2024 Market Project Candidates

Product and Project Management

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This document represents potential 2024 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.

Introduction

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Project Type	Description
Mandatory	Projects that are key to support Strategic Initiatives, comply with FERC Orders, or sustain the operation of the NYISO business. These projects will be included in the budget
Continuing	Projects approved in a prior year and that have progressed to either Software Design, Development Complete, or Deploy will generally be proposed as Continuing. Additional projects may be classified as Continuing based on stakeholder feedback. These projects will be included in the budget
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

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 2024 project deliverable will be Market Design Concept Proposed.

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. Advanced Storage Modeling and Operation

2.1. Problem / Opportunity

Currently, when the NYISO is short on Energy or Capacity in a given hour, operators will commit additional resources or modify Energy Limited Resources (ELR) or Capacity Limited Resource (CLR) unit schedules to provide the remainder of the necessary Energy or Capacity. These

resources may include Distributed Energy Resources (DER), Energy Storage Resources (ESR), or any other generator that did not already have a commitment for that hour. However, as DER and ESR penetration increases, the process for operators to redispatch resources becomes more complex.

Due to their inherent energy duration limitations, dispatching an ESR in one hour will reduce its state of charge and subsequently impact how it can perform in future hours. Therefore, if NYISO operators redispatch an ESR to account for a shortage of Energy in a given hour, the ESR may not be able to meet its Energy schedule in the coming hours. This issue is especially significant when an ESR that was originally scheduled to inject Energy during hours in the peak load window is re-dispatched to provide Energy earlier in the day. The Advanced Storage Modeling and Operation project will address considerations for the redispatch of an ESR and whether the asset will have the necessary state of charge to continue to meet its Energy schedule.

2.2. Project Objective(s) & Anticipated Deliverable(s)

The market design concepts will seek to assess methods for enhancing the market modeling and operation of ESRs. The NYISO will coordinate with stakeholders to consider market design concepts governing the redispatch of an ESR throughout the day and the impacts of the redispatch on the resource's availability later in the day. The deliverable for this effort in 2024 will be to develop a concept proposal and deliver a Market Design Concept Proposal to market participants.

2.3. Project Justification

As more behind-the-meter resources enter the market, net load profiles may deviate from expectations, resulting in Real Time needs differing from projections. As such, the redispatch of resources may become more frequent, and Advanced Storage Modeling and Operation is expected to provide NYISO operators the necessary flexibility and tools to account for increased net load variability while providing market participants additional capabilities to manage limited energy resources availability throughout the day. This effort is also important in supporting feasible participation of limited duration resources as the NYISO considers expanding its Energy and Ancillary Service product offerings as described in the Balancing Intermittency and Dynamic Reserves efforts.

3. Clean Hydrogen - Requested by NextEra and Constellation

3.1. Problem / Opportunity

Currently, NYISO's tariff does not clearly contemplate the co-location of an emissions-free generator and load arrangement, such as an electrolyzer producing clean hydrogen. This lack of an effective pathway will inhibit the development of clean hydrogen infrastructure, which will impede achievement of New York's decarbonization goals.

3.2. Project Objective(s) & Anticipated Deliverable(s)

The Clean Hydrogen Project would investigate use cases proposed by Market Participants for loads co-located with non-emitting generation, including an electrolyzer producing clean hydrogen using energy from a co-located emissions-free generator, and work with the NYISO to develop a market concept towards meeting a Market Design Concept Proposed milestone in 2024. Potential avenues may include a new participation model or modifications to the existing Co-located Resources, Hybrid Co-located Resource, and Behind the Meter Net Generator models.

3.3. Project Justification

Achieving New York's decarbonization goals will require a substantial amount of Dispatchable Emission Free Resources (DEFRs) in order to complement and balance intermittent generation sources. Clean hydrogen is widely understood to be a necessary fuel source for DEFRs, and the Clean Hydrogen Project is intended to develop market rules that will enable the development and deployment of clean hydrogen electrolyzers in New York State powered by co-located non-emitting generation.

Per New York State Energy Research and Development Authority (NYSERDA): "As New York transitions to a clean energy economy, we are seeking to understand and explore all resources that may be available as part of the State's comprehensive decarbonization strategy, including assessing the role of green hydrogen. Supporting innovation and studying all technologies will enable us to remain on the cutting edge of evolving solutions that will complement our existing decarbonization efforts in achieving the State's ambitious Climate Act goals." From the 2021-2040 Outlook: "As more wind, solar, and storage plants are added to the grid, DEFRs must be developed and added to the system at scale to reliably serve demand when intermittent generation is unavailable. The lead time necessary for research, development, permitting, and construction of DEFRs will require action well in advance of 2040 if state policy mandates under the CLCPA are to be achieved. Fossil generation will likely need to be retained past the 2040 mandates to keep the system reliable if DEFR technology is not in operation."

