

Operations Performance Metrics Monthly Report



July 2020 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 August 10, 2020.

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 Load Forecasting Performance*
 - *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*

July 2020 Operations Performance Highlights

- Peak load of 30,660 MW occurred on 07/27/2020 HB 17
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- 29.93 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- Warmer than normal temperatures offset the COVID-19 load impacts in July
- To reduce risks from COVID-19, the NYISO continues to take several actions to maintain critical business operations and protect the health and well-being of our employees and stakeholders.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

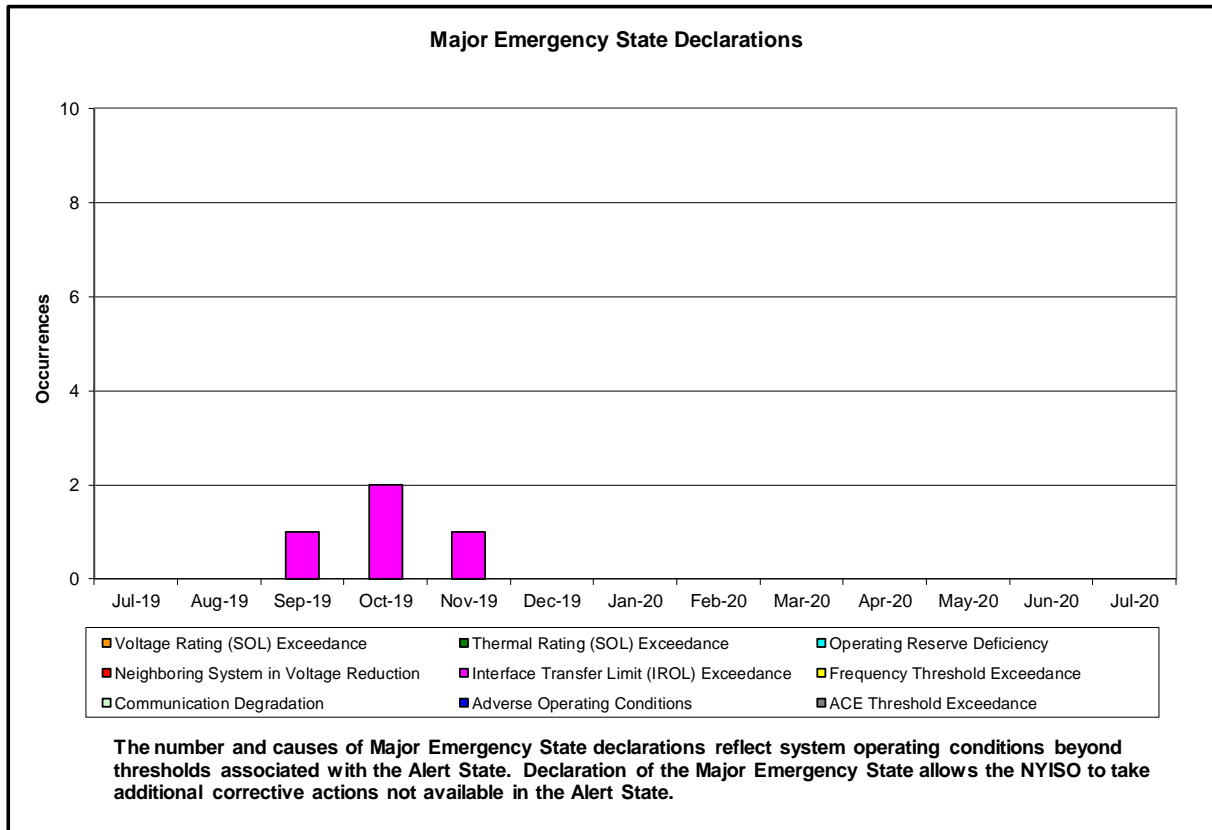
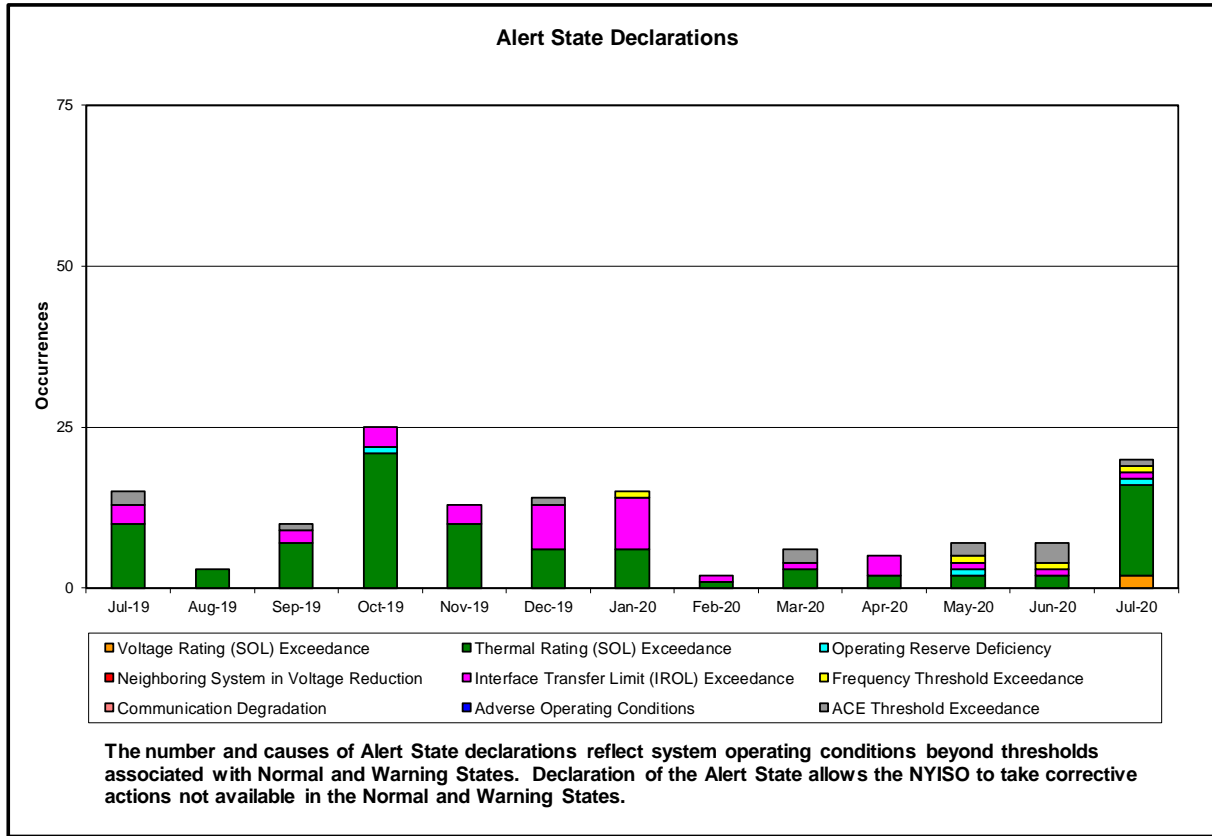
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$0.42	\$2.95
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.30)	(\$0.41)
NY Savings from NE-NY Coordinated Transaction Scheduling	\$0.49	\$1.04
Total NY Savings	\$0.61	\$3.58
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.40	\$1.17
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.16	\$0.18
Total Regional Savings	\$0.56	\$1.35

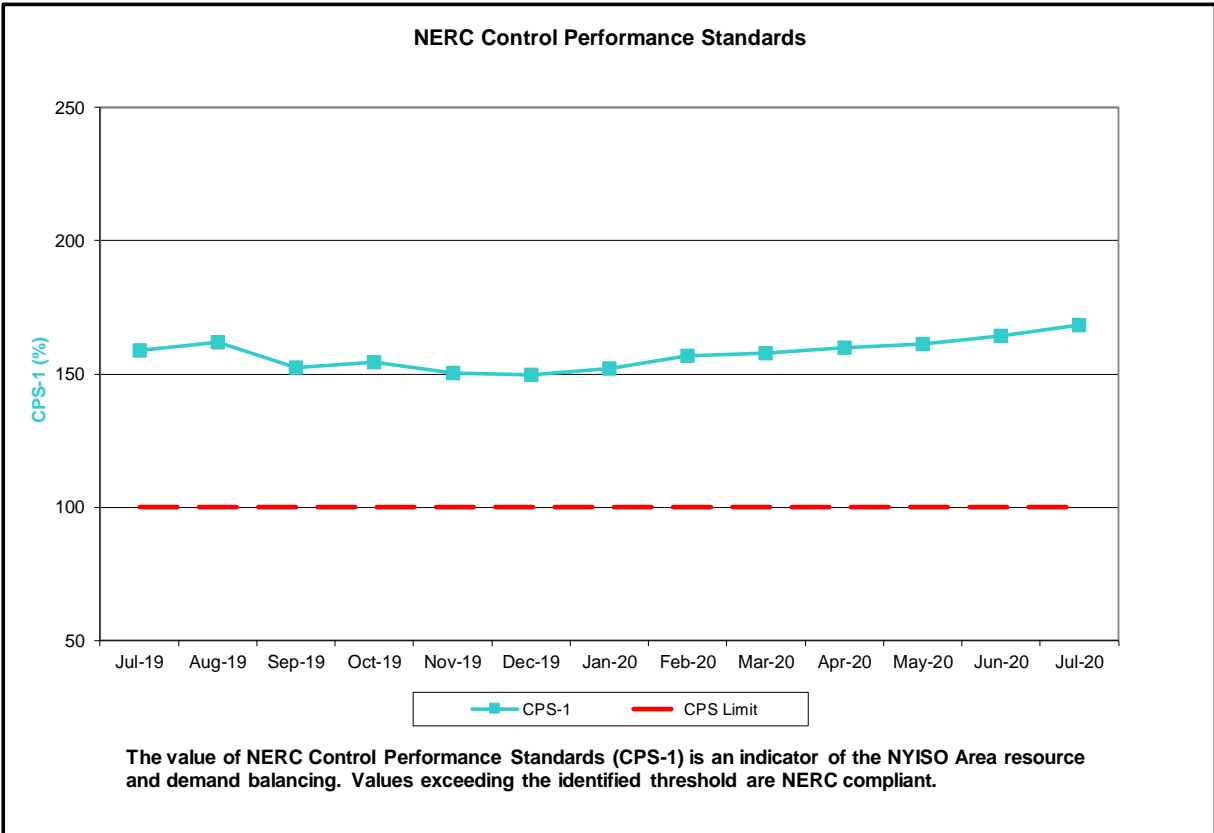
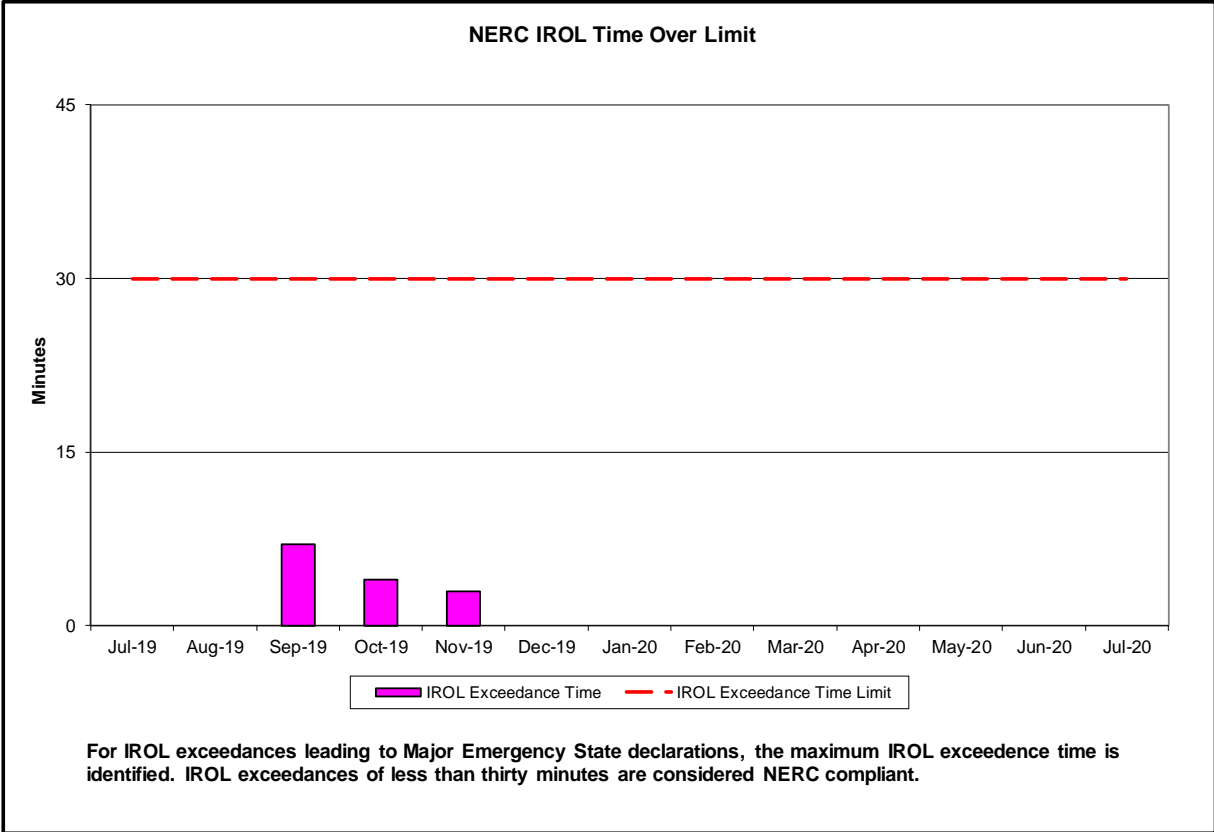
- Statewide uplift cost monthly average was (\$0.31)/MWh
- The following table identifies the Monthly ICAP spot market prices and the price delta.

