



GFO-23-308 Pre-Application Workshop

DC HVAC Nanogrid Module Development and Demonstration

Energy Research and Development Division, California Energy Commission

Presenter: Jason Tancher PE, Utility Engineer

Date: April 5, 2024



Agenda

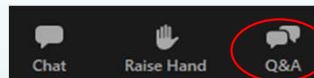
Time	Item
10:00 am	Welcome and Introduction
10:05 am	Solicitation Background <ul style="list-style-type: none">• EPIC Research Program• Purpose of Solicitation• Available Funding
10:25 am	Application Requirements <ul style="list-style-type: none">• Project Group Requirements• Attachments• Submission Process• Evaluation Process
11:00 am	Q&As
12:00 pm	Adjourn



Housekeeping

- This workshop will be recorded and posted to the CEC website.
- Attendees will be muted during the presentation. Please chat your question using the Q&A window.
- Updates to solicitation documents will be posted at the Grant Funding Opportunity's webpage:

<https://www.energy.ca.gov/solicitations/2024-03/gfo-23-308-dc-hvac-nanogrid-module-development-and-demonstration>





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.



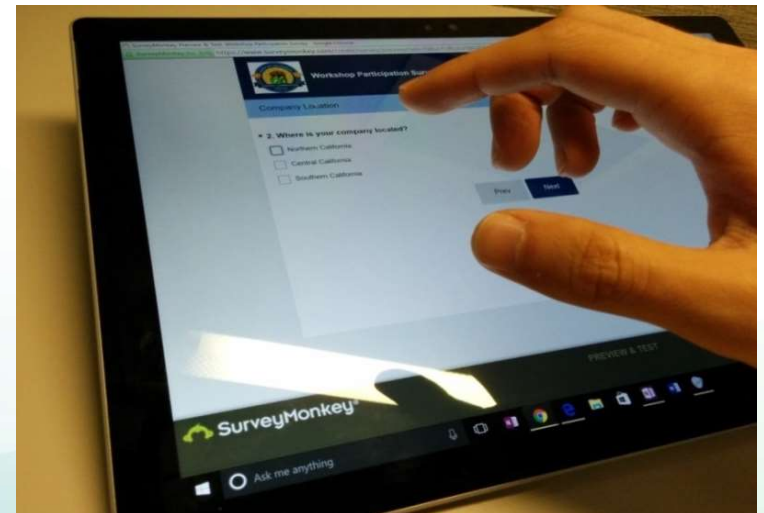
We Want to Hear From You!

Participation Survey

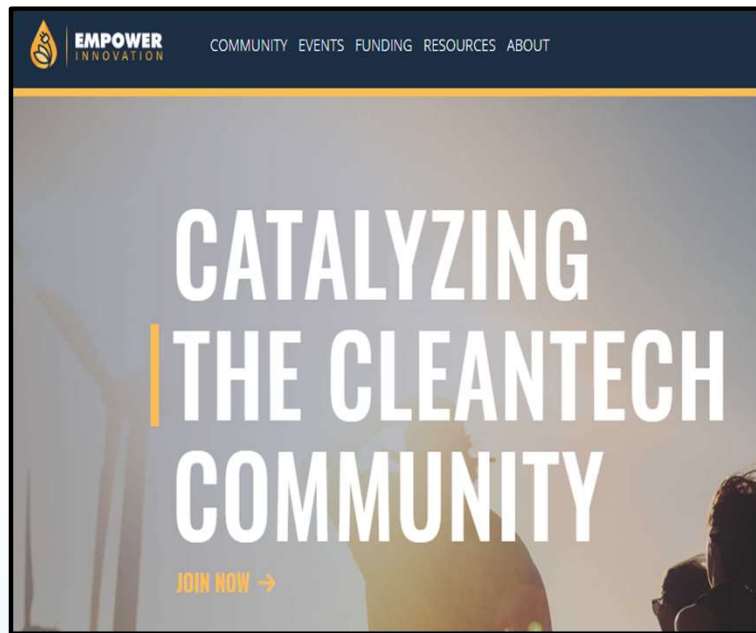
Survey responses will be summarized anonymously to track attendance of underrepresented groups in our workshops for public reporting purposes.