On April 7, 2023, NYSERDA, of behalf of the seven state Northeast Regional Clean Hydrogen Hub, applied to the U.S. Department of Energy (DOE) for a $1.25 billion share of $8 billion in federal hydrogen hub funding available as part of the Infrastructure Investment and Jobs Act. The proposal advances $3.62 billion of direct hydrogen investments advancing clean electrolytic hydrogen production, consumption, and infrastructure projects for hard to decarbonize sectors. As a result, clean electrolytic hydrogen projects and production will likely increase substantially.

4. Coordinated Grid Planning Process (CGPP) Continuation

4.1. Problem / Opportunity

The Joint Utilities and LIPA are currently developing a Local Coordinated Grid Planning Process (CGPP) [see February 9, 2022 ESPWG Presentation on CGPP] to comply with a Public Service Commission (PSC) directive to develop an end-to-end planning process to identify and approve local

transmission needed to achieve the state's CLCPA goals. The development of the CGPP needs to consider and address the alignment between the local utilities' planning process and the regional planning processes completed by the NYISO. This includes, but is not limited to, the utilization of NYISO databases to satisfy current regulatory requirements, the development of scenarios through the NYISO's System and Resource Outlook, and consideration of NYISO resource availability and additional resources necessary to perform studies to support the CGPP and align it with the NYISO's bulk system studies.

CGPP support is a 2023 corporate project, but it will be kicked off after the PSC issues an order accepting the CGPP and the CGPP process finalized. The NYISO's support for this effort is expected to continue in 2024.

4.2. Objective(s) & Anticipated Deliverable(s)

This project should entail a review of current NYISO procedures with a focus on identifying areas where the CGPP and the current set of NYISO processes and deliverables can be better aligned. The CGPP is envisioned to run on a two-year process cycle followed by Department of Public Service (DPS)/PSC review and approval of local project portfolio recommendations with the first CGPP cycle to start in 2023 or 2024. Utilization of and alignment with current NYISO deliverables related to the NYISO's planning processes would be beneficial to parties and stakeholders involved in both local and bulk transmission planning. Examples of work products that will be used in the CGPP include:

- Zonal capacity expansion modeling results
- New base cases in the FERC 715 database
- Modification of cases for zonal capacity expansion scenarios
- Performance of Bulk Power Transmission Facilities assessments of proposed local transmission solutions

A review of the current processes and deliverables is needed to identify potentially beneficial interactions, evaluate and make relevant changes to existing procedures or introduce new methods and procedures, and assess resourcing needs as compared to what exists today. The 2023 milestone will be Issue Discovery. The milestone for 2024 will be Study Defined. Depending on the requirements in a PSC order, the milestone may be revised.

4.3. Project Justification

The PSC has directed the Joint Utilities and LIPA to work with DPS Staff, the New York State Energy Research & Development Authority, and the NYISO to develop the CGPP – an effort to create a repeatable end-to-end planning process for local transmission needed to achieve the State's CLCPA goals. The NYISO has and continues to implement processes to plan for the for bulk transmission system needed to achieve the same (e.g., the Public Policy Transmission Process). Since the CGPP is meant to complement the NYISO's bulk planning processes, it is imperative that the two planning processes are coordinated with regards to initiating assumptions used to develop scenarios guiding recommendations for approval of local transmission projects. If the two processes or the assumptions underlying those processes are misaligned, there will be a risk that the identification and approval of projects on the bulk and local level could result in incompatible or inefficient transmission

investment. Such misalignment will reduce or negate the anticipated benefits of such investments and ultimately impact the achievement of the CLCPA goals and potentially harm customers, developers, and other Market Participants.

5. Dynamic Reserves Phase 1

5.1. 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 New York State Reliability Council, L.L.C. (NYSRC) rules, the NYISO is required to procure sufficient reserves to account for the single largest source contingency at all times. However, the current static modeling approach does not account for the potential for the largest source contingency to change based on system conditions and system topology every market run. Dynamically determining the operating reserve requirements could enhance system reliability and 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 would enhance the current modeling by: (i) allowing the adjustment of the minimum operating reserve requirements based upon the single largest source contingency or risk for simultaneous loss of energy from similarly situated generation (e.g., offshore wind or natural gas), and (ii) accounting for transmission capability when determining reserve needs within a constrained area. These enhancements could allow the scheduling of energy above the minimum operating reserve requirements from individual suppliers when sufficient reserves are available and also the shifting of reserves to lower-cost regions when transmission capability exists. A dynamic reserve procurement methodology could improve market efficiency through enhancing competition among suppliers, and better aligning market outcomes with how the power system is operated.

5.2. Objective(s) & Anticipated Deliverable(s)

The anticipated deliverable for 2024 will be Functional Requirements Specifications (FRS), based on the Market Design Complete from the 2023 Dynamic Reserves project.

5.3. 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 Market Monitoring Unit (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 State of the Market recommendations 2015-16, 2021-2.

