

Tan45 Methodology Review

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Agenda

- Background
- Tan45 Methodology Review
- Interim Process Development

Background

Background

- **The NYISO presented the whitepaper scope for the Tan45 methodology review whitepaper at the 1/30/2024 ICS Meeting**
 - Tan45 Methodology Review Whitepaper Scope:
<https://www.nysrc.org/wp-content/uploads/2024/02/Tan45-Methodology-Whitepaper-Scope-01302024-ICS-REVISED27280.pdf>
 - Based on the scope, this whitepaper will assess the performance/functionality of the Tan45 methodology in the long-term, as well as evaluate/develop near-term process improvements for the 2025-2026 installed reserve margin (IRM) study to account for potential impacts/interactions with transmission security limit (TSL) floor values used in the NYISO's Locational Minimum Installed Capacity Requirements (LCR) study
- **The Tan45 methodology review is part of the 5-year strategic plan for Resource Adequacy (RA) modeling improvements**
 - NYISO Resource Adequacy Model Strategic Plan (2024-2028):
https://www.nysrc.org/wp-content/uploads/2023/08/RA-Modeling-Improvement-Strategic-Plan-2024_v7_clean21459.pdf

Tan45 Methodology Review

- 2024 Phase

Tan45 Review – Test Case Development

- **NYISO will start by developing test cases that capture certain expected future system changes and conduct Tan45 process on the test cases**
 - The starting point base case will be the 2024–2025 IRM Final Base Case (FBC) with the technical study results (i.e., 23.1% IRM)
 - The NYISO’s LCR optimizer will not be utilized in testing at this time as there is currently a NYISO effort in progress to explore potential enhancements to the optimization methodology that may result in changes to the current process
- **Expected system changes are new transmission projects, supply mix changes, and the combination of both:**
 - Transmission projects considered for test case development:
 - Champlain Hudson Power Express (CHPE) – 1,250 MW, 375-mile submarine and underground high voltage direct current (HVDC) transmission project delivering power from Québec, Canada to New York City proposed to be in-service in 2026
 - Long Island Public Policy Transmission Need (LI PPTN) - Three new underground 345 kV cables connecting Long Island with the rest of the state and a 345 kV transmission backbone across western/central Long Island, plus additional infrastructure reinforcements expected to be in service in 2030 ([Link to Fact Sheet](#))
 - Clean Path New York (CPNY) - 1,300 MW, 174-mile underground and submarine HVDC transmission line from Fraser substation in upstate New York to New York City expected to be in-service in 2027
 - Supply mix changes considered for test case development are based on assumption in the [Phase 3 High Intermittent Renewable Resource Analysis White Paper](#)
 - 27,000 MW of in-front-of-the-meter (FTM) solar, land-based wind (LBW), and offshore wind (OSW) – 9,000 MW of each type
 - Combination(s) of the above anticipated transmission and resource changes
- **Other system change not being considered for test case development:**
 - Increased penetration of energy storage resources (ESRs)
 - Deactivation of additional thermal resources (beyond the assumptions in the starting point base case)

Tan45 Review – Summary of Test Cases

Test Case Name	System Scenario	Description
BC	Base Case	2024 – 2025 IRM Final Base Case (23.1% IRM)
TC-T1	Future Transmission Projects	Base Case + CHPE
TC-T2		Base Case + LI PPTN
TC-T3		Base Case + CPNY
TC-T4		Base Case + CHPE, LI PPTN, and CPNY
TC-G1	Increased Renewable Generation Resources	Base Case + 9,000 MW FTM Solar
TC-G2		Base Case + 9,000 MW LBW
TC-G3		Base Case + 9,000 MW OSW
TC-G4		Base Case + 27,000 MW FTM Solar, LBW, and OSW (9,000 MW of each type)
TC-TG5	Future Transmission Projects + Increased Renewable Generation Resources	Base Case + CHPE, LI PPTN, and CPNY + 27,000 MW FTM Solar, LBW, and OSW (9,000 MW of each type)

Timeline for 2024 Phase

Milestone	Timeline
Present draft scope to the ICS for approval	01/30/2024
Finalize assumptions for test cases	February/March 2024
Development of test cases	April 2024
Conduct Tan45 process and present results and insights	July 2024
Explore methodology improvements and identify guiding principles	Q3 - Q4 2024
Develop draft scope for 2025 Phase	December 2024

- **As this project proceeds, the NYISO will provide ongoing updates to the ICS to share progress and solicit feedback**

Interim Process Development

- Consideration of TSL Floor Values

Proposed Interim Process

- **At the 1/30/2024 meeting, the ICS discussed the desire of having sensitivity cases to provide information regarding the potential impact of preliminary 2025-2026 TSL floor values ahead of finalizing the 2025-2026 IRM study. The ICS also requested the opportunity to assess the potential impact of any proposed changes to the NYISO's current TSL floor methodology**
- **The NYISO proposes to assess the potential impact of TSL floor values for the 2025-2026 IRM study with three rounds of sensitivity cases:**
 - August/September – Preliminary sensitivity case
 - Using 2024-2025 TSL floor values (i.e., 81.0% for the G-J Locality, 81.7% for zone J, and 105.3% for zone K)
 - Perform on the final 2025-2026 IRM Preliminary Base Case (PBC)
 - September/October – Second round of sensitivity case
 - Using preliminary 2025-2026 TSL floor values with the following updated inputs:
 - 2024 Gold Book load forecast
 - Updated Special Case Resources (SCRs) MW values
 - Any methodology changes to be implemented for the 2025-2026 Capability Year, as presented to the ICAP Working Group
 - Perform on the final 2025-2026 IRM PBC or selected sensitivity case as starting point for the 2025-2026 IRM FBC
 - November – Final sensitivity case with final 2025-2026 TSL floor values
 - Perform on the 2025-2026 IRM FBC along with the Tan45 technical results
 - NYISO proposes to use a methodology similar to that used in the 2024 – 2025 IRM study cycle
 - Final study results include Tan45 result and any alternative IRM value using the final TSL floor values

Interim Process MW Shifting Approach

- **When performing the sensitivity cases and producing final study results with the TSL floor values, the NYISO recommends shifting MW based on Policy 5 Appendix A to bring all the locational capacity requirements to the TSL floor values**
 - This means zone J, zone K and the G–J Locality would be set as fixed at their corresponding TSL floor values in the sensitivity cases
 - This approach removes the potential complexity of trade-offs between zones if not all TSL floor values are binding
 - This can be done by either manual adjustment (for G–J Locality) or by using the NYISO’s LCR optimizer
 - The economic optimization functionality of the NYISO’s LCR optimizer would not be utilized since all the LCRs would be set as fixed to the applicable TSL floor values
- **Should other shifting approaches be considered for the sensitivity case?**

Timeline for Interim Process Development

Milestone	Timeline
Present draft scope to the ICS for approval	01/30/2024
Solicit inputs for potential technical study process improvements	February/March 2024
Assessment of potential technical study process improvements	April/May 2024
Develop recommendations for process improvements to implement for the 2025-2026 IRM study cycle	May/June 2024
Subject to NYSRC's approval, implement recommended process improvements in the 2025-2026 IRM study cycle	June/July 2024 (implementation pending NYSRC's approval)

- **As this project proceeds, the NYISO will provide ongoing updates to the ICS to share progress and solicit feedback**

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

Questions?