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Additional submitted attachment is included below.

California Energy Commission

Docket No. 23-DECARB-01

Submitted Electronically

Re: Recurve's Comments on the HOMES P4P Program Staff Solicitation Concept

Dear California Energy Commission Staff and Commissioners,

Thank you for the opportunity to provide comments on the HOMES P4P Program Staff Solicitation Concept.

Recurve Analytics, Inc. respectfully submits the following comments to the California Energy Commission. Recurve is a leading demand flexibility software provider specializing in open-source advanced measurement and verification to enable program optimization and validation of performance-based incentives.

Recurve's FLEX platform reduces friction and enables the consistency and transparency essential for operating successful residential and commercial measured programs. Several of these concepts and solutions originated in California with the backing of the Energy Commission. We are proud to continue supporting the state as a leader in innovation, delivering solutions that address urgent affordability goals, promote grid optimization, and expand the value of clean energy for both participants and ratepayers.

We look forward to working with California's many stakeholders to successfully implement these important and groundbreaking program models.

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
Recurve Analytics, Inc.

California Energy Commission Staff Input Request

To facilitate feedback, staff has developed a list of questions related to the HOMES P4P Program SWI solicitation. Individuals are invited to provide input on staff questions as well as program-related topics not posed. [Note: CEC Input Requested is in italics]

A. General

1. *Are there any tasks not contemplated in the HOMES Pay for Performance Solicitation Concept Paper's draft Scope of Work (SOW) that are necessary for the implementation of the HOMES P4P Program? Please describe.*

The draft scope of work in the Concept Paper appears comprehensive and complete. The scope of data management and analytics for risk management and optimization necessitates careful consideration of the necessary legal structures to enable appropriate, secure, and role-based data flows across multiple parties. The Statewide Implementer should have the proper security and authority to handle customer-specific data for both participants and non-participants, enabling them to optimize program delivery. Aggregators should be able to view basic information about eligible customers who would benefit the most from the program and could have the greatest impact to calibrate incentives paid to customers and to mitigate the risk of non-payment for underperformance. Contractors should have secure access to the results of projects they have delivered, enabling continuous improvement throughout the program's life. Participants should also have access to results as part of consumer protections.

The current concept paper does not yet include specifics on legal arrangements for data sharing. We anticipate the CEC will provide detailed guidelines upon publication of the solicitation, ensuring bidders possess the necessary security credentials and can offer suitable products and services for the project, and that all anticipated scope can be fulfilled as envisioned.

2. *Are there components of the solicitation concept paper and/or SOW that will be infeasible? Please describe.*

"Subtask 7.1 Identify high-impact projects" may be constrained if data access is limited for the Statewide Implementer. Walk lists of eligible, high-value customers provide a useful, yet static, output when the platform can inform and support a much more dynamic planning process of consumption patterns and other characteristics of the full population. The Statewide Implementer will be more efficient and effective in program design and deployment if they can engage with tools and software that allow them to run scenarios on the population of eligible customers, pre-screen for specific criteria, and have estimated bill impacts readily available for informing aggregator and contractor outreach. With limited

dollars and performance payments at stake, a strong data-driven decision infrastructure is a critical component for program success.

The CEC should also consider the benefits of directly procuring a compliant, DOE-approved open-source software platform to cover the full scope of Task 7. A technology platform available to any selected statewide program implementer under either a GFO or an RFP agreement ensures that the qualifications for handling confidential data and privacy protection are met (without adding that liability and cost to the implementer). It would also enable the CEC to run analyses on confidential data to fulfill Task 7.1 and support secure, role-based access with privacy-protected outputs where required. With an independently procured screening and M&V platform, the CEC would have the autonomy to assess implementation performance objectively, reduce costs by using it across all active programs, and empower implementers, aggregators, and contractors with critical feedback for prioritization and optimization decisions.

