

Memorandum

TO: Richard J. Dewey

FROM: David Patton, Pallas LeeVanSchaick, and Joseph Coscia

DATE: October 23, 2025

RE: MMU Comments on the NYISO's 2025-2034 Comprehensive Reliability Plan

As the Market Monitoring Unit ("MMU") for the NYISO, we are required to provide comments on the Comprehensive Reliability Plan ("CRP") regarding the results of the analysis and the extent to which the current market design fails to provide appropriate incentives for the markets to satisfy Reliability Needs.¹ This memo discusses the results of the 2025-2034 CRP and the implications for the NYISO's market design.

A. Executive Summary

The CRP provides a broad assessment of reliability risks through 2034, highlighting new challenges that NYISO faces in forecasting supply and demand which increase the risk of future capacity shortfalls. CRP Recommendation #1 is to develop procedures for considering a "range of plausible futures" (instead of a single base case) when evaluating potential Reliability Needs in future planning studies. While the CRP highlights the importance of the NYISO markets in efficiently supporting reliability objectives, this memo discusses several issues that undermine the ability of the ISO's competitive markets to address the reliability needs.

Poor Alignment of Reliability Planning Requirements and Market Requirements – NYISO markets provide the revenues needed to motivate investment and maintenance of resources needed to satisfy capacity requirements. The Reliability Planning Process is an important backstop, but if the planning and market requirements are not well aligned, it will undermine the performance of the market. Our recent reports have identified a consistent *planning-market gap* where the amounts of capacity needed for planning purposes one year in the future far exceed the market requirements for the same year. For example, our comments on the 2024 Reliability Needs Assessment found a major (743 MW) inconsistency for New York City in the 2025-26 Capability Year.² This was mostly driven by the use of the more conservative "Higher Demand forecast" and higher forced outage rates in the planning study. If the market requirements were raised to be aligned with the planning requirements, the market prices would increase sharply given that a 743 MW change in the ICAP market requirement corresponds to a ~\$150/kW-year change in capacity prices with the current capacity demand curve for New York City. Hence,

¹ See NYISO MST §30.4.6.8.3: "Following the Management Committee vote," the MMU evaluates "whether market rules changes are necessary to address an identified failure, if any, in one of the ISO's competitive markets."

² See MMU Comments on the 2024 RNA [here](#).

this misalignment reduces the ability of the market to set prices that will retain resources that the NYISO deems are needed for reliability and can lead to out-of-market contracts to maintain such resources.

Plausible Future Supply Analysis Should Control for Market Conditions and Other Key Factors

– NYISO’s statistical analysis implicitly treats retirements as random events, but the vast majority of generator retirements result from market pressures and/or environmental permit limitations. To properly model the risk that unforeseen retirements will result in the loss of supply despite tight capacity margins, the analysis should be modified to:

- Exclude retirements that would be avoided by the market response to shrinking capacity margins since NYISO’s capacity market is designed to retain generation at prices up to the net cost of new entry;
- Exclude retirements driven by environmental regulations, since these are generally anticipated many years in advance;
- Consider that the level of capacity imports is responsive to market incentives that increase as the supply margin shrinks.

If NYISO does not control for these factors in its plausible futures analysis, future planning studies will likely call for out-of-market regulated solutions that depress market prices and undermine its ability to maintain adequate supply.

Plausible Futures Load Forecast Should Consider the Role of Markets in Moderating Demand Growth

– NYISO has rightly expressed concern about the potential for rapid load growth particularly from large datacenters and electrification. However, large load growth depends on State regulation of siting and interconnection of large load facilities, and the pace of electrification depends on the rollout of regulations to promote switching by consumers. Regulators and developers consider wholesale market conditions and potential reliability violations from increased load levels, which helps moderate future load increases. Hence, NYISO’s load forecast for its reliability assessment should exclude load growth that is dependent on wholesale market conditions and/or the availability of surplus capacity from demand growth that results from policies and investments that have already moved forward. Otherwise, future planning studies are likely to unjustifiably call for out-of-market regulated solutions.

Market Reforms Are Needed to Enhance Incentives for Load Flexibility – While not all new large loads are expected to be flexible, it is critical to ensure that loads have efficient incentives to be economically curtailable. Improvements are needed to NYISO’s DER program and related market design areas. These include allowing DERs to bid commitment parameters, improving performance incentives and measurement for DERs, facilitating non-firm load interconnections, and enhancing the determination of UCAP obligations. The CRP highlights the importance of some of the same market reforms.

