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Recurve Comments on Docket No 23-DECARB-01

Please see the attached document for Recurve's comments on Docket No. 23-DECARB-01

Additional submitted attachment is included below.

RECURVE

Response to California Energy Commission
RFI on IRA-Residential Rebate Programs
12-DECARB-01 23-DECARB-01
January 26th, 2024

California Energy Commission
Docket No. 23-DECARB-01
Submitted Electronically
Re: Recurve's Response to RFI on the Inflation Reduction Act Home Energy Rebates

Dear California Energy Commission Staff and Commissioners,

Thank you for the opportunity to comment on the Inflation Reduction Act (IRA) Home Efficiency Rebate Program. Recurve Analytics, Inc. respectfully submits the following comments to the California Energy Commission via the Request for Information on IRA Rebate program deployment on 12-DECARB-01 23-DECARB-01. Recurve is a leading demand flexibility solution provider specializing in open-source advanced measurement and verification to enable program optimization and validation of performance-based incentives. Recurve's work in deploying residential measured programs originated in California, and we are proud to support the state as a pioneer of innovation in this space to deliver solutions that can meet the urgent decarbonization objectives and align with grid optimization and affordability for participants and rate-payers alike.

The Home Efficiency Rebates (HER) and High-Efficiency Electric Home Rebate Program (HEAR) programs, enabled through the Inflation Reduction Act, offer an exciting opportunity for California to accelerate their existing strategies for data-driven energy efficiency programs that build on historical best practices in measurement and verification, align incentives, and enhance accountability. A wide range of service providers and program administrators are eager to support the California Energy Commission in animating the measured approach to accelerate low-income decarbonization as quickly as possible. Existing program infrastructure compatible with DOE requirements is available today to channel funds and will serve to "prime the pump" for much larger investments via the Equitable Building Decarb program. As such, our responses answer the CEC questions in the RFI directly and focus on the following key recommendations for the expedited implementation of home efficiency rebates to leverage existing infrastructure:

1. Continue, as planned, to utilize **data-driven targeting**, an industry best practice, to meet minimum savings requirements and ensure federal funds drive maximum impact for customers and the electrical and gas systems for the home efficiency rebate program.

2. Continue to **measure all projects using a standard open-source advanced M&V method and code base as planned**. The California Energy Commission is attuned to the value of tracking and monitoring impacts and was instrumental in developing the original CalTRACK methods. We support and encourage the CEC to maintain this plan to understand the actual metered impacts of this historic investment and continue to adapt the valuable insights into performance and potential program adaptation.

3. Allow for the **braiding of a portion of initial federal funding with compliant existing local residential measured programs in 2024** as the Equitable Building Decarbonization program is launched and ramped up to deliver impacts in 2025. Specifically, we recommend that the CEC set aside funds for Community Choice Aggregator and Regional Energy Network pay-for-performance programs that are already approved by the CPUC (or are pending approval). This would allow these entities to submit modified plans to the CEC to apply for reimbursement from federal incentives based on delivered impacts. Opening this mechanism would provide effective pathways for low-income households to engage aggregators and contractors today to receive an energy audit and pursue whole-home, performance-based rebates sponsored by their local communities through established programs. Coupling these funds with rate-payer-funded programs to ensure 100% cost coverage for low-income residents and minimal additional administration will amplify and drive depth or breadth of the impacts.

4. We support the CEC's plan to utilize **hourly consumption data** and encourage them to provide performance incentives, rather than cost-based incentives, to capture the **time and locational value** of energy efficiency investments for the grid and customers and align incentives for service providers. The time value of California's Avoided Cost Calculator can inform incentives that will amplify grid impacts and ensure 100% cost coverage for customers with an appropriate performance incentive for aggregators and service providers to deliver quality work.

5. Implement a path that offers **technology-agnostic solutions** delivered via existing **open-market** program models that have demonstrated the power of giving service providers the flexibility to meet customer needs directly.

The federally funded Home Efficiency Rebate program allows California to accelerate and augment our investments in decarbonization, a reliable grid, and an affordable energy future for all citizens. California has been a leader in driving innovation within residential energy efficiency programs, inspiring this legislation with its first-to-market program offerings. We encourage the California Energy Commission to leverage this implementation infrastructure to accelerate the delivery of decarbonization and grid resiliency impacts for the state and the nation.

If you have any questions about these comments, please contact me at Carmen@recurve.com or 608-332-7992.

