New York ISO
Independent System Operator

Capacity Market Structure Review: Capacity Zone Redesign

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Capacity and New Resource Integration Market Design

ICAPWG/MIWG

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Agenda

- Background
- Today's Objective
- Recommendation 2022-4
- Granular Capacity Zonal Pricing Issue Discovery Report
- Next Steps

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Background

Background

- **At the 4/1/2025 Installed Capacity Working Group (ICAPWG) meeting, the NYISO presented its initial prioritized list of recommended topics for further exploration to evolve the ICAP market structure.**
- **The "Capacity Zone Redesign" effort was recommended for further exploration.**
  - This effort would explore changes to the capacity zone design to improve New York Control Area system reliability by strengthening locational price signals and streamlining capacity zone-related processes by reducing unnecessary complexity.
- **In the 2024 State of the Market Report (SOM), the MMU recommended the NYISO implement more granular capacity zones and a dynamic process for updating the zones as a high-priority recommendation (Recommendation 2022-4).[1]**
  - Many elements of Recommendation 2022-4 were also included in the Granular Capacity Zonal Pricing Issue Discovery Report (December 2024), which outlined key considerations for a Capacity Zone Redesign effort.[2]

1. 2024 SOM
2. Granular Capacity Market Pricing

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Today's Objective

Today's Objective

- The objective of today's presentation is to outline Recommendation 2022-4, which the NYISO may explore as part of the Capacity Zone Redesign project.

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Recommendation 2022-4

Recommendation 2022-4

- **In the 2024 SOM, the MMU argues that the current capacity zone framework contains the following issues:[1]**
  - Zonal boundaries are determined using a deterministic test based on a static set of system conditions, which fail to capture transmission constraints that emerge under real-time or probabilistic scenarios.
  - The current methodology does not account for constraints on lower-voltage (byway) interfaces, which results in the overcompensation of resources that are not fully deliverable to the zones in which they are located.
- **The primary focus of Recommendation 2022-4 is to**
  1. Discount capacity payments to export-constrained areas that are currently overpriced (such as Staten Island) and
  2. Allow for reliability needs to be efficiently reflected in prices as they emerge (for example, if bottlenecks in winter cause the value of capacity in Zones A-E to fall relative to Zone F in the future)

1. For further information on MMU Recommendation 2022-4, refer to the MMU's discussion in the 2024 SOM.

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Recommendation 2022-4

- **Recommendation 2022-4 is broken into a set of five sub-recommendations:**
  1. Represent all major capacity deliverability bottlenecks in the resource adequacy model;
  2. Designate capacity zones as import or export-constrained capacity zones based on the configuration of binding transmission constraints in the resource adequacy model;
  3. Determine ICAP requirements for all import and export zones;
  4. Establish import and export demand curves for use in the Spot Auction; and
  5. Apply a financial Capacity Constraint Pricing Credit or Charge to capacity payments of resources that positively or negatively impact aggregate deliverability between regions

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Recommendation 2022-4

1. Representing all major deliverability bottlenecks in the resource adequacy model

- In Recommendation 2022-4, the MMU argues that, if areas separated by intrazonal constraints were to be represented and priced in the NYISO's capacity market, they would also need to be represented in the NYISO's resource adequacy (RA) model to efficiently quantify the amount of constrained capacity in the area.
- The MMU recommends the NYISO use a power flow simulation as part of the annual transmission topology analysis for the Installed Reserve Margin study to identify intrazonal constraints and represent the areas separated by those constraints in GE MARS as part of the RA model.
  - The MMU recommends establishing a threshold to only represent areas with a significant amount of capacity affected by the constraint.

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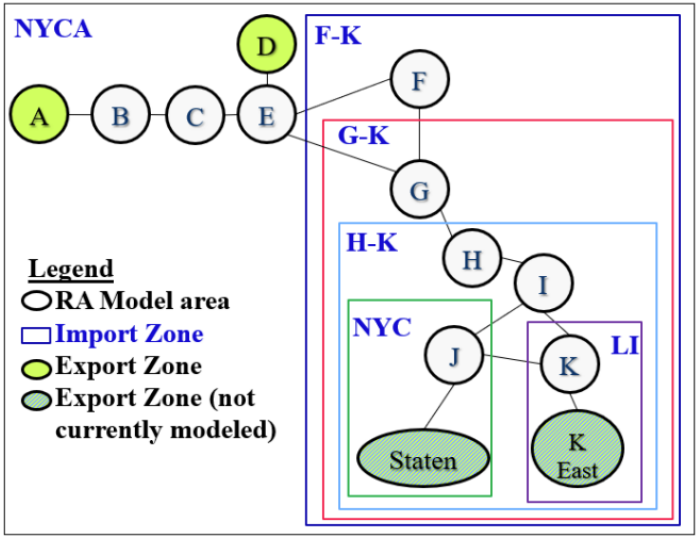
Recommendation 2022-4

2. **Designate capacity zones as import or export-constrained capacity zones based on the configuration of binding transmission constraints in the resource adequacy model**
   - Import zones are described as areas whose ability to import capacity is constrained during hours of reliability risk.
   - Export zones are described as areas nested within an import zone whose ability to export capacity to its parent region is constrained in MARS.

Example Capacity Zone Topology Under the MMU's Proposal[1]



1. This example assumes LI PPTN projects in service

Recommendation 2022-4

3. Determine ICAP Requirements for all import and export zones

- The MMU recommends to establish Locational Minimum Installed Capacity Requirements (LCRs) for each import zone using the LCR Optimizer and to establish ICAP requirements for export zones as the maximum amount of capacity that would be fully deliverable to its parent zone.
  - An export zone's maximum amount of deliverable capacity would be set such that any additional capacity would cause the export constraints to bind during hours of reliability risk in MARS.

