Report on
CURRENT MARKET INITIATIVES RELEVANT TO RELIABILITY
August 9~~July 12~~, 2019

The guiding principle for development of market rules at the NYISO is that Markets are consistent with and reinforce Reliability rules. The following current market design activities provide opportunities for application of this principle and may be of interest to the NYSRC.

1) Market Assessment for Accommodating Public Policy

The NYISO will assess the impacts of de-carbonization goals on the current NYISO energy and capacity markets from the high penetration of low carbon or carbon-free resources and consider whether new market products or changes to the existing market structure will be necessary to meet the anticipated reliability needs.

Key areas for consideration:

a) Understanding the additional resource flexibility that will be necessary to balance the intermittent nature of weather dependent resources;
b) Modeling intermittent resources in IRM and long term planning studies;
c) Ensuring resources are responsive to operational instructions.

Update: The NYISO is considering a broad spectrum of market product and structural enhancements that may be necessary to incent market participants to meet the reliability needs anticipated with 50% renewable generation. The NYISO has completed its simulation of potential market conditions and initiated discussions on possible reforms with stakeholders. Based upon these discussions, and input from the stakeholders, the NYISO has identified a series of initiatives to pursue in 2019, including: Reserve Procurement for Flexibility, More Granular Operating Reserves, Ancillary Shortage Pricing, Tailored Availability Metric and External Capacity Performance and Obligations. NYISO has engaged stakeholders in discussions on the topics and has proposed timelines for vetting each of the topics. NYISO accelerated an aspect of the More Granular Operating Reserves to implement a Zone J reserve requirement in June 2019. The NYISO has filed with FERC revisions to requirements for external capacity suppliers responding to a supplemental resource evaluation (SRE) and is continuing efforts to define expectations for external resource deliverability and eligibility obligations. The NYISO has produced a whitepaper on "Reliability and Market Considerations for a Grid in Transition," which identifies the needs for additional resource flexibility and responsiveness to balance the output from large penetrations of weather dependent resources. The paper provides a starting point for the discussions over how competitive markets must evolve in order to continue to provide reliable, economically efficient electricity to all New Yorkers as the resource fleet transitions to new cleaner energy technologies.

2) Distributed Energy Resources

To ensure NYISO markets are capable of integrating Distributed Energy Resources (DERs) in greater numbers and to provide clarity as to how they can realize value for their services, NYISO staff has engaged Market Participants in the development of a DER program.

Key areas for consideration:

a) Managing the volume of resources interacting with the NYISO;
b) Modeling distributed resources in IRM and long term planning studies;
c) Evaluating limited duration resources ability to satisfy resource adequacy needs;
d) Capturing the impact of behind the meter resources in Load Forecasting and other system models;
e) Ensuring resources are responsive to operational instructions.
f) Establishing requirements and expectations in the NYISO wholesale markets for resources that wish to simultaneously participate in retail market programs.

Update: The NYISO and stakeholders are engaged in the development of a DER Participation Model to support resource integration into the wholesale markets. NYISO and GE have developed an analytical assessment, based on the 2018 IRM base case, of the capacity value of resources with energy limitations. The model design is guided by the objective to encourage aggregation of smaller assets into qualified wholesale market participants, to manage the volume of resources scheduled and managed by the NYISO, and the development of requirements for sufficient measurement and verification protocols to enforce resource performance obligations. Stakeholders approved the market design in April and NYISO submitted its filing to FERC at the end of June.

3) Energy Storage Resources

As the grid evolves, Energy Storage Resources (ESRs) contribution to maintaining a reliable and cost effective grid is expected to grow. ESRs such as pumped hydroelectric generators, flywheels, and batteries can supply electricity to the grid to meet demand, and can withdraw electricity from the grid to alleviate excess supply. ESRs can promote more reliable and efficient operation of the electric grid, particularly when paired with intermittent renewable generation. The NYISO is currently engaged in developing a new market design concept that reflects ESR technological advancements and policy development to allow wholesale grid operators and ESR managers to take better advantage of ESR capabilities.

Key areas for consideration:

a) Evaluating limited duration resources ability to satisfy resource adequacy needs;
b) Modeling storage in IRM and long term planning studies;
c) Fulfilling reserve schedule obligations and maintaining resource flexibility to meet dynamic real-time operating conditions.

Update: On February 15, 2018, the FERC issued Order No. 841, designed to facilitate greater participation by electric storage resources in organized wholesale electric markets. NYISO and stakeholders engaged in the development of an Energy Storage Resource participation model and filed tariff revisions on December 3, 2018. The rules will require telemetry of resources state-of-charge to allow the NYISO to effectively monitor the resources performance and align the scheduling decisions with the resources physical capabilities to respond.