

Operations Performance Metrics Monthly Report



November 2019 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 December 9, 2019.

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November 2019 Operations Performance Highlights

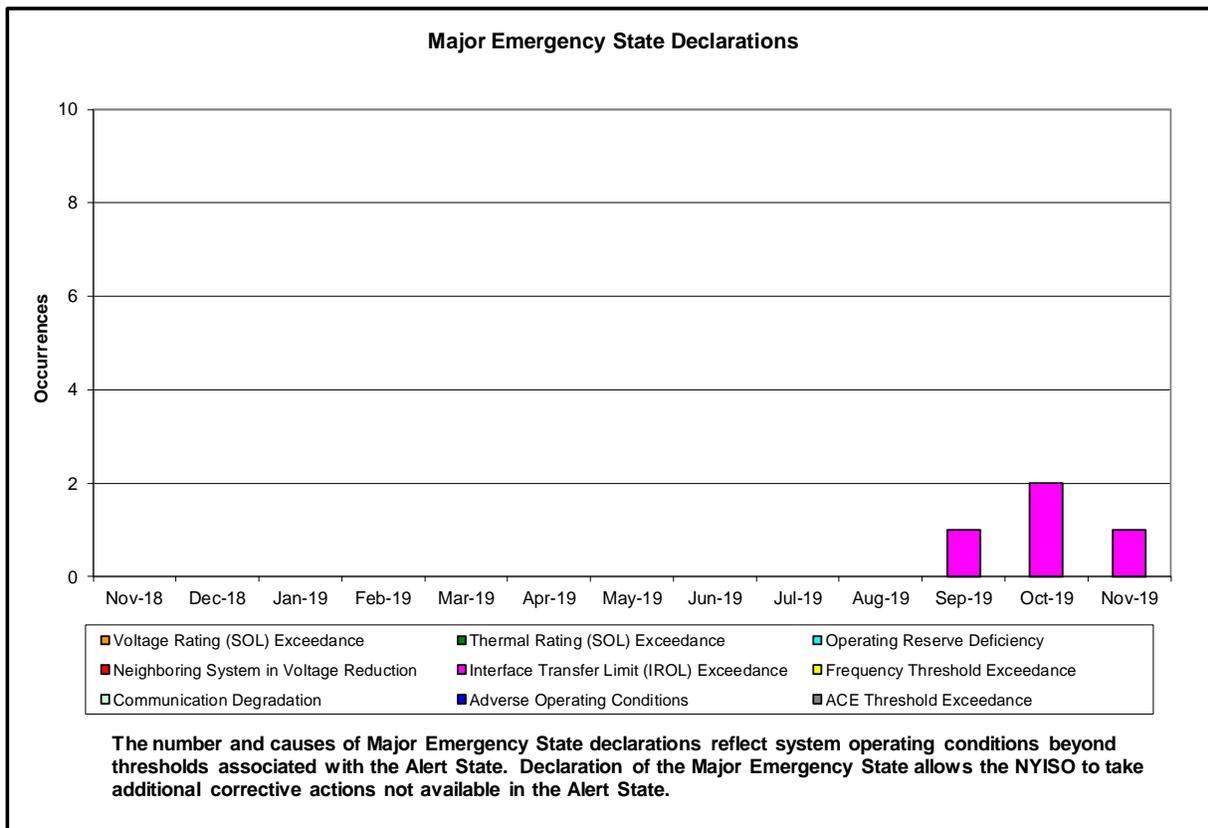
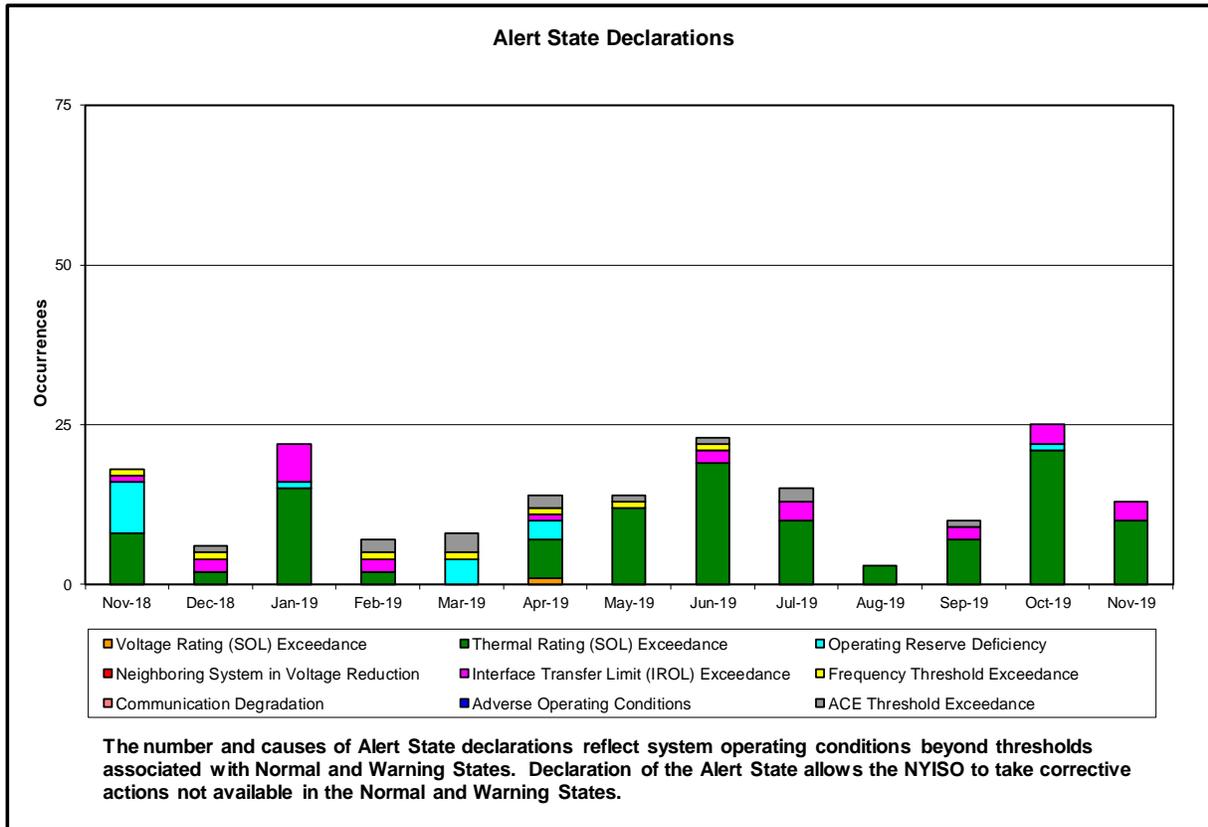
- Peak load of 21,324 MW occurred on 11/13/2019 HB 17
- All-time winter capability period peak load of 25,738 MW occurred on 1/7/2014 HB 18
- 0 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- A Major Emergency was declared on 11/07/2019 in HB00 when the power flow on Central East VC exceeded its voltage transfer limit by more than 105%.
- The initial 400MW Operational Base Flow (OBF) applied to the NY-NJ PARs was reduced to 0 (zero) MW and was reflected in the NYISO's Day-Ahead and Real-time Energy Markets beginning on November 1, 2019 00:00.
- 12 (twelve) 115kV western constraints were added to the list of coordinated M2M PAR flowgates with PJM on 11/19/2019.
- The cap on the initial loop flow around Lake Erie that RTC evaluations initialize with was changed on 11/25/2019 to not be any less than 100MW clockwise (previous value was 0 MW).
