

CALIFORNIA ENERGY COMMISSION

1516 Ninth Street
Sacramento, California 95814

Main website: www.energy.ca.gov



Staff Workshop on Research Needs for Utility Scale Renewables Energy (USRE)

The California Energy Commission's Public Interest Energy Research (PIER) Renewables Program and Geothermal Resources Development Account (GRDA) Program will hold an information exchange workshop to obtain input and comments from the renewable energy industry, experts, and other interested parties on research needs concerning Utility Scale Renewable Energy (USRE). The goal of this workshop is to identify critical research, development, and demonstration (RD&D) issues and solutions to help accelerate RD&D and increased deployment of USRE in an environmentally responsible manner.

USRE RD&D seeks to address technical integration barriers to accelerated deployment of renewable energy (RE) resources feeding in to the state's transmission grid. In addition, this research will also minimize the environmental impacts and fresh water consumption of renewable energy facilities. The information exchange workshop will be held on:

TUESDAY, APRIL 6, 2010
1:30 p.m. to 3:30 p.m.
CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
First Floor, Hearing Room A
Sacramento, California 95814
(Wheelchair Accessible)

Remote Attendance and Availability of Documents

Internet Webcast - Presentations and audio from the meeting will be broadcast via our WebEx web meeting service. For details on how to participate via WebEx, please see the "Remote Attendance" section toward the end of this notice.

Documents and presentations for this meeting will be available online at:

www.energy.ca.gov/research/notices/

Purpose

The purpose of the information exchange workshop is to gather input from experts and stakeholders regarding RD&D needs related to more rapid and environmentally responsible deployment of utility scale renewables energy (USRE) power plants in the California electricity grid.

The information gathered during this workshop related to issues and potential solutions will be used to design a solicitation that will provide funding to support accelerated USRE RD&D and deployment, and will help to optimize market penetration of multiple (RE) technologies, in order to make California's electricity sector more diverse, safe, cleaner, and affordable. Proposed research topics, as well as workshop questions are included in Appendix A.

Background

An increasingly diverse array of renewable energy technologies is now being developed and deployed in an equally diverse array of ways, ranging from utility scale power plants to energy sources for buildings that require no net energy from the local grid. The primary technical challenges relate to the technologies, tools and strategies that enable their integrated and symbiotic use. Technical challenges also confront the integration of renewable energy facilities with the surrounding environment in a manner that has low ecological and environmental impact. Barriers to the large-scale adoption of renewable energy technologies continue to include cost and environmental considerations.

Written Comments

Written comments on the attached questions (Attachment A) and workshop topics can be submitted until 5:00 p.m. on April 8, 2010. Please include the "PIER Renewables Program USRE RD&D" in the subject line or first paragraph of your comments. Please send your comments to:

Prab Sethi
California Energy Commission
Energy Generation Research Office
1516 Ninth Street MS 47
Sacramento, CA 95814-5512
e-mail: psethi@energy.state.ca.us
(916) 654-4509

The Energy Commission encourages comments by e-mail. Please include your name or organization's in the name of the file. Those submitting comments by electronic mail

should provide them in either Microsoft Word format or as a Portable Document (PDF) to [psethi@energy.state.ca.us].

Participants may also provide an original and 10 copies at the beginning of the meeting.

Public Participation

The Energy Commission's Public Adviser's Office provides the public assistance in participating in Energy Commission activities. If you want 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 the Media and Public Communications Office at (916) 654-4989, or by e-mail at [mediaoffice@energy.state.ca.us].

If you have questions related to the subject matter of this notice, please call Prab Sethi at (916) 654-4509, or by e-mail at [psethi@energy.state.ca.us].

Remote Attendance

You can participate in this meeting through WebEx, the Energy Commission's online meeting service. Presentations will appear on your computer screen, and you listen to the audio via your telephone. Please be aware that the meeting's WebEx audio and on-screen activity may be recorded.

