications (2015), available at http://www.cslb.ca.gov/Resources/GuidesAndPublications/DescriptionOfClassifications.pdf	
EAR (BHGS)	Electronic and Appliance Repair (California Bureau of Household Goods and Services)
Source: California Bureau of Household Goods and Services (2016), https://bhgs.dca.ca.gov/	

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.
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
Cenergy Power
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 Energy Management Service
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
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
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