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

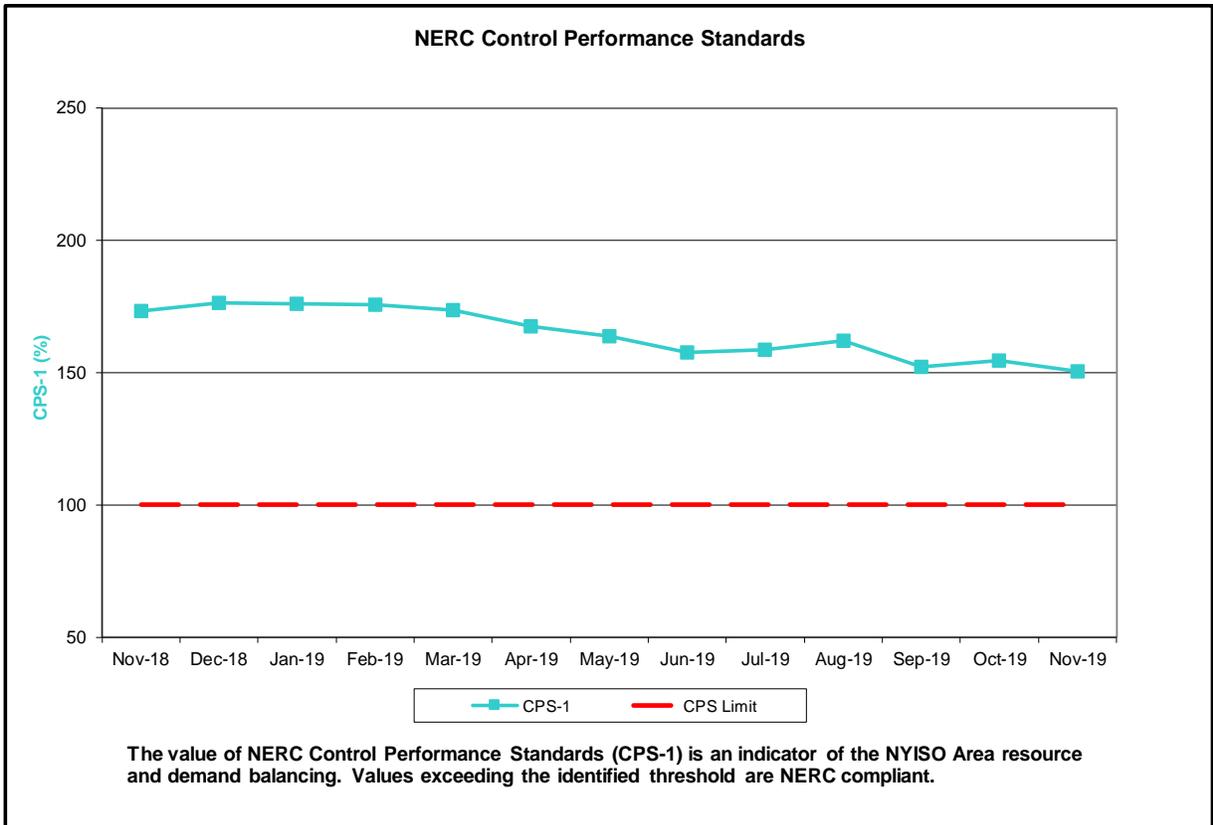
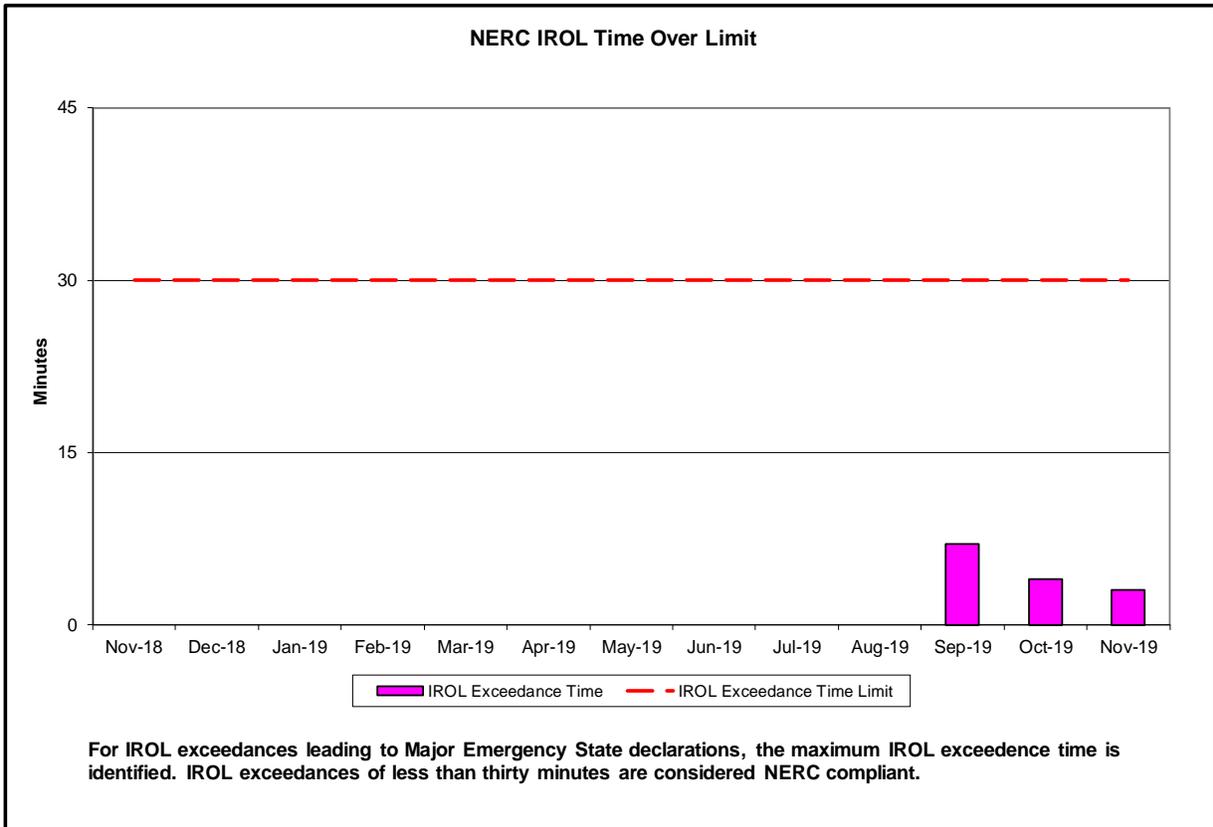
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$1.10	\$8.36