6. Engaging the Demand Side

6.1. Problem / Opportunity

Engaging consumers to assume greater control of their energy use will help to balance increasing penetration of intermittent and variable generation supporting New York State's zero emission and climate action policies. The NYISO's demand response programs and DER participation model offer Load consumers the opportunity to "supply" energy to the wholesale markets.

NYISO's current DER model requires DER to be fully dispatchable in real time with no advanced notification or startup commitment. NYISO's current SCR model have a 21-hour advance notice and 2-hour in day notice. SCRs are required to be a 4 hour capacity provider with no other time duration options. NYISO Market Participants have raised concerns that these requirements are potentially leaving both current and new resources, unable to fully participate using the current NYISO DER, or SCR models. The NYISO remains interested in exploring opportunities to enhance the DER and/or SCR models.

6.2. Project Objective(s) & Anticipated Deliverable(s)

The NYISO will advance the discussion with stakeholders on the recommendations identified in the 2023 Engaging the Demand Side Report. The 2024 project deliverable for this project will be

a Market Design Concept Proposed (MDCP) milestone that is reviewed in a presentation at MIWG.

6.3. Project Justification

Enhancements to NYISO's DER and/or SCR models that further support robust participation of more resources in both DAM and RTM may provide another tool to balance the New York Control Area (NYCA) system, address resource intermittency, and support ancillary service providers. The team will further evaluate recommendations identified in the 2023 Issue Discovery effort to determine their merit.

7. Evolving Resource Adequacy Models

7.1. Problem / Opportunity

Improving the resource adequacy tools and models is critical to efficiently meeting the reliability needs of the evolving grid. The Evolving Resource Adequacy Models project will evaluate enhancement of these tools and models, continuing work from the Improving Capacity Accreditation and Modeling Improvements for Capacity Accreditation projects.

7.2. Project Objective(s) & Anticipated Deliverable(s)

The Evolving Resource Adequacy Models project will research the need for potential changes to the assumptions, inputs, and modeling of winter months in the NYISO's current resource adequacy analysis software and investigate how unit size should be considered for calculating Capacity Accreditation Factors. Following the 2023 Modeling Improvements for Capacity Accreditation project, this project will also research the need for remaining enhancements, if any, related to accounting for correlated outages. The project deliverable for 2024 will be Study Complete. The completed study will be presented to the Installed Capacity Working Group and New York State Reliability Council's Installed Capacity Subcommittee for consideration of any recommendations.

7.3. Project Justification

This project is a continuation of the work started with the Improving Capacity Accreditation and Modeling Improvements for Capacity Accreditation projects. This project will facilitate future work to establish Installed Capacity Market Reserve Margins reflecting reliability risks not currently modeled in the resource adequacy software and improved Capacity Accreditation Factors.

8. Expanding Peak Hour Definition – Requested by DPS

8.1. Problem / Opportunity

The NYCA peak load hour is currently defined as the single hour within a Capability Year with the highest measured system load limited to weekdays during the months of July and August. The peak load is weather normalized, and a peak load forecast for the following year is generated by the NYISO in conjunction with the Transmission Owners (TOs). This peak load forecast is used for the Installed Reserve Margin study and the Installed Capacity (ICAP) market forecast, and determines the total load obligation for each Transmission District.

Current practice dictates that the TOs share out their capacity obligation to their Load Serving Entities (LSEs) based on the measured share of load consumed by each LSE during the NYCA peak load hour. Using multiple peak and near-peak load hours (*e.g.* the top five or top ten load hours) to share out obligations within a Transmission District may improve this process and create more robustly defined and consistent LSE shares. Likewise, in the distribution network, as LSEs use measures of peak period(s) usage to assign capacity cost to their customers, it becomes imperative that those measurements are representative of the customers' capacity needs. Basing a customer's capacity needs on demand during a single hour or day can leave too much to chance and not accurately measure the capacity need. Using the peaks from multiple high load days would be more stable and more reflective of long run cost causation.

Currently, the NYCA peak hour is determined using net hourly load as measured on the system. However, it is worth considering whether peak load should be based entirely or in part on gross load, which may become more important as demand response and distributed energy resource penetration increases.

8.2. Project Objective(s) & Anticipated Deliverable(s)

In 2020 this project was adopted by Market Participants. Over the course of 2021, NYISO Staff presented at the ICAPWG/MIWG (February 25, 2021, March25, 2021, May 4, 2021, June 3, 2021, June 30, 2021, and July 27, 2021). This resulted in a Market Design Concept Proposed, but the issue was not adopted for 2022. This project will continue from the Market Design Concept Proposed and determine what changes are needed in order to implement altering the way that capacity obligations are allocated to LSEs. Findings and resulting suggestions will be reported and discussed with stakeholders. The project deliverable will be Market Design Complete and proposal for deployment.

8.3. Project Justification

Many other jurisdictions consider more than a single hour when determining peak obligations for demand and resources. Given the upcoming changes planned for New York's grid, ensuring the determination of peak load hours used for capacity allocations is robust will be important for maintaining reliability and fair and equitable allocation of costs.

