MEMO

To:	PJM Stakeholders
From:	Dave Souder, Executive Director, System Operations
Date:	September 3, 2026
Subject:	PJM's Concerns about the IMM Reserve Proposal

PJM has been very successful in maintaining system reliability while setting new all-time winter and summer peaks. Nevertheless, real-time operations have become increasingly challenging as the level of fuel insecure resources increases and current reserve products become outdated and do not account for the level of uncertainty and risk. Our peer ISO/RTOs are years ahead of PJM in securing the necessary reserve products required to maintain system reliability,[1] providing an excellent roadmap for the PJM proposed RCSTF solution. PJM does not believe that the IMM's proposal addresses the reliability risks that led to the formation of the Reserve Certainty Senior Task Force. The IMM Reserve Proposal falls short of addressing the need for reserves to manage net-load ramping events and net-load uncertainty during these events, does not provide solutions that adjust reserve levels based on day-ahead projected uncertainty and risk, and fails to ensure that procured reserves are deliverable when they are needed. These reforms are critical to manage operational challenges that exist today and that will only become more pronounced in the coming years. Any delay in implementation of meaningful reforms that accurately reflect the operational needs of the system will lead to more shortage events and unnecessarily degrade system reliability.

Lack of Reserves to Meet Expected Net-Load Ramp

PJM's proposal seeks to leverage ramping products, which have been effectively implemented in several other ISOs across the country. Increasing net-load ramps have created operational challenges as more solar has come online over the last few years, and this trend is expected to continue. As demonstrated in the simulations[2] performed by PJM for the RCSTF, ramping products that include forecasted net-load ramp reduce the incidence of transient Synchronized Reserve shortage events and better position the system for upcoming ramping needs, which supports reliable operations.

The inclusion of net-load ramp in the forecast in both the positive and negative directions provision the reserves needed to maintain reliability based on the operational posture of the system. As demonstrated in the simulations of

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[1] During the October 16, 2025, and November 13, 2025, RCSTF meetings CAISO, SPP, NYISO, ISO NE and MISO all came and presented their reserve market designs to PJM stakeholders.

[2] Simulations of the day-ahead and real-time pricing outcomes of PJM's package for 2025 were presented at the RCSTF, and included two summary presentations (day-ahead simulation presentation (PDF), real-time simulation presentation (PDF)) as well as two the data of the simulation results (day-ahead simulation results (XLS), real-time simulation results (XLS)).

PJM's proposed design, PJM's proposal causes additional reserves to be procured leading up to the net peak load and then reduces reserve procurement at and following this peak. This design recognizes that the reliability value of reserves is dependent on operating conditions and seeks to procure reserves when they are needed for reliability and to reduce procurement targets when reserves are not needed. The IMM proposal will under-procure reserves when they are most needed and over-procure reserves when they are not needed, including during and following the net-load peak. Such a design would lead to increased costs without providing commensurate reliability value.

Finally, PJM does not agree with the IMM's assertion that multi-interval dispatch is a feasible alternative to the current PJM ramping product proposal. PJM is many years away from having the technology necessary to perform multi-interval dispatch, and an effective settlements approach to accompany multi-interval dispatch does not yet exist. Given the reliability imperative, PJM cannot afford to wait.

Lack of Deliverability of Operating Reserves

The IMM is proposing to maintain the status quo single reserve sub-zone construct and has not provided details on how requirements would be set to procure for net-load uncertainty within the reserve sub-zone. This lack of detail will make it difficult to implement the IMM proposal. Furthermore, the existing sub-zone construct was designed to ensure reliability across Reactive Interfaces (IROL) is maintained to avoid potential cascade risk. This approach is only appropriate for Synchronized Reserves because thermal limits on most transmission facilities can be exceeded for a limited time, typically 10 minutes or less. However, procuring at the IMM proposed subzone geographical granularity almost certainly ensures that stakeholders will be paying for operating reserves that are not deliverable, adversely impacting system reliability. This could lead to increased reserve costs without the expected reliability benefit. When CAISO initially implemented its ramp product, it did so without a nodal requirement and had to subsequently reform their markets to ensure that these reserves are deliverable when needed.[3]