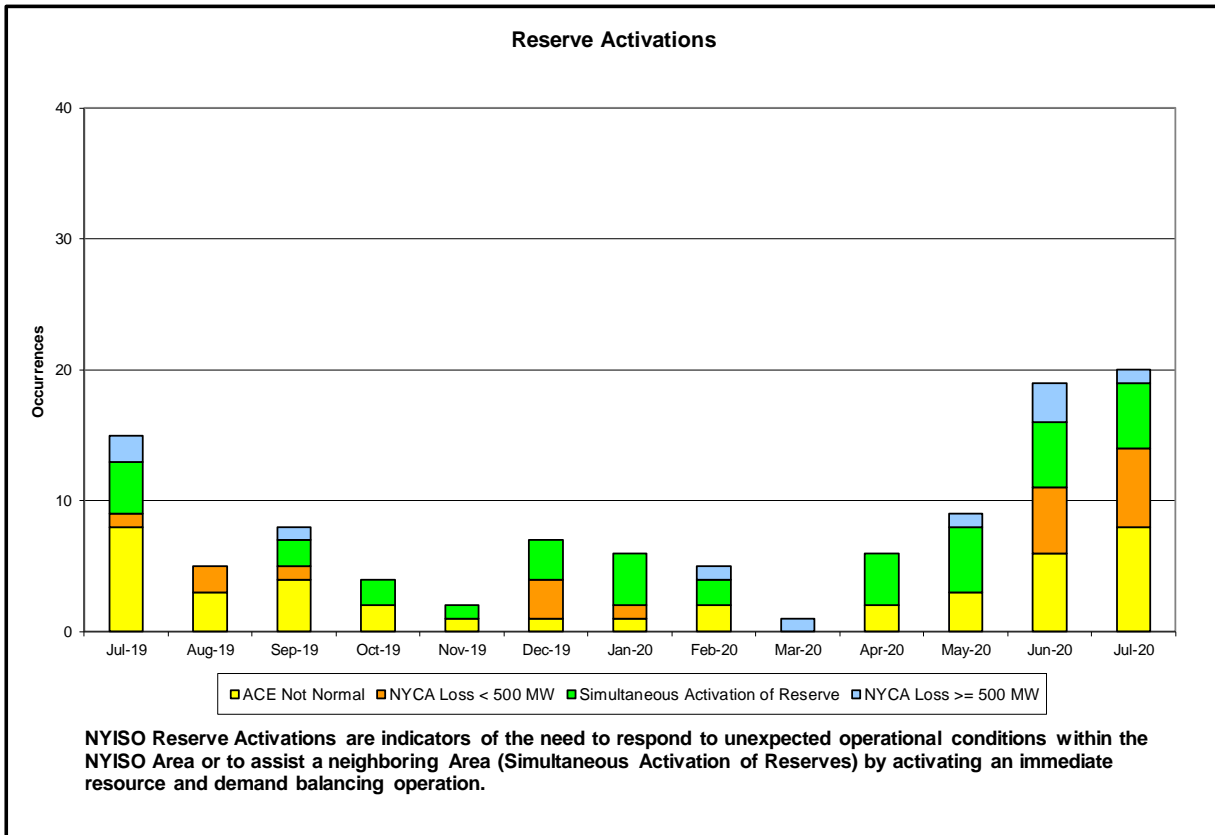
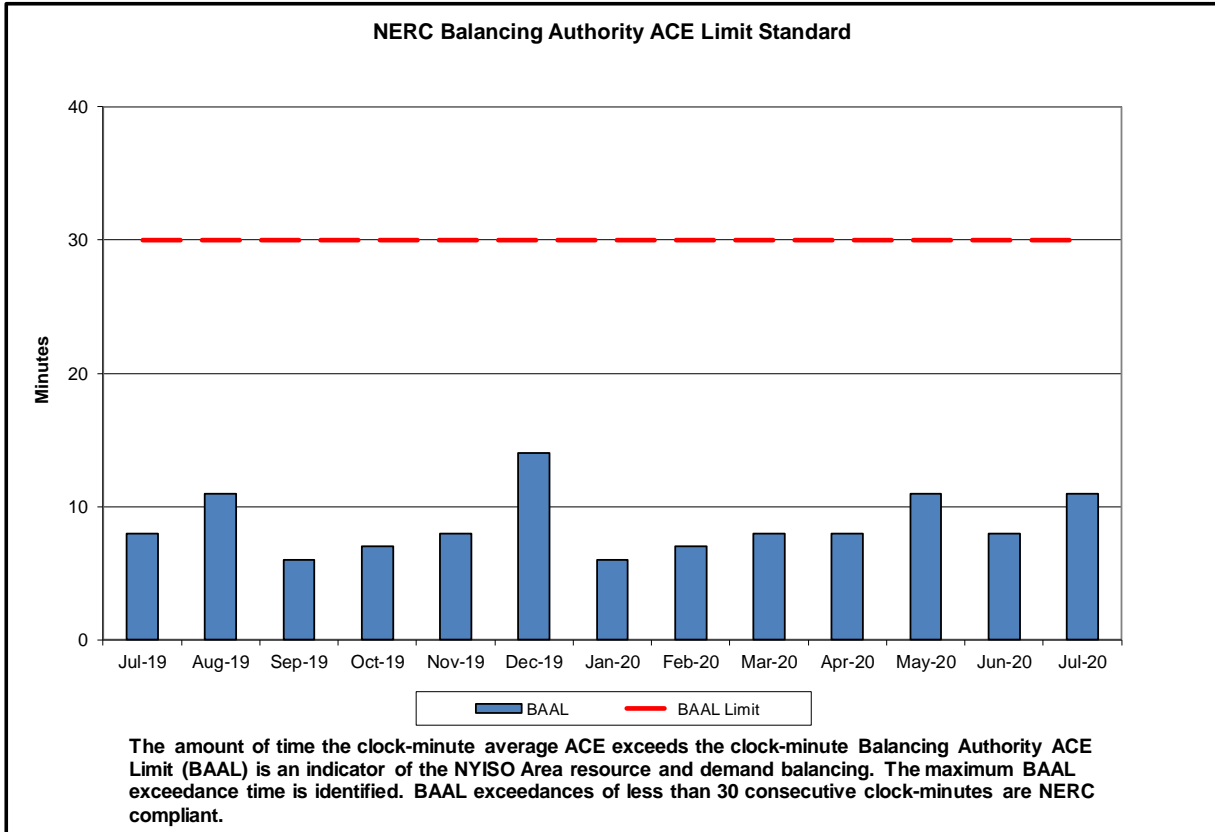
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
August 2020 Spot Price	\$2.37	\$2.37	\$18.72	\$5.17
July 2020 Spot Price	\$2.69	\$2.69	\$19.03	\$5.32
Delta	(\$0.32)	(\$0.32)	(\$0.31)	(\$0.15)

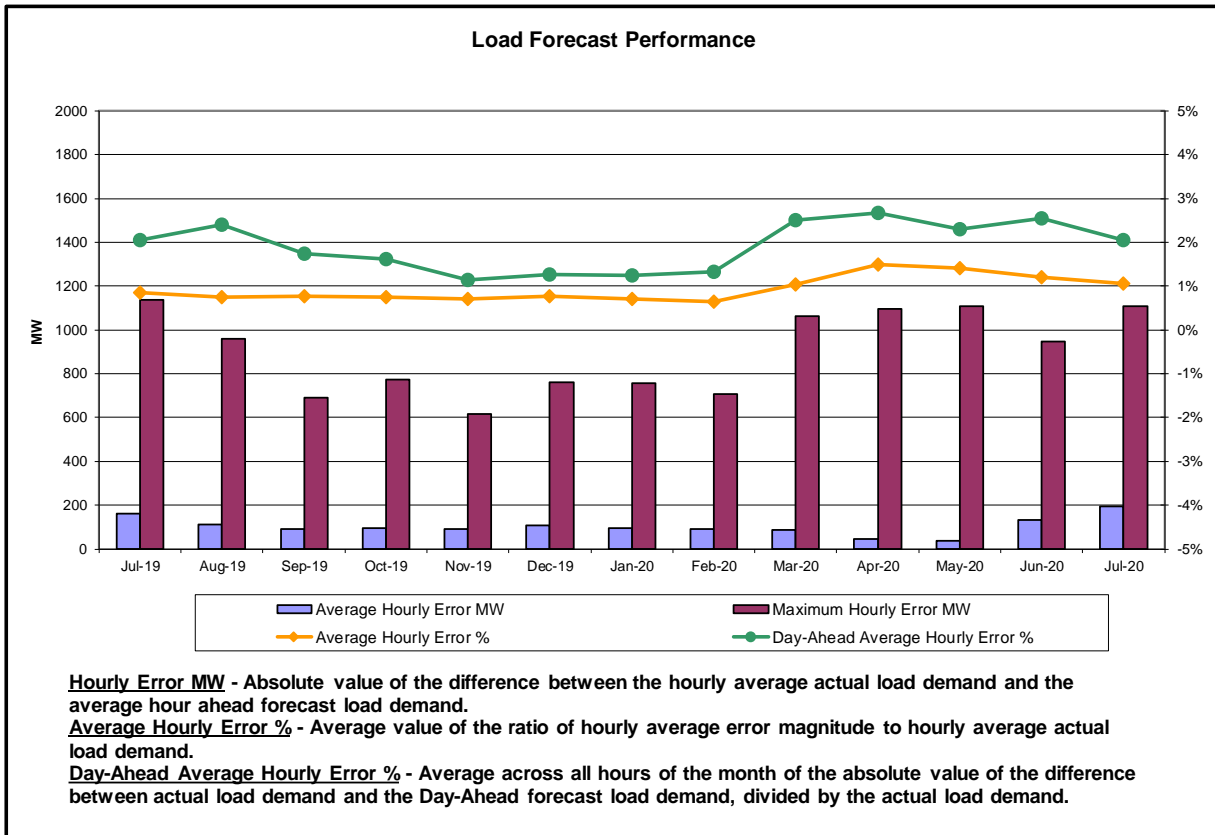
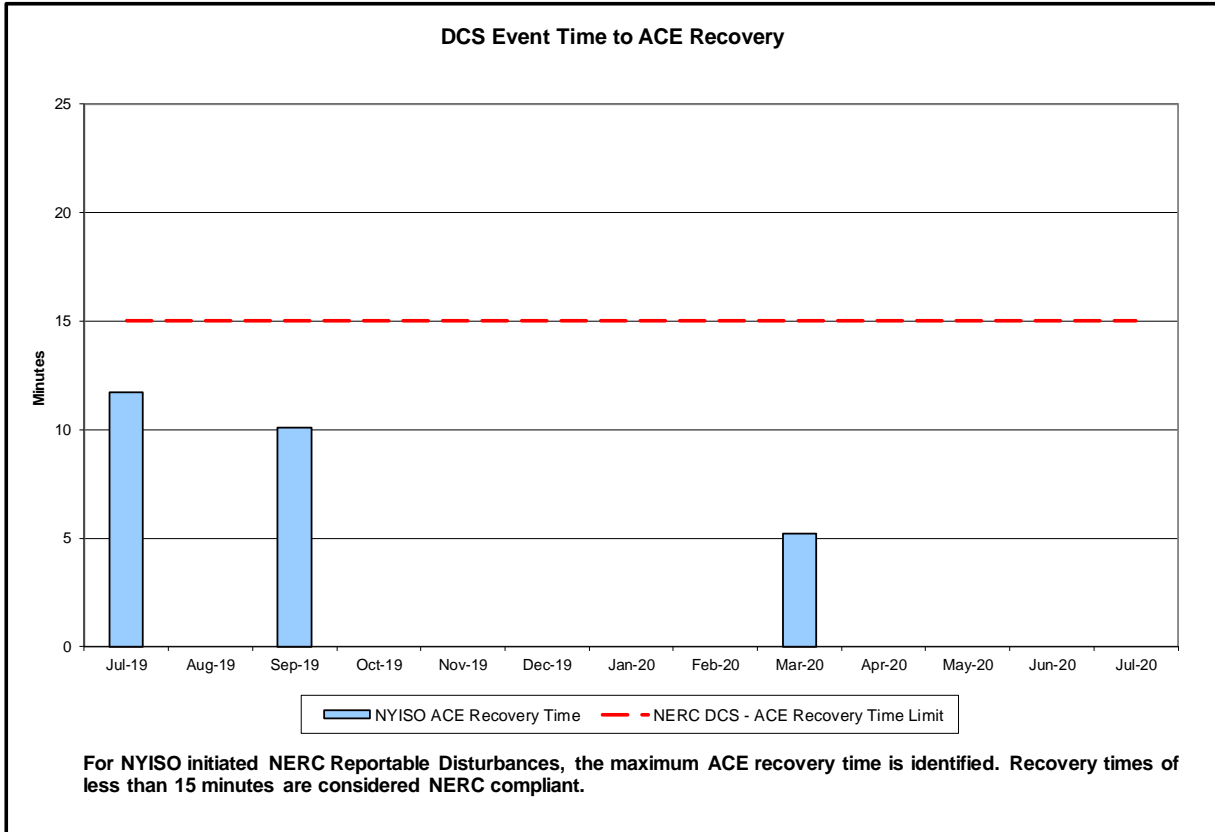
- Long Island - Increase in Gen UCAP, increase in SCR availability, decrease in unoffered
- NYC - Increase in Gen UCAP, increase in SCR availability, decrease in unoffered
- Lower Hudson Valley - Increase in Gen UCAP, increase in SCR availability, increase in unoffered
- NYCA - Increase in Gen UCAP, increase in SCR availability, increase in unoffered, increase in net imports

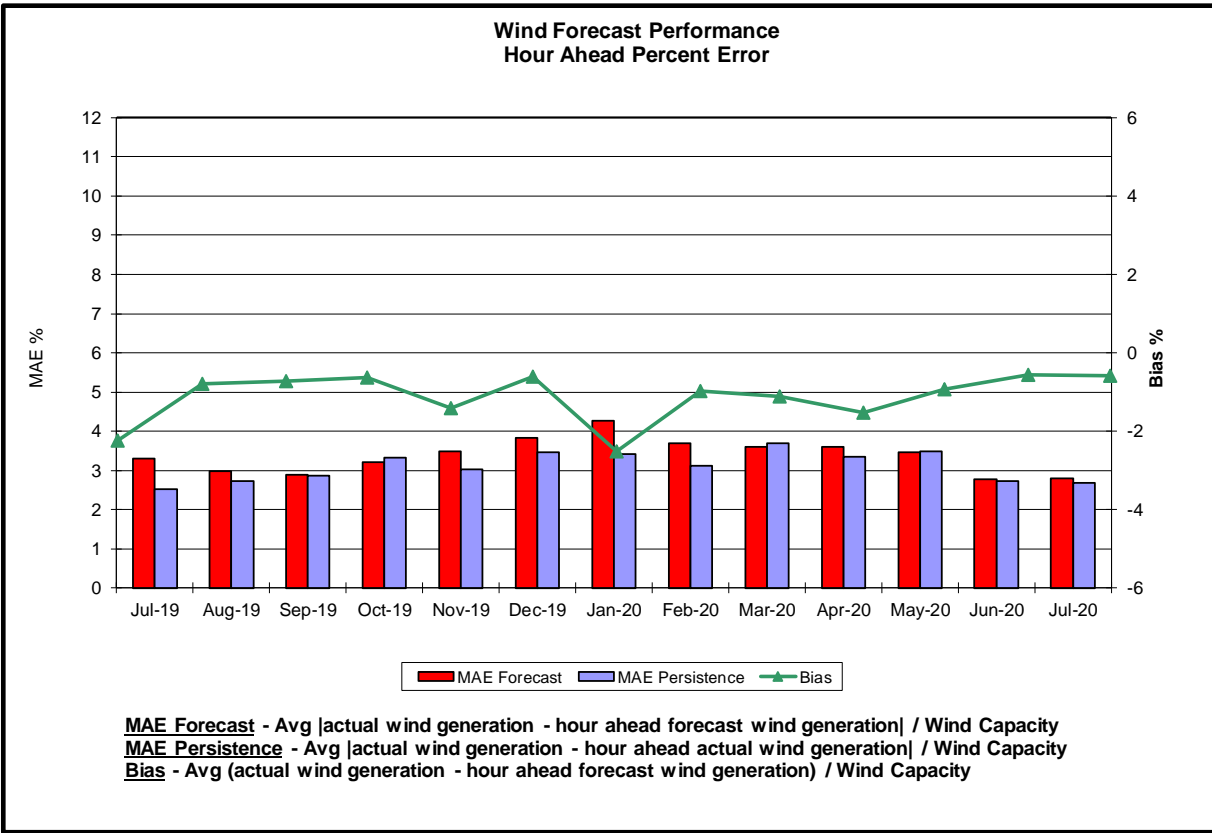
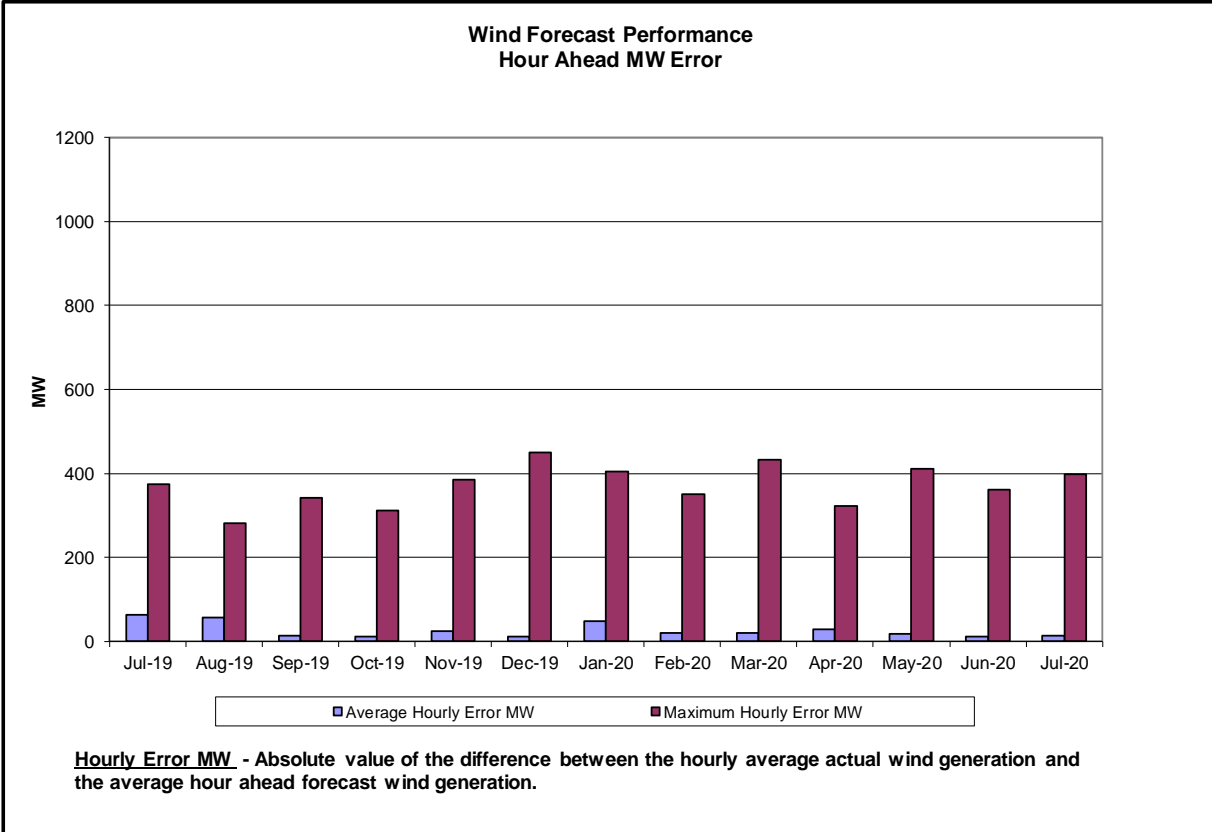
Reliability Performance Metrics

