




Please score the projects that your organization believes are the most important for the NYISO to pursue in 2021. 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 26, 2020.

- 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 and individual code 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:

Business and Finance Products

1. TCC Credit Enhancements

1.1 Problem / Opportunity

In 2019, the NYISO reviewed the Report of the Independent Consultants on the GreenHat Default in PJM's Financial Transmission Rights (FTR) market. The NYISO reviewed the report to understand the background, issues and recommendations for the PJM market. Moreover, the NYISO conducted a comprehensive evaluation of its current TCC credit policy and auction practices. As a result of this internal review, potential enhancements have been identified.

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

NYISO staff recommends pursuing the following TCC credit policy enhancements:

- Update the market-clearing price for the second year of a two-year TCC earlier than current policy.
- Either hold the higher of the payment obligation or the holding requirement on the second year of a two-year TCC, or require payment of both years up front.
- Utilize the Balance of Period auction prices to calculate credit requirements for TCCs currently only subject to the

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historical congestion rent credit requirement.

The anticipated deliverable of this project includes:

- Q4 2021 Deployment

1.3 Project Justification

This project will enhance credit policy to further mitigate potential risk in the NYISO TCC Market.



Capacity Market Products

2. Enhanced BSM Forecasts Assumptions (SOM)

2.1 Problem / Opportunity

The “Part A” and “Part B” Test mitigation exemption tests require the NYISO to forecast energy and capacity market revenues. These forecasts are dependent on the generating units that are treated as in service (among other things) when forecasting market outcomes. Current revenue forecast inclusion rules inform the inclusion of new units and exit of existing units based upon certain market factors that inform the likelihood of the entry and exit.

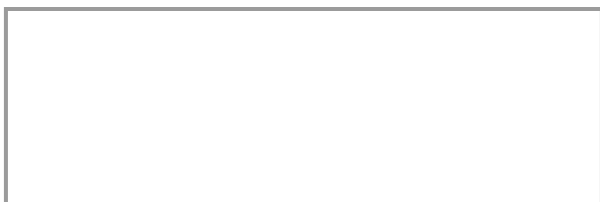
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2.2 Project Objective(s) & Anticipated Deliverable(s)

This project will propose to revise the forecast inclusion rules to improve the economic forecast. The project goal for 2021 would be Market Design Concept Proposed.

2.3 Project Justification

This project is a component of the Comprehensive Mitigation Review project. This project would seek to enhance the rules for including new entry and exit of generators in the forecasting model in order to result in a more accurate BSM, which would improve the balance between over and under mitigation.



3. Capacity Demand Curve Adjustments

3.1 Problem / Opportunity

The existing quadrennial ICAP DCR process includes consideration of the shape and slope of the ICAP Demand Curves. However, the NYISO recommends a targeted effort to review the efficacy of the ICAP Demand Curves to better evaluate whether alternative slopes and/or shapes would improve resource adequacy and grid reliability outside of the quadrennial DCR process.

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

This project would evaluate what, if any, changes to the current shape and/or slope of the ICAP Demand Curves may warrant further consideration. The milestone for 2021 would be Study Complete.

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3.3 Project Justification

The work effort and analysis required by the existing DCR process does not provide adequate time to conduct a detailed analysis of the efficacy of the existing structure of the ICAP Demand Curves and evaluate whether a modified structure may improve resource adequacy and grid reliability. This effort would allow the NYISO to conduct such analysis outside of the DCR process.



4. Expanding Peak Hour Forecasts

4.1 Problem / Opportunity

The NYCA peak load hour is currently defined as the single hour within a Capability Year with the highest measured

system load. More recently, a proposal to limit the peak hour to weekdays during the months of July and August is being considered by stakeholders. 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. This peak load forecast is used for the IRM study and the ICAP market forecast, and determines the total load obligation for each Transmission District.

Current practice dictates that the Transmission Owners 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 our obligations within a Transmission District may improve this process and create more robustly defined and consistent LSE shares. Likewise, in the distribution network, where LSEs use retail customer measures of peak period(s) usage that align with those used by the NYISO to assign capacity cost to their customers, it is imperative that those measurements be representative of the customers' capacity cost causation. Basing any given customer's capacity cost responsibility on metered demand during a single hour or day can place too much weight on an idiosyncratic, random event and not accurately measure the true impact that customer's use has on the system's 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 resources penetration increases.

