

CSR Tariff Updates

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Agenda

- Background
- Explanation of Issue
- Proposed Tariff Revisions
- Next Steps
- Appendix: Example

Background

Background

- **On January 29, 2021, the NYISO filed with FERC the Tariff revisions for the Co-Located Storage Resource (CSR) participation model proposal**
- **On March 30, 2021, FERC issued an order accepting the NYISO's proposed Tariff revisions**
- **As discussed at the October 5th ICAPWG/MIWG, the NYISO has been working to implement the CSR participation model by the end of 2021, and it has identified some clarifying revisions that should be made to certain Tariff sections**
 - The proposed revisions address situations when other constraints need to be prioritized above the CSR injection Scheduling Limit or the CSR withdrawal Scheduling Limit constraint

Explanation of Issue

Reasons for Proposed Tariff Updates

- **NYISO implementation of CSR injection and withdrawal Scheduling Limit Constraints and CSR-Generator specific operating parameters**
 - A few CSR Tariff revisions suggest that the CSR injection and withdrawal Scheduling Limit constraints may be prioritized over unit-specific limitations that affect a CSR Generator's operation (such as a ramp limit or a CSR Generator's UOL or LOL)
 - The Tariff language is not consistent with the NYISO's intended implementation
 - The NYISO will relax a CSR Scheduling Limit constraint if necessary to respect the unit-level parameters of a CSR Generator, including its ramp rate, UOL or LOL

Proposed Tariff Revisions

Proposed Tariff Revisions

■ MST/OATT Definition

- CSR Scheduling Limits: The CSR injection Scheduling Limit ~~sets the maximum is used to determine the~~ combined Regulation Capacity, Operating Reserve and Energy injection schedules for, and the maximum permitted net injection by a CSR's Generators. The CSR withdrawal Scheduling Limit ~~sets the maximum is used to determine the~~ combined Regulation Capacity and Energy withdrawal schedules for, and the maximum permitted net withdrawal by a CSR's Generators.

Proposed Tariff Revisions (cont'd)

- **MST Sections 15.4.2.1 and 15.4.3.1 (same text in both sections):**
 - For Co-located Storage Resources the sum of the amount of Energy each Generator is scheduled to provide, the amount of Regulation Service the Energy Storage Resource is scheduled to provide, and the amount of each Operating Reserves product the Energy Storage Resource is scheduled to provide, shall ~~not exceed~~ account for the CSR injection Scheduling Limit consistent with ISO Procedures. The net amount of Energy that the CSR Generators are scheduled to withdraw, plus the amount of Regulation Service the Energy Storage Resource is scheduled to provide, shall ~~not exceed~~ account for the CSR withdrawal Scheduling Limit consistent with ISO procedures.

Manual Updates

- Language will be added to the applicable manuals (likely the Day-Ahead Scheduling Manual and the T&D Manual) describing how the scheduling limits will interact with unit specific constraints (*i.e.*, ramp, UOL and LOL)

Next Steps

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- **Seek vote at MC**
- **Seek BOD approval (November 2021)**
- **File with FERC and request a flexible effective date for the Tariff changes that is prior to 12/31/21**
- **Manual changes to reflect the updates (November 2021)**

Appendix

Example: CSR injection Scheduling Limit Conflicts with Generator Ramp Rate

Equipment at the CSR POI experiences an issue, and the CSR injection Scheduling Limit drops from 200MW to 100MW

	CSR ESR	CSR IPR
UOL (MW)	50	150
Telemetered Output (MW)	50	150
NYISO Schedule (MW) in next interval *	30	95
Ramp Rate (MW/minute)	4	11

- **50MW ESR output + 150MW IPR output = 200MW (violates CSR Injection Scheduling Limit by 100MW)**
- **(4MW/minute ESR ramp rate + 11MW/minute IPR ramp rate) * (5-minute RTD interval) = 75MW/5 minutes**
 - Given the ramp rate of each Generator in the CSR, the combined output cannot get below the CSR Injection Scheduling Limit by the next RTD interval (units can only move 75MW, but output is 100 MW above the CSR injection Scheduling Limit)
 - In this scenario, the NYISO's dispatch software would violate the CSR injection Scheduling Limit in order to respect the Generator ramp rates for a few intervals, until the net output of the CSR Generators can be dispatched down to the Scheduling Limit

*In this simplified example, CSR Generator schedules are limited to energy only.

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