New York ISO
Independent System Operator

Winter Reliability Capacity Enhancements: Proposed Consumer Impact Analysis Methodology

Nicole Bouchez, Ph.D.

Sr. Principal Economist and Consumer Interest Liaison

ICAP/MIWG

August 5, 2025

Agenda

- Project Overview
- Overview of the Modeling Improvement Tracks
- Proposed Methodology
- Next Steps

New York ISO

Project Overview

New York ISO

Objective

- **The objective of this project is to develop potential changes to the Installed Capacity (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.**

New York ISO

Summary of 7/29/2025 Market Design Proposal*

Seasonal Minimum ICAP Requirements

- Derive Winter ICAP Requirements from the winter peak month of the final Installed Reserve Margin (IRM) study case reflecting the New York State Reliability Council (NYSRC)-approved IRM.
- Calculate the Winter NYCA Minimum ICAP Requirement using the Winter NYCA forecasted peak load value and using a winter locality non-coincident peak load forecast for Localities.
- Calculate seasonal transmission security limits (TSLs) from the approved Locational Minimum Installed Capacity Requirement (LCR) case.

Seasonal Elections for Unforced Capacity Deliverability Rights (UDRs)/External-to-Rest of State Deliverability Rights (EDRs)

- On August 1 prior to the applicable Capability Year, Unforced Capacity Deliverability Rights (UDRs) and External-to-Rest of State Deliverability Rights (EDRs) holders will be required to submit distinct seasonal elections: one for the Summer Capability Period and one for the Winter Capability Period.
  - Considering a UDR/ EDR “must offer” requirement (with no exemptions provided) for all elected MWs for all months in a season in which an UDR/EDR elects to participate.
- All other election types (duration, firm fuel, and participation model) will continue to apply to the entire Capability Year.

* See the 7/29/2025 ICAPWG presentation for more information

New York ISO

Summary of Market Design Proposal (cont.)

- **Annual Capacity Accreditation Factors (CAFs)**
  - Recommend maintaining the annual CAF methodology, as the existing marginal reliability improvement (MRI) technique for accrediting Resources in the ICAP market reflects seasonal risk. Annual CAFs calculate a Loss of Load Expectation (LOLE) risk-weighted CAF based on the summer/ winter annual risk split.
- **Demand Curve Enhancements**
  - Remove the seasonal capacity availability ratios (winter-to-summer ratio and summer-to-winter ratio) because distinct seasonal minimum ICAP Requirements directly represent the applicable levels of seasonal capacity, eliminating the need for seasonal capacity availability adjustments.
    - Foregoing removal of the seasonal capacity availability ratios would result in duplicative adjustments in calculating the reference point and maximum capacity prices.

New York ISO

Overview of the Modeling Improvement Tracks

New York ISO

Impacted NYISO Markets

- **The following slides are based on the current market design proposal presented at the 7/29/25 ICAPWG that is being discussed in the stakeholder process.***
- **The changes proposed may impact different NYISO market areas:**
  - **Resource adequacy** – Seasonal impacts to resource adequacy are anticipated because the proposed modeling improvement tracks will produce separate seasonal requirements and procure separate seasonal supply for Summer and Winter.
  - **ICAP market** – Wholesale capacity costs may be meaningfully different because the market design proposal changes the translation of the demand curve, produces separate seasonal requirements, and may introduce new offer rules for UDRs. In aggregate, these changes will change both price and quantity of cleared Unforced Capacity (UCAP) supply.
  - **Energy market** – There are no direct impacts on the energy market. However, changes to ICAP market incentives may lead to different ICAP auction outcomes that may change entry and exit decisions. In turn, this may cause secondary effects to the energy market. We will not be analyzing these secondary impacts, but we will qualitatively speak to them where possible.

* See the 7/29/25 ICAPWG presentation for more information

New York ISO

Overview of Modeling Improvement Tracks

Seasonal Minimum ICAP Requirements

Modeling Improvements for Winter Reliability					
	Track Description	Overview of Design	Resource Adequacy Changes	Capacity Market Changes	Energy Market Changes
Separate Summer/ Winter Minimum ICAP Requirements & LCRs	Summer & Winter Minimum ICAP Requirements and LCRs will be calculated separately. Seasonal Minimum ICAP Requirements for NYCA and Localities will maintain the annual 1-in-10 LOLE requirement set by the NYSRC.	Peak load will reflect the seasonal peak value for NYCA and the non-coincident peak forecast will be used for Localities. Equal amounts of capacity will be removed from each season until the annual risk tolerance threshold (1-in-10 LOLE) is met. This will produce separate seasonal Minimum ICAP Requirements.	X	X	

New York ISO

Overview of Modeling Improvement Tracks

Seasonal TSL Floor Values

Modeling Improvements for Winter Reliability					
	Track Description	Overview of Design	Resource Adequacy Changes	Capacity Market Changes	Energy Market Changes
TSL floor values used to calculate seasonal LCRs	TSL floor values are an input used for calculating LCRs. These floor values are currently annual values because only one set of LCRs is calculated each year. Given the proposed development of different seasonal Minimum ICAP Requirements, the calculated TSL floor values may be different in the Summer and Winter Capability Periods.	TSL floor values will be calculated separately for the Summer and Winter Capability Periods. The temporality of inputs used to calculate seasonal TSL floors (i.e., 5-Year Derating Factor and quantity of Special Case Resources) are subject to further evaluation.	X	X	

