



GFO-22-307 Pre-Application Workshop

Optimizing Long-Duration Energy Storage to Improve Resilience and Reliability in Disadvantaged and Low-Income Communities and Native American Tribes

Energy Research and Development Division, California Energy Commission

Presenter: Zoe Higgerson, Utilities Engineer

Date: 6/28/2023



Agenda

Time	Item
9:00 am	Welcome and Introduction
9:05 am	Solicitation Background • EPIC Research 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 pm	Adjourn



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/2023-06/gfo-22-307-optimizing-long-duration-energy-storage-improve-resilience-and>



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.



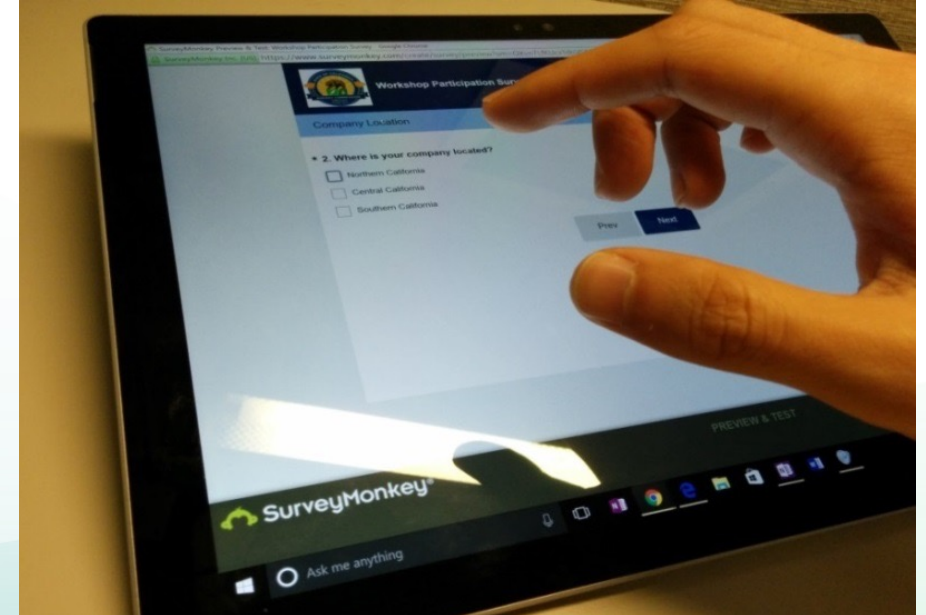
We Want to Hear From You!

Participation Survey

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

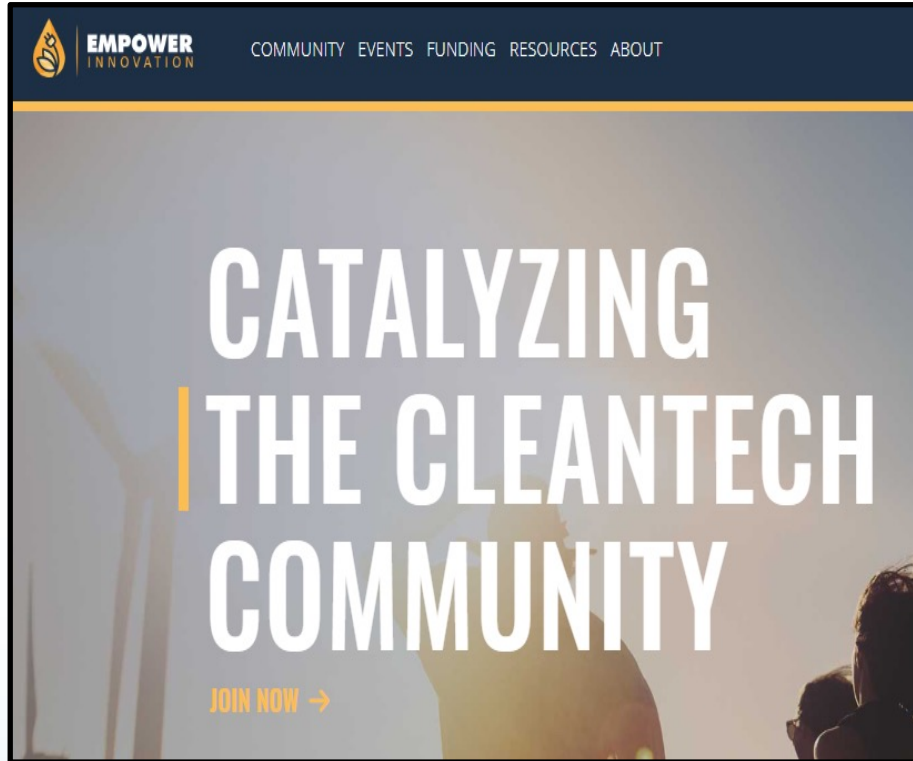
- Online participants, please use this link:
<https://forms.office.com/g/uf61Jdkx7K>

Thanks!





