



A123 Systems' Stakeholder Comments
CAISO Integration of Renewable Resources (IRRP)
October 24, 2008 Stakeholder Meeting

Organization: A123 Systems	Date Submitted 11/7/2008
Organization Representative: Charles Vartanian	Contact Number: 626-818-5230
Industry Segment: Equipment manufacturer (Nanophosphate™ Li-ion Battery Storage Systems)	

A123 Systems respectfully submits our responses to selected CAISO post-October 24th Work Shop questions. Our comments are provided below in *green italic text*, following the related prompting CAISO text.

To summarize,

- 1) A123 Systems applauds the proactive steps that the CAISO IRRP industry stakeholder group is taking to address the significant opportunity, and need, to facilitate successful integration of future significant amounts of renewable resources onto the California electric grid, and,
- 2) A123 Systems looks forward to working collaboratively within the CAISO IRRP forum.

CAISO: 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

- market design lessons being learned in other ISOs/RTOs or other countries that are relevant to the California market context.

A123 RESPONSE:

Relevant ISO lessons learned useful for evaluation and consideration within the IRRP: Midwest ISO Open Access Tariff and supporting ASM system modifications to remove unintentional and/or unnecessary barriers to participation by non-generation resources in their ancillary service markets.

Relevant International and U.S. technology lessons learned useful for evaluation and consideration within the IRRP: Several large scale grid-connected advanced battery systems are in operation and can provide the IRRP insight on the existing capabilities of advanced battery based storage technology, including,

- *34 MW Sodium Sulfur based battery plant for wind integration in Japan (Rokkasho), constructed and going into commercial operation in 2008*
- *400 kW Flow technology based battery for diesel+wind integration in Tasmania (Kings*



Island), in service 2003

- *1.5 MW Sodium Sulfur based battery system for PV Integration in Japan (Wakkanai), going into operation 2008-2009*
- *2 MW Li-ion based battery system for Frequency Regulation, operated in IP&L service territory, in service 2007*
- *1 MW Li-ion based battery system for Frequency Regulation, interconnected in PECO service territory, PJM RTO participant, in service 2008*
- *V2G with Li-ion battery system for Frequency Regulation (“MAGICC”project), same AC Propulsion eBox car at various distribution locations, dispatched by PJM.*

CAISO: 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.

RESPONSE: Yes, we support the formation of the listed working groups. We volunteer to participate in the Storage working group. The A123 Systems contact for this working group is Charles Vartanian, cvartanian@a123systems.com.

Another activity that may be relevant for IRRP working group participation is development of models for various new grid-participatory technologies, like fast acting battery storage, for future use in CAISO system-level studies. A123 Systems would support this additional modeling activity if included in the IRRP.

- Should there be limits on participation to those with appropriate technical backgrounds?

RESPONSE: No. Participation in working groups should be open to all IRRP stakeholders, at minimum, for information.

- Describe the role the working groups should play in the IRRP.

RESPONSE: The role is to investigate and answer technical questions pertinent to the broader market and regulatory issues to be identified and addressed by the IRRP. Ultimately, IRRP working group product will provide input for future policy actions that will improve market design elements relevant to successfully integrating substantial amounts of additional renewable resources in California.