3. *For potential implementers or others: are there any issues or concerns resulting from recent federal actions or orders that may influence your entity's interest in this solicitation?*

The key benefit of a measured program design is that the evidence of the impact is accurate, transparent, and defensible for all parties involved. The enabling federal legislation is clear in the program's intent to reduce energy costs for Americans, and more recent federal orders focusing on reducing customer energy bills should reinforce funding. However, a "back-up" funding plan would reassure the market and support a longer-term intent of integrating this initiative into the California energy efficiency landscape.

4. *DOE staff has advised it does not expect to allow "partial payments" for the HOMES measured pathway, prior to the 12-month Measurement & Verification (M&V) period. In addition, CEC does not foresee any state funds being available for this action.*
 - a. *What are options for financing the rebate value, given that HOMES and state funds are not available?*

We do not have specific recommendations for financing, but recommend the CEC consult with state financing initiatives for clean energy and climate. A data infrastructure that enables pre-screening and risk management using actuarial performance data will support lowering the cost of finance over time. Understanding performance is crucial to mitigating risk and, consequently, expanding financing options. Upfront payments have been extremely valuable for launching the program.

- b. *Do aggregators have the capacity to finance all or part of rebate values? Do recent federal actions impact aggregators' ability to access financing?*

At the advent of the Market Access program, there were only a limited number of aggregators, and as the program rolled out, new market actors emerged. Once they assessed the risk, they were able to take on the upfront financing. While the initial rollout of the program was "emergency" funded, rolling the program model into more secure funding (energy efficiency portfolios for resource acquisition), their business models could persist. This evidence suggests that secure funding and predictability will enable existing and emerging aggregators to make informed decisions and adapt their business practices to this model in the long term. They may develop strategies to fund projects using a combination of upfront rebates from other programs and performance-based rebates from HOMEs. The maturity of California's market and the number of existing programs that complement HOMEs may help mitigate the risk. Still, concerns about the security of funding and payment are real.

B. Agreement Structure

5. *CEC intends to release the solicitation as a Grant Funding Opportunity (GFO). Under this structure, the awardee will not be reimbursed for profit. Under a federally funded GFO, the awardee will also follow federal Subrecipient provisions. CEC encourages parties interested in this forthcoming solicitation to review the sample federal terms and conditions and flowdown requirements, viewable on the workshop event page at (<https://www.energy.ca.gov/event/workshop/2025-08/solicitation-concept-workshop-home-efficiency-rebates-homes-pay-performance>).*

Parties should also review federal financial assistance regulations at CFR Part 200 as amended by 2 CFR Part 910, including federal cost principles and provisions on indirect costs, profit or fees, and other requirements.

- a. *For potential implementers and others: will your entity respond to a solicitation structured as a GFO?*

As a technology provider, Recurve will be available and accessible to prospective statewide implementers under either structure. What we can offer our partners will depend on any differences in the security provisions or potential restrictions on data flows in either model.

- b. *What factors would influence your decision to bid/apply?*

Our technology is critical to executing the Statewide Implementer scope of work, which encompasses program planning, screening, savings estimation (via forecasting), and M&V. Integrated data management and analysis are key risk management and program optimization functions in any contracting structure, thereby accelerating implementation.

Based on the response to questions at the workshop, CEC anticipates that the data security provisions would be the same in either a GFO or RFP. To enable the scope envisioned in Task

7, the agreement must allow the Statewide Implementer access to an analytical platform that contains site-level customer consumption data. In program models where implementers are only authorized to view final outputs from an analytical platform in the form of walk lists, it hinders their access to more dynamic optimization activities and integration with the M&V and feedback loops needed for program risk management and optimization. In short, it would not enable the scope outlined in the staff proposal. The Statewide Implementer, through their subcontractor, will need to demonstrate appropriate security credentials to handle confidential non-participant data, and accept security obligations to do the work on behalf of the CEC.

Unless the CEC chooses to procure the scope in Task 7 separately, either implementation agreement pathway (GFO or RFP) must be structured such that the Statewide Implementer meets all of the security provisions and credentials required to handle confidential and personal information on behalf of the CEC. This would unlock full access to planning and screening technology and capabilities. Role-based secure access would still be required for handling and providing access outside of the contract (i.e., to Aggregators or Contractors). This data access framework would need to be clear from day one to empower the implementer to initiate planning, segmentation, and screening with the full power of the CEC's existing data infrastructure. The SWI and the data manager would have to comply with data security standards to fulfill the tasks.

