System Market Power Mitigation

Perry Servedio
Lead Market Design Policy Developer

Revised Straw Proposal
April 13, 2020
New online stakeholder commenting tool coming this Spring

- Ability to view all comments with a single click.
- Ability to filter comments by question or by entity.
- Login, add your comments directly into the template and submit.
  - You can save and return to your entry anytime during the open comment period.

**NOTE**

Submitting comments in the new tool will require a one-time registration.
CAISO policy initiative stakeholder process

PROPOSAL DEVELOPMENT

Issue paper

Straw proposal

Draft proposal

Draft business requirement specification

Draft tariff

Stakeholder input

Final proposal

ISO Board

EIM Governing Body

Tariff filing

FERC

IMPLEMENTATION

Business practice manual revisions

Market simulation

Go Live

This represents the typical process, and often stages of the process run in parallel.
Agenda

1. Background and initiative objective
2. Stakeholder comments and changes to the proposal
3. Proposal
   a) Pivotal supplier test trigger
   b) Pivotal supplier test design
   c) Competitive locational marginal price
   d) Energy offer mitigation
4. EIM Governing Body role
5. Next steps
Background and initiative objective

- This initiative addresses the potential for suppliers in the CAISO balancing area to exercise system-level market power
  - System market power concerns have been growing
  - CAISO anticipates tightening supply conditions in 2021

- The CAISO is taking a judicious approach with the design because system-level mitigation can have broad adverse impacts and there is a limited implementation timeline
  - Implementing measures relatively quickly
  - Avoiding inefficiencies resulting from inaccurate bid prices
  - Not deterring import supplier participation
  - Minimal impact to energy imbalance market mitigation

- Phased approach will allow the CAISO more time to carefully weigh the impacts of more complicated design elements
Stakeholder comments and changes to the proposal

• Some stakeholders were concerned that basing the import-constrained trigger on the three major import locations was either too strict a criteria or not strict enough
  – CAISO agrees that the previous criteria did not fully capture when there is potential for system-level market power

• Some stakeholders were concerned that suppliers in the CAISO balancing area could exercise market power even if CAISO interties are not limiting the purchase of external energy
  – This revised proposal balances this concern with potential broad adverse impacts of system-level mitigation
Stakeholder comments and changes to the proposal

- Some stakeholders were concerned that the market needs a mitigated offer price floor to ensure market clearing prices are reasonably competitive across the west
  - CAISO agrees a mitigated offer price floor is needed. The proposal now includes a mitigated offer price floor to prevent mitigating generators beyond the amount needed to resolve the constraint

- Some stakeholders suggested that the mitigation process should also mitigate import supply offers
  - CAISO does not propose to mitigate import offers because they are likely fringe supply and it does not want to discourage import supplier participation
  - CAISO does not have a way to calculate an accurate mitigated price
Stakeholder comments and changes to the proposal

- Some stakeholders feel that the initiative is not necessary at this time and the CAISO is prioritizing it over more pressing price formation topics
  - CAISO believes it is important to address tightening supply conditions will likely exacerbate system-level market power concerns
  - This phase of the initiative is targeted and is not having a significant impact on CAISO’s ability to implement other planned initiatives
Proposal overview

• Only perform the pivotal supplier test when the CAISO balancing area is in the highest priced import constrained region of the energy imbalance market

• Use the pivotal supplier test to determine if suppliers within the CAISO balancing area could potentially exercise market power over demand in the constrained region

• Calculate a competitive locational marginal price to use as a mitigated offer price floor

• Mitigate pivotal suppliers within the CAISO balancing area
Perform pivotal supplier test when the CAISO balancing area is in the highest priced import-constrained region

- Demand in the CAISO balancing area loses access to lower cost external energy when it is in an import-constrained region
- Pivotal suppliers in the import-constrained region may be able to exercise market power
- Energy imbalance market price information shows when there are import-constrained conditions and when the CAISO is in an import constrained region
Perform pivotal supplier test when the CAISO balancing area is in the highest priced import constrained region

Figure 5: The CAISO’s import constrained region in the energy imbalance market
Pivotal supplier test design

• Suppliers within the CAISO balancing area are potentially pivotal
• Account for supplier load-serving obligations when determining the three largest suppliers
• Consider offers from participating EIM resources within the constrained region as fringe competitive supply
• Consider economic import offers limited by intertie scheduling limits as fringe competitive supply
Pivotal supplier test design