Respectfully submitted,

Carmen Best, Chief Policy Officer

Direct Responses to Questions:

1) Braiding HOMES with Equitable Building Decarbonization Direct Install Program. Assembly Bill (AB) 209 (Chapter 251, Statutes of 2022) directs the CEC to develop and implement the Equitable Building Decarbonization Program which includes a direct install component. The CEC subsequently allocated $690 million to the EBD Direct Install Program and adopted Direct Install Program Guidelines in October 2023 with goals of reducing GHG emissions and advancing energy equity. The EBD Direct Install Program will serve low-income residents with energy decarbonization packages installed at no-cost. Packages will, at a minimum, include a heat pump for space or water heating and may also include induction ranges and electric clothes dryers, air sealing, insulation, solar window film, LED lighting, air filtration, electrical wiring and panel upgrades, and remediation and safety measures. Additionally, all households served must be located in an underresourced community.

Braiding HOMES funding with the EBD Direct Install Program would support building decarbonization for additional low-income residents while streamlining implementation and minimizing administrative costs by utilizing the same set of administrators and regional infrastructure. In the braiding scenario, CEC would seek approval from DOE to cover 100 percent of project costs for low-income households in alignment with the EBD Direct Install Program. The HOMES requirement for portfolios of projects to realize certain thresholds of energy savings would only apply to federally funded projects.

> *a. Share any best practices for braiding federal and state funds for highly effective rebate, incentive, and/or direct install programs aimed at households in disadvantaged communities or meeting low-income guidelines.*

Recurve has consistently supported the concept of "value stacking" to drive the integration of disparate but complementary program funds. By focusing on the "end in mind" and the value of the program outcomes, the value streams from each can be brought together in a price curve that is essentially seamless to the market actors and, most importantly, to end-use customers.

California is lucky to have a long-term value stream for avoided energy use and a myriad of other policy-oriented value components with the Avoided Cost Calculator. As a time-valued price signal, it also captures the value of reducing load at peak hours of the day and seasons of the year. The avoided cost curve can, and has been, complemented with other value streams to amplify the impacts of programs with varying objectives.

For example, the avoided cost curve for the Summer Reliability Market Access programs had incrementally higher incentives for 4-7 pm and 7-9 pm in response to the Governor's emergency call to action. Another example is in the 3C-REN residential decarbonization program, where the avoided cost served as the base price for the program, and kicker incentives were included for projects delivered by local contractors to Disadvantaged Communities and Low-Income residents. The simplified "kicker" approach allows the time-delimited grid value signal to cohabitate and complement the policy value of reaching historically underserved portions of our community. As a result, projects have been flowing

to these communities and individuals and could be designed to cover the full project cost with braided funding streams.

As described in the legislation and further clarified in DOE guidance, the home efficiency rebates utilize a similar approach to "kicker" incentives, offering double the incentive per unit for low-income customers. In California, this could enable a very streamlined and expedient implementation alongside existing measured programs offered by RENs and CCAS. The avoided cost value of the grid impacts and other values already recognized by the CPUC can be augmented by the federal performance incentives to make more projects feasible for customers and leverage the power of the two funding sources to reach a larger portion of the population.

In this scenario, the funds would fully complement expanding service and utilizing existing infrastructure without adding administrative burden. The different objectives of each program can be captured in the "value stack," and impacts can be tracked and monitored concurrently.

Braiding the Home Efficiency Rebates with only the Equitable Building Decarbonization effort presents several potentially important challenges for rapid deployment and the ability for the funds to be accessible to more Californians.

First, successful program infrastructure already exists in the state that aligns with the performance-based incentives for measured savings impacts envisioned in the home efficiency rebate legislation. As such, the CEC has a path to get funds to customers faster than waiting on the deployment of the Equitable Building Decarbonization (EBD) program, which is first and foremost intended to deliver decarbonization to customers, and has as a secondary goal support for grid reliability. EBD is also solely focused on low-income, whereas the federal funds could motivate market-rate customers to incrementally get to decarbonization and grid impacts with a much smaller public cash outlay and support the state's goals of 3 million climate-ready and climate-friendly homes by 2030 and 7 million homes by 2035, and 7,000MW load shift by 2030.[1]

The CEC should consider including market-rate customers in the early deployment of these funds. Everett Rogers' Diffusion of Innovations theory suggests that adopting new ideas or innovations follows a predictable pattern, and individuals are categorized into adopter categories based on their willingness to embrace new concepts. In this context,

[1] Governor Newsom's Letter to Liane Randolph, Chair, California Air Resources Board, dated July 22, 2022; and California Energy Commission Senate Bill 846 Load-Shift Report, May 2023, CEC-200-2023-008.

market-rate customers often fall into the "early adopters" category in the diffusion process. Early adopters are individuals or groups willing to take risks and try out innovations ahead of the majority. In the context of market-rate customers being early adopters, this could be because they have the financial means and risk tolerance to experiment with new products or technologies. The sequence of adoption from innovators and early adopters to the majority can make innovations more accessible to a wider range of individuals, including those who may initially be more risk-averse or have limited resources. This theory provides an important construct to validate the inclusion of market-rate customers in home efficiency rebates, given the larger impact and potentially stronger, higher-quality projects in LMI or DAC communities as the market matures. Allowing market-rate projects also allows aggregators to balance risk across their portfolios that may be delivered to both market-rate and residents with low incomes.

