

Operations Performance Metrics Monthly Report



March 2024 Report

Operations & Reliability Department New York Independent System Operator

Prepared by NYISO Operations Analysis and Services, based on settlements initial invoice data collected on or before April 8, 2024.

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March 2024 Operations Performance Highlights

Monthly Peak Load	Monthly Minimum Load	Winter 2023-2024 Peak	All-time Winter Peak
03/21/2024 HB 19 19,373 MW	03/31/2024 HB 14 11,976 MW	01/17/2024 HB 18 22,754 MW	01/07/2014 HB 18 25,738 MW

- 0.8 hours of Thunderstorm Alerts were declared
- 0.0 hours of NERC TLR level 3 curtailment

Installed Wind, Solar and Energy Storage Resource Nameplate Values:

Land-Based Wind	Behind-the-Meter Solar	Front-of-the-Meter Solar	Energy Storage Resource (ESR)
2,736 MW	5,454 MW	254 MW	63 MW

Estimated production cost savings associated with the Broader Regional Market initiatives:

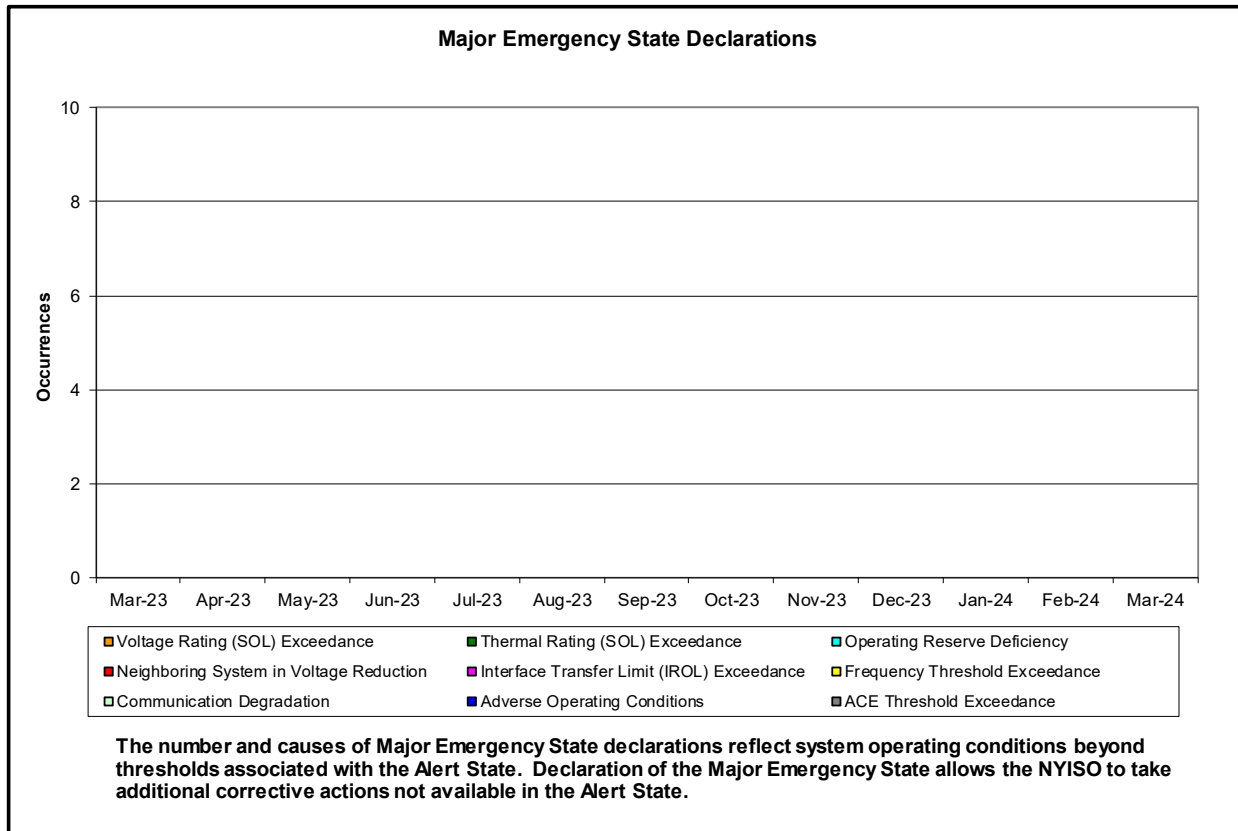
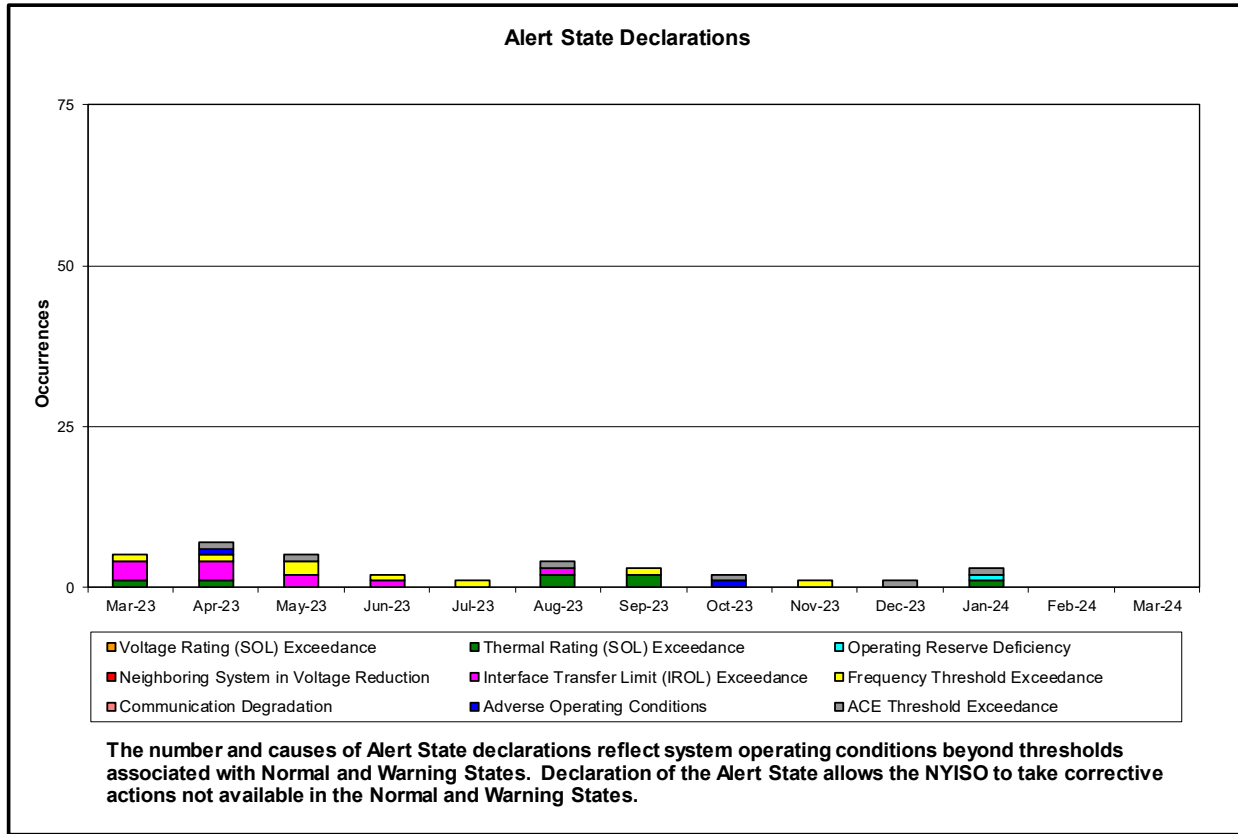
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	(\$0.22)	(\$1.82)
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.29)	(\$0.64)
NY Savings from NE-NY Coordinated Transaction Scheduling	\$0.81	\$3.70
Total NY Savings	\$0.30	\$1.24
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$1.00	\$2.76
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.13	\$0.45
Total Regional Savings	\$1.13	\$3.21

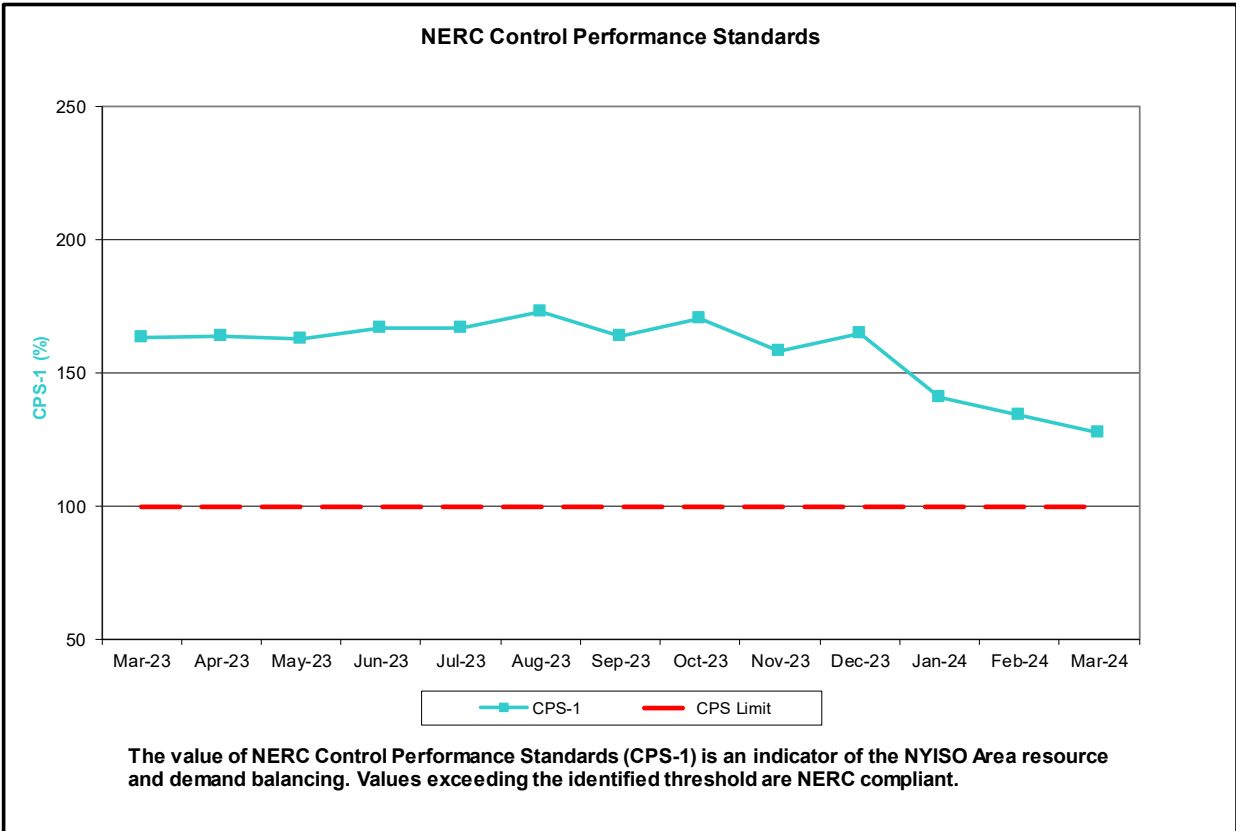
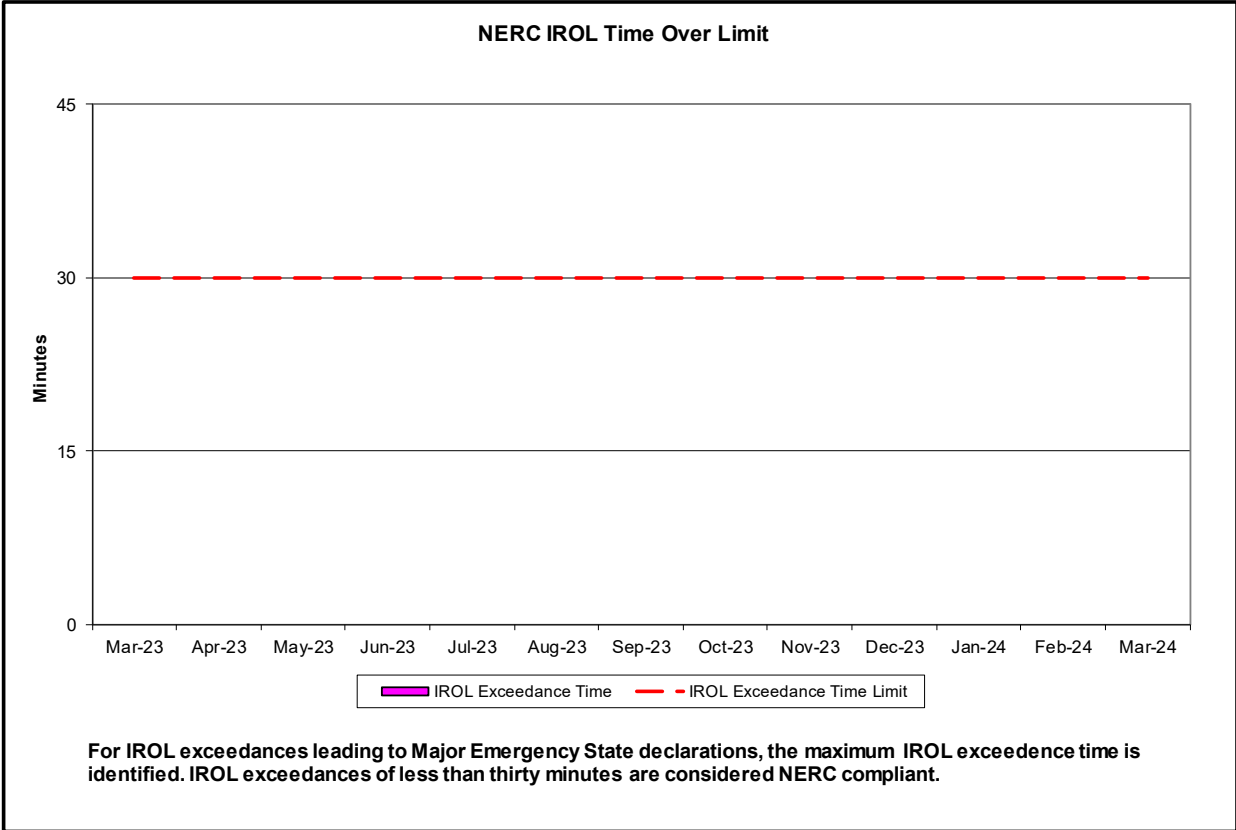
- Statewide uplift cost monthly average was (\$0.25)/MWh.
- The following table identifies the Monthly ICAP spot market prices and the price delta.

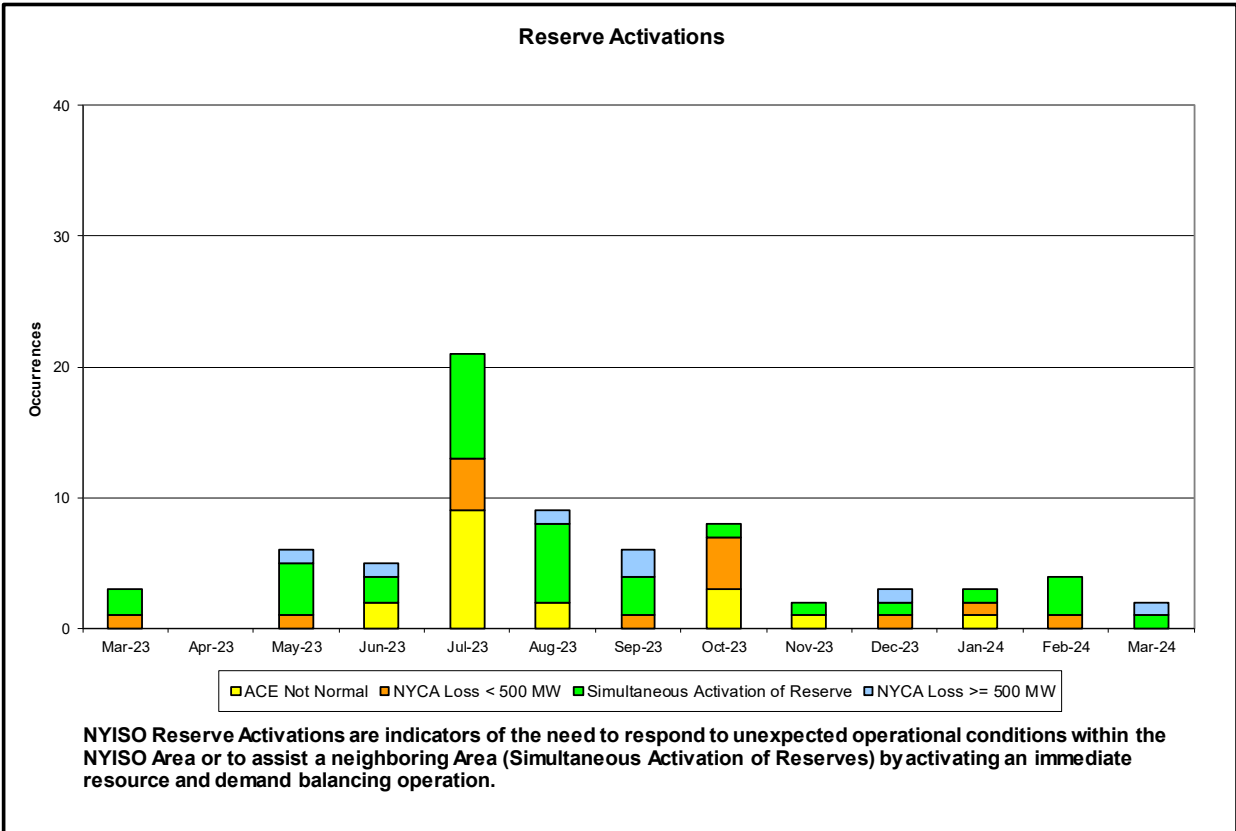
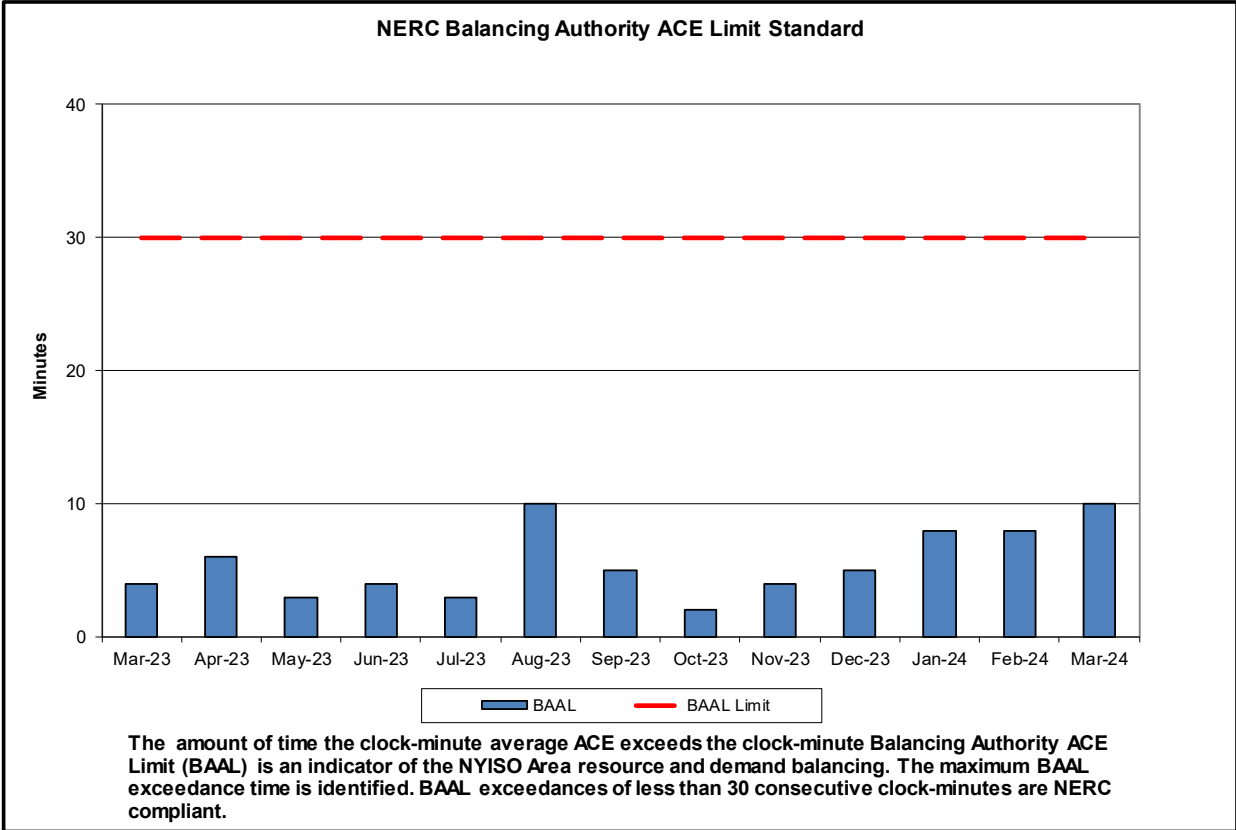
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
April 2024 Spot Price	\$0.44	\$0.83	\$12.78	\$0.44
March 2024 Spot Price	\$0.56	\$0.75	\$12.78	\$0.56
Delta	(\$0.12)	\$0.08	\$0.00	(\$0.12)