- Online participants, please use this link:
<https://forms.office.com/g/gS35K5LfYa>

Thanks!



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California Energy Commission
Government Organization

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Timeline About Photos Reviews More





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/42471>

EmpowerInnovation.net





Research Program Background

- Guided by the Electric Program Investment Charge Program, 2021–2025 Investment Plan
 - EPIC investments advance pre-commercial clean energy technologies and approaches for the benefit of electricity ratepayers of California’s three largest electric investor-owned utilities.
- Senate Bill 96 (Committee on Budget and Fiscal Review, Chapter 356, Statutes of 2013) guides the California Energy Commission (CEC) in administering EPIC.
 - Projects that will benefit electricity ratepayers and lead to technological advancement and breakthroughs to overcome the most significant barriers that prevent achieving the state’s statutory energy goals



Policy Drivers

- Senate Bill (SB) 32 - California Global Warming Solutions Act of 2006: emissions limit
- Senate Bill (SB) X1-2 - Renewables Portfolio Standard,
- AB 758 , Building Efficiency
- SB 350 - Clean Energy and Pollution Reduction Act of 2015
- AB 2514 - Energy Storage Systems
- Senate Bill (SB) 100 - The 100 Percent Clean Energy Act of 2018

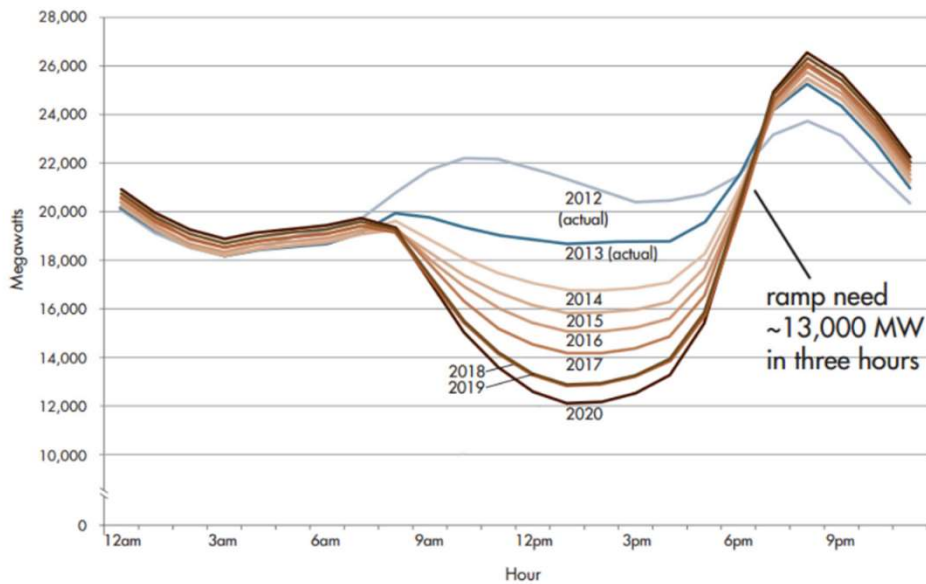


Purpose of Solicitation

- Reduce building dependency on grid electricity,
- Increase energy efficiency of HVAC equipment operating on DC power,
- Decrease burdens – and enhance access – to solar and heat pump adoption, and
- Create business and manufacturing opportunities for those who develop DC HVAC nanogrid modules.

