
**Please score the projects that your organization believes are the most important for the NYISO to pursue in 2023. All Survey responses and comments will be made public and posted with Budget and Priorities Working Group materials after the survey due date of June 17, 2022.**

- **You have a total of 100 points to allocate to as many projects as you like. Please only use POSITIVE whole numbers and no decimals. Negative numbers are not accepted.**
- **Click on the project title to display a description. To minimize the description, click on the project title again.**
- **There is an area under each project to add any comments pertaining to that project.**
- **You may share your link with your colleagues to work collaboratively on scoring prior to submitting your scores.**
- **Any questions, please reach out to Brian Hurysz at bhurysz@nyiso.com or 518-461-6405.**

**The organization you are completing this survey for is:**

## 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-Quebec. This will include evaluating the benefits of a transaction vs. generator model in greater detail.

0

The 2023 project deliverable will be Market Design Concept Proposed.

### 1.3 Project Justification

This market design is expected improve price convergence between RTC and RTD, improve market efficiency by increasing the amount of available resources for dealing with real-time system changes and/or events. More frequent interchange 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

requirements for renewable generation and other clean energy resources to replace the use of fossil fuel generation.

## 2. Advancing NYISO Transparency

### 2.1 Problem / Opportunity

Posting more information would aid in the transparency of wholesale market operations and market participation. The additional data requested below can be posted publicly or protected through CEII protocols, depending on the information classification.

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

The following additional data should be posted by the NYISO.

1. State estimator modal and data including:
   a. Topology
   b. Branch characteristics
   c. Branch flows
2. Transmission line rating for all transmission lines/facilities monitored, including when they change and why
3. Day-Ahead Market (DAM) and RTM contingencies. The NYISO has a separate list of contingencies for DAM/RTM relative to what the NYISO models in the TCC auctions, and the NYISO only publishes the TCC contingencies

The project will review the information requested to determine its classification (public, CEII, confidential, etc.), develop software to automate extracting the data from the appropriate system, including working with vendors that support NYISO systems for modifications, and developing software to periodically post data in a manner that is designed to protect CEII and other Confidential Information.

The 2023 project deliverable will be Deployment.

0

### 2.3 Project Justification

Open, transparent, and competitive ISO markets are essential to facilitate efficient solutions and provide benefits to consumers. The Federal Energy Regulatory Commission (FERC) has opined many times on the benefits that transparent and competitive markets deliver, for example:

- Commission's conclusions in AD14-14 that transparency plays a critical role in improving price formation
- Without sufficient transparency, market participants may not have the tools necessary to critically analyze and discuss problems and identify potential solutions to market inefficiencies.
- Order No. 704 conclusion: "[Such] policies [i.e., the Commission's market-oriented policies for the wholesale natural gas industries] require that interested persons have broad confidence that reported market prices accurately reflect the interplay of legitimate market forces. Without confidence in the basic processes of price formation, market participants cannot have faith in the value of their transactions, the public cannot believe that the prices they see are fair, and it is more difficult for the Commission to ensure that jurisdictional prices are ' just and reasonable.'"

## 3. Balancing Intermittency (SOM)

### 3.1 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, Energy Storage Resources (ESR), and Distributed Energy Resources (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 will identify 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. This project continues that work and supports State of the Market recommendations 2021-1.

0

**3.2 Project Objective(s) & Anticipated 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 and will determine if there are any changes or additions needed to maintain reliability. The 2023 project deliverable will be Market Design Concept Proposed.

### 3.3 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.

## 4. Constraint Specific Transmission Shortage Pricing (SOM)

### 4.1 Problem / Opportunity

Transmission facility and line ratings limit the amount of energy that can flow from one location to the next on the bulk electric

that can flow from one location to the next on the bulk electric system. As transmission constraints arise, the NYISO's energy market software prices the quantity of energy that would be necessary to alleviate shortages. The existing transmission constraint pricing logic applies a single graduated shortage pricing mechanism to all facilities assigned a non-zero constraint reliability margin (CRM) value. Under the current pricing logic, some transmission constraints are relaxed without being resolved by the graduated mechanism.

The NYISO and its stakeholders completed a Market Design in 2021 to utilize a revised and more graduated transmission demand curve (TDC) mechanism that better accounts for the various non-zero CRM values assigned to facilities. Under this proposed construct, TDC prices will increase with the severity of transmission overloads. The design is intended to reduce occurrences of constraint relaxation by seeking to resolve constraints for internal facilities using a graduated TDC mechanism that includes pricing values for shortages that exceed applicable CRM values. In 2022, the NYISO, in collaboration with stakeholders developed techniques to address multiple active transmission constraints (MATC) for the same monitored element, in-series monitored elements, and parallel monitored elements.

