



GFO-23-309 Pre-Application Workshop

Virtual Power Plant Approaches for Demand Flexibility (VPP-FLEX)

Energy Research and Development Division, California Energy Commission

Presenters: Dustin Davis, Akruiti Gupta, Brad Williams, and Kadir Bedir

March 28, 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/2024-03/gfo-23-309-virtual-power-plant-approaches-demand-flexibility-vpp-flex?utm_medium=email&utm_source=govdelivery



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



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.



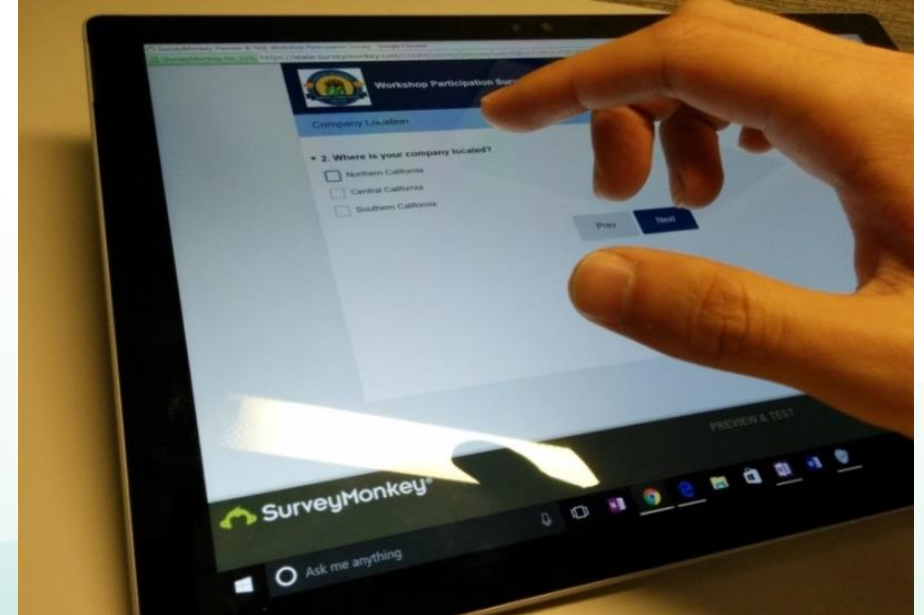
We Want to Hear From You!

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/SPYGsCZtwu>

Thanks!





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California Energy Commission
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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/42220>



Research Program Background

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

- Seeks to Increase the Value Proposition of Distributed Energy Resources to Customers and the Grid
- Helps to achieve Strategic Objective: Distributed Energy Resource Integration and Load Flexibility
 - Funding Initiative 18: Virtual Power Plants with Autonomous and Predictive Controls
 - Funding Initiative 19: Increasing Reliability and Interoperability of Load-Flexible Technologies



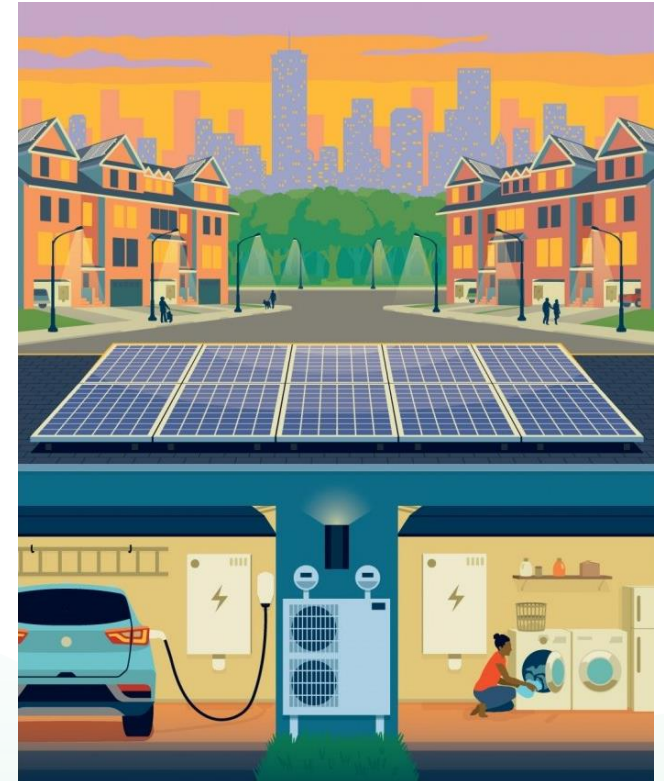
Policy Drivers

- SB 100: Meet 100% of electricity retail sales and state agency electricity needs with renewable and zero-carbon resources by 2045.
- CEC Load Management Standards & Market-Informed Demand Automation Server (MIDAS).
- SB 49: Standards for appliances to facilitate the deployment of flexible demand technologies.
- SB 846: Statewide demand flexibility goal of 7,000 megawatts (MW) by 2030.



