WESTERN ENERGY IMBALANCE MARKET (WEIM)

Opinion on CAISO Draft Final Proposal: Rules for bidding above the soft offer cap

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WEIM Governing Body Meeting
General Session
May 21, 2024

This presentation provides my opinion on the CAISO's Draft Final Proposal* for Summer 2024 changes to rules for bidding above the soft offer cap.

- Topics
  - Motivation: Why is it a priority to change the offer caps for hydro and storage resources?
  - Opinion: Should the CAISO move forward with the proposal?
  - Rationale: What is the basis for the proposal?
  - Conclusions: What are the primary benefits and issues for WEIM?
- Q&A with Governing Body and Stakeholders

*May 7, 2024 redline.

Today, hydro and storage resources may be dispatched uneconomically at prices less than their opportunity costs.

- Under current market rules:
  - Offer caps can be less than hydro and storage opportunity costs
  - Limited energy may be dispatched intra-day, before higher value intervals or intervals when needed for reliability
  - Participants are unable to consistently manage intra-day state of charge with current market rules and processes
- Consequences of uneconomic dispatch:
  - Decreases net revenue of hydro and storage resources
  - Increases dispatch cost and can decrease energy available in critical hours during tight system conditions
  - Discourages offer-based EIM participation by resources with potentially high intra-day opportunity costs

To address uneconomic hydro and storage dispatch, CAISO proposes rule changes for implementation in Summer 2024.

- Proposal 1: Revise the cap on all Default Energy Bids (DEBs) from $1000/MWh to $2000/MWh, in both day-ahead and real time markets
  - Lifting the cap on DEBs lifts the cap on offers because DEBs are considered cost-verified
  - Offer cap rises to DEB, not to $2000/MWh
- Proposal 2: Modify the offer cap for energy storage resources using a proxy opportunity cost value
  - Offer cap proposed to be the higher of: 1) $1000/MWh, 2) the 4th highest Maximum Import Bid Price (MIBP) for the day, and 3) the highest cost-verified offer
  - Raises offer cap for storage, but not the storage DEB

Opinion: Support the proposal to raise the cap on all DEBs from $1000/MWh to $2000/MWh, both day-ahead and real-time.

- Enables hydro to avoid dispatch when price is less than its DEB-based opportunity cost
- Enables hydro to position its dispatch more economically when it is energy-limited
- Low regulatory risk because DEB methodology established
- Applies equally to all specific resources, not to just hydro and storage
- Application in both day-ahead and real-time markets supports price convergence

Opinion: Support the proposal to modify the offer cap for energy storage resources using a proxy opportunity cost value.

