

Operations Performance Metrics Monthly Report



October 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 November 08, 2024.

Table of Contents

- ◆ **Highlights**
 - *Operations Performance*

- ◆ **Reliability Performance Metrics**
 - *Alert State Declarations*
 - *Major Emergency State Declarations*
 - *IROL Exceedance Times*
 - *Balancing Area Control Performance*
 - *Reserve Activations*
 - *Disturbance Recovery Times*
 - *Load Forecasting Performance*
 - *Wind Forecasting Performance*
 - *Wind Performance and Curtailments*
 - *BTM Solar Performance*
 - *BTM Solar Forecasting Performance*
 - *Net Wind and Solar Performance*
 - *Net Load Forecasting Performance*
 - *Net Load Ramp Trends*
 - *DAM Capacity Unavailable*
 - *Lake Erie Circulation and ISO Schedules*

- ◆ **Broader Regional Market Performance Metrics**
 - *PAR Interconnection Congestion Coordination Monthly Value*
 - *PAR Interconnection Congestion Coordination Daily Value*
 - *Regional Generation Congestion Coordination Monthly Value*
 - *Regional Generation Congestion Coordination Daily Value*
 - *Regional RT Scheduling - PJM Monthly Value*
 - *Regional RT Scheduling - PJM Daily Value*

- ◆ **Market Performance Metrics**
 - *Monthly Statewide Uplift Components and Rate*
 - *RTM Congestion Residuals Monthly Trend*
 - *RTM Congestion Residuals Daily Costs*
 - *RTM Congestion Residuals Event Summary*
 - *RTM Congestion Residuals Cost Categories*
 - *DAM Congestion Residuals Monthly Trend*
 - *DAM Congestion Residuals Daily Costs*
 - *DAM Congestion Residuals Cost Categories*
 - *NYCA Unit Uplift Components Monthly Trend*
 - *NYCA Unit Uplift Components Daily Costs*
 - *Local Reliability Costs Monthly Trend & Commitment Hours*
 - *TCC Monthly Clearing Price with DAM Congestion*
 - *ICAP Spot Market Clearing Price*
 - *UCAP Awards*

October 2024 Operations Performance Highlights

Monthly Peak Load	Monthly Minimum Load	Summer 2024 Peak	All-time Summer Peak
10/22/2024 HB 18 18,567 MW	10/06/2024 HB 04 12,321 MW	07/08/2024 HB 17 28,990 MW	07/19/2013 HB 16 33,956 MW

- 12.6 hours of Thunderstorm Alerts were declared
- 0.0 hours of NERC TLR level 3 curtailment
- A geomagnetic storm of the highest alert level, K9, impacted New York on October 10, 2024. Actions taken during the event included operating in the Alert State, restoring out of service transmission elements, extending commitment of generators, solving the system to 90% of established ratings and solving Thunderstorm Alert cases.

Installed Wind, Solar and Energy Storage Resource Nameplate Values:

Land-Based Wind	Offshore Wind	Behind-the-Meter Solar	Front-of-the-Meter Solar	Energy Storage Resource (ESR)
2,736 MW	136 MW	5,799 MW	394 MW	63 MW

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

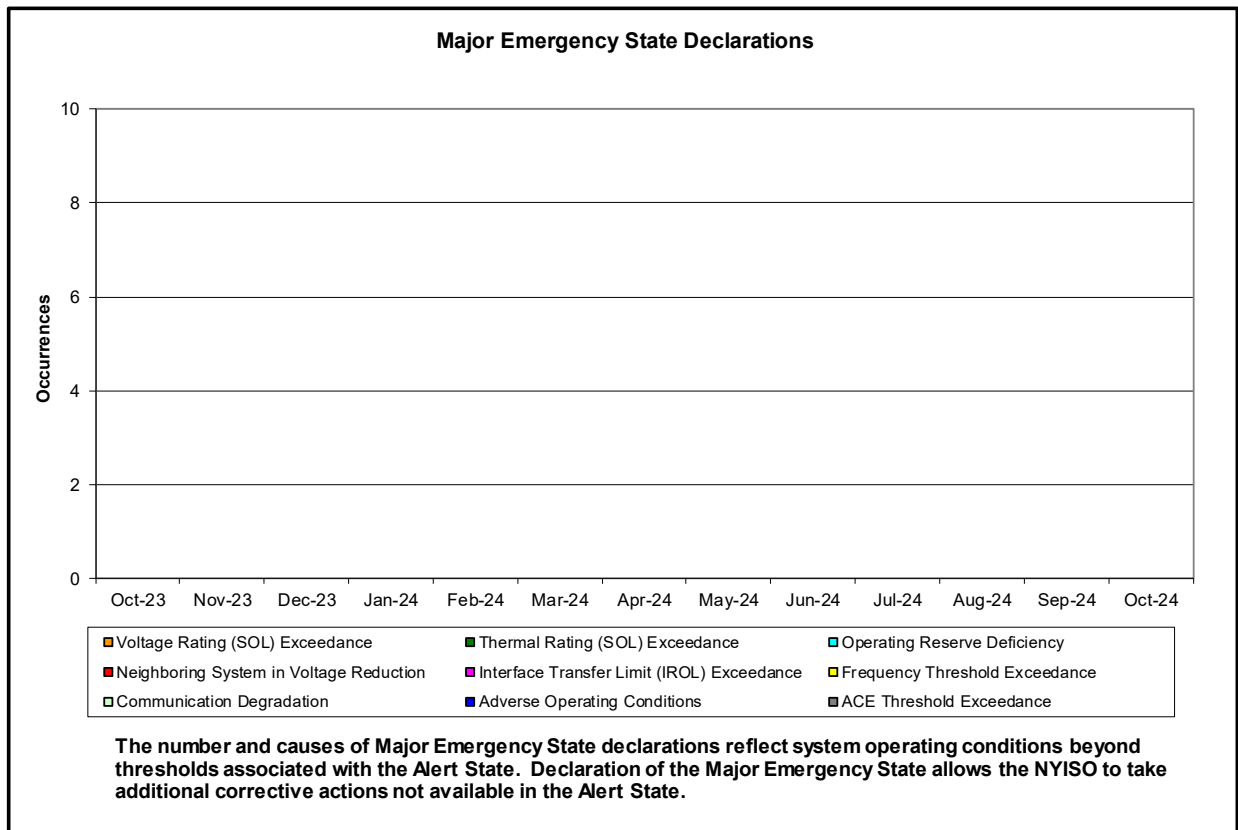
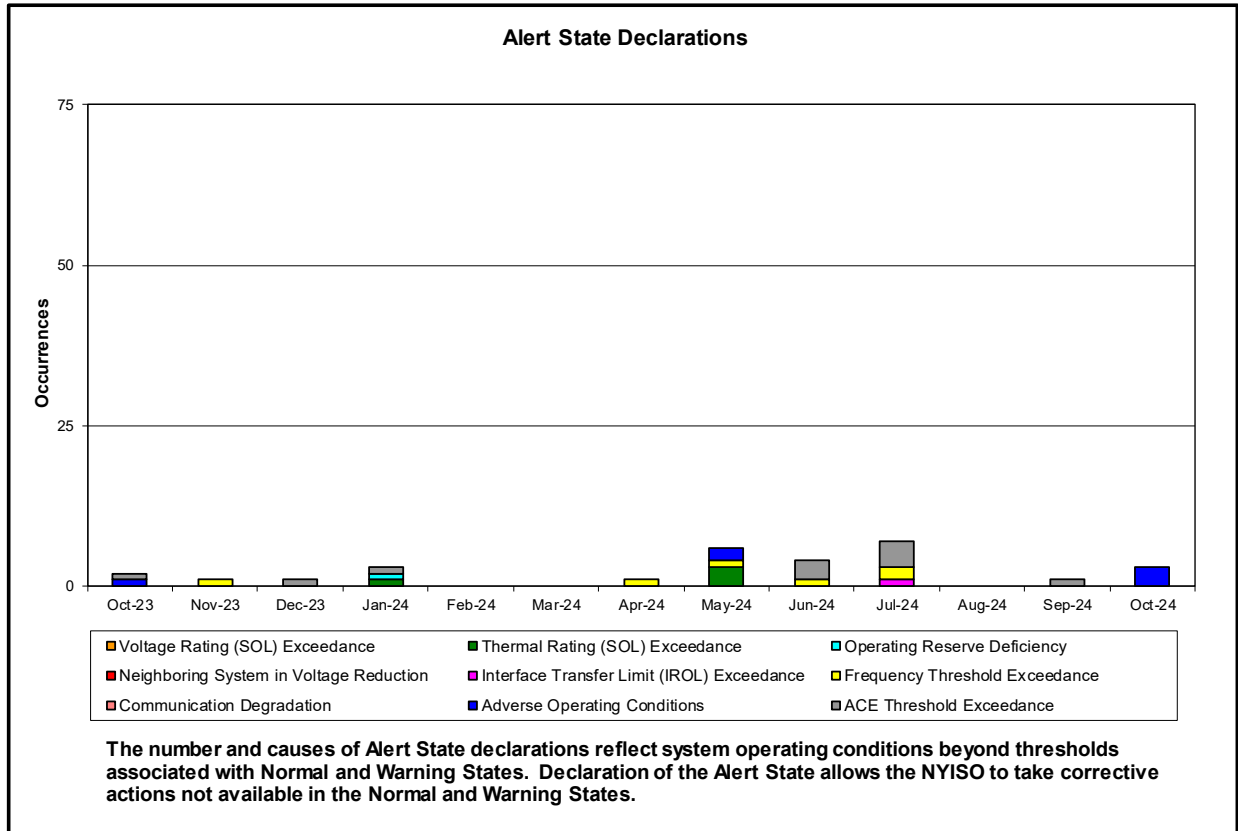
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	(\$0.19)	(\$6.08)
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.96)	(\$1.64)
NY Savings from NE-NY Coordinated Transaction Scheduling	\$1.13	\$7.00
Total NY Savings	(\$0.03)	(\$0.72)
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$2.05	\$8.02
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.17	\$1.94
Total Regional Savings	\$2.22	\$9.96

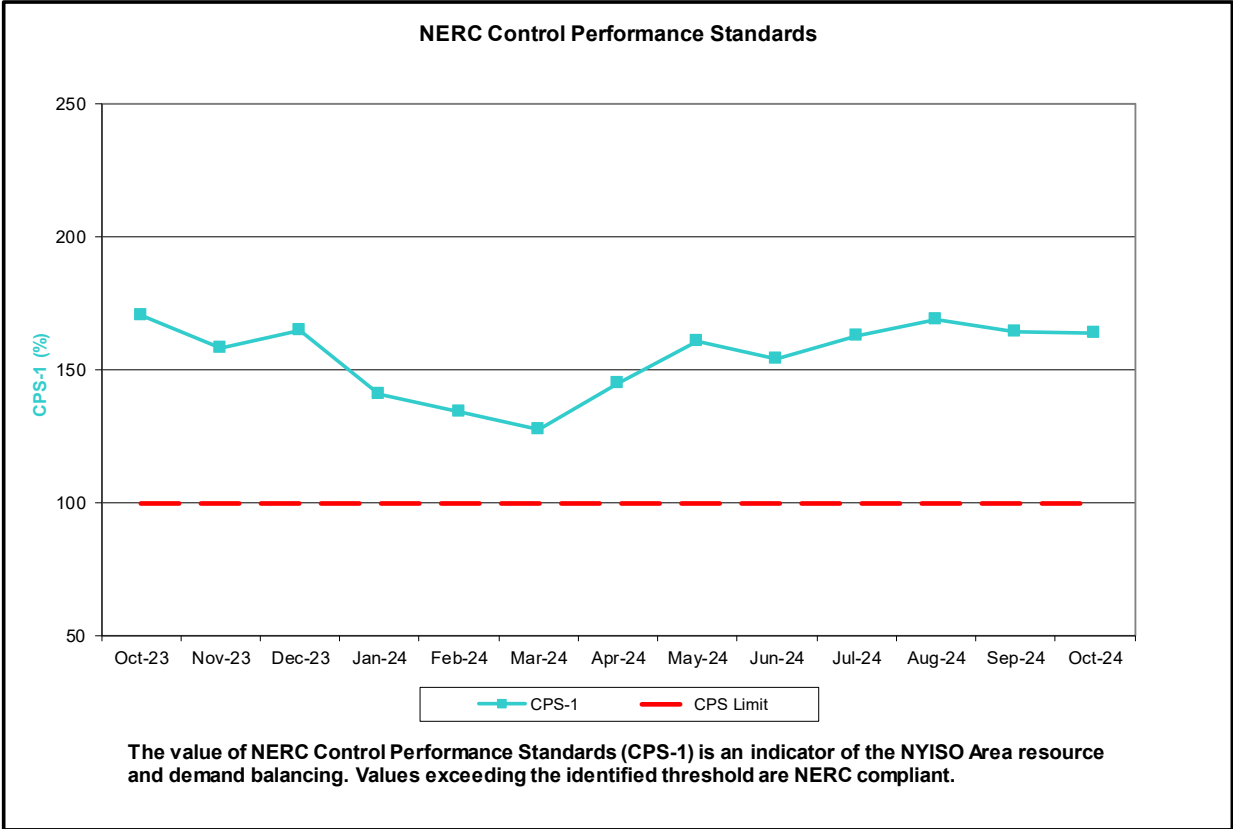
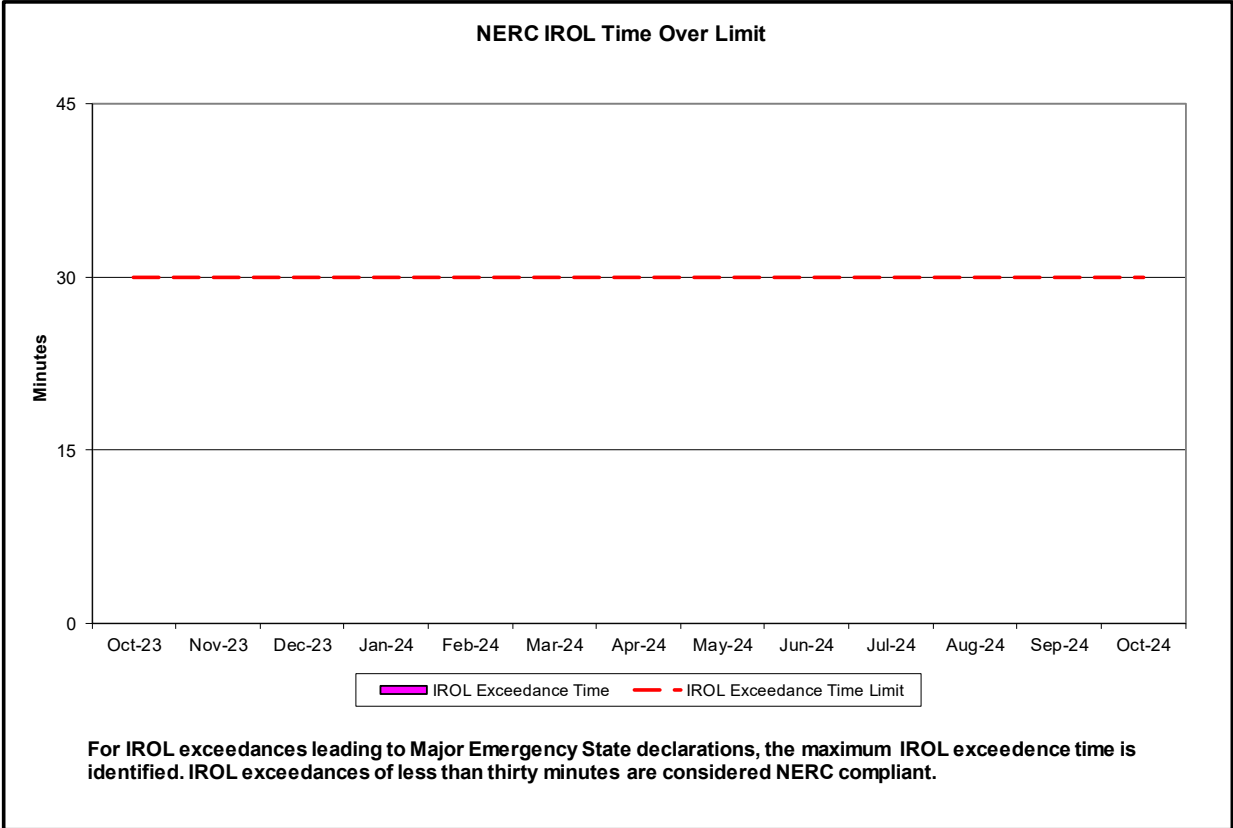
- Statewide uplift cost monthly average was (\$0.48)/MWh.
- The following table identifies the Monthly ICAP spot market prices and the price delta.