New York ISO

Overview of Modeling Improvement Tracks

Seasonal UDR/ EDR Elections & possible Must-Offer Requirement

Modeling Improvements for Winter Reliability					
	Track Description	Overview of Design	Resource Adequacy Changes	Capacity Market Changes	Energy Market Changes
Seasonal UDR/ EDR elections & must-offer requirement	The seasonal UDR "must-offer" requirement under consideration would mandate that (without exception) a UDR/EDR offer all elected MW for all months in a season in which the UDR/EDR elects to participate. This market design aims to align modeled capacity with MW offered in the spot auction.	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. • The NYISO is evaluating potential market mechanisms to address this possible misalignment.	X	X	

New York ISO

Overview of Modeling Improvement Tracks

Annual CAFs

Modeling Improvements for Winter Reliability					
	Track Description	Overview of Design	Resource Adequacy Changes	Capacity Market Changes	Energy Market Changes
Annual CAFs	The proposed methodology for annual CAFs does not diverge from the current methodology. CAFs will be calculated annually for all resource types based on seasonally-weighted risk contributions to address seasonal risk.	Annual CAFs reflect the risk-weighted average of each Capacity Accreditation Resource Class seasonal resource adequacy benefits. While this methodology does not differ from the current methodology, we note that CAFs today are entirely reflective of summer LOLE risk. As winter risk becomes more pronounced, the risk-weighted average will increasingly reflect winter season risk.	X	X	

New York ISO

Overview of Modeling Improvement Tracks

Removal of Seasonal Capacity Availability Ratios from Demand Curve Parameter Calculations

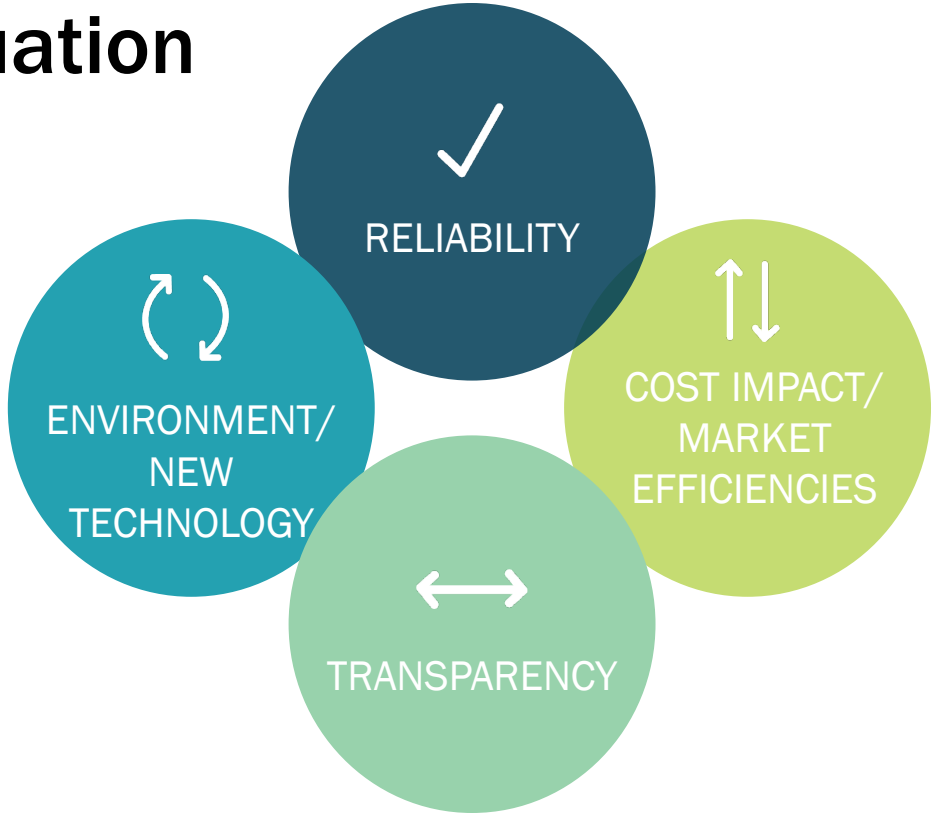
Modeling Improvements for Winter Reliability					
	Track Description	Overview of Design	Resource Adequacy Changes	Capacity Market Changes	Energy Market Changes
Removal of Seasonal Capacity Availability Ratios	With the proposed development of distinct seasonal Minimum ICAP Requirements, the current seasonal capacity availability adjustments (i.e., the winter-to-summer and summer-to-winter ratios) used in the determinations of the maximum clearing and reference point prices of the demand curves would no longer be necessary.	In isolation, removing the seasonal capacity availability adjustments compresses the demand curve vertically, indicating that the marginal clearing price will decrease for all points along the demand curve. However, the quantity of MW procured at requirements and at the zero-crossing-point will not change. The net impact of this change, however, must also account for the addition of distinct seasonal requirements	X	X	

