New York ISO
Independent System Operator

Storage as Transmission

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Agenda

- Project Background
- Storage as Transmission Landscape
- Issues Identified
- Next Steps

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Project Background

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Storage as Transmission

- **Project Background:**
  - The unique characteristics of energy storage allow these assets to provide many potential services to grid operators. During normal operation, 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, might be able to provide an alternative option for providing the same services as traditional transmission solutions
  - Currently, the NYISO tariffs treat storage as a Generator, and there is no pathway by which a storage project could be evaluated through the interconnection process as a regulated transmission asset, and no methods by which to operate a storage asset as transmission

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Storage as Transmission

- **Deliverable: Q4 Issue Discovery**
- **Project Description:**
  - This project will assess the current NYISO processes and whether a process for considering and evaluating a storage project as a regulated transmission asset, including options for cost recovery, is needed
  - Additionally, the project will consider if developing rules and methods for operating the storage as a regulated transmission asset to address identified reliability issues, is an appropriate next step

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Storage as Transmission Landscape

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FERC Statements on Storage as Transmission

- FERC hosted a Technical Conference on November 9, 2016, to discuss potential use cases for energy storage to receive cost-based rate recovery, as well as considerations for a storage resource participating as both a transmission asset and in wholesale markets
- As a follow-up to the Technical Conference, FERC issued a Policy Statement on January 19, 2017, clarifying precedent and providing guidance on the ability of energy storage resources to recover costs through both cost-based and market-based rates
  - FERC acknowledged that there are areas where implementation details will need to be further considered and addressed, including:
    - Potential for double-recovery of costs
    - Adverse market impacts
    - RTO/ISO independence from market participants

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Storage as Transmission Proceedings Across ISOs/RTOs

- **There are three ISOs/RTOs that have filed storage as transmission proposals with FERC**
  - MISO – Storage as Transmission Only Assets ("SATOA") model filed with FERC in December 2019, and it is currently effective
    - Phase II of MISO's process, assessing storage as transmission assets that also participate in wholesale markets, has been placed on hold
  - SPP – filed SATOA proposal with FERC in July 2022
    - FERC issued a deficiency letter on November 2, 2022, to which SPP filed a response on December 2, 2022
    - The proposal was accepted May 26, 2023
  - ISO-NE – filed SATOA proposal with FERC in December 2022
    - FERC issued a deficiency letter on May 15, 2023, to which ISO-NE filed a response on June 14, 2023
- **CAISO and PJM storage as transmission initiatives have been placed on hold**
- **In the models proposed by MISO, SPP, and ISO-NE, SATOA are not eligible to participate in other wholesale markets, except to the extent necessary to operate as a transmission asset**

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Issues Identified

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Issues Identified

- **There are a number of issues that have been identified that may need to be addressed in a storage as transmission model. These include, but are not limited to:**
  - Incorporating storage as transmission into the NYISO's Comprehensive System Planning Process (CSPP) and associated interregional planning processes
    - Consideration within each of the CSPP components, which include:
      - Local Transmission Planning Process
      - Reliability Planning Process
      - Economic Planning Process
      - Public Policy Transmission Planning Process
    - Use cases for a storage as transmission asset within these planning processes

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Issues Identified

- Evaluation of a storage as transmission asset as the more efficient or cost-effective solution to a transmission need
  - Comparison to a traditional transmission solution, including consideration of any attributes that are unique to storage resources when assessing the storage as transmission asset
  - Comparison to market-based solutions
  - Methods for evaluating and modeling the storage as transmission asset to ensure it meets the identified need
- Evaluation of the storage as transmission asset through the NYISO's interconnection processes
- Size and duration of the asset
- Ownership requirements and roles of entities
  - Operational control
  - Responsibility for maintaining asset state of charge
- Treatment of market revenues that result from:
  - Operating as a transmission asset
  - Operating to maintain state of charge
- Modeling the asset, including in the Installed Reserve Margin (IRM) and Locational Minimum Installed Capacity Requirements (LCRs)
- Determining use cases that may be classified as a Remedial Action Scheme (RAS)

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Issues Identified

- **There are additional considerations for storage as transmission assets that also participate in markets ("dual-use storage"), if recommended. These include, but are not limited to:**
  - Avoiding potential double compensation and cross-subsidization
  - Guidelines for operating the storage resource as a transmission asset vs. as a market resource
  - Forecasting the needs of the transmission asset and market participation
  - Incorporation of market revenues into the evaluation of the asset
  - Consideration of potential market impacts, such as price suppression, that may result from the storage as transmission asset receiving cost recovery
- **Dual-use storage may be addressed after assessing SATOA**

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Next Steps

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Next Steps

- **Research storage as transmission use cases across the world and their applicability to the NYISO**
- **The NYISO is seeking feedback on:**
  - Additional issues and questions for consideration for storage as transmission assets
  - Actual SATOAs in production that have applicable use cases in the NYCA
- **Please provide feedback to KZoellmer@nyiso.com**

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Questions?

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Our Mission & Vision

Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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