The CRP makes three additional recommendations which we briefly address here:

CRP Recommendation #2: *Strengthen reliability planning beyond emergency measures* – This seeks to develop a more stringent reliability criteria using resource adequacy modeling

techniques to limit the use of emergency operator actions rather than limiting the use of involuntary load shedding, stating that “Current criteria measure resource adequacy only after assuming the full utilization of emergency operating procedures, effectively planning for operators to rely on extraordinary measures as routine practice.”

- MMU Comment: The current resource adequacy modeling objective of limiting involuntary load shedding is consistent with the widely accepted reliability standards across the industry. Whether this is quantified as an expected loss of load probability or unserved energy quantity, it is rooted in reliability and implies a relatively high value of lost load. However, the proposed objective to limit the use of emergency operator actions does not have an obvious reliability rationale and implies an unreasonably high value of lost load. This would make it difficult to construct a market design that would provide efficient incentives to support this standard. Hence, we do not support this recommendation and advise the NYISO not to pursue it.

CRP Recommendation #3: *Structure a multifaceted approach to address resource shortfalls* – This advocates for streamlining the processes that support the development of new supply, including NYISO’s interconnection process and barriers outside NYISO’s control such as siting and permitting timelines.

- MMU Comment: We support efforts to enable investors to develop new resources without unnecessary barriers in the interconnection, siting, and permitting processes. The existing barriers prevent the replacement of older generators with more fuel efficient and cleaner units and drive up the cost of electricity to consumers.

CRP Recommendation #4: *Deploy a comprehensive strategy to address system voltage performance* – The CRP states that operator actions to maintain voltage have increased in recent years and that this is likely to continue with increased penetration of renewable generation and datacenter loads.

- MMU Comment: We support efforts to evaluate efficient solutions to voltage requirements. In addition, it would be beneficial to look for opportunities to model voltage constraints in the day-ahead and real-time markets when appropriate.³

B. Alignment of Reliability Planning Requirements and Market Incentives

Well-functioning wholesale markets are a key component of NYISO’s approach to reliability. The NYISO markets signal when and where capacity is needed, incentivize performance during tight conditions and supply the revenues needed to invest in and maintain resources.

There is an interdependence between reliability planning and the wholesale markets, as planning actions impact market prices which drive investment and retirement decisions. Hence, it is important for NYISO’s wholesale markets to be well harmonized with the goals and practices of the Reliability Planning Process. In this section, we discuss shortcomings in the alignment of the NYISO markets with the Reliability Planning Process that should be addressed.

³ For example, we have recommended NYISO model transient voltage recovery requirements on the east end of Long Island in recent State of the Market Reports (see Recommendation #2021-3).

1. Importance of NYISO Markets in Maintaining Reliability

The NYISO markets play a vital role in attracting and retaining the supply needed to satisfy reliability criteria. Most supply resources in New York rely entirely on the NYISO markets for the revenues they need to operate and make capital investments. Expectations of NYISO market prices form the basis for contracts and hedges between suppliers and loads.

The capacity market provides revenues needed for a variety of supplier decisions that are critical to maintaining the system's reserve margins, including:

- Fixed O&M of existing units;
- Capital investment to maintain units in good repair;
- Decisions to repair or replace equipment after major outages;
- Attracting capacity imports from neighboring areas;
- New York plants supplying capacity to NYISO instead of exporting to neighboring areas;
- Participation of flexible loads in demand response programs;
- Peak load management of customers with demand-based retail rate structures; and
- Winter firm fuel transportation and supply arrangements.

The CRP's analysis of aging generator retirements provides evidence of the market's major role in supporting reliability margins. NYISO estimates the likelihood that existing units will retire in each year of the study using historic nationwide data on the percentage of generating capacity that retired past a given age.⁴ This nationwide data certainly includes many units that retired because they were economically replaced by newer capacity and were no longer needed.

New York's generation fleet has notably outlasted national averages. For example, out of 4.7 GW of gas and/or oil steam turbine capacity that was at least 40 years old in summer 2005, 3.9 MW (83%) remains in service in 2025, despite the fact that over two-thirds of similar units historically retired between age 40-60 ranges nationwide.⁵ Capacity market incentives to remain in service – especially in downstate areas – have certainly been a key driver of this outcome.

This discussion does not detract from the value of planning for unexpected unit failures as the generation fleet ages. But it suggests that robust market incentives materially slow the pace of retirements and are rightly a key part of the NYISO's strategy for maintaining system margins over time. The remainder of this section discusses how market incentives may fail to adequately support NYISO's reliability planning goals.

