New York ISO
Independent System Operator

2025 - 2026 Final Capacity Accreditation Factors and Peak Load Window

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Objective of Today's Presentation

- The NYISO presented the 2025-2026 Informational Capacity Accreditation Factors (CAFs) Set 1 on October 7, 2024[1]
- The NYISO presented the 2025-2026 Informational CAFs Set 2 on January 7, 2025[2]
- Objective of today's presentation:
  - Review and discuss the 2025-2026 Final CAFs and Peak Load Window

1. 2025-2026 Informational CAFs Set 1
2. 2025-2026 Informational CAFs Set 2

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2025 - 2026 Final CAFs

Base Case for the 2025-2026 Final CAFs

- The 2025–2026 IRM Final Base Case (FBC) was completed with the Tan45 result at the 2025-2026 Installed Reserve Margin (IRM) of 24.4%
- The NYISO presented the Final Locational Minimum Installed Capacity Requirement (LCR) Study results for the 2025- 2026 Capability Year at the 01/07/2025 ICAPWG
  - IRM: 24.4%
  - G-J Region Final LCR: 78.8%
  - Load Zone J (NYC) Region Final LCR: 78.5%
  - Load Zone K (LI) Region Final LCR: 106.5%
  - Loss of load expectation (LOLE): 0.100 event-days/year
- The 2025-2026 Final LCR Results form the base case for 2025-2026 Final CAFs

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2025 - 2026 Final CAFs

CARCs	Rest of State	GHI Region	NYC Locality	LI Locality
Special Case Resource (SCR)	77.21%*	76.88%*	68.31%*	74.43%*
2-Hour Energy Duration Limited	74.32%	73.97%	64.94%	52.68%
4-Hour Energy Duration Limited	78.91%	78.60%	78.53%	87.10%
6-Hour Energy Duration Limited	87.24%	87.16%	85.90%	94.59%
8-Hour Energy Duration Limited	96.77%	96.40%	96.12%	98.96%
Landfill Gas	63.95%	63.87%*	64.04%*	65.68%*
Solar	12.24%	12.33%	12.03%	10.05%
Offshore Wind	-	-	-	35.79%
Land-based Wind	16.84%	16.61%*	16.69%*	18.20%*
Limited Control Run of River	38.44%	41.44%	-	-
Large Hydro	100.00%	100.00%	100.00%	100.00%
Large Hydro with partial Pump Storage	100.00%	-	-	-
Generator	100.00%	100.00%	100.00%	100.00%

*These CARCs are new to the 2025-2026 Capability Year and are reflected in the 2025-2026 Final CARC List

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Comparison of 2025-2026 Informational CAFs Set 2 and 2025-2026 Final CAFs

Differences between 2025-2026 Informational CAFs Set 2 and 2025-2026 Final CAFs

CARC	Rest of State			GHI			NYC			LI		
	ICAF 2 25-26	Final CAF 25-26	Delta	ICAF 2 25-26	Final CAF 25-26	Delta	ICAF 2 25-26	Final CAF 25-26	Delta	ICAF 2 25-26	Final CAF 25-26	Delta
Special Case Resource (SCR)	77.21%	77.21%	0.00%	76.88%	76.88%	0.00%	68.31%	68.31%	0.00%	74.43%	74.43%	0.00%
2-Hour Energy Duration Limited	74.32%	74.32%	0.00%	73.97%	73.97%	0.00%	64.94%	64.94%	0.00%	52.68%	52.68%	0.00%
4-Hour Energy Duration Limited	78.91%	78.91%	0.00%	78.60%	78.60%	0.00%	78.53%	78.53%	0.00%	87.10%	87.10%	0.00%
6-Hour Energy Duration Limited	87.24%	87.24%	0.00%	87.16%	87.16%	0.00%	85.90%	85.90%	0.00%	94.59%	94.59%	0.00%
8-Hour Energy Duration Limited	96.77%	96.77%	0.00%	96.40%	96.40%	0.00%	96.12%	96.12%	0.00%	98.96%	98.96%	0.00%
Landfill Gas	63.95%	63.95%	0.00%	63.87%	63.87%	0.00%	64.04%	64.04%	0.00%	65.68%	65.68%	0.00%
Solar	12.24%	12.24%	0.00%	12.33%	12.33%	0.00%	12.03%	12.03%	0.00%	10.05%	10.05%	0.00%
Offshore Wind	-	-	-	-	-	-	-	-	-	35.79%	35.79%	0.00%
Land-based Wind	16.84%	16.84%	0.00%	16.61%	16.61%	0.00%	16.69%	16.69%	0.00%	18.20%	18.20%	0.00%
Limited Control Run of River	38.44%	38.44%	0.00%	41.44%	41.44%	0.00%	-	-	-	-	-	-
Large Hydro	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%
Large Hydro with partial Pump Storage	100.00%	100.00%	0.00%	-	-	-	-	-	0.00%	-	-	-
Generator	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%