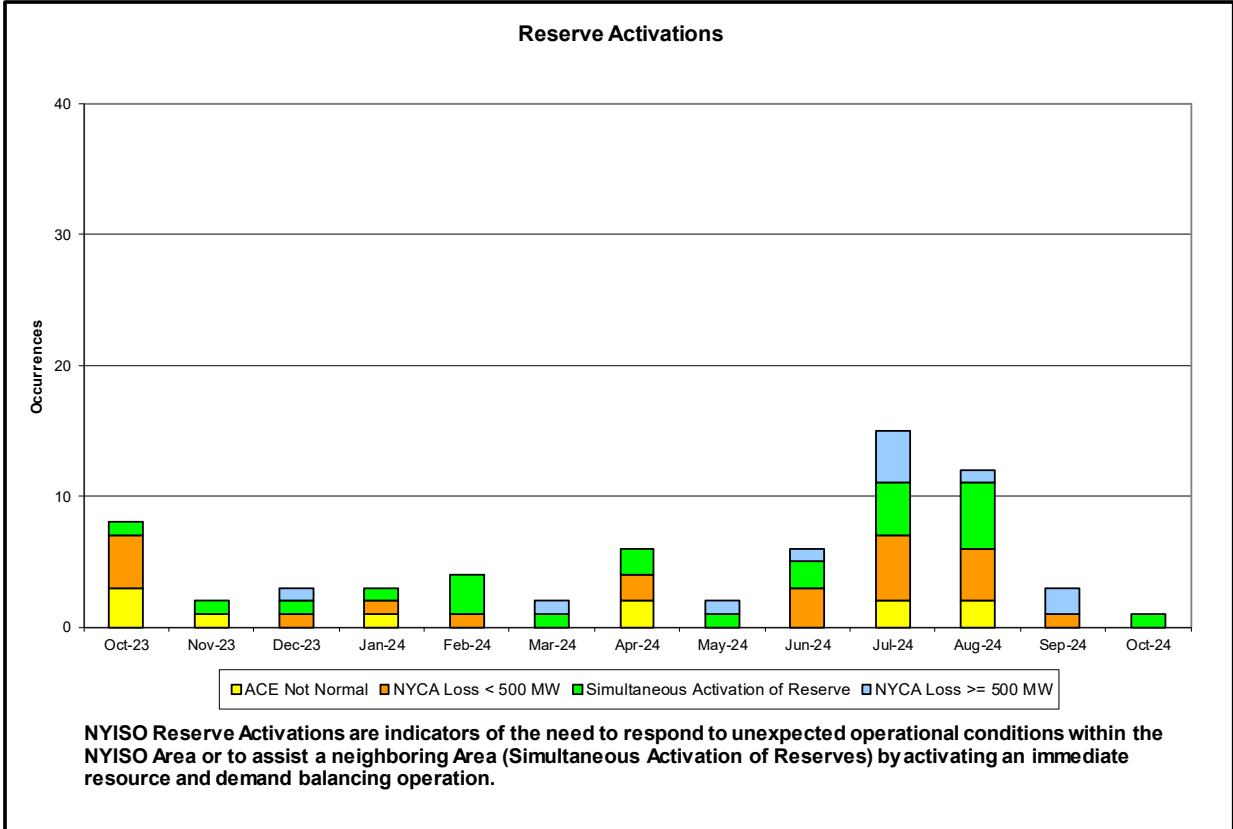
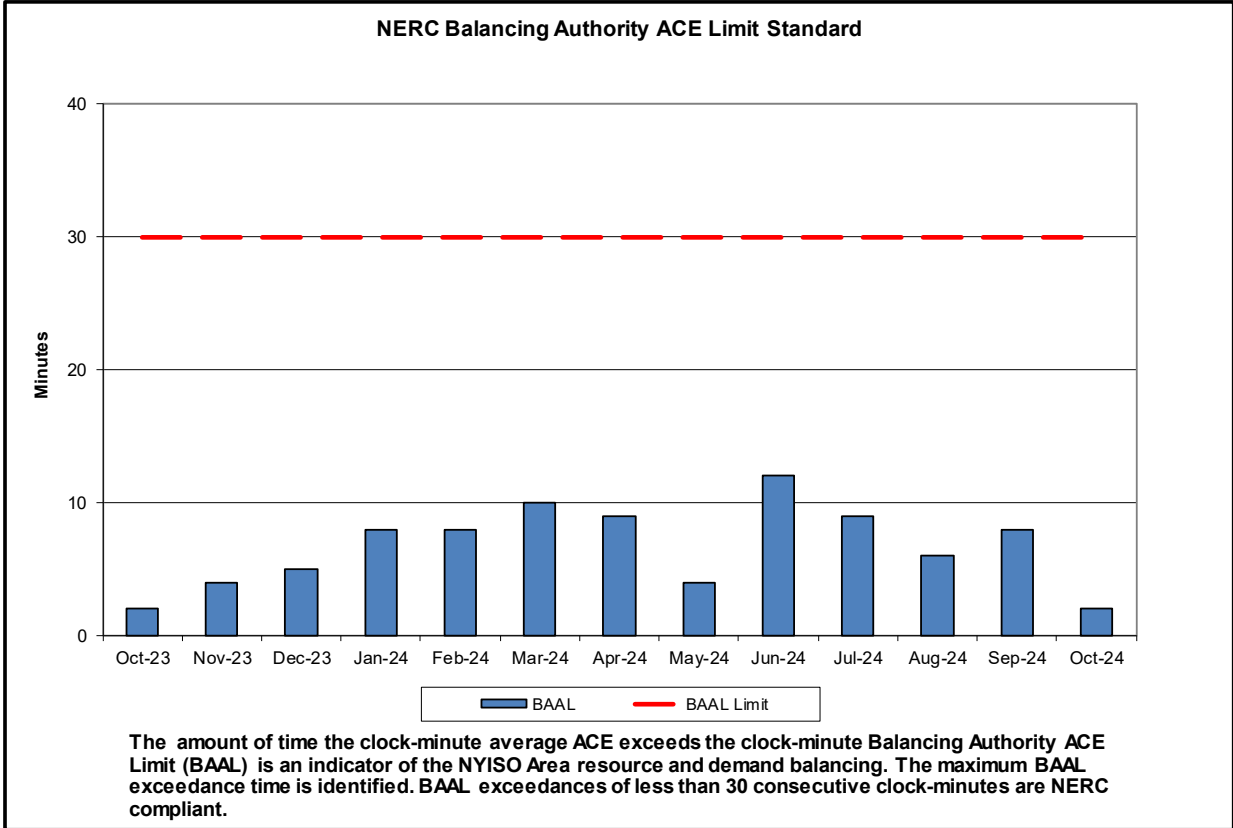
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
November 2024 Spot Price	\$0.50	\$0.50	\$8.12	\$0.50
April 2024 Spot Price	\$0.44	\$0.83	\$12.78	\$0.44
Delta	\$0.06	(\$0.33)	(\$4.66)	\$0.06

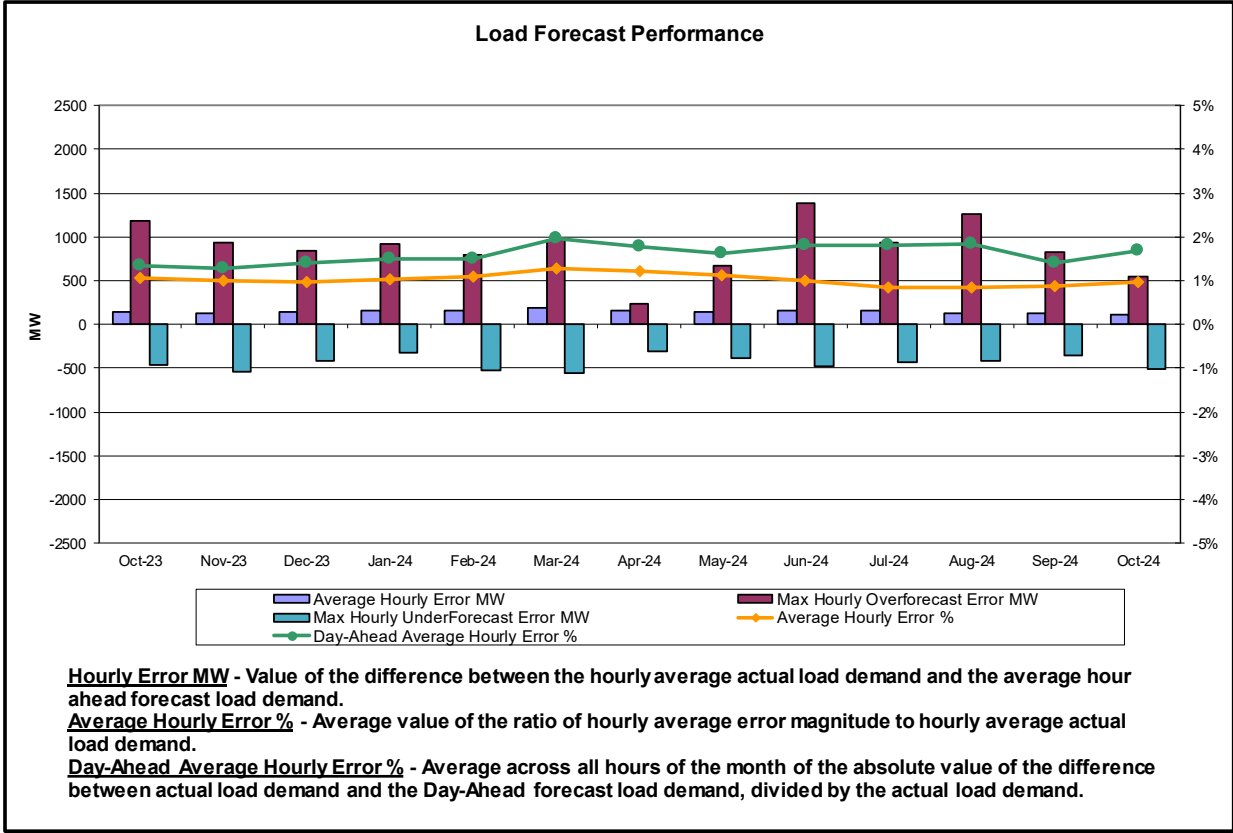
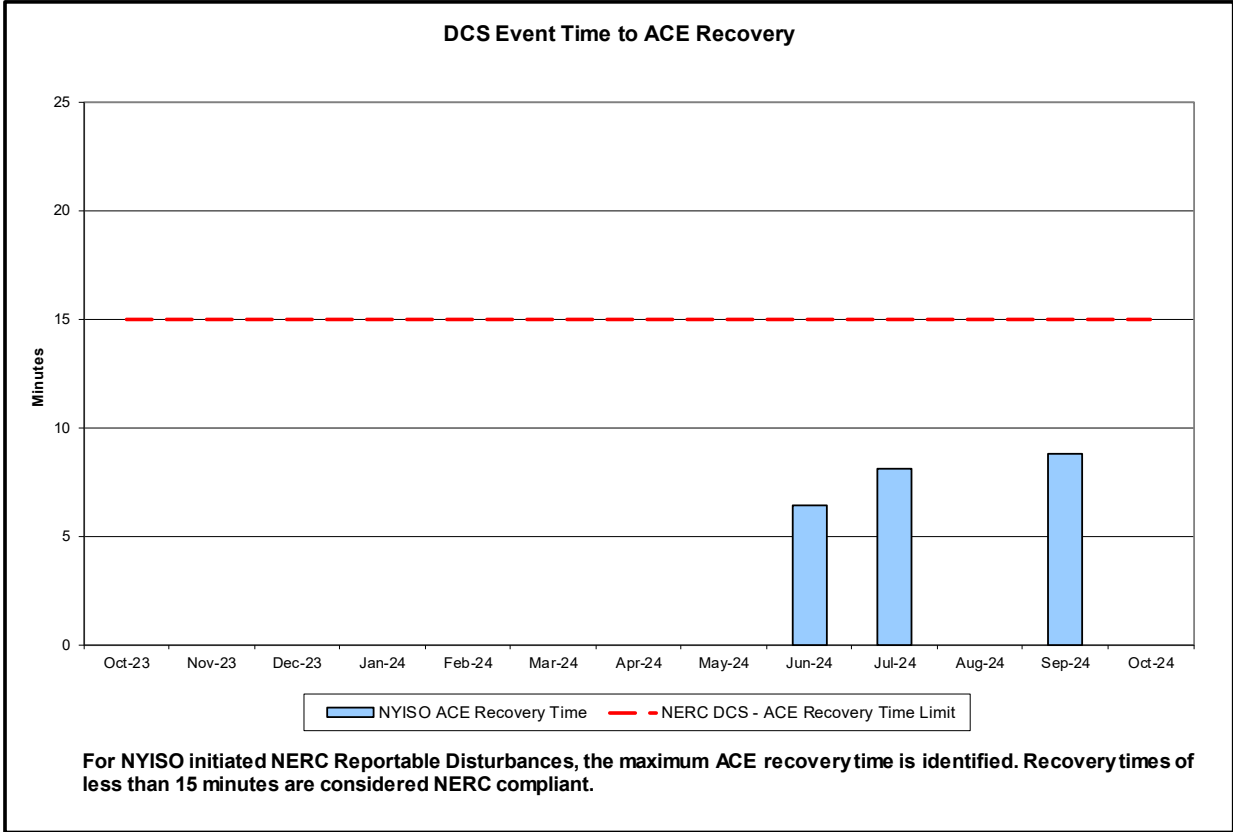
- Price changes from April 2024 to November 2024 are driven by changes in supply as well as Capability Year inputs such as demand curve parameters, Locational Capacity Requirements, the Installed Reserve Margin and the load forecast.

