New York ISO
Independent System Operator

Storage as Transmission

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MIWG/ICAPWG

December 16, 2025

Previous Presentations

Date	Working Group	Topic/Links to Materials
July 11, 2023	MIWG/ICAPWG	Storage as Transmission
September 18, 2023	MIWG/ICAPWG	Storage as Transmission – Use Cases and Recommendations
November 27, 2023	MIWG/ICAPWG	Storage as Transmission
November 21, 2024	MIWG/ICAPWG	Storage as Transmission
May 20, 2025	MIWG/ICAPWG	Storage as Transmission
September 8, 2025	MIWG/ICAPWG	Storage as Transmission
October 28, 2025	MIWG/ICAPWG	Storage as Transmission

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Agenda

- **Project Discussion and Next Steps**
- **Appendix:**
  - Project Background
  - Market Design Overview

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Project Discussion and Next Steps

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Project Discussion

- **At the October 28 working group, the NYISO presented the market design and associated tariff revisions for the Storage as Transmission project**
  - The NYISO received feedback requesting:
    - Additional details on the operations of the facilities
    - How a SAT facility as a non-market asset may be reflected in the market to capture potential impacts
    - How SAT facilities will appear in the Gold Book
    - How SAT facilities will appear in the IRM, LCR, and RA models
    - Whether settlements such as the Regulation Revenue Adjustment Payment (RRAP) and Regulation Revenue Adjustment Charge (RRAC) will apply to the SAT facilities
    - Treatment of non-performance of a SAT facility
  - The NYISO is working to address these open design questions and intends to return to stakeholders in Q1 with detailed responses

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Next Steps

- The NYISO intends to continue discussions on the Storage as Transmission market design into 2026
- The NYISO will continue these design discussions with stakeholders prior to bringing the design and the associated tariff to a vote at a future Business Issues Committee meeting

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Appendix

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Project Background

Project Background

- **Project Description:**
  - The characteristics of energy storage allow these assets to provide many potential services to grid operators. When operating as a coordinated resource, storage can have positive impacts on transmission systems by shifting demand, supporting ancillary services, and managing transmission congestion
  - In some select instances, storage used exclusively as a regulated transmission asset, instead of a market resource, could provide similar services as traditional transmission solutions
  - The NYISO's current market rules consider storage to be a market-based Generator that competes and is scheduled in parallel with other suppliers. The current rules do not allow assets that are suppliers, such as energy storage, to be considered with traditional transmission resources to be eligible for cost-of-service rate recovery

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Project Background

- **In 2023, the NYISO completed a study on the integration of Storage as Transmission Facilities ("SAT Facilities") into the planning processes, presented at the November 27, 2023, MIWG**
  - The effort identified a number of topics to be addressed in developing a storage as transmission model
- **In 2024, the NYISO expanded on the study to develop a design proposal that was presented at the November 21, 2024, MIWG**

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Project Background

- **Design Principle:**
  - Explore additional avenues for utilizing energy storage resources while maintaining reliability and the integrity of the competitive wholesale markets
- **2025 Deliverable: Market Design Complete**
  - Detailed design and associated tariff will be developed, building on the 2024 concept proposal

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Market Design Overview

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Establishing the Market Mechanism

- Within the current planning processes, energy storage is eligible to be proposed as a market-based solution
- With the implementation of a SAT model, energy storage may be proposed as a regulated transmission resource that is eligible for cost-of-service rate recovery in response to identified transmission needs
  - SAT will be evaluated consistent with the NYISO's planning processes
- SAT will not be dispatched via the NYISO-administered wholesale markets, and SAT will not operate in the wholesale markets beyond what is necessary to act as a transmission resource

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SAT Eligibility

- **SAT will be eligible to be considered as a transmission solution for needs that are identified through the Economic Planning Process, the Reliability Planning Process, or the Public Policy Transmission Planning Process**
  - SAT may be a component of a solution (*i.e.*, a SAT and a traditional transmission facility), so long as the SAT meets the identified eligibility criteria
  - A proposed solution may consist of multiple SAT facilities; however, the ISO may evaluate the compounding impact to reliability and operability when multiple SAT are included as part of the proposal
  - Market-based solutions are preferred in the Comprehensive System Planning Process

