

GFO-24-302 Pre-Application Workshop

Enabling Electric Vehicles as Distributed Energy Resources

Energy Research and Development Division

October 16, 2024



Time	Item
9:00 am	 Welcome and Introduction Diversity Survey Empower Innovation
9:15 am	 Solicitation Background EPIC Program Purpose of Solicitation Available Funding
9:25 am	 Application Requirements Project Group Requirements Attachments Submission Process Evaluation Process
10:00 am	Q&As
11:00 am	Adjourn



- 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: <u>GFO-24-302 – Enabling</u> <u>Electric Vehicles as Distributed Energy Resources</u>

Commitment to Diversity

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

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

- Engage with disadvantaged and underrepresented groups throughout the state.
- Notify potential new applicants about the CEC's funding opportunities.
- Assist applicants in understanding how to apply for funding from the CEC'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/t33A8pEWhM

Thanks!

Workshop Diversity Survey - GFO-24-302

Enabling Electric Vehicles as Distributed Energy Resources CEC staff will conduct a pre-application workshop to address this solicitation. The purpose of this solicitation is to deploy advanced decarbonization and/or grid support technologies at California industrial facilities to promote electrification and reduce GHG emissions produced from the industrial sector. This solicitation will target technologies that have the potential to demonstrate cost-effectiveness and scalable to multiple industrial facilities with potential to increase confidence for adoption.

October 16, 2024

The Energy Commission is committed to ensuring participation in its R&D programs reflect the rich and diverse characteristics of California and its people. We are collecting voluntary information about the attendance of this workshop. The information supplied will be used for public reporting purposes to display anonymous overall attendance of diverse groups.

* Required

1. Does your company identify as any of the following: Disabled Veteran Business Enterprise, Small Business, Women-owned business, Minority-owned business, or LGBT-owned business? *

O Yes

() No

Next

I'm not sure, I'd like to see some definitions

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Empower Innovation strives to accelerate your clean tech journey with easy access to funding opportunities from the CEC 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 clean tech innovators including Resource parties to find potential partners.

RESOURCES & TOOLS

Browse the collection of resources for Libraries, Funding Sources, Tools, and Databases.

https://www.empowerinnovation.net/en/custom/funding/view/44777



EMPOWER INNOVATION



EPIC Program Background

- The Electric Program Investment Charge (EPIC) program supports research, development, and demonstration of new and emerging clean energy innovations supporting California's clean energy goals.
- Administered by the CEC with CPUC oversight.
- Benefit electricity ratepayers* by improving safety, reliability, affordability, environmental sustainability, and equity.
- This solicitation responds to the EPIC 4 Strategic Objective: Increase the Value Proposition of Distributed Energy Resources to Customers and the Grid.



*Specifically, ratepayers of CA investor-owned utilities: PG&E, SDG&E, and SCE





Electricity load growth from Californians adopting EVs

Manage the where, when, and power level of EV charging and discharging

Using EV load flexibility to reduce grid impacts can save ratepayers billions of dollars

25% Of new car sales in CA are ZEV

~1000 MW Flexible load from EVs by 2030

~\$10B

Scale of reduced grid upgrade costs from managing EV charging





Optimized customer signals for grid-friendly charging



Easy-to-use and interoperable products and services



Rightsized infrastructure installed in the right locations



Verifiable and reliable benefits for grid planning





Analysis / Reports

- Integrated Energy Policy Report
- AB 2127 Charging Infrastructure Assessment



Regs / Programs

- Load Management Standards
- Flexible Demand
 Appliance Standards
- Demand Side Grid Support Program

•



Standardization

- Minimum standards
 for CEC funding
- Needs analysis
- V2G Equipment List



Tech Funding

- Charger and load flex deployment grants (e.g., REDWDS)
- EPIC RD&D funding



Fund research that will help accelerate the use of electric vehicles as distributed energy resources across California by:







