

**Agenda Item 4.1: ICS Report to NYSRC Executive Committee (EC)**

**November 6, 2024, ICS Meeting #296**

**November 12, 2024, ICS Meeting #297**

**Prepared for: November 15, 2024, EC Meeting #307**

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**4.1.1 Action Items List and Additional Agenda Items**

ICS discussed progress on the BTM PV and Tan 45 whitepapers as well as categorization of additional topics to monitor into near and longer term. As follow-up to a question in the prior meeting, ConEd indicated the reduction in EOP MWs attributed to voltage reduction was due to unexpected issues with transformer tap changer response at several stations and a Conservation Voltage Optimization (CVO) program fully implemented in Summer 2024 that reduces greenhouse gas emissions by lowering area station bus voltage schedules. ConEd continues to repair impacted transformer tap changers.

ConEd mentioned retirement of 59<sup>th</sup> St GT #1 from NYISO markets by May 1, 2025. The retirement notice came out after FBC assumptions matrix approval and is not reflected in the list of generator deactivations. Removal of the small 17.1 MW unit does not materially impact the IRM study result, and the unit will be retained for steam system black start. ICS members expressed interest in NYISO formally presenting the non-material finding and discussed the historical context around special sensitivities for material changes after the FBC assumptions matrix is approved. Rich Bolbrock expressed a preference for fixing known material differences, while acknowledging this change is likely not significant.

**4.1.2 BTM Solar Whitepaper**

NYISO presented a first draft whitepaper for explicitly modeling BTM PV as a supply resource. Completing the whitepaper is a NYSRC ICS goal for this year and the result also appears as one of the IRM report sensitivities. No new results were presented, and ICS will bring a copy to EC after reviewing the draft a second time. NYISO recommended delaying adoption of the work until completion of a related enhanced load shape adjustment procedure study early next year that will incorporate winter peak and energy forecasts.

**4.1.3 Offshore Wind Correlated Outages in Neighboring Areas**

NYISO presented on the impact of modeling Vineyard Wind in ISONE using an hourly shape to assess potential impacts of correlated outages with South Fork Wind near Long Island. EWWG had found a strong wind lull correlation between OSW bights in NYISO, ISONE and PJM. At present, ISONE uses hourly shapes for 885 MW Vineyard Wind internally and a 156 MW dependable UCAP dispatchable unit representation in the shared NPCC database. ICS had a robust discussion on the results; ultimately, it may be difficult to separate the impact of wind shape correlation from the increased energy output going from the conservatively sized dispatchable unit representation to hourly shape. Yvonne Huang suggested a reduced EA sensitivity as an alternative approach to study correlated resources outages in neighboring regions. Options to substitute hourly shapes were extensively discussed and were generally viewed as the preferred modeling approach. OSW should be prioritized over LBW given the large MWs involved, high correlation, and concentration in downstate regions. Tom Primrose pointed out the need to represent the full spectrum of wind output including 0 MW hours to capture zone K reliability concerns. Dylan Zhang mentioned that a goal of the current approach is to use NPCC databases as provided to reflect other regions' specific modeling practices. Mark Younger suggested correlated outages is a developing regional reliability concern and the best solution is to work with NPCC to coordinate inclusion of renewable shapes in the database. Existing OSW units are small relative to the ISOs generation, limiting impact in the near term but the dispatchable representation for renewables will become a worse approximation over time.

**4.1.4 2025 IRM Report Table 6 (FBC Parametric Analysis and Tan 45 Result) – Approval Item**

NYISO presented final IRM FBC parametric results including two material and one nonmaterial change since last meeting. The Fall Load Forecast and voltage reduction EOP changed the IRM by 0.26% and 0.27% respectively. Increasing replications due to standard error had a nonmaterial impact on the IRM.

NYISO presented the final 2025 FBC Tan 45 results of 24.4% IRM, 75.6% J LCR, 107.3% K LCR, and 86.9% G-J LCR. Of note, there is no longer surplus capacity in zone A and the Tan 45 method can only shift capacity from zones C and D. As a result, risk is showing up in zone A in this year's study. Contributing factors to upstate risk include large loads and intermittent renewables. The Tan 45 analysis is described more fully in the attached draft IRM report and appendices. ICS approved the FBC results contingent on the TOs completing their masked database quality assurance review. GE completed their database quality assurance review.

During the ICS meeting, Mike Cadwalader and Adam Evans asked about interaction of the Tan 45 IRM result with TSLs and related process changes. NYISO will present preliminary LCRs likely at the Nov 21 ICAP-WG.

