

# 2026 Market Project Candidates

---

## Product and Project Management

May 19,2025

This document represents potential 2026 Market project candidates. Market projects are associated with market rule(s), including market design and study projects as well as any projects implementing market rule changes. They are identified through (1) the State of the Market (SOM) Report; (2) internal NYISO discussions; and (3) discussions with Market Participants in the stakeholder process. These project candidates and their corresponding descriptions reflect information known about each of the project candidates as of the date of this document.

# Table of Contents

---

<b>TABLE OF CONTENTS .....</b>	<b>2</b>
<b>INTRODUCTION .....</b>	<b>4</b>
<b>PRIORITIZE .....</b>	<b>5</b>
<b>1 5 MINUTE TRANSACTION SCHEDULING .....</b>	<b>5</b>
<b>2 BALANCING INTERMITTENCY PHASE 2: EVALUATING NEEDS FOR DURATION IN RESERVES (ENDURE) .....</b>	<b>5</b>
<b>3 BIFURCATED CAPACITY MARKETS .....</b>	<b>6</b>
<b>4 CAPACITY ZONE REDESIGN .....</b>	<b>6</b>
<b>5 COST RECOVERY FOR NYISO-DESIGNATED IROL CRITICAL GENERATORS- REQUESTED BY ADVANCED POWER .....</b>	<b>7</b>
<b>6 DER MARKET ENHANCEMENTS .....</b>	<b>8</b>
<b>7 DYNAMIC RESERVES - REVIEW OPERATING RESERVE SUPPLIER COST RECOVERY .....</b>	<b>8</b>
<b>8 ELIMINATE OFFLINE GT PRICING .....</b>	<b>9</b>
<b>9 FLEXIBLE LOAD MODELS – LARGE LOADS .....</b>	<b>10</b>
<b>10 ICAP DEMAND CURVE RESET (DCR) PROCESS AND METHODOLOGY IMPROVEMENTS .....</b>	<b>11</b>
<b>11 IMPROVE DUCT-FIRING MODELING: MULTIPLE RAMP RATES .....</b>	<b>12</b>
<b>12 IMPROVING CAPACITY ACCREDITATION AND RESOURCE ADEQUACY MODELING .....</b>	<b>12</b>
<b>13 MARKET PURCHASE HUB TRANSACTIONS - REQUESTED BY LIPA .....</b>	<b>13</b>
<b>14 OPERATING RESERVES PERFORMANCE .....</b>	<b>14</b>
<b>15 REAL-TIME GUARANTEE PAYMENT MITIGATION NOTIFICATION PROCESS UPDATE ...</b>	<b>14</b>
<b>16 RELIABILITY ATTRIBUTE-BASED CAPACITY PRICING FOR TRANSMISSION SECURITY....</b>	<b>15</b>
<b>17 RELIABILITY PLANNING &amp; LARGE LOAD INTEGRATION.....</b>	<b>16</b>
<b>18 RESERVING CAPACITY FOR TCC BALANCE-OF-PERIOD (BOP) AUCTIONS.....</b>	<b>17</b>
<b>19 REVIEW OF REAL-TIME MARKET STRUCTURE (SOM).....</b>	<b>18</b>
<b>20 STORAGE AS TRANSMISSION .....</b>	<b>19</b>
<b>21 TIME DIFFERENTIATED TCCS .....</b>	<b>20</b>
<b>22 VOLTAGE SUPPORT SERVICE FOR INVERTER BASED RESOURCES (VSS-IBR).....</b>	<b>20</b>
<b>23 WINTER RELIABILITY CAPACITY ENHANCEMENTS.....</b>	<b>21</b>
<b>MANDATORY .....</b>	<b>22</b>
<b>24 AMBIENT ADJUSTED TRANSMISSION LINES RATINGS .....</b>	<b>22</b>

25	FERC ORDER 2222 COMPLIANCE .....	22
26	FERC TRANSMISSION PLANNING ORDER IMPLEMENTATION .....	23
27	HYBRID AGGREGATION MODEL .....	23
28	INTERCONNECTION CLUSTER STUDY PROCESS IMPLEMENTATION .....	24
	CONTINUING .....	25
29	BALANCING INTERMITTENCY .....	25
30	DYNAMIC RESERVES PHASE 1 .....	26
31	IMPROVE DUCT-FIRING MODELING .....	28
32	INTEGRATING CHAMPLAIN HUDSON POWER EXPRESS (CHPE).....	29
	FUTURE .....	29
33	ANCILLARY SERVICE SHORTAGE PRICING UPDATE .....	29
34	BALANCING INTERMITTENCY PHASE 3: EVALUATION OF EFFICIENT OPERATING RESERVE SCHEDULING PRACTICES AND DESIGNS.....	30
35	CAPACITY TRANSFER RIGHTS FOR INTERNAL TRANSMISSION UPGRADES .....	31
36	ELIMINATE FEES FOR CTS TRANSACTIONS WITH PJM .....	31
37	INTERNAL CONTROLLABLE LINES .....	32
38	LCR OPTIMIZER ENHANCEMENTS.....	33
39	LOCATIONAL MARGINAL PRICING OF CAPACITY .....	33
40	MITIGATION THRESHOLD REVIEW .....	34
41	MORE GRANULAR OPERATING RESERVES .....	35
42	RESERVES FOR CONGESTION MANAGEMENT (SOM) .....	36
43	SEPARATING REGULATION UP AND REGULATION DOWN.....	37
44	UNCERTAINTY ADJUSTMENT REVIEW .....	38

# Introduction

---

This document represents potential 2025 Market project candidates. Market projects are associated with market rule(s), including market design and study projects as well as any projects implementing market rule changes. They are identified through (1) the State of the Market (SOM) Report; (2) internal NYISO discussions; and (3) discussions with Market Participants in the stakeholder process. These project candidates and their corresponding descriptions reflect information known about each of the project candidates as of the date of this document. Projects are classified as four project types.

Project Type	Description
Mandatory	Projects that are key to support Strategic Initiatives, comply with FERC Orders, maintain reliable operations, or sustain the operation of the NYISO business. These projects will be included in the budget.
Continuing	Approved in a prior year and have progressed to either Functional Requirements, Software Design, Development Complete, or Deployment. Additional projects may be classified as Continuing based on stakeholder feedback. These projects will be included in the budget. No Enterprise Projects will be Continuing.
Future	Consensus from stakeholder discussions of this project's priority relative to other projects has resulted in these projects NOT being prioritized and initiated in the coming budget year. Resources, time constraints, stakeholder feedback, and other project dependencies have been taken into consideration
Prioritize	Projects to be prioritized and included in the budget based on a feasibility assessment taking into consideration resources, time constraints, stakeholder feedback, priority score, and other project dependencies. Market projects are included in the stakeholder survey

# Prioritize

---

## **1 5 Minute Transaction Scheduling**

### **1.1 Problem / Opportunity**

Currently, interchange with external control areas is achieved on either a 15-minute or an hourly basis using the NYISO's Real-Time Commitment (RTC) software. A significant portion of internal generation is scheduled every five minutes. More frequent interchange scheduling with external control areas could notably improve convergence between prices in RTC and Real-Time Dispatch (RTD) and provide additional balancing and/or ramping capabilities. With increased penetration of intermittent renewables, five-minute transactions would provide greater flexibility to RTD and would create more consistency between internal and external resource scheduling.

### **1.2 Project Objective(s) & Anticipated Deliverable(s)**

The project builds upon the study completed in 2020 that evaluated the feasibility for scheduling every five minutes with external control areas. This project will expand upon the recommendation from the study by developing market rules and a mechanism to schedule interchange every five minutes using the RTD with Hydro-Québec (HQ). This will include evaluating the benefits of a transaction vs. generator model in greater detail.

The 2025 project deliverable will be Market Design Complete (MDC).

### **1.3 Project Justification**

This market improvement is expected to improve price convergence between RTC and RTD and improve market efficiency by increasing the amount of resources available to address real-time system changes and/or events. More frequent scheduling that aligns with internal generation scheduling frequencies will also help to alleviate top-of-hour and quarter-hour interchange discrepancies between RTC and RTD.

The added flexibility that more frequent interchange scheduling provides is particularly important with the State-mandated requirements for renewable generation and other clean energy resources to replace the use of fossil fuel generation. This effort will focus on incorporating five-minute scheduling with HQ, as this is the only neighboring Balancing Authority that has expressed interest in developing that capability.

## **2 Balancing Intermittency Phase 2: Evaluating Needs for Duration in Reserves (ENDURE)**

### **2.1 Problem / Opportunity**

In a time of rapid change in the electricity sector, New York's competitive electricity markets must be positioned to unleash the innovation and flexible energy solutions necessary for a transformation towards a zero-emissions power grid. A rapid transition is underway in New York State from a power

grid where energy is largely produced by central-station fossil fuel generation, towards a grid with increased intermittent renewable resources and distributed generation.

This shift introduces operational challenges for system balancing, flexibility, and reliability. As part of its continued evolution, the NYISO must assess how reserves are structured to meet the growing need for flexible resources that can ensure sufficient supply is available to serve load. The 2023 Balancing Intermittency project proposed (1) Uncertainty Reserve Requirements and (2) long lead time and longer duration reserves. The 2024 Market Design finalized the Uncertainty Reserve Requirement design.

The proposed Balancing Intermittency Phase 2 will build upon the 2023 Market Design Concept Proposed for long lead time and longer duration reserves. It will further evaluate the scope and timing of long lead time and longer duration reserve needs, considering both system needs and the consumer value of the enhancements. It will also evaluate whether additional and related enhancements to operating reserves could facilitate reliability for a grid in transition. Through this approach, the NYISO seeks to ensure the market remains responsive to operational realities while supporting the state's climate goals.

## **2.2 Anticipated Project Deliverable(s)**

NYISO will develop a Market Design Concept Proposed for 2026 that will:

- Further evaluate reserve duration needs with respect to both duration availability and notification time.
- Benchmark reserve product structures from other ISO/RTOs for comparative insights.
- Explore improvements in reserve scheduling practices for greater flexibility and efficiency.

## **2.3 Project Justification**

This project supports the development of market mechanisms that enable reliable system operations while advancing New York's decarbonization goals in a cost-effective manner. It also responds to key recommendations from the SOM Report (Recommendations 2021-1 and 2017-2), helping to ensure that NYISO's market design evolves in step with emerging system needs and stakeholder expectations.

