

## Stakeholder Comment Template

### CAISO Integration of Renewable Resources (IRRP)

October 24, 2008 Stakeholder Meeting

#### Organizations:

California Wind Energy Association (CalWEA)  
Large-scale Solar Association (LSA)  
American Wind Energy Association (AWEA)

#### Organization Representatives & Contact Numbers:

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**Industry Segment:** Trade Associations

Instructions: The CAISO is requesting written comments on information discussed at the Integration of Renewable Resources Program (IRRP) stakeholder meeting held on October 24, 2008. This template is offered as a guide for entities to submit comments.

All documents related to the CAISO's IRRP Program Plan are posted on the CAISO Website at the following link: <http://www.caiso.com/1c51/1c51c7946a480.html>

Upon completion of this template please submit (in MS Word) to Jim Blatchford at [jblatchford@caiso.com](mailto:jblatchford@caiso.com). Submissions are requested by close of business on **Friday November 7, 2008**.

*The IRRP effort is currently divided into two components – 20% RPS and 33% RPS. Each of these components will assess operational and infrastructure needs, which will then drive solutions that will fall with four categories: (1) infrastructure additions, (2) internal operational tools, (3) market products, and (4) regulatory modifications. Many of the tasks identified are consistent with the specific projects included in the IRRP High-Level Plan published in May 2008. Please comment on whether those tasks, as discussed at the stakeholder meeting, are appropriate and whether other projects should be included as part of the IRRP.*

- *Please indicate whether you believe such tasks should be included for 20% RPS or beyond 20% RPS.*
- *If included in the 20% component, please provide a proposed schedule that would ensure the results of the task could impact meeting the 20% RPS goal by the start of 2012.*

Before proceeding with substantive comments, we offer these comments related to process.

- **System operational needs assumptions:** The ISO should take a short time before commencement of IRRP activities to review with stakeholders its earlier needs assessment upon which those activities will apparently be based. This review is needed to address concerns expressed earlier about that analysis, and to consider other promising approaches that have surfaced in the year since that earlier assessment was performed.

Specifically, we are greatly concerned that the ISO proposes to use the assumptions and results from the November 2007 Renewable Resources Integration Report (RRI Report) as a foundation for the IRRP analyses and action plans. CalWEA and AWEA submitted significant comments on the draft version of that report, questioning the ISO's methodology and assumptions related to:

- **Additional Regulation (and ramping) needs** from higher intermittent generation levels on the system – in particular, that the ISO analysis may have significantly overestimated the need for Regulation resources. Moreover, other approaches have been applied in recent studies by ERCOT and GE, and in the yet-unpublished NERC IVGTF report, that the ISO should consider.
- **Over-generation** – in particular, assumed minimum levels of different supply sources, including both internal resources and imports (see additional comments below). ISO's assumptions appeared to be based on broad generalizations and not any detailed investigation.
- **Resource mix** – in particular, the likely significant amount of solar generation that is likely to be on-line by the time the 20% renewables level is reached, and thus the potential synergies between the off-setting solar-wind profiles. (In general, here and in the other studies that will follow, the ISO should not attempt to forecast the future mix of renewables, because a narrow set of forecasts implicitly “picks winners and losers;” instead, the ISO should use a wide range of scenarios, to ensure that the resulting needs assessment, and the development of solutions, is robust and flexible.)

In total, we were concerned that the draft report over-stated the impact of the 20% renewables level and, thus, overstated ISO operational needs to adapt. Despite these comments, the final report contained the same analysis and results and did not address the CalWEA/AWEA comments.

The RRI Report was prepared in a very short time, with only one quick opportunity for stakeholder comments after most of the work was done. Many concerns left unaddressed; we are concerned that the inaccuracies in that report will carry through to all the analyses that depend on its results. It is critical that stakeholders be comfortable with ISO's foundational analysis for the IRRP effort before it is used as an input to the ISO's other important work there, and that all are confident that the best available analytic methods have been used.

- **Process for conducting new studies:** For each of the several IRRP reports planned for renewables at the 20% level (Phase 1) or 33+% level (Phase 2), the ISO should issue a draft study plan or other documents describing the proposed methodology and assumptions. Stakeholders should have a chance to comment on those key elements (with ISO explaining why it rejected any of those comments) before a final study plan is issued and any draft report is then produced. Any possible 2-3 week delay in issuance of these reports would be more than balanced by the benefits of broad stakeholder consensus on the foundations for these critical studies.

Both the ISO product and stakeholder acceptance of the product are likely to be improved if the

ISO provides for and considers input from others. This is consistent with the underlying purpose of the working group approach that the ISO discussed at the IRRP meeting.

***There are many renewable activities occurring in California and various areas across the country. Please list those studies or activities that you believe have merit that may serve as an appropriate model or otherwise assist the CAISO in conducting the IRRP. If ongoing, please indicate how such activities may be coordinated with the IRRP.***

See above comments related to the ERCOT and NERC reports. The ISO should consider employing GE Energy Consulting in the IRRP effort, given its excellent analysis of renewable-energy integration issues for the CEC's Intermittency Analysis Project and similar work elsewhere. GE can likely help the ISO consider lessons learned in jurisdictions with more experience than California with higher levels of intermittent-resource penetration.