Connect With Us





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/39168>



EmpowerInnovation.net





Funding:

- Electric Program Investment Charge (EPIC), \$133 million annually
- Gas Research, Development and Demonstration Program, \$24 million annually
- Food Production Investment Program (FPIP), \$124 million biennially
- Long-Duration Energy Storage Program (LDES), \$330 million total



EPIC Background

- The Electric Program Investment Charge (EPIC) is funded by an electricity ratepayer surcharge established in 2011 by the California Public Utilities Commission.
- Benefits ratepayers of state's electric investor-owned utilities (PG&E, SCE, and SDG&E).
- Funds clean energy technology projects: greater electricity reliability, lower costs, and increased safety.
- Projects must lead to technological advancement and breakthroughs to overcome barriers that prevent the achievement of the state's statutory energy goals.



EPIC Background (continued)

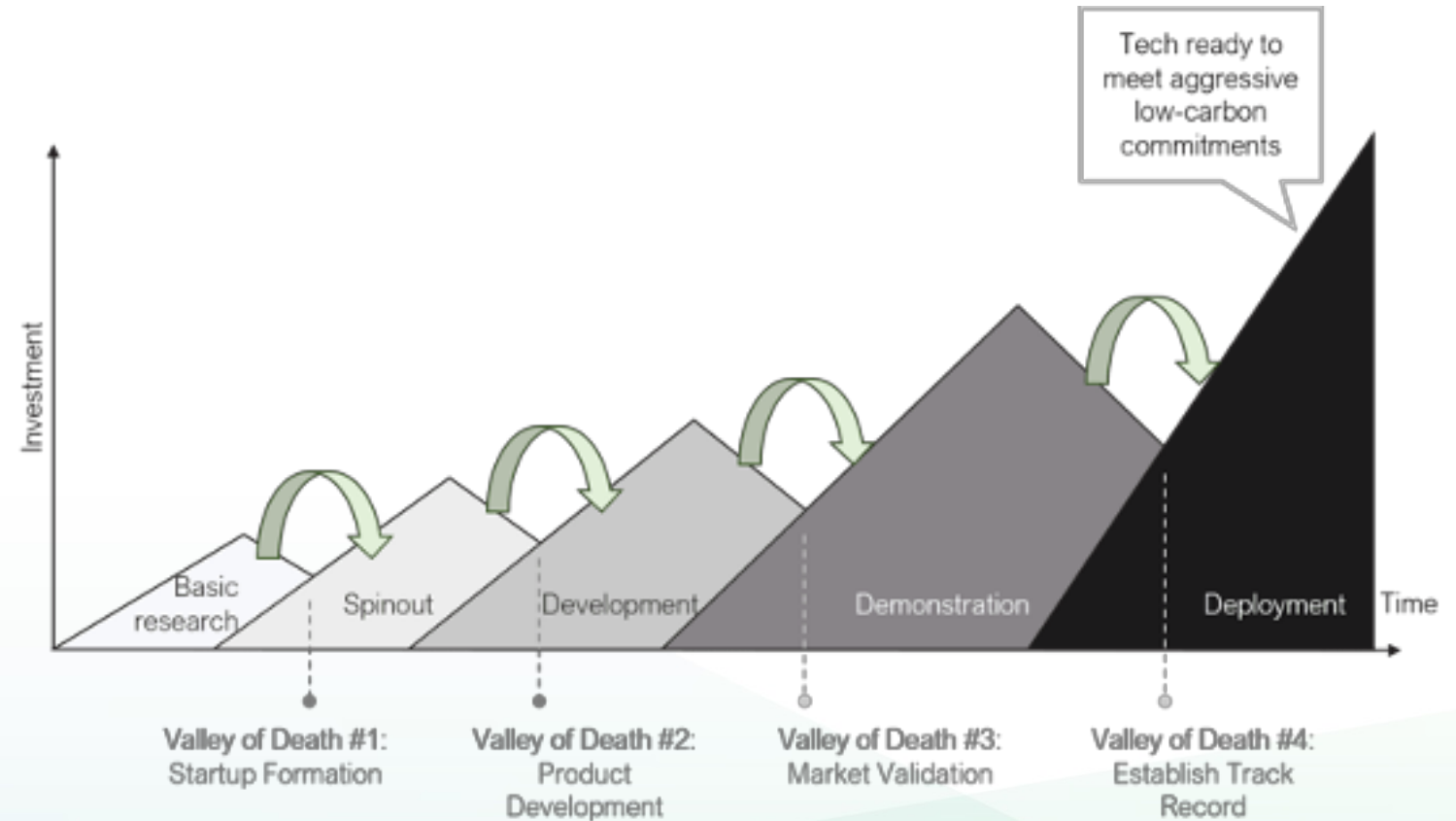
- Established to fund investments to advance clean energy technologies and approaches for the benefit of investor-owned utility electricity ratepayers.
- EPIC creates new energy solutions, fosters regional innovation, and brings clean energy ideas to the marketplace:





