

Capacity Market Workshop – Session 5

Capacity Market Reform Scope: Beyond MOPR

Guidance from the PJM Board

The PJM Board highlighted the below topics related to the capacity market that should be pursued (beyond MOPR):

- Examining the need to strengthen the qualification and performance requirements on capacity resources
- Evaluating all aspects surrounding the appropriate level of capacity procurement
- Considering clean capacity/energy auctions as an option to allow for procurement of clean resources
- Evaluating the need for PJM's procurement of additional reliability-based services, with a particular focus on reliability needs in the face of the changing resource portfolio and increased penetration of intermittent resource technologies.

Topics Beyond MOPR

Capacity Resource Qualification and Performance Requirements

- **Capacity Resource Qualification:** Evaluate whether additional requirements for capacity resources should be a part of the qualification of capacity resources, such as minimum start times, winterization specifications and firm/dual fuel supply, among others
- **Capacity Resource Obligations:** Examine the obligations of Capacity Resources in the energy and ancillary services markets, such as must-offer requirements, operating to parameter limits, flexibility requirements, among others.
- **Performance Requirements:** Re-examine the performance penalties, including the triggers for performance assessments and the excusals for non-performance. Evaluate the penalty rate and its effectiveness of incenting the needed investment and performance needed for reliability. Explore opportunities to provide more transparency and predictability in performance expectations.
 - Consider impacts of any changes on the design of the Market Seller Offer Cap and propose revisions to that design as necessary.

Capacity Procurement Level

- **Load Forecasting Enhancements:** Evaluate the need for further refinement of PJM's load forecasting method
- **Quadrennial Review:** Examine the VRR curve shape, choice of reference resource, Cost of New Entry, and aspects of the Energy & Ancillary Service (E&AS) Offset methodology
 - Pursuant to commitments made during the forward E&AS Offset docket, this review will focus on the assessment of liquidity of gas hubs and LMP hubs used in the calculation of the forward E&AS Offset, the methodology for calculating forward-looking ancillary services prices and the calculation of the forward E&AS offset for energy efficiency resources.
- **IRM Calculation:** Evaluate the consideration of correlated risks of extreme weather beyond what we have previously experienced, loss of fuel, equipment failures and other factors

- Examine whether an expectation of an amount of uncleared capacity should be incorporated in the capacity requirements or auctions and, if so, the requirements to which this capacity is subject
- **Seasonal Capacity:** Examine the variation in seasonal capacity needs and how this could be accounted for in setting capacity requirements and/or seasonal capacity accreditation; consideration of a seasonal market and products
- **Resource Adequacy Metrics:** Evaluate a shift in focus from the capability to serve load on the peak day to the ability to serve load in all hours of the year
 - Consider any benefits of alternative loss-of-load metrics, such as Expected Unserved Energy (EUE)
 - Consider expanding the application of Effective Load Carrying Capability (ELCC) to all resource types

Procurement of Policy Resources

- **Clean Energy/Capacity Auctions:** Evaluate forward clean energy and/or capacity auctions as an option to allow states and customers to procure the desired level of clean resources
- **Other Options for Policy Resources:** Evaluate opportunities for capacity procured bilaterally or through external auctions to be reflected in the PJM capacity market

Procurement of Reliability-based Services

- **Reliability-based Services:** Evaluate the need for the procurement and compensation of additional reliability-based services in PJM’s markets, particularly any additional flexible products or services that PJM will need to maintain reliability given a fleet with an increasing level of intermittent and distributed resources
 - Explore the appropriateness of adding products on a forward basis in the capacity market or separately as new products to be procured through PJM’s ancillary service markets

Timing Beyond MOPR

Auction Timing and Potential “File By” Dates for Reference

Auction	Run Date	File By *
23/24 BRA	12/21	7/21
24/25 BRA	6/22	10/21 (~ 5 months from now)
25/26 BRA	1/23	5/22 (~ 1 year)
26/27 BRA	7/23	10/22 (~ 1.5 years)
27/28 BRA	5/24	9/23 (~ 2.5 years)
28/29 BRA	5/25	9/24 (~ 3.5 years)

Note: File By dates may vary by a few months depending on the topic(s) and revisions. The dates shown in the table provide 2 months to receive a FERC order, and about 1 month to digest that order and finish any necessary implementation prior to the major pre-auction activities (condensed to ~4.5 months through the 26/27 BRA)

The dates do not consider the full implementation time needed for system revisions, which may be substantial for certain topics and enhancements, and may require the above dates be backed up further to account for implementation.

Sequencing and Dependencies (for discussion)

Topic Category	Topics Beyond MOPR	Timing Considerations
Capacity Resource Qualification and Performance Requirements	Capacity Resource Qualification ⁽¹⁾	
	Capacity Resource Obligations	
	Performance Assessments	
Capacity Procurement Level	Load Forecasting Enhancements	
	Quadrennial Review ⁽²⁾	Req. filing by Oct. '22
	IRM Calculation ⁽¹⁾	
	Seasonal Capacity ⁽¹⁾	
	Resource Adequacy Metrics	
Procurement of Policy Resources	Clean Energy/Capacity Auctions	
	Other Options for Policy Resources	
Procurement of Reliability-based Services	Reliability-based Services	Consider waiting for results from ongoing Renewable Integration Study which will inform this work

Noted Dependencies in Table:

- 1 | There are strong interdependencies between **Capacity Resource Qualification**, **Seasonal Capacity**, and **IRM Calculation** changes (e.g. requirement for firm fuel in qualification may reduce winter risk and therefore lead to the need to procure less capacity). If a phased approach is pursued, consideration should be given to evaluating these areas together to minimize rework.
 - **Resource Adequacy Metrics** also has strong interdependencies with these areas. However, reforms in this area likely have a longer-term discussion and implementation horizon and therefore may be best addressed after the aforementioned items.
- 2 | Various topics in the scope beyond MOPR have an impact on inputs and outcomes of the **Quadrennial Review**, particularly on performance of the VRR curve shape. However, given the Quadrennial Review begins this summer and proceeds coincident with initial discussions on topics beyond MOPR, certain assumptions such as Capacity Resource Qualifications may need to be treated as status quo for purposes of completing

the Quadrennial Review by the tariff-required date. Parts of the Quadrennial Review can be later revisited once the relevant market reforms have been decided.

Questions for Scoping & Timing

At the May 13 session, some stakeholders expressed they would like to use a phased approach to address certain issues first, before addressing other issues. Other stakeholders expressed that they would like to see a more holistic process for addressing the issues.

- Phased approach – Which issues should be addressed first, second, and so forth? What would the timing look like for this approach?
- Holistic review -- What is contemplated specifically by the term holistic? What might that entail and what would be the suggested timing for this review?