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.37)	(\$2.31)
NY Savings from NE-NY Coordinated Transaction Scheduling	\$0.16	\$1.20
Total NY Savings	\$0.89	\$7.25
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.43	\$5.73
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.02	\$0.58
Total Regional Savings	\$0.45	\$6.31

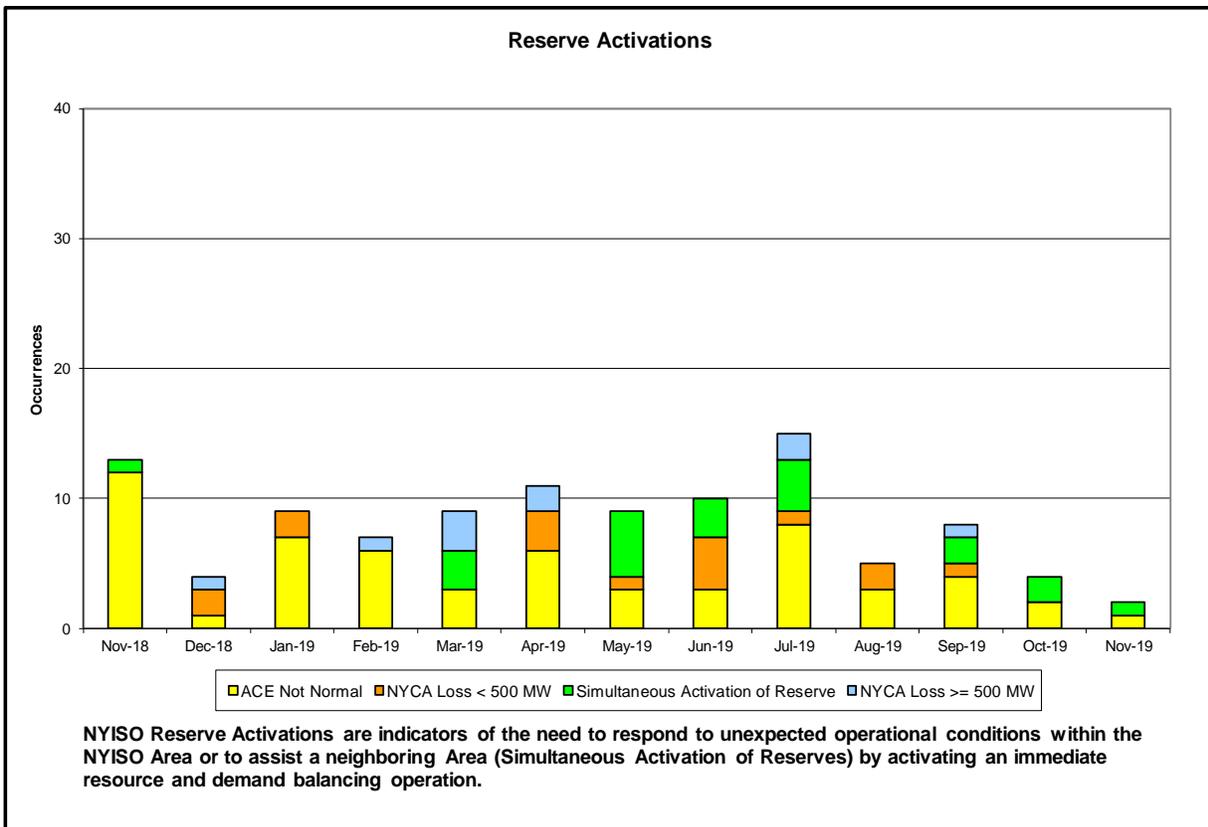
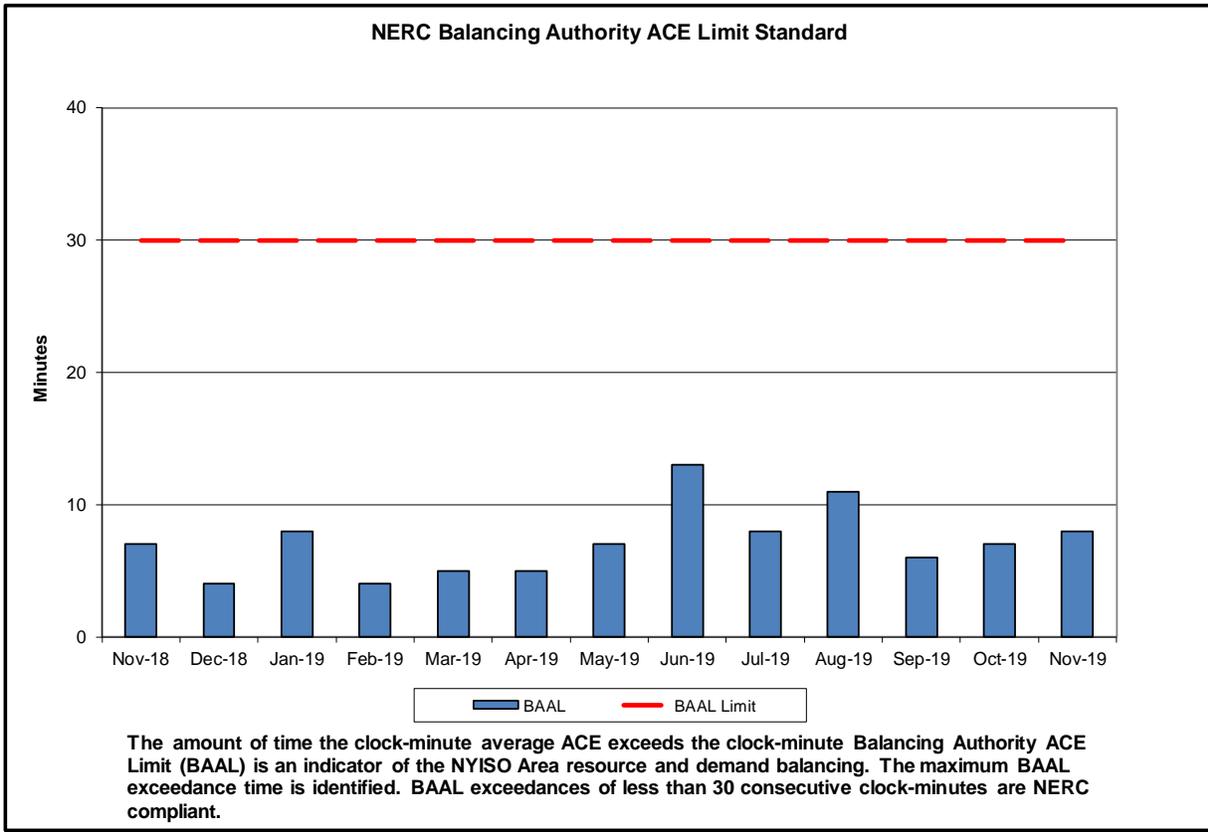
- Statewide uplift cost monthly average was (\$0.31)/MWh
