

Deploying Energy Storage as Transmission Assets

PRESENTED BY

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ICC/DOE/Sandia National Labs Storage Webinar Series
Battery Storage for Generation and Transmission Deferral Panel – Jan. 11, 2022



OUR VISION

Connecting you with
a sustainable energy future

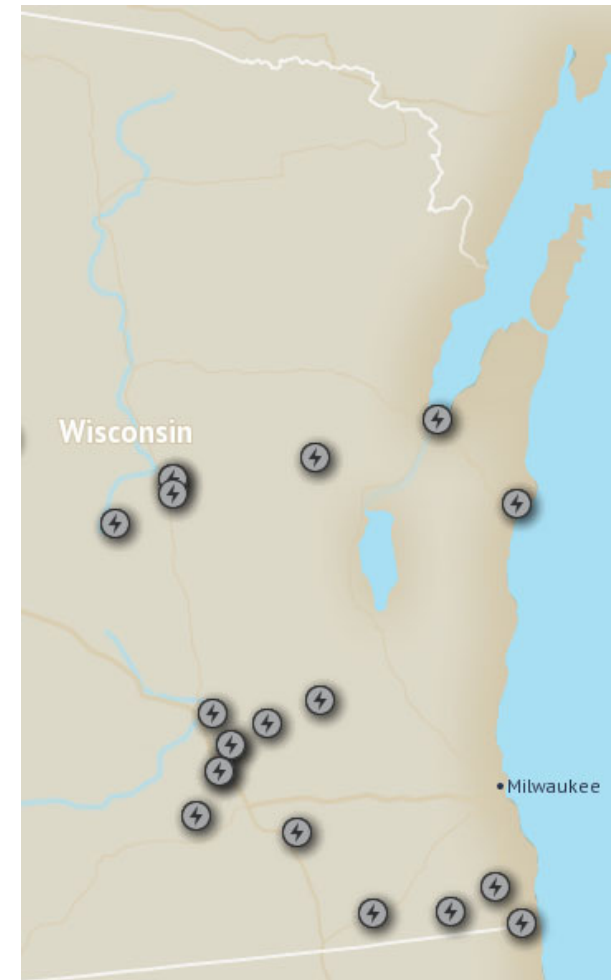
Introducing ATC

- Began operations in 2001 as the nation's first multi-state, transmission only utility
- Founding MISO transmission owner
- Operates >10,080 miles of lines and 582 substations
- Upgraded >2,260 miles of lines, built >710 miles of new lines, improved more than 210 substations



Storage as a Resource

- There is no storage connected at transmission today in ATC's footprint
 - Our customers and end-users have/are installing storage on distribution system
- There are 23 storage projects totaling ~ 2.4 GW proposed for ATC's footprint
 - ◆ Commonly paired with solar



Source: MISO

Storage as Transmission

- Promising tool for addressing transmission issues
 - Capital costs are declining
 - Battery technology is maturing
 - Flexibility of applications
 - Some advantages compared to traditional transmission facilities

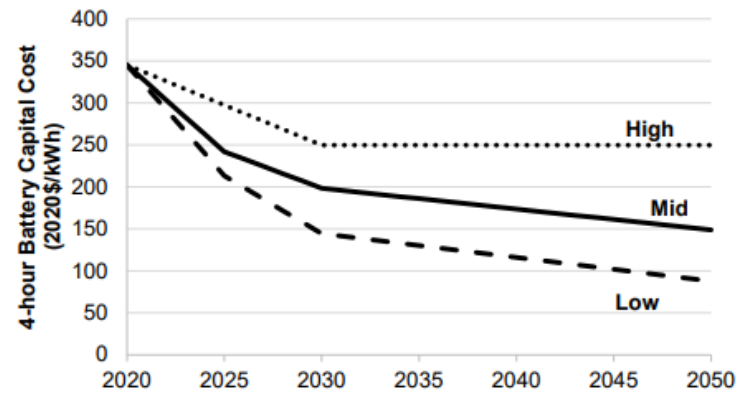
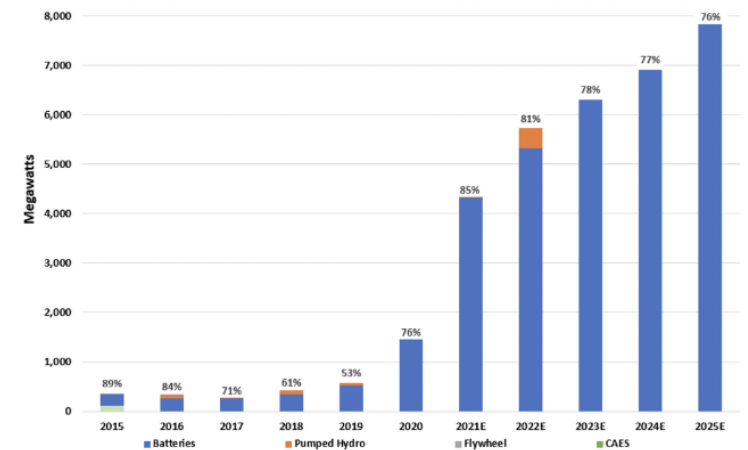


Figure ES-2. Battery cost projections for 4-hour lithium ion systems.

Source: NREL

Figure 1: Energy Storage Capacity Additions by Technology, 2015-2025



Sources: Wood Mackenzie Power & Renewables/ESA U.S. Energy Storage Monitor 2021; Dept. of Energy's Energy Storage Database, 2021; ABB Database 2021. Note: Commercial/Industrial and residential are the other two sectors involved in energy storage.

Source: EEI

FERC policy on storage as transmission

- Western Grid Development order (EL10-19)
 - Classified a group of batteries as transmission facilities based on how they were to be operated
- Cost Recovery Policy Statement (PL-17-2)
 - Determined that energy storage devices could provide both transmission and market services and raised issues to consider related to cost recovery

Treatment of Storage as Transmission in MISO

- Starting in April 2018, MISO in the stakeholder process developed rules to treat storage as transmission
- MISO in December 2019 filed “Storage as Transmission Only Asset (SATOA)” tariff revisions with FERC, which approved them in August 2020
 - Projects evaluated in planning process for ability to address transmission issues
 - Project must be deemed a transmission asset
 - Operated under MISO’s functional control
- MISO is currently conducting a stakeholder process to develop rules for using storage as transmission assets to provide market services



Source: clipartkey.com

Waupaca Area Storage Project

- 2.5 MW/5 MWh lithium-ion battery
- Provides voltage support and operational flexibility
- MISO Board included project in Appendix A of MTEP in December 2020
 - Classified as a transmission asset
- Project in early phases of construction
 - Mitsubishi selected as battery vendor
 - ISD October 2022
- Market Participant Agent Agreement filed with Public Service Commission of Wisconsin and FERC

