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Docket Number: 22-DECARB-03*

Peninsula Clean Energy Authority Response to Request for Information

January 10, 2022

California Energy Commission
715 P St.
Sacramento, CA 95814

Re: Peninsula Clean Energy Authority Response to Request for Information to Inform the Development of the Equitable Building Decarbonization Program (Docket No. 22-DECARB-03)

Dear Commissioners,

Peninsula Clean Energy Authority (PCE) appreciates the opportunity to provide comments in response to the California Energy Commission's (CEC) Request for Information (RFI) to inform the development of the Equitable Building Decarbonization Program.

PCE is a Community Choice Aggregation agency and the official electricity provider for San Mateo County and for the City of Los Banos in California. Founded in 2016 with a mission to reduce greenhouse gas emissions, the agency serves a population of 810,000 by providing more than 3,600 gigawatt hours annually of electricity that is 50 percent renewable, 100 percent clean and provided at lower cost than our area's investor-owned utility, Pacific Gas and Electric. The agency has earned investment grade credit ratings from both Moody's and Fitch and since inception in 2016, PCE customers have saved over \$90 million in electricity costs.

As a community-led, not-for-profit joint powers agency comprised of 22 municipal governments, PCE makes significant investments in its communities to expand access to sustainable and affordable energy solutions. This includes a forecasted investment of \$50 million through FY26 for building and transportation electrification, as well as distributed energy resources. Our programs include a leading national municipal building code enhancement program (called "Reach Codes"), which in partnership with PCE's peer agency, Silicon Valley Clean Energy, accounts for half of the decarbonization building codes in the state of California. In addition, our programs include incentives for heat pump space conditioning and water heating, on-bill finance, and emerging technology pilots. Other programs include low-income customer incentives for electric bikes and used electric vehicles (EVs), EV charging for multifamily

and other properties, and solar and storage for homes and municipalities. Our low-income electrification program Home Upgrade is detailed below.

PCE's response focuses on a few key suggestions:

- The CEC should exercise caution in mandating a single tool to target and define eligibility under the Program so as to not unintentionally limit participation;

- Tiered incentives are a critical tool for designing incentives for low-income communities;

- A streamlined customer experience is critical for the Program's success and proposal scoring criteria should account for incentive layering rather than making incentive layering a requirement;

- It is critical to first prioritize lower-cost building decarbonization projects rather than neighborhood electrification due to the challenges due to the latter's potential for higher costs and complications;

- Existing programs should be permitted to compete for funding under the Program to ensure faster and more efficient results;

- Program proposals should be permitted to incorporate unique equipment and measures as long as project costs are bound by well-designed total cost requirements.

Background

PCE recently completed an extensive analysis and planning process to advance aggressive decarbonization by 2035. This includes ambitious plans to ensure that low-income communities are not left behind with the move to decarbonization. In particular, it is essential that decarbonization not create added burdens and instead deliver tangible benefits to these communities. Otherwise, the communities least able to bear costs will face the added costs of stranded assets and increasing gas bills.

With this in mind, PCE established its low-income Home Upgrade program aimed at providing decarbonization and meaningful benefits to residents in our service territory. The program provides a home assessment, targeted appliance fuel-switching replacement and, importantly, home repairs to address basic needs frequently top of mind for residents such as entryway steps that may be dangerous or handrails for the elderly. Working closely with community-based organizations for outreach and qualification, the program coordinates across multiple incentive programs including Energy Savings Assistance program and spends an average of \$7,000 per home in PCE funding. The program is currently active and has completed its first year in the field. In its first year, it has served over 100 homes and provided a range of electrification including heat pump water heaters, central and mini-split heat pumps, window and wall-mounted heat pumps, and other measures. In most cases these upgrades were provided in homes whose systems were near the end of its life or were completely inoperable and residents could not afford to install new equipment. PCE envisions scaling this program in the coming months.

Critically, the program includes a number of major key features to ensure effectiveness:

• No Cost-share Expectation: Electrification and maintenance upgrades are funded entirely by the program, with no expectation of investment by the household.

• Integrating Funding Streams and Services: Effectively leveraging multiple funding streams while reducing the complexity for homeowners is essential for delivering more work. For the customer there is a single point of contact for coordination across programs. This is especially important for underserved communities that face numerous challenges and would be very unlikely to navigate across multiple programs and administrators to implement decarbonization.