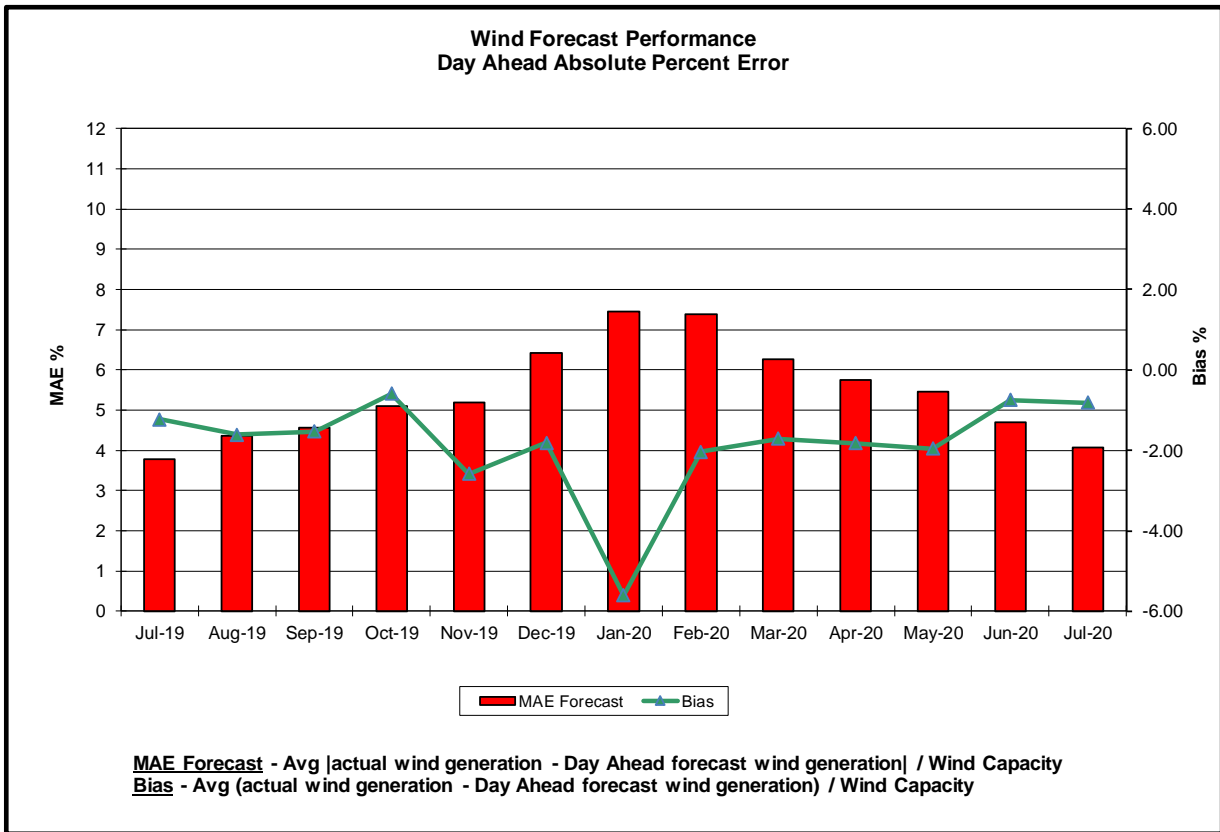
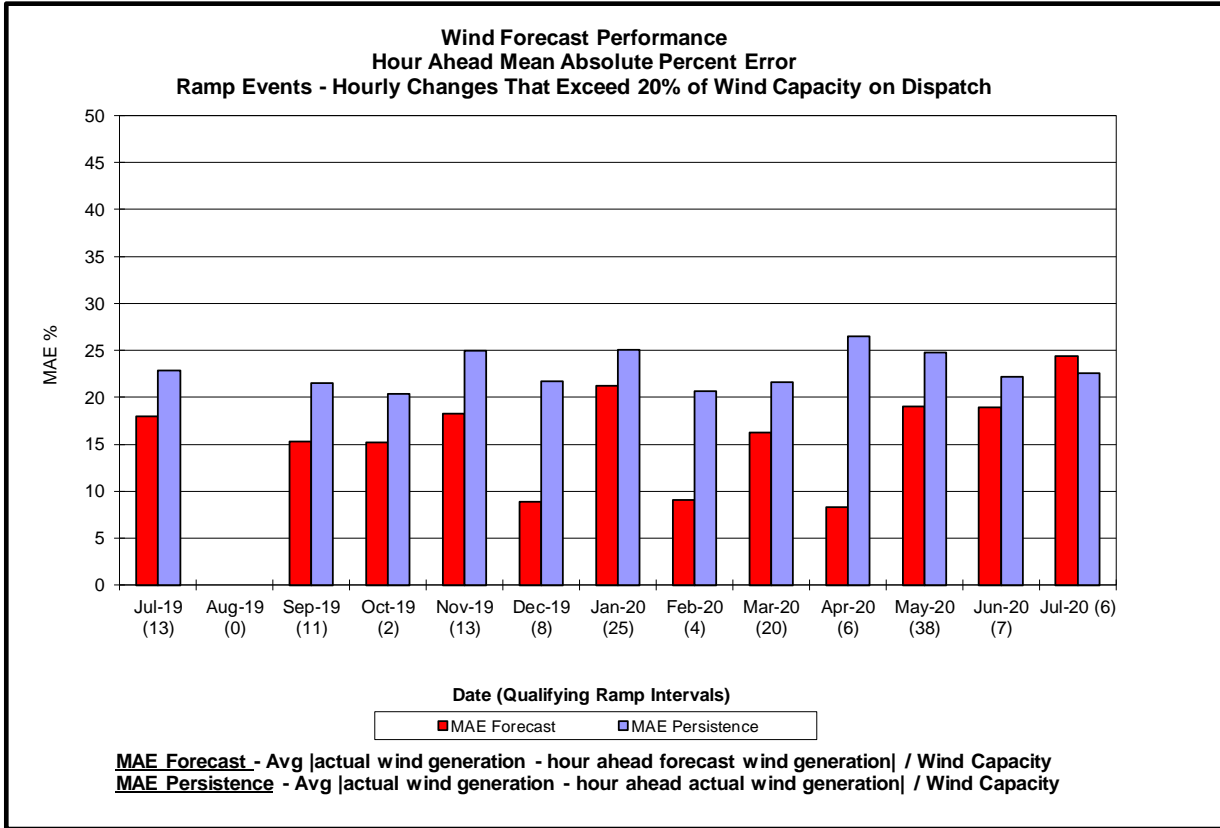


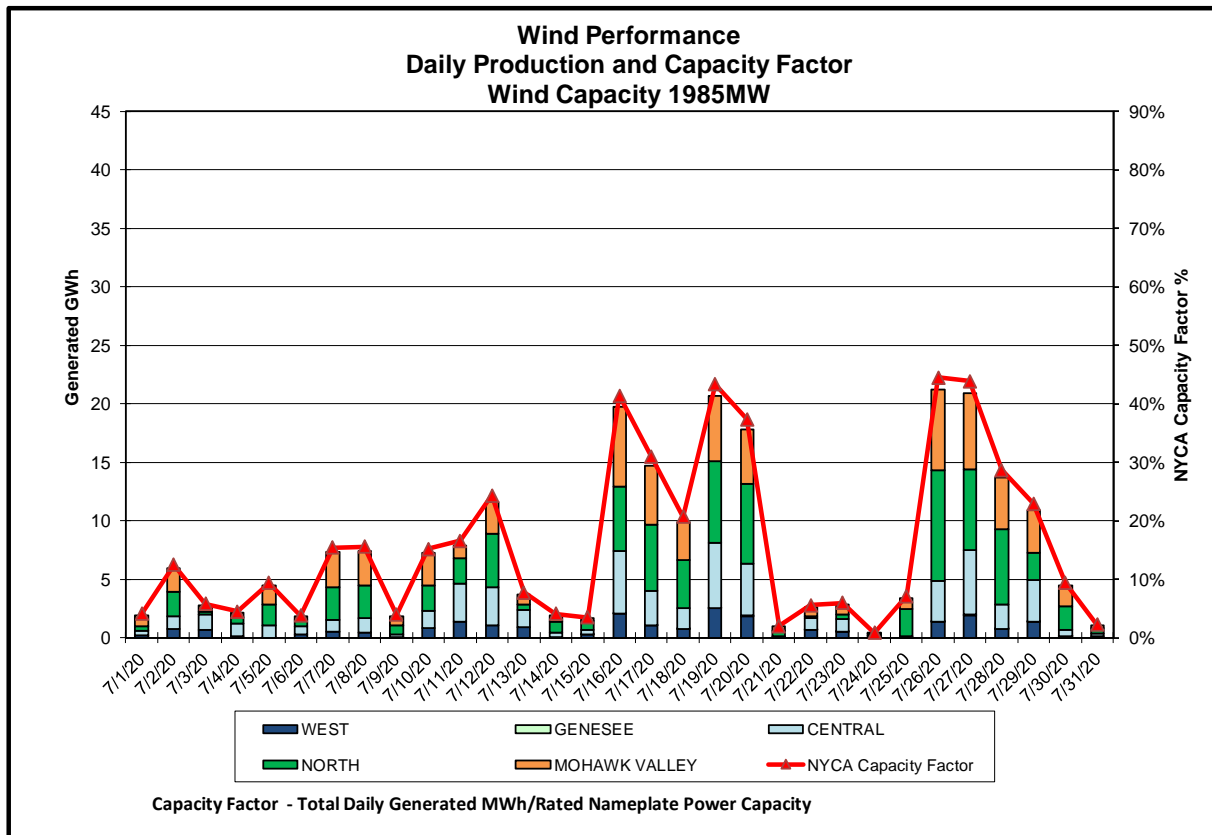
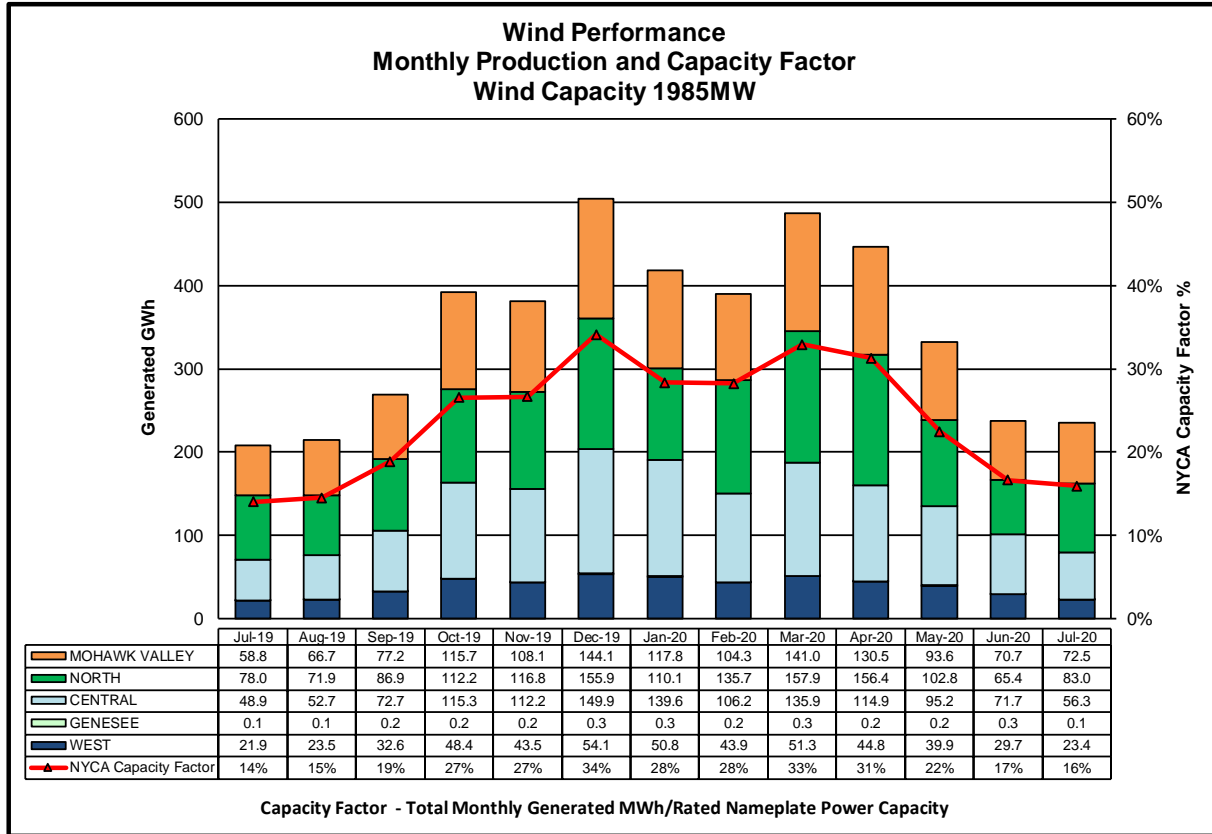


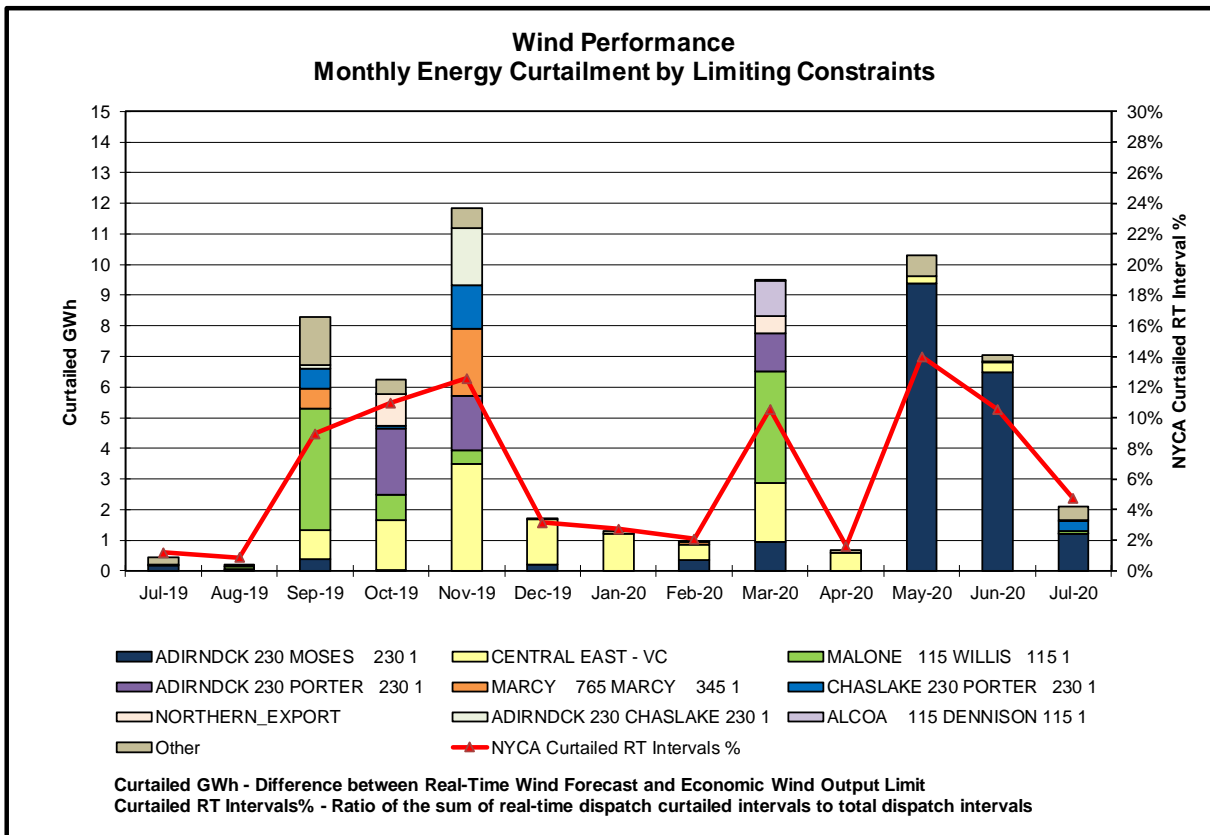
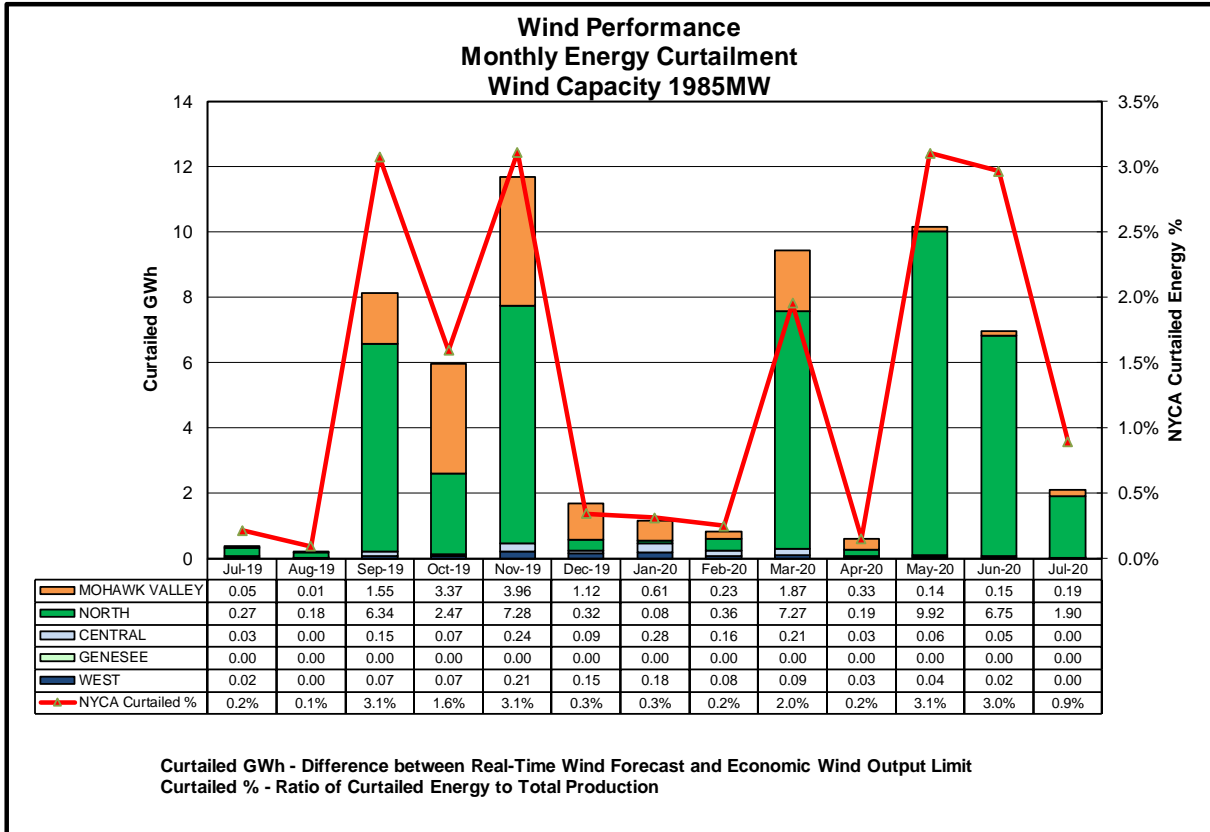