As retail electric metering evolves across New York state, LSEs will be better able to track customer usage on an hourly basis. The Public Service Commission first required hourly pricing for large C&I customers in April 2006 in Case 03-E-0641 Order Adopting Mandatory Hourly Pricing (MHP), those MHP customers are billed for capacity on the basis of their usage during the peak hour. Over the years, the threshold for MHP has decreased. In the last seven years Utilities have proposed, approved, and installed AMI meters that provide hourly load data for all customers. This allows LSEs to allocate capacity cost more specifically to customers causing the need for capacity. As customers become responsible for the capacity cost they cause, they will seek to manage that cost. This helps to engage the demand side to manage peak hour demand.

9. Granular Capacity Market Pricing

9.1. Problem / Opportunity

The NYISO's capacity market has four pricing zones, which may not capture differences in value of capacity in smaller regions inside these zones due to transmission constraints, both in the import and export direction. Additionally, today's rules only allow for zone creation every four years, coinciding with the Demand Curve Reset. Enhancements to the rules for creating zones and the frequency of establishing zones could better align compensation to capacity suppliers with system needs.

9.2. Project Objective(s) & Anticipated Deliverable(s)

This project would create a new process for evaluating what capacity zones are needed, and explore the frequency that zones should be re-examined. Additionally, this project would evaluate what demand curves may be needed for export constrained regions. The project deliverable would be Issue Discovery.

9.3. Project Justification

Establishing appropriate capacity pricing zones to incent needed reliability and recognize the value of capacity suppliers located in different zones could facilitate efficient retention and investment of capacity in regions that provide the highest value while minimizing consumer costs. This project also supports State of the Market Recommendation 2022-4.

10. Improve Duct-Firing Modeling

10.1. 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.

This project would seek to develop a design that better utilizes the capability of each plant segment. The following solutions are considered, such as: (1) testing the static registration response rates for each MW block and not the emergency rate for the entire output of the plant and (2) allowing reserves and regulation to be provided for just the baseload output of the plant.

10.2. Project Objective(s) & Anticipated Deliverable(s)

The 2024 project deliverable will be to complete the FRS. The project would build upon the 2022 MDCP to enable market enhancements of using static registration ramp rates, that are currently used for energy dispatch, for reserve scheduling and limiting participation before the duct-firing range for reserves and regulation that would be required for a combined-cycle generator to reflect its operating characteristics in the duct-burning range as well as the benefits of this functionality.

10.3. Project Justification

There are currently many combined cycle generators in the New York Control Area and the majority of these combined cycle generators have duct-firing capacity. These resources currently represent a large source of dispatchable resources. 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. Thus, the project would seek to evaluate the enhancements to the scheduling of a generator's capacity that would provide more flexibility to participate in the reserves and regulation markets. This project also supports State of the Market recommendation 2020-1.

11. Internal Controllable Lines

11.1. Problem / Opportunity

There are no internal controllable lines in operation within the NYCA. Prior to the 2023 Market Design Complete, 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.

11.2. Project Objective(s) & Anticipated Deliverable(s)

This project would build upon the 2023 Market Design Complete and develop the functional requirements that will be necessary to incorporate point-to-point internal controllable lines into NYISO markets. The 2024 milestone for this project will be FRS complete.

11.3. Project Justification

State initiatives such as Tier 4 Renewable Energy Credit (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.

12. LCR Optimizer Enhancements

12.1. Problem/Opportunity

In 2017 and 2018, the NYISO worked with stakeholders to design and implement a proposal to set Locational 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 Cost of New Entry (Net CONE) curves developed based upon the proxy technology underpinning the ICAP Demand Curve Reference Points. 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, called the Tan 45 methodology.

Since the new methodology has been implemented, concerns have been raised about the methodology and the resulting LCRs, about 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.

12.2. 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 LCR Optimizer Enhancements project. The milestone for 2024 is Deployment.

12.3. Project Justification

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

13. Long Island Reserve Constraint Pricing

13.1. Problem/Opportunity

The DAM and RTM schedule resources to satisfy reserve requirements, including specific requirements for 10-minute spinning reserves, 10-minute total reserves, and 30-minute total reserves on Long Island. However, reserve providers on Long Island are currently paid based on the clearing prices for the larger Southeastern New York (SENY) reserve region (Load Zones G-K).

13.2. Project Objective(s) & Anticipated Deliverable(s)

The project scope would include conducting a study to further evaluate the current compensation rules for Long Island reserve providers and whether revisions thereto may be reasonable and provide for improved efficiency in pricing outcomes and performance incentives for Long Island reserve providers. The 2024 project deliverable will be a Market Design Concept Proposed.

13.3. Project Justification

The project would seek to evaluate whether revisions to the current compensation rules for Long Island reserve providers may better reflect the value of reserve capability on Long Island. This project also supports State of the Market recommendation 2019-1.

