

Winter Reliability Capacity Enhancements

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Capacity and New Resource Integration Market Design

Business Issues Committee

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Previous ICAPWG Presentations

Date	Working Group	Discussion Points and Links to Materials
January 30, 2025	ICAPWG	2025 Winter Reliability Capacity Enhancements: Project Kick-off https://www.nyiso.com/documents/20142/49408264/04%202025%20Winter%20Reliability%20Kick-off%20Presentation.pdf/
April 1, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Winter Requirements https://www.nyiso.com/documents/20142/50614388/2025%20Winter%20Reliability%20Capacity%20Enhancements%20April%201%20ICAPWG%20(1).pdf/
April 9, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Seasonal Elections https://www.nyiso.com/documents/20142/50769536/2025%20Winter%20Reliability%20-%20Seasonal%20Elections%204.9.25%20Final.pdf/
May 5, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Existing Annual Capacity Accreditation Factor Methodology https://www.nyiso.com/documents/20142/51249988/Winter%20Reliability%20-%20Annual%20CAF%20Methodology%205.5.25%20-%20Final.pdf/
May 20, 2025	ICAPWG	2025 Winter Reliability Capacity Enhancements: Demand Curves Review https://www.nyiso.com/documents/20142/51501157/Winter%20Reliability%20-%20Demand%20Curves%2052025%20icap.pdf/
July 29, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Concept Proposal https://www.nyiso.com/documents/20142/52778669/2025%20Winter%20Reliability%20-%20July%2029%20ICAPWG%20MDC_Final.1.pdf/
August 5, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Proposed Consumer Impact Analysis Methodology https://www.nyiso.com/documents/20142/52908106/2025%20Winter%20Reliability%20-%20CIA%20Methodology%20FOR%20APPROVAL%2007302025.pdf/

Previous ICAPWG Presentations

Date	Working Group	Discussion Points and Links to Materials
August 19, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Analysis of Seasonal Capacity Accreditation Factors https://www.nyiso.com/documents/20142/53269544/2025%20Winter%20Reliability%20-%20August%2019%20ICAPWG_CAF%20Analysis.pdf/
August 19, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Proposed Demand Curve Changes https://www.nyiso.com/documents/20142/53269544/Winter%20Reliability%20-%20Proposed%20Demand%20Curve%20Changes%20Final.pdf/
September 22, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Final Market Design Concept Proposal https://www.nyiso.com/documents/20142/53966122/2025%20Winter%20Reliability%20-%20September%2022%20Final%20MDC%20-%20Reposted_Final.pdf/8f2d7576-1985-833a-a3c5-55e6046ef0a3
October 6, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Market Design Update and Review of Proposed Tariff Revisions https://www.nyiso.com/documents/20142/54258786/2025%20Winter%20Reliability%20-%20October%2006%20ICAPWG.pdf/
October 14, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Proposed Tariff Revisions https://www.nyiso.com/documents/20142/54406317/2025%20Winter%20Reliability%20-%20October%2014%20ICAPWG.pdf/
October 14, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Consumer Impact Analysis https://www.nyiso.com/documents/20142/54406317/2025%20Winter%20Reliability%20-%20CIA%20DRAFT%20FOR%20POSTING2.pdf/
October 28, 2025	ICAPWG	Winter Reliability Capacity Enhancements: Market Design Details and Additional Tariff Review https://www.nyiso.com/documents/20142/54719523/5%202025%20Winter%20Reliability%20-%20October%2028%20ICAPWG%20Final.pdf/

Agenda

- **Project Review**
 - Project Objective and Timeline
- **Summary of Market Design Proposal**
- **Summary of Proposed Tariff Revisions**
- **Proposed Incremental Tariff Revisions Since 10/28/2025 ICAPWG**
- **Next Steps**

Project Review

Project Objective

- The objective of the Winter Reliability Capacity Enhancements project is to develop potential changes to the Installed Capacity (ICAP) market design that will support efficient market outcomes as the NYCA trends towards increasing winter resource adequacy risk.
 - In the 2024 Winter Reliability Capacity Enhancements Issue Discovery Report, the NYISO addressed challenges with the expected, increased winter resource adequacy risk and potential areas for evolving the ICAP market over the next several years to respond to these anticipated changes.

