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BOARD LETTER SUBSTANTIVE DIRECTION

September 27, 2023

Dear Stakeholders,

This correspondence serves to convey the PJM Board of Managers' (Board) decision within the Critical Issue Fast Path-Resource Adequacy (CIFP-RA) stakeholder process wherein stakeholders have been deliberating over capacity market reform.

First, the Board wants to express its sincere gratitude to our stakeholders for their diligence and thoughtfulness during the CIFP-RA and its predecessor, the Resource Adequacy Senior Task Force (RASTF). The RASTF arose from a Board letter issued in April of 2021. Between these two processes, PJM and its stakeholders have been discussing capacity market reform for almost two and a half years. This is a sign of our evolving times; namely, the energy transition and how our markets must adapt to meet the transition.

While there are many detailed design elements to the capacity market, the Board's focus since the commencement of the CIFP-RA, as identified in its February 24, 2023, letter initiating the CIFP-RA, has been on enhancements in the following areas to be implemented beginning with the 2025/2026 Base Residual Auction:

1. Enhanced risk modeling
2. Evaluation of potential modifications to the Capacity Performance construct and alignment of permitted offers to the risk taken by suppliers
3. Improved accreditation
4. Synchronization between the Reliability Pricing Model (RPM) and Fixed Resource Requirement (FRR) rules

The Board has spent considerable time following the progress made at the RASTF and CIFP-RA and several Board members attended CIFP-RA meetings. Following the Stage 4 meeting, members of the Board engaged in multiple working sessions to review the contents of the proposals that were voted on at the August 23, 2023, Members Committee meeting before finally coming to a decision on what reforms to file with FERC.

In alignment with our stated priorities, the Board has determined that the enhancements set forth in the following section represent necessary changes to the capacity market and has directed PJM to file them with FERC for implementation in the 2025/2026 Base Residual Auction (BRA). The Board carefully and objectively considered the proposals it received. Given the large number of proposals, the Board initially considered proposals that garnered the highest sector-weighted support and that proposed beneficial enhancements to risk modeling and accreditation to be implemented in the 2025/2026 BRA, consistent with the February 24, 2023, letter. This process resulted in the Board beginning with the PJM annual proposal as a baseline and then addressing specific topics that the Board believes are critical to its priorities or perceived to be contentious within that proposal pursuant to Manual 34, Section 8.6.4. Those items, the Board's decision on how to address them, and the Board's rationale for its decision are provided herein. As such, the final proposal that the Board has authorized PJM to file is the PJM annual proposal with the provided adjustments.

The Board seeks to make necessary enhancements to the capacity market through this action but recognizes that additional changes to PJM's market are necessary to ensure prices align with the evolving reliability needs. Topics such as reserve market design and gas-electric coordination are areas where the Board is supportive of continued stakeholder engagement. The capacity market is a critical component of PJM's suite of markets, however, the evolution of markets specific to the operating time frame will likely be necessary as well.

In the February 24 letter, the Board set a target filing date of October 1. Given the importance of this filing, the complexity of the topics, and the desire expressed from stakeholders to review governing document changes prior to a filing, the Board has directed PJM to file these changes as soon as practicable but no later than October 13. Additionally, given the wide range of topics, some of which are closely related to each other and others less so, PJM is contemplating grouping specific topics together and submitting multiple filings, all to be filed on or before October 13, to mitigate the risk of a single component of the filing causing the delay or rejection of the entire suite of enhancements.

DIRECTION THE BOARD HAS GIVEN PJM WITH REGARD TO THE OCTOBER FILING

The Board has given PJM the following direction with regard to the October filing.

Market Structure

- The Board has directed PJM to maintain an annual market design in this filing as proposed in the PJM annual proposal. While the case for more granular designs is compelling, the Board heard overwhelming feedback from stakeholders about the desire for additional time to refine such proposals.

Resource Adequacy Risk Modeling

- The Board has directed PJM to file the set of enhancements to resource adequacy risk modeling proposed by PJM in its annual proposal and adopted by various other proposals. The Board's perspective is that these enhancements, specifically moving to hourly granularity and incorporating the modeling of correlated outages, are imperative to accurately modeling resource adequacy needs and risks on the PJM system. Further, the Board heard strong feedback from members in support of these enhancements during the Stage 4 meeting, which further supports proceeding with these changes.
- Regarding Board direction on more detailed, related topics:
  - The Board supports the proposal to use 30 years of weather history at this time and has directed PJM to include this in its filing. The Board recognizes the competing positions on this topic and believes this proposal represents an appropriate middle ground. Further, the Board views the reliability analysis and incorporation of historic weather and other information to be an area where PJM and stakeholders constantly seek to improve, and therefore, the incorporation of additional weather information may be a future enhancement following additional discussion.
  - The Board has directed PJM to maintain the status quo provisions in the Reliability Assurance Agreement (RAA) regarding the consideration of Capacity Benefit of Ties (CBOT) in the determination of the Installed Reserve Margin (IRM) at this time. The Board believes more discussion on this topic is necessary prior to supporting a singular value of 0 MW.