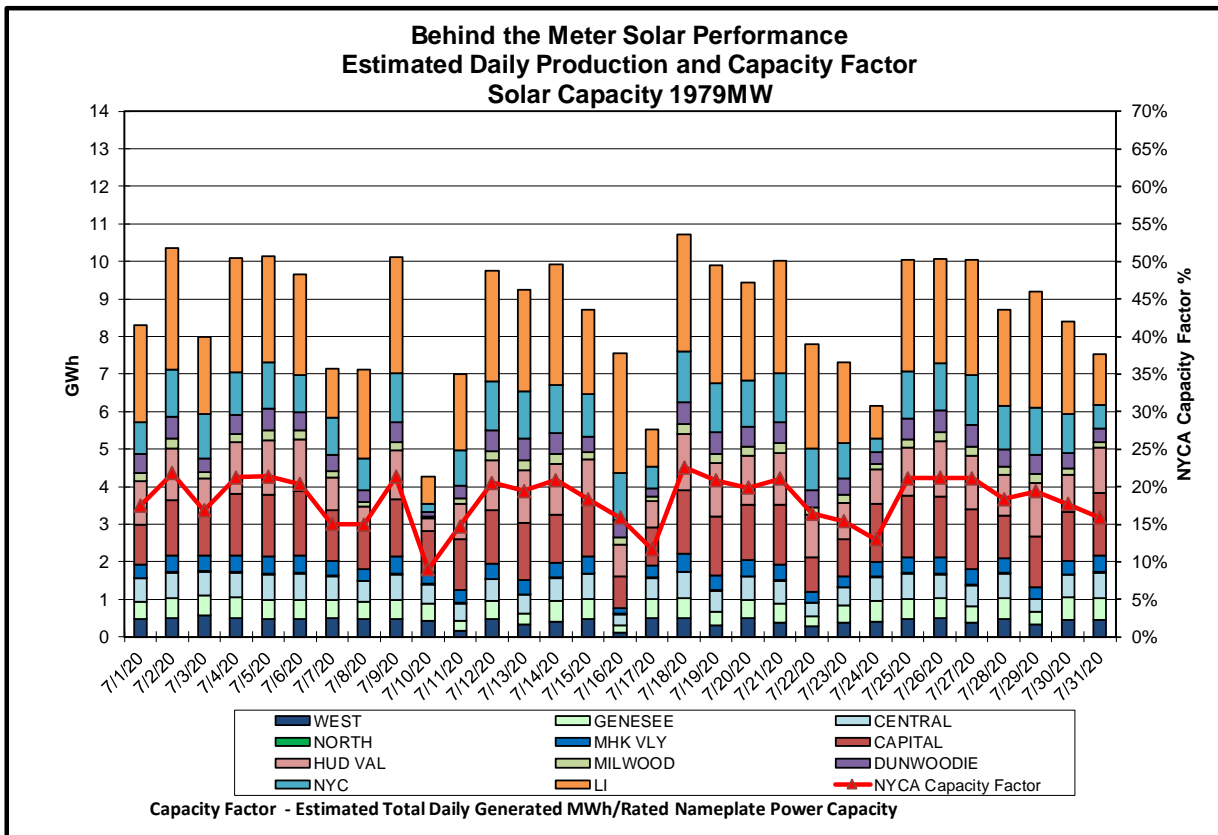
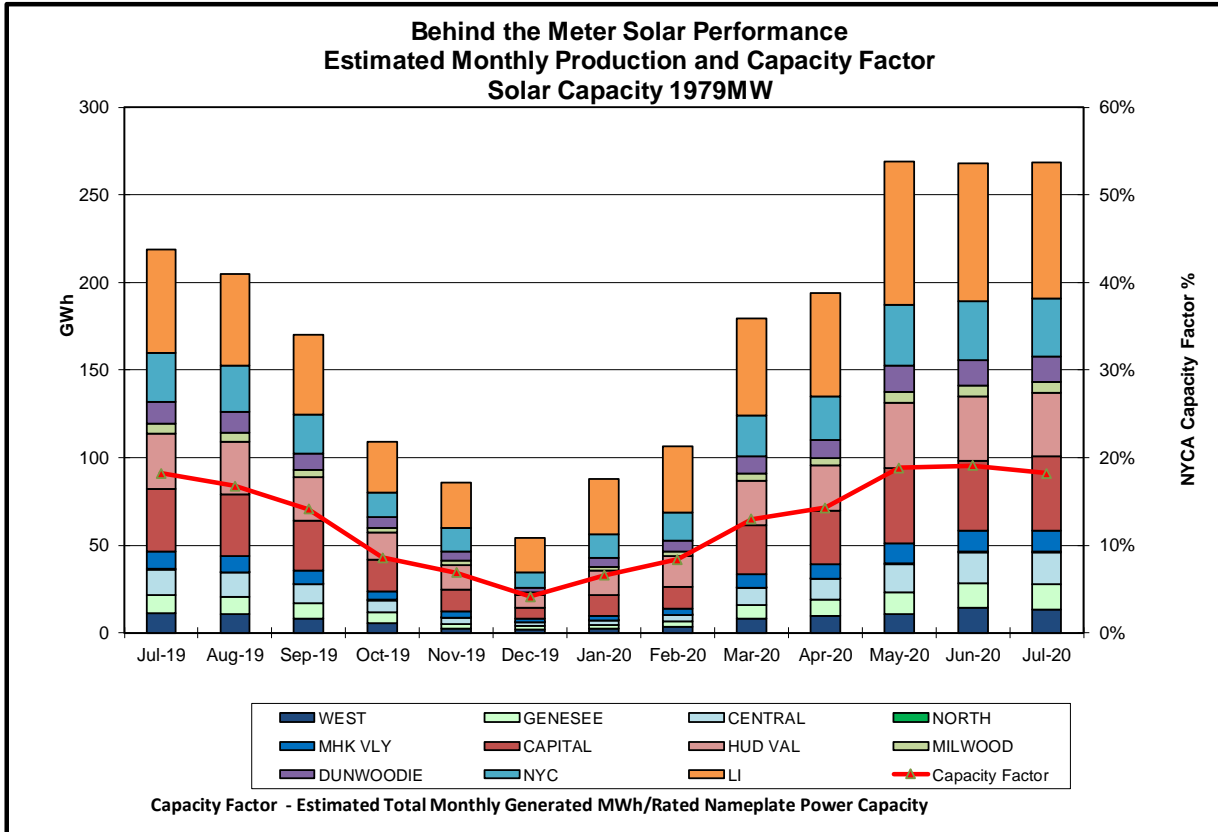


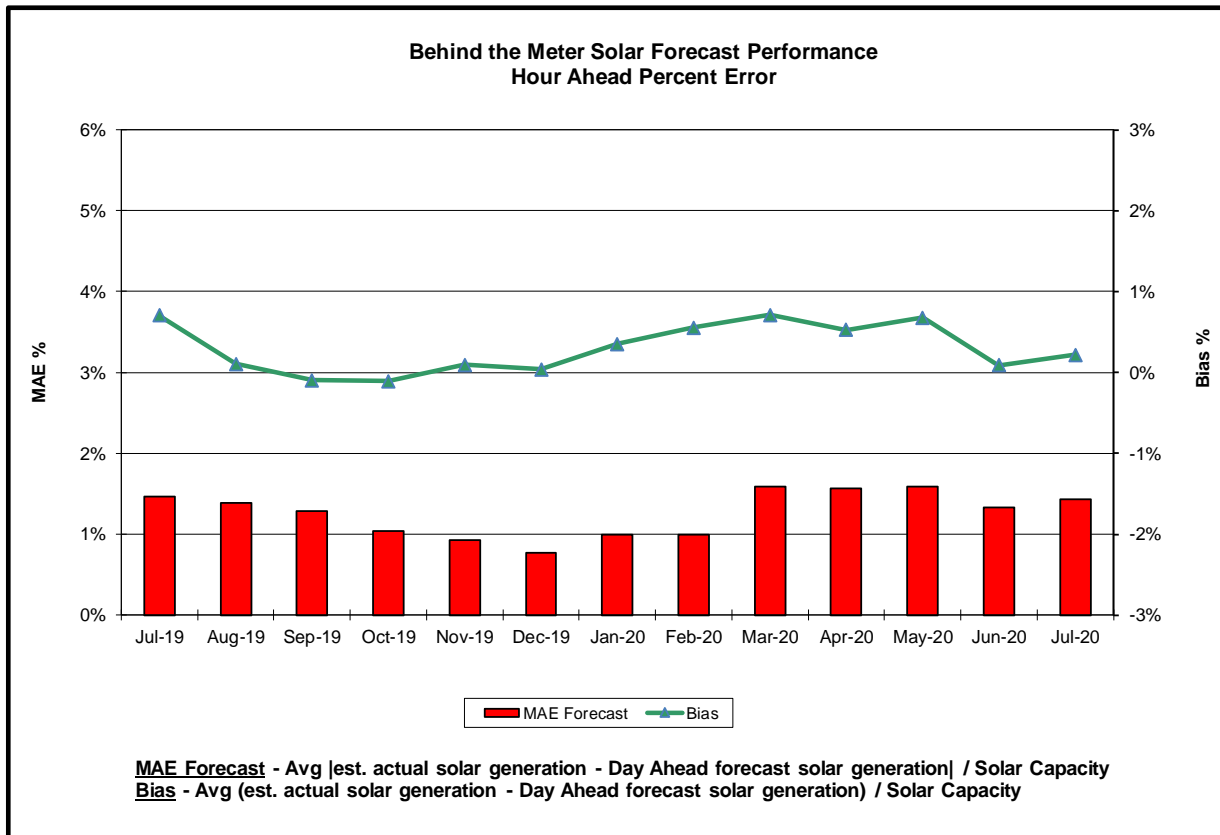
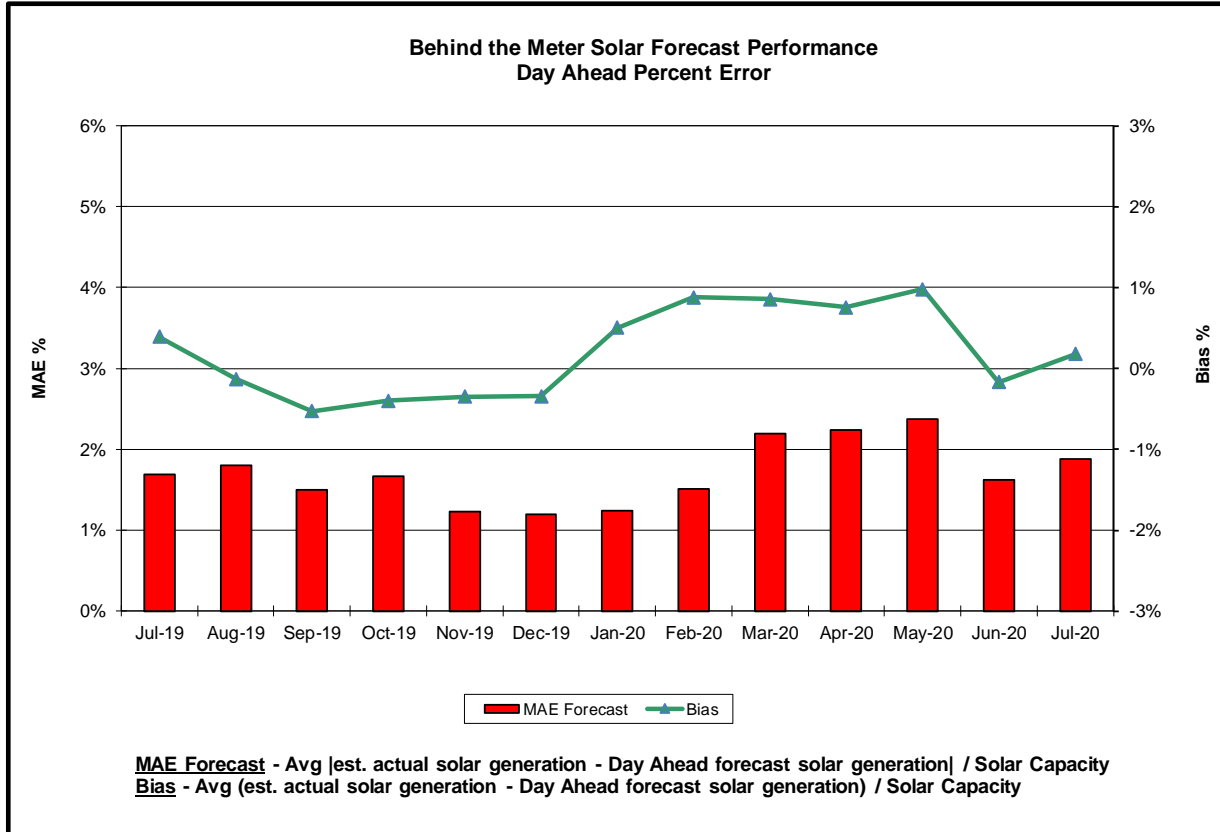