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

This section describes what the project should do to address the business problem or opportunity. It summarizes the approach and desired outcome, and may build on project work in a prior year. It includes the expected deliverables to satisfy the project objective and is tied to the proposed project milestone. The NYISO will work with the stakeholder(s) proposing a project to formulate what may be feasibly delivered in a particular time frame based on resourcing estimated for the effort.

This project will investigate these issues pertaining to capacity obligation shares over multiple peak-type hours and use of gross rather than measured load. Findings and resulting suggestions will be reported and discussed with stakeholders. The project deliverable will be Market Design Concept Proposed.

4.3 Project Justification

This section describes why the candidate project should be considered including what the benefits are and associated risks if we do not complete the project. Examples would include addressing a FERC Order, Tariff requirements, automate manual processes, mitigate risk, market enhancements, State of the Market recommendations.

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.



5. Demand Curve Translation Enhancement (SOM)

5.1 Problem / Opportunity

The ICAP demand curves are based on the net cost of new entry for the demand curve unit. This is estimated in ICAP-terms and then converted into UCAP-terms based on the regional average derating factor, which reflects the forced outage rates of the existing fleet as well as UCAP-ICAP ratios of intermittent resources. Since the demand curve unit would have a low forced outage rate, this method leads the monthly ICAP demand curves to be set higher than if the derating factor of the demand curve technology were used. This inconsistency will become more pronounced as additional intermittent resources are added to the system.

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

This project will investigate the implications of revising the demand curve reference point ICAP to UCAP conversion methodology to utilize the estimated forced outage rate of the demand curve unit technology. Findings and resulting suggestions will be reported and discussed with stakeholders. The project deliverable will be Market Design Complete.

5.3 Project Justification

Given the upcoming changes planned for the New York grid, ensuring an appropriate method for ICAP to UCAP reference point calculation will be important for maintaining reliability and sending accurate market signals in the ICAP market.



6. CRIS Expiration Evaluation – Requested by NYS Utility Intervention Unit

6.1 Problem / Opportunity

As part of the 2019 Class Year/Interconnection Queue Redesign project, NYISO proposed more stringent CRIS expiration rules. Although the new CRIS rules are expected to prevent retention of CRIS by facilities not participating in the ICAP market and increase deliverability “headroom”, the rules, as accepted by FERC and implemented by the NYISO, do not address the treatment of CRIS status for retired generators whose deliverability rights were subsidized in part by public policy transmission upgrades to support deliverability. These facilities can retain their CRIS Deliverability Rights beyond the effective date of their retirement for up to three years under Section 25.9.3 of the NYISO OATT.

Additionally, a generating facility pre-dating Class Year 2007 (“grandfathered” CRIS) can retain CRIS Deliverability Rights beyond its retirement date if the generator has not been CRIS-Inactive for three continuous years. This creates unnecessary retention of CRIS Deliverability Rights by facilities that did not pay for system deliverability upgrades and are no longer participating in the ICAP market.

Essentially both grandfathered facilities and new facilities benefiting from ratepayer investments have acquired at

no cost the right to use a public asset for a private purpose and then, even after the private purpose has ceased, are able to retain the access to the public asset for up to three years, rather than immediately returning it to the public. This provision may be inequitable.

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

Modify CRIS Deliverability Rights retention rules to reflect impact of Public Policy Transmission Projects (PPTP). A retired generator whose deliverability benefited from a PPTP should not be allowed to retain CRIS for the amount that is equal to the level of CRIS obtained as a result of the PPTP (i.e., capability needed to provide deliverability that would have required the facility to build upgrades but for the existence of the PPTP)

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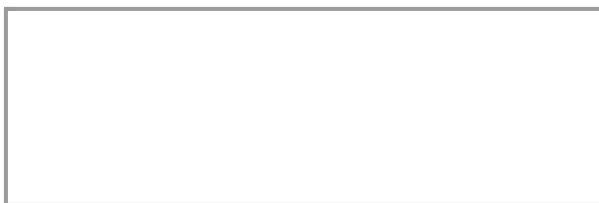
Modify “grandfathered” CRIS rules (Section 25.9.3 of the OATT) to ensure generating facilities pre-dating Class Year 2007 do not retain CRIS Deliverability Rights beyond their retirement effective date, even if the retired generators have not been CRIS-Inactive for more than three continuous years. Some exceptions or specific provisions may be warranted in certain circumstances to maintain equity between the ratepayer and generator, for instance if a generator actively plans to resume operations such as a repowering, or if it transfers CRIS rights to load.

