Stakeholder Comment Template
CAISO Integration of Renewable Resources (IRRP)
High-Level Program Plan

Date Submitted: 5/5/2008

Industry Segment: Market Participant

Instructions: The CAISO is requesting written comments on the document entitled Integration of Renewable Resources Program (IRRP) High-Level Program Plan. 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. Submissions are requested by close of business on Friday April 25, 2008.

Beacon Power Corporation (Beacon) appreciates the opportunity to submit comments on this matter. Our comments relate to the following High Level Program Plan sections:

- Track 3 (Perform Required Studies), Project #10 (Analyze the benefits of Fast Regulation and Wind Integration); and
- Track 4 (Market Product Assessment and Development), Project #11 (Assess and Develop Market Products and Mechanisms Necessary to Support Renewable Resource Mechanism) – specifically, the scope items related to meeting increased Regulation needs (#s 2 & 3), new energy storage technology (#7), and Resource Adequacy changes (#s 8 & 9).

Track 3, Project #10: We assume that the reference to "Fast Regulation" in the Project title refers to the kind of service implemented in some eastern markets, where the full ramping response is delivered in 4 seconds or less.

- ***Scope description:*** Broaden the description to encompass more than just generation resources, e.g., "Evaluate a methodology to assess the relative value of existing and new generation, energy storage, and demand response resources for Regulation and load-following."
- ***Scope additions:*** Add a scope items to this Project to assess:
  - The potential ability of a Fast Regulation service to reduce the total amount of Regulation needed to manage the ISO system, including intermittent-resource management needs; and
  - The optimum characteristics of a fast Regulation signal to maximize benefits to ISO.

Scope item #s 2, 3, & 7: These items are all related, to the extent that energy storage technology can be used to meet, not only on-/off-peak energy issues, but also Regulation requirements.

ISO markets sometimes run short of Regulation even today, and adding energy storage would benefit the grid regardless of future renewable-energy penetration and resource mix. Energy storage offers a highly dispatchable Regulation source not related to the rainfall and temperature uncertainties that can sometimes limit availability and operation of the current large amounts of hydro-related Regulation resources on the ISO system.

Beacon recommends that the ISO incorporate into Project #11 an examination of the tariff and technical changes needed to accommodate energy storage technology: (1) interconnection to the ISO grid; and (2) its use and participation in ISO markets. This should include (but not be limited to) examination of the items listed below:

- Changes to Ancillary Services bidding and procurement rules, to allow availability for less than a full hour;
- Appropriate interconnection study methodologies for energy storage technology, "behind" and "in front of" the meter;
- Changes to the Station Power Protocol, to provide for applicability to energy storage facilities;
- Changes to ISO agreements for market participation (e.g., Participating Generator Agreement), to broaden applicability beyond generating and load resources;
- Additional ISO Master File features needed for energy storage (e.g., maximum run time); and
- Modeling and dispatch of energy storage in ISO markets and operations

Scope item #s 8 & 9: In addition to considering RA requirements for fast-start and fast-ramping resources, this effort should consider such requirements for Ancillary Services-capable resources – especially those that would meet the increased Regulation needs