



12/13/2022

California Independent System Operator & Western Energy Imbalance Market

CAISO Board of Governors & WEIM Governing Body

250 Outcropping Way

Folsom, CA 95630

SUBJECT: Proposed decision on energy storage enhancements

Vistra Corp. (“Vistra”) respectfully submits this letter to the California Independent System Operator Board of Governors (“CAISO BOG”) and Western Energy Imbalance Market Governing Body Members (“WEIM GB”) on Management’s Energy Storage Enhancements proposal at the Wednesday, December 14, 2022 joint meeting.

Vistra is a leading, Fortune 500 integrated retail electricity and power generation company based in Irving, Texas, providing essential resources for customers, commerce, and communities. In California, Vistra owns and operates 1,130 MW of generation and 400 MW / 1,600 MWh of energy storage and provides natural gas retail products to California consumers. By 2023, Vistra will increase its storage operations to 750 MW / 3,000 MWh of energy storage with its third phase of Moss Landing Storage Facility achieving commercial operations. Vistra has plans to develop up to an additional 1,460 MW / 5,840 MWh of combined storage projects in California at its Oakland, Moss Landing, and Morro Bay sites to provide Resource Adequacy capacity and energy and ancillary services to support CAISO reliability.

As the scheduling coordinator for the largest battery asset in the world, we are directly and significantly impacted by any proposals that lead to adverse market outcomes. We are concerned this is a credible risk for the ancillary service proposals and request the WEIM GB and CAISO BOG take the following actions on the proposed energy storage decision:

- Approve a motion authorizing Management to make filings with the Federal Energy Regulatory Commission (FERC) to implement the changes proposed **where CAISO explicitly states that the two ancillary service proposals are severable from the remaining proposals for purposes of evaluation under Section 205 of the Federal Power Act (FPA).**
- Direct Staff to commit to **addressing concerns that the ancillary service proposals would lead to inefficient, potentially harmful, market outcomes in implementation** if these proposals are approved by FERC, including by adjusting ancillary service state of charge constraints to avoid adverse outcomes.
- Direct Staff to **commit to a stakeholder process to address the challenges that storage owners, operators, and scheduling coordinators requested** that were not included in scope of this initiative such as outage management improvements, telemetry improvements, more accurately modeling physical capabilities in Non-Generator Resource model, market power mitigation improvements, and continued challenges with interplay of energy and ancillary services.

Vistra supports Management’s proposals for storage exceptional dispatches, co-located resource participation, and storage mitigation, each of which is generally responsive to challenges raised by storage scheduling coordinators. However, CAISO has failed to support the problem being addressed or any potential benefits of its ancillary service proposals. These proposals are not storage scheduling coordinator priorities. CAISO also has not allayed concerns the proposed changes will introduce market issues.

Vistra seeks relief to our concerns on Management’s proposal in two parts: (1) that the two ancillary service proposals are declared to be severable from the remaining proposals for purposes of evaluation under section 205 of the FPA and that, to the extent FERC approves these proposals, (2) Staff commits to addressing

concerns that the ancillary service proposals would lead to inefficient, potentially harmful, market outcomes in implementation to the greatest extent possible. If approved by FERC, Staff should include adjusting ancillary service state of charge constraints in its efforts to address concerns in implementation.

As of the joint WEIM GB and CAISO BOG meeting, Vistra opposes the ancillary service proposals, but does not want this opposition to interfere with the success of the remaining elements that will improve on the CAISO's current rules. Declaring the ancillary service proposals to be severable from the remaining proposals for purposes of evaluation under section 205 of the FPA would allow FERC to reject the ancillary services proposals while accepting the remaining elements of proposed reforms. The ancillary service proposals instead of helping storage scheduling coordinators better manage the resources, only raise concerns that once implemented these market changes will reduce, potentially harmfully, the ability of storage resources to be efficiently managed. Vistra provides explanations for our opposition to these elements:

- ***Proposal to revise the day-ahead and real-time market's State of Charge ("SOC") calculation to either increase or decrease the SOC calculation by a portion, represented by a multiplier, of the Regulation Down or Regulation Up awards.*¹**

Vistra believes the proposed change to the SOC calculation to reduce SOC based on a multiplier of the Regulation Up or Down award without simultaneously updating the Ancillary Services State of Charge (AS SOC) constraint that currently requires either 100% in day-ahead or 50% in real-time to be included in the applicable SOC value will lead to inefficient market outcomes.² Specifically, CAISO has not proposed changes to the AS SOC constraints that manage the SOC minimum and maximum levels to meet some portion of its AS obligations in day-ahead and real-time. The CAISO proposed change to the SOC value used in this constraint would reduce the SOC value based on an assumed use of regulation (multiplier) but would require a different minimum amount be maintained in SOC to provide that use through the AS SOC constraint.