For 2021 implementation consistent with approved modifications to the CRIS expiration rules.

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 prevent retention of CRIS Deliverability Rights by facilities whose deliverability capability benefited from ratepayer investments but are now retired and no longer participating in the ICAP market. Finally, this project will ensure an increase in the capacity deliverability headroom available to future generating facilities seeking to participate in the ICAP market.



7. Tailored Availability Metric Enhancements – Requested by Central Hudson, Con Edison, National Grid, New York Power Authority, and O&R

7.1 Problem / Opportunity

At its April 29, 2020 meeting, the Management Committee approved modifications to the procedures that the ISO will use to determine the amount of unforced capacity (UCAP) that resources qualify to provide. Under Project #5 (Tailored Availability Metric (TAM)), the ISO will implement those modifications. For resources whose UCAP rating is based upon their availability, these modifications provide that the amount of UCAP each such resource qualifies to provide in each capability period will be based upon its availability during the two preceding like capability periods, in most cases. However, even with these improvements, forced outages at different times within the capability period may have roughly the same impact on the amount of UCAP that such a resource qualifies to provide. For example, as the ISO demonstrated in an

example presented at the March 20, 2020 ICAPWG/MIWG meeting, an extended forced outage in July may have only a slightly larger impact than an extended forced outage in May on the amount of UCAP that a resource qualifies to provide during the summer, even though the former outage may have a much larger impact on reliability than the latter.

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

This project will build upon the work performed in the Tailored Availability Metric project. For resources whose UCAP rating is based upon their availability, it will identify and assess further improvements to the procedures used to calculate the amount of UCAP that such resources qualify to provide. The objective is to develop and implement a market design that provides more effective incentives for these resources to be available during those hours when their availability significantly affects reliability, by tying their compensation for capacity more closely to their availability at those times.

7.3 Project Justification

Further improvements to the TAM will enhance its ability to provide better incentives for Installed Capacity Suppliers to be available at the times when it is most important for them to be available, thereby enhancing reliability and reducing the cost of meeting reliability objectives.



DER Products

8. Engaging the Demand Side

8.1 Problem / Opportunity

Further engaging the wholesale demand side participation will become increasingly important as deployments of intermittent wind and solar resources increase to support New York's decarbonization goals. The wholesale demand side is more than just Demand Response suppliers, it is that portion of the NYISO market resources modeled at load nodes including DER (Demand Response, Energy Storage Resources and generation) along with load that only consume energy. Today, suppliers are dispatched by the NYISO to meet load that has limited flexibility. Load is generally seen as "uncontrollable" by system operators, whereas generation resources are considered controllable. The NYISO-administered markets currently feature demand side participation opportunities through the SCR program, EDRP, DSASP, DADRP, price responsive load bids by Load Serving Entities in the Day-Ahead Market, and in the near future also through the DER participation model. Eventually, controllable and flexible load may be desirable to balance inflexible/intermittent supply and provide ancillary services. The net effect of a more engaged Demand Side will look like overall load modification in the NYISO-administered markets.

Animating load in the NYISO-administered markets will require close coordination with utilities and the New York State Department of Public Service. Improvements to consumer metering, communication platforms and access to retail real-time rates will be necessary to improve load flexibility, and should be a focus of these

efforts moving forward. These enhancements will provide consumers with visibility to real-time prices, which offers them with the ability to make more informed decisions about when and how to consume energy.

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

The NYISO will work with both internal and external stakeholders to identify opportunities to enable more demand side participation in the wholesale markets through issue discovery, such as including flexible load as supply in the price formation in the Installed Capacity and Energy markets. Further engaging load participation could allow for more robust price formation that reflects customers' willingness to pay, consistent with their marginal benefit of consuming energy. Evaluation of potential changes to SCR program to better align with the operational needs may also be considered. Any opportunities identified to further engage demand side participation can be used to develop future market design enhancements.