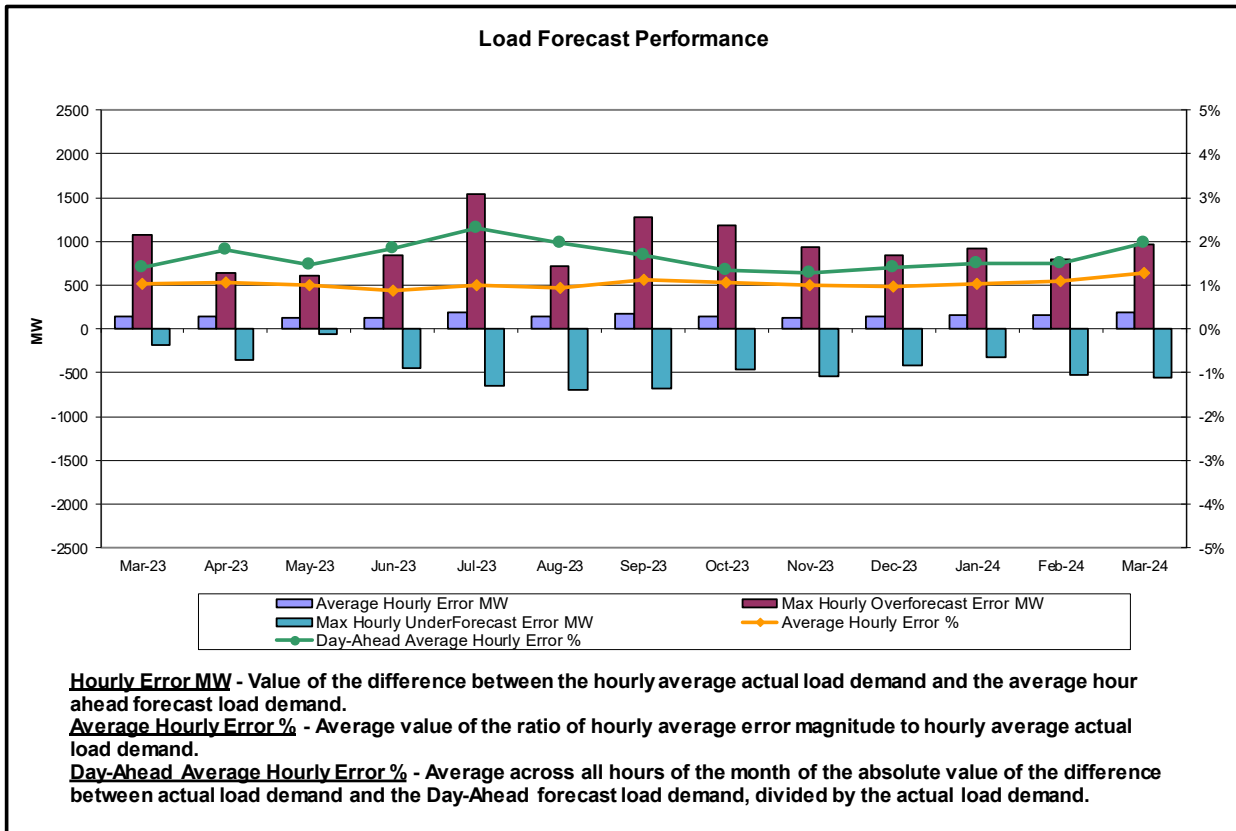
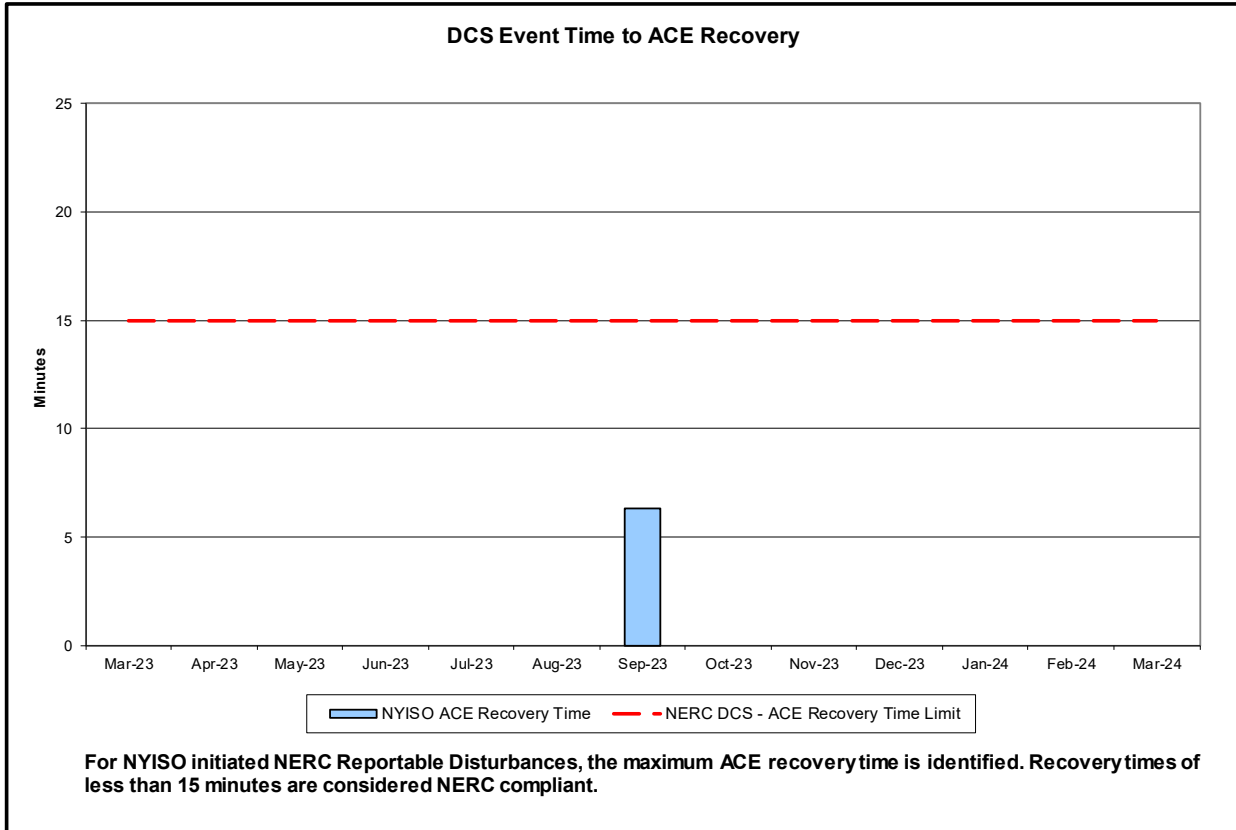
- Price changes in NYCA, Lower Hudson Valley, and Long Island were driven by an increase in Generation UCAP, along with a decrease in exports.

Reliability Performance Metrics

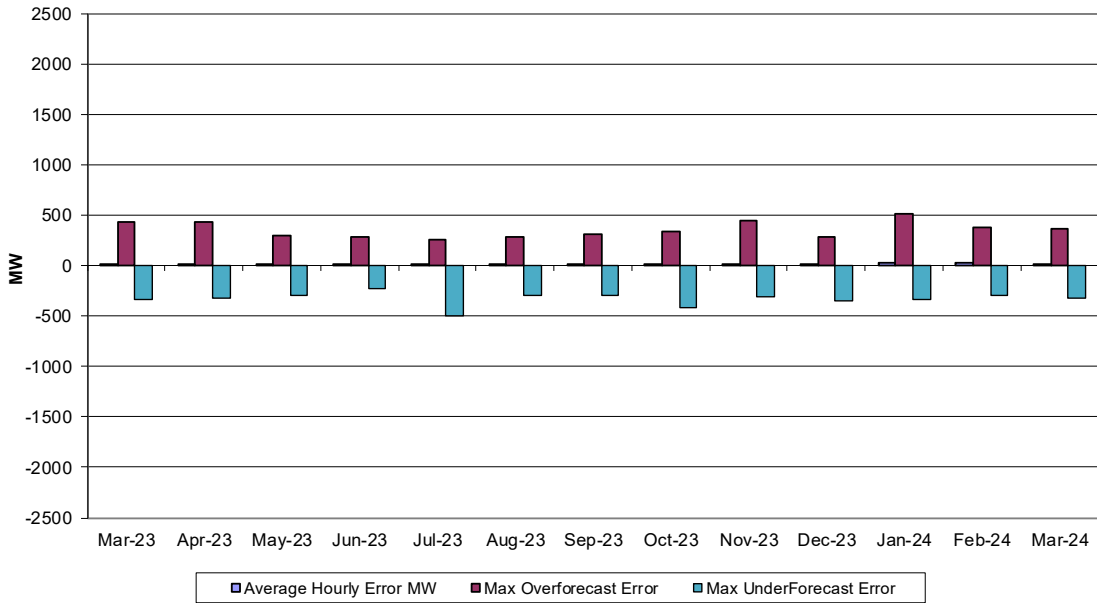






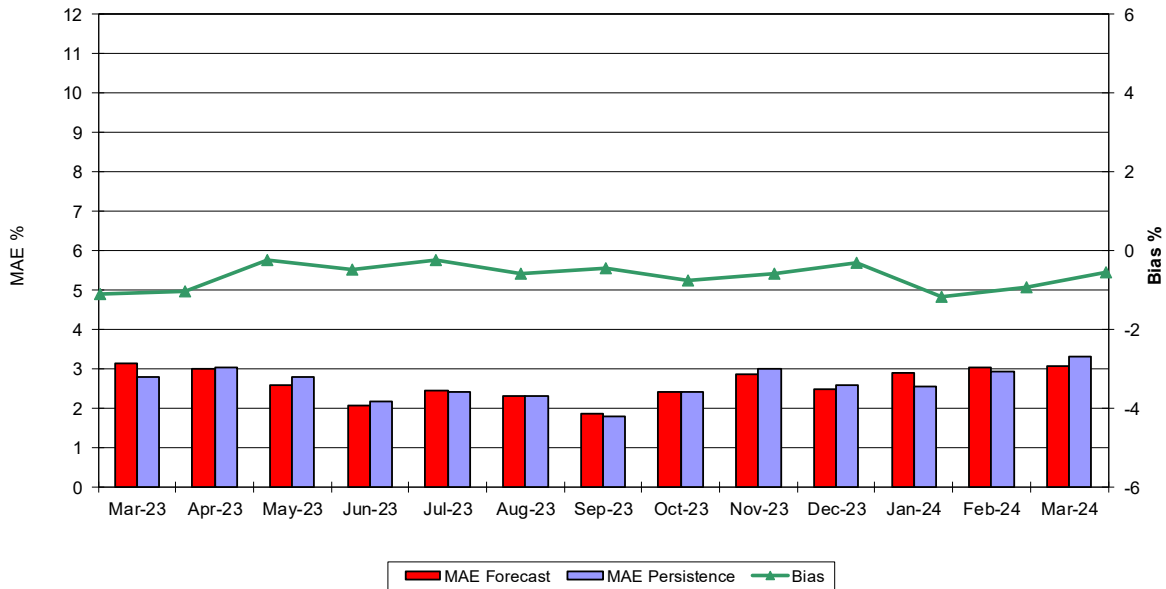


Wind Forecast Performance Hour Ahead MW Error

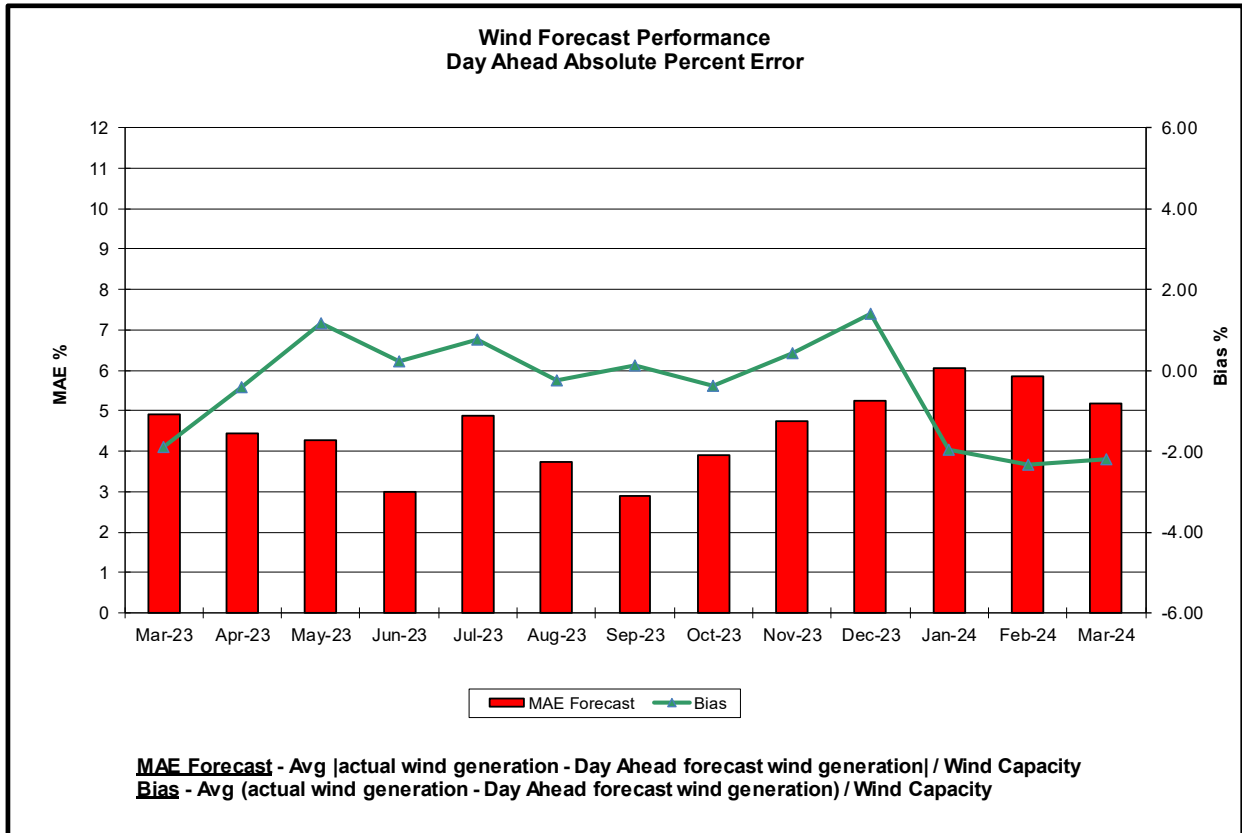
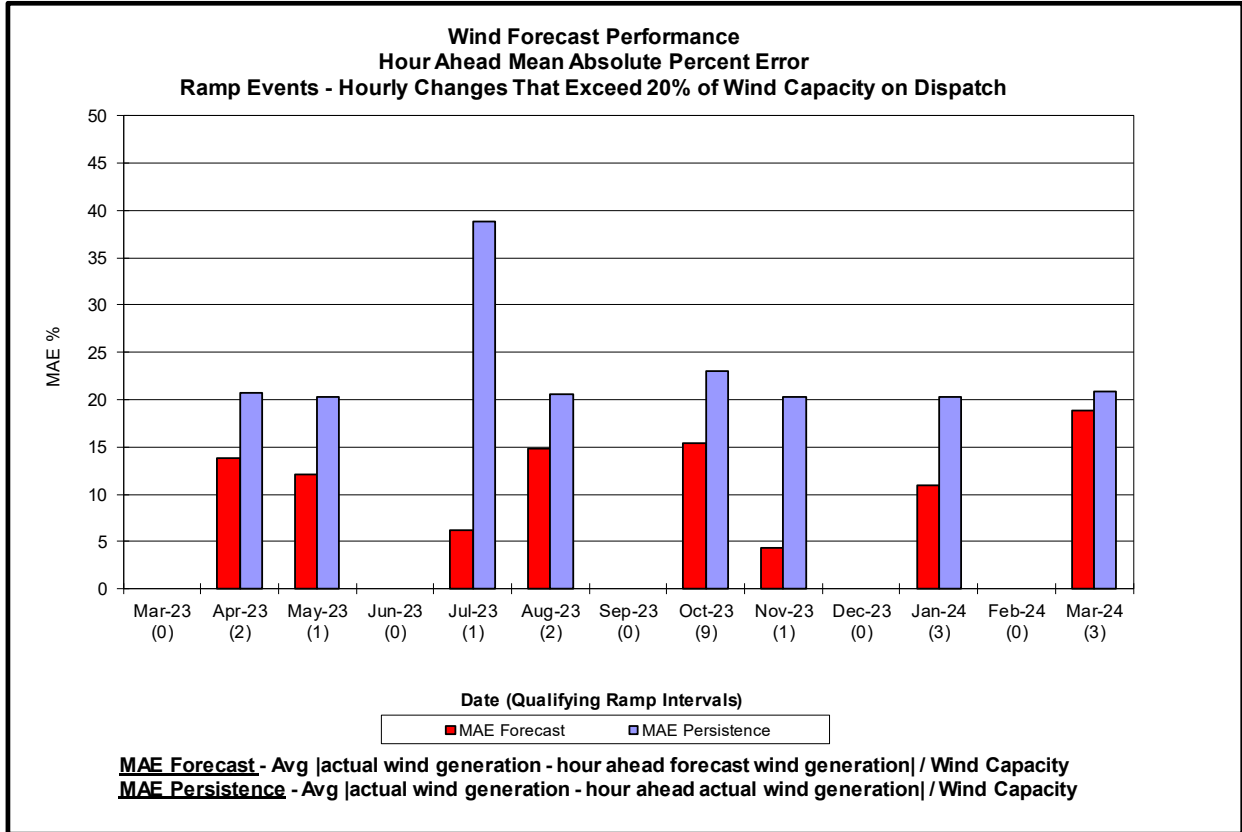