Reliability Performance Metrics

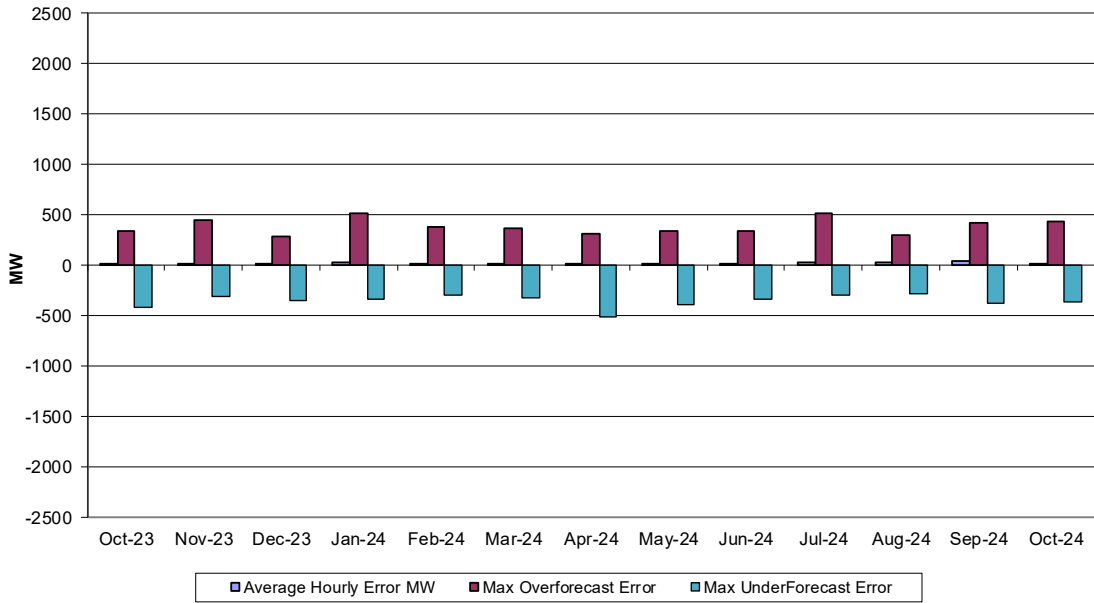






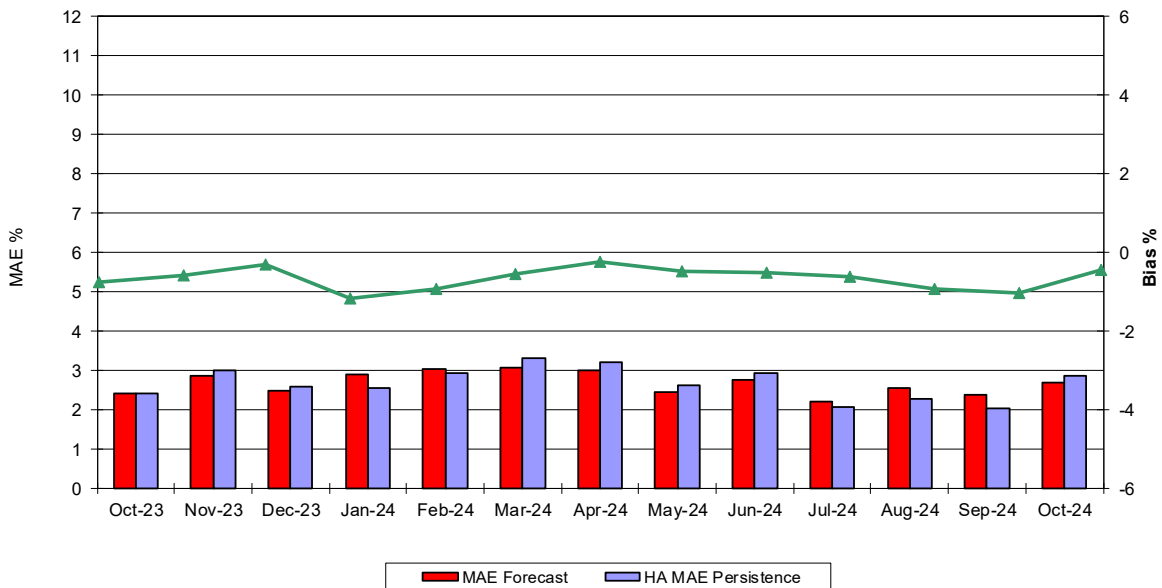


Wind Forecast Performance Hour Ahead MW Error

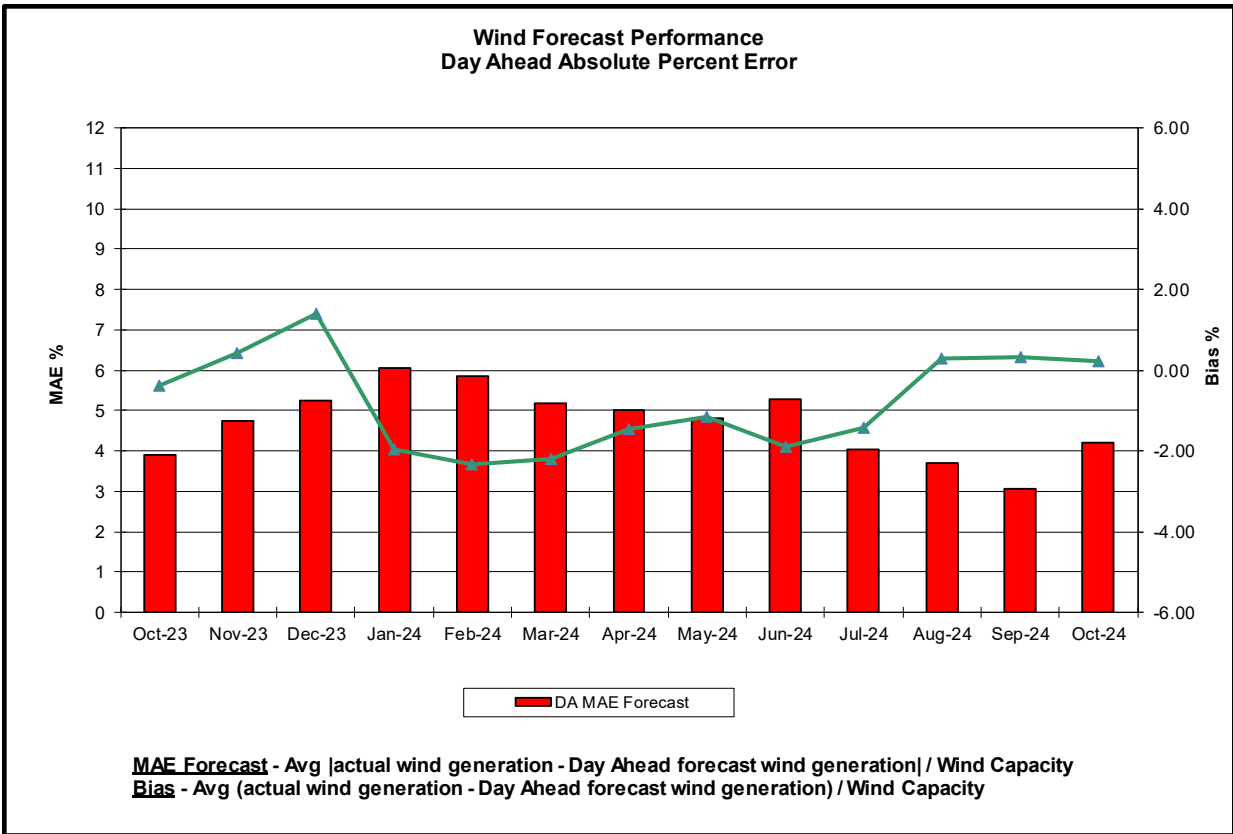
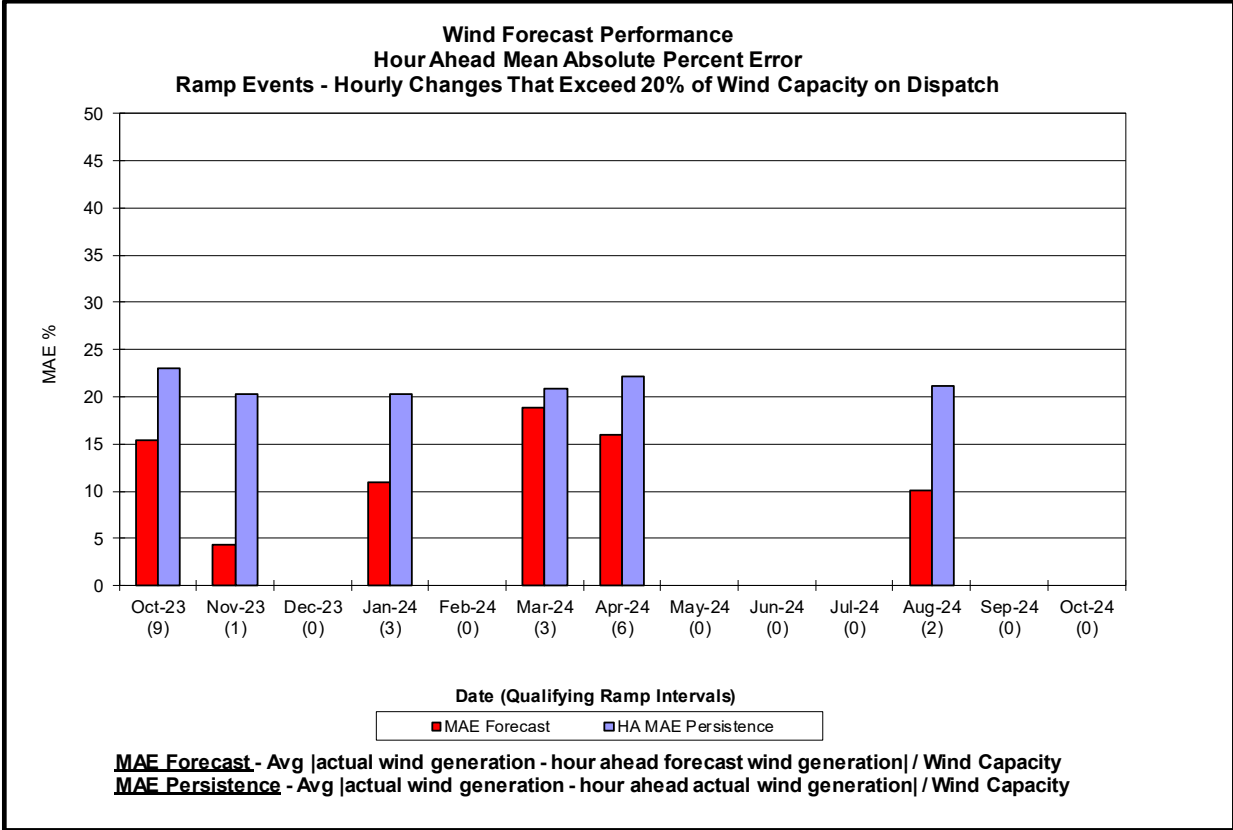


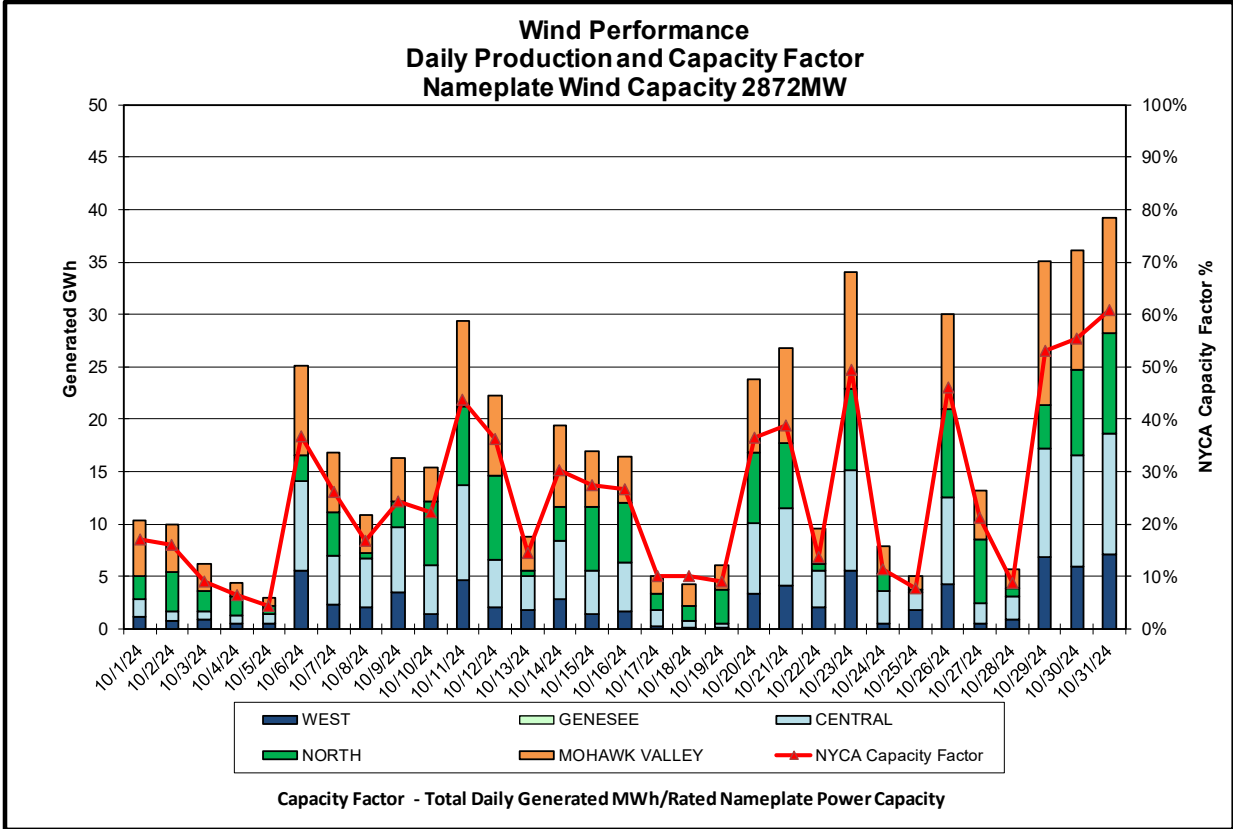
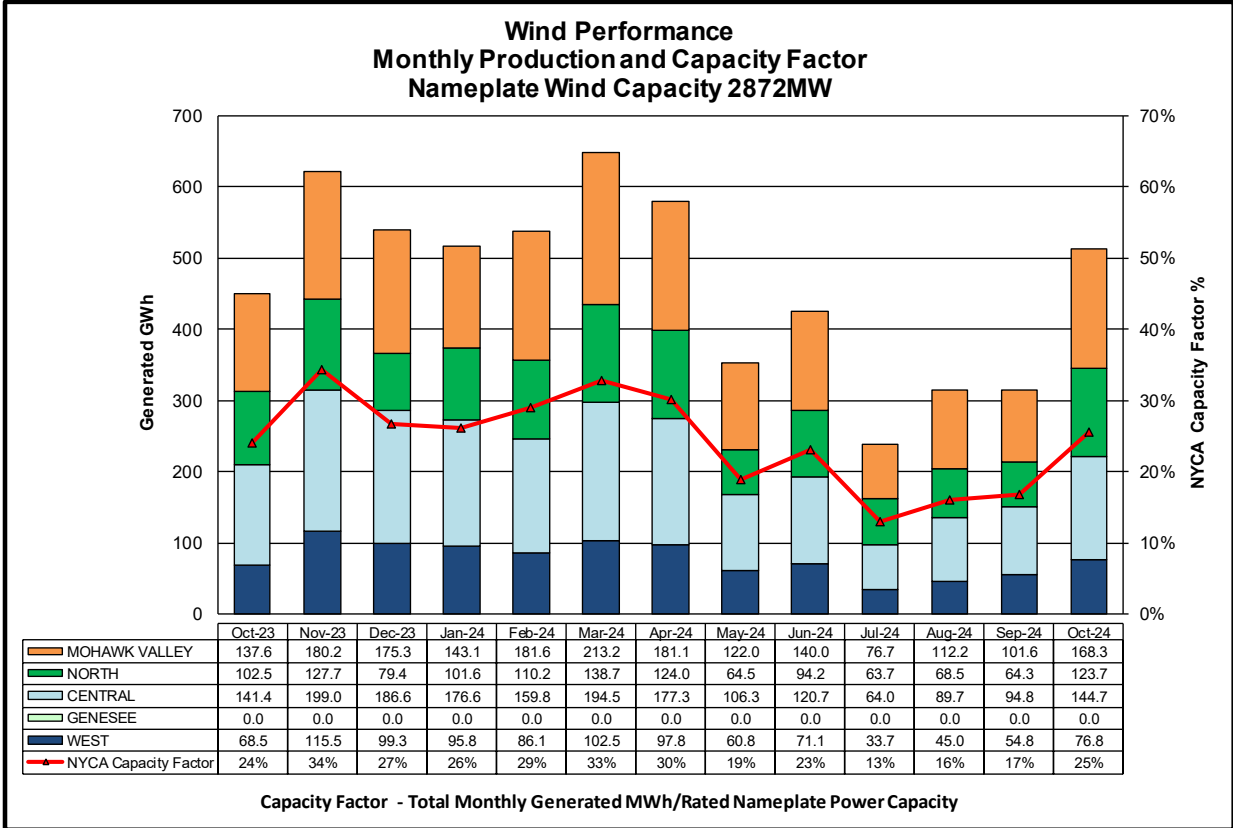
Hourly Error MW - Value of the difference between the hourly average actual wind generation and the average hour ahead forecast wind generation.

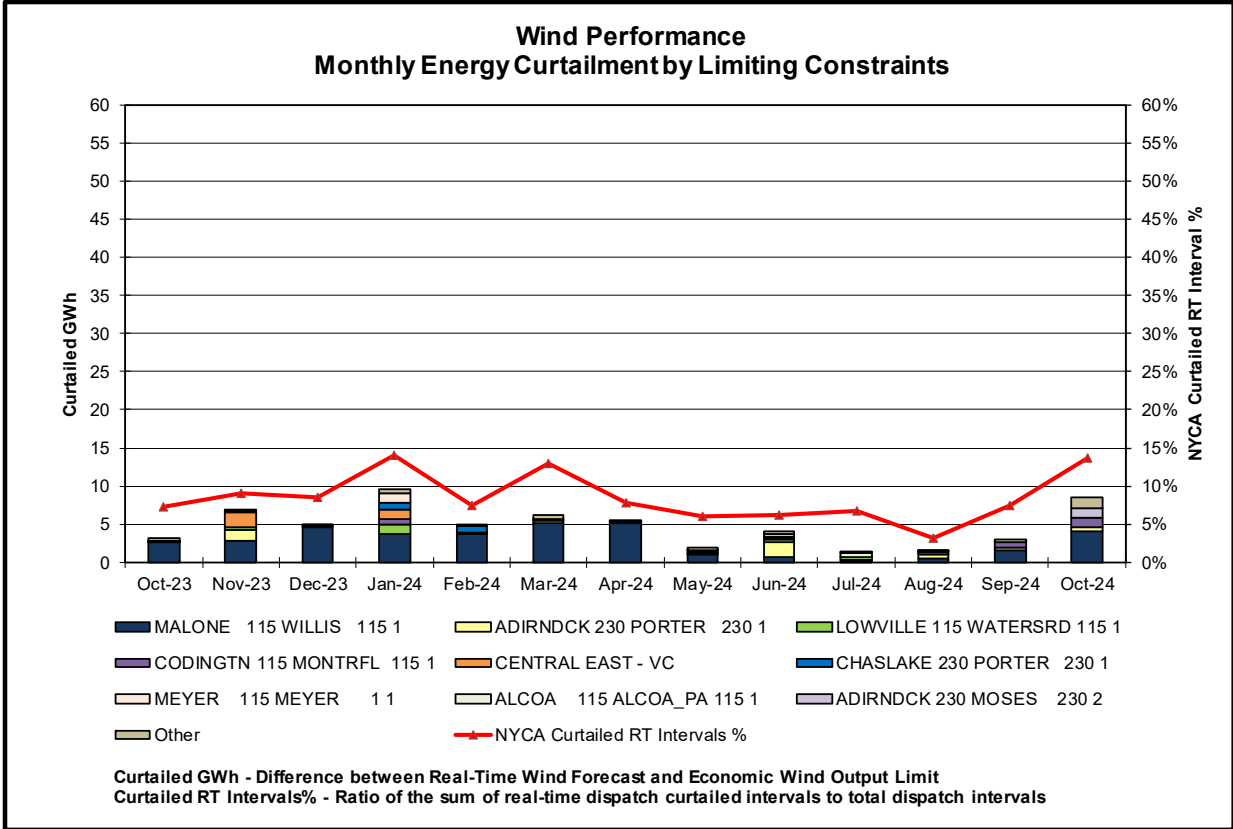
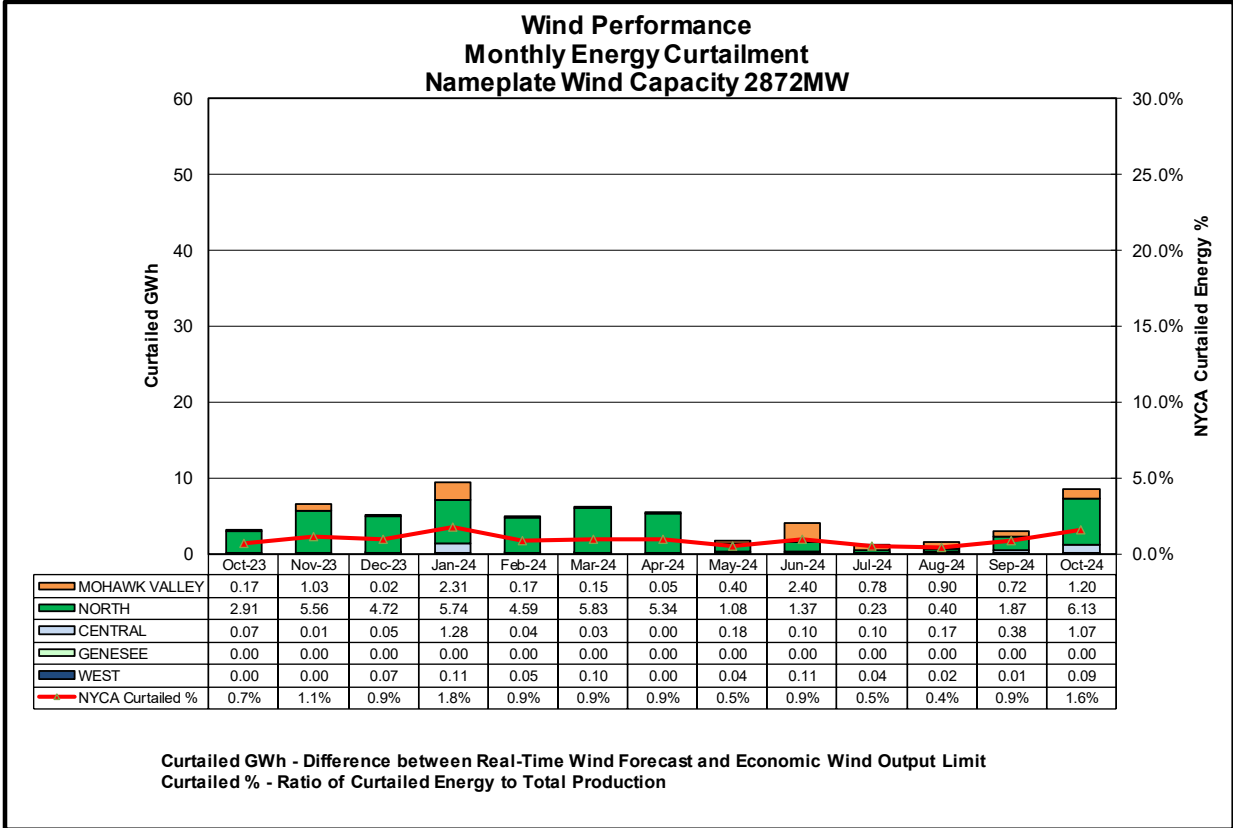
Wind Forecast Performance Hour Ahead Percent Error