Second, the EBD program is a pilot that has yet to be launched or tested. It seems potentially risky to allocate all of the federal funding for the Home Efficiency Rebates ($291,951,040) to a testing pilot when there are other proven channels that the financing could bolster. Several hundred residential projects have been installed in performance-based programs operating with CCAs and RENs in the past year. For example, the 3C-REN Residential program has several hundred installed projects and a forecasted Total Savings Benefit (TSB) value of over $2 million. The EBD program will take several more months to launch and scale. In the meantime, the CEC has a clear opportunity to diversify the paths to decarbonization and innovation and contribute to grid reliability and affordable clean energy solutions for Californians.
Integrating IRA HOMES funding with the CEC's current direct install programs may also present several technical and operational challenges that may not synch well with the HOMES requirements. Some of these challenging requirements are: home energy audits are required for every retrofit regardless of project type to be compliant; a post-installation third-party project certification detailing the work performed, equipment installed, and projected energy savings; additional data will need to be collected and reported to DOE which can include various home characteristics. These are just a few examples of the HOMES requirements that may pose challenges in layering the program with the EBD. The existing measured programs are already closely aligned with the stringent technical requirements of HOMES and offer a community-driven approach to drive efficient and equitable implementation of the funds in California.

One key objective of EBD is to channel funds towards local entities. Local organizations like CCAs and RENs have been early adopters of residential measured programs, given their ability to deliver results to their communities. Leveraging the provider network and

expertise of CCAs and RENs and deploying funds to current measured pay-for-performance programs is a viable and impactful alternative to accelerate community impacts before implementing the regionalized approach envisioned in EBD. Furthermore, CCA and REN programs currently have access to rate-payer and local funds that can complement federal funding to enable 100% cost coverage for customers with low incomes and provide performance incentives for aggregators that align with delivered impacts.

Additionally, by accelerating the launch by braiding the federal funding with an existing program that is already up and running, the IRA HOMES funding would be responding swiftly to energy challenges by supporting immediate decarbonization, innovation, grid reliability, and affordable clean energy solutions for Californians. This expedited timeline allows for a faster realization of benefits and aligns with the urgency of addressing climate and energy concerns. A balanced consideration of timing, alongside program efficacy and diversification, is crucial for maximizing the positive outcomes of this historic investment.

2) In the situation where CEC does not incorporate/braid HOMES program funding into the EBD Direct Install Program, respond to the following questions to inform CEC's HOMES program design and application to DOE.

a. Overall program design:

i. How can HOMES funds that are awarded to deliver residential whole building energy efficiency retrofits, be best utilized to support the state's decarbonization and electrification goals?

We encourage the CEC to use the federal HOMES program funding in an early acceleration model to fund existing local residential measured programs while the Equitable Building Decarbonization program is rolled out. Both efforts would leverage existing state funds and enable California to drive more decarbonization projects than they would with existing funds alone.

HOMES funds awarded for residential whole-building energy retrofits can be utilized in the context of existing local measured programs. Leveraging existing programs would support the state's immediate decarbonization and electrification goals by utilizing existing infrastructure, including trained contractors, to install compliant projects almost immediately with limited incremental administrative effort from the CEC. Administrative lift would be confined to establishing the incentive rate and processing the incentive payments for existing program administrators, rather than full program administration.

Existing programs, approved and recognized by the CPUC in D.23-06-055 as a preferred mechanism for supporting Inflation Reduction Act implementation, can support the early

launch of CEC's low-income decarbonization efforts. The CEC could also leverage this pathway to allow access to market-rate customers. In line with the diffusion of innovation theory, as discussed in the first question, a benefit of opening the work to market-rate customers may be enabling early wins on implementation by leveraging private capital and using it to build a stronger workforce if demand is higher in the market-rate segment.

