

Capability of Energy Storage Resources in Other ISORTOs

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Capacity Market Capability of Energy Storage Resources

- NYISO has a “4 hour rule” (pending replacement with a tiered rule).
- Applicable to all duration limited resources.
- Must bid into day ahead energy market,
- Must be “able to provide the Energy equivalent of the Unforced Capacity for at least four consecutive hours each day.”
- New tiered method approved by FERC on Jan. 23, 2020, now pending implementation.
- New method based on Effective Load Carrying Capability analysis by GE.

• The NYISO proposed capacity values are based on the GE Capacity Value Study as well as the other studies that have been conducted

- The NYISO is proposing that the market signal should not incent investment of large quantities of 2 hour resources (i.e. no more than 50% of 4 hour resources)
- Every year, the NYISO will post the MW tally of new resources with duration limitations to identify if we have hit the transition point
 - Once past the transition point (=> 1000 MW), the ‘At and Above 1000 MW’ numbers will be used until new values are established

Durations (hours)	Incremental Penetration of resources with duration limitations	
	Less than 1000 MW	At and Above 1000 MW
2	45%	37.5%
4	90%	75%
6	100%	90%
8	100%	100%



Peak Load Window

- **Capacity Suppliers with duration limitations must be available during a predefined Peak Load Window**
 - The Peak Load Window for Winter and Summer Capability Periods are different
 - The 6 hour window is applicable for incremental penetration of resources with duration limitations less than 1000 MW
 - Winter: HB 16 - 21
 - Summer: HB 13 - 18
 - The 8 hour window is always applicable to resources that elect an 8-hour duration limitation, and will be applicable to all duration limited resources for incremental penetration of resources with duration limitations equal to or greater than 1000 MW
 - Winter: HB 14 - 21
 - Summer: HB 12 - 19

- “Use Limited Resources” = 4 hour rule.
- Applicable to all duration limited resources.
- Day-ahead energy market: must offer in 4 specific hours of each day*.

**“A Use Limited Resource is required to submit a must-offer into the Day-Ahead Market for at least four (4) continuous hours daily across MISO’s forecasted daily peak (including weekends). The must offer period of 4 hours includes the 2 hourly intervals prior to the forecasted peak hour, the peak hourly interval, and 1 hourly interval after the forecasted peak load. This approach enables MISO to have an opportunity to schedule the Resource for the period in which the Use Limited Resource will not be recharging or replacing depleted resources. MISO’s peak period will be based on the forecast published one day prior to the operating day in the Market Report provided at the link provided below. <https://www.misoenergy.org/Library/MarketReports/Pages/MarketReports.aspx>”*

- SPP has a 4-hour rule.
- Note: SPP has commissioned an Effective Load Carrying Capability analysis for energy storage resources:
<https://www.spp.org/Documents/60823/SAWG%20Agenda%20&%20Background%20Materials%2020191021.zip>

- ISO-NE does not use duration to calculate energy storage resource capability.
- However, the annual operating test duration for several resource types in ISO-NE, including energy storage resources, is two hours.