



California ISO

System Market Power Mitigation

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Agenda

Topic	Presenter
Welcome and stakeholder process	Jimmy Bishara
Background and Scope	Perry Servedio
Principles	Perry Servedio
Proposal	Perry Servedio
EIM Classification and Next Steps	Jimmy Bishara

CAISO Policy Initiative Stakeholder Process



Background

- CAISO operates an organized competitive energy market where energy is priced based on marginal supply bid.
- The CAISO market is part of a broader western interconnected system
- Suppliers located in constrained and uncompetitive areas could artificially raise market prices above competitive levels
- CAISO markets currently protect against suppliers exercising market power on a local level (and at an energy imbalance market entity balancing area level)

Design principles

- Energy prices should reflect the marginal cost of the highest cost resource used to meet demand. Energy prices should reflect competitive conditions across the region when energy transactions are not limited by transmission capability.
- A supplier should not be forced to sell power below its offer price if it cannot exert market power. Supply offers should be mitigated to marginal costs to the extent supply has market power.
- Mitigation design should not deter robust market participation and long-term forward contracting. The design should maintain strong incentives for suppliers and consumers to economically participate in the CAISO's market and to enter into long-term forward energy contracts.
- Mitigation should be effective at mitigating the exercise of market power. A supplier should not be able to easily circumvent the effects of the mitigation.

Plan to complete *phase one* policy development fairly quickly so that we can implement changes prior to the summer of 2021

- To support this short implementation timeline, we want to leverage our existing market power mitigation design elements and rationale as much as possible.
- Mitigation design should follow the common framework:
 1. Identify constraint or constrained area
 2. Test structural competitiveness in the constrained area
 3. Mitigate resources which could exercise market power on demand in the constrained area
- Local market power mitigation and energy imbalance market non-CAISO balancing area-level mitigation follows this common framework.

Propose to initially apply system-level market power mitigation to the real-time market

- Concentrate on real-time system-level market power mitigation design initially.
- The real-time market has characteristics that make it more susceptible to market power than the day-ahead market.
- Adding system-level market power mitigation to the real-time market will also protect the day-ahead market to some degree
 - Economic demand bidding
 - Convergence bidding

Second phase will consider more comprehensive measures

- We plan on considering mitigation in the day-ahead market at a system-level
- We will also consider design relative to enhancements developed in the *Day-Ahead Market Enhancements* initiative and *Extended Day-Ahead Market* initiative in.
- Improvements to market power mitigation tests, including for the broader EIM
 - Test competitiveness by groups of BAAs rather than individually
 - Consider alternative tests for triggering mitigation

Propose to execute pivotal supplier test only if the CAISO balancing area is import constrained

- Mitigation measures should protect demand in constrained and uncompetitive areas
- Demand in the CAISO balancing area is captive to internal supply when the CAISO balancing area is import constrained
- Mitigation design with an import constraint screen is reasonable given that the broader western interconnection is likely to be competitive
 - Entities across the west have market-based rate authority
 - External transmission rights are generally available and the quantity of these rights generally exceed the CAISO's import capability

First testing whether the area is import constrained follows the same design pattern applied at a local level and to other balancing areas in the energy imbalance market

- Existing local market power mitigation screens first find binding constraints, indicating that supply in a constrained area has lost access to external supply
- Existing non-CAISO energy imbalance market balancing areas must first be found to be import constrained before applying an pivotal supplier test
- The same policy would apply to CAISO balancing area system-level market power mitigation

While it is unlikely that the CAISO balancing area can exhaust all of its import capability in an interval, it may exhaust its capability on major competitive entryways