14. Market Purchase Hub Transactions - Requested by LIPA

14.1. Problem / Opportunity

The ability for marketers to source energy from the wholesale market, i.e. buy at 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 Market Participants for other commercial purposes. The Netting of Bilaterals (Trading Hubs) initiative was first proposed in 2008, but was limited to balanced transactions. This initiative would expand the rules to allow market purchase hub transactions. To permit these unbalanced hub transactions, the project will need to address market design, collateral requirements, and energy imbalances. The project will consider mechanisms to allow the transfer of responsibility for these requirements to the ultimate load recipient.

14.2. 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 and scheduling system, a Market Participant will be able to establish unbalanced transactions to purchase power from the NYISO market for ultimate delivery to a load. The Market Participant will be able to establish separate transactions to sell the power it purchases from the trading hub to a portfolio of load service entities that may be at different electrical locations. The purpose is to allow service to load, not virtual transactions. This project will identify tariff, software, and procedural changes needed to bring about these changes. The project deliverable will be a Market Design Concept Proposed.

14.3. Project Justification

This market enhancement project can reduce costs to load by allowing financed prepayments of energy purchases, and will allow additional transactional flexibility for Market Participants.

15. Operating Reserves Performance

15.1. 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, create an inefficiency in the market, and has potential negative impacts to system reliability.

Based on North American Electric Reliability Corporation 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 NYISO's direction, 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.

15.2. Project Objective(s) & Anticipated Deliverable(s)

This project will seek to assess methods for evaluating the performance of an operating reserves provider and confirming its actual capabilities match its stated reserves capabilities. Additionally, the NYISO will work with stakeholders to develop a proposal for improving the market rules to

create financial consequences for resources that misstate operating reserve capability and/or perform poorly when called upon to convert operating reserves to energy. The deliverable for this effort in 2024 will be Market Design Complete, where NYISO will develop a market design, including a presentation and accompanying tariff modifications, to be presented for approval by Market Participants.

15.3. Project Justification

As the markets and grid are expected to rapidly evolve in the coming years and reliance on grid reliability services such as reserves increases, enhancements to the methods for both assessing the performance of operating reserves providers and ensuring that compensation appropriately 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 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.

16. Storage as Transmission

16.1. 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 resource that is capable of injecting and withdrawing to shift demand and/or manage transmission congestion and provide ancillary services. In some instances, storage used exclusively as a regulated transmission asset, instead of 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 eligible for cost of service rate recovery.

16.2. Project Objective(s) & Anticipated Deliverable(s)

This project will continue the work recommended in the Issue Discovery phase of this effort, which considered two components. The first component would allow a storage project to be considered and evaluated as a regulated solution (including options for cost recovery) in the

planning process, and assessed in the applicable interconnection process as necessary. The second component would consider methods for operating the storage as a transmission asset, taking multi-use and double payment issues into consideration. These components are related and may depend on one another.

The NYISO intends to leverage the recommendation(s) identified in the 2023 Storage as Transmission Report, which were based on discussions with stakeholders to more fully understand the issues and opportunities. The 2024 project deliverable for this project will be to develop a concept proposal and deliver a Market Design Concept Proposal to Market Participants.

16.3. 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.

17. SubAccounts for Reporting - Requested by NRG

17.1. Problem / Opportunity

Current NYISO accounting and settlement processes do not allow a Market Participant to partition billing components by the source or type of commercial activity. This creates certain difficulties for companies with diverse portfolio of businesses and market transactions. For example, under the current system, a company may have separate Market Participants for activity in generation, trading, and TCC activities.

The solution will be a modification of the NYISO's settlement and invoicing systems to allow the utilization of sub-accounts nested under a larger account to sub-divide or group all transactions for reporting purposes as best seen fit by the Market Participant. Sub-accounts may separate under a single Market Participant generation, virtual transaction, or load, and/or may separate by ptid (eg. generator or load).

17.2. Project Objective(s) & Anticipated Deliverable(s)

This project will modify invoice reporting in the NYISO settlement and invoicing systems to provide additional flexibility in a consolidated invoice query. The Market Participant will be able to establish sub-accounts to separate market transactions on the invoice.

Sub-acounts will allow more detailed invoicing while keeping the overall settlement under a larger account. This project will identify tariff, software, and procedural modifications needed to bring about these changes.

17.3. Project Justification

This NYISO settlement and invoicing systems enhancement project can reduce costs to Market Participants by reducing the need to maintain multiple Market Participants and will allow additional flexibility for Market Participants to compartmentalize larger accounts for better tracking of various market transactions. Other ISOs and RTOs have successfully implemented the utilization of sub-accounts to the benefit of their Market Participants (*e.g.*, PJM and ISO-NE).

18. Valuing Transmission Security

18.1. Problem / Opportunity

The ICAP Market incorporates transmission security limits (TSLs) in its process to establish LCRs. When a TSL binds during the process to establish LCRs, the market is indicating that the transmission limitations are driving the need for ICAP in that Locality rather than strictly resource adequacy needs. A resource can have different contributions to resource adequacy transmission security. Due to the potential differing reliability values, the ICAP Market may not provide efficient compensation when requirements are set by transmission limitations rather than strictly resource adequacy needs.