Addressing VGI Knowledge Gaps Reducing the Cost of V2X Enabling Technology **Developing Submetering Solutions to Facilitate VGI**



Group	Available Funding	Minimum Award	Maximum Award	Match Required
Group 1: Addressing VGI Knowledge Gaps	\$1,600,000	\$500,000	\$800,000	0%
Group 2: Cost Reduction of V2X Enabling Technology	\$6,000,000	\$1,000,000	\$3,000,000	10%
Group 3: Submetering Solutions to Facilitate VGI	\$5,000,000	\$1,000,000	\$2,500,000	10%



- Group 1: No minimum match funding requirement.
- Group 2 and Group 3: Minimum 10% of the total project budget (CEC + Match funding) is required in match funding.
- Example Calculation:
 - For a total project budget of \$2,000,000
 - Minimum of \$200,000 match share is required
 - The remainder will be requested in CEC funding
- Match funding contributors must submit match funding commitment letters that meet the requirements of Attachment 9. Failure to do so will disqualify the match funding commitment from consideration.
- The appropriateness and amount of match funding above the minimum requirement will be considered in the evaluation process.



Funding Available: \$1,600,000 Funding Per Award: \$500,000 - \$800,000 Minimum Match: 0%

Background:

- Limited data on the value, performance, and reliability of VGI.
- Recent technological and policy advancements warrant updated studies.

Focus:

• Fund scientific and techno-economic analysis projects focused on bridging existing VGI knowledge gaps that are hindering widespread adoption in California and realization of ratepayer benefits at scale.



Requirements:

- Generate new, useful knowledge for the purpose of informing policy decisionmaking and facilitating technology advancement including through:
 - Future research, development, and demonstration (RD&D) opportunities that can be funded through the upcoming EPIC 5 Investment Plan Cycle
 - CPUC's Transportation Electrification Policy and Infrastructure proceeding
 - CEC's energy forecasting and grid reliability programs
- Support judicious VGI program design to ensure net ratepayer benefits.
- Produce useful insights to inform additional policy and programmatic actions to advance VGI.
- Involve innovative approaches or target novel questions that build on past analyses, incorporate learnings from ongoing work, and do not duplicate existing research.



Example Projects:

- Comparative study evaluating the qualitative and quantitative value of VGI to other DERs and flexible load.
- Comparative study evaluating the value of VGI use cases applied to residential home charging, workplace charging, commercial charging, and public charging.
- Modeling study evaluating the VGI potential for emerging commercial EV segments, considering duty cycles, charging profiles, and charging locations.
- More examples can be found in the GFO Manual.

Note: Applicants may propose projects not listed here, these are just meant to be illustrative examples.



Funding Available: \$6,000,000 Funding Per Award: \$1,000,000 - \$3,000,000 Minimum Match: 10%

Background:

- V2X interconnection is allowed but costly.
- Lack of access to predictable compensation structures.
- Equity concerns, such as lack of V2X options for multifamily customers.

Focus:

• Fund applied research and development projects that advance innovative technologies and solutions to reduce the cost and other barriers for customers to adopt V2X.



Requirements:

- Develop innovative technology that will lower the cost of participating in V2X.
- Quantify the cost reduction of the innovation compared to current market options.
- Demonstrate the technology in a lab environment with an EVSE and vehicle original equipment manufacturer (OEM) project partner.

Note: Group 2 projects are not required to include real-world demonstrations but are highly encouraged to do so if needed to gather additional learnings and further advance their path to market.



Example Projects:

- EV charging system research to improve the roundtrip efficiency of V2X with a focus on bidirectional charging scenarios with varied power levels.
- Design of a consolidated V2X installation solution that combines the required metrology, networking devices, and electrical connections into a cost-effective and easily installed package.
- Innovations to enable novel certification approaches for V2X equipment that can lower costs while ensuring safety.
- More examples can be found in the GFO Manual.

Note: Applicants may propose projects not listed here, these are just meant to be illustrative examples.