8.3 Project Justification

The NYISO-administered markets may benefit from more robust demand side participation. Further enabling and encouraging loads to be more engaged in understanding their consumption patterns and responsive to real-time prices is not a trivial change to NYISO market design and operations, but will benefit grid reliability and improve market efficiency. Tangible benefits may not appear in the near term, however long-term trends point towards more customer engagement as technology supports more load interactivity. This is apparent with the state's actions to encourage more customer engagement in their energy

usage through its REV actions. The NYISO's DER participation model, anticipated to be deployed in Q4 2021, is the next step toward animating load in the wholesale markets. That participation model builds upon the NYISO's experience with demand response programs, and will begin the technological advances needed in the future.



Energy Market Products

9. 5 Minute Transaction Scheduling—Requested by HQUS

9.1 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. It also provides increased flexibility to RTD, which is important as the penetration of intermittent renewables increases. The NYISO has also determined that five-minute transaction scheduling would be at least one of the prerequisites for external resources to provide operating reserves, and perhaps other ancillary services.

Evaluating external resources every five minutes will create more consistency between internal and external resource

scheduling.

9.2 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, e.g., Hydro-Quebec (HQ).

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The 2021 deliverable will be a Market Design Complete that provides a mechanism to schedule interchange every five minutes using the RTD with the external control areas identified as being feasible in the 2020 study.

9.3 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, and potentially increase the flexibility of the NYISO's market operations to respond to the State mandated exponential growth in renewable resources output. More frequent interchange scheduling that aligns with internal generation scheduling frequencies will also alleviates 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 growing objectives in New York for renewable generation and for the replacement of fossil fuel generation.



10. Constraint Specific Transmission Shortage Pricing (SOM)

10.1 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 system. As transmission constraints arise, the NYISO's energy market software prices the quantity of energy that would be necessary to alleviate them. The existing transmission constraint pricing logic applies a single graduated 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.

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, the NYISO proposes 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 would increase proportionally with the severity of transmission overloads. The NYISO also proposes to eliminate most 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.

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

The 2021 deliverable for this project will be Development Complete.

10.3 Project Justification

The transmission constraint pricing logic enables the NYISO's market software to re-dispatch suppliers efficiently in the short term to alleviate constraints, and incentivizes long-term investment in locations where suppliers could provide the greatest benefits.



11. Large Scale Solar on Dispatch

11.1 Problem / Opportunity

Large scale solar installations are just beginning to enter the New York Control Area (NYCA). While solar technology can offer many benefits, it can also pose challenges to reliable grid operation due to its variable nature. Indeed, the NYISO already contracts with solar forecasting entities to provide predictions of output from such resources. As higher levels of intermittent resources like solar connect to the grid, it is important to have appropriate market mechanisms to manage this variability with flexible resources that can follow a dispatch signal. Solar resources have a demonstrated ability to reduce their output in response to a dispatch signal, and the NYISO seeks to implement this capability within its energy markets.

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

This project will continue the effort first described in NYISO's

2018 Market Design Concept proposal for a Solar Participation model resources. It is anticipated that the 2021 project will consist of the deployment for solar on Economic Dispatch.

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11.3 Project Justification

Large scale solar resource entry has the potential to cause reliability issues due to the variable nature of solar resource output, but these resources are also capable of contributing to system reliability due to their flexibility. The NYISO does not have a market construct that allows it to send an economic market basepoint signaling a Solar resource to reduce its output in response to system needs. The ability to send an economic market basepoint signaling a Solar resource to reduce its output in response to system needs increases reliability while decreasing total production cost.



12. Mitigation Thresholds Review

12.1 Problem / Opportunity

Load Pocket Thresholds (LPT) are mitigation measures designed to prevent the exercise of market power by the New York City units that might occur under constrained system conditions. These thresholds strictly limit the bidding leeway of NYC Generators, relative to their energy reference levels. The requirement is explained in Services Tariff Section 23.3.1.2.2. In certain situations, the LPTs, which are based on previous months' data, may over or underestimate the actual conditions experienced and, hence, may lead to over or under mitigation. A review of the mitigation behavior thresholds could identify opportunities to improve upon the current LPT methodology.

