



CALIFORNIA ENERGY COMMISSION

# **Pre-Application Workshop**

## **EPIC Clean Energy Generation Applied Research and Development Grant Solicitation**

**Advancing Utility Scale Clean Energy Generation**

**PON-13-303**

Energy Generation Research Office  
Energy Research and Development Division  
California Energy Commission  
May 27, 2014



# Agenda

Time	Topic
10:00 am	Welcome and Introductions <ul style="list-style-type: none"><li>• Housekeeping</li><li>• Solicitation Purpose, Goals, Background, Policy Drivers</li><li>• Eligible Applicants</li><li>• Key Dates</li></ul>
10:15 am	Research Project Groups
10:30 am	Application Requirements: <ul style="list-style-type: none"><li>• Formatting and Attachments</li><li>• Evaluation Process</li><li>• Grounds for Rejection</li></ul>
10:45 am	Questions and Answers



# Housekeeping

- In case of emergency
- Facilities
- Sign-In Sheet
- Updates on Solicitation Documents and today's presentation can be found at:

<http://www.energy.ca.gov/contracts/epic.html#PON-13-303>



## Purpose

- Fund applied research and development projects that develop emerging utility-scale renewable energy generation technologies and strategies improve power plant performance, reduce costs and expand the resource base for the following project groups:
  - 1) Thermal Energy Storage for Concentrating Solar Power
  - 2) Solar and Wind Forecasting and Modeling
  - 3) Geothermal Energy Generation Facilities
- Funded projects must benefit California IOU electric ratepayers



## Goals

- **Group 1:** Develop new and enhanced tools and technologies to improve the cost and efficiency of **thermal energy storage**, leading to increased capacity and dispatchability of **concentrating solar power** and understanding of grid benefits.
- **Group 2:** Develop and validate advanced **solar and wind forecasting and modeling** tools to increase the accuracy and reliability of forecasts, reduce the costs of solar and wind generation integration for utilities, and assist grid operators in variable and intermittent resource management.
- **Group 3:** Increase the efficiency and extend the operating life of existing **geothermal energy generation** facilities by improving reservoir management techniques and system design, and enhancing grid support through flexible generation and ancillary services.



## Background

- The Electric Program Investment Charge (EPIC) is funded by an electricity ratepayer surcharge established by the California Public Utilities Commission (CPUC) in 2011
- The purpose of EPIC is to benefit the ratepayers of three electric investor-owned utilities\*
- EPIC funds clean energy technology projects that promote greater electricity reliability, lower costs, and increased safety.
- Funded projects must lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals.
- Annual program funds total \$162 million per year with 80% administered by the California Energy Commission.

\* Pacific Gas and Electric Co., San Diego Gas and Electric Co., and Southern California Edison



# Policy Drivers for Energy Generation RD&D

- Laws and Regulations:
  - AB 32 (Global Warming Solutions Act)
  - SB X1-2 (Renewable Portfolio Standard)
  - AB 2514 (Energy Storage)
- Policies/Plans
  - Governor Brown's Clean Energy Jobs Plan
  - Integrated Energy Policy Report
  - CPUC Decision 13-10-040 (Energy Storage Procurement)



## Eligible Applicants

- This is an open solicitation for public and private entities.
- Applicants must accept the EPIC terms and conditions
- Business applicants are required to register with the California Secretary of State and be in good standing in order to enter into an agreement with the Energy Commission. <http://www.sos.ca.gov>
- Applicants must propose a team that has demonstrated the ability to successfully complete similar research or demonstration projects.