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Key Observations

- The 2025-2026 Final CAFs are the same as the 2025-2026 Informational CAFs Set 2
- The differences between the 2025-2026 Informational CAFs Set 1 and Set 2 were largely driven by the changes of underlying LOLE risk profiles of the base cases for each information evaluation
  - Detailed review of the informational CAFs Set 2 was presented at the January 7 ICAPWG[1] and is included in the Appendix for reference
- CAFs are highly dependent on a multitude of factors that can impact the New York Control Area's LOLE risk profile, making it challenging to predict future CAFs

1. January 7, 2025, ICAPWG Presentation

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2025-2026 Peak Load Window

Background: Annual Review of Peak Load Window

- As part of the 2022 Improving Capacity Accreditation project, the NYISO established the rules for an annual review of the Peak Load Windows in Section 7.3 of the ICAP Manual.
- The NYISO calculates the percentage of total hourly annual loss of load expectation (LOLE) by utilizing the LCR study model ("LCR model")
  - The Summer Peak Load Window is determined by capturing at least 90% of the hourly LOLE over an even number of consecutive hours.
  - The Winter Peak Load Window will remain static at HB 16 through HB 21, subject to ISO review, until updated winter modeling approaches and assumptions are incorporated into the LCR model.
    - The NYISO can still modify the Winter Peak Load Window based on operation experience, before winter risks are modeled in the IRM/LCR base case
- If the Peak Load Window from the prior Summer Capability Period captures at least 90% of the hourly LOLE occurring in the Summer Capability Period, the Peak Load Window from the prior Summer Capability Period will be maintained for the upcoming Summer Capability Period, subject to ISO review in accordance with Section 7.3.3 of the ICAP Manual.
- If the Peak Load Window from the prior Summer Capability Period does not capture at least 90% of the hourly LOLE during the Summer Capability Period, the ISO will establish a new Peak Load Window for the upcoming Summer Capability Period in accordance with Section 7.3.2 of the ICAP Manual.

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Background: Annual Review of Peak Load Window (cont.)

Peak Load Windows for the 2024/2025 Capability Year	
Summer Capability Period	Winter Capability Period
HB 13 through HB 20	HB 16 through HB 21

- The Peak Load Window is used to determine the Bid/Schedule/Notify requirements for Resources with Energy Duration Limitations, Energy Storage Resources (ESRs) and Distributed Energy Resources (DERs) for the indicated Capability Year.

- The Peak Load Window is also used in the determination of the derating factors for intermittent and Limited Control Run of River resources, Resources with Energy Duration Limitations, ESRs with Energy Duration Limitations, and DERs

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2025-2026 Capability Year Peak Load Window

- Based on the hourly LOLE from the 2025-2026 LCR model, to capture at least 90% of the LOLE risk over an even number of consecutive hours, the Peak Load Window for the Summer will need to be expanded to 10 hours (HB 12 through HB 21)
- The Winter Peak Load Window will remain unchanged at 6 hours (HB 16 through HB 21)
- These Peak Load Windows have been reviewed by the NYISO for consistency with the expected hours of reliability risk based on operating experience and expected grid conditions for the upcoming Capability Year