- ***Proposal to limit the operating range of storage resource(s) that can be awarded regulation in day-ahead to no more than two-thirds its operating range and to require real-time economic bids or self-schedules for energy to accompany 50% of any day-ahead ancillary service awards in the opposite direction.***

CAISO has not sufficiently explained the problem being addressed by the proposal to limit the range of storage that can provide regulation services to two-thirds of its capability and to require accompanying energy bids or self-schedules in real-time. Further, it is unclear to Vistra that market participants fully grasp that the proposal is to limit the range that can be made available for regulation.³

In addition, Vistra wants to ensure the WEIM GB and CAISO BOG are aware that CAISO resisted including in scope of this effort practical challenges with operating raised by stakeholders. This is counter to the stated intent of the effort. The purpose of this initiative was to "explore enhancements that could help storage scheduling coordinators better manage resource state of charge and continue to ensure efficient market outcomes".⁴ This effort could have been an opportunity for the CAISO team to understand the issues facing

¹ CAISO refused to revise its Ancillary Service State of Charge Constraint in the day-ahead and real-time that currently require 100% and 50% of the ancillary service awards, including regulation, to be reserved in the state of charge capability. This failure is the gap that is expected to cause inefficient or infeasible market outcomes. See Market Operations BPM formulation for day-ahead AS SOC constraint in Section 6.6.2.3 and the real-time AS SOC constraint in Section 7.8.2.5.

² See Vistra's comments on Final Proposal and Draft Final Proposal for its concerns on the adverse interaction between the proposed SOC calculation without accompanying revisions to the AS SOC requirements. Vistra also communicated this on stakeholder calls and informal conversations with Management.

³ See Vistra's written comments on Final Proposal, Draft Final Proposal, and April Workshop asking CAISO to take more time to appropriately vet the issue and proposals. Vistra also communicated this on stakeholder calls and informal conversations with Management.

⁴ Final Proposal at 5.

storage market participants and the CAISO operators, and to work towards solutions that resolve these concerns. We are disappointed that the CAISO missed this opportunity to sufficiently investigate these issues.

Vistra asks that the WEIM GB and CAISO BOG direct Management to commit to a stakeholder process to address the challenges that storage owners, operators, and scheduling coordinators requested that were not included in scope of this initiative, such as outage management improvements, telemetry improvements, more accurately modeling physical capabilities in Non-Generator Resource model, market power mitigation improvements, and continued challenges with interplay of energy and ancillary services.

We repeatedly asked the CAISO to delay the timeline of the initiative to allow for this effort to be a robust effort addressing the issues raised by the storage community that are introducing challenges in our operations, especially after the lessons learned from the summer 2022 heat wave.⁵ CAISO declined this request. From Vistra's standpoint, it appears there was insufficient CAISO resources assigned to this effort to fully vet these novel and complex issues. Given the limited resources at the CAISO and the need to prioritize efforts on the most important issues, Vistra respectfully seeks the joint WEIM GB and CAISO BOG help in informing CAISO priorities so that storage challenges are addressed timely with sufficient resources to fully vet these complex and novel issues. Given storage's growing important role in supporting reliability, improving storage market functionality and its operations should be prioritized.

Sincerely,

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⁵ See Vistra's written comments on the Draft Final Proposal flagging we had identified new challenges during the summer 2022 heat wave and asking the CAISO delay the timeline of this initiative to allow for analysis and stakeholder discussions on the events and storage performance during the summer 2022 heat wave.

Appendix: Vistra Comments

- **December 6, 2022:** Vistra communicated inability to support the proposed changes to ancillary service proposals to the Market Surveillance Committee (“MSC”) because of concerns with market inefficiency.
- **November 15, 2022:** Vistra submitted written comments on Final Proposal ([comments](#))
- **September 12, 2022:** Vistra submitted written comments opposing Draft Final Proposal ([comments](#))
- **August 25, 2022:** Vistra voiced concerns with the ancillary service proposals ([video](#)).
- **August 5, 2022:** Vistra submitted comments on the Second Revised Straw Proposal ([comments](#))
- **April 13, 2022:** Vistra presented at workshop urging CAISO to address known storage issues ([slides](#))
- **April 5, 2022:** Vistra submitted comments on the Revised Straw Proposal ([comments](#))
- **January 18, 2022:** Vistra submitted comments on the Straw Proposal ([comments](#))
- **August 10, 2021:** Vistra submitted comments on the July workshop ([comments](#))
- **July 26, 2021:** Vistra presented at workshop on pressing challenges affecting storage operations ([slides](#))
- **May 20, 2021:** Vistra submitted comments on the Issue Paper ([comments](#))