- c. If you are typically not inclined to bid on/apply to a GFO, could your existing business model be modified to accommodate a grant agreement vehicle?*

Our business model would not be modified; however, our products and technology offerings would be adapted to the scope and data security provisions.

- 6. The SWI compensation will not be tied to program energy savings to allow the SWI to serve as a neutral arbitrator of aggregator performance. However, CEC is considering aligning a portion of the SWI's compensation with program success. What non-energy savings metrics are appropriate to consider as a performance incentive for the SWI?*

It is appropriate to hold the Statewide Implementer accountable for launch time and project enrollment. This should be a direct complement to the Aggregators' incentive to deliver high-quality, impactful projects. The Statewide implementer ensures that the process for enrolling and identifying high-value projects is optimized, supporting the aggregator in achieving its goals. Data-driven feedback from a robust platform provides a tight feedback loop, identifying potential delays in project enrollment and addressing performance issues. Having alternative performance incentives for the SWI aligned with program success, that are still objectively quantifiable, is appropriate and calibrated to the program goals.

It's also important to note that open-source software, as required in the legislation and approved by DOE, serves as a neutral arbiter of performance. The code base is the

prescriptive roadmap for defining performance for all parties. To date, OpenDSM (OpenEEmeter) is the only open-source software reviewed and approved by DOE for the HOMES measured pathway. If the data management infrastructure were procured independently, it would enhance its ability to serve as a neutral arbiter of performance

C. Roles and Responsibilities

7. *Which types of companies or organizations are likely to step into the residential aggregator role for the HOMES P4P Program? What capacities (for example: existing tools or platforms, financing) do they have? Are these entities likely to be working locally, across the state, or across the country?*

Based on our experience, Aggregators have come from multiple corners to engage in this type of program. Regional Energy Network pay-for-performance programs have had high participation of local contractors, largely enabled and facilitated by a motivated and specialized aggregator operating in the region. The introduction of the aggregator to alleviate the workload of rebate applications and project enrollment processes led to a significant increase in projects and more local contractors participating.

Under the Market Access banner, Aggregators emerged to serve this program exclusively, given their frustrations with "traditional" programs. While we cannot know yet, the signals are positive that aggregators of all stripes can and will engage in this model as long as the program is clear and direct about the value, provides enabling tools (like auto-enrollment), and predictable payments.¹ Local aggregators and contractors are emerging in California, and the persistence of this kind of program model alongside the Market Access model will continue to stimulate the business model.

8. *What tools or resources will the SWI need to provide to aggregators to facilitate participation and project success? Are there different needs for experienced, established aggregators versus new and emerging aggregators? Please describe and prioritize.*

Key criteria for Aggregator success are cited in recent P4P and Market Access studies. Resources they have consistently mentioned are the need for automatic eligibility approval (including data sufficiency or eligibility for an alternate path), access to information on the likelihood of significant savings, and the value of any potential project to the program. This information is enabled through a comprehensive platform where population-level data is processed and accessible on a secure basis to Aggregators and contractors for decision-making in the field.

¹ See the recent draft study by Cadmus on the PG&E Market Access citing the key needs of Aggregators for success.
https://pda.energydataweb.com/api/view/4194/PGE%20MAP%20Evaluation%20Report_CLEAN_July%202025%20Updates.pdf

Recurve's products are designed to serve this need. We provide easy access to this intelligence to SWIs and their Aggregators. The platform is loaded with pre-processed information derived from the planning process, providing the aggregator with ready access to information about how the project may perform, enabling informed decisions on the amount of rebate to offer and setting reasonable expectations with the customer.

