New York ISO
Independent System Operator

2026-2027 IRM FBC Tan45 Results

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Agenda

- Tan45 Results
- Tan45 Results Comparisons/Key Drivers
- Summary

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2026-2027 IRM FBC Tan45 Results

- The 2026-2027 installed reserve margin (IRM) final base case (FBC) Tan45 produced an IRM of 25.3%, together with a Load Zone J locational capacity requirement (LCR) of 79.2%, Load Zone K LCR of 106.7% and G-J Locality LCR of 88.8%

IRM	Load Zone J LCR	Load Zone K LCR	G-J Locality LCR
25.3%	79.2%	106.7%	88.8%

- The key statistics for the 2026-2027 IRM FBC Tan45 results are shown below:

Season	LOLE (Event-Days/Yr)	LOLH (Event-Hours/Yr)	EUE (MWh/Yr)	EOP Calls (Days/Yr)
Annual	0.0993	0.3613	169.51	6.3
Summer	0.0854 (86.0%)	0.3212 (88.9%)	149.74 (88.3%)	4.6
Winter	0.0139 (14.0%)	0.0402 (11.1%)	19.77 (11.7%)	1.7

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Comparison to 2026-2027 IRM PBC

Case	IRM	Load Zone J LCR	Load Zone K LCR	G-J Locality LCR	Summer LOLE (%)	Winter LOLE (%)	EOP Calls (Days/Yr)
2026-2027 IRM PBC	27.3%	80.6%	106.9%	89.7%	86.2%	13.8%	7.5
2026-2027 IRM FBC	**25.3%**	**79.2%**	**106.7%**	**88.8%**	**86.0%**	**14.0%**	**6.3**
Delta	-2.0%	-1.4%	-0.2%	-0.9%	-0.2%	+0.2%	-1.2

- Between the preliminary base case (PBC) and FBC, the IRM decreased by 2%, the Load Zone J LCR decreased by 1.4%, the G-J Locality LCR decreased by 0.9%, and the Load Zone K LCR decreased by 0.2%
- There was a minimal change to the seasonal loss of load expectation (LOLE) risk observed for the two cases
- There were 1.2 days/year fewer calls of emergency operating procedures (EOPs) in the FBC compared to the PBC

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Key Drivers: PBC to FBC

Since the 2026-2027 IRM PBC, there have been several key updates that drove the IRM and LCR impacts observed in the 2026-2027 IRM FBC Tan45 results:

- **Special Case Resource (SCR)/Distributed Energy Resources (DER) Enrollments**
  - Compared to the assumptions for the PBC, SCR enrollments decreased by over 500 MW with many of the resources transitioning to the DER program. Resources modeled as DER instead of SCR provide greater availability for meeting the system risk in the IRM model resulting in downward pressure on the IRM and LCRs
- **Fall Load Forecast**
  - The peak load in the FBC reduced compared to the PBC, particularly in upstate, which placed downward pressure on the IRM
- **Revised Call Limit for Voluntary Curtailments**
  - The call limit for voluntary curtailments (267 MW NYCA-wide) was revised to 3 days/month between the PBC and FBC. This update prevents voluntary curtailment calls from being used up in January and February, as was frequently the case under the prior 3 days/year call limit assumption. As a result, this update allows for increased voluntary curtailments calls during the peak risk period in summer. Allowing calls during the summer places downward pressure on the IRM and LCRs
- **New Generator Inclusion**
  - Between the PBC and FBC, 277.6 MW of wind resources were added to the IRM model. Resources with higher than system average forced outage rates typically result in upward pressure on the IRM

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Comparison to 2025-2026 IRM FBC

Case	IRM	Load Zone J LCR	Load Zone K LCR	G-J Locality LCR	Summer LOLE (%)	Winter LOLE (%)	EOP Calls (Days/Yr)
2025-2026 IRM FBC	24.4%	75.6%	107.3%	86.9%	100.0%	0.0%	7.0
2026-2027 IRM FBC	**25.3%**	**79.2%**	**106.7%**	**88.8%**	**86.0%**	**14.0%**	**6.3**
Delta	0.9%	3.6%	-0.6%	1.9%	-14.0%	+14.0%	-0.7

- Compared to the 2025-2026 IRM FBC Tan45 study, the IRM increased by 0.9%, the Load Zone J LCR increased by 3.6%, the G-J Locality LCR increased 1.9%, and the Load Zone K LCR decreased by 0.6%
- The introduction of the winter fuel availability constraints modeling (and interactions with modeling the Champlain Hudson Power Express (CHPE) project as in-service) for the 2026-2027 IRM study resulted in winter LOLE risk being observed for the first time in this year's study
- There were 0.7 days/year fewer calls of EOPs in the 2026-2027 IRM FBC compared to the 2025-2026 IRM FBC

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Key Drivers: 2025-2026 to 2026-2027

