California ISO

Stakeholder Comments Template

Energy Storage and Distributed Energy Resources (ESDER) Phase 4

This template has been created for submission of stakeholder comments on the Straw Proposal for ESDER Phase 4. 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 **May 17, 2019**.

Submitted by	Organization	Date Submitted
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Please provide your organization's general comments on the following issues and answers to specific requests.

1. Non-Generator Resource (NGR) model SOC parameter

The proposed NGR model State of Charge (SOC) parameter will allow scheduling coordinators to manage an energy storage resource throughout the day by limiting its participation in the market to a desired SOC at the end of each operating hour. Scheduling coordinators are not required to use SOC parameters but have the option to use them. As stated in the Energy Storage and Distributed Energy Resources (ESDER) Phase 4 Straw Proposal currently the "market does not ensure that the resource's state-of-charge at the end of the time horizon is sufficient to meet future dispatches beyond the real-time market horizon."[1]

CPUC staff supports this SOC parameter proposal because it provides a tool for scheduling coordinators to use to manage storage as a transmission asset (SATA) resources. The proposed SOC parameters will enable these resources to comply with SATA requirements while participating in CAISO markets. This proposal also allows scheduling coordinators to achieve the optimal use of an energy storage resource throughout the day through desired end-of-hour

[1] *CAISO Energy Storage and Distributed Energy Resources Phase 4 Straw Proposal*, May 9, 2019, (ESDER Straw Proposal), p. 5.

SOC parameters. The SOC parameter proposal is thus useful overall to achieving the Multiple-Use Application (MUA) framework[2] developed jointly by CAISO and CPUC.

2. Bidding requirements for energy storage resources

The CAISO proposes to develop an energy storage default energy bid (ES-DEB) to address possible incidents of energy storage market power. CPUC staff is not opposed to developing an ES-DEB but seeks responses to concerns and information requests to ensure that the ES-DEB is implemented in a way that does not act as an unnecessary barrier to energy storage operations or procurement.

Concerns

Since energy storage can serve multiple purposes the categories of conduct that trigger local market power mitigation measures should be revisited for energy storage.[3] This is important because an energy storage unit may be holding a specific SOC to be able to meet a wholesale market obligation at a specific time of day. Forcing storage to bid could interfere with its ability to meet another wholesale market obligation. Thus, the design of an ES-DEB needs to be sensitive to the ability of storage to operate in a multiple service market environment. The recently proposed DEB for hydroelectric resources may serve as a guide as it captures:

> the opportunity costs for hydro resources to sell energy in markets outside of the CAISO…It also includes a floor that serves to ensure that the default energy bid is sufficiently large such that hydro resources with limited capability to run may not be dispatched more than energy available, dictated by short-term limitations, too frequently.[4]

In order to develop an ES-DEB that accurately compensates for the operating costs of energy storage, CPUC staff also recommends further discussion on the presented third option for calculating an ES-DEB in the next ESDER Phase 4 straw proposal and stakeholder workshop. This third option for calculating an ES-DEB would consider all costs for energy storage resources to calculate the marginal costs for each energy storage resource which would then be used to develop an ES-DEB.[5,6] CPUC staff makes this recommendation because energy storage resources have unique costs based on their technology type that should be considered in the ES-DEB calculation.

Since the operating and maintenance costs for energy storage resources may vary based on their application, CPUC staff also supports accounting for the variable operating and maintenance costs for energy storage (such as maintaining an energy storage resource at a non-

[2] *Decision 18-01-003, Decision on Multiple-Use Application Issues, issued January 17, 2018 in R.15-03-011, Order Instituting Rulemaking to consider policy and implementation refinements to the Energy Storage Procurement Framework and Design Program (D.13.-10-040, D.14-10-045) and related Action Plan of the California Energy Storage Roadmap*.

[3] *CAISO Fifth Replacement Electronic Tariff, Section 39. Market Power Mitigation Procedures*, April 1, 2019, section 39.3.1, pp. 2-3.

[4] *CAISO Local Market Power Mitigation Enhancements Draft Final Proposal*, January 31, 2019, pp. 32-33.

[5] ESDER Straw Proposal, p. 15

[6] *CAISO Energy Storage and Distributed Energy Resources Phase 4 Straw Proposal*, May 7, 2019 Stakeholder Web Conference Presentation, slide 22.

zero charge[7]) amongst the costs used to calculate an ES-DEB. In short, the ES-DEB should be unique to the energy storage technology type and application.

Information Request
CPUC staff requests the CAISO describe all the energy storage cost data it intends to use to develop an ES-DEB and for comparison, the CAISO should also describe all the gas generator cost data collected for gas generator DEBs.

3. **DR operational characteristics**

    a. Please provide comments on the CAISO's three options.

CPUC staff may comment on these issues in a later comment period.

4. **Variable output DR**

    a. CAISO requests additional detail and reasoning from stakeholders who believe a more appropriate method exists for determining QC than applying an ELCC methodology.
    b. CAISO requests stakeholder feedback on controls needed to ensure that forecasts accurately reflect a resource's capability.

CPUC staff may comment on these issues in a later comment period.

5. **Non-24x7 settlement of behind the meter NGR**

    a. As a behind the meter resource under the non-generator resource model, any wholesale market activity will affect the load forecast. How will load serving entities account for changes to their load forecast and scheduling due to real time market participation of behind the meter resources?

    b. How would a utility distribution company prevent settling a resource at the retail rate when the behind-the-meter device is participating in the wholesale market?

    c. If a behind-the-meter resource is settled only for wholesale market activity, what would prevent a resource from charging at a wholesale rate and discharging to provide retail or non-wholesale services? How would this accounting work?

CPUC staff may comment on these issues in a later comment period.

6. **Additional comments**

Please offer any other feedback your organization would like to provide from the topics discussed during the working group meeting.

[7] ESDER Straw Proposal, p. 5.