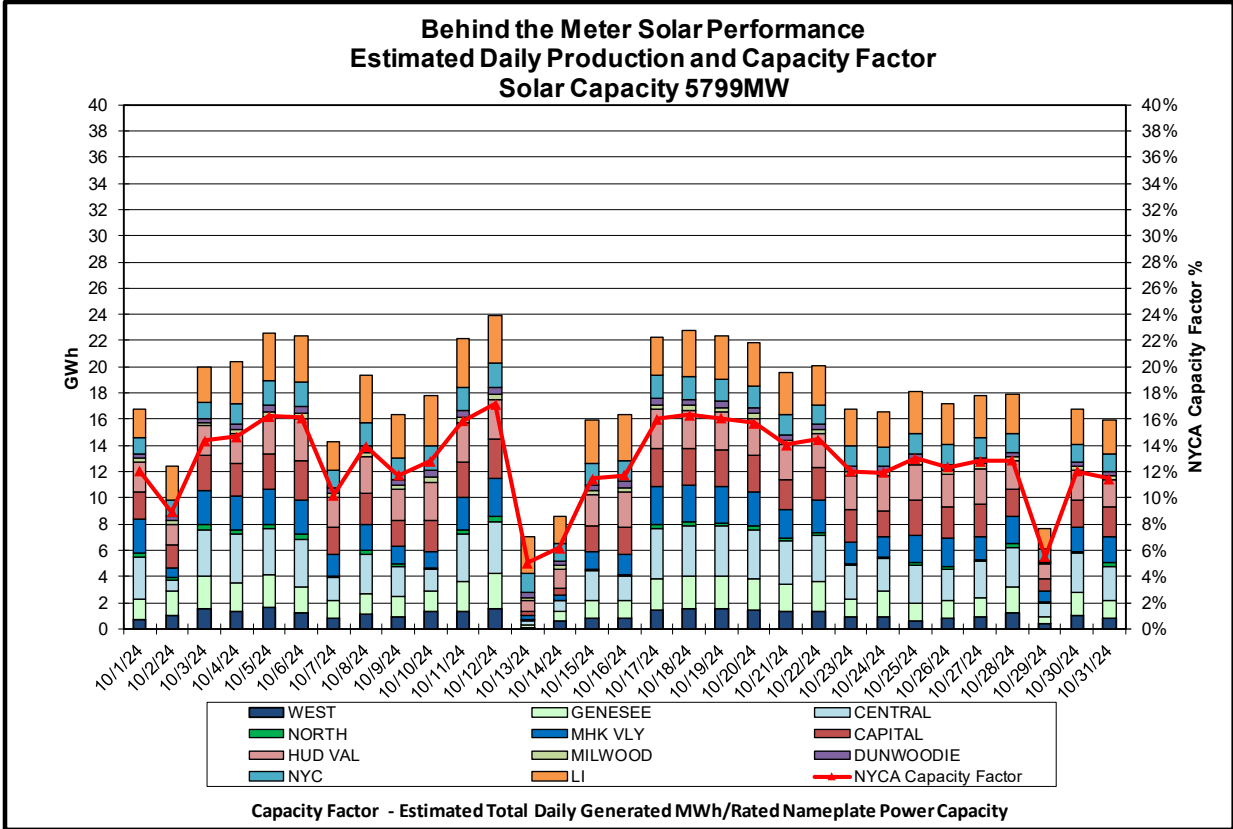
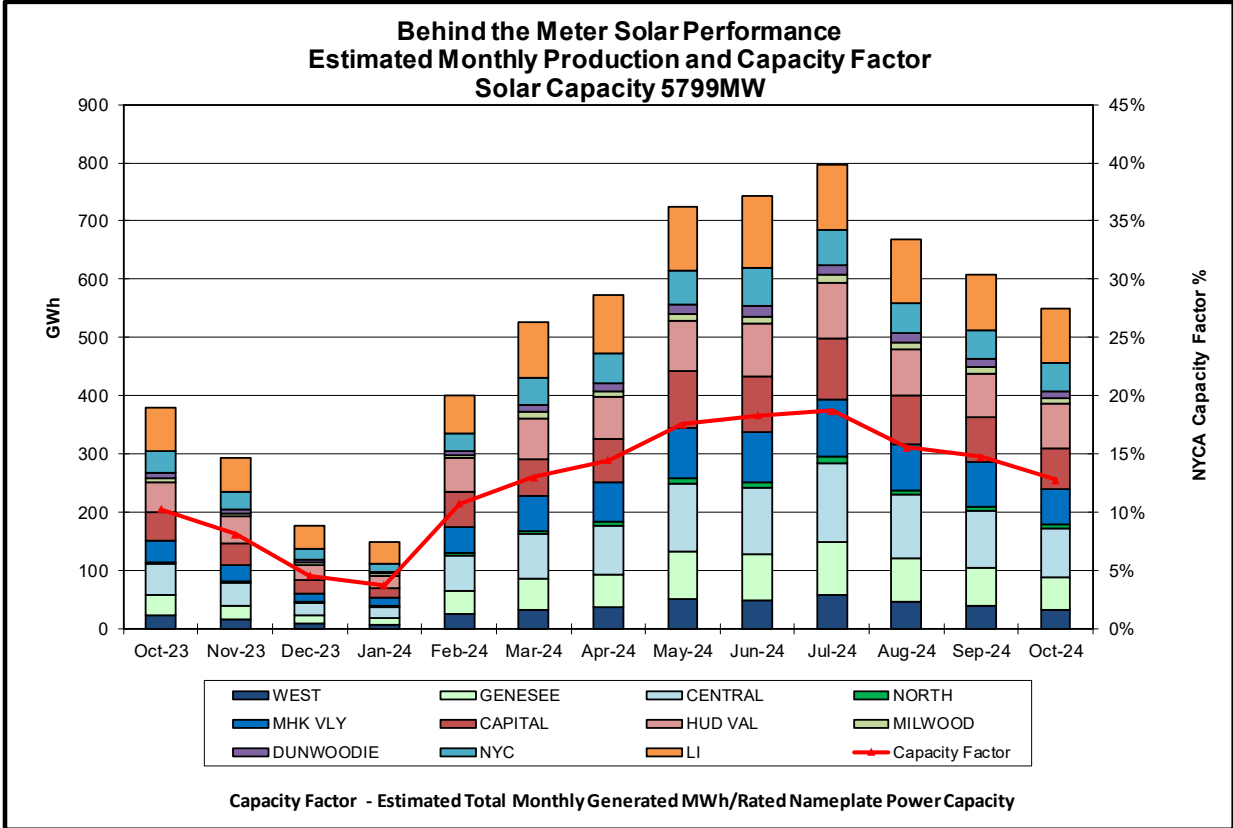


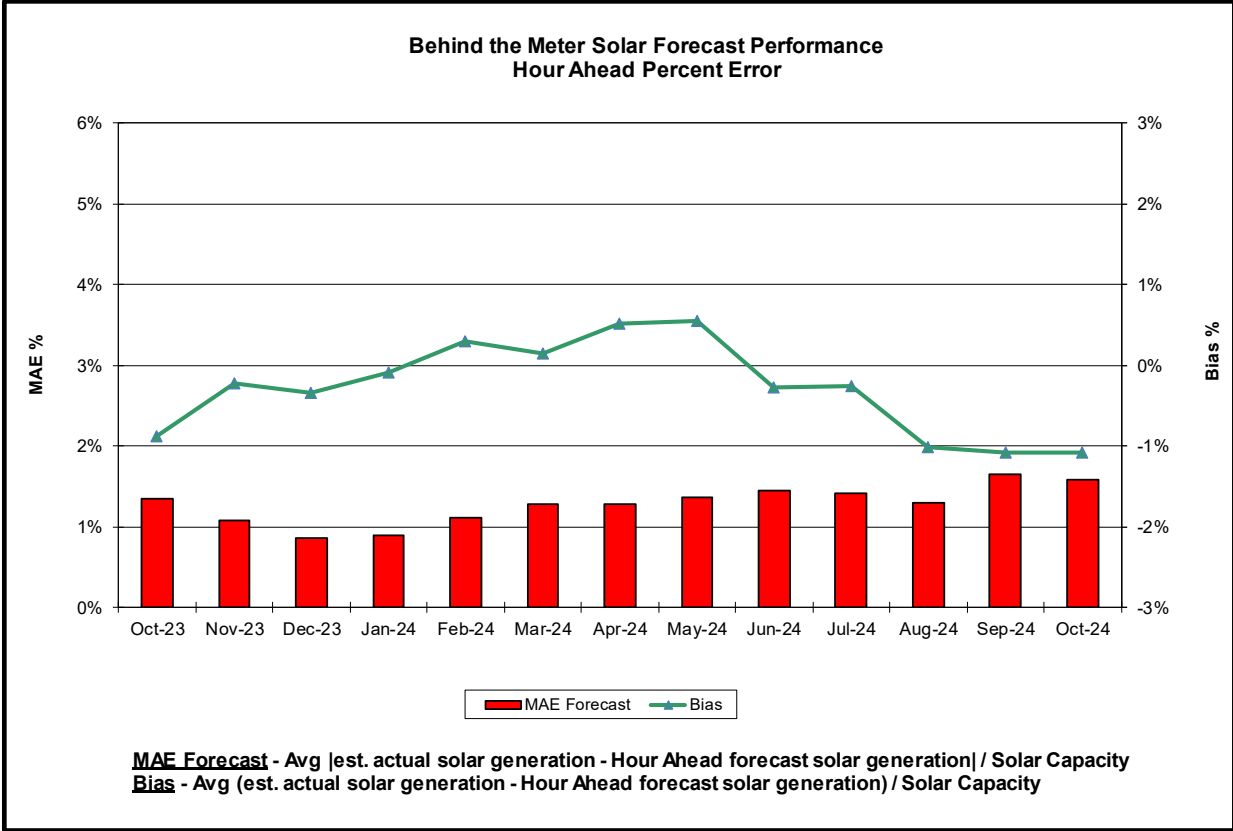
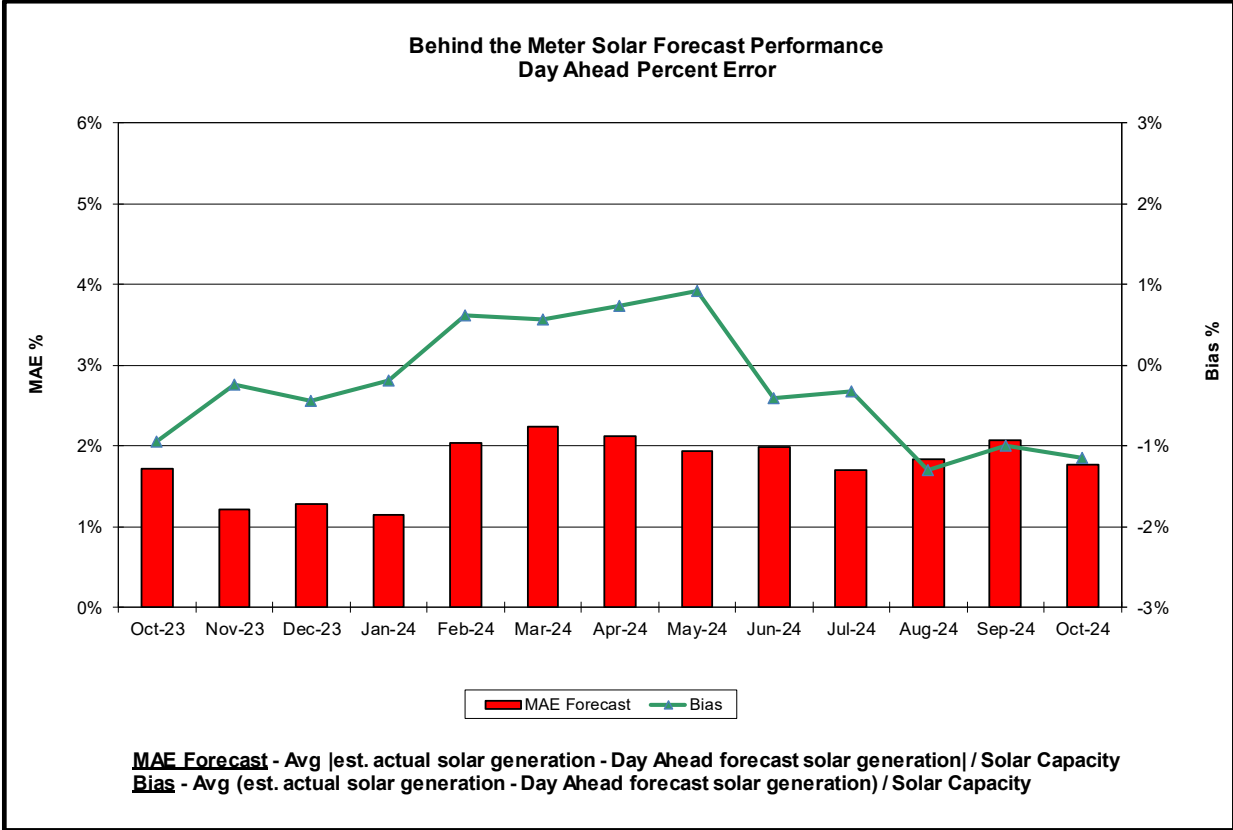
MAE Forecast - $\text{Avg } | \text{actual wind generation} - \text{hour ahead forecast wind generation} | / \text{Wind Capacity}$
MAE Persistence - $\text{Avg } | \text{actual wind generation} - \text{hour ahead actual wind generation} | / \text{Wind Capacity}$
Bias - $\text{Avg } (\text{actual wind generation} - \text{hour ahead forecast wind generation}) / \text{Wind Capacity}$

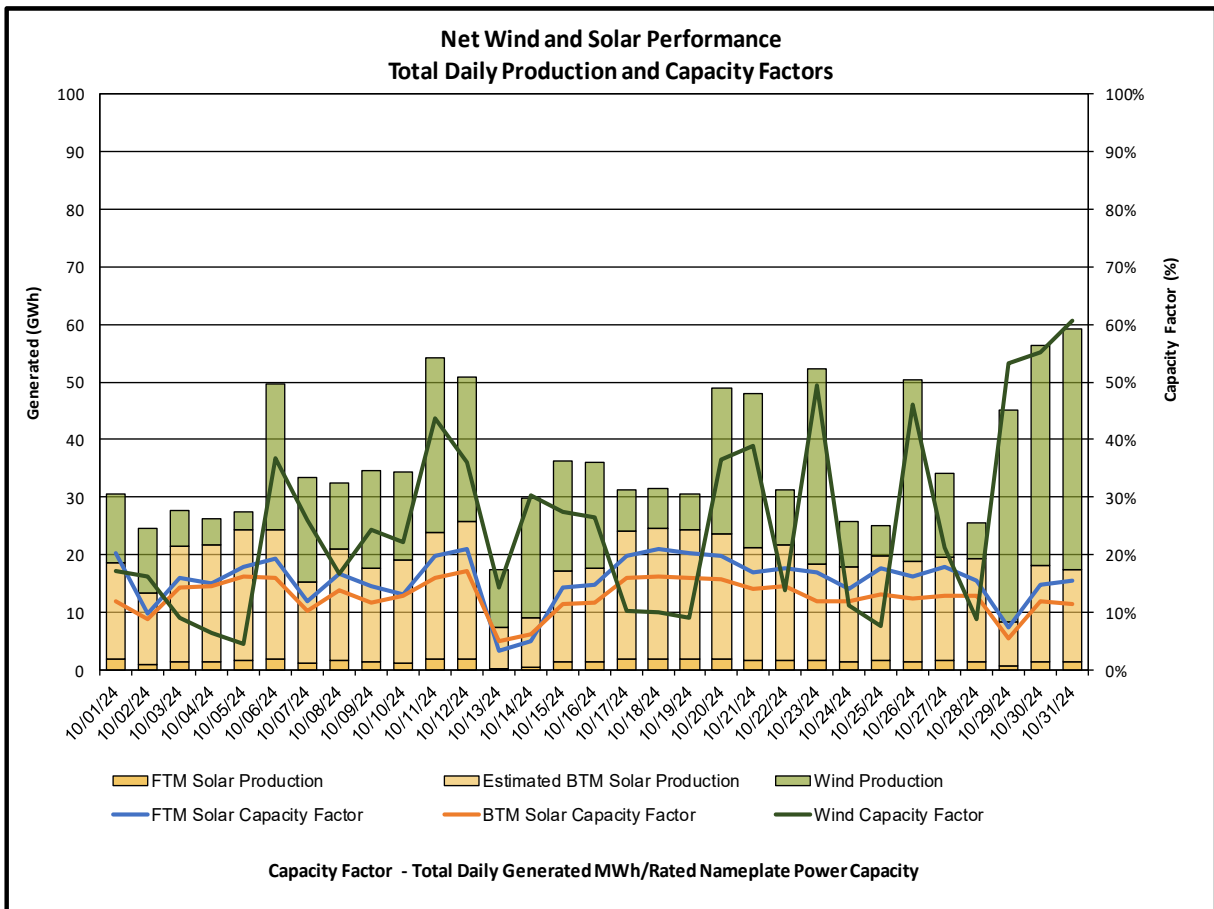
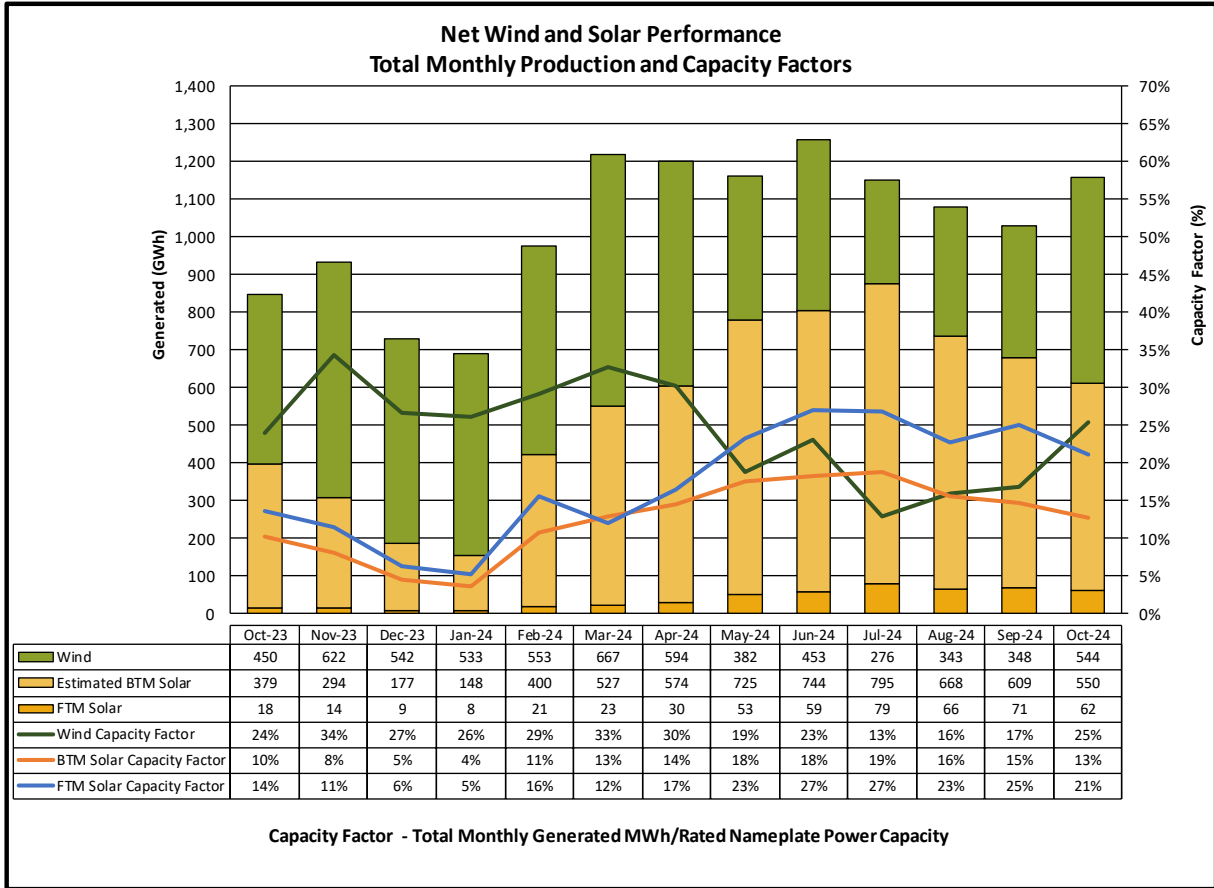