⁴ See Appendix C of the 2025-2034 CRP.

⁵ See Figure 3 of Appendix C of the 2025-2034 CRP.

2. *NYISO Should Work to Eliminate Planning-Market Gaps*

NYISO’s capacity market is designed to satisfy reliability criteria by setting prices sufficient to attract and retain supply when capacity margins are tight. Under NYISO’s market design, conditions that are deemed to violate resource adequacy or transmission security criteria should correspond to a supply shortfall in the capacity market, causing prices to rise. This may fail to be the case due to a *planning-market gap*, where capacity market requirements are set using models that are inconsistent with those used in reliability planning.

We have previously discussed a planning-market gap that causes New York City transmission security requirements in the capacity market to be lower than the effective requirements in planning studies.⁶ Key elements of this planning-market gap include the use of lower generator forced outage rates and lower forecasted load when setting the market LCR for New York City compared to in planning models.⁷ These factors explain how New York City had a capacity market surplus of 620 MW in summer 2025, despite the 2025 Q2 Short Term Assessment of Reliability producing a transmission security margin of 50 to 230 MW for the same period.⁸ If NYISO decides to use a more conservative load forecast for planning purposes, it would be appropriate to use more conservative load assumptions for setting capacity market requirements.

NYISO’s use of the NERC class average forced outage rate implies a lack of confidence in the outage rates used in the IRM and LCR studies and the capacity market. We share a general concern that the forced outage rates used in the IRM and LCR studies and the capacity market under-estimate outage risks. In our 2025-Q2 Quarterly State of the Market Report, we observed much higher levels of capacity unavailability during the June 23 to 25 heat wave than anticipated based on EFORD rates.⁹

A persistent planning-market gap will interfere with the market’s ability to support reliability. Market participants understand that NYISO will take action to address any Reliability Needs it identifies, potentially using out-of-market contracts and RMR agreements. A large planning-market gap ensures that these actions will result in capacity market surpluses and depress capacity prices even when planning assessments indicate the system is tight. This will likely cause market participants to under-invest in maintaining generation and other sources of supply if they expect prices to remain suppressed in circumstances where the system needs capacity.

NYISO recently acknowledged the importance of aligning the planning process and the market when it “proactively accounted for [a 310 MW expected] reduction in summer capability...rather than waiting for the publication of the updates in the 2026 Gold Book” in the 2025-Q3 STAR

⁶ See MMU Comments on 2024 Reliability Needs Assessment, available [here](#).

⁷ For additional discussion of the difference in treatment of generator outage rates between the planning and market assessments, see October 7, 2024 ICAPWG presentation “Transmission Security Limit Floor for the Installed Capacity Market - Follow-up Discussion”, slide 8, available [here](#).

⁸ See Figure 49 of NYISO’s 2025 Q2 STAR Report, available [here](#). The margins of negative 281 to 461 MW shown in Figure 49 exclude the Gowanus and Narrows peaking units which were retained for reliability to address the New York City Reliability Need identified in the 2023 Q2 STAR. Inclusion of these units’ 570 MW ICAP with a NERC class average EFORD of 10 percent results in a margin of 50 to 230 MW.

⁹ See [here](#), slide 6.

Report.¹⁰ While we support this proactive update to the assumed generator capabilities, it had the effect of perpetuating the *net* planning-market gap since it reduced the amount of available supply in the planning study. It is important to take an unbiased approach to the planning assumptions so that updates are made promptly, regardless of whether they increase or decrease the forecasted capacity margins.

3. Incompatibility of Capacity Market with Plausible Future Planning Approach

The CRP recommends widening the “range of plausible future” planning scenarios that can be used to declare actionable Reliability Needs. This is meant to capture unforeseen reductions in supply and/or increases in load that will inevitably occur over a ten-year period. In this subsection we discuss why the analytical approaches presented in the CRP would lead to excessive and unnecessary reliability procurements and interfere with the functioning of the capacity market. These concerns should be carefully considered as NYISO develops a detailed proposal for planning enhancements.