• Design guidelines: PCE analyzed the electrical requirement for full electrification of single-family and small multi-family and determined that most homes can fully electrify and be EV ready within 100 amps. We have developed design guidelines which will be published soon and they indicate the role for technology options such as 120 V water heaters and circuit splitters to reduce the need for costly service upgrades.

• Leveraging Electric and Gas Data: Remote assessment of panel capacity can be done through electric meter data. This enables targeting of homes for maximum cost efficiency. This is critical in the early phases of electrification when costs are high and technology improvements are on the horizon. PCE targets homes that are unlikely to need service capacity upgrades. Gas data is also leveraged to inform targeting and assessment as high gas usage may indicate old or faulty equipment in need of attention. In addition, PCE can validate decarbonization benefits by monitoring reduction in gas usage.

• Community-Based Organization Partners: A key dimension to successful low-income programs is building trust between program administrators and participants. Many underserved community members are reticent to engage in programs for a wide variety of reasons including language barriers, historic injustices, and other concerns. Engagement through existing trusted organizations is essential to quickly establish that trust and to the success of these programs. PCE, as a joint-powers authority with board members from each jurisdiction it serves, leverages those relationships and has built a network of local outreach partners specifically to foster awareness and trust among hard-to-reach populations.

These comments draw on PCE's experience with its Home Upgrade program are all aimed at informing how to maximize the impact of the Equitable Building Decarbonization Program's (Program) direct install provisions.

Responses to Questions

PCE provides the below comments in direct response to questions in the RFI:

1b) Meter data and analytical-based tools: Should the CEC require all proposals to include independent, data-driven targeting of participants and eligible measures, or

should the CEC itself contract to provide a single, program-wide tool to target participants and eligible measures that program administrators would be required to use?

PCE encourages caution in mandating a single tool for targeting and defining measure eligibility. Building types, climate zones, and community features vary significantly across the state which could make a “one-size fits all” approach yield significant unintended consequences which could unnecessarily limit customer participation. Instead, the CEC should set standards that programs can align with. This will allow administrators with mature programs, relationships, data, and systems to leverage those existing systems to maximize results given the unique features of their community.

As an example, PCE has a highly mature set of systems for data management and analytics including:

- a Salesforce based process management system for incentive applications and approvals;

- a Google BigQuery data warehouse with continually updated electric and gas meter data which is merged with comprehensive building stock characterization and demographic data for detailed analytics; and

- a Recurve analytics platform in partnership with our billing data provider Calpine that provides sophisticated load shape analytics and outreach targeting capabilities using open source Caltrack methodologies.

Collectively these tools provide best-in-class capabilities which PCE leverages for its existing programs.

1c) Incentive Levels: Should low-income and moderate-income households be incentivized at different levels? If so, how should that be approached?

Yes, low-income and moderate-income households, as judged on an area median income basis, should be incentivized at different income levels. As part of PCE’s decarbonization plan, we modeled building decarbonization based on a tiered incentive and finance strategy. Tiering is essential given that the cost of a given building decarbonization project is often high and the incentive funding availability is limited. Low-income households will have little or no capacity to offer any copay and, in most cases, cannot bear the debt that would come with more traditional financing. This means that incentives must do most or all of the financial “lift” to get projects done for low-income households. In contrast, middle-income households can cover some costs and may have some financing capacity if reasonably priced. This allows differing approaches such as to have the incentives cover the differential between the clean alternative and the replacement cost for the business-as-usual gas equipment. This approach could be especially attractive if it can be supplemented by credit-enhanced finance, such as that being developed through the “green bank” provisions of the Inflation Reduction Act.

Furthermore, the incentives should provide enough flexibility for local implementers to integrate their funds and financing into a unified package for greatest cumulative effect. PCE envisions leveraging its incentive funds and on-bill finance program to ensure that funding is stretched to the maximum degree. This is a major reason why local administration is particularly valuable, as discussed further below in question 7.

2) Incentive layering: To optimize program funds, CEC may offer preference for proposals that layer incentives or leverage other programs.

a. What best practices, program elements, or state actions would facilitate layering or leveraging different program offerings?

