

**Responses of the New York Independent System Operator re:  
December 18, 2023 Additional Questions for the Record  
from the United States House of Representatives  
Subcommittee on Energy, Climate, and Grid Security  
Regarding the September 28, 2023 hearing entitled  
“Powering America’s Economy, Security, and Our Way of Life:  
Examining the State of Grid Reliability”**

**January 8, 2024**

**The Honorable Jeff Duncan**

**Question 1.** A historic benefit of wholesale markets is that they created competition and shifted financial risk from ratepayers to private investors.

- a. Do you believe that state policies mandating the use of, or providing subsidies for, certain types of generation shift the financial risk back to ratepayers?

**NYISO Response:**

In my September 28, 2023 Hearing Statement (Statement), I noted that “Competitive wholesale electricity markets are fundamental to providing consumers reliable, lowest-cost power and an essential mechanism for achieving public policy objectives.” The New York Independent System Operator’s (NYISO) pioneering energy markets, implemented in 1999, have demonstrated significant value for New Yorkers, delivering savings, supporting reliability, and aiding in emissions reductions and improved system efficiency. Wholesale electricity markets harness competition to improve economic efficiency and encourage innovation while shifting risk to investors who are best able to manage it. Asset owners who are more responsive to system conditions and most efficient will thrive in the market and lower the costs to consumers for maintaining reliability.

Similarly, the NYISO’s grid planning functions have served policymakers and investors well by providing authoritative, independent information on potential challenges. The NYISO’s markets and planning functions have established a solid platform to address new and emerging goals in support of what will be a more dynamic system of the future. As I stated in the September hearing, “properly designed competitive markets are an important element to realizing clean energy goals while minimizing costs and risks to ratepayers.” Because wholesale electricity markets are designed to seek the least-cost mix of reliability services needed, rather than procuring from specific resources or specific resource types, markets do a much more effective job of protecting consumers from investment risks than other procurement models.

New York's wholesale electricity markets are adapting to address these challenges and provide signals that support the resources needed to continue to support the reliable delivery of electricity. The NYISO's market design continues to provide proper incentives to new and existing resources that can respond and follow dispatch signals in all types of conditions, harnessing competition to minimize consumer costs while maintaining reliable service and assisting with the achievement of policy goals. To continue to support wholesale electricity market benefits to both reliability and economic efficiency, the NYISO has identified certain key wholesale electricity market enhancements to maintain the alignment between emerging reliability needs and market incentives. The NYISO has and is continuing to work with stakeholders to address these market enhancements.

Question 2. Is there evidence that subsidies for grid scale battery storage, solar, and wind resources suppress capacity and energy market prices in your region? If so, please describe.

- a. In your opinion, have subsidies negatively affected market outcomes? Do subsidies for batteries, solar, and wind discourage investment for new dispatchable thermal generation? How much have these market conditions contributed to the retirement of existing dispatchable thermal resources?
- b. Do these subsidies and their effects on markets make your system more reliable or less reliable?
- c. What steps are you taking to ensure that these subsidies are not unduly discriminatory and preferential, and that rates remain just and reasonable?
- d. Would you consider state renewable mandates as out of market interventions? Would you consider the mandates as a form of market power?

NYISO Response:

New York's public policies are increasingly prioritizing clean energy production and a rapid transition away from fossil fuels. It is imperative that during this time of rapid change we maintain adequate supply necessary to meet a growing demand for electricity. The NYISO believes that it is possible to maintain a reliable system through the transition, as well as achieve efficient market outcomes through the evolution of innovative market rules. Achieving this balance will be the central challenge to the industry and New York State in the coming years.

State policies, specifically the Climate Leadership and Community Protection Act (CLCPA), require an emission-free electric system by 2040. As the independent grid operator in New York, our mission is to ensure a reliable electric grid during the transition to the new clean energy technologies that will support the economy and the health and safety of New Yorkers.