Bridge to Bankability

- **Electric Program Investment Charge**
 - \$29.2 million for non-lithium LDES.
 - Supports new technologies across the earlier stages.
- **LDES Program**
 - Fills a critical funding gap in the later stages.





Policy Drivers

- **AB-32**¹: Requires reduction of GHG emissions to 1990 levels by 2020.
- **SB-32**²: Requires reduction of GHG emissions to 40% below 1990 levels by 2030.
- **SB-100**³: Requires 100% of electricity come from renewable and zero-carbon resources by 2045.
- **SB-1020**⁴: Accelerates targets for electric decarbonization.

¹ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200520060AB32

² https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB32

³ https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB100

⁴ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220SB1020



Energy Storage is a Big Part of California's Future

- 5 GW battery storage currently installed
- 15 GWs battery storage needed by 2032 (per CPUC)
 - 1 GW identified for LDES (pumped hydro)
- 40 – 50 GWs of energy storage needed by 2045
 - 4 GW LDES



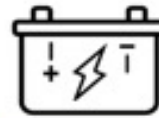
Solar & Wind

To Achieve Clean Energy

Development Needs To Rapidly Accelerate

3X

Solar and wind build rates need to nearly triple*



Battery

8X

Battery storage build rates need to increase by nearly eightfold**

*Based on 10-year average | **Based on 2020



Portfolio Approach to Energy Storage is Needed

- Lithium-ion is the dominant technology for energy storage.
- Lithium-ion has several limitations including:
 - Supply chain security.
 - Safety.
 - Cost at 8-10+ hours of duration.
- Reliance on lithium-ion could impede the state's ability to meet its clean energy goals.
- A diverse set of energy storage technologies optimized for specific applications are needed.
- Non-lithium storage technologies struggle to compete with more mature lithium-battery systems.



Purpose of Solicitation

- Fund LDES non-Li-ion technology demonstration and deployment projects.
- Accelerate commercialization and validate the capability of LDES technologies.
- Improve grid reliability and resilience in DACs, LICs, and Tribes.



Available Funding

Available Funding	Minimum Award Amount	Maximum Award Amount
\$29,200,000	\$4,000,000	\$9,000,000



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.



Background

- Extreme weather-related power outages have risen in frequency and duration.
- PSPS events disproportionately affect DACs, LICs, and Tribes.
- Currently rely on fossil-fuel-dependent energy infrastructure during PSPS events.
- Need for LDES solutions to improve resiliency, reduce GHG emissions, and improve air quality.



Requirements

- Non-Li-ion electrochemical or thermal LDES technology with a full rated power of at least 100 kW and a minimum duration of 24 hours.
- Demonstration sites must be located in a California IOU service territory.
- Must provide direct benefits to the residents of the identified DAC, LIC, or Tribe.
- Systems must stay in operation for at least one year before the end of the grant agreement. This must be completed at least six months prior to the end of the agreement.



Optional

Examples for maximizing benefits to strengthen proposal:

- Proposals should consider at least one “critical facility,” such as:
 - Hospitals, emergency operations centers, fire stations, etc.
- Proposals are encouraged to select demonstration sites highly impacted by PSPS events or located in a Tier 2 or 3 High Fire-Threat District (HFTD), as defined by the CPUC⁵.

⁵ <https://www.cpuc.ca.gov/industries-and-topics/wildfires/fire-threat-maps-and-fire-safety-rulemaking>



Additional Requirements

- Include the following in Project Narrative (Attachment 3).
 - Describe the specific LDES use case being demonstrated.
 - Describe the advantages that the proposed technology has at scale over Li-ion.
 - Describe the expected level of scale the technology needs to reach to be competitive with Li-ion.
 - Describe the customer's requirements or criteria for storage at the proposed site and how the proposed technology meets these requirements.
 - Describe what testing and validation has been done to ensure the technology is ready for a demonstration in a real-world environment.



