Review and Possible Revision of California's Local Market Power Mitigation Mechanism

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Outline of Presentation

- Current Local Market Power Mitigation Mechanism (LMPM)
- Strengths of Current LMPM Mechanism
- Potential Shortcomings of Current LMPM Mechanism
- Alternative Approach to LMPM
  - Combination of Ex Ante Static Approach and Dynamic Mitigation
  - Costs and Benefits of Alternative Approach
- Possible Approaches to Designing Dynamic Mechanism
- Way forward with design of LMPM mechanism

Current LMPM Mechanism

- Prospective designation of the competitive and non-competitive transmission paths
- Candidate transmission paths that could be deemed “competitive” are only those paths with more than 500 hours of “managed congestion” over past 12 months
- Department of Market Monitoring (DMM) simulates market outcomes under pre-specified system conditions and designates a transmission path as non-competitive if there are three jointly pivotal suppliers on that path
  - Analysis done on seasonal basis
- All non-candidate transmission paths are declared non-competitive, without analysis for existence of three jointly pivotal suppliers

Current LMPM Mechanism

- 3-step process for determining generation-unit level schedules and LMPs
  - Day-ahead locational marginal pricing market is run with all non-competitive paths set to have infinite capacity
  - Day-ahead market operated with all transmission paths set at actual capacity
- If a generation unit's schedule is increased between competitive constraints and all-constraints run, then its offer is mitigated to reference level
- Reference level is verified variable costs plus a 10 percent adder
- Third step of process re-runs all constraints model with mitigated offers and all other offers to compute day-ahead schedules and prices

Strength of Current LMPM Mechanism

- Mitigated bid price under current LMPM mechanism set above bid price that a unit owner facing sufficient competition (no ability or incentive to exercise unilateral market power) would submit
- Firm facing sufficient competition would submit bid price equal to minimum marginal cost of supplying energy
- Mitigated bid is based on verified, by Department of Market Monitoring, variable cost of supplying energy from unit plus a bid adder
  - Verified variable cost > Bid supplier would submit if faced sufficient competition
  - Verified variable + adder >> Bid supplier would submit if faced sufficient competition
- Conclusion--Difficult to argue that over-mitigation occurs if bid price under mitigation is greater than bid price supplier would submit if it had no ability or incentive to exercise unilateral market power

Potential Weakness of Current Mechanism

- If mitigate bid prices too frequently can destroy incentives for least-cost production by suppliers
  - Suppliers take actions to increase verified variable cost and magnitude of bid adder
  - Suppliers exercise unilateral market power by taking actions to ensure that mitigated bid prices set market prices
- Lack of clarity in when and why a generation unit is mitigated can increase cost for load-serving entities to hedge risk of high spot prices at that location
  - Increased potential for disagreements over what price a generation unit owner with ability and incentive to exercise unilateral market power will be paid in short-term market
    - Increased disagreement over appropriate price for fixed-price forward contracts for “delivery” at that location

Alternative to Current Approach

- Two-step approach to LMPM
  - Ex ante designation of competitive or non-competitive paths
    - Apply this step to all transmission paths
  - Real-time or day-ahead designation of non-competitive paths
- Test all transmission paths on an ex ante basis under pre-specified set of system conditions
  - Because DMM cannot test for all possible system conditions that could exist, there should be a real-time LMPM mechanism to protect against false negatives on the finding of the "competitiveness" a transmission path
- Dynamic mitigation mechanism cannot be as thorough as ex ante approach because of need to test many paths in day-ahead or real-time market every hour of every day
  - Design real-time or day-ahead LMPM approach to catch potential for significant consumer harm from local market power

Alternative to Current Approach

- Possible approaches to day-ahead or real-time process
  - Use Residual Supply Index (RSI) cut-off for each market participant
  - Use nodal unit-level elasticity of residual demand curve cut-off for mitigation of generation unit
  - Other alternatives for determine day-ahead or real-time mitigation can be considered
- Over coming months, MSC plans to investigate performance of current LMPM mechanism approach that allows for consideration of transmission paths for “ex ante competitive” designation
- Completing this analysis in time for required filing with FERC is not possible given enormous quantitative data analysis effort for MSC
- Analysis based on first year of market operation not likely to be indicate of system conditions high demand conditions
  - Low levels of economic activity and mild weather

The Way Forward

- Continue with current CPA
- Initiate process to consider two-step process
  - Ex ante analysis of all transmission paths
  - Real-time or hour-ahead analysis to determine if competitive assessment was inappropriate for actual system conditons
- Concerns about over-mitigation under existing mechanism difficult to take seriously given generosity of current LMPM mitigated bid prices
- More serious problem is increased incentive to load more costs into verifiable marginal cost and bid adders
- Two-step process can better balance these two competing goals of encouraging minimum marginal cost bidding against need to protect consumers against the exercise of market power
  - Further work needed on best combination of approaches for two-step process

Questions and Comments?