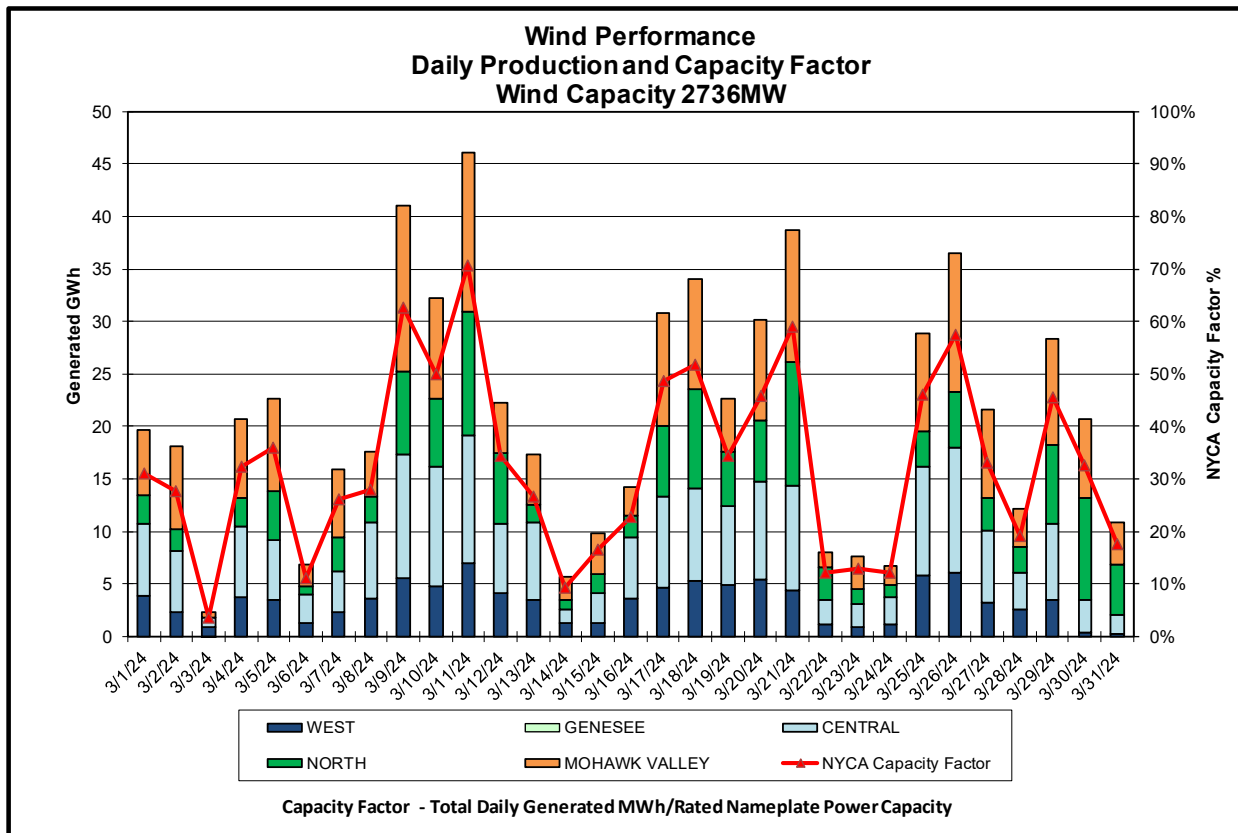
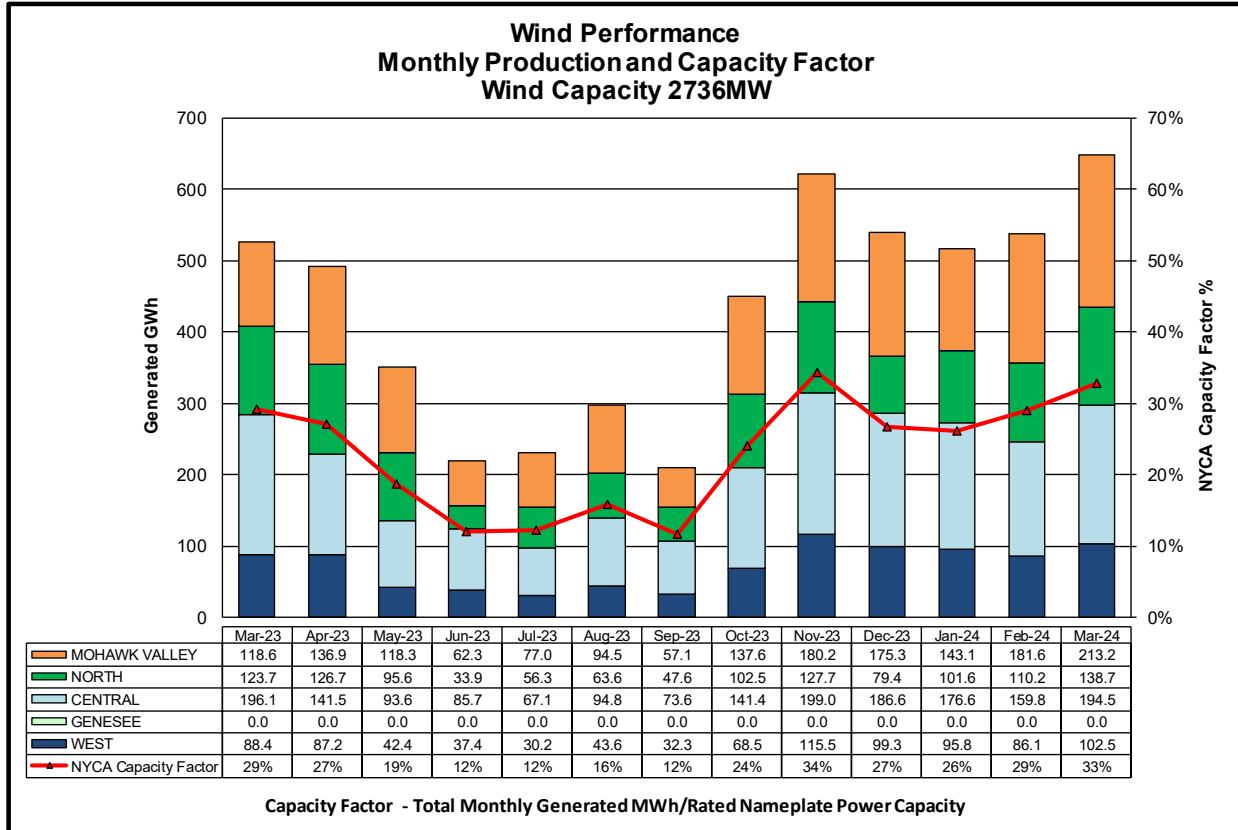
Hourly Error MW - Value of the difference between the hourly average actual wind generation and the average hour ahead forecast wind generation.

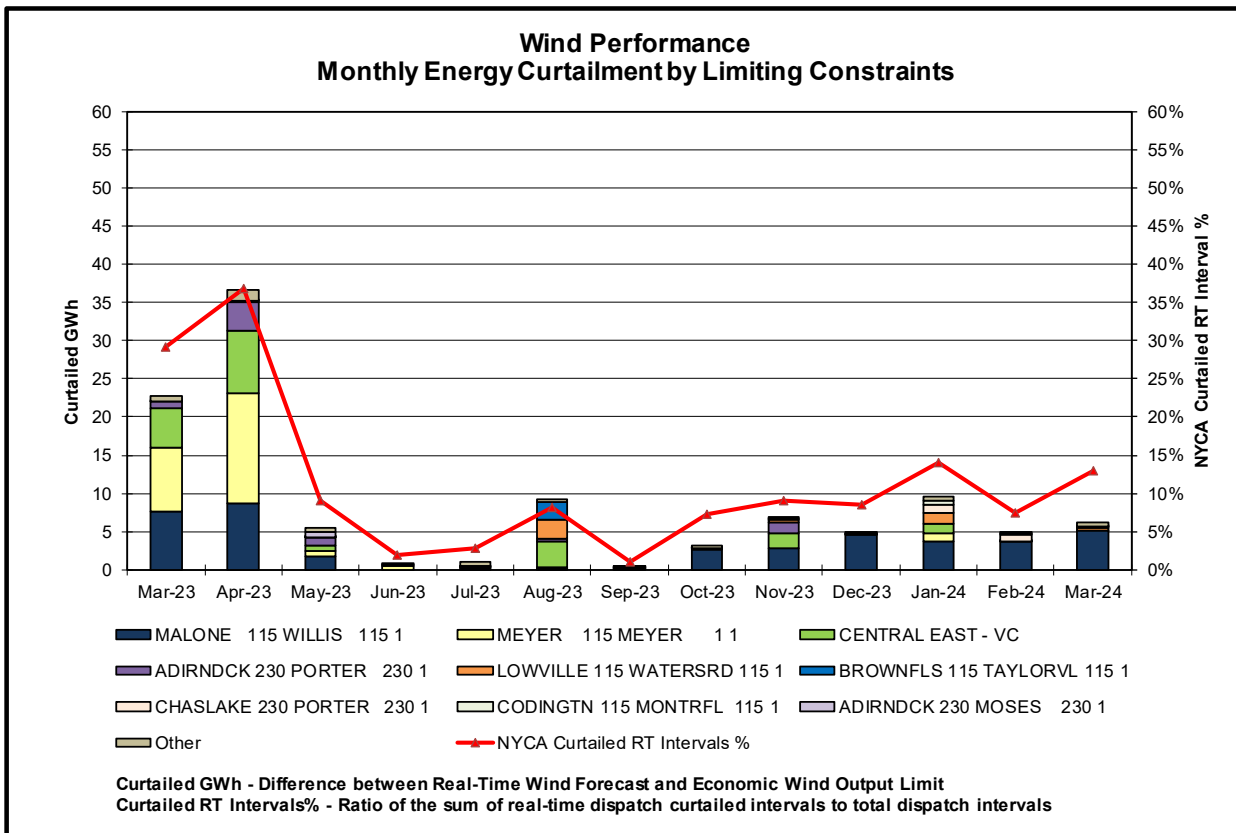
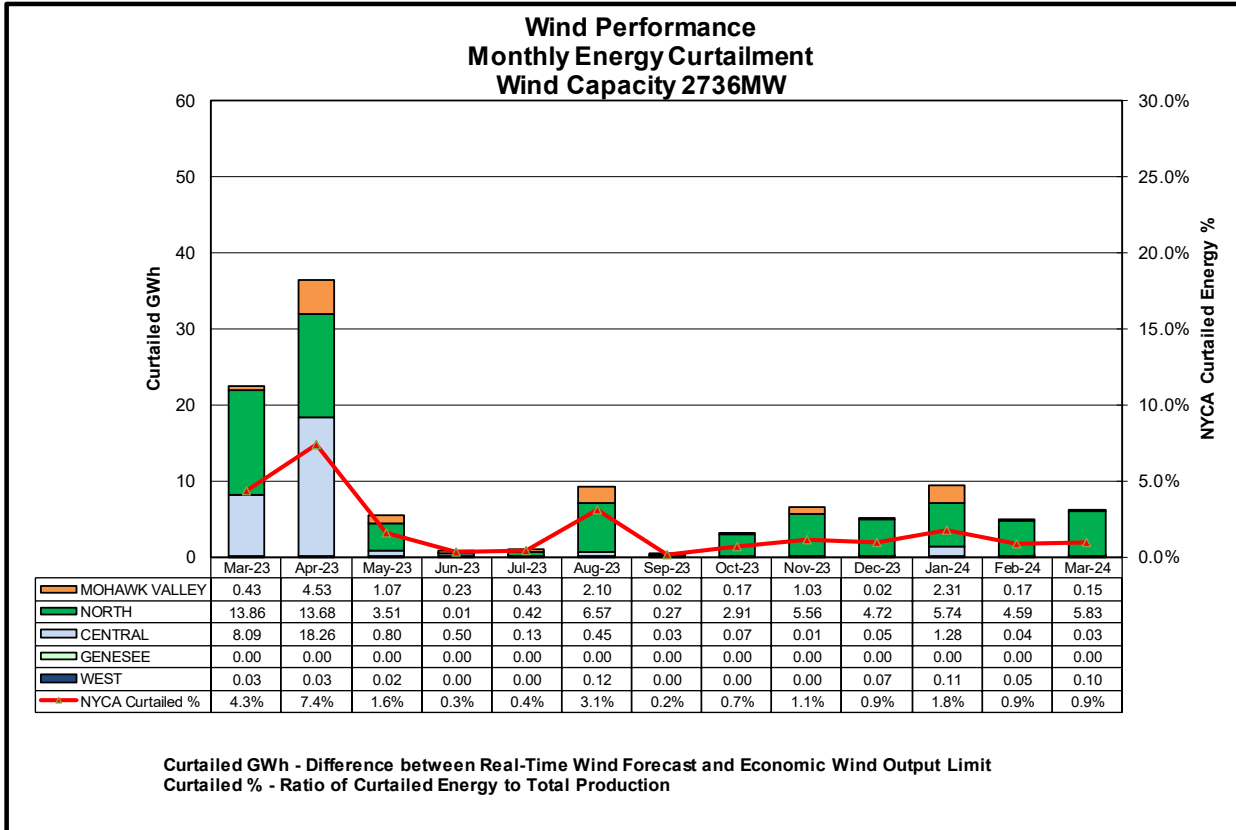
Wind Forecast Performance Hour Ahead Percent Error

