

Stakeholder Comments Template

Submitted by	Company	Date Submitted
James Kelly, CEO jim@aresnorthamerica.com	Advanced Rail Energy Storage LLC (ARES)	May 29, 2015

ARES applauds the CAISO for commencing this stakeholder initiative to develop enhancements to CAISO rules, market products and models needed to encourage greater participation of energy storage in the CAISO, and appreciates this opportunity to comment on the scope of the CAISO's proposed initiative. ARES suggests that to support energy storage participation in the CAISO markets and properly compensate storage for its fast-response in the regulation market, the scope of CAISO's Energy Storage and Aggregated Distributed Energy Resources initiative must consider improvements in the market design and CAISO operations in connection with the regulation and frequency response market. Accordingly, ARES suggests that CAISO add the following regulation market issues to the scope of this initiative.

The minimum performance standard for regulation suppliers

ARES recognizes that the CAISO needs to set a minimum performance standard that permits enough resources to qualify to provide regulation service. However, low minimum performance thresholds undervalue fast-response storage resources. Although FERC has given the CAISO time to review and report on minimum performance thresholds, ARES believes that this issue is highly problematic for storage resources, and should be evaluated within the scope of this stakeholder initiative.

In addition to evaluating its minimum performance standards sooner, the CAISO should consider reducing mileage payments, imposing penalties for units that cannot follow reg up and reg down instructions, or imposing penalties on regulation capacity awards where units fail to meet proper response times. The effectiveness of CAISO's ability to regulate its system turns directly on the ability of regulation service providers to accurately respond to CAISO's dispatch signals. Fast-response units that meet the accuracy requirements should be compensated accordingly, and those that fail to respond appropriately should not get compensated for services they are not providing.

The entry of energy storage technology, which is uniquely suited to meet regulation service needs most efficiently, will not occur, or will be delayed, if the market is not designed and operated in a manner that incentivizes such entry, i.e., that does not send false market signals that supply margins are high and market prices are low or volatile. This initiative provides the

opportunity to identify what needs to be done to improve regulation market design and CAISO operations, particularly with respect to establishing and enforcing minimum performance standards, to ensure timely and effective entry by energy storage.

Accuracy metrics

While CAISO's regulation service market rules employ a two-part rate design which is intended, through the mileage component, to tie compensation to performance, it appears that supply offers are not responsive to this rate design, i.e., the mileage offers are often zero. ARES believes that this may reflect ineffective accuracy metrics. If CAISO's accuracy metrics do not properly identify and reward performance, suppliers may structure their offers so that the bid is captured solely or primarily in their capacity offers. This initiative provides the opportunity to evaluate accuracy metrics to ensure that offers and clearing prices reflect rational levels.

Mileage payments

As part of its assessment of regulation services, the CAISO should evaluate why the CAISO mileage payments are so much lower than other markets. If mileage price is being depressed because of performance, this would be a concern.

Evaluation of the impact of the flexible ramping constraint on regulation service

ARES also suggests that the CAISO evaluate the impact of its flexible ramping constraint on regulation service, and whether the large deadband results in reliance on flexible ramping capacity to effectively serve regulation needs.

Timing

While FERC has provided CAISO with additional time to resolve some of these issues, CAISO's operational realities may not allow it to wait until the FERC deadline. In addition to ensuring that development of efficient energy storage supply for regulation markets is not delayed, NERC requirements are being tightened in connection with frequency response requirements. Given the close association between development of energy storage supply and a workable regulation market, ARES requests that the CAISO include these regulation service issues in the scope of this initiative.