New York ISO
Independent System Operator

Operations Performance Metrics Monthly Report

A Report by the
New York Independent System Operator

July 2025

Prepared by NYISO Operations Analysis and Services, based on settlements initial invoice data collected on or before August 8, 2025.

New York ISO

Table of Contents

July 2025 Highlights

Monthly Metered Load

Peak Load	Minimum Load
30,645 MW 07/29/2025 HB 18	14,573 MW 07/05/2025 HB 06

Historical Metered Load Peaks

Summer 2025 Peak Load	All-Time Summer Peak Load
31,857 MW 06/24/2025 HB 18	33,956 MW 07/19/2013 HB 16

Monthly Intermittent Resource Peaks

Peak Wind	Peak Solar (FTM+BTM)
1,974 MW 07/17/2025 HB 14	5,613 MW 07/04/2025 HB 13

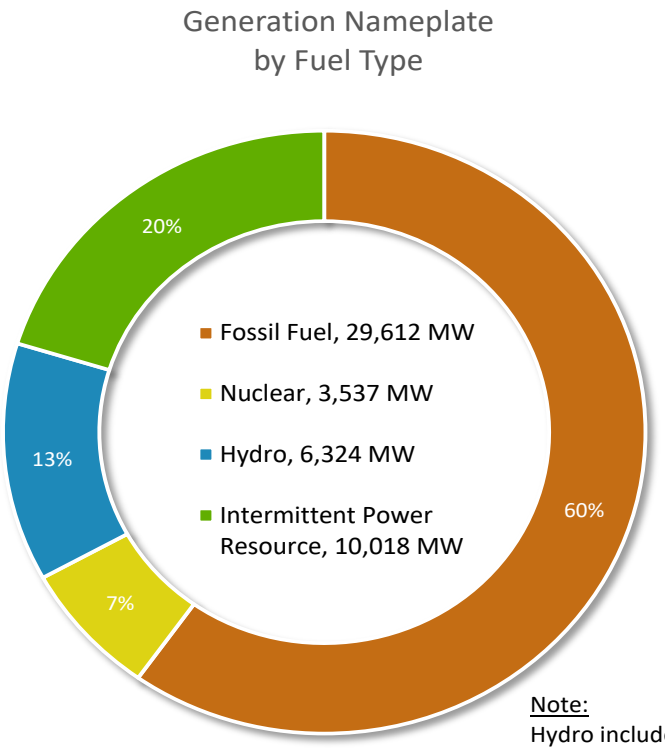
Historical Intermittent Resource Peaks

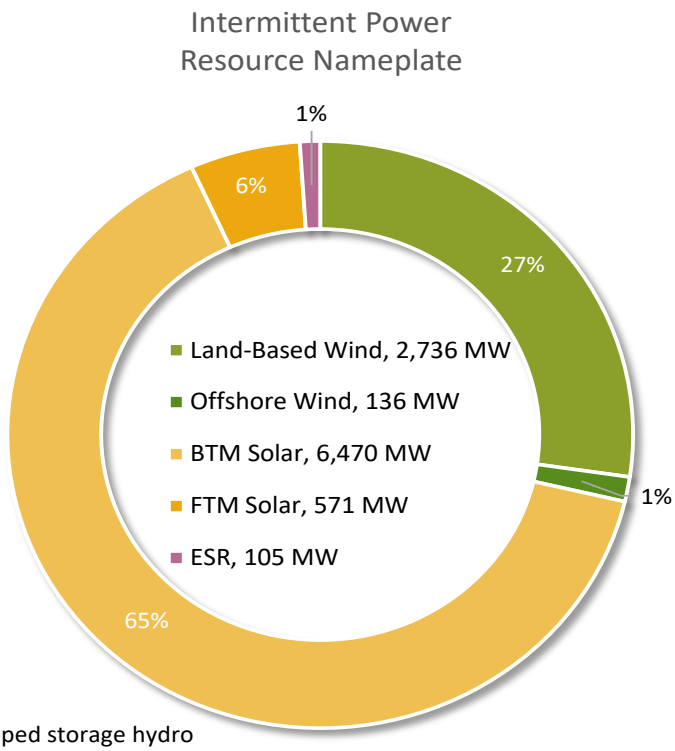
All-Time Peak Wind	All-Time Peak Solar (FTM+BTM)
2,309 MW 12/16/2024 HB 23	4,809 MW 04/17/2025 HB 12

Notable NYCA System Events

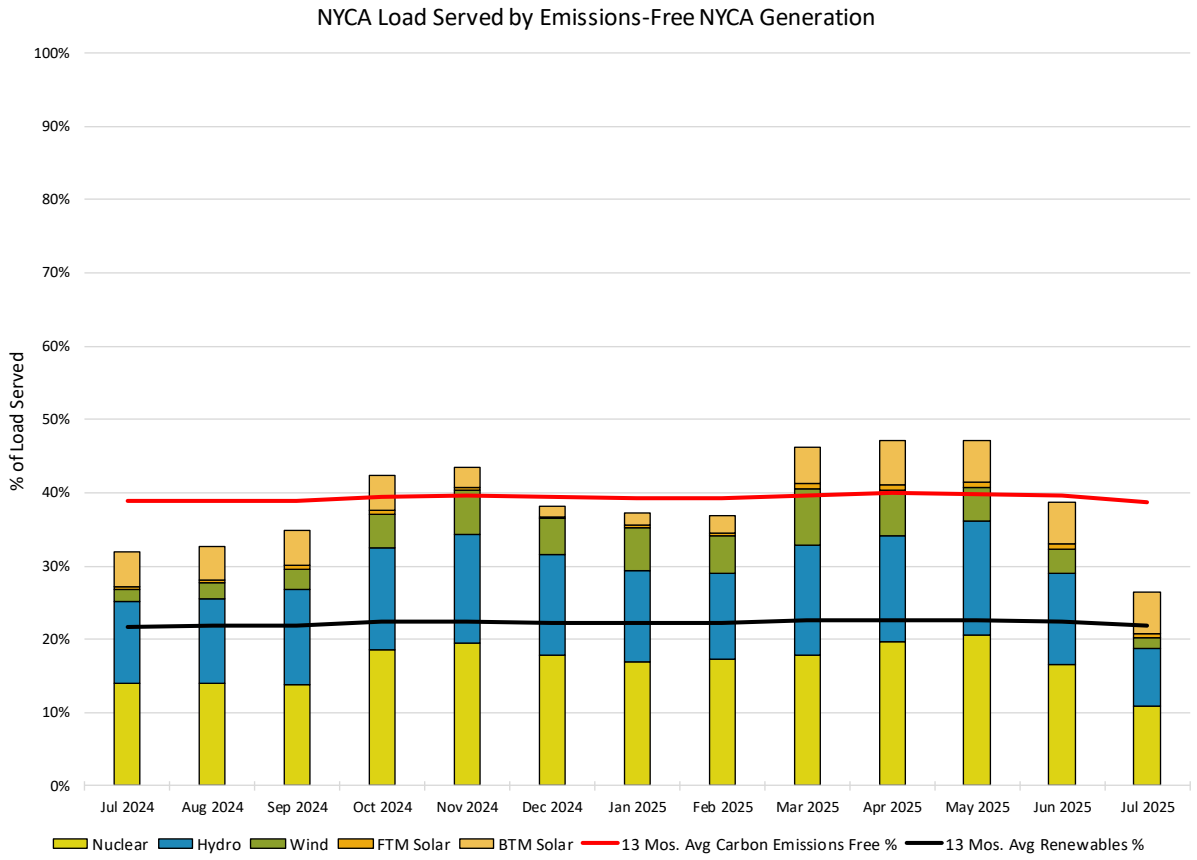
- A July heat wave occurred on 7/28-7/30. NYISO declared Emergency Energy Alert Level 1 on 7/29 due to tight capacity conditions. Real-time prices during the heat wave reflected reserve and transmission shortages and scarcity conditions.
- NYISO called upon External ICAP suppliers on 7/16, 7/17, 7/28, 7/29 and 7/30 HB15-22.
- EDRP/SCR resources activated on 7/16, 7/17, 7/25, 7/28, 7/29 and 7/30. See Historic Demand Response Activation webposting for specific hours and additional TDRP events.
- Increased levels of BMCR observed due to Thunderstorm constraints aggravated by the forced outage of Pleasantville-Wood St 345kV (#Y87) on 7/1 and the forced outage of Pleasantville-Dunwoodie 345kV (#W90) on 7/25 and 7/30.
- An unplanned outage of supporting data used in the calculation of BTM solar estimated actuals resulted in published daily peak values likely being overestimated by roughly 300-500MW, on average, during July. Three days, including July 4th, had possible BTM solar peak overestimates of at least 1,000MW. This issue was addressed with our forecast vendor and corrected going forward.

NYCA Generation Mix



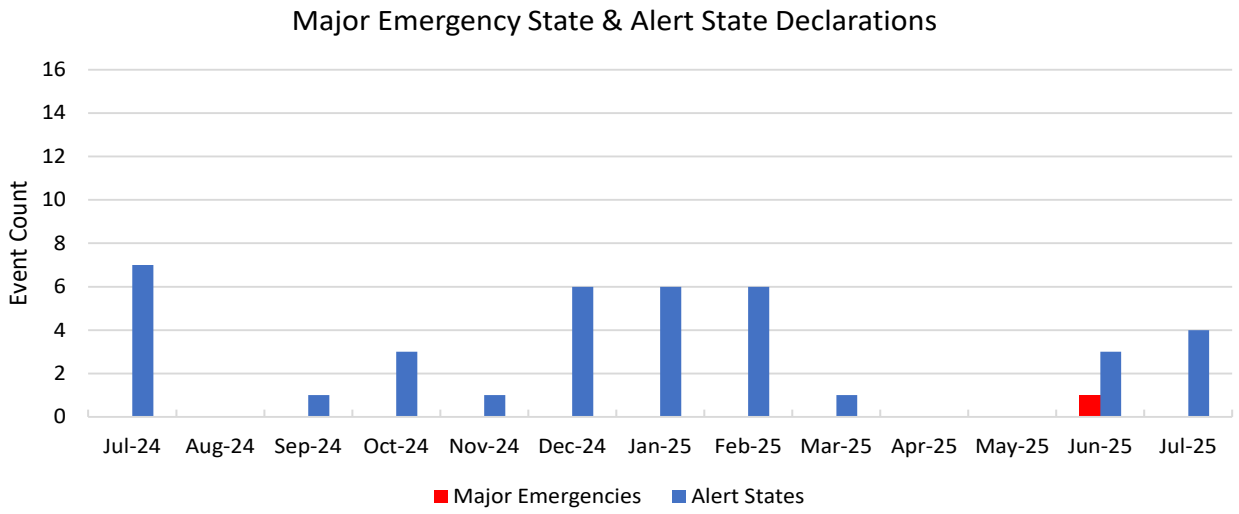


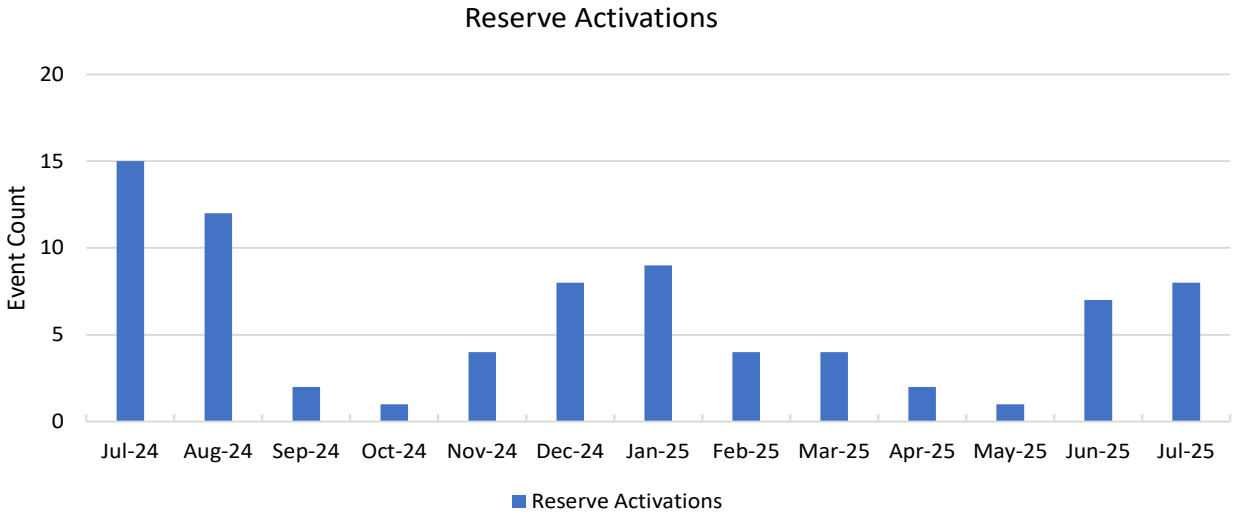
Note:
Hydro includes pumped storage hydro
ESR includes LESR

