

COMMENTS OF THE CALIFORNIA ENERGY STORAGE ALLIANCE

Flexible Resource Adequacy Criteria and Must-Offer Obligation

Second Revised Straw Proposal, July 25, 2013

Submitted by	Company	Date Submitted
Don Liddell, Douglass & Liddell liddell@energyattorney.com (619) 993-9096	California Energy Storage Alliance (CESA)	August 15, 2013

CESA welcomes the CAISO’s collaborative work with the CPUC and stakeholders to ensure that flexible capacity energy storage resources are available in the very near future to reliably operate the grid while fulfilling state energy and environmental goals. CESA recognizes that to be operationally available to the CAISO markets, energy storage resources must submit economic market-based bids for grid services, as opposed to self-scheduling. CESA will continue to work closely with the CAISO and the CPUC in developing the CAISO tariff changes necessary for the CAISO to adopt flexible RA capacity requirements that specifically include energy storage for inter-hour, load following, and ramping needs.

CESA applauds the CAISO’s planned market changes underway in conjunction with FERC’s Order 764 to better integrate variable energy resources to increase the dispatch frequency by allowing resources to bid and schedule in 15-minute intervals in the real-time market. While this new scheduling approach will use a flexible capacity counting methodology established specifically for the CAISO tariff in the first instance, it is strategically key that it will be designed to be consistent with what is soon to be established by the CPUC as well, and should relate directly to each capacity resource’s net qualifying capacity, minimum operating level, start-up time, and ramp rate.

It is encouraging that the CAISO’s present starting point for discussion of a must-offer obligation for energy storage resources that provide flexible capacity will allow storage resource to either: (1) submit economic bids to provide regulation for the time period from 5:00 a.m. – 10:00 p.m. as a regulation energy management resource, *or* (2) like demand response, select

CESA | 2150 Allston Way, Suite 210, Berkeley, CA 94704 | 510.665.7811 | www.storagealliance.org

one of the time periods for a must-offer obligation to provide a minimum of three hours of energy. However, energy storage resources can effectively provide ramping capability of much less than three hours, and should be able to bid in smaller increments as [small as 15 minutes each to build up to the 3 hour requirement](#). CESA thus supports elimination of an arbitrary duration requirement for energy storage for all services it provides, above a baseline 15-minute commitment, including ramping. A baseline 15-minute commitment would enable energy storage to cost-effectively participate in each of the three categories of need identified by CAISO: intra hourly, load following and full ramp. By procuring resources in smaller increments, less overall resource will likely need to be procured resulting in reduced cost to ratepayers.

The proposal to give energy storage resources only two flexible resource adequacy options – especially options equating energy storage with demand response - is inappropriate. There is no reason that energy storage, that can provide both upward and downward load following, should not be uncritically treated as demand response. For example, demand response resources are located behind the meter, are intended to primarily serve customers through cost savings, and typically entail reduced energy usage.

There are two main reasons that an arbitrary duration requirement of three hours will produce unintended negative consequences for California’s system:

First, as mentioned above, handicapping a flexible capacity resource like energy storage that can easily be dispatched and aggregated in smaller increments by arbitrarily requiring a resource in 3-hour blocks may result in purchasing capacity that is not needed. The same rationale behind FERC Order 755 for regulation also applies to ramping. Faster, more accurate bids are more effective than longer, less accurate bid.

Second, a shorter duration will enable a much larger pool of energy storage resources to bid, increasing competition among energy storage as well as competition among all resources. This will help drive down cost. Indeed, as was the case for FERC Order 755 implementation, CESA respectfully suggests that an incentive payment for ramping accuracy may be good idea.

Diversity of energy storage means that some resources will most economically provide short-duration bids best suited for regulation energy management, others will be mid-duration, and some (such as pumped hydro) will provide longer-duration. Energy storage is an optimal resource class to meet the need for all of these services as products to the CAISO, but will not be able to provide them most economically with an arbitrary three-hour requirement. Indeed, best-fit resources may not be able to provide those services at all with such dispatch requirements. Any must offer obligation for energy storage should be appropriately tailored to the appropriate service, of which energy storage can provide many.