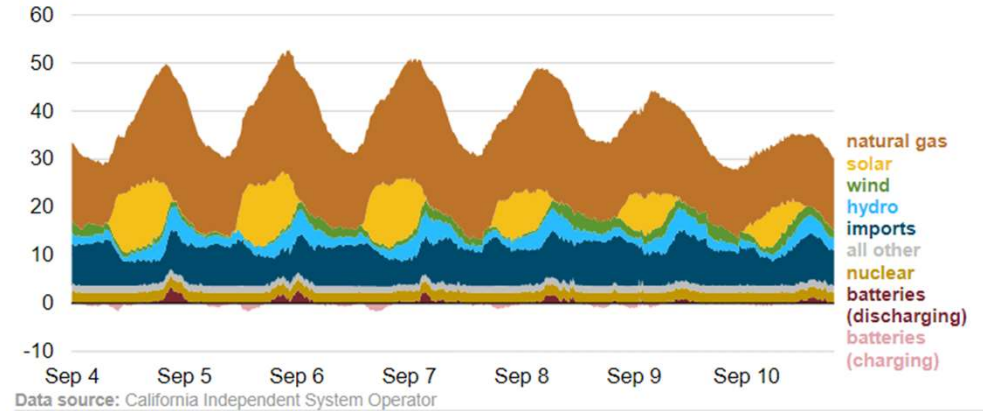


Background and Motivation



Evening load is highest in summer evenings due to HVAC cooling loads

CAISO electricity supply by source (Sep 4–Sep 10, 2022)



CAISO reports 52,061 MW record peak demand on September 6, 2022



Background and Motivation

Current Solar Successes:



Single family homes



Large commercial buildings



Microgrids



Utility-scale

Obstacles to Solar for:

Renters

Low and middle income building owners

Small commercial businesses

Shaded or complex buildings

Large commercial buildings





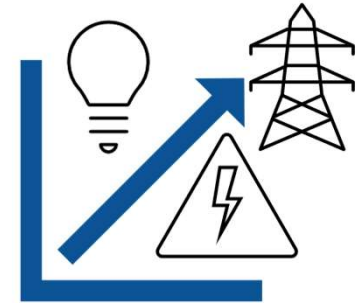
Background and Motivation



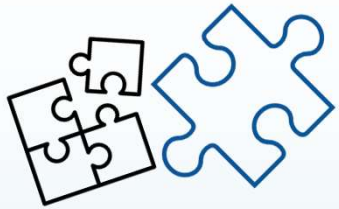
Interconnection complex and costly



Net Energy Metering and solar/storage adoption have disproportionately benefited some households



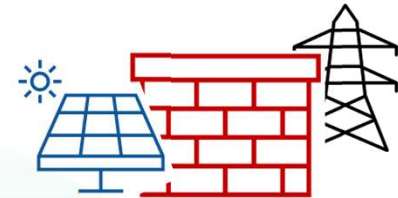
Electricity rates



Inadequate roof space








Under-resourced communities need pathways for decarbonization



Non-export solar and storage agreements



Purpose

-  Demonstrate a combined DC HVAC, solar-PV, and energy storage module for use in commercial and residential buildings.
-  Eliminate or reduce building HVAC grid load during peak hours in summer months.
-  Streamline installation by using a factory-built module that does not require interconnection and does not export electricity to the grid.
-  Reduce installation costs and barriers for under-resourced and other communities from installing solar PV and storage.
-  Demonstrate efficiency from onsite DC-coupled HVAC.



