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Exelon/PPL Modifications to Constellation Storage as a Transmission Asset (SATA) Issue Charge Proposal

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Background

- FERC and the PJM states have both expressed interest and in some instances are actively pursuing SATA concepts.
  - ✓ FERC has recently approved proposals from ISO New England and Southwest Power Pool to utilize storage as transmission-only assets (SATOA), meaning these assets are specifically built for transmission reliability and don't participate in electricity markets.

- FERC has acknowledged that energy storage can serve transmission functions, like providing voltage support or addressing thermal overload, and can be compensated through regulated rates.

- Some states have policies specifically incentivizing or supporting energy storage deployment, which can indirectly benefit its use as a transmission asset.

- Vertically integrated states (where utilities both generate and distribute power) might prioritize using energy storage for distribution-level problems, but they are increasingly recognizing its multi-use potential.

- Several Innovation, Tech and Global Power companies are actively pushing for utilizing energy storage as a transmission asset – e.g. Tesla, Siemens, AES

- **Goal: Recognize market participant concerns and ensure fair energy markets competition while maximizing benefits for customers and also enabling storage technology to reach its full potential on the grid.**

SATA REALITY CHECK

- **Potential to improve grid reliability and resilience**: Storage may be able to provide voltage support, mitigate thermal overload, and offer backup power during outages, enhancing grid stability.
- **Potential to reduce transmission congestion**: Storage can shift energy demand and supply, potentially reducing the need for transmission upgrades and improving efficiency and cost-effectiveness
- **Faster deployment and smaller footprint**: Storage projects can be deployed relatively quickly compared to traditional transmission infrastructure, with a smaller physical and environmental impact.
- **Potential to enhance renewable energy integration**: By storing intermittent renewable energy, storage may be able to help smooth out production and facilitate greater integration of clean energy sources onto the grid.

ISSUE CHARGE REALITY CHECK

- **SATA Impacts Likely to Be Small:** For over a decade grid planners have only sporadically identified least-cost energy storage alternatives to conventional transmission investments, and most deployments have been small and targeted.

- **Even Exclusive SATA Will Have Market Impacts:** Just like other transmission assets today pose market impacts, SATOA will cause market impacts that will not be able to be addressed. They may be small and/or localized, but neither PJM nor anyone will be able to commit to addressing.

  - A stakeholder process can perhaps **commit to evaluating and/or considering**, but that's about it.

- **MISO, SPP, and ISO-NE** all are currently evaluating with market participants having the opportunity to raise their views and work towards solutions but no commitment to address market impacts.

- **Exelon and PPL Agree** we need to evaluate and consider market integrity and efficient price formation.

Concern Driving Modifications

- The Constellation Issue Charge provides a reasonable foundation for a path forward, but it needs to avoid “poison pill” language requiring commitment to address market impacts from storage functioning exclusively as transmission.

- Need to address concern that mitigating pricing impacts to market participants would be improperly at the expense of end use customers

- We want to avoid an issue charge that includes provisions fairly guaranteed to yield under-delivery.

- Exelon-PPL modifications are limited and confined to only two key work activities; reflect productive discussions with PJM and Constellation team in between MRC meetings; and reinforce as out of scope any storage use that is market-based or would result in market revenues of any sort

Exelon-PPL Alternative – In Blue

6. ~~Identify the transmission use case for which the battery is planned and identify the times to operate that are consistent with that use case.~~ Identify possible representative Planning needs that SATA could mitigate, as well as timing/operation schemes of the SATA to mitigate those needs.
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~~ evaluate opportunities to address them. ~~Included in those market impacts could be charging and discharging revenues and re-dispatch.~~
    e. Develop rules in the planning process setting the priority of use of the battery in relation to ~~market-based~~other resources including market-based and transmission solutions.
    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.
- Any storage activity that is market-based or that would result in market revenues of any sort

- 6. Modified to allow for exploration by stakeholders of multiple transmission only benefits/use cases of a SATA in Planning and how that would play out in Operations.
- 7d. Tweak to recognize the critical reality that neither PJM nor anyone can commit to addressing market impacts from SATA – even when functioning exclusively as a transmission asset and not dual use as has been committed to in these discussions. End-use customers should not have to make market participants whole for losses associated with cost-effective transmission build, including SATOA.
- 7e. Clarifying the work activity to respect the GO interest in having a discussion similar to the one held in designing PJM's market efficiency transmission process while also recognizing the TO interest in a discussion that involves setting the priority of us of the battery in relation to other transmission alternatives.
- OUT OF SCOPE: Afford GOs explicit comfort that the intention here is Storage as Transmission ONLY Asset. Any storage activity that is market-based or that would result in market revenues of any sort is explicitly out of scope.