Local program administrators, like CCAs and RENs, can modify their residential measured performance programs to comply with DOE guidance and submit these plans with the CEC's application to the Department of Energy for review. Aggregators and contractors in these programs are familiar with open-source meter-based quantification, can gauge expected results, and can manage performance-based accountability. Some programs have delivered projects at zero cost to the customer, and others (that are confined by the CPUC's cost test) have experienced some challenges with project activity, given that incentives are not high enough to motivate customers or aggregators to participate. Combining the avoided cost value with a per-unit incentive for electric and gas impacts would allow these programs to accelerate and deliver results to local customers.

The rules and guidance for these programs are already established, and the CPUC's guidance on normalized metered energy consumption is closely aligned with the IRA - HOMES advanced open source measurement and verification - where CalTRACK and the OpenEEmeter are the foundation for calculation. Programs not using open-source advanced measurement and verification would require additional review for compliance with DOE guidance. The goals for these programs are anchored in achieving Total Systems Benefits and utilizing the avoided cost calculator (ACC) as the primary price with kickers for other benefits not included in the ACC. The federal per unit incentives could likewise reflect the time-valued distribution of savings with increased incentives for policy objectives like reaching low-income customers (like the 2x kicker for low-income incentives in the federal requirements).

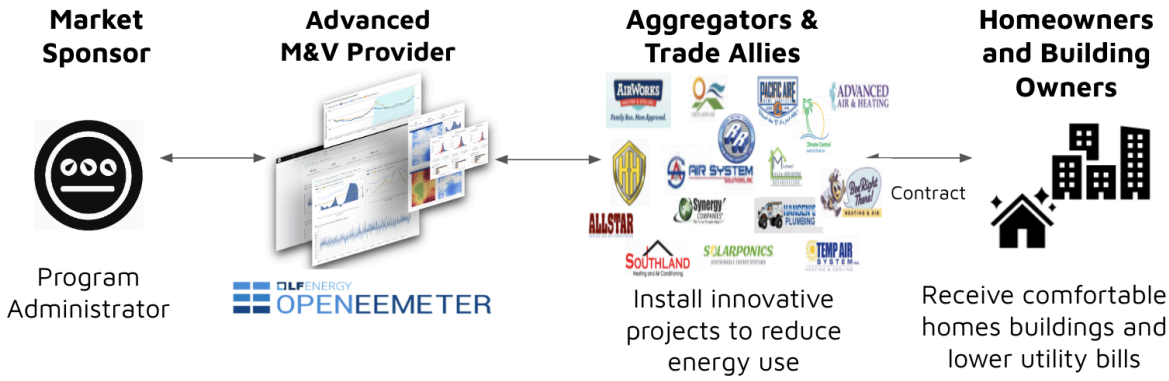
Utilizing the established programs allows the CEC to deploy funds more quickly to deliver decarbonization impacts to low-income communities, build local workforce capabilities (through doing the work), and build intelligence on the results to inform and support the EBD deployment. These programs have "shovel-ready" projects in the pipeline that could be unlocked with federal funding and mitigate climate impacts today. Given that Justice 40 definitions are more expansive than simple DAC and low-income definitions currently used in the state, the federal funding could serve a middle-income portion of the population that frequently slips between the cracks of program models. Deploying via existing CPUC-authorized programs would also ensure that the interventions would be aligned with grid value (via the ACC valuation) and help support the state's ongoing reliability struggles.

Since these programs were all designed with an open, technology-agnostic delivery model, they can be more flexible in meeting customers ``where they're at" in technology adoption. It is not clear that customers will be ready for comprehensive upgrades on the first intervention. With this model, they can start a journey with federal funding for the first high-impact interventions (over 15% at the portfolio level) and continue to build packages that are most attractive to customers. The opportunities for innovation and creativity will live with aggregators (not homeowners) to deliver and build the first set of key lessons learned as EBD is launched.

> *ii. Aside from ensuring that program participation is a simple process from the resident's point of view and the need to avoid cash outlays, how should the program be structured to support widespread access and uptake in households located in disadvantaged communities or with a low income? How could CEC structure HOMES's pay-for-performance option to reach low-income communities more effectively?*

The existing measured programs operated by the RENs and CCAs are designed to be simple for the residents and contractor/aggregator alike. By paying on the VALUE of the projects instead of the parts, all parties can access the products and services they want and build this transaction seamlessly into their offerings. This means more resilient business models to continue to deliver value to customers, as funds for decarbonization may ebb and flow and technologies evolve and change.