18.2. Project Objective(s) & Anticipated Deliverable(s)

This project will investigate the potential for inefficient compensation when ICAP Market requirements are set by transmission limitations. The project deliverable for 2024 will be Issue Discovery.

18.3. Project Justification

Transmission security margins are declining in southeast New York as noted by the 2022 Reliability Needs Assessment. The declining transmission security margins will make it more likely for TSLs to set the LCRs in southeast New York, as was the case in the New York City and G-J Localities for the 2023/2024 Capability Year. This project also supports State of the Market recommendation 2022-1.

19. Winter Reliability Capacity Enhancements

19.1. Problem / Opportunity

As identified in the NYISO's planning analyses, the New York State electric system is evolving from a summer peaking system to a winter peaking 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 Installed Capacity Market will continue to be effective in a winter peaking system.

19.2. Project Objective(s) & Anticipated Deliverable(s)

The Winter Reliability Capacity Enhancements project will review the need for potential changes to the ICAP Market structure ahead of moving to a winter peaking system. This review will include evaluating the ICAP Load Forecasts, the requirement setting process, the establishment of ICAP Demand Curves, and participation rules for ICAP Suppliers. The project deliverable for 2024 will be Issue Discovery.

19.3. Project Justification

The existing structure of the ICAP Market 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 Installed Capacity Market may be needed to ensure the market continues to efficiently provide for New York's resource adequacy needs. This project also supports State of the Market recommendation 2022-2.

Mandatory

20. CRIS Expiration Evaluation

20.1. Problem/Opportunity

As part of the 2022 and 2023 CRIS Expiration Evaluation project, stakeholders approved market rule changes to (1) allow deactivated facilities with unexpired CRIS to voluntarily relinquish their CRIS, (2) limit the extent to which facilities using only part of their CRIS can retain unused CRIS (i.e., partial CRIS expiration), and (3) provide additional CRIS transfer options. These changes aim to increase capacity deliverability headroom and potentially lower the cost of market entry to future facilities seeking to participate in the ICAP market. To effectuate the partial CRIS expiration rules, the NYISO must work towards developing the necessary software.

20.2. Project Objective(s) & Anticipated Deliverable(s)

Continuing the work from 2023, the objective of this project is to complete the development of the software requirements to implement the partial CRIS expiration rules.

The project deliverable for 2024 will be Development Complete.

20.3. Project Justification

This project seeks to automate the tracking of utilization of CRIS to maintain compliance with the Tariff.

21. Demand Curve Reset

21.1. Problem / Opportunity

Every four years, the NYISO, along with its stakeholder community, conducts a comprehensive review to determine the parameters used in establishing the ICAP Demand Curves. This process is referred to as the demand curve reset (DCR). As required by the tariff, the study includes an examination of potential peaking unit technologies and the financial parameters assumed in the construction and operation of that unit, along with an estimate of the projected profit earned in the Energy and Ancillary Service markets, to determine unit with the "lowest fixed costs and highest variable costs among all other units' technology that are economically viable" that serves in establishing values for each of the ICAP Demand Curves.

21.2. Project Objective(s) & Anticipated Deliverable(s)

This periodic review of the ICAP Demand Curves seeks to ensure that the capacity market continues to efficiently support reliability and send accurate, transparent price signals. The review is performed by engaging an independent consultant to lead the DCR process. In addition to providing recommendations for the parameters and assumptions used in establishing the ICAP

Demand Curves, the consultant's efforts include evaluating the shape, slope, and zero crossing point for each ICAP Demand Curve.

The 2024 project deliverables will be Study Complete, which will include reports by the independent DCR consultant and the NYISO providing recommendations addressing the ICAP Demand Curves for the 2025/2026 Capability Year, as well as the parameters and assumptions to be used in conducting the subsequent annual updates to derive the ICAP Demand Curves for the 2026/2027, 2027/2028, and 2028/2029 Capability Years.

The DCR process culminates in a filing on or before November 30, 2024 of the proposed curves for the first year of the reset period (i.e., the 2025/2026 Capability Year), along with the assumptions and methodology to be used to set demand curves for the subsequent three Capability Years of the reset period (i.e., the 2026/2027, 2027/2028 and 2028/2029 Capability Years).

21.3. Project Justification

The quadrennial DCR is mandated by the tariff. The DCR is a resource intensive process for both the NYISO and stakeholders that has a significant impact on the market as a whole.

22. FERC Order 2222 Compliance

22.1. Problem / Opportunity

FERC's issuance of Order No. 2222 presents additional scope to NYISO's previously-approved DER market design. In 2021 and 2022, the NYISO developed and filed market rules in compliance with Order No. 2222. Additional work is necessary to design market rules for heterogeneous Aggregations supplying Ancillary Services. In 2023, NYISO will complete the Market Design Concept for Order No. 2222 Compliance requirements. The additional Order No. 2222 scope requires the NYISO to develop a final Market Design to be in compliance with the order and support deployment of Order No. 2222 compliant software by 2026.

