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

<table>
<thead>
<tr>
<th>Time</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 pm</td>
<td>Welcome and Introduction</td>
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<tr>
<td>1:05 pm</td>
<td>Solicitation Background</td>
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<tr>
<td></td>
<td>• Commitment to Diversity</td>
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<td></td>
<td>• EPIC Research Program</td>
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<td></td>
<td>• Purpose of Solicitation</td>
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<td></td>
<td>• Available Funding</td>
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<tr>
<td>1:25 pm</td>
<td>Application Requirements</td>
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<td>• Attachments</td>
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<td>• Submission Process</td>
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<td>• Evaluation Process</td>
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<tr>
<td>2:00 pm</td>
<td>Q&amp;As</td>
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<tr>
<td>3:00 pm</td>
<td>Adjourn</td>
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</tbody>
</table>
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!
Connect With Us

CATALYZING THE CLEANTECH COMMUNITY

JOIN NOW →
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
Fostering Innovation Across the Energy Sector

**Mission:** strategically invest funds to catalyze change and accelerate achievement of policy goals

**Strategy:** advance energy technology, facilitate customer learning, and strategic targeted intervention

**Funding:**
- Electric Program Investment Charge (EPIC), $133 million annually
- Natural Gas Research, Development and Demonstration Program, $24 million annually
- Food Production Investment Program (FPIP), $124 million biennially
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:

<table>
<thead>
<tr>
<th>APPLIED RESEARCH AND DEVELOPMENT</th>
<th>TECHNOLOGY DEMONSTRATION AND DEPLOYMENT</th>
<th>MARKET FACILITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focuses on validating new ideas and technologies</td>
<td>Demonstrates strategies at real-world scales</td>
<td>Overcomes non-technical hurdles to increase market adoption and expansion of emerging solutions</td>
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</table>
Entrepreneurial Ecosystem

1. Research & Development
2. Prototype / Proof of Concept
3. Pilot / Demonstration
4. Customers in 1st Target Market
5. Customers in follow-on Markets
6. Maturity / Price Competition

- CalSEED
- CalTestBed
- BRIDGE
- RAMP

Innovation Clusters
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.
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

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.”

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:
  
  o Public and private universities
  o National Labs
  o Utilities
  o Private non-profit research organizations
  o End-use customers of the proposed technology
<table>
<thead>
<tr>
<th>Eligible Technology Categories with Technology Examples</th>
</tr>
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<tbody>
<tr>
<td>Energy Efficiency</td>
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<tr>
<td>Solid-state lighting</td>
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<tr>
<td>High-efficiency motors</td>
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<tr>
<td>Non-vapor compression cooling and heating</td>
</tr>
<tr>
<td>Advanced materials and coatings for fenestration and building envelopes.</td>
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<tr>
<td>Photonic computing</td>
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<tr>
<td>Energy-efficient desalination and wastewater reuse</td>
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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.

<table>
<thead>
<tr>
<th>Funding Round</th>
<th>Available Funding</th>
<th>Minimum Award Amount</th>
<th>Maximum Award Amount</th>
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</thead>
<tbody>
<tr>
<td>Round 1:</td>
<td>$15,834,000</td>
<td>$1,000,000</td>
<td>$3,000,000</td>
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<tr>
<td>Round 2:</td>
<td>$25,000,000</td>
<td>$1,000,000</td>
<td>$3,000,000</td>
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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:

<table>
<thead>
<tr>
<th>1. Application Form (.pdf)</th>
<th>8. CEQA Compliance Form (.docx)</th>
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</thead>
<tbody>
<tr>
<td>2. Executive Summary (.docx)</td>
<td>9. References and Work Product Form (.docx, .pdf)</td>
</tr>
<tr>
<td>3. Project Narrative (.docx)</td>
<td>10. Commitment and Support Letters (.pdf)</td>
</tr>
<tr>
<td>4. Project Team (.docx, .pdf)</td>
<td>11. Project Performance Metrics (.docx)</td>
</tr>
<tr>
<td>5. Scope of Work (.docx)</td>
<td>12. Applicant Declaration (.pdf)</td>
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</table>
Project Narrative (Attachment 3)