It is crucial for the customer experience to be as streamlined as possible, minimizing points of contact and paperwork requirements. Alignment on the key requirements of different program offerings is essential for the success of layering and leveraging. This includes similar customer eligibility criteria and acceptance of categorical eligibility, and consistent equipment eligibility requirements and documentation requirements for application processing. Many underserved community members work multiple jobs, have challenging home issues, language barriers, and other challenges. Furthermore, trust is difficult to establish and aggravated by program complexity results in reduced participation at every point in the process.

Because of the fragmentation of customer programs across the state, including state-wide programs (such as TECH) and various regional/local programs (including the regional energy networks, utilities and community choice agencies), it is essential that the implementer with the customer relationships serve as the point of integration.

b. Should layering or leveraging other programs be a requirement for proposals or a prioritization when scoring proposals?

It is advisable to strongly encourage layering where it is available to help smooth expenditures and avoid the damaging “on again, off again” program effect which can come from rapidly exhausting funds. It may not be appropriate to make it a requirement however, because conditions vary significantly “in some cases including very small, hyper-local short-term incentives from some jurisdictions that would be difficult to coordinate” it may be best to treat layering/leveraging as a scoring feature. If made a requirement, one option would be to only require layering with other incentive programs when they are of sufficient size and duration such as county level and 2+ year committed program.

3) Neighborhood Electrification: The inclusion of both low-income and moderate-income households allows flexibility for proposals that want to electrify specific neighborhoods

or communities.

a. What program elements, geographic targeting, or state actions would facilitate this approach?

Neighborhood electrification is desirable in the long run to facilitate decommissioning of the gas infrastructure, thereby reducing gas maintenance expenditures that would be borne by the customers who remain on the gas system. However, it is challenging to implement as it requires voluntary participation from all the customers in a given neighborhood or community. Ensuring such a high level of customer participation is very difficult. To do so would likely require very high incentive levels which is likely to be at odds with cost-effectiveness objectives. And the cost of electrifying individual homes in a given neighborhood or community can vary significantly. For instance, homes which may be especially difficult and costly to electrify, such as homes with very old, non-code compliant wiring (e.g. "knob and tube" wiring), would need to be included in the neighborhood decarbonization project. This can rapidly deplete funds and reduce the scale of what can be accomplished with the state investment.

Because building decarbonization is in the earliest stages, it is most critical to scale as quickly as possible. To do so the program should target homes that can be done without extreme costs and it is best to avoid being geographically restrictive.

7) Active Programs: While designing the criteria and solicitations for the regional decarbonization programs, CEC is considering offering an initial phase of the Equitable Building Decarbonization Program to support or expand currently active decarbonization programs with established infrastructure and demand. These programs may be more limited in geographic scope or decarbonization activities than what is expected from the regional programs.

a. Should other currently active building decarbonization programs be allowed to compete for funding from the Equitable Building Decarbonization Program?

PCE strongly recommends existing programs be allowed to compete for funding from the Equitable Building Decarbonization Program. Integrating new funding into existing effective programs is likely to be both highly cost efficient and yield faster results by eliminating costly and time-consuming program design, setup, and associated costs. Existing, "shovel-ready" programs benefit from the improvements that come from implementation experience, having existing systems in place, and, crucially for reaching low-income segments, existing relationships with community-based organizations and customers. CEC funding through existing programs would also ensure continuity from a customer perspective, rather than having to build programs anew and "recreate the wheel."

b. Should the CEC fund decarbonization programs that have existing infrastructure in an initial phase to allow for the Program to quickly decarbonize homes and provide benefits

to residents?

Yes, the CEC should fund decarbonization programs that have existing infrastructure in an initial phase. Starting quickly in the early phases of CEC investment is essential for several reasons. As a multi-year program in a new and evolving domain, rapid learning and adaptation will be key to improving the effectiveness of the program over time. This is particularly true given that the state's funds, while ambitious, are limited especially in contrast to the scale of what is needed for comprehensive decarbonization.

Secondly, reaching the state's decarbonization objectives hinges on producing enough scale to engage market forces. The faster the program begins to deliver tangible outcomes the more the supply chain will align to bring down costs. Contractors must become attracted to the work, get trained, and gain experience. Manufacturers, distributors and retailers must see the demand for products. The sooner these elements see business benefits the faster costs will decline. In turn, declining costs will enable state funds to stretch farther and accomplish more.