The NYISO's wholesale electricity markets continue to lead the way toward a cleaner, resilient, and efficient electricity grid. In 2022, the Federal Regulatory

Energy Commission (FERC) accepted the NYISO's groundbreaking proposal to eliminate buyer side mitigation and introduce capacity accreditation serve to enhance capacity markets for investment in new clean energy technologies, while enhancing grid reliability by better measuring and compensating resources for their benefits to grid reliability. These reforms serve as a new national model for wholesale electricity market design, addressing the issue of federal versus state oversight of capacity markets while also strengthening reliability and economic efficiency. Additional market enhancements are underway to help meet the requirements of public policy, strengthen the grid, and position the competitive markets for future technologies.

Question 3. Are changes to how the capacity market procures resources needed to ensure that sufficient dispatchable thermal resources are, and remain, available to the system? How far in advance of that timeframe do you need to make changes to avoid reliability issues?

- a. Should changes to capacity accreditation go into effect before other changes to the capacity market?
- b. Are forward looking markets like capacity markets needed to procure enough resources that can provide essential reliability services?
- c. Are you concerned that there will be a recurring need to defer retirements or enter into out of market contracts to retain generators if subsidies persist and the markets do not change to correct inefficiencies?
- d. Do all resources with a capacity obligation have a must-offer requirement in the day-ahead market? If not, why not? What effect does not having a must-offer requirement have on the day-ahead and real-time markets?

NYISO Response:

The NYISO supports reliability through three complementary markets: energy, ancillary services, and capacity. The full reliability benefit and economic efficiency of the NYISO markets necessitate considering how these markets all work together. Each day, the NYISO conducts wholesale electricity auctions for market participants to buy and sell electricity. These auctions ensure sufficient electricity is scheduled to match consumer demand, delivering reliable electricity with the least-cost mix of resources available to the grid. For these daily auctions to function efficiently, operators need a longer-term view into what supply resources will be available to the grid. The NYISO achieves this certainty through its Installed Capacity (ICAP) market, which promotes reliability by compensating suppliers for committing to be available to the grid whenever needed.

While other wholesale electricity markets in the nations conduct capacity markets on a longer-term, three-year forward market basis, the NYISO conducts capacity market auctions on a seasonal and monthly basis. This design benefits consumers and resource investors. Nearer-term auctions more accurately reflect market supply and demand conditions, benefiting reliability and minimizing market

uncertainty that can increase consumer costs. At the same time, transparent locational pricing signals reward availability, performance, and resources' contributions towards reliably serving load. Longer-term investment decisions are made by supply resources through transparent pricing and availability of models and forecasts. Selected capacity resources are compensated for their availability to serve the grid, and in turn are obligated to offer their services into the NYISO's daily wholesale electricity markets. The performance of these resources to meet their obligations directly impacts the levels of capacity these resources can offer and be compensated for.

While the capacity market exists to help ensure reliability, these markets must also take into account public policies. To ensure rules intended to preserve competition in the capacity market do not interfere with the state's clean-energy policies, the NYISO engaged stakeholders and policymakers to revise its buyer-side capacity market mitigation (BSM) measures. In conjunction with BSM reforms, the NYISO also pursued capacity accreditation tools to more accurately reflect capacity market suppliers' contributions to resource adequacy.

The NYISO's balanced approach incentivizes efficient investments to attract and retain the necessary resources to maintain resource adequacy. In May 2022, FERC accepted the NYISO's proposal. In supporting the Commission's acceptance of the capacity accreditation component of the NYISO's proposal, FERC Commissioner Christie stated, "Getting capacity valuations right is essential both for reliability purposes and to ensure consumers do not pay for capacity that does not perform when needed."

- Question 4. Please describe your generator retirement process. Are current retirement processes that retain resources while transmission upgrades are implemented sufficient to prevent the scale of retirements facing RTOs/ISOs?
- a. Do you consider issues other than reliability violations on the transmission system when assessing the impacts of proposed generator retirements?
    - i. For example, should violations of other reliability criteria, shortfalls of FERC-approved resource adequacy requirements, or need for essential reliability services be considered when a generator proposes to retire?
  - b. Should RTOs/ISOs be able to retain generators until the capacity, energy, and essential reliability services they provide are replaced?