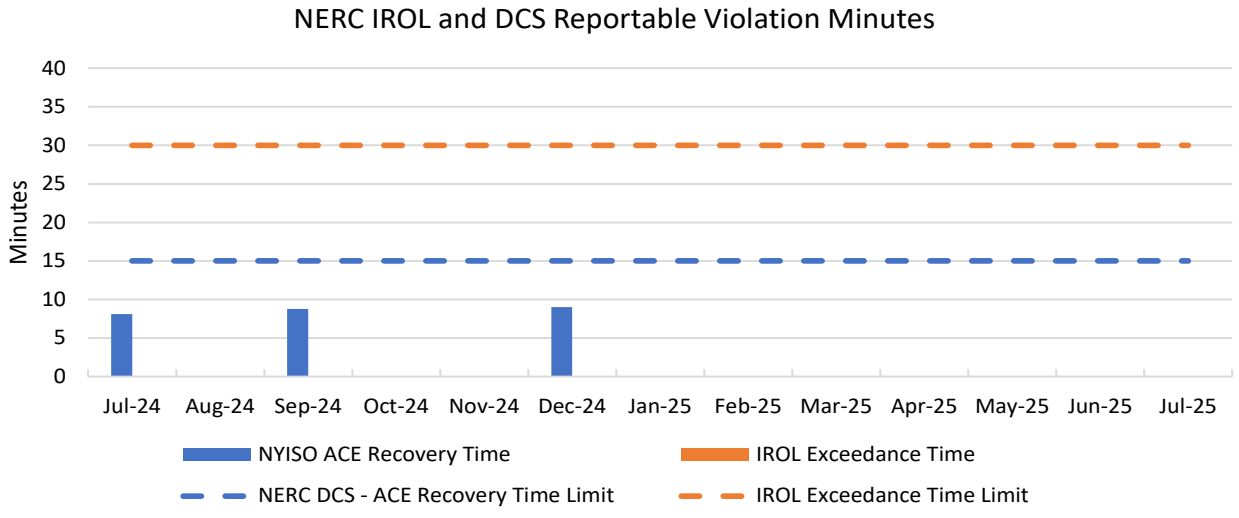


Reliability Performance Metrics

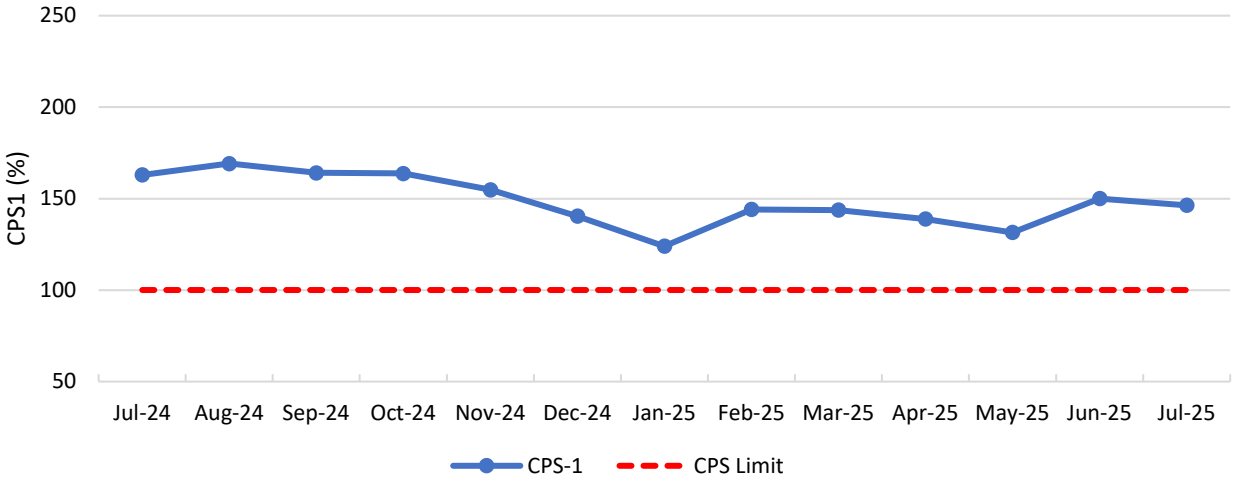
See Appendix A for metric definitions



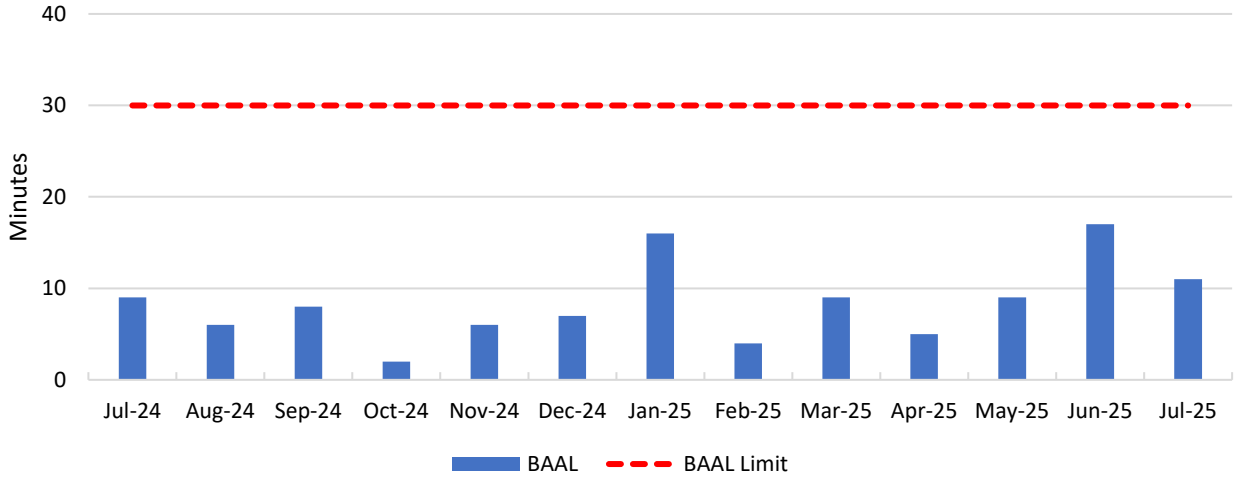




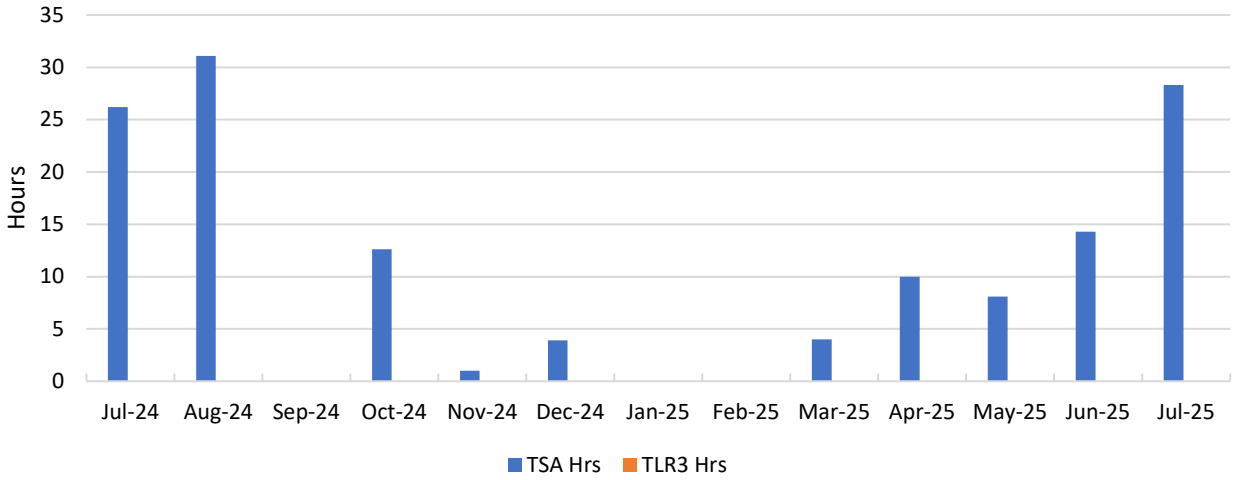
NERC Control Performance Standard



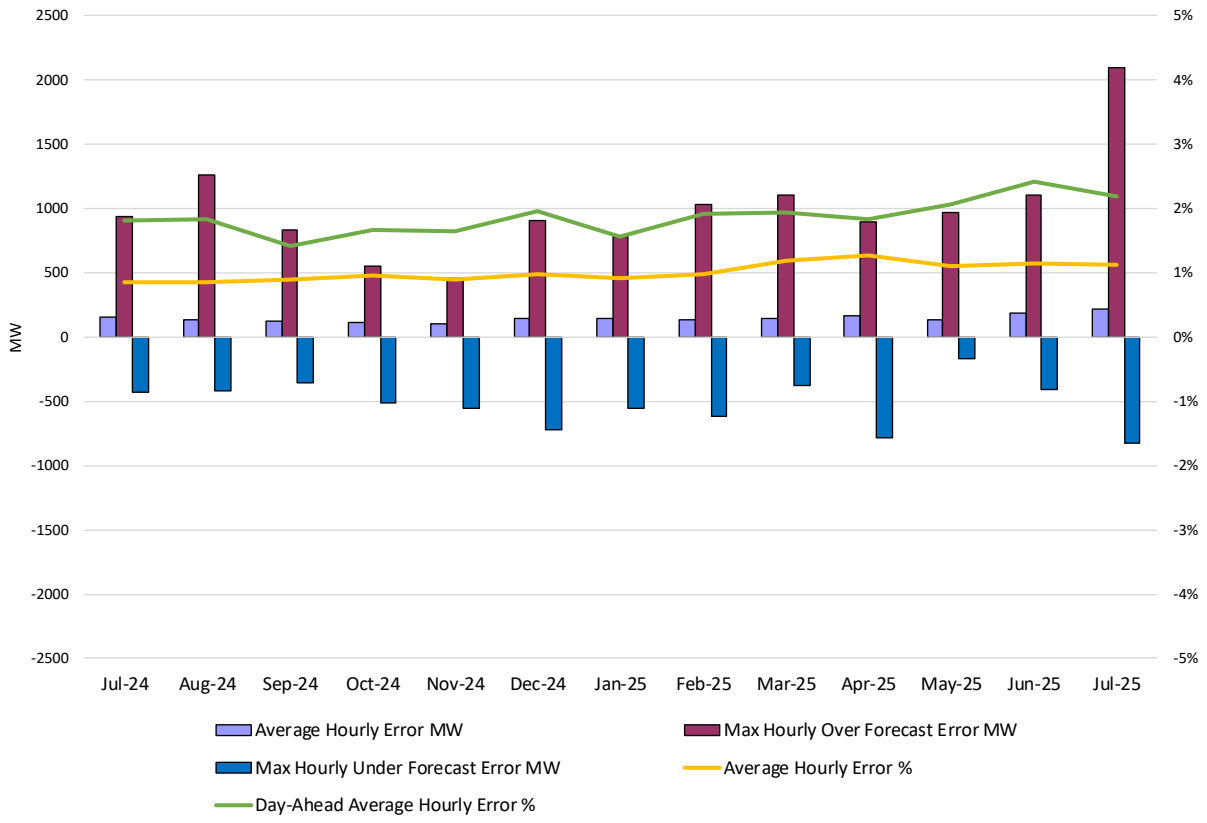
NERC Balancing Authority ACE Limit Standard



