

Managing Uncertainty

- Conceptual Discussion

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Background

- **Significant changes to the NYCA system are expected for the next few years**
 - Offshore wind, topology changes (e.g., Champlain Hudson Power Express, Clean Path, and public policy driven transmission upgrades), large loads, etc.
- **These system changes can have significant impact on the IRM**
 - Significant uncertainty can exist for the timeline of completion and other relevant development milestones
 - Assumptions must be finalized ~7 months prior to delivery period despite uncertainty
- **Significant interaction exists between modeling of the IRM and price signals/market outcomes**
- **Managing uncertainty with significant system changes is an effort for 2024 within the Resource Adequacy modeling improvement “Strategic Plan”**

IRM Assumptions vs. Market Realization

- As part of the IRM process, generation and topology changes are reviewed for potential inclusion in the IRM study
 - Changes are included if expected to be in-service by June 1st of the applicable Capability Year
- New generation resources may not be operational in the relevant Capability Year, despite inclusion in the IRM study, due to unforeseen delays or events
- Reviews of past inclusion assumptions are conducted and discussed with the ICS as part of the annual inclusion screening process
 - For example, of the 10 new generators included in the IRM study for 2022/23, only 3 became operational prior to June 1, 2022
- **Misalignment between modeling assumptions and market reality may result in suboptimal market outcomes or other issues**
 - Market inefficiencies may occur when capacity procurement requirements are set based upon certain supply mix assumptions that do not align with the actual supply available in the auctions.
 - Recent example observed in PJM's forward capacity market auction for their 2024/25 planning year, further details in Appendix

Initial Considerations

- **Assess inclusion criteria for new generation, transmission, and load**
- **Evaluate the potential for using more granular assumption updates (e.g., seasonal) to better align with market structure and expected timing of material resource changes**
 - Can also consider inclusion of resource changes on monthly boundaries to help mitigate potential misalignments
- **Consider sensitivities for testing impact of delay/advancement of assumption changes**
 - Criteria for selecting potential impactful assumptions may be needed to avoid excessive increases in the number of sensitivity cases
- **Consider criteria and measurement of material significance**
 - For example, loss of load expectation (LOLE) impacts, % changes to the IRM, impacts to the system equivalent demand forced outage rate (EFORd)

Next Steps

- **Continue to refine issue definition and success measure based on ICS feedback**
 - Additional feedback is welcome
- **Currently seek to present whitepaper scope at the late January/February 2024 ICS meeting**
 - Whitepaper scope will define deliverables and whitepaper timeline

Our Mission & Vision



Mission

Ensure power system reliability and competitive markets for New York in a clean energy future



Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

Questions?

Appendix

PJM Auction Issue Background

- PJM normally holds forward auctions 3 years in advance of the delivery year
- 2024/2025 Base Residual Auction (BRA) was held in December 2022, and the reliability requirements were determined in July 2022.
 - Resource assumptions were locked down 36 months prior to the delivery period
- After 2024/2025 BRA bidding window closed, the auction clearing prices were 400% higher in zone DPL-S (Delmarva) than prior auctions
 - \$70 → \$425/MW-day, or \$2 → \$13/kW-month

Requirements and Auction Misalignment

- **PJM modeled 1,000 MW of planned generation within their resource adequacy model in the DPL-S zone that did not submit supply offers in the 2024/25 BRA**
 - Zone has a peak load of ~2,000 MW, and 1,000 MW increase represents significant change in supply
- **DPL-S locational reliability requirement increased by 12% relative to previous year**
- **Since the planned generators did not offer their supply into the auction, this created an artificially high clearing price**
- **Assuming planned generation availability resulted in the DPL-S zone local reliability requirement being overstated producing market clearing prices that did not reflect the actual conditions for the zone**

PJM Resolution

- In December 2022, PJM submitted a proposal to FERC¹ to allow PJM to change the requirement in a locality if the addition of planned generators increases the requirement by more than 1% from prior year, but such planned generation ultimately does not offer its supply in the relevant auction
- PJM asked FERC to allow for updating the demand curve parameters to only reflect offers from resources that offered into the auction, after bidding window closes.
- February 2023, FERC approved the PJM proposal finding that “the benefits associated with changing the planning parameters of a zone after the auction outweigh the potential costs to market participants.”

1) PJM Filing