Maintaining the Same Duration Requirement for All Reserve Services

A key aspect of the PJM proposal is the unnesting of reserve services to allow differentiation in the duration requirement of each service. Learning from other regions in the country, PJM recognizes that when more of its fleet – and in particular, its flexible fleet – is comprised of energy-limited storage resources, there will be two value dimensions to its reserve services: speed of response and energy endurance. Battery storage resources can respond very quickly to dispatch instructions, making them highly valuable for contingency recovery. However, they may not be able to sustain their output for extended periods of time, depending on their state of charge. Today, PJM's Synchronized Reserve service has a performance requirement of 30 minutes. This appropriately reflects the length of response required from Synchronized Reserve resources when responding to a Synchronized Reserve Event.

PJM's proposal maintains this duration requirement but recognizes that a 30-minute duration requirement is insufficient for a 30-minute reserve service, where reliability requires that the resources providing those reserve services be able to continue to serve energy needs for longer. The IMM's proposal introduces a four-hour duration requirement for all reserve services to maintain the status quo nested construct without a clear explanation of why that nesting is so critical. This would mean that energy limited storage resources would be able to provide

[3] CAISO presented its reserve market design to the RCSTF at the October 16, 2024, meeting, including the needing for ramping products to maintain reliability, and the operational drivers for moving to nodal procurement for these products.

significantly lower quantities of Synchronized Reserves (as little as 1/8th of what would be allowed under the PJM proposal). These flexible reserves, which are highly valuable for reliability in responding after a contingency, will not be available to provide this service. Any reserves that do clear on energy limited resources will unduly restrict the amount of energy available to serve load during net-load ramps and during peak times. This will strand energy that could otherwise be used to provide valuable reliability services. Additionally, this design by the IMM will artificially increase energy and Synchronized Reserve prices and increase the incidence of Synchronized Reserve shortage events once more energy limited resources are operational within PJM's footprint.

Lack of Day-Ahead Reserve Services

The IMM proposal does not address the need to provision additional reserves in the Day-Ahead Market to schedule the system for reliable operation going into the operating day. Today, these reserve needs are reflected in PJM's operational practice and can lead operators to make additional commitments after the Day-Ahead Market closes. PJM believes the current Day-Ahead market reserve requirement, approximately 3,000 MW, has no reliability basis and needs to change to reflect the appropriate level of uncertainty and risk.[4] PJM's proposal seeks to represent these reserve needs based on this assessed uncertainty and risk in the market to ensure that these reserve assignments are made earlier in the day, that resources have a day-ahead commitment with corresponding performance expectations and that these reserve assignments are co-optimized with the energy and reserve assignments made in the market. PJM believes that this will enhance reliability, create additional clarity and accountability for resources providing reserve services, and increase market efficiency.

Lack of Detail on the Demand Response Reserve Must-offer

The IMM has included in its package rules that require Pre-emergency Demand Response to offer reserves capability during hot and cold weather alerts and Emergency Demand Response to offer reserves capability during EEA2 events. Given the lack of discussion around this topic and the lack of detail on how this would be integrated into operational practice, PJM is concerned that this reform may not be implementable. For example, Pre-Emergency and Emergency Demand response are Emergency Procedures defined in the PJM Emergency Procedures Manual M13, Section 2 Capacity Emergencies. A Hot Weather or Cold Weather Alert may not even trigger a Maximum Generation Emergency / Load Management Alert (NERC EEA 1) capacity emergency. There are several outstanding questions including whether these Demand Response participants would need to be Economic Demand Response, whether new telemetry requirements would need to be in place, how these reserves would be deployed, and how performance would be evaluated, all of which would have to be part of a complete stakeholder package.

[4] RCSTF PJM Reserve Requirements, July 17, 2024