"A member of PG&E staff shared another factor that contributed to the simplicity of the program was **the automatic eligibility check feature** that was implemented in the application process. Staff noted that this feature told participants whether their project was eligible immediately, which **expedited the enrollment process** by removing administrative processes associated with similar programs." [Cadmus PG&E Market Access Draft Evaluation](#)

Similarly, transparency and accuracy on the "back end" of results provides a critical feedback loop for Aggregators and contractors to optimize projects going forward. Recurve's platform has been cited as a favorite by aggregators:

"Calculating actual energy savings – MAP was designed to calculate savings based on meter data. While the program did this, the level of support for sharing actual energy savings varied among implementers. **Aggregators expressed that Recurve provided the most accessibility and transparency in the savings calculations.** Aggregators could access their project's energy savings online monthly. This allowed aggregators to review their projects and troubleshoot with the customer if necessary." [ODC Process Evaluation on Market Access](#)

9. *What tools or resources (for example: tool to gather and submit required data, energy savings estimators, rebate value estimators) will the SWI need to provide to contractors(installers) to facilitate participation and project success? What tools or resources do contractors (installers) typically already have access to? Are any provided by existing aggregators?*

Based on evaluations and our experience, the Statewide Implementer should provide contractors with as much information as they can on prospective project enrollment including: eligibility (and any criteria that have an exception or alternative path for enrollment), potential project value (for making a rebate offer), estimated energy and bill savings (pre-calculated based on forecasting models), and any information on bonus incentives for which the customer may be eligible (kicker for grid constrained area).

D. Utility Data and M&V

10. *If CEC were to provide access to the CEC's Interval Meter Data for the SWI, and the SWI were to share granulated aggregated data, such as zip code + four lists of potentially high-impact geographic areas with aggregators, what measures have been or could be implemented to protect consumers against customer harassment or aggressive upselling?*

Process evaluations of Market Access programs have consistently shown high customer satisfaction, indicating that sales tactics are effectively calibrated. When Aggregators and Contractors have sufficient information to approach a customer, they can be more sensitive in the offers they present, taking into account the competitive landscape. If there are other contractors available to do the job, right-sizing the pitch and tactics will be essential to winning customers.

Aggregators and contractors generally operate at the local level. They tend to specialize in particular geographic or demographic pitches, so the risk of "harassment" from multiple providers is low. It's also important to balance the low risk of "aggressive upselling" with the potentially significant benefits for the consumer, such as getting a better price for the planned projects. The flexibility of incentives that contractors and aggregators can offer to customers has been one of the key upsides cited in program evaluations of the Market Access programs to date.

11. CEC staff understands that in other California pay for performance programs, "data sufficiency checks" are necessary to confirm access to sufficient utility baseline data for conducting M&V. CEC's intent is to make the statewide HOMES P4P Program available to as many Californians as possible, including those who have may been ineligible for other performance-based programs such as customers who: have been in their homes less than 12 months

- have recently installed, or plan to install, solar photovoltaic systems*
- have recently installed, or plan to install, electric vehicle charging infrastructure*
- are served by a small publicly-owned utility (POU), for whom the POU would provide monthly billing data, but the data would likely not be available until post-project analysis.*

a. Can CalTrack/OpenEEmeter currently support the inclusion of the above segments? If not, what would be needed to include these categories of customers?

The recently updated OpenEEmeter, part of the [OpenDSM](#) project, includes the necessary approaches for handling customers with photovoltaic (PV) and electric vehicles (EVs) on-premise. Customers with PV or EV technology can still be eligible for program participation.

OpenDSM can be used with monthly billing data, provided a data flow is established.

- b. Given the above context, is a "data sufficiency check" necessary for the HOMES P4P Program? If yes, what are the options for when and how data sufficiency checks are conducted using the CEC's Interval Meter Data?*

A data sufficiency check is still helpful to ensure calculations can be completed, but it does not have to be a disqualifying criterion for eligibility. Since the portfolio must achieve 15% savings, it is important to demonstrate that the majority of projects are "measurable" and that their data is sufficient.