22.2. Project Objective(s) & Anticipated Deliverable(s)

Using the 2023 Market Design Concept Proposed as a basis, NYISO will first develop a Market Design Complete presentation and tariff to be presented for discussion with stakeholders. The MDC will support the design of ancillary service rules for heterogenous Aggregations of DER. NYISO will then develop a Functional Requirements Specification to reflect requirements of Order No. 2222 compliance that were previously not in scope for the 2023 deployment, including the new market rules from the Market Design Complete. The FRS will guide the remaining software development necessary to prepare NYISO systems for compliance with Order No. 2222. The 2024 deliverable for this project is FRS.

This effort may also include steps to address any additional Order No. 2222 compliance requirements established by a new FERC order.

22.3. Project Justification

This project will enable NYISO to review and incorporate 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 the Commission.

The 2024 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.

23. Integrating Champlain Hudson Power Express (CHPE)

23.1. 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 does not currently have an operating agreement for CHPE with HQ or the U.S. owner/operator of this HVDC line. Additionally, Tariff revisions may be required to incorporate the new device.

23.2. Project Objective(s) & Anticipated Deliverable(s)

The objective of this project is to develop an operating protocol with HQ and the U.S. owner/operator for the CHPE HVDC line, identify needed software enhancements, and to map out the timeline of changes needed to effectively integrate this facility into the market systems and reliability tools (EMS). The project deliverable for 2024 will be integration Study Complete and draft Operating Agreements.

23.3. 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 agreements are necessary to guide the HDVC line control actions that reduce the overall cost of congestion and maintain reliability.

24. Interconnection Process Enhancements

24.1. Problem / Opportunity

With the implementation of the CLCPA, New York State's power grid is rapidly transitioning with the incorporation of new intermittent renewable resources, ESRs, and DERs. It is estimated that an additional 26,000 MW of new resources will need to come online by 2030 in order to achieve the codified goals of the CLCPA. Most of these new resources will be required to go through the

NYISO's interconnection process. While the NYISO has taken important steps to improve the interconnection process in recent years, additional steps are needed to promote further efficiencies, develop study and other process enhancements, and to reform the overall structure of the interconnection study process. Such reforms are critical to ensuring the NYISO's interconnection process keeps pace with the dramatic influx of renewable resources proposing to interconnect in New York.

24.2. Project Objective(s) & Anticipated Deliverable(s)

For 2024, this continuing project will aim to file tariff revisions and implement interconnection process and Salesforce portal changes according to the Market Design that is being completed in 2023.

24.3. Project Justification

In addition to the evolving climate policies in in New York, FERC has also recognized the need for reforms to interconnection queues generally and issued a Notice of Proposed Rulemaking in 2022 (Interconnection NOPR). The Interconnection NOPR proposes significant revisions to pro forma Large Generator Interconnection Procedures. As of April 19, 2023, FERC has not yet issued a final order; however, upon such an order, the NYISO and other ISOs/RTOs will likely have a compliance directive to make significant interconnection-related tariff revisions. While recent interconnection-related process improvements and tariff revisions from 2019-2022 have addressed some of the issues of concern in the Interconnection NOPR, the NYISO is committed to pursuing additional reforms with stakeholder collaboration in advance of a FERC order on the Interconnection NOPR. 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 to balance the large influx of new resources and maintain the reliability of the electric grid.

25. Modeling Improvements for Capacity Accreditation

25.1. Problem / Opportunity

As part of the Improving Capacity Accreditation project discussed in 2021 and 2022, limitations in the NYISO's current resource adequacy analysis software were identified on modeling and accounting for attributes, such as correlated fuel unavailability for non-renewable resources or resources with long start up notifications. Resolving these limitations would enable more accurate calculations of the Resource Adequacy requirements needed to maintain reliability as well as the value of resources in meeting Resource Adequacy requirements.

25.2. Project Objective(s) & Anticipated Deliverable(s)

The 2024 effort will work to deploy the enhancements approved as part of the 2023 Modeling Improvements for Capacity Accreditation project to the resource adequacy software and, if necessary, internal reports.

25.3. Project Justification

This project is a continuation of the 2023 Modeling Improvements for Capacity Accreditation project and will facilitate both the establishment of ICAP Market Reserve Margins reflecting reliability risks not currently modeled by the resource adequacy software, as well as improved Capacity Accreditation Factors for resources with these operating characteristics. This project also supports State of the Market recommendation 2021-4.

Continuing

26. Balancing Intermittency

26.1. 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 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 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.

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.

26.2. Project Objective(s) & Anticipated Deliverable(s)

The 2023 effort reviewed the need for additional market products, appropriateness of existing operating reserve demand curves, re-evaluated system regulation requirements, and proposed market concepts with recommended next steps as needed. The 2024 project will more fully develop the recommended market concepts to meet a deliverable of Market Design Complete.