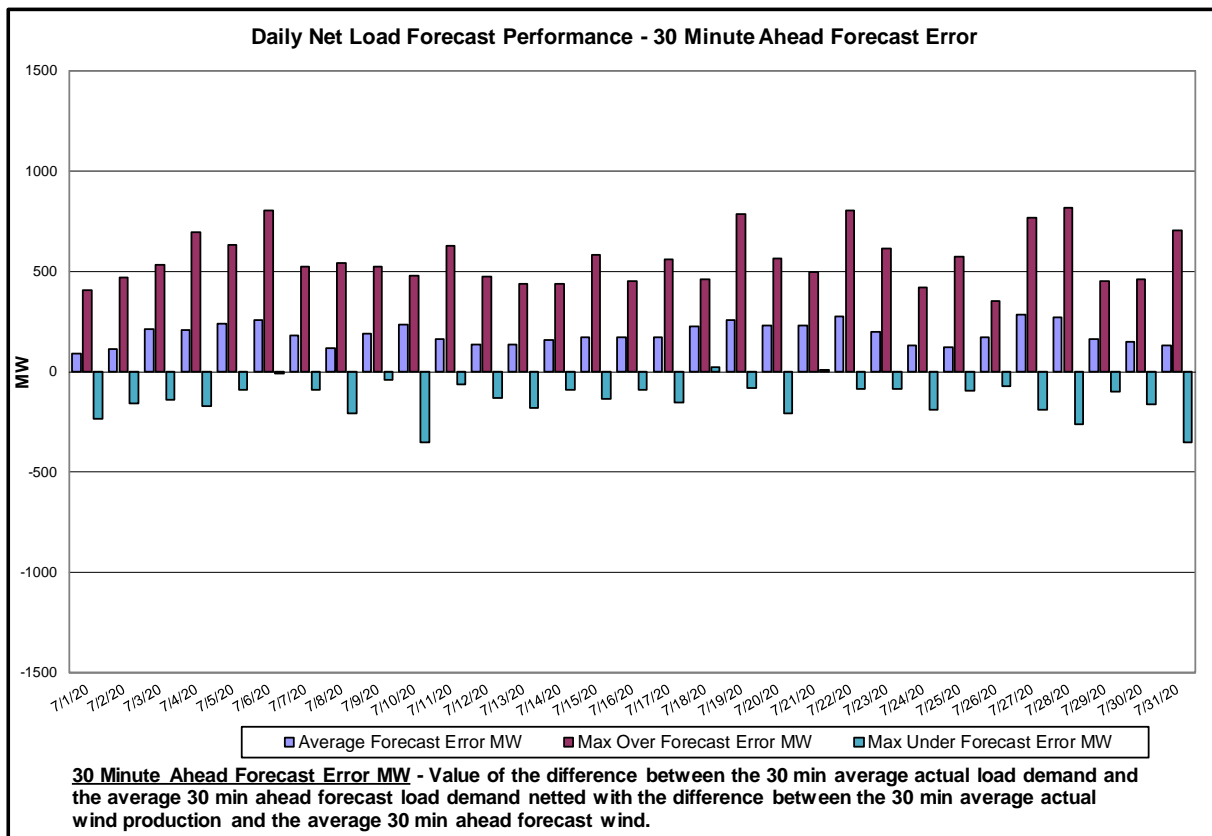
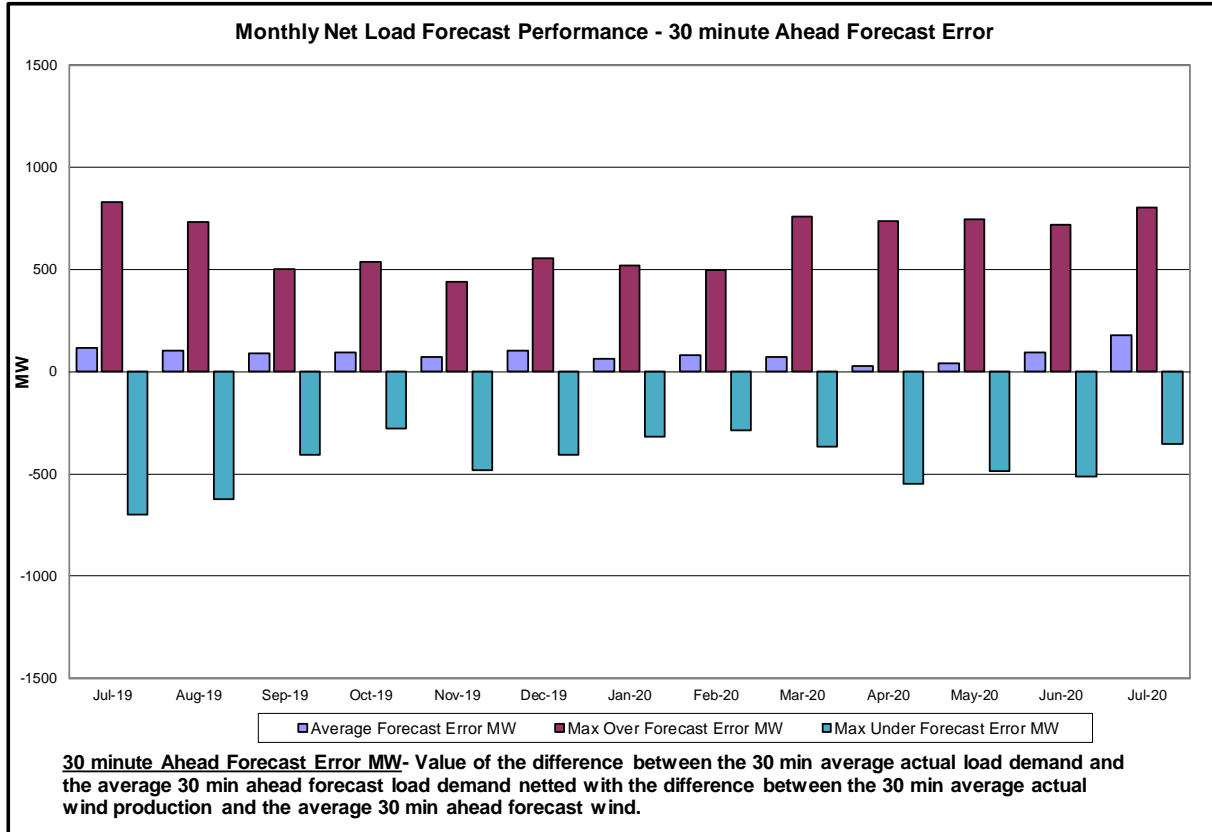


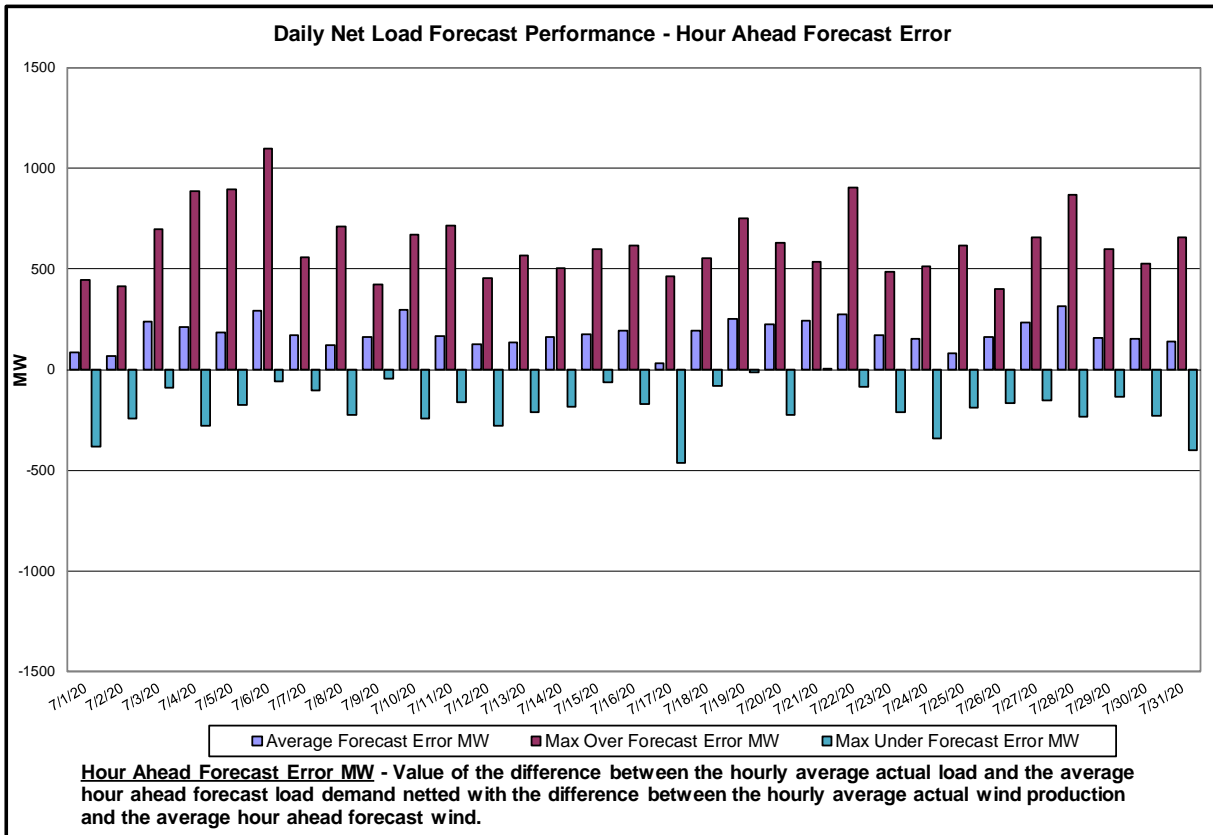
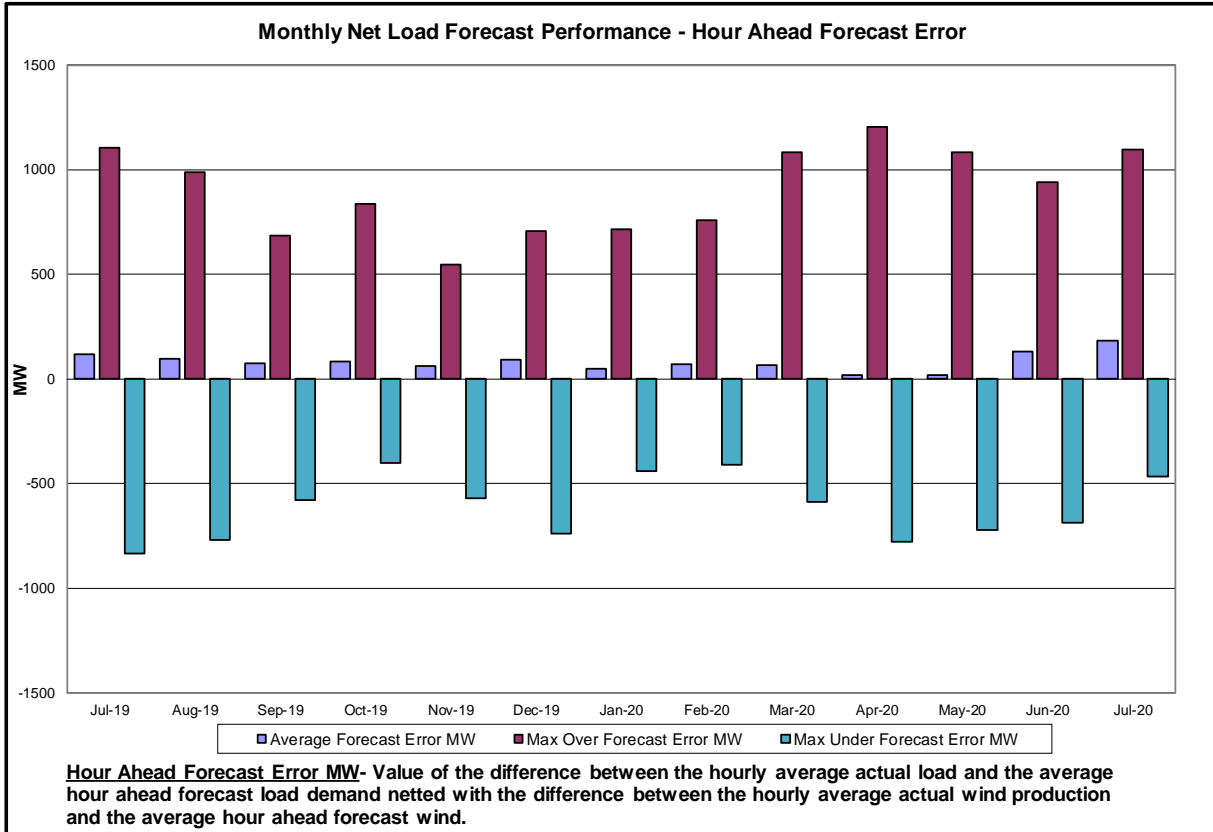


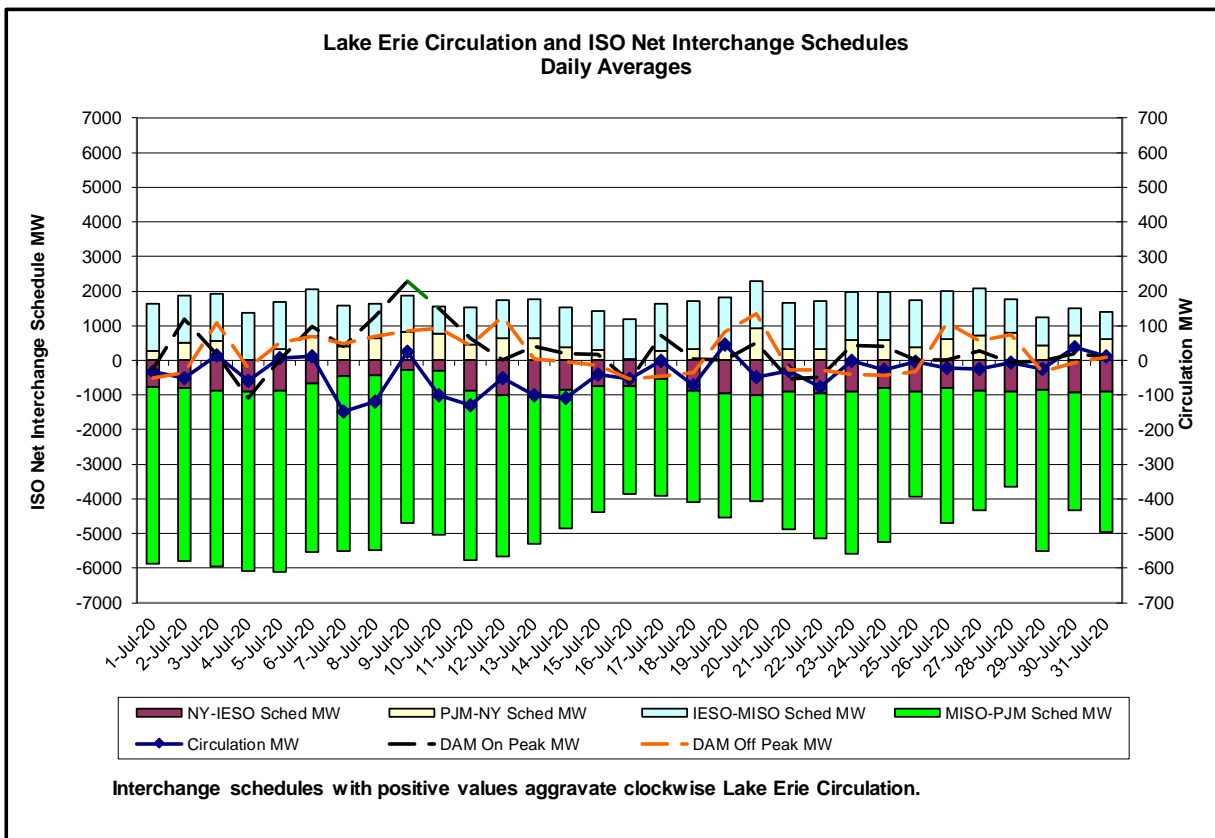
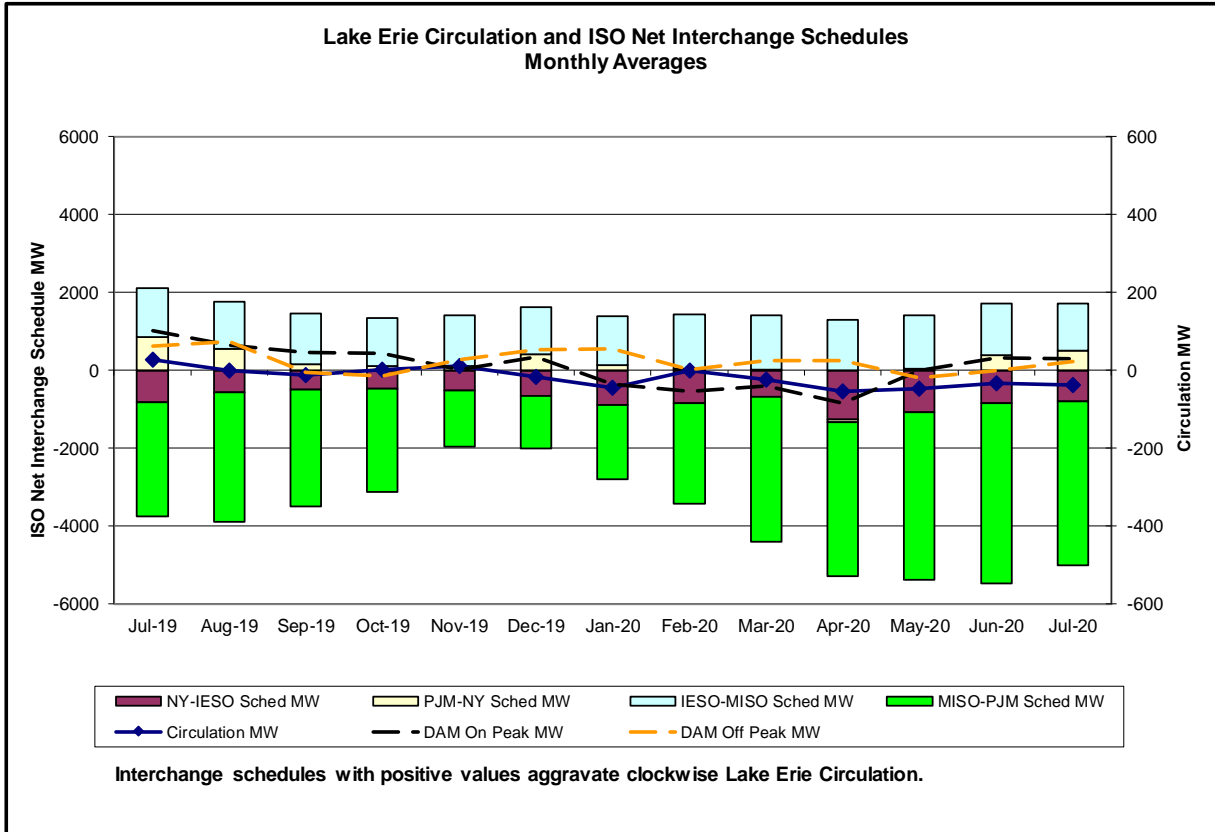