## Key Dates

Activity	Action Date
✓ Solicitation Release	May 15, 2014
Pre-Application Workshop	May 27, 2014
<b><u>DEADLINE FOR WRITTEN QUESTIONS</u></b>	<b><u>May 28, 2014 by 5:00 p.m.</u></b>
Post Questions and Answers to Website	June 13, 2014
<b><u>DEADLINE TO SUBMIT APPLICATIONS</u></b>	<b><u>July 22, 2014 by 3:00 p.m.</u></b>
Post Notice of Proposed Award (NOPA)	September 17, 2014
Anticipated Energy Commission Business Meeting Date	November 12, 2014
Anticipated Agreement Start Date	December 1, 2014
Agreement Termination Date	December 31, 2017



## Project Groups

- Up to \$9.5 million available in the following groups
- Funding amounts may be modified or moved among the groups

<b>Project Group</b>	<b>Available Funding</b>	<b>Minimum award amount</b>	<b>Maximum award amount</b>
Group 1: Thermal Energy Storage for Concentrating Solar Power	\$3,000,000	\$750,000	\$1,500,000
Group 2: Solar and Wind Forecasting and Modeling	\$3,500,000	\$500,000	\$1,000,000
Group 3: Geothermal Energy Generation Facilities	\$3,000,000	\$500,000	\$3,000,000



## Project Groups

- Each group will be evaluated and scored separately
- Each Application must address only one project group
- Applicants may submit more than one Application as long as each is for a distinct scope of work, with no duplication



## **Group 1: Thermal Energy Storage for Concentrating Solar Power**

(\$750,000 - \$1,500,000 per award)

### **Funded Activities Include:**

- Develop improved heat transfer fluids and thermal energy storage media
- Assess the potential for power plant and system-wide optimization of thermal energy storage
- Develop advanced technological approaches or modeling tools to improve the value of concentrating solar power with thermal energy storage



## Group 2: Solar and Wind Forecasting and Modeling

(\$500,000-\$1,000,000 per award)

- Improve the data acquisition capabilities, reliability, and cost of ground-mounted solar and wind observation instrumentation
- Develop higher-accuracy solar and wind generation models and forecasting tools to support grid operations
- Improve the measurement and verification of solar and wind forecasting accuracy
- Integrate high-accuracy wind and solar forecasts to increase the value of other energy resources



## Group 3: Geothermal Energy Generation Facilities

(\$500,000 - \$3,000,000 per award)

### Funded Activities Include:

- Develop advanced technologies and tools to improve geothermal subsurface operations
- Research improvements to the techniques and modeling tools needed for reservoir management
- Develop advanced system designs and components, including integration of thermal or other energy storage technologies
- Develop advanced materials, methods and strategies that:
  - Reduce and control system scaling, corrosion, and wear
  - Lower the cost of well construction in challenging geothermal environments



## Application Requirements

- Submit Applications with all attachments in the order specified by the due date and time listed.
- Application documents should meet formatting requirements, page limits, and number of copies specified on page 13.
  - **Six** hard copies and **one** electronic copy
- Evaluation Consists of Two Parts
  - Part 1 – Proposal Screening (Section E, page 21)
  - Part 2 – Proposal Scoring (Section F, pages 22)



## Application Requirements (continued)

Every Applicant must complete and include the following:

1. Application Form	7. Budget
2. Executive Summary	8. CEQA Compliance Form
3. Fact Sheet	9. References and Work Product
4. Project Narrative	10. Contact List
5. Project Team	11. Commitment Letters
6. Scope of Work	



## Application Form (Attachment 1)

- Form provides the Energy Commission with basic information about the Applicant and project.
- Must include all information requested
- Must be signed by an authorized representative of the applicant's organization
- Information provided should be consistent with project budget, narrative, and letters of commitment.



## Executive Summary Form (Attachment 2)

- Executive Summary should summarize the information included in the project narrative
- Must include:
  - A project description
  - The project goals and objectives to be achieved
  - An explanation of how the goals and objectives will be achieved, quantified, and measured
  - A description of the project tasks and overall management of the agreement.
- Limited to **two** pages



## Fact Sheet Template (Attachment 3)

- Must present project information in a manner suitable for publication (if funded).
- The fact sheet must follow the template provided, including:
  - A summary of project specifics
  - A description of the issue addressed by the project
  - A project description
  - Anticipated benefits for the State of California
- Limited to **two** pages