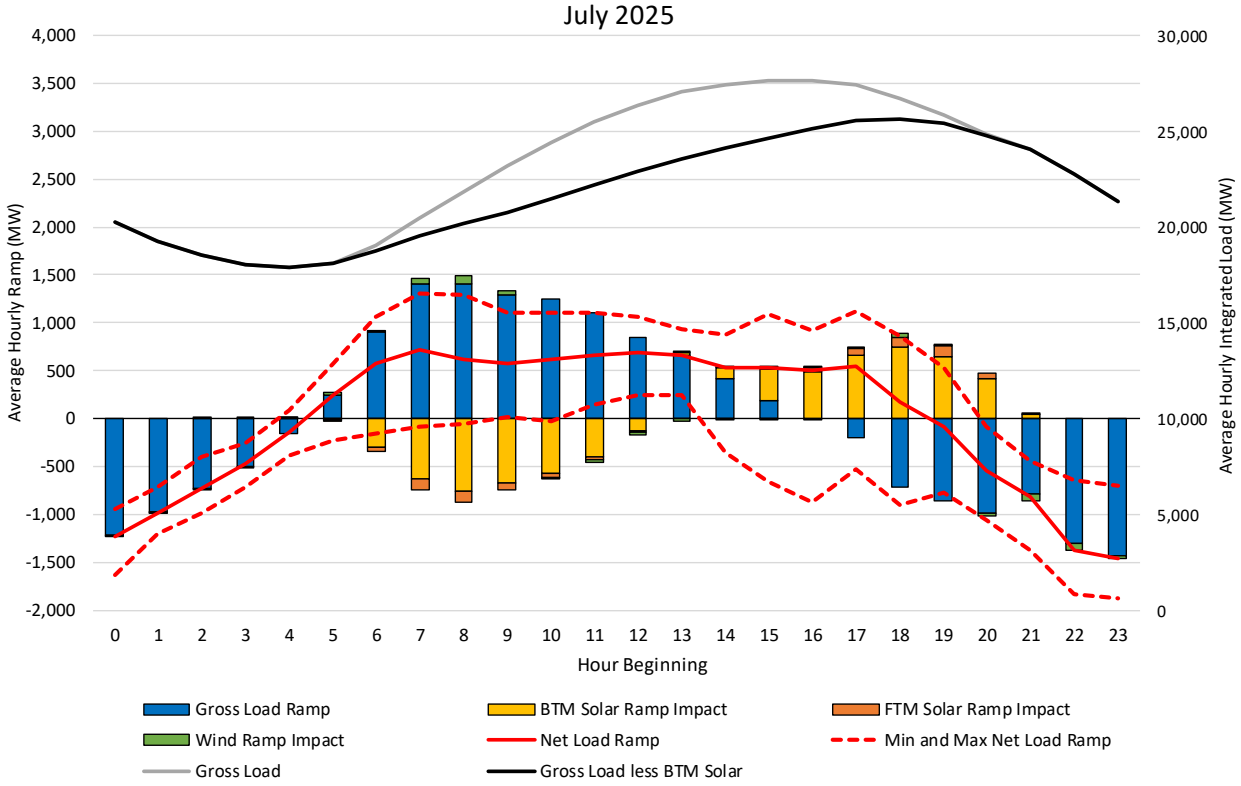
Thunderstorm Alert Hours and NERC TLR-3 Hours



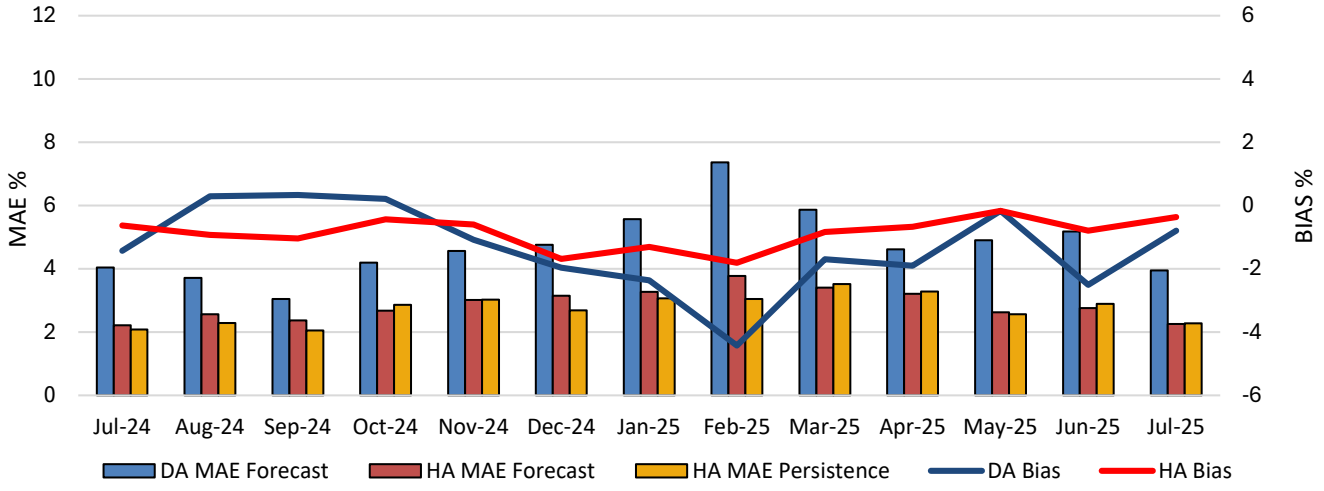
Load Forecast Performance



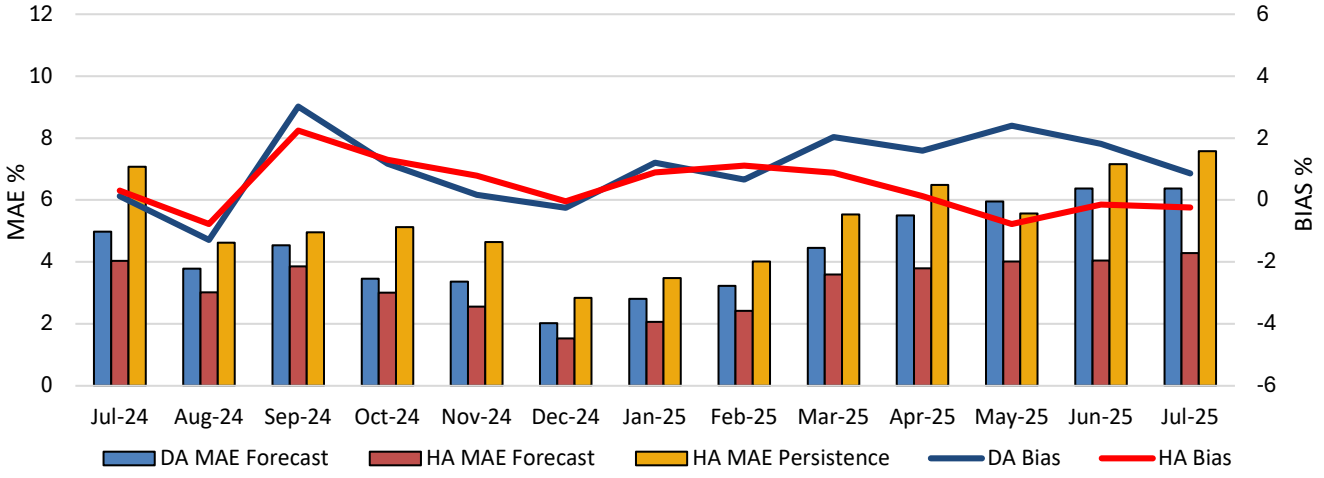
Average Hourly Net Load Ramps
July 2025



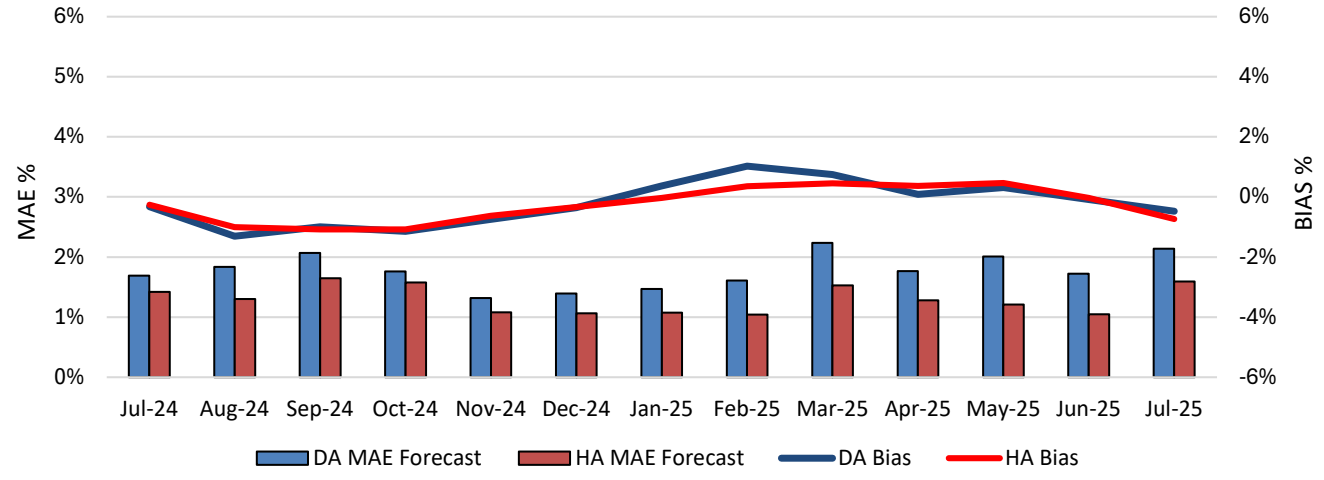
Wind Forecast Performance
Nameplate Wind Capacity 2872MW



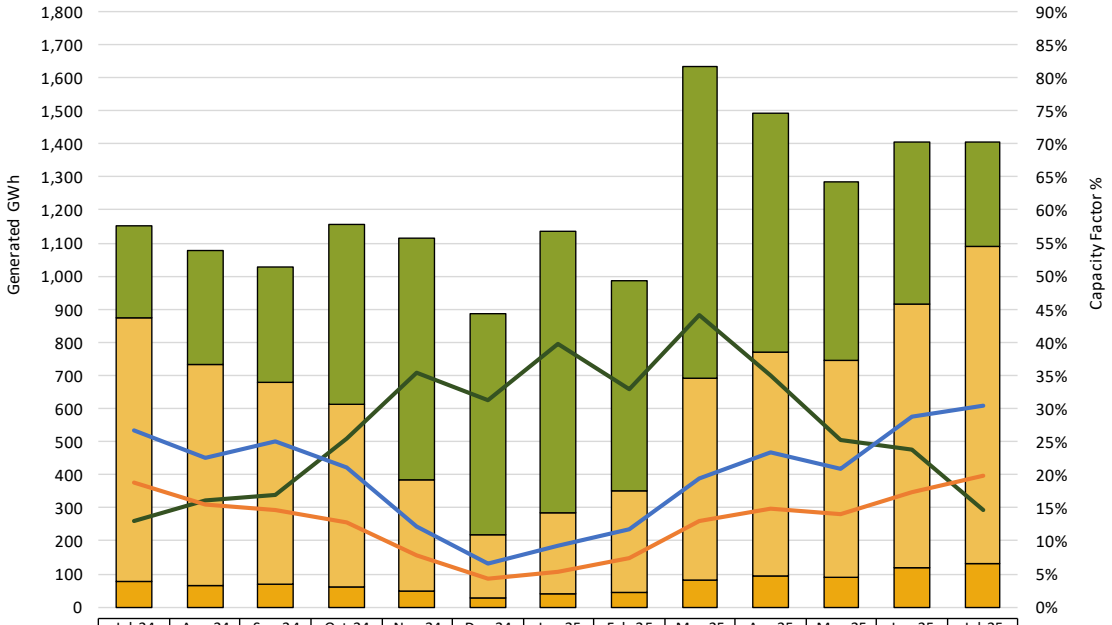
FTM Solar Forecast Performance
Nameplate FTM Solar Capacity 571MW