Funding Available: \$5,000,000

Funding Per Award: \$1,000,000 - \$2,500,000

Minimum Match: 10%

Background:

- Submetering is allowed in CA using networked EVSE, but still comes with cost and data management challenges.
- EV telematics-based submetering is not allowed due to a lack of vehicle data and communication standards.

Focus:

• Fund applied research and development projects that advance innovative, accurate, robust, and cost-effective submetering solutions with the potential to increase VGI adoption.



Requirements:

- Develop and demonstrate a submetering solution that better enables customers to participate in EV-specific rates or programs without installing a separate utility meter
- Align with the submetering requirements set by the CPUC in Decision 22-08-024 as applicable to the project (e.g. data accuracy, data integrity, communication, billing and data disputes)
- Quantify the financial and energy impacts the solution may have on the customer and grid.

Note: Group 3 projects are not required to include real-world demonstrations but are highly encouraged to do so if needed to gather additional learnings and further advance their path to market.



Example Projects:

- Development of mobile submetering solutions, including associated testing protocols and certifications, using energy usage data from a vehicle telematics system or a mobile charger that demonstrates reliable data accuracy and integrity required for submetering.
- Demonstration of submetering to facilitate EV adoption and VGI use cases at multi-family homes.
- Development of software, data analytics, and data access solutions capable of interfacing with vehicle and EVSE data streams to simplify translation and transmission of customer charging data to utilities at scale and in a timely manner.
- More examples can be found in the GFO Manual.
- Note: Applicants may propose projects not listed here, these are just meant to be illustrative examples.



- Comply with PUC section 740.20 requiring electrical vehicle charging infrastructure to be installed by someone with an Electric Vehicle Infrastructure Training Program (EVITP) certification.
- Encouraged to develop or incorporate interoperable hardware and software products that will support CEC's vision for charging interoperability:

https://efiling.energy.ca.gov/GetDocument.aspx?tn=253106



Application Submission and Scoring Process





- This is an open solicitation for public and private entities with the exception of local publicly owned electric utilities.
- Applicants must accept applicable EPIC terms and conditions.
 - Standard, UC, and DOE T&Cs available online: <u>https://www.energy.ca.gov/funding-opportunities/funding-resources</u>
- 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 CEC: <u>http://www.sos.ca.gov</u>



Phase 1

Pre-Application Project Abstract

Stage 1: Screening

Stage 2: Evaluation

If a **Phase 1** Abstract passes, the applicant will be invited to submit a Full Application for **Phase 2.**

Phase 2

Full Application

Stage 1: Screening

Stage 2: Scoring

Passing Phase 2 Full Applications are eligible for funding.



Phase 1: Pre-Application Project Abstracts



Pre-Application Project Abstract Requirements

Each Applicant must complete and include the following Attachments in their submission:

Attachment	Page Limit	
A. Pre-Application Project Abstract (.docx)	5 pages	
Appendix – Letters of Commitment	Not subject to page limit	

Pre-Application Project Abstract Attachment A

- Provide a concise overview of the proposed project goals, objectives, core innovation, scope, benefits, and desired outcomes.
- Complete all the sections of Attachment A:
 - Cover Page
 - Technical Merit and Approach
 - Benefits
 - Budget and Cost Effectiveness
 - Team Qualifications
 - Appendix (Commitment Letters and/or Support Letters)



Phase 2: Full Application



Full Application Requirements

Each Applicant must complete and include the following Attachments in their submission:

Attachment	Page Limit	
1. Executive Summary (.docx)	2 pages	
2. Project Narrative (.docx)	20 pages	
3. Project Team (.docx, .pdf)	2 pages for each resume	
4. Scope of Work (.docx)	30 pages	
5. Project Schedule (.xlsx)	4 pages	
6. Budget (.xlsx)	None	
7. CEQA Compliance Form (.docx)	None	
8. Past Projects Information Form (.docx, .pdf)	2 pages for each project description	
9. Commitment and Support Letters (.pdf)	2 pages, excluding the cover page	
10. Project Performance Metrics (.docx)	None	
11. Applicant Declaration (.docx)	None	