The basic program structure follows the transactional flow diagram below:



The market sponsor sets the rules for qualifying projects and the price per unit for delivered energy savings impacts and any additional benefits (i.e., equity kicker, etc.), as well as any upfront payments and other requirements. This is codified in the implementation plan filed with the regulatory body (e.g., California Public Utilities Commission) and complies with any funding requirements. The aggregators assess and may adapt their business models to

participate. Aggregators recruit or work with service providers to do the work within the terms of their agreement. Service providers and/or aggregators directly interact with the residents and potential customers to assess their needs and pitch them on the solutions they can offer. It is worth noting that in this approach, contractors and households **do not** have to wait for rebates in measured programs. Aggregators will pay the rebate upfront and be the ones to take on the risk of performance.

The size of the performance incentives offered drives the program design. An increased incentive is the primary structural component for reaching disadvantaged communities and households with a low income. Aggregators serve and identify partners and providers in these communities because the value of delivering is higher. Federal incentives would further enhance the ability to reach residents with low income and those living in disadvantaged communities in this existing model. Projects completed by local contractors are eligible for higher incentive rates, which supports local workforce development. When local contractors reach historically underserved customers, the multipliers are additive. Federal funding could complement this structure effectively by providing a fixed per-unit incentive, which is doubled for low-income residents.

CCAs and RENs serve a significant portion of California's residents and will be important allies in implementing the EBD program. This is an opportunity to build capacity locally to allow EBD to have an even greater impact when fully launched and more effectively serve low-income residents faster in our collective decarbonization journey.

> *iii. If funds are provided directly to existing residential efficiency programs, which programs will make the highest impact in terms of market transformation for efficiency and decarbonization technology?*

The programs that can have an impact in the shortest amount of time are the existing programs approved by the CPUC and in operation in several counties in California. These include the MCE Residential Market Access Program, 3C-REN Residential Program, and Peninsula Clean Energy's FLEXmarket Program. Sonoma Clean Power (SCP) also recently had a residential pay-for-performance program that could be a conduit for federal funding. These programs have implementation plans that are nearly DOE-compliant and, with an open technology-agnostic design, can drive market transformation for efficiency and decarbonization technology by allowing this federal funding to expand upon the variety of non-prescriptive measured packages already available in California.

The market access program model is transformative in and of itself. Adopted by the CPUC in 2021 to address summer reliability (D.21-12-011), it was adopted for the full portfolio in D.23-06-055 precisely because of its simplicity and ability to drive innovation and reduce barriers to entry for various service providers. As California accelerates its adoption of

comprehensive home performance technology for full decarbonization, an open market model driven by accountability for delivered impacts will ensure we can continue to invest and scale confidently.

iv. Leveraging and stacking:

a) CEC has gathered feedback on how electrification incentives could best be leveraged and stacked with existing programs. Are there additional considerations for best leveraging and stacking residential whole house efficiency rebates, like HOMES with existing programs?

Stacking incentives is a great strategy when fixed technology incentives are in play. Either when you have multiple "deemed" programs that combine incentives to build a project or when a project has a combination of deemed technology incentives and a performance payment component.

For deemed technology rebate/incentive stacking, the purpose of the rebate is to reduce the cost of the technology to improve the availability of technologies in the market and the accessibility of the technology to individual customers. Adding up the incentives is an appropriate strategy, with provisions of applying only one incentive per technology or a cap on the total project. The TECH layering principles adopted by the CPUC provide good guidance.

When layering deemed technology incentives with performance-based incentives, it is important to segment the purpose of the incentive or rebate. The deemed rebate is to improve the availability of technologies in the market and accessibility to individual customers, while the performance incentive is to deliver grid value and tangible avoided cost value. In this case, it is reasonable to allow both incentives. It is unnecessary to cap the incentives at the project cost because the grid or other value recognized by the market sponsor may exceed the project cost.