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

The 2021 project deliverable would be the development of Functional Requirements based on the work conducted in 2020 that performed a comprehensive review of mitigation behavioral thresholds and proposed corresponding market design improvements.

12.3 Project Justification

This project would allow for a comprehensive review of the LPT methodology and process to identify ways to improve the accuracy of and verification process for LPT calculations.



13. Multi-Level References

13.1 Problem / Opportunity

This project supports the 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 the Market Monitoring Unit and Market Mitigation and Analysis Department to more effectively implement tariff requirements, allow greater flexibility in creation of references to meet market conditions, and provide additional transparency to MPs.

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

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, an increasing bids in real-time screening report, improve screen refreshes, and create a super approver role.

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Multiple audit recommendations have included the need for improved documentation explaining the workings of the RLS software.

13.3 Project Justification

The functional enhancements will allow MMA analysts a greater ability to quickly and accurately identify potential problems with reference levels, which could subsequently lead to erroneous mitigations potentially affecting both locational based marginal pricing (LBMP) and uplift.



14. Reserve Enhancements for Constrained Areas (SOM)

14.1 Problem / Opportunity

Based on New York State Reliability Council (NYSRC) rules, the NYISO is also required 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.

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 does not reflect the flexibility of the grid to respond to system needs by utilizing the transmission system to import capacity into generation-constrained regions. As reserve regions become smaller, this static modeling can potentially lead to market inefficiencies and unnecessary price volatility.

The NYISO recently proposed to introduce a Zone J reserve region with 10 and 30-minute reserve requirements beginning in late-June 2019. The Zone J reserve region will provide region-specific market signals consistent with reliability needs in New York City. The NYISO is also exploring the potential implementation of more granular reserve requirements within certain New York City load pockets that would better represent the value of short-notice resources in desirable locations. As the potential implementation of load pocket reserve requirements is considered, a dynamic reserve procurement methodology that does not exist today could be useful to improve market efficiency, better aligning market outcomes with how the power system is operated, and avoid the potential for unnecessary price volatility...

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

The deliverable for this effort in 2021 will be Study Complete. The study will seek to develop potential changes to the NYISO's market software to facilitate more efficient schedule operating reserves based on system conditions. If determined to be feasible, such enhancements could facilitate the capability for reserves to be scheduled in more cost-effective regions if sufficient transmission capability is available to deliver the reserves to another location/reserve region, post-contingency. This study will also evaluate potential ways to compensate operating reserve providers that help manage transmission congestion to determine if market incentives can be improved to maintain resource flexibility. Finally, the study will explore how to most efficiently incorporate potential reserve requirements within certain load pockets

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in New York City into the market software.

14.3 Project Justification

The MMU has recommended that the NYISO “[d]ynamically adjust operating reserve requirements to account for factors that increase or decrease the amount of reserves that must be held on internal resources [SOM Recommendation 2015-16].” A dynamic reserve procurement methodology could improve market efficiency by scheduling reserves in a less expensive region using available transmission capability to import power into a more constrained region post-contingency, rather than hold reserves in the more expensive reserve area. By scheduling reserves dynamically, reserves could be shifted to resources in lower cost regions as transmission capacity is made available or shifted to resources that are not export constrained. Dynamic reserves 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 two additional recommendations 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].” The MMU has also recommended that the NYISO “[m]odel local reserve requirements in New York City load pockets [Recommendation 2017-1].”



15. Adjustment of Energy Offer/Bid Floor (SOM)

15.1 Problem / Opportunity

The bid and offer floor for internal resources and external transactions is negative \$1,000/MWh. Under rare conditions, the NYISO operators may have to reduce external interface limits and/or curtail external transactions to maintain transmission security on an external interface. In such cases, external transaction schedulers are effectively able to “buy” power at arbitrarily low price levels, resulting in uplift for NYISO customers. The MMU recommends raising the bid and offer floor to a level that is closer to the range of potential avoided costs of supply for generation resources.

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

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The project deliverable would be a Market Design Complete. The project scope would be to investigate the impacts of increasing the offer floor for resources and also the capping logic required to implement the change.

