

Additional Tariff Modifications Required for the ESR Participation Model

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Agenda

- Background
- Tariff Changes
- Next Steps



Background

- During software development for the Energy Storage Resource Project, NYISO identified additional tariff revisions required to support the ESR participation model
- These revisions address:
 - Day-Ahead Margin Assurance Payments
 - One modification is to support Fast-start pricing rule changes
 - Method for setting feasible Day-Ahead and real-time schedules
 - Generator offer caps and reference levels (presented February 26, 2020)
 - ICAP Supplier bidding requirements (presented March 6, 2020)
- This presentation discusses the necessary changes to DAMAP and setting feasible schedules



Additional Tariff Changes



Day-Ahead Margin Assurance Payments

- MST Section 25 Attachment J
- Clarify which of the two Energy contribution formulas will apply to ESR schedule changes.
- The first existing formula applies when the real-time Energy schedule is lower than the Generator's Day-Ahead Energy schedule
 - NYISO proposes to clarify that this formula will apply (1) when the Day-Ahead schedule is to inject Energy and the real-time Energy schedule is lower than the Day-Ahead Energy schedule; or (2) when the Day-Ahead schedule is to withdraw Energy and the real-time Energy schedule is greater than the Day-Ahead Energy schedule
- The second existing formula applies when the real-time Energy schedule is greater than or equal to the Generator's Day-Ahead Energy schedule
 - NYISO proposes to clarify that this formula will apply (1) when the Day-Ahead schedule is to inject Energy and the real-time Energy schedule is greater than or equal to the Day-Ahead Energy schedule; or (2) when the Day-Ahead schedule is to withdraw Energy and the real-time Energy schedule is less than or equal to the Day-Ahead Energy schedule



DAMAP continued

- NYISO proposes to simplify and remove redundancy from the defined terms in Section 25.3.4 for the DAMAP formula
- NYISO proposes to add an exception to specify that Faststart units that increase their minimum generation bids in real-time will not be eligible for DAMAP
 - The proposed clarification is consistent with the Tariff rules that apply to increasing Incremental Energy Bids or Start-Up Bids in realtime
 - This proposed change is related to Fast-Start, not ESRs



Setting Feasible Real-Time Schedules

- MST 4.4.2.1
- Tariff revision needed to support the market software used to achieve feasible realtime schedules for ESRs
 - As described in the NYISO's Order No. 841 compliance filing, the NYISO's Real-Time Dispatch software will account for the Energy Level of all ESRs, and is designed to avoid infeasible dispatch of both Self-Managed and ISO-Managed Energy Storage Resources.
 - Tariff language submitted and accepted states that the market software will reduce the ESR's UOL or increase its LOL, as appropriate, to an achieve a feasible schedule
 - In the process of coding the market software, the NYISO determined that it is not necessary and may be inefficient to modify an ESR's UOL/LOL to achieve feasible real-time schedules
 - The software operates consistent with the intent and purpose of the accepted ESR tariff. It will
 determine feasible real-time schedules based on an ESR's actual telemetered energy storage
 level.



Proposed Tariff Modifications

- MST Sec. 4.4.2.1 as filed: "Real-Time Dispatch will review each Energy Storage Resource's Beginning Energy Level in each interval. Real-Time Dispatch will attempt to prevent dispatching a Self-Managed Energy Storage Resource in a manner that would be infeasible based on its Beginning Energy Level. Instead, Real-Time Dispatch will reduce the Energy Storage Resource's Upper Operating Limit or increase its Lower Operating Limit, as appropriate, to an achievable value."
- Proposed Revisions to MST Sec. 4.4.2.1: "Real-Time Dispatch will review each Energy Storage Resource's Beginning Energy Level in each interval. Real-Time Dispatch will attempt to prevent dispatching a Self-Managed Energy Storage Resource in a manner that would be infeasible based on its Beginning Energy Level. Instead, Real-Time Dispatch will consider an Energy Storage Resource's Beginning Energy Level in developing a schedule for the binding interval reduce the Energy Storage Resource's Upper Operating Limit or increase its Lower Operating Limit, as appropriate, to an achievable value."



Tariff Modifications for 205 Filing

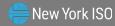


Tariff Changes

- In addition to the changes discussed today, the following presentations outline other tariff modifications:
 - ESR ICAP Supplier B/S/N Revisions
 - https://www.nyiso.com/documents/20142/11214986/ESR%20Bidding%20for%20ICAP%20Suppliers.pdf
 - Offer Price Capping and Mitigation
 - https://www.nyiso.com/documents/20142/11026984/ESR%20Tariff% 20Updates.pdf



Next Steps



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Next Steps

- NYISO will review the feedback provided today and would like to bring the tariff modifications listed below to the March BIC
 - Day-Ahead Margin Assurance Payment
 - Method for setting feasible schedules
 - Generator offer caps and reference levels
 - ICAP Supplier bidding requirements



Questions?



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- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policymakers, stakeholders and investors in the power system