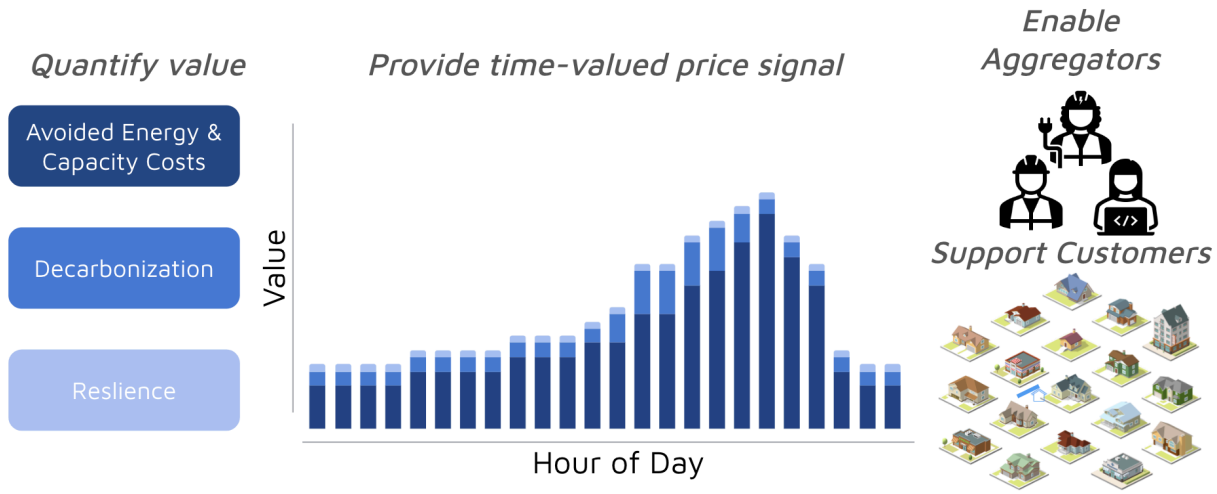
When layering performance incentives, it's even easier. Since performance incentives are tied to the value delivered, they can simply be stacked on top of one another. This is the foundational construct of the Avoided Cost Calculator. Avoided energy, transmission, distribution, and ancillary services are included, but so are some GHG impacts, low GHG refrigerant mitigation, and methane mitigation. The federal HOMES funding could be added to the existing Avoided Cost value in existing CCA and REN measured programs to augment the time-value of GHG mitigation (which is arguably undervalued in the current calculator) and the value of addressing equity (embraced in the 2x multipliers for low-income interventions).

b) Are there considerations for stacking pay-for-performance rebates (see below) with existing programs?

The primary consideration is the ease of integration. Existing pay-for-performance measured programs can layer a time-valued per-unit energy incentive on the existing performance value stack. Kickers for low-income decarbonization from DOE can be 2X and combined with existing incentives.

CCAs and RENS operating these programs are already familiar with this structure and, with an additional value stream, could deliver additional projects that would complement the impacts of the CEC's EBD effort and could deliver in a shorter time frame.

These programs were designed for local entities to leverage braided funding strategies, efficiently provide household rebates, and spearhead comprehensive home retrofits and full decarbonization efforts.



c) What are the best strategies for effective and efficient integration into existing programs' administration, websites, and materials?

Pay-for-performance measured programs are designed to integrate into existing business offerings and can accommodate straightforward marketing integration into websites and materials. These programs already have effective administration, and CEC, in effect, would be leveraging their expertise to deliver the impacts and report on delivered savings that are eligible for incentive payments from the CEC's DOE allocation for HOMEs.

d) Which existing program quality assurance, quality control, workforce, or other implementation standards or best practices should be taken into consideration or used as a model?

The pay-for-performance measured programs were approved by the CPUC and met the quality assurance, quality control, workforce, and other implementation standards for the investor-owned utility programs. If CEC had additional requirements, they could be included in updated implementation plans.

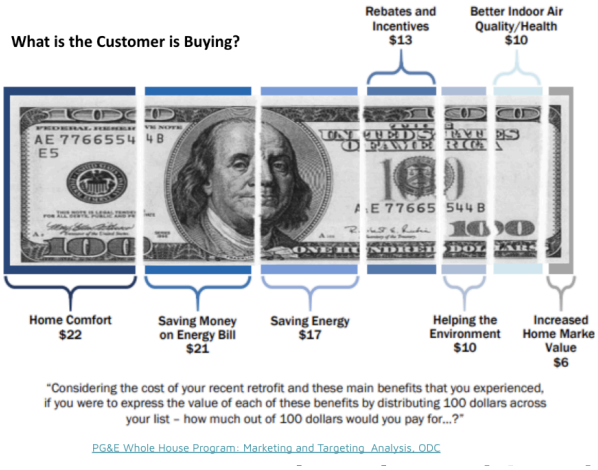
b. Rebate determination approach and rebate values. DOE offers both a modeled and a measured savings pathway. The measured savings pathway requires energy savings of 15 percent or greater per home or portfolio of homes. As noted above, through the measured savings pathway, the state can choose to set rebate values by either 1) paying a fixed portion of the project cost (80 percent for low-income households and 50 percent for households with income at 80 percent AMI or greater or 2) a pay-for-performance calculation payment rate equal to $4,000 for a 20 percent reduction of energy use for the average home in the state for low-income households and $2,000 for a 20 percent reduction of energy use for the average home in the state for households with 5 income at 80 percent AMI or greater. States may seek approval from DOE to increase the maximum amount available for low-income households. For both measured pathway options, CEC is to receive and review nine to 12 months of each retrofitted home's energy consumption data to confirm 15 percent of energy savings prior to issuing a rebate to the contractor, aggregator, or program implementers. Additionally, states must design programs such that low-income households are not required to use personal funds to pay for rebate covered work.

i. What are the advantages and drawbacks of program design using the fixed costs versus pay-for-performance method? Can the pay-for-performance method effectively serve low-income households?