0

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

Subject to acceptance by the Federal Energy Regulatory Commission (FERC), in 2023, the NYISO will deploy enhancements to the TDC mechanism approved in the 2021 Market Design Complete as further enhanced to address the MATC issue. The 2023 project deliverable will be Deploy.

**4.3 Project Justification**

The transmission constraint pricing logic enables the NYISO's market software to re-dispatch resources efficiently in the short term to alleviate constraints and incentivizes long-term investment in locations where resources could provide the greatest benefits. This project also supports State of the Market recommendation

2015-17.

## 5. Coordinated Grid Planning Process (CGPP) Support - Requested by New York TOs

### 5.1 Problem / Opportunity

The New York Transmission Owners (TOs) are currently developing a Local Coordinated Grid Planning Process (CGPP) [see Feb 9 ESPWG Presentation on CGPP] to comply with a Public Service Commission (PSC) directive to develop an end-to-end planning process to identify and approval local transmission needed to achieve the state's CLCPA goals. A major part of the CGPP development needs to address the alignment between the local utilities' planning process and the regional planning processes completed by the NYISO, including but not limited to the utilization of databases developed by the NYISO 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 complete studies to support the CGPP and align it with bulk system studies.

### 5.2 Project 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 BPTF assessments of TO's proposed Local Transmission Solutions

0

As such a review of the current processes and deliverables is needed to identify potentially beneficial interactions, evaluate, and establish changes to existing or introduce new methods and procedures, and assess resourcing needs as compared to what exists today. The 2023 milestone will be Issue Discovery.

**5.3 Project Justification**

The PSC has directed the NYTOs 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 for bulk transmission identification and approval needed to achieve the same (e.g., the Public Policy Transmission Needs Process). It is imperative for the sake of consistency and transparency that the two planning processes are coordinated with regards to initiating assumptions used to develop scenarios guiding recommendations for approval of local transmission projects. The CGPP is meant to be complementary to the NYISO's bulk planning processes. Not having alignment between the two processes will risk the identification and approval of projects on the bulk and local level that may be incompatible with one another, reducing or negating the anticipated benefits of

both and ultimately harming customers, developers, and other Market Participants.

## 6. CRIS Expiration Evaluation

### 6.1 Problem / Opportunity

As part of the Class Year Redesign project, the NYISO identified proposals providing for more stringent Capacity Resource Interconnection Service (CRIS) expiration rules. Some of those proposals were implemented as part of that initiative, while others were deferred for later consideration. Although the new CRIS rules are expected to prevent retention of CRIS by certain facilities not participating in the Installed Capacity (ICAP) market and increase deliverability "headroom," the rules, as accepted by FERC and implemented by the NYISO, do not significantly address circumstances under which facilities can retain their CRIS beyond the effective date of their retirement for up to three years and retain unused CRIS with minimal participation in the ICAP market under Section 25.9.3 of the NYISO Open Access Transmission Tariff (OATT).

The current tariff provisions may allow facilities to retain CRIS that, if terminated, could eliminate the need for deliverability upgrades or require less costly deliverability upgrades, thereby facilitating new entry. For example, the existing rules allow a facility to retain its full CRIS by offering as little as 1 MW into the capacity market. Additionally, a facility is able to retain all CRIS obtained for up to three years after it retires, rather than immediately making its unused CRIS available to other new entrants.

Modifying the current tariff language with respect to CRIS transfers may allow for more flexibility as more public policy resources come on to the system. Modifications could include exploring

0

options to include same-location transfers to better facilitate these new entrants.

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

Continuing the work from the 2022, the objective of this project is to develop software requirements to implement the CRIS Expiration rules as well as the rules surrounding CRIS Transfers. The project deliverable for 2023 will be Functional Requirements.

### 6.3 Project Justification

This project will seek to further enhance and provide additional clarification to the CRIS expiration rules. Further enhancements to the CRIS expiration rules will more appropriately address the retention of CRIS by retired facilities and facilities no longer fully participating in the ICAP market.

Finally, this project will seek to increase the capacity deliverability headroom and potentially lower the cost of market entry to future facilities seeking to participate in the ICAP market.