CESA | 2150 Allston Way, Suite 210, Berkeley, CA 94704 | 510.665.7811 | www.storagealliance.org

1 Energy Systems | A123 Systems | AES Energy Storage | Alton Energy | American Vanadium | AU Optronics Corporation | Beacon Power | Bright Energy Storage
BrightSource Energy | CALMAC | Chevron Energy Solutions | Christenson Electric, Inc. | Clean Energy Systems | CODA Energy | Deeya Energy
Demand Energy Networks | DN Tanks | Eagle Crest Energy | East Penn Manufacturing | Energy Cache | EnerVault | FAFCO Thermal Storage Systems
FIAMM Group | FIAMM Energy Storage Solutions | Flextronics | Foresight Renewable Systems | GE Energy Storage | GELI - Growing Energy Labs
Green Charge Networks | Greensmith Energy Management Systems | Gridtential Energy | Halotechnics | Hecate Energy LLC | Hydrogenics | Ice Energy | Invenergy
KYOCERA Solar | LightSail Energy | Next Era Energy Resources | OCI Company Ltd. | Panasonic | Paramount Energy West | Parker Hannifin | PDE Total Energy
Solutions | Powertree Services | Primus Power | RedFlow | RES Americas | S&C Electric Co. | Saft America | Samsung SDI | Sharp Labs of America | Silent Power
SolarCity | Sovereign Energy Storage LLC | Stem | Sumitomo Electric Innovation Core | Sumitomo Corporation of America | TAS Energy | UniEnergy Technologies
Xtreme Power

Locational diversity of energy storage will be further amplified if CAISO enables not only stand alone merchant plants to participate, but also energy storage that maybe co located with generation, renewable generation and/or energy storage that is sited behind the meter on customer premises. On the latter point, there is already precedent for this for regulation and similarly allowing behind the meter resources to participate in ramping will encourage greater competition and provide CAISO with tremendous flexibility in location.

CESA appreciates the fact that the must-offer obligation developed in this initiative will be a critical component of the multi-year forward procurement mechanism. Further, CESA agrees with the CAISO that future procurement must consider how to implement separate procurement requirements for aggregation of multiple flexible capacity products, particularly if they are sited behind the meter. It is clear that much further detailed work needs to be done at the CAISO and at the CPUC to produce a robust methodology that will take full advantage of the capabilities of energy storage to competitively deliver reliable and valuable products in the CAISO's capacity markets. CESA will be an active contributor to the work ahead.

CESA | 2150 Allston Way, Suite 210, Berkeley, CA 94704 | 510.665.7811 | www.storagealliance.org

1 Energy Systems | A123 Systems | AES Energy Storage | Alton Energy | American Vanadium | AU Optronics Corporation | Beacon Power | Bright Energy Storage
BrightSource Energy | CALMAC | Chevron Energy Solutions | Christenson Electric, Inc. | Clean Energy Systems | CODA Energy | Deeya Energy
Demand Energy Networks | DN Tanks | Eagle Crest Energy | East Penn Manufacturing | Energy Cache | EnerVault | FAFCO Thermal Storage Systems
FIAMM Group | FIAMM Energy Storage Solutions | Flextronics | Foresight Renewable Systems | GE Energy Storage | GELI - Growing Energy Labs
Green Charge Networks | Greensmith Energy Management Systems | Gridtential Energy | Halotechnics | Hecate Energy LLC | Hydrogenics | Ice Energy | Invenergy
KYOCERA Solar | LightSail Energy | Next Era Energy Resources | OCI Company Ltd. | Panasonic | Paramount Energy West | Parker Hannifin | PDE Total Energy
Solutions | Powertree Services | Primus Power | RedFlow | RES Americas | S&C Electric Co. | Saft America | Samsung SDI | Sharp Labs of America | Silent Power
SolarCity | Sovereign Energy Storage LLC | Stem | Sumitomo Electric Innovation Core | Sumitomo Corporation of America | TAS Energy | UniEnergy Technologies
Xtreme Power