

Transmission Planning Technical Guide Update



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Purpose

- Updates to the Transmission Planning Technical Guide (TPTG) and relevant appendices
- Summary of proposed changes
 - Updating the wind assumptions for winter peak studies
 - Adding a description of Storage as a Transmission Only Asset (SATOA)
 - Documenting the latest additional Phase Shifting Transformers (PSTs) in the TPTG and Appendix G – Phase Shifting Transformer Modeling Guide (App G)

WIND ASSUMPTIONS



Wind Assumption Background

- The onshore and offshore wind availability assumptions
 - Last discussed at Planning Advisory Committee (PAC) in [November 2021](#) during the 2050 Transmission Study
 - The winter peak assumptions are based on a relatively small sample size (temperatures $<10^{\circ}$ F) from the [DNV Report – Analysis of Stochastic Data Set](#), dated February 24, 2021
- The small sample size data supported the higher availability required for the 2050 Transmission Study
 - Higher output assumptions were warranted in the 2050 Transmission Study since load exceeded assumed generation
 - Onshore wind assumed 65% available at winter peak
 - Offshore wind assumed 40% available at winter peak

Updated Wind Assumptions for TPTG Studies

- The DNV report also includes data for larger sample sizes (temperatures $<15^{\circ}\text{F}$ and $<20^{\circ}\text{F}$)
 - Winter peak conditions can occur at these higher temperatures
 - Large sample size leads to better statistical significance
 - Relying on higher wind output at winter peak introduces a risk of insufficient transmission capability to serve load
- The wind availability assumptions using the larger sample size from the DNV report result in
 - Onshore wind assumed 10% available at winter peak
 - Offshore wind assumed 20% available at winter peak
- These changes are captured in Section 2.3.6 and Table 2-7 of the TPTG

SATOA



SATOA Background

- Treatment of SATOAs was discussed at the Transmission Committee (TC) and Markets Committee (MC) in 2022
- On October 19, 2023, FERC issued an [order](#) accepting the ISO's tariff changes regarding SATOAs



SATOA Updates

- SATOAs in Planning Studies
 - An energy storage device connected to the PTF at 115 kV or higher that can inject stored power to address transmission system concerns
 - Can be a solution to a reliability need in a Solutions Study or a solution to a system need within in competitive solution process to address reliability, Public Policy, or Longer-term Transmission concerns
 - Discharging real power will be limited to post-second contingency (post N-1-1) as a last step to avoid load shedding or criteria violations
 - Must have the ability to produce reactive power for continuous voltage control much like a dynamic reactive transmission device, such as a synchronous condenser, an SVC, or a STATCOM, whether it is charging or discharging
- Section 2.3.8.1 Storage as a Transmission Only Asset are proposed to be added to the TPTG to capture how SATOAs are used in planning studies, and to differentiate them from market-facing Energy Storage Systems
 - Conforming changes are also proposed to be made in Section 2.3.8

PHASE SHIFTING TRANSFORMERS



PSTs Background

- A recent upgrade in New York included a PST on an AC tie line with New York
 - Two 345 kV PSTs that control the flow on the Cricket Valley – Long Mountain 345 kV 398 Line were added at Dover Street Substation
- Eversource introduced the Greater Dorchester Area Initiative study at the May 2026 RC meeting
 - Included two new 115 kV PSTs that control the flow on the 517-524/525 North Quincy to Dewar Street 115 kV lines were added at Dewar

PSTs Update

- The Dover and Dewar PSTs have been added to:
 - Sec 2.4 Phase Shifting Transformers of the TPTG
 - Sec 2 Phase Shifter Operation of Appendix G – Phase Shifter Transformers Modeling Guide
- An additional minor clerical update was made in Section 2.11 Steady State Power Flow Solutions Settings of the TPTG

Next Steps

- Please provide comments on the draft TPTG to pacmatters@iso-ne.com by June 10, 2026
- A final version of the TPTG will be posted, along with responses to any stakeholder feedback received, following the comment period



Questions



About the Presenter



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