## 7. Dispatchability and Fast Response Product - Requested by NYPA

### 7.1 Problem / Opportunity

The purpose of this project is to study the need for market products to address system needs given the changing resource mix, electrification of the grid, and evolving load profiles as we transform New York's electric grid as mandated by the Climate Leadership and Community Protection Act (CLCPA). Given the mandate for the State to achieve a 70% renewable energy supply mix by 2030; and a 100% clean electricity supply mix by 2040 the available technologies to meet these goals are primarily non-dispatchable, weather-dependent, intermittent resources,

challenging the reliable operation of the grid with their inherent variability and uncertainty of output. This project will help the NYISO and stakeholders' study, identify and implement market products necessary to sustain and incent generator attributes necessary to maintain reliability while promoting the achievement of reaching the State's policy goals codified in the CLCPA.

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

This project will be to perform a study to assess the need for new products to provide economic incentives to sustain or attract generation attributes including but not limited to: generator dispatchability; ramping reserves; a fast (near-immediate) ramping product; a premium fast ramping product for generators capable of large (>500MW) inertial response capable of addressing natural events, e.g. wind-lull and cloud events, fast and slow responding reserves; and, other products as identified in the study to provide operational capabilities, safety margins and overall system reliability and appropriate compensation mechanisms that appropriately value such attributes. If demonstrated to be valuable, a market product(s) would be promoted as the next phase of this project for implementation.

**7.3 Project Justification**

With the State's codified CLCPA goals, intermittent resources will soon be the pre-eminent generating resource powering New York's electric grid. New York's power grid was developed with large central-station fossil generation where dispatchability, quick ramping, frequency regulation, long-duration output, and near-immediate inertial response and other capabilities were available to maintain reliability and in quick response to a signal from the TO/NYISO Control Room. As the grid transforms into becoming the cleaner and greener energy form of energy New Yorkers value, the high penetrations of non-dispatchable weather-dependent resources raise the issue of exactly how to balance intermittency on the system.

Numerous recent studies conducted by the NYISO and others

Numerous recent studies conducted by the NYISO and others conclude that we will need to replace the fossil generation mandated by public policy to retire. Currently these studies state that this fossil generation will be replaced in large part by dispatchable emissions-free resources (DEFRs). What technology will be employed by these new DEFRs, and therefore what generator attributes they will have that are capable of addressing high levels of intermittency is not known. This means that in the near-term it is likely that the NYISO will increasingly rely upon the existing DEFRs on the system, specifically NYPA's large hydro resources, to balance increasing intermittency on the system to maintain reliability. The only alternative to NYPA's large hydro resources for large flexible emissions-free power-on-demand-are the upstate nuclear units, which are not designed to ramp up or down – and in fact have very little variability in their operational output in order to avoid expensive damage to their facilities.

Current NYISO market products, reimbursement mechanisms and market rules do not fully consider the excessive wear and tear (which significantly reduces unit life-expectancy) that these large expensive units already endure, and will likely increase. The current practice to go on indefinitely. NYPA's large hydro resources, which are relied upon by the NYISO operationally, and consumers for its DEFR status and low-cost energy must be valued appropriately for their essential electrical and economic attributes.

0

The NYISO has proposed addressing the need to balance intermittency by developing Operating Reserve products. This study would distinguish the important differences between operating reserves, which enables the ISO to respond to unanticipated outages, and ramping reserves, which serve a separate and distinct purpose of managing generation variability and uncertainty in net load. This distinction is drawn in the NYISO Grid in Transition (GIT)report, which explained that the quantity of a ramping product that is needed would "depend[ ] on the magnitude of the potential variations in intermittent resource output … rather than on the size of potential generation or

transmission contingencies.

As an example of the need to expand the NYISOs focus beyond operating reserve products, in a recent Brattle paper[1] Dr's Spee and Newell suggest setting demand curves for ramping capability "to account for the declining probability of lost load due to lack of ramping at each level of reserve, times the value of lost load," which is similar to the NYISO MMU's proposal for determining the maximum price the ISO should be willing to pay for 30-minute reserve. In contrast, the GIT Report asserts, "The energy market cost of resources providing ramp capability would ideally be taken into account in scheduling additional ramp capability, as resources scheduled to provide additional ramp capability would be dispatched for energy much more often than spinning reserves will be activated following contingencies." Taken together these conclusions highlight the fact that the price at which energy is offered is much more important for a provider of ramping reserve than for a provider of operating reserve underscores the desirability of separating the need for operating reserve from the need for ramping capability.