- The following table identifies the Monthly ICAP spot market prices and the price delta.

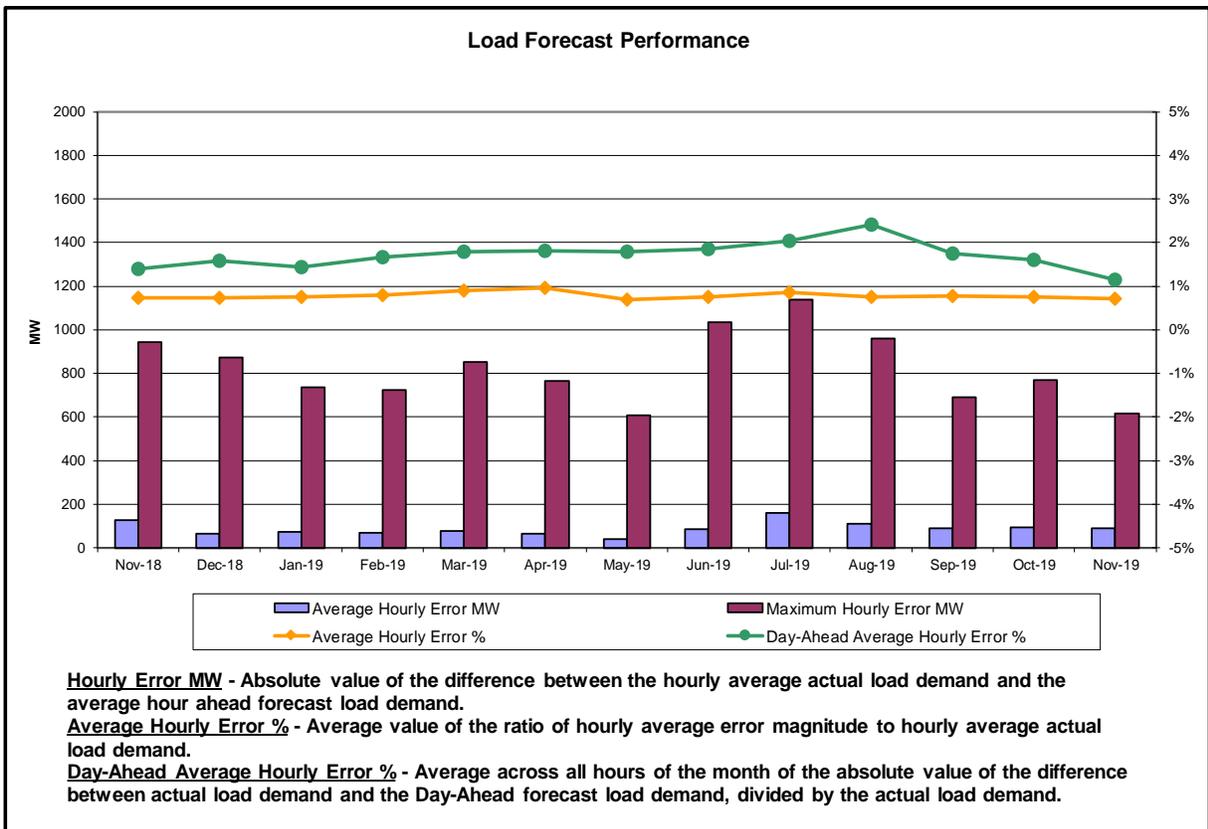
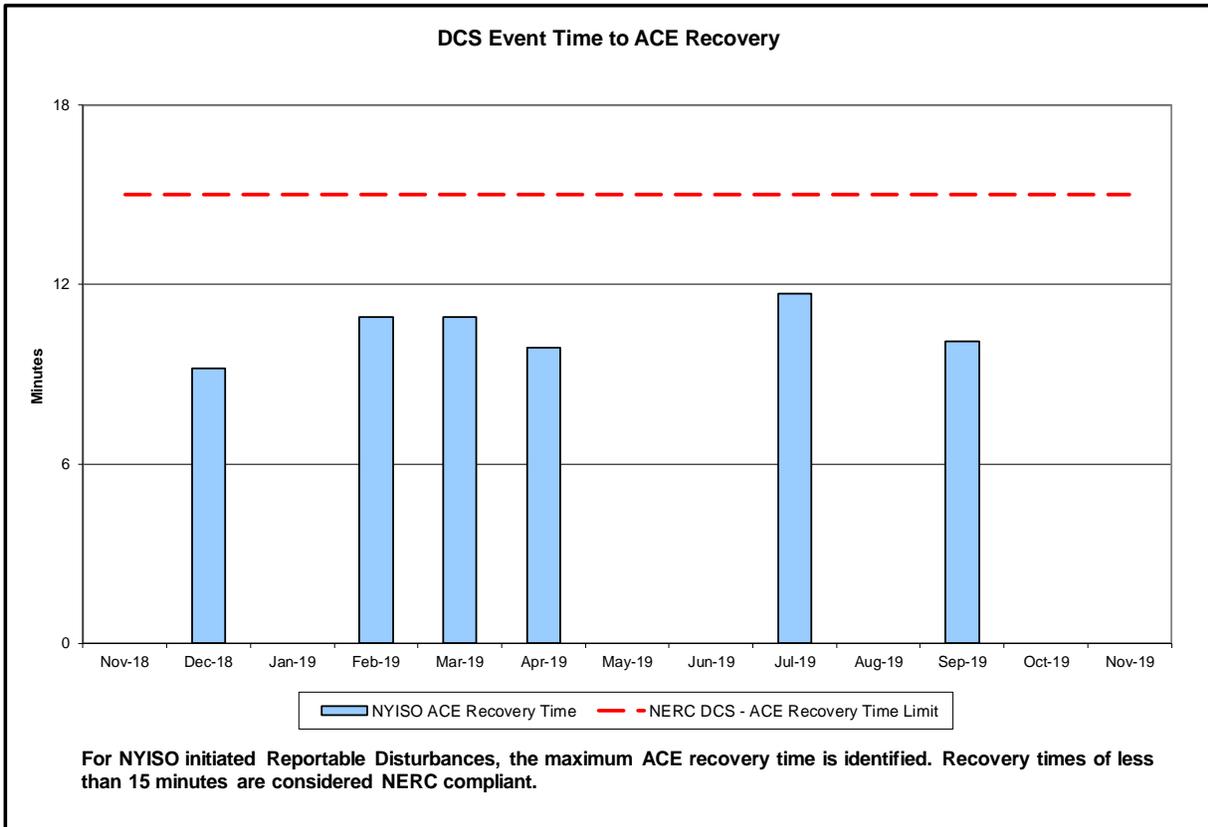
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