Project Timeline

- **The 2025 project goal is Market Design Complete, with the following milestones:**
 - Consumer Impact Analysis (CIA) presented at the October 14, 2025 ICAPWG
 - Seek Business Issues Committee (BIC) approval of proposed market design and recommendation of proposed Market Administration and Control Area Services Tariff (Services Tariff or Tariff) revisions to the Management Committee
- **Target implementation date is the Capability Year beginning May 1, 2027**
 - Targeting a Q1 2026 filing to FERC of any proposed Tariff revisions approved by stakeholders and the NYISO Board of Directors.
 - The NYISO plans to request that any FERC-accepted Tariff revisions become effective immediately following the standard 60-day notice period for Section 205 filings under the Federal Power Act.
 - If, for unforeseen reasons, the software development related to this project delays the implementation of seasonal NYCA Minimum ICAP Requirements beyond the 2027-2028 Capability Year, the NYISO proposes to return to stakeholders to discuss any necessary proposed Tariff revisions to address this delay, which may include maintaining the seasonal availability adjustments (with a revised calculation to account for seasonal UDR and EDR elections) in the calculation of the maximum clearing and reference point prices of the ICAP Demand Curves, and the procedural path forward.

Market Design Proposal

Proposed Market Design Overview

- **In consideration of the Winter Reliability Capacity Enhancements project's objective, the NYISO proposes the following:**
 - setting seasonal minimum ICAP requirements;
 - creating seasonal elections for Unforced Capacity Deliverability Rights (UDRs) and External-to-Rest of State Deliverability Rights (EDRs) with a Must Offer Requirement; and
 - adjusting the ICAP Demand Curves to reflect the development of seasonal NYCA Minimum ICAP Requirements.

Seasonal Minimum ICAP Requirements

- **Seasonal NYCA Minimum ICAP Requirements, Seasonal Transmission Security Limit (TSL) Floor Values, and Seasonal Locational Minimum ICAP Requirements (LCRs)**
 - The proposed seasonal NYCA Minimum ICAP Requirements aim to better account for the differences in available capacity and the reliability requirements in Summer and Winter Capability Periods due to the anticipated shift in reliability risk to the winter.
 - The NYISO proposes that (i) seasonal Transmission District (TD) capacity requirements be determined and allocated to Load Serving Entities (LSEs) separately for the Summer and Winter Capability Periods for NYCA and the Localities and (ii) seasonal TD Minimum Unforced Capacity (UCAP) be used to calculate seasonal LSE Minimum UCAP Requirements.
 - To implement seasonal NYCA Minimum ICAP Requirements, seasonal TSL floor values and seasonal LCR values would need to be calculated.
 - Details regarding the proposed development of seasonal NYCA Minimum ICAP Requirements, seasonal TSL floor values and seasonal LCRs are provided in the Appendix.