15.3 Project Justification

This project would potentially reduce uplift for NYISO customers by reducing the level of arbitrary low pricing that is not necessarily reflective of associated costs.



16. Grid Services from Renewable Generators - Requested by NYSERDA

16.1 Problem / Opportunity

According to two recent studies by CAISO, NREL, GE, Avangrid Renewables, and First Solar, wind and solar resources equipped with inverter controls can provide grid services, including regulation, voltage control, frequency response, and ramping. The upgrades required to the renewable plants were minimal, if any, and resulted in provision of services at the same or better levels of performance as compared to traditional generators, while simultaneously easing the integration of additional renewables onto the grid.

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

This project has two primary components. The first component would have the NYISO work with renewable generators to determine what upgrades, if any, are required to typical inverters and controls to allow renewable generators to provide grid services. The second component would evaluate the current NYISO market designs for grid service products to determine what barriers may exist that prevent renewable generators from providing the grid services of which they are capable. The project would then propose new market designs and accompanying tariff language, if necessary, to allow renewable generators to provide grid services.

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16.3 Project Justification

Significant quantities of renewable generation will be required to meet the targets in the CLCPA. These renewable generators also have the ability to provide grid services, thereby decreasing the cost of renewable

integration while decarbonizing the provision of many essential reliability services. Barriers that prevent renewables from providing these services will serve only to increase the costs of grid operation and overall emissions and should be removed as soon as practicable as the number of renewable generators continues to accelerate.



17. Long Island Reserve Constraint Pricing (SOM)

17.1 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).

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

The 2021 project deliverable would be a Market Design Complete. The project scope would include the conduct of 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 reserve providers.

17.3 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.



18. More Granular Operating Reserves (SOM)

18.1 Problem / Opportunity

In 2019 and 2020, the NYISO worked to develop proposed enhancements that would implement reserve requirements for certain load pockets within New York City to provide location-specific market signals consistent with reliability needs. These new requirements would further enhance the location-specific value of maintaining short notice responsive resources in desirable locations. Additionally, load pocket reserves could provide further incentives for resources to locate in important, supply constrained areas of the NYCA.

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

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The 2021 project deliverable will be Development Complete based on the market design expected to be proposed for stakeholder approval in 2020.

18.3 Project Justification

This effort has been recommended by the Market Monitoring Unit, and has also been identified as beneficial in both the 2018 Performance Assurance Management Response and the 2017 Integrating Public Policy Market Assessment Report. Additionally, this effort will reflect the locational reliability value provided by resources in certain load pockets within New York City and incent generator performance.



TCC Products

19. Reserving Capacity for Balance-of-Period (BoP) Auctions

19.1 Problem / Opportunity

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

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

Consequently, this proposal seeks to build upon the 2020 project effort 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. This will permit auction participants to purchase additional shorter-term TCCs in the BoP Auctions.

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

This project is intended to build on the efforts undertaken in 2020 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 will develop the system requirements to the TCC Automated Market System needed to support the market changes.

19.3 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. Certain stakeholders have previously requested this capability.

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 in surveys of TCC MPs; 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.



20. Time Differentiated TCCs – Requested by Calpine and Vitol

20.1 Problem / Opportunity

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

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

This project's deliverable would be a Market Design

Concept Proposed and would include working with stakeholders to develop market rule changes needed to facilitate the creation of TCC products that apply to different periods of time (i.e., either day or week) to supplement the current 24-hour product, including an assessment of:

- The number of different types of TCCs that would be valid during each month.
- The hours in which each of those types of TCCs would be valid.
- The procedures the NYISO would use to auction those TCCs, to establish the prices of those TCCs, to allocate auction revenue, and to allocate costs or revenues associated with increases or decreases in transfer capability.
- Other market design improvements that might be made possible as a result of this project.

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Completion of this project would define the following within the TCC market and related systems:

- TCC auction design to support the sale of more granular TCC products
- Revenue allocation methodology adjustments to support the more granular TCC products

- Potential changes in credit policy to accommodate the new TCC products

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.

20.3 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 weekly and daily time periods where congestion patterns can vary; and (4) permit other market design improvements.

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Total

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Please enter any additional comments below:



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