Behind-the-Meter Solar Forecast Performance
Nameplate BTM Solar Capacity 6470MW

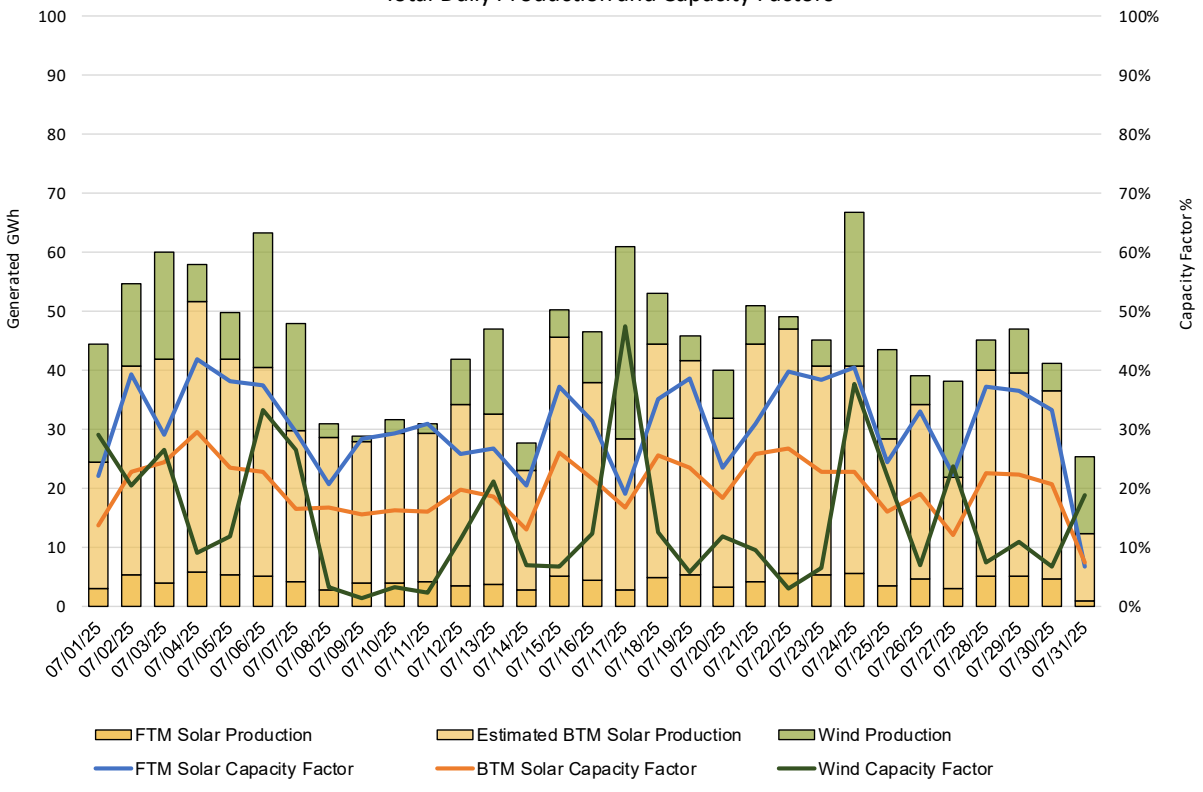


Net Wind and Solar Performance
Total Monthly Production and Capacity Factors

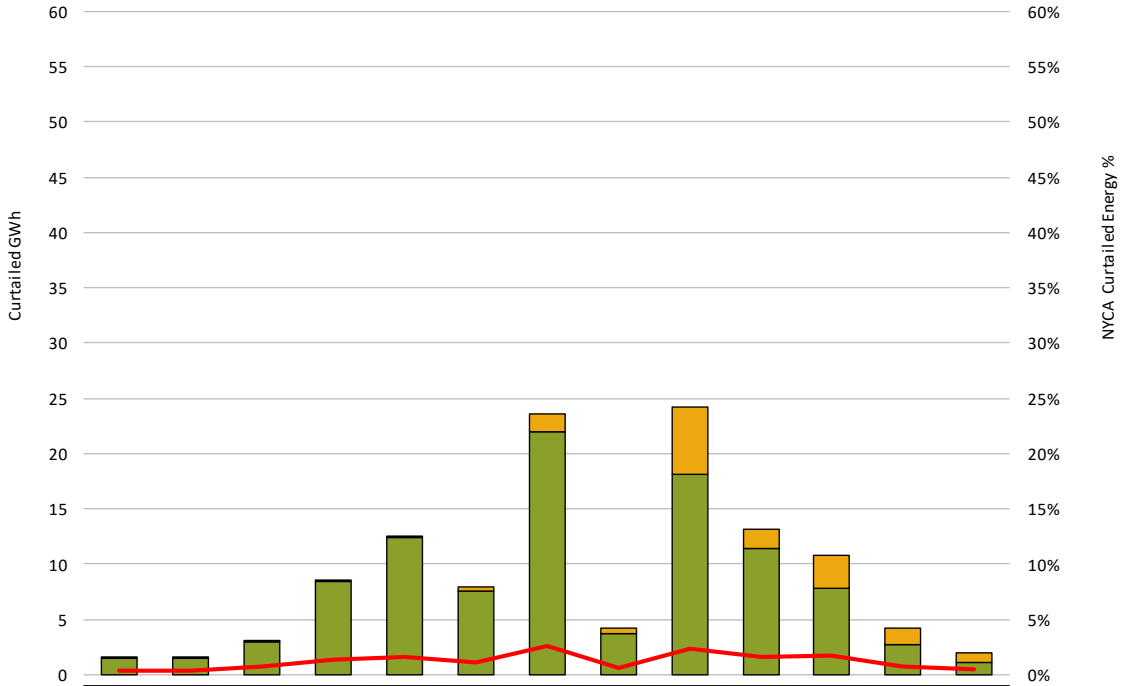


	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25
Wind	276	343	348	544	733	669	849	633	944	724	539	491	314
Estimated BTM Solar	795	668	609	550	333	190	246	306	607	674	658	797	960
FTM Solar	79	66	71	62	50	28	39	45	83	96	89	118	130
Wind Capacity Factor	13%	16%	17%	25%	35%	31%	40%	33%	44%	35%	25%	24%	15%
BTM Solar Capacity Factor	19%	16%	15%	13%	8%	4%	5%	7%	13%	15%	14%	17%	20%
FTM Solar Capacity Factor	27%	23%	25%	21%	12%	7%	9%	12%	19%	23%	21%	29%	31%

Net Wind and Solar Performance
Total Daily Production and Capacity Factors

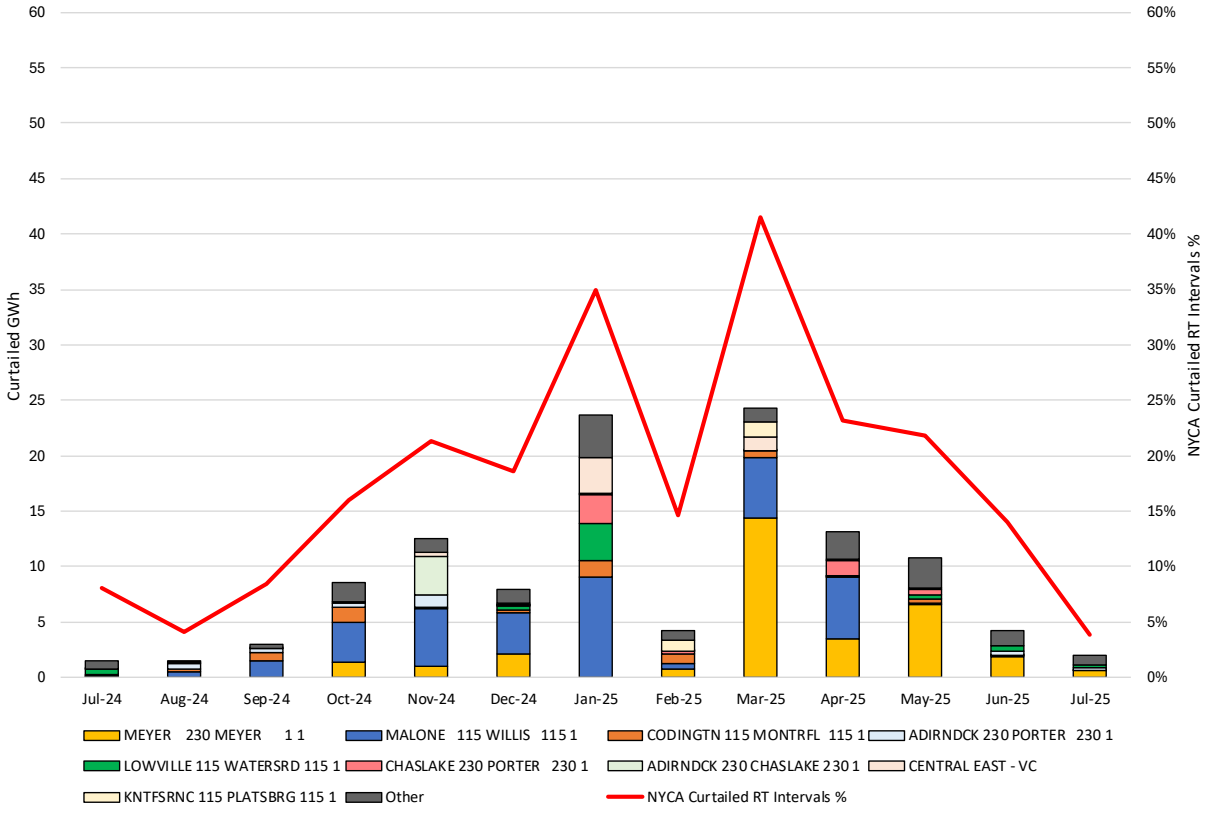


Net Wind and FTM Solar Performance
Monthly Energy Curtailment

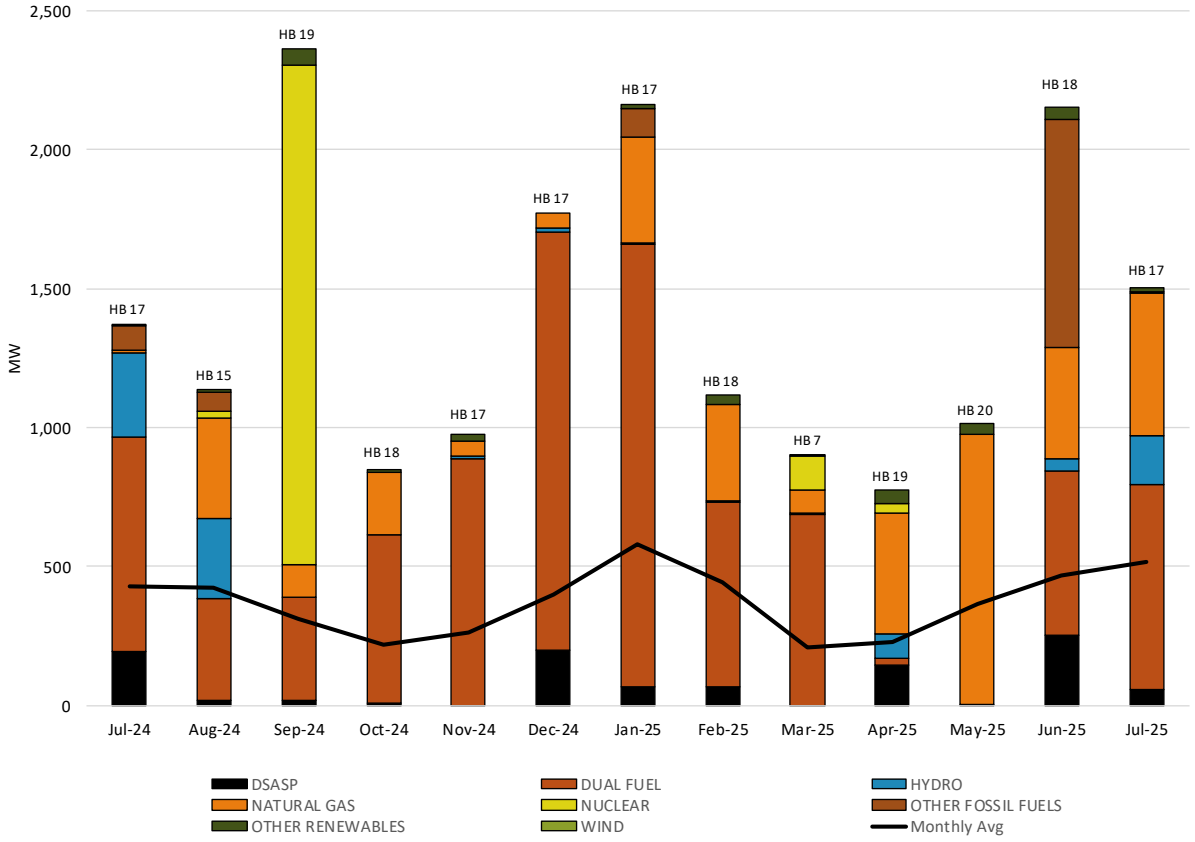


	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25
FTM Solar (MWh)	65	14	14	13	185	301	1,710	594	6,163	1,647	2,986	1,504	940
Wind (MWh)	1,461	1,521	3,022	8,493	12,379	7,618	21,929	3,683	18,087	11,455	7,856	2,674	1,103
NYCA Curtailed %	0.4%	0.4%	0.7%	1.4%	1.6%	1.1%	2.7%	0.6%	2.4%	1.6%	1.7%	0.7%	0.5%