NYISO Response:

The NYISO's planning processes are an essential element of the NYISO's mission of ensuring power system reliability and competitive markets for New York in a clean energy future. These processes serve this mission by identifying future system needs and enabling investment to meet those needs long before there is an impact to consumers. NYISO planners continuously study the electric system to identify and address changes that risk reliability.

NYISO planners evaluate the reliability of the system by assessing available supply, expected demand, and risks such as the effects of extreme weather. The NYISO identifies reliability needs by applying mandatory and enforceable rules established by international, national, regional, and New York State-specific reliability standards organizations. The standards examine two key aspects of reliability:

1. **Adequacy:** The ability of the electric systems to supply the aggregate electrical demand and energy requirements of their customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements; and
2. **Security:** The ability of the electric systems to withstand sudden disturbances such as electric short circuits or unanticipated loss of system elements.

The Reliability Planning Process itself is composed of four components:

1. Each transmission owner conducts a public Local Transmission Planning Process for its transmission district that feeds into statewide planning;
2. The quarterly Short-Term Assessments of Reliability (STARs) address near-term needs, with a focus on needs arising in the next three years. The Short-Term Reliability Process includes assessing the potential for reliability needs arising from proposed generator deactivations;
3. The Reliability Needs Assessment (RNA) focuses on longer-term reliability needs for years four through ten of a ten-year forward looking study period; and
4. The Comprehensive Reliability Plan (CRP) integrates all of the planning studies into a ten-year reliability analysis for New York.

Together, these processes enable the NYISO to nimbly identify reliability needs ranging from localized needs to broader statewide needs arising over the next decade.

If reliability needs are identified in the RNA, then the CRP will include the results of a solicitation for market-based and regulatory backstop solutions to address those needs. Solutions can take the form of any generation and resource type, including demand response and storage, as well as new local and bulk level transmission solutions. The quarterly reliability assessments focus on the next five years, evaluating the impacts of generators that intend to retire. If needs are identified in the next three years, the NYISO solicits market-based solutions from developers and regulatory backstop solutions from transmission owners to maintain reliability if market-based solutions are not available. The reports for each of these processes are reviewed with stakeholders and posted on the NYISO website.

The NYISO's planning processes strive to produce market-based solutions to identified needs whenever possible. This process allows developers and investors to respond to the needs and price signals in the NYISO's markets and to assume the risks of such investments, which avoids imposing those risks on rate-paying consumers. The NYISO also identifies the Responsible Transmission Owner(s) for each Reliability Need and requests that those Transmission Owners submit regulated backstop solutions in the event they are needed to maintain bulk power system reliability. Other interested entities may also submit alternative regulated solutions to address the identified Reliability Needs. These NYISO reports provide insight to federal and state regulators, reliability organizations, and investors regarding the reliability impacts of environmental regulations and policies impacting power generation resources in New York. Through these processes, the NYISO continuously monitors and reports on the development and implementation of environmental regulations and policies impacting power generation resources in New York based on its mandate to maintain reliability for the state's bulk electric system.

While the planning criteria used to evaluate reliability conditions is strict, the NYISO conducts many scenario analyses to supplement these studies. These scenario analyses, which can look at conditions beyond the mandatory planning criteria, are highly effective in informing existing resource owners, developers, and policymakers of the need for future investment.

Question 5. Electrification of the heating and transportation sectors has the potential to greatly increase electric demand and capacity needs. The nation's top reliability organization, the North American Electric Reliability Corporation (NERC), and leaders from the Federal Energy Regulatory Commission (FERC), have testified that the bulk power system is confronting a potential reliability crisis caused by the potential loss of dispatchable thermal generation. This issue grows greater with the proposed EPA rules that will discourage coal and natural gas-fired generation. When do you anticipate reliability concerns materializing, or have they already materialized? What are you doing to solve this resource adequacy crisis and potential reliability crisis?