26.3. 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. This project also supports State of the Market recommendations 2021-1 and further evaluating 2017-2.

27. Emissions Transparency - Requested by Stakeholders

27.1. Problem/Opportunity

The emissions rates associated with the production of electricity in New York vary widely from hour to hour and location to location, but emissions rates are not transparent to the market. This project envisions that the NYISO would publish implied marginal emissions rates concurrent with the release of Locational Based Marginal Pricing (LBMP) results. Doing so would inform end users, load-serving entities, generators, energy service companies, marketers, aggregators, and other Market Participants seeking to optimize their use, production, storage, or purchase of electricity based on emissions. In addition, providing such data to the market would enable consumers to evaluate the emissions associated with the energy they consume.

27.2. Project Objective(s) and Anticipated Deliverable(s)

This project will deploy a methodology to estimate real-time implied emissions rates for each load zone. The NYISO would aim to begin publishing emissions rates by 2025. They would be posted concurrently with LBMP results on its website.

Implied marginal emissions rates would be determined using a methodology comparable to LBMPc (see LBMPc Slides).

27.3. Project Justification

Publishing implied marginal emissions rates adds transparency of bulk power system related emissions, as requested by stakeholders.

28. Evolving Financial Transactions Capabilities – Bilateral Transactions

28.1. Problem / Opportunity

Current NYISO software capabilities facilitate internal bilateral transactions. While withdrawal-eligible generators, such as ESRs, can currently be the source in bilateral contracts, however, they cannot currently be a sink.

To the extent there is increasing demand to use bilateral transactions to serve load by contracting output from specific resources, an opportunity exists for NYISO to enhance its bilateral transaction functionality to meet this demand.

28.2. Project Objective(s) & Anticipated Deliverable(s)

This project will enhance the existing financial bilateral transaction functionality by creating the opportunity for bilateral contracts in which a withdrawal-eligible generators could be a sink. The 2024 project deliverable for this project will be Deployment based on the 2023 Software Design Specifications.

28.3. Project Justification

The ability for withdrawal-eligible generators to procure charging energy from specific generators, particularly renewable generators, would enhance the ability to provide customers with energy that is sourced from certain resources. Additionally, New York State has adopted aggressive energy storage goals (6,000 MW by 2030) as a step towards achieving the requirements of the CLCPA. The software revisions that would be pursued under this project would enable developers of withdrawal-eligible generators to represent to potential customers that the energy stored in their facilities is sourced from renewable and emission-free generators. This is especially important in Zone J, where much of the generation operates using fossil fuels. Allowing developers to enter bilateral contracts to charge their energy storage projects will facilitate financing and development, as it will allow withdrawal-eligible generator operators to meet the needs of customers who prefer acquiring emission-free energy. Similarly, owners of renewable and emission-free generators may want the ability to store their energy in downstate energy storage facilities during periods of low-demand for use during higher-demand periods.

29. Hybrid Aggregation Model and Co-located Steam and Storage

29.1. 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). In 2023 the NYISO completed the Software Design Specifications document. In 2024, the NYISO must now work towards developing and implementing the necessary software changes.

The market rules NYISO implemented in December 2021 for Co-Located Storage Resources (CSRs) limit eligibility to an Energy Storage Resource (ESR) and a wind or solar Intermittent Power Resource ("IPRs"). The proposed enhancements the NYISO developed in 2022 are described above. Adding steam turbines as an eligible resource that can co-locate with an ESR for eligibility as CSRs would continue what the NYISO has described as its “ambitious effort to integrate advanced energy technologies into the wholesale markets it administers.” [1] Expanding the CSR-

[1] FERC Docket No. ER21-1001, Jan. 29, 2021.

eligible resource types to include steam turbines would provide an opportunity for the development of additional CSRs, which will complement efforts to meet the Climate Leadership and Community Protection Act (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.

29.2. Project Objective(s) & Anticipated Deliverable(s)

This project is a continuation of the 2023 Hybrid Aggregation Model project. The 2024 project will deploy the CSR Enhancements described above and begin development of the HSR participation model functionality, which is targeted for deployment in 2025.

Additionally, this project will build upon the pending amendments to the CSR model by adding steam turbine generators to the technologies eligible for pairing with an ESR. Specifically, the project will identify tariff and, if necessary, market design changes needed to permit CSRs composed of steam-turbines and ESRs to participate in the NYISO Energy, Ancillary, and Capacity Markets. NYISO will review the proposed tariff and, if necessary, market rule updates with stakeholders, seek stakeholder approval and if approved, include the updates with the CSR market rule updates that stakeholders approved in 2022 when filing with FERC.

29.3. Project Justification

State and federal initiatives such as 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 will broaden the range of resources that can use its existing CSR participation model. The 2024 project deliverable will continue the work necessary to implement the new participation model.

In addition to the benefits discussed in Section 1.1 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." [2]

[2] *Id.*