New York ISO
Independent System Operator

Winter Reliability Capacity Enhancements: Final Market Design Concept Proposal

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Capacity and New Resource Integration Market Design

ICAPWG

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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/

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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/

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Agenda

- **Project Objective and Timeline**
- **Final Market Design Concept Proposal**
  1. Seasonal Elections for Unforced Capacity Deliverability Rights (UDRs) and External-to-Rest of State Deliverability Rights (EDRs)
  2. Seasonal NYCA Minimum ICAP Requirements, Seasonal Transmission Security Limit (TSL) Floor Values and Seasonal Locational Minimum Installed Capacity Requirements (LCRs)
  3. ICAP Demand Curves
- **Next Steps**

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Project Objective and Timeline

- **The objective of the Winter Reliability Capacity Enhancements project is to develop potential changes to the ICAP market that will support efficient market outcomes as the NYCA trends towards increasing winter resource adequacy risk.**
  - NYISO efforts this year are focused on developing winter capacity requirements, seasonal demand curves, and seasonal elections
- **The 2025 project goal is Market Design Complete, with the following milestones:**
  - Consumer Impact Analysis (CIA)
  - Seek Business Issues Committee (BIC) approval of proposed Tariff revisions
- **The target implementation date is May 1, 2027.**

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Final Market Design Concept Proposal

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Seasonal Elections for UDRs and EDRs

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Seasonal Elections for UDRs and EDRs*

- **Continuation of Existing Election Requirements:**
  - To support the timeline of the annual New York State Reliability Council (NYSRC) Installed Reserve Margin (IRM) study, ICAP Suppliers will continue to be required to submit elections by August 1 prior to the subject Capability Year.
  - Annual participation model, duration, and firm fuel elections will continue to apply to the entire Capability Year. The elected value will be used as a consistent assumption in the IRM study.
- **New Market Design Element:**
  - On August 1 prior to the applicable Capability Year, UDR and EDR holders will be required to submit distinct seasonal elections: one for the Summer Capability Period and one for the Winter Capability Period.
  - These two separate election values may provide more accurate input of available capacity in the applicable season that can be reflected in the IRM study.

*Presented on July 29, 2025 ICAP WG

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Seasonal Elections for UDR and EDR: Must-Offer Requirement*

- When setting UDR and EDR seasonal requirements, the NYISO currently assumes the UDR and EDR elections are available capacity that impacts the LCR for the Locality into which the UDR or EDR sinks.
- Currently, unless existing ICAP market mitigation rules require otherwise, UDRs and EDRs may not offer capacity consistent with their annual elections. UDRs and EDRs that elect to participate in the ICAP market, but do not offer capacity, can create a misalignment between the proposed seasonal requirements and available supply in a delivery month.
  - This misalignment can result in prices that are not reflective of reliability needs.

*Presented on July 29, 2025 ICAP WG

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Seasonal Elections for UDR and EDR: Must-Offer Requirement (cont.)

- The NYISO proposes the following must-offer requirement to address this potential misalignment between the proposed seasonal election requirements for UDRs and EDRs and supply in a delivery month:
- An ICAP Supplier holding UDR or EDR rights that makes an election for a given Capability Period must offer the elected quantity in each Spot Market Auction for that Capability Period.
- If the UDR or EDR rights holder fails to offer its full elected MW amount in any month of the Capability Period in which it has elected to participate, it shall be subject to penalty equal to:
  - 1.5 x Spot Market Clearing Price x Unoffered MW
    - Where Unoffered MW = seasonal elected UDR/EDR MW – offered MW

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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 Load Serving Entities 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.

*Presented on July 29, 2025 ICAP WG

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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)**

*Presented on July 29, 2025 ICAP WG

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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)***

*Presented on July 29, 2025 ICAP WG

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

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Seasonal TSL Floor Values & Seasonal LCRs

- **To implement NYCA seasonal Minimum ICAP requirements, seasonal LCRs and seasonal TSL floor values 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. If the NYCA system transitions to 100% winter resource adequacy risk, this proposal to use the more restrictive seasonal TSL floor value would need to be reconsidered. This element of the proposal could be reevaluated as part of the transmission security project.
- **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.**

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Winter Locational Minimum ICAP Requirements: NYC Example

Calculating NYC Summer Requirements:	
Summer ICAP in the Model	9,500
subtract annual ICAP removed	1,000
Summer Requirement	8,500
Summer Locality Non-Coincident Peak Load	11,000
Summer LCR %	77%

Illustrative numbers only

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

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% ***

*Presented on July 29, 2025 ICAP WG

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

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Seasonal Transmission District Capacity Requirements

- NYCA Minimum ICAP and UCAP Requirements allocated to Transmission Districts (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 NYCA and the Localities.
  - For example, Winter TD Minimum ICAP $Requirement = Winter\ TD\ Forecasted\ Peak\ Load \times (1 + Winter\ Reserve\ Margin)$
- 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, Winter TD Minimum UCAP Requirement $= \frac{Winter\ TD\ Forecasted\ Coincident\ Peak\ Load}{Sum\ of\ Winter\ Forecasted\ Coincdent\ Peak\ Loads\ for\ all\ TDs}$
  - LSEs with Load in a Locality would be required to purchase a portion of UCAP MW to satisfy the seasonal Locational Minimum UCAP Requirement.