## Project Narrative (Attachment 4)

- Project Narrative form follows the Application Scoring Criteria (page 22)
- Include a detailed description of the proposed project(s) and respond to the information requested in each of the following areas:
  1. Technical Merit and Need
  2. Technical Approach
  3. Impacts and Benefits for California IOU Ratepayers
  4. Team Qualifications, Capabilities and Resources
  5. Budget and Cost Effectiveness
  6. Funds Spent in California
  7. Ratio of Unloaded Labor Rates to Loaded Labor Rates
  8. Match Funding (optional)
- Provide sufficient detail so that reviewers will be able to evaluate the proposal against each of the scoring criteria.
- Limited to **ten** pages



## Project Team Form (Attachment 5)

- Must identify all key personnel assigned to the project
  - “Key personnel” are individuals that are critical to the project due to experience, knowledge, and/or capabilities.
- Clearly describe their individual areas of responsibility
- Include a resume for each individual
  - Limited to **two** pages for each resume



## Scope of Work (Attachment 6)

- Ensure that the problem/Solution Statement and Goals and Objectives are consistent with the Project Narrative
- All task in black are mandatory and do not revise
  - Task 1: General Project Tasks
  - Task TBD-1 Evaluation of Project Benefits
  - Task TBD-2 Technology/Knowledge Transfer Activities
  - Task TBD-3 Production Readiness Plan-only applicable to agreements that fund the development of products that may be commercialized
- Task 2 are the technical task
  - Indicate specific tasks in the “Recipient Shall” section (these should be major items)
  - “Products” are documents, plans and reports (tangible items that can be submitted to the CAM)
  - “Products” are not equipment and other items that cannot be delivered and stored at the Energy Commission.



## Budget (Attachment 7)

**Every Applicant must complete and include the budget forms for its team**

Don't delete sheets or rows;  
use the hide/expand function

- ✓ Task Summary - Att B-1
- ✓ Category Summary - Att B-2
- ✓ Prime Labor Rates - Att B-3
- ✓ Labor Rates for each Subcontractor - Att B-3a-z
- ✓ Prime Non-Labor Rates - Att B-4
- ✓ Non-Labor Rates for each Subcontractor - Att B-4 a-z
- ✓ Direct Operating Expenses – Att B-5
- ✓ Match Funding – Att B-6
- ✓ Rates Summary - Att B-7 (for evaluation purposes)

The Applicant must submit information on **all** of the attached budget forms, and in the format required.



## California Environmental Quality Act (CEQA) Compliance Form (Attachment 8)

- The information provided will help facilitate Energy Commission's environmental evaluation of the proposed project under CEQA.
- All sections of the form must be completed.
- Failure to complete CEQA process in a timely manner may result in cancellation of the award.



# Reference and Work Product Form (Attachment 9)

- This form contains two sections.
- Section 1: References
  - Provide applicant and subcontractor references as instructed
  - Include three reference for Applicant and two for each subcontractor
- Section 2: Work Products
  - Provide a list of up to three past projects detailing technical and business experience of the applicant or team member (two pages maximum per project)
  - Include copies of up to three recent relevant technical publications



## Contact List Template (Attachment 10)

- Identifies the names and contact information of the project manager, administrator, and accounting officer.
- Applicant should complete the information in the “Recipient” column shown in blue text
- Energy Commission staff will complete the information in the “California Energy Commission” column



## Commitment and Support Letter Form (Attachment 11)

- This form provides guidelines for the submission of letters of support or commitment that are submitted with the application.
  - Commitment letter commits an entity to providing the service or funding described
  - Support letter details an entity or individual's support for the project
- All Applicants are required to submit at least one support letter from a project stakeholder.
- If the project involves a pilot test, a commitment letter must be included from the host site
- Any project partners that will make other contributions to the project must submit a commitment letter.
- Any match funding provided must be supported by a match fund commitment letter.
- Limited to **two pages** per letter, excluding the cover page



## How will my Proposal be Evaluated? → Application Screening

### Application Screening Process (page 21)

1. Energy Commission staff screens applications per criteria in the solicitation (page 21).
2. Criteria is evaluated on a pass/fail basis.
  - ✓ Applicants must pass all screening criteria or the applicant will be disqualified
  - ✓ Applicants must review the Evaluation and Award Process section of the solicitation and ensure that the Project Narrative provides a clear and complete response to each screening criteria.