- a. How do you plan to retain existing dispatchable generation and incent new entry of dispatchable generation if your markets currently do not?
- b. If your system is already facing resource adequacy issues without electrification and demand increase, how will the system be able to sustain large growth amidst significant thermal resource retirements?
- c. It appears that capacity obligations and performance requirements fail to reduce the impacts of winter storms. Does your market structure provide incentives for winterization of natural gas infrastructure or firm fuel supplies? What steps is NYISO taking to incentivize weatherization of natural gas infrastructure or firm fuel supplies?

NYISO Response:

The NYISO's reliability planning processes, described in response to Question 4, not only address changes in expected generation availability, but transmission capability and expected demand. Forecasted demand in each of our reliability studies accounts for New York State's aggressive electrification programs. NYISO reliability studies have noted that growth in forecasted electricity demand driven by economic factors and electrification programs, along with generators retiring at a faster pace than new supply and transmission capability is entering service, are leading to reliability needs on the grid as soon as 2025. These ongoing studies continue to update demand forecasts to reflect revisions to expected economic conditions that influence demand, and the pace of adoption of electrification programs. As noted in Question 4, the NYISO is empowered to act should reliability studies identify risks to meeting reliability rules.

In 2022, the NYISO evolved its economic planning processes to produce the first-ever System & Resource Outlook. This study includes a 20-year forecast that examines multiple cases and scenarios that identify project resource mixes for achieving 2030 and 2040 policy mandates while maintaining reliability. While not stipulating fuel or resources type, the Outlook identified the requirement for minimum quantities of Dispatchable Emission Free Resources (DEFERs) would be necessary to maintain reliability throughout the lifecycle of the policy objectives.

The NYISO's wholesale electricity markets work together with our planning responsibilities to address reliability risks when they occur. Enhancing market rules to support greater flexibility, through new or enhanced ancillary market services for both traditional supply, energy storage, and demand-side programs to support the development of distributed energy resources, is key to incentivizing the reliability services needed for the grid as the resource mix changes to one more dependent on wind and solar conditions.

New York's capacity markets have continued to serve consumers by supporting the availability of supply needed. While the NYISO has identified risks attributable to declining reliability margins across the state, the performance of the electric system in New York during Winter Storm Elliott highlights the benefits of wholesale electric markets, particularly capacity markets, in New York. NYISO markets, working hand-in-hand with reliability rules, support dual-fuel capability in certain parts of the state, most notably New York City. During Winter Storm Elliott, when the natural gas system became constrained due to demand tied to home and business heating, the dual-fuel capability of generators, particularly in downstate New York, became key to maintaining reliability during the storm. Thanks to accurate load forecasts and the responsible efforts of New York's generators and transmission owners, the bulk electric system performed well across New York during Winter Storm Elliott.

- Question 6.** While the interconnection queue is large, not all resources in the queue get built. What percentage of the generation queue has historically come onto the system? How much from the existing queue do you expect to be built?
- a. Can you provide an estimate of the gross cost of all the additional renewable capacity you expect to get built?
  - b. Can you elaborate on the projects that are delayed or canceled due to cost increases?
    - i. What is the reliability impact of these delays and cancellations if they force retirement of existing dispatchable thermal resources but no new capacity is added?
    - ii. Are these projects subject to financial penalty if they are unable to meet their obligations? Should project financiers and sponsors be required to pay for any out of market actions to retain dispatchable thermal resources?
  - c. Can you describe how much additional dispatchable thermal generation capacity you will need to balance the system if renewables are added to meet state goals? Is it financially sensible to add significant amounts of generation to meet state goals only to need to add more dispatchable thermal generation to maintain balance on the system?
  - d. Can additional natural gas-fired generation capacity be served by the current pipeline infrastructure or is additional pipeline infrastructure needed?
  - e. Have you been consulted by EPA or FERC on the proposed power sector regulations?
  - f. If the EPA rules are enacted, will you be able to reliably operate your system?
  - g. Should nuclear play a larger role in reliably operating the system and meeting state emission targets?