This project seeks to perform a study to assess the need for new products to provide economic incentives to sustain or attract generation attributes including but not limited to: generator dispatchability; ramping reserves; a fast (near-immediate) ramping product; a premium fast ramping product for generators capable of large (>500MW) inertial response capable of addressing natural events, e.g. wind-lull and cloud events, fast and slow responding reserves; and, other products as identified in the study to provide operational capabilities, safety margins and overall system reliability and appropriate compensation mechanisms that appropriately value such attributes. If demonstrated to be valuable, a market product(s) would be promoted as the next phase of this project for implementation.

[1] Dr. Kathleen Spees and Dr. Samuel Newell, Principals of the Brattle Group,

"Modernizing Electricity Market Design Efficiently Managing Net Load Variability in High-Renewable Systems: Designing Ramping Products to Attract and Leverage Flexible Resources" submitted by NYSERDA as an attachment to their "Post-Technical Conference Comments on Modernizing Electricity Market Design, held by the Federal Energy Regulatory Commission ( FERC) (Docket No. AD21-10-000).

## 8. Dynamic Reserves (SOM)

### 8.1 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 changing 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 NYC, the NYISO is permitted to operate transmission facilities above LTE, using generating capacity not otherwise scheduled to provide energy

and phase angle regulator actions to quickly secure the transmission facilities, post-contingency. This offers opportunities to reduce production costs by relaxing the transmission limits of facilities that feed New York City load pockets. Currently, operating reserve providers in these NYC 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 and/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.

In 2018, the NYISO's Constraint Specific Transmission Demand Curves study concluded that certain enhancements to the current logic would be beneficial and should be further explored with stakeholders. Based on this study, it is expected that the NYISO and its stakeholders will complete a Market Design in 2021 to utilize a revised and more graduated transmission demand curve mechanism that better accounts for the various non-zero CRM values assigned to facilities. Under this new construct, transmission demand curve prices will increase with the severity of transmission overloads. The design reduces occurrences of constraint relaxation by instead seeking to resolve constraints for internal facilities through use of a graduated transmission demand curve mechanism that includes pricing values for shortages that exceed applicable CRM values.

0

applicable CRM values.

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

The market design will seek to leverage the recommendations from the study conducted in 2021 and the 2022 Market Design Concept Proposed and develop potential changes to the NYISO's market software and market rules to facilitate more efficient scheduling of operating reserves based on system conditions. The project deliverable for this effort in 2023 will be Market Design Complete.

### 8.3 Project Justification

As the markets and grid are expected to rapidly evolve in the coming years, the modeling of reserves will need to also 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 procurement of the reserves adequately reflect the conditions of the system. Specifically, the reserve modeling should dynamically account for the single largest source contingency or 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 more constrained region post-contingency. Dynamic reserve procurements present opportunities to enhance grid resilience, incentivize resource flexibility, lower total production costs, and increase efficiency in meeting applicable reserve requirements.

This project also considers an additional recommendation made by the MMU in past State of the Market Reports. The MMU has recommended that the NYISO "[c]onsider rules for efficient pricing and settlement when operating reserve providers provide

congestion relief [Recommendation 2016-1]."

## 9. Emissions Transparency (Requested by Stakeholders)

### 9.1 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 specific emissions rates are not transparent to the market. This project envisions that the NYISO would publish marginal and average 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 and could inform decision-making related to implementation of State policies and environmental initiatives.

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

This project will deliver Functional Requirements including a methodology to determine real-time emissions rates for each transmission node and load zone.

The NYISO would aim to begin publishing emissions rates by 2024. Published rates would include indicative day-ahead and real-time emissions rates (both average and marginal) for each transmission node and load zone. They would be posted as an additional column when the NYISO posts LBMP results on its website.

0

Marginal emissions rates would be determined based on the

characteristics and operations of each marginal generator in a manner similar to that used by PJM (see PJM Primer) or using a methodology comparable to LBMPc (see LBMPc Slides).

Average emissions rates for each transmission node and load zone would be determined using a methodology to be developed and documented (e.g., in a manual) by the NYISO in consultation with its stakeholders.