HB	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
2025 LCR Model	0.13%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.04%	0.15%	0.52%	1.13%	2.69%	6.94%	2.66%	6.08%	12.66%	18.92%	13.06%	9.67%	15.82%	8.95%	0.54%	0.01%

(97.45% LOLE Distribution)

*The Hourly LOLE Distribution represented here is an annual evaluation, able to capture both summer and winter LOLE events

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Next Steps

- 2025-2026 Peak Load Window will be presented at the February 13, 2025, OC meeting
- The 2025-2026 Peak Load Window will be posted by March 1, 2025, on the Capability Accreditation web page.
- Final 2025-2026 CARCs and CAFs will be available in ICAP AMS as described in the ICAP Manual and ICAP Event Calendar
  - The NYISO is required to post Final 2025-2026 CAFs on or before March 1, 2025

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Questions?

Appendix

Relationship between the LOLE Risk Profile and CAFs

- **The LOLE risk profile impacts CAF values**
  - CAF values are calculated based on how effective a resource class is at addressing LOLE risk compared to “perfect capacity”
- **As the LOLE risk profile changes, a CARC’s ability to address LOLE risk can also change, leading to changes in CAF values**
  - For example, if the LOLE risk profile shifts to later in the day, a solar resource is less effective at addressing such later occurring LOLE risk; therefore, the CAF for a solar resource is likely to be lower

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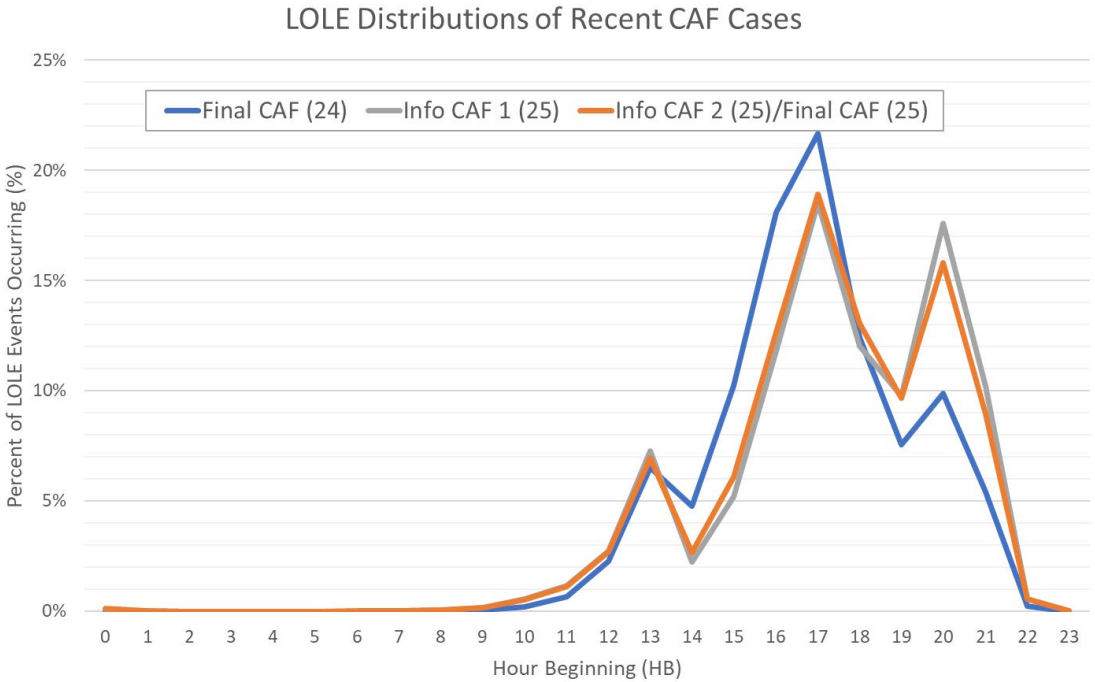
LOLE Distribution Comparison