**NYISO Response:**

As indicated in our response to question 5 above, the *2022 System & Resource Outlook* is a valuable study to assess multiple future scenarios. The NYISO's Outlook report will be updated in 2024. While the 2022 Outlook did not specify the cost for projects seeking to interconnect in response to New York State's clean energy programs and policies, it estimated that nearly 20 GW of new renewable generation would be needed to meet New York States objective for 70% renewable supply by 2030. For reference, 12.9 GW of new generation has been developed since wholesale electricity markets began in 1999. To meet the state's objective of 100% of load to be supplied by zero-emissions resources by 2040, at least 95 GW of new generation projects and/or modifications to existing plants will be needed. New York currently has approximately 37 GW of generating capacity.

Prior NYISO studies have also served to inform policymakers, consumers, and investors on the investments needed to maintain reliability as New York transitions



to a zero-emissions grid by 2040. In 2020, the NYISO completed its *Climate Change Impact and Resilience Study*. The study provided information on potential changes to planning, operational practices, and/or wholesale market design features by reviewing the potential impacts of a range of extreme conditions on power system reliability in 2040. To reflect compliance with state clean energy policies, all of the existing fossil-fueled generating resources were removed from the resource mix that was analyzed. However, to preserve reliability, the study included an undefined “backstop resource” to supply the grid whenever wind, solar, and energy storage resources were insufficient to meet demand. Since the backstop resource must be fully dispatchable to balance the system effectively, the study referred to these resources as “Dispatchable Emissions-Free Resources,” or DEFRs.

The idea behind the inclusion of DEFRs is to mimic the reliability service capabilities currently supplied by fossil fuel resources while meeting the CLCPA’s requirement of zero-emissions. Resources with this combination of attributes are not currently commercially available, but will be critical to future grid reliability. In order to phase down the fossil fuel resources currently providing these services, new technologies are needed. The Climate Study made no assumptions about what technologies will be capable of performing these reliability services. The study found that the system in New York will need as much as 30,000 MW of installed capacity of these types of resources.

The marketplace is responding. The number of projects seeking to connect to the grid has more than quadrupled since enactment of the CLCPA in 2019. Working closely with developers and affected utilities, studies identify necessary system upgrades and estimated costs to allow new resource developers to make informed investment decisions. Costs identified as necessary to maintain reliability are borne by developers and not consumers under the NYISO’s interconnection process. The focus of the process is on balancing the demands of open access to the electric system with grid reliability, at the most efficient cost to consumers.

When studying the interconnection of new generating resources, each project is studied individually before eventually being grouped into a “Class Year.” These studies enable developers to make design changes of their individual projects as they learn about the possible impacts associated with their proposal. Developers choosing to remain in the queue based on the results of initial interconnection studies enter a “Class Year” where detailed analysis precisely identifies the reliability impact the group of projects have on the grid. The NYISO then assigns the cost of necessary upgrades to each developer to mitigate the impact on reliability of the system. In January 2023, the NYISO completed Class Year studies for 27 new wind, solar, storage, and transmission expansion projects totaling nearly 7,500 MW of clean energy capacity that can proceed towards commercial operations.”

Multiple factors outside the scope of the NYISO's control can impact whether a project elects to move forward with the interconnection process. Economic conditions, siting requirements and approvals, and other regulatory approvals occur outside of the NYISO's interconnection planning processes. While the NYISO does not have visibility into all of these factors, we monitor those conditions closely while continuously striving to further enhance interconnection processes.

As NYISO has noted in numerous studies, the pace of the transition between existing supply and new clean energy supply driven by public policies is critically important. Anticipating the more rapid pace of change in both supply and demand characteristics of the system in New York, the NYISO developed the quarterly reliability planning processes noted in prior responses. These studies evaluate the availability of all resources – including the existing fleet of fossil, nuclear, wind, solar, and hydro-powered supply. To be included as a resource in future reliability studies, new projects must complete extensive studies and reach other regulatory and development milestones. Once they reach those milestones for inclusion in reliability studies, the NYISO continuously monitors the development of those projects and accounts for their progress in our reliability studies.

While the NYISO does not seek to select one type of supply over any other, it is clear that the system will need greater levels of flexible, dispatchable resources that can respond quickly to changes in both supply and demand of electricity.