Risk of Excessive Procurements under Plausible Future Planning

The analysis of plausible futures would likely result in excessive declaration of Reliability Needs because the analysis does not account for the impact of market incentives on investment decisions. In practice, tightening capacity margins lead to higher prices that provide strong incentives for participants to support system margins:

- *Generator Retirements* – when current or expected future capacity prices are high, generation owners have strong incentives to remain in service, maintain and repair equipment, and return from outages. As noted in section B.1, NYISO’s capacity market likely explains why its generation fleet has remained in service notably longer than national averages. The CRP proposes a method to forecast generator retirements using historic nationwide data, but it makes no distinction between units that truly experienced irreparable outages and those that retired for economic or environmental reasons. Hence, the proposed methodology is likely to consistently over-forecast retirements when margins are tight and unit owners have strong incentives to retain capacity.
- *Load Growth* – market prices affect the incentives of end users, making scenarios of runaway load growth unlikely. Rising prices are likely to slow the pace of large load development or induce more of those loads to bring onsite generation or participate in demand response programs. Similarly, utilities and state regulators overseeing the rollout of electrification programs are sensitive to the price of electricity and availability of surplus capacity.
- *External Capacity* – capacity imports fluctuate year to year but are strongly influenced by the difference in prices between NYISO and neighboring areas. Scenarios of deficient capacity margins may be unrealistic if they assume underutilization of import capability regardless of price conditions in New York.

¹⁰ See page 17.

If the above factors are treated as insensitive to market conditions, the plausible futures planning approach will result in the declaration of Reliability Needs in circumstances where they are not truly needed to maintain reliability. NYISO will find it difficult to procure market-based solutions to resolve needs that are based on scenarios that market participants find unrealistic or improbable. Hence, NYISO may be increasingly forced to rely on out-of-market contracts and RMR agreements. We discuss below how this will have unintended consequences for the capacity market's role in maintaining reliability.

Consequences of Excessive Procurements

A planning framework that declares Reliability Needs based on highly conservative scenarios will lead to surplus conditions and suppressed prices in the capacity market. As noted above, market-based solutions will not be forthcoming to address a Reliability Need that is based on improbable conditions. As a result, NYISO will need to select a regulated solution such as a generator contract or RMR agreement. Since the solution will be sized based on a conservative assessment of future needs, it will result in a capacity surplus under the most likely conditions. Hence, capacity prices will indicate that the system has excess capacity even as Reliability Needs are being declared.

The consequence of this dynamic is that market participants will face weakened incentives to supply capacity. A long-term outlook of low prices resulting from planning actions would reduce participants' willingness to invest in plant maintenance, return to service from outages, manage peak load, and other actions listed in section B.1. In other words, the spot market may accurately reflect *short-term* conditions but fail to provide the *long-term* revenue stream needed by suppliers. As a result, NYISO may need to increasingly rely on costly out of market procurements as retirements, loss of imports and weak demand participation become a self-fulfilling prophecy.

This discussion highlights that the capacity market is not currently designed to provide adequate long-term prices if the planning framework consistently ensures large capacity surpluses. Making the market compatible with such an approach would require changes to market parameters and/or design elements. For example, changes to the ICAP Demand Curves (such as the tariff-prescribed level of excess or zero crossing points) could be used to offset the expected surpluses produced by the planning process. However, this would result in a market designed to inefficiently retain more capacity than is needed to satisfy reliability criteria at great cost to ratepayers. Hence, it is important to carefully consider the level of conservatism that is appropriate for declaring Reliability Needs before such market changes become necessary.

Conclusions on Plausible Futures Planning Approach

We are concerned that the proposed plausible futures planning approach will transcend the important role of the Reliability Planning Process as a backstop capacity mechanism and instead preempt the market. While it is tempting to imagine a paradigm in which conservative planning produces a strong reliability cushion that may lower capacity prices in the short term, this will facilitate inefficient investment and retirement decisions and produce an increasing reliance on reliability contracts that will raise consumer costs over the long term.

C. Market Incentives for Flexible Load

The CRP highlights the large number of pending interconnection requests from large loads as a major risk factor. Over 10 GW of large load requests are currently in NYISO's interconnection queue. While some interconnection applicants (such as cryptocurrency mining) indicate that they are willing to economically curtail, the largest categories (including AI data centers and advanced manufacturing) generally do not. It is impossible to say how much large load flexibility will ultimately prove available as market conditions and industry practices evolve. Even a minority of new large loads choosing to be flexible could provide substantial relief to reliability margins. Hence, it is important for the NYISO markets to provide appropriate incentives for demand flexibility.

