

GRANT SOLICITATION AND APPLICATION PACKAGE

**American Recovery and Reinvestment Act of
2009 Cost Share**



PON-08-011

PIER

**Energy Research, Development and
Demonstration Program**

June 18, 2009

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GRANT SOLICITATION AND APPLICATION

Subject Area: American Recovery and Reinvestment Act Cost Share

1. Release Date: June 18, 2009

2. Purpose:

This is a competitive solicitation, limited to applicants who are submitting applications to the federal government in response to energy research and development-related American Recovery and Reinvestment Act of 2009 (ARRA) funding opportunity announcement(s) (FOAs). The California Energy Commission (Energy Commission) through the Public Interest Energy Research (PIER) Program is offering eligible applicants funding to be used as cost share for their application to the federal government. The Energy Commission plans to allocate up to \$21 million of PIER electricity funds for cost share for current and future research-related ARRA funding opportunities.

To be eligible for funding, applicants must fulfill all of these requirements:

- Seek and obtain an award through one of the ARRA funding opportunity announcements identified in this solicitation.
- Address the pre-application requirements and final application evaluation criteria contained in this solicitation AND obtain a minimum passing score.
- Submit applications that are consistent with the goals of the PIER program (Public Resources Code Section 25620 et seq.) and of the relevant federal funding opportunity announcement.

3. Background:

The Energy Commission administers the PIER Program, which supports and funds energy research, development, and demonstration (RD&D) projects that will help improve the quality of life in California by bringing environmentally safe, affordable, and reliable energy services and products to the marketplace. The PIER Program annually awards up to \$62.5 million to conduct the most promising public interest energy research by partnering with RD&D organizations including individuals, businesses, utilities, and public or private research institutions. The PIER Program funds pioneering RD&D in the following programmatic areas: energy efficiency and demand response, renewable resources, advanced electricity generation, transmission and distribution, advanced transportation technologies, energy-related environmental research and climate science.

President Obama signed ARRA into law on February 17, 2009. Since then, the U.S. Department of Energy has released several solicitations on a variety of energy RD&D topics. They span the entire range of topics funded by PIER. It is the Energy

Commission's policy to encourage and support California entities applying for ARRA funding.

4. ARRA Funding Opportunity Announcements:

To participate in this solicitation, applicants must submit applications to the federal government in response to one or more of the following ARRA funding opportunity announcements:

- Enhanced Geothermal Systems Component Research and Development/Analysis, DE-FOA-0000075
- Enhanced Geothermal Systems Demonstration, DE-FOA-0000092
- Geothermal Technologies Program, DE-FOA-0000109
- High Penetration Solar Deployment, DE-FOA-0000085
- Building America Energy Efficient Housing, DE-FOA-0000099
- Solid State Lighting Round IV Core, DE-FOA-0000082
- Training Program Development for Commercial Building Equipment Technicians, Building Operators, Energy Commissioning Agents/Auditors, DE-FOA-0000118
- Solid State Lighting Product Development Round VI, DE-FOA-0000055
- Energy Efficient Information and Communication Technology, DE-FOA-0000107
- Smart Grid Investment Grant Program, DE-FOA-0000058
- Smart Grid Demonstrations, DE-FOA-0000036
- Geological Sequestration Training and Research, DE-FOA-0000032
- Site Characterization of Promising Geologic Formations for CO₂ Storage, DE-FOA-0000033
- Carbon Capture and Sequestration from Industrial Sources and Innovative Concepts for Beneficial CO₂ Use, DE-FOA-0000015
- Advanced Energy Efficient Building Technologies, DE-FOA-0000115

The Energy Commission reserves the right to add or delete ARRA funding opportunity announcements from this Solicitation.

Table 1: Due Dates and FOA Specific information

ARRA Funding Opportunity Announcement (FOA)	FOA Issue Date	Pre-Applications to Energy Commission by 4:00 p.m.	LOI Provided to Applicants	DOE Due Dates and Final Applications to Energy Commission by 4:00 p.m.	Tentative Dates for Federal Award Notifications	Technical Contact	Workshop Date
Enhanced Geothermal Systems Component Research and Development/ Analysis DE-FOA 0000075	5/27/09	7/07/09	7/10/09	7/24/09 Scored with Geothermal Scoring Criteria	9/09	Gail Wiggett gwiggett@energy.state.ca.us (916) 653-7551	Date: June 26, 2009 Time: 9:00-11:00 a.m. Location: 1516 9 th Street, Sacramento, CA 95814, Hearing Room B Computer Logon: https://energy.webex.com meeting # 923 835 568 Password: meeting@9am.
Enhanced Geothermal Systems Demonstration DE-FOA-0000092	5/27/09	7/20/09	7/23/09	8/06/09 Scored with Geothermal Scoring Criteria	9/09	Gail Wiggett	Date: June 26, 2009 Time: 9:00-11:00 am
Geothermal Technologies Program DE-FOA-0000109	5/27/09	7/10/09	7/15/09	7/29/09 Scored with Geothermal Scoring Criteria	12/09-1/10	Gail Wiggett	Date: June 26, 2009 Time: 9:00-11:00 a.m

High Penetration Solar Deployment DE-FOA-0000085	5/27/09	7/16/09	7/23/09	8/06/09 Scored with Solar Scoring Criteria	8/09	Prab Sethi psethi@energy.state.ca.us 916-654-4509	Date: June 26, 2009 Time: 1:00-3:00 p.m.
Building America Energy Efficient Housing, DE-FOA-0000099	6/29/09	8/10/09	8/17/09	10/5/09	11/09	Elaine Hebert Ehebert@energy.state.ca.us 916-654-4800	
Solid State Lighting Round IV Core, DE-FOA-0000082	6/29/09	8/18/09	8/25/09	10/13/09	11/09	Michael Seaman Mseaman@energy.state.ca.us 916- 654-4981	
Training Program Development for Commercial Building Equipment Technicians, Building Operators, Energy Commissioning Agents/Auditors, DE-FOA-0000118	6/29/09	7/27/09	8/3/09	9/21/09	11/09	Chris Scruton cscruton@energy.state.ca.us 916-653-0948	
Solid State Lighting Product Development Round VI, DE-FOA-0000055	6/29/09	8/3/09	8/10/09	9/28/09	11/09	Michael Seaman Mseaman@energy.state.ca.us 916- 654-4981	

Energy Efficient Information and Communication Technology, DE-FOA-0000107	6/2/09	7/13/09	7/17/09	9/8/09	10/09	Paul Roggensack proggens@energy.state.ca.us 916-654-6560	
Smart Grid Investment Grant Program DE-FOA-0000058	6/25/09	7/20/09	7/27/09	8/06/09	10/09	Pedro Gomez pgomez@energy.state.ca.us 916-653-4278	<p>Date: July 20, 2009 Time: 1:00-4:00 p.m. Location: 1516 9th Street, Sacramento, CA 95814, Hearing Room B Computer Logon: https://energy.webex.com meeting # 929 745 862 Password: meeting</p>
Smart Grid Demonstrations DE-FOA-0000036	6/25/09	8/3/09	8/14/09	8/26/09	11/09	Pedro Gomez	<p>Date: July 20, 2009 Time: 1:00-4:00 p.m. Location: 1516 9th Street, Sacramento, CA 95814, Hearing Room B Computer Logon: https://energy.webex.com meeting # 929 745 862 Password: meeting@1pm.</p>

<p>Geologic Sequestration Training and Research DE-FOA-0000032</p>	<p>6/29/09</p>	<p>7/20/09</p>	<p>7/27/09</p>	<p>8/11/09</p>	<p>12/23/09</p>	<p>Pedro Gomez</p>	<p>Date: July 20, 2009 Time: 9:00-12:00 p.m. Location: 1516 9th Street, Sacramento, CA 95814, Hearing Room B Computer Logon: https://energy.webex.com meeting # 920 530 021 Password: meeting@9am.</p>
<p>Site Characterization of Promising Geologic Formations for CO2 Storage DE-FOA-0000033</p>	<p>6/2/09</p>	<p>7/20/09</p>	<p>7/27/09</p>	<p>8/03/09</p>	<p>12/15/09</p>	<p>Pedro Gomez</p>	<p>Date: July 20, 2009 Time: 9:00-12:00 p.m. Location: 1516 9th Street, Sacramento, CA 95814, Hearing Room B Computer Logon: https://energy.webex.com meeting # 920 530 021 Password: meeting@9am</p>
<p>Carbon Capture and Sequestration from Industrial Sources and</p>	<p>6/08/09</p>	<p>7/20/09</p>	<p>7/27/09</p>	<p>8/07/09</p>	<p>9/09</p>	<p>Pedro Gomez</p>	<p>Date: July 20, 2009 Time: 9:00-12:00 p.m. Location: 1516 9th Street, Sacramento, CA 95814, Hearing</p>

Innovative Concepts for Beneficial CO2 Use DE-FOA-0000015							Room B Computer Logon: https://energy.webex.com meeting # 920 530 021 Password: meeting@9am
Advanced Energy Efficient Building Technologies, DE-FOA-0000115	6/29/09	8/3/09	8/12/09	10/5/09	12/09	Norm Bourassa njbouras@energy.state.ca.us (916) 654-4581	

5. Funding Information

The estimated funding available for this solicitation is up to \$21 million of PIER funds. The Energy Commission reserves the right to adjust the available funding for this solicitation. The maximum ARRA cost share to be awarded for any one application is provided in Table 2.

Pursuant to Executive Order S-09-09,¹ the Energy Commission may be prohibited from awarding match funding under this solicitation. The Applicant will be responsible for obtaining sufficient cost share to meet ARRA funding requirements if the Energy Commission is unable to successfully execute a funding agreement.

¹ <http://gov.ca.gov/executive-order/12460/>.

Table 2: Funding Maximums by FOA

ARRA Funding Opportunity Announcement	Maximum Energy Commission Cost Share for a Single project
Enhanced Geothermal Systems Component Research and Development/Analysis, DE-FOA-0000075	\$380,000
Enhanced Geothermal Systems Demonstration, DE-FOA-0000092	\$250,000
Geothermal Technologies Program, DE-FOA-0000109	\$410,000
High Penetration Solar Deployment, DE-FOA-0000085	\$500,000
Building America EE Housing, DE-FOA-0000099	\$200,000
Solid State Lighting Round IV Core, DE-FOA-0000082	\$200,000
Training Program Development for Commercial Building Equipment Technicians, Building Operators, Energy Commissioning Agents/Auditors, DE-FOA-0000118	\$120,000
SSL Product Development Round VI, DE-FOA-0000055	\$200,000
Energy Efficient Information and Communication Technology, DE-FOA-0000107	\$250,000
Smart Grid Investment Grant Program DE-FOA-0000058	Maximum \$1,000,000 or up to 10% whichever is less
Smart Grid Demonstrations DE-FOA-0000036	Maximum \$1,000,000 or up to 10% whichever is less
Geologic Sequestration Training and Research DE-FOA-0000032	Maximum \$30,000 or up to 20% whichever is less
Site Characterization of Promising Geologic Formations for CO2 Storage DE-FOA-0000033	Maximum \$500,000 or up to 20% whichever is less
Carbon Capture and Sequestration from Industrial Sources and Innovative Concepts for Beneficial CO2 Use DE-FOA-0000015	Maximum \$300,000 or up to 20% whichever is less
Advanced Energy Efficient Building Technologies, DE-FOA-0000115	\$400,000

The Energy Commission reserves the right to adjust the cost share for any single project.

