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Energy for What's Ahead℠

System Market Power Issues & Recommendations

July 15, 2019

CAISO Working Group Meeting

SCE EXTERNAL

Outline

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Introduction

- The market should be designed to deliver competitive prices
  - FERC must ensure rates are just and reasonable
- Tight supply conditions have been observed & are expected to continue
  - Number of hours with day-ahead LMP greater than $500/MWh (SCE DLAP):
    - 2009-2018: 14
    - 2017: 3
    - 2018: **11** (highest price: $999.98/MWh)
  - Anticipated OTC & nuclear unit retirements in the near term
- Financial & other harms can be significant or even catastrophic under an uncompetitive market
- The assumption of the system-level market competitiveness is being examined by CAISO & DMM and may no longer be valid

Issues of structural un-competitiveness in the CAISO market

- Analyses by CAISO and DMM on structurally uncompetitive hours:
  - CAISO: likely 55 - 272 hours with RSI3 < 1 with net virtual supply included (only a small portion may correlate to a low reserve)
  - DMM: 272 - 305 hours with RSI3 <1 when virtual supply bids are excluded
- Findings from DMM's 2018 Annual Report:
  - *"Prices in the day-ahead market were significantly in excess of competitive levels in some hours when net load that must be met by gas-fired units is highest"*
  - *"Market for capacity needed to meet local requirements is structurally uncompetitive in all local areas"*
- LMPM will not function without structural system-level competitiveness
  - In order for LMPM to function, there must be a competitive price at the system level to mitigate to
- To ensure competitiveness, either the market itself must be structurally competitive, or there is functioning market power mitigation at both local and system

Recommendation for addressing structural un-competitiveness in the CAISO market

Similar to LMPM, CAISO should:

- Perform three-pivotal supplier test at the system level
- Trigger system market power mitigation during intervals when the test fails (i.e., RSI 3 < 1)

➢ CAISO should launch an initiative immediately to develop a system market power mitigation mechanism and work out details

  - The rest of the slides provide some thoughts on specific areas

System-level pivotal supplier test

- Same general methodology as used by CAISO & DMM in their analyses
- The concept of a BAA-level pivotal supplier test exists today for EIM entities
  - The system-level test should not be limited to congestion conditions
- Suggest that the test should include only cleared virtual bids for consistency with LMPM

System-level bid mitigation

- Mitigate internal resources inside the CAISO to DEB when system MPM triggers
  - No mitigation if the bid is lower than the DEB
  - Progress has been made in calculating resource DEBs
    - E.g. new DEB bid option for hydro, opportunity cost calculation tool
  - RA imports should be considered in the mitigation process (details should be discussed in a stakeholder initiative)
- The system-level bid mitigation ensures appropriate competitive benchmark prices for LMPM
  - LMPM will function as today for congestion and local areas (including areas inside EIM)
- RA supply to serve California if California needs the energy
  - The design needs to address the issue of energy from mitigated RA supply being purposely exported to out-of-state when California needs the energy