Concise two-page summary highlighting key information about the proposed project including:

- Project description
- Project goals and objectives and how they will be achieved, quantified, and measured
- Description of the project tasks
- Agreement management plans including team organization

Project Narrative (Attachment 2)

- Explain the entirety of the project including sufficient information regarding:
 - Why is your project necessary and important to California?
 - What is the core innovation?
 - How will each task in the Scope of Work be completed in the project term?
 - What are the project's critical success factors and risks and how will these be planned for and addressed?
 - How will the project outcomes benefit IOU electricity ratepayers?
 - Does the project have the appropriate resources (team and budget) to complete successfully?
 - How will the project benefit disadvantaged and low-income communities?
- Applicants must address each of the scoring criteria in Section IV.H and project group requirements as described in Section I.C Project Focus.

Scope of Work (Attachment 4) and Project Schedule (Attachment 5)

- Tell us exactly what you are proposing to do in your project in the Scope of Work (Attachment 4):
 - Specify the purpose, goals, and objectives.
 - Identify what will be delivered to the CEC. Each technical task should have at least one product.
 - Address relevant requirements in Section I.C Project Focus.
- Be sure to include in the Project Schedule (Attachment 5):
 - Technical tasks and products that correspond with the Scope of Work.
 - Realistic date estimates on when products can be completed.
- For awarded projects, the Scope of Work and Schedule become part of the grant agreement with CEC.



- Identify how the CEC funds and match funds will be spent to complete the project.
- Subrecipients requesting \$100,000 or more CEC funds must complete a separate budget form using the same template.
- 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.
 - <u>https://www.energy.ca.gov/funding-opportunities/funding-resources/ecams-resources</u>

Commitment and Support Letter Forms (Attachment 9)

- **Commitment letters** are required for entities or individuals that are committing match funding, testing/demonstration sites, including the **Applicant** (prime).
 - Match funding must be supported by match fund commitment letter(s).
 - The source of match funding, match funding amount, and the breakdown of cash versus in-kind match must all be detailed in the letters
 - Any project partners that will make contributions to the project (other than match and sites) must submit a commitment letter.
- **Support letters** describe a project stakeholder's interest or involvement in the project.
 - All applicants must submit at least one support 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 Galifornia Energy Commission offers a variety of lunding opportunities to advance the state's transition to clean energy and transportation through innovation, efficiency, and the development and deployment of advanced technologies.







Funding Workshop Find upcoming workshops to learn about solicitations, tak questions, network, and meet potential project partners

information about the California Energy Commission's awards,

Funding Resources Guides, forms, templates, and other resources for individuals applying for funding opportunities that the California Energy including notices of proposed awards and notices of selection Commission offers







Empower Innovation Empower Innovation is an initiative of the California Energy Commission, in partnership with leading California technology accelerators, fellowship programs, nonprofits, and private



Salesforce Training How to apply for solicitations and submit invoices

Contact ecams.salesforcesupport@energy.ca.gov

GFO Submission Requirements (cont.)

- For detailed instructions on application submittal, please see the Applying for a Solicitation at: <u>https://www.energy.ca.gov/media/7956</u>
- Both referenced guidance documents are available at: <u>https://www.energy.ca.gov/funding</u> <u>-opportunities/funding-</u> <u>resources</u> under General Funding Information.

General Funding Information	×
GRANT SOLICITATION SYSTEM (GSS) INFORMATION • Grant Solicitation System (GSS) Login • How to Apply - PDF	
ENERGY COMMISSION AGREEMENT MANAGEMENT SYSTEM (ECAMS) Energy Commission Agreement Management System (ECAMS) Login	
Line Desistanting DDC	

 Questions with the ECAMS system should be directed to: <u>ECAMS.SalesforceSupport@energy.ca.gov</u>

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.



START THE PROCESS EARLY!