6. Eligible Projects

To be eligible to receive cost share award, the project must advance the science and technology of energy technologies and meet the minimum scoring criteria. The project must also correspond to the eligibility requirements of the relevant ARRA funding opportunity announcement **and receive ARRA funding from the federal government.**

Projects must be based in California.

To be eligible for funding, applicants must fulfill all of these requirements:

- Seek and obtain an award through one of the ARRA funding opportunity announcements identified in this solicitation.
- Address the pre-application requirements and final application evaluation criteria contained in this solicitation AND obtain a minimum passing score.
- Submit applications that are consistent with the goals of the PIER program (Public Resources Code Section 25620 et seq.) and of the relevant federal funding opportunity announcement.

7. Eligible Applicants

This is an open solicitation and all types of organizations may be eligible to apply.² Proposals submitted under this solicitation may request funding only for new projects or new tasks associated with existing projects. Organizations may submit multiple applications. However, each application must be for a distinct, separate project and must be submitted separately adhering to all requirements contained in this solicitation.

California business entities as well as non-California business entities conducting intrastate business in California are required to register and be in good standing with the California Secretary of State to enter into an agreement with the Energy Commission. If not currently registered with the California Secretary of State, Applicants are encouraged to contact the Secretary of State's Office as soon as possible to avoid potential delays in beginning the proposed project (should the application be successful). For more information, contact the Secretary of State's Office via its website at www.sos.ca.gov.

8. Project Selection and Award Process:

The Energy Commission will employ the following two-step process involving submission of a pre-application and, if invited, a final application. Pre-applications and final applications that meet the eligibility requirements will be reviewed by an Evaluation Committee. The Evaluation Committee may consist of Energy Commission staff, staff of other agencies, private consultants, and/or other designated representatives of the State. The Evaluation Committee can utilize application reviewers to provide input on one or more applications. The Evaluation

² Please refer to the relevant ARRA funding opportunity announcement(s) for federal eligibility requirements.

Committee and any application reviewers will keep the contents of the pre-applications and final applications confidential until they become publicly accessible.

a) Pre-Applications

- The Energy Commission will consider pre-applications that contain all of the following information:
 - Cover Page (Attachment A).
 - Project Summary. For a pre-application to pass, **the Project Summary must address all bullets or questions specified in the appropriate project summary requirements, or provide a statement of why the bullet or question is not applicable.** The project summary requirements are specified in Attachment B.
 - California Environmental Quality Act (CEQA) Compliance Form (Attachment O, Form 1) if applicable.
 - Short biographies, no more than 200 words per person (for the Project Manager/Principal Investigator and key project personnel (individuals in your organization or subcontractors)), emphasizing education, licensing, and experience related to the activities to be performed in the proposed project. Be specific. Do not submit complete resumes.
 - Signature of the organization's authorized representative.
- **Grounds for rejection:** A pre-application **WILL** be rejected and not considered for funding if it:
 - Does not include the signature of the organization's authorized representative.
 - Does not meet requirements as defined in appropriate DOE FOA.
 - Requests an amount for any Project/Activity greater than the amount identified in Table 2.
 - Is not received by the Energy Commission by the specified date and time as listed in Table 1, corresponding to the applicable ARRA funding opportunity announcement(s).
 - Contains any information the Applicant has labeled as confidential, secret or protected in any manner. The Applicant's application will be returned and will not be considered.
 - Is inconsistent with the goals of PIER and/or the relevant ARRA funding source.
- The Energy Commission will provide a Letter of Intent (LOI) to Provide Funding for selected pre-applications. Applicants may include the Letter of Intent in an application for funding through any of the federal funding opportunity announcements specified in this solicitation. **Applicants that do not receive a Letter of Intent will not be eligible for cost share funding pursuant to this solicitation.** The Energy Commission will send a letter of rejection to unsuccessful applicants.

- A Summary including the applicant's name, requested PIER amount and project title will be made public. Applications will not be made public until the Notice of Proposed Awards (NOPA) is released.
- Applicants may request a debriefing to determine why their pre-application was not selected. A request for debriefing must be received no later than 30 days after Letters of Rejection are postmarked.

b) Final Applications

- Applicants must receive a Letter of Intent to submit a final application to the Energy Commission. **Receipt of a Letter of Intent does NOT guarantee that the final application will be approved for funding.**
- The final application must include the following:
 - Written proof that the application has been submitted to the federal government in response to an ARRA funding opportunity announcement. An example of written proof includes a printed copy of e-mail from appropriate federal agency confirming the receipt of the Applicant's relevant application.
 - A response to the scoring criteria (Attachment C).
 - A PIER Budget Workbook (Attachment F), Scope of Work (Attachment D), Product Schedule (Attachment G), CEQA Compliance Form (Attachment O, Form 2) if applicable, and Permitting Information Form (Attachment P) if applicable.
- **Grounds for Rejection.**
 - A final application **WILL** be rejected and not considered for funding if:
 - The Applicant has not submitted an application by the required deadline to the federal government in response to a federal ARRA solicitation.
 - The application is not received by the Energy Commission Grants and Loans office by 4 p.m. on the due date as specified in Table 1.
 - Contains any information the Applicant has labeled as confidential, secret or protected in any manner. The Applicant's application will be returned and will not be considered. The Energy Commission will accept DOE applications provided all confidential information is deleted.
 - Is inconsistent with the goals of PIER and the relevant FOA.
 - Requests an amount for any Project/Activity greater than the amount identified in Table 2.
 - A final application **MAY** be rejected and not considered for funding if:
 - It does not include a Resolution (if applicable). A resolution authorizing submission of the application is required from a local jurisdiction's governing body (Sample in Attachment Q).
- A Scoring Committee will score the final applications using the relevant criteria (Attachment C), taking into consideration the comments of reviewers. Scoring will be based on the merits of the project proposal. Table 1 defines the scoring criteria that will be applied to each proposal submitted pursuant to the relevant FOA. Each

proposal will be scored against other proposals competing under the same FOA. Rank orders will be established for eligible projects under each FOA.

- The Energy Commission may invite applicants to a clarification interview for their final applications. Applicants may appear in person at the Energy Commission or discuss the application by telephone. The Energy Commission will provide no reimbursement to any applicant for the interview appearance.
- A minimum score of 70% is required for the application to pass and be considered for cost share funding (eligible project). Additional scoring information is in Attachment C. Eligible projects will be ranked according to their overall score.
- Applicants whose projects are eligible and who meet the criteria of a California-Based Entity (CBE) may have preference points added to their final technical score, subject to certain restrictions. Please see Attachment M for more information. Applicants must request and demonstrate eligibility by filling out and submitting as part of the application package the questionnaire contained in Attachment N. Otherwise eligible applicants who do NOT submit the Attachment N questionnaire shall NOT be eligible for the CBE Preference Points.
- Projects obtaining at least the minimum score will be considered for cost share funding, starting with the highest ranked project. The Energy Commission reserves the right to determine the number of final applications it will fund, and for each application to negotiate with the Applicant: the final project scope, any additional special terms and conditions, and the level of funding received pursuant to this solicitation.
- After taking into consideration CBE preference points, eligible projects will be ranked within the federal solicitation category starting with the highest ranked project.
- The Energy Commission reserves the right to determine the number of final applications it will fund under each federal solicitation rank list, and for each winning application to negotiate with the Applicant: the final project scope, any additional special terms and conditions, and the level of funding received pursuant to this solicitation.
- The results of the Energy Commission's decision of proposed funding level, the rank order of proposers, and the amount of each proposed award will be released through a Notice of Proposed Awards (NOPA).
- Applicants may request a debriefing to determine why their Application was not selected. A request for debriefing must be received no later than 30 days after the release of NOPA.
- Applicants proposed for an award pursuant to this solicitation will be required to prepare a detailed set of award documents, including but not limited to: a Scope of Work (Attachment D), a schedule of products and due dates (Attachment G), and detailed budget documents.
- Upon receiving the required documents, the Energy Commission will prepare a Grant Agreement, including applicable Terms and Conditions³ and any additional terms and conditions, and send it to the grant recipient for review, approval, and signature.

³ Samples of the required detailed award documents and the Grant Terms and Conditions can be found at [<http://www.energy.ca.gov/contracts/>] as part of this solicitation package. However, please note that the Energy Commission reserves the right to modify the award documents and/or the Grant Terms and Conditions prior to executing Grant Agreements.

- The Grant Agreement will be scheduled and heard at an Energy Commission Business Meeting for approval. If approved, the Energy Commission will fully execute the Grant Agreement. Recipients are approved to begin the project only after the date of the full and final execution of the Grant Agreement.
- If the Energy Commission is unable to successfully execute a funding agreement with an Applicant, the Applicant will be responsible for obtaining sufficient cost share to meet ARRA funding requirements.

9. Schedule of Application and Award Process:

Event	Date
Release of Solicitation	June 18, 2009
Workshop	June 26, 2009
Posting of Questions & Answers from Workshop	June 29, 2009
Deadline to Submit Written Questions	June 30, 2009
Posting of Questions and Answers	July 6, 2009
Deadline to Submit Pre-Applications	By 4 p.m. on the date listed in Table 1
Release of Letters of Intent	As listed in Table 1
Deadline to Submit Final Applications	By 4 p.m. on the date listed in Table 1
Approval of Awards at Energy Commission Business Meeting	TBD

Further information will be released in addendums as it becomes available.

10. Confidential Information:

Do not submit confidential information as part of the pre-application or final application. Applications containing such information will be returned without consideration.

Applicants may *propose* to deliver confidential products during the course of the project if funded. If necessary, instructions on submitting confidential products will be provided by the Energy Commission prior to executing the Grant Agreement.

11. Administrative Information:

Federal

Projects selected by the federal government for ARRA funding must comply with federal administrative and national policy requirements. Applicants must review the relevant ARRA funding opportunity announcement(s) for information regarding these requirements.

State

- **Payment of Prevailing Wage**

Some projects under this solicitation might be considered public works pursuant to the California Labor Code. If the project is a public work, prevailing wage is required. The California Department of Industrial Relations (DIR) has jurisdiction to decide whether a particular project is or is not a public work. If the project involves construction, alteration, demolition, installation, repair or maintenance work, it probably would be considered by DIR to be a public work. Examples of the activities that would probably lead DIR to find that the project involves public works include: cement work, site preparation such as grading, surveying, electrical work such as wiring, and carpentry work. Certain workers are entitled to prevailing wage, such as operating engineers, surveyors, carpenters, laborers, etc. However, other trades are not entitled to prevailing wage, such as engineers and project superintendents.

Applicants are encouraged to determine if the proposed project involves public works as soon as possible. In order to determine if the proposed project involves public works, please contact DIR as directed in Attachment J. If the Applicant is unsure whether the proposed project involves public works and has not received a determination from DIR that the project is not a public work, the proposed budget must provide for the payment of prevailing wages. Indicate whether the proposed budget includes prevailing wage.

