



GFO-21-304 Pre-Application Workshop

RAMP 2022: Realizing Accelerated Manufacturing and Production for Clean Energy Technologies
Energy Research and Development Division, California Energy Commission

Presenter: Benson Gilbert, Mechanical Engineer

Date: April 25, 2022



Agenda

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



Virtual Housekeeping

- This workshop will be recorded.
- Participants will be muted during the presentation.
- 3 ways to comment
 - Use the “raise hand” feature in Zoom
 - Over the telephone: dial *9 to “raise hand” and *6 to mute/unmute your phone line
 - Enter your question in the Q&A window on Zoom
- Please limit comments to 3 minutes.
- Updates on solicitation documents including this presentation will be posted at the Grant Funding Opportunity’s webpage: <https://www.energy.ca.gov/solicitations/2022-04/gfo-21-304-realizing-accelerated-manufacturing-and-production-clean-energy>



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.



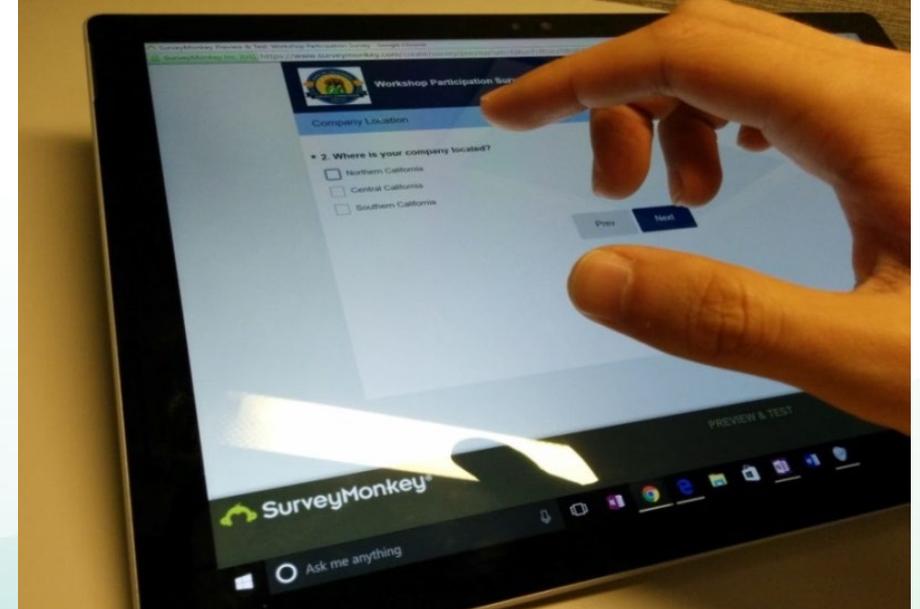
We Want to Hear From You!

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/p8xFtimWwU>

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/30245>



EmpowerInnovation.net





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.



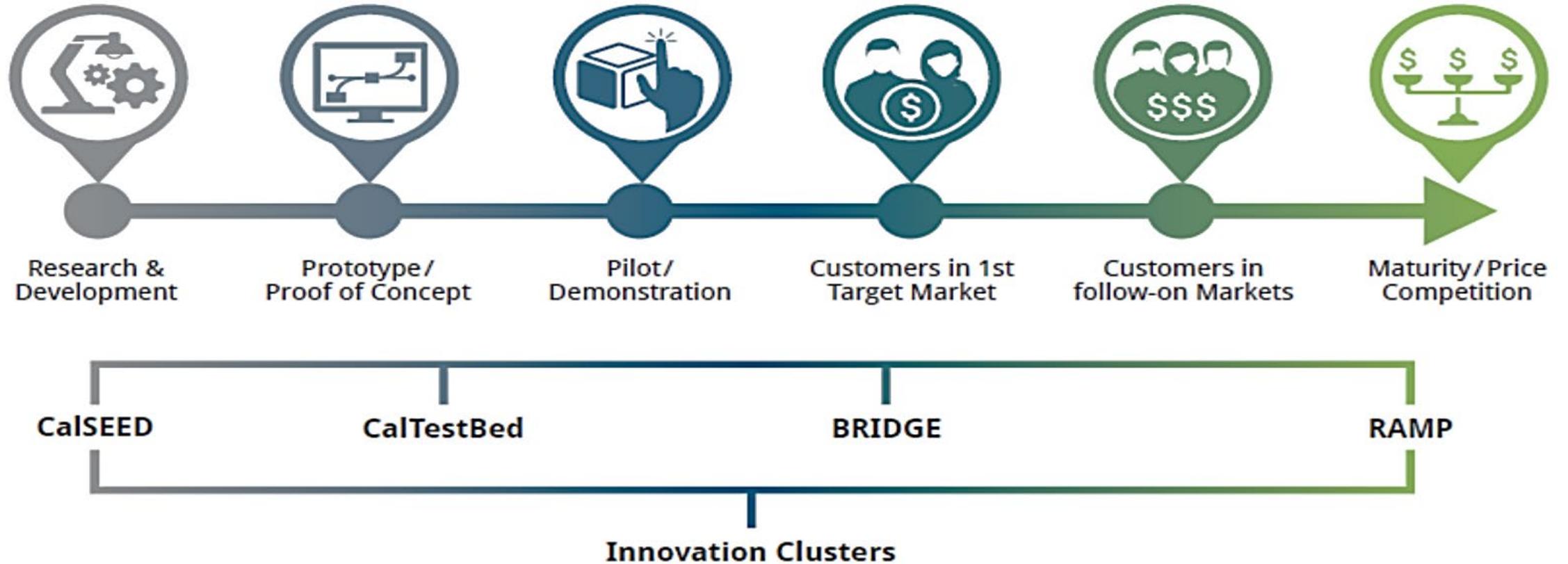
EPIC Background (continued)