Seasonal UDR/EDR Elections with Must Offer Requirement

- Seasonal Elections for UDRs and EDRs with a Must Offer Requirement
- **Proposed Seasonal Elections:** By August 1 prior to the applicable Capability Year, the holder of External UDRs or EDRs will be required to submit distinct seasonal elections: one for the Summer Capability Period and one for the Winter Capability Period.
 - These proposed seasonal election values aim to provide more accurate input of available capacity in the applicable season that can be reflected in the New York State Reliability Council's (NYSRC) Installed Reserve Margin (IRM) study.
- **Proposed Must Offer Requirement:** The UCAP associated with an External UDR or EDR that has not been returned to the NYCA must be offered in each ICAP Spot Market Auction or certified for use in meeting an LSE's NYCA Minimum Unforced Capacity Requirement or Locational Minimum Unforced Capacity Requirement for the Obligation Procurement Period in accordance with Section 5.14.1.1 of the Services Tariff and the ISO Procedures. If the holder of an External UDR or EDR fails to offer or certify UCAP associated with an External UDR or EDR that has not been returned to the NYCA in any ICAP Spot Market Auction during the subject Capability Period, it shall pay the ISO an amount for all months of the subject Capability Period equal to the product of:
 - (i) 1.5 times the applicable ICAP Spot Market Auction price and
 - (ii) the quantity by which the UCAP associated with the given External UDR or EDR that has not been returned to the NYCA exceeds the minimum amount of UCAP associated with the given External UDR or EDR that has not been returned to the NYCA that is offered or certified during any month of the subject Capability Period.
- Note: If the NYISO determines that the holder of an External UDR or EDR is required to pay the ISO for (1) the failure to offer or certify the UCAP associated with an External UDR or EDR that has not been returned to the NYCA in any ICAP Spot Market Auction during the subject Capability Period as well as (2) the failure to offer or sell Mitigated UCAP or External Sale UCAP in accordance with Section 23.4.5.4.2 of the Services Tariff, then the holder of the applicable External UDR or EDR shall pay the ISO the larger of these two sanction amounts.
- The proposed must offer requirement aims to address potential misalignment between the proposed seasonal election requirements for UDRs and EDRs and supply in a delivery month.
- Details of the penalty calculation related to the UDR/EDR seasonal election must offer requirement are provided in the Appendix.

Seasonal ICAP Demand Curves

■ ICAP Demand Curve Changes

- With the proposed development of distinct seasonal NYCA Minimum ICAP Requirements, the current seasonal availability adjustments (i.e., the winter-to-summer ratio (WSR) and summer-to-winter (SWR)) would no longer be required to determine the maximum clearing and reference point prices of the ICAP Demand Curves.
 - The NYISO proposes removing the current seasonal availability adjustment components of the denominators of the maximum clearing price and reference point price formulas to account for the proposal to capture seasonal differences in ICAP availability through seasonal NYCA Minimum ICAP Requirements
- With the proposed development of distinct seasonal NYCA Minimum ICAP Requirements, the NYISO proposes to create distinct zero crossing points (ZCPs) and prescribed level of excess percentages for the summer and winter ICAP Demand Curves.
 - Details regarding the proposed development of distinct ZCPs and prescribed level of excess percentages is provided in the Appendix.

Summary of Proposed Tariff Revisions

Summary of Proposed Tariff Revisions Corresponding to Each Market Design Element

- **Seasonal NYCA Minimum ICAP Requirements, Seasonal TSL Floor Values, and Seasonal Locational Minimum ICAP Requirements**
 - See proposed revisions to MST Sections 2.14, 5.10, 5.11 and 5.16.¹
- **Seasonal Elections for UDRs and EDRs with Must Offer Requirement**
 - See proposed revisions to MST Sections 5.11.4, 5.12 and 23.4.5.4.
- **ICAP Demand Curve Changes**
 - See proposed revisions to MST Section 5.14.
- **Additional Ministerial Edits**
 - See proposed revisions to MST Sections 5.10.1, 5.11.1 and 5.12.6.1.2.

1. For MST Sections 5.10 and 5.11, the NYISO may also need to supplement the proposed revisions to account for the proposed changes to these sections in the “triggering resource” proposal submitted to FERC in Docket No. ER26-235-000 on October 24, 2025.