Background and Motivation

- Demand flexibility is key to meeting California's climate and clean energy goals
- Virtual power plants (VPPs)
 - Aggregate distributed energy resources
 - Integrate renewables and demand flexibility
 - Revolutionize how and when electricity is used
- Need to increase consumer awareness, reduce cost of implementation, expand deployment of smart devices, and demonstrate best practices for interoperability





Purpose of Solicitation

- Demonstrate automated demand flexibility as a long-term (10+ years) grid resource
 - ✓ Partner with local governments and non-profits to educate customers and facilitate deployments
 - ✓ Evaluate community-based VPP approaches
 - ✓ Use state-of-the-art DER management software
- Demonstrate innovative energy management systems in commercial buildings, with a focus on interoperability
- Increase demand flexibility, support reliability, and reduce energy and infrastructure costs for investor-owned utilities (IOUs) and community choice aggregators



Available Funding

Project Group	Available Funding	Minimum Award Amount	Maximum Award Amount
Group 1: Community Virtual Power Plant Approaches for Demand Flexibility	\$15,000,000	\$1,000,000	\$5,000,000
Group 2: Interoperable Energy Management Systems for Commercial Buildings	\$6,000,000	\$1,000,000	\$2,000,000



Match Funding

- Minimum 20% of match funding is required.
- Applications with additional match above the minimum and higher proportions of cash match may 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 - Community Virtual Power Plant Approaches for Demand Flexibility

Funding Amount: \$15,000,000

This group aims to demonstrate community-based VPP programs as a long-term (10 or more years) grid resource.

- Enable load shifting capabilities that benefit customers and the grid and reduce overall (on-site and grid) GHG emissions.
- Include partnerships with local governments or non-profits that will educate customers and facilitate smart device installations.
- Evaluate the benefits and cost-effectiveness of community-based VPP approaches that use state-of-the-art DERMS.



Group 1 - Community Virtual Power Plant Approaches for Demand Flexibility

Project Requirements:

- DERMS must have load shifting capabilities via automated and predictive controls.
- Include community partnerships such as one or a combination of any local government or not-for-profit entities such as city and county governments, military campuses, California Native American tribal lands, or agricultural cooperatives.
- Use metered load data in program design to estimate load reductions and cost-effectiveness of the proposed VPP, based on the selected demonstration sites and on an annual 8760 hour model. The energy and cost impacts should be reported as hourly impacts for each hour of the year.



Group 1 - Community Virtual Power Plant Approaches for Demand Flexibility

Project Requirements continued:

- Achieve a minimum load reduction of 1 MW that corresponds to the utility's annual peak demand hour.
- Achieve a 20 percent cost recovery by the end of Year 4 by using the net benefit guidelines provided in Attachment 12.
- CEC funding can be used for the procurement of DERMS, project/program management, smart devices, consumer participation incentives, and consumer education and outreach efforts.
- Using CEC funding for smart device installations is only allowed for low-income customers such as California Alternative Rates for Energy (CARE)-enrolled customers
- Refer to the solicitation manual for complete list of requirements.



Group 1 - Community Virtual Power Plant Approaches for Demand Flexibility

Include the following in Project Narrative (Attachment 2).

- Technical Merit
 - Discuss target end uses (e.g., residential, commercial, etc.).
 - Discuss how the project will determine the proposed system's ability to engage users.
 - Discuss the communication architecture and reliability issues.
 - Assess the cost-effectiveness of the proposed technology or innovation informed by real-world performance data, and evolving market conditions.
 - Refer to the solicitation manual for complete list of items to include.



Group 1 - Community Virtual Power Plant Approaches for Demand Flexibility

Include the following in Project Narrative (Attachment 2).

