

Hybrid Aggregated Storage (HSR) Model – Generator Deactivation and Energy Market Mitigation Tariff Updates

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New Resource Integration

MIWG/ICAPWG

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Agenda

- **Project Background**
- **Overview of Tariff Changes**
- **MST 2.8 – Proposed Definition of HSR Modification**
- **Generator Deactivation Tariff Modifications**
- **Energy Market Mitigation Tariff Modifications**
- **Next Steps**

Previous HSR Presentations (2022)

Date	Working Group	Topic/Links to Materials
March 25 th , 2022	MIWG/ICAPWG	<u>Hybrid Storage Model – Energy and Capacity Market Design Proposal</u>
May 11 th , 2022	MIWG/ICAPWG	<u>NYISO Hybrid Aggregated Storage Resource (HSR) Model Use Case and Proposal Update</u>
July 15 th , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – Energy and Ancillary Services Market Design Proposal Update</u>
August 9 th , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – Energy and Capacity Market Design Proposal</u>
August 24 th , 2022	MIWG/ICAPWG	<u>Hybrid Storage Model – CSR Market Design Proposal Updates</u>
September 12 th , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – CSR Market Design Proposal Updates (Settlements/Metering and Telemetry)</u>
September 12 th , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – Tariff Modifications, Energy and Settlements</u>
September 20 th , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – Tariff Modifications: Interconnection, ERIS, CRIS</u>
October 4 th , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – Tariff Modifications: Energy and Settlements</u>
October 20 th , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – Capacity Tariff, Capacity Mitigation Tariff, Interconnection Tariff, CSR Updates Tariff, Enhanced Fast Start Resources Tariff, and Metering and Telemetry</u>
November 3 rd , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – Metering and Telemetry Tariff</u>
November 14 th , 2022	MIWG/ICAPWG	<u>Hybrid Aggregated Storage (HSR) Model – Generator Deactivation Rules for HSRs, Energy Mitigation - Updated</u>

Project Background

HSR Project Background

- **A HSR consists of an Energy Storage Resource (ESR) and at least one Intermittent Power Resource (IPR) and/or Limited Control 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

Overview of Tariff Changes

Overview of Tariff Changes

- **The following proposed modifications to the Market Administration and Control Area Services Tariff (MST) and the Open Access Transmission Tariff (OATT) address updates needed for Hybrid Storage Resource participation model regarding definitions, generator deactivation, and Energy market mitigation**
 - The rules for these topics were discussed at the 11/14 MIWG presentation, “Hybrid Aggregated Storage (HSR) Model – Generator Deactivation Rules for HSRs, Energy Mitigation – Updated”
- **Modifications to previously proposed redlines are highlighted in the posted materials**

MST 2.8

MST 2.8 – Hybrid Storage Resources

- The NYISO proposes a modification to the definition of the “Hybrid Storage Resources” in MST 2.8 to clarify that the HSR participates as a single resource in the Energy and Ancillary Services markets and not all ISO Administered Markets
- The NYISO proposes the following update to a portion of the previously presented definition for HSR:
 - The Generators must (a) all be located behind a single Point of Injection (as defined in Section 1.16 of the OATT) that accommodates Energy injections greater than 20 MW; and (b) participate in the ISO Administered **Energy and Ancillary Services Markets** together as a single Resource that is capable of following the ISO’s dispatch instructions.

Generator Deactivation Tariff Modifications

Generator Deactivation Tariff Overview

- **The NYISO proposes changes to the following sections in the MST and the OATT to address HSR outages and generator deactivation:**
 - MST 5.18 – Generator Outages and Generator Obligations While in These Outages
 - MST 2.3 – Definition of “Commenced Repair”
 - MST 2.9 – Definition of “Inactive Reserve”
 - OATT 30 – Attachment X
 - OATT 38.3 – Generator Deactivation Requirements

MST 5.18

- **The NYISO proposes updates to the following sections to address outages for components that are part of a HSR:**
 - MST 5.18 – Generator Outages and Generator Obligations While in These Outages
 - MST 5.18.1 – Forced Outages and Commenced Repair Determinations
 - MST 5.18.2 – ICAP Ineligible Forced Outage
 - MST 5.18.3 – Mothball Outage
- **See MST 5.18 in the attached meeting materials for the complete proposed language**

MST 2.3 – Commenced Repair

- The NYISO proposes a modification to the definition of “Commenced Repair” in MST 2.3 to reflect the requirements when an ESR component of a HSR suffers a complete Forced Outage
- Proposed language:
 - A determination by the ISO that a Market Participant with a Generator or a Hybrid Storage Resource i) has decided to pursue the repair of its Generator or the dissolution of the Hybrid Storage Resource and the reconfiguration of the component Intermittent Power Resource(s) and/or Limited Control Run-of-River Hydro Resource so that they can participate in the markets as independent Generators on a going-forward basis, and based on the ISO’s technical/engineering evaluation ii) has a Repair Plan for the Generator or Hybrid Storage Resource that is consistent with a Credible Repair Plan, and iii) has made appropriate progress in pursuing the repair of its Generator or reconfiguration of its Hybrid Storage Resource when measured against the milestones of a Credible Repair Plan.