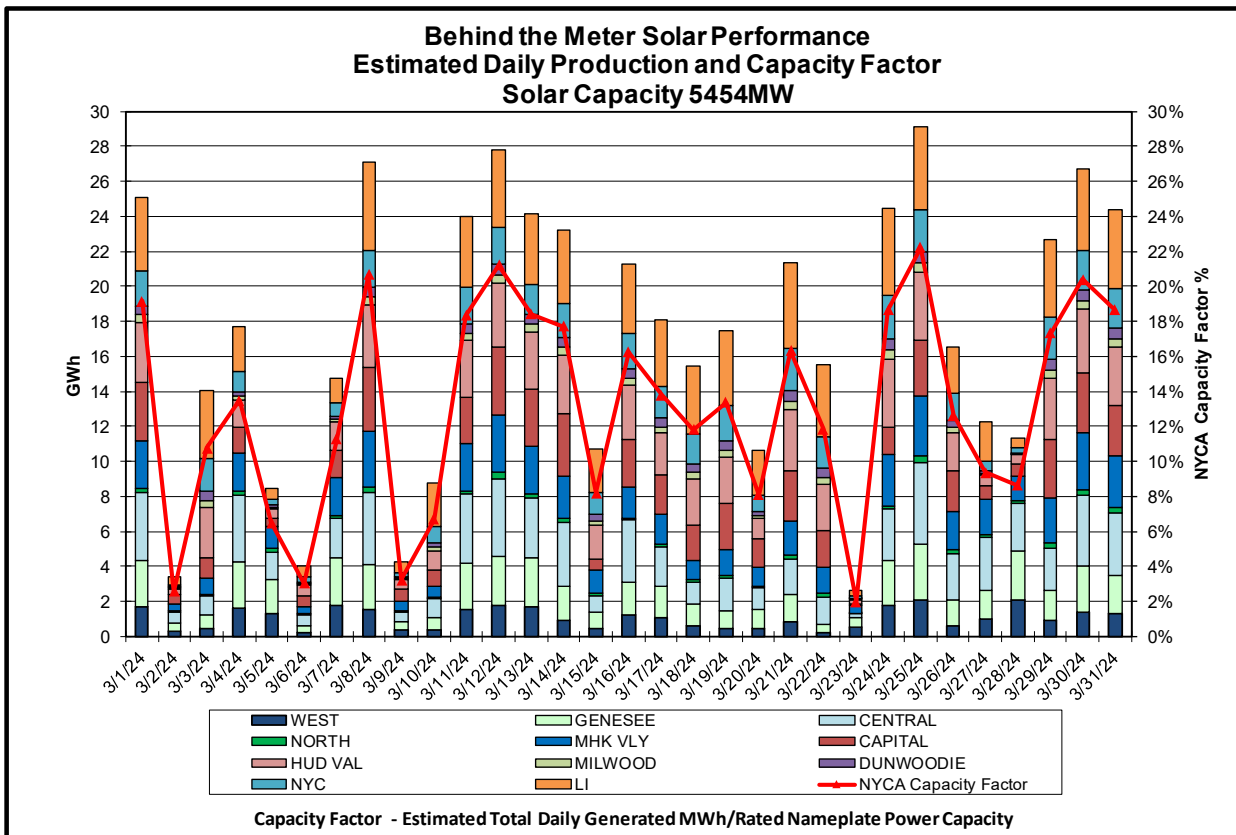
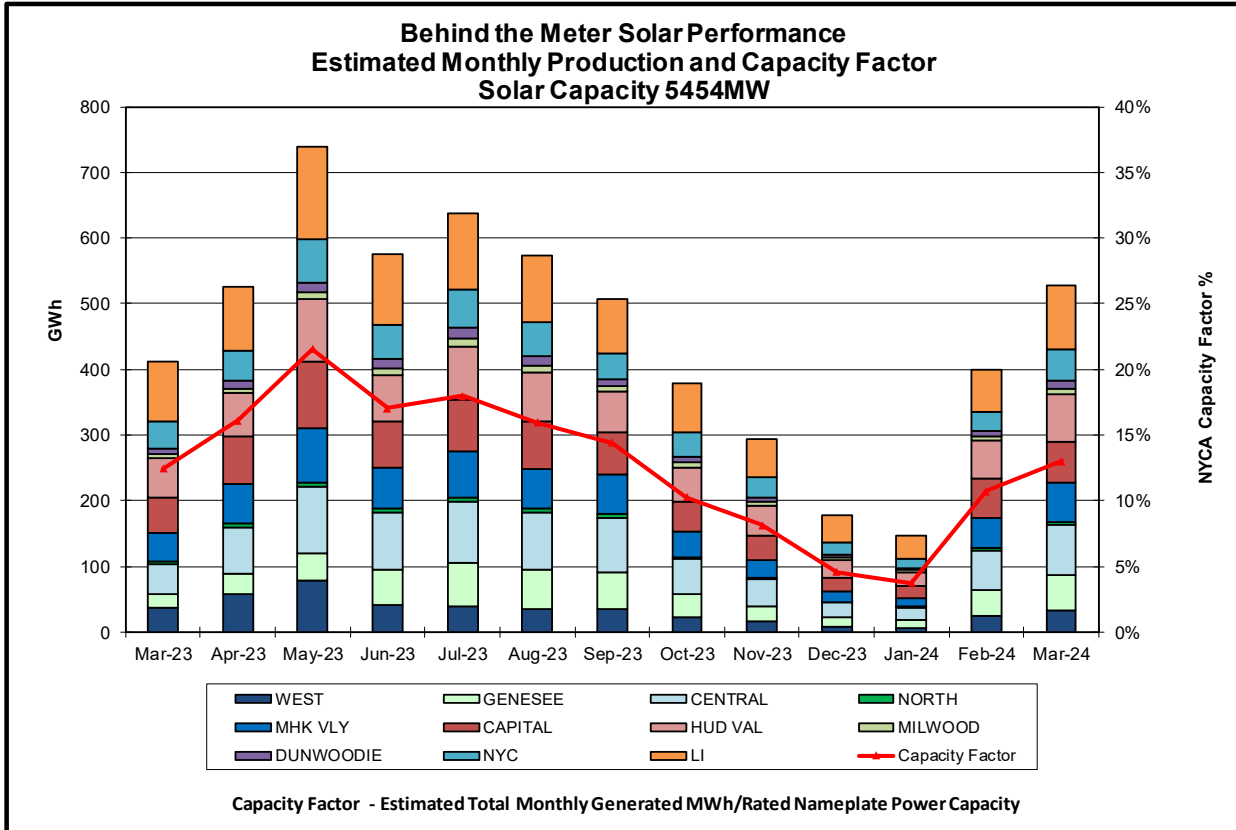


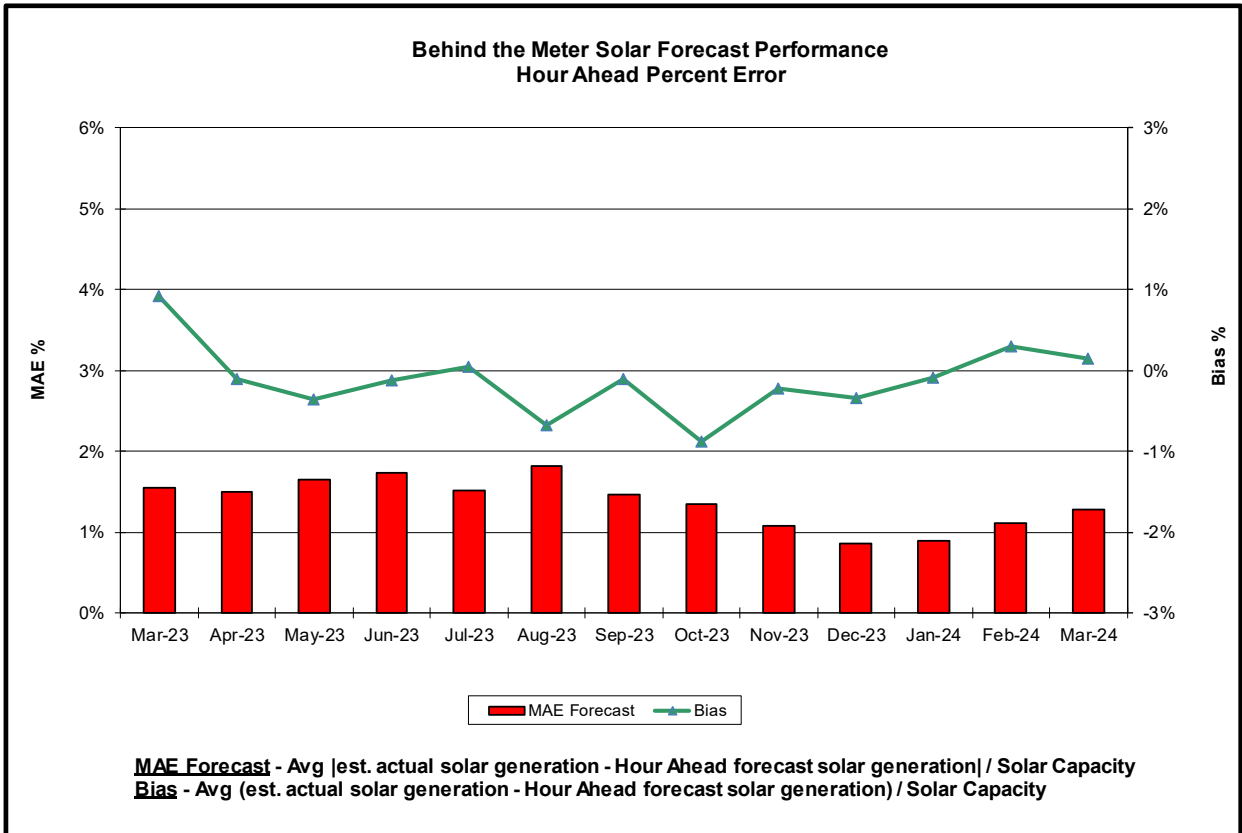
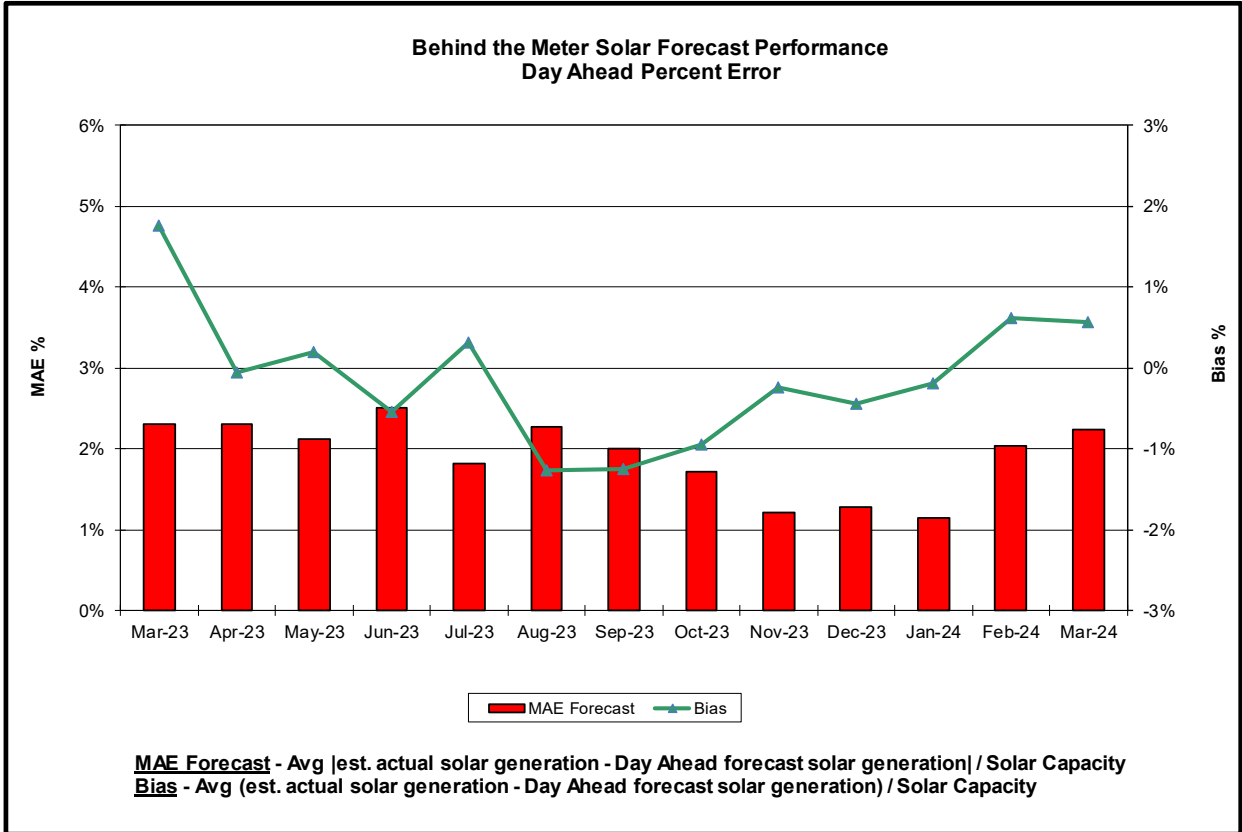
MAE Forecast - Avg |actual wind generation - hour ahead forecast wind generation| / Wind Capacity
MAE Persistence - Avg |actual wind generation - hour ahead actual wind generation| / Wind Capacity
Bias - Avg (actual wind generation - hour ahead forecast wind generation) / Wind Capacity

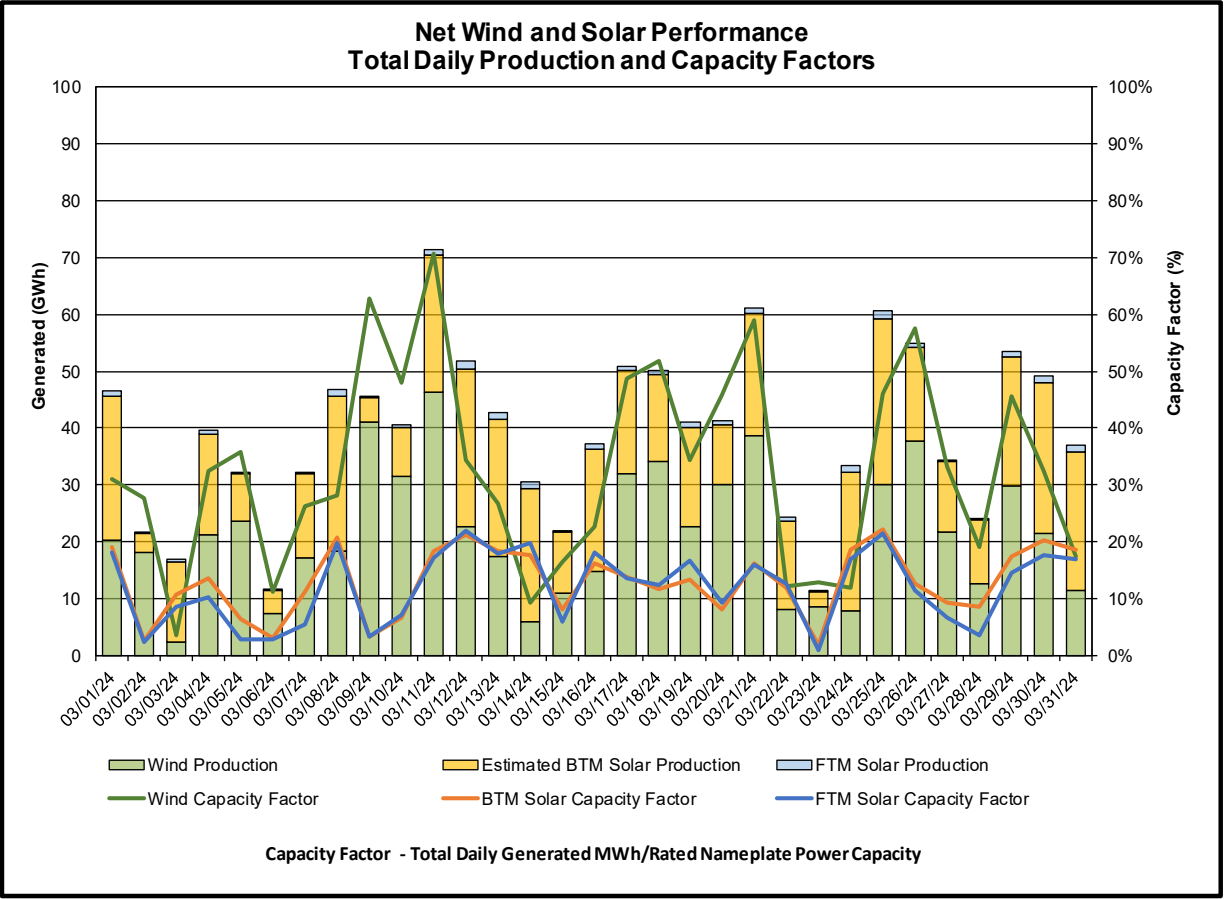
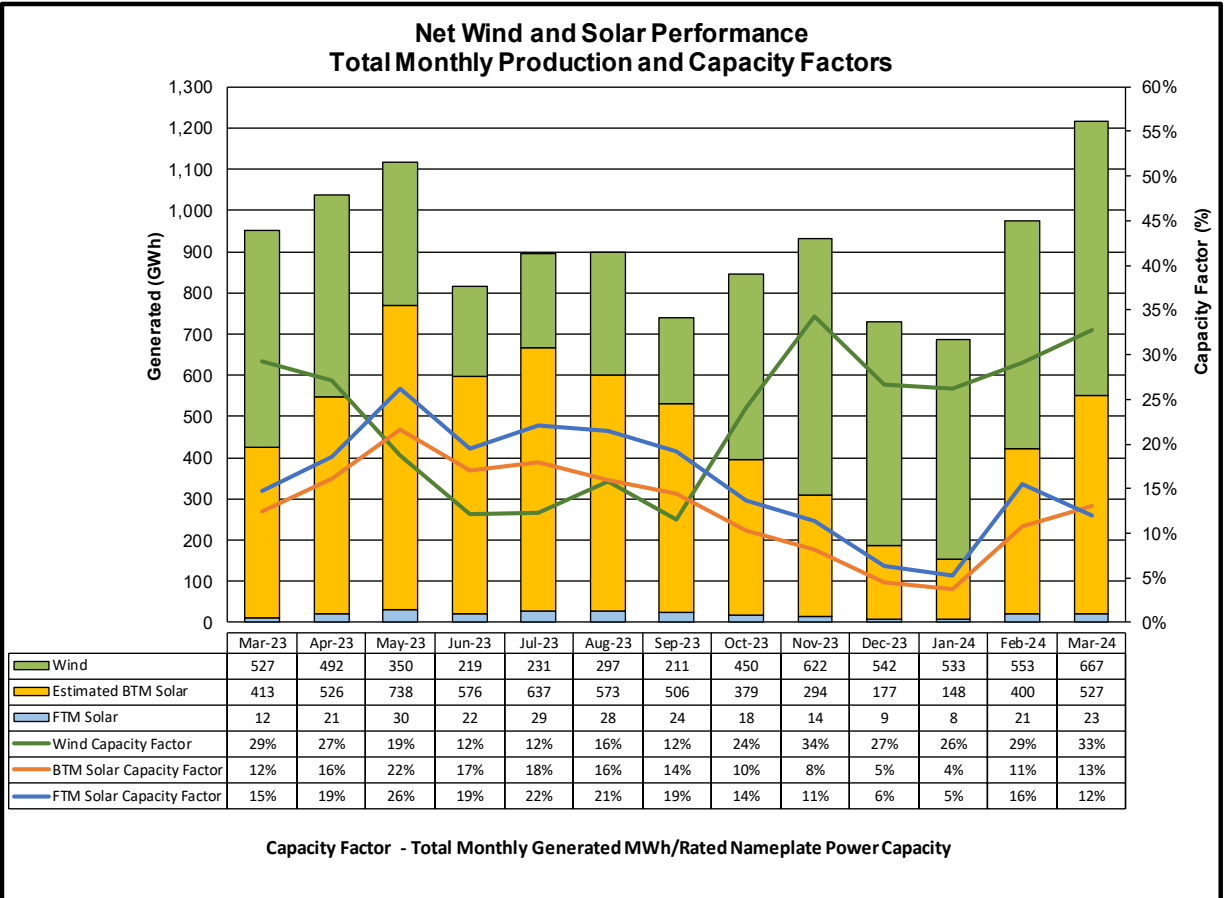