- Technical Approach
 - Describe the demonstration sites, explain how and why they were selected, and identify the electric IOU service territory for each site.
 - Describe any planned consumer protections so that installed technology does not result in utility bill or rent increases for tenants.
 - Discuss how VPPs enrolling residential and commercial customers will maximize the use of customer incentive funds for disadvantaged communities or low-income populations such as customers enrolled in the IOU CARE program.
 - Refer to the solicitation manual for complete list of items to include.



Group 2 - Interoperable Energy Management Systems for Commercial Buildings

Funding Amount: \$6,000,000

This group aims to demonstrate innovative EMS in commercial buildings prioritizing interoperability and open standards.

- Focused on best practices for seamless data exchange including but not limited to heating, ventilation, and air conditioning (HVAC) controls, water heating, lighting controls, and EV charging.
- Include participation in electric investor-owned utility (IOU) or third-party DR programs and partnerships with device and original equipment manufacturers (OEMs).



Group 2 - Interoperable Energy Management Systems for Commercial Buildings

Project Requirements:

- CEC funding can be used for the procurement of demand flexibility control systems, such as DERMS, sensors, smart devices, and monitoring and communication equipment.
- Must reduce building load by at least 10% during the site's monthly peak hour in summer months (May to September) and at least 5% during winter months (November to March).
- Project technology must be at Technology Readiness Level (TRL) 7-9 at the start of the project. The objective is to advance sufficiently to yield a market-ready technology.



Group 2 - Interoperable Energy Management Systems for Commercial Buildings

Project Requirements:

- Must be enrolled and participate in an IOU demand response program.
- Must include at least one site with at least 50,000 square feet of total gross floor area. The 50,000 square foot requirement can be the total area of multiple buildings at the same physical location.
- EMS technology must be able to communicate with CEC's Market Informed Demand Automation Server (MIDAS).
- Refer to the solicitation manual for complete list of requirements.



Group 2 - Interoperable Energy Management Systems for Commercial Buildings

Include the following in Project Narrative (Attachment 2).

- Technical Merit
 - Proposed EMS capabilities, emphasizing alignment with ASHRAE BACnet Standard 135 and integration with any other open-source interoperability protocols.
 - Describe EMS integration with various buildings systems and how it will reliably control a significant portion of the building's electrical load including at minimum HVAC, water heating, and lighting end-uses.
 - Describe the ability of the project and technology to provide demand flexibility and to adapt to changing electricity rate structures and evolving grid needs.
 - Refer to the solicitation manual for complete list of items to include.



Group 2 - Interoperable Energy Management Systems for Commercial Buildings

Include the following in Project Narrative (Attachment 2).

- Technical Approach
 - Describe the project's cost-effectiveness and scalability for the selected buildings by analyzing how the chosen utility demand flexibility program, technologies, and strategies achieve tangible cost reductions.
 - Describe how the project will demonstrate broader system compatibility, seamless integration across different OEM equipment, and future-proofing for a more seamless adoption of future technologies.
 - Describe how project partnerships foster industry-wide adoption of open standards.
 - Refer to the solicitation manual for complete list of items to include.



Eligible Applicants

- This is an open solicitation for public and private entities with the exception of local publicly owned electric utilities.
- 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 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 include the following:

1. Executive Summary Form (.docx)	8. Past Projects (.docx)
2. Project Narrative (.docx)	9. Commitment and Support Letters (.pdf)
3. Project Team Form (.docx)	10. Project Performance Metrics
4. Scope of Work (.docx)	11. Applicant Declarations (.docx)
5. Project Schedule (.xlsx)	12. *Guidelines for Calculating Group 1 Project Net Benefits*
6. Budget (.xlsx)	13. *CEQA Reference Guide*
7. CEQA Compliance Form (.docx)	

*** Only for reference and not required to be included as part of application package**



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 deliver 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 be spent to complete the project
- Subcontractors receiving \$100,000 or more Energy Commission funds must complete a separate budget form.
- Ensure that all rates provided are **maximum** rates for the entire project term.
- Travel Restrictions:
 - CEC funds should be limited to lodging and transportation (e.g., airfare, rental car, public transit, parking, mileage).
 - If an applicant plans to travel to conferences, including registration fees, they **must** use match 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

