



LOCATIONAL MINIMUM INSTALLED CAPACITY REQUIREMENTS STUDY

For the 2024–2025 Capability Year

Approved by NYISO Operating Committee, January 18, 2024

I. Recommendation

This report documents a study conducted by the New York Independent System Operator, Inc. (NYISO) to determine Locational Minimum Installed Capacity Requirements (LCRs) for the Localities of New York City (Load Zone J), Long Island (Load Zone K), and the G-J Locality (Load Zones G, H, I, and J) for the 2024–2025 Capability Year beginning May 1, 2024.

The New York State Reliability Council, L.L.C. (NYSRC) approved the 2024–2025 New York Control Area (NYCA) Installed Reserve Margin (IRM) at 22.0% on December 8, 2023. The NYISO then determined the LCRs for the 2024-2025 Capability Year using the IRM study database and the approved IRM.

Based on the NYSRC IRM study base case for the 2024–2025 Capability Year, and the approved IRM identified above, the NYISO’s calculations result in a New York City LCR of 81.7%, a Long Island LCR of 105.3%, and a G-J Locality LCR of 81.0%.

IRM	J LCR	K LCR	G-J LCR
22.0%	81.7%	105.3%	81.0%

II. Starting Point Database

As its starting point, the NYISO LCR study utilized the NYCA IRM study directed by the NYSRC. The IRM study information is available on the NYSRC website.¹ The final IRM study base case for the 2024-2025 Capability Year maintains the loss of load expectation (LOLE) criterion at no more than 0.100 event-days/year with a statewide reserve margin of 23.1% and corresponding preliminary locational requirements of 72.7% and 103.2% for New York City and Long Island, respectively. In addition to the above technical results, this year’s IRM study also identified a statewide reserve margin of 21.5% when respecting the applicable 2024-2025 Capability Year transmission security limit (TSL) floor values for Zone J, Zone K and the G-J Locality.

The NYISO follows the “Locational Minimum Installed Capacity Requirements Determination Process” to develop the LCRs for Zone J, Zone K, and the G-J Locality.² Pursuant to this procedure, the IRM study database is adjusted to the approved IRM (22.0%), and the target LOLE is established at

¹ NYSRC New York Control Area Installed Capacity Requirement Reports:
<https://www.nysrc.org/documents/reports/nysrc-new-york-control-area-installed-capacity-requirement-reports>

² Locational Minimum Installed Capacity Requirements Determination Process:
<https://www.nyiso.com/documents/20142/21537892/LCR-determination-process-2021.pdf>

the lesser of 0.100 event-days/year and the LOLE that results from the adjusted database corresponding to the approved IRM. The adjusted database corresponding to the approved 22.0% IRM and respecting the TSL floors for all three Localities resulted in the target LOLE for this year's LCR study at 0.089 event-days/year.

III. Changes from Previous (1/23/2023) LCR report

Two major modeling and assumption changes were implemented in the base case of this year's IRM study: the adoption of reduced emergency assistance (EA) allowed from neighboring areas³ and the implementation of topology updates due to the "AC Transmission" project.⁴ On top of these modeling and assumption changes, this year's IRM base case also reflects the addition of 136 MW of new offshore wind resources and 90 MW of new in-front-of-the-meter solar resources. There were also 140.1 MW of resources reinstated in this year's IRM study that were removed in the IRM study for the 2023-2024 Capability Year. These resources were anticipated to be deactivated due to the New York State Department of Environmental Conservation (DEC) "Peaker Rule" but confirmed their intent to continue operating beyond June 2024.⁵

In addition to the changes in the IRM study base case for the 2024-2025 Capability Year, there were two changes implemented in this year's methodology for calculating the TSL floor values for the LCR study. The calculation was updated to account for the difference in forced outage rate utilized in the IRM study and the NYISO's reliability planning procedures as it relates to the new offshore wind resources modeled in this year's IRM study. The calculation was also updated to account for the assumed net flow from Load Zone K to Load Zone J.⁶

³ EOP Review Whitepaper Report:
https://www.nysrc.org/wp-content/uploads/2023/10/EOP-Review-Whitepaper-Report_FINAL_For_Posting.pdf

⁴ 2024 – 2025 IRM Proposed MARS Topology Update:
https://www.nysrc.org/wp-content/uploads/2023/07/6.2_Topology-Update-ICS-0530202315816.pdf

⁵ NYCA IRM Requirement Study 2024-2025 Final Base Case (FBC) Model Assumptions Matrix:
https://www.nysrc.org/wp-content/uploads/2023/10/IRM_FBCAssumptionsMatrix_V1.222498.pdf