- 2025-2026 Informational CAF Set 2/2025-2026 Final CAF case shows the same LOLE risk profile trend as 2025-2026 Informational CAF Set 1
- Compared to 2024-2025 Final CAF case, the LOLE risk profile has 2 dominant peaks instead of 1
  - This is predominantly driven by the increased penetration of behind-the-meter solar and enhanced Special Case Resource (SCR) modeling implemented for the 2025-2026 IRM study as described in 10/7 ICAPWG

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General Observation: Set 2 vs. Set 1

- **The 2025-2026 Informational CAF Set 2 values are generally slightly lower than the Set 1 informational values**
  - This general trend is predominantly attributed to the LOLE differences between the two base cases.
    - The base case LOLE is higher for the Informational CAF Set 2 than Set 1 (0.100 vs 0.078
    - With a higher starting point LOLE, any marginal unit will be more valuable in reducing reliability risk (i.e., greater LOLE improvement)
    - However, “perfect units” (denominator in the below equation and comparative for each CARC) are the most valuable, and so have the greatest LOLE improvements
      - The denominator is increased more than the numerator and therefore the resulting CAF value goes down
  - $$CAF = \frac{LOLE_{reference} - LOLE_{representative\ unit}}{LOLE_{reference} - LOLE_{perfect\ unit}}$$

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Optimal Output Window - EDLs

- **With a similar LOLE risk distribution, the optimal output window for Energy Duration Limited resources (EDLs) remains unchanged between 2025-2026 Informational CAFs Set 1 and Set 2, except for the 2-hour EDL CARC in Load Zone K**
- **The optimal hours identified were:**
  - 2-hour EDL: HB 17 and HB 20 for all locations other than Load Zone K ; and HB 17 and HB 18 for Load Zone K
  - 4-hour EDL: HB 16 – HB 18 and HB 20
  - 6-hour EDL: HB 16 – HB 21
  - 8-hour EDL: HB 13, HB 15 – HB 21

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Optimal Output Window – SCRs

- **Similarly, the optimal output window for SCRs also remains unchanged between 2025-2026 Informational CAFs Set 1 and Set 2 (HB 17, 18, 19, 20), except for Load Zone K**
  - These hours allow the SCR to capture the two highest peaks in HB 17 and HB 20
  - For Load Zone K, the optimal output window for SCRs is HB 16 – HB 19
  - These four-hour periods (i.e., HB 17 – HB 20 or HB 16 – HB 19) are within the response window of the enhanced SCR modeling construct used in the IRM study, which is between HB 14 and HB 20

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Load Zone K 2-hour EDLs and SCRs

- **Additional review of the LOLE risk profile for Load Zone K was conducted to further understand the CAF changes for the 2-hour EDL and SCR CARCs in Load Zone K (see appendix for details)**
  - Load Zone K has a relatively flatter LOLE profile compared to the rest of the system, with LOLE risk concentrated in HB 17, 18 and 20
  - In addition, between 2025-2026 Informational CAFs Set 1 and Set 2, the Load Zone K profile exhibited more loss of load events, with longer duration, between HB 16 and HB 18
    - The base case for Informational CAFs Set 2 has more 1-hour loss of load events in HB 18, 2-hour loss of load events in HB 16 and 17, and 3-hour loss of load events in HB 16 compared to the based case for Informational CAFs Set 1
    - The NYISO compared the solved loss of load events after adding a 100 MW “perfect capacity” to Load Zone K in each base case In MARS simulations, reliability risk can only be resolved when the entire loss of load event can be solved
- **2-hour resources are more valuable to address the increased loss of load events observed for Load Zone K in HB 17 and 18 within the base case for 2025-2026 Informational CAFs Set 2 because these events are of 2-hour or less in duration**
- **SCRs in Load Zone K are more valuable to address the longer loss of load events starting HB 16 for Load Zone K, in addition to addressing the increased events in HB 17 and 18 observed for Load Zone K within the base case for 2025-2026 Informational CAFs Set 2**

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Informational CAFs – Shape-Based Units