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ICAP Demand Curves

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Proposed ICAP Demand Curve Changes*

- The current seasonal ICAP Demand Curves account for the difference in seasonal availability of ICAP in the Spot Market Auctions.
- The NYISO uses seasonal capacity availability adjustments (i.e., the winter-to-summer ratio (WSR) and summer-to-winter ratio (SWR)) to determine the maximum clearing and reference point prices of the seasonal demand curves.
- With the proposed development of distinct seasonal NYCA Minimum ICAP Requirements, the WSR and SWR will no longer be required to determine the maximum clearing and reference point prices of the demand curves. If the NYISO were to add the seasonal NYCA Minimum ICAP Requirements without removing the WSR and SWR, the seasonal ICAP demand curves would be adjusted for seasonal ICAP differences twice.
  - Seasonal NYCA Minimum ICAP Requirements derived from the IRM model results directly represent the amount of capacity needed to maintain the NYCA system at the 0.1 event-days/year LOLE criteria, eliminating the need for seasonal capacity availability adjustments.
  - Accounting for the difference in the seasonal availability of ICAP based on the IRM model results is a more accurate representation of future NYCA system needs in the upcoming Spot Market Auction timeframe.
- Therefore, the NYISO proposes to no longer use the WSR and SWR to determine the maximum clearing and reference point prices of the demand curves.

*Presented on August 19, 2025 ICAP WG

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Proposed ICAP Demand Curve Changes (Formulas)*

- The NYISO proposes removing the WSR and SWR 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 rather than seasonal demand curve prices.

*Presented on August 19, 2025 ICAP WG

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Proposed ICAP Demand Curve Changes (Zero Crossing Points)

- ICAP Manual Section 5.5. defines the "zero crossing point" as "the smallest quantity of [ICAP] counting towards the NYCA Minimum Installed Capacity Requirement or a Locational Minimum Installed Capacity Requirement, as applicable, for which the price of ICAP is zero."
- With the proposed development of distinct seasonal NYCA Minimum ICAP Requirements, the NYISO proposes to create distinct zero crossing points for the summer and winter demand curve respectively.
- However, the NYISO proposes to retain the current zero crossing point percentages because they are established for the applicable ICAP Demand Curve during the first year of each four-year period review, as outlined in MST Section 5.14.1.2, and studied for impact on reliability.
  - The zero crossing points for years 2-4 of the four-year period remain the same as the respective zero crossing points for the first year of the four-year period.
- Moving to seasonal zero crossing points would provide the framework for using distinct seasonal zero crossing point percentages in the future.
  - The demand curve structure will be reevaluated in its entirety as part of the 2026 Demand Curve Modeling Improvements project.

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Next Steps

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Next Steps

- Return to a future ICAPWG meeting(s) to review proposed tariff revisions.
- Return to a future ICAPWG meeting to review the Consumer Impact Analysis.

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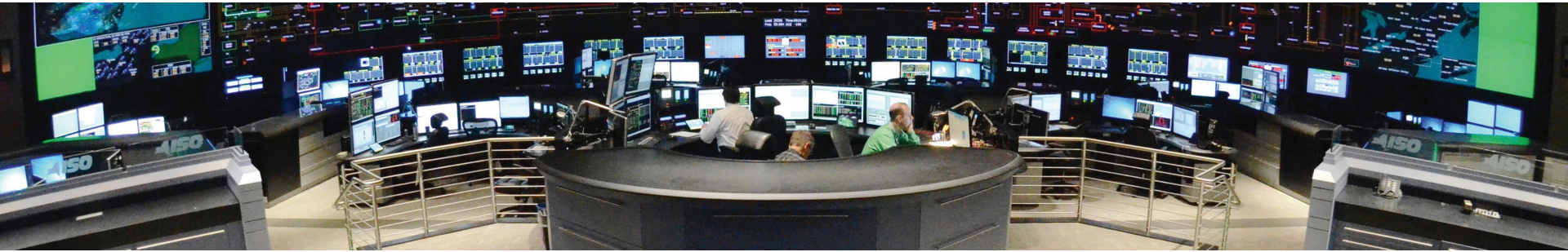
Our Mission and Vision

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



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