Reserve Certainty and Resource Flexibility Incentives

Issue Source

PJM

Issue Content

The work of this group is intended to investigate enhancements in the following areas:

Immediate System Need:

- Reserve Resource Performance and Penalty Structure
- Reserve Offer structure appropriately aligned for resource fuel procurement
- Reserve deployment
- Reserve quantities procurement reflects system needs

Longer- term System Need:

- (*Continued)* Reserve quantities procurement reflects system needs
- Reserve product participation requirements
- Incenting Resource flexibility that the system needs

The phasing, based on system need timelines, is to allow for a vote on immediate system need issues, with the potential for a FERC filing to effectuate any associated changes, before we start and/or complete the longer-term system need issues. Additionally, each Key Work Activity identified, in the immediate and longer-term system need areas, can be voted independently. All items in an area do not need to be complete before moving to vote on a specific KWA proposal.

Key Work Activities and Scope

While the review of the task force will be comprehensive, the solutions for any of the above topics may be advanced to a vote alone or in conjunction with other topics at the members' discretion. Members are advised to use the timeline priorities identified above for guidance on the work plan.

- Given the immediate implementation needs of identified work items, those KWAs will start once the Sr. Task Force commences and worked in an expedited fashion, moving to a vote once proposal packages(s) are developed.

KWA #1: Education and level-setting

- Education on current rules, requirements, and responsibilities for each reserve product, with emphasis on synchronized reserves. (10/10/2023 meeting)
- Define a set of design criteria intended to ensure that reserve markets and deployment in PJM function in a manner that meets performance expectations, by providing the necessary compensation and/or penalties to incent performance through a competitive market. (Initial criteria reviewed at 10/10/2023 meeting. Revisited at 12/12/2023 meeting)

Immediate: KWA #2: Reserve Resource Performance and Penalty Structure

- Provide education on reserve event penalty rules and calculation, including portfolio netting (10/13/2023 meeting)
- ✓ Provide education on performance measurement, current rules about performance, and reserve capability calculations, including comparison of synchronous condensers, hydro, combined cycle operating modes, and demand response (initial education on 10/10/2023, additional education on reserve capability / ramping calculations covered on 11/27/2023 and 12/12/2023)
- ✓ Provide education on other RTO/ISOs performance measurements, capability, testing, and penalties (12/12/2023 meeting)
- Provide education on historic spin event resource performance and discuss causes and feedback for non-performance (10/13/2023 meeting)

CBIR

- Discuss expected reserve performance requirements, event triggers and definitions, and non-performance penalty structure and any reforms that should be considered
- Discuss resource reserve requirements and any impact that could have on reserve compensation, including reserve opportunity cost eligibility
- Develop proposal package(s) for vote, as appropriate, based on the above analysis and findings

Following the June Vote:

- The initial full PJM package (which is no longer under consideration) fully addressed KWA#2 with the combination of:
  - New penalties, make-whole payments and performance evaluation enhancements for SR
  - New penalties and performance evaluation enhancements for NSR and offline SECR
- Assuming the deployment package during the June vote:
  - The Synchronized Reserve reforms will be put on hold
  - The Non-Synchronized Reserve and offline Secondary Reserve reforms will continue to be discussed in conjunction with new reforms under KWA#3 (see below)

Immediate: KWA#3: Reserve Offer structure appropriately reflects resource capabilities and aligns with resource fuel procurement

- Review Winter Storm Elliott reserve and natural gas procurement observations (1/17/2024 meeting)
- Review any applicable work of the Electric Gas Coordination Sr. Task Force (EGCSTF) (1/17/2024 meeting)
- Provide education on the current offer structure and pricing outcomes for Reserves, implemented in October 2022 with Reserve Price Formation (11/27/2023 meeting)
- Provide education on other ISO/RTO activities around recognizing fuel procurement (ISO-NE and ERCOT)
  - MISO education was provided at the 2/14/2024 meeting

CBIR

- Explore reforms to compensation for fuel procurement that provide efficient incentives for market sellers committed to provide reserves to be able to perform in real-time
- Explore potential reforms or additional market products, if needed, to support the analysis and findings of the Winter Storm Elliott observations and the work of the EGCSTF
- Examine PJM market tools to determine if modification to those tools and/or systems can better help reflect resources' reserve capability
- Develop proposal package(s) for vote, as appropriate, based on the above analysis and findings

Following the June Vote:

- Will be part of the scope tackled next in the RCSTF
- PJM will issue a short position paper within the next two months before design discussions begin in earnest

Issue Charge

Immediate: KWA#4: Reserve Deployment

- Provide education on status-quo process for synchronized and non-synchronized reserve deployment, including technology, timing, and generators' use of communication tools. (10/26/2023 meeting)
- Review previous Synchronous Reserve Deployment Task Force (SRDTF) work, PJM's IRD FERC filing, and FERC's Order on the IRD filing (11/27/2023 meeting)

CBIR

- Explore reforms to reserve deployment to support operational and reliability needs, including but not limited to procedures for initiating and ending a reserve event, resource requirements for responding and deployment method and technology.
- Develop proposal package(s) for vote, as appropriate, based on the above analysis and findings