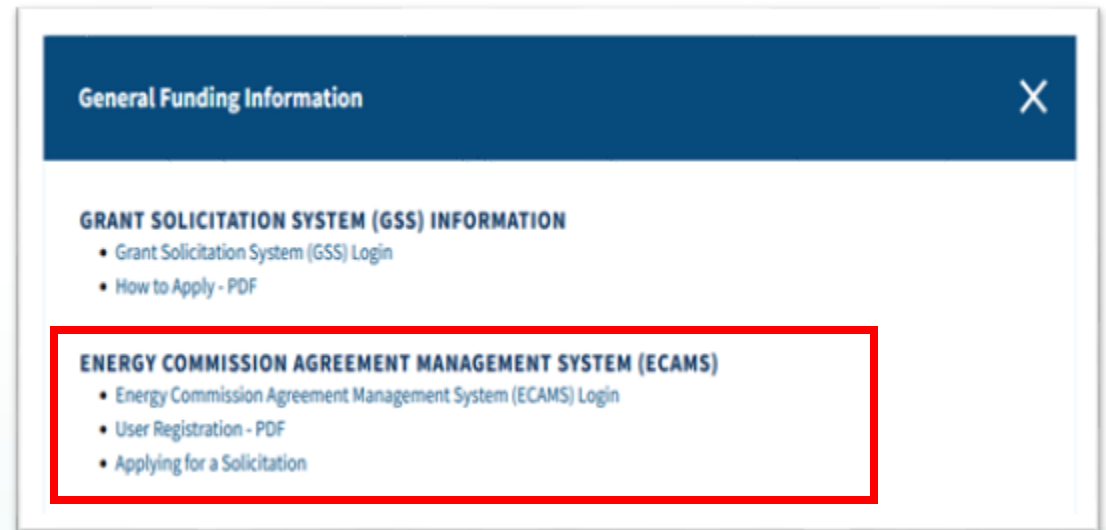
- Applications must be submitted through the **Energy Commission Agreement Management System (ECAMS)** at: <https://ecams.energy.ca.gov/>

A screenshot of the California Energy Commission website. The header includes the logo and a search bar. The main content area features a "Welcome!" message and "Funding Opportunities" with a "View Details" button. Below this 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 page is divided into six sections, each with an image and a title: "Funding Workshops" (image of an electric vehicle charging station), "Awards" (image of a scientist in a lab), "Funding Resources" (image of wind turbines), "ECAMS Grant Resources" (image of a city skyline at night), "Empower Innovation" (image of the Empower Innovation logo), and "Salesforce Training" (image of a classroom). Each section has a brief description of the resources. The footer contains contact information: "Contact ecams.salesforce.support@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





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 (Applicant Declarations 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 commitment letters that total the minimum match share.
- 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 / tribes	5
Total Bonus Points	20



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 & Low-Income 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>



Disadvantaged & Low-Income Communities

- Projects seeking preference points under Scoring Criterion 9, must provide a Community Benefit Plan as a separate section under Project Narrative that includes:
 - Existing or planned community engagement activities with community(ies) and labor stakeholders (i.e., local governments, tribal governments, labor unions, and *community-based organizations (CBO)) that support or work in these communities.
 - Refer to solicitation manual for more details.
- Group 2 projects must include a *CBO and allocate appropriate funding for CBO engagement for relevant tasks under the scope of work.

*As defined in section I.B of solicitation manual



Key Dates

Activity	Date
Solicitation Release	March 1, 2024
Pre-Application Workshop	March 28, 2024 at 10:00 a.m.
Deadline for Written Questions	April 4, 2024 at 5:00 pm
Anticipated Distribution of Questions and Answers	Week of April 22, 2024
Deadline to Submit Applications	July 1, 2024 at <u>11:59 pm</u>
Anticipated Notice of Proposed Award Posting	Week of August 26, 2024
Anticipated Energy Commission Business Meeting	December 2024
Anticipated Agreement Start Date	December 2024
Anticipated Agreement End Date	March 30, 2029



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).



Questions and Answers

- Please chat your question in the Question and Answers window.
- Note that our official response will be given in writing and posted on the GFO webpage:
https://www.energy.ca.gov/solicitations/2024-03/gfo-23-309-virtual-power-plant-approaches-demand-flexibility-vpp-flex?utm_medium=email&utm_source=govdelivery



Additional Questions

Please send all questions related to GFO-23-309 to:

Enrico Palo

Commission Agreement Officer

715 P Street, MS-1

Sacramento, CA 95814

(916) 957-7856

Enrico.Palo@energy.ca.gov

Deadline to submit questions:

Thursday, April 4 at 5:00 PM



Thank You!