New York ISO

Proposed Methodology

New York ISO

Consumer Impact Analysis (CIA) Evaluation Areas



New York ISO

Cost Impact/ Market Efficiencies

Assumptions and Approach (1/3)

- **Wholesale capacity prices are expected to be influenced by the Winter Reliability Capacity Enhancement project, and the indicative price outcomes of the proposed seasonal design and evolving seasonal resource mix can be measured. Additional second-order effects, some of which can be modeled as sensitivities, may also impact market incentives.**
- **Some of the impacts of these ICAP market design changes are not estimable over the long-term, but it is possible to quantify indicative short-run Rest of State ICAP market impacts for several proposed seasonal rule changes.**
  - An indicative IRM is available, so we can estimate ROS impacts.
  - Estimating impacts to Locality sales would require indicative LCR values. These will not be available until the seasonal TSL floor value calculations are finalized. Calculation assumptions for the seasonal TSL floor values, an input into the LCR optimizer, are still under development.

New York ISO

Cost Impact/ Market Efficiencies

Assumptions and Approach (2/3)

- We are proposing to model the impact of the following changes to the ICAP market:
  - Seasonal UDR/ EDR Elections & Must-Offer Requirement;
  - Separate Summer/ Winter Seasonal Minimum ICAP Requirements; and
  - Removal of the seasonal capacity availability adjustments in calculating the seasonal demand curve parameters
- The Base Case Supply will be established from January 2025 (winter supply) and July 2025 (summer supply) adjusted for announced retirements, compliance deactivations, and expected renewable additions as identified in NYISO's short-term reliability needs process & in the Q2 2025 STAR Report. The base case will assume annual market participation by Champlain Hudson Power Express (CHPE), so that the impact is separate from the impact of the addition of CHPE.
- The base-case demand curve assumptions are assumed from the most recently published demand curve and translation. In addition, non-firm CAFs will be assumed.
- Modeling impacts are then isolated to estimate wholesale consumer cost impacts associated with the modeled changes.
- This is a short run analysis because long-run impacts are not quantifiable because we would need to better understand how entry and exit would be impacted.

New York ISO

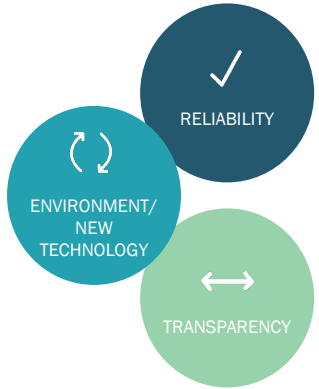
Cost Impact/ Market Efficiencies

Assumptions and Approach (3/3)

- **We also plan to conduct sensitivity analyses to understand key drivers of the results. We intend to look at**
  - Wholesale cost outcomes of the modeling tracks given different annual Non-Firm CAFs; and
  - No retirements or Generator additions.

New York ISO

Reliability, Environment/New Technology and Transparency

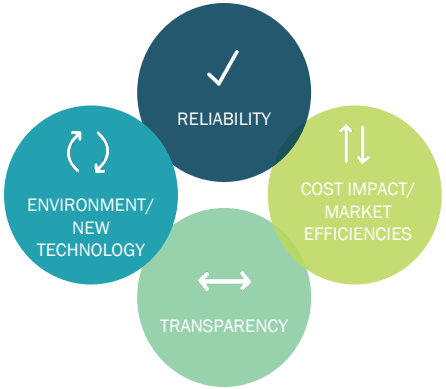


- We propose to assess these three areas qualitatively.

Next Steps

New York ISO

Next Steps



- Review and consider stakeholder feedback on the proposed methodology
- Return to ICAPWG in September 2025 to discuss the results

New York ISO

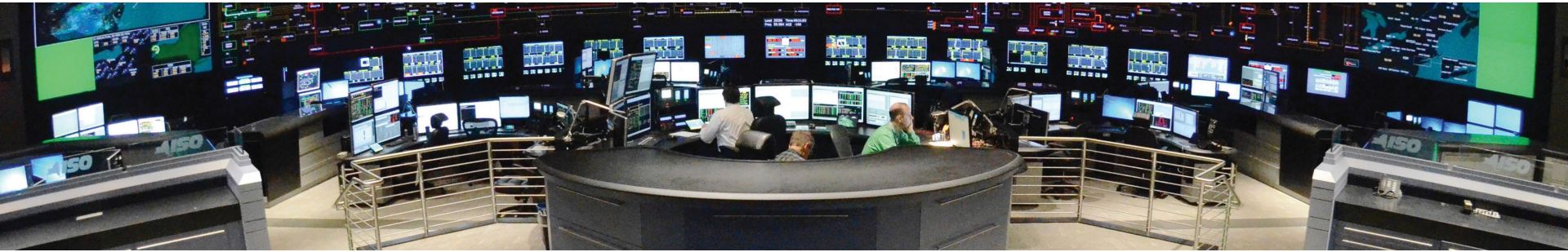
Our Mission and Vision

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