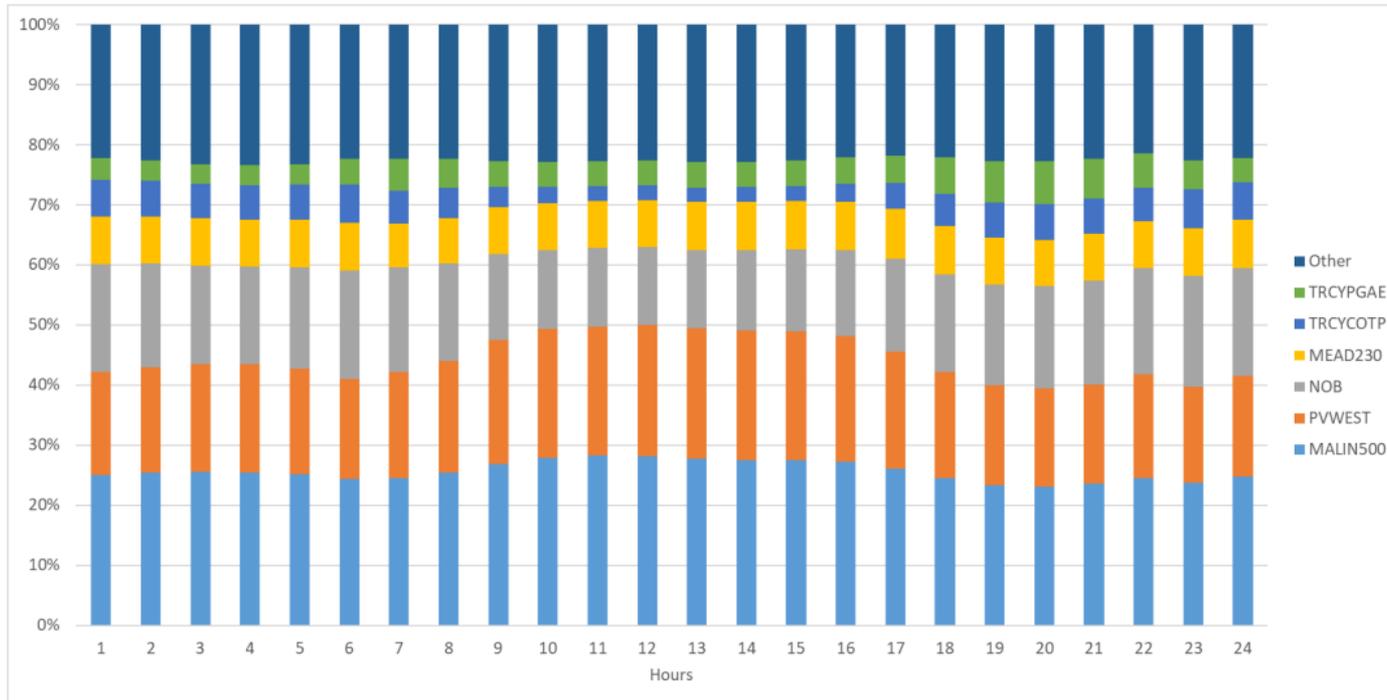


Figure 3: Percent of Total Hourly Import Offers per Intertie in 2018

- Approximately 60% of all import offers were made on Malin, NOB, and Palo Verde interties throughout 2018.

Proposal to consider the CAISO balancing area import constrained if its major competitive entryways are simultaneously binding

- The CAISO could consider itself import constrained if Malin, NOB, and Palo Verde are simultaneously binding in an interval
- This scenario would severely limit demand's ability to import competitive west-wide power
- Another way to evaluate for the CAISO's major competitive entryways would be to compare import offer volumes at specific intertie locations to the intertie limits
 - If import offers rarely exceed import limits throughout the year, perhaps there is something structurally deficient on the external side of the import location

Other considerations

- An import constraint screen is needed to avoid a potentially unreasonable number of false positives
 - Pivotal supplier test treats potentially cost-effective import offers as non-existent
 - Pivotal supplier test does not account for load-serving obligations of net-sellers
- Mitigation screens could consider the CAISO balancing area import constrained if it has exhausted all of the offers at an intertie constraint rather than only when an intertie constraint is binding
 - Nothing physical is limiting demand's ability to import more
 - Internal and external suppliers do not know whether other external suppliers will be offering more or less supply on the same interties
 - Such a screen may be easily circumvented with suppliers offering high-cost import bids