# **3 Bifurcated Capacity Markets**

**Project Description will be available at a future BPWG**

# **4 Capacity Zone Redesign**

## **4.1 Problem/Opportunity**

The current Installed Capacity (ICAP) market zonal structure may pose unnecessary barriers to entry for new, more efficient resources due to high interconnection costs, while also potentially overcompensating existing resources in areas with intrazonal constraints. However, having a dynamic structure for capacity zones based on the nature of the transmission constraints may also lead to unnecessary volatility and weaken the effectiveness of the capacity market price signal. Redesigning the process and methodology for defining capacity zones to address these challenges could enhance system reliability by delivering more accurate and effective locational price signals to resources.

#### **4.2 Project Objective(s) & Anticipated Deliverable(s)**

This project will evaluate both alternative frameworks and enhancements to the existing zonal structure for locationally valuing and procuring ICAP in the New York Control Area (NYCA). Examples include but are not limited to exploring alternatives to the deterministic test used in the New Capacity Zone (NCZ) study, modifying the frequency and flexibility of changing zonal boundaries, and restructuring the interrelationship and classification of capacity zones. These alternative frameworks will also be considered for preserving the investability of the capacity market and avoiding unnecessary market volatility. The 2026 deliverable for this project would be a Market Design Complete (MDC).

#### **4.3 Project Justification**

The capacity zone structure and zone-setting process play a critical role in establishing effective locational price signals. Redesigning these zones could help optimize resource entry and exit decisions, ultimately supporting the reliability and efficiency of the NYCA system.

### **5 Cost Recovery for NYISO-Designated IROL Critical Generators- Requested by Advanced Power**

#### **5.1 Problem / Opportunity**

Under North American Electric Reliability Corporation (NERC) Standards, it is the NYISO's responsibility to identify and notify generators that are critical to the derivation of Interconnection Reliability Operating Limits (IROL) ("IROL Critical Generators"). Once a unit is designated as an IROL Critical Generator, the generator is required to make NERC-mandated investments that correspond to its impact rating consistent with the NYISO's notification.

These NERC-mandated upgrades for reliability and security are above and beyond the requirements in NYISO tariffs and Interconnection Agreements. The NYISO tariff does not have a mechanism to permit cost recovery for capital costs and ongoing operations and maintenance for the NERC-mandated investments made by these IROL Critical Generators.

For clarity, the cost recovery for generators will be forward-looking only. Cost recovery for capital investment already made by current IROL Critical Generators operating in the NYISO markets would not be considered.

#### **5.2 Project Objective(s) & Anticipated Deliverable(s)**

The objective of this project is an MDC that develops tariff revisions that will allow designated IROL Critical Generators to recover costs related to compliance with NERC Standards for IROL Critical designated units.

#### **5.3 Project Justification**

The project is needed to allow generators identified by the NYISO as IROL Critical Generators the opportunity to recover the costs associated with meeting the NERC Standards for IROL Critical Generators. The NYISO tariff does not have any means for cost recovery for capital investment and ongoing O&M costs associated with the investments made to meet the NERC Standards of IROL Critical Generators.

Other RTOs do allow cost recovery for these investments. PJM and ISO-NE have recently made updates to their tariffs to allow this cost recovery.

## **6 DER Market Enhancements**

### **6.1 Problem / Opportunity**

The NYISO launched the Distributed Energy Resource and Aggregation participation model in 2024 as the first-in-the-nation program to integrate distributed energy resources (DER) into the wholesale market. The program provides an opportunity for resources with at least 10 kilowatts of capability to aggregate and participate in NYISO markets and was designed to replace the Demand Side Ancillary Services (DSASP) and Day-Ahead Demand Response Programs (DADRP) as a fully integrated participation model for Demand Side Resources (DSR). However, while DSR contribute to grid reliability and can serve as a competitive alternative to generation in the wholesale markets, each DSR engages in a primary business that is not wholesale market participation. DSR participation in the wholesale electric markets is different than other suppliers whose only business supplying Energy, Ancillary Services and/or Installed Capacity.

The NYISO seeks to work with its stakeholders to identify and address areas of the DER participation model that may unlock additional DSR enrollment opportunities. Areas of concern include bidding obligations and metering and telemetry requirements. Additionally, commitment parameters, such as start-up and minimum run times, have been cited as a challenge to participation for large industrial loads.

### **6.2 Project Objective(s) & Anticipated Deliverable(s)**

The deliverable for this effort in 2026 will be to develop a concept proposal and deliver a Market Design Complete proposal. The NYISO will coordinate with stakeholders to consider a market design that enhances the DER participation model to improve market access for DSR.

### **6.3 Project Justification**

Active participation by customers in the form of demand response in organized wholesale energy markets helps to increase competition in those markets. Furthermore, demand response has the potential to support system reliability and address resource adequacy. The DER participation model was designed from the ground up to cater to the characteristics of DER, such as the options to aggregate, time-stack resource duration lengths, and move between aggregations smoothly. Addressing potential rule revisions for Demand Side Resources will greatly enhance participation in the DER and Aggregation participation model to allow it to reach its full potential in animating load in the NYISO markets.

## **7 Dynamic Reserves - Review Operating Reserve Supplier Cost Recovery**

### **7.1 Problem / Opportunity**

Currently, the NYISO charges Load Serving Entities (LSEs) for the cost of providing all Operating Reserves based on load-ratio share, distributing costs throughout the NYCA. However, with the



impending implementation of Dynamic Reserves, which tailor reserve requirements to specific grid conditions, including localized constraints, this project will explore alternatives to the current procedures for recovering the cost of reserves that the NYISO procures in order to manage these locational constraints. In particular, this project will explore unique settlements for generators that are the first and second largest contingencies.

Under Dynamic Reserves, the schedules of the first and second largest supply contingencies in the NYCA directly impact the magnitude of the NYCA-wide reserve requirements. Increases to large contingency schedules or dispatching another Supplier above the current first and second largest contingencies causes reserve requirements to rise in tandem, increasing systemwide reserve costs. Said differently, each incremental Energy MW procured from the largest contingencies results in an incremental increase to statewide reserve costs. This relationship can be framed as a negative externality, in the form of increased reserve costs borne by consumers that are the product of large contingency energy schedules. The Market Monitoring Unit's (MMU) proposed settlement charge would reassign the costs of these incremental reserves to the large contingencies that cause them according to a cost-causation argument, lowering reserve costs to consumers.

This new settlement charge would be applicable to both Generator and Import schedules, as both Imports and Generators can qualify as the largest contingency and can therefore affect the NYCA-wide reserve requirements.

## **7.2 Objective(s) & Anticipated Deliverable(s):**

The primary objective of this project is to develop a settlement mechanism by which the NYISO can reassign some of the costs of incremental reserve procurements to the large supply contingencies that cause them. The MMU has suggested it may be appropriate to credit exports for offsetting NYCA-wide reserve requirements if an import scheduled at the same proxy qualifies as the largest contingency. NYISO will evaluate the merits of this credit and determine how such a credit could be applied, if it deems it appropriate to do so. The anticipated deliverable for 2026 is MDC, consistent with the 2025 milestone of market design concept proposed (MDCP).

## **7.3 Project Justification**

Stakeholders have expressed interest in exploring alternative operating reserve cost recovery structures. The settlement charge being evaluated under this project would serve to correct a negative externality produced by large contingency schedules, resulting in an economically efficient settlement outcome based on cost-causation principles. The ultimate result is decreased reserve costs to consumers, with those costs being reassigned, in part, to the first and second largest supply contingencies.

# **8 Eliminate Offline GT Pricing**

## **8.1 Problem/Opportunity**

The NYISO's RTM is based on a dispatch model that updates prices and generator schedules every five minutes. Currently, the dispatch model treats 10-minute gas turbines (*i.e.*, units capable of starting up in ten minutes) as if they can follow a 5-minute signal. Offline gas turbine (GT) pricing was developed

to produce real-time prices that reflect the costs of actual resources that could be committed to address a constraint. The MMU has observed that this structure leads to inefficiencies, because 10-minute gas turbines are unable to respond in five minutes. This may lead to periods of under-generation, inconsistencies between scheduled transmission flows and actual flows, and inefficient prices that do not properly reflect the balance of supply and demand. The logic, however, provides useful information to grid operators regarding system needs and allows them to commit additional units based on evaluation by the real-time dispatch model.

## **8.2 Project Objective(s) & Anticipated Deliverable(s)**

The scope of this project would involve eliminating the offline GT pricing logic, creating an information stream (that replaces the information provided by Offline GT pricing) to help operators identify system needs and effectively commit additional units, and developing tariff revisions to support this change. The 2026 deliverable for this project would be Functional Requirement Specification (FRS).

## **8.3 Project Justification**

This project would enhance market efficiency by better aligning price signals and schedules with operational needs and resource capabilities. This project is also supported by the Market Monitoring Unit based on their SOM Recommendation 2020-2.

# **9 Flexible Load Models – Large Loads**

## **9.1 Problem / Opportunity**

Large loads and the co-location of injecting resources with large loads has begun to proliferate in the NYCA. NERC has created a Large Loads Task Force to study the impact that data centers and other similar large loads will have on transmission system operation. NERC has also recently published guidance for voltage-sensitive large load integration, specifically regarding cryptocurrency mining and data centers. The prevalence of large Loads is increasing and may pose a risk to system security.

However, the flexibility of large Loads has the potential to play an increasing role in maintaining system reliability. The 2024 Clean Hydrogen project considered an expansion to the NYISO's Behind-the-Meter Net Generation (BTM:NG) Resource participation model to accommodate more generating resources paired with Load. The NYISO's current BTM:NG Resource model allows generation that routinely serves a Host Load to offer any excess generation into the NYISO's Energy, Installed Capacity, and Ancillary Service markets. However, the BTM:NG Resource participation model is premised on a firm Host Load that is not easily controllable or responsive to market signals.

The BTM:NG Resource model may benefit from development of new market rules that are tailored to flexible Host Load that will allow the BTM:NG Resource to offer additional excess *supply* to the NYISO markets in addition to pairing with more diverse types of generation such as intermittent power and energy storage resources. Similarly, stand-alone large loads may be studied for their impact to the grid and potential expanded market participation pathways. The NYISO has the opportunity to create a more efficient implementation of the BTM:NG Resource participation model as well as enhance market participation options and the reliability contributions for stand-alone loads.