- Calculate available supply as the supply from pivotal suppliers than cannot be withheld plus fringe supply
  - Supply controlled by pivotal suppliers that cannot be withheld in each market interval due to resource operational constraints, self-schedules, and load-serving obligations
  - Supply controlled by non-pivotal suppliers that can be provided in each market interval limited by resource operational constraints
  - Net cleared supply of energy imbalance market transfers into the import-constrained region
  - Available import supply considering intertie scheduling limits

- Determine if available supply can meet demand
Use a mitigated offer price floor to ensure resource offers are only mitigated to the extent needed to meet demand

• Calculate competitive locational marginal price

\[ \text{Competitive LMP} = \min( \text{next constrained un-cleared economic import offer}, \text{next non-CAISO grouped EIM area PBC shadow cost} ) \]

• Competitive LMP will not apply to EIM balancing area system-level mitigation because EIM balancing area mitigation cannot be simultaneously triggered
  – However, the calculated competitive LMP can impact the mitigated offer price floor used for mitigation for EIM area internal transmission constraints
Energy offer mitigation

- Mitigate resource offers from internal CAISO pivotal suppliers to the maximum of the resource DEB or the competitive LMP
  - Mitigate resource offers from any supplier when in combination with the two largest suppliers are required to meet demand

- Import offers not mitigated
  - Import offers are likely fringe supply
  - CAISO does not want to discourage import supplier participation
  - Import suppliers could withhold and raise prices by reducing bid quantities or not bidding
  - Other suppliers may be discouraged from offering due to the possibility of offer mitigation
  - CAISO does not have a way to calculate an accurate mitigated price
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
Next steps

• Please submit stakeholder written comments on today’s discussion and the revised straw proposal by end of day May 4, 2020
  – Submit to initiativecomments@caiso.com
  – Please utilize the comments template, which will be available on the initiative webpage under today’s meeting header, at http://www.caiso.com/StakeholderProcesses/System-market-power-mitigation
Pivotal supplier test design

- Compare available supply to demand in the import constrained region

\[
RSI3 = \frac{\text{Net cleared EIM transfers into the import constrained region}}{\text{Demand forecast in the import constrained region}}
\]

NonPivotal Supplier Available Supply +
Pivotal Supplier Available Supply +
Economic Import Available Supply +
Pivotal supplier test design

Calculate available supply quantities for resources controlled by non-pivotal suppliers and for resources that are controlled by pivotal suppliers.

\[RR \times T = \text{AMOUNT NON-PIVOTAL SUPPLIER COULD FEASIBLY PROVIDE}\]

\[-RR \times T = \text{AMOUNT PIVOTAL SUPPLIER COULD FEASIBLY WITHHOLD}\]
Account for resource minimum/maximum output constraints, self-schedules, and load-serving obligations.

Available Supply Quantity from Non-Pivotal Suppliers

Available Supply Quantity from Pivotal Suppliers

RR × T = Amount Non-Pivotal Supplier Could Feasibly Provide

Amount Pivotal Supplier Could Feasibly Withhold

When calculating per resource:
- PMIN
- Self-schedule

When calculate per affiliate group:
- Load-serving obligation (per affiliate)

Available Supply Quantity from Pivotal Suppliers
Pivotal supplier test design

- Limit amount of economic import offers that can count as fringe competitive supply using the various import scheduling limitations
  - No more than 600 MW can count from behind ITC A
  - No more than 1,100 MW can count from behind ITC B

\[
SP2 + SP3 \leq 600
\]

\[
SP1 + SP2 + SP3 \leq 1,100
\]
Pivotal supplier test design

- Calculate net EIM transfers into the constrained region and count as fringe competitive supply
  - $A$ plus $B$ is fringe competitive supply

![Diagram showing balancing areas with lambda values and an arrow indicating the direction of transfers.]

*Figure 5: The CAISO’s import constrained region in the energy imbalance market*
Next steps

- Please submit stakeholder written comments on today’s discussion and the second revised straw proposal by end of day May 4, 2020
  - Submit to initiativecomments@caiso.com
  - Comments template will be available on the initiative webpage under today’s meeting header, at http://www.caiso.com/StakeholderProcesses/System-market-power-mitigation