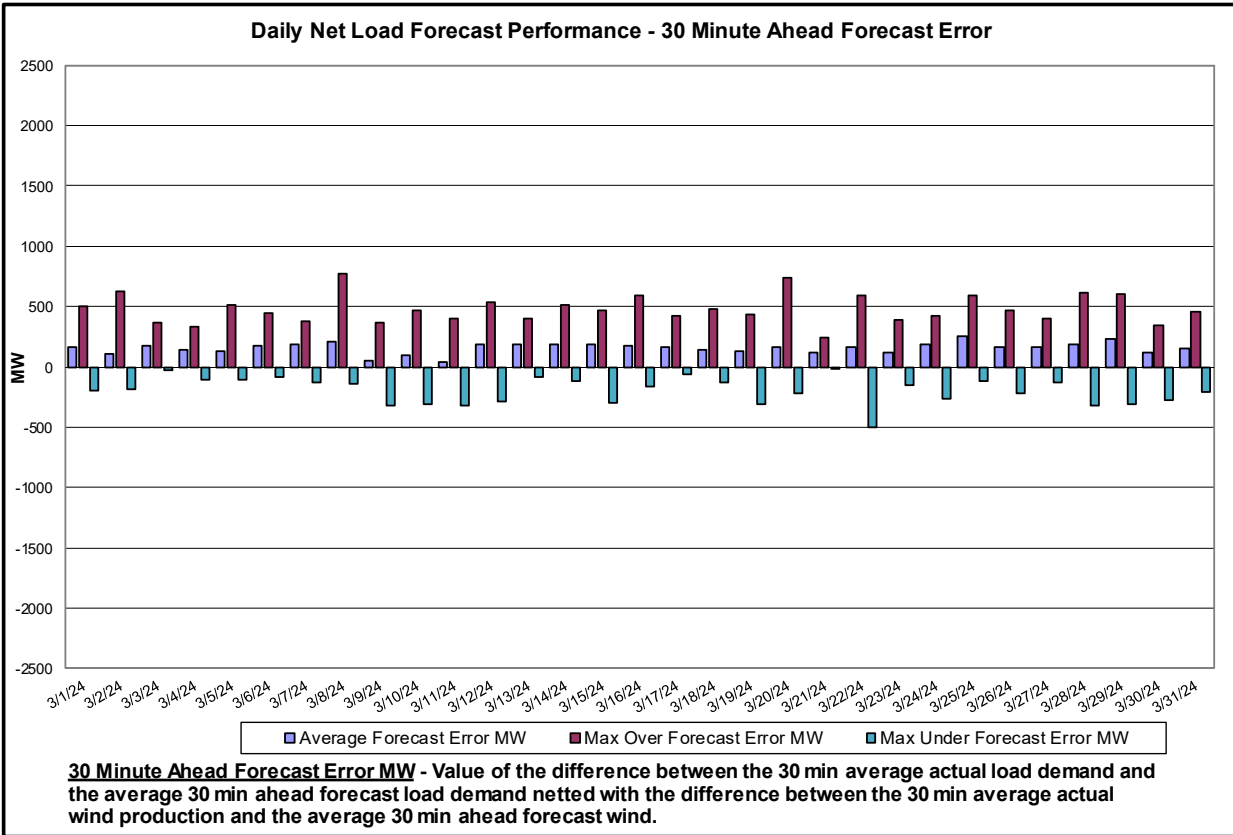
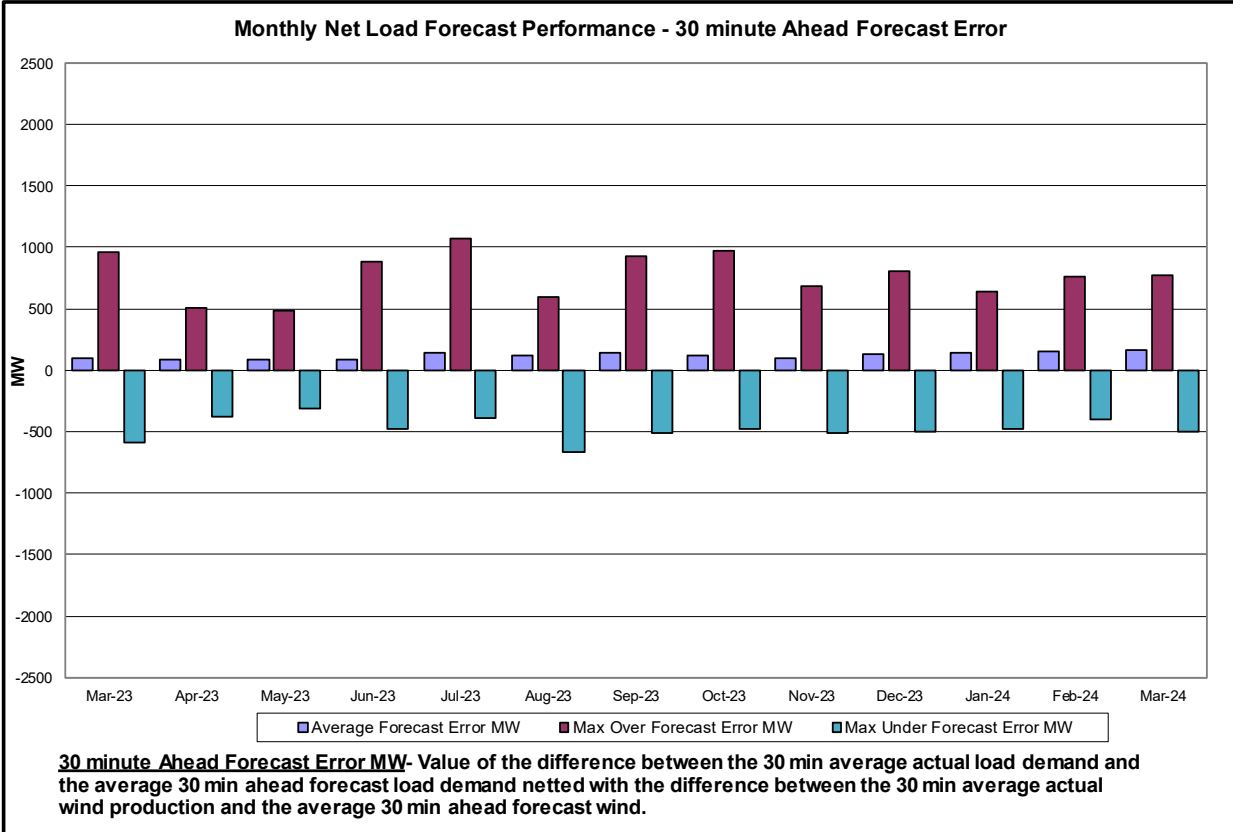


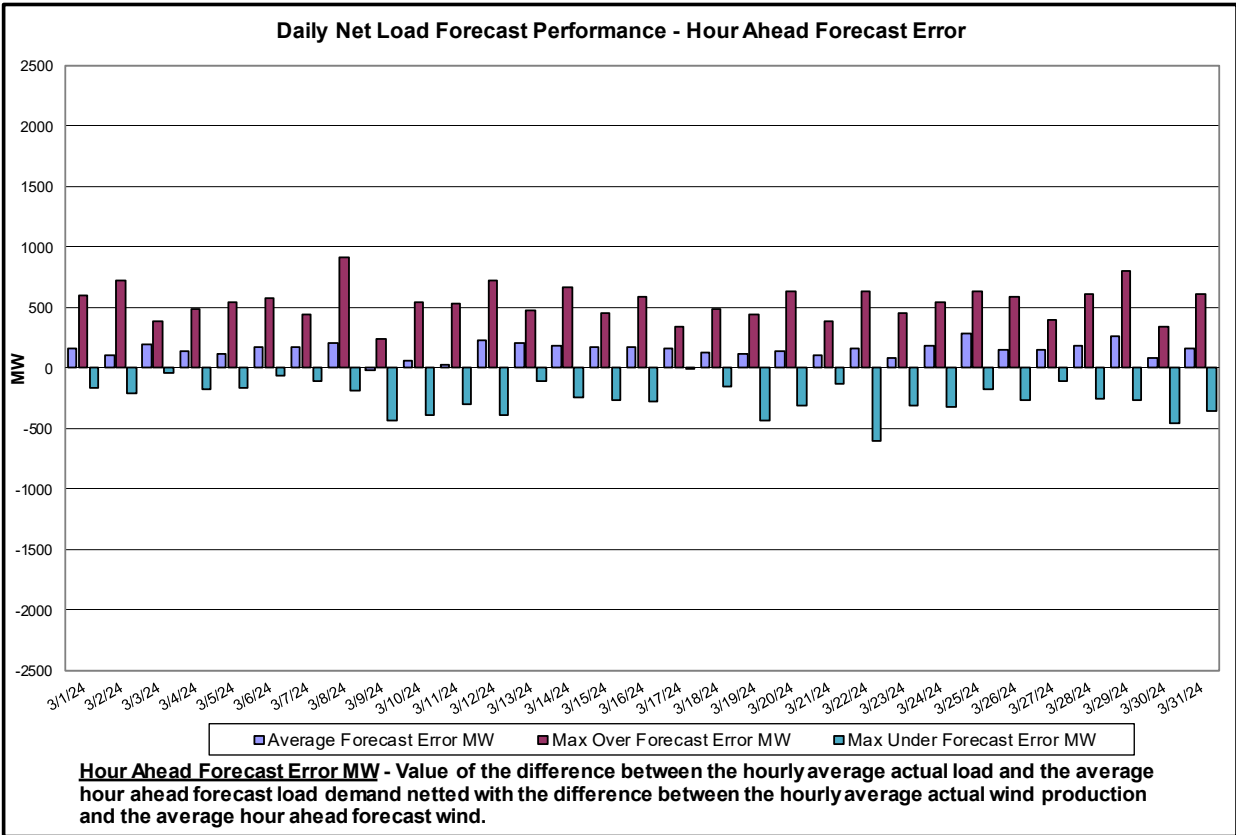
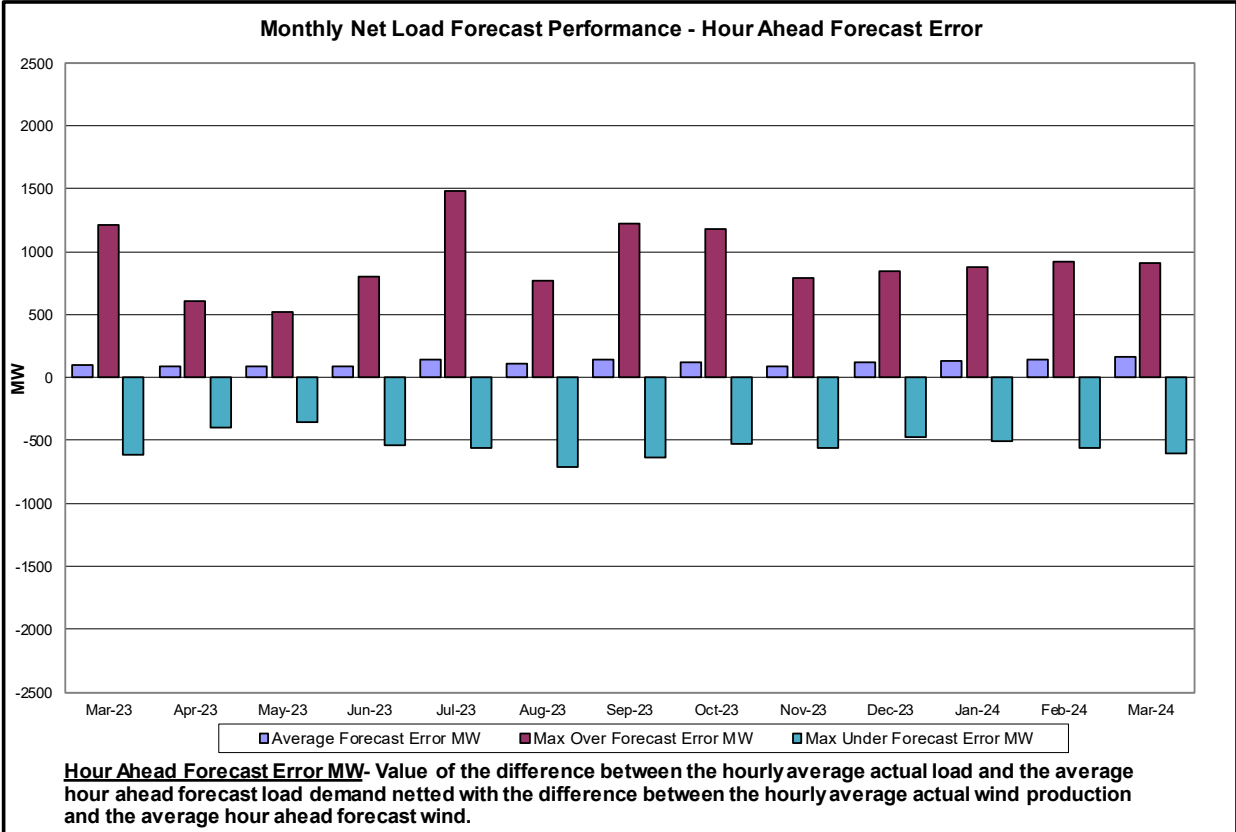


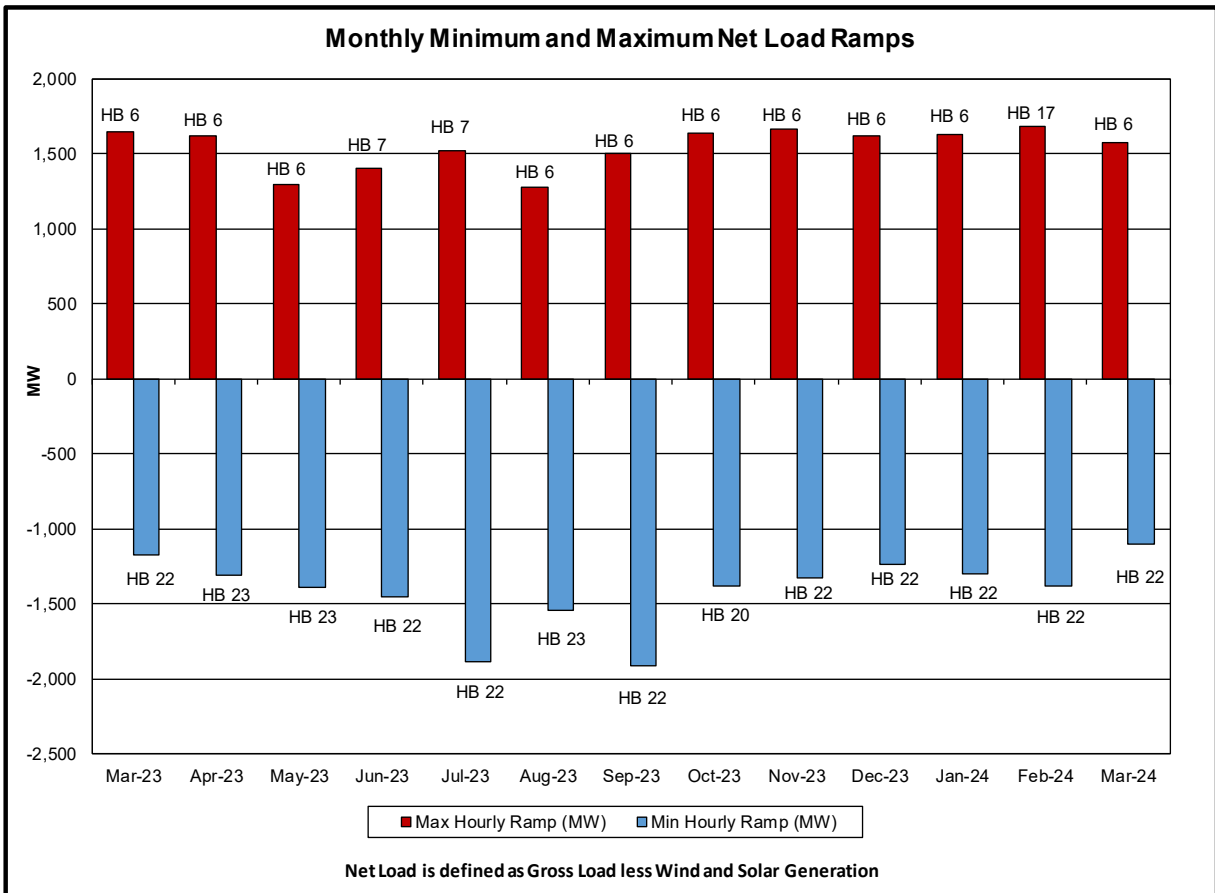
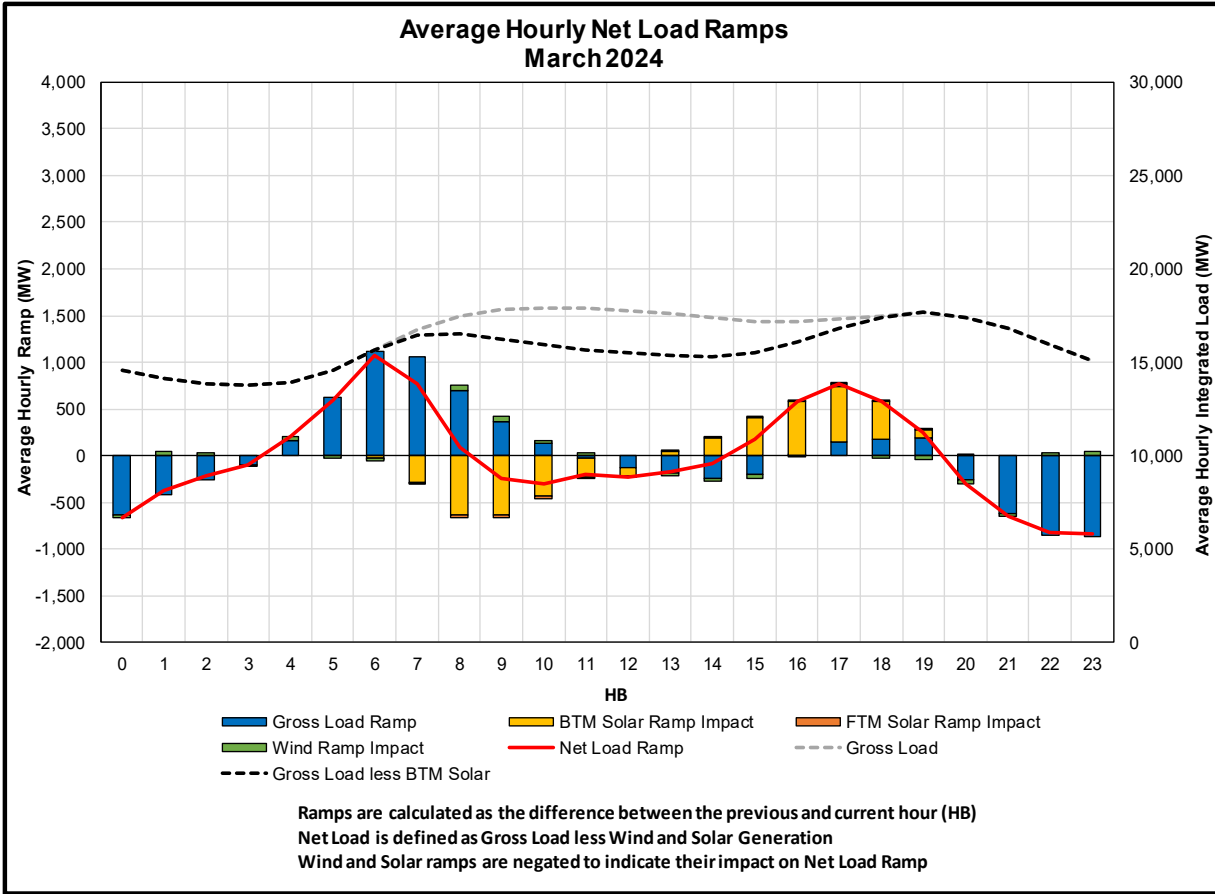