The NYISO has been engaged with federal, state, and local policymakers on the implications of new policies on grid reliability and economic efficiency. On December 20, 2023, the NYISO submitted comments to the Environmental Protection Agency on the *New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule* (DOCKET ID NO. EPA-HQ-OAR-2023-0072). In our comments, we noted “To facilitate continued electric system reliability, new and modified environmental regulations must allow a sufficient fleet of new, compliant generation resources, with the appropriate reliability attributes, to be available before the existing, generators retire voluntarily or are forced out of service. An essential step to facilitate the orderly transition from traditional generators to emission-free electricity is promulgation of environmental regulations with defined milestones and ample lead time for new resource development. Proposing environmental regulations with defined milestones helps protect electric system reliability by allowing the existing reliability processes to more accurately review and evaluate reliability needs.”

The NYISO further stated “The NYISO strongly encourages the EPA, and to the extent appropriate, the state agencies that the EPA works with, to pursue new or

amended regulations to implement emissions reductions in an orderly, predictable manner with effective mechanisms for independent system operators and regional transmission organizations (“ISOs/RTOs”) to assess electric system reliability impacts. The NYISO and the NYSDEC were able to effectively execute this exact approach while the NYSDEC developed the Peaker Rule in 2018-2019. 5 In this case, the NYISO and other interested stakeholders evaluated a proposed rule in its early stages, assessed potential electric system impacts, used the conclusions from such evaluations to shape an environmental regulation that supported the NYSDEC’s objectives, and immediately started planning for the reliable implementation of the regulation without jeopardizing electric system reliability. This approach allowed the NYISO to include the effects of regulations in its reliability planning processes to address any reliability needs before generation would retire under the new regulations.”

Question 7. What is the expected cumulative cost of the transmission needed to integrate renewables?

- a. Can you describe your coordination efforts with neighboring RTOs/ISOs?
- b. What is your position on a minimum transfer requirement between planning regions?
- c. Would a minimum transfer capability requirement undermine the autonomy of the various RTOs/ISOs and their planning processes?

NYISO Response:

In collaboration with its New England (ISO-NE) and Mid-Atlantic (PJM Interconnection) neighbors, the NYISO has participated in the Northeastern ISO/RTO Planning Coordination Protocol. Joint planning between the three regions pre-dates FERC’s Order 1000 inter-regional planning requirements. The Joint ISO/RTO Planning Committee, consisting of representatives of the three regional ISOs/RTOs, coordinates and reconciles the regional practices and assumptions used for interregional planning. In July, 2022, the three ISO/RTOs issued the 2021 Northeast Coordinated System Plan, which did not identify a need for new interregional transmission projects at that time. As a member of the Eastern Interconnection Planning Collaborative (EIPC), the NYISO also conducts joint evaluations with planning authorities across the entire Eastern Interconnection, a region that includes 40 states and several Canadian provinces from the Rocky Mountains. The NYISO was a leader in the formation of the EIPC, which involves 20 electric system planning authorities, and was created in 2009 as the first organization to conduct interconnection-wide planning analysis across the eastern portion of North America.

While the NYISO cannot offer a specific estimate of costs of the transmission needed to integrate renewables, the New York has seen significant success in the development of new transmission within New York under FERC Order 1000. In addition to the noted reliability planning studies and the Outlook, the NYISO also works with the state and stakeholders to identify transmission expansion needs

driven by public policies. New York has seen the most significant investment in new transmission in decades through the NYISO's Public Policy Transmission Planning Process. While the process has been a great success, the NYISO has called for significant additional transmission investment through its Public Policy Transmission Planning Process to support the achievement of public policy requirements.

In recent years, the NYPSC has identified five transmission investment needs being driven by state policy. The first, located in western New York, was completed last year and expanded the delivery of emissions free hydropower to consumers across the state. Two additional projects are under construction in the Mohawk and Hudson Valley regions and, upon completion, will deliver more than 1,000 MW of additional power from upstate generators to downstate consumers. Together, these three projects represent the largest investment in transmission infrastructure in New York State in more than 30 years.