## **9.2 Project Objective(s) & Anticipated Deliverable(s)**

The project deliverable for 2026 will be to develop a concept proposal and deliver a Market Design Complete. The NYISO will coordinate with stakeholders develop a market design to study the impact of large loads and enhance the market participation opportunities for flexible Loads to bid into NYISO markets and accurately reflect the costs for the curtailment of Load.

## **9.3 Project Justification**

New York State has made large investments into datacenter and microchip fabrication incentives, and there are already several such large Loads in the interconnection queue. A market design initiative to study potential market solutions to the problems these types of Loads present may result in market enhancements that improve grid reliability.

The BTM:NG Resource participation model was developed to provide the NYISO with: (i) improved grid reliability and operational flexibility; (ii) more clarity and certainty for future resource investment within New York State; and (iii) improved awareness of resources not currently participating in the NYISO's wholesale markets. Expanding the offer capabilities of BTM:NG Resources and stand-alone large Loads furthers the original objectives of the BTM:NG Resource participation model and is line with the NYISO's strategic goal of increasing market efficiency and creating value for consumers.

# **10 ICAP Demand Curve Reset (DCR) Process and Methodology Improvements**

## **10.1 Problem / Opportunity**

The current ICAP Demand Curve Reset (DCR) process for determining the parameters used in establishing the ICAP Demand Curves is complex, time-intensive, and involves extensive debate and analysis. Additionally, the process can introduce volatility into the market when the reference technology underlying the ICAP Demand Curves changes from one reset to the next. Alternative processes and methodologies for determining the parameters used in establishing the ICAP Demand Curves may reduce the complexity and resource-intensity of the DCR and allow the ICAP Demand Curves to continue to provide efficient and transparent price signals for resource entry and exit.

## **10.2 Project Objective(s) & Anticipated Deliverable(s)**

This project will examine potential alternative methodologies and processes for determining the parameters used in establishing the ICAP Demand Curves with the goal of reducing the complexity and resource-intensity of the DCR and allowing the ICAP Demand Curves to continue to provide efficient and transparent price signals for resource entry and exit. Potential alternatives to examine may include, but are not limited to, leveraging existing publications of resource costs, changing the ICAP Demand Curve shapes and slopes, and/or using "empirical" net cost of new entry (CONE) to set reference point prices. The 2026 deliverable for this project would be MDC.

## **10.3 Project Justification**

Having predictable and robust ICAP Demand Curves allows the ICAP market to meet its objectives of providing appropriate price signals for resource entry and exit, delivering transparent and predictable

market outcomes, providing an economically efficient, durable, and stable market structure to facilitate investment, and functioning without unnecessary administrative complexity.

## **11 Improve Duct-Firing Modeling: Multiple Ramp Rates**

### **11.1 Problem/Opportunity**

Providers of reserves and regulation are currently required to achieve their emergency response rate over the entire range of operation. This is problematic for combined-cycle gas turbines (CCGTs) with duct firing because the response rate of the duct-firing portion is typically slower than the baseload portion of the plant. These resources cannot achieve the emergency response rate in the duct-firing portion of their range (typically the upper 10-20% of capability), which limits their availability to provide reserves and regulation. The requirement to achieve the emergency response rate over the entire range of operation is also expected to be a problem for resources with a mix of technologies, such as Aggregations.

This project would seek to develop a design that better utilizes the capability of each plant by utilizing the response rates for each MW block and not the emergency rate for the entire output of the plant.

### **11.2 Project Objective(s) & Anticipated Deliverable(s)**

The deliverable for this project will be a Study Defined to study the feasibility of a production level Multiple Ramp Rate model that builds on the prototype from the 2022 Improve Duct-Firing Modeling project.

### **11.3 Project Justification**

There are currently many combined cycle generators in the NYCA, and the majority of these combined cycle generators have duct-firing capacity. These resources currently represent a large source of dispatchable energy, reserves, and regulation. Having access to these resources' full dispatchable capability will become increasingly important as generation from intermittent resources grows over the coming years. Enabling their expanded participation will provide consumer benefits, as increased competition could result in lower market prices and greater availability of resource capability to provide various ancillary services. Thus, the project would seek to evaluate enhancements to the scheduling of a generator's capacity that would provide more flexibility in the reserves and regulation markets. This project also supports SOM Recommendation 2020-1.

## **12 Improving Capacity Accreditation and Resource Adequacy Modeling**

### **12.1 Problem / Opportunity**

The resource adequacy models used for determining Locational Minimum Installed Capacity Requirements (LCRs) and Capacity Accreditation Factors (CAFs) involve complex simulations that may produce unintuitive LCR and CAF outcomes. The resource adequacy models incorporate confidential Market Participant information, such as historical performance and upcoming elections, which limits transparency of the models. In addition, the CAF calculation is conducted by measuring small changes in simulation outcomes. The complexity, the granular resolution, and limited visibility into these

models may hinder the ability of Market Participants to forecast market outcomes and make investment decisions.

### **12.2 Project Objective(s) & Anticipated Deliverable(s)**

This project will explore adjustments to marginal capacity accreditation and resource adequacy modeling processes that may improve market stability, enhance transparency and predictability, and support more informed decision-making by Market Participants (MPs). Adjustments to explore could include, but are not limited to, adopting an alternative marginal capacity accreditation calculation, using additional historical input data in the resource adequacy model, and further refining the LCR setting process. The 2026 deliverable for this project would be a Study Complete.

### **12.3 Project Justification**

Improvements to marginal capacity accreditation and resource adequacy modeling processes may reduce complexity and improve visibility into the resource adequacy models. The reduced complexity and improved visibility into the resource adequacy models may increase the transparency and predictability of market outcomes and improve the ability of the ICAP market to provide an economically efficient, durable, and stable market structure that facilitates investment.

## **13 Market Purchase Hub Transactions - Requested by LIPA**

### **13.1 Problem / Opportunity**

The ability for marketers to source energy from the wholesale market, (i.e., buy at Locational Based Marginal Pricing (LBMP) for sale to load or other parties) is important for municipalities to take advantage of Treasury Department regulations allowing for tax-advantaged prepaid energy market purchases that serve retail load, and may be valuable to a broad range of MPs for other commercial purposes. The Netting of Bilaterals (Trading Hubs) initiative was first proposed in 2008 but was limited to balanced transactions. The proposed project would expand the rules to allow market purchase hub transactions.

### **13.2 Project Objective(s) & Anticipated Deliverable(s)**

This project will modify zonal trading hubs in the NYISO energy market systems to provide additional flexibility in scheduling of hub transactions. Using the NYISO scheduling system, an MP will be able to establish unbalanced transactions to purchase power from the NYISO Day-Ahead Market for either ultimate delivery to a load or resale back into the Day-Ahead Market. This project will also modify zonal trading hubs by allowing Trading Hub Energy Owner (THEO)-to-THEO transactions at a Trading Hub. The 2026 milestone will be Deployment.

### **13.3 Project Justification**

The market design will modify zonal trading hubs to allow unbalanced transactions and provide additional flexibility in the scheduling of trading hub transactions.

## **14 Operating Reserves Performance**

### **14.1 Problem / Opportunity**

Assessing an operating reserves provider's stated capabilities or performance is becoming a growing concern as the grid becomes more dependent on intermittent renewable generators and limited duration or limited energy resources. It is important that the NYISO can count on resources' stated capabilities when they are instructed to convert reserves to energy in response to grid reliability needs, such as load balancing or contingency response. Additionally, under current market rules, operating reserves receive the same compensation regardless of their actual performance. This compensation structure may not provide adequate incentive to perform, creates an inefficiency in the market, and has potential negative impacts to system reliability.

Based on NERC and Northeast Power Coordinating Council rules, if the NYISO fails to procure sufficient reserves to recover from a Disturbance Control Standard event, the NYISO may be required to procure additional reserves and may be subject to financial penalties. Additionally, if a supplier cannot fully convert operating reserves to energy at the NYISO's direction, the NYISO must dispatch other, often more costly, resources to provide the needed energy, or be forced to take out-of-market actions that cause uplift and reduce efficiency. The Operating Reserves Performance project seeks to improve market efficiency and help maintain system reliability.

### **14.2 Project Objective(s) & Anticipated Deliverable(s)**

Continuing the work from 2025, the 2026 deliverable for this project is Deployment.

### **14.3 Project Justification**

As the markets and grid are expected to rapidly evolve in the coming years and reliance on grid reliability services such as operating reserves increases, enhancements to the methods for both assessing the performance of operating reserves providers and compensating them in a manner that reflects performance will be of growing importance. The MMU has previously recommended that the NYISO "[c]onsider means to allow reserve market compensation to reflect actual and/or expected performance [SOM Recommendation 2016-2]." The Operating Reserves Performance project seeks to improve incentives for a resource to accurately reflect the operating reserves that it is capable of providing. Ensuring that operating reserves capabilities are accurately stated will aid the NYISO in procuring the necessary levels of operating reserves for reliable operation and reduce the need for potentially less efficient and/or costly actions to ensure access to adequate production capability.

## **15 Real-Time Guarantee Payment Mitigation Notification Process Update**

### **15.1 Problem / Opportunity**

The NYISO monitors Bid Production Cost Guarantee (BPCG) payments pursuant to Services Tariff Section 23.3.1.2.1. Automatic mitigation, including programmatic adjustment of BPCG payments, is applied to any payments identified as impactful. Adjustments to guarantee payments are reflected in electronic posting of settlement results provided by the NYISO two business days after the relevant Real-Time Market day. The Market Mitigation and Analysis department (MMA) is responsible for

manually downloading a report from the NYISO's DSS application that identifies any units whose guarantee payments were automatically mitigated. An analyst must then produce a generic email notification for each instance of new mitigated BPCG on a given market date, of which the MP was not previously notified. The notices do not provide specific details regarding the amount mitigated, but rather serve to support the tariff requirement to provide notice to the MP two days following the market day.

There is an opportunity to improve process efficiency by revising the current tariff requirement such that the NYISO will not notify upon each instance of mitigation, which may be as little as \$0.01. There is also an opportunity to explore a new de minimis threshold to determine whether a notification is necessary and gauge the value of current notification practices with MPs to ensure that the tariff framework continues to support an efficient process.

### **15.2 Project Objective(s) & Anticipated Deliverable(s)**

The first step of this project is to review the current infrastructure and logic used to notify MPs of new guarantee payment mitigation charges, and review potential process improvements. The ultimate objective for this project is tariff revisions and procedural enhancements for MMA processes. The 2026 business commitment will be MDC.

