



Report on
CURRENT MARKET INITIATIVES RELEVANT TO RELIABILITY
September 14, 2018

The guiding principle for development of market rules at the NYISO is that Market and Reliability rules should be complimentary and reinforce each other. 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.

Implications to Reliability: Improved incentives to provide necessary services and products to enhance reliability.

Key areas for consideration are:

- 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 proposed 2019 initiatives to pursue: Reserve Procurement for Resilience, More Granular Operating Reserves, Ancillary Shortage Pricing, Tailored Availability Metric and External Capacity Performance and Obligations. The recommendations build upon the success of wholesale markets to efficiently achieve the necessary resource characteristics to reliably meet energy needs and public policy objectives.

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.

Implications to Reliability: Enhanced system reliability and resiliency through distributed resource availability and active management of load consumption based upon market conditions.

Key areas for consideration include:

- a) **Managing the volume of resources interacting with the NYISO,**
- b) **Modeling distributed resources in IRM and long term planning studies**
- c) **Capturing the impact of behind the meter resources in Load Forecasting and other system models**
- d) **Ensuring resources are responsive to operational instructions.**

Update: The NYISO and stakeholders are engaged in the development of a DER Participation Model to support resource integration into the wholesale markets. 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. The model design is expected to complete in 2018, with implementation proposed for 2021.

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.

Implications to Reliability: Enhanced system reliability and resiliency through access to flexible resources valuable in balancing intermittent resource output.

Key areas for consideration include:

- 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. The Order requires a compliance filing by December 2018 and implementation of the changes in December 2019. NYISO and stakeholders are engaged in the completion of an Energy Storage Resource participation model. 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.