- Shape-based units: landfill gas, solar, land-based wind, and limited control run-of-river
- Limited control run-of-river in Rest of State exhibited the largest change in CAF values between 2025-2026 Informational CAF Set 1 and Set 2 (-7.77%)
  - Production shape changes based on updated data between Set 1 and Set 2 impacted certain hydro units in the Rest of State region; the resulting representative resource production shape was less effective at addressing the LOLE risk profile of the base case
- Solar CAFs increased in all locations for Set 2 in comparison to Set 1
  - The slight decrease in HB 20 risk and increase in HB 15 and HB 18 risk observed in the base case for 2025-2026 Informational CAFs Set 2 made the LOLE risk distribution more favorable for solar dispatch

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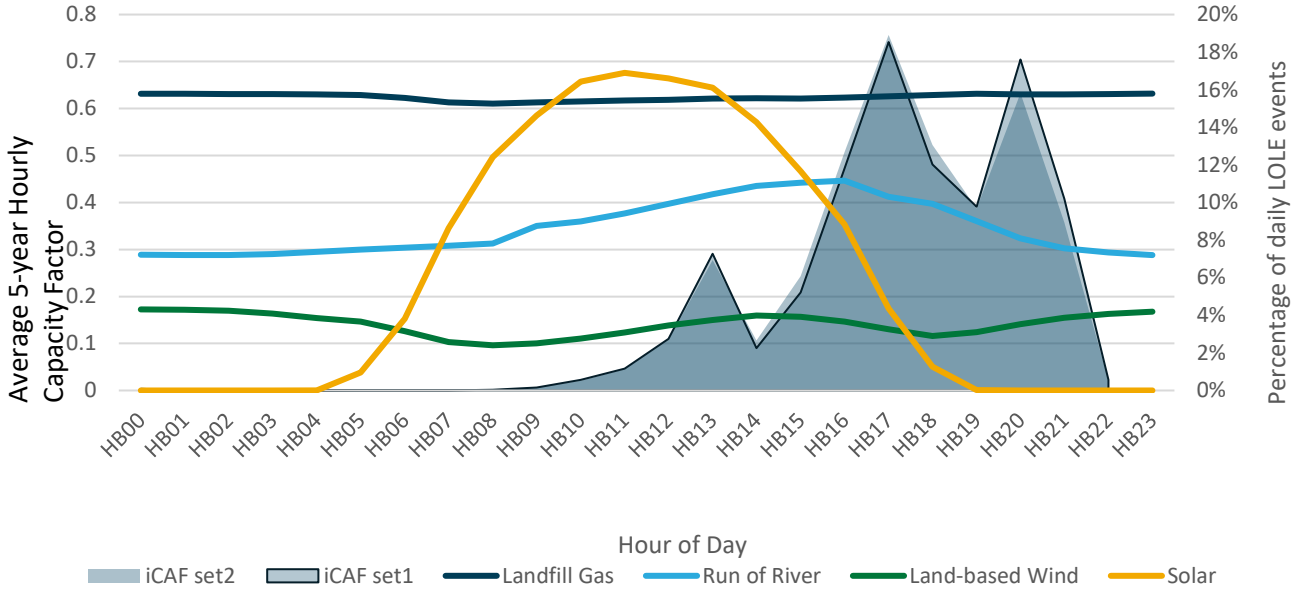
Illustration: Average Shape-Based Unit Profiles vs. LOLE Risk Profile in Rest of State (ROS) in July



- The figure is for illustrative purposes, comparing the average hourly profiles of shape-based units with hourly LOLE distribution
  - It represents an average for only July and specific circumstances during each MARs simulation may be different than this illustrative depiction
- The hourly resource profiles are based on five years of historical production data for July (July 2019–July 2023)

