MARKET SURVEILLANCE COMMITTEE

System Market Power Discussion Notes

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Topics

- Market Power Mitigation and HASP Supply

- System Market Power in RAMP?

- Mitigation Trigger

- High Cost Import Supply

Market Power and HASP Supply

Some stakeholder comments express a concern that the application of mitigation to an exercise of system market power would reduce HASP supply. There does not appear to be a mechanism for such an adverse impact under a design in which internal CAISO resources are subject to mitigation which is determined in the HASP.

- If system market power mitigation were applied in HASP to offer prices reflecting an exercise of system market power by sellers within the CAISO, the application of mitigation would reduce the clearing price in HASP, and hence potentially reduce the amount of import supply cleared in HASP.

- However this would only occur to the extent that the application of market power mitigation resulted in import supply being displaced by output within the CAISO that otherwise would have been economically withheld.

Market Power and HASP Supply

The reduced need for imports if economic withholding is eliminated through the application of market power mitigation in HASP would be an efficient outcome.

- High cost imports would be replaced with lower cost supply within the CAISO with accurate default energy bids enabling greater efficiency gains.

- If market power mitigation were triggered in HASP and then applied in FMM and RTD, the application of market power mitigation should not introduce an additional source of price inconsistency.

Market Power and HASP Supply

If system market power mitigation were triggered in HASP when there was no actual exercise of market power, and the offer prices of internal CAISO resources were mitigated in HASP and then in FMM and RTD based on understated default energy bids, the application of system market power mitigation could result in inefficient outcomes.

- Understated default energy bids could result in low cost HASP imports being replaced with higher cost gas fired generation within the CAISO or being replaced by withdrawing energy from batteries that would be needed later in the day.

- However, the application of system market power mitigation in HASP based on understated default energy bids would not create price risk for scheduling imports in HASP, the mitigation would be applied in HASP and then in FMM. Imports would not be scheduled in HASP if they were uneconomic when mitigation was applied based on the understated default energy bids.

Market Power and HASP Supply

There could be increased price risk for HASP import supply if the system market power design allowed the triggering of mitigation in FMM when mitigation had not been triggered in HASP, and FMM prices were determined using understated default energy bids that had not been used in evaluating import economics in HASP.

- If mitigation were applied in FMM, but not in HASP, the FMM dispatch based on understated default energy bids would not displace hourly HASP imports, which would be fixed in FMM.

- The increased output from mitigated units would instead displace the output of resources that would otherwise have been marginal in FMM, resulting in FMM prices that were lower than HASP prices as a result of market power mitigation.

Market Power and HASP Supply

- If the supply of energy within the EIM in FMM was highly elastic and the increased supply from mitigated resources small, market power mitigation based on understated default energy bids would have a small impact on FMM clearing prices.

- Conversely, market power mitigation based on understated DEBs would have a larger impact on FMM prices if the increased supply due to the understated default energy bids was larger and the supply in the EIM less elastic.

Market Power and HASP Supply

The potential for system market power mitigation to be spuriously triggered in FMM and then applied based on understated default energy bids (after no mitigation had been triggered in HASP because the market was in fact highly competitive), would tend to create additional price risk for HASP imports because they could be scheduled economically in HASP, then settled uneconomically in FMM.

- This increased price risk would tend to reduce import supply and raise prices for California consumers.

- The spurious application of system market power mitigation power in FMM when no mitigation had been triggered in HASP would also increase the potential for understated default energy bids to reduce market efficiency and raise consumer costs. This is because understated default energy bids would be applied more often if the application of offer price mitigation were spuriously triggered more often.

Market Power in Ramp

Is there a concern with system market power in the supply of ramp capability?

- DMM's analysis of the day-ahead market that led to this initiative did not appear to me to identify concerns with the exercise of market power in ramp capability as that analysis concerned the aggregate supply of energy in the day-ahead market.

- The CAISO has had problems with the efficient scheduling sufficient ramp capability over the past several years in part as a result of flaws in flexiramp implementation. These problems have likely contributed to a wide variety of ad hoc operator actions to increase the supply of ramp capability. I am not aware of any discussion of indications that there has been a potential exercise of market power in supplying ramp capability.

Market Power in Ramp

The scheduling of hourly import transactions in HASP very directly increases CAISO ramp capability. Indeed that is precisely the intent of implementing the flexible ramping constraint in HASP. With the ramping constraint correctly implement, HASP would schedule more imports that would back down internal generation when that is a cost effective way of increasing the available ramp capability.

- The flexible ramping constraint is currently not serving its intended purpose because of the flawed implementation of the locational targets.

- However, CAISO operators use HASP to increase the available ramp capability by biasing the load forecast in HASP. It is precisely because hourly transactions scheduled in HASP can be used to increase the available ramp capability that CAISO operators bias the load forecast in HASP.