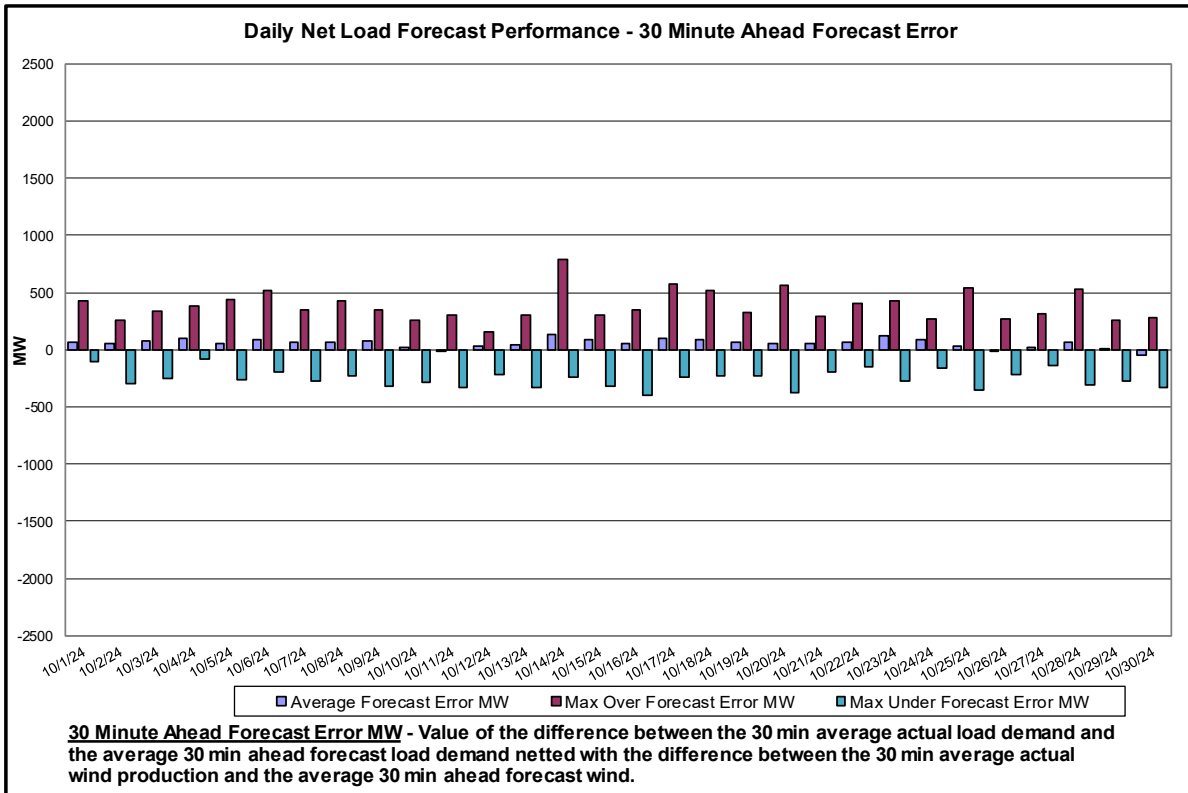
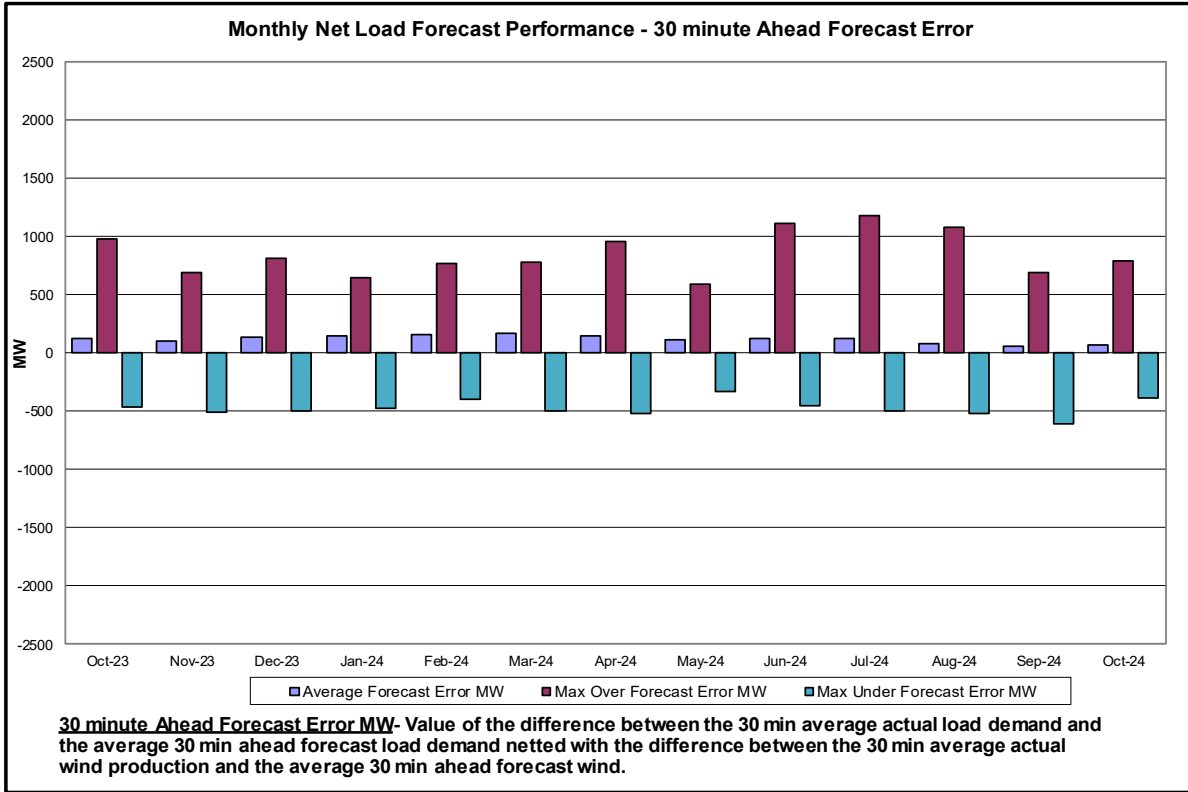


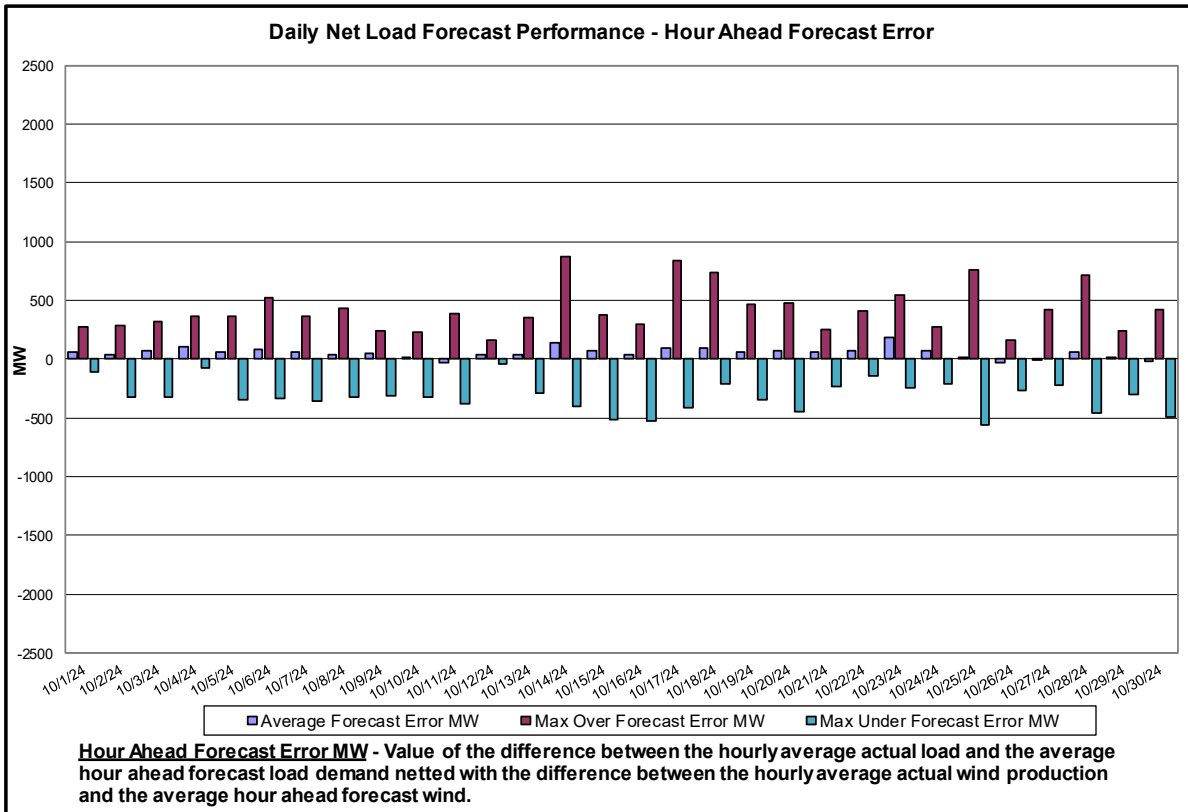
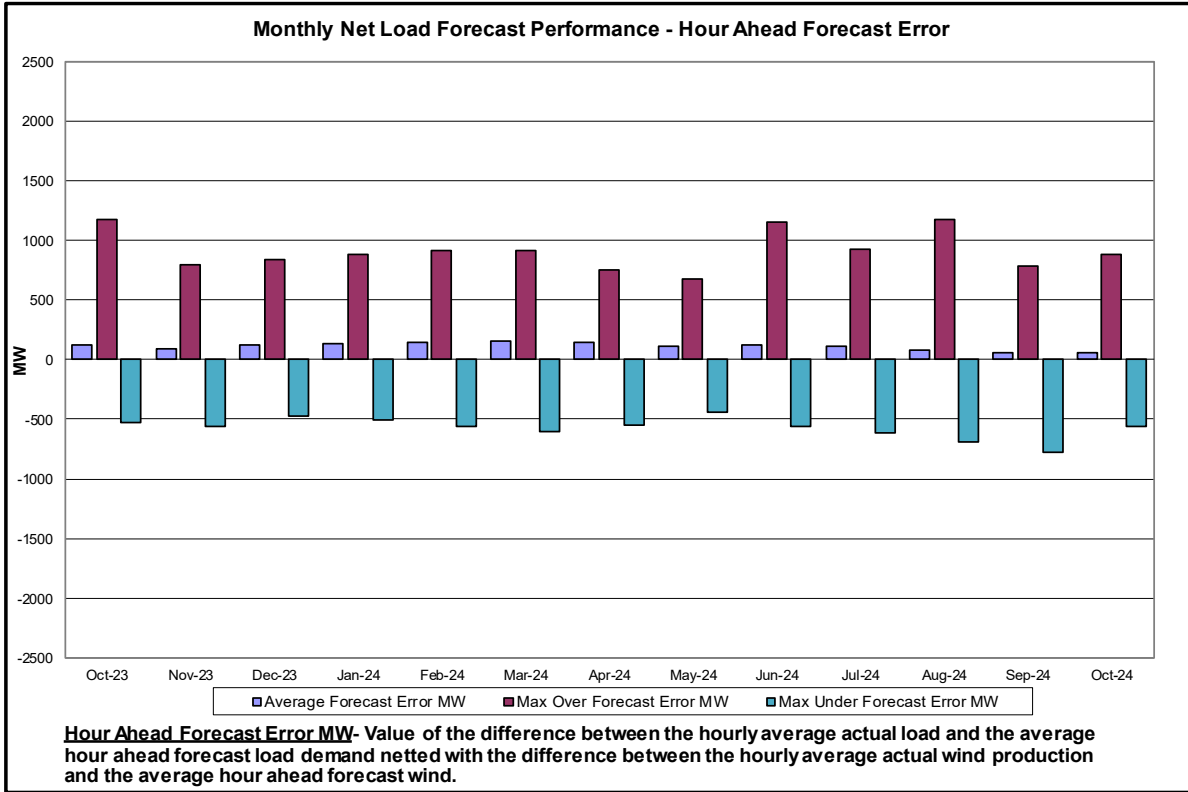


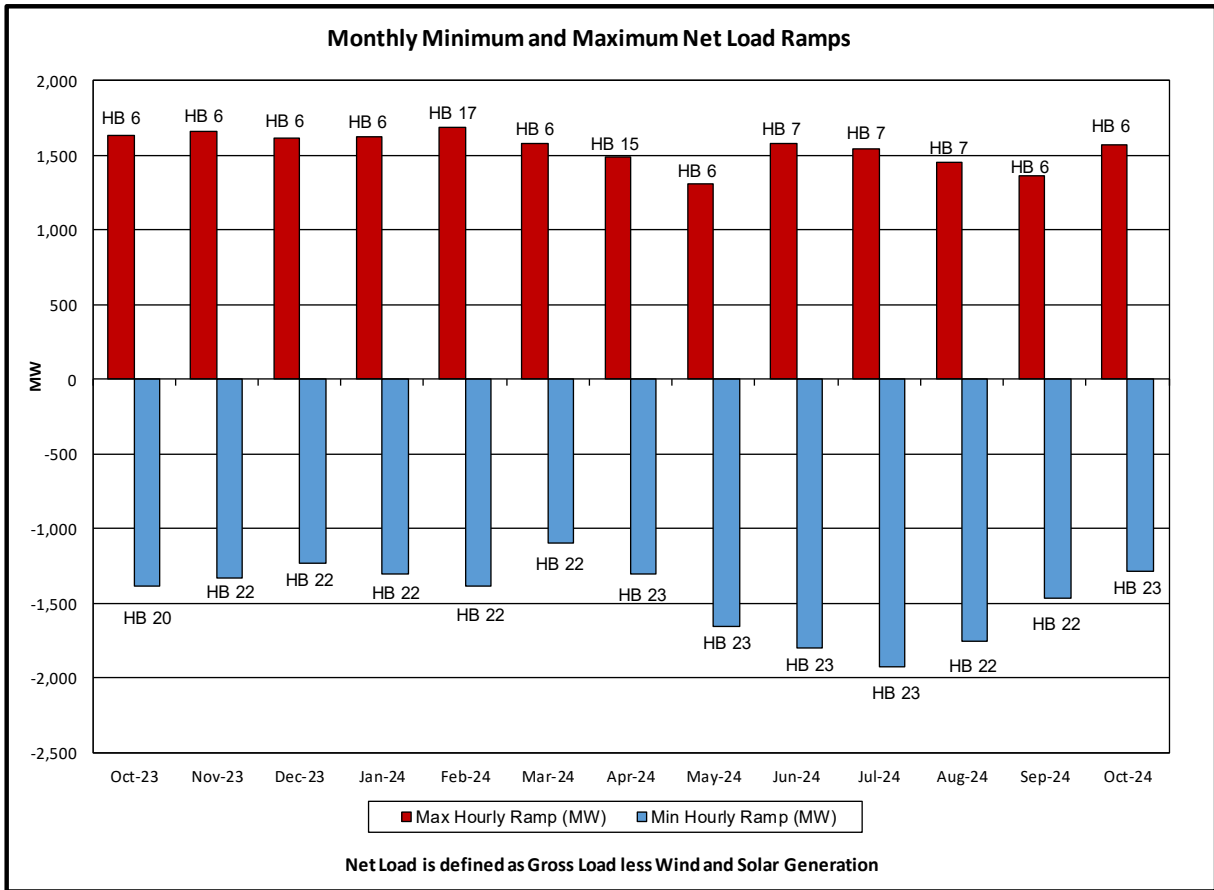
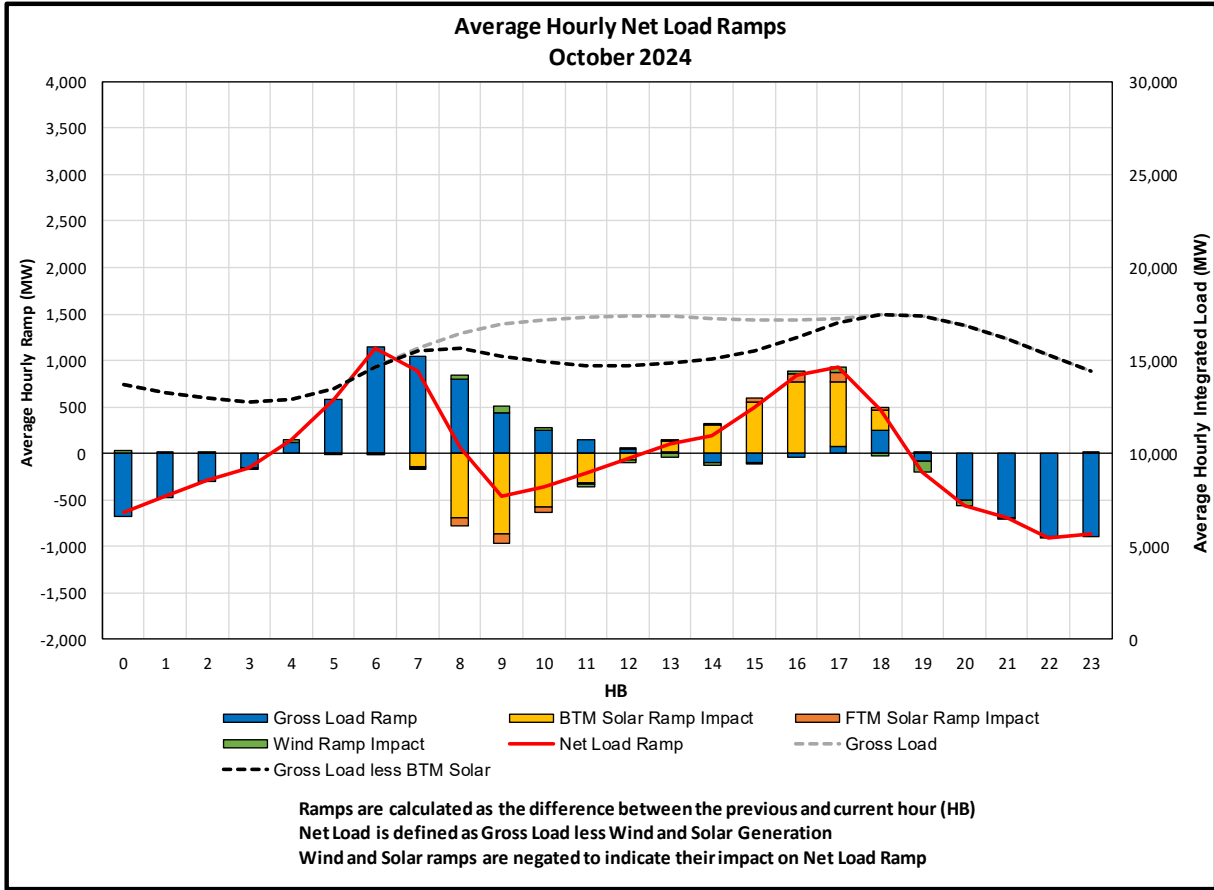


