New York ISO
Independent System Operator

Review of Control Area System Resources: Key Concerns

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Capacity and New Resource Integration Market Design

ICAPWG

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Agenda

- Project Overview
- CASR & External Resource Comparison
- Key Concerns
- Next Steps

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Today's Objective

- Today’s objective is to highlight the differences in the treatment of Control Area System Resources (CASRs) and other External Resources in the Installed Capacity (ICAP) market and discuss the key concerns with the current CASR participation model

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Project Overview

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Background

- Entities supplying Unforced Capacity (UCAP) using the CASR participation model do not designate specific resources to the UCAP sold, and therefore cannot be evaluated like External Resources and ICAP Suppliers located within the New York Control Area (NYCA)
- This project will evaluate the ability of CASRs to provide UCAP to determine whether it is functionally equivalent to the way External Resources provide UCAP and whether CASRs are being appropriately valued for their contribution to resource adequacy
  - This effort seeks to assess the current CASR market rules' ability to support bulk power system reliability as the NYCA grid continues to evolve
- Deliverable: Q3 Market Design Complete

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CASR & External Resource Comparison

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CASR and External Resource Comparison

Control Area System Resource	External Resource
Data Requirements: Must submit Control Area Resource and Load (CARL) data, which is the cumulative data for all the UCAP that the CASR supplied in the previous month, by the 20th of each month	Data Requirements: Must submit Generating Availability Data System (GADS) data for each individual generating unit for the UCAP supplied in the previous month, by the 20th of each month
Net Projected Capacity (ICAP qualified): • Forecasted data, actual operational data is not used • Based upon agreed parameters when CARL was established • ICAP = Maximum generating capacity + External firm capacity purchases outside of NYCA + Amount of interruptible load – Peak load – External firm capacity sales – Actual losses – Planned generation maintenance - Planned reserve requirements	ICAP qualified: • Actual operational data • ICAP = $\min(CRIS, DMNC)$

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CASR and External Resource Comparison

Control Area System Resource	External Resource
Derating Factor (ACAF): • For the system as a whole and for every hour of the month for previous two like seasons • ACAF calculation only takes into account months in which the CASR participated • Formula for ACAF is as follows: $ACAF = Max\ (0, Installed\ Capacity\ Equivalent\ - \frac{(maximum\ generating\ capacity + External\ firm\ capacity\ purchases\ outside\ of\ NYCA + amount\ of\ interruptible\ load - peak\ load - External\ firm\ capacity\ sales - actual\ losses - planned\ generation\ maintenance - capacity\ unavailable\ due\ to\ generation\ forced\ outages - operating\ reserves)}{Installed\ Capacity\ Equivalent})$	**Derating Factor (AEFORd):** • Average Equivalent Demand Forced Outage Rate (AEFORd) for every generator for previous two like seasons • AEFORd calculation takes into account forced outages or derates for all months • Formula for EFORd is in the Appendix
UCAP sold: UCAP = $Net\ Projected\ Capacity * (1 - ACAF) *\ CAF$	**UCAP sold:** UCAP = $ICAP * (1 - AEFORd) *\ CAF$
Curtailment Priority (on a Supplemental Resource Evaluation (SRE) call): CASRs afford NYCA load the same *pro rata* curtailment priority that it affords its own Control Area load	**Curtailment Priority (on an SRE call):** Generation must be dispatched and cannot be recalled or curtailed to satisfy its own Control Area Resource Adequacy needs

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Key Concerns

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Concerns

- **External Resources are required to demonstrate energy deliverability to the NYCA while CASRs do not have this demonstration requirement**
  - The requirements for deliverability of energy to the NYCA border associated with External ICAP are set forth in ICAP Manual Section 4.9.3.2
- **NYISO does not receive load curtailment data for CASRs' Control Area load to ensure the proportionality of curtailment priority**
  - Under ICAP Manual Section 4.9.1, to qualify as External Installed Capacity Suppliers, such entities must, among other things, provide the NYISO assurance that the External Control Area in which the Resource is located either:
    (a) Will not recall or curtail, for the purposes of satisfying its own Resource Adequacy needs, exports from that External Control Area to the NYCA of an amount of Energy equal to the Installed Capacity Equivalent of the amount of Unforced Capacity that Resource is supplying to the NYCA; or

    (b) In the case of CASRs, will afford NYCA Load the same pro-rata curtailment priority that it affords its own Control Area load

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Concerns

- Since CASRs do not designate specific resources to the UCAP sold, there might be real-time reliability concerns with an increase in intermittent resources along with a lack of CASRs' Control Area load forecast information
- There might be reliability and deliverability concerns with energy that is wheeled through the CASR Control Area from non-NYISO-neighboring Control Areas

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Next Steps

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Next Steps

- Return to an April ICAPWG to discuss draft market design concept on changes to the treatment of CASRs

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Questions?