### Some Reasons for Failing Screening

- ✓ Application not submitted by the specified due date and time
- ✓ Applicant did not address one of the eligible project groups
- ✓ Requested funding is outside of the specified minimum/maximum range
- ✓ Project completion date beyond the specified agreement end date
- ✓ Application contains confidential material
- ✓ Application does not include one or more support letters, as described in Attachment 11



## What is the technical scoring scale?

% of Possible Points	Interpretation	Explanation for Percentage Points
0%	Not Responsive	<input checked="" type="checkbox"/> The response does not include or fails to address the criteria. <input checked="" type="checkbox"/> The omission(s), flaw(s), or defects( )are significant and unacceptable.
10-30%	Minimally Responsive	<input checked="" type="checkbox"/> The response minimally addresses the criteria. <input checked="" type="checkbox"/> The omission(s), flaw(s), or defect(s) are significant and unacceptable.
40-60%	Inadequate	<input checked="" type="checkbox"/> The response addresses the criteria. <input checked="" type="checkbox"/> There are one or more omissions, flaws, or defects or the criteria are addressed in a limited way that results in a low degree of confidence in the proposed solution.
70%	Adequate	<input checked="" type="checkbox"/> The response adequately addresses the criteria. <input checked="" type="checkbox"/> Any omission(s), flaw(s), or defect(s) are inconsequential and acceptable.
80%	Good	<input checked="" type="checkbox"/> The response fully addresses the requirements being scored with a good degree of confidence in the applicant's response or proposed solution. <input checked="" type="checkbox"/> There are no identified omission(s), flaw(s), or defect(s). Any identified weaknesses are minimal, inconsequential, and acceptable.
90%	Excellent	<input checked="" type="checkbox"/> The response fully addresses the criteria with a high degree of confidence in the applicant's response or proposed solution. <input checked="" type="checkbox"/> The applicant offers one or more enhancing features, methods, or approaches that exceed basic expectations.
100%	Exceptional	<input checked="" type="checkbox"/> All requirements are addressed with the highest degree of confidence in the applicant's response or proposed solution. <input checked="" type="checkbox"/> The response exceeds the requirements in providing multiple enhancing features, a creative approach, or an exceptional solution.



## How will my application be evaluated?

- Evaluation Committee applies the scoring scale to the scoring criteria
- A minimum passing score of 70% is required for criteria 1 to 4—equivalent to a score of 49 in order for an Application to be considered for funding, and
- A total minimum passing score of 70 out of 100 points is needed for all criteria (1 to 7)
- Applicants must review the Evaluation and Award Process section of the solicitation and ensure that their application provides a clear and complete response to each scoring criteria in the project narrative.

Scoring Criteria (page 27-30)	Maximum Points
1. Technical Merit and Need	20
2. Technical Approach	20
3. Impacts and Benefits to California IOU Ratepayers	20
4. Team Qualifications, Capabilities & Resources	10
5. Budget Cost Effectiveness	10
6. Funds Spent in California	15
7. Ratio of Direct Labor and Fringe Benefit Rates to Loaded Labor Rates	5
Total	100
<b>Minimum points to pass</b>	<b>70</b>



## Technical Merit and Need (Criterion 1)

- Provides a clear and concise description of the goals, objectives, technological or scientific knowledge advancement, and innovation in the proposed project.
- Explains how the proposed project will lead to technological advancement and breakthroughs that overcome barriers to achieving the state's statutory energy goals.
- Summarizes the current status of the relevant technology and/or scientific knowledge, and explains how the proposed project will advance, supplement, and/or replace current technology and/or scientific knowledge.
- Justifies the need for EPIC funding, including an explanation of why the proposed work is not adequately supported by competitive or regulated markets.
- Discusses the degree to which the proposed work is technically feasible and achievable.
- Provides a clear and plausible measurement and verification plan that describes how energy savings and other benefits specified in the application will be determined and measured.