8c) Unique Equipment: What unique equipment and measures should be considered for different building segments, i.e., existing single-family, multi-family, and mobile/manufactured homes?

We recommend significant flexibility in equipment and measures to ensure the most effective designs can be implemented. Technologies and methods are rapidly evolving and new developments can be expected to emerge in the timeframe of the Program.

PCE has focused on residential segments whose building systems are housed within each residential unit, i.e., single-family homes and small multi-family, as compared to residential segments with centralized systems such as large multi-family. This focus was derived from the fact that the majority of the building emissions in PCE's service territory come from this sector.

Our detailed analysis indicates that most homes in this segment can be electrified within only 100 amps. However, the design approach is essential. In some cases, less common methods must be used such as circuit sharing devices (e.g., NeoCharge and SimpleSwitch) and 120 V equipment like water heaters and small heat pumps. Energy recovery ventilation systems can enable downsizing of heat pump HVAC systems. Combo water and space heating systems can be cost effective in the right scenarios (e.g., Harvest Thermal and Stow). There may also be a role for smart panels or battery enabled appliances (e.g, Channing Street Copper ranges) though costs remain high for these technologies. All of these methods and technologies should be eligible but bounded with total project cost limitations to drive proper design approaches.

And it is worth emphasizing that in all cases, homes must be screened to select homes that can be electrified at reasonable cost. The specific conditions of homes result in wide variances even with the best design strategies. To maximize decarbonization in

the early phases, homes that cost less to decarbonize should be done first. As technologies and methods improve thereby lowering costs, the more difficult homes can be more readily addressed.

In summary, PCE recommends the above approaches for the CEC's Equitable Building Decarbonization Program's direct install to ensure rapid impact and genuine value to low-income community members. PCE appreciates the opportunity to provide input on this RFI regarding the CEC's important program. We look forward to working with the CEC and stakeholders in the further development. Please let us know if we can provide any additional information. We would be pleased to continue the discussion at the Agency's request.

Respectfully Submitted,

Rafael Reyes
Director of Energy Programs
rreyes@peninsulacleanenergy.com

Additional submitted attachment is included below.



January 10, 2022

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715 P St.
Sacramento, CA 95814

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PCE's response focuses on a few key suggestions:

- The CEC should exercise caution in mandating a single tool to target and define eligibility under the Program so as to not unintentionally limit participation;
- Tiered incentives are a critical tool for designing incentives for low-income communities;

- A streamlined customer experience is critical for the Program's success and proposal scoring criteria should account for incentive layering rather than making incentive layering a requirement;
- It is critical to first prioritize lower-cost building decarbonization projects rather than neighborhood electrification due to the challenges due to the latter's potential for higher costs and complications;
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Background

PCE recently completed an extensive analysis and planning process to advance aggressive decarbonization by 2035. This includes ambitious plans to ensure that low-income communities are not left behind with the move to decarbonization. In particular, it is essential that decarbonization not create added burdens and instead deliver tangible benefits to these communities. Otherwise, the communities least able to bear costs will face the added costs of stranded assets and increasing gas bills.

With this in mind, PCE established its low-income Home Upgrade program aimed at providing decarbonization and meaningful benefits to residents in our service territory. The program provides a home assessment, targeted appliance fuel-switching replacement and, importantly, home repairs to address basic needs frequently top of mind for residents such as entryway steps that may be dangerous or handrails for the elderly. Working closely with community-based organizations for outreach and qualification, the program coordinates across multiple incentive programs including Energy Savings Assistance program and spends an average of \$7,000 per home in PCE funding. The program is currently active and has completed its first year in the field. In its first year, it has served over 100 homes and provided a range of electrification including heat pump water heaters, central and mini-split heat pumps, window and wall-mounted heat pumps, and other measures. In most cases these upgrades were provided in homes whose systems were near the end of its life or were completely inoperable and residents could not afford to install new equipment. PCE envisions scaling this program in the coming months.