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SAT Eligibility

- **SAT may only be considered as a transmission solution for a need that arises from an N-1-1 contingency event, or an N-1-1-0 contingency event if the applicable Transmission Owner plans its system based on such N-1-1-0**
  - N-1-1 and N-1-1-0 contingencies are lower-probability events. Using SAT for more infrequent events aims to minimize potential adverse market impacts that result from the SAT injecting and/or withdrawing Energy
  - The SAT will be dispatched manually and not via the NYISO markets
    - Additional details on the operations of SAT are discussed in future slides

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SAT Evaluation

- **Consistent with the NYISO planning processes, if proposed by a developer as a solution to a need identified through the Economic Planning Process, Reliability Planning Process, Public Policy Planning Process, or Short-Term Reliability Process, SAT will be included in the evaluation process with other proposed solutions to determine the more efficient or cost-effective solution to address an identified need**
  - SAT will be evaluated using the criteria for the planning process under which it was proposed

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SAT Evaluation

- In addition to the criteria established under each planning process, a SAT proposal must include the expected useful life of a solution for informational purposes
- A 20-year planning window is established in FERC Order No. 1920. Therefore, in order to assess SAT proposals over that timeframe, if the expected useful life of the proposed SAT is less than 20 years, the SAT proposal should include:
  - Equipment replacement schedules and associated costs; and/or
  - Retirement costs for the SAT

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SAT Interconnection

- **If a SAT is identified, on its own or as part of a project, as the selected, triggered, or approved solution in one of the planning processes, the SAT will be subject to the Transmission Interconnection Procedures outlined in Attachment P of the NYISO OATT**
  - The SAT will not be eligible to go through the Standard Interconnection Procedures in Attachment HH of the NYISO OATT

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SAT Operations

- **The NYISO will have operational control to dispatch the SAT, which will be dispatched manually**
  - The SAT will not submit bids
  - The SAT will not be dispatched via the NYISO-administered wholesale markets
  - The NYISO will coordinate the dispatch of the SAT, similar to the operation of non-bulk assets
    - The NYISO will coordinate the dispatch of the SAT consistent with the planning need for which it was selected and additional system conditions as described in a coordination agreement. Additional details on the coordination agreement can be found on slide 17
- **Consistent with FERC precedent, the owner of the SAT will be responsible for initiating the charging and discharging to return to and to maintain the necessary state of charge of the asset**
  - However, the SAT owner must coordinate with the ISO when intending to charge or discharge to minimize impacts on system reliability

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SAT Operations

- **Because SAT will be manually dispatched, the NYISO proposes the implementation of the following limitations:**
  - 20 MW of nameplate capacity of SAT at a single substation
  - 200 MW of nameplate capacity in aggregate of SAT across the NYISO
    - The 20 MW limit at a single substation aligns with the normal constraint reliability margin (“CRM”) value for transmission facilities
    - These limits reduce the burden on NYISO grid operators, potentially during a complex event
    - Additionally, implementing such limits reduces the impacts on the market due to a sudden injection or withdrawal of Energy

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SAT Operations

- **If a SAT is identified as a solution in the Reliability Planning Process, Economic Planning Process, Public Policy Transmission Planning Process, or Short-Term Reliability Process, a SAT coordination agreement must be executed, which may include:**
  - Scenarios/system conditions in which the SAT may be dispatched to meet the need for which it was selected
    - Whether the SAT may be dispatched for other/additional system conditions
  - Additional metering and communications protocols
  - Plans for replacement and/or augmentation of the system, if necessary
  - Whether the SAT can provide voltage support service

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SAT Settlements

- **The cost of the SAT will be allocated consistent with the methods of the planning process under which it was selected**
- **Because a SAT will be charging from and injecting onto the grid to act as a transmission resource, there will be resulting costs and revenues from interacting with the wholesale markets**
  - When a SAT charges from or injects onto the grid, the SAT will be charged and/or credited at the applicable LBMP
  - Any resulting costs and/or revenues will offset the cost allocation

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