



CALIFORNIA ISO

California Independent
System Operator

MRTU Market Power Mitigation Issues for Resolution

Market Surveillance Committee Meeting

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Three Issues to Resolve

1. Criteria for assessing whether to raise the energy bid cap under the proposed transition plan.
2. Criteria and methodology for determining “competitive” transmission path designations.
3. Methodology and criteria for assessing the competitiveness of A/S procurement regions.



Criteria for Raising the Energy Bid Cap

- Transition plan for annual increase in energy bid caps is conditioned on evaluation of whether market conditions are such that a higher bid cap would not impose significant risk to ratepayers.
- Determine specific criteria to use in evaluation:
 - Competition in spot markets,
 - Forward energy contracting by LSEs,
 - Available demand response programs,
 - Other considerations???



Criteria for Raising the Energy Bid Cap (2)

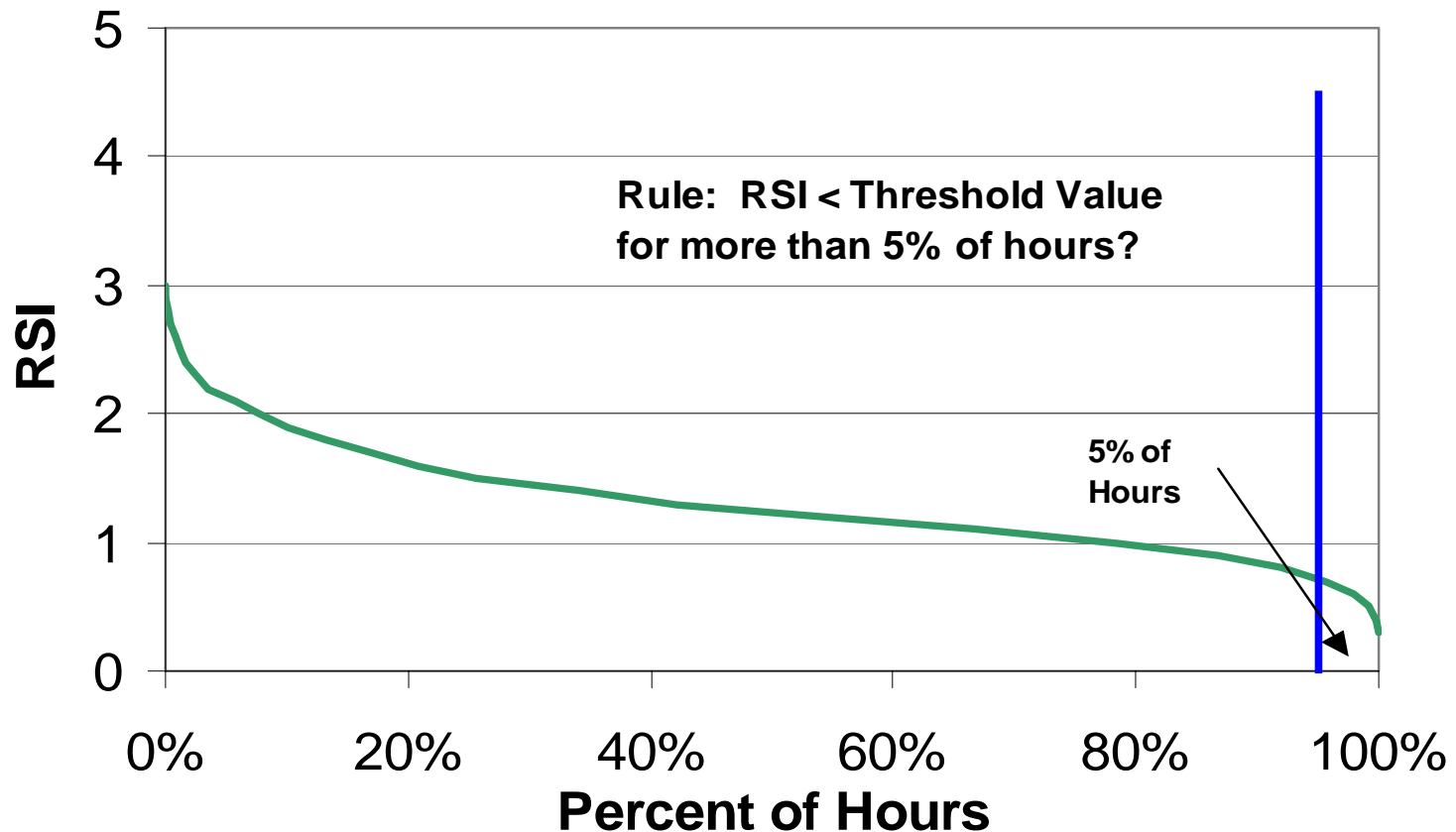
- Evaluation of Competition in Spot Markets
 - Use empirical relationship between RSI and Price-Cost Markup to define threshold for competitiveness.
 - How to define RSI (available capacity –vs.– offered capacity, any deliverability considerations at system level, treatment of imports).
 - Incorporate forward-looking system conditions into model
 - Load growth / shifts,
 - Changes in transmission & generation facilities,
 - Expected hydro availability,
 - Extended (major) transmission outages.
 - Simulate market outcomes for next year and compare to competitive threshold.
 - If RSI greater than competitive threshold for specified number of hours, then there is insufficient competition.



