



GFO-23-303 Pre-Application Workshop

A Decision Tool to Electrify Homes with Limited Electrical Panel Capacity

Energy Research and Development Division, California Energy Commission

Presenter: Felix Villanueva, Utilities Engineer

January 18, 2024



Housekeeping

- This workshop will be recorded.
- Participants will be muted during the presentation. Please chat your question in the Q&A window.
- Updates on solicitation documents including this presentation will be posted at the Grant Funding Opportunity's webpage:

<https://www.energy.ca.gov/solicitations/2023-12/gfo-23-303-decision-tool-electrify-homes-limited-electrical-panel-capacity>



Agenda

Time	Item
1:00 pm	Welcome and Introduction
1:05 pm	Commitment to Diversity Empower Innovation Solicitation Background <ul style="list-style-type: none">• EPIC Research Program• Purpose of Solicitation• Available Funding
1:25 pm	Application Requirements <ul style="list-style-type: none">• Project Group Requirements• Attachments• Submission Process• Evaluation Process
2:00 pm	Q&As
3:00 pm	Adjourn



Commitment to Diversity

The Energy Commission adopted a resolution strengthening its commitment to diversity in our funding programs. The Energy Commission continues to encourage disadvantaged and underrepresented businesses and communities to engage in and benefit from our many programs.

To meet this commitment, Energy Commission staff conducts outreach efforts and activities to:

- Engage with disadvantaged and underrepresented groups throughout the state.
- Notify potential new applicants about the Energy Commission's funding opportunities.
- Assist applicants in understanding how to apply for funding from the Energy Commission's programs.
- Survey participants to measure progress in diversity outreach efforts.



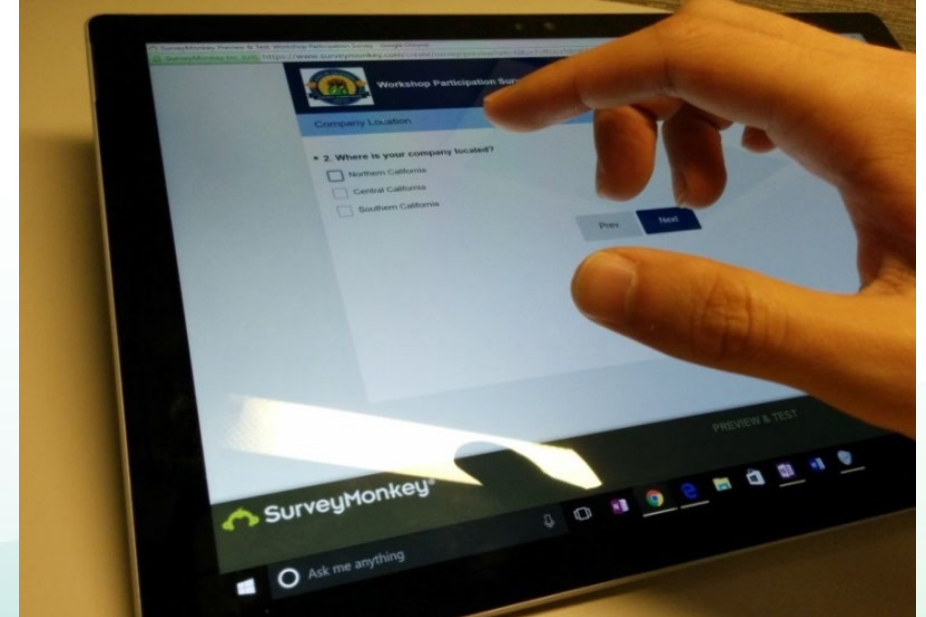
We Want to Hear From You!

Participation Survey

Survey responses will be summarized anonymously to track attendance of underrepresented groups in our workshops for public reporting purposes.

- Online participants, please use this link:
<https://forms.office.com/g/YvLUjBcG1k>

Thanks!





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California Energy Commission
Government Organization

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Find a Partner on EmpowerInnovation.net

Empower Innovation strives to accelerate your clean tech journey with easy access to funding opportunities from the Energy Commission and other funding providers, curated resources and events, and connections to people and organizations.