### **15.3 Project Justification**

The current state of the guarantee payment mitigation notification process introduces a risk that the screening process may lead to missed notifications. MMA is required by the Services Tariff to provide notice of new guarantee payment mitigation charges to the impacted MP. Without improvements, there may be risk of both a potential process error or human error when reviewing reports and data to notify the MP, and continued resourcing spent reviewing and notifying of mitigation outcomes that are relatively small in magnitude. Furthermore, current displays available to MPs in DSS contain the mitigation charge value for BPCG payments automatically – the MMA process is simply a notification of the charge. Making the identified improvement would be an incremental enhancement that does not require broader systematic changes in the tariff or procedures, and would improve process efficiency by reducing the volume of notifications for MMA and impacted MPs to address.

## **16 Reliability Attribute-based Capacity Pricing for Transmission Security**

### **16.1 Problem / Opportunity**

The two tenets of power system reliability are resource adequacy and transmission security. The ICAP Market is presently set up directly to value resources based on their contribution to resource adequacy. Transmission security concerns are studied outside of the resource adequacy model and considered as minimum constraints via the transmission security limit (TSL) floors in establishing the LCRs. As different reliability standards and assessment methods are applied, a resource can have different contributions to resource adequacy and transmission security. Due to the potential differing reliability values, the ICAP Market may not accurately value capacity when basing resource reliability contributions using resource adequacy models alone. Such situations may be worsened when transmission security requires higher capacity requirements than resource adequacy when setting



ICAP Market requirements. Clear and effective price signals that are aligned with the underlying reliability needs should be considered in conjunction with the overall effectiveness of the ICAP market structure.

### **16.2 Project Objective(s) & Anticipated Deliverable(s)**

Building off the 2024 Valuing Transmission Security Issue Discovery work and 2025 Capacity Market Structure Review, this project will propose any necessary ICAP market design changes to provide for efficient capacity market compensation for both resource adequacy and transmission security, while maintaining an effective overall market structure. Options that can be considered include establishing a second set of demand curves, capacity accreditation methodologies, and an auction mechanism to explicitly price transmission security and co-optimize with resource adequacy, as well as merging transmission security concerns within the resource adequacy model. The project deliverable for 2026 will be MDC.

### **16.3 Project Justification**

Pricing transmission security may better represent reliability needs within the structure of the ICAP Market. A better pricing signal that incorporates both transmission security and resource adequacy may incent investment that supports reliability while delivering transparent and predictable market outcomes, and would also contribute to one of the fundamental objectives of the Capacity Market: to accurately value resources according to their contribution to maintaining bulk system reliability.

## **17 Reliability Planning & Large Load Integration**

### **17.1 Problem / Opportunity**

The NYISO has experienced an exponential growth in large load interconnection requests over the last three years – a trend seen across the country. These large load projects vary in their function – *e.g.*, AI, crypto currency mining, semiconductor manufacturing, and hydrogen electrolysis – and are often tied to local economic development. These large loads, some equivalent to the demand of the city of Rochester, can develop from concept to in-service in a matter of a couple years, which is much faster than it takes to develop an equivalent amount of generation to serve the new load. The current load interconnection process affords very limited opportunity for: 1) the NYISO to identify reliability issues at the bulk level that may result from the collective impact of multiple load interconnections proceeding in parallel; and 2) load developers to progress quickly through the interconnection process to meet business needs and expedited deadlines.

### **17.2 Project Objective(s) & Anticipated Deliverable(s)**

The objective of this project proposal is to improve the current load interconnection process to further address bulk system reliability concerns and speed up the overall load interconnection process to provide solutions for the unique issue presented by these types of large load projects and accelerated timelines for project development and in-service dates. The NYISO will propose revisions to the load interconnection process and adjustments to the organizational structure (if needed) to sustain the improvement. It is anticipated that these revisions could impact other NYISO processes, such as



Reliability Planning Process, Short Term Planning Process, Demand Forecasting, DER, and customer registration, among others. The 2026 target project milestone for this project will be MDCP.

### **17.3 Project Justification**

Large loads can be important to support economic development or policies. While the reliability margins are decreasing in NYCA, incorporating these large loads in a reliable and timely fashion is critical. The proposed project aims to promote the transparency and efficiency of the interconnection process for large loads, as well as the ability to more fully address the reliability issues (if any) resulting from their expedited integration.

## **18 Reserving Capacity for TCC Balance-of-Period (BoP) Auctions**

### **18.1 Problem / Opportunity**

The NYISO currently conducts Centralized TCC Auctions twice each year. In each of those auctions, longer-duration TCCs (six-month, one-year, and/or two-year) are available for purchase. However, TCCs covering periods shorter than six months are not available in those auctions. Instead, MPs wishing to purchase shorter-term TCCs must do so in the Reconfiguration Auctions, which are held each month. Reconfiguration Auctions may be conducted as either single month auctions or Balance-of-Period (BoP) Auctions. BoP Auctions encompass all remaining months of the applicable Capability Period.

Currently, the NYISO's tariffs require that all transmission capacity not associated with Existing Transmission Agreements or outstanding TCCs and not reserved through conversion of Existing Transmission Capacity for Native Load (ETCNL) to ETCNL TCCs or Residual Capacity Reservation Rights (RCRR) to RCRR TCCs be made available for sale in the Centralized TCC Auctions. As a result, the opportunity for MPs to acquire shorter-term TCCs in BoP Auctions may be significantly limited. Other ISO/RTOs reserve some transmission capacity for sale in their monthly Financial Transmission Right auctions.

Consequently, this proposal seeks to build upon the 2020 and 2021 project efforts related to the development of software and rule/procedure revisions to permit the NYISO to reserve a portion of available system transfer capability, which it would then release into the BoP Auctions. Such functionality would permit auction participants to purchase additional shorter-term TCCs in the BoP Auctions.

### **18.2 Project Objective(s) & Anticipated Deliverable(s)**

This project is intended to build on the efforts undertaken in 2020 and 2021 to develop market rule changes to accommodate the potential for reserving a portion of otherwise available transmission capacity for release in the BoP Auctions. The project deliverable for 2026 will be Software Design.

### **18.3 Project Justification**

Today the TCC Automated Market System and other supporting systems do not support the reservation of transmission Capacity for sale in BoP Auctions.

The proposed solution is intended to:

- Address stakeholder requests for such enhancements to the current TCC auction design, as auction participants have consistently indicated interest in reserving transfer capability for release in BoP Auctions; and
- Provide additional opportunities for interested parties to obtain shorter-duration TCCs because it would remove a constraint that limits the availability of shorter-term TCCs in the BoP Auctions.

## **19 Review of Real-Time Market Structure (SOM)**

### **19.1 Problem / Opportunity**

In a time of unprecedented change in the electricity sector, New York's competitive electricity markets must be positioned to unleash the innovation and flexible energy solutions necessary for a reliable transformation towards a zero-emissions power grid. A rapid transition is underway in New York State from a power grid where energy is largely produced by central-station fossil fuel generation, towards a grid with increased intermittent renewable resources and distributed generation.

The pace of this transition is driven primarily by state policy, notably by the Climate Leadership and Community Protection Act (CLCPA). In addition, technological advancements are expanding the capabilities of new resources and lowering their costs, further driving broader industry changes.

The NYISO is actively working on market enhancements to meet these future challenges. A grid characterized by high levels of intermittent renewable resources, ESR, and DER may require different Real-Time market structures and rules to efficiently balance intermittency and uncertainty while continuing to efficiently schedule energy transactions and commit short lead time resources.

The NYISO approaches this work with two guiding principles: (1) all aspects of grid reliability must be maintained; and (2) competitive markets should continue to maximize economic efficiency and minimize the cost of maintaining reliability while supporting the achievement of New York's climate policy codified in the CLCPA.

### **19.2 Project Objective(s) & Anticipated Deliverable(s)**

This project will review the existing real-time market structure and settlements and determine if changes are needed to maintain reliable operation in real time. The project will review the current real-time market and settlement structure, the risks associated with a grid characterized with high levels of intermittent renewable resources, ESR and DER and will review potential alternative structures. The 2026 project deliverable will be Issue Discovery.

### **19.3 Project Justification**

The CLCPA includes the following goals:

- 100% of the state's electricity must be emissions free by 2040
- 9,000MW of offshore wind energy must supply NY by 2035
- 6,000MW of solar energy be installed in NY by 2025

- Statewide reduction of 185 trillion BTUs through energy efficiency
- 6,000MW of energy storage capacity must be installed to serve NY by 2030

This project will help to identify the means to maintain real-time system reliability while addressing the state's goals and mandates in a cost-effective way through the creation of proper market mechanisms. This project also supports SOM Recommendation 2012-13.

## **20 Storage as Transmission**

### **20.1 Problem / Opportunity**

The unique characteristics of energy storage allow these assets to provide many potential services to grid operators. During normal operation, storage can have positive impacts on transmission systems by shifting demand, supporting ancillary services, and managing transmission congestion. Currently, the NYISO tariffs treat storage as a market-based Generator that competes and is scheduled in parallel with other suppliers. When operating as a market resource, storage can have positive impacts on transmission systems by shifting demand, supporting ancillary services, and managing transmission congestion. In some instances, storage used exclusively as a regulated transmission asset, instead of as a market resource, could provide an alternative option for providing the same services as traditional transmission solutions. Because storage requires scheduling of power to consume or supply, the current market rules do not contemplate evaluating storage as a regulated transmission asset in the planning process. Additionally, the market rules consider storage to be a market-based resource that competes and is scheduled in parallel with other suppliers; the current rules do not contemplate allowing assets that are suppliers such as generators, pumped hydro, or energy storage to be considered with traditional transmission resources to be eligible for cost-of-service rate recovery.

### **20.2 Project Objective(s) & Anticipated Deliverable(s)**

Building on the 2025 MDC effort, the 2026 deliverable is FRS.

### **20.3 Project Justification**

Transmission upgrades may be necessary to deliver more clean energy across New York's electric grid. However, transmission development is often difficult, expensive, and on very extended development time frames. Utilizing storage as regulated transmission assets may provide an alternative for providing or enhancing these services on a shorter timescale and potentially at lower cost, while preserving valuable optionality in the process. However, storage does not create transfer capability on the grid and thus it may not be the appropriate solution in many cases. Without fully vetting the opportunities and risks for considering whether storage can offer viable and reliable alternatives to traditional transmission, the marketplace will not have certainty on whether there is value to these potential projects, and market rules changes would not be pursued that could unlock these benefits.