### 9.3 Project Justification & Anticipated Deliverable(s)

The project could provide several benefits: 1) it would support use of load management and storage operations to reduce emissions, 2) it would enhance the market for sustainable electricity products, and 3) it would provide data that could be used to support planning and implementation of State policies and environmental initiatives. The project would enhance the NYISO's reputation as a leader in market design, would provide more effective planning in the context of state and local environmental goals, and would facilitate the development of more robust markets for green energy products. Without a transparent and reliable flow of detailed information to the marketplace, decisions intended to reduce greenhouse gas emissions and enhance environmental quality may not be made in the most efficient manner.

## 10. Engaging the Demand Side

### 10.1 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 is 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. The NYISO also

currently offers Load Serving Entities the opportunity to offer Price-Responsive Load in the Day-Ahead Market (DAM). Historically, Price-Responsive Load Bids have constituted a few percent of total bid Load by volume.

As part of the NYISO's mission to improve market efficiencies, the NYISO believes there may be opportunities to enhance market signals for Load Serving Entities to modulate Load in response to price on the buyer side of the equation. Load flexibility is at the intersection of the retail and wholesale markets. While demand response is a reduction of planned or expected consumption, Load flexibility includes other actions such as shifting or modulating demand in response to price signals. Robust participation of flexible, price–responsive Load in both DAM and Real-Time Markets (RTM) may provide another tool to balance the NYCA system, address resource intermittency, and support ancillary service providers.

0

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

The NYISO will work with both internal and external stakeholders to identify opportunities ripe for enhancing Load participation in the wholesale markets. The 2023 project deliverable for this project will be Issue Discovery.

**10.3 Project Justification**

Further engaging Load participation could allow for more robust price formation that reflects customers' willingness to pay, consistent with the marginal benefit of consuming energy. Engaged end-use customers that understand their Load consumption patterns and have access to incentivized price signals are enabled to modify behaviors to take advantage of enhanced customer rate design. Once established, end-use customer consumption patterns can allow Load Serving Entities to bid price sensitivity in the wholesale markets. Incenting Loads to modify behavior and bid responsively would benefit the NYISO's market design and operations and aligns with New York State

policy goals to encourage end-use customer engagement in their energy usage through Reforming the Energy Vision. Opportunities identified in this effort can then be further evaluated to determine their merit.

## 11. Enhancing Fuel and Energy Security

### 11.1 Problem / Opportunity

The 2023 Enhancing Fuel and Energy Security project would refresh the assumptions developed in the 2019 Enhancing Fuel and Energy Security project in recognition of the ongoing transformation of the bulk power system to assess emerging operational and grid reliability concerns. The NYISO also appreciates stakeholder concerns related to a wide range of potential grid resilience risks, including extreme weather scenarios and climate change impacts. Future changes to New York's fuel supply mix as well as the expected increases in winter peak loads due to electrification may challenge the ability to meet electric system demands under stressed system conditions, such as a prolonged cold weather event and/or natural gas supply/transportation disruptions. NERC, NPCC and NYSRC are all currently considering new mandatory standards in this area. The 2023 Enhancing Fuel and Energy Security project should examine potential new reliability standards and the changing nature of the supply mix and load patterns and quantify the amount of resources that will be required based on a wide array of study assumptions. Depending on the results of the study, the NYISO would, in collaboration with stakeholder, assess the subsequent development of potential operational and/or capacity and energy market enhancements to achieve recommended improvements in grid resilience as related to fuel and energy security.

0

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

The 2023 project deliverable for this project will be Study Complete.

### 11.3 Project Justification

Future changes to New York's resource mix as well as the expected increases in winter peak loads due to electrification may challenge the ability to meet electric system demands under stressed system conditions, such as a prolonged cold weather event and/or natural gas supply/transportation disruptions. Additionally, NERC, NPCC and NYSRC are all currently considering new mandatory standards in this area.

## 12. Evolving Financial Transaction Capabilities: Bilateral Transactions (Requested by NY-Best and Bayonne Energy Center)

### 12.1 Problem / Opportunity

Current NYISO software capabilities facilitate internal bilateral transactions, however the range of source and sink locations do not encompass the full range of use cases. For example, while ESRs can currently be the source in bilateral contracts, 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.

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

This project will enhance bilateral transaction functionality by increasing the range of bilateral contracting opportunities (i.e., source and sink locations), including creating the opportunity for bilateral contracts in which an ESR could be a sink. This project would assess and commence designing the software changes

necessary to achieve this objective. The 2023 project deliverable for this project will be Software Design.

0

**12.3 Project Justification**

The ability for an ESR 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 (6000 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 ESRs 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 into bilateral contracts to charge their energy storage projects will facilitate financing and development, as it will allow ESR 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.