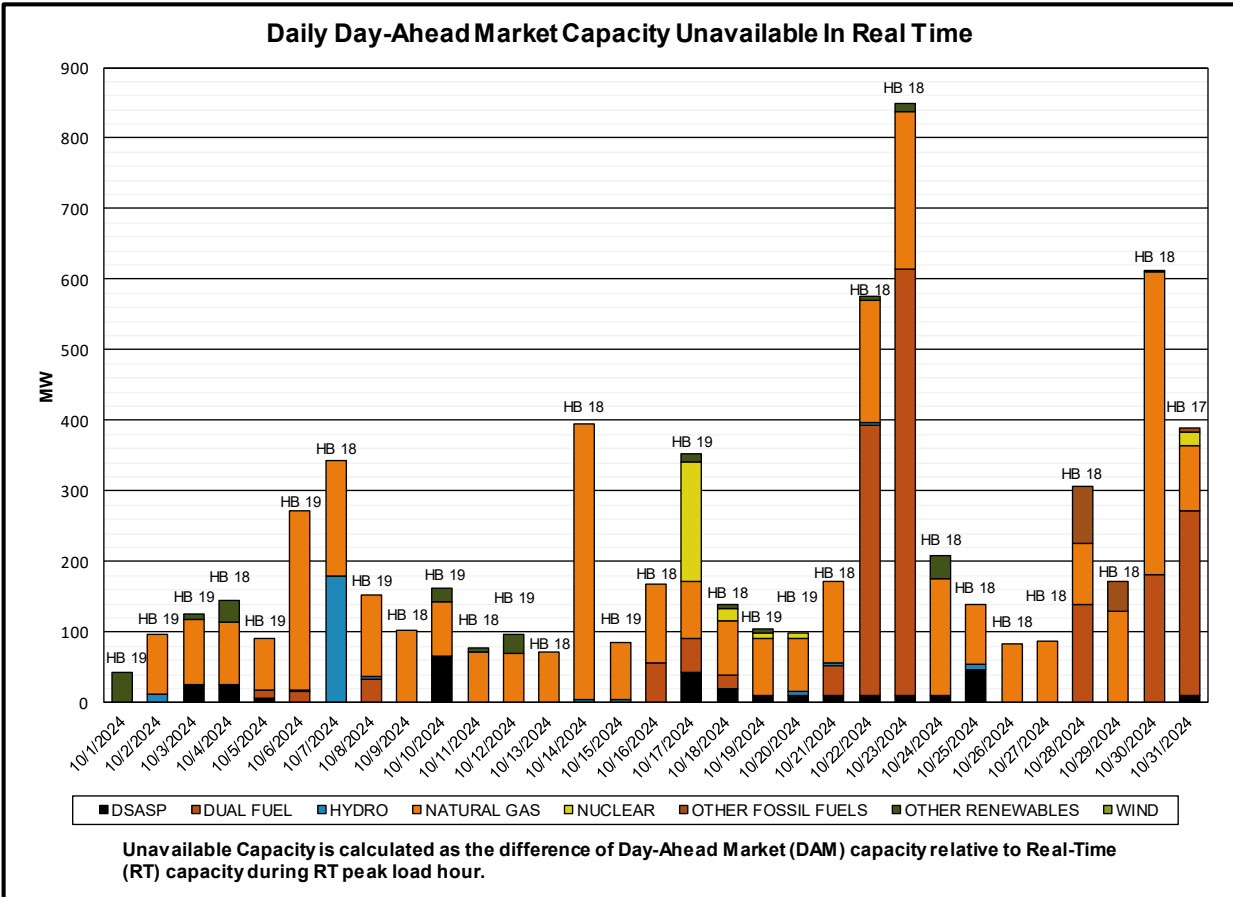
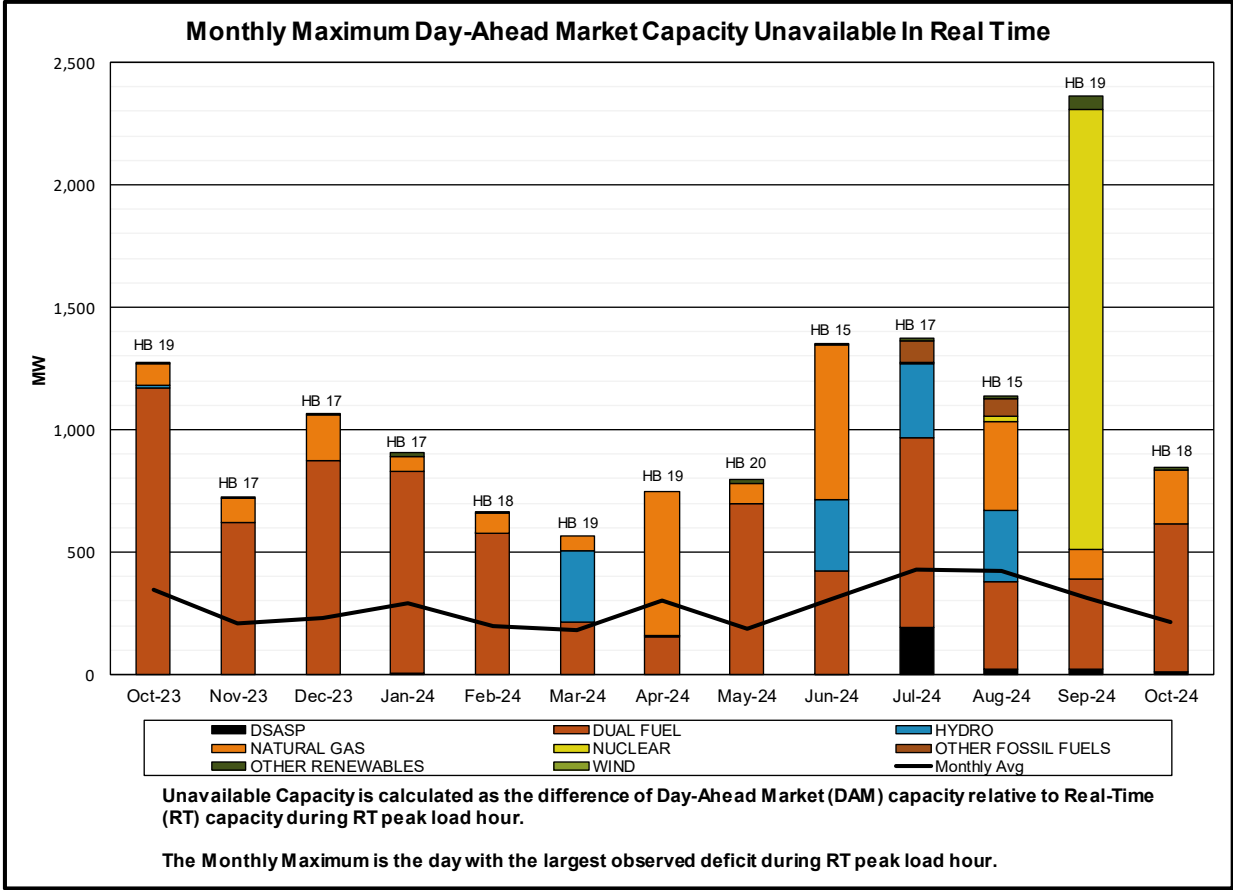


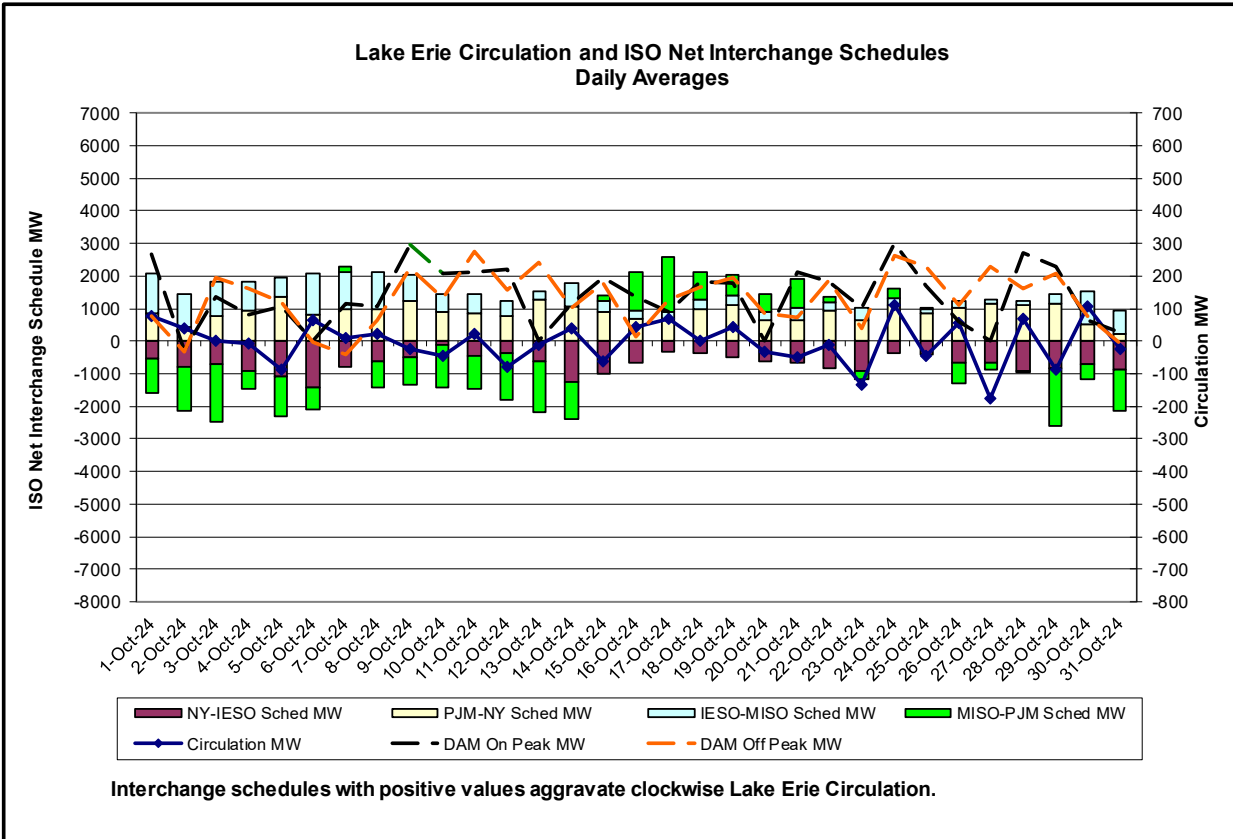
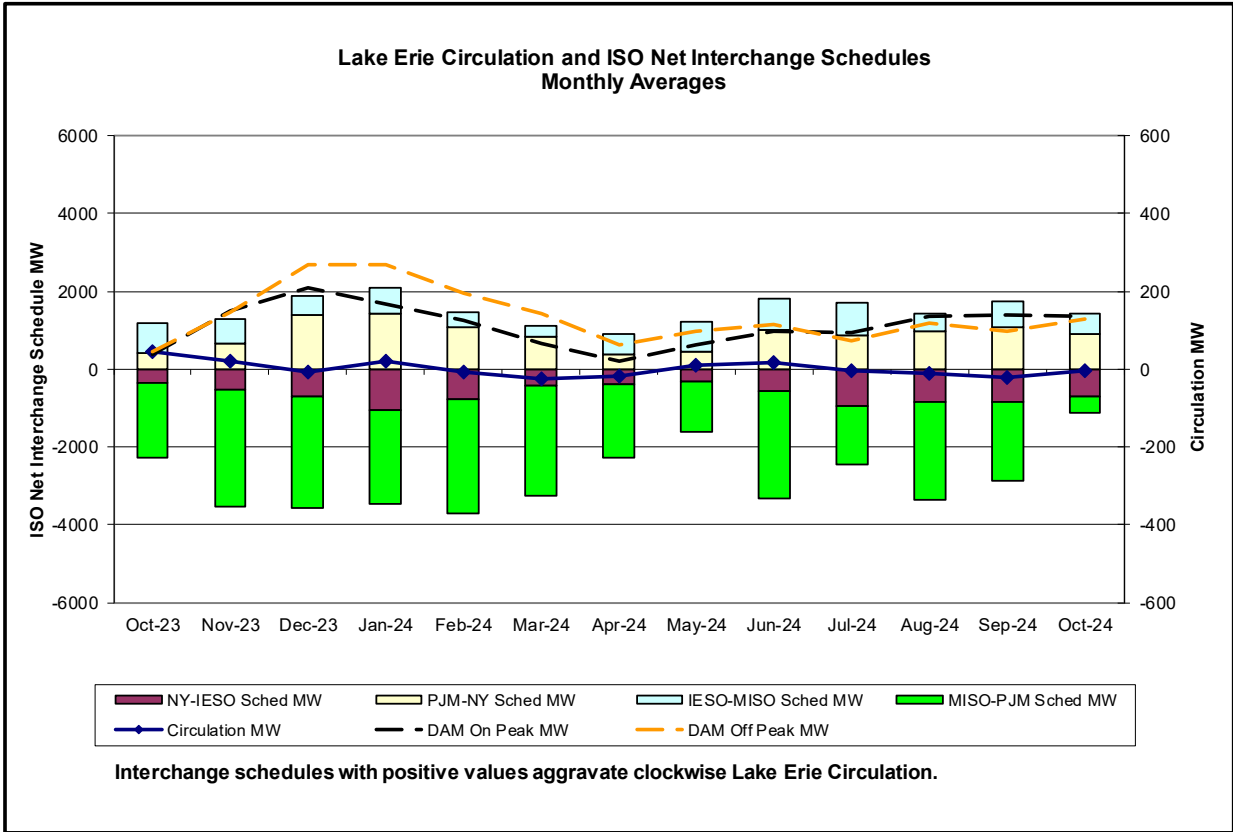




