New York ISO
Independent System Operator

# Internal Controllable Lines: Capacity Market Updates


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# Agenda

- Capacity Market Design Updates
- Deliverability
- Next Steps
- Appendix: Previous Project Presentations

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# Capacity Market Design Updates



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# Aligning the Capacity Market Design with the Proposed Energy Market Design

- **Consistent with the proposed Energy Market design for an Internal Controllable Line, the proposed Capacity Market Design will not tie supply to specific generators**
  - This structure aims to enable the market design to work for any Internal Controllable Line that may seek to enter NYISO markets
  - Enabling UDRs to participate in the NYISO capacity market is appropriate so long as they are not regulated transmission facilities that recover their costs via the TSC
- **For purposes of this Capacity Market discussion, an Internal Controllable Line is also referred to as an "Internal UDR"**

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# Capacity Market Proposal Overview

- **Internal UDRs will participate in the Capacity market as an ICAP Supplier and via an updated and revised market construct**
- **Internal UDRs will transmit pooled NYCA capacity across the controllable line**
  - For example, an Internal UDR that connects Zone C and Zone J and that sells UCAP into Zone J will be required to purchase pooled NYCA Capacity in order to fulfill its ICAP Supply obligation in Zone J
  - The purchase of pooled capacity at the source (Zone C) will be contingent upon the ICAP required to be delivered at the sink (Zone J) as determined by the ICAP Equivalent of the UCAP Sold and will be linked automatically in NYISO Spot auctions such that one will not occur without the other
    - This structure will support reliability by ensuring sufficient UCAP at the line source to cover UCAP sales at the line sink
    - An Internal UDR can procure its capacity requirement through certified bilateral contracts and forward auctions
    - There will be an automatic procurement in the NYISO Spot auctions from the source region if needed to cover the ICAP Supply Obligation in the Locality (accounting for line losses)
      - An example illustrating this concept is provided on a subsequent slide

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# “Pooled Capacity” Rationale

- **Since the NYISO will control the dispatch of resources at both ends of the line and the line’s operation, the NYISO can direct energy to be moved across the line to meet reliability needs**
  - The NYISO does not need to identify specific ICAP Suppliers as backing the line, as all the capacity transferred by the line in the auction will be sourced from ICAP Suppliers in NYCA
  - Any bilateral contracts with specific ICAP Suppliers will be required to be fully certified in order to meet the Internal UDR’s ICAP purchase obligation

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# NYC ICAP/UCAP Translation Example

(approximate values for illustrative purposes)

| | Without ICL | With ICL |
|---|---|---|
| ICL ICAP (MW) | - | 1,300 |
| ICL UCAP (MW) (5% DF) | - | 1,235 |
| NYC ICAP Supply (MW) | 10,100 | 11,400 |
| NYC UCAP Supply (MW) (10% DF) | 9,090 | 10,325 |
| NYC Derating Factor (%) | 10 | 9.4 |

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# Capacity Accreditation

- **The NYISO recognizes the need to establish a Capacity Accreditation Factor (CAF) for Internal UDRs**
  - The CAF for Internal UDRs may be less than 100%, as this value reflects the contribution of Internal UDRs towards maintaining reliability, which, like other resource types, may vary based on the overall generation mix of the pool
  - Consistent with other resource types, the CAF for Internal UDRs will be recalculated periodically, which will enable the CAF to reflect shifts in reliability value based on the changing generation fleet
- **The NYISO will need to incorporate Internal UDRs as part of the ongoing work to evaluate the CAF for the different Capacity Accreditation Resource Classes (CARC)**

The most recent ICAPWG presentation on the Capacity Accreditation effort, as well as links to previous presentations, can be found at the following location: https://www.nyiso.com/documents/20142/30276257/04-28-22%20Capacity%20Accreditation%20-%20Preliminary%20CARCs.pdf/c82c47c5-28c2-cf19-c602-16bf3cfc4aca

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# Capacity Market Participation (cont'd)

- **Internal UDR ICAP supply available in Locality =**
  - Annually elected UDR amount, which is <= ICL CRIS
- **Internal UDR UCAP supply available in Locality =**
  - ICAP * CAF * (1 - Internal UDR unavailability)
- **Internal UDR UCAP procurement obligation in NYCA =**
  - UCAP supply sales + (UCAP supply sales * Losses %1)
- **Internal UDR Day-Ahead Bidding Obligation in Locality (ICAP equivalent of UCAP sold)=**
  - UCAP supply sales / ((1 - Internal UDR unavailability)*CAF)

[1] For purposes of discussion in this presentation, losses are assumed to be a static percentage.