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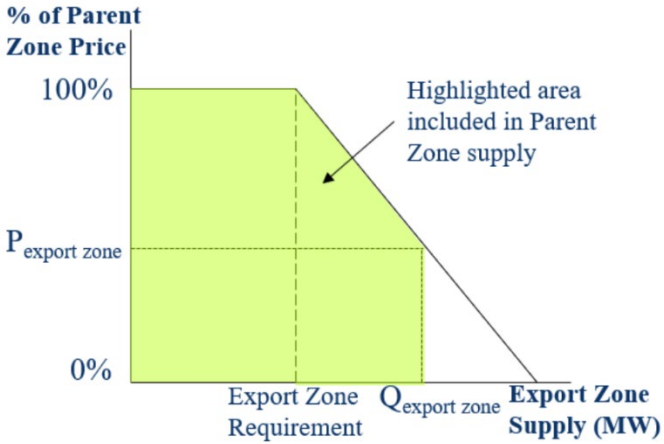
Recommendation 2022-4

4. Establish import and export demand curves for use in the ICAP Spot Market Auction

- The MMU recommends establishing demand curves for import zones using the same Demand Curve Reset (DCR) process applied to the current capacity zones.
  - As recommended, each DCR would calculate Net Cost of New Entry values for additional locations in the case that an additional import zone is created between DCRs.
- The MMU also recommends establishing demand curves for export zones that apply discounted payments for capacity exceeding the export zone's requirement based on a percentage of the capacity price in the parent zone.

Example Export Zone Demand Curve Design Under the MMU's Proposal



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Recommendation 2022-4

5. **Apply a financial Capacity Constraint Pricing (CCP) Credit or Charge to capacity payments of resources that positively or negatively impact aggregate deliverability between regions.**
    - As recommended by the MMU, a resource's CCP Credit or Charge would be calculated by multiplying its CCP Factor, representing its marginal impact on transfer capability across constrained interfaces, by the zonal capacity price difference across those interfaces.
        - Each generator's capacity payment is assumed to be calculated by multiplying its UCAP MW by the sum of (i) the applicable zonal capacity price and (ii) the generator's CCP Credit or Charge.

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Granular Capacity Zonal Pricing Issue Discovery Report

Granular Capacity Zonal Pricing Issue Discovery Report

- In the 2024 Granular Capacity Zonal Pricing Issue Discovery Report, the NYISO identified high-level areas for exploration to consider under a potential capacity zone redesign.
- These areas for exploration are discussed in Recommendation 2022-4.
- The high-level exploration areas include:
  - Exploring alternatives to the deterministic New Capacity Zone (NCZ) test
  - Modifying the frequency with which zonal boundaries may change
  - Enabling the elimination of zonal boundaries where appropriate
  - Restructuring the classification and interrelationships among zones

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Next Steps

Next Steps

- Following the release of the 2026 project prioritization scoring results, NYISO intends to revisit the Q3 ICAPWG meetings to further examine Recommendation 2022-4 and, more broadly, the topics outlined in the Granular Capacity Zonal Pricing Issue Discovery Report, as part of the ongoing Capacity Zone Redesign effort.

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Questions?

Previous Presentations on CMSR

Date	Working Group	Topic/Link to Materials
1/22/25	ICAPWG/MIWG	Project Kickoff
2/4/25	ICAPWG/MIWG	CMSR Sector Meeting Schedule
2/25/25	ICAPWG/MIWG	Review of Potential Methods for Evolving the ICAP Market Structure
3/3/25	ICAPWG/MIWG	CMSR Sector Meeting Feedback Summary
3/26/25	ICAPWG/MIWG	Nonprioritized ICAP Market Structure Changes
4/1/2025	ICAPWG/MIWG	NYISO's Initial List of Priority Efforts

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Previous Presentations on CMSR

Date	Working Group	Topic/Link to Materials
5/22/2025	ICAPWG/MIWG	Theoretical Analysis of Bifurcated Market Structures with Real-World Examples from the California Independent System Operator and Europe MMU Quantitative Analysis of Bifurcated Market Structures ICAP Demand Curve Reset Process and Methodology Improvements New Supply Analysis
6/17/2025	ICAPWG/MIWG	ICAP Demand Curve Reset Process and Methodology Improvements

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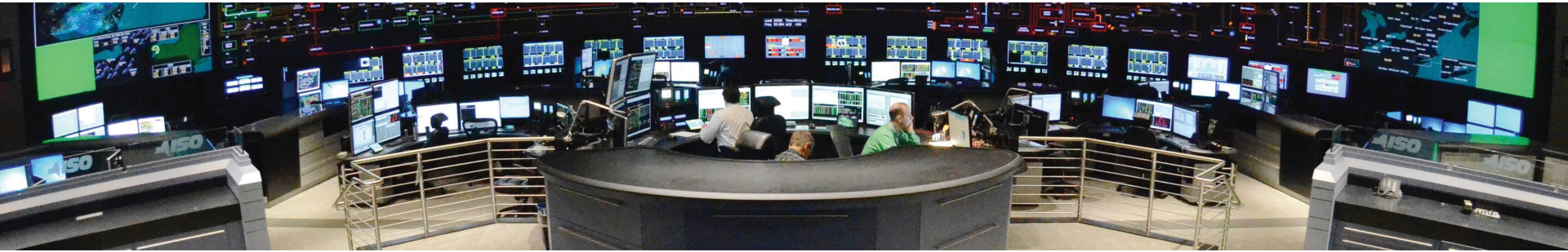
Our Mission and Vision

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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