MST 2.9 – Inactive Reserves

- The NYISO proposes an update to the definition of “Inactive Reserves” in MST 2.9 to address the outage state in which the ESR component of a HSR experiences a complete Forced Outage
- Proposed language:
 - The outage state in which a Market Participant’s Generator is unavailable to produce Energy for a limited period of time not to exceed six months, for reasons that are not equipment related, which state does not meet the criteria to be classified as any other outage pursuant to the provisions of this Services Tariff or of ISO Procedures; or the outage state in which an Intermittent Power Resource or Limited Control Run-of-River Hydro Resource that participate in the markets as components of a Hybrid Storage Resource, and that are capable of operating and injecting Energy onto the grid, are temporarily removed from service while a Market Participant completes a Credible Repair Plan to either (i) repair or replace the Hybrid Storage Resource’s component Energy Storage Resource, or (ii) reconfigure the Intermittent Power Resource or Limited Control Run-of-River Hydro Resource so that it will be able to operate as independent Intermittent Power Resources and/or a Limited Control Run-of-River Hydro Resource on a going-forward basis. A Generator in Inactive Reserves is ineligible to participate in the Installed Capacity market.

OATT 30 – Attachment X

- **The NYISO proposes to add the following language to OATT 30.3, Interconnection Requests, to address multiple Generators behind a single POI transitioning to standalone Generators:**
 - If an existing Large Facility comprised of multiple Generators behind a single Point of Injection modifies its Large Facility to become one or more standalone Generators, the total ERIS of the standalone Generator(s) behind the single Point of Injection cannot exceed the Point of Injection limit.
- **Additionally, the NYISO proposes ministerial edits in the Large Generating Facility Interconnection Request form**

OATT 38.3.1.7

- **The NYISO proposes to add the following new section to OATT 38.3.1 to address the retirement or Mothball Outage of an ESR that participates as part of a HSR:**
 - An ESR that participates in the ISO-Administered Markets as a component of a Hybrid Storage Resource is only permitted to submit a Generator Deactivation Notice to become Retired if all of that Hybrid Storage Resource's other component Generators are also proposing to become Retired on the same date. An ESR that participates in the ISO-Administered Markets as a component of a Hybrid Storage Resource is only permitted to submit a Generator Deactivation Notice to enter a Mothball Outage if all of that Hybrid Storage Resource's other Generators are or will be in a Mothball Outage on or before the proposed Mothball Outage date. The above restrictions do not apply to an Intermittent Power Resource or a Limited Control Run-of-River Hydro Generator that participate in the ISO-Administered Markets as a component of a HSR. Additional information about the deactivation of Generators that are components of a HSR is available in Section 5.18 of the Market Services Tariff.

Energy Market Mitigation Tariff Modifications

MST 23 – Attachment H

- **The NYISO proposes modifications to the following tariff sections to address Energy Market Mitigation measures and the thresholds for HSR:**
 - MST 23.3.1 – Thresholds for Identifying Physical Withholding
 - MST 23.4.3.2 – Imposition of financial Sanction
 - MST 23.4.3.3 – Base Penalty Amount

MST 23.3.1 – Thresholds for Identifying Physical Withholding

- The NYISO proposes to add the following language to MST 23.3.1.1.1.1 to address the physical withholding threshold for the Operating Reserve Limit (ORL) submitted or updated by the HSR operator
- Proposed language:
 - A Hybrid Storage Resource will violate the withholding threshold whenever its Operating Reserve Limit is less than 75% of the minimum of (a) the HSR's Beginning Energy Level, or (b) the HSR's emergency ramp rate multiplied by the time period over which the Operating Reserves would have been scheduled. Provided however, withholding less than 5 MW of Operating Reserves will not result in a violation.
- This threshold is proposed to be the same for Generators in a Constrained Area

MST 23.4.3.2 – Imposition of Sanction

- **The NYISO proposes to add a condition under which it will impose an after-the-fact financial penalty if a HSR withholds Operating Reserves.**
- **Proposed language:**
 - or (xii) a Market Party has withheld Operating Reserves that a Hybrid Storage Resource is capable of providing by submitting an Operating Reserve Limit that violates the conduct threshold specified in Section 23.3.1.1.1.1 of these Mitigation Measures and causes a market clearing price impact that exceeds the applicable threshold.

MST 23.4.3 – Base Penalty Amount

- The NYISO proposes to add a new section, MST 23.4.3.3.1.3, to exclude the component ESR's Lower Storage Limit from the penalty calculations when determining the quantity of Operating Reserves withheld
- Proposed language:
 - For purposes of determining the “MW meeting the standards for mitigation during Mitigated Hours” the ISO shall exclude the Lower Storage Limit of an Energy Storage Resource that is a component of a Hybrid Storage Resource when the ISO is calculating a penalty for withholding Operating Reserves.

Next Steps

- BIC vote

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

Questions?