

Real-Time Market Settlements

Services Tariff Clarifications

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Agenda:

- Proposed Real-Time Market Settlements Tariff Revisions
- Interaction with Energy Storage Resources (ESRs) and Order No. 841 Compliance Filing
- Next Steps

Proposed Real-Time Market Settlements Tariff Revisions

NYISO Proposal Overview

- NYISO is proposing a series of tariff clarifications to MST section 4.5 related to Real-Time Market settlements
 - Reviewed with Stakeholders at 10/18/2018 MIWG
- No changes to the actual calculations are proposed
 - No software modifications are required
 - Tariff changes are intended to clarify existing rules as currently implemented

NYISO Proposal Overview, continued

- **Revise Services Tariff Section 4.5 to more clearly describe real-time Energy imbalance settlements**
 - Energy imbalance payments and charges account for differences among Actual Energy Injections/Withdrawals, real-time Energy schedules and Day-Ahead Energy schedules
- **Consolidate Services Tariff Sections 4.5.3.1 and 4.5.6 into one section**
 - Revised Services Tariff Section 4.5.2.1 contains real-time settlement formulas for Suppliers
- **Consolidate Services Tariff Sections 4.5.1 and 4.5.4.1 into one section**
 - Revised Services Tariff Section 4.5.3.1 contains real-time settlement formulas for withdrawals
- **Clarify Energy imbalance settlement formulas for Imports and Exports**

Real-Time Energy Imbalance Payments

Services Tariff Section 4.5.2.1

- Section will include three formulas for Supplier payments
 1. A formula for RTD intervals with positive RT LBMPs;
 - Supplier Payment = $(\text{MIN}(\text{AE}_{iu}, \text{RTS}_{iu}) - \text{DAS}_{hu}) * \text{LBMP}_{iu}^{\text{RT}}$
 2. A formula for when: (1) RTD intervals have negative LBMPs, or (2) there is a NYISO large event reserve pickup or maximum generation pickup, or (3) there is a TO reserve pickup in accordance with a Reliability Rule;
 - Supplier Payment = $(\text{AE}_{iu} - \text{DAS}_{hu}) * \text{LBMP}_{iu}^{\text{RT}}$
 3. A formula for Imports
 - Supplier Payment = $(\text{RTS}_{iup} - \text{DAS}_{hup}) * \text{LBMP}_{ip}^{\text{RT}}$

Limitations on Real-Time Settlements

Services Tariff Section 4.5.2.1

- As is the case today:
 - Suppliers are not settled for Energy in excess of their real-time scheduled Energy injections, except (1) when the LBMP is negative, (2) for Compensible Overgeneration, (3) during a large event reserve pickup or a maximum generation pickup, or (4) when a TO initiates a reserve pickup; and
 - Generators are not compensated for any Energy in excess of their real-time scheduled energy injection when the Generator is not following Base Point Signals and its upper operating limit has been reduced by the NYISO
- Services Tariff Section 4.5.6 will be deleted

Real-Time Energy Imbalance Charges for Withdrawals

Services Tariff Section 4.5.3.1

- Section will include two formulas for Customer Charges
 1. A formula for real-time Energy charges to Customers;
 - Customer Charge = $(AEW_{icz} - DAS_{hcz}) * LBMP_{iz}^{RT}$
 2. A formula for Exports;
 - Customer Charge = $(RTS_{iup} - DAS_{hup}) * LBMP_{ip}^{RT}$
- Move existing BTM:NG language from Section 4.5.1

Real-Time Settlements for Imports and Exports

- Proposed revisions clarify the balancing market settlement formulas for Imports (*i.e.*, injections) and Exports (*i.e.*, withdrawals)
- Failed Transactions remain subject to a Financial Impact Charge
 - No software modifications are required

Interaction with Energy Storage Resources (ESRs) and Order No. 841 Compliance Filing

Energy Storage Resource Terminology

- Proposed revisions will accommodate ESRs
 - Tariff revisions proposed in these materials include certain defined terms that will be introduced and defined in the NYISO's Order 841 compliance filing
 - The real-time imbalance formulas in section 4.5.2.1 will apply to both injections and withdrawals for Energy Storage Resources

Next Steps

- November 2018:
 - Present to BIC for stakeholder vote
 - Present to MC for stakeholder vote
- NYISO Board of Directors Vote
- Submit Federal Power Act Section 205 Filing to FERC

Questions?

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

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



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