Comments of the Center for Energy Efficiency and Renewable Technologies (CEERT)
On Present and Future Central Station Renewable Plant Costs

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The Center for Energy Efficiency and Renewable Technologies (CEERT) respectfully provides these comments on the staff workshop and draft analyses conducted on the Present and Future Central Station Renewable Plant Costs.

Our concerns reflect a general lack of stakeholder involvement and transparency with regard to the inputs behind the analyses. CEERT feels that stakeholders were not provided enough information or time to fully explore the draft results. Furthermore, non-industry stakeholders have little basis for measuring the accuracy of present cost estimates or the likelihood of future costs of central station renewable generation plants with such limited information on current renewable contract prices. We ask that the Commission host another workshop to discuss in greater detail the assumptions and inputs used in the analysis, and that the Commission also allow a significantly lengthier comment period to provide stakeholders with a better opportunity to fully explore the model and its results.

In general, CEERT is concerned about the following elements of the study:

- Lack of consideration of avoided costs e.g. carbon and fuel price volatility
- Basis for the "commercial" or "emerging" technology rankings
- Need for consistent boundaries for consideration of costs and cost drivers

Avoided Cost Analysis

The Commission's Technical Consultant Gerry Braun suggested conducting a more integrated analysis which would look at avoided costs of renewable generation against fossil plants. CEERT strongly supports this concept. In order to compare the costs of renewables to the costs of conventional resources, it is essential to look at avoided costs associated with greenhouse gas prices and natural gas price spikes and volatility.

CEERT suggests that this analysis should include a range of avoided costs resulting from carbon mitigation. CEERT recommends starting with a range of $27.00/ton CO_2 - $41.00/ton CO_2, and running multiple sensitivities to reflect the potential avoided costs under high ($60.00/ton CO_2) and low ($8.00/ton CO_2) carbon prices. The CPUC uses an initial assumed value of $8.00/ton CO_2 to establish the minimum Value of Avoided CO_2 Emissions.[1]

Additionally, with regard to volatility of the price of natural gas, CEERT recommends that the CEC and its consultants consider the value of avoided generation fuel cost as well as the value of avoided fossil fuel as a price hedge in its assessment of the costs of each renewable technology.

Commercial and Emerging Characterizations

CEERT is also concerned about Mr. Braun's classification of "commercial" versus "emerging" technologies and "capable" or "developing" industries in his analysis of future supply costs. Not only do the slides fail to sufficiently explain the basis for the characterizations, but Mr. Braun's presentation does not explain how such rankings or categorizations might feed-in to other calculations within the modeling exercise. CEERT requests that Mr. Braun describe his evaluation process for determining these rankings and how it affects the rest of the results so that parties can appropriately respond.

Need for Consistent Boundaries

Supportive Infrastructure Costs

According to the staff workshop notice, the purpose of this modeling effort is to better forecast the current and future costs of electricity *generation* from central station renewable energy facilities and

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[1] Energy and Environmental Economics, Inc., October 25, 2004. Updated E3 Electric Avoided Costs Workbook. Calculations use a cost estimate of $0.004/lb of CO_2, equivalent to the $8/ton CO_2 penalty applied in the CPUC's Integrated Resource Planning process.

other generation sources. As such, CEERT believes that the Commission should apply some boundaries to each of the technologies, in order to lead to unbiased results. These boundaries would assist the Commission and its consultants in determining which cost drivers to include in the analysis, and which to exclude.

One such boundary should determine whether or not to include supportive infrastructure costs such as transmission and grid reliability. If the purpose of this modeling exercise is only to look at the costs of generation itself, CEERT would argue with the inclusion of non-generation costs. Furthermore, if the total cost curves for renewables will be eventually compared to the costs of conventional fossil generation, consistency is necessary between the two types.

Mitigation Costs and Land Impacts

During the Workshop on the Present and Future Costs of Renewable Generation, Commissioner Boyd suggested eventually looking at the potential costs of mitigation of land and habitat impacts associated with permitting central station renewable energy plants. He also noted that at some point, the Commission should consider conducting an externalities assessment for renewable facilities. CEERT strongly urges the Commission to limit this particular analysis to costs directly associated with generation. Any further investigation of the costs associated with mitigation and externalities would require a transparent process to agree upon inputs and assumptions and significant stakeholder review. The results would be speculative at best. Furthermore, such an assessment would require applying the same methodology to assess the externalities of fossil generation in order to provide a basis for comparison.

CEERT appreciates the opportunity to review the draft analyses and provide comments on the preliminary results. At this time, however, sufficient information has not been provided to the parties to proved feedback as to the accuracy of the study results. Therefore, we seek further dialogue with Commission staff and consultants, particularly with regard to the issues above, but also to discuss more specific cost drivers and outputs.

Respectfully submitted,

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