## **21 Time Differentiated TCCs**

### **21.1 Problem / Opportunity**

The project seeks to disaggregate the TCC product from its current 24-hour time span to include additional, more granular products covering shorter timeframes. This enhancement, which is a feature requested by certain Market Participants, is intended to improve the commercial function and forward congestion price transparency. Currently, the availability of only a 24-hour product may limit the effectiveness in serving as an efficient forward hedging mechanism against congestion for certain MPs' interests because it does not provide forward congestion price signals from TCC auctions that distinguish between the congestion patterns that can occur during different periods of the day or week. MPs could utilize more granular TCC products to tailor portfolios to better hedge congestion costs during different periods of the day or week. This additional flexibility could benefit MPs under current grid conditions, as well as future grid topologies with increased levels of intermittent resources, which have notable variations in output in daytime hours versus nighttime hours. Additionally, defining more granular TCCs may make other market design improvements possible.

### **21.2 Project Objective(s) & Anticipated Deliverable(s)**

The 2026 project deliverable will be MDC, building upon the 2021 project efforts to develop a MDCP and would include working with stakeholders to finalize market rule changes needed to facilitate the creation of TCC products that apply to different periods of time and the market design proposed in 2021.

Due to the potential increased complexity of multi-period granular TCC auctions, the implementation of more granular TCC products may depend on the automation of the Existing Transmission Capacity for Native Load (ETCNL) feasibility analysis process and the automation of an inventory system to calculate the remaining feasible ETCNL and Original Residual TCCs.

### **21.3 Project Justification**

Breaking out the TCC product into time differentiated products may: (1) improve the commercial functionality of TCCs to provide tailored congestion hedges for MPs, including intermittent generation; (2) reduce the cost of congestion hedging for MPs; (3) improve forward congestion price signals from TCC auctions to distinguish between time periods where congestion patterns can vary; and (4) permit other market design improvements.

## **22 Voltage Support Service for Inverter Based Resources (VSS-IBR)**

### **22.1 Problem / Opportunity**

The New York State Reliability Council (NYSRC) issued Reliability Rule #151 - Reliability Rule B.5: Establishing New York Control Area (NYCA) Interconnection Standards for Large IBR Generating Facilities, which adopts all normative mandatory requirements specified in IEEE 2800-2022. The new rule necessitates updated testing requirements and settlement mechanisms for inverter-based resources (IBRs). IEEE 2800-2022 requires that new large IBR generating facilities have the capability to produce and absorb MVARs at zero active power output. However, the mandates of the new rule

may not be required by the NYISO under its existing Voltage Support Service program. This requires the NYISO to revisit the existing payment structure and revise existing protocols to accurately assess IBR performance and facilitate appropriate compensation for reactive power.

### **22.2 Project Objective(s) & Anticipated Deliverable(s)**

The Voltage Support Service for Inverter Based Resources (VSS-IBR) project will deliver updated testing requirements and settlement mechanisms to align with the new rule set forth by the NYSRC. The 2025 project deliverable would be MDCP.

### **22.3 Project Justification**

This project is crucial for compliance with the latest NYSRC reliability rules regarding reactive power capability for IBRs. This project will explore providing an incentive for existing IBRs to upgrade their equipment to provide reactive power support at zero MW output. Procuring this service greatly enhances grid reliability and will alleviate the need to commit fossil fuel-based generators for voltage support only through the Supplemental Resource Evaluation (SRE) Process. Being able to rely on this service might even contribute to efficient/economic solutions to the voltage issues identified through the reliability planning process. By aligning testing requirements and settlement mechanisms with the new rule, the project facilitates accurate assessment of IBR performance and fair compensation for power support. This enhances grid stability and reliability while promoting the efficient utilization of IBRs in the NYCA.

## **23 Winter Reliability Capacity Enhancements**

### **23.1 Problem / Opportunity**

The NYISO's planning analyses indicate that the New York State electric system is evolving from a summer peaking/summer-risk system to a winter peaking/winter-risk system. Ahead of this change, the NYISO's ICAP Market structure will need to be reviewed to assess whether price signals, obligations, and incentives provided by the ICAP Market will continue to be effective in a winter peaking system.

### **23.2 Project Objective(s) & Anticipated Deliverable(s)**

In 2025, the Winter Reliability Capacity Enhancements project is enhancing the ICAP market to include seasonal requirements and corresponding changes to seasonal ICAP demand curves, resource participation elections, and capacity accreditation. To deploy software changes in time for the 2027-2028 Capability Year, in 2026, the NYISO will complete functional requirements, develop software specifications, and develop software for a Development Complete milestone.

### **23.3 Project Justification**

The existing ICAP Market structure is based on New York being a summer peaking electric system. As New York moves from a summer peaking system to a winter peaking system, changes to the ICAP Market may be needed for the market to continue to efficiently provide for New York's resource adequacy needs. This project also supports SOM Recommendation 2022-2.

# Mandatory

---

## **24 Ambient Adjusted Transmission Lines Ratings**

### **24.1 Problem / Opportunity**

The Federal Energy Regulatory Commission (FERC) issued Order 881 to improve the accuracy and transparency of transmission line ratings. This order requires both TOs and regional transmission organizations (RTOs)/independent system operators (ISOs) to implement a methodology to determine transmission line ratings that are ambiently adjusted on an hourly basis for all near term evaluations such as the DAM, RTM and Real-Time Security. This effort will require coordinated work by the TOs and NYISO because the TOs, who are the rating authorities, will need to calculate the hourly ratings for their own use and then transmit them to the NYISO for use in the Energy Management System and Business Management System software and posting to the NYISO's public website.

### **24.2 Project Objective(s) & Anticipated Deliverable(s)**

This project is a continuation of the 2022 FERC Ruling assessment effort and compliance filing. In 2025, this project is working with Transmission Owners to determine requirements, specifically the mechanics of a data exchange and communication, with a 2025 deliverable of Study Complete. The goal of this 2026 project is a deliverable of FRS.

### **24.3 Project Justification**

This project is a FERC mandate. Completion by 2028 is required to comply with Order 881.

## **25 FERC Order 2222 Compliance**

### **25.1 Problem / Opportunity**

FERC's issuance of Order No. 2222 presents additional scope to the NYISO's previously approved DER market design. In 2021, 2022, and 2024, the NYISO developed and filed market rules in compliance with Order No. 2222. In 2024, the NYISO completed the FRS for all functionality remaining to support the filed tariff language for compliance with the Order. In 2025, NYISO completed the Software Design Specification for Order No. 2222 Compliance requirements based on the 2024 FRS. The project scope requires the NYISO to complete software development in alignment with accepted tariff language to support the deployment of Order No. 2222 compliant software by the end of 2026.

### **25.2 Project Objective(s) & Anticipated Deliverable(s)**

Using the 2024 FRS as a basis, the NYISO will deploy software according to the requirements of Order No. 2222 compliance that were previously not in scope for the DER project deployments and releases.

The deliverable for 2026 will be Deployment.

### **25.3 Project Justification**

This project will enable the NYISO to incorporate software specifications to support market design features required by Order No. 2222 that were not previously included in the initial deployment of DER due to resource constraints and a lack of final ruling from FERC.

The 2026 effort will enable NYISO's DER Participation Model and software to be fully compliant with the requirements of FERC Order No. 2222, while building on the 2020 FERC-accepted market design deployed in 2023.

## **26 FERC Transmission Planning Order Implementation**

### **26.1 Problem / Opportunity**

FERC issued a final rule on Long-Term Regional Transmission Planning and Cost Allocation on May 13, 2024. The final rule requires the NYISO to reform its current regional transmission planning process (i.e., the Comprehensive System Planning Process [CSPP]) to, among other things, establish a process to identify and address long-term transmission needs over a 20-year time horizon, improve coordination of its CSPP and generator interconnection procedures, require consideration of alternative transmission technologies, improve transparency and coordination of local transmission planning processes, and require the establishment of a right of first refusal for right-sized replacement transmission facilities selected to meet an identified long-term transmission need.

This is a multi-year project that will continue work started in 2024 to explore the potential changes required to its regional transmission planning process to comply with the final rule. In 2025, the deliverable for this project is an Issue Discovery document to provide a high-level outline of the necessary business process changes to the regional transmission planning process. The project deliverable for 2026 will be a Study Defined.

### **26.2 Project Objective(s) & Anticipated Deliverable(s)**

For 2026, the objectives are to complete a compliance filing, including necessary tariff revisions for the NYISO's regional requirements due April 30, 2026, and to work on the subsequent compliance filing for the NYISO's inter-regional coordination requirements due June 14, 2027.

### **26.3 Project Justification**

The project is required to comply with a FERC final rule.

## **27 Hybrid Aggregation Model**

### **27.1 Problem / Opportunity**

As part of the 2022 Hybrid Aggregation Model project, the NYISO developed the market rules and Functional Requirements to permit an ESR and a Landfill Gas, Run-of River Hydro Resource, or a Fast-Start Resource to be co-located at a single point of interconnection and share the same point identifier (PTID).



The market rules that the NYISO implemented in December 2021 for Co-Located Storage Resources (CSRs) limited eligibility to an Energy Storage Resource (ESR) and a wind or solar Intermittent Power Resource (IPRs). In 2024, the NYISO added steam turbines as an eligible resource that can co-locate with an ESR for eligibility as CSRs. Expanding the CSR-eligible resource types to include steam turbines provides an opportunity for the development of additional CSRs, which will complement efforts to meet the CLCPA requirements that seventy percent (70%) of New York's electric load be served by renewable resources by 2030 and 6,000 MWs of ESRs by 2030.

## **27.2 Project Objective(s) & Anticipated Deliverable(s)**

The 2026 project goal is to reach the Deployment milestone for the Hybrid Storage Resources (HSRs) market design approved by stakeholders.

## **27.3 Project Justification**

State and federal initiatives such as renewable energy credit (REC) procurements provide incentives for developers to couple storage and intermittent renewable assets. Such programs are aimed at reducing the output volatility and improving the availability of intermittent resources. The NYISO has implemented a CSR model for front-of-the-meter generators plus storage acting as two distinct resources with a shared injection limit that better align the NYISO's market procurement with state and federal efforts to integrate more clean energy into the grid. The NYISO has broadened the range of resources that can use its existing CSR participation model. The 2026 project deliverable will continue the work necessary to implement the HSR participation model.

In addition to the benefits discussed above, including steam turbines as an eligible CSR technology is consistent with the motivating factors that supported the NYISO's proposal for co-locating ESRs and Fast-Start Resources and IPRs, including "reducing development costs by sharing interconnection facilities" as well as reducing barriers to entry for ESRs."