If the proposed project is a public work, DIR maintains a list of covered trades and the applicable prevailing wage. Any agreement resulting from this solicitation will include the requirements for a public works project, such as paying prevailing wage, keeping payroll records, complying with working hour requirements, and apprenticeship obligations. See the sample terms and conditions, the Special Condition regarding Prevailing Wage Compliance (Attachment J), and Prevailing Wage Compliance Certification Form (Attachment K).

For detailed information about prevailing wage and the process to determine if the proposed project is a public work, see the Prevailing Wage Compliance Questions and Answers (Attachment L).

- **California Environmental Quality Act**

Projects selected for funding may meet the definition of a “project” for purposes of the California Environmental Quality Act (CEQA). (See Public Resources Code section 21000 et seq.) If this occurs, the Energy Commission’s Legal staff will review the projects to determine whether an exemption applies that would prevent further actions under CEQA. If no exemption applies, certain CEQA requirements (such as, preparation of a negative declaration or environmental impact report) will have to be met prior to the Energy Commission approving the grant. The Applicant will have to pay the cost for these activities. Please refer to Title 20, California Code of Regulations, Chapter 6, Article 1, including section 2308. CEQA must be addressed in Attachment O.

12. Submission Deadlines:

Pre-applications

Five written (physical) copies and one CD with electronic files for all documents of each pre-application must be **received** by the Energy Commission’s Grants and Loans Office by 4:00

p.m. on the due date in accordance with Table 1. Neither postmark dates of mailing nor electronic transmissions (i.e., facsimile (Fax) or e-mail) are acceptable in whole or in part under any circumstances. The Energy Commission will reject all applications not received by the Grants and Loans Office by the stated due date and time.

Pre-applications may be mailed or hand delivered to:

Crystal Willis
California Energy Commission
Grants and Loans Office
Attn: American Recovery and Reinvestment Act of 2009 Cost Share
1516 Ninth Street, MS-1
Sacramento, CA 95814
cpresley@energy.state.ca.us

Final applications

Five written (physical) copies and one CD with electronic files for all documents submitted in word or excel files of each final application must be **received** by the Energy Commission's Grants and Loans Office by 4:00 p.m. on the due date in accordance with Table 1. Neither postmark dates of mailing nor electronic transmissions (i.e., facsimile (Fax) or e-mail) are acceptable in whole or in part under any circumstances. The Energy Commission will reject all applications not received by the Grants and Loans Office by the stated due date and time.

Crystal Willis
California Energy Commission
Grants and Loans Office
Attn: American Recovery and Reinvestment Act of 2009 Cost Share
1516 Ninth Street, MS-1
Sacramento, CA 95814
cpresley@energy.state.ca.us

13. Availability of Solicitation Documents and Information:

This solicitation, all supporting documents and forms can be found at

www.energy.ca.gov/contracts/index.html under "Current Solicitations." Interested parties may also sign on to the electronic mailing list on this webpage to be notified of any changes to this solicitation.

For those parties without Internet access, copies of this solicitation can be obtained by contacting:

California Energy Commission
Grants and Loans Office
1516 Ninth Street, MS-1
Sacramento, CA 95814
Telephone: 916-654-5067

Interested parties may also request to be added to the mailing notification list to receive changes made to this solicitation.

14. Amendment or Cancellation of this Solicitation:

The Energy Commission reserves the right to do any of the following:

- Cancel this solicitation;
- Amend or revise this solicitation as needed; or
- Reject any or all applications received in response to this solicitation.

15. Workshop:

The Energy Commission has held workshops to discuss solicitations and may continue to hold workshops as new funding opportunities are announced. See Table 1 for a list of scheduled workshops. Minutes from previous workshops may be found on the Energy Commission Website.

Workshops may be attended in person, online or by phone. General instructions for attendance are listed below.

Remote Attendance

- **Web Conferencing** - Presentations and audio from the meeting will be broadcast via our WebEx web conferencing system. For details on how to participate via WebEx, please see the "Participation through WebEx" section at the end of this notice.
- **Conference Call** - To participate in the meeting by phone, please call (866) 469-3239 by 9 a.m. Passcode: please see Table 1. Call Leader: Rizaldo Aldas

Public Participation

The Energy Commission's Public Adviser's Office provides the public assistance in participating in Energy Commission activities. For information on how to participate in this forum, please contact the Public Adviser's Office at (916) 654-4489 or toll free at (800) 822-6228, by FAX at (916) 654-4493, or by e-mail at [PublicAdviser@energy.state.ca.us].

If you have a disability and require assistance to participate, please contact Lou Quiroz at (916) 654-5146 at least five days in advance.

Please direct all news media inquiries to the Media and Public Communications Office at (916) 654-4989, or by e-mail at [mediaoffice@energy.state.ca.us].

If you have technical questions on the subject matter, please contact Ms. Sandra Fromm of the Energy Generation Research Office at 916-653-9355 or e-mail at Sfromm@energy.state.ca.us.

Participation through WebEx, the Energy Commission's on-line meeting service

Computer Logon with a Direct Phone Number:

- Please go to [<https://energy.webex.com>] and enter the unique meeting number please see Table 1.
- When prompted, enter your information and the following meeting password please see Table 1.
- After you login, a prompt will appear on-screen for you to provide your phone number. In the Number box, type your area code and phone number and click OK to receive a call back on your phone for the audio of the meeting. International callers can use the "Country/Region" button to help make their connection.

Computer Logon for Callers with an Extension Phone Number, etc.:

- Please go to [<https://energy.webex.com>] and enter the unique meeting number please see Table 1.
- When prompted, enter your information and the following meeting password please see Table 1.
- After you login, a prompt will ask for your phone number. CLICK CANCEL.
- Instead call (866) 469-3239 (toll-free in the U.S. and Canada). When prompted, enter the meeting number above and your unique Attendee ID number which is listed in the top left area of your screen after you login. International callers can dial in using the "Show all global call-in numbers" link (also in the top left area).

Telephone Only (No Computer Access):

Call (866) 469-3239 (toll-free in the U.S. and Canada) and when prompted enter the unique meeting number above. International callers can select their number from [<https://energy.webex.com/energy/globalcallin.php>].

If you have difficulty joining the meeting, please call the WebEx Technical Support number at 1-866-229-3239. Please be aware that the meeting's WebEx audio and on screen activity may be recorded.

16. Questions:

For technical questions about this solicitation please refer to the contact information on Table 1. For administrative questions about this solicitation please contact:

California Energy Commission
Grants and Loans Office
Attn: American Recovery and Reinvestment Act of 2009 Cost Share
1516 Ninth Street, MS-1
Sacramento, CA 95814

or

Email: cpresley@energy.state.ca.us
(916) 654-5067

Questions received prior to the workshop will be answered at the Workshop and will be posted on the Energy Commission's website. All questions and answers will be posted on the Energy Commission website at [www.energy.ca.gov/contracts] as part of this solicitation package. The person and organization submitting a question will not be identified.

17. Attachments:

- A – Cover Page and Summary Form
- B – Pre-Application Project Summary
- C – Final Application Scoring Criteria
- D – Scope of Work Template
- E – Instructions for the Scope of Work Template
- F – Budget Template and Instructions
- G – Schedule of Products and Due Dates Template and Instructions
- H – Topic Areas and Examples of Previously Funded Solar Projects
- I – Topic Areas and Examples of Previously Funded Geothermal Projects
- J – Prevailing Wage Compliance
- K – Prevailing Wage Compliance Certification Form
- L – Prevailing Wage Compliance Questions and Answers
- M – Preference Points for California Based Entities
- N – CBE Preference Points Questionnaire
- O – California Environmental Quality Act (CEQA) Compliance Forms
- P – Permitting Information Form
- Q – Sample Resolution
- R – Sample Terms and Conditions

ATTACHMENT A**American Recovery and Reinvestment Act of 2009 Cost Share
Instructions for Pre-Application Cover Page****Item a (Project Title):**

Provide a title for the project that is descriptive of the proposed work. The title must communicate the type of work being proposed. Avoid trademarked names and acronyms that are not well understood by the general public. The title shall not exceed 10 words.

Item b (AARA Funding Opportunity Announcement):

List the American Recovery and Reinvestment Act of 2009 funding opportunity announcement and number identifier to which you will be responding

Item c (ARRA Funding Requested):

Provide the amount of ARRA funds you are requesting from the federal government.

Item d (Energy Commission Funds Requested):

Specify the amount of cost share funds you are requesting from the Energy Commission, and the minimum funding (total from ARRA and Energy Commission and other sources) required to allow the project to proceed.

Item e (Proposed Project Duration):

Specify how many months you need to complete the project. Project duration cannot exceed 48 months.

Item f (Project Category):

Check the box that corresponds to the overall category of the project.

Item g (Principal Investigator/Project Manager):

In most cases the Principal Investigator also serves as the Project Manager. If this is not the case then list the Project Manager in item f.

Item h (PI/PM Certification):

Include the signature of the Principal Investigator/Project Manager. Include a date after the signature.

ATTACHMENT A**APPLICATION COVER PAGE TEMPLATE AND INSTRUCTIONS**

[The application cover page template for this solicitation is a separate Microsoft Word document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

ATTACHMENT B**American Recovery and Reinvestment Act of 2009 Cost Share
Pre-Application Project Summary Requirements**

The Pre-application project summary must address the requirements specified in the relevant section below. **Please limit your response to no more than five pages.** Be as concise as possible.

I. Solar pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered and project duration.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed development vs. current practices, and broad applicability and adaptability for other similar applications in the State of California.
4. Describe the potential impact of the technology on California industry, market and accelerated deployment of renewable energy. Explain projected cost reduction impact in dollar/watt and levelized cost of electricity.
5. Describe how the proposed project will help meet the goals of California Solar Initiative, California's Renewable Portfolio Standard, and California's Global Warming Solutions Act (AB 32). Quantify results and benefits for above mentioned policy goals.
6. Discuss proposed project system integration with the California utility grid and resulting benefits.

II. Geothermal pre-application

All Applicants:

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, products to be delivered and project duration.
2. List additional funding partners, and the total project budget. List team members (such as universities, national laboratories and utilities) and project site location.
3. Describe the products to be delivered.
4. How will this project support California's economic recovery in the near term and create or sustain jobs and local income or tax revenue? Quantify your answers to the extent possible, and include time frames.

Please answer the additional questions for each specific FOA for which you are applying:

EGS Component R&D/Analysis DE-FOA-0000075:

- a. Have you chosen a site(s) in California to demonstrate or test this technology and at what other sites would you expect this technology to be useable, if successful? Have you discussed the deployment of this technology with companies operating in California? If so describe the results.

EGS Demonstration DE-FOA-0000092:

- b. The U.S. Department of Energy envisions a 4-6 year time frame for these projects, but there is a need to increase power production as quickly as possible to facilitate economic recovery. Describe the site-specific factors that would cause the recipient to shorten or lengthen this time frame.
- c. Any new power plant built in California will face issues surrounding connection to the transmission grid. Describe as specifically as possible the ability of a power plant at the project demonstration site to connect to the grid in California. Include quantities such as distances to collection lines or substations, feed in capacities, connection voltages, distance, isolation, power quality, voltage and metering.

Geothermal Technologies DE-FOA-0000109:

- d. Have you chosen a site(s) in California to demonstrate or test this technology and at what other sites would you expect this technology to be useable, if successful? Have you discussed the deployment of this technology with companies operating in California? If so, describe the results.

