



California ISO

Price Formation Enhancements

Stakeholder Workshop

June 9, 2022

Reminders:

- The intent of this collaborative workshop is to foster open dialogue, share ideas, and explore different perspectives
- Please raise your hand if you have a question or comment at any time during the meeting and the facilitator will call on you
 - Please start by stating your name and affiliation
- Meetings are recorded and video files posted on corresponding working group webpages

Agenda

Time:	Topic:	Presenter:
9:00 – 9:05	Welcome	Brenda Corona
9:05 – 9:30	Price Formation Enhancements Proposed Scope	James Friedrich
9:30 – 11:55	Stakeholder Presentations	Jeff Spires (Powerex) Mark Smith (Calpine) Brian Bartholomew (Rev Renewables) Kallie Wells (Gridwell Consulting)
11:55 – 12:00	Next steps	Brenda Corona

ISO Policy Initiative Stakeholder Process



We are here

Price Formation Enhancements Timeline

6/9:	Workshop
6/30:	Post Issue Paper
7/8:	Issue Paper Stakeholder Meeting
8/12:	Issue Paper Comments Due
Q1 2023:	Board Meetings

Proposed Price Formation Enhancements Scope

1. Scarcity pricing enhancements that better reflect tight supply conditions
2. Consideration of fast-start pricing in the CAISO markets
3. Enhancements to how the real-time market uses advisory prices to dispatch resources
4. Bid cost recovery changes focused on storage resource interaction with the real-time market's multi-interval optimization
5. Improvements to local power mitigation to more accurately assess transmission constraints between BAAs
6. Other price formation issues important to stakeholders

Scarcity pricing enhancements to better reflect tight supply conditions

- Scarcity pricing incentivizes resource availability and performance during tight system conditions and reflects value consumers place on avoiding load shedding events.
- Efficient scarcity pricing signals can incentivize more accurate day-ahead load scheduling and virtual bidding behavior
- Recent energy shortages and associated prices in the CAISO real-time market have emphasized the need for the CAISO to review and enhance its scarcity pricing provisions.

ISO seeks to build off numerous changes implemented in 2021 related to pricing during scarcity conditions

- FERC Order 831
 - Cost-justified bids can be submitted up to \$2000/MWh
 - The highest cost-justified bid sets the power balance constraint penalty price
- Market Enhancements for Summer 2021 Readiness
 - Hourly imports receive the higher of their bid or the 15-minute market price during tight system conditions
 - Bid price of reserves added to the energy supply stack set at the energy bid cap when arming load
 - RDRR (emergency DR resources) included in market pricing and dispatch

Consideration of fast-start pricing in the CAISO markets

- In 2016, FERC issued a NOPR that required each RTO/ISO to adopt market rules meeting certain requirements for pricing fast-start resources
- CAISO argued the measures proposed in the NOPR would be unlikely to improve price formation in the CAISO's market
- As the ISO and other entities explore broader regional market participation with a more diverse resource fleet and additional operational considerations, the ISO believes it is appropriate to reassess its position regarding the need for fast start pricing

Stakeholders are concerned price formation during critical periods may preclude active participation of energy storage resources in the real-time market

- Concerns raised about how the real-time market's multi-interval optimization's dispatches storage resources
 - E.g., the real-time market can instruct a storage resource to charge uneconomically in anticipation of higher prices in future intervals. If those high prices do not materialize, financial losses and unnecessary cycling can result
- Stakeholders suggest changes to the optimization's weighting of future market interval prices could reduce suboptimal storage dispatches.
- Stakeholders suggest ISO re-examine bid cost recovery settlement

Improve local power mitigation to more accurately assess transmission constraints between BAAs

- In WEIM, the CAISO tests if the supply in an individual WEIM BAA can meet the demand competitively or provide counter flow on congested transmission constraints within the BAA
- CAISO proposed to extend the WEIM market power mitigation framework to EDAM as a starting point
- CAISO seeks feedback whether to revise the MPM methodology to group together all resources (across multiple EDAM BAAs) that contribute to congestion relief, as opposed to testing individual BAAs
 - Doing so may require CAISO to similarly enhance the WEIM MPM framework

Other price formation issues stakeholders feel the CAISO should prioritize

- The CAISO seeks feedback if there are other price formation issues that should be considered in this initiative

Next Steps

- All related information for the Price Formation Enhancements initiative is available at: <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Price-formation-enhancements>
- Post Issue Paper: 6/30



- The ISO is pleased to be hosting the Stakeholder Symposium in-person at the Safe Credit Union Convention Center in downtown Sacramento on Nov. 9 – 10, 2022
- Registration will be open in June
 - Public notice will be issued once the site is available
- Additional information is available on the Stakeholder Symposium page on ISO's website at:
<http://www.caiso.com/informed/Pages/MeetingsEvents/StakeholderSymposium/Default.aspx>
- Please direct questions to symposiumreg@caiso.com