• This is your opportunity to explain the entirety of the project. The narrative should explain:
  o Why is your project necessary and important to California?
  o What is your project approach and how will each major task be implemented?
  o How will the project be completed in the term proposed
  o How will the project outcomes benefit electric ratepayers?
  o 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:
  o CEC funds should be limited to lodging and any form of transportation (e.g., airfare, rental car, public transit, parking, mileage).
  o 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.
  o Commitment letters are required for entities or individuals that are committing match funding, testing/demonstration sites, including the Prime.
  o 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.

<table>
<thead>
<tr>
<th>Scoring Criteria</th>
<th>Maximum Points</th>
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<tbody>
<tr>
<td>1. Technical Merit</td>
<td>15</td>
</tr>
<tr>
<td>2. Technical Approach</td>
<td>25</td>
</tr>
<tr>
<td>3. Impacts and Benefits for California IOU Ratepayers</td>
<td>20</td>
</tr>
<tr>
<td>4. Team Qualifications, Capabilities, and Resources</td>
<td>15</td>
</tr>
<tr>
<td>5. Budget and Cost-Effectiveness</td>
<td>10</td>
</tr>
<tr>
<td>6. CEC Funds Spent in California</td>
<td>10</td>
</tr>
<tr>
<td>7. Ratio of Direct Labor to Indirect Costs</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td><strong>Minimum Points to Pass</strong></td>
<td><strong>70</strong></td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Scoring Criteria</th>
<th>Maximum Points</th>
</tr>
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<tbody>
<tr>
<td>8. Match Funds</td>
<td>10</td>
</tr>
<tr>
<td>9. Disadvantaged &amp; Low-income Communities</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Bonus Points</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>
Match Funding Points

• Applicants may receive up to 10 additional preference points based on the criteria below:
  o 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.
  o 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.
  o 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

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
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<tbody>
<tr>
<td>Solicitation Release</td>
<td>April 14, 2022</td>
</tr>
<tr>
<td>Pre-Application Workshop</td>
<td>April 25, 2022 at 1:00 pm</td>
</tr>
<tr>
<td><strong>Deadline for Written Questions</strong></td>
<td><strong>April 29, 2022 at 5:00 pm</strong></td>
</tr>
<tr>
<td>Anticipated Distribution of Questions and Answers</td>
<td>Week of May 30, 2022</td>
</tr>
<tr>
<td><strong>Deadline to Submit Applications – Round 1</strong></td>
<td><strong>July 28, 2022 at 11:59 pm</strong></td>
</tr>
<tr>
<td>Start Date for Submitting Round 2 Applications</td>
<td>January 26, 2023</td>
</tr>
<tr>
<td><strong>Deadline to Submit Applications – Round 2</strong></td>
<td><strong>July 27, 2023 at 11:59 pm</strong></td>
</tr>
<tr>
<td>Activity</td>
<td>Date</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Anticipated Notice of Proposed Award Posting Date – Round 1</td>
<td>Week of September 5, 2022</td>
</tr>
<tr>
<td>Anticipated Notice of Proposed Award Posting Date – Round 2</td>
<td>Week of September 4, 2023</td>
</tr>
<tr>
<td>Anticipated Energy Commission Business Meeting Date – Round 1</td>
<td>November 2022</td>
</tr>
<tr>
<td>Anticipated Energy Commission Business Meeting Date – Round 2</td>
<td>November 2023</td>
</tr>
<tr>
<td>Anticipated Agreement Start Date – Round 1</td>
<td>December 2022</td>
</tr>
<tr>
<td>Anticipated Agreement Start Date – Round 2</td>
<td>December 2023</td>
</tr>
<tr>
<td>Anticipated Agreement End Date – Round 1</td>
<td>March 31, 2026</td>
</tr>
<tr>
<td>Anticipated Agreement End Date – Round 2</td>
<td>March 31, 2027</td>
</tr>
</tbody>
</table>
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!