III. Advanced Energy Efficient Building Technologies (DE-FOA-0000115) pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered and project duration.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed development vs. current practices, and broad applicability and adaptability for use in the State of California.
4. Describe the potential impact of the project on California industry and markets and how it accelerates deployment of energy efficiency. Explain projected cost reduction impact (e.g., annual energy and cost savings and demand savings).
5. Describe how the proposed project will help meet the goals of the California's Global Warming Solutions Act (AB 32). Quantify results and benefits.
6. How will this project support California's economic recovery in the near term and create or sustain jobs and local income or tax revenue? Quantify your answers to the extent possible, and include time frames.

IV. Building America (DE-FOA-0000099) pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered and project duration.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed development vs. current practices, and broad applicability and adaptability for use in the State of California.
4. Describe the potential impact of the project on California industry and markets and how it accelerates deployment of energy efficiency. Explain projected energy cost reduction impact (e.g., annual energy and cost savings and demand savings).
5. Describe how the proposed project will help meet the goals of the California's Global Warming Solutions Act (AB 32). Quantify results and benefits.
6. How will this project support California's economic recovery in the near term and create or sustain jobs and local income or tax revenue? Quantify your answers to the extent possible, and include time frames.

V. Solid State Lighting Core (DE-FOA-0000082) pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered and project duration.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed technology vs. current systems, and broad applicability and adaptability for use in the State of California.
4. Describe the potential impact of the technology on California's lighting industry and markets and how it accelerates and advances energy efficient lighting. Explain projected cost reduction impact (e.g., annual energy and cost savings and demand savings).
5. Describe how the proposed project will help meet the goals of the California's Global Warming Solutions Act (AB 32). Quantify results and benefits.

VI. Solid State Lighting Product (DE-FOA-0000055) pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered and project duration.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. List team members (such as universities,

national laboratories and utilities), relevant experience and project site location.

3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed project vs. current systems, and broad applicability and adaptability for use in the State of California.

Describe the potential impact of the technology on California's lighting industry and market and how it accelerates and advances energy efficient lighting. Discuss the plan for accelerated deployment of the product. Explain projected cost reduction impact (e.g., annual energy and cost savings and demand savings).

VII. Training Program (DE-FOA-0000118) pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered and project duration.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the **total project budget**. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed project vs. current practices, and broad applicability and adaptability for use the State of California.
4. Describe the potential impact of the project on California's energy efficiency industry and markets. Discuss how it advances and accelerates energy efficiency deployment in California. Explain projected cost reduction impact (e.g., annual energy and cost savings and demand savings).
5. Describe how the proposed project will help meet the goals of the California's Global Warming Solutions Act (AB 32). Quantify results and benefits.

VIII. Energy Efficient Information and Communication Technology (DE-FOA-0000107) Pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered and project duration.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed project vs. current practices, and broad applicability and adaptability for the State of California.
4. Describe the potential impact of the technology on California IT and communication industry. Explain projected cost reduction impact (e.g., annual energy and cost savings and demand savings).
5. Describe how the proposed project will help meet the goals of the California's Global Warming Solutions Act (AB 32). Quantify results and benefits.

IX. Smart Grid Demonstrations (DE-FOA-0000036) Pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered, project duration, costs and benefits.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. Identify the collaborating grid owner for your project and include point of contact. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed development vs. current practices, and broad applicability and adaptability for other similar applications in the State of California.
4. Describe the potential impact of the technology on California industry, market and accelerated deployment of renewable energy technologies.

Please answer the additional questions:

1. Describe the proposed project. Identify the application category from the following list:
 - Battery Storage for Utility Load Shifting or for Wind Farm Diurnal Operations and Ramping Control
 - Frequency Regulation Ancillary Services
 - Distributed Energy Storage for Grid Support
 - Compressed Air Energy Storage (CAES)
 - Demonstration of Promising Energy Storage Technologies

X. Smart Grid Investment Grant Program (DE-FOA-0000058) Pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered, project duration, costs and benefits.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. Identify the collaborating grid owner for your project and include point of contact. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed development vs. current practices, and broad applicability and adaptability for other similar applications in the State of California.
4. Describe the potential impact of the technology on California industry, market and accelerated deployment of renewable energy technologies.

Please answer the additional questions:

1. Describe the proposed project. Identify the “smart grid functions” application category from the following list:
 - a. “The ability to develop, store, send and receive digital information concerning electricity use, costs, prices, time of use, nature of use, storage, or other information relevant to device, grid, or utility operations, to or from or by means of the electric utility system, through one or a combination of devices and technologies.
 - b. The ability to develop, store, send and receive digital information concerning electricity use, costs, prices, time of use, nature of use, storage, or other information relevant to device, grid, or utility operations to or from a computer or other control device.
 - c. The ability to measure or monitor electricity use as a function of time of day, power quality characteristics such as voltage level, current, cycles per second, or source or type of generation and to store, synthesize or report that information by digital means.
 - d. The ability to sense and localize disruptions or changes in power flows on the grid and communicate such information instantaneously and automatically for purposes of enabling automatic protective responses to sustain reliability and security of grid operations.
 - e. The ability to detect, prevent, communicate with regard to, respond to, or recover from system security threats, including cyber-security threats and terrorism, using digital information, media, and devices.
 - f. The ability of any appliance or machine to respond to such signals, measurements, or communications automatically or in a manner programmed by its owner or operator without independent human intervention.
 - g. The ability to use digital information to operate functionalities on the electric utility grid that were previously electro-mechanical or manual.
 - h. The ability to use digital controls to manage and modify electricity demand, enable congestion management, assist in voltage control, provide operating reserves, and provide frequency regulation.”
 - i. Other as described in the FOA.

XI. Geologic Sequestration Training and Research (DE-FOA-000032) Pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered, project duration, costs and benefits.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. Identify the collaborating grid owner for your project and include point of contact. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed development vs. current practices, and broad applicability and adaptability for other similar applications in the State of California.
4. Describe the potential impact of the technology on California industry, market and accelerated deployment of renewable energy technologies.

Please answer the additional questions:

1. What is the relationship if any of the proposed project to ongoing WESTCARB regional partnership activities?

XII. Site Characterization of Promising Geologic Formations for CO2 Storage (DE-FOA-000033) Pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered, project duration, costs and benefits.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. Identify the collaborating grid owner for your project and include point of contact. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed development vs. current practices, and broad applicability and adaptability for other similar applications in the State of California.
4. Describe the potential impact of the technology on California industry, market and accelerated deployment of renewable energy technologies.

Please answer the additional questions:

1. What is the relationship if any of the proposed project to ongoing WESTCARB regional partnership activities?

XIII. Carbon Capture and Sequestration from Industrial Sources and Innovative Concepts for Beneficial CO2 Use (DE-FOA-000015) Pre-application

1. Describe the proposed project. Identify specific quantified goals, address barriers and their resolution, tasks, products to be delivered, project duration, costs and benefits.
2. State the amount of funding needed from the Energy Commission, other match funding partners, and the total project budget. Identify the collaborating grid owner for your project and include point of contact. List team members (such as universities, national laboratories and utilities), relevant experience and project site location.
3. Describe the products to be delivered. Discuss anticipated performance improvements (technical and operational) of the proposed development vs. current practices, and broad applicability and adaptability for other similar applications in the State of California.
4. Describe the potential impact of the technology on California industry, market and accelerated deployment of renewable energy technologies.

Please answer the additional questions:

1. What is the relationship if any of the proposed project to ongoing WESTCARB regional

partnership activities?

2. If responding to technology area 1: Is the proposed storage in a saline formation or an oil/gas reservoir?
3. What is the CO₂ source - refinery, cement plant, etc.?

ATTACHMENT C**American Recovery and Reinvestment Act of 2009 Cost Share
Final Application Scoring Criteria**

The Energy Commission will fully evaluate each proposed project using the scoring criteria and methodology described in the relevant sections below. Applicants' responses to the scoring criteria must be based on the entire project as proposed to the Federal government in response to an ARRA solicitation, and may not be limited to the portion of the project for which Energy Commission cost share funds are being requested.

Applicants must provide no more than 20 pages, using 12 point font, single space and one inch margin on all sides, of qualitative and quantitative supporting documents for this attachment.

I. Solar application**1. Technical Merit:****Maximum Possible Points: 20**

- The current status of the proposed technology as it has been developed by the research and industrial community at large.
- How the proposed project will address current barriers or knowledge gaps to advance the state-of-the-art and market acceptance.
- Past and current work in the subject technology performed by the project team and others, including successes and failures.
- The extent to which the project will address the objectives of the PIER Program in the area of Solar and Energy Storage.
- How the proposed project will help meet the goals of California Solar Initiative, California's Renewable Portfolio Standard, and California's Global Warming Solutions Act (AB 32).

2. Description of Proposed RD&D**Maximum Possible Points: 30**

- The technical tasks are clearly and logically presented, with appropriate objectives, logical and discrete tasks, sequence of activities, products produced, deliverables, schedule, and budget.
- The application describes the scientific and technical principles underlying the proposed work, and the manner in which the scientific and engineering principles will be applied.
- The distinctive and innovative features of the approach are discussed.
- The likelihood of success based upon a sound research plan.

3. Identified Targets, Goals, and Market Application

Maximum Possible Points: 25

- The proposed project is cost effective and will significantly help in adding additional solar generation capacity.
- The extent to which the project addresses significant key issues and barriers to the development and market acceptance of solar technology.
- Quantitative or measurable technical and economic performance goals and the methodology used to determine if the goals have been achieved.
- How the project will fulfill market needs. A reasonable path is described for commercialization of the technology if the project is successful.
- Quantified results and benefits for meeting policy goals of CSI, RPS and AB 32.

4. Qualifications of Project Manager and Project Team

Maximum Possible Points: 25

- The Project Manager and team members have the technical capabilities, specific experience and financial capability to successfully complete the project.
- The Project Manager can successfully manage the project, control cost, and maintain the schedule, and report results and accomplishments in an effective manner.
- The application clearly and adequately presents capabilities and experience of the team members to perform the proposed work for different tasks.
- The application presents the team members' collaboration to perform and facilitate transfer of project products to the marketplace. Is electric utility part of the team?
- The project cost is consistent with the work to be performed and is justified.
- The PIER funding request, match funding, and need for PIER funding are appropriate and consistent with the expected level of public benefits if the project is successful

II. Geothermal application

1. Policy

Maximum Possible Points: 5

- The degree to which the project addresses key issues or problems facing the geothermal industry in California and/or:
- Is applicable to relevant goals and objectives stated in the Commission's Energy Action Plan (available on the Energy Commission website at www.energy.ca.gov) and/or:
- Accelerates the goals of the California Renewable Portfolio Standard, SB 1078.

2. Increased Geothermal Presence in California**Maximum Possible Points: 5**

- The degree to which the project can demonstrate the ability to attract and support geothermal development of new or underutilized geothermal resources in California and/or enhance existing resources.

3. Public vs. Private Benefits**Maximum Possible Points: 5**

- The degree to which the project is likely to create or retain jobs, provide local revenue and support California businesses;
- The degree to which the project demonstrates overall benefits to California in addition to private benefits to the applicant, with consideration of the proportion of match provided by the applicant from other than public sources.