The primary advantage of a program design that uses a pay-for-performance method is that it provides the greatest protection for residents to get a high-quality project, not just an expensive one. This is because the incentives are aligned for all parties in this model.

A fixed cost method alone would have no protection for the customer getting valuable outcomes or an assurance that the contractor does quality work. CEC is mitigating this worst outcome by using measurement to determine eligibility for the incentive for the customer. However, aggregators and contractors could still potentially game the model by inflating costs for the project because it is not tied to delivered value. While they'd still need to deliver the minimum 15% savings, they would not be motivated to deliver more. The customer would get the highest cost and only the minimum value of savings impacts. Measuring individual customer impacts at 15% creates other issues as well. A better alternative to the 15% approach is portfolio risk mitigation, in which aggregators are paid for overall delivery across their portfolio. With this model, aggregators do quality work, even though some customers will save more or less than 15%. With a site-level

savings screening approach, the cost-based incentive would also preclude residents who may not reach 15% (imagine 14.5%) from getting any rebate. When aggregators can manage risk across a portfolio, they can offer more incentives to more residents, which they do up front, and they can take the performance risk on the back end.



Performance-based programs have been built to protect against this kind of gamification. The contractor/aggregator will keep costs right-sized to get the highest performance payment and offer a similarly right-sized rebate to get a customer to agree to do the job. Every resident has a different tipping point based on what they are valuing, and this model enables aggregators to find that sweet spot to deliver the highest quality project to residents who choose to proceed with the project - including 100% if the market sponsor decides that is a program criterion.

Pay-for-performance models can, and do, effectively serve low-income households by offering higher incentives for better outcomes, thereby encouraging more comprehensive retrofits in these homes. They can also directly value other aspects of the program goals (i.e., equity with a 2x or more kicker) to ensure aggregators prioritize interventions in these areas.

Contrary to stereotypes, pay for performance can deliver for low-income residents. In fact, it may be even MORE important to ensure that outcomes are DELIVERED at the lowest cost and highest quality possible.

> *ii. What are the options to manage and allocate performance risk and financing costs during the 9 to 12-month post-installation period prior to issuing the rebate? Options should consider at a minimum that: low-income households are not required to utilize personal funds to pay for rebated work, the inability for many contractors, installers, or small businesses to "float" rebate costs, and the cost of capital for aggregators (or some designated entity) to float those costs.*

Based on experience with market access programs over the past two years in California, an emerging cohort of aggregators appreciate the flexibility of the performance-based program model. These aggregators have developed approaches

to financing the upfront costs in the first year and are now leveraging cash flows from past project performance to fund their next investments. In effect, the cost of capital is absorbed into minimal program administration that would traditionally exist in a T&M program administration model. In California, this has historically been up to 40-60% of the program cost; hence the cost of capital is not likely to add to the overall cost of implementation compared to other implementation models.

Utilizing existing pay-for-performance programs and their existing infrastructure, the CEC could tap into the overhead they've already expended to launch programs and, in some cases, the up-front partial payments they provide to aggregators. Low-income customers are not on the hook for upfront investments, and neither are local service providers. Projects are closed out with them upon completion. The performance risk is only visible and a concern to the aggregator and program administrator (market sponsor) as the projects mature.

The most important point is that households that choose to do the retrofits are NOT exposed to performance risk, nor are small local service providers, making the project deal flow seamless while still delivering significant improvements in accountability for the program sponsor.

iii. For the fixed cost method, how should the CEC approach setting allowable project cost caps? What are similar programs CEC should use as examples?

We recommend that the CEC not use the fixed cost approach, but rather maintain performance payments for aggregators. Participants would not be exposed to performance risk. The primary concern with using a fixed-cost approach is that it is inconsistent with the original legislation's intent and could unintentionally drive up costs and drive down the quality of installations because the results are not tied to performance outcomes. Furthermore it is widely acknowledged that "or" was a drafting error in the legislation and may risk stability of implementation in the future.

In the legislative text, the words “the lesser of” were unintentionally left out of the measured path, though they were included in the modeled path. This had the unintended impact of removing the cap from the measured rebate. These approaches have always been proposed by Congress as equivalent pathways with the same caps.

