New York ISO
Independent System Operator

Parametric Improvements - Initial Recommendation

Dominic Riendeau-Krause

Data Scientist, Resource Adequacy

ICS Meeting #315

March 31, 2026

©COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED

Background

- The parametric process evaluates the direction and magnitude of impacts from modeling and assumption changes during the development of the installed reserve margin (IRM) study base case, and is intended to serve as an early indication of expected Tan45 outcomes.
  - In last year's IRM study, material divergence (2.2%) between parametric and Tan45 outcomes was observed, motivating a deeper review of the parametric process.
- At the 2/4/2026 ICS meeting, load forecast, transmission, and generation updates were identified as key drivers of divergence between Tan45 and parametric outcomes. Two potential improvements to the parametric process to address load forecast and generation updates were reviewed at the 3/4/2026 ICS meeting. [1]
  - Initial testing on the fall load forecast update from the 2024-2025 IRM Final Base Case (FBC) suggested that both options decreased Tan45 divergence. The "upstate/downstate parametric split" methodology (Parametric Split) also exhibited lower divergence from the Tan45-determined locational requirement values.
- This presentation outlines the NYISO's initial recommendations based on additional test results across a broad set of updates.

[1] Parametric Whitepaper Scope ICS #313

New York ISO

©COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED

Parametric Split Methodology

- **The parametric process allows capacity adjustments to be applied at the full system level (Load Zones A–K) or regionally to Upstate (Load Zones A–F) or Downstate (Load Zones G–K).**
  - The current parametric process applies capacity adjustments to the full system unless the updated assumptions affect only Upstate or only Downstate, in which case the corresponding regional capacity adjustment is applied.
- **The Parametric Split is an alternative methodology for evaluating model updates by applying capacity adjustments sequentially to Upstate (Load Zones A-F) and Downstate (Load Zones G-K) regions rather than a single system-wide adjustment.**
- **As an example, the load forecast update using the Parametric Split methodology would differ from the current process as follows:**
  - Under the current parametric process, load forecast updates are addressed using system-wide (Load Zones A–K) capacity adjustments.
  - Using the Parametric Split approach, the load forecast update is split into Upstate and Downstate components which are solved sequentially.
  - First the load forecast is updated for only Load Zones A-F and the system is then brought back to the 0.1 loss of load expectation (LOLE) criteria by running a parametric case with capacity adjustments limited to Load Zones A-F.
  - The remaining load forecast update is then applied to Load Zones G-K and the system is then brought back to 0.1 LOLE by running a parametric case with capacity adjustments limited to Load Zones G-K.

New York ISO

©COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED

Additional Testing

- The NYISO conducted additional testing to further evaluate the impacts of generation resource updates and load forecast updates on parametric process results relative to Tan45 results. All tests were conducted using the 2026–2027 IRM FBC Special Sensitivity Case, which served as the common base case across the analysis.
- Three tests were performed. Two tests assessed the impacts of adding perfect capacity with no forced outage rate. These cases were selected to evaluate asymmetric impacts between adding capacity Upstate (Load Zones A–F) and adding capacity Downstate (Load Zones G–K):
  - Addition of 500 MW of perfect capacity to Load Zone D (Upstate).
  - Addition of 500 MW of perfect capacity to Load Zone J (Downstate).
- A third test evaluated the impact of the 2026–2027 fall load forecast update in isolation. In this test, the fall load forecast update was removed from the base case, and the load forecast was reset to the forecast from the 2025 Load & Capacity Data report (Gold Book), allowing the effect of the load forecast update to be evaluated independently.
- For each test, a Tan45 study was then performed to quantify the corresponding impacts. Results from the current parametric methodology and the Parametric Split methodology were then compared against the corresponding Tan45 outcomes.

New York ISO

©COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED

Results

	+500 MW Upstate Generation		+500 MW Downstate Generation		2026-2027 Load Forecast Test		2024-2025 Load Forecast Update [1]	
	Current Parametric	Parametric Split	Current Parametric	Parametric Split	Current Parametric	Parametric Split	Current Parametric	Parametric Split
IRM Δ vs Tan45	+0.99	+0.16	+0.05	+0.51	-1.10	-0.15	+0.68	+0.12

- **For load forecast updates, the results indicate that the Parametric Split methodology reduces divergence between parametric results and the corresponding Tan45 results.**
  - For the 2026-2027 load forecast case, the IRM divergence was reduced from -1.1 to -0.15.
  - For the 2024-2025 load forecast update, the IRM divergence was reduced from +0.68 to +0.12.
- **For generation resource updates, the results for the Parametric Split methodology varied depending on the location of the assumed capacity addition.**
  - For the +500 MW Upstate generation addition, IRM divergence was reduced from +0.99 to +0.16.
  - For the +500 MW Downstate generation addition, IRM divergence increased from +0.05 to +0.51.
  - Results are currently being investigated

[1] Results from Parametric Improvement Update ICS #314

New York ISO

©COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED

Initial NYISO Recommendation

- **The current parametric study process generally aims to isolate solving for the estimated IRM impact based on the location of the update.**
  - For this effort, the NYISO is focused on assessing potential improvement for the three main types of updates identified as key drivers in divergence between parametric and Tan45 results (i.e., load forecast, transmission, and generation updates).
- **For load forecast updates, initial test results indicate that the Parametric Split methodology reduces divergence between parametric results and the corresponding Tan45 results. Accordingly, the NYISO recommends adopting the Parametric Split methodology for evaluating load forecast updates starting with the 2027-2028 IRM study.**
- **For generation resource updates, additional investigation on the test case results is needed to inform an initial recommendation.**
- **For transmission updates, the NYISO recommends maintaining the current parametric methodology.**
  - Major topology changes impact how capacity can be balanced across the system, which the parametric methodology is unable to reflect.
  - In limited cases where a material transmission update warrants additional evaluation, a separate Tan45 assessment could be used to quantify associated impacts.
  - Such additional Tan45 assessments are performed independently and in parallel with the Preliminary Base Case (PBC) or FBC runs.

New York ISO

©COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED

Next Steps

- Incorporate ICS feedback and perform additional testing on generation resource updates
- Finalize the recommended improvements to the parametric process
- Whitepaper report drafting and completion

New York ISO

©COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED

Questions?

© COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED.

New York ISO

Our Mission and 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

New York ISO

©COPYRIGHT NYISO 2026. ALL RIGHTS RESERVED