



System Market Power Mitigation

Perry Servedio
Lead Market Design Policy Developer

Revised Straw Proposal
April 13, 2020

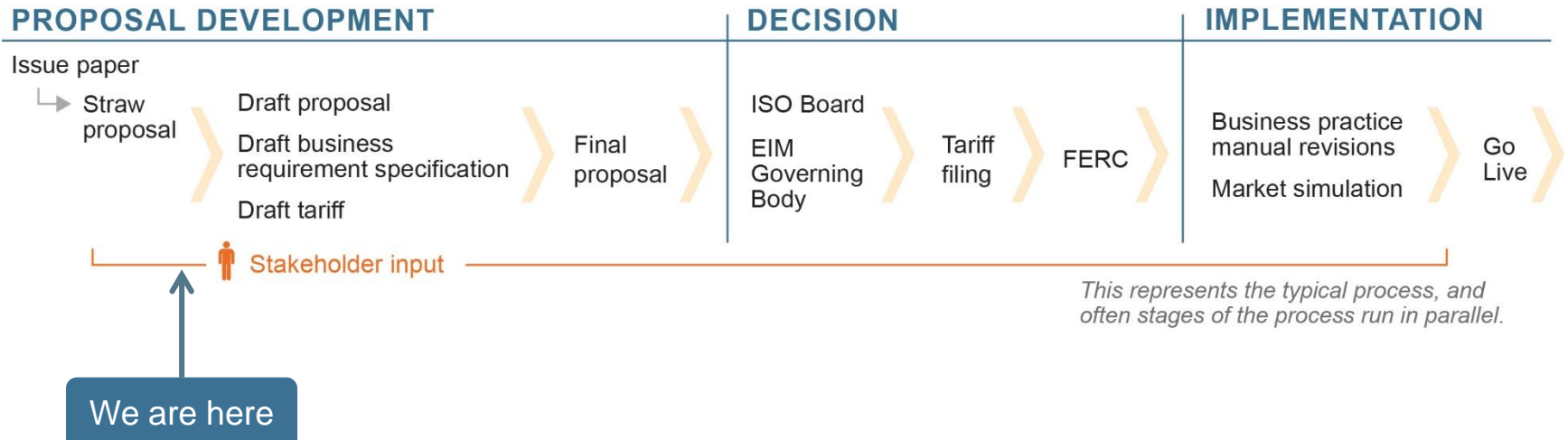
New online stakeholder commenting tool coming this Spring

- 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



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

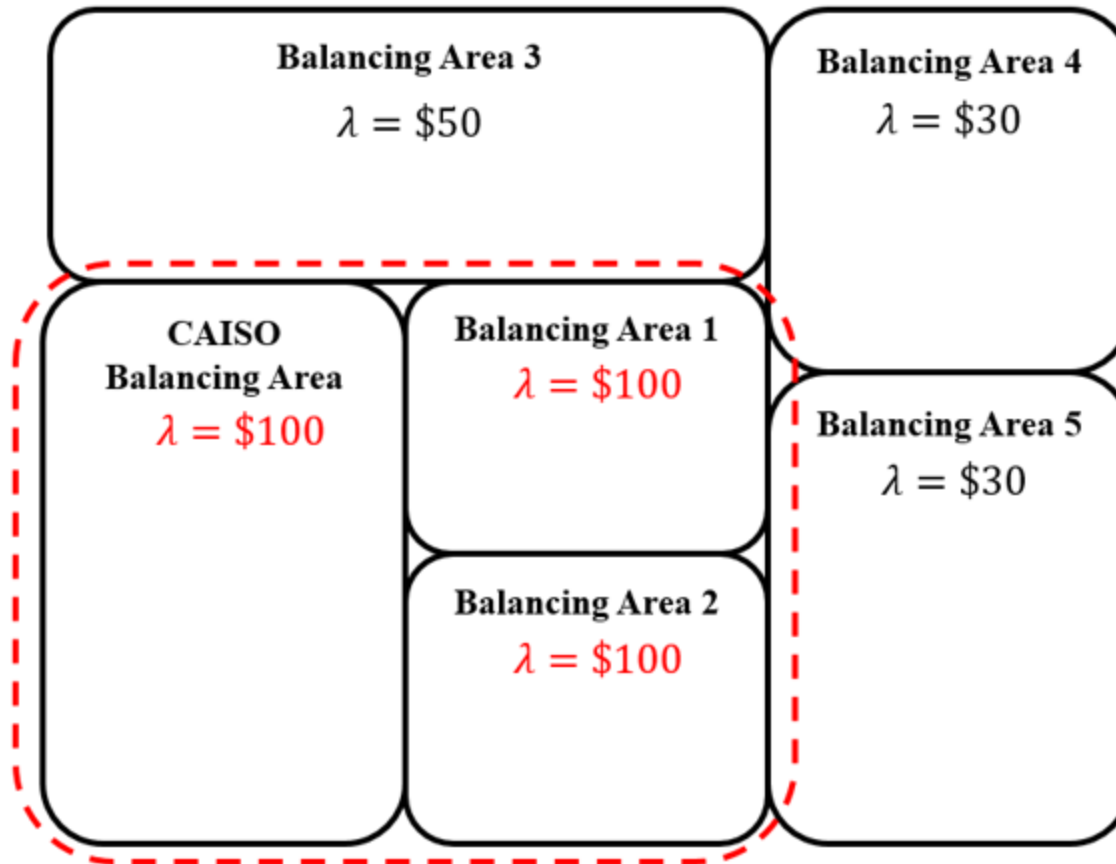


Figure 5: The CAISO's import constrained region in the energy imbalance market

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 that 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