  - While the Board does not support the 0 MW proposal at this time, the Board is concerned that the current process to produce CBOT may no longer produce accurate estimates given the evolving view of resource adequacy risk and resource adequacy dispositions of neighboring regions. This is consistent with the views of some stakeholders at the Stage 4 meeting. The Board has therefore asked PJM to evaluate other methods to estimate CBOT that may be incorporated in the determination of the 2025/2026 IRM for the Board's consideration. The existing RAA allows for flexibility in the incorporation of CBOT into the IRM that the Board approves each year, which will allow for alternative methodologies to be considered without forcing a value of 0 MW at this time.

Capacity Performance and Alignment of Risk in the Market Seller Offer Cap

- The Board has directed PJM to file several changes to the Capacity Performance (CP) construct. In general, the Board continues to support strong performance incentives in the capacity market absent a stronger set of explicit requirements or a broader review of performance incentives in the energy and ancillary service markets that may allow more targeted performance incentives to be put in place. However, the Board also acknowledges the concern of many capacity market sellers regarding the level of risk associated with taking on a capacity commitment versus the annual revenues and the challenge some suppliers have voiced regarding the ability to express risk in capacity market offers. In response to this feedback, and in an effort to balance risk with strong performance incentives, the Board has directed PJM to:
  - Maintain the current Non-Performance Charge Rate calculation as proposed by several stakeholders and PJM.
  - File a stop-loss provision that is indexed to the BRA clearing price as opposed to the current Net Cost of New Entry (CONE). The Board acknowledges that versions of this were proposed in several stakeholder packages. The stop-loss that the Board has directed PJM to file with FERC is 1.5 × BRA Clearing Price × 365 instead of the current, 1.5 × Net CONE × 365.

    The Board views that the combination of the enhanced testing requirements in the PJM proposal, retention of the Non-Performance Charge Rate calculation, the recent changes to the triggers for Performance Assessment Intervals (PAI) to align with more severe emergency conditions, and a reduction in the stop-loss from 1.5 × Net CONE × 365 to 1.5 × BRA Clearing Price × 365 provides a reasonable balance between additional requirements, strong performance incentives during system emergencies and risk to capacity suppliers.
- As part of the Board discussion on the design of CP, the Board discussed the pros and cons of various proposals regarding eligibility for bonus payments. The Board believes that under the current design, bonus payments represent an important incentive for capacity resources to perform and therefore has directed PJM to file its proposal to refine the eligibility of bonus payments to resources that have taken on a capacity commitment as proposed by PJM. The Board recognizes that this rule change can be viewed to reduce incentives for performance to non-capacity resources; however, it is not clear why incentives for uncommitted resources to perform should reduce revenues to capacity resources that are over-performing. Instead, the Board believes that incentives for performance from resources without capacity commitments should be conveyed through the energy and ancillary service markets.
- Additionally during the discussion on CP, the Board discussed the process for excusals from performance during a PAI and in particular whether long-lead-time units should be excused from nonperformance penalties if

they are not called on by PJM due to their operating parameters. The Board decided to continue with the current approach of not excusing such resources given the need to maintain incentives for resources to offer as flexibly as possible, and keep the onus on such resources to be prepared to operate when emergency conditions occur. While the Board is not proposing to change the current rules, the Board understands governing document clarifications may be beneficial and therefore directs PJM to file such revisions. The Board does not believe that self-scheduling of such resources in the anticipation of being required to operate presents a reliability concern for PJM, and to the extent a self-schedule request is actively denied by PJM, it represents a dispatch instruction by PJM and therefore an excusal.

- The Board is supportive of the general concept of allowing market sellers to express the incremental cost of taking on a capacity commitment in their offer. Under the current Market Seller Offer Cap (MSOC) calculation, market sellers whose anticipated forward revenues exceed their avoidable costs (not including risk) may be unable to fully express their risk of taking on a capacity commitment in their offer. This was very apparent during Winter Storm Elliott where the current MSOC required many resources to offer $0/MW-day, but some of those same resources incurred Non-Performance Charges. As such, the Board directs PJM to make the necessary changes to the MSOC to allow capacity market sellers to include their cost of risk in their offer even if their Net Avoidable Cost Rate (Net ACR) is zero or otherwise negative. The ability to express risk in offers is integral to ensuring the optimal set of resources are selected to provide capacity, and on its own is not an exertion of market power when those quantified risks are rooted in rigorous, reasonable analysis as is required by the current resource-specific process.

  The Board supports additional transparency and standardization regarding the calculation of Capacity Performance Quantifiable Risk (CPQR) and as such has directed PJM to file its proposal to calculate resource-specific default values for market sellers. The Board hopes that this enhancement will ease the complications of the resource-specific review process.

