CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
Sacramento, California 95814

Main website: www.energy.ca.gov

In the matter of:	)	Docket No. **09-IEP-1G**
	)	Docket No. **03-RPS-1078**
Preparation of the	)	NOTICE OF JOINT COMMITTEE
2009 Integrated Energy Policy Report	)	WORKSHOP RE: "Electricity
	)	System Implications of 33 Percent
_____	)	Renewables"

Joint Integrated Energy Policy Report and Renewables Committee Workshop "Electricity System Implications of 33 Percent Renewables"

Two Energy Commission Committees oversee the work on this subject: the Renewables Committee with Commissioner Julia Levin as Presiding Member and Chairman Karen Douglas as Associate Member; and the Integrated Energy Policy Report (IEPR) Committee with Commissioner Jeffrey D. Byron as Presiding Member and Vice Chair James D. Boyd as Associate Member. Other Commissioners from the Energy Commission or the California Public Utilities Commission (CPUC) may attend and participate in the workshop. The workshop will be held:

MONDAY, JUNE 29, 2009
9 a.m.
CALIFORNIA ENERGY COMMISSION
1516 Ninth Street
First Floor, Hearing Room A
Sacramento, California
(Wheelchair Accessible)

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.

Purpose

The goal of this workshop is to review changes needed to integrate higher levels of renewable energy into California's electricity system, focusing on the range of findings from 2008-2009 studies. At this workshop, the IEPR Committee and Renewables Committee seek comment on the following issues:

- Identify the type and amount of dispatchable, firming generation necessary to satisfy energy needs and system reliability under various scenarios of renewable development.
- Identify whether all major issues have been identified, the order in which issues need to be resolved and if there are projects underway to develop implementation steps.
- Identify potential physical changes needed in the natural gas system, including storage, to respond to variable output expected from some renewable resource generation technologies through the cycling of natural gas-fired generation to back up intermittent renewable resources.

The Committees are particularly interested in public input regarding the discussion questions listed in Attachment A.

Background

As required by Senate Bill 1389 (Bowen, Chapter 568, Statutes of 2002), the Energy Commission conducts "assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices." In addition, the Energy Commission conducts workshops to receive input from the public and industry stakeholders to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. Public Resources Code PRC § 25302(a) and (d) directs the Energy Commission to adopt the *IEPR* every odd-numbered year and in even-numbered years an energy policy review is conducted to update analyses from the previous *IEPR* or to raise energy issues that have emerged since the previous proceeding.

California currently has a mandate to achieve 20 percent of retail electricity sales from renewable resources by 2010, and the Governor and the state's energy agencies have identified a further goal of 33 percent renewables by 2020. This higher goal is a key strategy for meeting the state's greenhouse gas emission reduction targets.

This workshop continues discussion of the electricity system implications of 33 percent renewables. On this topic, the *2008 IEPR Update* highlighted the following key points:

> Another major barrier to increasing the amount of renewables in California is how to integrate large amounts of variable resources, like wind and solar, into the system while maintaining grid stability, operation, and reliability. Unexpected drops in energy production require quick-start units to cover the shortfall, while unexpected increases require the ability to absorb the unscheduled generation. Procuring additional resources to support intermittent renewable resources will be needed, as will better forecasting techniques for wind and solar generation.
>
> It is important to remember that not all renewable resources are intermittent. Geothermal and biomass power plants provide reliable, baseload power and can be integrated into the system without any additional backup. However, adding large amounts of any type of renewables to the system can still be problematic because California's local reliability requirements call for load to be met primarily with local resources, and many renewable resources are located outside the state's 10 load centers. (p. 15)

Written Comments

Written comments on the workshop topics must be submitted by 5 p.m. on July 13, 2009. Please include both docket numbers **09-IEP-1G** and **03-RPS-1078** and indicate **"Joint IEPR and Renewables Committee Workshop: Electricity System Implications of 33 Percent Renewables"** in the subject line or first paragraph of your comments. Please hand deliver or mail an original copy to:

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 09-IEP-1G/03-RPS-1078
1516 Ninth Street
Sacramento, CA 95814-5512

The Energy Commission encourages comments by e-mail. Please include your name or organization 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 [docket@energy.state.ca.us]. **One paper copy** must also be sent to the Energy Commission's Dockets Unit.