## Technical Approach (Criterion 2)

- Describes the technique, approach, and methods to be used in performing the work described in the Scope of Work. Highlights any outstanding features.
- Describes how tasks will be executed and coordinated with various participants and team members.
- Identifies and discusses factors critical for success, in addition to risks, barriers, and limitations. Provides a plan to address them.
- Describes how the knowledge gained, experimental results, and lessons learned will be made available to the public and key decision-makers.



# Impacts and Benefits for California IOU Ratepayers (Criterion 3)

- Explains how the proposed project will benefit California Investor-Owned Utility (IOU) ratepayers with respect to the EPIC goals of greater reliability, lower costs, and/or increased safety.
- Provides clear, plausible, and justifiable **quantitative** estimates of potential benefits for California IOU electricity ratepayers, including the following (*as applicable*): annual electricity and thermal savings (kilowatt-hour and therms), peak load reduction and/or shifting, energy cost reductions, greenhouse gas emission reductions, air emission reductions (e.g., NO<sub>x</sub>), and water use and/or cost reductions.
- States the timeframe, assumptions, and calculations for the estimated benefits, and explains their reasonableness.
- Identifies impacted market segments in California, including size and penetration or deployment rates, with underlying assumptions.
- Discusses any **qualitative** or intangible benefits to California IOU electricity ratepayers, including timeframe and assumptions.
- Provides a cost-benefit analysis that compares project costs to anticipated benefits. Explains how costs and benefits will be calculated and quantified, and identifies any underlying assumptions.
- *Group 1 Projects Only:* If the proposed project involves development of a technology that addresses heat transfer fluids and storage media or systems, explain how the technology can reach commercial status by 2020 and contribute to meeting the U.S. Department of Energy's SunShot Initiative goal of reducing the total installed cost of solar energy systems to \$.06 per kilowatt-hour (kWh) by 2020 (see <http://www.nrel.gov/docs/fy13osti/58186.pdf>).



## Team Qualifications, Capabilities, and Resources (Criterion 4)

- Describes the organizational structure of the applicant and the project team. Includes an organizational chart that illustrates the structure.
- Identifies key team members, including the project manager and principal investigator (*include this information in Attachment 5, Project Team Form*).
- Summarizes the qualifications, experience, capabilities, and credentials of the key team members (*include this information in Attachment 5, Project Team Form*).
- Explains how the various tasks will be managed and coordinated, and how the project manager's technical expertise will support the effective management and coordination of all projects in the application.
- Describes the facilities, infrastructure, and resources available to the team.
- Describes the team's history of successfully completing projects (e.g., RD&D projects) and commercializing and/or deploying results/products.
- Identifies past projects that resulted in a market-ready technology (*include this information in Attachment 9, Reference and Work Product Form*).
- References are current, meaning within the past three years (*include this information in Attachment 9, Reference and Work Product Form*).



## Team Qualifications, Capabilities, and Resources (Criterion 4) (cont'd)

- Identifies any collaborations with utilities, industries, or others. Explains the nature of the collaboration and what each collaborator will contribute.
- Demonstrates that the applicant has the financial ability to complete the project, as indicated by the responses to the following questions:
- Has your organization been involved in a lawsuit or government investigation within the past ten years?
- Does your organization have overdue taxes?
- Has your organization ever filed for or does it plan to file for bankruptcy?
- Has any party that entered into an agreement with your organization terminated it, and if so for what reason?
- For Energy Commission agreements listed in the application that were executed (i.e., approved at a Commission business meeting and signed by both parties) within the past five years, has your organization ever failed to provide a final report by the date indicated in the agreement?
- Support or commitment letters (for match funding, test sites, or project partners) indicate a strong level of support or commitment for the project.