Approach



Factory Constructed Module



Demonstrate feasibility and cost-effectiveness



Optimize use of materials



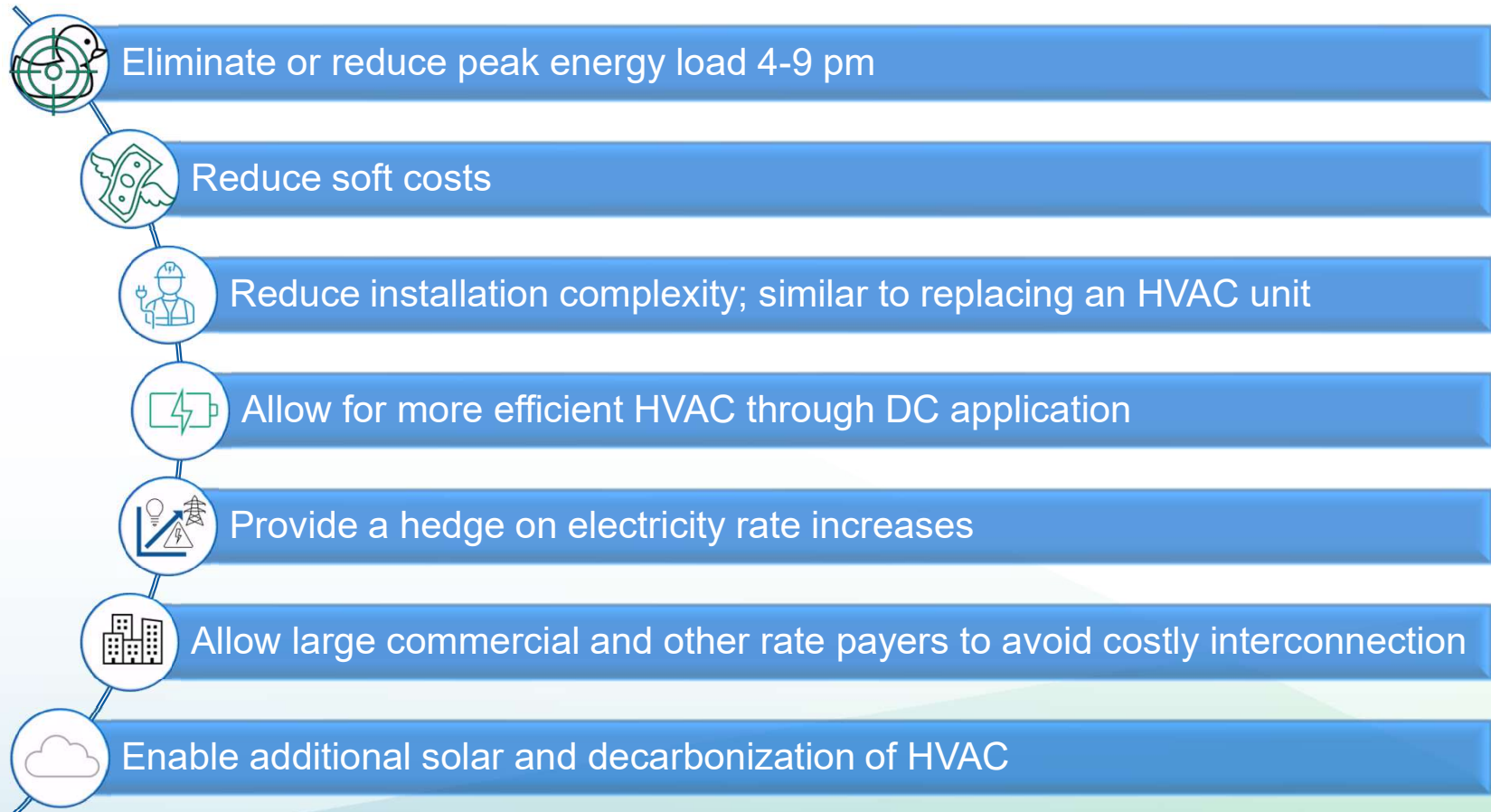
UL Certification and Listing



Database for Energy Efficiency Resources



Targets and Benefits





Available Funding

Project Group	Available Funding	Minimum Award Amount	Maximum Award Amount
Group 1: Residential DC HVAC Nanogrid	\$2,000,000	\$1,000,000	\$2,000,000
Group 2: Commercial DC HVAC Nanogrid	\$3,000,000	\$1,000,000	\$3,000,000



Group 1 Match Funding

- Match funding is optional.
- Applications that include match funding will receive additional points during the 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.