FIND A PARTNER

Announce your interest in this funding opportunity and message other interested parties to find potential partners.

RESOURCES & TOOLS

Browse the collection of resources for clean tech innovators including Resource Libraries, Funding Sources, Tools, and Databases.

<https://www.empowerinnovation.net/en/custom/funding/view/41116>



EmpowerInnovation.net





Research Program Background

Guided by the EPIC 4 Investment Plan (2021-2025), this concept:

- Seeks to improve the Customer Value Proposition of End-Use Efficiency and Electrification Technologies
- Helps to achieve Strategic Objective S1: Building Decarbonization
 - Funding Initiative S1.29: Demonstrate Smart Energy Management Systems to Accelerate Electrification in Homes at a Reduced Cost



Policy Drivers

- Senate Bill 32- California Global Warming Solutions Act of 2006
- Assembly Bill 758- Building Efficiency
- Assembly Bill 3232- 40 percent reduction in GHG emissions from CA buildings by 2030
- Senate Bill 350- doubling energy efficiency by 2030
- Additional Information available in the Solicitation Manual



Purpose of Solicitation

Develop and demonstrate a decision tool that can provide homeowners with detailed information on their electricity use and panel capacity and provide actionable pathways to achieve electrification.

- Verify whether the existing electrical panel is adequate for partial or full electrification
- Help homeowners decide if they need to upsize
- Provide homeowners with recommendations and options on a variety of strategies and electrical appliances



Background and Motivation

- California climate goals: Accelerate building decarbonization efforts
- Increasing adoption of electric vehicles, solar, and electric appliances presents a challenge to residents' existing electrical panel capacity, especially those with 100-amp panels
- The cost of a panel upsize can range from \$3,000-\$10,000
- Upstream costs on the distribution grid may flow down to the homeowner/ building owner
- Homeowners lack the knowledge of their electrical panel capacity, electric energy usage, and pathways to electrify



Available Funding

Project Group	Available Funding	Minimum Award Amount	Maximum Award Amount
Residential Electrical Panel Decision Tool Development and Demonstration	\$4,775,000	\$2,500,000	\$4,775,000



Match Funding

- Minimum **20%** match funding is required.
- Applications with additional match above the minimum and higher proportions of cash match may receive additional points during scoring phase.
- Match funding contributors must submit match funding commitment letters that meet the requirements. Failure to do so will disqualify the match funding commitment from consideration.
- Refer to the Solicitation Manual for more details on match funding.



Residential Electrical Panel Decision Tool Development and Demonstration

Funding Amount: \$4,775,000

Develop and demonstrate a user-friendly decision tool that is no-cost to the user to easily chart a path toward home electrification

- Gather Data
 - Electrical Service Panel Size
 - Panel Electrical Utilization Rate
 - Remaining Electrical Capacity
 - Electricity Use & Peak Load



Residential Electrical Panel Decision Tool Development and Demonstration

Project Requirements:

- Collect data from minimum of **100** single-family homes with electrical service panel ≤ 100 amps
- Provide recommendations for current market-available electric appliances (including low-voltage options), emerging smart energy management systems (SEMS), and other technologies.
- Demonstrate these recommendations in a minimum of **50** of the 100+ homes analyzed.
 - **EPIC funds will only be used to pay for emerging solutions and technologies. EPIC funds will not pay for off-the-shelf electric appliances. Applicants are encouraged to leverage federal and state building decarbonization programs to pay for off-the-shelf technologies.**
 - **All residential demonstrations must occur in electric investor-owned utility (IOU) service territory.**
- Identify of a minimum of **25** additional single-family homes that previously upsized their electrical service panels from 100 Amps to 200 Amps to electrify their home and analyze calculations to assess whether the upsized panels were necessary for electrification or could have been avoided.
- Collaborate with homeowners, electric utilities, and electricians
- Identify and quantify the economic, energy, and non-energy benefits of the recommended electrification pathway



Residential Electrical Panel Decision Tool Development and Demonstration

Tool Feature Requirements:

- User-friendly interface (app, website, etc.)
- Analyze smart meter data of at least one-hour interval data; 15-minute interval data is preferred.
- Perform NEC Load Calculations
- Develop an energy usage load profile for each home to show demand and maximum power usage over the last 12 consecutive months, at a minimum
- Provide recommendations for electrification through installation of electric appliances, energy management systems, and other technologies
- Enable the tool to be free to residents, electricians, contractors, and all others wanting to use it for a minimum of 3 years after the end of the project



Residential Electrical Panel Decision Tool Development and Demonstration

Tool Feature Recommendations:

- May use Artificial Intelligence (AI) by employing algorithms that can analyze energy usage patterns, historical data, and various factors impacting consumption to identify inefficiencies and opportunities for improvement
- Recommend behavior changes to homeowners to reduce demand and energy consumption
- Provide information on incentives and financing to help pay for appliances and devices including installation costs
- Capability to be maintained and upgraded
- Any additional features that may be relevant to the homeowner in making decisions about electrifying their home.



Residential Electrical Panel Decision Tool Development and Demonstration

Include the following in Project Narrative (Attachment 4).

- **Technical Merit**

- Describe how the tool will gather smart meter data or other data to provide comprehensive electrical service data
- Describe how the tool provides electrification pathway recommendations
- If using AI, describe how AI can be utilized to provide customized recommendations based on household energy consumption patterns and other data to help homeowners explore pathways of electrification
- Describe the process of recruiting 100+ homes
- Describe the demonstration of the tool in coordination with low-voltage appliances and smart energy management systems, as appropriate
- Describe how to keep the tool free to end users
- Discuss plans to keep the tool available after CEC funding
- Provide any additional recommended features



Residential Electrical Panel Decision Tool Development and Demonstration

Include the following in Project Narrative (Attachment 4).

- **Technical Approach**

- Discuss how CEC funding helps overcome challenges and barriers
- Discuss how the research will be coordinated with homeowners, electricians, and building contractors
- Discuss how the tool will perform panel analysis and NEC load calculations
- Discuss training opportunities for homeowners and electrical contractors
- Discuss how to gain access to historical and current electricity data
- Discusses how will the project team plans to demonstrate the features and capabilities of the developed tools.



Eligible Applicants

- This is an open solicitation for public and private entities.
- Applicants must accept the EPIC terms and conditions.
 - Standard, UC, and DOE T&Cs available online:
<https://www.energy.ca.gov/funding-opportunities/funding-resources>
- Applicants are encouraged to register with the California Secretary of State, as all recipients and subcontractors must be registered and in good standing to enter into an agreement with the Energy Commission:
<http://www.sos.ca.gov>



Application Requirements

Each Applicant must complete and including the following:

- | | |
|---------------------------------|---|
| 1. Executive Summary (.docx) | 8. Past Projects Information (.docx, .pdf) |
| 2. Project Narrative (.docx) | 9. Commitment and Support Letters (.pdf) |
| 3. Project Team (.docx, .pdf) | 10. Performance Metrics Table (.docx) |
| 4. Scope of Work (.docx) | 11. Applicant Declaration (.docx) |
| 5. Project Schedule (.xlsx) | 12. References for Calculating Energy End-Use and GHG Emissions |
| 6. Proposal Budget (.xlsx) | |
| 7. CEQA Compliance Form (.docx) | |



Project Narrative (Attachment 2)

- This is your opportunity to explain the entirety of the project. The narrative should explain:
 - Why is your project necessary and important to California?
 - What is your project approach and how will each major task be implemented?
 - How will the project be completed in the term proposed
 - How will the project outcomes benefit electric ratepayers?
 - Address the requirements for your group as described in Section I.C.

Respond to the scoring criteria described in Section IV.F.



Scope of Work (Attachment 4)

- Tell us exactly what you are proposing to do in your project.
- Identify what will be delivered to the Energy Commission.
- Be sure to include in the technical tasks:
 - At least one product deliverable per task.
 - Address requirements in Section I.C. under Project Focus.
- Be sure to include in the Project Schedule (Attachment 6):
 - Product deliverables that correspond with the Scope of Work.
 - Realistic dates on when product deliverables can be completed.



