



FERC Order 831- Import Bidding and Market Parameters

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This initiative addresses two topics related to the CAISO's compliance with FERC Order No. 831, which raised the energy bid cap to \$2,000/MWh

1. Adjusting CAISO market constraint relaxation parameter prices "penalty prices" to align with the increased energy bid cap
2. Price screening methodology for import bids greater than \$1,000/MWh

CAISO has revised its power balance constraint relaxation pricing approach for when the \$2,000/MWh power balance constraint is in place

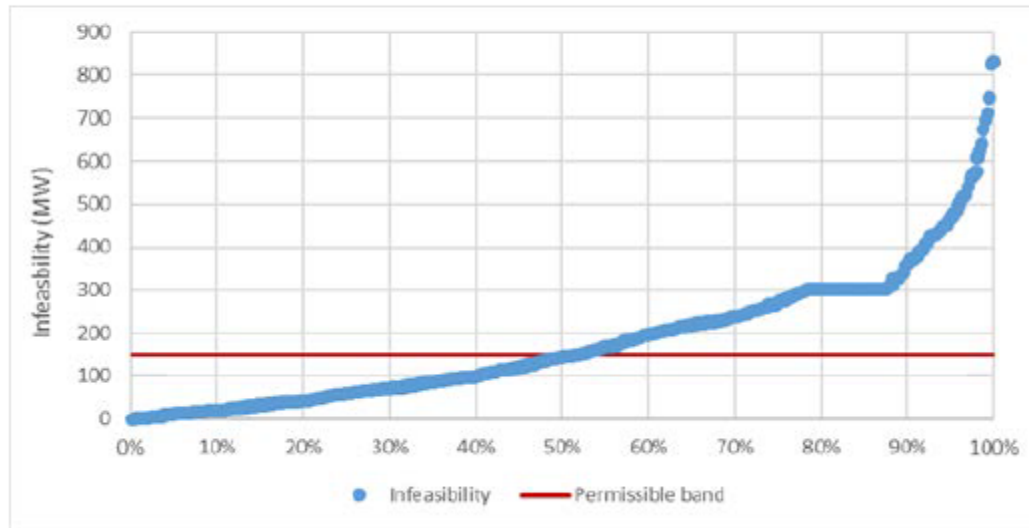
- Sets market prices based on the amount of shortfall in supply to meet demand when the power balance constraint is relaxed and cost-verified bids are greater than \$1,000/MWh
 - If infeasibility \leq threshold amount (i.e. 150 MW for CAISO BAA), prices would be set based on the highest-priced cleared bid, unless that bid is less than \$1,000/MWh
 - Else, if infeasibility $>$ threshold amount (i.e. 150 MW for CAISO BAA), prices would be set based on \$2,000/MWh

CAISO proposes threshold amounts for each BAA based on their operating practices

- Each BAA has an operating threshold for which supply and demand imbalances do not affect applicable reliability criteria and do not result in any action
- This threshold, i.e. “permissible band” is 150MW for the CAISO BAA
- Propose to set threshold amounts for the other BAAs in the EIM based on their specific documented operational practices
 - Based on good utility practice and not on economic or market considerations
- Proposal reflects logic that prices should not reflect small infeasibilities for which a BAA takes no action

CAISO 150 MW threshold amount accounts for about 50-55% of all observed infeasibilities

Figure 1: CAISO permissible band versus observed MW infeasibilities (July 2018-June 2020)



Examples

#1: Assume the following inputs in the real-time market:

- Highest-priced submitted bid from a resource-specific resource = \$1,200/MWh
- CAISO-calculated maximum import bid price = \$700/MWh
- CAISO permissible band = 150 MW

The power balance constraint penalty price would be set to \$2,000/MWh

- If there is a power balance constraint infeasibility:
 - If the scheduling run infeasibility \leq 150 MW, energy prices would be set based on \$1,200/MWh
 - If the scheduling run infeasibility $>$ 150 MW, energy prices would be set based on \$2,000/MWh

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#2: Assume the following inputs in the real-time market:

- Highest-priced submitted bid from a resource-specific resource = \$900/MWh
- CAISO-calculated maximum import bid price = \$1,100/MWh
- CAISO permissible band = 150 MW

The power balance constraint penalty price would be set to \$2,000/MWh

- If there is a power balance constraint infeasibility:
 - If the scheduling run infeasibility ≤ 150 MW, energy prices would be set based on \$1,000/MWh
 - If the scheduling run infeasibility > 150 MW, energy prices would be set based on \$2,000/MWh

#3: Assume the following inputs in the real-time market:

- Highest-priced submitted bid from a resource-specific resource w/n EIM BAA= \$1,200/MWh
 - EIM BAA is import constrained
- EIM BAA's permissible band = 100 MW
- EIM BAA's available balancing capacity supply = 20 MW @ \$100/MWh

The power balance constraint penalty price would be set to \$2,000/MWh for all individual EIM BAAs and overall market

- If there is a power balance constraint infeasibility within the import constrained EIM BAA:
 - Highest-priced cleared economic bid = \$1,200/MWh
 - If the scheduling run infeasibility ≤ 120 MW, energy prices would be set based on \$1,200/MWh
 - If the scheduling run infeasibility > 120 MW, energy prices would be set based on \$2,000/MWh

CAISO proposes to price-screen resource adequacy import bids greater than \$1,000/MWh

$$\text{Energy Price} = \text{Electric Hub Price} \times \text{Hourly Shaping Factor}$$

Where, Hourly Shaping Factor is:

$$1 + \left[\frac{(\text{CAISO Hourly DA SMEC} - \text{CAISO Average DA SMEC of on/off peak hrs})}{\text{CAISO Average DA SMEC of on/off peak hrs}} \right]$$

- Index price is determined by the maximum of Mid-Columbia and Palo Verde Trading Hub Price
 - Maximum import bid price is also applicable to virtual bids for which the north and south intertie concept is not relevant
- Use previous day's SMEC in each hour to shape prices
 - Has a smaller average margin of error compared to the previous proposal of day-ahead SMEC from the same month from the previous year
 - No longer publish calculated ratios in advance