Group 2 Match Funding

- 20% of match funding is required.
- Applications that include match funding will receive additional points during the 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.



Group 1 Residential DC HVAC Nanogrid

Funding Amount: \$2,000,000

Requirements:

- Does not require an interconnection agreement or building electrical infrastructure improvements.
- Single or multifamily
- Existing rooftop packaged HVAC unit (1-5 tons)
- No existing solar PV
- Exclusively in under-resourced communities
- Obstacles to solar adoption





Group 1 Residential DC HVAC Nanogrid

Examples for maximizing benefits to strengthen proposal:

- Exceed 2022 or later Title 24 building energy efficiency
- Provide seasonal load reduction for other building electrical consumption to avoid solar curtailment
- HVAC as a service





Group 2 Commercial DC HVAC Nanogrid

Funding Amount: \$3,000,000

Requirements:

- Commercial buildings with rooftop packaged units (5-20 tons)
- Buildings used mostly 7 days/week
- Examples: grocery stores, urgent care clinic, community centers
- Commercial buildings with current solar installations





Group 2 Commercial DC HVAC Nanogrid

Examples for maximizing benefits to strengthen proposal:

- Exceed 2022 or later Title 24 building energy efficiency
- Provide seasonal load reduction for other building electrical consumption to avoid solar curtailment
- HVAC as a service





Additional Requirements

- Include the following in Project Narrative (Attachment 4).
 - Energy storage, HVAC heat pump, and solar PV panels, as a single module
 - DC-powered HVAC equipment
 - Demonstrate value
 - Meet relevant codes
 - path for market deployment and commercialization of the modules
 - California Technical Forum



Eligible Applicants

- This is an open solicitation for public and private entities.
- Applicants must accept applicable 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 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 Form (.docx, .pdf)
2. Project Narrative (.docx)	9. Commitment and Support Letters (.pdf)
3. Project Team (.docx, .pdf)	10. Project Performance Metrics
4. Scope of Work (.docx)	11. Applicant Declaration (.docx)
5. Project Schedule (.xlsx)	12. References for Calculating Energy End-Use and GHG Emissions
6. 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 5):
 - 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 **Applicant** (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(s).
- 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, there is a search bar and a 'Home' link. The main heading reads 'Welcome! Funding Opportunities' with a 'More Content' button. Below this, a banner image shows a solar panel, a wind turbine, and a house. A paragraph states: '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.'

Below the banner are six featured sections:

- 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' link 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 links: "Grant Solicitation System (GSS) Login" and "How to Apply - PDF". The second section is "ENERGY COMMISSION AGREEMENT MANAGEMENT SYSTEM (ECAMS)" and contains three links: "Energy Commission Agreement Management System (ECAMS) Login", "User Registration - PDF", and "Applying for a Solicitation". The ECAMS 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 (Both Groups)

- **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



Evaluating TD&D Projects (Group 1)

Proposed Scoring Criteria	Maximum Points
8. <i>Benefits to Disadvantaged/Low-Income Communities and Localized Health Impacts</i>	
8.1 Benefits to Disadvantaged/Low-Income Communities	15
8.2. Community Engagement Efforts	10
8.3. Localized Health Impacts	15
8.4. Technology Replicability	5
8.5. Project Support Letters	5
Total Possible Points for criteria 8 (Minimum Passing Score for criteria 8 is 70% or 35.00)	50
Total Possible Points for Proposal	150



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
9. Match Funds	10
Total Bonus Points Group 1	10

Scoring Criteria	Maximum Points
9. Match Funds	10
10. Disadvantaged & Low-income Communities	5
Total Bonus Points Group 2	15



Identifying Disadvantaged Communities

[To be used only for EPIC TD&D criteria 8 delete otherwise]