# **28 Interconnection Cluster Study Process Implementation**

## **28.1 Problem / Opportunity**

On July 28, 2023, FERC issued Order No. 2023 addressing Improvements to Generator Interconnection Procedures and Agreements. Among the order's goals are addressing long interconnection queue backlogs across the country due to increasingly large numbers of new resources seeking to interconnect to the transmission system. The NYISO submitted its full compliance filing on May 1, 2024, with a requested effective date of May 2, 2024. The NYISO began implementing its new process on May 2, 2024, with the initial Cluster Study – the Transition Cluster – commencing August 1, 2024. On April 17, 2025, FERC issued its order broadly accepting the NYISO's new interconnection procedures with an effective date of May 2, 2024. FERC determined that the NYISO's compliance filing partially complied with the requirements in Order Nos. 2023 and 2023-A and directed that the NYISO submit a further compliance filing by June 16, 2025 to address a limited number of directives requiring further revisions, additional clarification, or further justification from the NYISO. This project is a multi-year project focused on the implementation of the new cluster study process and tools needed to support the FERC Interconnection study process, the ultimate process for which cannot be determined with



certainty until FERC accepts the NYISO's Order No. 2023 compliance tariff revisions in their entirety. These enhancements will allow collaboration and communication with the Interconnection customers, connecting Transmission Owners (CTOs), and NYISO.

## **28.2 Project Objective(s) & Anticipated Deliverable(s)**

This is a multi-year project focusing on the implementation of the new Cluster Study process changes and tools to support the interconnection study process. These enhancements assist with ensuring compliance with tariff deadlines including in pending tariff revisions and allow collaboration and communication with the Interconnection Customers, TOs, and the NYISO. The NYISO's goal is to develop an Interconnection Portal to serve as the source of information for the NYISO and Interconnection Customers regarding interconnection projects and to replace the manual processes that the NYISO currently uses. As the volume of new resources seeking to interconnect to the system rapidly grows, it is paramount that the NYISO continues to enhance the interconnection process's evaluation of reliability impacts of proposed projects while ensuring compliance with Order No. 2023 tariff revisions.

To meet the FERC Order No. 2023 requirement for a HeatMap, which is an interactive visual representation of estimated incremental injection capacity available at each point of interconnection to be posted publicly, the project will include the implementation of a vendor solution. Additionally, the project will deploy additional software changes to support enhancements that would increase the transparency and efficiency of the interconnection process. The project goal for 2026 is Deployment.

## **28.3 Project Justification**

This project is required to meet compliance obligations related to Order No. 2023.

# **Continuing**

---

## **29 Balancing Intermittency**

### **29.1 Problem / Opportunity**

In a time of unprecedented change in the electricity sector, New York's competitive electricity markets must be positioned to unleash the innovation and flexible energy solutions necessary for a reliable transformation towards a zero-emissions power grid. A rapid transition is underway in New York State from a power grid where energy is largely produced by central-station fossil fuel generation, towards a grid with increased intermittent renewable resources and distributed generation.

The pace of this transition is driven primarily by state policy, notably the CLCPA. In addition, technological advancements are expanding the capabilities of new resources and lowering their costs, further driving broader industry changes.

The NYISO continues work on market enhancements to meet these future challenges. A grid characterized by high levels of intermittent renewable resources, ESR, and DER requires new thinking

to adequately balance intermittency on the system and the associated system ramps. The NYISO approaches this work with two guiding principles: (1) all aspects of grid reliability must be maintained; and (2) competitive markets should continue to maximize economic efficiency and minimize the cost of maintaining reliability while supporting the achievement of New York's climate policy codified in the CLCPA.

The 2022 Grid in Transition Study identified the potential level of system flexibility that will be required with increases in intermittent resources and evaluate grid and/or resource attributes necessary to continue to reliably maintain system balance. Using previous NYISO studies and initiatives, including the Reliability and Market Considerations for a Grid in Transition work, Grid in Transition project work, and external studies on ramp and flexibility, the NYISO developed an Uncertainty Reserves Requirement design to incorporate into the existing Operating Reserves procurement structure. The market design was approved by stakeholders in 2024. The NYISO is targeting software development complete in 2025.

## **29.2 Project Objective(s) & Anticipated Deliverable(s)**

The 2026 project goal is to reach the Deployment milestone for the Balancing Intermittency Uncertainty Reserve Requirement market design approved by stakeholders in 2024.

## **29.3 Project Justification**

The CLCPA includes the following goals:

- 100% of the state's electricity must be emissions free by 2040
- 9,000MW of offshore wind energy must supply NY by 2035
- 6,000MW of solar energy be installed in NY by 2025
- Statewide reduction of 185 trillion BTUs through energy efficiency
- 3,000MW of energy storage capacity must be installed to serve NY by 2030

Continuation of this project will support a reliable electric system while addressing the state's goals and mandates in a cost-effective way through the creation of proper market mechanisms. This project also supports SOM Recommendation 2021-1 and further evaluating 2017-2.

# **30 Dynamic Reserves Phase 1**

## **30.1 Problem / Opportunity**

Today, the NYISO procures fixed quantities of operating reserves in specified regions across the state. Under this structure, the static modeling of reserve regions and their associated requirements may not optimally reflect the varying needs of the grid to respond to changes in system conditions. These system conditions are expected to become more variable as new resources enter into the market in the coming years.

Based on NYSRC rules, the NYISO is required to procure sufficient 10-minute reserves to account for the single largest source contingency and sufficient 30-minute reserves to account for the two largest source contingencies at all times. Dynamically determining the operating reserve requirements could maintain system reliability and enhance market efficiency based on the system needs at any time.

The NYSRC rules also require the NYISO to ensure that transmission facilities are not loaded above their Long-Term Emergency (LTE) rating, post-contingency. In some cases, within New York City, the NYISO is permitted to operate transmission facilities above LTE, using generating capacity not otherwise scheduled to provide energy and Phase Angle Regulator (PAR) actions to quickly secure the transmission facilities post-contingency. This operation offers opportunities to reduce production costs by relaxing the transmission limits of facilities that feed load pockets in New York City. Currently, operating reserve providers in these load pockets are not compensated for the avoided transmission congestion they enable by allowing certain facilities to be secured to a rating that is higher than LTE.

Therefore, Dynamic Reserves, as designed and approved by stakeholders in 2024, would enhance the current modeling by: (i) allowing the adjustment of the minimum operating reserve requirements based upon the single largest source contingency or the simultaneous loss of energy from the two largest contingencies, and (ii) accounting for transmission headroom when determining reserve needs within a constrained area. These enhancements could allow the scheduling of reserves above the minimum operating reserve requirements in areas where sufficient reserves are available and also the shifting of reserves to lower-cost regions when transmission capability exists. The dynamic reserve procurement methodology approved in 2024 could improve market efficiency through enhancing competition among suppliers, and better aligning market outcomes with how the power system is operated.

### **30.2 Objective(s) & Anticipated Deliverable(s)**

The anticipated deliverable for 2026 will be Development Complete.

### **30.3 Project Justification**

As the markets and grid are expected to rapidly evolve in the coming years, the modeling of reserves will also need to evolve and become more flexible. The MMU has recommended that the NYISO “[d]ynamically adjust operating reserve requirements to account for factors that increase or decrease the amount of reserves that must be held on internal resources [SOM Recommendation 2015-16].” Dynamic Reserves would seek to ensure the reserve requirements, and the procurement of reserves adequately reflect the conditions of the system. Specifically, the reserve modeling should dynamically account for the single largest source contingency and the loss of transmission capability into a region. This would improve market efficiency by allowing more energy to be produced from a single source if adequate reserves are available and also allow reserves to be scheduled in less expensive regions when there is available transmission capability to import power into a constrained region post-contingency. Dynamic reserve requirements and procurements present opportunities to enhance grid resilience, encourage resource flexibility, lower total production costs, and increase efficiency in meeting applicable reserve requirements. This project also supports SOM Recommendations 2015-16, 2021-2.

## **31 Improve Duct-Firing Modeling**

### **31.1 Problem/Opportunity**

Providers of reserves and regulation are currently required to achieve their emergency response rate over the entire range of operation. This is problematic for combined-cycle gas turbines (CCGTs) with duct firing because the response rate of the duct-firing portion is typically slower than the baseload portion of the plant. It is also expected to be a problem for resources with a mix of technologies, such as Aggregations. These resources cannot achieve the emergency response rate in the duct-firing portion of their range (typically the upper 10-20% of capability), which limits their availability to provide reserves and regulation.

The NYISO developed, and stakeholders approved, a duct-firing modeling approach in 2024. The improved modeling is designed to better utilize the capability of each plant segment. The new modeling will allow suppliers of reserves and regulation to limit their reserve and regulation schedules to the dispatchable range of the resource.

The improved duct-firing modeling includes the following functions:

- CCGTs equipped with duct firing capability and opted-in for the limited participation functionality will have the 10-minute spinning reserve capacity and regulation capacity restricted to the last Normal Response Rate breakpoint.
- During RTD-CAM modes, the Participation Limit, i.e., the last Normal Response Rate breakpoint, combined with the unit's Last Actual Output prior to RTD-CAM activation will determine the schedule during RTD-CAM modes.
- If the unit's Last Actual Output is below the Participation Limit, then the unit can only provide energy up to the Participation Limit.
- If the unit's Last Actual Output is between the Participation Limit and Upper Operating Limit (UOL), the unit will be held at the Last Actual Output prior to the activation of the RTD-CAM mode.
- The "Prior Normal Response Rate" RTD-CAM enhancement applies to all the Combined Cycle Gas Turbine Generators with duct-firing (including units that have opted for Limiting Participation option). These units will be moved using the Normal Response Rate of the operating region that the unit's Last Actual Output was in prior to the activation of any of the RTD-CAM modes and not using the Emergency Response Rate.

### **31.2 Project Objective(s) & Anticipated Deliverable(s)**

The anticipated 2026 project deliverable will be Deploy software changes to support the approved 2024 market design.

### **31.3 Project Justification**

There are currently many combined cycle generators in the NYCA, and the majority of these combined cycle generators have duct-firing capacity. These resources currently represent a large source of dispatchable energy, reserves, and regulation. Having access to these resources' full dispatchable capability will become increasingly important as generation from intermittent resources grows over

the coming years. Enabling their participation will provide consumer benefits, as increased competition could result in lower market prices and greater availability of resource capability to provide various ancillary services. This project also supports SOM Recommendation 2020-1.