- 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:





Entrepreneurial Ecosystem





Problem Statement

Challenges for startups to transition from prototype to production are:

- Securing capital
- Unable to adjust emerging technology to fit established manufacturing processes
- Lack of practical manufacturing experience/knowledge

Result leads to low-yields and quality control issues; which also creates a representation of being less investable.



Solicitation Purpose

This solicitation provides assistance to help clean energy entrepreneurs successfully advance their emerging best-of-class innovative technology to the Low-Rate Initial Production (LRIP) stage.

There is up to **\$40,834,000** available to fund projects under this solicitation.

What is Low-Rate Initial Production stage?

LRIP is the first step in making the transition from highly customized hand-built prototypes, which are used for performance testing and vetting the production process, to the mass-produced end product produced in the Full-Rate Production phase.¹

¹*Department of Defense Instruction 5000.02: Operation of the Defense Acquisition System.* Department of Defense, 7 January 2015, 10 August 2017 (Incorporating Change 3), https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/500002_dodi_2015.pdf.



Solicitation Purpose (continued)

This solicitation will provide funding to help clean energy start-up companies reach a Manufacturing Readiness Level 8.

What does Manufacturing Readiness Level 8 mean?

“Technologies should have matured to at least TRL 7. Detailed system design is complete and sufficiently stable to enter low rate production. All materials, manpower, tooling, test equipment and facilities are proven on pilot line and are available to meet the planned low rate production schedule. Manufacturing and quality processes and procedures have been proven in a pilot line environment and are under control and ready for low rate production. Known producibility risks pose no significant challenges for low rate production. Cost model and yield and rate analyses have been updated with pilot line results. Supplier qualification testing and first article inspection have been completed.”²

²Manufacturing Readiness Level (MRL) Deskbook Version 2.0. The Office of the Secretary of Defense Manufacturing Technology Program, May 2011, http://www.dodmrl.com/MRL_Deskbook_V2.pdf.



Applicant Eligibility

- For this GFO, the Energy Commission is looking for applicants with clear intentions and a path to commercialize advance technologies in California.
- This solicitation is open **ONLY** to private for-profit companies and individuals with ownership rights to the intellectual property that is being developed under the proposal.
- The following entities are **NOT ELIGIBLE** to be prime applicants for this solicitations:
 - Public and private universities
 - National Labs
 - Utilities
 - Private non-profit research organizations
 - End-use customers of the proposed technology



Eligible Technology Categories with Technology Examples

Energy Efficiency	End-use Electrification	Energy Storage	Zero- and Negative Carbon Emissions Electric Generation (Renewable Generation)
Solid-state lighting	Electrochemical production of industrial products	Advanced Lithium Batteries	Emerging thin-film solar PV
High-efficiency motors	High-power electric drive systems for medium- and heavy-duty vehicle applications	Non-lithium electrochemical storage using earth-abundant materials	Novel mounting systems and structures for PV systems
Non-vapor compression cooling and heating	Wide Band Gap semiconductor devices for efficient power transfer	Thermal storage	Enabling technologies for green hydrogen applications in the power sector
Advanced materials and coatings for fenestration and building envelopes.	Advanced EV charging technologies (i.e. high-power charging, wireless charging)	Battery repurposing and recycling technologies	Offshore wind and wave technology components
Photonic computing	Next-generation electric heat pumps		Solid-state energy harvesting
Energy-efficient desalination and wastewater reuse			



Available Funding

- There is up to **\$40,834,000** to fund projects under this solicitation.
- Source of funds come from the Market Facilitation Program Area of EPIC.
- Round 2 funding is contingent on approval of the CEC's EPIC 4 Investment Plan.

