New York ISO
Independent System Operator

Hybrid Aggregated Storage (HSR) Model – Metering and Telemetry Tariff

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New Resource Integration

MIWG/ICAPWG

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Agenda

- Overview of Tariff Changes
- Project Background
- HSR Metering and Telemetry Background
- Proposed Modifications to MST Section 13
- Next Steps

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Previous HSR Presentations (2022)

Date	Working Group	Topic/Links to Materials
March 25th, 2022	MIWG/ICAPWG	Hybrid Storage Model – Energy and Capacity Market Design Proposal
May 11th, 2022	MIWG/ICAPWG	NYISO Hybrid Aggregated Storage Resource (HSR) Model Use Case and Proposal Update
July 15th, 2022	MIWG/ICAPWG	Hybrid Aggregated Storage (HSR) Model – Energy and Ancillary Services Market Design Proposal Update
August 9th, 2022	MIWG/ICAPWG	Hybrid Aggregated Storage (HSR) Model – Energy and Capacity Market Design Proposal
August 24th, 2022	MIWG/ICAPWG	Hybrid Storage Model – CSR Market Design Proposal Updates
September 12th, 2022	MIWG/ICAPWG	Hybrid Aggregated Storage (HSR) Model – CSR Market Design Proposal Updates (Settlements/Metering and Telemetry)
September 12th, 2022	MIWG/ICAPWG	Hybrid Aggregated Storage (HSR) Model – Tariff Modifications, Energy and Settlements
September 20th, 2022	MIWG/ICAPWG	Hybrid Aggregated Storage (HSR) Model – Tariff Modifications: Interconnection, ERIS, CRIS
October 4th, 2022	MIWG/ICAPWG	Hybrid Aggregated Storage (HSR) Model – Tariff Modifications: Energy and Settlements
October 20th, 2022	MIWG/ICAPWG	Hybrid Aggregated Storage (HSR) Model – Capacity Tariff, Capacity Mitigation Tariff, Interconnection Tariff, CSR Updates Tariff, Enhanced Fast Start Resources Tariff, and Metering and Telemetry

Overview of Tariff Changes

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Overview of Tariff Changes

- The NYISO proposes changes to Section 13 to incorporate the metering and telemetry rules of Hybrid Storage Resources

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HSR Project Background

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HSR Project Background

- **An HSR consists of an Energy Storage Resource (ESR) and at least one Intermittent Power Resource (IPR) and/or Run-of-River (RoR) Hydro Resource**
  - This model will support several Wind, Solar, Landfill Gas, RoR Hydro, and ESR(s) resources that aggregate, and share a POI, and operate as a single dispatchable resource

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Metering and Telemetry Background

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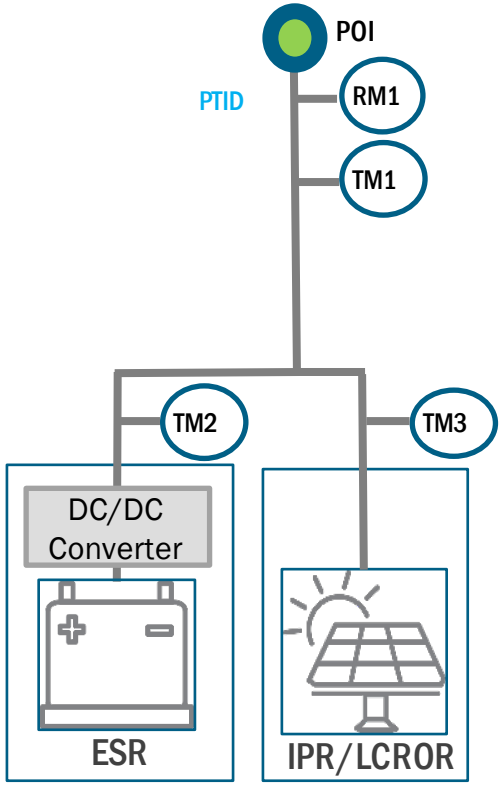
HSR Metering and Telemetry Proposal

Meter Designation	Meter Requirements	Data flows
RM1	Revenue grade; dual – channel meter; reported by a Meter Authority	Hourly data
TM1	SCADA data	6 second output telemetry from HSR
TM2	SCADA data	6 second telemetry measuring SOC of ESR component
TM3	SCADA data	6 second output telemetry measuring performance of IPR/LCROR Hydro component(s)

- TM1 and RM1 will inform HSR scheduling, dispatch, and settlement
- TM2 and TM3 will provide the operating data needed to calculate an HSR components' ICAP/UCAP



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MST Section 13

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Section 13.1

- **The NYISO proposes to add "Hybrid Storage Resources" to the list of Resources that must supply meter data to the NYISO**
  - The ISO will require adequate metering for all Generators, Co-located Storage Resources, Hybrid Storage Resources, and Loads within the NYCA to ensure the reliable operation of the NYS Power System.

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Section 13.2

- **The NYISO proposes to add "Hybrid Storage Resources" to the list of Resources that must supply 6 second telemetry to the NYISO**
  - Customers shall provide real-time telemetry for Generators and Co-located Storage Resources, and Hybrid Storage Resources nominally every six (6) seconds, in accordance with the specifications set forth in the ISO Procedures. Real-time telemetry data errors and transmission disruptions shall be remedied in accordance with ISO Procedures.

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Section 13.2.4.1

- **The NYISO proposes a grammatical fix in Section 13.2.4.1:**
  - Such metering must allow the Meter Authority and/or ISO to be able to distinguish the Energy injections and withdrawals of the Energy Storage Resource from all other injections and withdrawals behind the point of interconnection.

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Section 13.2.5

- **The NYISO proposes to add a new Section to explain the metering requirements of Hybrid Storage Resources:**
  - Hourly meter data for Hybrid Storage Resources that are withdrawal–eligible shall be reported as two separate components: (i) Energy injections, and (ii) Energy withdrawals. Each component shall be submitted to the NYISO by the meter authority in separate fields such that the ISO is able to separately determine the total Energy injections and withdrawals in each interval.

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Section 13.2.6

- **The NYISO proposes to organize existing language into a new subsection, and expand the list of Resources with manual associations**
  - 13.2.6 Associated Procedures

    The ISO Procedures, including the Revenue Meter Requirements Manual (M-25), Control Center Requirements Manual (M-21), and Accounting and Billing Manual (M-14) contain additional information related to metering requirements for Generators, Co-located Resources, Behind-the-Meter Net Generation Resources, Hybrid Storage Resources, and Energy Storage Resources.

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Next Steps

- **Upcoming MIWG Topics:**
  - Generator Deactivation Proposal
  - Generator Deactivation Tariff
  - HSR Energy Mitigation Tariff

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Our Mission & Vision

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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Questions?

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