  Finally, the Board has directed PJM to file its proposal to allow it more flexibility to work directly with the market seller on an alternative MSOC in the event that the market seller cannot reach agreement with the IMM. The Board does not view this as altering the responsibilities of PJM or the IMM. PJM already has the responsibility for final approval of MSOCs. This additional ability for PJM to accept or reject certain components of a resource-specific MSOC submission if insufficient supporting documentation is provided will give PJM more flexibility when working with market sellers to reach an agreement and possibly avoid the need for a market seller to solicit FERC for an alternative MSOC.

Improved Accreditation

- The Board has directed PJM to file a proposal to implement Marginal Effective Load Carrying Capability (ELCC) as the method of capacity accreditation for all resources. The Board's view is that accredited levels of capacity, compensation and performance incentives must align with performance periods of system risk to send efficient market signals for resource adequacy at least cost in the short and long term. This philosophy aligns with the use of marginal accreditation.

  Further, the Board heard numerous comments during the Stage 4 meeting from stakeholders in support of moving to marginal accreditation and observes that other ISO/RTOs are in various stages of implementation of their own versions of marginal accreditation.

FRR Rule Changes and Transition

- The Board feels it is necessary to apply the market rule changes it directs PJM to file here to the Fixed Resource Requirement (FRR) alternative with several additional changes. The Board directs PJM to apply the aforementioned resource adequacy risk modeling and accreditation enhancements to the determination of obligations and accredited capacity levels of FRR entities and resources.
- In addition to those changes, the Board also directs PJM to include the FRR transition from the PJM seasonal proposal in this proposal as a transition into marginal accreditation but extend that transition to the next four delivery years as opposed to the two originally proposed. The Board believes that FRR entities made compelling arguments regarding the need for additional time to complete their plans given changes to their obligations and accreditation. While the Board does not support making the necessary changes to resource adequacy risk modeling and accreditation for RPM and not FRR, the Board recognizes that FRR entities are uniquely situated with respect to this change and therefore has directed PJM to file the aforementioned extended transition.

Additional Important or Contentious Design Elements Vetted by the Board

- During the Stage 4 and the preceding CIFP-RA meetings, some stakeholders expressed the opinion that some quantity of Non-Performance Charges should be allocated to load. The Board has decided not to move forward with this proposal at this time. The allocation of Non-Performance Charges to loads would require more discussion to determine a justifiable level, and any allocation of these charges to load ultimately erodes bonus payments to over-performing suppliers. It is not clear to the Board at this time that such a change is beneficial to the market design or performance incentives.
- The Board is interested in further discussion on a prompt market design, although it is electing not to move forward with filing this change at this time. There is likely a more complex set of tradeoffs associated with reducing the look-ahead period than what stakeholders have had time to discuss in the CIFP-RA, and so more time needs to be dedicated to identify the benefits and drawbacks before moving forward with this change.
- The Board heard feedback regarding the levels of capacity procured in the RPM auction versus the quantity required to be held by FRR entities. At least one proposal contained a provision that would apply a reserve requirement to FRR entities similar to that which cleared in the RPM auction as opposed to the reserve requirement of the IRM for FRR plans. The Board views this to be a fundamental change to the FRR option that was originally design to be a “fixed” requirement and a change that would need much more discussion and more support from the various stakeholder groups to be considered. The Board therefore does not support changes to this at this time.
- Intermittent storage resources and demand response all have exceptions to the must-offer requirement under the current rules. These rules were put in place during the original CP proceeding and were intended to be a risk mitigation tool for resources whose operational characteristics may diverge from the uniform performance obligation that exists under an annual market structure. Given that the Board is directing that PJM retain an annual market structure at this time, the Board is not directing PJM to file changes to the rules regarding this exception.
- During the Stage 4 meeting, there was a discussion regarding the current capping of resource capability in the winter deliverability studies performed by PJM Planning. After further discussion with PJM, the Board has directed PJM to modify the deliverability assumptions in its resource adequacy risk modeling and accreditation

analysis for solar resources to better correspond to system conditions and resource output during winter hours outside of the currently studied hours.

STAKEHOLDER DISCUSSION NEXT STEPS

Through various venues including the CIFP-RA meetings themselves, the Board has heard strong support from stakeholders for continuing targeted discussions to enhance the capacity market, including a more granular approach to the market. The Board is supportive of this as well and looks forward to stakeholder feedback at the upcoming Liaison Committee and meetings with the Organization of PJM States, Inc. (OPSI) as to the particulars of how PJM should proceed with stakeholder discussions. In closing, the Board expresses its gratitude for the hard work of PJM and our stakeholders in providing a robust set of proposals and solutions for the Board's consideration and looks forward to our continued focus on evolving our markets to meet the energy transition.

Sincerely,

Mark Takahashi
Chair, PJM Board of Managers