

Storage Integration (Phase II): Transmission Asset Utilization in Operations**Issue Source**

PJM staff is bringing this issue forward for consideration based on the following sources:

- 1) The Planning Committee conducted a Consensus Based Issue Resolution (CBIR) process ("Phase I") to consider Storage as a Transmission Asset (SATA) in relation to transmission planning criteria and developed a proposed solution including criteria to be used in evaluating storage as a transmission asset and addressing elements in the RTEP associated with Reliability, Market Efficiency, Operational Performance, and Public Policy. The PC endorsed solution provides clarity regarding how SATA should be evaluated and incorporated into the PJM Regional Transmission Expansion Plan ("RTEP") process as well as SATA performance requirements. The PC endorsed solution provides transparent rules for how PJM will evaluate these assets and ensure reliable RTEP outcomes.
- 2) During the Phase I SATA efforts, stakeholders expressed a desire to look more holistically at Storage as a Transmission Asset including a consideration of potential impacts of SATA to the PJM markets and operations. Specifically, stakeholders wished to further understand the operational mechanics of implementation (model, telemetry requirements, etc.) and the evaluation of operations and market issues related to market participation, transmission asset utilization, and dual usage (storage as a transmission asset and market participant). The development of rules to address dual usage was specifically out of scope of the Phase I – Storage as a Transmission Asset efforts.
- 3) At the February 24, 2021 Markets and Reliability Committee (MRC), Members passed a motion to defer consideration and endorsement of the Storage as a Transmission Asset Phase I solution until the conclusion of a second phase of discussion to include the development of a comprehensive proposal to include all aspects of incorporation of storage resources into markets and operations.
- 4) PJM recommends proceeding with a second phase in this effort to address the operational mechanics of integrating storage that has been implemented as a transmission asset. Doing so at this time would allow storage to be planned and integrated as a transmission asset to assist with resolving reliability issues.

Issue Content

The Issue will build upon the PC-endorsed solution to consider the integration of storage as transmission assets into PJM operations.

Key Work Activities and Scope

1. Provide education on regulatory precedent and approaches employed in other ISOs and RTOs.
2. Provide education on the jurisdictional interplay between transmission and distribution.
3. Provide education in regards to current applicable business rules for operations related to storage, including the PC-endorsed SATA Phase I proposal.
4. Provide education as to current operating/dispatch impacts of storage resources.
5. Explore Operational mechanics of implementation (including but not limited to model, telemetry requirements, etc.)
6. **Identify the use case for which the battery is planned and identify the times to operate that are consistent with that use case.**
7. Engage stakeholders in PJM business rule considerations, as well as developing possible recommendations for changes.
 - a. Ensure the ability of the storage resource to fulfil the reliability needs for which it is picked up in the Regional Transmission Expansion Planning process.
 - b. Ensure the netting of all charges and credits for the various states of charge against the transmission asset rate of recovery offset to avoid double recovery.
 - c. **Develop rules for when the battery will be used.** Ensure proposed rules appropriately reflect operational requirements to maintain system reliability **and minimally impact markets.**
 - d. **Identify what the market impacts could be and a commitment to address them.** Included in those market impacts could be charging and discharging revenues and re-dispatch. Included in those market impacts could be: charging and discharging revenues and re-dispatch.
 - e. **Develop rules setting the priority of use of the battery in relation to market-based resources.**
 - f. **Consider rules to mitigate pricing impacts resulting from use of the battery.**

Out of Scope Phase II (Potential Future Stakeholder Phase):

- Ability for other non-storage resource types to meet transmission related needs.
- Fundamental aspects of the PC-endorsed Phase I Storage As a Transmission Asset Planning Reliability and Performance Evaluation Criteria.
- Consideration of storage dual participation as both a transmission asset and a market asset.

Expected Deliverables

- Proposed solution to address operational impacts of storage resources operating as a transmission asset.
- Corresponding revisions to PJM Manual(s) and governing documents consistent with the solution proposed will be brought to the MRC and MC for review and endorsement

Constellation Alternate

Issue Charge

Decision-Making Method

Tier 1, consensus (unanimity) on a single proposal

Stakeholder Group Assignment

Operating Committee

Expected Duration of Work Timeline

Six to Nine Months

Start Date	Priority Level	Timing	Meeting Frequency
Q4 2024	<input type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low	<input type="checkbox"/> Immediate <input checked="" type="checkbox"/> Near Term <input type="checkbox"/> Far Term	<input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Quarterly

Charter

(check one box)

<input checked="" type="checkbox"/>	This document will serve as the Charter for a new group created by its approval.
<input type="checkbox"/>	This work will be handled in an existing group with its own Charter (and applicable amendments).

More detail available in M34; Section 6