4. Innovation**Maximum Possible Points: 10**

- The degree to which the application demonstrates that the project will increase the reliability of site characterization, and/or:
- Lead to improved well targeting, innovations in tools, models, remote sensing, reservoir management and modeling, or other applications usable in California, above and beyond what is present practice.

5. Technical Merit**Maximum Possible Points: 15**

- As applicable, the degree to which the application demonstrates the technical merit and feasibility of the proposed work, including but not limited to, understanding of the current state of the art within California;
- Adequacy of the existing site characterization data and/or understanding of the resource quality and potential;
- Adequacy of the plan to validate and test the proposed technology or measure the success of a field stimulation/enhancement activity.

6. Project Implementation**Maximum Possible Points: 15**

- Clarity of statement of goals and objectives, including specific measures of success;
- Adequacy and clarity of a plan to address potential risks, liabilities, or problems that may arise;
- Adequacy and reasonableness of the budget;
- Appropriateness of proposed decision points and milestones.

7. Life Cycle Costs**Maximum Possible Points: 15**

- The degree to which the project reduces the life-cycle cost of geothermal electricity generation in California by, including but not limited to, improving the efficiency and reducing the cost of resource exploration and assessment, permeability detection, mapping, well siting, drilling and well completion, power plant design and construction, reservoir monitoring and management, or power plant surface facilities.

8. Efficiency and Capacity**Maximum Possible Points: 15**

- The degree to which the project increases the capacity, efficiency and/or sustainability of existing California geothermal facilities and/or:
- Adds new geothermal generation capacity in California, creates value-added products and income streams from existing plants and/or:
- Reduces operation and maintenance costs of wells and plants.

9. Likelihood of Success**Maximum Possible Points: 5**

- The degree to which the applicant demonstrates the ability to implement and complete the project, including but not limited to, the qualifications and experience of the team; feasibility of the project at the proposed site; cost-effectiveness; clarity, conciseness and quality of the research and implementation plan; and the degree of commitment from other partners.

10. Tech transfer**Maximum Possible Points: 5**

- If applicable, the degree to which the technology, methods or products are transferable to other geothermal fields within California, and the adequacy of the technology transfer or information dissemination plan.

11. Potential major hurdles and other considerations**Maximum Possible Points: 5**

- As applicable, the extent of the characterization, planning and regulatory and environmental permitting and status of CEQA compliance, and/or:
- The demonstrated availability and sustainability of sufficient water or other means for a stimulation or enhancement project; and/ or:
- Adequacy of transmission availability to support the proposed project in a timely fashion; and/or:
- Extent to which the project may contribute to or fit in with a local distributed generation system or integrate with other renewables.

III Training Program Development for Commercial building Equipment Technicians, Building Operators, Energy Commissioning Agents/Auditors Application

1 Qualifications of Team and Institution

Maximum Possible Points: 20

- Experience with curriculum and or program development
- Teaching/training experience
- Established institution
- Credentials of team members
- Experience and qualifications with subject matter

2 Scalability of Research Project Results

Maximum Possible Points: 20

- Can development products be used in other institutions
- Intellectual property issues
- Transfer media and accessibility
- Educational market size
- Infrastructure requirements for deployment and use

3 Need for Research Products

Maximum Possible Points: 20

- Similarity of comparable program materials
- Institutional demand for materials
- Ready student population for materials
- Demand for trained workforce

4 Potential Energy Impacts

Maximum Possible Points: 20

- Training addresses a significant energy issue
- Training has potential to impact issue

5 Connections to Marketplace

Maximum Possible Points: 20

- Training materials have conduit to marketplace
- Institutions or media have strong market presence
- Relevance to certification standards

IV Solid State Lighting (Core and Product Development) Applications

1 Qualifications of Team and Institution**Maximum Possible Points: 20**

- Experience with product/technology development
- Established institution or company
- Credentials of team members
- Experience and qualifications with subject matter

2 Scalability of Research Project Results**Maximum Possible Points: 20**

- Research products can be used by other institutions/companies
- Intellectual property issues
- Technology Transfer potential
- Market size

3 Need for Research Products**Maximum Possible Points: 20**

- Similarity of existing or soon-to-be-developed products
- Commercial demand for products
- Qualified companies available for product manufacture

4 Potential Energy Impacts**Maximum Possible Points: 20**

- product addresses a significant energy issue
- product has potential to impact issue
- likelihood of technical success

5 Connections to Marketplace**Maximum Possible Points: 20**

- Products have conduit to marketplace
- Companies involved have strong market presence
- Meets or exceeds relevant performance standards
- Likelihood of commercial success

V Building America Energy Efficient Housing Application

1 Qualifications of Team and Institution**Maximum Possible Points: 20**

- Experience with building technology development
- Established institution or company
- Credentials of team members
- Experience and qualifications with subject matter

2 Scalability of Research Project Results**Maximum Possible Points: 20**

- Research products can be used by other institutions/companies
- Intellectual property issues
- Technology Transfer potential
- Market size

3 Need for Research Products**Maximum Possible Points: 20**

- Similarity of existing or soon-to-be-developed technology
- Commercial demand or potential for products
- Qualified companies available for product manufacture
- Production or custom builders can easily adopt techniques

4 Potential Energy Impacts**Maximum Possible Points: 20**

- Research project addresses a significant energy issue
- project has potential to impact issue
- likelihood of technical success

5 Connections to Marketplace**Maximum Possible Points: 20**

- Research products have conduit to marketplace
- Companies and/or builders involved have strong market presence
- Products meet or exceed relevant performance standards
- Likelihood of commercial success

VI Energy Efficient Information and Communications Technology Application**1 Technical Merit**

Maximum Possible Points: 25

- Research project addresses a significant energy issue in the Information and Communications Technology industry. The project thoroughly describes the technical barriers, knowledge gaps and deficiencies that impede market penetration of energy efficiency technologies within the industry.
- The current status of the proposed technology as it has been developed by the research and industrial community at large.
- How the proposed project will address current barriers or knowledge gaps to advance the state-of-the-art and market acceptance.
- Past and current work in the subject technology performed by the project team and others, including successes and failures.

2 Description of Proposed RD&D**Maximum Possible Points: 30**

- The technical tasks are clearly and logically presented, with appropriate objectives, logical and discrete tasks, sequence of activities, products produced, deliverables, schedule, and budget.
- The application describes the scientific and technical principles underlying the proposed work, and the manner in which the scientific and engineering principles will be applied.
- The distinctive and innovative features of the approach are discussed.
- The likelihood of success based upon a sound research plan.

3 Performance Goals and Commercialization Path**Maximum Possible Points: 25**

- The extent to which the project addresses significant key issues and barriers to the development and market acceptance of energy efficiency technologies within the industry.
- Quantitative or measurable technical and economic performance goals and the methodology used to determine if the goals have been achieved.
- A reasonable path is described for commercialization of the technology if the project is successful.
- Market penetration goals or estimates are provided based on technical and economical potential.

4 Qualifications of Team and Institution**Maximum Possible Points: 20**

- The description demonstrates that the project team is qualified to undertake the proposed project.

- Project manager and team members have the technical capabilities and specific experience to successfully complete the project.
- The Project Manager can successfully manage the project, control cost, maintain the schedule, and report results and accomplishments in an effective manner.
- Project team has past success in taking research, development, and technology demonstration products to market and the experience, skills and market connections to help ensure market transfer of the products and knowledge that result from the project.

VII Advanced Energy Efficient Building Technologies Application

1 Technical Merit

Maximum Possible Points: 25

- Research project addresses a significant energy issue in the Information and Communications Technology industry. The project thoroughly describes the technical barriers, knowledge gaps and deficiencies that impede market penetration of energy efficiency technologies within the industry.
- The current status of the proposed technology as it has been developed by the research and industrial community at large.
- How the proposed project will address current barriers or knowledge gaps to advance the state-of-the-art and market acceptance.
- Past and current work in the subject technology performed by the project team and others, including successes and failures.

2 Description of Proposed RD&D

Maximum Possible Points: 30

- The technical tasks are clearly and logically presented, with appropriate objectives, logical and discrete tasks, sequence of activities, products produced, deliverables, schedule, and budget.
- The application describes the scientific and technical principles underlying the proposed work, and the manner in which the scientific and engineering principles will be applied.
- The distinctive and innovative features of the approach are discussed.
- The likelihood of success based upon a sound research plan.

3 Performance Goals and Commercialization Path

Maximum Possible Points: 25

- The extent to which the project addresses significant key issues and barriers to the development and market acceptance of energy efficiency technologies within the industry.

- Quantitative or measurable technical and economic performance goals and the methodology used to determine if the goals have been achieved.
- A reasonable path is described for commercialization of the technology if the project is successful.
- Market penetration goals or estimates are provided based on technical and economical potential.

4 Qualifications of Team and Institution

Maximum Possible Points: 20

- The description demonstrates that the project team is qualified to undertake the proposed project.
- Project manager and team members have the technical capabilities and specific experience to successfully complete the project.
- The Project Manager can successfully manage the project, control cost, maintain the schedule, and report results and accomplishments in an effective manner.
- Project team has past success in taking research, development, and technology demonstration products to market and the experience, skills and market connections to help ensure market transfer of the products and knowledge that result from the project.

VIII All application

1. Technical Merit:

Maximum Possible Points: 20

- The current status of the proposed technology as it has been developed by the research and industrial community at large.
- How the proposed project will address current barriers or knowledge gaps to advance the state-of-the-art and market acceptance.
- Past and current work in the subject technology performed by the project team and others, including successes and failures.
- The extent to which the project will address the objectives of the PIER Program.

2. Description of Proposed RD&D

Maximum Possible Points: 30

- The technical tasks are clearly and logically presented, with appropriate objectives, logical and discrete tasks, sequence of activities, products produced, deliverables, schedule, and budget.
- The application describes the scientific and technical principles underlying the proposed work, and the manner in which the scientific and engineering principles will be applied.
- The distinctive and innovative features of the approach are discussed.
- The likelihood of success based upon a sound research plan.

3. Identified Targets, Goals, and Market Application

Maximum Possible Points: 25

- The proposed project is cost effective and will significantly help in adding additional capacity.
- The extent to which the project addresses significant key issues and barriers to the development and market acceptance of smart grid technology.
- Quantitative or measurable technical and economic performance goals and the methodology used to determine if the goals have been achieved.
- How the project will fulfill market needs. A reasonable path is described for commercialization of the technology if the project is successful.

4. Qualifications of Project Manager and Project Team

Maximum Possible Points: 25

- The Project Manager and team members have the technical capabilities, specific experience and financial capability to successfully complete the project.
- The Project Manager can successfully manage the project, control cost, and maintain the schedule, and report results and accomplishments in an effective manner.
- The application clearly and adequately presents capabilities and experience of the team members to perform the proposed work for different tasks.
- The application presents the team members' collaboration to perform and facilitate transfer of project products to the marketplace. Is electric utility part of the team?
- The project cost is consistent with the work to be performed and is justified.
- The PIER funding request, match funding, and need for PIER funding are appropriate and consistent with the expected level of public benefits if the project is successful

ATTACHMENT D

SCOPE OF WORK TEMPLATE

[The scope of work template for this solicitation is a separate Microsoft Word document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

ATTACHMENT E

INSTRUCTIONS FOR THE
SCOPE OF WORK TEMPLATE

The Scope of Work Template contains the framework to use to complete the Scope of Work. The template has instructions in **blue type** within < > that are to be deleted as it is filled out. The following are additional instructions for the items in the Scope of Work. At the end of these instructions, there are examples of Technical Tasks to provide guidance in drafting your own.

