New York ISO
Independent System Operator

Hybrid Storage Resource (HSR) Ancillary Service Participation

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New Resource Integration

MIWG/ICAPWG

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Agenda

- Hybrid Storage Resource Model 2022 Scope Review
- Hybrid Aggregation Model Proposal
- Reserves Performance

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2021 HSR Presentations

- March 11 - Hybrid Storage Aggregation Resource (HSR) Model: Project Kick-Off
- May 19 - Hybrid Storage Resource (HSR) Model: Energy and Ancillary Services
- June 30 - HSR Model: Energy & Ancillary Services Update
- July 7 - HSR Model: Capacity Market
- August 10 - NYISO Hybrid Storage Resource (HSR) Model Overview & High Level Proposal

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Hybrid Aggregation Model Scope Review

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Hybrid Aggregation Model 2022 Scope

- **Deliverables:**
  - Q4 Functional Requirements
- **Project Description:**
  - This project is distinct from the CSR, DER and ESR Integration initiatives, but it will build on work completed as part of those initiatives. This project is a continuation of the 2020-2021 Hybrid Storage model effort and will develop market rules that allow at least one ESR and other Generator(s) to be co-located behind the same point of interconnection, share a single PTID, and act as a single market resource.

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Hybrid Aggregation Model Proposal

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Hybrid Storage Resource Definition

- **Hybrid Storage Resource = An Energy Storage Resource and at least one additional Generator that: (a) are both located behind a single Point of Injection; (b) participate in the ISO Administered Markets as one Generator sharing a single PTID; and (c) have a POI limit greater than 20MW.**
  - If less than or equal to 20 MW, the Facility may enroll via the DER aggregation model
- **Hybrid Storage Resources are dispatch–only units**
- **Hybrid Storage Resources cannot be co-located with Load**
  - Only Station Service load is permitted
- **HSRs must provide updated operating limits to the NYISO to reflect their RT and forecasted aggregated energy capabilities**
  - Failure to provide accurate limits may result in a penalty

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Product Eligibilities

- **HSRs can qualify to provide Energy, Ancillary Services, and Capacity**
- **Some product eligibilities for HSRs will be evaluated on the individual component level:**
  - **Example: GT + ESR**
    - This HSR may provide 10 minute spinning reserves and regulation based on the ESR's capabilities only;

    OR
    - This HSR may elect to provide non – spinning reserves based on the combined capabilities of the GT and the ESR
  - **Example: Solar/Wind + ESR**
    - This HSR may provide 10 minute spinning reserves and regulation service based on the ESR's capabilities only
    - This HSR may not utilize its wind/solar facilities to provide reserves; IPRs are unable to qualify to provide reserves in the NYISO markets

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Reserves Performance

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Reserve Pickup (RPU) Performance

- **NPCC Directory 5 Requirement R6.** A Balancing Authority's **synchronized reserve, ten-minute reserve**, and **thirty-minute reserve**, if activated, shall be sustainable for at least one hour from the time of activation.

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Reserve Pickup (RPU) Performance Cont.

- December 2, 2021, MIWG presentation "RPU Performance Winter 2020-21" discussed resource performance in response to RPU events
  - GT pass rate of 77.8%
  - All resource pass rate of 81.2%
- As more intermittent power resources (IPRs) enter the market, guaranteeing reserves performance becomes increasingly important to maintaining reliability
  - The NYISO is subject to NPCC and NERC requirements that Operating Reserve providers that are converted to providing Energy be capable of sustaining their Energy schedule for at least one hour
  - NYISO is considering the introduction of a penalty for all resources that fail to convert reserves to energy during an RPU event
- Next steps: present additional RPU performance data and penalty proposal at an upcoming MIWG

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Next Steps

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Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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