PJM Market Efficiency
Window and Mid-Cycle Update

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Market Efficiency Process Enhancement
Task Force – Education Session
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To provide an overview of

- The biennial Market Efficiency Window Process
- Challenges due to annual constraints
- The Mid-Cycle Update
Overview

• Background (Market Efficiency Window and Mid-Cycle Update)

• Considerations for Short Term Window
  – Capacity
  – Potential Projects resulting from 10-year ARR study

• Considerations for Long Term Window
  – MISO coordination
  – Placeholder (optional – driven based on constraints)

• Considerations for Mid-Cycle Update
  – Reevaluation
  – Interregional update freeze
Background – Market Efficiency Window

• Currently, in both energy and capacity markets, congestion is addressed via the long-term Market Efficiency window, which occurs from November 1st to end of February on a biennial basis.

• However some constraints in PJM’s market can be identified annually.

• PJM believes a structured approach is necessary to address this existing gap.
Background – Mid-Cycle Update

• PJM’s existing Market Efficiency process includes posting window mid-cycle base case updates prior to the evaluation of Market Efficiency window proposals.

• The objective of these mid-cycle updates is to capture most up-to-date input assumptions such as updated transmission topology (baseline, network and supplemental upgrades), load forecast, gas prices, and generator deactivations.

• Submitted proposals are analyzed using the mid-cycle updated Market Efficiency Base Case which is different from the Market Efficiency Base Case posted at the beginning of the window.

• This effort may be related to activities contemplated in the Market Efficiency Window section before.
Market Efficiency Timeline

- **12-month Cycle**
  - Acceleration Analysis
  - FTR Credit

- **24-month Cycle**
  - Input assumptions
  - Base case development
  - Develop target congestion
  - Proposal submission
  - Evaluation
  - Approval
24-Month Market Efficiency Cycle (Year 1, Year 2)

• Long term proposal window: November Year 1 – February Year 2

• Mid-cycle update of major assumptions: January – April
  • Load Forecast, Fuel and Emissions forecasts, Generation expansion, Network topology
  • Only updating the most significant changes, not full update.
  • Updated ME Base Scenarios posted

• Analysis of proposed solutions: May - October
  • Independent consultant review of cost and ability to build
  • Review of analysis with TEAC: Jun – Nov

• Determination of final projects: December
  • Final review with TEAC and Board approval
  • Projects may be approved earlier if analysis and review complete
Considerations for Short Term Window - Capacity

• Constraints in PJM’s capacity market can be identified annually.

• Given that, under the default project solicitation approach, once a capacity market constraint is identified it could take 2 or 3 years or more before the transmission solution could be implemented in the capacity market.

• During the most recent cycle, PJM conducted a special short-term RPM window to address known congestion in our most recent base residual capacity auction.

• PJM believes a structured approach is necessary to address this existing gap between capacity market and planning cycles.
Considerations for Short Term Window - ARR

• PJM conducts a FERC mandated stage 1A Auction Revenue Right 10 year analysis
  – to attempt to preserve minimum ARR transmission rights for its firm transmission customers.

• If unresolved violations exist, PJM is required to develop transmission solutions

• This analysis is conducted on an annual basis
  – results are discussed at the Transmission Expansion Advisory Committee.

• The process shall be consistent with the spirit of FERC order 1000.
  – the necessary transmission solutions to mitigate violations from this analysis do not require the need to satisfy Market Efficiency benefit-to-cost metric,

• The existing Market Efficiency window might not be the best avenue to implement transmission solutions for this requirement.

• PJM believes a structured approach is also necessary to address this existing gap similar to the previously discussed capacity market challenge.
Considerations for Long Term Window

- Ample time for stakeholder review/vetting of window model

- Allows for MISO coordination
  - MISO Window open ~ January - February
  - PJM-MISO JOA requires regular interregional analyses

- Placeholder for long-term congestion drivers
  - optional – driven based on constraints
Considerations for Mid-Cycle Assumptions Update

- Interaction between Reevaluation processes and Mid-Cycle Update
- Updated PJM load flow model (RTEP) available ~March
- Generation mix/queue status changes daily
- Interregional Updates
  - External load flow model (MMWG) available ~November
  - MISO economic model available ~December
Appendix A – Operating Agreement & Manual References
References

- Scope, PJM requirements & Member requirements

- PJM Manual 14B, Section 2.6:
  - http://www.pjm.com/~/media/documents/manuals/m14b.ashx

- PJM Operating Agreement, Schedule 6, Section 1.5.7:

- PJM Market Efficiency Practices