Along with the key drivers described on slide 5 addressing updates since the 2026-2027 IRM PBC, there were several assumption and modeling changes implemented during this year's study which led to the overall increase in IRM and Load Zone J LCR compared to the 2025-2026 IRM study

- **Enhanced Load Modeling (ELM)**
  - The ELM procedure, adopted in this year's IRM study, calibrates the load model to seasonal peak forecasts as well as zonal annual energy forecasts. This modeling improvement leads to a decrease in the IRM but was adopted alongside the behind-the-meter (BTM) solar modeling described below which ultimately increased the IRM and LCRs in aggregate
- **BTM Solar Modeling**
  - Starting with this year's study, BTM solar resources are now modeled as supply side resources and utilize hourly production shapes (consistent with the modeling of other intermittent renewable generators) which are no longer aligned to the load shape years. This variability in the BTM solar production increased the IRM and LCRs
- **Winter Fuel Availability Constraints Modeling**
  - Starting with this year's study, the winter fuel availability constraints modeling was adopted. This increased the IRM and LCRs due to derating of thermal generators in Load Zones F-K to account for potential limitations on natural gas and oil availability during peak winter conditions. This also introduces winter LOLE risk in the IRM study for the first time
- **CHPE Modeling**
  - CHPE, which is a 1,250 MW high-voltage direct current (HVDC) line between Hydro Quebec and Load Zone J, is assumed in-service in this year's IRM study. The Unforced Capacity Deliverability Rights (UDRs) related to the project increase assumed capacity in Load Zone J, which leads to an increase in the Load Zone J LCR. CHPE, which is assumed as a summer-only resource in this year's study, was also observed to exacerbate the impact of the winter fuel availability constraints modeling on the IRM and winter LOLE risk

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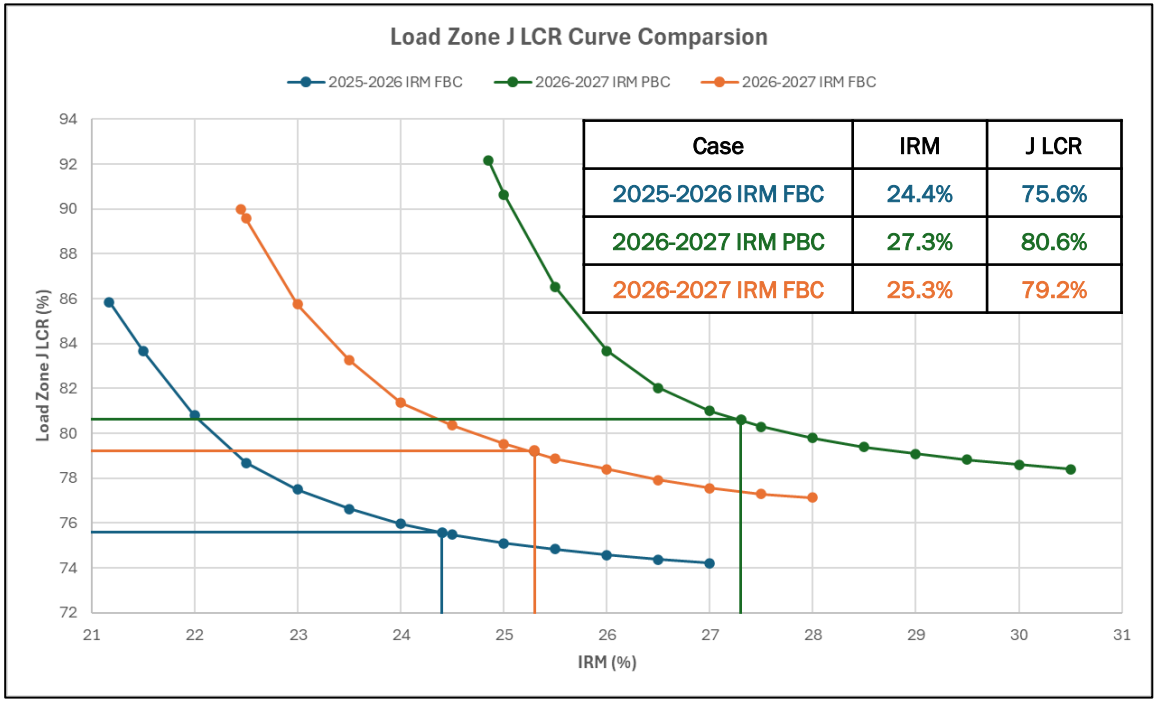
Load Zone J Curve Comparison