Criteria for Raising the Energy Bid Cap (3)

- Example of Application of RSI Threshold:

Residual Supplier Index Duration Curve





Criteria for Raising the Energy Bid Cap (4)

- Evaluation of Long-run Energy Contracting by LSEs
 - What criteria do we use to assess whether load is sufficiently hedged through forward energy contracts?
 - Count only fixed-price contracts?
- Evaluation of Available Demand Response
 - What criteria do we use to assess whether there a sufficient level of demand response?
 - What types of demand response programs should be considered?
 - Time of use programs
 - Real-time Pricing programs
 - Pay to curtail programs



Criteria for Assessing Competitive Path

- Application of the CAISOs proposed LMPM requires a distinction between competitive and uncompetitive transmission paths.
- Need to develop a methodology for determining the competitiveness of a transmission path:
 - Specific criteria to use in assessing competitiveness, and
 - The range of system conditions under which these criteria will be applied.
- Evaluation will be performed prior to Day One MRTU and periodically thereafter.



Criteria for Assessing Competitive Path (2)

- CAISO will consider RSI for metric of competition to relieve congestion on individual paths.
- Issues that need to be addressed:
 - Quantifying the amount of “effective supply” available for providing congestion relief.
 - System conditions to incorporate into forward-looking assessment: load levels and LDFs, hydro availability, congestion on one path affecting unit effectiveness in relieving congestion on another path.
 - Separate assessment of DA and RT.
 - Appropriate threshold for classification as competitive.



Assessing Competition in A/S Regions

- Under MRTU, Ancillary Services will be procured regionally and there is concern that more granular procurement may result in less competition at a regional level.
- CAISO proposes to lower A/S bid cap to \$100 if regional procurement is determined to be uncompetitive.
- CAISO must develop
 - General methodology for assessing competition within A/S regions,
 - Appropriate threshold for determining a region is competitive,
 - Method of applying lower bid cap if region is uncompetitive.



Assessing Competition in A/S Regions (2)

- CAISO Straw Proposal
 - Use RSI as basis for measuring competition within an A/S procurement region.
 - Establish RSI threshold for competitive supply within a region using relationship between historical RSI and A/S price.
 - Lower bid price cap to \$100 / MW in any region that does not meet the definition of competitive in a pre-specified percent of hours.
- Issues to Consider
 - How does simultaneous optimization of energy and A/S affect the measurement and use of RSI in A/S procurement regions?
 - How will lower bid price cap be applied if A/S procurement regions are not static?