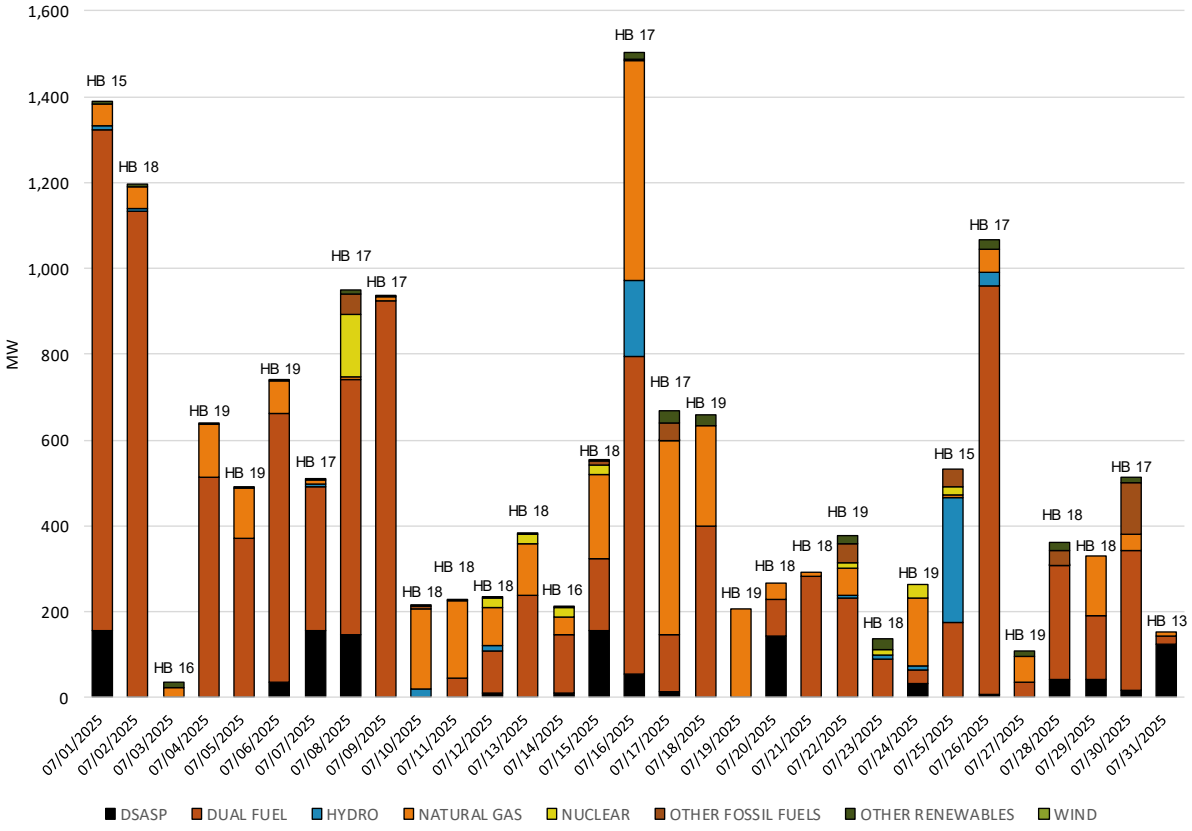
Net Wind and FTM Solar Performance
Monthly Energy Curtailment by Limiting Constraint

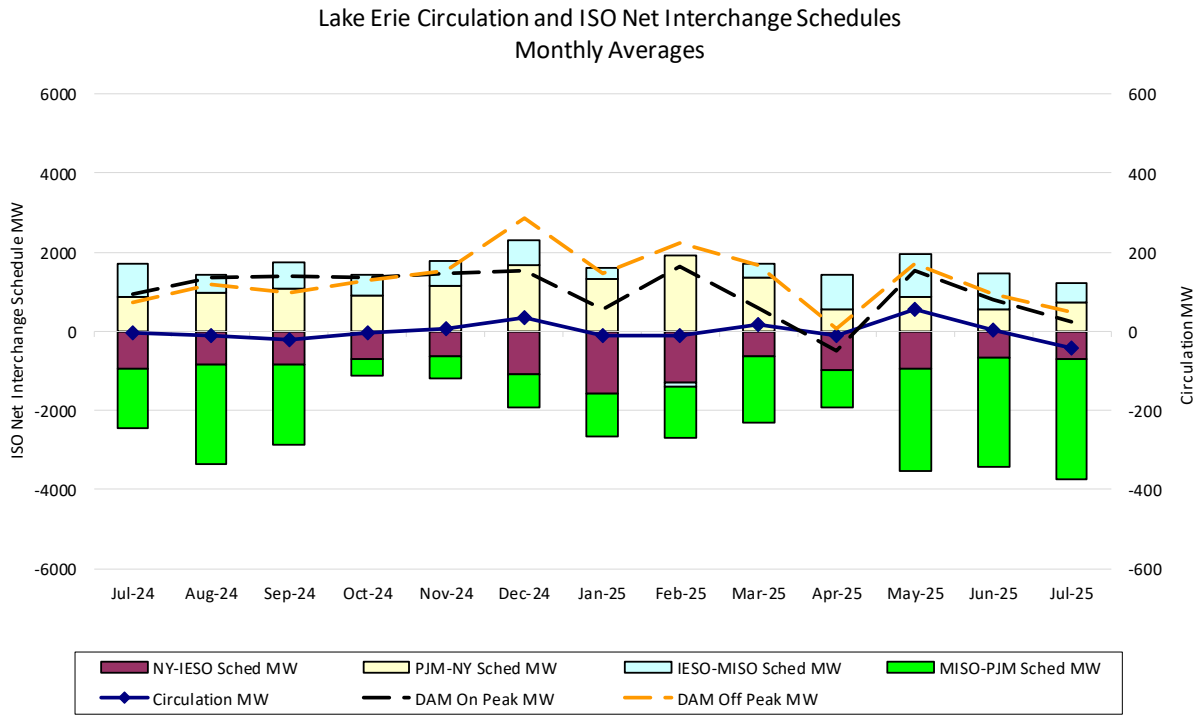


Monthly Maximum Day-Ahead Market Capacity Unavailable In Real Time

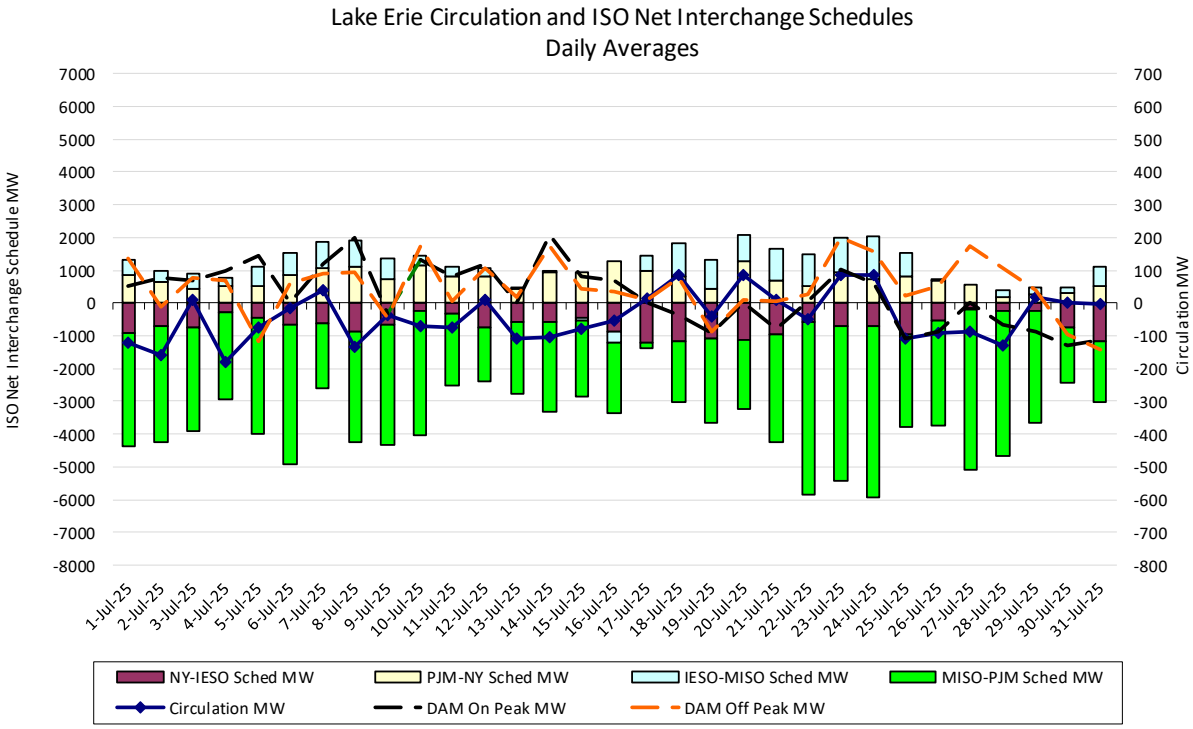


Daily Day-Ahead Market Capacity Unavailable In Real Time



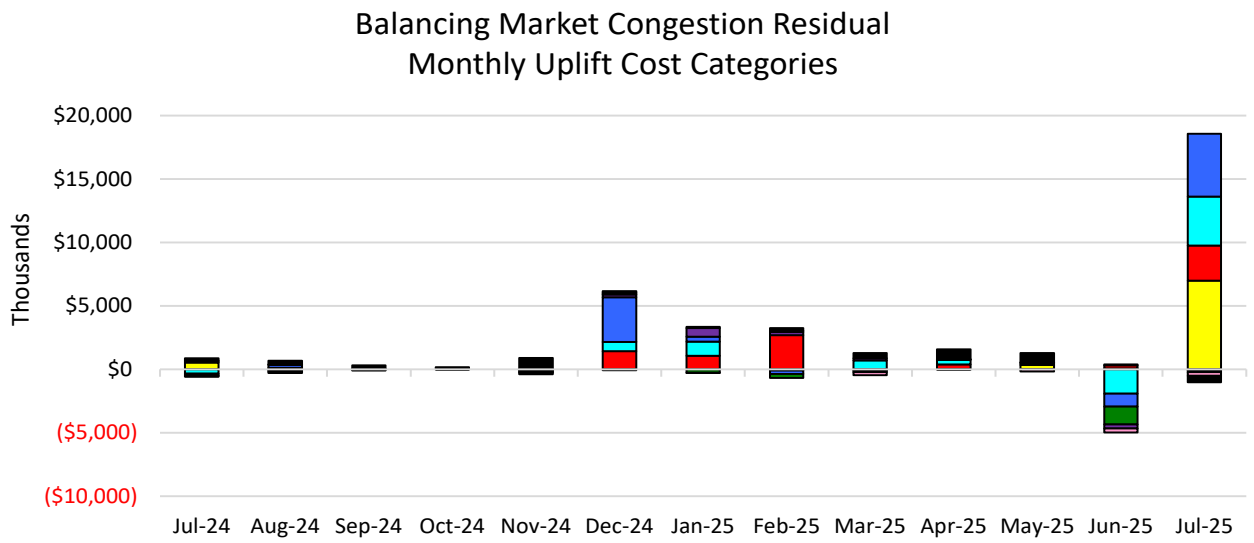


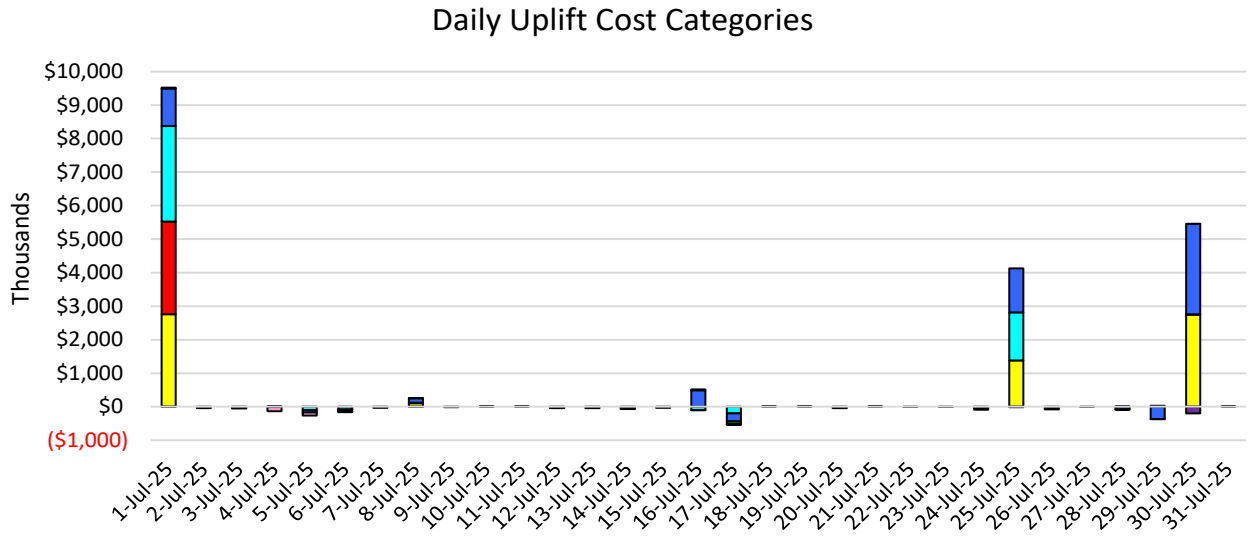
Interchange schedules with positive values aggravate clockwise Lake Erie Circulation.



Interchange schedules with positive values aggravate clockwise Lake Erie Circulation.