Case	IRM	J LCR
2025-2026 IRM FBC	24.4%	75.6%
2026-2027 IRM PBC	27.3%	80.6%
2026-2027 IRM FBC	25.3%	79.2%

- Between the 2025-2026 IRM FBC and 2026-2027 IRM PBC, there was a large shift up and to the right with three large drivers being BTM solar modeling, winter fuel availability constraints modeling and implementation of CHPE
- Between the 2026-2027 IRM PBC and 2026-2027 IRM FBC, there was a shift down and to the left primarily due to typical IRM study annual updates (e.g., the fall load forecast and UDR elections), in addition to certain assumption updates such as revising the call limit for voluntary curtailments

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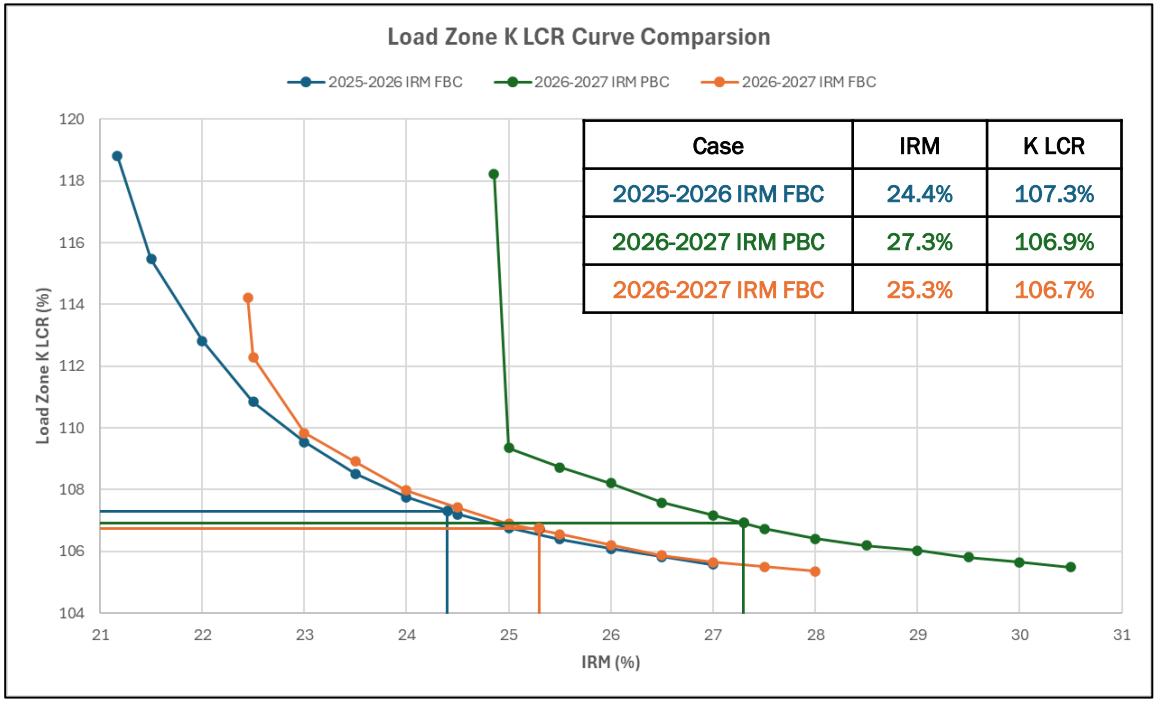
Load Zone K Curve Comparison



Case	IRM	K LCR
2025-2026 IRM FBC	24.4%	107.3%
2026-2027 IRM PBC	27.3%	106.9%
2026-2027 IRM FBC	25.3%	106.7%

- **Between the 2025-2026 IRM FBC and 2026-2027 IRM PBC, there was a large shift to the right primarily resulting from BTM solar modeling, winter fuel availability constraints modeling and implementation of the CHPE project**
  - The 2026-2027 IRM PBC Load Zone K curve exhibited a steep decline from the low point to the first Tan45 point, which should be investigated further
- **Between the 2026-2027 IRM PBC and 2026-2027 IRM FBC, the curve shifted down and to the left primarily due to generator deactivations, the fall load forecast update, and the revised call limit for voluntary curtailments**
  - The steep decline observed in the 2026-2027 IRM PBC Load Zone K Curve is less evident in the 2026-2027 IRM FBC curve, but steepening of the curve should continue to be monitored and researched

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Summary

- Overall, the IRM increased from 24.4% to 25.3% from last year's FBC Tan45 to this year's FBC Tan45
- There were several modeling and assumption changes driving this increase, including but not limited to adoption of the ELM procedure, BTM solar modeling, winter fuel availability constraints, implementation of CHPE, SCR/DER enrollments, the revised call limit for voluntary curtailments, and standard annual IRM study updates (e.g., load forecast updates, generator additions/deactivations, UDR elections, etc.)

Case	IRM	Load Zone J LCR	Load Zone K LCR	G-J Locality LCR	Summer LOLE (%)	Winter LOLE (%)	EOP Calls (Days/Yr)
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Questions?

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Mission

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Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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