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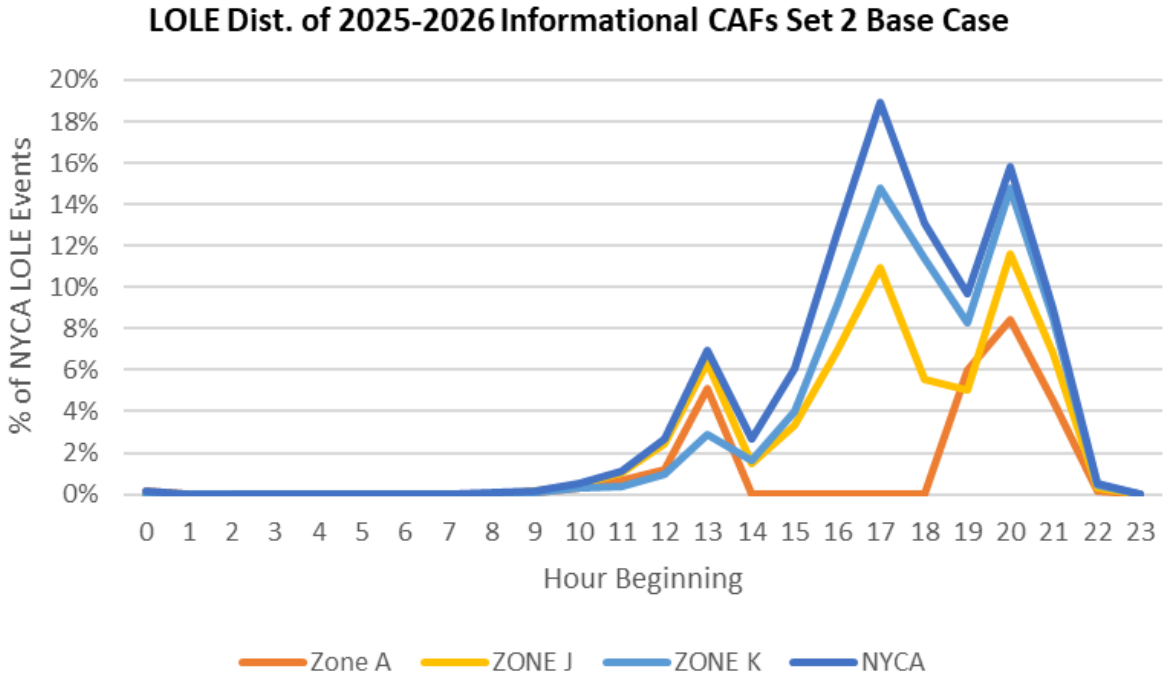
Zonal LOLE Distributions



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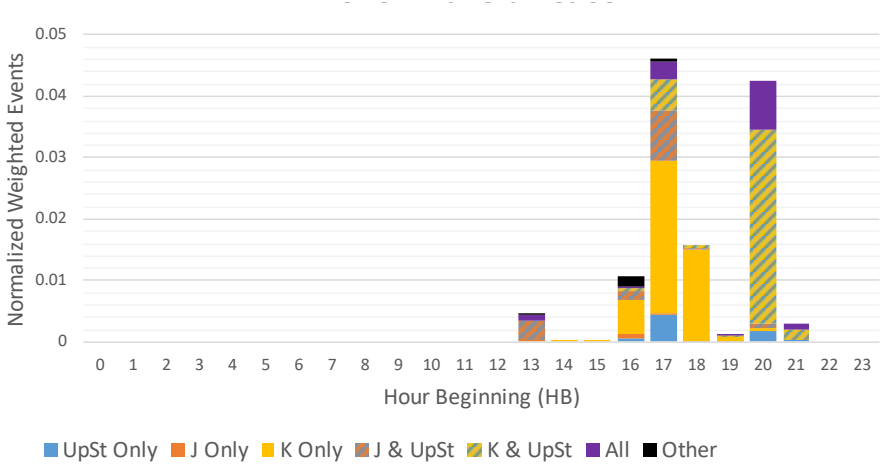
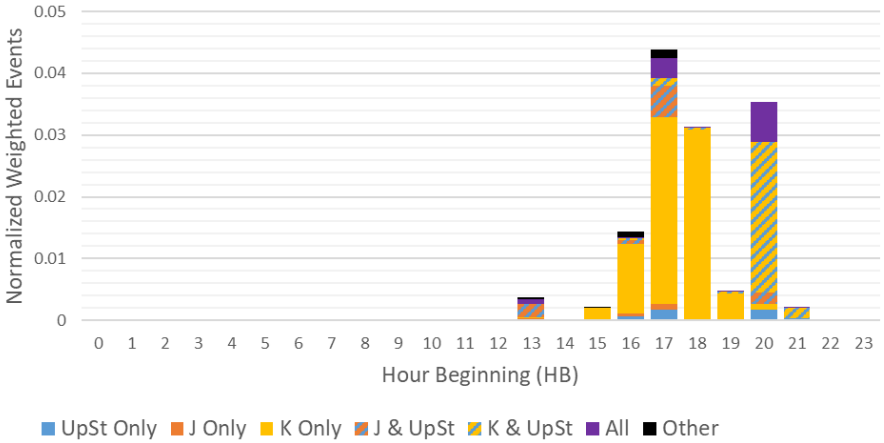
Solved 1-hr Events (100 MW Perfect Capacity Addition in Load Zone K)