Participants may also provide an original and 10 copies at the beginning of the workshop. All written materials relating to this workshop will be filed with the Dockets Unit and become part of the public record in this proceeding.

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 to the Media and Public Communications Office at (916) 654-4989, or by e-mail at [mediaoffice@energy.state.ca.us]. If you have questions on the technical subject matter of this forum, please contact Pamela Doughman, Energy Specialist II, at (916) 651-2934 or by e-mail at [pdoughma@energy.state.ca.us]. For general questions regarding the IEPR proceeding, please contact Lynette Esternon Green, IEPR project manager, by phone at (916) 653-2728 or by e-mail at [lesterno@energy.state.ca.us].

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

Computer Log on with a Direct Phone Number:

- Please go to https://energy.webex.com and enter the unique meeting number **923 183 531**
- When prompted, enter your information and the following meeting password **Meeting@9** (Please note that password is case sensitive.)
- After you log in, 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 Log on for Callers with an Extension Phone Number, etc.:

- Please go to https://energy.webex.com and enter the unique meeting number **923 183 531**
- When prompted, enter your information and the following meeting password **Meeting@9** (Please note that password is case sensitive.)
- After you log in, a prompt will ask for your phone number. CLICK CANCEL.
- Instead 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 log in. 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 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. Please be aware that the meeting's WebEx audio and on-screen activity may be recorded.

JEFFREY D. BYRON
Commissioner and Presiding Member
Integrated Energy Policy Report Committee

JAMES D. BOYD
Vice Chair and Associate Member
Integrated Energy Policy Report Committee

JULIA LEVIN
Commissioner and Presiding Member
Renewables Committee

KAREN DOUGLAS
Chairman and Associate Member
Renewables Committee

Mail Lists: Renewables, Energy Policy

Note: California Energy Commission’s formal name is State Energy Resources Conservation and Development Commission.

Attachment A

Discussion Questions

Questions for Participants in the Panel of Authors

To facilitate comparison of studies, panelists are asked to prepare a written summary of the following questions, highlighting key drivers, findings and conclusions, and input assumptions in the panel discussion. The focus of the panel will be to discuss how the studies are/are not related and to discuss lessons learned:

1. What is/was the purpose and principle research questions of the study?
2. Brief description of methodology/links to documentation
3. Key drivers
4. Findings and conclusions
5. Uncertainties
6. Lessons for implementing a higher level of renewable in California by 2020.
7. Recommendations for further analysis
8. Input assumptions: matrix for comparing studies
    a. Load forecast used
    b. How was the “additional renewables” (amount required for 33 percent renewable energy by 2020) calculated for your study?
    c. What did you assume for Renewable Portfolio Standard developments in the rest of Western Electricity Coordinating Council (WECC)?, how much fossil generation was added to replace once-through cooling retirements and how much was added to “back-up” intermittent renewable energy in California and the rest of the WECC?
    d. What major transmission upgrades were included and in what year in California and the rest of WECC?

Questions for Stakeholder Roundtable and Public Comment

The committees invite stakeholders and the public to address the following questions on the matter of electricity system implications of 33 percent renewable energy. Existing and ongoing studies address most of the following questions, but the committees seek public comment on aspects of each topic that still need to be fully addressed:

9. What are the potential electricity integration issues that need to be addressed in order to achieve the 33 percent renewables goal by 2020? Are any of these issues not being addressed by ongoing studies or in identified policy development proceedings?

10. What impact will related policies, especially energy efficiency and combined heat and power goals in the California Air Resources Board AB32 scoping order, have on the amount of renewable energy needed to achieve 33 percent by 2020?

11. What impact will related policies have on the electricity system implications of 33 percent renewable energy by 2020? For example, how would policies supporting the use of energy storage systems (e.g., pumped hydro, compressed air, etc.), geothermal generation, or biomass generation affect the electricity system implications of 33 percent renewable energy by 2020? What level of penetration would be needed?

12. What uncertainties need to be considered?