NYISO's DER Participation Model, launched in 2024, is intended to provide a flexible and comprehensive framework for diverse types of demand-side resources to participate in the NYISO markets. It improves on previous demand response programs by providing flexible loads an integrated participation model for the energy, capacity and ancillary services markets. To support the goals of maintaining reliability margins improvements to this model and associated market design issues are required to (1) remove inefficient barriers to flexible load participation and (2) accurately quantify and access the load response potential of participating resources. Areas where improvement is required include:

- *Commitment Parameters:* DERs are currently unable to include commitment parameters such as start-up notification time, minimum-run time, and start-up cost in their day-ahead market offers. These parameters are available to conventional generators to ensure that the unit will receive a feasible schedule and recoup its commitment costs if scheduled. Without them, DERs can only sell capacity if they are willing to be curtailable with little notice and without the ability to recoup commitment costs.
- *Performance Measurement and Incentives:* As NYISO gains experience with DER participation by large loads, improvements are needed to ensure that the market can appropriately model and access their load response potential in real time. We have observed: (1) weak incentives for DERs to follow real-time curtailment instructions from the NYISO, (2) the ability of DERs to offer reserve and curtailment capacity exceeding their actual online load, and (3) weak capacity market incentives for DERs to be available during periods of potential reliability risk. A load-reducing DER's UCAP rating is determined by the capacity accreditation factor (CAF) of its elected duration class and an availability factor reflecting the individual resource's historical performance. NYISO currently calculates the availability factor in a way that equally weights all hours of the historical capability period (excluding planned outages), regardless of whether the resource was in demand. As a result, a resource that is 'available' in the majority of hours but is unavailable during peak conditions when it is needed may receive a near-perfect availability factor. An availability calculation that more heavily weights periods when the resource is in demand (similar to generator EFORD) is needed to motivate performance of DERs during critical periods and accurately reflect their expected availability in resource adequacy studies.
- *Lack of Non-Firm Interconnection:* When large loads seek to interconnect in New York, they are studied by the NYISO for system impacts and then enter into interconnection

agreements with a transmission owner, which may include allocation of substantial network upgrade costs to address identified impacts. This process currently does not have distinct rules for non-firm load customers, so large load customers that are willing to be curtailable are potentially subject to the same interconnection costs and procedural timelines as customers seeking firm service. This may weaken the incentive of large loads to commit to accept curtailment in peak conditions.

- *Capacity Obligation Based on a Single Peak Hour*: NYISO’s tariff dictates how the capacity purchase obligations of load-serving entities (LSEs) are determined.¹¹ It specifies that an individual LSE’s obligation is proportionate to its customers’ load during the previous summer’s NYCA peak load hour. Demand reductions of DERs are added back to the peak load of the LSE serving the DER. As a result, loads capable of flexibility may find it preferable to reduce their capacity obligation by reducing load during a single peak hour instead of participating in the DER program. Self-curtailment by loads during a single peak hour may not provide relief during the most critical periods and offers less operational coordination compared to participation as a DER.

NYISO has the opportunity to address these issues through planned and ongoing market enhancement projects. NYISO plans to address some of the participation model and interconnection concerns highlighted above through several market enhancement projects related to demand side participation already prioritized for 2026.¹² NYISO should also introduce tariff changes as part of the existing Expanding Peak Load Hours project to widen the set of hours used to determine load ICAP tags beyond a single peak.¹³

D. Conclusions and Recommendations

As highlighted in the CRP, NYISO faces increasing uncertainty related to a variety of supply and demand factors. The wholesale markets are foundational in NYISO’s approach to managing reliability amid changing conditions. We recommend the following to ensure that the markets continue to efficiently carry out this function:

- Align the assumptions and models used between the capacity market and reliability planning process when considering the same time frame;
- When developing a proposal for plausible scenarios planning, (a) avoid assumptions that unrealistically ignore market responses to tightening margins and (b) explore whether changes to market parameters (such as level of excess, requirements or demand curves) are needed for the capacity market to complement the planning framework;
- Address DER commitment parameters, performance measurement, incentives to follow instructions, and non-firm interconnection options of large loads through the currently prioritized 2026 Market Projects; and

¹¹ See Section 5.11.1 of NYISO MST.

¹² These include the DER Market Enhancements, Flexible Load Models – Large Loads and Reliability Planning & Large Load Integration projects. For descriptions of these efforts, see “2026 Market Project Candidates”, posted with August 25, 2025 BPWG materials, available [here](#).

¹³ See February 25, 2025 ICAPWG presentation “Expanding Peak Hours”, available [here](#).

- Consider tariff provisions to widen the range of hours used to determine LSE UCAP obligations through existing Expanding Peak Hours market enhancement project.

We look forward to discussing these comments and addressing any question they may raise.

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