2025-2026 iCAF Set 1



2025-2026 iCAF Set 2



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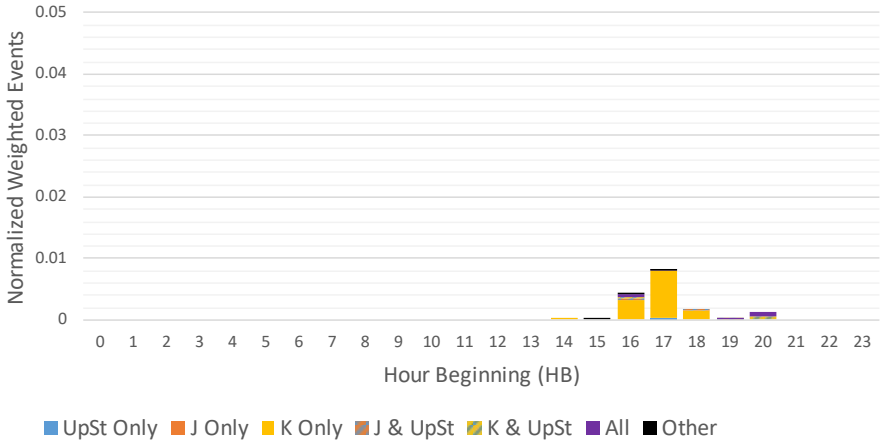
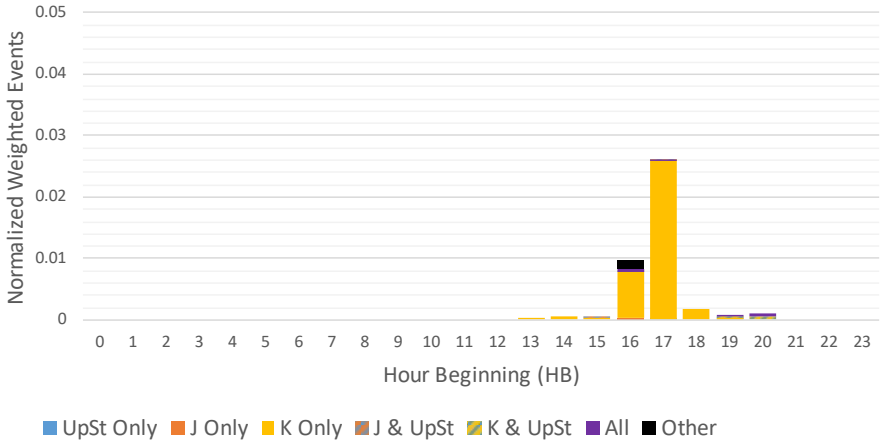
Solved 2-hr Events (100 MW Perfect Capacity in Addition Load Zone K)