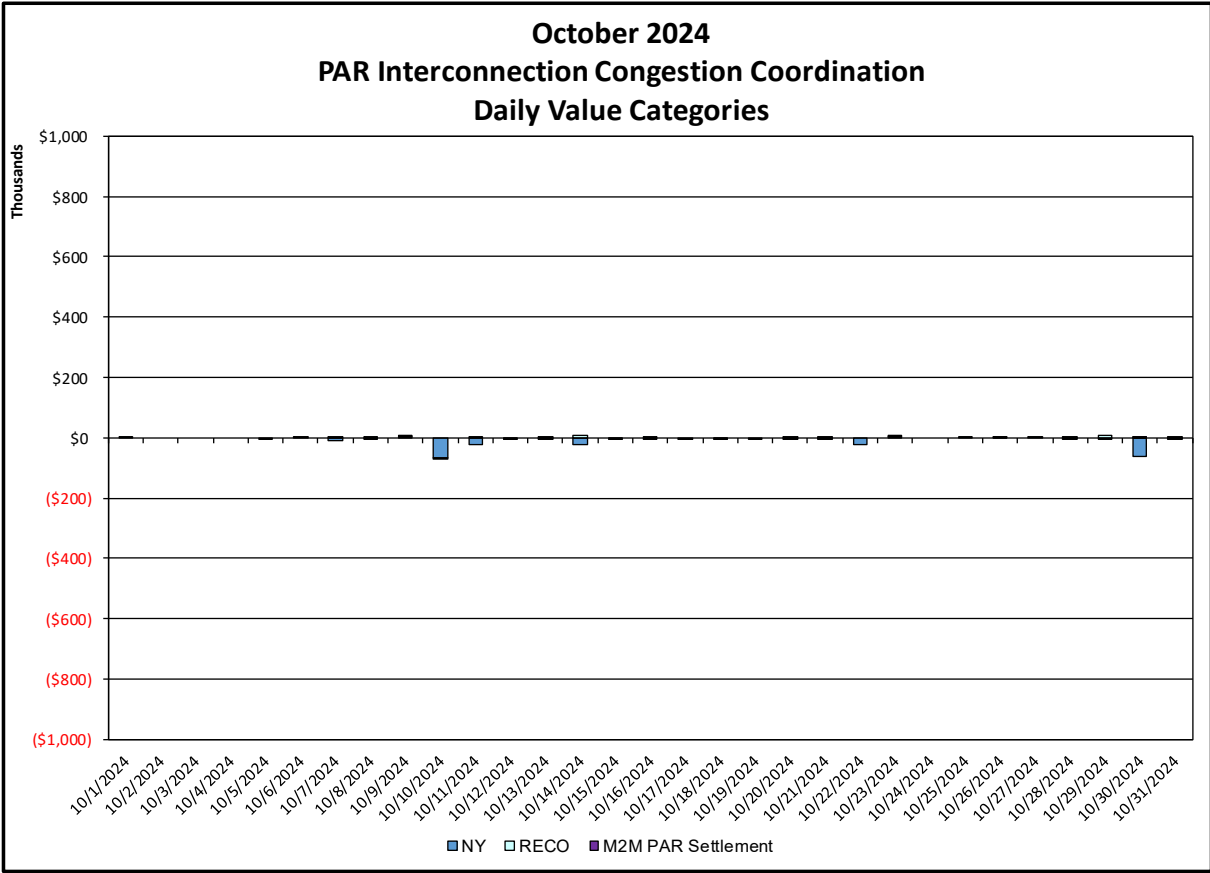
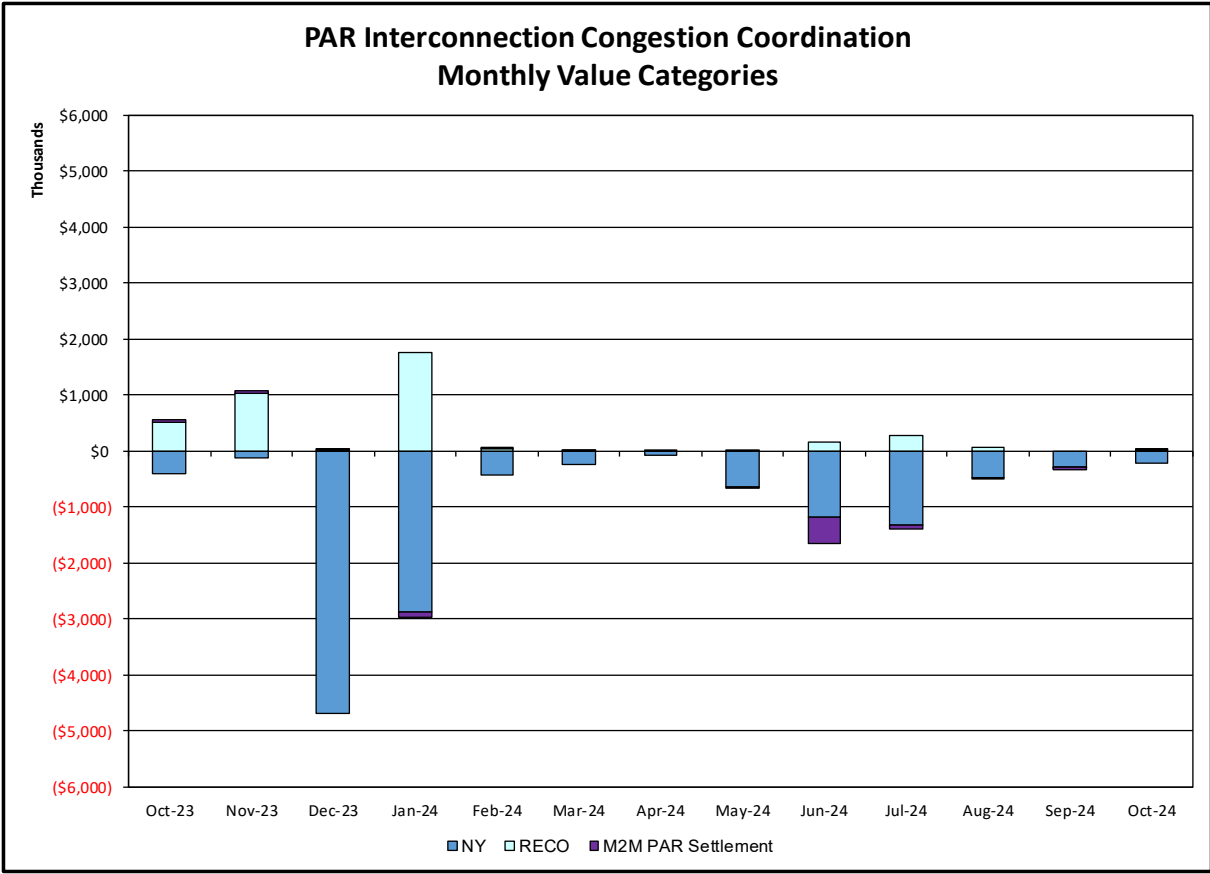






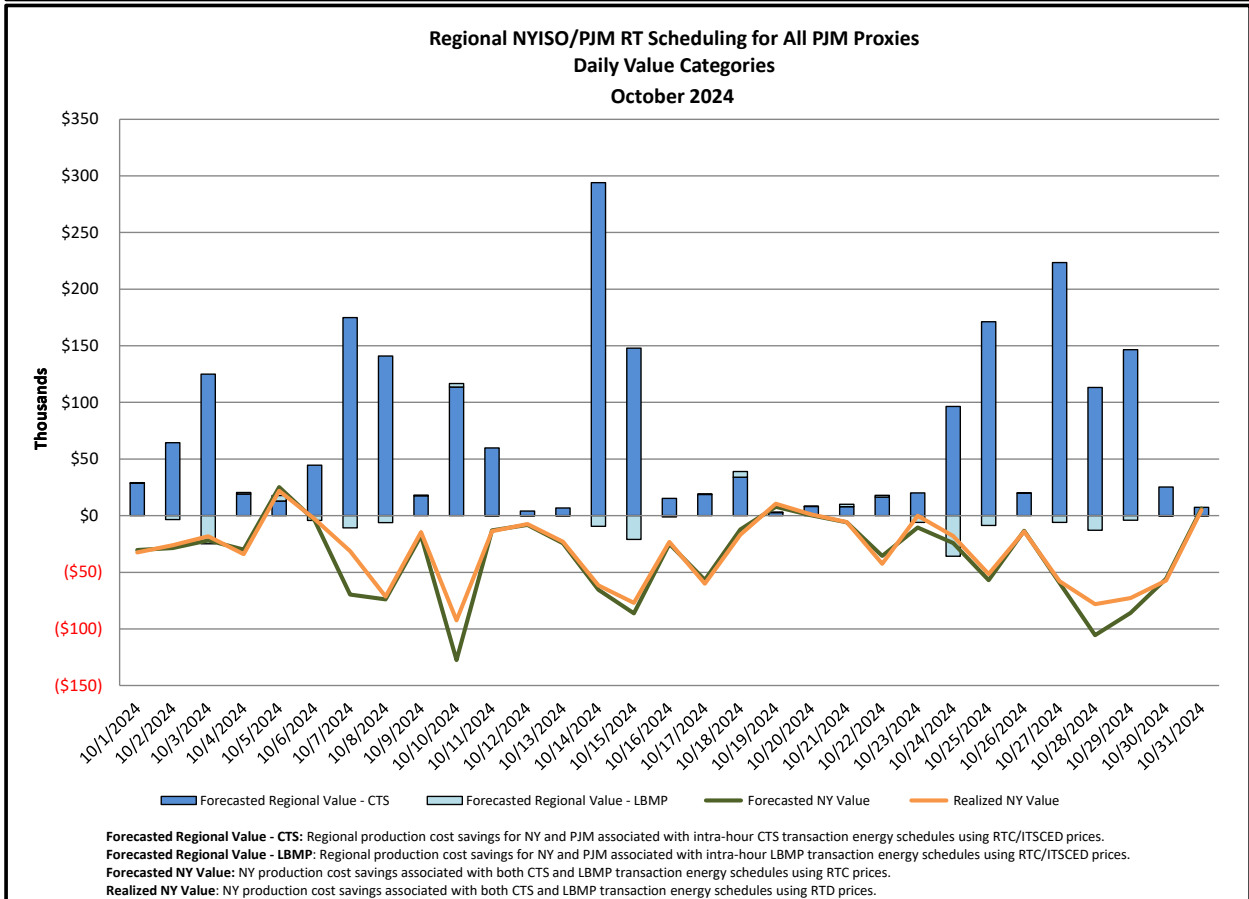
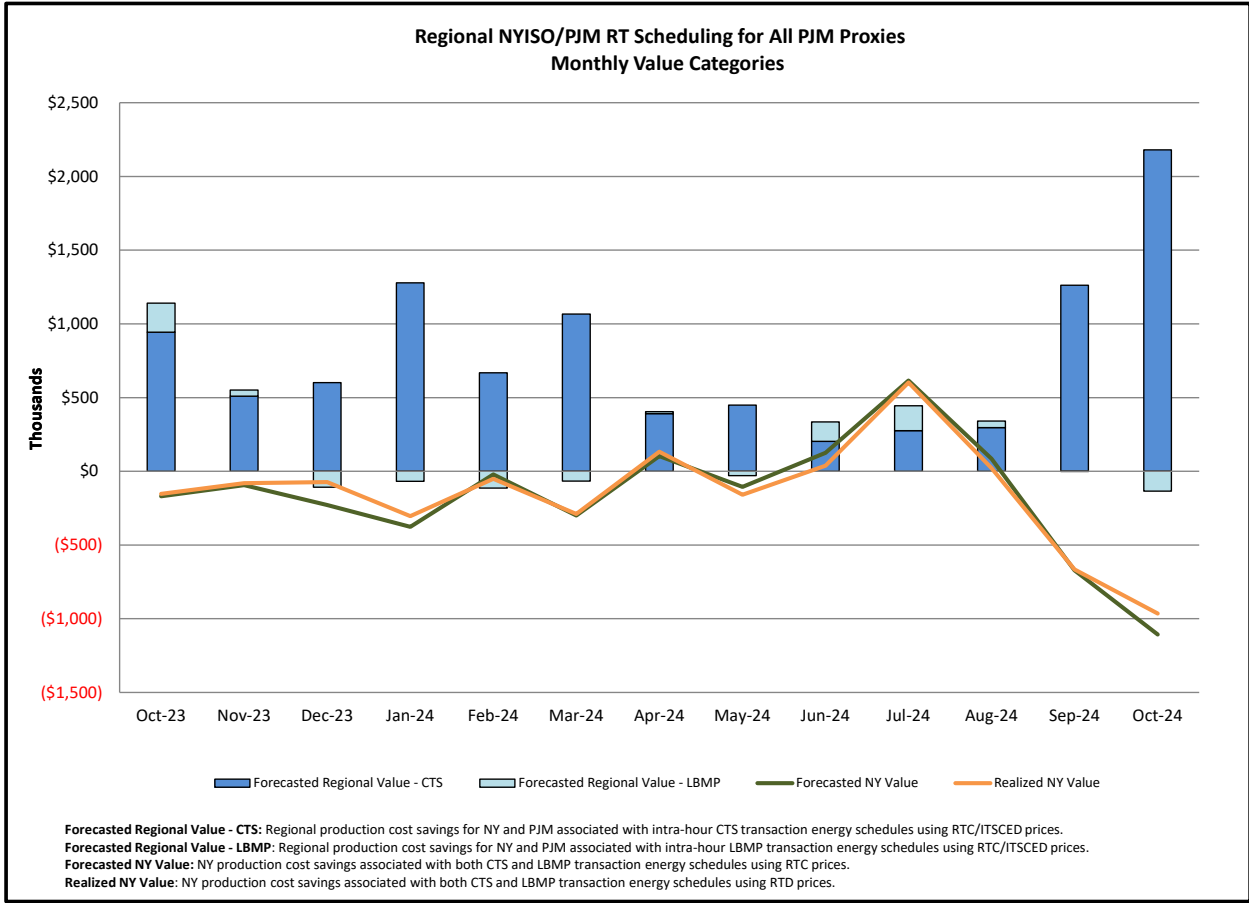


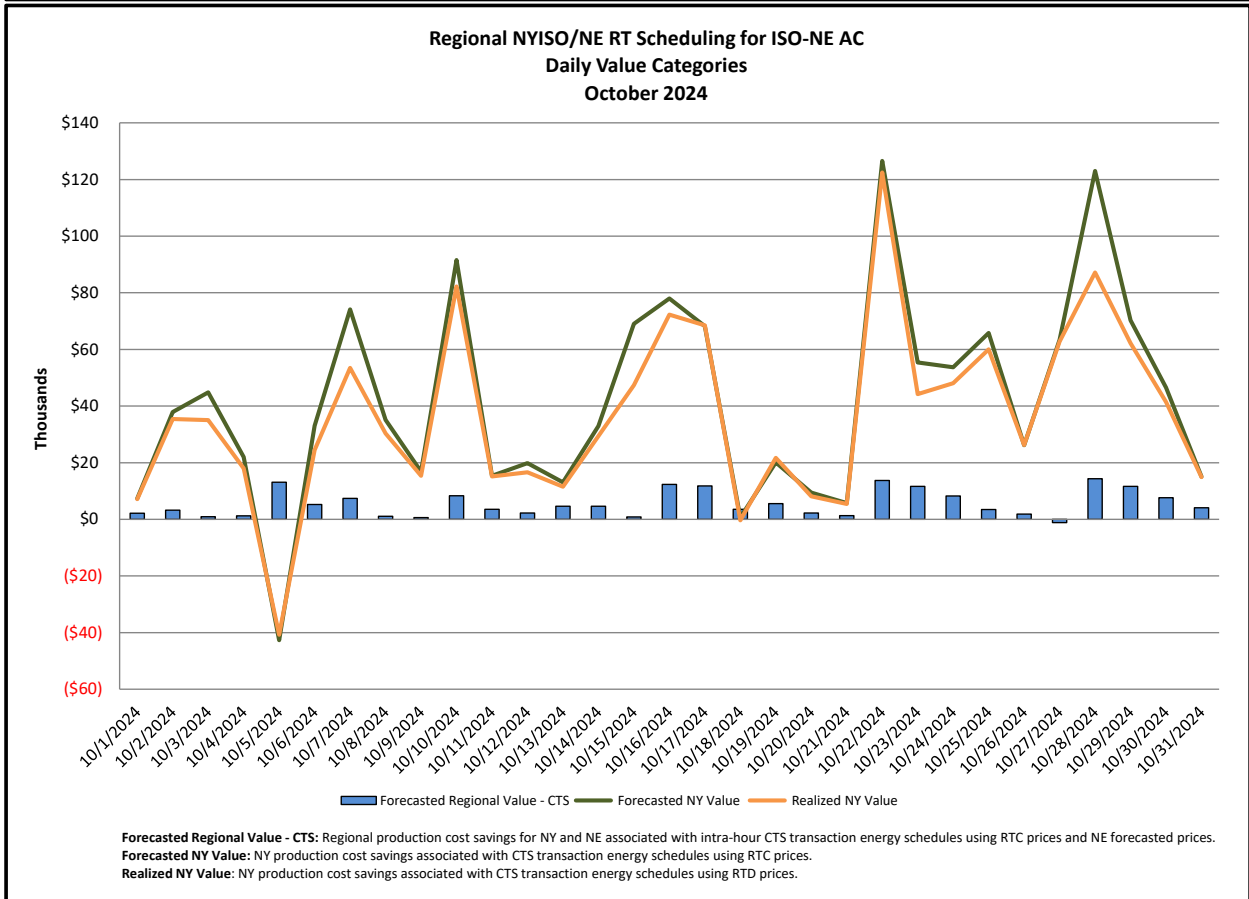
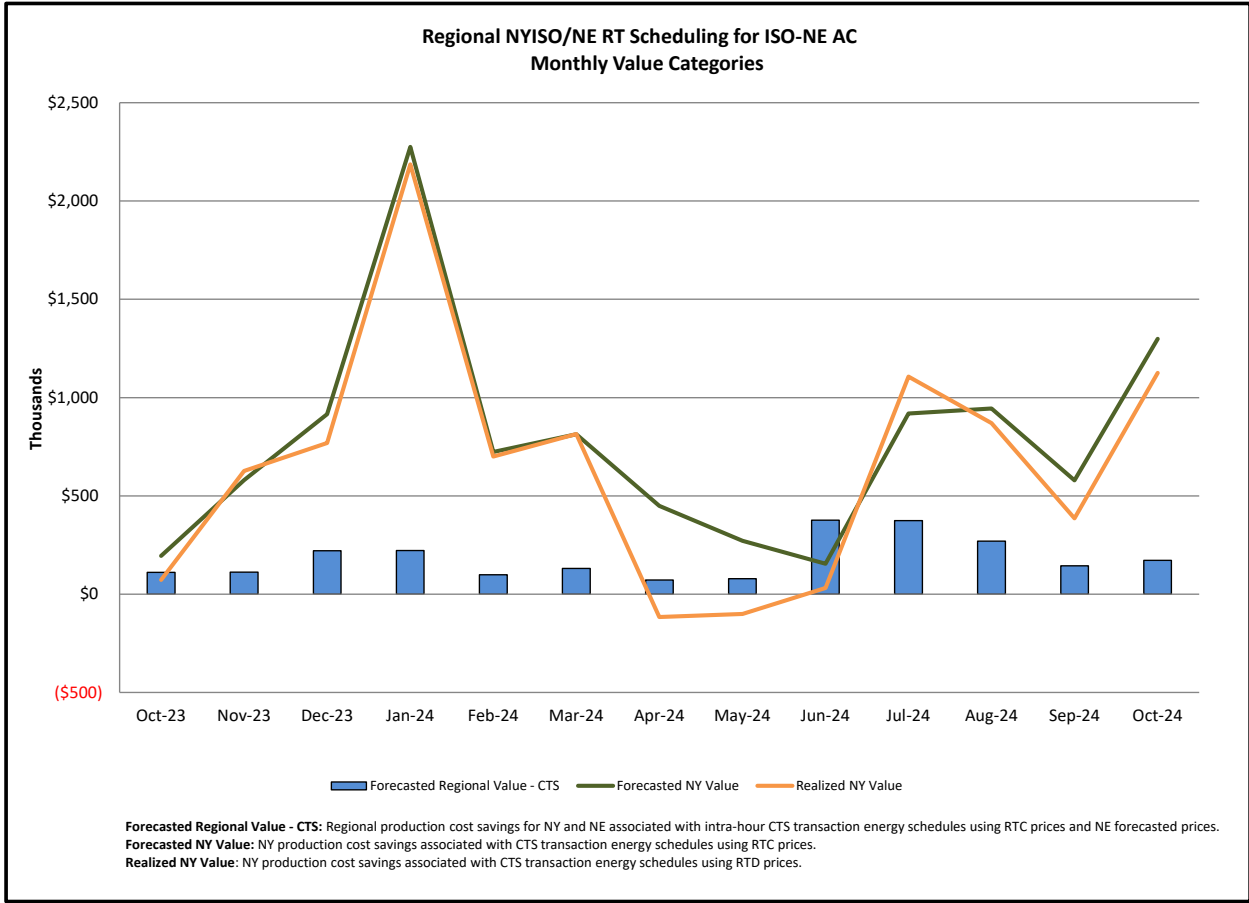
Broader Regional Market Performance Metrics