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Appendix

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EFORd Formula

$$EFORd = \frac{f_f * FOH + fp * (EFOH - FOH)}{SH + fr * FOH}$$

1) $f_r = \frac{\frac{1}{r} + \frac{1}{T}}{\frac{1}{r} + \frac{1}{T} + \frac{1}{D}}$

2) r = Average forced outage duration = $\frac{FOH}{number\ of\ forced\ outages}$

3) T = Average time between calls for a unit to run = $\frac{RSH}{number\ of\ attempted\ starts}$

4) D = Average run time = $\frac{SH}{number\ of\ successful\ starts}$

5) $f_p = \frac{SH}{AH}$

Source: ICAP Manual Attachment J Section 1

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EFORd Formula (contd.)

Definitions

- EFORd: Equivalent Demand Forced Outage Rate
- f_f: full f-factor
- F_p: partial f-factor
- FOH: Full Forced Outage Hours
- Forced Outage: An unplanned failure that requires a unit to be removed from service, or the Load on the unit to be reduced before the end of the nearest following weekend
- EFOH: Equivalent Full Forced Outage Hours - Sum of all hours a unit was involved in an outage expressed as equivalent hours of full forced outage at its maximum net dependable capability
- SH: Service Hours - The time a unit is electrically connected to the system
  - SH = Sum of all Unit Service Hours
- AH: Available Hours - The time a unit is capable of producing energy, regardless of its capacity level
  - AH = Sum of all Service Hours + Reserve Shutdown Hours + Pumping Hours + Synchronous Condensing Hours
- RSH: Reserve Shutdown Hours - The time a unit is available for service but not dispatched due to economic or other reasons
- PH: Period hours equals 24 times the number of days in the reporting period

Source: ICAP Manual Attachment J Section 2

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Schedule & Previous ICAPWG presentations

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Schedule

- **Q1**
  - Identify key differences in CASR rules from those for External Resources
  - Assess need for market design changes
  - Draft internal market design concept if need is identified
- **Q2**
  - If need is identified, begin stakeholder discussion on draft market design concept
  - Understand key concerns and changes to market design concept and its impact on the ICAP market to start drafting market rules
- **Q3**
  - Propose and finalize market rules and tariff changes at ICAPWGs
  - BIC and MC vote on proposed tariff changes

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Previous ICAPWG Presentations

Date	Working Group	Links to Materials
February 4, 2025	ICAPWG/MIWG	Review of Control Area System Resources: Project Kickoff

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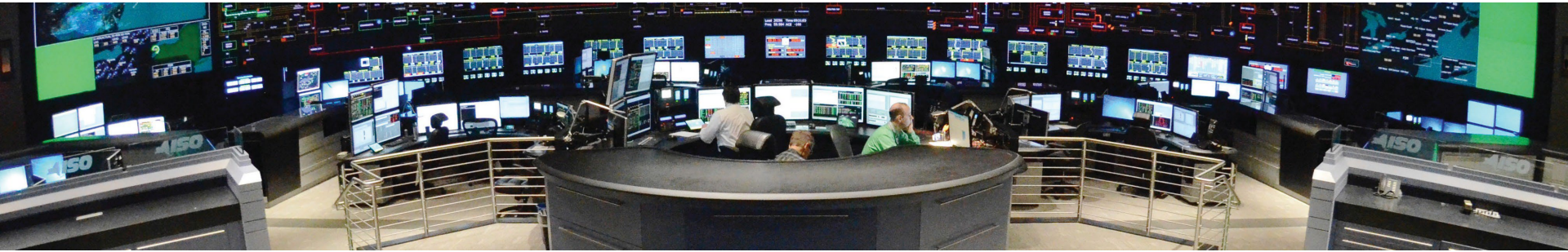
Our Mission and Vision

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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