## 13. Hybrid Aggregation Model

### 13.1 Problem / Opportunity

The 2022 Hybrid Aggregation Model project created the market rules and Functional Requirements for an ESR and another Generator to be co-located at a single point of interconnection and share the same point identifier (PTID). To effectuate these rules, the NYISO must work towards developing and implementing the necessary software changes.

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

This project is a continuation of the 2022 Hybrid Aggregation Model project. The 2023 project deliverable will be Software Design based on the 2022 Functional Requirements.

### 13.3 Project Justification

0

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 Co-Located Storage (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 2023 project deliverable will continue the work necessary to implement the new participation model.

## 14. Improve Duct-Firing Modeling (SOM)

### 14.1 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 plants 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. Simpler alternatives may also be considered, such as: (1) testing response rates for each MW block and not the emergency rate for the entire output of the plant or (2) allowing reserves and regulation to be provided for just the baseload output of the plant.

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

The 2023 project deliverable will be Market Design Complete. The project would propose the market enhancements 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.

0

### 14.3 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 2021-1.

## 15. Interconnection Process Enhancements - Requested by ACE-NY

### 15.1 Problem / Opportunity

With the advent of the CLCPA, New York State's power grid is rapidly transitioning with the incorporation of new intermittent renewable resources, energy storage resources, and distributed energy resources. 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. All of these new resources will be required to go through the NYISO's interconnection process. While the NYISO has taken important steps in ensuring the competitive markets and reliability are maintained through initiatives like Grid in Transition, additional steps are needed to be taken to develop new enhancements and reforms to the interconnection process to ensure that is remains sustainable and reflects the unique characteristics of the resources that will be interconnecting.

The NYISO's Interconnection process was last enhanced and reformed back in 2019 with the Class Year Redesign, and a 2022 project will seek to better coordinate the interconnection process with expected transmission expansion. Additionally, FERC has initiated an Advance Notice of Proposed Rulemaking with regards to Transmission Planning and Interconnection. It is expected that FERC will issue a final Notice of Proposed Rulemaking (NOPR) by the end of 2022 resulting in a compliance directive for the

RTO/ISOs. While these initiatives have and are expected to result in increased efficiencies, there are additional opportunities for reforms and enhancements that build upon these initiatives (i.e., 2019 Class-year redesign, 2022 project, and expected FERC NOPR).

Due to a large influx of new projects to the Interconnection Queue, the complete study process has become overly lengthy, with high numbers of withdrawals from the queue. Longer timelines create queue churn, wherein potential generators will submit a large number of projects in the hopes of seeing 2 or 3 make it through the process. This leads to longer study timelines. And a feedback loop is created.

As the volume of new resources seeking to interconnect to the system rapidly grows, it is paramount that the NYISO seeks to continue to enhance the interconnection process to be the most efficient and sustainable possible.

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

The project will first study and identify opportunities for improvement to the interconnection process by working with key stakeholders (i.e., Interconnecting Developers, Transmission Owners, and NYISO Planning department). As part of this initial phase of the project, it will be important to identify aspects that are included as part of the expected FERC NOPR. This will help the project avoid any duplicative work and ensure it is operating in coordination with other interconnection initiatives. These identified opportunities will then be prioritized to create a plan that identifies a timeline for their implementation. The project will culminate in a final proposal for the enhancement of the interconnection process.

The areas identified for improvement would range from simple process improvements, to updating study procedures, to tariff modifications.

Areas to be addressed should include but not be limited to the

following:

0

- Evaluate current COD requirements to accommodate longer development timeframes (e.g., Off-shore wind)
- Stakeholder Communications
- Portal Improvement
- Improved response time to inquiries
- Study process improvements
- Determine how to speed up SRIS process
- Determine the need for SRIS Cluster analysis
- Improve cost estimate accuracy
- Determine how Developers and NYISO can use consultants to expedite SRIS process
- Standardize agreements and milestone templates across all TOs
- Improve facilitation of LGIA process

The proposed enhancements would result in an interconnection process that is sustainable, efficient, and designed to support the state of New York's energy transition goals. The 2023 project milestone would be a Market Design Complete.