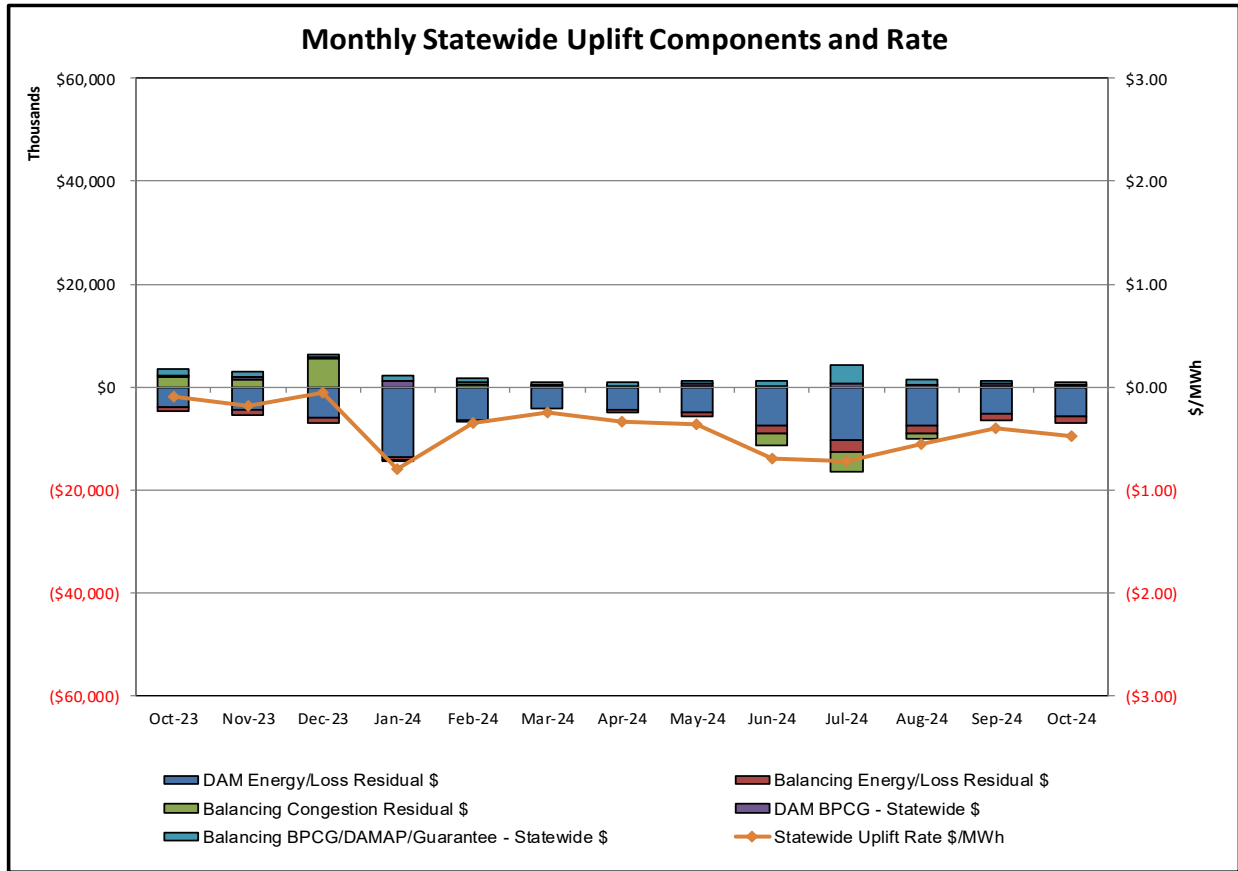
PAR Interconnection Congestion Coordination

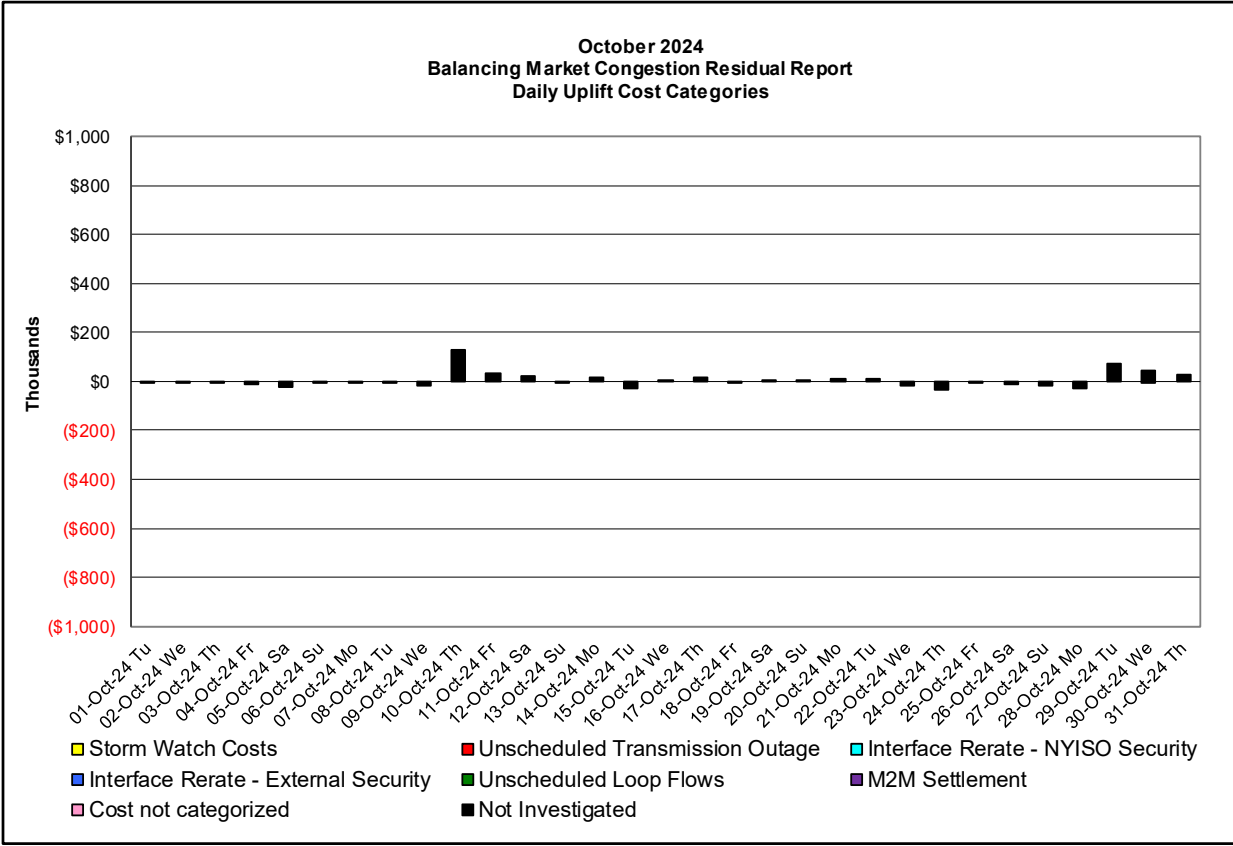
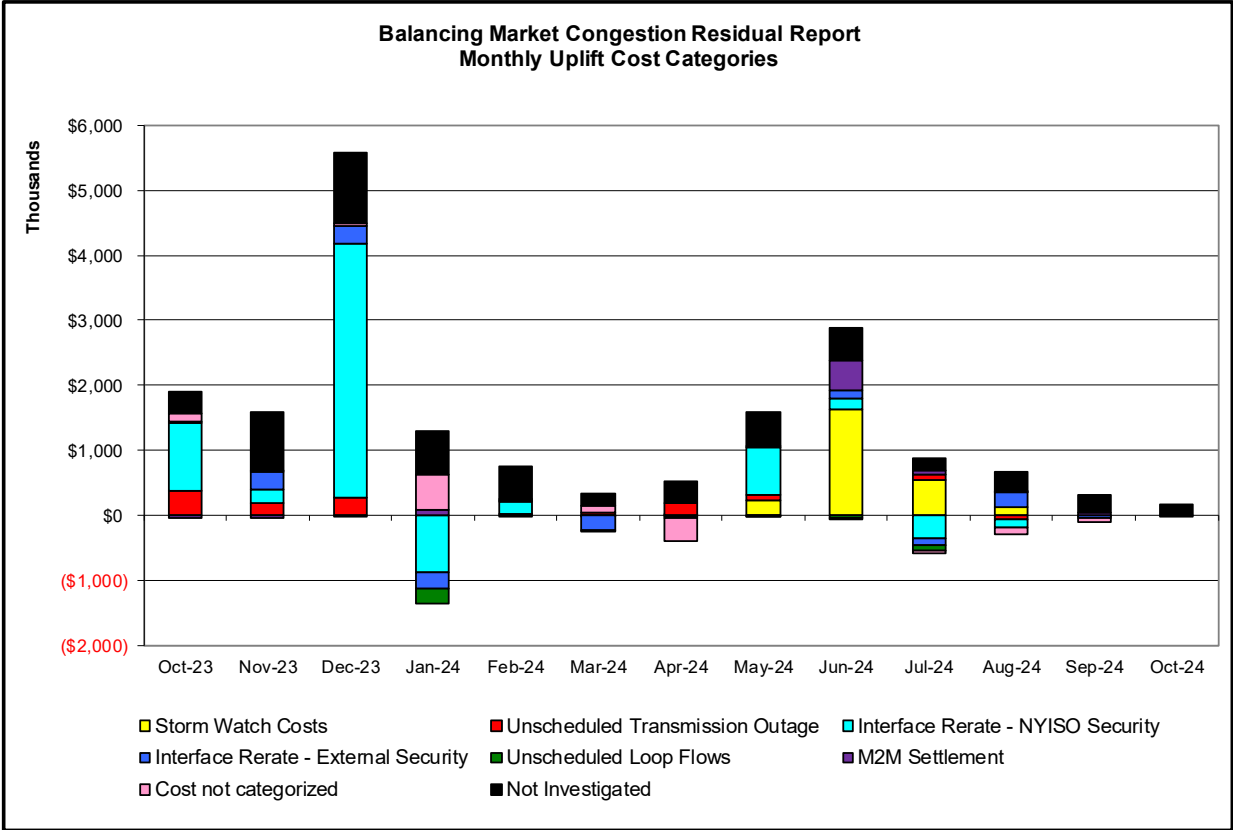
<u>Category</u>	<u>Description</u>
NY	Represents the value NY realizes from Market-to-Market PAR Coordination when experiencing congestion. This is the estimated savings to NY for additional deliveries into NY
RECO	Represents the value of PJM's obligation to deliver 80% of service to RECO load over Ramapo 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



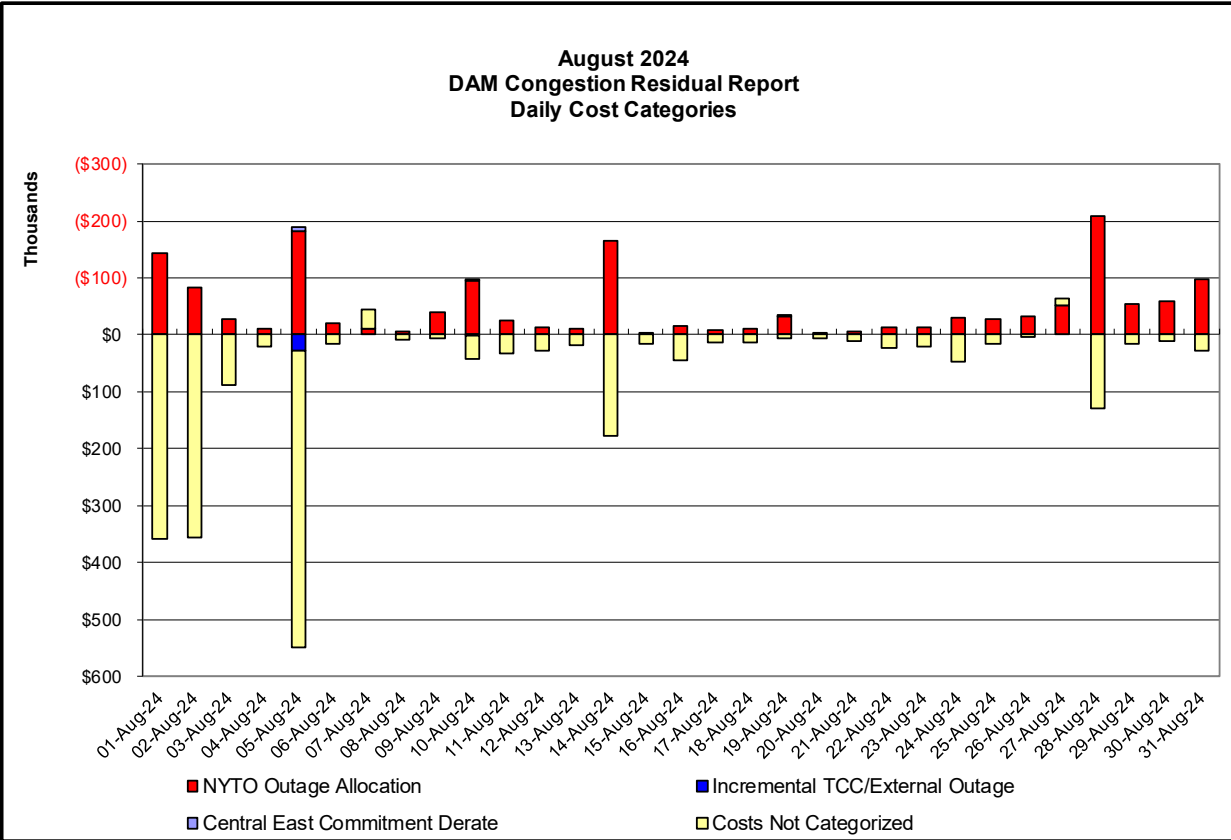
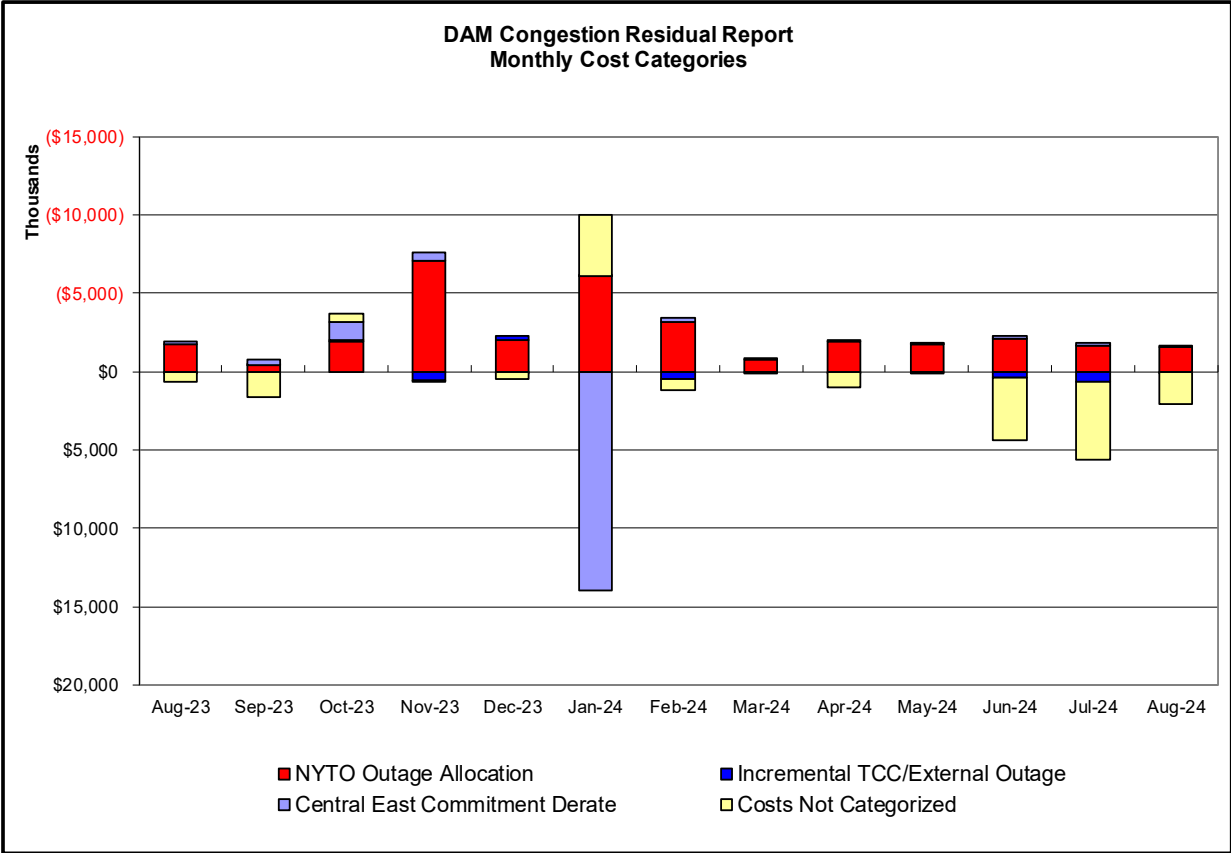


Real-Time Balancing Market Congestion Residual (Uplift Cost) Categories

<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

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



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 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.	