Removal of Tariff References to Duration Adjustment Factor

- With the transition to the Capacity Accreditation Factor methodology for derating factor calculations, the term “Duration Adjustment Factor” has been sunset
- Outdated references to Duration Adjustment Factor and Capacity Value Study are being removed from the following sections of the Services Tariff:
 - Section 2.1 (definition of Adjusted Installed Capacity)
 - Section 2.4 (definition of Duration Adjustment Factor)
 - Section 5.12.1.14
 - Section 5.12.14
 - Section 30.4.6.3.3 (Capacity Value Study)
 - In FERC Docket No. ER22-772-001, the NYISO removed the Capacity Value Study as part of its broader reforms to improve how capacity is accredited and valued

Proposed Incremental Tariff Revisions Since 10/28/2025 ICAPWG

Proposed Incremental Tariff Revisions

Since 10/28/2025 ICAPWG

- **Section 2.14**
 - Removed unnecessary comma in the definition of “NYCA Minimum Installed Capacity Requirement” starting with the 2027-2028 Capability Year.
 - Replaced “beginning with the 2027-2028 Capability Year” to “starting with the 2027-2028 Capability Year.”
- **Section 5.10.1**
 - Revised “Load and Capacity Data Report” to read “Load & Capacity Data Report” to track the title of the report.
 - Revised reference to “Transmission” to lower case “transmission.”
- **Section 5.10.2**
 - Revised “Load and Capacity Data Report” to read “Load & Capacity Data Report” to track the title of the report.
 - Removed unnecessary comma.
 - Added “Services” to reference to the Services Tariff.
 - Revised reference to “Transmission” to lower case “transmission.”
- **Section 5.11.1**
 - Corrected references to “aggregate Load data” to read “aggregate Adjusted Actual Load data.”
 - Clarified the language describing the existing Transmission Owner submission requirements to read as follows: “Each Transmission Owner shall be required to submit such aggregate Adjusted Actual Load data and peak Load forecasts for each LSE active within its Transmission District, in accordance with the ISO Procedures, that the ISO shall use to allocate the NYCA Minimum Unforced Capacity Requirement among all LSEs serving Load in the NYCA.”
- **Section 5.14.1.2.2**
 - Revised the reference to “Section 5.16.3” to read “Section 5.16.3 of this Services Tariff.”
 - Added “the” prior to the reference to “ICAP Demand Curves.”
 - Corrected a reference to “each ICAP Demand Curves” to read “each ICAP Demand Curve.”

Next Steps

Next Steps

- Targeting to seek stakeholder approval of the proposed market design and Tariff revisions at the November 20, 2025 Management Committee meeting.
 - Intended to facilitate a Q1 2026 filing to FERC of any proposed tariff revisions approved by stakeholders and the NYISO Board of Directors.
- For any questions or feedback, please email adrake@nyiso.com

Appendix

Seasonal NYCA Minimum ICAP Requirements, Seasonal TSL Floor Values and Seasonal LCRs

Seasonal NYCA Minimum ICAP Requirements

- The NYISO proposes to expand the existing annual NYCA Minimum ICAP Requirement to develop seasonal requirements to better account for the differences in the amount of available capacity and the reliability requirements between the Summer and Winter Capability Period due to the anticipated shift in reliability risk to the winter.
 - Historically, NYCA Minimum ICAP Requirements allocated to LSEs for a Capability Year have been based on the summer peak.
- The separate Summer and Winter NYCA Minimum ICAP Requirements would be based on the final IRM study case reflecting the NYSRC-approved IRM to ensure the reliability criterion of 0.1 Loss of Load Expectation (LOLE) is met.