#### **4.1.5 Standard Error Analysis**

NYISO increased MARS replications to 4,250 based on a Policy 5 requirement of 0.025 or less mean standard error for LOLE. Required replications have increased ~20%/year for the past few years due to increased model complexity and this trend is expected to continue with winter gas constraints, potential additional weather years, and other modeling improvements in the strategic plan. The increased replications are largely due to a few high LOLE "outlier" events reflecting large, correlated outages that drive up the standard error and take hundreds of replications to average out. Computational effort scales linearly with replications and MARS uses parallel processing, allowing similar run times using more CPU cores.

NYISO checks standard error for the PBC and FBC and there was some discussion given recent trends if NYISO should overshoot the minimum number of replications to ensure compliance in studies conducted throughout the year. NYISO indicated other teams use the MARS model and the high number of replications have cost implications. ICS expressed skepticism at suggestions to remove high LOLE events or go below a 95% confidence interval. NYISO will investigate the replication issue next year including options and costs.

#### **4.1.6 2025 IRM Report Table 7 (Sensitivity Analysis) – Approval Item**

The sensitivity results are the same as previously presented to the EC but adjusted to reference off the FBC vs PBC. The results are included now as an approval item for the IRM report.

#### **4.1.7 2025 IRM Study Technical Report**

Gary Jordan reviewed a first draft of the 2025-2026 IRM study technical report and ICS provided edits that have been incorporated into the version included with this report.

#### **4.1.8 2025 IRM Study Technical Report Appendices**

John Adams reviewed a first draft of the technical report appendices and ICS provided edits that have been incorporated into the version included with this report. For the sensitivities, there was a suggestion to incorporate LOLE before adjustment to criteria.

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#### **4.1.9 Action Items List and Additional Agenda Items**

NYISO formally presented that the 59 St GT #1 retirement discussed at the last meeting and left out from base case retirements had a non-material impact on the IRM study result. ICS accepted this finding and will not pursue a special base case sensitivity.

ConEd and PSEG-LI presented on their FBC MARS database review. Both organizations found no issue with the provided input set but observed a LOLE (0.106) above criteria. Further analysis by NYISO and GE traced the issue to the database

masking process (used to hide confidential info) and confirmed the unmasked version yields a 0.100 LOLE. ICS accepted the TO review on a provisional basis and will not revisit provided the LOLE comes in at criteria.

#### **4.1.10 BTM Solar Whitepaper**

NYISO presented the BTM Solar whitepaper a second time and there were no further changes recommended. ICS approved the whitepaper to fulfill one of the annual NYSRC ICS goals. The whitepaper will be brought to the Dec 6<sup>th</sup> EC meeting for approval and is included as an additional attachment here for informational purposes. There was a suggestion when presenting the whitepaper to the EC to be sure to mention the limitations of the approach. Particularly, implementation of explicit modeling of BTM solar will be delayed until paired with an updated load shape adjustment method.

#### **4.1.11 Tan45 Methodology Review Whitepaper**

NYISO presented the Tan 45 methodology whitepaper for the first time and solicited comments before returning to the Nov 25<sup>th</sup> ICS for final edits/approval. The whitepaper summarizes this year's work identifying potential issues with the Tan 45 methodology and will be followed by another study in 2025 looking at potential solutions. Chris Wentlent suggested making the EC aware of the draft whitepaper at the upcoming EC meeting and the first draft is included here for informational purposes.

One point raised at ICS is that Tan 45 failed when significant amounts of capacity were added downstate via OSW and CHPE. Large capacity additions downstate (without significant load growth) will likely trigger corresponding fossil retirements, thereby avoiding significant excess capacity downstate. State policy also calls for such a shift from fossil to renewable generation. Whether excess capacity downstate or the low availability nature of the resources was driving the Tan 45 failure was discussed; the conclusion was to note in the study that such questions have yet to be studied.

There was also a request to note that the UCAP translation factors for renewables were held constant to those in the 2024-2025 IRM FBC. With the large OSW additions that drove Tan 45 failure, the actual reliability value of these resources likely differs from the UCAP value used in the model. There was a suggestion that better alignment between reliability value and UCAP may reduce the "flattening" of the Tan 45 curve.

#### **4.1.12 2025 IRM Study Technical Report**

Gary Jordan presented a second draft of the IRM report including additional redline changes. One prominent area of discussion was if the report should include the parametric analysis table 6-1 in the unmodified form or after manually adjusting the parametric results to match the difference between last year and this year's FBC results (both versions attached). Also, Adam Evans suggested we clarify the public appeals and voluntary industrial curtailment assumption last year (unlimited) to provide more context for the 3 call/year limit imposed this year. A draft of the report is included for informational purposes.

#### **4.1.13 2025 IRM Study Technical Report Appendices**

John Adams presented a second draft of the IRM appendices including the updated environmental section. There were no substantive comments and the editorial team requested input by Nov 20<sup>th</sup> to turn around a copy for the Nov 25<sup>th</sup> ICS meeting and final approval. A copy is attached for informational purposes.