Computer Log-on with Telephone Audio:

1. Please go to <https://energy.webex.com> and enter the unique meeting number: 920 696 606
2. When prompted, enter your name other information as directed and the meeting password: **meeting@130**
3. After you log-in, a prompt will ask for your phone number. If you wish to have WebEx call you back, enter your phone number. This will add your name on the WebEx log so that we know who is connected and have a record of your participating by WebEx.

If you do not wish to do that, click cancel, and go to step 4. Or, if your company uses an older switchboard-type of phone system where your line is an extension, click cancel and go to step 4.

4. If you do not want WebEx to call you back, then call 1-866-469-3239 (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 via computer. 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):

5. Call 1-866-469-3239 (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.

Date: March 23, 2010

Mail Lists: Mail Lists: renewable (CEC Renewable Energy Programs), geothermal (Geothermal Energy), research (Energy RD&D / PIER program), natural gas (Natural Gas), 33by2020 (Implementing the Renewable Energy Executive Order), wind research, opportunities

Attachment A

Staff Workshop on research needs for utility scale renewables energy (USRE) based RD&D

In this workshop, Energy Commission staff seeks public input about the goals, benefits, issues, gaps and opportunities, RD&D solutions, and market mechanisms to help accelerate research and development and increased deployment of mixed renewable energy technologies (such as biomass, solar, wind, geothermal and storage) in an integrated and environmentally sound fashion to be applied at the utility scale level.

To assist in the implementation of this USRE RD&D Initiative, staff seeks public input on the following questions or topics.

- 1. What are the goals and desirable benefits in advancing RD&D and deployment of USRE?**
- 2. What are the key technical, economic, and environmental issues or opportunities for USRE implementation?**
- 3. What are the RD&D solutions for accelerated development and deployment of USRE?**
- 4. What are the RD&D solutions for reducing land and fresh water demands, and biological and environmental impacts of utility scale solar energy development, particularly in the California desert?**

Proposed Research

The Utility Scale Renewables Energy (USRE) Program at the California Energy Commission will identify and develop data, technologies, and tools needed to plan and operate large RE power plants in concert with state, regional, and local transmission resources. This solicitation aims to fund projects whose results will enable accelerated and optimized USRE deployment in an environmentally responsible manner.

There are five proposed major research areas to target in this research endeavor, taking into account criteria such as connection to state energy policy, opportunities unaddressed by other research entities, potential impact per dollar spent, timeliness of outcomes, and the potential for partnership with other organizations. Staff seeks comments on these proposed topic areas.

1. Hybrid Generation: Addresses the synergistic integration, at the power plant level, of a renewable generation source with another generation resource (renewable or fossil) and/or a storage resource in a way that enhances the value or reduces the cost of generation.
2. Monitoring and Forecasting: Focuses on the forecasting and monitoring of variable/intermittent output renewable energy in a way that helps the grid accommodate its variable output. Particular emphasis will be placed on solar given the anticipated expansion of this area and the potential for solar generation to be deployed more diversely across system sizes and locations.
3. Renewable Energy Integration: Resolve renewable energy integration issues across regions and technology mixes and provide quantitative metrics to address those issues. This work will build on existing intermittency/variability and integration projects and will focus on continued development of modeling tools while also convening key stakeholders.
4. Renewable Environmental Mitigation Technologies: Propose RD&D aimed at environmental issues of land and water use, and mitigation of biological and environmental impacts in sensitive regions, particularly in the desert, such as developing new solar power technologies, designs, or approaches that mitigate adverse impacts of solar development on sensitive biological and water resources in the California desert, such as alternatives to once through cooling, reduced solar plant footprint and/or land impact, reduced water consumption, lowered air emissions, etc. while enhancing value of renewable energy projects.
5. Renewable Energy Planning Projects: Projects that support or develop plans and scenarios that will help the development, deployment and integration of geothermal and other RE sources in an area or utility, and aim to increase the penetration of geothermal and other RE into the energy generation mix.

Proposed projects should address technology solutions that support planning for high levels of RE penetration in the California electricity grid at the lowest cost, highest value grid and RE plant operation, and lowest environmental impact and fresh water consumption.