Additional Requirements (cont., 2 of 3)

- Describe opportunities the applicant has identified to reduce balance of system costs for the LDES system.
- Describe the LDES project in terms of major subsystems and how the applicant intends the LDES system to operate and provide grid services under both blue sky and islanding conditions.
- Describe the technical specifications of the proposed system.
- Describe how safety will be achieved and prioritized for the project.
- Describe the cybersecurity needs of the proposed LDES demonstration.



Additional Requirements (cont., 3 of 3)

- Describe the requirements and plans for interconnection, permitting, and certification necessary for their systems.
- Describe how the project will meet the California Environmental Quality Act (CEQA) or other environmental review requirements.
- Describe the strategy or methods for overcoming potential interconnection and permitting challenges.
- Describe the efforts that will be taken to address public safety concerns.
- Describe a measurement and verification plan detailing how project benefits will be measured, quantified, and reported.



Eligible Applicants

- This is an open solicitation for Project Developers, System Integrators, Site Owner or Operators, or Technology Developers.
- 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 including the following:

- | | |
|-------------------------------|---|
| 1. Application Form (.pdf) | 8. CEQA Compliance Form (.docx) |
| 2. Executive Summary (.docx) | 9. References and Work Product Form (.docx, .pdf) |
| 3. Project Narrative (.docx) | 10. Commitment and Support Letters (.pdf) |
| 4. Project Team (.docx, .pdf) | 11. Project Performance Metrics |
| 5. Scope of Work (.docx) | 12. Applicant Declaration (.docx) |
| 6. Project Schedule (.xlsx) | 13. References for Calculating Energy End-Use and GHG Emissions |
| 7. Budget (.xlsx) | 14. Special Terms and Conditions for California Native American Tribes and Tribal Organizations with Sovereign Immunity (<i>optional</i>) |



Project Narrative (Attachment 3)

- 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 as described in Section I.C.

Respond to the scoring criteria described in Section IV.F of the Solicitation Manual.



Scope of Work (Attachment 5)

- 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 6):
 - Product deliverables that correspond with the Scope of Work.
 - Realistic dates on when product deliverables can be completed.



Budget (Attachment 7)

- 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 any form of 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 10)

- 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

- Method of Delivery is the Energy Commission Grant Solicitation System, available at: <https://gss.energy.ca.gov/>
- Electronic files must be in Microsoft Office Word (.doc, .docx) and Excel (.xls, .xlsx) formats, unless originally provided in solicitation in another format.
- Application documents should meet formatting requirements, and page recommendations.
- Attachments requiring signatures (Application Form and Support/Commitment Letters) may be scanned and submitted in PDF format.
- First-time users must register as a new user to access system.
- Grant Solicitation System (GSS) How to Apply presentation: <https://www.energy.ca.gov/media/1654>



GSS WARNING

START THE PROCESS EARLY!

- Applications must be fully submitted BEFORE the deadline listed in the solicitation manual
- The GSS system will shut off at the deadline
- Applications in the process of being submitted prior to the deadline will NOT be accepted after the deadline
- Applications will NOT be accepted after the deadline



GSS Structure

- Register as a New User
- Log In
- 3 Step Application Process:
 1. Select Solicitation
 2. Upload Files
 - Select documents for upload
 - Tag files with document type
 - Designate confidential documents (if applicable)
 3. Review and Submit

All three steps must be complete BEFORE the deadline



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

[Modify when using EPIC TD&D criteria 8]