## **32 Integrating Champlain Hudson Power Express (CHPE)**

### **32.1 Problem / Opportunity**

The Champlain Hudson Power Express (CHPE) is a new high-voltage direct current (HVDC) line between HQ and NYISO that is expected to come in-service by summer 2026. The NYISO will have operational control over the U.S. portion of the project. The NYISO does not currently have an operating agreement for CHPE with HQ or the U.S. owner/operator of this HVDC line. Additionally, Tariff revisions and software will be required to incorporate the new device.

### **32.2 Project Objective(s) & Anticipated Deliverable(s)**

The objectives of this project are to build upon the 2025 work for this project, which include developing an operating protocol with HQ and the U.S. owner/operator for the CHPE HVDC line, identifying needed software enhancements, and mapping out the timeline of changes needed to effectively integrate this facility into the NYISO's market systems and reliability tools (EMS).

The project deliverable for 2026 will be Deployment of the software required to incorporate the CHPE facilities into the NYCA.

### **32.3 Project Justification**

With the addition of the new HVDC line between HQ and the NYISO that will be operated in the U.S. by a new, non-incumbent TO, operating protocols are necessary to protect reliability and to develop a least production cost solution that incorporates the new line's capabilities.

## **Future**

---

## **33 Ancillary Service Shortage Pricing Update**

### **33.1 Problem / Opportunity**

With an increasing share of intermittent generation within the New York Control Area (NYCA), it is increasingly important to rely on Ancillary Services, such as reserves and regulation, for handling uncertainties arising from intermittent generation. While fuel prices continue to fluctuate, it is essential to review the existing Ancillary Services shortage pricing structures to ensure that they reflect the market dynamics. The evolving energy landscape demands a comprehensive reassessment of pricing mechanisms to accommodate the growing prominence of renewables and maintain grid reliability. Thus, there is an opportunity to analyze and potentially recalibrate existing pricing frameworks to better align with the evolving energy mix and mitigate potential disruptions.

### **33.2 Project Anticipated Deliverable (s)**

The 2025 project deliverable will be a Study Complete.

### **33.3 Project Justification**

This project would enhance the existing energy, reserves, and regulation pricing structures, especially with the expanding role of renewable energy sources and new market structures. By assessing current pricing mechanisms, the project aims to bolster grid reliability and align pricing strategies accordingly.

After thorough analysis, potential shortage price adjustments could improve overall electricity pricing effectiveness, benefiting stakeholders and the broader energy ecosystem.

## **34 Balancing Intermittency Phase 3: Evaluation of Efficient Operating Reserve Scheduling Practices and Designs**

### **34.1 Problem / Opportunity**

In a time of unprecedented change in the electricity sector, New York's competitive electricity markets must be positioned to unleash the innovation and flexible energy solutions necessary for a transformation towards a zero-emissions power grid. A rapid transition is underway in New York State from a power grid where energy is largely produced by central-station fossil fuel generation, towards a grid with increased intermittent renewable resources and distributed generation.

The pace of this transition is driven primarily by state policy, notably by the CLCPA. In addition, technological advancements are expanding the capabilities of new resources and lowering their costs, further driving broader industry changes.

The NYISO is actively working on market enhancements to meet these challenges. A grid characterized by high levels of intermittent renewable resources, ESR, and DER will require new thinking to adequately balance intermittency on the system and the associated system ramps. The NYISO approaches this work with two guiding principles: (1) all aspects of grid reliability must be maintained; and (2) competitive markets should continue to maximize economic efficiency and minimize the cost of maintaining reliability while supporting the achievement of New York's climate policy codified in the CLCPA.

As Operating Reserve needs grow to provide the flexibility needed to manage increasing uncertainty and variability, the efficient scheduling of such Operating Reserves will become increasingly important. Currently, Operating Reserves are scheduled strictly based on the supplier's offer to provide Operating Reserves. Alternate designs may enable broader consideration of Operating Reserve supplier costs, such as the cost of energy if the Operating Reserve supplier is converted from reserves to energy.

### **34.2 Anticipated Project Deliverable(s)**

Using the work completed to date across various NYISO studies and initiatives, including the Reliability and Market Considerations for a Grid in Transition work, Grid in Transition project work, and any relevant external studies on the ramp and flexibility needs of the future, this project will examine the existing NYISO market structures and market rules to evaluate efficient methods to schedule Operating

Reserves, including consideration of the energy costs of those resources scheduled for Operating Reserves. The deliverable for this project will be Study Complete

### **34.3 Project Justification**

The CLCPA includes the following goals:

- 100% of the state's electricity must be emissions free by 2040
- 9,000MW of offshore wind energy must supply NY by 2035
- 6,000MW of solar energy be installed in NY by 2025
- Statewide reduction of 185 trillion BTUs through energy efficiency
- 3,000MW of energy storage capacity must be installed to serve NY by 2030

Continuation of this project will help to identify the means to maintain system reliability while addressing the state's goals and mandates in a cost-effective way through the creation of proper market mechanisms.

## **35 Capacity Transfer Rights for Internal Transmission Upgrades**

### **35.1 Problem / Opportunity**

Granting internal capacity deliverability rights for transmission between zones would incentivize merchant investment in supply resources, demand resources, and transmission facilities, since right-holders would not be limited to a cost-of-service rate.

### **35.2 Project Objective(s) & Anticipated Deliverable(s)**

This project would create a new process for granting capacity transfer rights based on internal transmission upgrades that increase transfer capability into areas with Locational Minimum Installed Capacity Requirements that can be offered into the NYISO's ICAP Market. The project deliverable would be MDCP.

### **35.3 Project Justification**

Deliverability constraints can create barriers to entry for competitive new suppliers and imports, which may reduce competition in the market. Transfer rights would increase market efficiency by creating a dynamic framework for incorporating system upgrade needs into capacity price signals. This project also supports SOM Recommendation 2012-1c.

## **36 Eliminate Fees for CTS Transactions with PJM**

### **36.1 Problem / Opportunity**

Coordinated Transaction Scheduling (CTS) was introduced as a market design concept to allow wholesale market operators the ability to schedule efficient transactions based on close to real-time price information. The 2017 SOM Report notes that overall performance of CTS improved significantly



between 2016 and 2017, but that participation is still much stronger at the ISO-NE interface (where it is required) than the PJM interface (where it is optional). The lower utilization of CTS with PJM can partially be attributed to the relatively large fees that are charged to transactions between the NYISO and PJM, while no substantial transmission charges or uplift charges on transactions are charged between New York and New England. The fees and uplift charges present an economic barrier to achieving potential benefits from CTS process at the PJM border. The cost of these fees is paid by load, regardless of whether it is charged to transactions because MPs facilitating transactions must increase their bids to account for the fees.

### **36.2 Project Objective(s) & Anticipated Deliverable(s)**

This effort would seek to eliminate fees on CTS transactions at the NYISO and PJM interface, or alternatively minimize the fees applied by the NYISO on CTS transactions. The project deliverable for this effort would be MDCP.

### **36.3 Project Justification**

Charging fees for transactions introduces an unnecessary cost into the marketplace. Eliminating or minimizing transaction fees with PJM would provide a market efficiency gain by setting an LBMP at the border that better reflects the actual marginal cost of energy. This project also supports SOM Recommendation 2015-9.

## **37 Internal Controllable Lines**

### **37.1 Problem / Opportunity**

There are no internal controllable lines in operation within the NYCA. Prior to the 2023 project MDC, market rules for the scheduling and pricing of internal controllable lines within the Energy Market did not exist. The NYISO had high-level rules to allow Internal Unforced Capacity Deliverability Rights (UDRs) to participate within the ICAP Market. The internal rules had significant gaps that were addressed in 2023, including, but not limited to, the determination of requirements for providing capacity on the Internal UDR and the determination of obligations for the Internal UDR that sells capacity.

The development of market rules for internal controllable lines to support outcomes in the best interests of all stakeholders is needed. This project began with developing market rules for the scheduling and pricing of internal controllable lines within the Energy Market. The NYISO also evaluated and revised the existing ICAP market rules for Internal UDRs to ensure compatibility with the expected operation of internal controllable lines in the Energy Market. These newly developed rules account for how internal controllable lines may be used to support state and local programs.

### **37.2 Project Objective(s) & Anticipated Deliverable(s)**

This is a continuing project to incorporate point-to-point internal controllable lines into NYISO markets. Continuing the work from 2024, the deliverable for the project for 2025 is Software Design .



### **37.3 Project Justification**

State initiatives such as Tier 4 REC procurements provide incentives for developers to deliver renewable generation into congested areas using HVDC lines or similarly controllable transmission resources. New York State has awarded one Tier 4 contract for an internal controllable line and additional projects have been proposed.

## **38 LCR Optimizer Enhancements**

### **38.1 Problem/Opportunity**

In 2017 and 2018, the NYISO worked with stakeholders to design and implement a proposal to set Locational Minimum Installed Capacity Requirements (LCRs) based on both the resource adequacy criterion of maintaining a loss of load expectation of no greater than one event-day in 10 years, as well as an economic cost minimization of those requirements based upon a set of net CONE curves developed based upon the peaking plant used in establishing each ICAP Demand Curve. This effort, called the “Alternative Methods for Determining LCRs,” was intended to produce a robust, transparent, and intuitive process for maintaining reliability, while producing a lower cost solution in comparison to the previous method for developing LCRs, commonly referred to as the “Tan 45” methodology.

Since implementation of the revised methodology, concerns have been raised about the methodology and the resulting LCRs, including the stability of the LCRs and the transparency of the optimization function. Re-examining this process and the methodology could lead to improvements in the stability and transparency of the LCRs.

### **38.2 Project Objective(s) & Anticipated Deliverable(s)**

The objective of this project is to deploy any modifications and enhancements to the LCR process that were approved as part of the 2023 and 2024 “LCR Optimizer Enhancements” project efforts. The milestone for 2026 is a Deployment.

### **38.3 Project Justification**

This project will seek to further enhance the LCR methodology to improve stability and transparency of the LCRs.

## **39 Locational Marginal Pricing of Capacity**

### **39.1 Problem / Opportunity**

An opportunity exists to better align capacity market clearing prices with the marginal reliability value of capacity in each Locality. Achieving this alignment could lower overall costs of satisfying capacity needs.