Market Performance Metrics





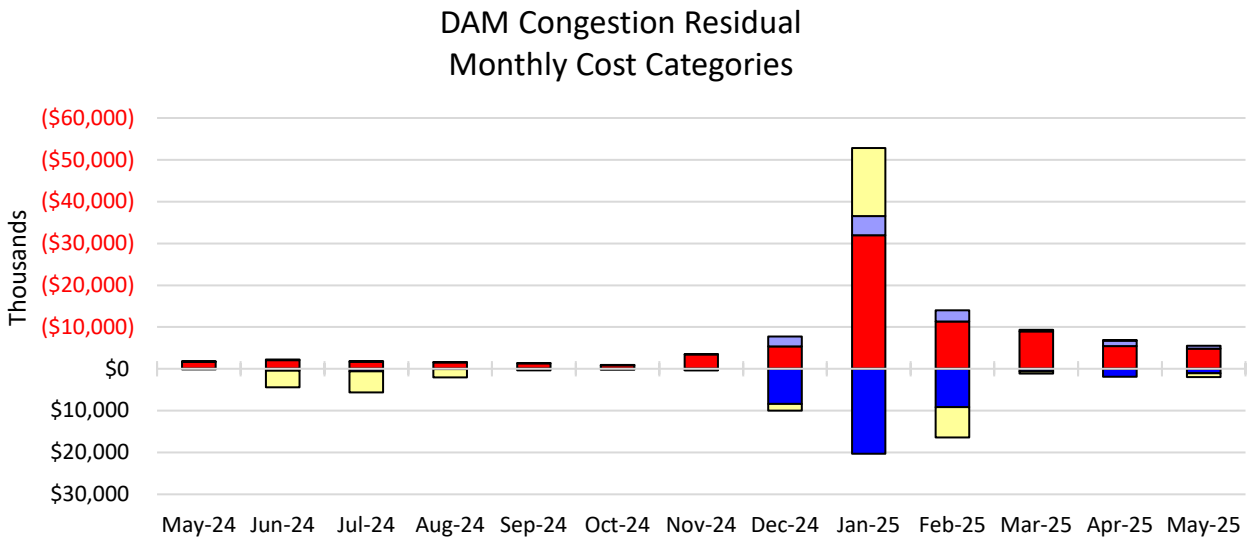
Real-Time Balancing Market Congestion Residual Categories

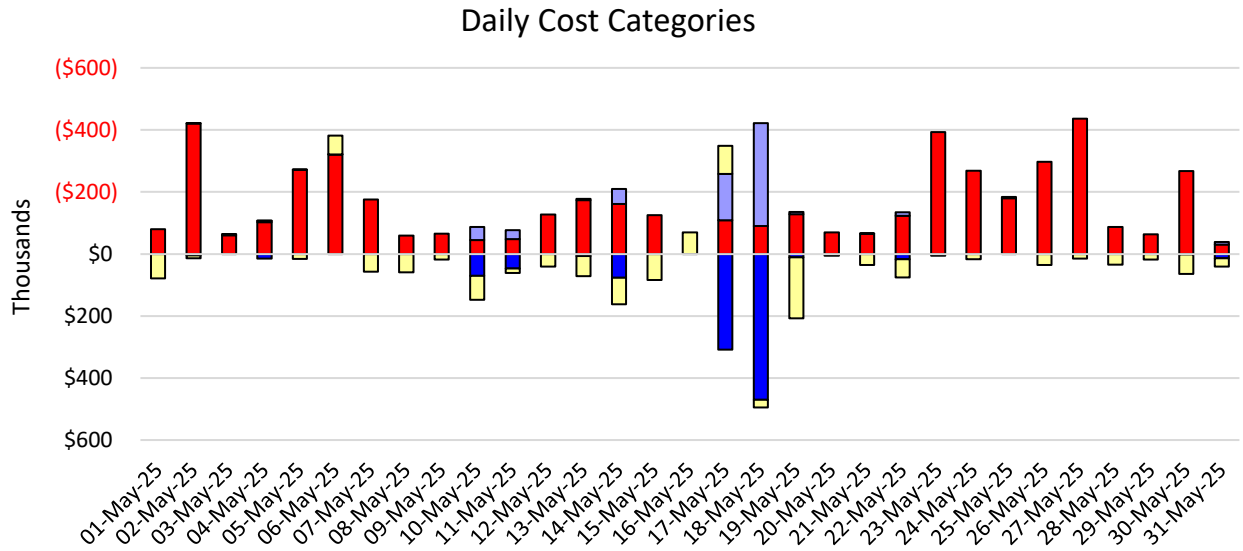
Category	*Cost Assignment*	*Events Types*	*Event Examples*
Storm Watch	Zone J	Thunderstorm Alert (TSA)	TSA Activations
Transmission Outage Mismatch	Market-wide	Changes in DAM to RTM transfers related to transmission outage mismatch	Forced Line Outages, Unit AVR Outages, Early Line Return from Outage
Interface/Facility Rerate - NYISO Security	Market-wide	Changes in DAM to RTM transfers not related to transmission outage	Interace/Facility Rerates due to RTM voltages
Interface Rerate - External Security	Market-wide	Changes in DAM to RTM transfers related to External Contral Area Security Events	TLR Events, External Transaction Curtailments
Unscheduled Loop Flows	Market-wide	Changes in DAM to RTM unscheduled loop flows impacting NYISO Interface transmission constraints	DAM to RTM Lake Erie Loop Flow exceeding +/-125MW
M2M Settlement	Market-wide	Settlement result inclusive of coordinated redispatch and Ramapo flowgates	
Cost Not Categorized	Market-wide		
Not Investigated	Market-wide		

Monthly Balancing Market Congestion Report Assumptions/Notes

1) Storm Watch Costs are identified as daily total uplift costs
2) Days with a value of BMCR less M2M Settlement of $100K/HR, shortfall of $200K/Day or more, or surplus of $100K/Day or more are investigated.
3) Uplift costs associated with multiple event types are apportioned equally by hour

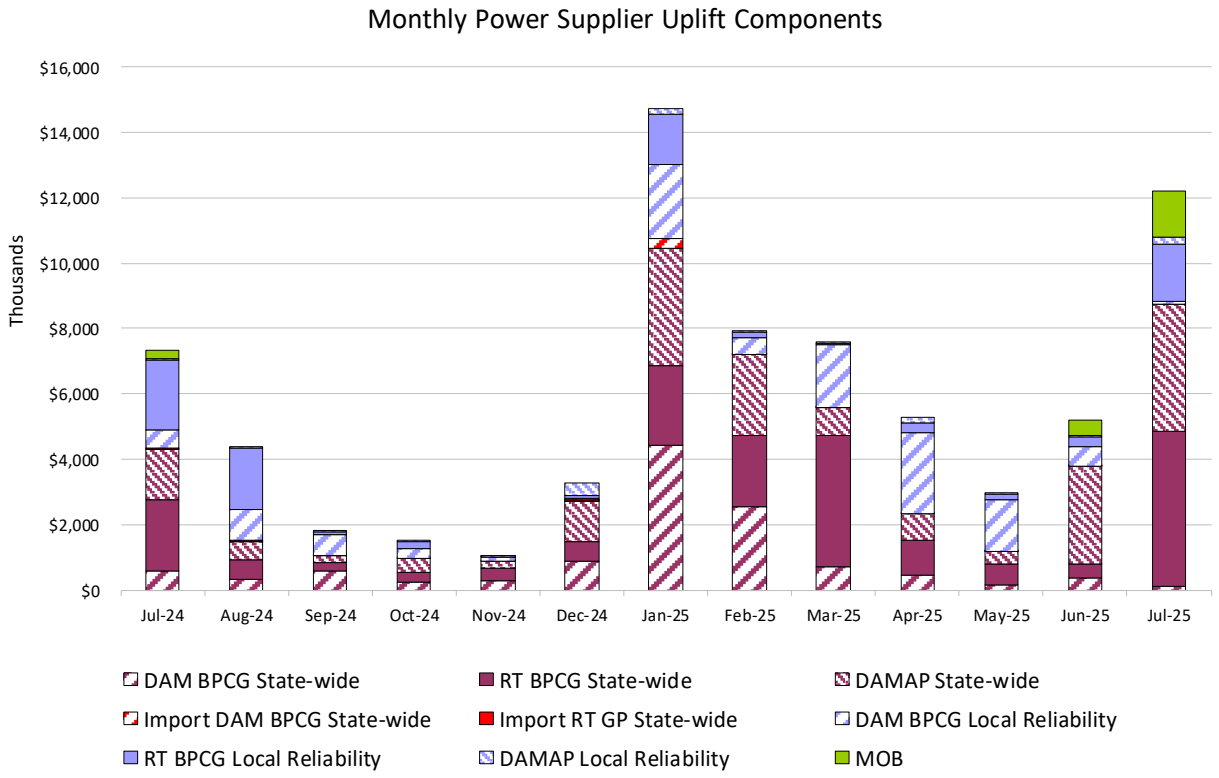
Days investigated in July: 1,4,5,6,8,16,17,25,28,29,30		
Event	Description	July Dates
	Thunder Storm Alert, Buchanan 345kV/138kV (#BK TA5)	1,8,25,30
	Thunder Storm Alert, Buchanan-Lovett 345kV (#Y88)	1,25,30
	Thunder Storm Alert, Buchanan-Ramapo 345kV (#Y94)	1
	Thunder Storm Alert, Chester-Shoemaker 138kV (#27)	25,30
	Thunder Storm Alert, Ladentown-Ramapo 345kV (#W72)	1
	Thunder Storm Alert, Newbridge-Stewart Ave 138kV (#462)	1,25
	Thunder Storm Alert, Rocktavern-Roseton 345kV (#311)	1,25,30
	Thunder Storm Alert, Van Wagner-Leeds 345kV (#92)	1,8,25,30
	Forced Outage Pleasantville-Wood St 345kV (#Y87)	1
	Derate Carl Place-Stewart Ave 138kV (#361) l/o SCB:DUNW(4):W73&W89&Y50&BKS1	28
	Derate Carl Place-Stewart Ave 138kV (#361) l/o SCB:STEWRTAV(1320) 467& 362	1
	Derate Dunwoodie-Pleasantville 345kV (#W89) l/o TWR F30&W80&F31&W81	1,28
	Derate Dunwoodie-Shore Road 345kV (#Y50) l/o SCB:SPBK(RNS2):Y49&M29&Y49_ST	8,17
	Derate Gowanus-Greenwood 138kV (#42233)	25,29,30
	Derate Newbridge-Stewart Ave 138kV (#463)	1
	Uprate Astoria West-Hellgate 138kV (#24051) l/o SIN:HELLG-ASTOR_24052&15055M&B	6,8,16,17,25,28,29
	Uprate Freshkills-Willowbrook 138kV (#29211)	16
	Uprate Gowanus-Greenwood 138kV (#42232) l/o GREENWD_-FOXHILLS_138_29232	17
	Uprate Greenbush-Regeneron 115kV (#9) l/o SCB:KNICRBKR(R2):6&2&Y57	16
	Uprate Greenwood-Kent Ave 138kV (#31232) l/o GREENWD_-FOXHILLS_138_29232	17
	Uprate Scriba-Volney 345kV (#20) l/o SCRIBA__-VOLNEY___345_21	1,5,8
	Uprate Van Wagner-Leeds 345kV (#92) l/o ATHENS__-VNWAGNER_345_91	17
	NYCA Active DNI Ramp Limit	1,4,6,8,17,25,28,29
	HQ_CEDARS - NY Scheduling Limit	25,28-30
	HQ_CHAT - NY Scheduling Limit	5,6,8,17,25,28-30
	HQ_CHAT Active DNI Ramp Limit	6,17
	IESO_AC Active DNI Ramp Limit	4-6,17,25,28-30
	NE_AC - NY Scheduling Limit	16,17,25,28,29
	NE_AC Active DNI Ramp Limit	1,4,8,16,25,28,29
	NE_NNC1385 - NY Scheduling Limit	8,17
	PJM_AC - NY Scheduling Limit	16,17,28,29
	PJM_AC Active DNI Ramp Limit	8,16,17,28-30
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West	17
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East	17