### 15.3 Project Justification

Enhancements to the NYISO Interconnection process result in efficiencies that reduce time, decrease uncertainty, and reduce the risk that the interconnection process imposes upon new resources. This risk creates uncertainty for entrants, which is most often reflected in costs, and a need to overcompensate with additional projects. By reducing this risk, a positive feedback loop could be created, fewer interconnection requests would be required, timelines would shrink, and the process would become more efficient. Additionally, the NYISO is facing an unprecedented challenge associated with the drastic increase in workload due to the volume of projects needing to interconnect while also experiencing staffing challenges. Therefore, any increase in efficiency would support the NYISO in their essential function of the reliable interconnection of new resources.

## 16. LCR Optimizer Enhancements

### 16.1 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, multiple 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.

0

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

The objective of this project is to examine the process used today to optimize the setting of Location Capacity Requirements and develop any necessary modifications and enhancements to the process. The milestone for 2023 is a Market Design Complete.

### 16.3 Project Justification

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

## 17. M2M West PARs

### 17.1 Problem / Opportunity

Market to Market (M2M) provides the capability for the NYISO to request assistance from a neighbor or provide assistance to a neighbor through re-dispatch and Phase Angle Regulator (PAR) control actions to solve constraints at a lower cost, thereby reducing the overall cost of congestion. PARs are scheduled to be installed on the East Towanda -Hillside line and the Dunkirk-South Ripley line. With these planned installations the NYISO seeks to update the OATT and other applicable documentation/procedures and make software updates to allow for future PARs to be included in the M2M PAR coordination program.

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

0

The objective of this project is to identify and capture the necessary software and tariff updates required to include new PARs that straddle the NY-PJM border. The 2023 project deliverable will be Market Design Concept Proposed. Implementation is expected to be completed in 2024.

### 17.3 Project Justification

With the addition of PARs at the NY-PJM seam, it is important to continue the coordination of PAR control actions across all the border PARs to reduce the overall cost of congestion.

## 18. Meter Data Management Modernization

### 18.1 Problem / Opportunity

The DER project provided the opportunity to modernize the upload and download of generator and tie meter data with the introduction of an API, which is a computer-to-computer communication protocol. This project seeks to continue with this modernization and include additional API functionality for upload and download for the remaining data in SDX. This will allow for the eventual retirement of the existing SDX application.

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

The 2023 project deliverable will be Deploy.

This 2023 effort will include the gathering of functional requirements, detailed requirements, software design, development, testing, and production deployment of API functionality to replace the current file upload and download processing currently utilized through the SDX application.

0

This project will also include discussions with stakeholders regarding the timing of the sunsetting and eventual retirement of the SDX application.

### 18.3 Project Justification

This is a continuation of the modernization effort to introduce significant efficiencies by retiring older technology.

## 19. Mitigation Threshold Review

### 19.1 Problem / Opportunity

This project intends to perform a comprehensive review of all mitigation behavioral thresholds, including solicitation of feedback from stakeholders. This project will review all thresholds used for

from stakeholders. This project will review all thresholds used for conduct and impact for mitigation, including the current Load Pocket Threshold (LPT) process.

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

The objective of this project would be to evaluate all current mitigation thresholds and to improve upon the LPT methodology based on observations from the last several years and to determine if there is a need to modify any of the other current existing mitigation thresholds.

This project will consider the following improvements:

1. Modifying the 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 strong summer peaks in constrained hours, but fewer such constraints over the rest of the year.

2. Revising the measure of "lowest allowable LPT." That measure uses 12-month averaging of load-weighted and fuel-price-adjusted LBMPs to calculate the expected load-pocket LBMP in the coming month and takes 2% of that figure to generate a "lowest allowable LPT." 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, and hence create a more appropriate measure of lowest allowable LPT.

0

3. The Tariff requires the NYISO to fuel-price-adjust the LPTs, allowing the NYISO to specify the method of fuel adjustment. Currently, the Market Mitigation and Analysis Department (MMA) implements this requirement by fuel-adjusting the LBMP term in on a monthly basis. However, MMA proposes to change the frequency of fuel-adjusting LPTs from monthly to daily, so that each day LPTs maintain consistency with the daily-evolving fuel-price

component of energy reference levels.

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

The project deliverable for 2023 will be Market Design Concept Proposed.

**19.3 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.

## 20. Multi-Level References

### 20.1 Problem / Opportunity

This project supports gas electric system coordination by providing more sophisticated and efficient methods for Market Participants (MPs) and the NYISO to model generator fuel availability, fuel costs, and operational situations.