***In response to the IRRP High-Level Plan, the Market Initiatives Roadmap, and the storage White Paper, several parties have indicated a strong interest in market product development to address aspects of renewable integration. To assist IRRP in prioritizing and coordinating its role in market development, please indicate your perspective on***

- ***the effect of MRTU market design and planned enhancements (MAP) on renewable integration;***
- ***any changes to the Roadmap based on consideration of renewable integration;***
- ***which new market products, if any, are needed to stimulate needed capabilities;***
- ***market aspects of interdependencies with other market and policy developments (e.g., once through cooling, long-term RA, greenhouse gas regulations); and***
- ***market design lessons being learned in other ISOs/RTOs or other countries that are relevant to the California market context.***

Our comments here relate mainly to market products. In general, the ISO's approach should address the following key issues, for both Phase 1 and Phase 2:

- ***Identifying a robust inventory of ISO operational needs under a wide range of scenarios***, including different renewables-mix assumptions (see discussion above). These analysis should be technology-neutral, i.e., recognize the fact that all generating resources, as well as all electric loads, are intermittent to some degree, and consistent treatment should be applied to all of them to the extent possible.
- ***Complete an inventory of the existing fleet of flexible resources***, adjusted for likely retirements and new flexible generation likely to be operational. (This assessment could include a detailed look at minimum generation levels for must-take, hydro, and fossil units, as well as flexibility in import levels, if that analysis is not conducted in an RRI Report as discussed above.) We first need to know what we have, before we can determine what we need.
- ***Examine market-rule and related changes to remove barriers to participation in existing ISO markets***, including increased flexibility for the existing/expected fleet and participation by the range of likely new technologies (e.g., energy storage and demand response). Estimate the additional response that the market might provide as a result. As the

ISO has recognized, these rules should be technology-neutral.

- **Develop additional market products & processes to meet any gaps remaining.** Generally, this produce development should emphasize “carrots,” not “sticks” – if the ISO imposes flexibility, rather than paying for it, it will simply push the costs onto other parties.
- **Include economic analyses for different alternative solutions, where practicable.** This information, from an objective source like the ISO and considering stakeholder input, can inform the decisions of policymakers and regulators. The CPUC will need an integration-cost estimate of for its renewables procurement program, and the ISO, with support from GE (see above), is in the best position to supply this information. At a minimum, the ISO should provide the technical integration requirements for various renewable energy scenarios, and make costing data available for the CPUC to use.

In addition, we want to add a note of support for ISO work on opportunities for inter-BAA cooperation and coordination, including ACE- and reserve-sharing and increased use of dynamic scheduling. These “no-lose” measures have been shown to improve system reliability and reduce the cost of integrating intermittent generation into electric-system operation.

***In response to comments on the IRRP High-Level Plan, several parties supported the creation of working groups. The CAISO proposes to create the following working groups to act as technical forums to assist the CAISO: Storage, Forecasting and PIRP, Needs Assessment Studies and Research, and Market Products.***

- ***Please indicate whether you support the creation of such groups and whether your company would be willing to participate.***
- ***Are there other working groups that should be created?***
- ***Should there be limits on participation to those with appropriate technical backgrounds?***
- ***Describe the role the working groups should play in the IRRP.***

We support the creation of focused working groups where the scope is narrow, e.g., energy storage and forecasting/PIRP; we would be willing to participate in a forecasting/PIRP group, and participation in the energy storage group may be possible depending on the scope.

Participation in either group should be open to those that are technically knowledgeable, so that group members can contribute toward the technical problem-solving best done in these smaller groups. However, group work-product should be shared with the wider stakeholder group (see below) before decisions are made, to ensure adequate policy-level consideration.

All group agendas, minutes, and proposals should be widely noticed to the market so all can be informed, and participate where they wish.

Each group should have defined objectives and a clear schedule. The ISO should chair the groups and ensure that they stay focused and on schedule.

***(Additional input to the “mission” of the forecasting/PIRP group: The scope of this group should include the following:***



- (1) Finalizing the solar specs ASAP, with stakeholder-input opportunity for any changes since the last version issued in April and for proposed MRTU BPM language, and additional discussion on solar forecasting/modeling;*
- (2) Full stakeholder-input process for any changes to wind specs, and a transition plan for any changes;*
- (3) The ISO's long-promised "best practices" list of equipment and operational advice for improving data quality/availability;*
- (4) Additional information-sharing about the PIRP forecasting RFB, including details of the forecasting "contest" ISO has reportedly been conducting between interested bidders and the schedule for making a decision on how to proceed.)*

The larger study and market-development work would be better done through the general ISO stakeholder process, for two reasons: (1) this work is of very broad interest, so it's unlikely that a smaller group could be effective in incorporating the wide range of stakeholder concerns; and (2) affected stakeholders have resource limits and cannot reasonably participate in large numbers of working groups or sub-groups.