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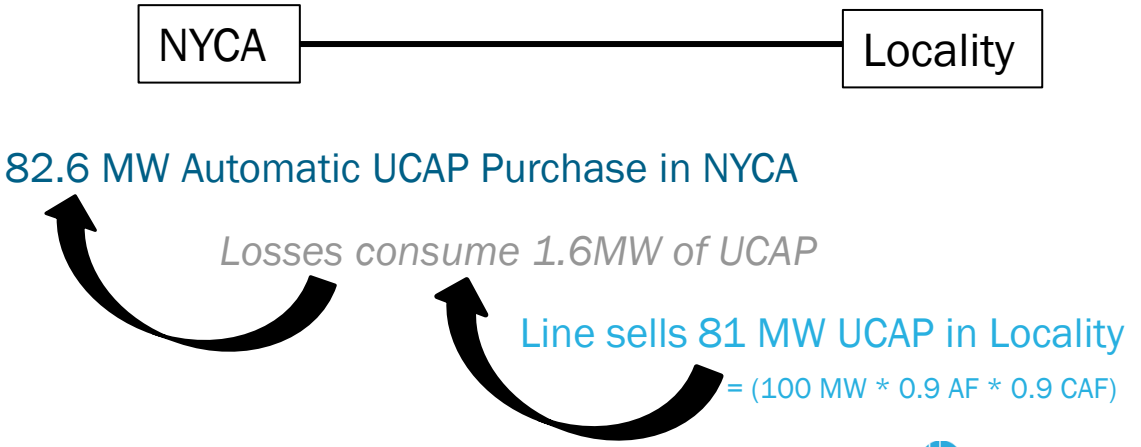
# Illustrative Capacity Market Mechanics

- **Similar to LSE procurement obligations, an Internal UDR can satisfy its 82.6 MW purchase obligation via bilateral contracts or via participation in NYISO auctions**
  - If the procurement obligation is not satisfied via bilateral contracts, it will automatically be satisfied in NYISO auctions

Elected Line ICAP at POI = 100 MW
Losses = 2%
Internal UDR Availability Factor (AF) = 90%
Capacity Accreditation Factor (CAF) = 90%

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# Deliverability



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# ICL Deliverability

- **NYISO proposes to evaluate an ICL requesting CRIS (Internal UDR) for deliverability in both the ROS Capacity Region (evaluating potential deliverability impacts of withdrawal) and the Capacity Region in which the ICL injects**
  - NYISO proposes to evaluate deliverability at both ends of the ICL in order to capture the deliverability impacts of the ICL project
- **The following slides discuss how the NYISO proposes to perform this deliverability evaluation and how to cost allocate any required System Deliverability Upgrades (SDUs)**

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# Proposed ICL Deliverability Methodology

- **NYISO proposes to evaluate Internal Controllable Line (ICL) withdrawals for deliverability as follows, consistent with current procedures:**
  - Model internal line withdrawals similar to CRIS requested projects, but as negative generation
    - Model the sending end of the ICL as a proxy generator withdrawing power (negative output) from the system
  - Model the receiving end of the ICL as a proxy generator injecting power (positive output) to the system
  - Perform the applicable deliverability tests based on the location of ICL, (Highways, Byways, Other Interface, etc.)
  - Follow existing deliverability methodology rules for the sink Capacity Region with respect to applicable tests (*e.g.*, for Internal UDR from ROS to NYC, current rules would apply the Byways test and No Harms Other Interface test to evaluate the deliverability within the NYC Capacity Region)

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# Proposed ICL SDU Cost Allocation Methodology

- **NYISO proposes to utilize the existing cost allocation methodology to cost allocate to Internal UDRs any SDUs triggered by the impact of their withdrawal**
  - Cost Allocation Method 1: Generator Bus Dfax (distribution factor) Reporting
    - Dfax calculation will provide information about how a monitored facility/contingency pair is impacted by the newly added generator project – whether a project is a helper or harmer
      - Calculate project impact based on the dfax of a newly added project
  - Cost Allocation Method 2: Sensitivity Scenario for Project On and Off
    - If Method 1 is not viable, sensitivity cases will be created to reflect the in and out status of a newly added project
      - Additional tests will be performed using sensitivity cases
      - Project incremental impact is the delta in study results between Project Off case and Project On case

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# Next Steps



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# Next Steps

- **July/August:**
  - Market Design Concept Proposal (ICAPWG/MIWG)
  - Consumer Impact Analysis methodology (ICAPWG/MIWG)
- **September/October:**
  - Consumer Impact Analysis results (ICAPWG/MIWG)

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# Appendix



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# Previous Project Presentations

- 2/03/22: Kick-Off presentation discussing project scope and timeline
  - 2/3/22 MIWG Presentation
- 3/16/22: Energy Market Real-Time Scheduling and Settlement Examples
  - 3/16/22 MIWG Presentation
- 4/19/22: Energy Market Two-Settlement Examples
  - 4/19/22 MIWG Presentation
- 6/07/22: Energy and Capacity Market Proposals
  - 6/7/22 Energy Market MIWG Presentation
  - 6/7/22 Capacity Market Presentation

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# Our Mission & 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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