Seasonal NYCA Minimum ICAP Requirements: Calculation

- **The Summer NYCA Minimum ICAP Requirement calculation will remain unchanged; it will continue to be consistent with the NYSRC-approved IRM value.**
 - The Summer NYCA Minimum ICAP Requirement will continue to be calculated as follows:
 - Summer NYCA Minimum ICAP Requirement = NYCA Summer Forecasted Peak Load x (1 + IRM)
- **The Winter NYCA Minimum ICAP Requirement will be derived from the available capacity in the winter peak month as modeled in the final IRM study case, which reflects the NYSRC-approved IRM.**
 - The annual capacity as modeled in the NYSRC-approved IRM case will be used to determine the Winter NYCA Minimum ICAP Requirement to maintain the annual LOLE criteria.
 - Winter NYCA Minimum ICAP Requirement = NYCA Winter Forecasted Peak Load x (1 + Winter Reserve Margin)

Winter NYCA Minimum ICAP Requirement: Example

Calculating Summer Requirements:	
Summer ICAP in the Model	41,500
subtract annual ICAP removed	1,500
Summer Requirement	40,000
Summer Peak Load	34,500
Summer Reserve Margin %	116%

Illustrative numbers only

Summer NYCA Minimum Installed Capacity Requirement = NYCA Summer Forecasted Peak Load x (1 + IRM)

Calculating Winter Requirements:	
Winter ICAP in the Model	43,000
subtract annual ICAP removed	1,500
Winter Requirement	41,500
Winter Peak Load	26,000
Winter Reserve Margin %	160%

Illustrative numbers only

*Winter NYCA Minimum Installed Capacity Requirement = NYCA Winter Forecasted Peak Load x (1 + Winter Reserve Margin)**

* The Winter NYCA Minimum ICAP Requirement will be made available consistent with the current annual requirements..

Seasonal TSL Floor Values & Seasonal LCRs

- To implement seasonal NYCA Minimum ICAP Requirements, seasonal TSL floor values and seasonal LCRs would need to be calculated.
- The NYISO proposes that the seasonal TSL floor values be based on calculation parameters that are expanded to account for seasonal differences such as, but not limited to, Load forecasts and bulk power transmission limits.
 - The LCR optimizer would use the more restrictive seasonal TSL floor value to procure sufficient resources to meet transmission security on an annual basis
- The NYISO proposes that the LCR study process, including inputs to the LCR optimizer (such as the final IRM base case, the NYSRC-approved IRM, the targeted LOLE, and TSL floor values) remain unchanged.
 - The LCR optimizer would use the more restrictive seasonal TSL floor value as the capacity removal for the IRM and LCR study process would remain an annual value.
- The NYISO proposes that Winter LCRs be derived from the available capacity in each Locality in the winter peak month of the final IRM base case, which is similar to the method for calculating the Winter NYCA Minimum ICAP Requirement. The Winter LCRs would be calculated based on the applicable Locality non-coincident peak Load forecast as modeled in the final IRM base case.

Winter Locational Minimum ICAP Requirements: NYC Example

Calculating NYC Winter Requirements:	
Winter ICAP in the Model	10,250
subtract annual ICAP removed	1,000
Winter Requirement	9,250
Winter Locality Non-Coincident Peak Load	7,500
Winter LCR %	123%

Illustrative numbers only

*Winter Locational Minimum Installed
Capacity Requirement = Locational Winter
Forecasted Peak Load x Winter LCR%**

* The Winter Locational Minimum ICAP Requirement will be made available consistent with the current annual requirements..

Seasonal Transmission District Capacity Requirements

- NYCA Minimum ICAP and UCAP Requirements allocated to TDs for a Capability Year are currently based on the TDs' share of summer peak Load.
- With the proposed development of seasonal NYCA Minimum ICAP Requirements, the NYISO proposes that seasonal TD capacity be determined and allocated to LSEs separately for the Summer and Winter Capability Periods for the NYCA and Localities.
 - For example, $\text{Winter TD Minimum ICAP Requirement} = \text{Winter TD Forecasted Peak Load} \times (1 + \text{Winter Reserve Margin})$
- With the proposed development of seasonal NYCA Minimum ICAP Requirements, the NYISO proposes that seasonal TD Minimum UCAP be used to calculate seasonal LSE Minimum UCAP Requirements.
 - For example, $\text{Winter TD Minimum UCAP Requirement} = \frac{\text{Winter TD Forecasted Coincident Peak Load}}{\text{Sum of Winter Forecasted Coincident Peak Loads for all TDs}}$
 - LSEs with Load in a Locality would be required to purchase a portion of UCAP MW to satisfy the seasonal Locational Minimum UCAP Requirement.