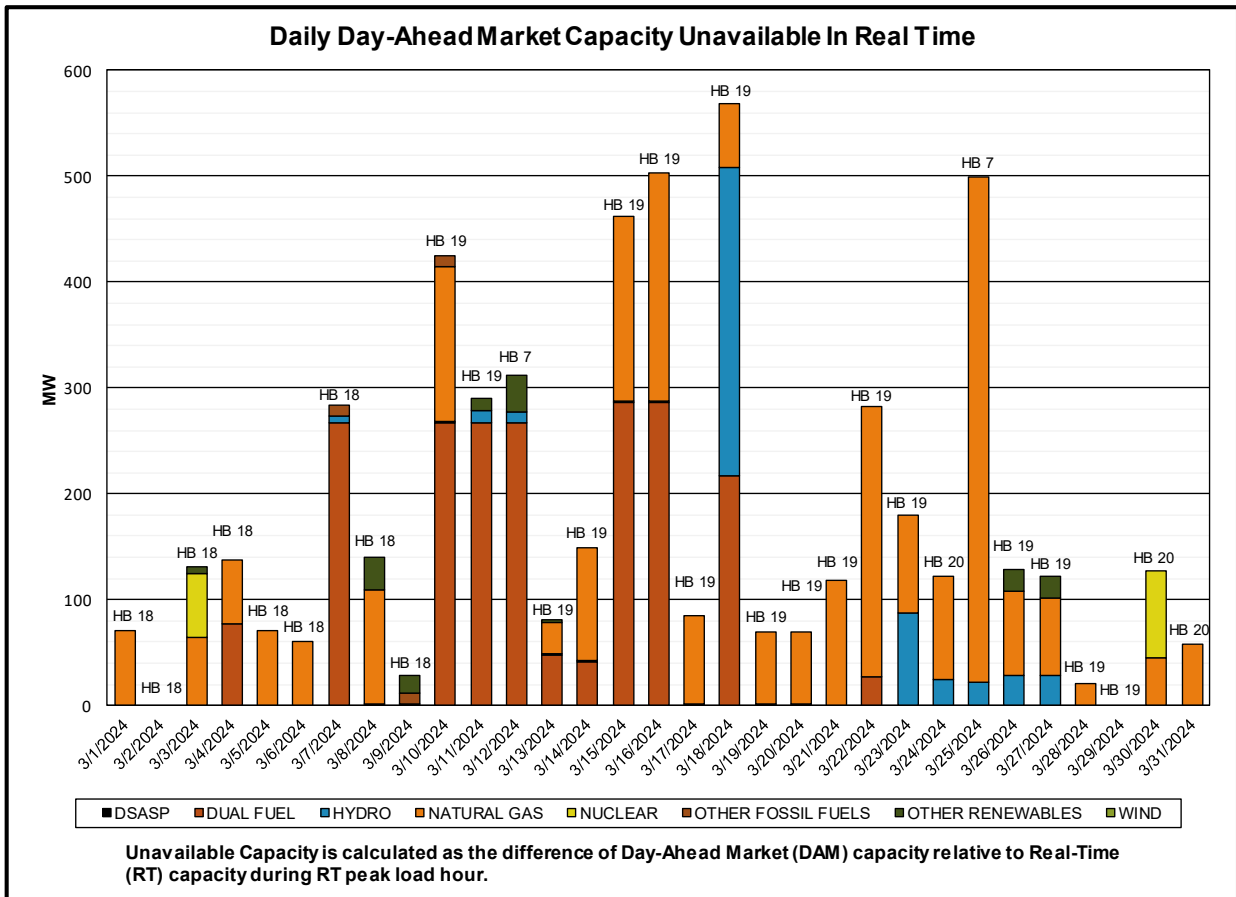
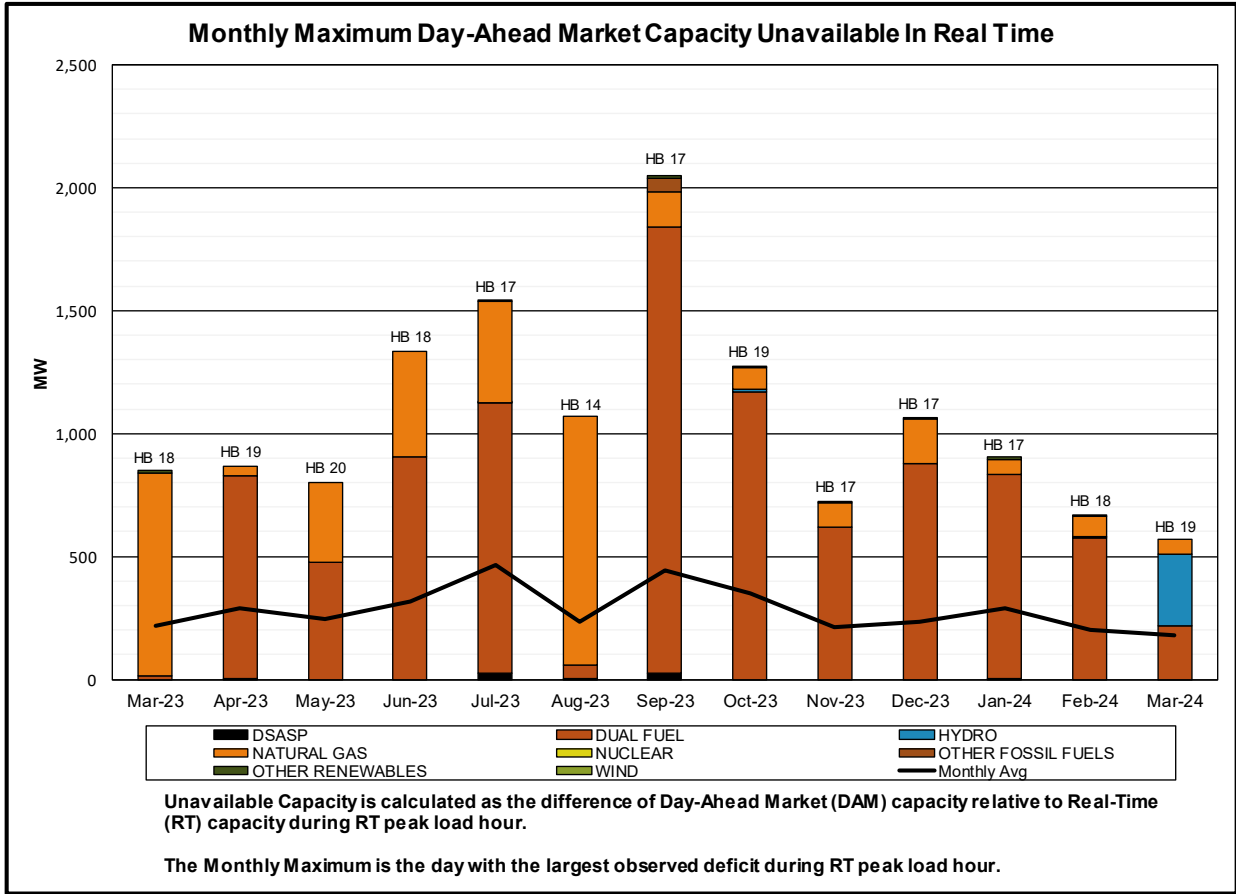


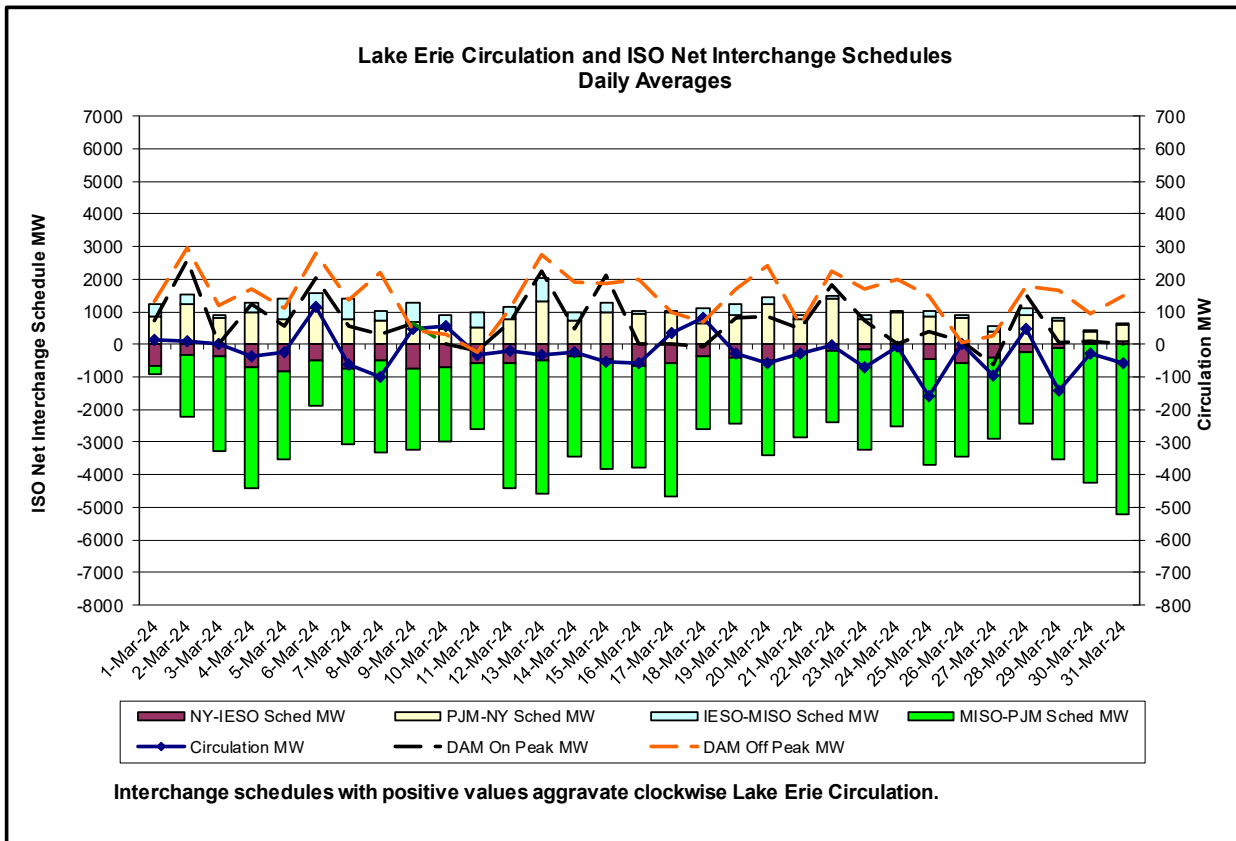
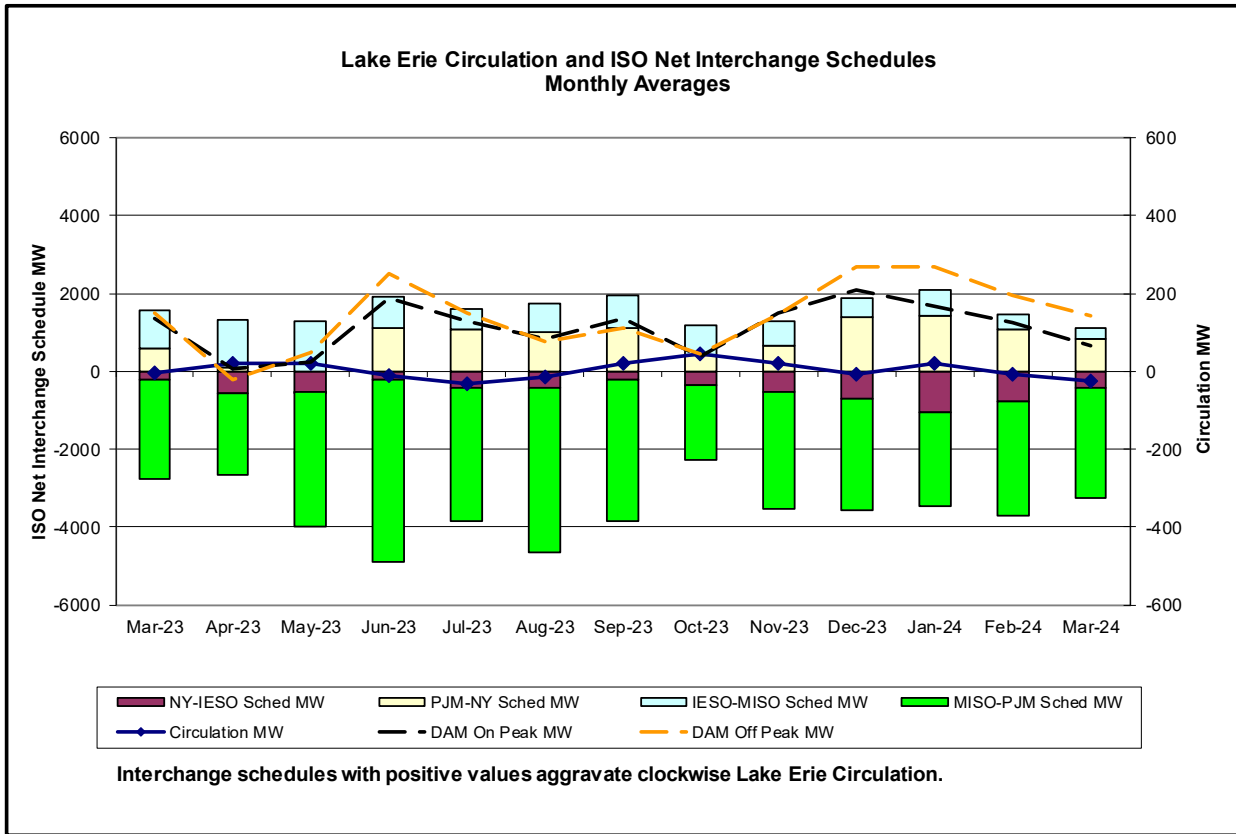




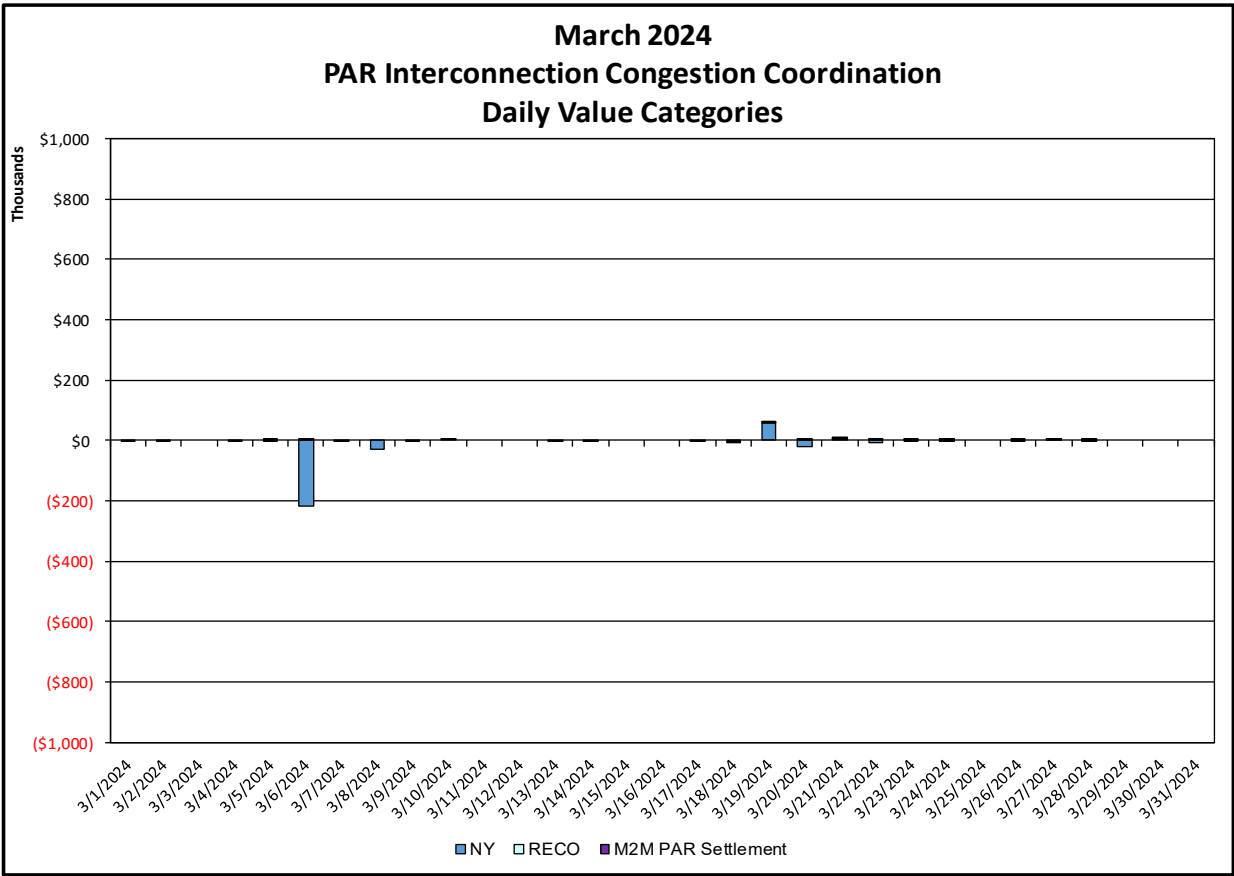
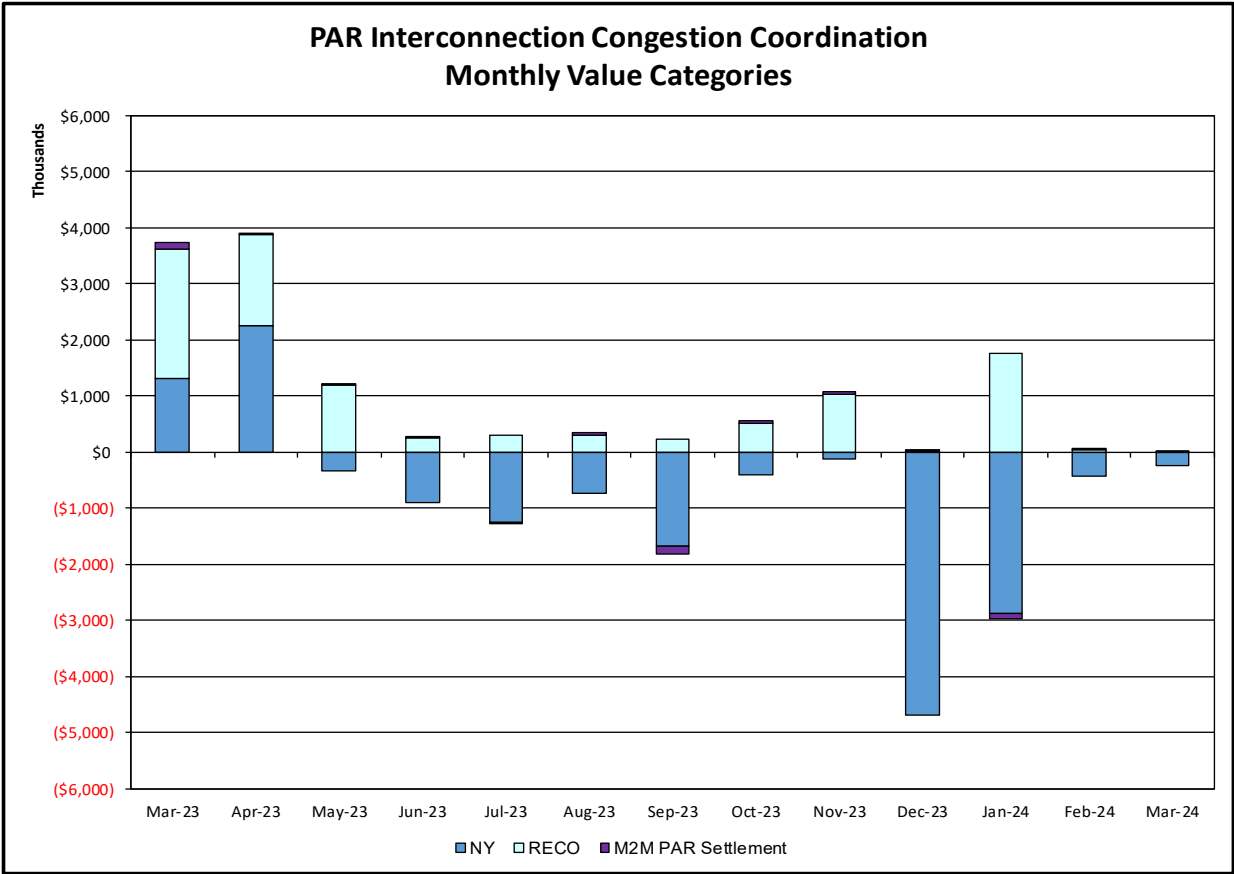