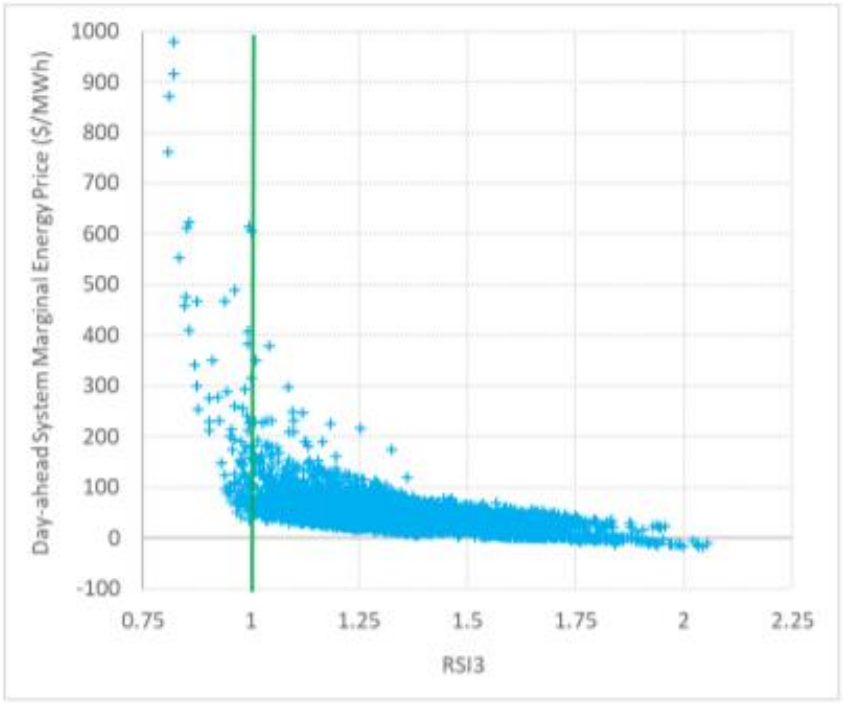
*Imports: further discussion needed including RA imports & non-RA imports. RA Imports are currently being discussed in the RA Enhancements Initiative. Further discussion is needed on the DEB calculation for imports.

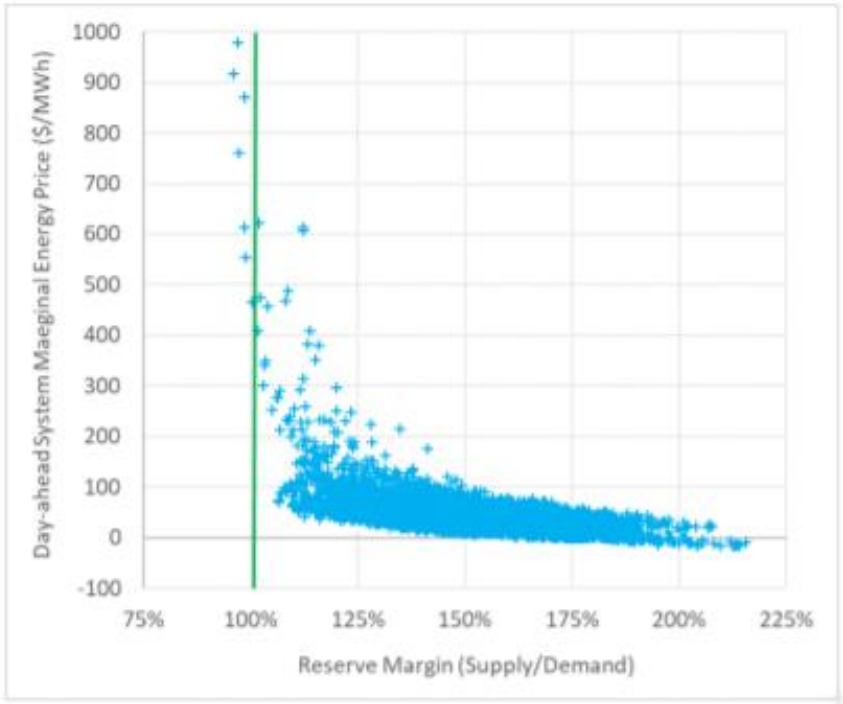
Summary

- The market has had hours where it was structurally uncompetitive and uncompetitive periods are expected to continue, if not worsen
- Market design should either ensure a structurally competitive market or have system market power mitigation during uncompetitive conditions
- Competitive price at the system level is the foundation of LMPM
- CAISO should start development of system market power mitigation and work out details

BACKUP

Only a small portion of the number of structurally uncompetitive hours occurred when reserves are low





- Source: http://www.caiso.com/Documents/Presentation-SystemMarketPowerAnalysisJune7_2019.pdf