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

- 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>

APPENDIX

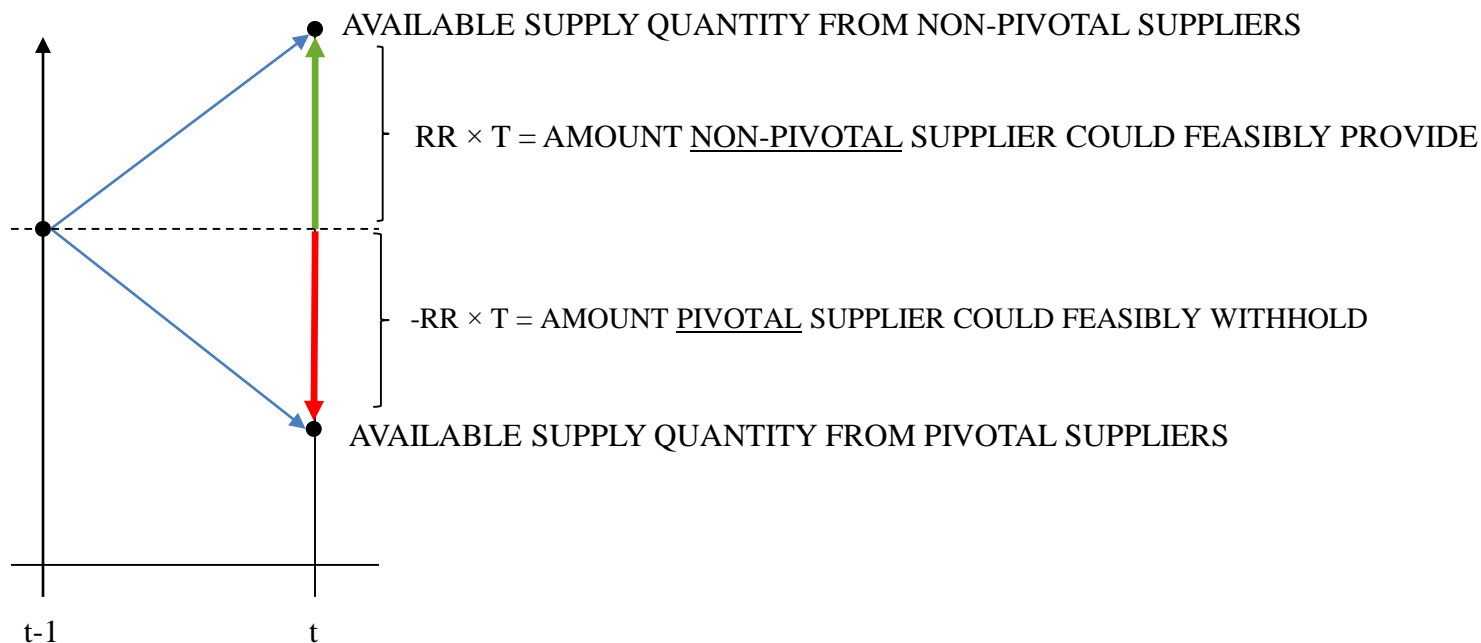
Pivotal supplier test design

- Compare available supply to demand in the import constrained region

$$RSI3 = \frac{\begin{aligned} & \textit{NonPivotal Supplier Available Supply} + \\ & \textit{Pivotal Supplier Available Supply} + \\ & \textit{Economic Import Available Supply} + \\ & \textit{Net cleared EIM transfers into the import constrained region} \end{aligned}}{\textit{Demand forecast in the import constrained region}}$$