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>



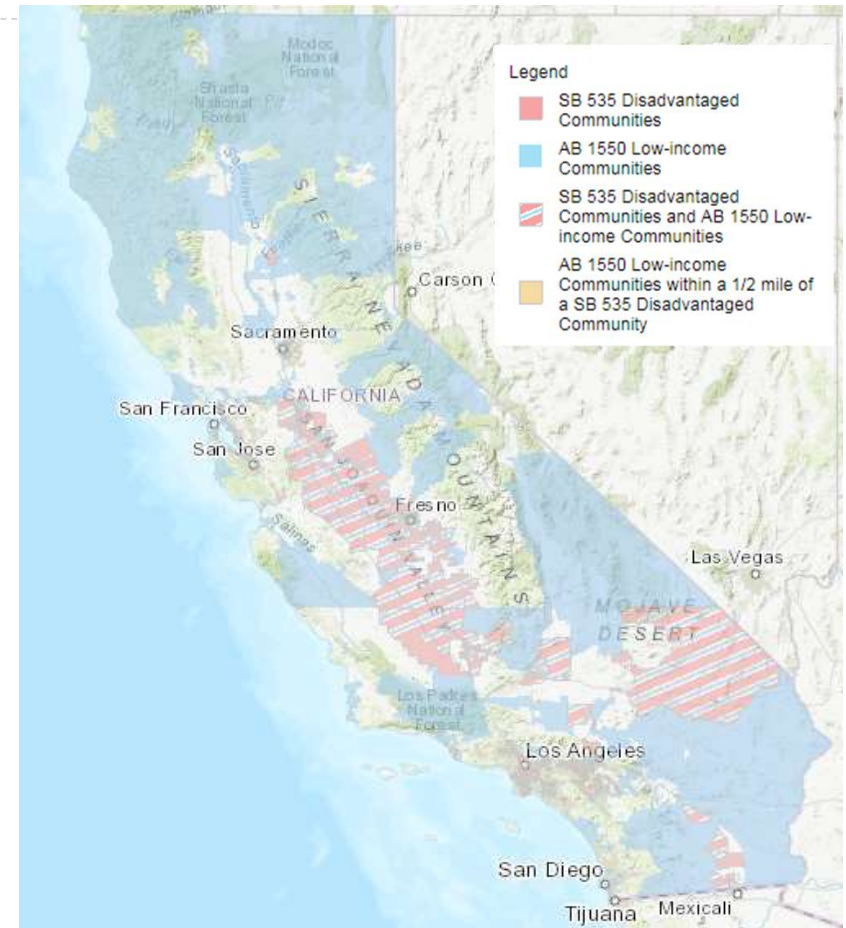


Identifying Low-Income Communities

[To be used only for EPIC TD&D criteria 8 delete otherwise]

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>





Community Based Organization Requirements



Has an office in the region and meets the demographic profile of the communities they serve



Has deployed projects and/or outreach efforts within the region



Have official mission and vision statements that expressly identifies serving DAC or LI communities



Employs staff specialized in and dedicated to – diversity, equity, inclusion, or is a 501(c)(3) non-profit





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 (Group 2)

- 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:** Shows 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	03/08/2024
Pre-Application Workshop	04/05/2024 at 10:00 am
Deadline for Written Questions	04/19/2024 at 5:00 pm
Anticipated Distribution of Questions and Answers	Week of 04/29/2024
Deadline for ECAMS Submission Support	Ongoing until 05/15/2024 at 5:00 pm
Deadline to Submit Applications	05/15/2024 at <u>11:59 pm</u>
Anticipated Notice of Proposed Award Posting	08/05/2024
Anticipated Energy Commission Business Meeting	September 2024
Anticipated Agreement Start Date	October 2024
Anticipated Agreement End Date	March 2029



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-23-308 to:

Crystal Willis

Commission Agreement Officer

715 P Street

Sacramento, CA 95814

(916) 529-1108

crystal.willis@energy.ca.gov

Deadline to submit questions:

Friday, 4/19/2024 5:00 PM

Thank You!