The enhanced functionality will also allow MMA and the MMU to more effectively implement tariff requirements, allow greater flexibility in creation of references in response to market conditions, and provide additional transparency to MPs. This will allow for more accurate reference levels for non-traditional generation (e.g., DER, CSR, Hybrid Storage resources).

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

0

This project will implement several functional enhancements to the Reference Level Software (RLS) web application as well as the Reference Calculation Engine. Some functional enhancements include allowing multiple fuels for a single reference and cost adjustment reports. The project deliverable for 2023 will be Software Design.

### 20.3 Project Justification

The functional enhancements will improve MMA analysts' ability to quickly and accurately identify potential problems with reference levels, which could subsequently improve application of mitigation.

## 21. Reserving Capacity for TCC Balance-of-Period (BoP) Auctions

### 21.1 Problem / Opportunity

The NYISO currently conducts Centralized Transmission Congestion Contracts (TCC) Auctions twice each year. In each of those

Contracts (TCC) Auctions three times each year. In each of these 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.

0

**21.2 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 2023 will be Software Design.

### 21.3 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.

## 22. Review of Real-Time Market Structure (SOM)

### 22.1 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

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 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.

**22.2 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 2023 project deliverable will be Issue Discovery.

0

**22.3 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 State of the Market Recommendation 2012-13.

## 23. Storage as Transmission – Requested by Stakeholders

### 23.1 Problem / Opportunity

The unique characteristics of energy storage allow these assets to provide many potential services to grid operators. During normal operation, storage often has very positive impacts on transmission systems by relieving peak demand through injections and reducing congestion through off-peak charging to bring power where it will be needed later. Currently, the NYISO tariffs treat storage as a Generator. In some instances, storage used exclusively as a transmission asset could provide a faster and cheaper option for providing the same or similar services as traditional alternatives, while providing valuable optionality to scale or augment project size or operation in the future. There is currently no pathway by which a storage project could be evaluated through the interconnection process as a transmission asset, and no methods by which to operate a storage asset as transmission. Furthermore, market rules for such projects would need to consider what impact market participation may have to avoid double

payment while allowing for flexibility and reduced revenue requirements through traditional rate-basing mechanisms. Finally, the project should consider options for cost recovery for storage as transmission, while evaluating participation of storage in various transmission use cases.

The NYISO's Interconnection process was last enhanced and reformed back in 2019 with the Class Year Redesign, and a 2022 project will seek to better coordinate the interconnection process with expected transmission expansion. Additionally, FERC has initiated an Advance Notice of Proposed Rulemaking with regards to Transmission Planning and Interconnection. It is expected that FERC will issue a final Notice of Proposed Rulemaking (NOPR) by the end of 2022 resulting in a compliance directive for the RTO/ISOs. While these initiatives have and are expected to result in increased efficiencies, there are additional opportunities for reforms and enhancements that build upon these initiatives (i.e., 2019 Class-year redesign, 2022 project, and expected FERC NOPR).

0

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

This project has two primary components. The first component would have the NYISO develop a process by which a storage project could progress through the interconnection queue while being considered and evaluated as a transmission asset, including options for cost recovery. The second component would have the NYISO develop rules and methods for operating the storage as a transmission asset, taking multi-use and double payment issues into consideration, as well as the various use cases. These components are related and may depend on one another.

This process should include discussions with developers in this space, review of the literature from FERC on the issue, and consideration of similar projects in other jurisdictions. The 2023 project deliverable will be Market Design Concept Proposed, covering market rules for evaluating, interconnecting, and operation storage as a transmission asset.

### 23.3 Project Justification

Transmission upgrades may be necessary to ensure delivery of clean energy across New York's electric grid. However, transmission development is often difficult, expensive, and on very extended time frames. Utilizing storage as transmission provides another alternative for providing or enhancing these services on a shorter timescale and potentially at lower cost, while preserving valuable optionality in the process. Without a path forward and market rules, these projects are unlikely to be proposed or move forward, despite the significant potential benefits.

## 24. Time Differentiated TCCs

### 24.1 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 MPs, 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 than 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

possible.

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

The 2023 project deliverable will be Market Design Complete, building upon the 2021 project efforts to develop a Market Design Concept Proposed 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.

0

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.

### 24.3 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 all 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.

Total

0

**Please enter any additional comments below:**

**Please provide any recommendations you may have for future enhancements to the Project Prioritization Process:**

**After clicking submit, you will be able to see a summary of your responses. After reviewing, if you wish to make any changes, you can click the left arrow and return to this page to make any changes.**