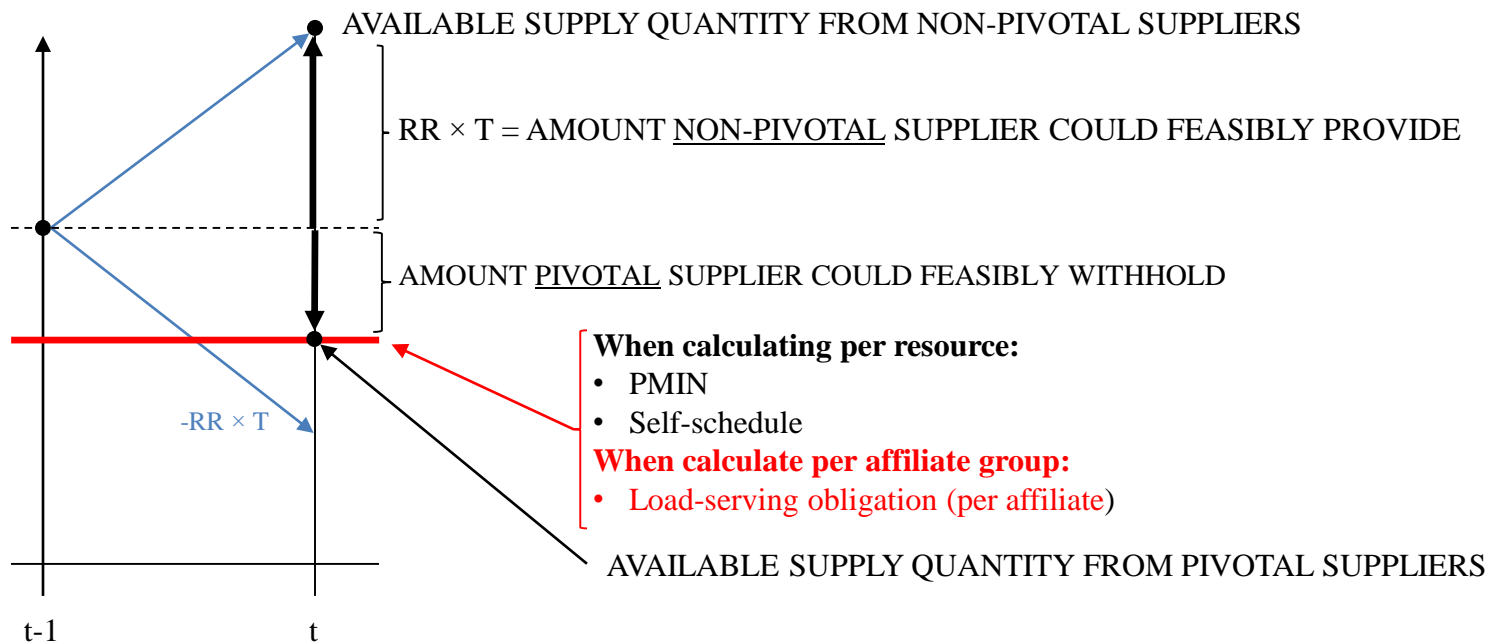
Pivotal supplier test design

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



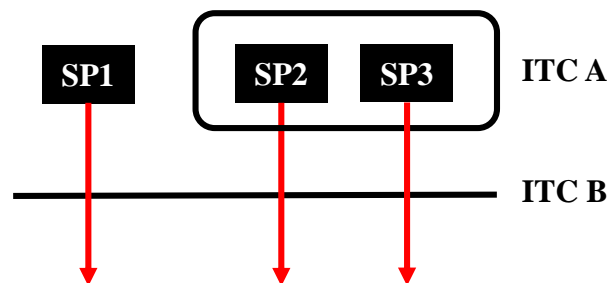
Pivotal supplier test design

Account for resource minimum/maximum output constraints, self-schedules, and load-serving obligations



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**



SP1 limits flows to 500 MW
SP2 limits flows to 600 MW
SP3 limits flows to 600 MW
ITC A limits flows to 600 MW
ITC B limits flows to 1,100 MW

$$SP2 + SP3 \leq 600$$

$$SP1 + SP2 + SP3 \leq 1,100$$

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

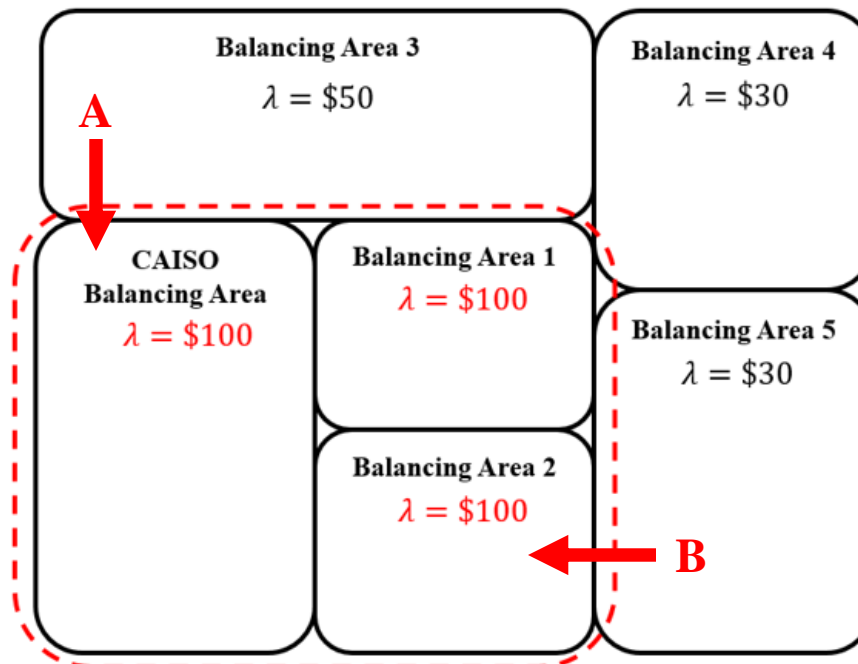


Figure 5: The CAISO's import constrained region in the energy imbalance market

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>