Budget (Attachment 6)

- Identify how the Energy Commission funds and match funds will be spent to complete the project.
- Subrecipients receiving \$100,000 or more Energy Commission funds must complete a separate budget form.
- Ensure that all rates provided are **maximum** estimated rates for the entire project term and any potential increases are included.
- Travel Restrictions:
 - CEC funds should be limited to project task specific in-state travel.
 - Travel to conferences are generally not considered applicable travel for projects and should not use CEC funds.



Commitment and Support Letter Forms (Attachment 9)

- Follow guidelines provided for commitment and support letters.
 - Commitment letters are required for entities or individuals that are committing match funding, testing/demonstration sites, including the **Prime**.
 - Support letters describe a project stakeholder's interest or involvement in the project.
- All applicants must submit **at least one** support letter.
- Match funding must be supported by a match fund commitment letter.
- Any project partners that will make contributions to the project (other than match and sites) must submit a commitment letter.
- Limit to two pages per letter, excluding the cover page.



GFO Submission Requirements

- Applicants must have or must create a user account to submit a solicitation application. To create an account, please see the guidance **User Registration Instructions** at:

<https://www.energy.ca.gov/media/7893>

Note: One account manager per organization, but users can be added by account manager

- Applications must be submitted through the **Energy Commission Agreement Management System (ECAMS)** at: <https://ecams.energy.ca.gov/>

The screenshot displays the California Energy Commission website. At the top left is the logo, and at the top right is a search bar and a 'Sign In' button. Below the navigation bar is a 'Welcome!' message followed by 'Funding Opportunities' and a 'View Solutions' button. A large banner image shows a colorful bus, a wind turbine, solar panels, and a house. Below the banner is a paragraph: 'The California Energy Commission offers a variety of funding opportunities to advance the state's transition to clean energy and transportation through innovation, efficiency, and the development and deployment of advanced technologies.'

The main content area features six tiles:

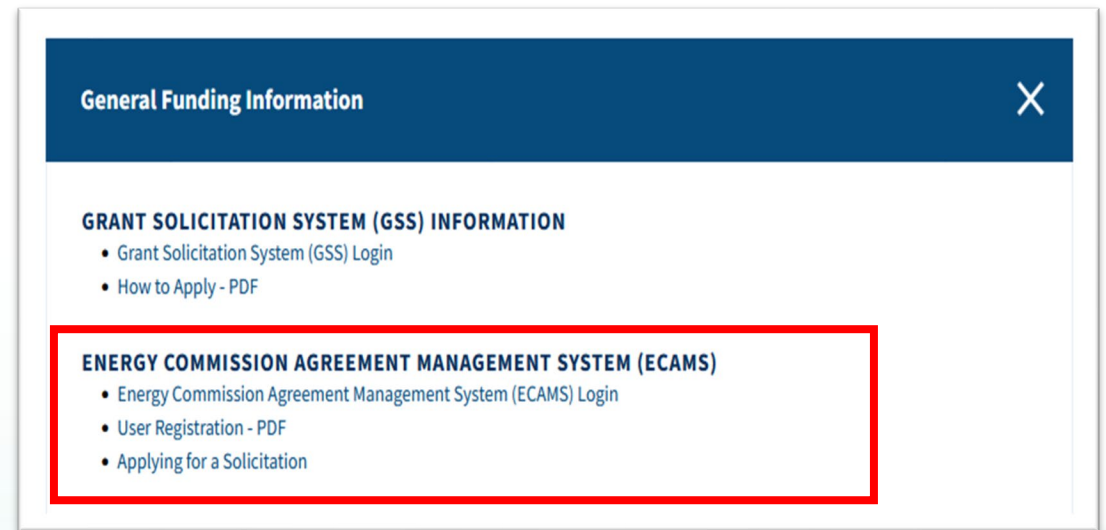
- Funding Workshops**: Find upcoming workshops to learn about solicitations, ask questions, network, and meet potential project partners.
- Awards**: Information about the California Energy Commission's awards, including notices of proposed awards and notices of selection.
- Funding Resources**: Guides, forms, templates, and other resources for individuals applying for funding opportunities that the California Energy Commission offers.
- ECAMS Grant Resources**: Templates, forms, and tools for the invoicing process and agreement management in general.
- Empower Innovation**: Empower Innovation is an initiative of the California Energy Commission, in partnership with leading California technology accelerators, fellowship programs, nonprofits, and private partners.
- Salesforce Training**: How to apply for solicitations and submit invoices.