The fourth transmission need identified by the NYPSC sought transmission facilities to export at least 3,000 MW of future offshore wind energy from Long Island to New York City and the rest of the state. The NYISO issued a solicitation for projects to address this need, and the NYISO's Board of Directors selected, in June 2023, a transmission solution submitted by Propel NY, a joint venture between the New York Power Authority and New York Transco LLC. The selected transmission project will provide transmission capability to deliver at least 3,000 megawatts from offshore wind projects — advancing the state closer to its goal of 9,000 MW of offshore wind energy by 2035.

In June 2023, the NYPSC identified a fifth transmission need driven by a public policy requirement to coordinate the delivery of offshore wind resource production into New York City. The NYPSC directed that proposed solutions to address the identified need must demonstrate their ability to be in service by January 1, 2033, to support the CLCPA's timeframe for offshore wind. The NYISO will be working with stakeholders and interested parties, including hosting technical conferences, through the end of 2023 in advance of a solicitation for solutions to this new public policy transmission need.

The NYISO joined the Eastern Interconnection Planning Collaborative (EIPC) in comments to FERC regarding FERC's Notice of Proposed Rulemaking (NOPR) *Establishing Interregional Transfer Capability Transmission Planning and Cost Allocation Requirements* (Docket No. AD23-3-000). As the comments noted, "The transmission system enables the delivery of economic transfers, firm capacity and emergency power purchases. A robust transmission system helps maintain reliability between regions during extreme events, when reliable power is needed the most. Maintaining sufficient Interregional transfer capability will become more important to preserve reliability during more frequent frigid winters and extreme

hot summer peak loads, and in response to potential catastrophic loss of infrastructure that impacts a wide portion of the Interconnection. Understanding and planning to the appropriate level of Interregional transfer capability will lead to enhanced reliability, enabling the continuous delivery of electric power to customers during extreme weather, fuel supply disruptions and physical or cyber-attacks.” The EIPC comments added “EIPC does not support requiring transmission planning regions to use a simplistic “easily quantifiable” minimum Interregional Transfer Capability requirement that cannot demonstrate a true need, and which may not stand up to a prudency review...The development of a range of appropriate transfer capabilities that respects regional differences would be more defensible. EIPC supports engaging experts to work with the industry to determine the appropriate metrics to quantify the appropriate range of Interregional Transfer Capability requirements.”

### **The Honorable Kelly Armstrong**

**Question 1.** Markets often have difficulty sending the appropriate price signals that account for reliability to support the development of new or improvement of existing dispatchable resources. Capacity markets appear to set prices below efficient levels, and some lack a demand curve that accurately represents needed capacity, leading to questions about resource adequacy.

- a. Has your organization evaluated the role capacity markets play in sending price signals?
- b. Does the current demand curve establish clearing prices that are alienated from the worth of capacity and reliability?
- c. If your organization is in the process of restructuring a demand curve, will it be implemented in a timeline aggressive enough to send appropriate price signals to dispatchable resources?

### **NYISO Response:**

The NYISO’s capacity markets are essential to supporting the retention of the levels of new and existing supply needed to preserve reliability. The NYISO’s capacity auctions select the least cost mix of capacity available to meet resource adequacy needs. The levels of needed capacity are established each year by the New York State Reliability Council (NYSRC) and subsequently approved by both FERC and the New York Public Service Commission. This annual re-evaluation of the Installed Reserve Margin (IRM) for the system is an important step in ensuring that the minimum level of capacity, beyond the forecasted peak demand, is available to be procured to serve consumers. The NYISO, in assisting the NYSRC, analyzes forecasted demand, supplier performance, transmission capability, and factors such as extreme weather, to measure the grid’s ability to meet reliability requirements.

Another important element of the capacity markets in New York is the establishment of capacity demand curves. These demand curves offer important transparent investment signals to both supply and demand, benefiting both

reliability and market efficiency. They reflect market investment conditions and changes in available technologies, providing stable and effective investment signals. Demand curves are reset on a periodic basis through a rigorous review process and are subject to approval from FERC.