2025-2026 iCAF Set 1



2025-2026 iCAF Set 2



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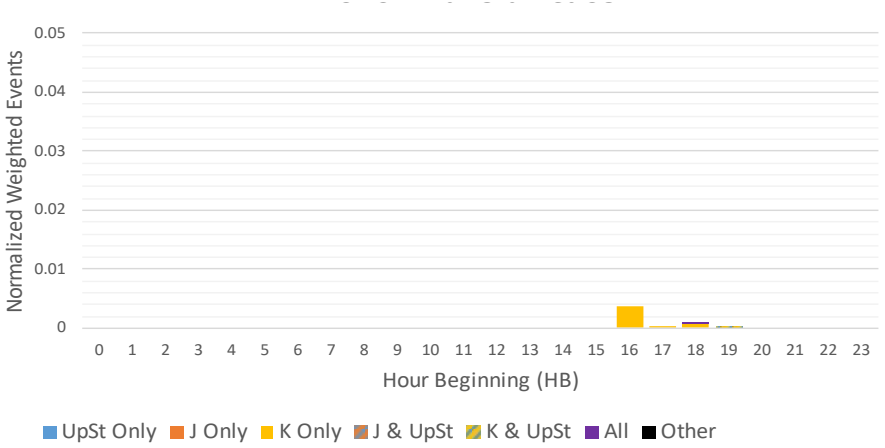
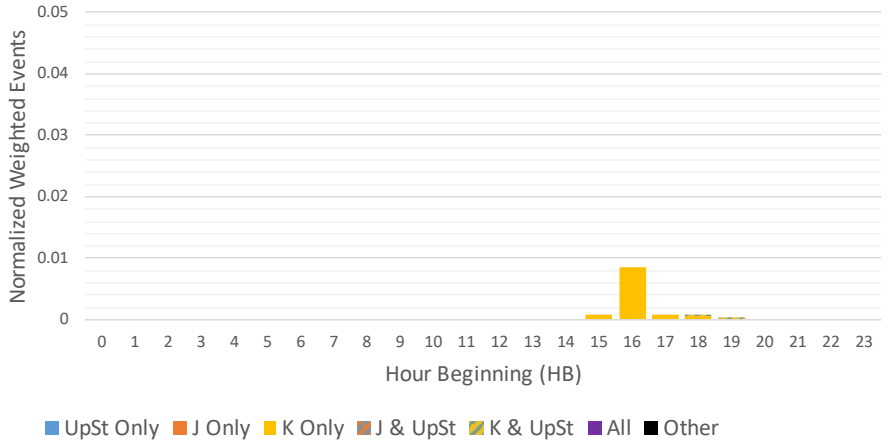
Solved 3-hr Events (100 MW Perfect Capacity in Addition Load Zone K)

2025-2026 iCAF Set 1



2025-2026 iCAF Set 2



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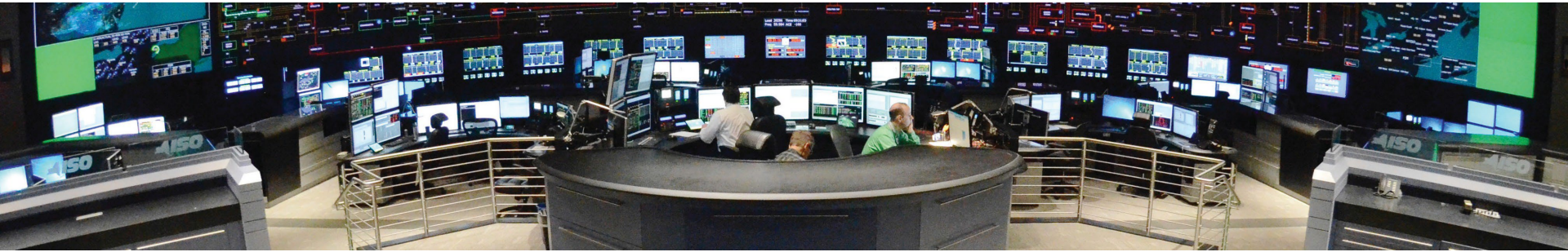
Our Mission and Vision

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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