



Stakeholder Comments Template

Energy Storage and Distributed Energy Resources (ESDER) Phase 4

This template has been created for submission of stakeholder comments on the Issue Paper for ESDER Phase 4 that was published on Feb 6, 2019. The paper, stakeholder meeting presentation, and all information related to this initiative is located on the [initiative webpage](#).

Upon completion of this template, please submit it to initiativecomments@caiso.com. Submissions are requested by close of business **Feb 27, 2019**.

Submitted by	Organization	Date Submitted
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Please provide your organization's comments on the following issues and questions.

1. Non-Generator Resource (NGR) model

Please state your organization's position as described in the Issue Paper:

WPTF supports exploring modifications either to market rules or the optimization that would improve ability of market participants to better manage the state-of-charge of energy storage resources. WPTF appreciates the potential options noted in the issue paper and appreciates the CAISO's willingness to consider other options beyond what is in the issue paper.

WPTF asks the CAISO to consider expanding the outlook horizon of the real-time market. This was something that the CAISO has had on the policy roadmap for a few years now and it keeps getting pushed. WPTF recognizes this will not address all the issues noted but should be considered as part of a fleet of solutions within this policy process.

WPTF is also supportive of exploring the idea of allowing the market to optimize bid curves based on resource's state of charge. For example, a resource could provide a bid curve for a state of charge less than 25%, a bid curve if its state of charge is between 25% and 75%, and one if its state of charge is more than 75%. The market would then be able to optimize the use of the resource given the differing bid curves and associated state of charge. Additional benefits of such a bidding structure could be captured if coupled with a longer optimization horizon.

Other options for consideration could include:

- Targeted end of day SOC rather than hourly, as an hourly targeted SOC may overly limit the optimizations ability to maximize the resource's use.
- Implementation of an optional resource constraint that dispatches the resource in real-time in such a way as to still be able to meet its day-ahead schedule – perhaps similar to how MSG configurations are limited between day-ahead and real-time.

2. Bidding requirements for energy storage resources

WPTF supports the idea of exploring the need for mitigation tools and potential mitigation structures for energy storage. An effective mitigation mechanism will need to ensure that resources are only mitigated in the event they could exercise market power and adversely impact the market. As the CAISO engages' stakeholders on this topic, WPTF believes it will be key to understand how the ability for energy storage resources to impact market prices differ from that of traditional generators. For example, the market can only discharge a resource when it has already opted to charge that resource in a previous dispatch interval; this requires *two* bid prices in *two* separate market intervals to be economic in opposite directions (i.e. charging and discharging). In contrast, the market can dispatch a traditional generator whenever the resource is online and the bid price in that *one* interval is economic.

Additionally, the CAISO and stakeholders will need to be able to develop a method to establish a reasonable price at which energy storage resources would be mitigated. In the past, the CAISO and stakeholders alike have agreed it to be a daunting task and looks forward to engaging the CAISO on this topic again. WPTF supports a methodology structured in a way that does not overly hinder the ability of resource to be optimally dispatched within the market and, at a minimum, should include the opportunity costs arising from intra-day limitations due to charging/discharging.

3. Demand Response resources

Please state your organization's position as described in the Issue Paper:

No comments at this time.

4. Multiple-Use Applications (MUA)

Please state your organization's position as described in the Issue Paper:

WPTF supports this topic.

5. Additional comments

Thank you for taking up these very important topics!