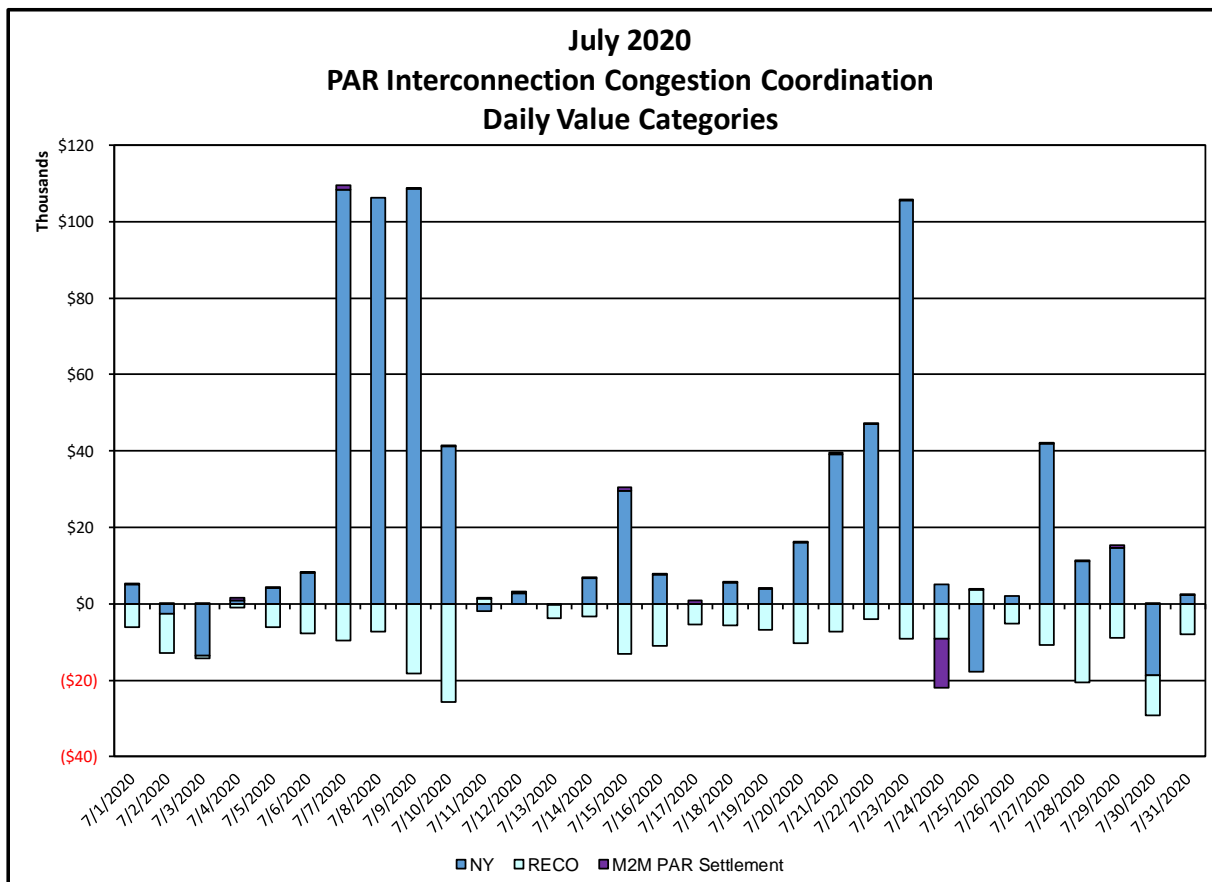
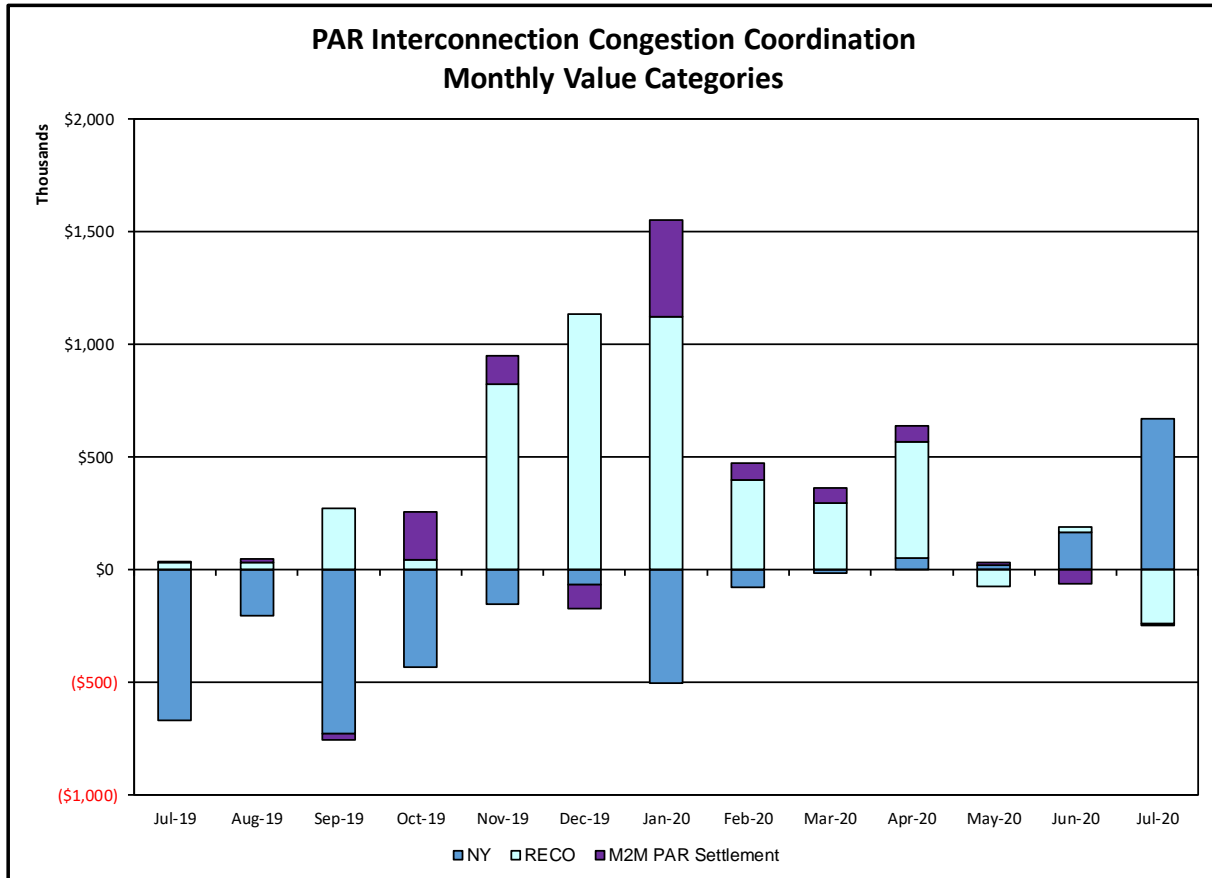






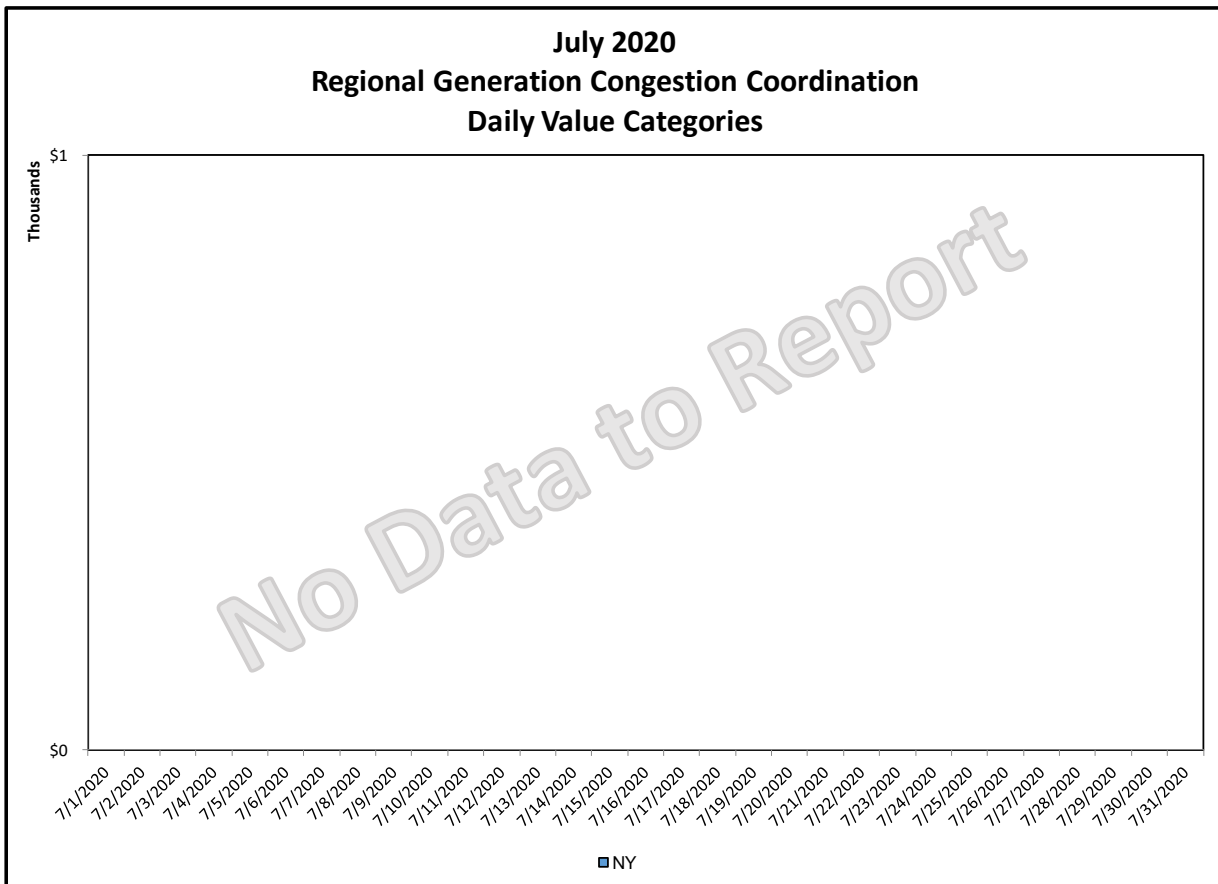
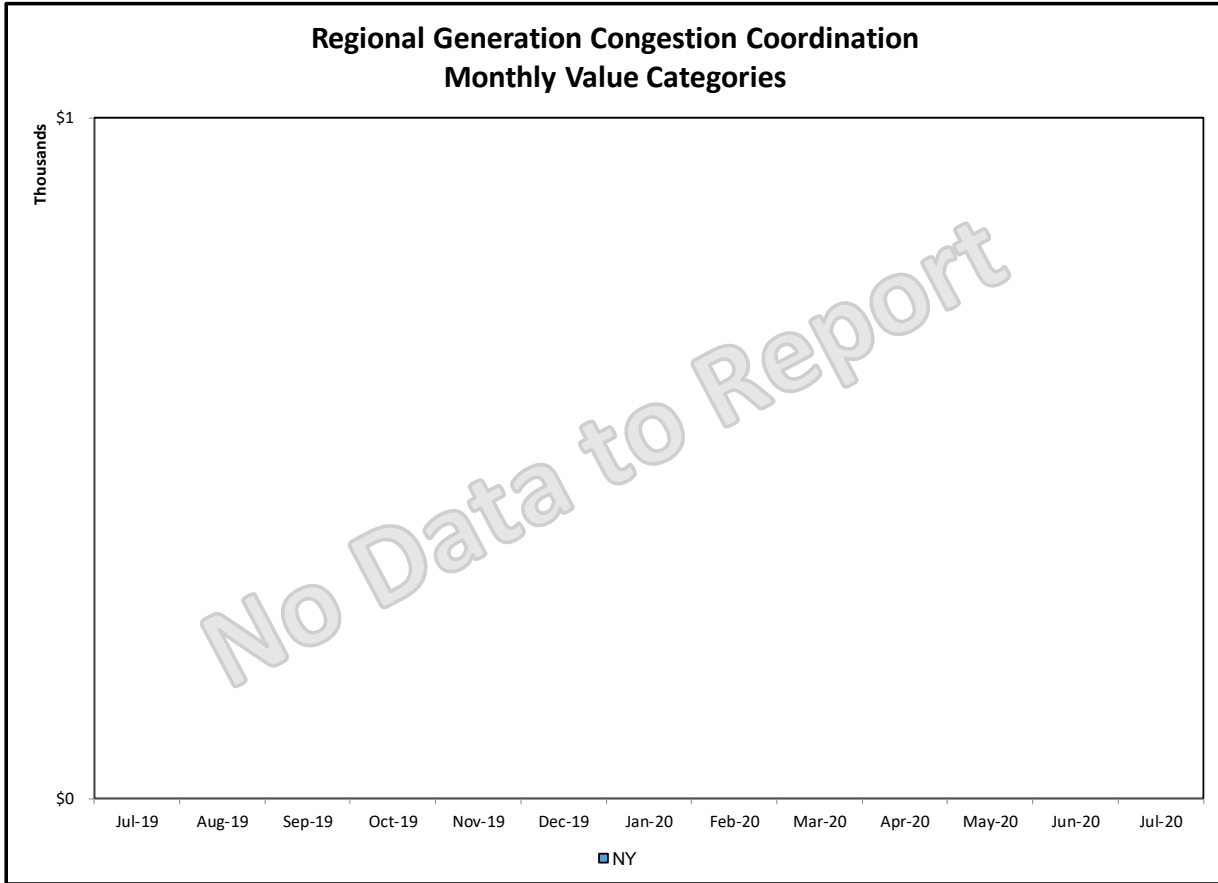


Broader Regional Market Performance Metrics



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.