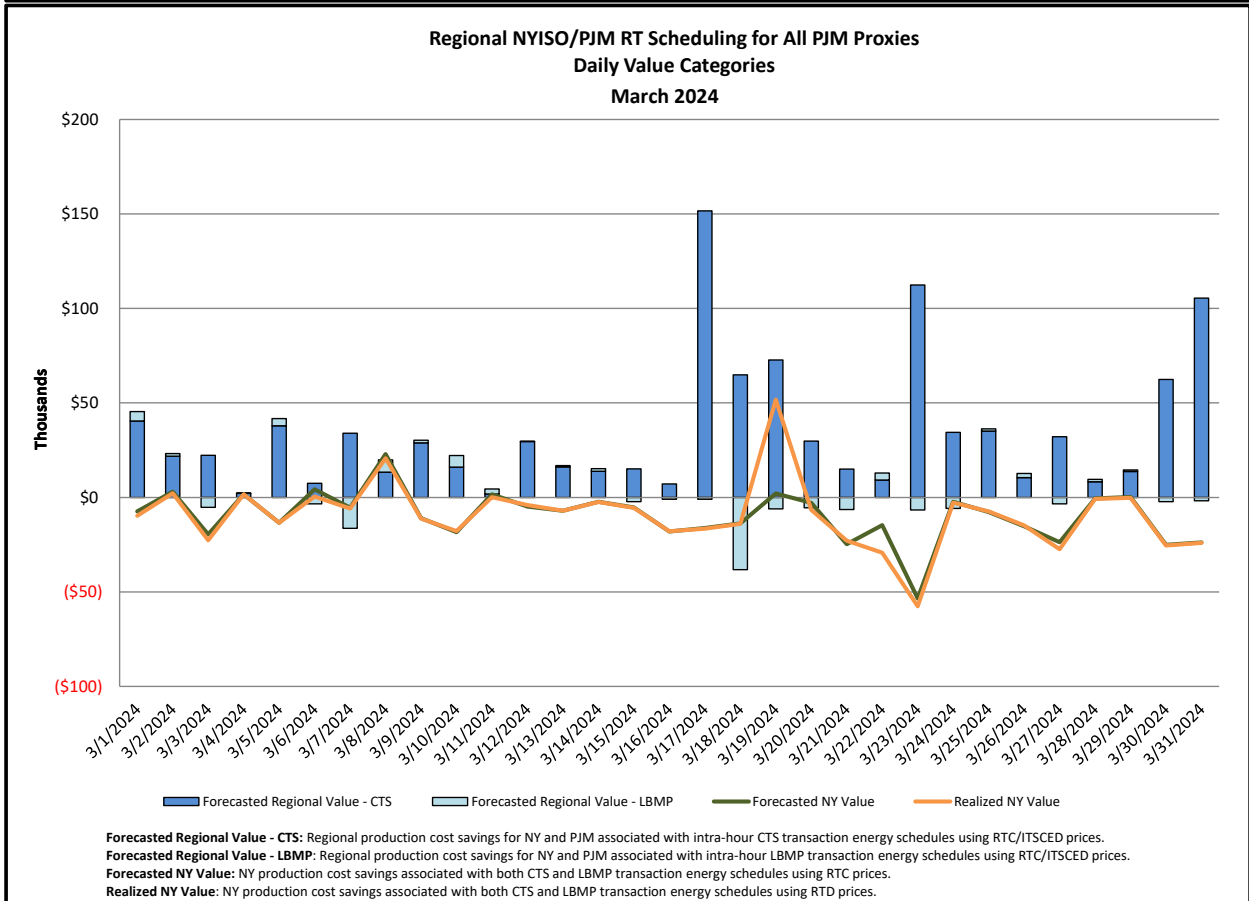
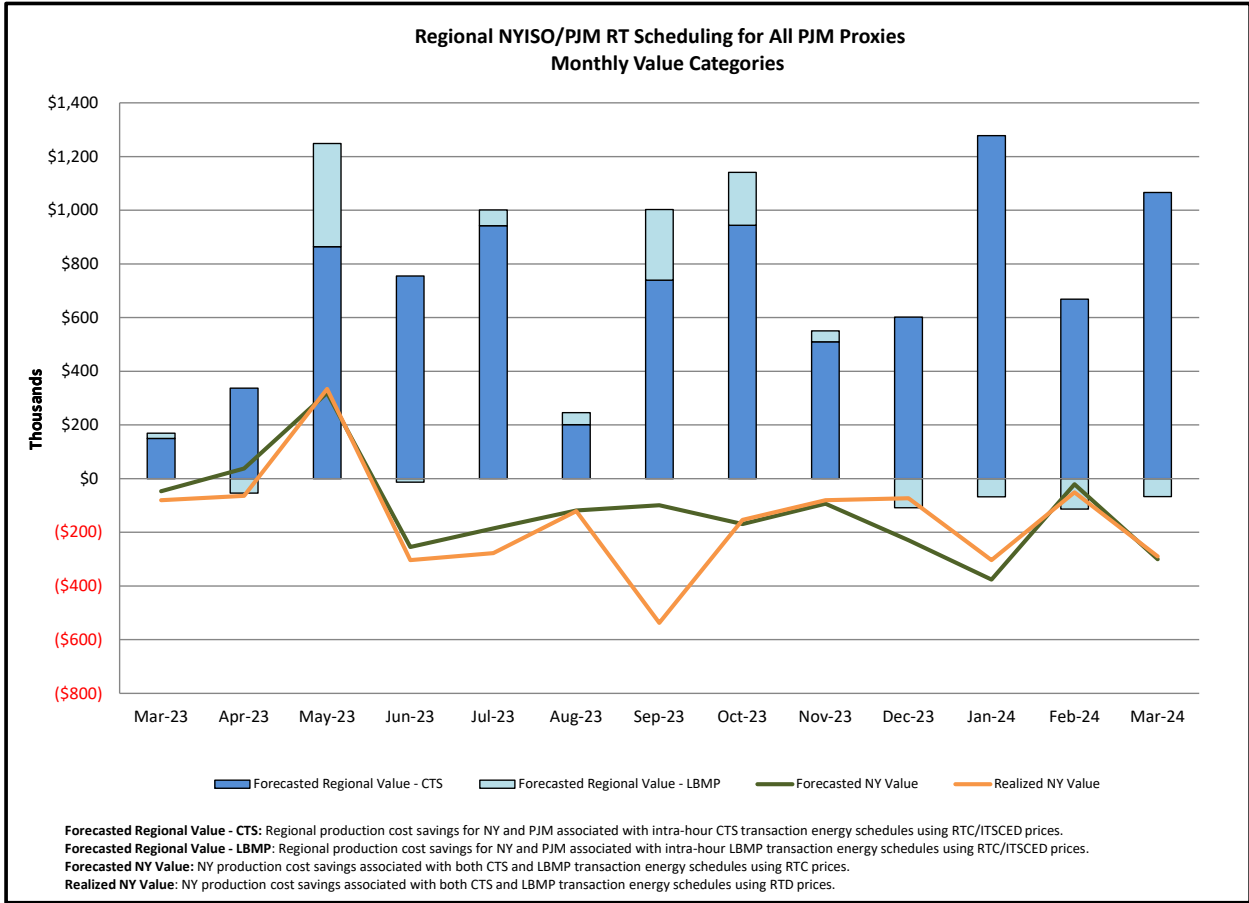


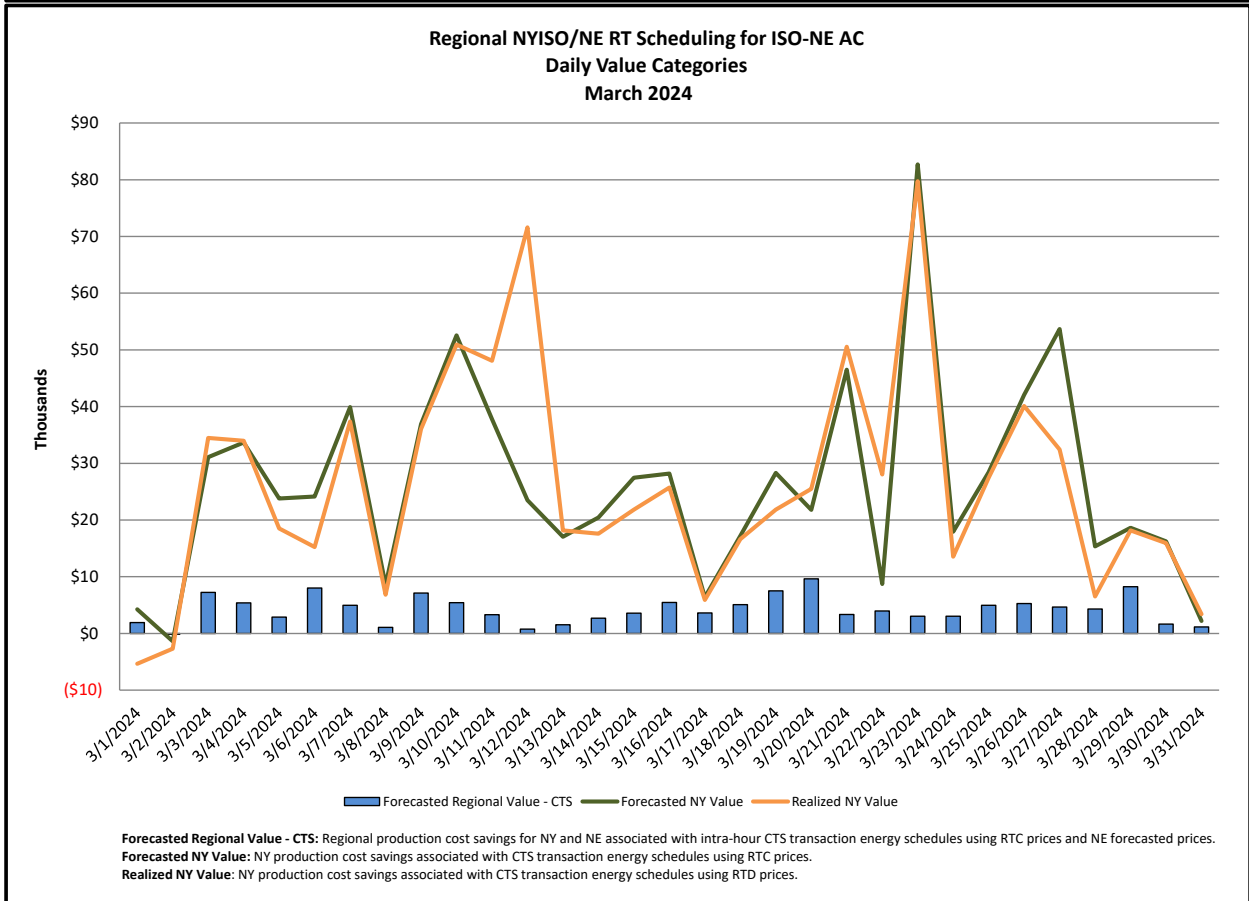
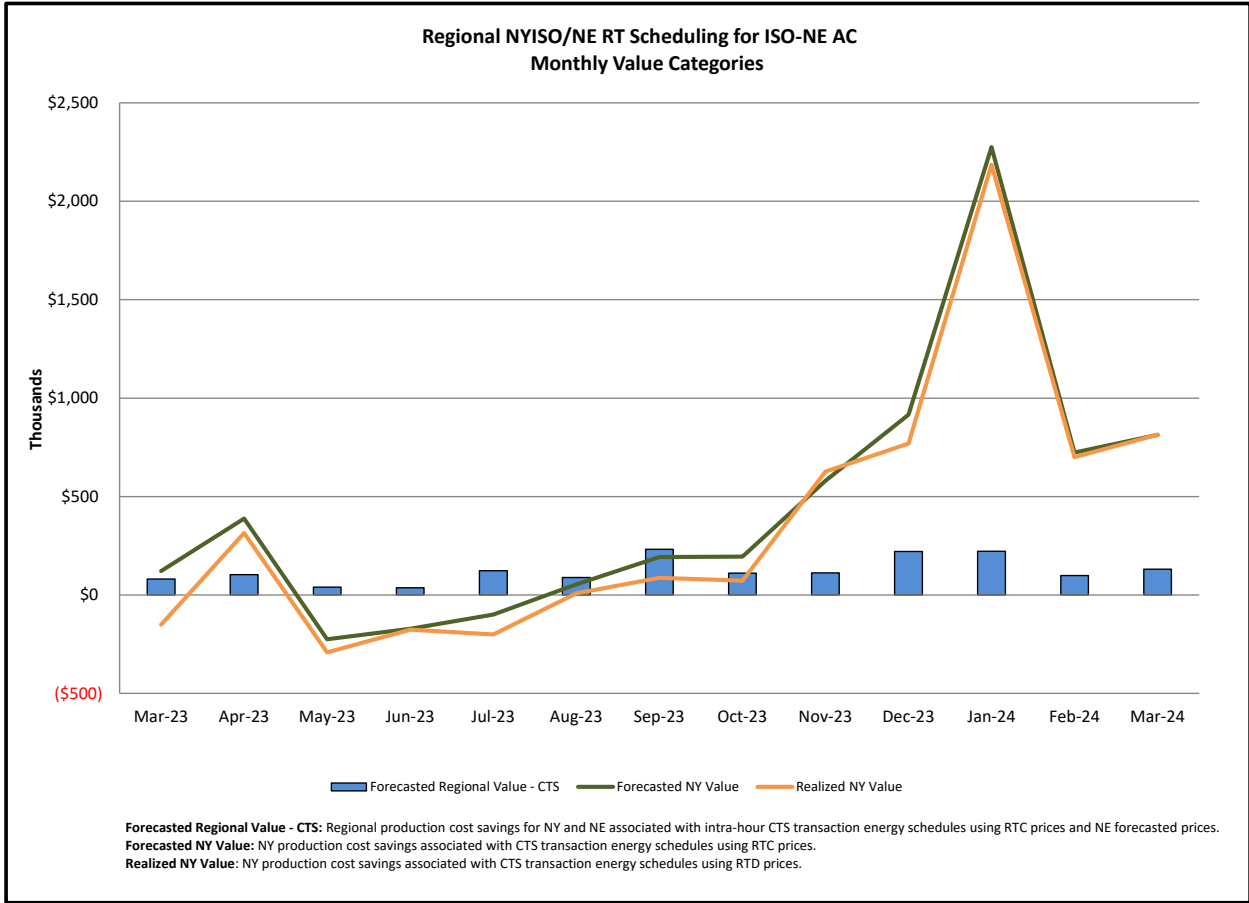
Broader Regional Market Performance Metrics