⁶ Transmission Security Limit Floor Proposal: Capability Year 2024-2025:
<https://www.nyiso.com/documents/20142/39768278/TSL%20Floor%20Proposal%20-%20Capability%20Year%202024-2025.pdf>

IV. LCR Determination Process

The LCR calculation methodology utilizes an economic optimization algorithm to minimize the total cost of capacity for the NYCA, taking into account net cost of new entry (CONE) curves as shown in the table below. Such net CONE curves account for the applicable net Energy and Ancillary Services revenue offset.⁷

2024-2025 Net CONE Curves		
Location	LCR (%)	Net CONE (\$/kW-yr)
NYCA	112.9	69.34
	115.9	70.97
	118.9	72.35
	121.9	73.66
	124.9	74.21
G-J	84.0	75.09
	87.0	77.25
	90.0	78.82
	93.0	80.26
	96.0	80.95
Zone J	80.6	144.12
	83.6	149.00
	86.6	150.98
	89.6	152.54
	92.6	153.65
Zone K	97.4	45.93
	100.4	55.40
	103.4	61.24
	106.4	64.19
	109.4	66.74

⁷ The term 'net Energy and Ancillary Services revenue offset' is defined in Section 5.14.1.2.2 of the NYISO Market Administration and Control Area Services Tariff.

Using this methodology, the NYSRC’s LOLE reliability standard will be met while utilizing the NYSRC-approved IRM and maintaining capacity requirements greater than or equal to the applicable TSL floor values, as shown in the table below.⁸ The TSL floors for all three Localities were binding in this year’s LCR study.

Transmission Security Limit Floor Calculation	Formula	G-J	NYC	LI	Notes
Load Forecast (MW)	[A] = Given	15,274	11,171	5,080	[1]
Bulk Power Transmission Limit (MW)	[B] = Studied	4,350	2,875	275	[2]
Net Flow Adjustment to Transmission Limit (MW)*	[N] = Study Assumption	275			[3]
Offshore Wind (MW)	[O] = Given			37.5	[4]
UCAP Requirement (MW)	$[C] = [A] - [B] + [N] + [O]$	11,199	8,296	4,843	
UCAP Requirement Floor	$[D] = [C] / [A]$	73.32%	74.26%	95.33%	
5-Year Derating Factor	[E] = Given	5.40%	4.50%	8.85%	[5]
Special Case Resources (MW)	[F] = Given	526.7	442.4	35.3	[6]
ICAP Requirement (MW)	$[G] = ([C] / (1 - [E])) + [F]$	12,364	9,129	5,348	
ICAP Requirement Floor (%)	$[H] = [G] / [A]$	81.0%	81.7%	105.3%	

[1] 2024 Fall Load Forecast⁹

[2] Based on 2024 Locality Bulk Power Transmission Capability Report¹⁰

[3] LI Bulk Power Transmission Limit Adjustment

[5] 5-year Market EFORD based on the generation mix in the 2024-2025 IRM FBC

[4] Difference in Resource Adequacy and Transmission Security UCAP Valuation

[6] Modeled SCRs for 2024-2025¹¹

V. Summary of Study

The calculations and analysis in this study utilize the NYISO process for setting the LCRs with the NYSRC-approved statewide IRM of 22.0% for the 2024-2025 Capability Year.

Based on the NYSRC’s final IRM base case for the 2024–2025 Capability Year, the applicable LOLE criterion is met with an LCR of 81.0% for the New York City Locality, an LCR of 105.3% for the Long Island Locality, and an LCR of 81.7% for the G-J Locality.

⁸ Transmission Security Limit Floor: Capability Year 2024-2025:

<https://www.nyiso.com/documents/20142/40834869/Final%20TSL%20Floors%20-%20Capability%20Year%202024-2025.pdf>

⁹ NYSRC Fall Forecast Update:

<https://www.nyiso.com/documents/20142/40206684/NYSRC%20Fall%20Forecast%20Update%20Updated%2002%20Weather%20Normalization%20&%20Proposed%202024%20IRM%20Forecast.pdf>

¹⁰ 2024-25 Locality Bulk Power Transmission Capability Report:

<https://www.nyiso.com/documents/20142/40834869/2024-25%20Locality%20Bulk%20Power%20Transmission%20Capability%20Report.pdf>

¹¹ Demand Response: Final Model Values for 2024 IRM Studies:

https://www.nysrc.org/wp-content/uploads/2023/07/2023-ICS_Final-SCR-Model-Values20598.pdf