At the bottom right, there is a 'Contact' section with the email address: ecams_salesforcesupport@energy.ca.gov



GFO Submission Requirements (cont.)

- For detailed instructions on application submittal, please see the *Applying for a Solicitation* at: <https://www.energy.ca.gov/media/7956>
- Both referenced guidance documents are available at: <https://www.energy.ca.gov/funding-opportunities/funding-resources> under General Funding Information.
- Questions with the ECAMS system should be directed to: ECAMS.SalesforceSupport@Energy.ca.gov

A screenshot of a web page titled "General Funding Information" with a close button (X) in the top right corner. The page is divided into two main sections. The first section is "GRANT SOLICITATION SYSTEM (GSS) INFORMATION" and contains two bullet points: "Grant Solicitation System (GSS) Login" and "How to Apply - PDF". The second section is "ENERGY COMMISSION AGREEMENT MANAGEMENT SYSTEM (ECAMS)" and contains three bullet points: "Energy Commission Agreement Management System (ECAMS) Login", "User Registration - PDF", and "Applying for a Solicitation". This second section is highlighted with a red rectangular border.



GFO Submission Requirements (cont.)

- Electronic files, other than those requiring signatures, must be consistent with the specific file format provided in the solicitation.
- Application documents should meet formatting requirements, and page recommendations as specified in the solicitation manual.
- Attachments requiring signatures (Application Form and Support/Commitment Letters) may be signed, scanned, and submitted in PDF format.



Submission Warning

START THE PROCESS EARLY!

- Applications must be fully submitted BEFORE the deadline listed in the solicitation manual.
- The ECAMS system will reject applications submitted after the deadline.
- Applications in the process of being submitted prior to the deadline will NOT be accepted after the deadline.
- ECAMS support is ONLY available from 8am – 5pm Monday-Friday.



Application Submission

- Register as a New User (if applicable)
- Log In
- 4-Step Application Submittal Process:
 1. Select Solicitation
 2. Enter Application Information
 3. Upload Files
 - Select documents for upload
 - Tag files with document type
 - Designate confidential documents (if applicable)
 4. Review and Submit
- Confirmation from ECAMS system that submission was successful

All steps must be complete BEFORE the submission deadline



Application Reminders

We recommend you carefully review your application before submission.

- Verify that all necessary documents have been uploaded.
- Verify that all documents uploaded are the accurate version you intend to submit as your final.
- Verify that your documents are not marked "confidential" unless the solicitation allows specific material to be confidential. Most solicitations do not allow submission of confidential information.
- Verify that your match commitment letters accurately reflect the match amounts included in your budgets, including the match provided by the prime applicant.
- Verify that support and commitment letters are included, if required.
- Verify that amounts entered within the system's budget (if any) concur with information included on uploaded budget worksheets.



How will my Application be Evaluated?

Application Screening

Admin Screening Process

- Energy Commission staff screens applications per criteria in Section IV.E.
- Criteria are evaluated on a pass/fail basis.
- Applicants must pass all screening criteria or the application will be disqualified.

Some Reasons for Disqualification

- Application is not submitted by the specified due date and time.
- Application does not include one or more support letters.
- Application contains confidential material.



How will my Application be Evaluated?