I. Technical Task List

Insert the Task numbers and Task names for the project. Put an "X" in the CPR column next to the Tasks that contain a Critical Project Review. Add additional rows as necessary.

II. Key Name List

List key parties within the agreement as described below. See Terms and Conditions for more information regarding key parties within the agreement.

Key Personnel are employees or consultants who are critical to the outcome of the project and are being paid with PIER funds. Key Personnel have expertise in the project field or experience that is not available from another source. Replacing these individuals may be difficult due to their expertise and may affect the outcome of the project. Since key personnel can come from various organizations working on the agreement, they should be written as follows to avoid confusion: "John Smith – Acme Company"

Key Subcontractors are contractors, subcontractors, or vendors who are critical to the outcome of the project and are being paid with PIER funds. Key Subcontractors have expertise in the project field or experience that is not available from another source. Replacing these individuals may be difficult due to their expertise and may affect the outcome of the project.

Key Partners are participants in the Project who are not receiving PIER funds and are not providing Match Funds but are integral to the outcome of the Project. Key Partners may be providing space, testing facilities, demonstration sites or may be a manufacturer or other implementer of the Project results. Individual key employees from the Key Partner organizations are listed under "Key Personnel." "Key Partners" are company names.

III. Glossary

Spell out each acronym used in the Scope of Work. Also include definitions of odd or unusual terms. Think about the document from the perspective of someone who does not work in the particular industry or discipline.

IV. Problem Statement

Describe the problem that this research will address in one to two paragraphs maximum.

Describe the scientific and technological baseline that is the current state-of-the-art or the developmental status of the subject technology to be advanced.

Identify entities engaged in development of the subject technology. Identify whether or not the proposed project duplicates or overlaps with other ongoing RD&D. Emphasize past advances that you have made in areas relevant to the proposed work.

Describe the deficiencies that exist for the subject technology. The deficiencies should illuminate the question of *why* the proposed project should be done.

Identify and discuss the principal barriers, key unresolved issues, and knowledge gaps that hinder the development and widespread use of the resource or the products of the proposed research in California. Barriers may be grouped under the following categories, or other categories that the Applicant deems appropriate:

- Scientific and technological – such as insufficient scientific understanding of relevant phenomena and processes, inadequate data acquisition technologies, low reliability, low power density, low energy density, lack of detailed engineering designs and design trade-off analyses, inadequate component development, high cost of fabrication techniques, insufficient field testing, or insufficient field demonstrations.
- Market – such as inadequate consumer knowledge or limited system supply and maintenance infrastructure.
- Institutional – such as regulatory hurdles (e.g., atmospheric emission limitations) or lack of adopted standards.
- Environmental – such as H₂S emissions, excessive noise, or ground water contamination.

Explain why these barriers have not been addressed by the marketplace or by other institutions.

Explain why the barriers should be addressed at this time. For example, place the proposed work into the context of the spectrum of barriers to widespread deployment and adoption.

V. Goal of the Agreement

At the beginning of this section, complete the following sentence. Please be succinct.

The goal of this project is to ... *<Complete the sentence with a brief description of the goal(s) and how the goal(s) will be met. Goals can be technical, economic or social. Please be brief, two to three sentences maximum.>*

VI. Objectives of the Agreement

The objectives of this project are to ... *<Complete this sentence with the objectives, which are things that will be measurable or knowable at the end of this project.>*

If the improvements that your project will make are not amenable to measurement, surrogate performance metrics that can be measured must be given. Describe the methodology or procedure that will be used at the completion of the project to determine if the performance metrics have been achieved.

List and describe technical or economic objectives, or desired conditions outside the project itself that will result from the success of the project.

VII. Task 1.0 Administration

The administrative tasks must be included in every agreement and the language does not change except for the following:

- **Applicants can propose to change Task 1.4 from monthly to quarterly progress reports.**
- **Applicants can propose to delete or modify Task 1.8, Establish the PAC, and Task 1.9, Conduct PAC Meetings.**

Otherwise, do NOT change anything in the administrative tasks.

VIII. Technical Tasks (Tasks 2 through n)

This is the area in the Scope of Work where the technical work to be performed under this Agreement is set forth. The work effort should be divided into a series of logical, discrete and sequential tasks. Each task has the following components:

- **Task Name**
- **The goal of this task is to ...**
- **The Recipient shall:**
- **Products**

A. The Goal

The goal of this task is to ... *<Complete the sentence with a brief description of the goal(s). Please be brief, two to three sentences maximum.>*

B. The Recipient shall ...

List each individual **activity** with a separate bullet if there are more than two individual activities and begin each bullet with a verb to complete the sentence beginning with "The Recipient shall." Organize activities in the order in which they will occur. Use this section to describe the essential elements of the process you will use to complete the project. The contents of each product shall also be described in this section.

For Example:

The Recipient shall:

- Prepare the X Test Plan. This plan shall include, but is not limited to ...
- Conduct research in accordance with the X Test Plan.

- Prepare the X Test Results Report. This report shall include, but is not limited to, the following ...

Please note that if a project is for demonstration, or if a project involves testing, one of the tasks should be Test Plan preparation. The Test Plan should include considerations such as the number of hours of operation, the type of monitoring to be performed, the manner in which data will be validated, analyzed, and reported.

C. Products:

Product(s):

- *<Insert 1st product (name only)>*
- *<Insert 2nd product (name only)>*

Only the names of each product shall appear in the “Products” section. Use exactly the same name to identify a product (report, data set, project plan, etc.) in the activity and in the list of products.

Products incorporate the knowledge and understanding gained by performing the activities, and are submitted to the Energy Commission for review, comment and approval. Products include, but are not limited to, written reports that describe methods, test plans, results of testing, analysis of data, conclusions, and recommendations for future study, workshop agendas and summaries, description and photographs of equipment/product developed, summaries of advisory group meetings, computer software with written instructions for data input and use of the software, if intended for public or Energy Commission use, and production prototypes. The summaries of the Products should be sufficiently detailed to be of use to stakeholders and other researchers. The level of detail should be sufficient for an observer to assess whether the project objectives and goals have been successfully met.

D. Task n-1 Technology Transfer Activities

Change the language as appropriate for your project.

E. Task n Production Readiness Plan

Change the language as appropriate for your project

IX. Examples of Different Types of Technical Products *(These are examples, which you may modify for use in your project. You may create other products as needed, but please adhere to the patterns shown.)*

1. Written Notification

- Provide a Written Notification regarding _____, to the Commission Project Manager. *(Give it a unique name based on the content and the project.)* The letter shall include but is not limited to written documentation that the _____ is ready for *(testing, viewing, submission for certification, etc.)* and the date such *(testing, viewing,*

submission for certification, etc.) shall begin, and shall include photographs.

Product: Written Notification regarding _____

2. Test Plans

- Prepare the _____ Test Plan. *(Give it a unique name, such as the Site A Test Plan. Test plans and testing procedures should be described in detail including factors such as instrumentation, data collection, data analysis, statistical analyses, and performance curves. Test results shall include relationships among performance, efficiency, emissions, temperature, pressure and all other parameters that qualify and quantify the subject technology.)* The Test Plan shall include, but is not limited to:
 - a description of the process to be tested;
 - the rationale for why the tests are required;
 - predicted performance based on calculations or other analyses;
 - test objectives and technical approach;
 - a test matrix showing the number of test conditions and replicated runs;
 - a description of the facilities, equipment, instrumentation required to conduct the tests;
 - a description of test procedures, including parameters to be controlled and how they will be controlled; parameters to be measured and instrumentation to measure them; calibration procedures to be used; recommended calibration interval; and maintenance of the test log;
 - a description of the data analysis procedures;
 - a description of quality assurance procedures;
 - contingency measures to be considered if the test objectives are not met;
 - *<add additional bullets specific to the project as needed>.*

Product(s):

- Draft _____ Test Plan
- Final _____ Test Plan

3. Interim Reports *(This applies to all product reports. Examples include task and subtask reports, test reports, data sets, databases and computer model development or application. Monthly reports and the final report are treated separately as shown in the Scope of Work.)*

- Prepare the _____ Report *(Give it a unique name, such as the ABC Test Report or 123 Database. If an interim report is based on earlier work in this project, then the titles should relate to each other. After the title insert a description of the product.)* This report shall include, but is not limited to, the following: *(List the elements of the report in separate bullets.)*

For example, if the Interim Report is a Test Report, use the following description:

The Test Report shall include, but is not limited to, the following:

- the Test Plan;
- test results;
- analysis;
- conclusions;
- recommendations;
- photographs as appropriate;
- *<add additional bullets specific to the project as needed>*.

For example, if the Interim Report is a Task or Subtask Report, use the following description:

The Task or Subtask Report shall include, but is not limited to, the following:

- the goal of the task or subtask;
- the description of the approach used;
- list of activities performed;
- description of the results and to what degree the goal was achieved;
- significant issues encountered and how they were addressed;
- a discussion of the implications regarding the success or failure of the results, and the effect on the budget and the overall objectives of the project;
- photographs as appropriate;
- *<add additional bullets specific to the project as needed>*.

Product(s):

- **Draft** _____ **Test (Task, Database, etc.) Report**
- **Final** _____ **Test (Task, Database, etc.) Report**

4. Bills of Materials or Equipment Lists

- Prepare a Bill of Materials (or Equipment List) for _____. *(Give it a unique name.)*. This document shall include but is not limited to:
 - a description of each item;
 - test protocols and codes applicable to each item;
 - cost estimates or bids for each item.

Product: Bill of Materials (or Equipment List) for _____

5. Site Selection (optionally, this can be incorporated into a Test Plan)

- Determine Site Selection Details for the field test site, including but not limited to the following, and obtain Commission Project Manager approval:
- Type of site, i.e., <Sites for Wind Energy Storage Projects>
 - Residential
 - Specify type of dwelling: single family, multiple family including number of units, apartment, townhouse, etc.

- Specify age of dwelling: new home construction, model home, existing home (indicate approximate age)
- Commercial (specify warehouse, retail, office, etc.) <Sites for Wind Energy Storage Projects>
- Number of sites
- Location, i.e., climate zone, area, or city
- Timing of testing (i.e., season or month), length and frequency of testing
- Agreement with site owner, to address issues such as:
 - Details of test, including dates, length of test
 - Site owner input and feedback on test conditions
 - Access to site
 - Insurance and indemnity
 - Contingency if damages are caused by test
 - Equipment installation and removal

Once the site is selected, Recipient shall enter into an agreement with the site owner and make a copy of the agreement available to the Commission Project Manager upon request.

