California ISO

Stakeholder Comments Template

Energy Storage and Distributed Energy Resources Phase 4 – Work Shop

This template has been created for submission of stakeholder comments on the ESDER Phase 4 - Workshop that was held on June 27, 2019. The workshop, stakeholder meeting presentations, and other information related to this initiative may be found on the initiative webpage at:
http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyStorage_Distributed EnergyResources.aspx

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business on **July 11, 2019.**

Submitted by	Organization	Date Submitted
Sandeep Arora	*LS Power*	*7/11/19*

Please provide your organization's comments on the following issues and questions.

1. **Default Energy Bids for Energy Storage**

    Please provide your organization's feedback on the ISO's presentation on the *default energy bids for energy storage* topic. Please explain your rationale and include examples if applicable.

CAISO is on the right track in calculating Energy, Loss, Cycling & Opportunity costs as the components that will help guide developing DEB for Energy Storage. We recommend that DEB for Storage should be high enough such that it doesn't disincentive market participation from this class of resources which provide critical flexible capacity that CAISO needs.When reviewing opportunity costs, CAISO should also consider the "intra hour" opportunity costs for storage and not just use an average cost over several hours during the day.

The scenario that should be carefully avoided is one where a resource's Default Energy Bid is used and the result is that the resource ends up discharging most of its energy, becoming unavailable for later periods of higher demand and higher LMPs. This scenario would work against the interests of everybody involved, as the storage operator would experience a huge lost opportunity cost and earn lower revenues, and the CAISO grid operators would have fewer MW of

flexible resources available during a time of higher demand, with the possible result of needing to dispatch even higher cost resources later.

Please provide your organization's feedback on DMM's presentation on *default energy bids for energy storage*.

Please provide your organization's feedback on SCE's presentation on *resource availability.*

2. NGR State-of-charge paramenter

Please provide your organization's feedback on the ISO's presentation on *the NGR State-of-charge* topic. Please explain your rationale and include examples if applicable.

Please provide your organization's feedback on WPTF's presentation on *the NGR State-of-charge* topic.

We support the SOC range proposed by WPTF. A range will offer better functionality and allow Storage operators to meet their specific SOC goals while reducing the frequency of uneconomic situations while meeting these goals. Range should still let a Storage operator define a set SOC target if desired for any specific business needs.

3. Variable Output Demand Response

Please provide your organization's feedback on the ISO's presentation on *the variable output demand response* topic. Please explain your rationale and include examples if applicable.

4. Maximum Run Time Parameter for DR

Please provide your organization's feedback on the ISO's presentation on *the maximum run time parameter for DR* topic. Please explain your rationale and include examples if applicable.

Additional comments

Please offer any other feedback your organization would like to provide on the topics discussed during the workshop.

Allow a bid spread

As discussed at the Stakeholder meeting, we encourage CAISO to reconsider providing Storage projects the optionality to bid a spread. As noted by LS Power in its previous comments[1], if Storage is unable to opt out of Multi Segment Optimization, CAISO should consider providing an option to Storage to be able to bid a spread between its highest charge offer price and lowest discharge offer price to be sure that any dispatch covers its Variable Operations Cost. If it were possible for the Scheduling Coordinator to directly provide CAISO with a minimum spread between charge and discharge prices that will be enforced in multi-interval optimization, similar to the way in which many generator types input a VOM value in $/MWh into their master file, then that would alleviate some of the concerns related to Multi Segment Optimization.

NGR – Ancillary Service Awards

Currently NGR resources providing Ancillary Services get awards based on their 1 hour dispatch capability. This is primarily due to the current 1 hour optimization construct for the Day Ahead market and is not in line with CAISO's tariff and BPM definitions of Ancillary service, which state this to be a 30 min product. The issue for NGRs would have been resolved if CAISO proceeded to implement a 15 min market in Day Ahead. Since CAISO is no longer proceeding with a Day Ahead 15 min market, the NGR AS issue should be resolved. Non-generating resources (NGRs) with a state of charge should be required to be capable of a 30 minute discharge to be awarded regulation-up, spinning reserves and non-spinning and 30 minute charge to be awarded regulation down. We recommend that CAISO include this issue in the scope for either ESDER4 or DAME.

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[1] LS Power comments, page 2:
http://www.caiso.com/Documents/LSPowerComments-EnergyStorage-DistributedEnergyResourcesPhase4WorkingGroup-Mar18-2019.pdf