- **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

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	165



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**

Scoring Criteria	Maximum Points
9. Match Funds	10
Total Bonus Points	10



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>

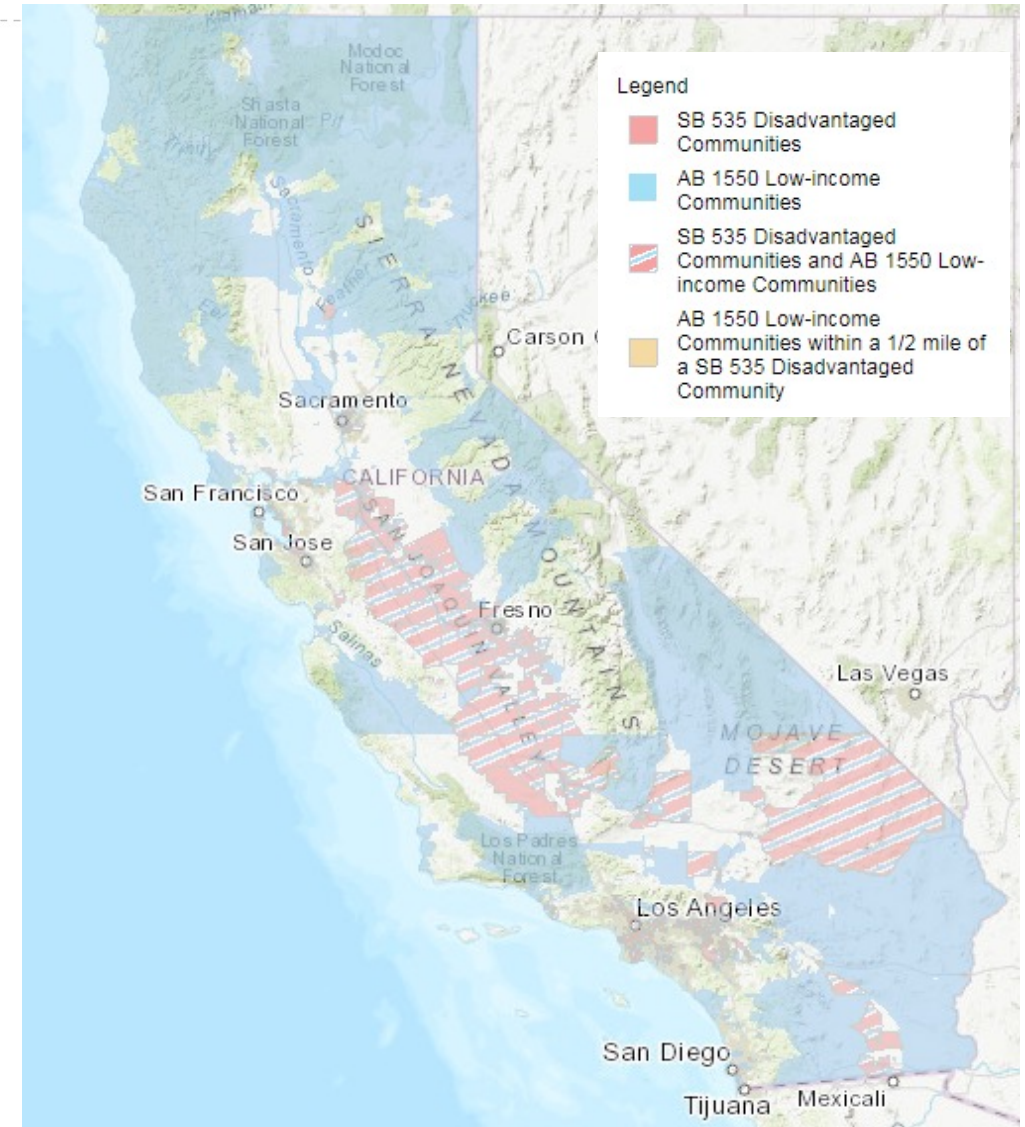




Identifying Low-Income Communities

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/capandtrade/auctionproceeds/communityinvestments.htm>

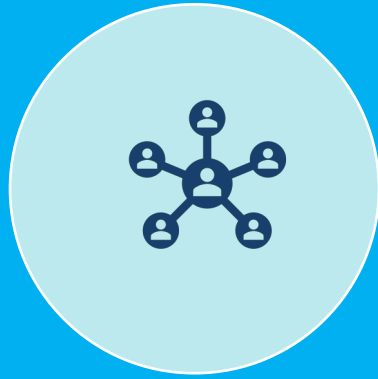




Community Based Organization Requirements



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, Low-Income, Native American Tribal Communities Preference Points

- Projects with **all test or demonstration** sites located in disadvantaged, low-income, and/or Native American Tribal 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 3.0 or later versions:
<https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>
 - 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>
 - Native American tribes listed with the California Native American Heritage Commission (NAHC) for the purposes of Chapter 905 of the Statutes of 2004.9



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	June 13, 2023
Pre-Application Workshop	June 28, 2023 at 9:00 am
Deadline for Written Questions	July 6, 2023 at 5:00 pm
Anticipated Distribution of Questions and Answers	Week of July 20, 2023
Deadline to Submit Applications	September 7, 2023 at 11:59 pm
Anticipated Notice of Proposed Award Posting	Week of November 7, 2023
Anticipated Energy Commission Business Meeting	May 2024
Anticipated Agreement Start Date	June 2024
Anticipated Agreement End Date	March 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-22-307 to:

Phil Dyer

Commission Agreement Officer

1516 Ninth Street, MS-18

Sacramento, CA 95814

Phil.Dyer@energy.ca.gov

Deadline to submit questions:

Thursday, July 6, 2023, 5:00 PM



Thank You!