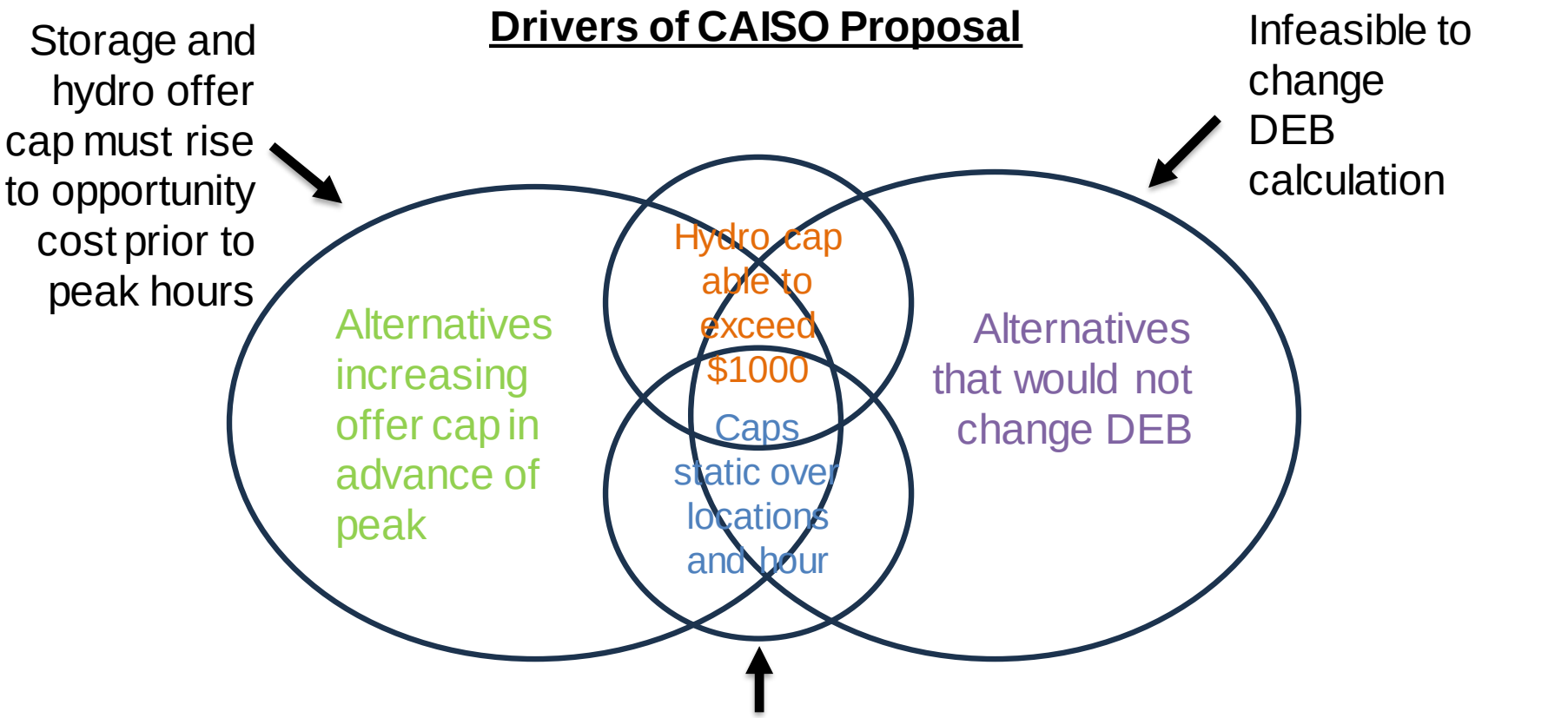
- Appears to be the best solution available in the near-term to enable management of storage state of charge in advance of peak hours
- CAISO analysis shows that lifting the cap on DEB is not sufficient to enable storage offers to rise to opportunity cost for critical hours of the day
- Because DEB is unchanged, market power mitigation will limit storage offers when there is insufficient competition
- Because DEB is unchanged, potential remains for uneconomic mitigation of storage

Current offer cap rules have developed over time; there are gaps in the rules for hydro and storage resources.

Resource Type (not an exhaustive list)	Current Process to Request Real-Time Offer Cap >$1000?	Can Uncapped DEB Increase Offer Cap to Reflect Opportunity Cost >$1000?
Gas, e.g.	Yes (DEB adjustment)	Yes
Hydro	No, in practice (no proved DEB adjustment process)	Yes
Storage	No (no DEB adjustment process)	Unlikely (due to DEB formula)

CAISO has identified two aspects of its offer cap rules which, if addressed, could reduce hydro and storage uneconomic dispatch during the summer of 2024

Feasible alternatives for changing storage and hydro offer caps for the summer of 2024 are limited.



*One exception: Hourly caps could match those used for non resource specific non-RA resources

The CAISO proposal for rules for bidding above the soft offer cap could significantly benefit the WEIM.

- Economics: improves last-cost dispatch and market price signals and strengthens incentive for offer-based participation in the WEIM
- Equity: corrects anomalous returns to hydro and storage resources through improved dispatch and pricing
- Reliability: improves availability of energy from limited-energy hydro and storage during stressed system conditions and encourages offers from resources with high opportunity costs on tight days

The proposal also has some potential issues; these can be assessed as development and testing occur.

- FERC approval: there are good reasons for FERC approval, but could question whether the proxy offer cap for storage is cost-verified for all hours
- $2000 penalty prices: possible unintended results from triggering $2000 penalty prices during hours when they would not be triggered today
  - For example, possibility of higher cost of power balance violations inadvertently resulting from load biasing
  - High priority to assess implications of higher penalty prices
- Potential for higher offer caps for hydro, storage, and non-resource specific resources in many hours: market power mitigation might fail to prevent the exercise of some form of market power

In my opinion, the potential benefits of the CAISO's proposed changes to the rules for bidding above the soft offer cap outweigh the cost of potential issues that have been identified.

- The proposal is a reasonable approach to addressing the uneconomic dispatch of hydro and storage for the summer of 2024
  - Proxy offer cap for storage may be too high in some hours, but more granular alternatives are not feasible this summer
  - DEBs for storage could be too low in some hours, but cannot be changed this summer
- Changes to market rules to encourage flexible offers into the EIM should be a high priority because they support both least-cost dispatch and reliability