Market Power in Ramp

If the CAISO and stakeholders are concerned with the exercise of system market power in the supply of energy to the CAISO, this could be addressed by testing for the application of market power mitigation in HASP.

- If mitigation were triggered in HASP, it would be applied to pivotal sellers in FMM and RTD.

- In light of the large upward load bias adjustments typically applied in HASP, it is unclear whether there is any need to test for system market power in RTD unless there is a concern with the exercise of system market power in ramp capability.

Market Power in Ramp

If the CAISO and stakeholders are concerned with the exercise of system market power in the supply of ramp capability (or with the potential for the exercise of market power when net load is much higher than tested in HASP), the LMPM framework for applying mitigation should be modified to account for import competition that is present in HASP.

- If system market power mitigation were triggered by the application of a pivotal supplier test in HASP, mitigation would be applied to pivotal sellers in FMM and RTD.

- If system market power mitigation was not triggered in HASP, the pivotal supplier test for ramp in FMM (RTD) should be applied based on the HASP schedules of the suppliers being tested for pivotality.
  - Is there enough fringe supply to replace the FMM (RTD) output of the suppliers being tested that is in excess of their HASP schedules?
  - The HASP schedules of the suppliers being tested for pivotality would have passed the pivotal supplier test, taking account of import competition in HASP.
  - The current LMPM design which does not take account of ramp schedules would likely trigger spurious mitigation much more frequently than a design that takes account of the HASP outcome.

Trigger for Mitigation

The observation that the CAISO has historically very rarely been import constrained on its three major import interfaces does not establish that this is an inappropriate trigger for the application of system market power.

- This observation is consistent with the premise that there is little potential for the exercise of system market power except during what have historically been very unusual operating conditions in which import capability is materially reduced by planned and/or forced transmission outages.

- Some comments appear to suggest the goal should be a design that frequently triggers mitigation, without regard to whether there is a potential for a material exercise of system market power.

Trigger for Mitigation

A trigger based on whether a balancing area somewhere in the EIM is constrained down relative to the CAISO has no apparent relationship to the potential for a material exercise of system market power in the CAISO.

- Such a trigger would be activated by low load and high supply in the constrained down balancing area.

- Why would the existence of a few constrained down megawatts of generation in a remote balancing area have even a distant relationship to the potential for the material exercise of system market power in the CAISO?

- The CAISO data show that such a design would trigger a pivotal supplier test mostly in non-summer months and would trigger pivotal supply tests almost as often during the middle of the night as during the evening ramp. This pattern suggests that this trigger is not well related to the potential for a material exercise of system market power in the CAISO.

High Cost Import Supply

There appear to be two issues relating to high cost import supply:

- Should CAISO resource adequacy supply imports be subject to offer price mitigation?

- How should the CAISO account for imports offered at prices close to the offer cap in applying a pivotal supplier test in HASP?

High Cost Import Supply

Should CAISO resource adequacy supply imports be subject to offer price mitigation?

- There is a continuing concern that resource adequacy imports offered at high prices are phantom supply that is not backed by any resource.

- There does not appear, however, to be a conceptual connection between a concern that some LSEs are contracting for phantom RA and the application of offer price mitigation based on the application of a pivotal supplier test.

- Wouldn't there be a concern with LSEs having contracted for phantom RA imports in hours in which mitigation is not triggered by a pivotal supplier test?

- Rather than triggering a pivotal supplier test in all hours in which there is a concern with phantom RA imports, would it be preferable to require that import RA be offered at or below a specified price? Or at or below a price within a specified range of the day-ahead market price for that hour? Or at or below a price based on a gas price index?

High Cost Import Supply

How should the CAISO account for imports offered at prices close to the offer cap in applying a pivotal supplier test in HASP?

- A key complexity in applying a pivotal supplier test that is triggered when the CAISO is not import constrained is determining which import supply offers should be included in a pivotal supplier test.

- If import supply that is offered but did not clear in the LMPM HASP run is excluded from the pivotal supplier test, mitigation could be triggered in many hours in which there is strong competition, materially increasing the likely cost to ratepayers from the application of inaccurate DEBs to gas fired generation and various types of storage resources.

- On the other hand, if import supply offered at very high prices is included in the pivotality calculation, the triggering of the test could be intentionally circumvented by the submission of very high priced offers or perhaps incidentally circumvented by the submission of high priced offers associated with phantom RA.

High Cost Import Supply

How should the CAISO account for imports offered at prices close to the offer cap in applying a pivotal supplier test in HASP?

Would it be preferable to only include import supply in the HASP pivotality calculation if the import supply is:

- Offered at or below a specified price?

- Offered at or below at or below a price within a specified range of the day-ahead market price for that hour?

- Offered at or below a price based on a gas price index?