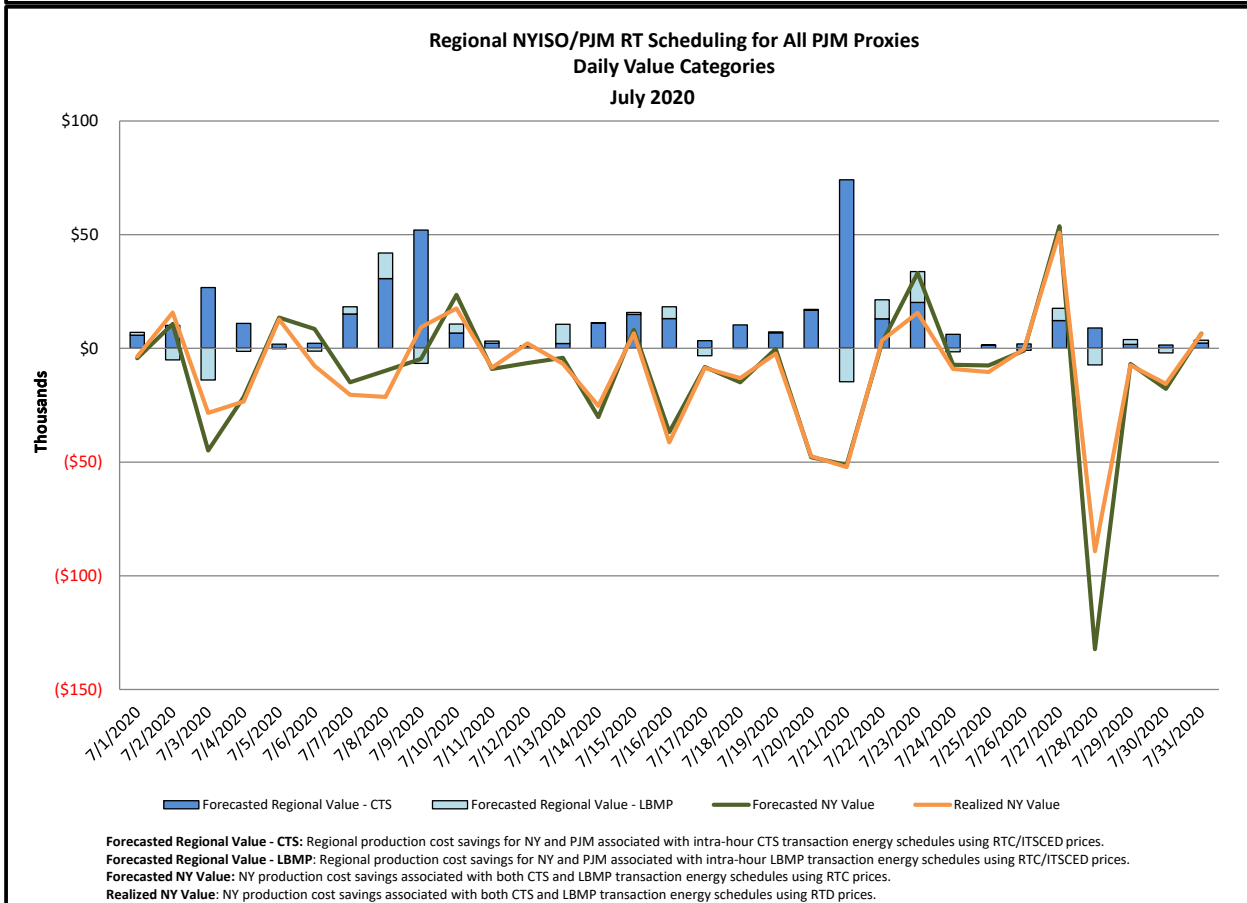
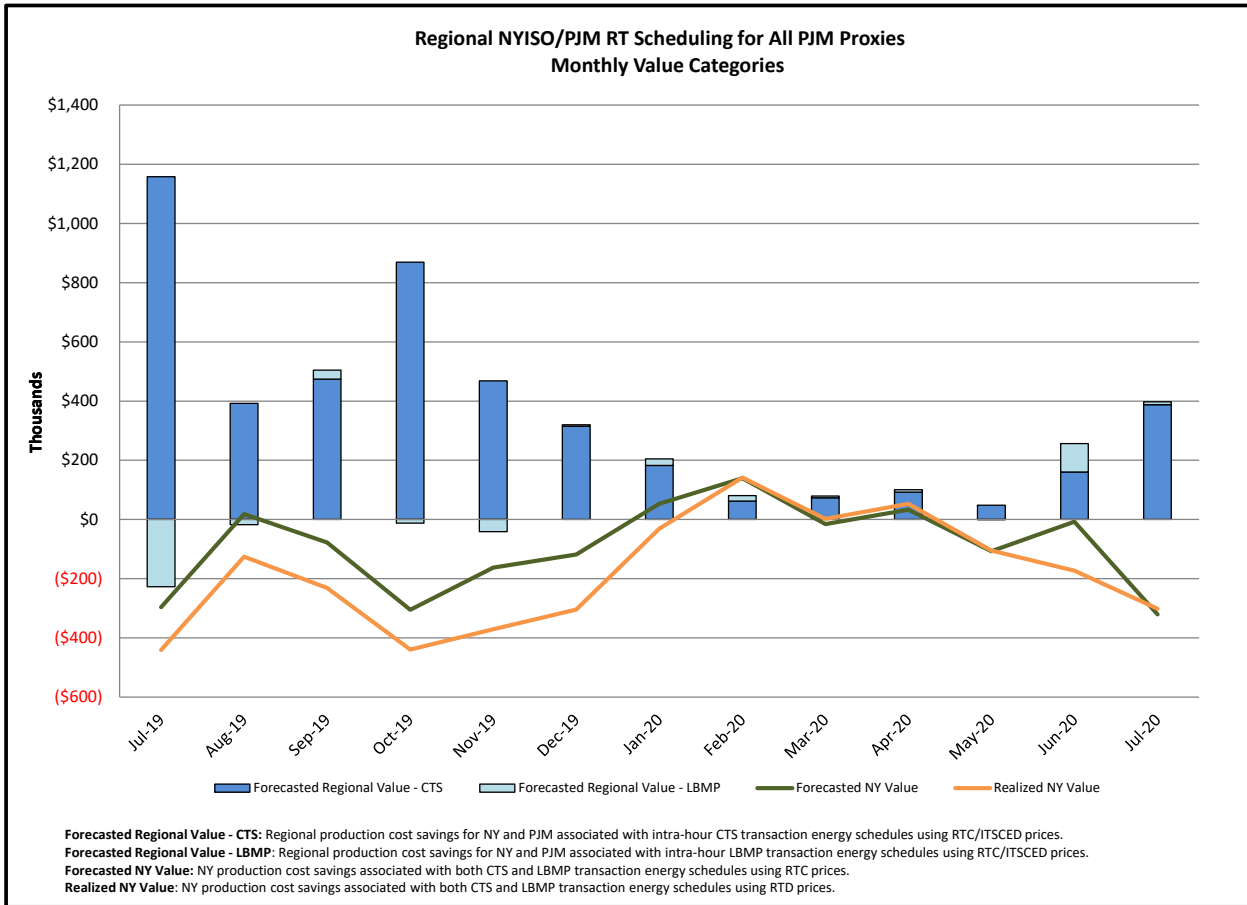


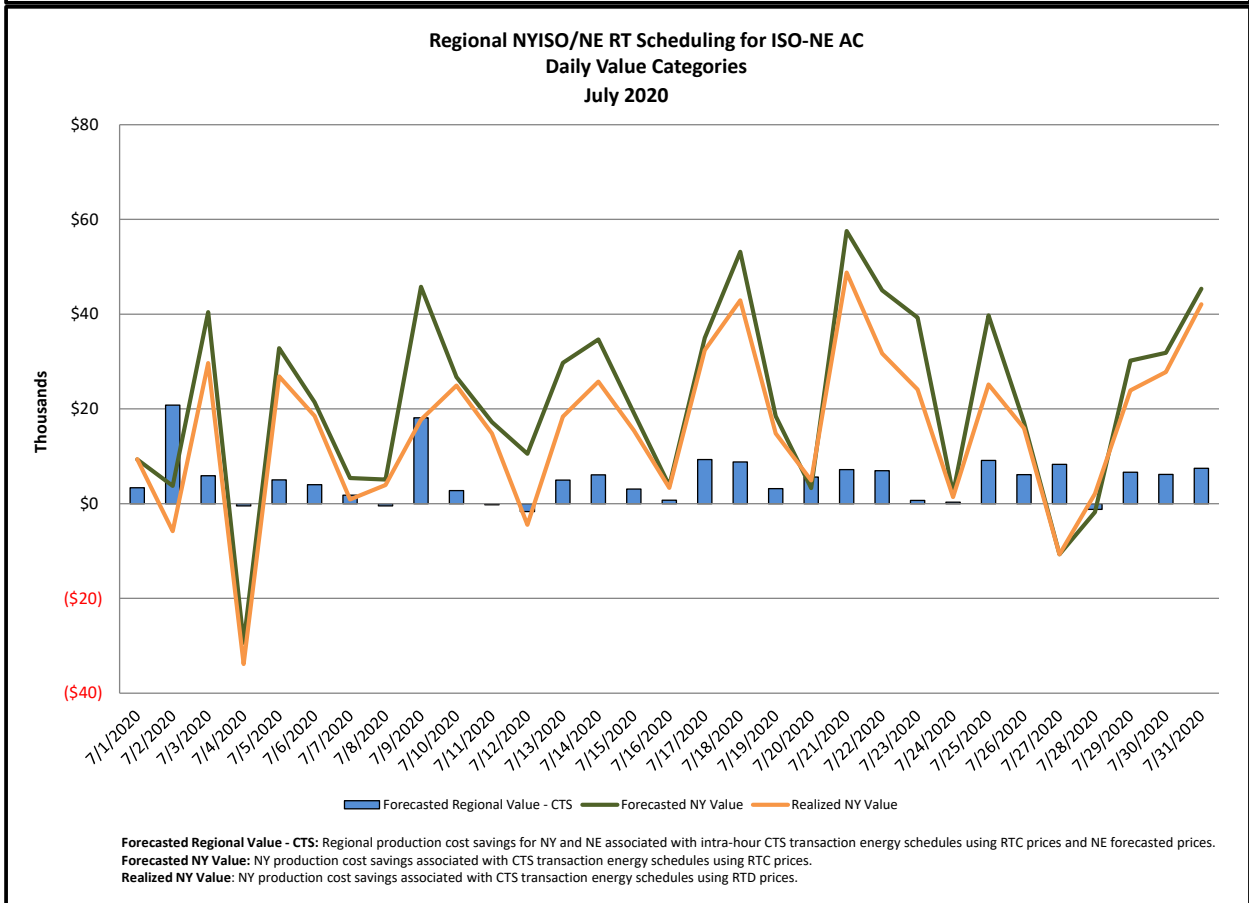
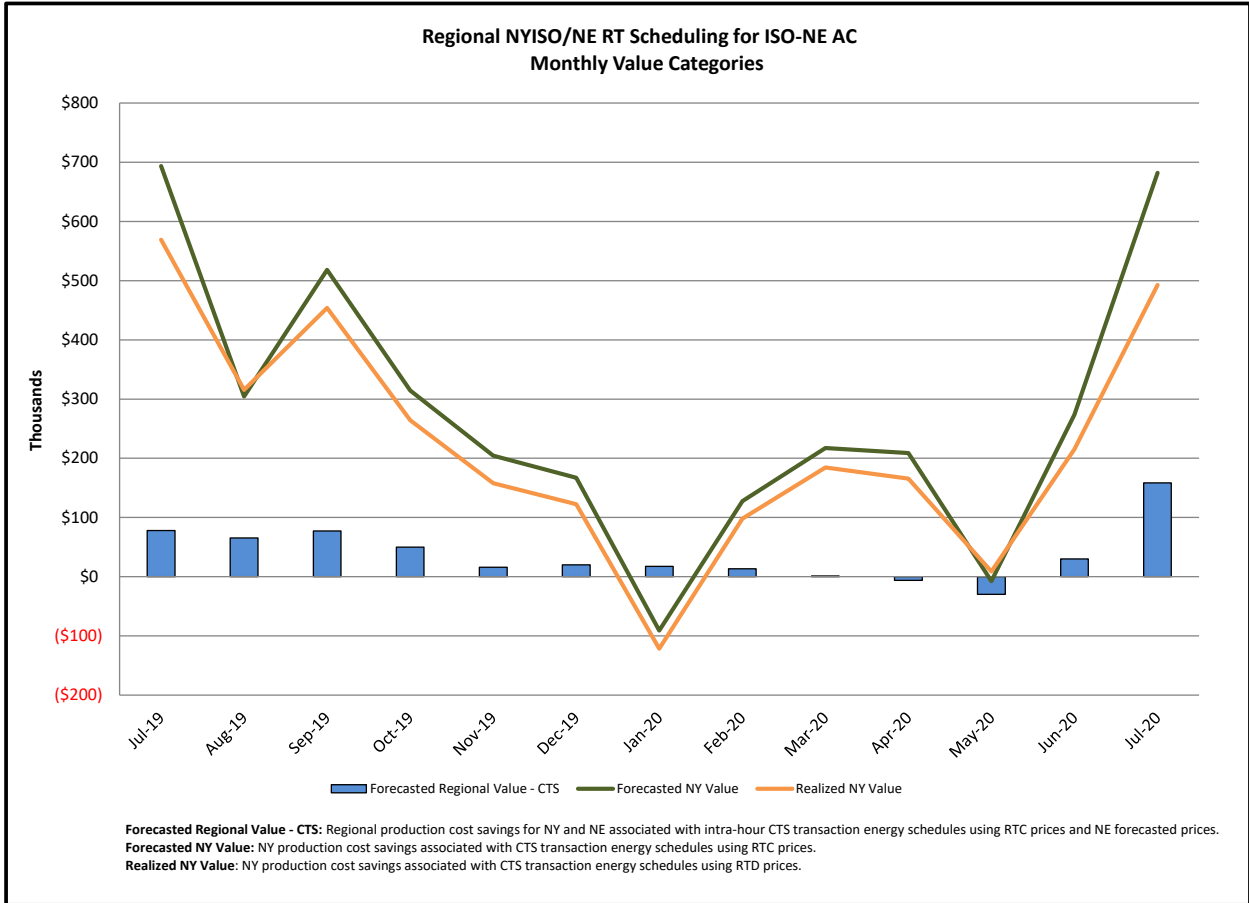
Regional Generation Congestion Coordination