Product: Written Notification of Site Selection

ATTACHMENT F**Budget Template and Instructions**

[The budget template and instructions for this solicitation is a separate Microsoft Excel document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

ATTACHMENT G**SCHEDULE OF PRODUCTS AND DUE DATES
TEMPLATE AND INSTRUCTIONS**

[The schedule of products and due dates template and instructions for this solicitation is a separate Microsoft Excel document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

ATTACHMENT H**American Recovery and Reinvestment Act of 2009 Cost Share
Topic areas and Examples of Previously Funded Solar Projects**

Funding for the solar component of this solicitation may include, but not be limited to, the following topic areas:

- Development of modeling tools and database on the dynamics and scenarios of photovoltaics (PV) and distribution system.
- Demonstration and integration of PV and energy storage technologies for smart grid applications.
- Technological development and strategies for cost reduction of installed systems by developing value-added components, sub-systems or packaged systems, standardization and/or simplification of design installation.
- Development, analysis, validation and piloting of innovative business models and financing mechanisms for PV systems to accelerate market penetration, end user adoption, and sustainable PV market growth in California.
- Evaluation of alternatives to current grid integration standards and procedures such as benefits and costs of innovative PV-specific tariffs and/or net metering arrangements or alternative mechanisms for monetization of carbon off-sets and other environmental benefits of PV.
- Innovations in solar-enhanced energy security such as integration of grid-tied PV arrays with conventional back-up power systems.
- Integration of PV modules with micro-inverters to achieve optimum performance.
- Development and implementation of advanced inverter technologies.

Examples of current and recently completed projects include the following:

- Design & development of low-cost high-temperature solar collectors for mass production
- Reduce Natural Gas Use for Industrial Process Heat using High-Temperature Parabolic Trough Solar Collectors
- Solar Combined Heat and Power System
- Advanced Community Scale Solar Home Design Tools
- Demonstration of a Novel, Low-Cost Two Axis Solar Tracking System
- Design & Optimization of a Solar Fired 2E Absorption Chiller
- Residential Electric Power Security
- Hybrid Solar-Fossil Thermophotovoltaics
- Catalytic Combustor - Fired Industrial Gas Turbine for Distributed Power & Cogeneration Applications

- Reduce Natural Gas Use for Industrial Process Heat using High-Temperature Parabolic Trough Solar Collectors

ATTACHMENT I**American Recovery and Reinvestment Act of 2009 Cost Share
Topics Areas and Examples of Previously Funded Geothermal Projects**

Funding for the geothermal component of this solicitation may include, but not be limited to, projects that address the following:

- Demonstrate and validate reservoir stimulation technologies.
- Reduce the risk and costs of geothermal site selection, exploration and characterization.
- Increase effectiveness and efficiency of reservoir management and sustainability.
- Reduce the life-cycle cost of geothermal electricity generation and improve power plant efficiency.
- Research, development and demonstration projects that reduce the uncertainty and cost of enhancing geothermal reservoir systems.
- Demonstrate and validate the feasibility of energy production from nonconventional geothermal resources such as low-temperature fluids, co-produced oil and gas brines or geopressured resources.

Examples of current and recently completed projects include the following:

- Application of InSAR to the Monitoring and Mitigation of Surface Substance from Increased Geothermal Development in the Imperial Valley, CA
- Structuring A Geothermal Heating District for Mammoth Lakes
- Integrated Geothermal Systems Simulator to Enhance Power Generation at the Geysers
- Pilot-Scale Geothermal Silica Recovery at Mammoth Lakes
- Structure of Salton Sea Geothermal Field from Passive Seismic Measurements
- Geothermal Exploration in Eastern California Using ASTER TIR Data
- Development of an Extended Logging Tool for Geothermal Exploration and Field Development
- Rhyolite Plateau Geothermal Exploration
- Drill And Complete Gmf 88-28 To Confirm The Existence Of A Commercial Geothermal Resource
- Dual Horizontally Completed Injection Well To Enhance Geothermal Production At The Geysers
- Fluid Inclusion Stratigraphy: A New Inexpensive Method For Geothermal Reservoir Assessment
- Geothermal Exploration Under The Salton Sea Using Marine Magnetotellurics
- Geothermal HVAC Conversion
- Drilling & Testing Of An Exploratory Well Truckhaven Geothermal Area, Imperial County, CA
- Geothermal Exploration Drilling, Assessment, & Demonstration In Indian Country

- Geothermal Reservoir Exploration By Fault Zone Guided Wave & Shear Wave Splitting Tomography
- Mineral Recovery From Geothermal Brine
- Fracture Permeability Mapping & Fluid Flow monitoring At The Geysers Geothermal Area
- Optimization Of Steam Field Management At The Aidlin Geothermal Project
- Evaporative Cooling Of Geothermal Power Plants With Recycled Water
- Co-Production Of Silica From Geothermal Fluids
- Improving Energy Recovery at the Geysers Geothermal Field by Delineation of In-Situ Saturation

Topics Areas and Examples of Previously Funded Energy Efficiency Research Projects

Examples of previously funded energy efficiency research projects can be found at the following website:

<http://www.energy.ca.gov/pier/portfolio/PIERwrite-ups.htm>.

ATTACHMENT J**PREVAILING WAGE SPECIAL CONDITION TEMPLATE****PUBLIC WORKS AND PAYMENT OF PREVAILING WAGE****A. Recipient/General Requirements**

1. Recipient shall comply with state prevailing wage law, Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720 and Title 8, California Code of Regulations, Chapter 8, Subchapter 3, commencing with Section 16000, for any “public works” (as that term is defined in the statutes) performed on the Project funded by this Agreement. For purpose of compliance with prevailing wage law, the Recipient shall comply with provisions applicable to an awarding body. Compliance with state prevailing wage law includes without limitation: payment of at least prevailing wage as applicable; overtime and working hour requirements; apprenticeship obligations; payroll recordkeeping requirements; and other obligations as required by law.
2. Recipient shall certify to the Energy Commission on each Payment Request Form, that prevailing wages were paid to eligible workers who provided labor for work covered by the payment request and that the Recipient and all contractors complied with prevailing wage laws.
3. Prior to the release of any retained funds under this Agreement, the Recipient shall submit to the Energy Commission a certificate signed by the Recipient and all contractors performing public works activities stating that prevailing wages were paid as required by law. The required certificate follows these special conditions.

B. Flowdown Requirements

Recipient shall ensure that all agreements with its contractors to perform work related to this Project contain the following provisions:

1. Contractor shall comply with state prevailing wage law, Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720; and Title 8, California Code of Regulations, Chapter 8, Subchapter 3, commencing with Section 16000, for all construction, alteration, demolition, installation, repair or maintenance work over \$1,000 performed under the contract. Contractor’s obligations under prevailing wage laws include without limitation: pay at least the applicable prevailing wage for public works activities performed on the Project; comply with overtime and working hour requirements; comply with apprenticeship obligations; comply with payroll recordkeeping requirements; and comply with other obligations as required by law.
2. Contractor shall ensure that the above requirements are included in all its contracts and any layer of subcontracts for activities for the Project.

ATTACHMENT K**PREVAILING WAGE COMPLIANCE CERTIFICATE**

After the public works⁴ activities funded by this Agreement are complete, Recipient must fill out and sign this certificate and obtain the signatures from all of its contractors and any layer of subcontractors involved in public works funded by this Agreement.

This certificate must be completed and submitted to the Energy Commission Project Manager prior to the release of the retained funds under this Agreement.

Recipient:

Energy Commission Agreement Number:

Date Public Works Completed:

Recipient hereby certifies as follows:

1. State prevailing wage law, Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720 and Title 8, California Code of Regulations, Chapter 8, Subchapter 3, commencing with Section 16000, has been complied with for the “public works” (as that term is defined in the statutes) funded by this Agreement, including payment of at least prevailing wage as applicable; overtime and working hour requirements; apprenticeship obligations; payroll recordkeeping requirements; and other obligations as required by law.
2. All contracts and every layer of subcontracts involving public works funded by the above-referenced Agreement contained requirements that the contractor or subcontractor comply with prevailing wage law and pay prevailing wages in accordance with the requirements of the Labor Code.
3. The contractors and subcontractors have maintained labor records as required by the Labor Code and such records shall be made available upon request.
4. The undersigned Recipient acknowledges that disbursement of the retention by the California Energy Commission is expressly made in reliance upon the representations made in this certification.

⁴ Public works is defined in Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720.

Recipient:

Signature of Authorized Representative: _____

Printed/Typed Name:

Title:

Date:

Each contractor and subcontractor performing public works (e.g., construction, alteration, demolition, installation, repair or maintenance work) for the Project must sign below. Include additional pages if necessary.

Contractors and subcontractors hereby certify as follows:

1. The contract with the Recipient or the Recipient's contractor to perform work funded by the above-referenced Agreement contained requirements that the contractor and all its subcontractors comply with prevailing wage law and pay prevailing wages in accordance with the requirements of the Labor Code.
2. Prevailing wages have been paid as required by law.
3. Contractor and all its subcontractors have maintained labor records as required by the Labor Code and such records shall be made available upon request.
4. The undersigned acknowledges that disbursement of the retention by the California Energy Commission to the Recipient is expressly made in reliance upon the representations made in this certification.

Construction Contractor #1

Company Name:

Signature of Authorized Representative: _____

Printed/Typed Name:

Title:

Date:

Construction Contractor #2

Company Name:

Signature of Authorized Representative: _____

Printed/Typed Name:

Title:

Date:

Construction Contractor #3

Company Name:

Signature of Authorized Representative: _____

Printed/Typed Name:

Title:

Date:

Construction Contractor #4

Company Name:

Signature of Authorized Representative: _____

Printed/Typed Name:

Title:

Date:

Construction Contractor #5

Company Name:

Signature of Authorized Representative: _____

Printed/Typed Name:

Title:

Date:

Construction Contractor #6

Company Name:

Signature of Authorized Representative: _____

Printed/Typed Name:

Title:

Date:

ATTACHMENT L**PREVAILING WAGE COMPLIANCE QUESTIONS AND ANSWERS****1. Is Payment of Prevailing Wage Required?**

Yes. Any Recipient whose project involves “public works” as the term is defined in defined in Chapter 1 of Part 7 of Division 2 of the Labor Code, commencing with Section 1720, must pay prevailing wages in accordance with the law.

2. Does prevailing wage apply to private entities?

Yes. A private entity must pay prevailing wage under California law if the project involves public works.

3. How do I know if my project involves public works?

The California Labor Code beginning at section 1720 deals with this issue. Labor Code sections 1720 and 1771 define public works as:

- Construction (includes work performed during the design and preconstruction phases of construction including but not limited to, inspection and land surveying work).
- Alteration.
- Demolition.
- Installation.
- Repair work.
- Maintenance work.

These Labor Code sections can be found online at <http://www.leginfo.ca.gov/calaw.html>.

Below are some examples (this list is not exhaustive) of the types of activities that typically lead to finding that a project is a public work:

- Cement work such as pouring a cement pad.
- Site preparation such as grading.
- Surveying.
- Electrical work such as wiring.
- Carpentry work.
- Limited inspection activities.

4. What kind of trades or workers must be paid prevailing wage?

The California Department of Industrial Relations (DIR) Division of Labor Statistics and Research (DLSR) makes the final determination on which trades and/or workers are covered by prevailing wage laws. DLSR maintains a list of the covered trades/workers that are entitled

to prevailing wage for public works commercial construction projects. See www.dir.ca.gov/dlsr/statistics_research.html or call the DLSR Prevailing Wage Hotline (415) 703-4774 for more information about these trades.