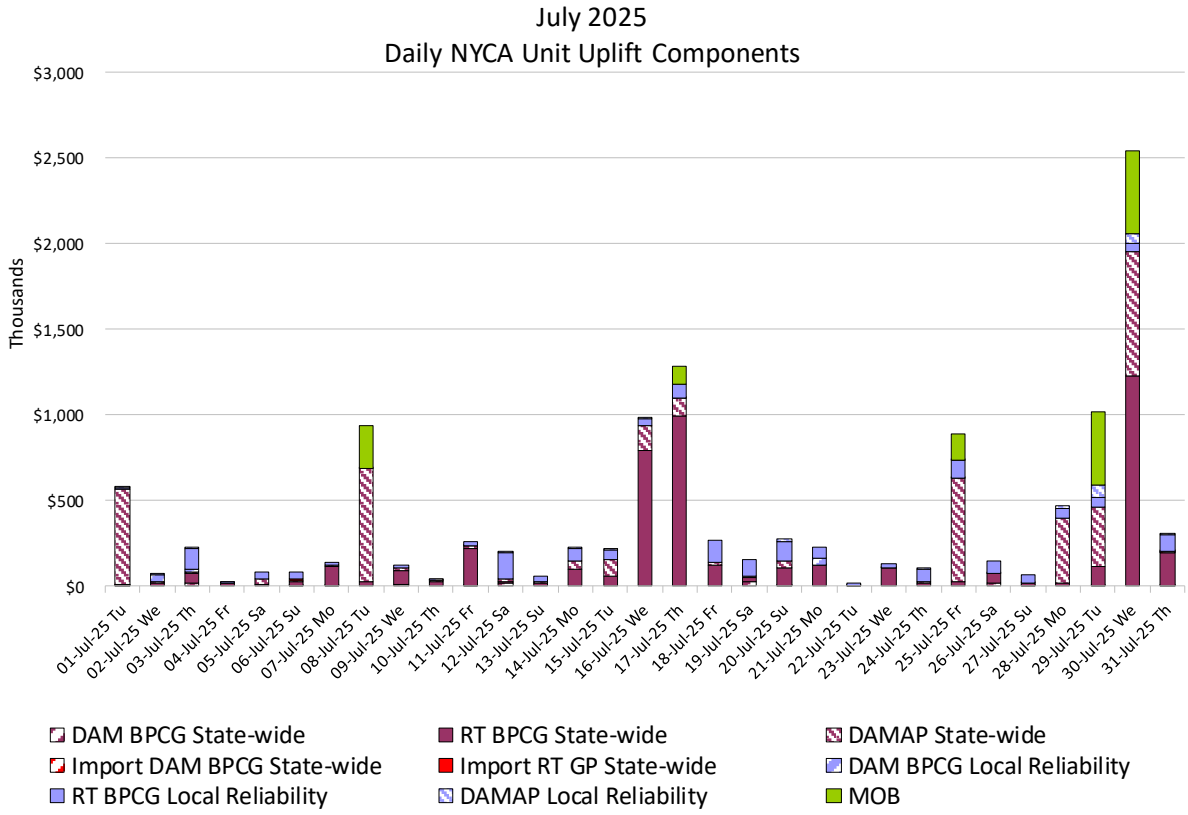




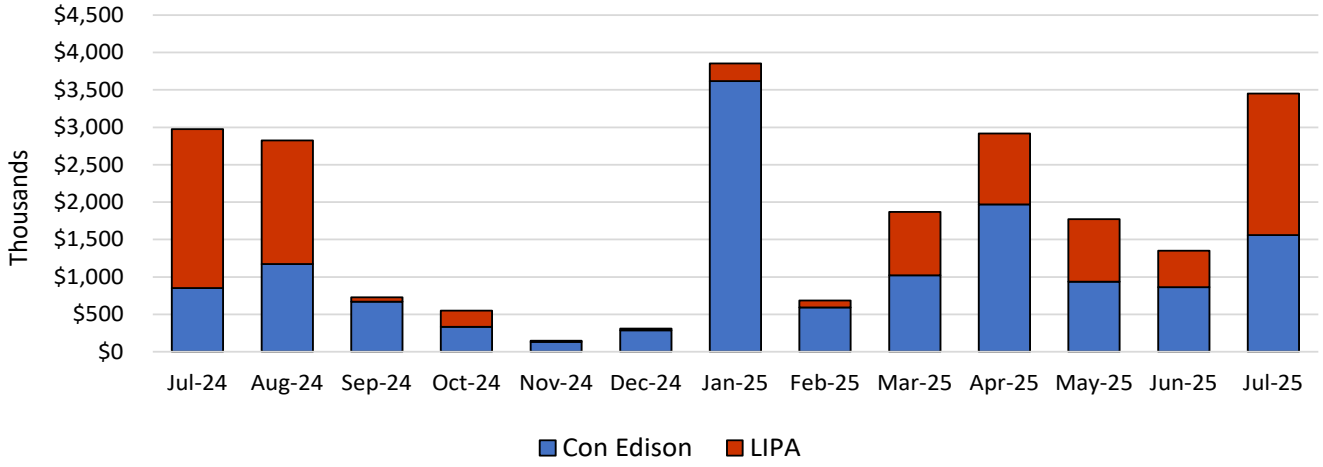
DAM Congestion Residual Categories

Category	*Cost Assignment*	*Events Types*	*Event Examples*
NYTO Outage Allocation	Responsible TO	Direct allocation to NYTO's responsible for transmission equipment status change.	DAM scheduled outage for equipment modeled in-service for the TCC Auction.
Incremental TCC/External Outage Impacts	All TO by Monthly Allocation Factor	Allocation associated with transmission equipment status change caused by change in status of external equipment or change in status of equipment associated with Incremental TCC.	Tie line required out-of-service by TO of neighboring control area.
Central East Commitment Rerate	All TO by Monthly Allocation Factor	Changes in the DAM Central East_VC limit as compared to the TCC Auction limit, which are not associated with transmission line outages.	
Cost Not Categorized	All TO by Monthly Allocation Factor		

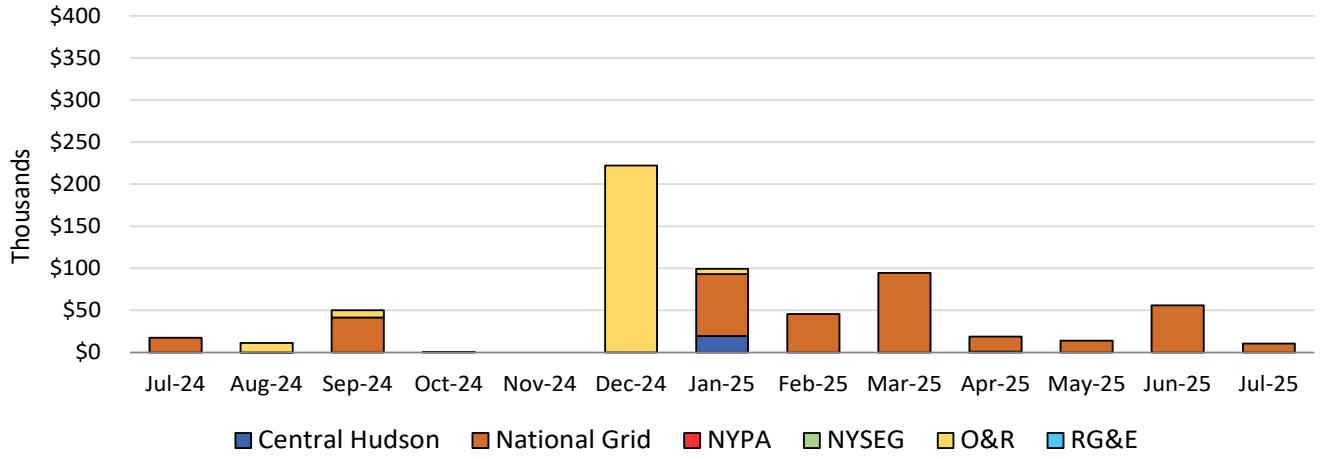

Monthly Power Supplier Uplift Components
Thousands
$16,000
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$0
Jul-24
Aug-24
Sep-24
Oct-24
Nov-24
Dec-24
Jan-25
Feb-25
Mar-25
Apr-25
May-25
Jun-25
Jul-25
DAM BPCG State-wide
RT BPCG State-wide
DAMAP State-wide
Import DAM BPCG State-wide
Import RT GP State-wide
DAM BPCG Local Reliability
RT BPCG Local Reliability
DAMAP Local Reliability
MOB


July 2025
Daily NYCA Unit Uplift Components
Thousands
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
01-Jul-25 Tu
02-Jul-25 We
03-Jul-25 Th
04-Jul-25 Fr
05-Jul-25 Sa
06-Jul-25 Su
07-Jul-25 Mo
08-Jul-25 Tu
09-Jul-25 We
10-Jul-25 Th
11-Jul-25 Fr
12-Jul-25 Sa
13-Jul-25 Su
14-Jul-25 Mo
15-Jul-25 Tu
16-Jul-25 We
17-Jul-25 Th
18-Jul-25 Fr
19-Jul-25 Sa
20-Jul-25 Su
21-Jul-25 Mo
22-Jul-25 Tu
23-Jul-25 We
24-Jul-25 Th
25-Jul-25 Fr
26-Jul-25 Sa
27-Jul-25 Su
28-Jul-25 Mo
29-Jul-25 Tu
30-Jul-25 We
31-Jul-25 Th
DAM BPCG State-wide
RT BPCG State-wide
DAMAP State-wide
Import DAM BPCG State-wide
Import RT GP State-wide
DAM BPCG Local Reliability
RT BPCG Local Reliability
DAMAP Local Reliability
MOB

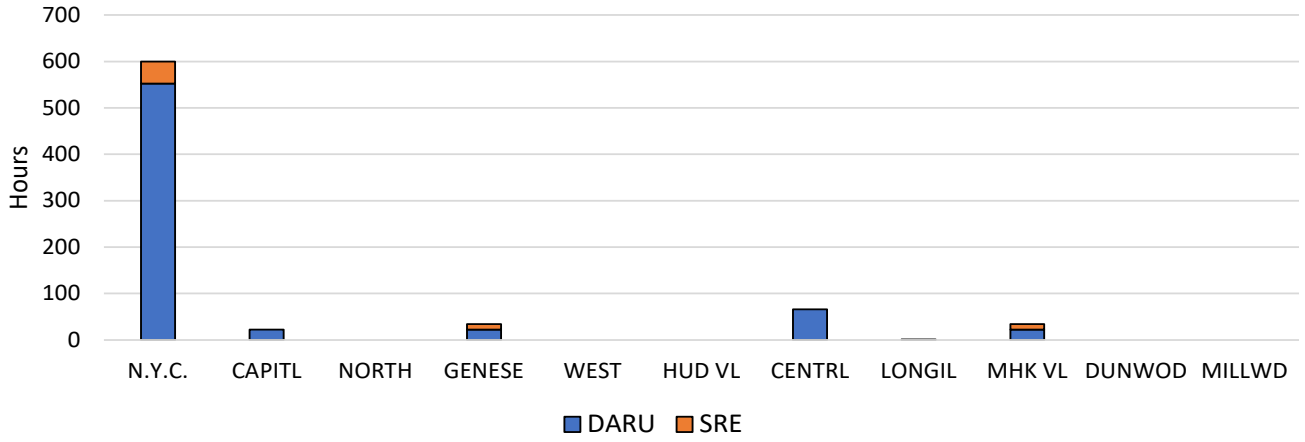
Local Reliability Cost - NYC & LONGIL
Monthly RT BPCG, DAM BPCG, DAMAP & Minimum Oil Burn Costs



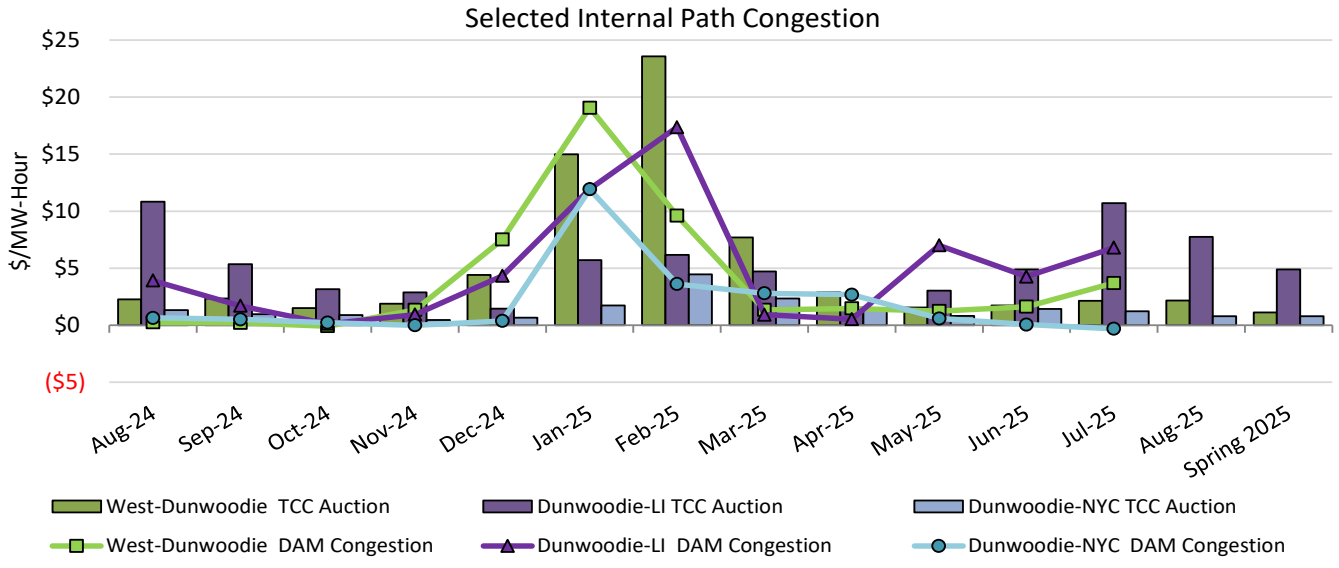
Local Reliability Cost - Rest of State
Monthly RT BPCG, DAM BPCG & DAMAP Costs