Application Scoring

- **Evaluation Committee applies the scoring scale to the scoring criteria.**
- **Applications must obtain a minimum passing score of 52.5 points for Criteria 1-4 in order to continue evaluation.**
- **Applications must obtain a minimum passing score of 70 points for Criteria 1-7 in order to be considered for funding.**
- **Review Section IV of the manual and ensure the application provides a clear and complete response to each scoring criteria.**

Scoring Criteria	Maximum Points
1. Technical Merit	15
2. Technical Approach	25
3. Impacts and Benefits for CA IOU Ratepayers	20
4. Team Qualifications, Capabilities, and Resources	15
5. Budget and Cost-Effectiveness	10
6. CEC Funds Spent in California	10
7. Ratio of Direct Labor Costs to Indirect Costs	5
Total	100
Minimum Points to Pass	70



How will my Application be Evaluated?

Application Scoring – Preference Points

- **Passing applications (score of 70 or more from Criteria 1-7) will be considered for bonus points. Criteria for bonus points include:**
 - **Match Funding**
 - **Disadvantaged Communities**

Scoring Criteria	Maximum Points
8. Match Funds	10
9. Disadvantaged & Low-income Communities	5
Total Bonus Points	15



Identifying Disadvantaged Communities

These areas represent the **25% highest scoring census tracts in CalEnviroScreen**, along with other areas with high amounts of pollution and low populations.