Using this error to provide rebates as a percentage of the cost – not energy savings – is contrary to the intent of Congress and could cause legal and regulatory delays, require dramatic programmatic changes if the drafting error is fixed in subsequent legislation, and set a precedent that leads other states to exploit other possible loopholes. Using a

drafting error could put access to funding at risk and slow progress on achieving the state's climate goals.

The existing pay-for-performance-measured programs already deployed successfully in California should be the primary example for the distribution and delivery of impacts from HOMES funding. These programs are primarily paid based on the avoided cost value delivered, which aligns the delivery of impacts for the customer and the quality of the projects for the aggregator or trade ally. Project cost caps have a negative impact on motivating performance and quality and may unintentionally inflate project costs.

iv. What is the best way for the CEC to obtain consistent and sufficient documentation for contractors, such as itemized cost breakdowns, while remaining consistent with contractor business practices?

Consistent and sufficient documentation from contractors is included in the existing CCA / REN measured pay-for-performance programs and could be reviewed to ensure all DOE-required information is included.

c. Eligible recipients.

i. Should CEC reserve additional HOMES funds for low-income households, beyond the DOE-requirement of 50 percent of total rebate funds? If so, why, and what percent?

To mitigate the risk of slow uptake among residents with low income, the CEC should consider making some funds available for moderate-income and market-rate projects. This could have the initial impact of delivering decarbonization to California by leveraging private consumer investments as well as potentially prime the contractor market for fully implementing the Equitable Decarbonization Program. Allowing moderate-income and market-rate customers to access funds could help mitigate early adopter risk and also ensure that low-income residents can take advantage of the experimentation and testing that may result from the early adoption of market-rate customers. Market-rate customers, who are less sensitive to price changes, can take on more risk with their energy burden, making them ideal candidates for early adoption.

The CEC should strategically allocate a portion of the funding to harness the early decarbonization potential from market-rate customers while reserving funds for advancing the decarbonization of low-income and disadvantaged communities. The exact percentage is not clear, but adopting a balanced approach that is somewhere around a 50/50 split between residents with low incomes and market-rate residents could ensure a harmonious and dynamic mix, leveraging the private capital and enthusiasm of market-rate customers for quicker impact while dedicating significant resources to benefit vulnerable communities.

The HOMES legislation provides double the incentive for HOMES when serving low-income and disadvantaged communities. This simple incentive structure helps drive interventions to those communities and individuals and supports the delivery of quality service and decarbonization. By reserving funds for these customers, the program can ensure targeted impact and effective carbon reduction, even if voluntary participation takes time to ramp up.

Existing pay-for-performance programs in California have demonstrated success with the use of a similar simplified incentive adder construct for reaching disadvantaged communities. This approach, with low barriers to local contractor entry, enables the active participation of community service providers. Incorporating additional outreach strategies for low-income and disadvantaged communities into the program design enhances its potential for deeper impacts. This aligns with the existing efforts of CCAs and RENs, who, with the added value of TSB, can extend beyond mere participation to achieve grid-optimized interventions.

Moreover, historically marginalized communities have often been excluded from clean energy and technology programs. Therefore, it is essential to ensure that the allocated funding can be effectively utilized by and accessible to LMI and DAC customers, aligning with and fulfilling the legislative intent of the IRA. Recognizing that project uptake may take longer with LMI and DAC customers, setting aside dedicated funds becomes crucial for the program's success in addressing historical disparities and promoting equitable access to clean energy solutions.

d. Income Verification.

i. What approaches should CEC consider to verify individual household income that are efficient and accurate, safeguard information, and create a minimal burden for residents? Please provide examples of other programs and why you consider them effective models?

We support the CEC's "Categorical Eligibility" strategy from the EBD guidelines leveraging a list of federal and state assistance programs that can be accepted to qualify a resident as low-income in addition to the geographic Disadvantaged Community recognized by the CPUC and Justice 40 neighborhoods identified by DOE.[2]

ii. The EBD Direct Install Guidelines established a list of federal and state assistance programs that can be accepted to qualify a resident as low income (i.e., "Categorical Eligibility"). Should the CEC utilize the same list of programs for Categorical Eligibility for

[2] More detail on the overlap can be seen here: https://screeningtool.geoplatform.gov/en/#3.63/37.26/-101.57

a program(s) developed with HOMES 6 funding? In addition to the programs found in Section E.3. of the Guidelines, are there additional programs CEC should consider?

We support the CEC's "Categorical Eligibility" strategy along with the geographic DAC classifications from the CPUC and Justice 40 Neighborhoods recognized by DOE.