Funding Round	Available Funding	Minimum Award Amount	Maximum Award Amount
Round 1:	\$15,834,000	\$1,000,000	\$3,000,000
Round 2:	\$25,000,000	\$1,000,000	\$3,000,000



Match Funding

- Minimum match funding required is **50%** of request EPIC funds.
- 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.



Eligible Applicants

- Applicants must accept the EPIC terms and conditions.
 - Standard 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. 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 (.docx)
5. Scope of Work (.docx)	12. Applicant Declaration (.pdf)
6. Project Schedule (.xlsx)	13. Market Readiness Calculator (.xlsx)
7. Budget (.xlsx)	14. References for Calculating Energy End-Use and GHG Emissions (.xlsx)



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 solicitation specific project focus requirements described in Section I.C.

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



Technical Merit & Need

- Q1. What is the value proposition of the technology? What potential competitive advantages does it have over current benchmark or best-in-class solutions?
 - a. If the technology is a key component of a larger system that falls under an eligible technology category, describe the performance of the overall system and how the component relates to the overall system.
- Q2. What is the target market(s) for the technology and what is the size of each in California? What independent analysis, reports or studies support these estimates?
 - a. If the technology is a key component of a larger system that falls under an eligible technology category, describe the first customer market and end-user markets. For example, will the component be supplied to an original equipment manufacturer or used in the applicant's own product?



Technical Merit & Need (continued)

- Q3. What steps has the applicant taken to determine there is market demand for this technology?
- Q4. What pilot demonstrations or field trials have been conducted that demonstrate the technology is ready to move to LRIP?
- Q5. What steps have already been taken to determine the manufacturing requirements for the technology? For example, what are the key cost, manufacturing, and scalability risks associated with the proposed technology and how will these risks be addressed?
 - a. If the technology is a key component of a larger system that falls under an eligible technology category, describe the specific challenges facing the technology that require manufacturing support.



Technical Merit & Need (continued)

- Q6. What steps have been taken to establish the supply chain that supports low-rate production volume, and to address potential risks to scale-up production volume?
- Q7. What plans, if any, does the applicant have to provide local manufacturing jobs and on-the-job-training as part of this project?
- Q8. What entities have or in the future may have legal rights to the technology and what are those rights?
- Q9. How may the project be impacted due to other entities having legal rights to the technology?



Technical Approach

- 1. The proposed steps the applicant will take to bring the technology to a MRL of 8 by the Anticipated Agreement End Date listed in the Key Activities Schedule in Section I.E.
- **Please be **comprehensive** and **clear** when describing each step of advancement for the technology to reach MRL 8 within the project timespan.**
- 2. The estimated lead time for all equipment expenses, with a priority list of when equipment should be ordered to prevent delays to the project schedule. Note that some equipment may need to be ordered soon after the Anticipated Agreement Start Date listed in the Key Activities Schedule in Section I. E to prevent delays to the project schedule.



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 will 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

- **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 California 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 to Indirect Costs	5
Total	100
Minimum Points to Pass	70



How will my Application be Evaluated?

Application Scoring – Preference Points

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

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



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

- Applicants may receive up to 5 additional preference for projects that demonstrate benefits to disadvantaged and/or low-income communities.
 - 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, 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	April 14, 2022
Pre-Application Workshop	April 25, 2022 at 1:00 pm
Deadline for Written Questions	April 29, 2022 at 5:00 pm
Anticipated Distribution of Questions and Answers	Week of May 30, 2022
Deadline to Submit Applications – Round 1	July 28, 2022 at <u>11:59 pm</u>
Start Date for Submitting Round 2 Applications	January 26, 2023
Deadline to Submit Applications – Round 2	July 27, 2023 at <u>11:59 pm</u>



Key Dates (continued)

Activity	Date
Anticipated Notice of Proposed Award Posting Date – Round 1	Week of September 5, 2022
Anticipated Notice of Proposed Award Posting Date – Round 2	Week of September 4, 2023
Anticipated Energy Commission Business Meeting Date – Round 1	November 2022
Anticipated Energy Commission Business Meeting Date – Round 2	November 2023
Anticipated Agreement Start Date – Round 1	December 2022
Anticipated Agreement Start Date – Round 2	December 2023
Anticipated Agreement End Date – Round 1	March 31, 2026
Anticipated Agreement End Date – Round 2	March 31, 2027



Questions and Answers

- If you want to ask a question, please 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)
 - 3 ways to ask questions:
 - Use the “raise hand” feature in Zoom
 - Over the telephone: dial *9 to “raise hand” and *6 to mute/unmute your phone line
 - Enter your question in the Q&A window on Zoom
- Keep questions under 3 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-21-304 to:

Crystal Willis

Commission Agreement Officer

715 P Street, MS-18

Sacramento, CA 95814

crystal.willis@energy.ca.gov

Deadline to submit questions:

Friday, April 29, 2022 at 5:00 PM



Thank You!