## Budget and Cost-Effectiveness (Criterion 5)

- Justifies the reasonableness of the requested funds relative to the project goals, objectives, and tasks.
- Justifies the reasonableness of costs for direct labor, non-labor (e.g., indirect overhead, general and administrative costs, and subcontractor profit), and operating expenses by task.
- Explains why the hours proposed for personnel and subcontractors are reasonable to accomplish the activities in the Scope of Work (Attachment 6).
- Explains how the applicant will maximize funds for technical tasks and minimize expenditure of funds for program administration and overhead.



## EPIC Funds Spent in California (Criterion 6)

- Projects that spend EPIC funds in California will receive points as indicated in the table below. “Spent in California” means that: (1) Funds under the “Direct Labor” category and all categories calculated based on direct labor in the B-4 budget attachments (Prime and Subcontractor Labor Rates) are paid to individuals who pay California state income taxes on wages received for work performed under the agreement; and (2) Business transactions (e.g., material and equipment purchases, leases, rentals, and contractual work) are entered into with a business located in California.

Percentage of EPIC funds spent in CA (derived from budget attachment B-2)	Percentage of Possible Points
>60%	20%
>70%	40%
>80%	60%
>90%	80%
>100%	100%

- Airline ticket purchases and payments made to out-of-state workers are not considered funds “spent in California.” However, funds spent by out-of-state workers in California (e.g., hotel and food) are considered funds “spent in California.”



## **Ratio of Direct Labor and Fringe Benefit Rates to Loaded Labor Rates (Criterion 7)**

- The score for this criterion will derive from the Rates Summary worksheet (Tab B-7) in the budget forms, which compares the weighted direct labor and fringe benefits rate to the weighted loaded rate. This ratio, as a percentage, is multiplied by the possible points for this criterion.



## Project Match Funds (Criterion 8)

- Match funding is not required
- Applications with match funds will receive additional points during the scoring phase (up to 5 points)
- Points applied only for those that achieve a minimum score of 70.
- Match funding includes cash in hand, equipment, materials, information technology services, travel, subcontractor costs, contractor in-kind labor, advanced practice costs.
  - Refer to Section 1, item D-2 of the Application manual, pages 5-6
  - Advanced practice costs means the incremental cost difference between standard and advanced practices.
- Match funding sources may include those from the prime Applicant, subcontractors, and pilot test sites (e.g., test site staff services).
- Commitment letters are required from all match fund contributors (see requirements in Attachment 11)



## Grounds for Rejection

- An application may be rejected by the Energy Commission for the following reasons:
  - ✓ Application contains false or misleading statements
  - ✓ Application is intended to mislead the State in its evaluation
  - ✓ The application does not comply with the solicitation requirements
  - ✓ The application contains confidential information
  - ✓ Applicant is not in compliance with royalty provisions from previous Energy Commission awards
  - ✓ Applicant has received unsatisfactory evaluations from the Energy Commission or another California state agency
  - ✓ Applicant has not demonstrated financial capability to complete the project
  - ✓ Applicant is a business that is not in good standing with the California Secretary of State
  - ✓ The application is not submitted in the format specified



## Key Dates

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✓ Solicitation Release	May 15, 2014
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## Other Information

- **Updates on Solicitation Documents and today's presentation:** [www.energy.ca.gov/contracts/epic.html#PON-13-303](http://www.energy.ca.gov/contracts/epic.html#PON-13-303)
- **Sign up for the Listserver by selecting "Opportunity:"**  
[www.energy.ca.gov/listservers/](http://www.energy.ca.gov/listservers/)
- **Information on EPIC:** [www.energy.ca.gov/research/epic/index.html](http://www.energy.ca.gov/research/epic/index.html)
- **Information on other EPIC solicitations:**  
[www.energy.ca.gov/contracts/epic.html](http://www.energy.ca.gov/contracts/epic.html)



## Questions and Answers

- Please send all PON related questions in written form to:

Angela Hockaday  
Commission Agreement Officer  
[angela.hockaday@energy.ca.gov](mailto:angela.hockaday@energy.ca.gov)

**Deadline to submit questions is  
5:00 PM PDT, May 28, 2014!**