UDR/EDR Seasonal Elections

UDR/EDR Seasonal Election Must Offer Requirement: Penalty Calculation

$$Penalty = \sum_{m=1}^6 \left(1.5 \times MCP_m \times 1,000 \times \left[ElectedMW - \min_m(OfferedMW_m) \right] \right)$$

<u>Parameter</u>	<u>Unit</u>	<u>Definition</u>
m	1 to 6	Index for month in Capability Period
MCP_m	\$/kW-month	The Market-Clearing Price for the Locality in which the UDR sinks, or the NYCA for any EDR, for the ICAP Spot Market Auction for month m
$Elected MW$	MW	Total MW capacity elected by the UDR or EDR for the Capability Period
$Offered MW_m$	MW	Total offered capacity in month m by the UDR or EDR
$\min_m(OfferedMW_m)$	MW	The minimum total offered capacity across all $m = 1$ to 6

ICAP Demand Curves

Seasonal Zero Crossing Point Details

- The NYISO proposes to annually calculate the ZCP percentages for the Winter ICAP Demand Curves, so that the resulting ICAP MW quantities of the ZCP for the summer and winter ICAP Demand Curves are approximately equal.
- The NYISO proposes to adjust the ZCP percentages using the ratio of available capacity that would be used to set the minimum ICAP requirements for the Summer Capability Period of the upcoming Capability Year to the available capacity that would be used to set the minimum ICAP requirements for the Winter Capability Period of the upcoming Capability Year based on the most recently NYSRC-approved assumptions matrix for the upcoming Capability Year
 - The NYISO proposes to use the ratio of available capacity, rather than the ratio of the expected Summer Minimum ICAP Requirements to Winter Minimum ICAP Requirements based on the IRM case reflecting the most recently NYSRC-approved assumptions matrix for the upcoming Capability Year, because the NYISO has determined the IRM case reflecting the most recently NYSRC-approved assumptions matrix for the upcoming Capability Year will not be available early enough to meet the November 30th tariff requirement to post the updated ICAP Demand Curves for the upcoming Capability Year (See MST Section 5.14.1.2.2) The minimum ICAP requirements are generally not available until the following January.

Seasonal Level of Excess

- The NYISO proposes to update the prescribed level of excess definition to reflect the use of distinct seasonal minimum ICAP requirements for each Capability Period.
- The proposal intends to annually update the prescribed level of excess percentages for both the Summer and Winter Capability Periods to reflect the most recent Capability Year's seasonal minimum ICAP requirements.
 - This proposal is an enhancement to the current prescribed level of excess calculation, which utilizes the minimum ICAP requirements of the Demand Curve Reset (DCR) filing year for all years in a reset period.
 - The NYISO believes that utilizing the minimum ICAP requirements of the prior Capability Year will be a better proxy for estimating the prescribed level of excess for each upcoming Capability Year compared to using the minimum ICAP requirements in effect during the DCR filing year
 - Because seasonal minimum ICAP requirements will not be in effect until the 2027-2028 Capability Year, the NYISO proposes to derive what the seasonal minimum ICAP requirements would have been for the 2026-2027 Capability Year to calculate the prescribed level of excess percentages for the 2027-2028 ICAP Demand Curves
 - This component of the proposal is due to the requirement for the NYISO to post the updated ICAP Demand Curves, which utilize the prescribed level of excess percentages as an input, for each subsequent Capability Year covered by the periodic review on or before November 30th of the calendar year immediately preceding the calendar year that includes the start of the Capability Year for which the updated ICAP Demand Curves will apply (See MST Section 5.14.1.2.2). As mentioned, the minimum ICAP requirements are generally not available until the following January.

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