Propose to use three pivotal supplier test to evaluate the structural competitiveness in the import constrained CAISO balancing area

$$RSI_3 = \frac{\text{Internal Supply Offers} - \text{Internal Pivotal Supply Offers}}{\text{CAISO Balancing Area Demand} - \text{Cleared Net Imports} + \text{Cleared Net EIM Transfers}}$$

- **Internal Supply Offers** is the up-ramp limited sum of all offers on resources within the CAISO balancing area
- **Internal Pivotal Supply Offers** is the down-ramp limited sum of all offers from pivotal supplier resources within the CAISO balancing area
- **CAISO Balancing Area Demand** is the demand forecast for the CAISO balancing area
- **Cleared Net Imports** is the quantity of imports cleared in the market power mitigation pass
- **Cleared Net EIM Transfers** is the quantity of EIM transfers cleared in the market power mitigation pass

Propose to mitigate supply offers within the CAISO balancing area

- Supply offers in constrained and uncompetitive areas should be mitigated
- The CAISO proposes to mitigate all of its non-import internal supply offers to default energy bids when the import constraint screen fails and when the three-pivotal supplier test fails
- External supply cannot affect price within an import constrained CAISO balancing area.
 - The CAISO has already imported as much less expensive west-wide supply as it could before resorting to more expensive internal supply

Mitigating import offers could be potentially inappropriate

- It may make sense to mitigate import offers under the following conditions
 1. If the western interconnection is uncompetitive
 2. If suppliers offering imports are pivotal to the entire western interconnection, rather than fringe suppliers
- There is no evidence available to support either of these assumptions
 1. External entities have market-based rate authority and the CAISO does not have complete information on the external supply and demand conditions to determine constrained and uncompetitive conditions
 2. Entities that control large amounts of generation outside California likely also have large load-serving obligations so supply offered to CAISO is likely fringe supply from a west-wide perspective

Potential basis for mitigating only resource adequacy import offers

- Some stakeholders suggest mitigating only import offers from resources with bi-lateral capacity contracts
- Import offers represent energy from outside of the constrained and uncompetitive area and therefore should not be able to exercise market power or affect price in the CAISO balancing area
- For purposes of market power mitigation, there does not seem to be a basis to distinguish between import offers with bi-lateral capacity contracts and import offers without bi-lateral capacity contracts
- Regardless of whether the import resource has a bi-lateral capacity contract, if there are conditions where importers can exercise market power, we should uniformly mitigate all imports, rather than just the importers with bi-lateral capacity contracts

There is no competitive locational marginal price when the CAISO balancing area fails its system-level market power mitigation screens

- Today, resource offers in non-CAISO energy imbalance market balancing areas are mitigated to the greater of their default energy bid or the CAISO's competitive locational marginal price
- When the CAISO balancing area fails its system-level market power mitigation test, there is no competitive locational marginal price
- If there is no competitive locational marginal price when a balancing area in the energy imbalance market fails its market power screens, the CAISO proposes to mitigate resource offers in those areas to their default energy bid.

EIM Governing Body to have an advisory role

- The proposal falls within the EIM Governing Body's advisory role
 - Proposed changes would not change any market rules that are EIM-specific
- Stakeholders are encouraged to submit a written response if they have concerns or questions

Proposed Initiative Schedule

Date	Milestone
December 11, 2019	Publish straw proposal
December 16, 2019	Stakeholder call
January 10, 2020	Stakeholder written comments due
February 2020	Publish Draft Final Proposal
February 2020	Stakeholder call
March 2020	Stakeholder written comments due
February – March 2020	Development of Business Rules Specifications and Tariff Language
April 2020	Publish Final Proposal
April 2020	Stakeholder written comments due
May 2020	EIM Governing Body & Board of Governors meetings



Please submit written comments by
January 10, 2020 to
initiativecomments@caiso.com