The majority of the data sufficiency checking could be done upfront as part of the program optimization and prioritization analysis. A data sufficiency "check box" could be included in the eligibility screening intelligence provided to aggregators and contractors. Providing this information alongside the segmentation and screening information will give aggregators and contractors key information needed to decide on outreach and project enrollment. Data sufficiency can significantly impact the risk profile of a project for an aggregator or contractor, as well as the ability to validate its impacts for the customer. Therefore, it should still be conducted and included in the project's documentation.

- c. Could a customer-provided questionnaire be used as an alternative to standard data sufficiency checks for customers of small POUs when data is not available until after the performance period?*

Since these projects will likely make up a small portion of the full portfolio, a questionnaire may be sufficient, provided that the data flows can be established for customer billing data post-project.

E. Program Integration

- 12. How can the statewide HOMES P4P Program leverage and support existing local Market Access Programs authorized by the California Public Utilities Commission?*
- a. What is the feasibility of developing and administering a shared application portal for both the HOMES P4P Program and local programs?*

Many of the requirements for each program are the same, but there are likely nuances and differences in the enrollment interface for different program implementers. Rather than designing a shared application portal, the CEC could consider a standard data specification for enrollment data that could be matched with any existing application portals. That way, an existing P4P program could use the same interface, but have additional fields that capture any data unique to HOMES. The enrollment software is typically calibrated to the program requirements, so to the extent the core information is captured and can be provided to the CEC, the application portal itself may not be the primary point of coordination.

b. What are other potential roles and responsibilities for coordinating participation in both types of programs?

Given that the CPUC has already recognized the desire for co-funding and leveraging non-ratepayer funding sources to accelerate program impact, the program administrators should be motivated and encourage creativity in their third-party implementers to make it work. The key requirement for the CPUC is that co-funded projects are flagged in reported savings.

c. What should the SWI's responsibilities, if any, be with regard to coordination with local Program Administrators and integration of marketing efforts?

The Statewide Implementer should reach out to existing programs to align intentions and identify how programs are similar or may overlap. Local program implementers have experience in their regions that would be valuable to the SWI for optimizing in that jurisdiction or for potentially applying strategies in other places. That applies to both marketing and program delivery strategy.

F. Workflow related questions

CEC intends to post a set of draft workflows prior to the workshop on the [workshop event page](#)

13. Do stakeholders agree with the overall sequence of project steps -- project initiation, rebate reservation, project installation, project submittal, QA/QC, M&V, and final rebate payment?

The overall sequence of steps aligns with existing performance-based programs.

14. When should the various eligibility checks (customer and address eligibility, project and measure eligibility, etc.), as well as project compliance checks (for example: bill impact estimated provided, safety testing, permits closed, etc.), be performed in relation to the above steps, particularly rebate reservations and payment?

Assessing eligibility in advance enables aggregators to quickly access the information and determine the project's likely value before selling a project to the end-user. By leveraging predictive analytics and forecasting platforms, the CEC or SWI could also provide more detail on estimated bill impacts before rebate reservation.

15. Are the roles of the contractor (installer), aggregator, and SWI aligned with how you see the project process? Particularly for the SWI, are there missing responsibilities or responsibilities that should be assigned to others?

The roles of the contractor, aggregator, and SWI are properly aligned for the project's progress. The SWI serves as the hub for implementation, with its core responsibility being to

ensure that processes support aggregators and contractors for successful implementation and provide them with all the necessary tools to mitigate the risk of non-payment. Together, they will provide the greatest impact for the program.

16. How can the workflow best support an efficient sales process for the customer and contractor (installer) while minimizing the risk that a contractor completes a non-compliant project? Who bears the risk that a project is ultimately found to be non-compliant?

Having information readily accessible to the aggregators and contractors to facilitate eligibility checks, enrollment, and visibility to project value will be key to the workflow and process for efficient sales. Having this information accessible and reliable for in-field decisions will reduce the risk of initial outreach to ineligible customers. Project value and feedback loops will also help mitigate the non-compliance risk - by ensuring it's caught early and contractors are clear on what's required. Since aggregators bear the risk of non-compliance, it affects their performance payment, and they will most certainly take steps to mitigate it from happening again, creating protection for both the implementer and the customer.