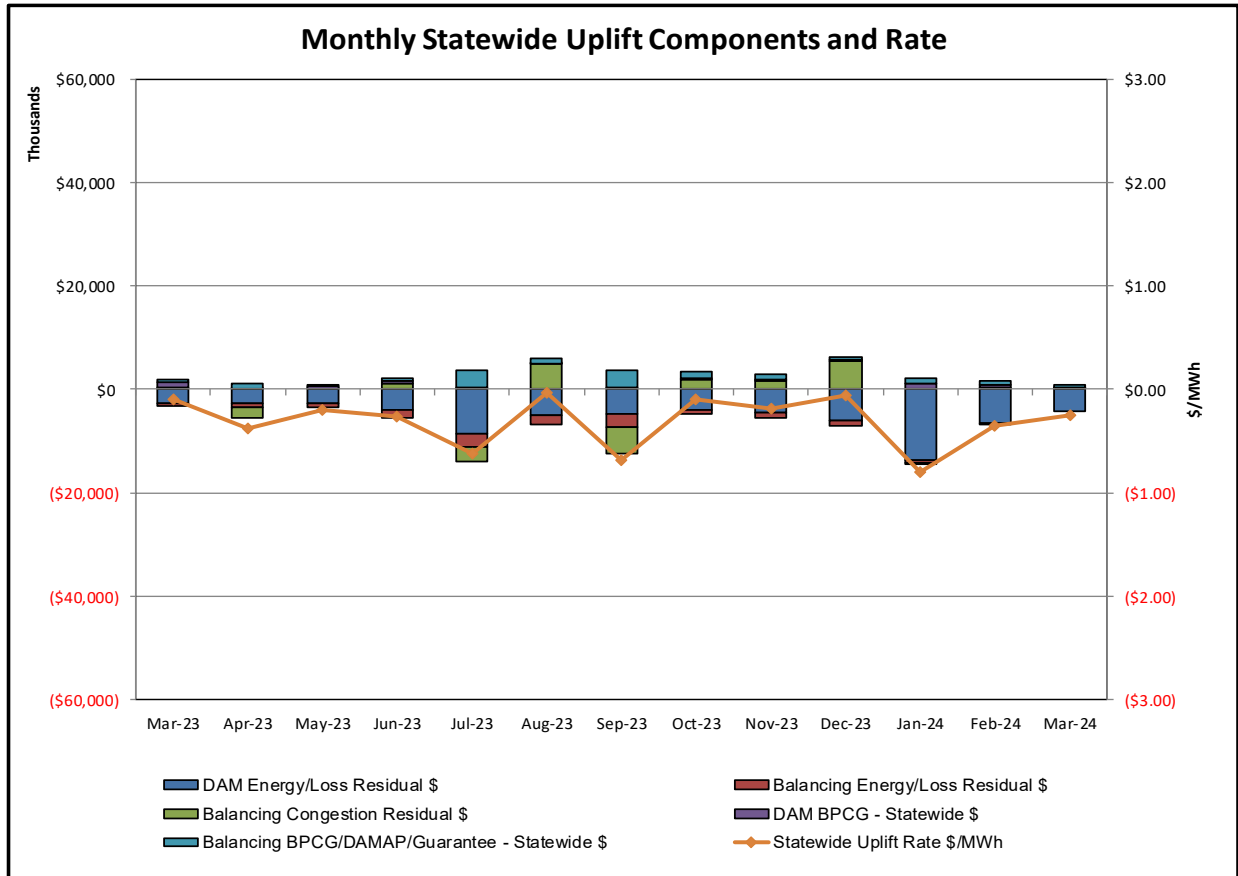
PAR Interconnection Congestion Coordination

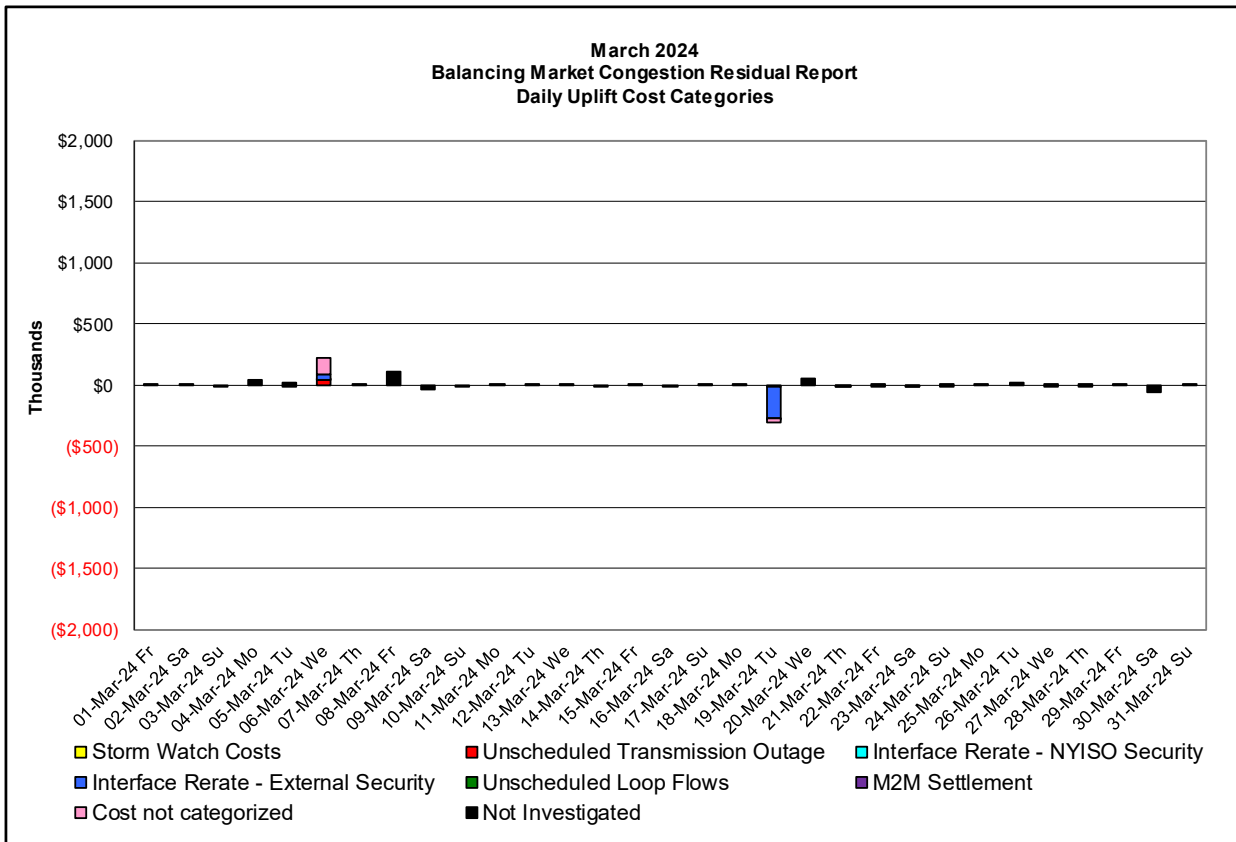
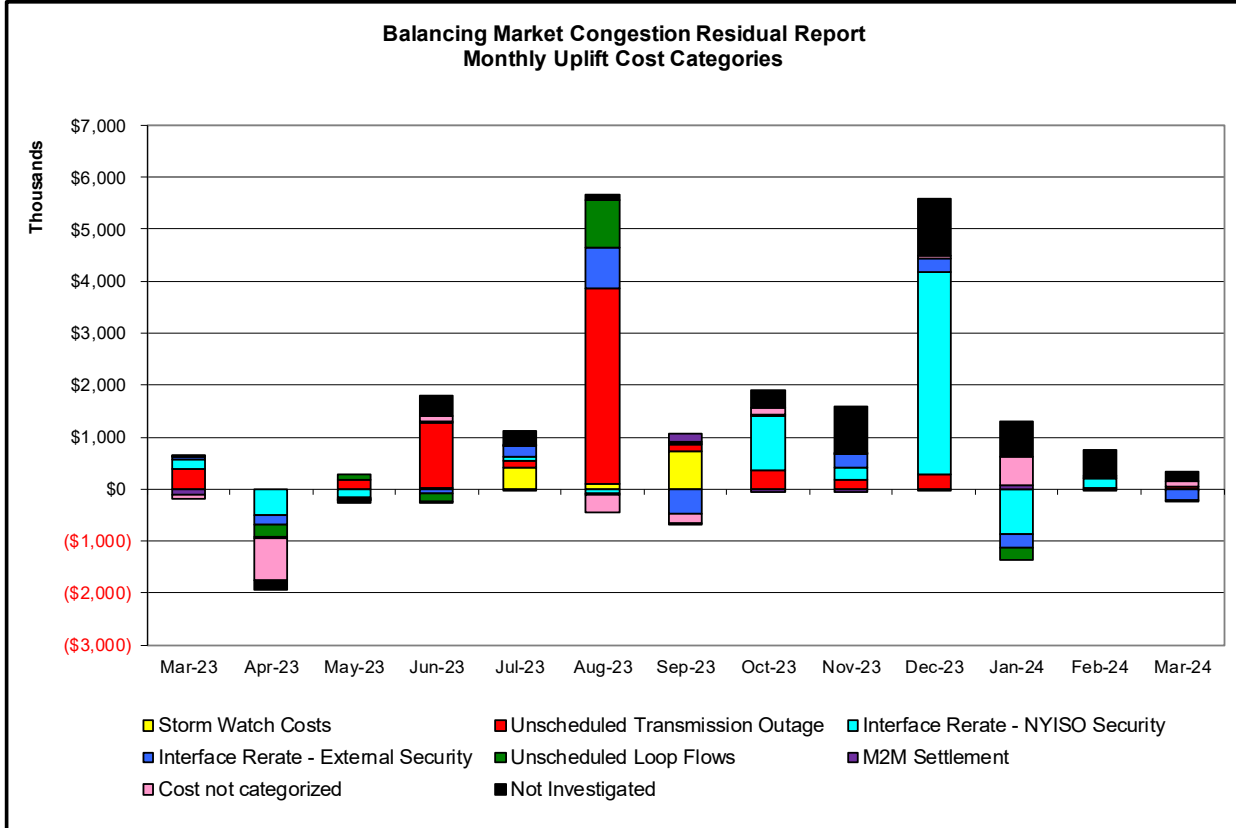
<u>Category</u>	<u>Description</u>
NY	Represents the value NY realizes from Market-to-Market PAR Coordination when experiencing congestion. This is the estimated savings to NY for additional deliveries into NY
RECO	Represents the value of PJM's obligation to deliver 80% of service to RECO load over Ramapo 5018. This is the estimated reduction in NYCA congestion due to the PJM delivery of RECO over Ramapo 5018.
M2M PAR Settlement	Market-to-Market PAR Coordination settlement on coordinated flowgates. Through April 2017 this value was included in the NY and RECO categories. The positive sign convention indicates settlement to NY while the negative indicates settlement to PJM.





Market Performance Metrics





Day's investigated in March:6,19

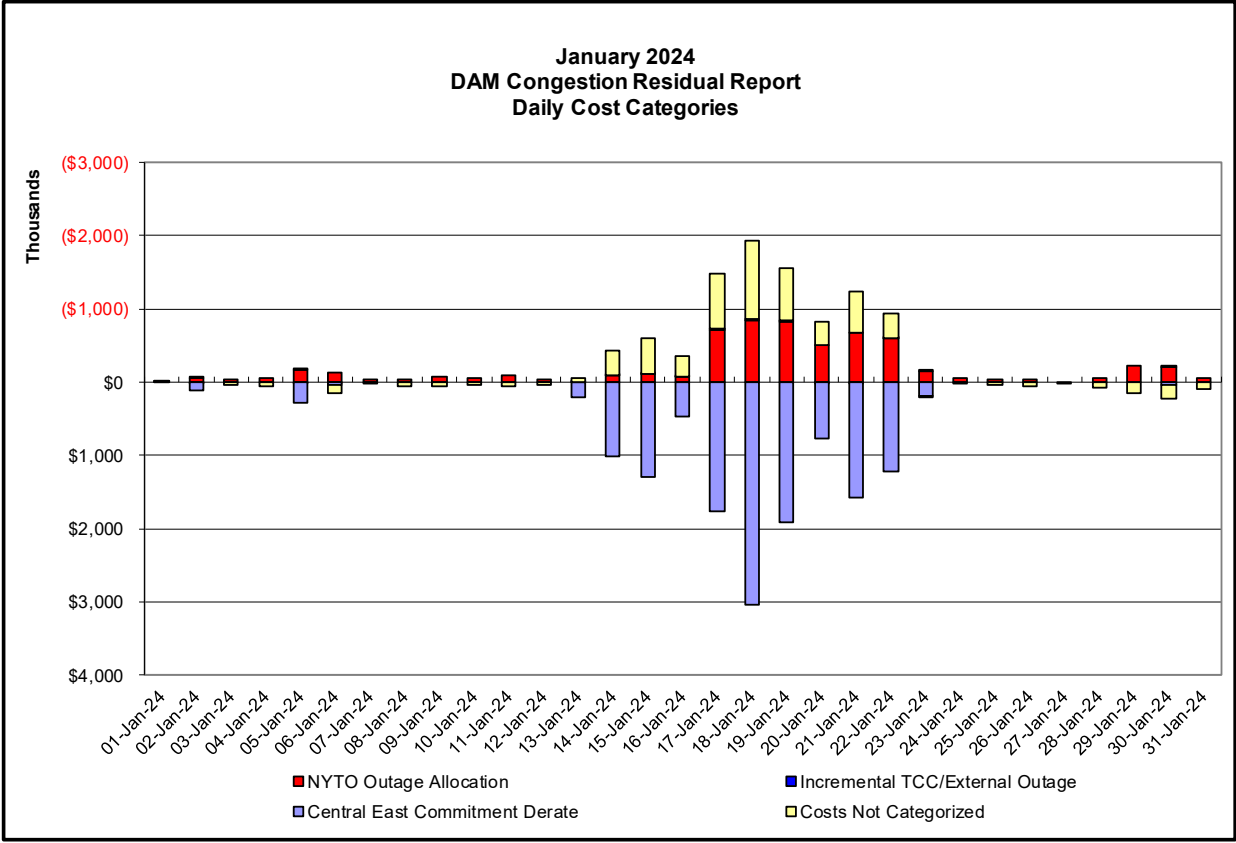
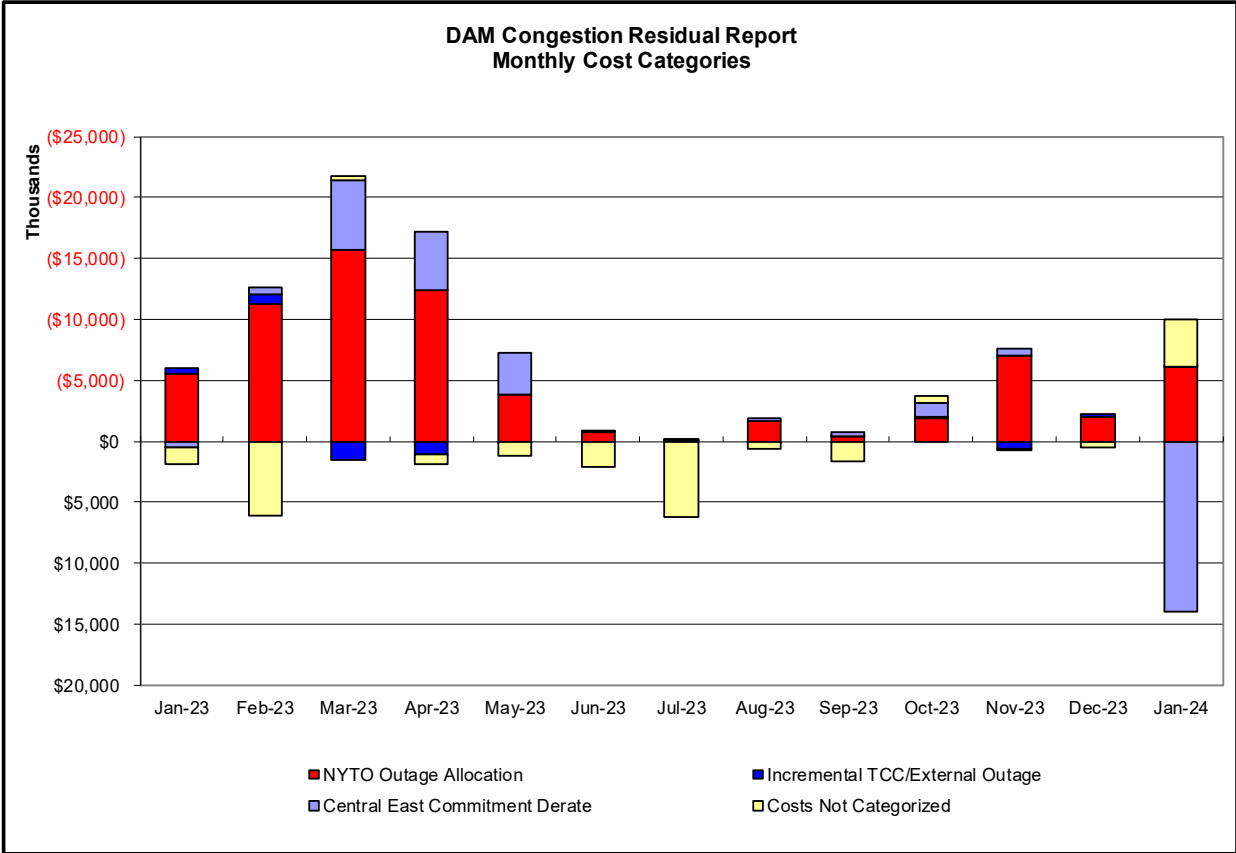
Event	Date (yyyymmdd)	Hours	Description
	3/6/2024	13-16	Forced Outage Northport-Pilgrim 138kV (#679)
	3/6/2024	15	NYCA DNI Ramp Limit
	3/6/2024	14	NE AC Active DNI Ramp Limit
	3/6/2024	14,23	PJM AC Active DNI Ramp Limit
	3/6/2024	14-16,22,23	NE_NNC1385-NY Scheduling Limit
	3/19/2024	8	NYCA DNI Ramp Limit
	3/19/2024	8	Derate Foxhills-Greenwood 138kV (#29231) I/o SCB:GOWANUS(2):41&42231&R4
	3/19/2024	19	Uprate W49th St.-Sprainbrook 345kV (#M52) I/o SCB:DUNW(7):W75&72
	3/19/2024	11	NE AC-NY Scheduling Limit
	3/19/2024	8,19	PJM AC Active DNI Ramp Limit
	3/19/2024	23	IESO AC ACTIVE DNI Ramp Limit

Real-Time Balancing Market Congestion Residual (Uplift Cost) Categories

<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
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 Outage, 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	Interface/Facility Rerates due to RTM voltages
Interface Rerate - External Security	Market-wide	Changes in DAM to RTM transfers related to External Control 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 Flows exceeding +/- 125 MW
M2M Settlement	Market-wide	Settlement result inclusive of coordinated redispatch and Ramapo flowgates	

Monthly Balancing Market Congestion Report Assumptions/Notes

- Storm Watch Costs are identified as daily total uplift costs
- 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.
- Uplift costs associated with multiple event types are apportioned equally by hour



Day-Ahead Market Congestion Residual Categories

<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
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 Derate	All TO by Monthly Allocation Factor	Reductions in the DAM Central East_VC limit as compared to the TCC Auction limit, which are not associated with transmission line outages.	