December 2019 Spot Price	\$0.03	\$0.03	\$3.99	\$0.03
November 2019 Spot Price	\$0.10	\$0.10	\$4.01	\$0.10
Delta	(\$0.07)	(\$0.07)	(\$0.02)	(\$0.07)

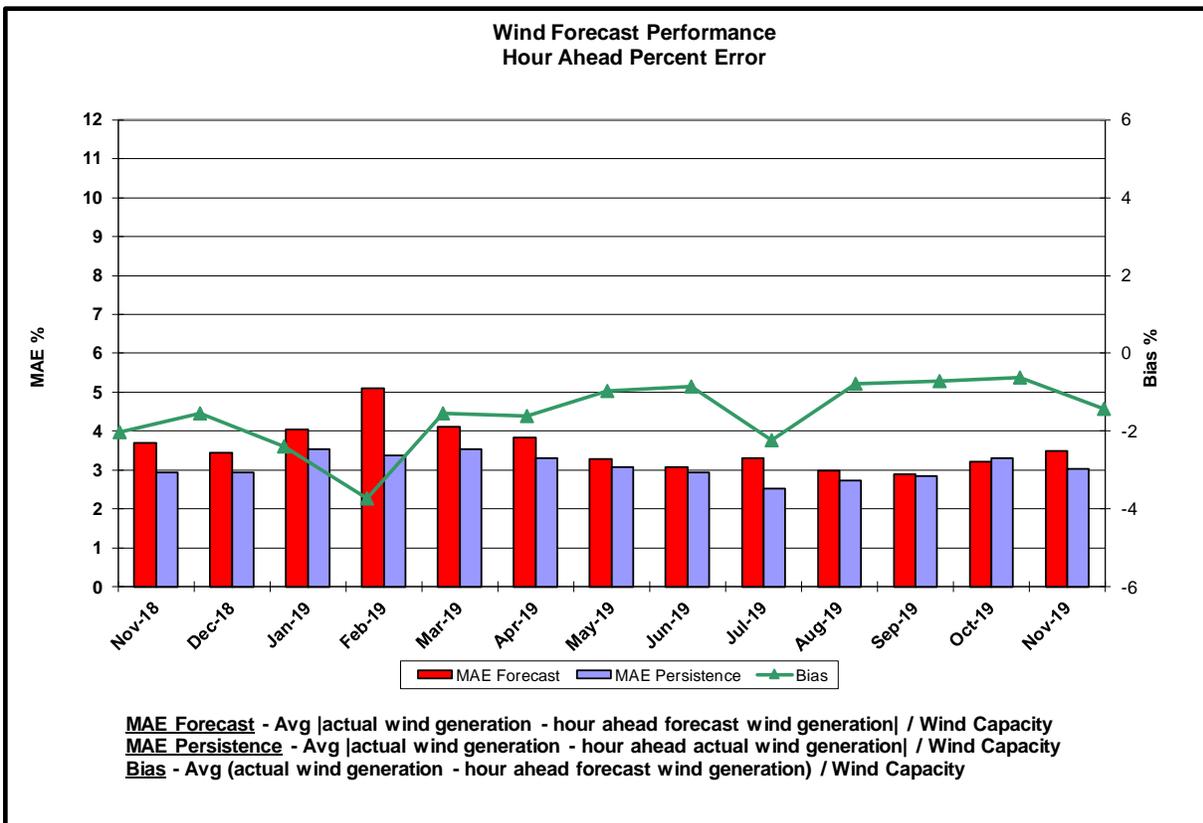
