

**Comments of the NY Transmission Owners, Central Hudson, Consolidated Edison Company of New York, National Grid, New York Power Authority, Power Supply Long Island, and Orange and Rockland Utilities Regarding NYISO's Energy Storage Optimization Project**

NYISO has initiated a project to develop Market Design Concepts for optimizing Energy Storage (ES) participation in the wholesale market. At the March 1 Market Issues Working Group meeting, NYISO described its four market products in which ES can currently participate, albeit within certain restrictions: Energy Limited Resources (ELR), Limited Energy Storage Resources (LESR), Demand Side Ancillary Service Program (DSASP), and Special Case Resources (SCR). Accordingly, the Indicated New York Transmission Owners<sup>1</sup> submit the following comments on how participation can be improved:

**COMMENTS:**

1. Unique operating characteristics of storage devices should be recognized and accommodated in NYISO's bidding process.
  - a. NYISO should evaluate options for new programs that would enable battery storage (and other utility-scale storage such as molten salt, thermal storage, compressed air, and liquid air) resources that can perform for limited runtimes (i.e., less than 24 hours). Options explored should include resources that can perform at 1 MW for longer than 4 hours (e.g., 12 hours at 100 kW, or 12 hours at 1 MW).
  - b. Options for bidding in the Day-Ahead and Real Time (RT) markets that account for "state of charge" should be discussed.
  - c. It may be sensible for NYISO to explore software modifications to allow RT energy arbitrage for resources with less than 4 hours of storage.
  
2. Aggregation should be allowed for storage resources not only within Demand Response programs (i.e., DSASP and SCR), but including resources participating as a Behind the Meter Net Generator or a direct connect grid resource.
  - a. Resources of any size should be allowed to aggregate to meet the 1 MW minimum requirement within, for example, a load zone, or behind a transmission bus. Logistical barriers that NYISO has mentioned in passing, such as excessive M&V burdens, can be overcome by transacting with the aggregator and, if necessary, statistical sampling methods for M&V.
  
3. Resources with partially intermittent capacity with storage backup should not only be categorized as fully dispatchable.

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- a. Storage paired with renewable generation, such as solar or hydro, should retain its renewable classification for a portion of its MW capacity.
  - b. If a storage resource connected to a renewable resource can store a fraction of its energy output, a fractional rating should be made for its intermittent capacity.
4. NYISO should examine whether utility-scale storage should be considered differently than distributed storage. Separate market rules may need to be created given potentially wide variation in MW size and operating capabilities of the different resource types.
5. Once the participation model for storage has been defined, NYISO should continue to address other issues with stakeholders (e.g., metering, Measurement & Verification, operational coordination, etc.) that could delay successful implementation of those measures.