

ESR Participation Model: Settlements

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Agenda

- **Background**
- **Market Design Concept Review / ESR settlement framework**
 - Persistent Over- and Under-generation Charges and Compensable Over-generation
 - BPCG
 - RRAC/RRAP
- **Timeline**

Previous Discussions

Date	Working Group	Discussion points
08-04-16	Market Issues Working Group (MIWG)	Initial discussion on alternatives for Energy Storage in the NYISO markets
09-29-16	MIWG	Market Design ideas discussion
11-29-16	MIWG	Presentation providing more detail on the Market Design that the NYISO will pursue
05-05-17	MIWG	Presentation addressing the proposed modeling enhancements as the cornerstone of the Energy Storage Integration phase
07-19-17	MIWG	Presentation delving into the eligibility criteria and RT scheduling logic for Energy Storage Resources (“ESRs”).
08-25-17	MIWG	Discussion on the Settlements logic for ESRs.
10-03-17	MIWG	Day-Ahead scheduling logic and Mitigation framework
11-02-17	MIWG	Aggregations in the ESR model
12-20-17	MIWG	Market Design Concept Proposal Summary
02-21-18	MIWG	Ancillary Services Treatment in the ESR Participation Model
04-26-18	MIWG	ESR Energy Level Monitoring

Background

- **In 2017, the NYISO developed a framework for ESR settlements.**
 - Specifically the NYISO discussed the following elements of the settlement logic:
 - Penalty structure
 - DAMAP
 - BPCG
 - The settlement framework proposed was largely consistent with that currently used for Generators. However, additional considerations are necessary to fully account for ESRs' withdrawing capabilities and Energy Level constraints in the settlements logic.
- **Today we will discuss additional settlement elements.**

Background

- Regarding Energy Level monitoring alternatives, the NYISO proposed that ESRs be allowed to participate in one of two modes¹:
 1. NYISO-monitored energy level
 - ESRs will be able to request that the NYISO monitor their energy level constraints by awarding schedules that respect their Beginning Energy Level, Upper Storage Limit and Lower Storage Limit parameters.
 2. Self-monitored energy level
 - ESRs will be responsible for managing their energy level constraints through their offers.

1. See 4/26/18 MIWG Presentation: [ESR Participation Model: Energy Level Monitoring](#) for additional information.

Settlement Framework

Existing Settlement Provisions for Over- and Under- Generation

- Under the current NYISO Generator settlement structure for over/under generation, an energy provider is expected to remain within a 3% of UOL tolerance from its Base Point.
 - However, if a Generator's actual output deviates by more than 3%, it may be subject to certain settlement provisions. Ordinarily, these provisions are structured as follows:
 - Suppliers, subject to certain restrictions, may be compensated for MWs produced above their Real-Time Energy Schedule up to 3% of their UOL (See MST Section 2.3 – Definitions C, Compensable Over-generation).
 - If a Supplier, subject to certain exceptions, operates at a level below its Energy schedule by more than 3% of its UOL, it is only compensated for its actual output; and it may be eligible for Persistent Under-generation Charges² for the difference between its actual output and the lower bound of the 3% band created around the Base Point that the resource received.

2. See Tariff Rate Schedule 3-A (Section 15.3A) for additional details.

Proposed Settlement Provisions for Over- and Under- Withdrawing ESRs

- The NYISO proposes to extend the current settlement provisions to ESRs:
 - ESRs will be expected to remain within 3% of the resource's maximum capability (UOL/Max. Load).
 - For generating/injecting states, 3% of the resource's UOL will be applicable.
 - For withdrawing states, 3% of the resource's Max. Load will be applicable.
 - Additionally, if an ESR over-withdrew energy from the grid in a withdrawing state, the resource may be eligible for a "Persistent Over-generation Charge" as it would be when the resource is under-generating in a generating state.
 - If an ESR under-withdrew its Base Point by more than 3% of its Max. Load, it may be charged for at least its Base Point minus 3% of its Max. Load.
 - If an ESR over-withdrew its Base Point by more than 3% of its Max. Load, it may be charged for its actual withdrawal; and it may be eligible for an equivalent Persistent Under-generation charge.
 - See Services Tariff Rate Schedule 3-A for details on current Under-generation Charges.

Bid Production Cost Guarantee (BPCG) Payments

- **Services Tariff Sec. 18 describes ten different BPGC payments that are available to Suppliers. A Supplier may be eligible for one of the BPGC payments if it is committed, but its LBMP revenues are not enough to cover the resource's costs³.**
 - BPCG payments are totaled on a daily-basis.
- **The NYISO proposes to allow ESRs to be eligible to receive BPCG payments, and to base new ESR BPCG calculations on the existing formulae for Generators.**
 - If an ESR is uneconomically committed for either withdrawing or injecting, it may be eligible for BPCG.
 - ESRs will have to be ISO-committed in order to retain eligibility for BPCG payments.
 - BPCG payments for the injecting states will be substantively similar to payments available to Generators; the NYISO is developing appropriate calculations for BPCG payments for energy withdrawals.
- **The NYISO is considering in its proposal that receiving DAMAP payments for one state (withdrawing/injecting) would not preclude an ESR from being eligible for BPCG payments for another state during the same hour.**

3. The resource's costs are inclusive of the Regulation Capacity Bid, Regulation Movement Bid, Operating Reserves Bid, Minimum Generation Bid, Start-up Bid and Incremental Energy Bid, when existent and applicable.

Regulation-Specific Charges and Payments

- **Regulation Revenue Adjustments are designed to balance the Energy payments that Generators receive and the costs that Generators incur when providing Regulation Service.**
 - For any interval in which a Generator that is providing Regulation Service receives an AGC Base Point Signal that is different from its RTD Base Point Signal, it may be eligible to receive or pay a Regulation Revenue Adjustment Payment (RRAP) or Regulation Revenue Adjustment Charge (RRAC).
- **The NYISO proposes that ESRs be eligible for similar charges/payments when providing Regulation in either withdrawing or injecting states.**
 - Example: If the Energy Bid Price of a resource is higher than the LBMP at its location for a given interval, and the resource receives an AGC Base Point Signal that is higher than its RTD Base Point Signal, the Generator may receive a RRAP.
 - For additional information on RRAC and RRAP calculations and eligibility criteria see NYISO Accounting and Billing Manual – Section 5.2.

Timeline

- **May – August 2018:**
 - Continue discussions at MIWG on key topics:
 - Settlements rules – DAMAP eligibility
 - Capacity market participation
 - DA and RT market prototyping efforts
 - FERC Order No. 841 Implications
 - Mitigation rules
 - Credit implications
 - Consumer impact analysis
- **June-September 2018**
 - Draft Tariff language and share with stakeholders.
- **September-November 2018**
 - Prepare and finalize FERC Order No. 841 compliance filing.

Questions?

We are here to help.

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- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system



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