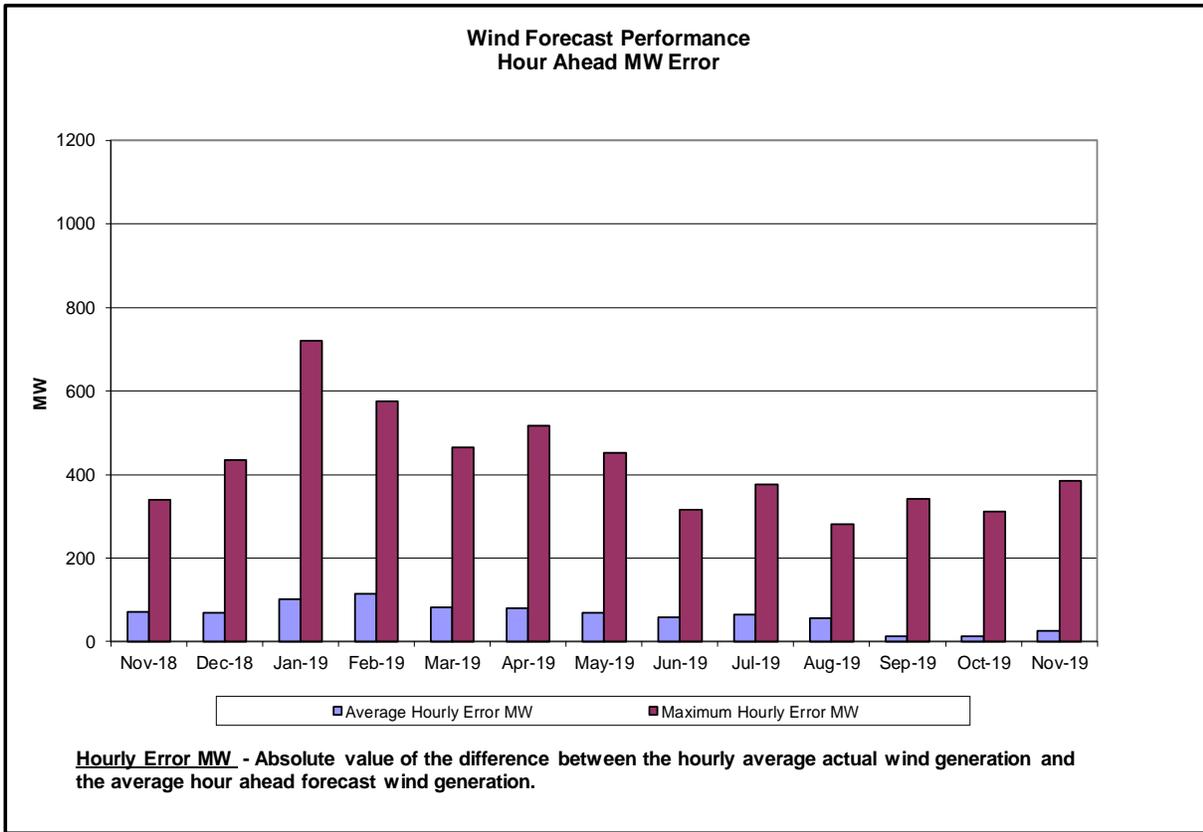
Reliability Performance Metrics

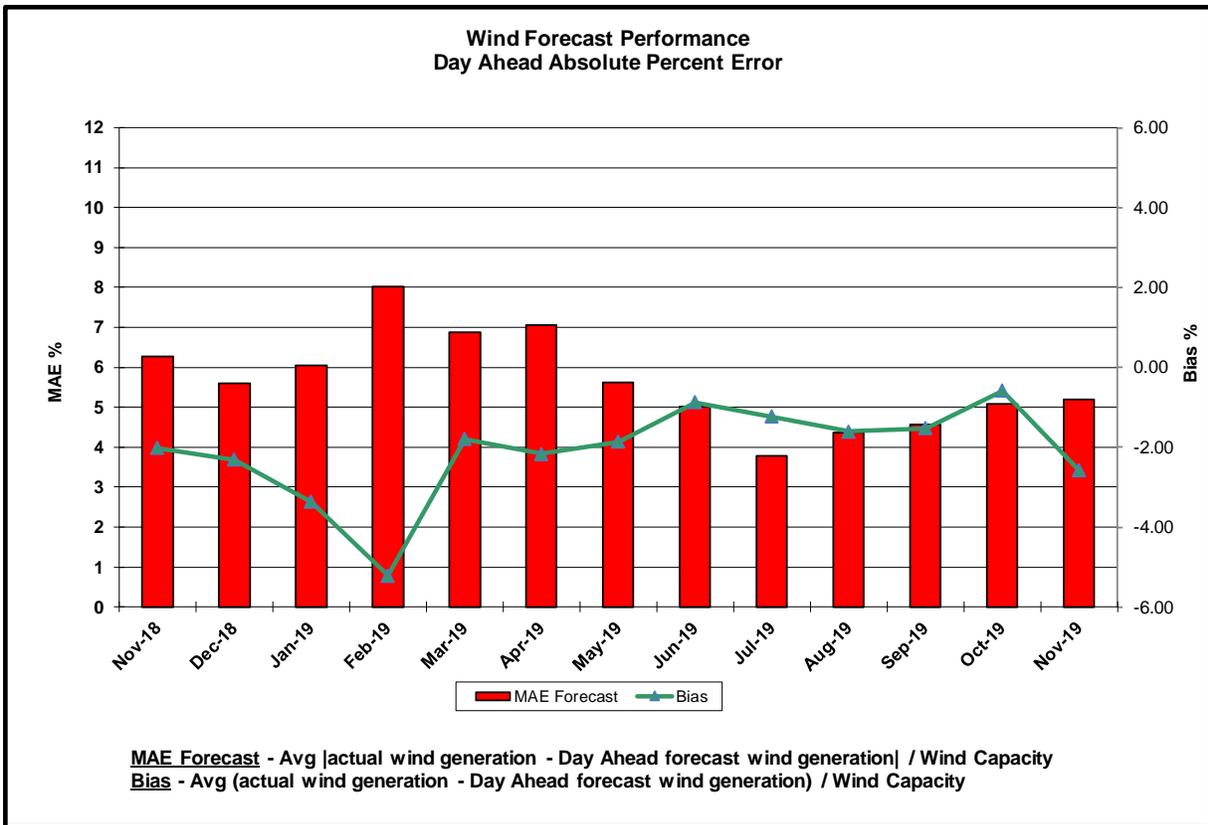
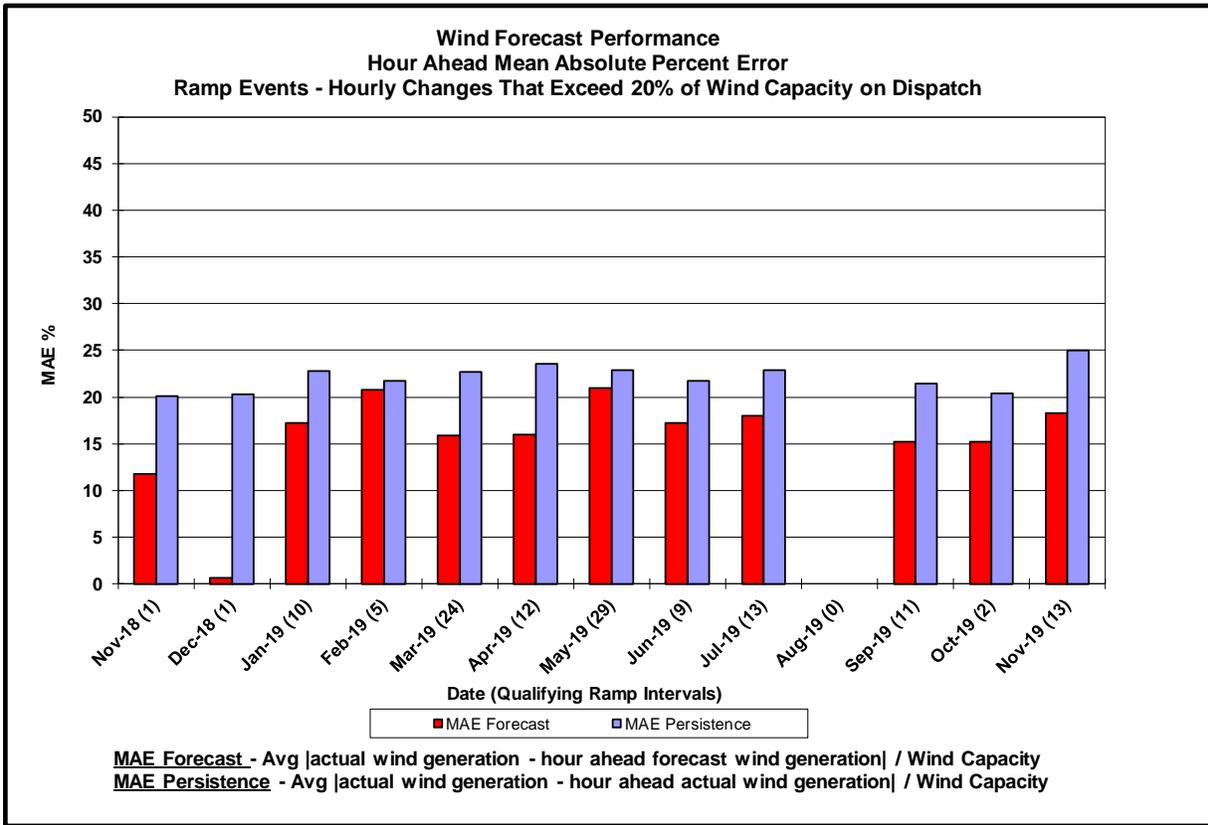


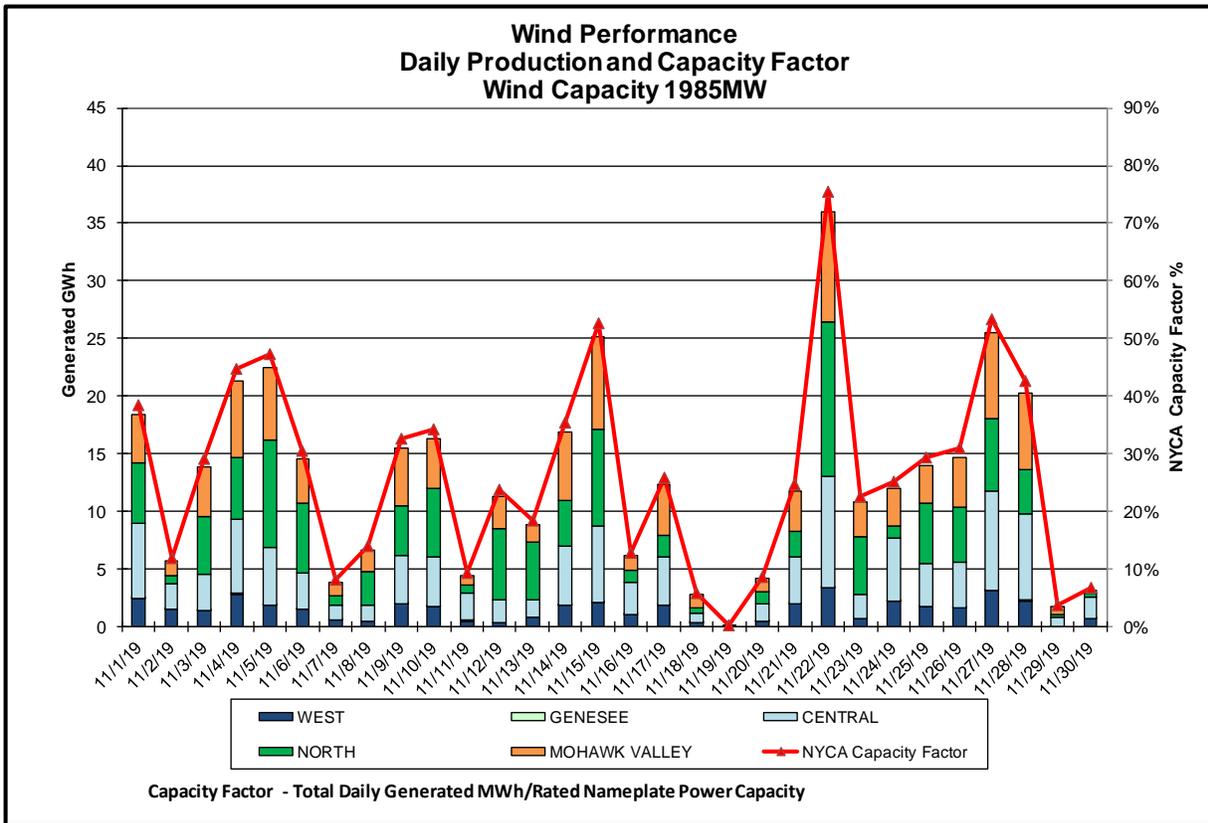
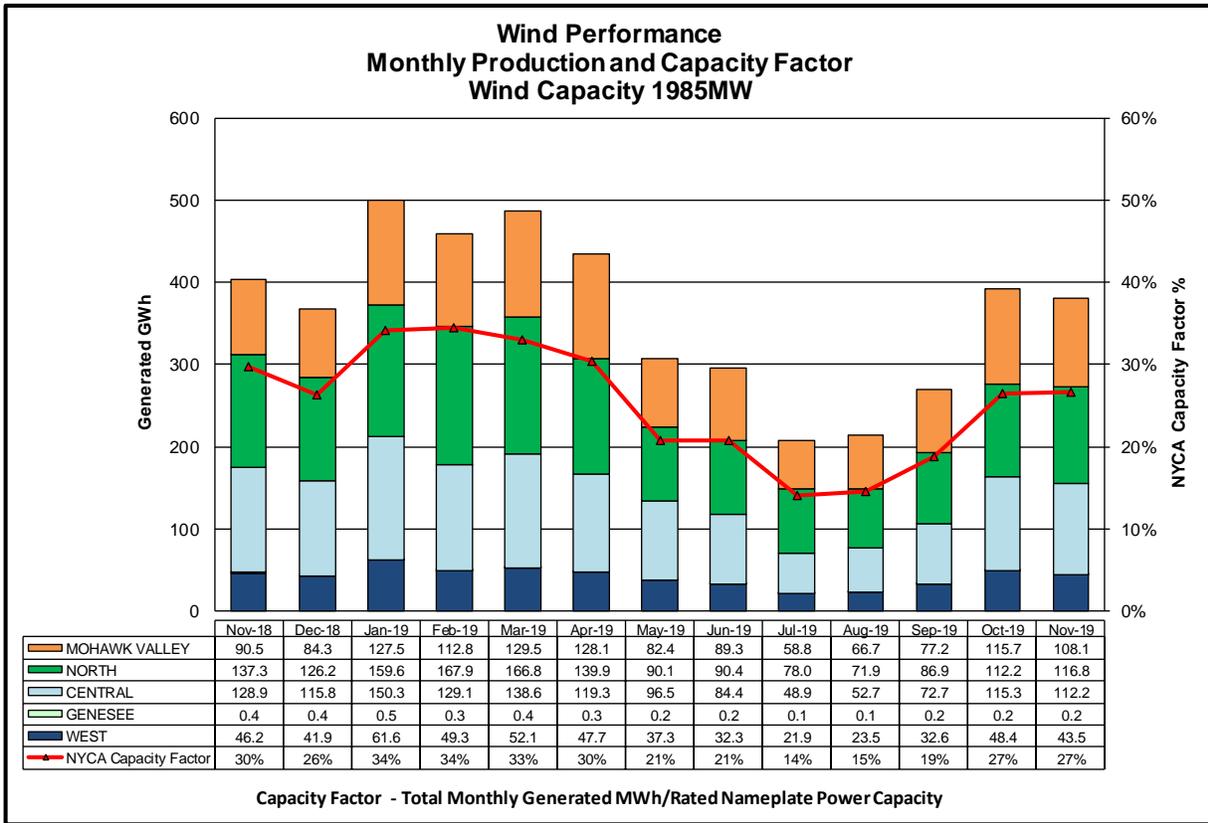