### **39.2 Project Objective(s) & Anticipated Deliverable(s)**

The objective for this project would be to devise a capacity pricing framework where the clearing price at each location is set in accordance with the marginal reliability value of capacity at the location. The project deliverable for 2026 would be MDCP.

### **39.3 Project Justification**

This proposal could reduce the costs of satisfying resource adequacy needs, facilitate more efficient investment and retirement decisions, and be more adaptable to changes in resource mix (*i.e.*, increasing penetration of wind, solar, and energy storage). It may also lead to capacity pricing outcomes that are difficult to anticipate and a market that is administratively complex. The project also supports SOM Recommendation 2013-1c.

## **40 Mitigation Threshold Review**

### **40.1 Problem / Opportunity**

This project will perform a comprehensive review of all mitigation behavioral thresholds, including solicitation of feedback from stakeholders. This project will review all thresholds used for conduct and impact for mitigation, including the current Load Pocket Threshold (LPT) process.

### **40.2 Project Objective(s) & Anticipated Deliverable(s)**

The objective of this project would be to evaluate all current mitigation thresholds, to improve the LPT methodology based on observations from the last several years, and to determine if any of the existing mitigation thresholds need to be modified.

This project will consider the following improvements:

1. Modifying the mitigation measure that predicts potential market power for each load pocket in the coming month, based on the number of transmission-constrained hours in the previous 12 months. The existing measure may not accurately forecast upcoming tightness of load pockets by neglecting the systematic tendency for tight constraints during summer peaks, but fewer constraints over the rest of the year.
2. Revising the method to determine the load pocket threshold. Currently, the formula uses a 12-month averaging of load-weighted and fuel-price-adjusted LBMPs to calculate the expected load-pocket LBMP in the coming month. The formula that calculates a weighted average of past load-pocket LBMPs could be revised to better predict load-pocket LBMP in the upcoming month. The proposal is focused on the yearly average. The NYISO wants to explore other options to replace the 12-month average with averages calculated over shorter, more relevant periods to better predict load-pocket LBMPs going forward and hence create a more appropriate measure of the load pocket threshold.
3. The Services Tariff requires the NYISO to fuel-price-adjust LPTs, allowing the NYISO to specify the method of fuel price adjustment. Currently, MMA implements this requirement by fuel-adjusting the LBMP term on a monthly basis. MMA proposes to change the frequency of fuel-

adjusting LPTs from monthly to daily, so that each day LPTs maintain consistency with the daily fuel-price component of energy reference levels.

4. Automating the process of calculating LPTs, which currently consists of several manual steps that are time consuming and labor intensive. MMA proposes to work with Information Technology to create a fully automated process with measures in place to validate results from each execution.

The project deliverable for 2025 will be MDCP.

### **40.3 Project Justification**

This project would allow for a comprehensive review of all mitigation thresholds, as well as the LPT methodology and process, to identify ways to improve the accuracy of and verification process for LPT calculations.

## **41 More Granular Operating Reserves**

### **41.1 Problem/Opportunity**

In 2020, the NYISO proposed enhancements to implement reserve requirements for certain load pockets within New York City and Long Island to provide location-specific market signals consistent with reliability needs. In 2021, as part of the Reserve Enhancements for Constrained Areas study, the NYISO investigated the feasibility of modeling local reserve requirements in New York City load pockets based on available transmission capability. These new requirements would account for the flexibility of the grid to respond to system needs by utilizing the transmission system to import capacity into generation-constrained regions. Additionally, load pocket reserves could provide further incentives for resources to be located in important, supply constrained areas of the NYCA.

As the potential implementation of load pocket reserve requirements is considered, a dynamic reserve procurement methodology that does not exist today is an important pre-requisite to improve market efficiency, better align market outcomes with how the power system is operated, and avoid the potential for unnecessary price volatility.

### **41.2 Project Objective(s) & Anticipated Deliverable(s)**

The project deliverable would be MDCP. The More Granular Operation Reserves design and implementation would be dependent on the market design for Dynamic Reserves.

### **41.3 Project Justification**

The MMU has recommended that the NYISO “[m]odel local reserve requirements in New York City load pockets [Recommendation 2017-1].” This effort has also been identified as beneficial in both the 2018 Performance Assurance Management Response and the 2017 Integrating Public Policy Market Assessment Report. Additionally, this effort will reflect the locational reliability value provided by resources in certain load pockets within New York City. This project also supports SOM Recommendation 2021-3.

## **42 Reserves for Congestion Management (SOM)**

### **42.1 Problem/Opportunity**

The NYISO is responsible for the reliable operation of the electricity grid in New York State. One way the NYISO maintains reliability is by procuring operating reserves – extra power capability that can quickly be dispatched to address sudden changes in demand or unexpected outages. Additionally, the availability of reserves in certain locations allows NYISO operators to increase transmission flows on certain facilities, thereby increasing the utilization of the transmission system.

The current system does not reflect the location-specific benefits of operating reserves when they relieve congestion on the transmission grid. As a result, all providers of operating reserves receive the applicable market clearing price regardless of whether they enable NYISO operators to increase transmission system flows on certain facilities.

There is an opportunity to improve the NYISO's wholesale electricity markets by developing rules for efficient pricing and settlement when operating reserve suppliers provide congestion relief. Such rules could compensate operating reserve suppliers for the cost of providing those reserves, including any location-specific costs or benefits associated with relieving congestion on the transmission grid. Furthermore, promoting competition among operating reserve suppliers will help to drive down the cost of providing those reserves and reduce the cost to consumers. Encouraging investment in new operating reserve capacity will also help maintain the reliability of the electricity grid.

### **42.2 Project Objective(s) & Anticipated Deliverable(s)**

The objective of this project is to consider and develop new rules and mechanisms for efficient pricing and settlement when operating reserve suppliers provide congestion relief. The anticipated deliverable is a Study Complete identifying the proposed rules and mechanisms.

### **42.3 Project Justification**

Improving the rules and mechanisms for efficient pricing and settlement of operating reserves in the NYISO's wholesale electricity markets will lead to a more efficient and reliable electricity grid. By more accurately reflecting the true cost of providing operating reserves and the location-specific benefits of relieving congestion, the new rules and mechanisms will promote competition among operating reserve suppliers, produce efficient costs for consumers, and encourage investment in new operating reserve capacity.

The project will address the need for improved pricing and settlement mechanisms for operating reserves that provide congestion relief. The goal is for the NYISO's wholesale electricity markets to promote competition, efficiency, and investment in new operating reserves to maintain the reliability of the electricity grid.

## **43 Separating Regulation Up and Regulation Down**

### **43.1 Problem / Opportunity**

Currently, Regulation Service providers are required to be able to move both up and down at the instruction of the NYISO in order to balance the system.

The Reliability Gap Analysis in the 2019 *Reliability and Market Considerations for a Grid in Transition* report identified that bifurcation of the reserve by separating regulation “up” and regulation “down” products would be a benefit in maintaining the ability to balance load and generation.

The 2021 Grid Services from Renewable Generators report reported that bifurcation of Regulation Service into “up” and “down” products would lead to a variety of impacts on markets, grid operations, and consumers. It expected to:

- Expand the participation by renewable resources by allowing participation in regulation down without having the impact on generation that participating in regulation up would have, and
- Expand participation by generation when they encounter limitations in scheduling capability due to an inability to regulate up or down. For example, generators that are scheduled at either their minimum generation or UOL and are not currently eligible to provide the current symmetric Regulation Service because they are not able to move in both directions.

Additionally, this effort could include reassessing the Regulation Capacity and Movement structure to determine if there might be opportunities for increased market efficiency.

The bifurcation of the regulation market will require substantial software revisions. Discussions with other ISOs and RTOs that procure distinct Regulation “up” and Regulation “down” products indicated that procurement of separate regulation products has led to software run-time increases due to the added complexity of the solution.

### **43.2 Project Objective(s) & Anticipated Deliverable(s)**

The project deliverable would be MDCP. The project would propose the market enhancements that would be required for regulation providers to separate their up and down regulation offers as well as for the NYISO to accept, optimize, price, and dispatch resources using separate up and down regulation offers.

### **43.3 Project Justification**

Bifurcation of the Regulation Service market would be expected to reduce consumer costs, as it would expand the pool of eligible suppliers. This increase in supply may include some renewable generators, but it is likely that the majority will consist of generators that were previously precluded from providing Regulation Service due to the constraint of either being scheduled at mingen or UOL. The NYISO conducted a consumer impact analysis for this project in 2021. Costs to consumers would be expected to decline overall as a result of this market change, since the shift in supply would likely drive a

reduction in high-priced intervals, including shortage price intervals, and reduce price impacts from tradeoffs with producing energy. The current Regulation Service market is small in relation to the energy market, on the order of \$15-\$20M annual cost compared to annual energy market costs that have ranged from roughly \$4B to \$7B in recent years. Thus, while this effort would be expected to reduce consumer costs, the benefits are expected to be minimal in the context of total NYISO market costs.

## **44 Uncertainty Adjustment Review**

### **44.1 Problem / Opportunity**

The NYISO market design is advancing rapidly to consider (1) dynamic scheduling of reserves based on the varying needs of the grid to respond to changes in system conditions (*i.e.*, the Dynamic Reserves Project) and (2) the uncertainty introduced by intermittent and behind the meter resources (*i.e.*, the Balancing Intermittency project).

These designs will enable more efficient reserve requirements and facilitate efficient operations. At the same time, they will build a foundation for further improvements (*e.g.*, More Granular Operating Reserves). One such potential enhancement would be to transition the Uncertainty Reserve Requirements calculation process from one based on measured historic errors to one that incorporates probabilistic forecasts of next-day uncertainty.

This study will also serve as an opportunity to review the performance and parameters of the Uncertainty Reserve Requirement more broadly to ensure that it is performing its intended function of procuring additional reserves to ensure sufficient Real-Time energy is available to serve Load.

### **44.2 Project Objective(s) & Anticipated Deliverable(s)**

The deliverable for 2026 will be Study Complete.

### **44.3 Project Justification**

The CLCPA includes the following goals:

- 100% of the state's electricity must be emissions free by 2040
- 9,000MW of offshore wind energy must supply NY by 2035
- 6,000MW of solar energy be installed in NY by 2025
- Statewide reduction of 185 trillion BTUs through energy efficiency
- 3,000MW of energy storage capacity must be installed to serve NY by 2030

This project will help to identify the means to maintain system reliability while addressing the state's goals and mandates in a cost-effective way through the creation of proper market mechanisms. This project also supports SOM Recommendations 2021-1 and further evaluating 2017-2