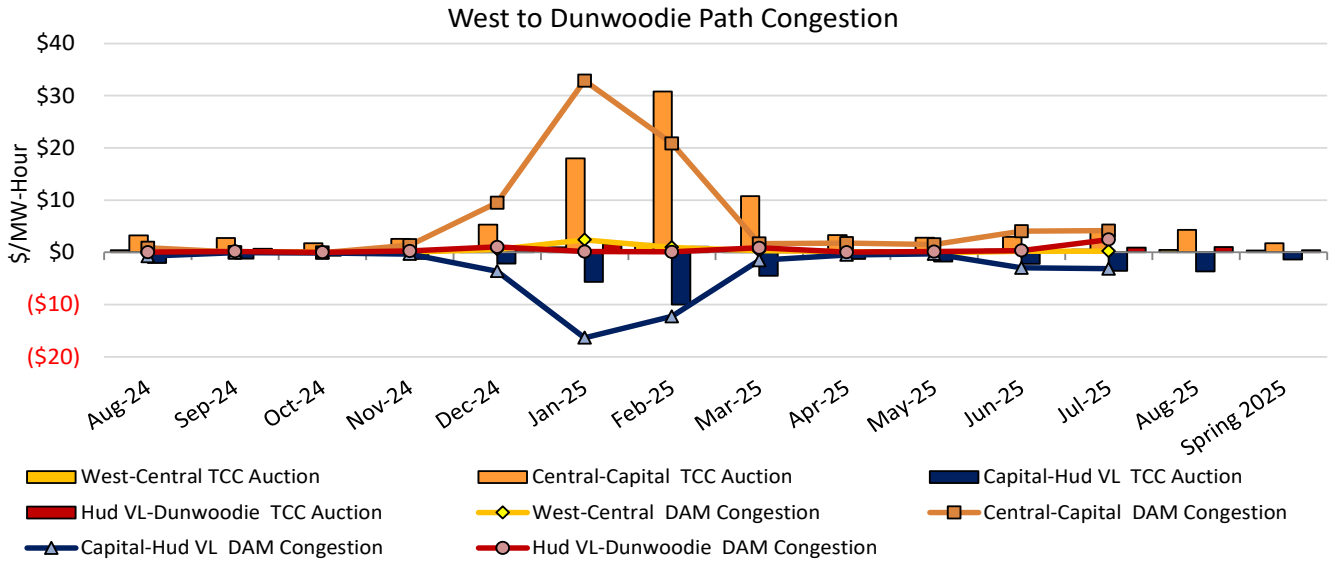


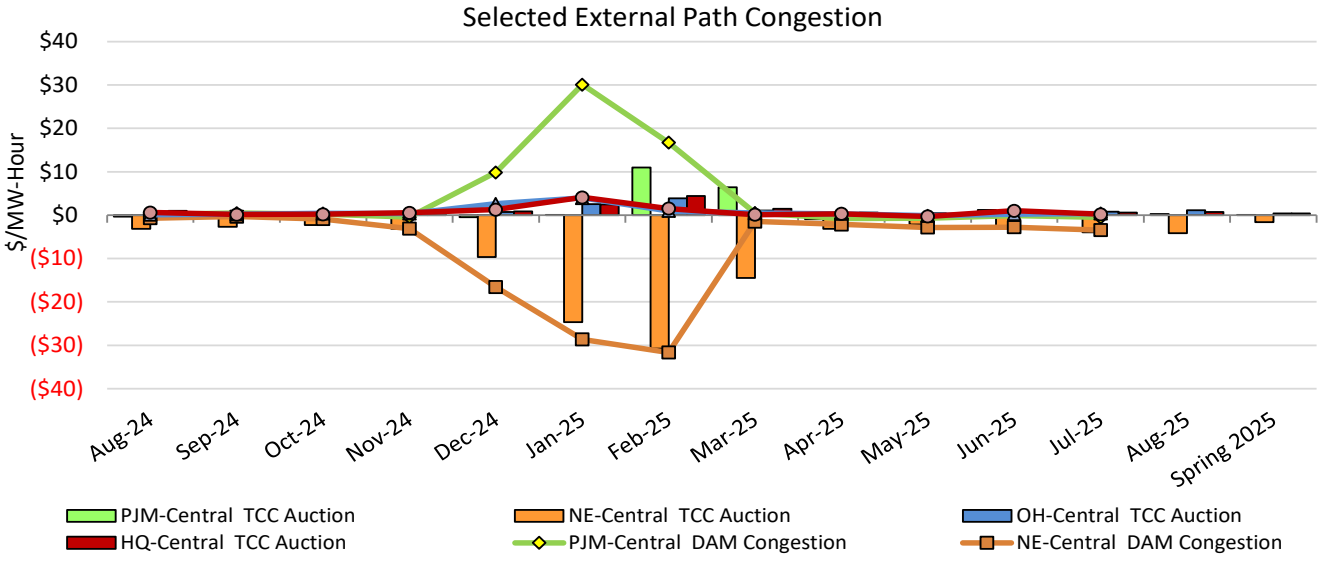
Local Reliability Commitments
July 2025 DARU & SRE Hours

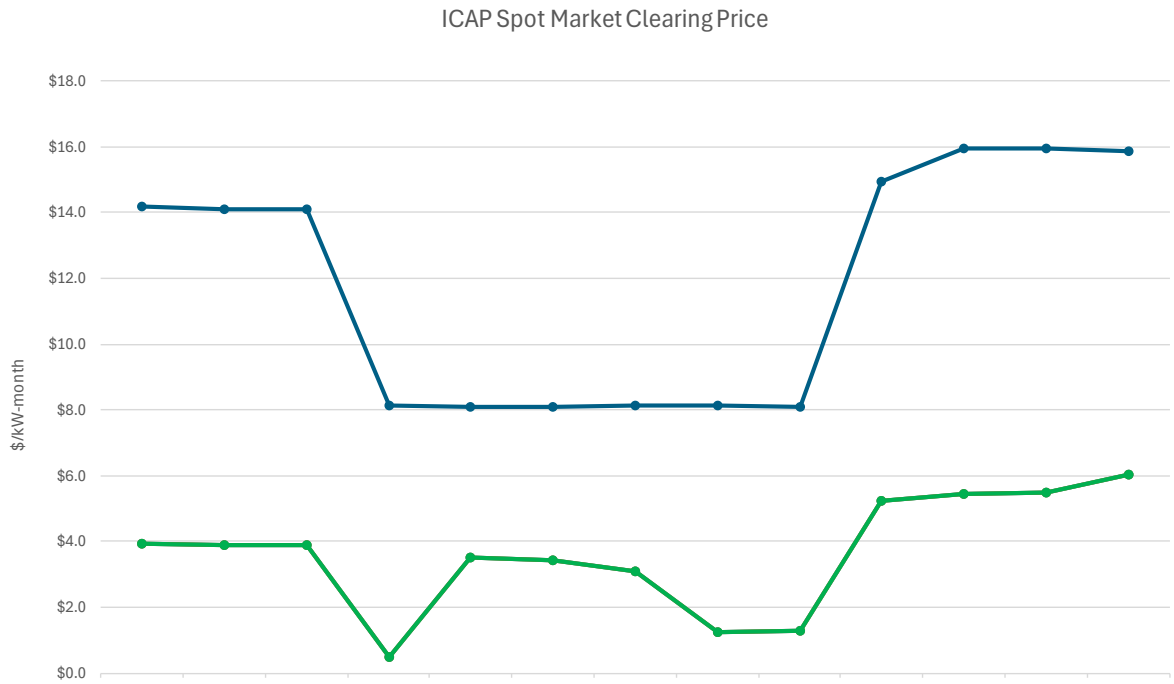


TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Spring 2025 Centralized TCC Auction Six-Month Average









	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25
NYC	14.18	14.1	14.11	8.12	8.11	8.1	8.12	8.15	8.11	14.96	15.93	15.93	15.86
LI	3.91	3.87	3.88	0.5	3.49	3.43	3.09	1.25	1.27	5.23	5.46	5.47	6.04
GHIJ	3.91	3.87	3.88	0.5	3.49	3.43	3.09	1.25	1.27	5.23	5.46	5.47	6.04
NYCA	3.91	3.87	3.88	0.5	3.49	3.43	3.09	1.25	1.27	5.23	5.46	5.47	6.04

Price Change Summary:

Price increase in LI was driven by a decrease in generation capacity. Price increase in NYCA was driven by a decrease in generation capacity and an increase in exports.

Appendix A –Metric Definitions

- **Alert State**: The number of Alert State declarations reflect system operating conditions beyond thresholds associated with Normal and Warning States. Declaration of the Alert State allows the NYISO to take corrective actions not available in the Normal and Warning States.
- **Average Hourly Error %:** Average value of the ratio of hourly average error magnitude to hourly average actual load demand.
- **Capacity Factor:** The ratio of actual energy produced to the maximum energy that could have produced if operating at full capacity continuously during the same period.
- **Curtailed Energy:** Difference between real-time wind/FTM solar forecast and economic wind/FTM solar output limit.
- **Curtailed Energy %:** The ratio of curtailed energy to total energy production.
- **Day-Ahead Average Hourly Error %:** Average across all hours of the month of the absolute value of the difference between actual load demand and the Day-Ahead forecast load demand, divided by the actual load demand.
- **Day-Ahead Bias:** Avg (actual generation – Day-Ahead forecast generation) / capacity
- **Day-Ahead MAE Forecast Error**: Avg |actual generation – Day-Ahead forecast generation| / Capacity
- **Day-Ahead Market Capacity Unavailable:** Unavailable capacity is calculated as the difference of Day-Ahead Market capacity including SRE relative to the real-time (RT) capacity during RT peak load hour.
- **Disturbance Control Standard Event Time**: For NYISO initiated NERC Reportable Disturbances, the maximum ACE recovery time is identified. Recovery times less than 15 minutes are considered NERC compliant.
- **Hour-Ahead Bias:** Avg (actual generation – Hour-Ahead forecast generation) / capacity
- **Hour-Ahead MAE Forecast Error:** Avg |actual generation – Hour-Ahead forecast generation| / Capacity
- **Hour-Ahead MAE Persistence Error:** Avg |actual generation – Hour-Ahead actual generation| / Capacity
- **Hourly Error MW:** Value of the difference between the hourly average actual load demand and the average hour ahead forecast load demand.
- **Major Emergency:** The number of Major Emergency State declarations reflect system operating conditions beyond thresholds associated with the Alert State. Declaration of the Major Emergency State allows the NYISO to take additional corrective actions not available in the Alert State.
- **NERC Balancing Authority ACE Limit Standard:** The amount of time the clock-minute average ACE exceeds the clock-minute Balancing Authority ACE Limit (BAAL) is an indicator of the NYISO Area resource and demand balancing. The maximum BAAL exceedance time is identified. BAAL exceedances of less than 30 consecutive clock-minutes are NERC compliant.
- **NERC Control Performance Standard**: The value of NERC Control Performance Standard 1 (CPS-1) is an indicator of the NYISO Area resource and demand balancing. CPS-1 values greater than 100% are considered NERC compliant.
- **NERC IROL Time Over Limit:** For IROL exceedances leading to Major Emergency State declarations, the maximum IROL exceedance time is identified. IROL exceedances of less than thirty minutes are considered NERC compliant.
- **NERC Transmission Loading Relief (TLR)**: Value represents the number of hours in which the NYISO requested TLR level 3 curtailments to provide transmission constraint relief.
- **Net Load:** Defined as Gross load less wind and solar generation.
- **Net Load Ramp:** Average value of the difference in load demand between the previous and current hour. Wind and solar ramps are negated to indicate their impact on Net load ramp.
- **Reserve Activation:** NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.
- **Thunderstorm Alert (TSA)**: TSA is declared by NYISO when severe operating conditions are detected. A predetermined set of pre-and post-contingency constraints are passed to the RTC and RTD programs while TSA is in effect. Value represents number of hours TSA was active.
- **13 Month Trailing Avg Carbon Emissions Free %**: Sum of internal NYCA generation from Nuclear, Hydro, Wind, Solar resources divided by Gross Load. Gross load is defined as metered load plus BTM solar estimated actuals.
- **13 Month Trailing Avg Renewables %:** Sum of internal NYCA generation from Hydro, Wind, Solar resources divided by Gross Load. Gross load is defined as metered load plus BTM solar estimated actuals.

Appendix B –NYISO Information Resources

- Annual Renewable Energy Performance Metrics
- Demand Response - NYISO
- Energy Market & Operational Data
- FERC Order 844 Zonal and Resource Specific Uplift Reports
- Installed Capacity Market Data
- Load & Capacity Data Report (Gold Book)
- Operating Committee - NYISO
- Systems Operations Advisory Subcommittee Report
- Transmission Congestion Contracts Market Data