



Submit comment on Energy storage enhancements - straw proposal

Initiative: Energy storage enhancements

1. Please provide a summary of your organization's general comments on the straw proposal presentation for this initiative:

The California Community Choice Association (CalCCA) appreciates the opportunity to comment on the Energy Storage Enhancements Straw Proposal. In summary:

- CalCCA supports the California Independent System Operator's (CAISO's) proposal to develop a new energy storage resource model and looks forward to additional details in future iterations regarding how transition costs will be established and how market power mitigation will be applied;
- CalCCA generally supports the proposed reliability enhancements and offers a clarification on the ancillary services proposal; and,
- The CAISO's co-located enhancements must allow storage resources to take full advantage of the federal program for investment tax credits (ITC) by allowing ITC-eligible resources to only charge from its on-site renewable.

2. Provide your organization's comments on the proposed energy storage resource model, as described in the straw proposal:

CalCCA supports the CAISO's proposal to develop a new energy storage resource model in which scheduling coordinators bid in terms of incremental state of charge (SOC) as an alternative to the existing non-generator resource (NGR) model that requires bids in terms of incremental energy. This model will allow for the better reflection of storage resource capabilities through separate hourly bids for charging and discharging, master file parameters to reflect upper and lower capacity limits and ramp rates dependent on SOC, and transition times and costs. CalCCA looks forward to additional details in future iteration regarding how transition costs will be calculated and verified by the CAISO and how market power mitigation will be applied to resources using this model.

3. Provide your organization's comments on the proposed reliability enhancements for storage resources, as described in the straw proposal:

Ancillary Services

The Straw Proposal explains issues have been identified around the feasibility of storage resources to provide ancillary services awarded in the day-ahead market when the resource does not have sufficient SOC in real-time to deliver energy associated with the ancillary service award. The CAISO states that it may potentially propose in the future that all ancillary service awards for storage be accompanied with bids for energy, such that regulation up awards must be accompanied by a bid to charge, and regulation down awards must be accompanied by a bid to discharge. The CAISO should clarify in its proposal that to the extent necessary to satisfy their award, the storage must provide an energy bid with its ancillary service award. For example, if a storage resource with a Pmax of 100 megawatts (MW) receives a 5 MW regulation up award and the resource is operating at 80 MW, then the energy bid to charge is not needed to ensure the resource can deliver on their

ancillary service award. On the other hand, if the same resource receives a 200 MW ancillary service award, then the resource would need energy bids from -100MW to 100 MW (*i.e.*, charge and discharge bids) to deliver on its ancillary service award.

Exceptional Dispatch and Compensation to Hold State of Charge

The CAISO proposes new functionality to allow operators to dispatch storage resources to hold a certain SOC. The proposal would also compensate storage resources exceptionally dispatched to hold SOC using the realized prevailing locational marginal price (LMP) compared to the reference interval discharge price to represent the opportunity costs for exceptionally dispatching the resource. This proposal is a reasonable replacement for the minimum SOC requirement sunsetting in 2023, as it will provide operators the ability to instruct resources to hold SOC when they identify a need and compensate storage resources for the opportunity costs of holding that SOC.

4. Provide your organization's comments on the proposed co-located enhancements, as described in the straw proposal:

The CAISO proposes enhancements to the co-located resource model to ensure co-located storage resources eligible for ITC can reflect their availability in the CAISO market. CalCCA appreciates the steps the CAISO has taken in this proposal to improve the current co-located model to consider the ITC. However, the CAISO's proposal must take into account that the ITC program is a federal program and allow storage resources to take full advantage of such program.

The CAISO's proposal would provide functionality to limit dispatch instructions for storage resources so they are no greater than the forecast of the on-site renewable. When the CAISO issues a dispatch instruction for the renewable to curtail, or cuts a renewable self-schedule, the CAISO will not reduce charging instructions to co-located storage resources. This could result in grid charging.

Because of the way the ITC is designed, it is not possible for storage resources to fully reflect their cost of foregone ITC in the market through bids. When grid charging occurs, the ITC credits are fractionally reduced until the fraction of grid charging exceeds 25 percent. At that time, a storage resource would not be eligible for the ITC at all. There is no way to financially represent when a resource is fully ineligible for ITC within a CAISO market bid because the cost far exceeds the bid cap. For this reason, some storage resources are designed to go offline to avoid grid charging when there is not sufficient energy from the onsite renewable to charge the storage. The CAISO must make an exception for ITC resources, so they are allowed to only charge from the renewable. Such resources should not be required to grid charge when the renewable output is below forecast or when the renewable is curtailed either through economically curtailment, exceptional dispatch, or self-schedule cuts.

5. Provide your organization's comments on the proposed EIM classification for this initiative, as described in the straw proposal:

No comments at this time.