Critically, the program includes a number of major key features to ensure effectiveness:

- **No Cost-share Expectation:** Electrification and maintenance upgrades are funded entirely by the program, with no expectation of investment by the household.
- **Integrating Funding Streams and Services:** Effectively leveraging multiple funding streams while reducing the complexity for homeowners is essential for delivering more work. For the customer there is a single point of contact for coordination across programs. This is especially important for underserved communities that face numerous challenges and would be very unlikely to navigate across multiple programs and administrators to implement decarbonization.

- **Design guidelines:** PCE analyzed the electrical requirement for full electrification of single-family and small multi-family and determined that most homes can fully electrify and be EV ready within 100 amps. We have developed design guidelines which will be published soon and they indicate the role for technology options such as 120 V water heaters and circuit splitters to reduce the need for costly service upgrades.
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- **Community-Based Organization Partners:** A key dimension to successful low-income programs is building trust between program administrators and participants. Many underserved community members are reticent to engage in programs for a wide variety of reasons including language barriers, historic injustices, and other concerns. Engagement through existing trusted organizations is essential to quickly establish that trust and to the success of these programs. PCE, as a joint-powers authority with board members from each jurisdiction it serves, leverages those relationships and has built a network of local outreach partners specifically to foster awareness and trust among hard-to-reach populations.

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a. What best practices, program elements, or state actions would facilitate layering or leveraging different program offerings?

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b. Should layering or leveraging other programs be a requirement for proposals or a prioritization when scoring proposals?

It is advisable to strongly encourage layering where it is available to help smooth expenditures and avoid the damaging “on again, off again” program effect which can come from rapidly exhausting funds. It may not be appropriate to make it a requirement however, because conditions vary significantly – in some cases including very small, hyper-local short-term incentives from some jurisdictions that would be difficult to coordinate – it may be best to treat layering/leveraging as a scoring feature. If made a requirement, one option would be to only require layering with other incentive programs when they are of sufficient size and duration such as county level and 2+ year committed program.

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a. What program elements, geographic targeting, or state actions would facilitate this approach?

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Because building decarbonization is in the earliest stages, it is most critical to scale as quickly as possible. To do so the program should target homes that can be done without extreme costs and it is best to avoid being geographically restrictive.

7) Active Programs: While designing the criteria and solicitations for the regional decarbonization programs, CEC is considering offering an initial phase of the Equitable Building Decarbonization Program to support or expand currently active decarbonization programs with established infrastructure and demand. These programs may be more limited in geographic scope or decarbonization activities than what is expected from the regional programs.

a. Should other currently active building decarbonization programs be allowed to compete for funding from the Equitable Building Decarbonization Program?

PCE strongly recommends existing programs be allowed to compete for funding from the Equitable Building Decarbonization Program. Integrating new funding into existing effective programs is likely to be both highly cost efficient and yield faster results by eliminating costly and time-consuming program design, setup, and associated costs. Existing, “shovel-ready” programs benefit from the improvements that come from implementation experience, having existing systems in place, and, crucially for reaching low-income segments, existing relationships with community-based organizations and customers. CEC funding through existing programs would also ensure continuity from a customer perspective, rather than having to build programs anew and “recreate the wheel.”

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Secondly, reaching the state’s decarbonization objectives hinges on producing enough scale to engage market forces. The faster the program begins to deliver tangible outcomes the more the supply chain will align to bring down costs. Contractors must become attracted to the work, get trained, and gain experience. Manufacturers, distributors and retailers must see the demand for products. The sooner these elements see business benefits the faster costs will decline. In turn, declining costs will enable state funds to stretch farther and accomplish more.

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And it is worth emphasizing that in all cases, homes must be screened to select homes that can be electrified at reasonable cost. The specific conditions of homes result in wide variances even with the best design strategies. To maximize decarbonization in the early phases, homes that cost less to decarbonize should be done first. As technologies and methods improve thereby lowering costs, the more difficult homes can be more readily addressed.

In summary, PCE recommends the above approaches for the CEC's Equitable Building Decarbonization Program's direct install to ensure rapid impact and genuine value to low-income community members. PCE appreciates the opportunity to provide input on this RFI regarding the CEC's important program. We look forward to working with the CEC and stakeholders in the further development Please let us know if we can provide any additional information. We would be pleased to continue the discussion at the Agency's request.

Respectfully submitted,



Rafael Reyes
Director of Energy Programs
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