Category
NY

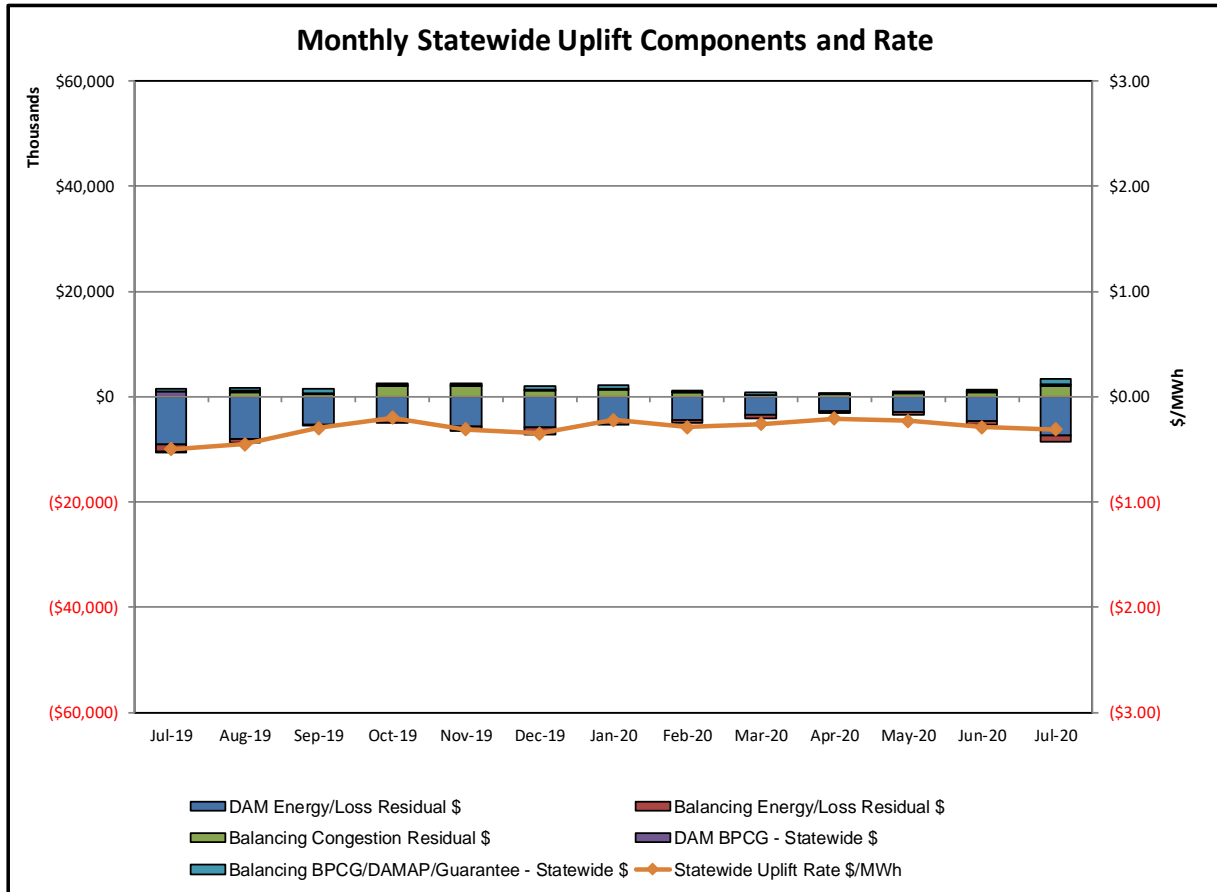
Description

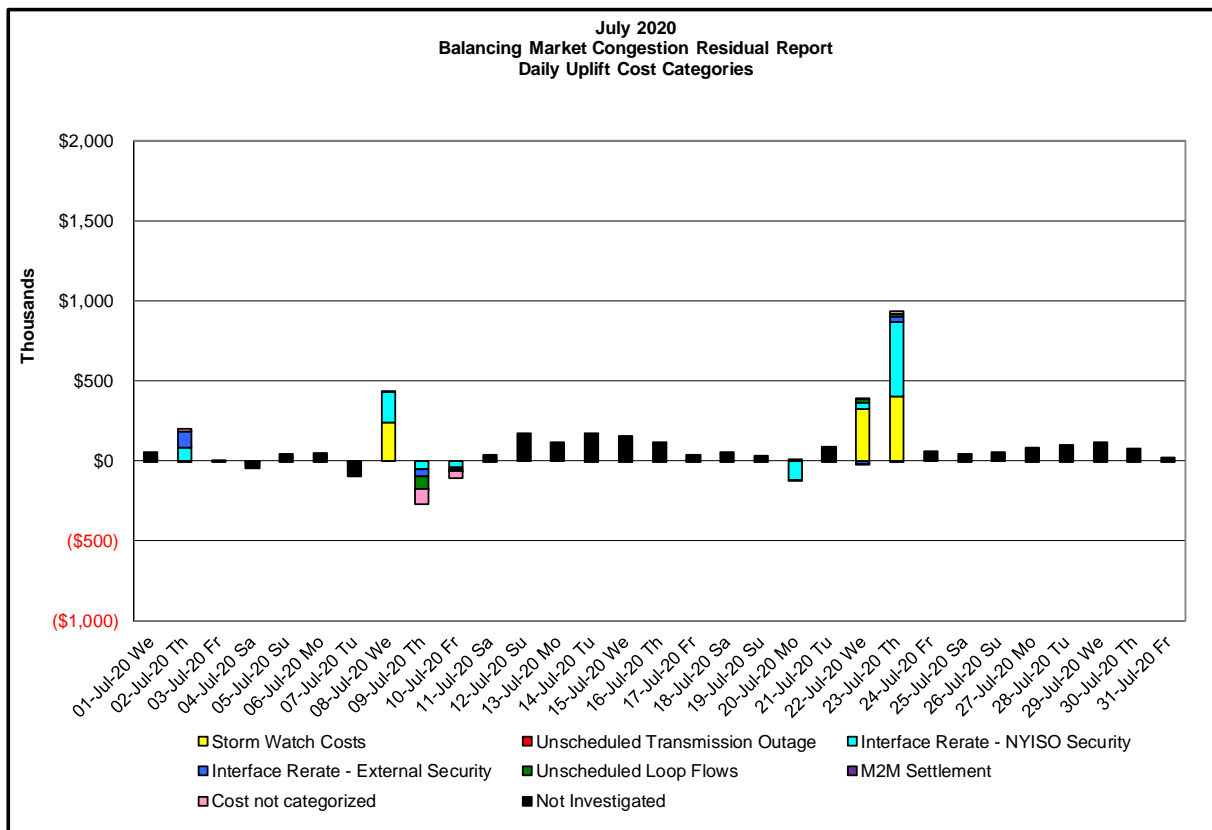
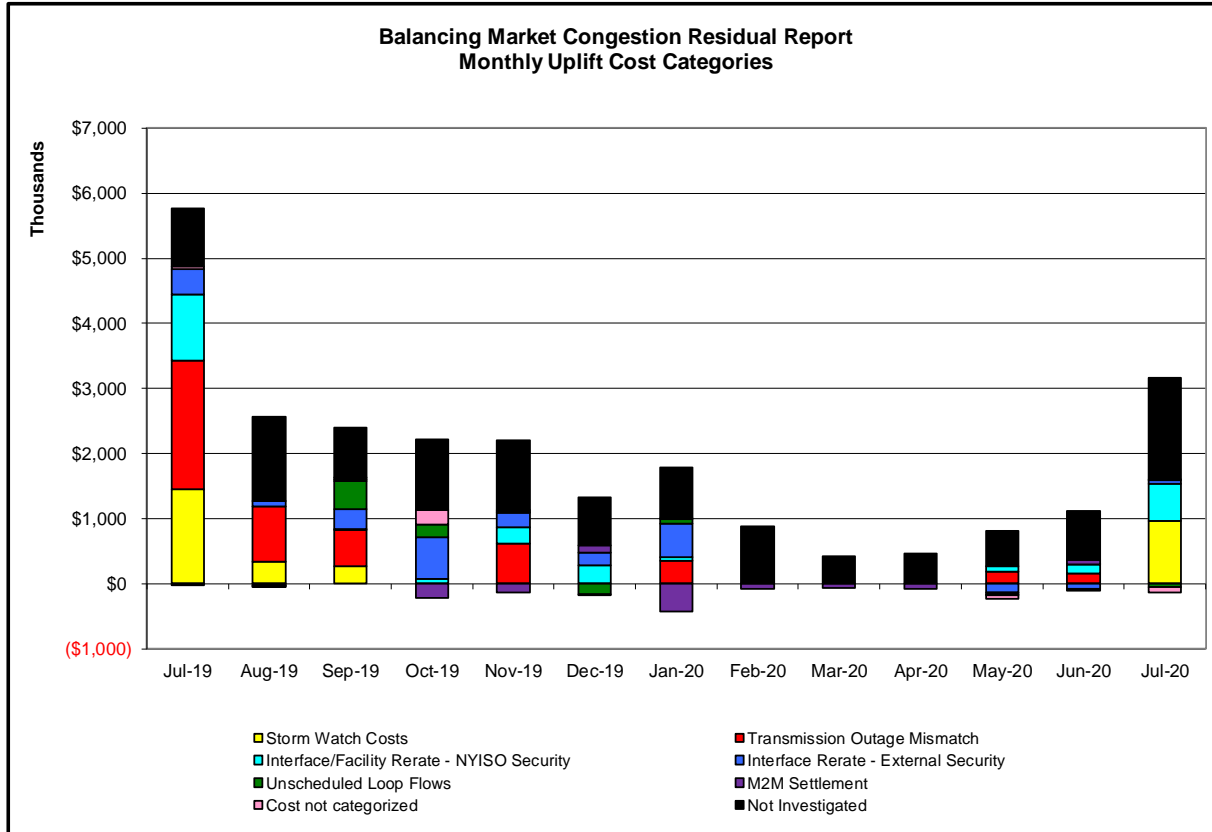
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization of PJM's generation resources to directly address Western or Central NY transmission congestion.





Market Performance Metrics





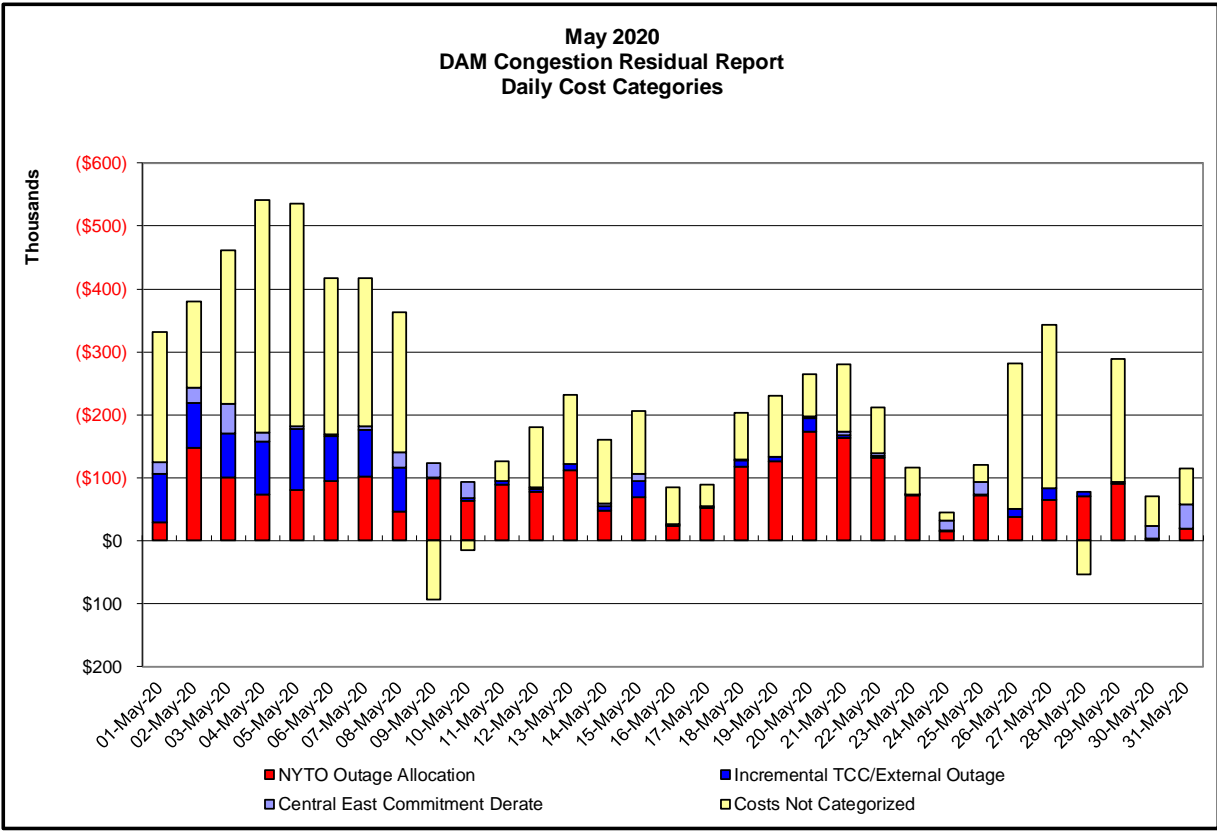
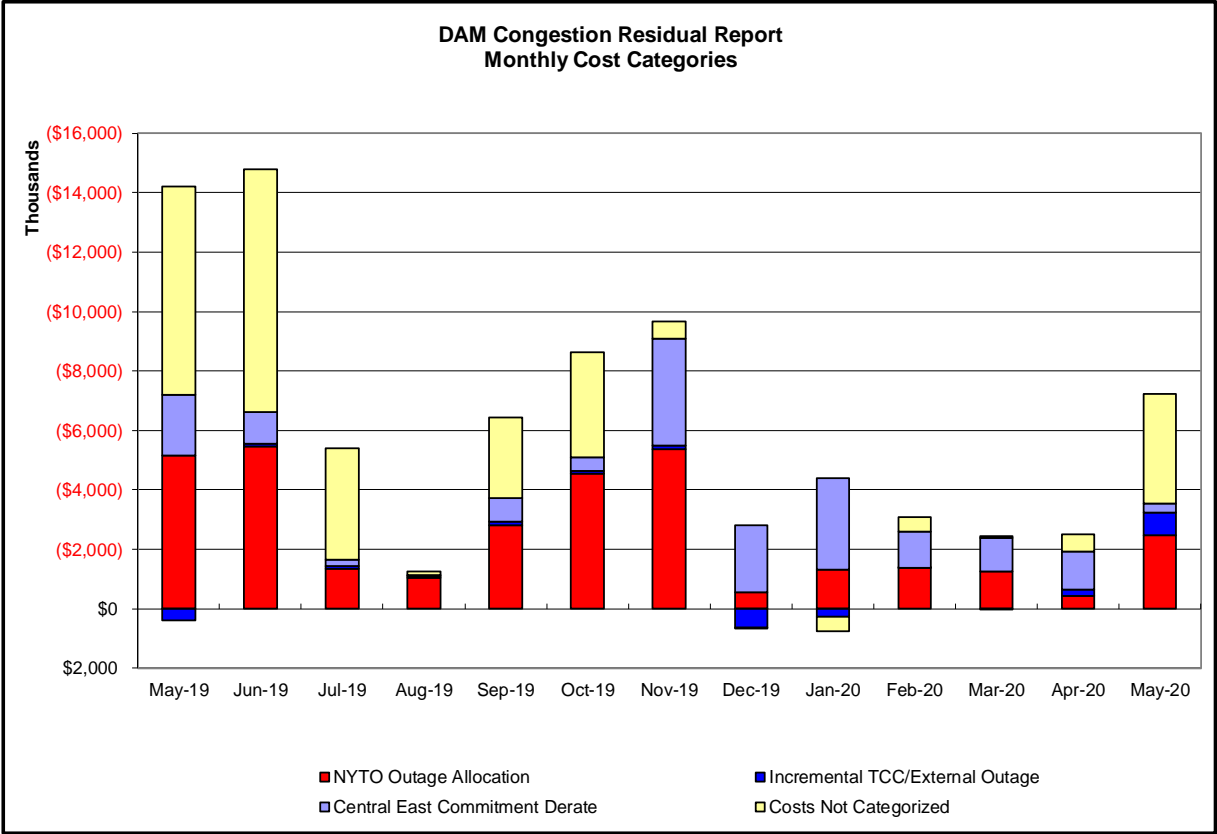
Day's investigated in July: 2, 8, 9, 10, 20, 22, 23			
Event	Date (yyyymmdd)	Hours	Description
	7/2/2020	16,17	Derate C.Islip-Happauge 138kV (#889) for I/o TWR:HOLTSVILLE 881& 882& 880
	7/2/2020	13,14	Derate of Cricket Valley-Pleasant Valley 345 kV (#F83) for I/o Cricket Valley-Pleasant Valley 345 kV (#F84)
	7/2/2020	17-20	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o SCB:SPBK(RNS2):Y49&M29&Y49_ST
	7/2/2020	14	Derate Moses South
	7/2/2020	13-20	Derate Scriba-Volney 345kV (#20) for I/o Scriba-Volney 345kV (#21)
	7/2/2020	20	NYCA DNI Ramp Limit
	7/2/2020	13-22	PJM_AC-NY Scheduling Limit
	7/2/2020	15	NE_NNC1385-NY Scheduling Limit
	7/8/2020	12-15,17	Thunder Storm Alert, Buchannan 345/138kV (#TA5)
	7/8/2020	12	NYCA DNI ramp limit
	7/8/2020	12-14	Derate of Cricket Valley-Pleasant Valley 345 kV (#F83) for I/o Cricket Valley-Pleasant Valley 345 kV (#F84)
	7/9/2020	15-17,20	Uprate of Niagara-Packard 230kV (#62) for I/o TWR:NIAGARA 61 & 64
	7/9/2020	14	NE_AC ACTIVE DNI ramp limit
	7/9/2020	20	PJM_AC ACTIVE DNI ramp limit
	7/9/2020	13,15-17	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West
	7/10/2020	13	Uprate of Niagara-Packard 230kV (#62) for I/o TWR:NIAGARA 61 & 64
	7/10/2020	13	Uprate Niagara Blvd-Packard 115kV (#)
	7/10/2020	17	IESO_AC DNI Ramp Limit
	7/10/2020	22	HQ_CEDARS - NY Scheduling Limit
	7/10/2020	17	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West
	7/20/2020	23	NYCA DNI Ramp Limit
	7/20/2020	17,19	Uprate Buffalo78-Huntley 115kV (#130) for SIN:PACKARD-WALCK_RD_129
	7/20/2020	11,16,18	Derate East Garden City-Valley Stream 138kV (#262) for BUS:BARRETT 292&459&G2&IC9-12
	7/20/2020	10,19,22	Uprate Gowanus-Greenwood 138kV (#42231)
	7/20/2020	10,19,22	Uprate Gowanus-Greenwood 138kV (#42232)
	7/20/2020	19,22	Uprate Gowanus-Greenwood 138kV (#42232) for TWR:GOETHALS 22 & 21
	7/20/2020	7,8,14,16,18	Derate Greenwood-Vernon 138kV (#31231) for TWR:GOETHALS 22 & 21
	7/20/2020	7,8,11	Derate Mott Haven-Dunwoodie 345kV (#71)
	7/20/2020	18	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West
	7/22/2020	16-20	Thunder Storm Alert, Buchannan 345/138kV (#TA5)
	7/22/2020	17,18	Thunder Storm Alert, Chester-Shoemaker 138kV (#27)
	7/22/2020	11-16,20	Derate Niagara - Packard 230 kV (#61) for I/o TWR:PACKARD 62 & BP76
	7/22/2020	12,20	Derate Scriba - Volney 345 kV (#20) for I/o Scriba - Volney 345kV (#21)
	7/22/2020	9,10	Uprate Buffalo78-Huntley 115kV (#130) for SIN:PACKARD-WALCK_RD_129
	7/22/2020	9,19	Uprate East 179th Street-Hellgate 138kV (#15055)
	7/22/2020	10	NE_AC DNI ramp limit
	7/22/2020	9	PJM_AC DNI ramp limit
	7/22/2020	12-14	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West
	7/23/2020	14-21	Thunder Storm Alert, Buchannan 345/138kV (#TA5)
	7/23/2020	16,18	NYCA DNI Ramp Limit
	7/23/2020	11,12,16-18,22,23	Derate C.Islip-Happauge 138kV (#889) for I/o TWR:HOLTSVILLE 881& 882& 880
	7/23/2020	10,11	Derate Cricket Valley-Pleasant Valley 345kV (#F83) for I/o Cricket Valley-Pleasant Valley 345kV (#F84)
	7/23/2020	8-12,14-18,20-23	Derate Packard-Sawyer 230kV (#77) for I/o BUS:PACKARD BK3 & 61 & 78
	7/23/2020	9,11,12,14-16,21-23	Derate Scriba-Volney 345 kV (#20) for I/o Scriba - Volney 345kV (#21)
	7/23/2020	19	PJM_AC DNI ramp limit
	7/23/2020	9,14	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West

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 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.	