- Applications must be fully submitted <u>BEFORE</u> 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 <u>NOT</u> be accepted after the deadline.
- ECAMS support is <u>ONLY</u> available from 8am 5pm Monday-Friday.



- 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"
- 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.
- Verify that amounts entered within the system's budget (if any) concur with information included on uploaded budget worksheets.

How will my Abstract be Evaluated? Phase 1: Screening

Admin Screening Process

- CEC staff screens applications per criteria in Section IV.E. for Phase 1
- 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 submitted late.
- Application contains confidential material.
- Applicant submitted multiple applications with overlapping work.

How will my Abstract be Evaluated? Phase 1: Abstract Evaluation

Abstract Evaluation Process

- CEC staff evaluates abstracts per criteria in Section IV.F
- Criteria are evaluated on a pass/fail basis.
- Phase 1 submissions must pass all abstract evaluation criteria to progress to Phase 2

Evaluation Criteria

- Addresses group requirements, needs EPIC funding, builds on existing work.
- Offers clear ratepayer benefits, will engage DACs, track benefits through data, and has a clear path to market strategy.
- Proposes a reasonable budget with plans for co-funding.
- Features a qualified team with relevant experience and necessary resources.



How will my Full Application be Evaluated? Phase 2: Screening

Admin Screening Process

- CEC staff screens applications per criteria in Section IV.G for Phase 2
- 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 submitted late.
- Application addresses multiple project groups
- Application does not include commitment letters for match
- Project demo activities are not located in IOU service territory



How will my Full Application be Evaluated? Phase 2: Full 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 Full Application be Evaluated? Preference Points

Passing applications (score of 70 or more from Criteria 1-7) will be considered for bonus points.

Scoring Criteria	Maximum Points
8. Disadvantaged & Low-income Communities	10
Total Bonus Points	10

Evaluation Criteria

- How increased deployment will benefit DAC/LICs
- Economic impact to DAC/LICs
- Mitigation of potential risks to DAC/LICs
- Benefits of project activities to DAC/LICs
- Community outreach and engagement
- Letters of support describing equity benefits

Defining Disadvantaged Communities and Low-Income Communities

Disadvantaged Communities are designated by CalEPA as:

- Census tracts identified in the top 25% of overall scores in CalEnviroScreen 4.0
- Census tracts identified in the top 25% of CalEnviroScreen 3.0
- Areas of high pollution but low population
- Lands controlled by federally recognized, California Native American Tribes

Low-Income Communities are 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 Department of Housing and Community Development.

Identifying Disadvantaged Communities and Low-Income Communities

Applicants may use CARB's latest California Climate Investments Priority Populations mapping tool to identify disadvantaged and lowincome communities.

https://gis.carb.arb.ca.gov/portal/apps /experiencebuilder/experience/?id=e7 46df40e39144029cd1f9fd748c81b2



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 CEC 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 a CEC business meeting and signed by the Recipient and the CEC).





Questions and Answers

Three ways to ask questions:

- 1. Use the raise hand feature in Zoom:
 - Zoom phone controls:
 - *6 Toggle mute/unmute
 - *9 Raise hand
 - Introduce yourself by stating your name and affiliation
 - Keep questions under 2 minutes to allow time for others

- 2. Type questions in the Q&A Box in Zoom:
 - Please provide name and affiliation.
- 3. Submit written questions:
 - Send written questions to kevyn.piper@energy.ca.gov by October 23 at 5:00 PM (PT)

Note that a Q&A document with written responses will be posted on the GFO webpage in ~3 weeks.



Please send all questions related to GFO-24-302 to:

Kevyn Piper Commission Agreement Officer 715 P Street, MS-18 Sacramento, CA 95814 (916) 827-9241 kevyn.piper@energy.ca.gov

Deadline to submit questions: Wednesday, October 23 at 5:00 PM (PT)

Deadline to submit abstracts: Friday, November 22 at 11:59 PM (PT)



Thank You!