Following the June Vote:

- This KWA will be considered complete with advancement of the deployment package

Immediate and Longer Term: KWA#5 Reserve procurement quantities

- Review material and education on the analysis performed in the Energy Price Formation Sr. Task Force (EPFSTF) in support of Reserve Price Formation with respect to defining PJM's Reserve Requirements and applicable findings and analysis from PJM Energy Transition Reports
- Provide education on other ISO/RTO's reserve procurement methodologies (12/12/2023 meeting)

CBIR

- Evaluate the current Reserve Market design and modeled parameters to ensure the procurement quantities align with operational needs, and future system needs amongst the energy transition
- Evaluate the current resource parameters and dispatch flexibility allows for accurate estimated reserve capabilities on resources, at all times
- Explore reforms to PJM reserve requirement definitions and reserve procurement quantities
- Explore reflecting system uncertainty into LMP, based on reserve needs and any resulting impacts to PJM's existing reserve demand curves and shortage pricing.
- Develop proposal package(s) for vote, as appropriate, based on the above analysis and findings

Following the June Vote:

- The requirements proposal addresses some of the scope for KWA5, but additional design discussions will continue into the longer term effort.
- In the near term, PJM intends to initiate discussions around options for better alignment of reserve procurement and deployment with economic dispatch

*** Late Summer / Fall 2024 ** PJM will begin to introduce education for the longer term KWAs (5, 6 & 7), starting with education on other ISO/RTOs and review of research/analysis performed by Penn State*

Longer Term: KWA#6 Reserve product participation requirements

- Provide education on current product participation requirements (example: synchronized reserves must respond within 10 minutes)
- Provide education on other ISO/RTO reserve product participation requirements
- Explore reforms or modifications to reserve product participation requirements (example: develop a duration requirement for reserve products) or any potential new market products to meet determined participation requirements
- Develop proposal package(s) for vote, as appropriate, based on the above analysis and findings

Longer Term: KWA#7: Incenting Resource flexibility that the system needs

- Review PJM's response in FERC Docket No. AD-21-10, Modernizing Electricity Market Design
- Review the results of the PJM/PSU Operational Flexibility Study
- Review PJM's flexibility metrics and discuss flexibility needs indicators
- Provide education on other ISO/RTOs flexibility needs and solutions
- Explore market reforms, including but not limited to multi-interval dispatch, ramping products, and Stochastic Unit Commitment. Discuss cost allocation of reserves and any potential new market products under discussion
- Develop proposal package(s) for vote, as appropriate, based on the above analysis and findings

Out of Scope

- Changes that minimize PJM Operation's ability to maintain compliance with NERC Standards (such as: BAL-001, BAL-002, BAL-003 and TOP-001).

Expected Deliverables

1. Education and analysis as needed concerning items identified in the scope of work
2. Proposed solution(s) to address enhancements to the areas identified under the Issue Content section above.

Corresponding revisions to PJM's Tariff and the Operating Agreement consistent with the solutions proposed will be brought to the MRC and MC for review and endorsement, resulting in a FERC filing. Proposed revisions to PJM Business Practice Manuals conforming to the FERC approved solution will be brought to the appropriate Standing Committees for review and endorsement.

- *Each KWA can be brought forward for vote separately, and all items in a defined system need timeline area do not need to be voted and advanced together.*

Decision-Making Method

Tier 1, consensus (unanimity) on a single proposal (preferred default option)

Stakeholder Group Assignment

New Senior Task Force reporting to the MRC.

Expected Duration of Work Timeline

Start this group in Q4 2023. Work on the immediate system needs topics is expected to start immediately and be completed and voted out of the Senior Task Force in 6-9 months, with the exception of the Reserve procurement quantities topic (KWA #4) which will span both the immediate and longer-term timelines, and have a 9-18 month design timeline. Work on the longer-term system needs will have a delayed start of approximately 6-9 months and continue for an additional 12-18 months with a vote to occur at the completion of such work.

Topic	Design Timeline	System Need Timeline
Reserve Resource Performance and Penalty Structure	Start: Immediately Timeline: 6-9 months	Immediate
Reserve Offer structure appropriately aligned for resource fuel procurement	Start: Immediately Timeline: 6-9 months	Immediate
Reserve deployment	Start: Immediately	Immediate

	Timeline: 6-9 months	
Reserve quantities procurement reflects system needs	Start: Immediately Timeline: 9-18 months	Immediate & Longer- term
Reserve product participation requirements	Start: Delayed 6-9 months Timeline: 12-18 months	Longer-term
Incenting Resource flexibility that the system needs	Start: Delayed 6-9 months Timeline: 12-18 months	Longer term

Start Date	Priority Level	Timing	Meeting Frequency
Click here to enter a date.	☒High ☐ Medium ☐ Low	☐ Immediate ☒ Near Term ☐ Far Term	☐ Weekly ☒ Monthly ☐ Quarterly

Charter

(check one box)

☒	This document will serve as the Charter for a new group created by its approval.
☐	This work will be handled in an existing group with its own Charter (and applicable amendments).

More detail available in M34; Section 6