<https://oehha.ca.gov/calenviroscreen/sb535>

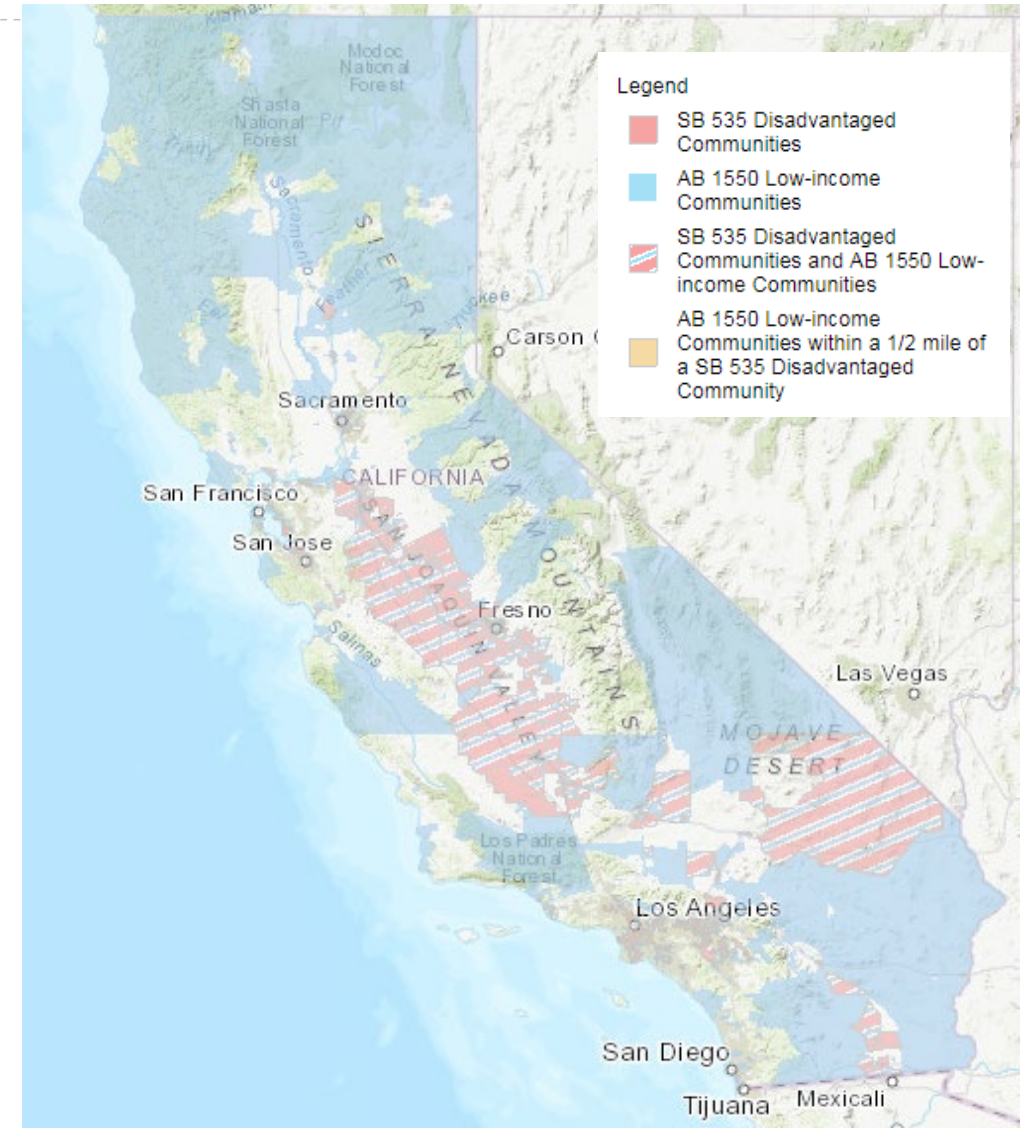




Identifying Low-Income Communities

Energy Commission staff proposes to use the existing low-income mapping tool developed by ARB to determine AB 523 low-income communities

<https://www.arb.ca.gov/cc/capa/ndtrade/auctionproceeds/communityinvestments.htm>





Match Funding Points

- Applicants may receive up to 10 additional preference points based on the criteria below:
 - Up to 5 points will be awarded based on the percentage of proposed cash relative to the total match contributions using the Match Scoring Table in the Scoring Criteria.
 - The remaining 5 points may be awarded to applications that exceed the minimum match requirements up to 100 percent using the Exceeds Minimum Match Scoring table.
 - Refer to the Solicitation Manual for more details on the match funding scoring criteria.



Disadvantaged Communities

- Projects with **all test or demonstration** sites located in disadvantaged and/or low-income communities and justifies how the project will benefit these communities may receive additional points.
 - A disadvantaged community is identified by census tract and represents the 25% highest scoring tracts in CalEnviroScreen 4.0 or later versions:
<https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>
 - Low-income communities are defined as communities within census tracts with median household incomes at or below 80 percent of the statewide median income, or at or below the threshold designated as low-income by the California Department of Housing and Community Development.
<http://www.hcd.ca.gov/grants-funding/income-limits/index.shtml>



Next Steps After Grant Award

- **Notice of Proposed Award:** The Notice will show total proposed funding amounts, rank order of applicants by project group, and the amount of each proposed award.
- **Agreement Development:** Proposal documents will be processed into a legal agreement.
- **Failure to Execute:** The Energy Commission reserves the right to cancel the pending award if an agreement cannot be successfully executed with an applicant.
- **Project Start:** Recipients may begin work on the project **only** after the agreement is fully executed (approved at an Energy Commission business meeting and signed by the Recipient and the Energy Commission).



Key Dates

Activity	Date
Solicitation Release	December 27, 2023
Pre-Application Workshop	January 18, 2024 at 1:00 p.m.
Deadline for Written Questions	January 22, 2024 at 5:00 pm
Anticipated Distribution of Questions and Answers	Week of February 5, 2024
Deadline to Submit Applications	March 5, 2024 at <u>11:59 pm</u>
Anticipated Notice of Proposed Award Posting	April 2, 2024
Anticipated Energy Commission Business Meeting	June 12, 2024
Anticipated Agreement Start Date	July 1, 2024
Anticipated Agreement End Date	March 31, 2028



Questions and Answers

- Please chat your question in the Question and Answers window or raise your hand and you will be called on to unmute yourself. Please remember to introduce yourself by stating your name and affiliation. (Feature found under the Participants panel)
- Keep questions under 2 minutes to allow time for others.
- Note that our official response will be given in writing and posted on the GFO webpage.



Additional Questions

Please send all questions related to GFO-23-303 to:

Pierre Washington

Commission Agreement Officer

715 P Street, MS-18

Sacramento, CA 95814

(916) 931-8974

pierre.washington@energy.ca.gov

Deadline to submit questions:

Monday, January 22 at 5:00 PM



Thank You!