Generally, workers such as the following would be covered trades:

- Operating engineer (heavy equipment operator)
- Surveyor
- Carpenter
- Cement Mason
- Electrician
- Laborer

The following types of workers usually would NOT be covered trades entitled to prevailing wage:

- Engineer
- Project superintendent / construction manager / project manager
- Architect
- Planner
- Computer programmer

The above examples are for general information only. If you have questions about whether a worker is in a covered trade requiring payment of prevailing wages, you should check directly with DIR.

5. What if I am unsure whether my project involves public works and prevailing wage must be paid? How Should I Budget if I am Unsure About Prevailing Wage?

You are encouraged to determine if your project involves public works as soon as possible. In order to determine if your project is a public work, you will need to contact the California Department of Industrial Relations (DIR). They can be reached at (415) 703-4774. If you do not know whether your project is a public work and you have not obtained a determination from DIR that the project is not a public work, you must budget with the assumption that the project is a public work and comply with the prevailing wage laws, including but not limited to the payment of prevailing wages.

On the budget, please indicate whether your budget includes amounts for the payment of prevailing wage. You must indicate “yes” unless you have received a determination from DIR that the project is not a public work.

If you do not budget for prevailing wage, and it is later determined that the project involves public works and prevailing wage must be paid, you may be liable for damages and penalties. You also cannot later increase your grant award if it is determined that prevailing wages apply and increase project costs higher than budgeted. The amount requested in your application is the maximum that will be paid. Any increased costs for payment of prevailing wage must be paid with match funds. The Energy Commission’s grant award amount does not change or increase if the applicant’s costs increase for any reason.

6. How do I get assistance in determining whether the project involves public works?

First, call the DLSR Prevailing Wage Hotline, (415) 703-4774. The Prevailing Wage Hotline can frequently give advice quickly on routine questions. If the Prevailing Wage Hotline is unable to answer your question, you will need to write to the Director of DIR for a coverage determination on whether your project involves public works. You would include all the relevant facts and documents related to the project. DIR regulations, Title 8 California Code of Regulations, section 16001(a)(1), provides that any interested party may file a request with the Director of DIR to determine coverage under the prevailing wage laws. The request can be either for a specific project or type of work to be performed that the interested party believes may be subject to or excluded from coverage as public works under the Labor Code. The full text of DIR's regulations can be found at: <http://ccr.oal.ca.gov>, (Title 8, Division 1, Chapter 8, Subchapter 3, Article 2). Send requests for a coverage determination to:

Department of Industrial Relations
Office of the Director
455 Golden Gate Avenue
San Francisco CA 94102

7. How long will it take to get an answer?

We do not know, but hope that the question can be asked and answered informally and quickly through the Prevailing Wage Hotline. If you need to submit a request to the Director of DIR, it will take longer to get a coverage determination.

8. What happens if I make a request to DIR but do not have a decision, or am still unsure whether prevailing wage must be paid, by the time the Energy Commission makes an award at a business meeting, or by the time I execute the grant agreement?

In this case, the Energy Commission would execute a grant agreement with a budget that assumes prevailing wage is required. If the Recipient, prior to performing the activities in question, then receives a determination from DIR that the project is not a public work, then the Energy Commission can execute an amendment with the Recipient to decrease the budget accordingly. The prevailing wage terms and conditions can also be removed.

9. What if I submit an application to the Energy Commission with a project that I say is not a public work, and the Energy Commission believes that it might be a public work? How would we resolve our differences?

We would request that you first call the Prevailing Wage Hotline. If you do not receive an answer, we would request that you write a letter to DIR and ask DIR to make the decision. If DIR says the project is a public work, then you will need to pay prevailing wages. If you do not obtain a DIR determination that the project is not a public work requiring the payment of prevailing wage, then you must assume that the project is a public work and comply with the prevailing wage laws, including paying prevailing wages.

10. If my project is a public work, how do I know what prevailing wages are required in order to prepare a budget?

If your project is a public work, please submit your budget with the applicable prevailing wage for each trade entitled to prevailing wage as determined by DLSR. For prevailing wage rate information for commercial projects, see www.dir.ca.gov/dlsr/statistics_research.html or call the Prevailing Wage Hotline (415) 703-4774. If your project involves residential construction, the rates are not listed on DIR's website, and you must call the DLSR Prevailing Wage Hotline.

11. What do I do if workers will be used who do not fit neatly into one of the categories on the DIR website?

Contact DLSR and describe the type of trade you anticipate will be required in your project and ask whether there is an existing prevailing wage already set by DLSR.

12. Does prevailing wage apply to a public entity that performs project work with its own employees?

No.

13. If my project is considered a public work, then are there any special requirements?

Yes. For example, the grantee must make sure that covered workers are paid prevailing wage. There are other requirements, such as keeping payroll records, complying with working hour requirements, and apprenticeship obligations. See the Labor Code and the sample terms and conditions, Special Condition regarding Prevailing Wage.

ATTACHMENT M**PREFERENCE POINTS FOR CALIFORNIA-BASED ENTITIES**

Pursuant to AB 2267 (Fuentes, 2008), the California Energy Commission's Public Interest Energy Research (PIER) Program must give a priority to "California-based entities" (CBEs) when making awards. To implement this law, the Energy Commission will award preference points if the application meets the criteria for a CBE as described below.

An Applicant must meet all of the following to receive CBE preference points:

1. The application must include a CBE as either the recipient or a subcontractor. A CBE is a corporation or other business form organized for the transaction of business that:
 - Either has its headquarters or an office in California AND
 - Substantially manufactures the product or substantially performs the research within California that is the subject of the award.
2. The budget must show that the CBE(s) will receive 50% or more of the PIER funds awarded.
 - If the CBE is the prime recipient, then this means that no more than 50% of the awarded PIER funds can be subcontracted to non-CBEs.
 - The 50% applies to the PIER funds and does not include the match funding. For example, if a application has a PIER budget of \$100,000, then regardless of how much match funding is pledged, the budget must show \$50,000 or more in PIER funds going to CBEs.
 - The 50% requirement can be made up of multiple CBEs. For example, a application in which a prime recipient CBE will receive 25% of PIER funds and a subcontractor CBE will receive 25% of PIER funds, meets this 50% requirement.
3. The application must receive a passing score prior to any preference points being added.

The preference points will be awarded as follows:

<i>Technical Score (prior to preference points being added)</i>	<i>Additional Points</i>
70-75	1
76-81	2
82-87	3
88-93	4
94-100	5

The total possible points, not counting any preference points, for this solicitation is 100. The minimum passing score is 70 points. Each application that has a score of 70 points or more and qualifies for this preference will receive additional points based on the table above.

Applicants wanting to qualify for these preference points must fill out the attached form. Otherwise eligible Applicants who do NOT submit the attached form with the application shall NOT be eligible for the CBE preference points.

ATTACHMENT N**CBE PREFERENCE POINTS QUESTIONNAIRE**

[The CBE preference points questionnaire is a separate Microsoft Word document that can be accessed at www.energy.ca.gov/contracts as part of this solicitation package. Eligible Applicants must request these preference points by completing and submitting this questionnaire for each CBE contained in the application.]

ATTACHMENT O**CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) COMPLIANCE FORMS**

[The CEQA compliance forms for this solicitation is a separate Microsoft Word document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

ATTACHMENT P**PERMITTING INFORMATION FORM**

[The permitting information form for this solicitation is a separate Microsoft Word document. The template can be accessed at www.energy.ca.gov/contracts as part of this solicitation package.]

ATTACHMENT Q

RESOLUTION

Applicants are required to complete Attachment Q Resolution for the final application only, if a Resolution is required. Below are 3 examples of resolutions; use the one appropriate for your situation.

Example 1: Resolution by a Local Governmental Jurisdiction Applying for its Own Project

RESOLUTION

WHEREAS, the **(name of local governmental jurisdiction here)** recognizes that it is in the interest of the regional, state, and national economy to develop alternative energy resources to reduce our dependence on foreign oil; and,

WHEREAS, geothermal energy is indigenous to **(name local geographic area)**, and its careful development may provide benefits to the local community in the form of jobs and reduced fuel costs; and,

WHEREAS, GRDA funds are available through the California Energy Commission for grants and loans to local governments for geothermal-related activities;

NOW, therefore, be it resolved that the **(name governing body of the local governmental jurisdiction)** authorizes the submittal of the application to the California Energy Commission for funds to execute the **(name project)**.

Be it also resolved, if recommended for funding by the Commission, the State Legislature, and the Department of Finance, the **(name of governing body of the local governmental jurisdiction)** authorizes **(name of local governmental jurisdiction)** to accept a loan or grant award up to the amount of this application for \$ **(name requested amount)**, and, that **(name job title of designated project manager)** acting for the **(name local governmental jurisdiction)** is hereby authorized and empowered to execute in the name of **(name local governmental jurisdiction)**, all necessary contracts and agreements, and amendments hereto, to implement and carry out the purposes specified in the application.

The foregoing resolution was passed by the **(name governing body of the local governmental jurisdiction)** this _____ day of _____, _____.

Effective _____, _____

ATTEST:

Signed: _____ Date: _____

Title: _____

Example 2: Resolution by a Local Governmental Jurisdiction Approving a Project Initiated by a Private Entity in the Local Jurisdiction

RESOLUTION

NOTE: If the local jurisdiction has issued a permit(s) for your project (e.g. land use, building permits etc.), such permit(s) may substitute for the following formal resolution by the local jurisdiction to meet Energy Commission requirements. If there is no permit(s), the following formal resolution is required:

WHEREAS, the **(name local governmental jurisdiction here)** recognizes that it is in the interest of the regional, state, and national economy to develop alternative energy resources to reduce our dependence on foreign oil; and,

WHEREAS, geothermal energy resources are found in **(name local geographic area)**, and its careful development may provide benefits to the local community in the form of jobs and reduced fuel costs; and,

WHEREAS, **(name private party developing project)** has proposed a project with potential significance to both the local community and the geothermal industry; and,

WHEREAS, the **(name governing body of the local governmental jurisdiction)** has authority to approve geothermal-related projects in its jurisdiction; and,

WHEREAS, **(name private party developing project)** has requested approval for **(name project)** from **(name governing body of the local governmental jurisdiction)**;

Now, therefore, be it resolved that the **(name governing body of the local governmental jurisdiction)** hereby approves **(name project)**.

The foregoing resolution was passed by the **(name governing body of the local governmental jurisdiction)** this _____ day of _____, _____.

Effective: _____, _____

ATTEST:

Signed: _____ Date: _____

Title: _____

Example 2: If neither of the above examples apply, use the following, if a Resolution is required:

RESOLUTION

At a minimum, we need the following in the authorizing *Resolution*:

- Brief description of the project.
- Acceptance of award up to \$ (specific dollar amount).
- Authorization of a person, by title, or authorized designee, empowered to execute agreement and all future documents related to this award.
- Resolution approved by your Governing Authority with a signature.

ATTACHMENT R

[The sample PIER grant terms and conditions for this solicitation is a separate portable document file (.pdf). The document can be accessed at www.energy.ca.gov/contracts as part of this solicitation package. Please note that the California Energy Commission reserves the right to modify these terms and conditions prior to issuing funding awards.]