The NYISO, through extensive engagement with stakeholders, is currently in the early stages of a new demand curve reset process. A proposal to update these capacity demand curves will be submitted to FERC for approval in November 2024.

Question 2. Weather-dependent generation is penetrating the generation mix at an increasing rate.

- a. Has your organization evaluated accreditation processes for these resources?
  - i. If so, does this accreditation consider the weather risks associated with weather-dependent generation?  
Is your organization evaluating seasonal accreditation and/or effective load carrying capability for weather-dependent generation?
- b. Does your organization have the same reliability standards for weather-dependent generation as it does for dispatchable resources?
- c. Should changes to capacity accreditation go into effect before other changes to the capacity market?

NYISO Response:

As previously noted, in 2022 FERC accepted the NYISO's proposal to implement new capacity accreditation rules. These new rules seek to better reflect the reliability contributions of all resource types, benefiting both reliability and consumers. The NYISO's capacity market accreditation rules were proposed in combination with rules to reform how capacity market mitigation rules are applied to resources entering operation in response to state clean energy policies.

As the NYISO works to implement these new rules, it continues to evaluate further enhancements. Today, the NYISO conducts capacity auctions on a seasonal and monthly basis. Many of these rules were developed in consideration that New York's peak demand typically occurs during summer months. New York State electrification programs are expected to change that early in the next decade, with heating demand expected to change New York's electric system to see peak conditions in winter months. The NYISO is already engaged with stakeholders on the planning and market design changes that may be necessary to preserve reliability and market efficiency as we approach these new conditions.

While the NYISO does not establish reliability standards, it applies all market and operational rules in an unbiased manner. Market design rules are designed to attract the services needed to meet reliability needs, rather than any specific type of

resource. Developing and continuing to enhance market rules that reflect the performance of resources, and incentivize new services that will be needed, remains the focus of the NYISO.

Question 3. Traditional load forecasting tools rely on customer history and interactions to approximate demand needs, including peak consumption.

- a. To what extent does your organization consider external studies or critiques of load forecasting models when acquiring capacity?

NYISO Response:

Forecasting future demand on the power grid often begins by understanding how things like weather and temperature changes can influence demand. For instance, air conditioning is largely responsible for driving summer peak demand, and, increasingly, heating load will drive winter demand. Understanding that relationship is important to prepare the grid to reliably meet peak demand conditions. Decades of experience on how temperatures influence demand from air conditioning helps the NYISO accurately forecast future load, but little data exists on newer technologies like heat pumps and electric vehicles with changes on demand patterns from consumer behavior and adoption rates. Extreme weather associated with climate change is an additional risk factor impacting grid planning efforts.

New York State clean energy policies require significant electrification of the building sector, which has historically relied almost exclusively on fossil fuels for heating needs. In fact, only 10% of New York's homes rely on electricity for heat today. To meet state policy targets, electric heating penetration would need to grow to 90% by 2050.

Electric heat pumps are considered the leading technology to convert fossil-fuel-based furnaces and boilers. As heat pump technology proliferates, peak demand on New York's grid is expected to shift from summer to winter.

**The Honorable Diana DeGette**

Question 1. What actions is NYISO taking to ensure that utilities and states with climate goals won't sacrifice those goals by joining or by being a member of your ISO?

NYISO Response:

The grid in New York is undergoing an unprecedented, historic transformation. The NYISO's involvement in this transition is significant: operating a changing electric system with new intermittent resources, studying, and planning for future changes and designing wholesale markets for a future of newer technologies that will provide flexibility and diversity. Highly skilled grid operators continue to support reliability and resilience. Through sophisticated modeling and expertise, NYISO grid planners support reliability and enable record levels of new transmission and

supply development. The NYISO's wholesale market design continues to lead the way in innovative market rules, supporting reliability and minimizing costs for consumers.

As policymakers seek widespread change in how energy is produced and consumed, the NYISO is providing critical data and information to stakeholders and policymakers on the reliability implications of current and new policies. The NYISO will continue to be actively engaged with stakeholders and policymakers on the steps necessary on the path to a more reliable and greener grid for New York.