

Co-located Storage Resource Update Market Design Proposal

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Agenda

- **Project Background**
- **CSR Market Design Summary**
- **Proposed Tariff Changes**
- **Next Steps**

Previous CSR Presentations

Date	Working Group	Topic/Links to Materials
December 15, 2022	BIC	Hybrid Aggregated Storage (HSR) Market Design Proposal
December 22, 2022	MC	Hybrid Aggregated Storage (HSR) Market Design Proposal
December 15, 2023	ICAPWG/MIWG	Co-located Storage Resource Model Updates
February 20, 2024	ICAPWG/MIWG	Co-located Storage Resource Model Updates
March 13, 2024	BIC	Co-located Storage Resource Update Market Design Proposal

Project Background

CSR Model Background

- **The Co-located Storage Resource (CSR) project explores market participation options for Generators that are co-located with Energy Storage Resources and are both behind a single Point of Injection**
 - Motivations for coupling generation with storage resources include financial incentives as well as improvements to flexibility and availability of resources

CSR Model Background

- In 2021, the Co-located Storage Resource (CSR) model was deployed, allowing an Energy Storage Resource (ESR) to pair with a wind or solar Intermittent Power Resource (IPR) behind the same Point of Injection and share a set of CSR Scheduling Limits while participating in the ISO Administered Markets as two distinct Generators
- As part of the 2022 Hybrid Storage Resource (HSR) effort, the CSR model was expanded to include the following participation options:
 - ESR + Landfill Gas IPR
 - ESR + Limited Control Run-of-River Hydro (RoR)
 - ESR + Fast-Start Resource (FSR)

CSR Model Background

- A proposed 2024 project would further expand the eligibility of the CSR model to include steam turbines that pair with an ESR. Instead of creating an additional 2024 project, NYISO agreed to include this work as part of the ongoing HSR project
- As a result, the NYISO now proposes tariff modifications for a broader CSR expansion to allow an ESR to generically pair with another Generator, with the following limitations in place. The non-ESR Generator cannot be:
 - A Withdrawal-Eligible Generator
 - A Limited Energy Storage Resource
 - A Generator comprised of a group of generating units at a single location, which grouped generating units are separately committed and dispatched by the ISO, and for which Energy injections are measured at a single location
 - One or more Generators that are participating via a model that can accommodate several participants (such as HSR and DER) – similar to the "no nested Aggregations" rule
 - Generators that serve a Host Load

CSR Model Background

- **The proposed Tariff revisions that accompany this presentation further modify and will be submitted to FERC with the Hybrid Storage Resource Tariff revisions that were approved by the BIC and MC in December of 2022**
 - The proposed tariff revisions were approved at the March 13, 2024, BIC
 - Additional information is provided on slides 14 and 15

CSR Market Design Proposal Summary

CSR Definition

- **A modification has been made to the Market Administration and Control Area Services Tariff (MST) 2 Definitions, and conforming changes will be made to the Open Access Transmission Tariff (OATT):**
 - **Co-located Storage Resource (“CSR”):** An Energy Storage Resource and one other type of Generator that is not a Withdrawal-Eligible Generator. The second participating Generator can be a wind, solar, or landfill gas fueled Intermittent Power Resource, a Limited Control Run-of-River Hydro Resource, or a Dispatchable Generator which **may** require commitment and time to start-up. The two Generators must: (a) both be located behind a single Point of Injection (as defined in Section 1.16 of the OATT); (b) participate in the ISO Administered Markets as two distinct Generators; and (c) share a set of CSR Scheduling Limits. Generators that may not participate in the ISO-Administered Markets as components of a CSR include: (a) Limited Energy Storage Resources, (b) a Generator comprised of a group of generating units at a single location, which grouped generating units are separately committed and dispatched by the ISO, and for which Energy injections are measured at a single location, (c) Generators participating via a model that can accommodate several participants, including but not limited to Hybrid Storage Resources and Aggregations, and (d) Generators that serve a Host Load.
- **Note: the highlighted language in the definition on the slide is a change from the presentation from the March 13 BIC. The highlighted language was included in the tariff materials posted with the BIC presentation.**

CSR Update Market Design Overview

- **The updates to the CSR model largely apply the existing market design rules to the new types of eligible resources, including:**
 - Each unit within a CSR will have a distinct PTID, bid, schedule, and settlement
 - Each unit will participate under its own participation model
 - A CSR scheduling constraint will be used to determine feasible Energy and Ancillary Service schedules for units within the CSR

CSR Update Market Design Overview

- **Additionally, new market design considerations are proposed to accommodate the expanded eligibility of the participation model**
 - Any participating Generator that is eligible to provide Operating Reserves and Regulation Service may do so when participating as a CSR
 - When a Generator that submits a Minimum Generation Bid or that is a Fixed Block Unit participates as a CSR, the Generator will be treated as operating at, at least, its Minimum Generation Level for the purpose of scheduling the Energy Storage Resource whenever the Generator is scheduled, including during start-up and shut-down periods

Proposed Tariff Changes

CSR Tariff Modifications

- **Proposed tariff modifications have been made to support the updates to the CSR model**
 - Proposed modifications have been built on top of the HSR tariff revisions that were approved at the December 2022 BIC and MC. Any **new modifications proposed for discussion today are highlighted yellow in the posted materials**
- **Capacity Market related tariff changes have been proposed to the following sections and are posted with today's meeting materials:**
 - MST 2.3; 5.12.6.2; 23.2
 - Additionally, changes have been proposed to MST 5.12.7.2 to accommodate the Hybrid Storage Resource Capacity Market participation
- **Energy Market related tariff changes have been proposed to the following sections and are posted with today's meeting materials:**
 - MST 2.3; 4.2; 4.4; 7.2; 15.4; 17.1
 - OATT 2.7
- **An additional modification has been proposed in MST 5.12 to support the HSR model**
- **Conforming changes will be made to OATT definitions, or a cross-reference to the MST definition will be added to the OATT**
- **The NYISO will need to conform the HSR and CSR tariff revisions with the DER tariff revisions in its FERC filing**

Note on Tariff Modifications

- **Tariff changes that were approved at the December 2022 Business Issues Committee and Management Committee meetings related to interconnection for Hybrid Storage Resources and Co-located Storage Resources will require additional modifications as a result of FERC Order No. 2023, “Improvements to Generator Interconnection Procedures and Agreements”**
 - Revisions will be necessary to comply with rules and requirements developed as part of Order No. 2023
 - After the NYISO submits its Order No. 2023 compliance filing to FERC, it will incorporate any additional interconnection rules that are needed to implement HSR and enhanced CSR into the new OATT Attachment HH and present its proposed revisions to stakeholders at a working group for review and comment
 - The NYISO will consider any comments it receives from stakeholders before it submits the complete HSR filing to FERC in April

Next Steps

Next Steps

- Present the proposed HSR model and CSR updates to the NYISO Board of Directors
- FERC filing
 - Target date is Q2 2024
- The CSR updates are expected to be implemented in 2024

Questions?

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