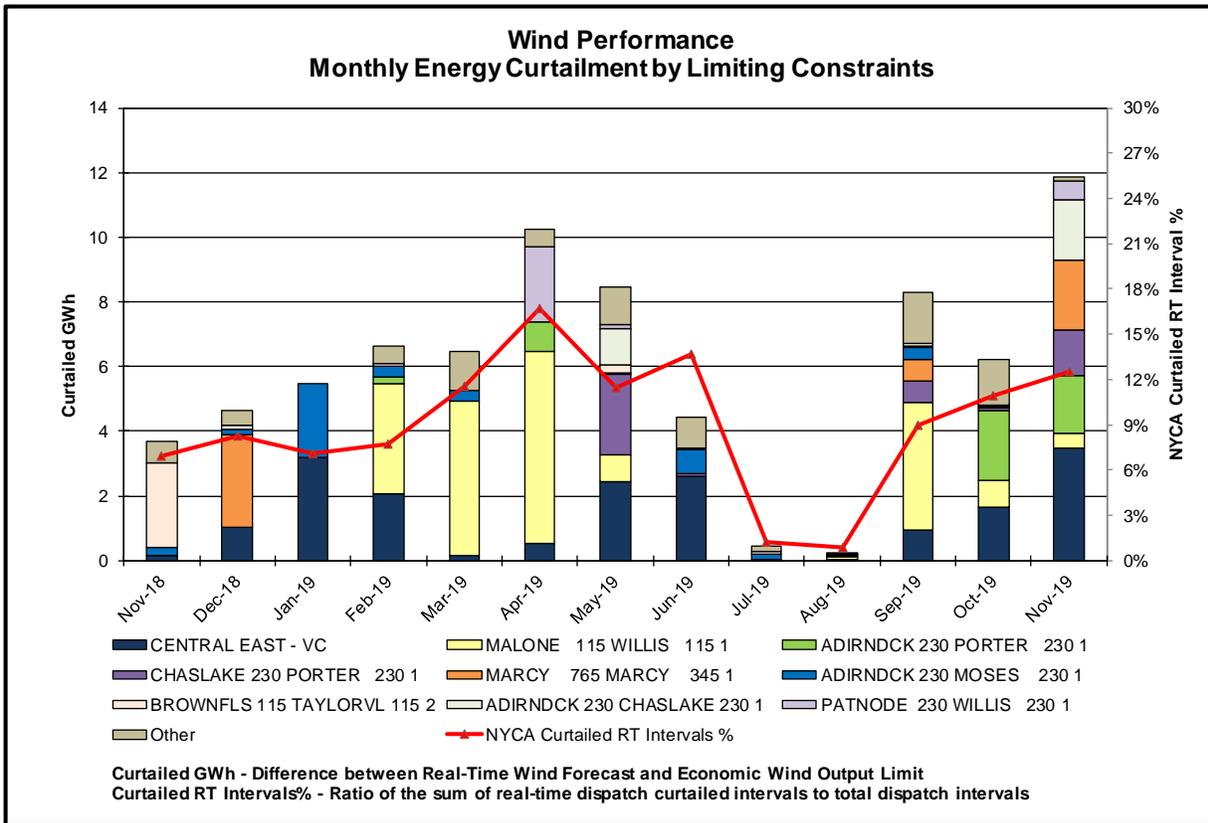
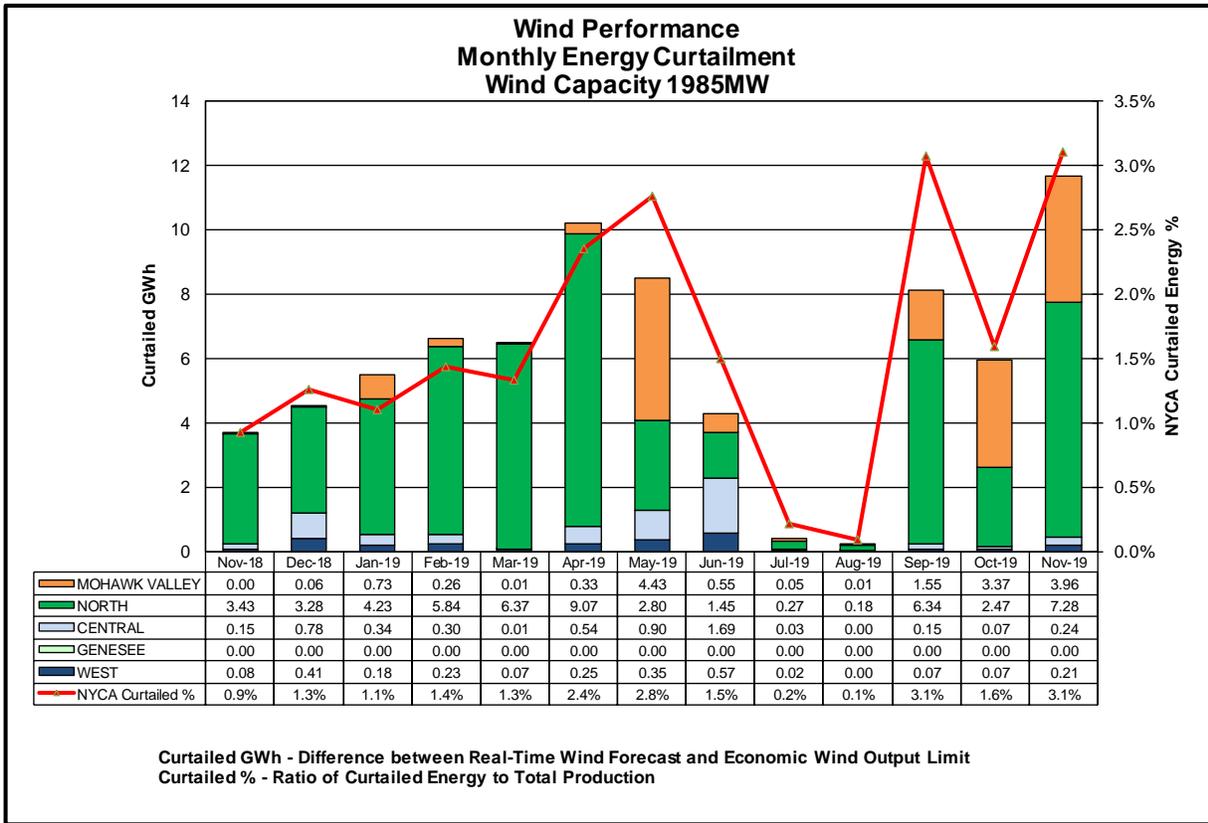


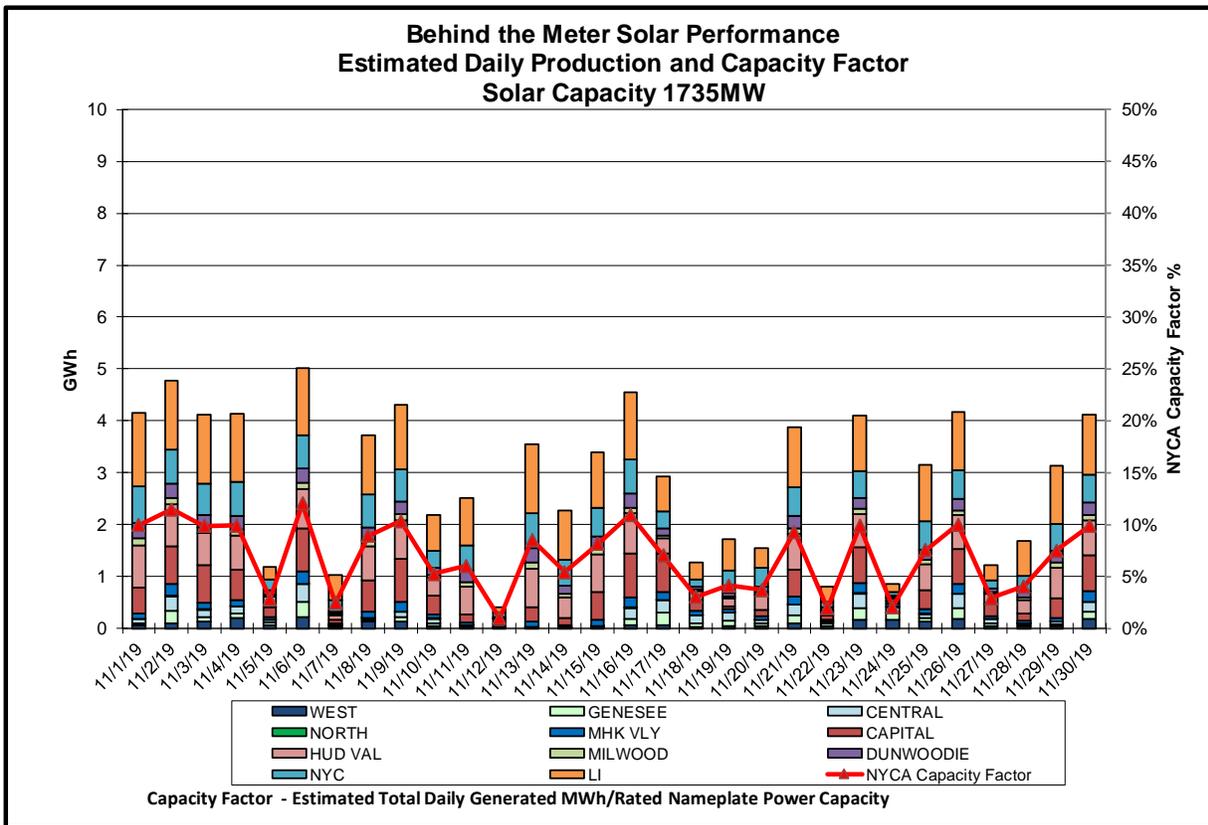
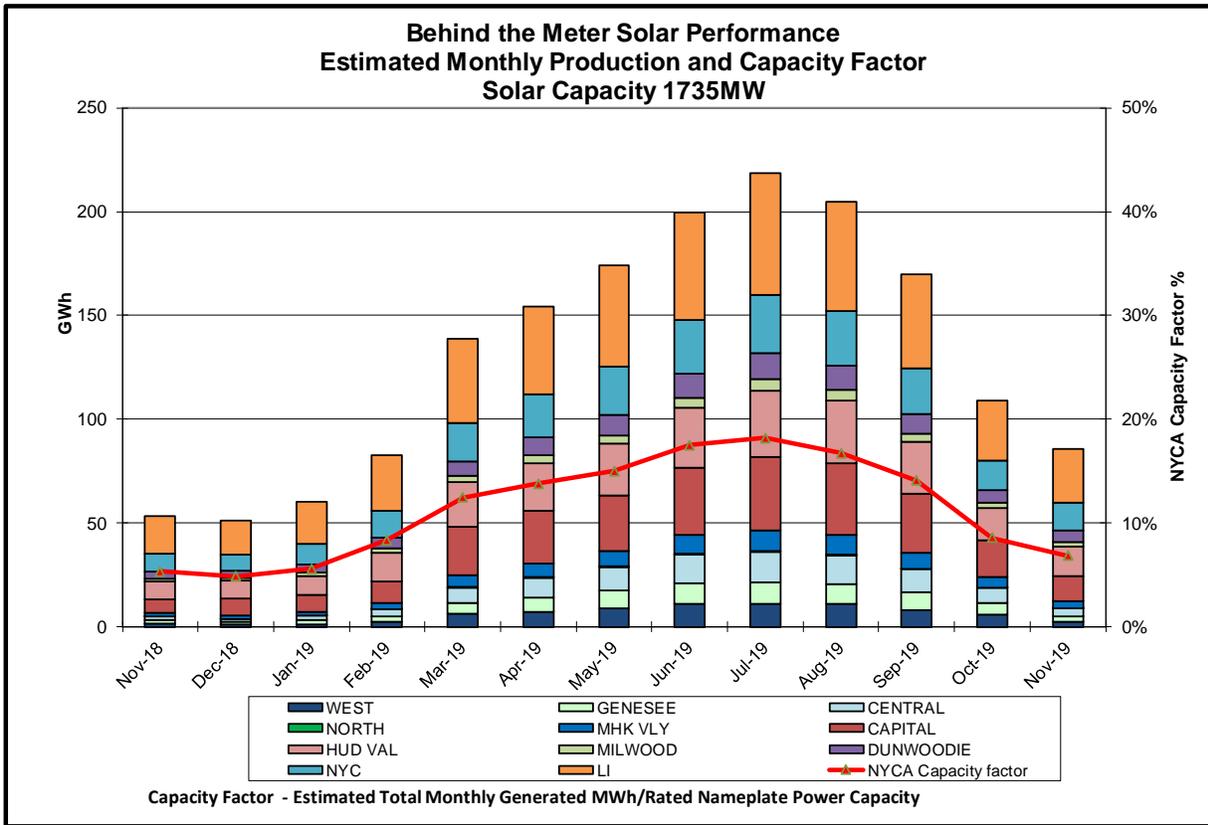


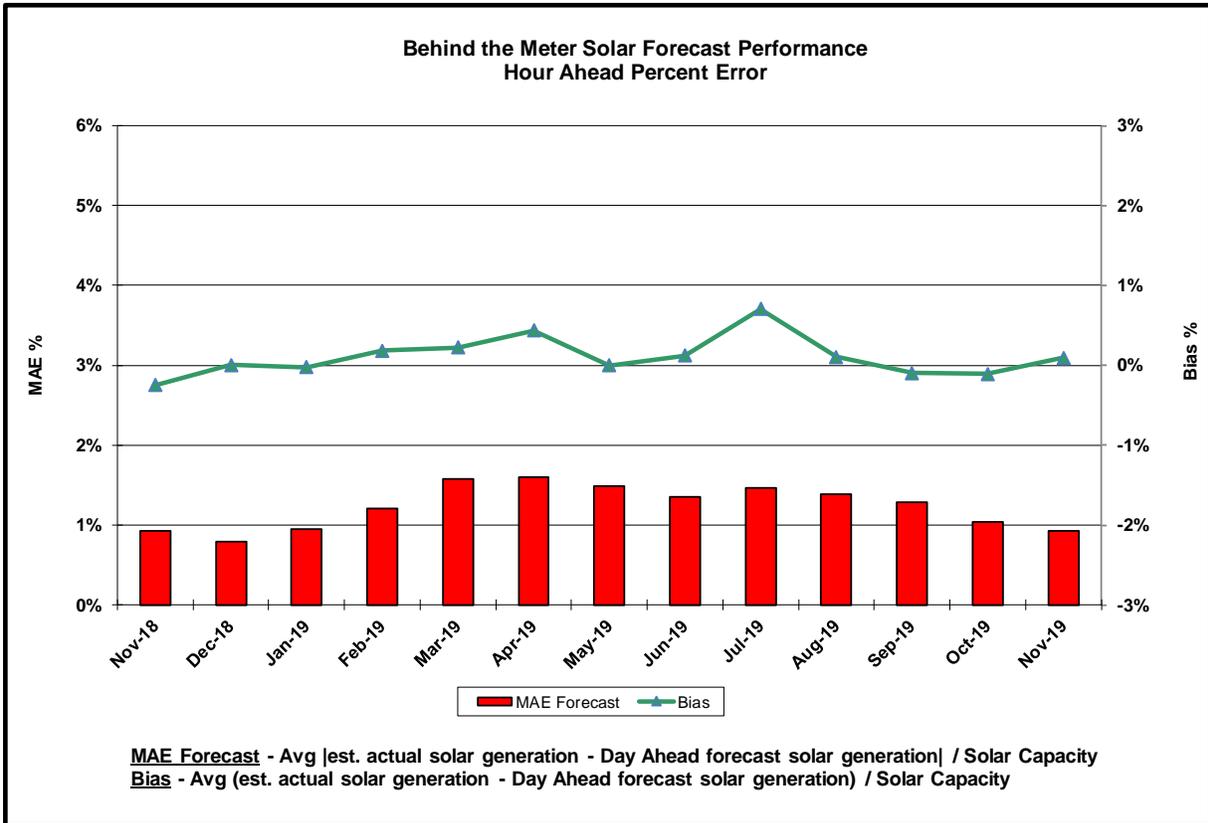
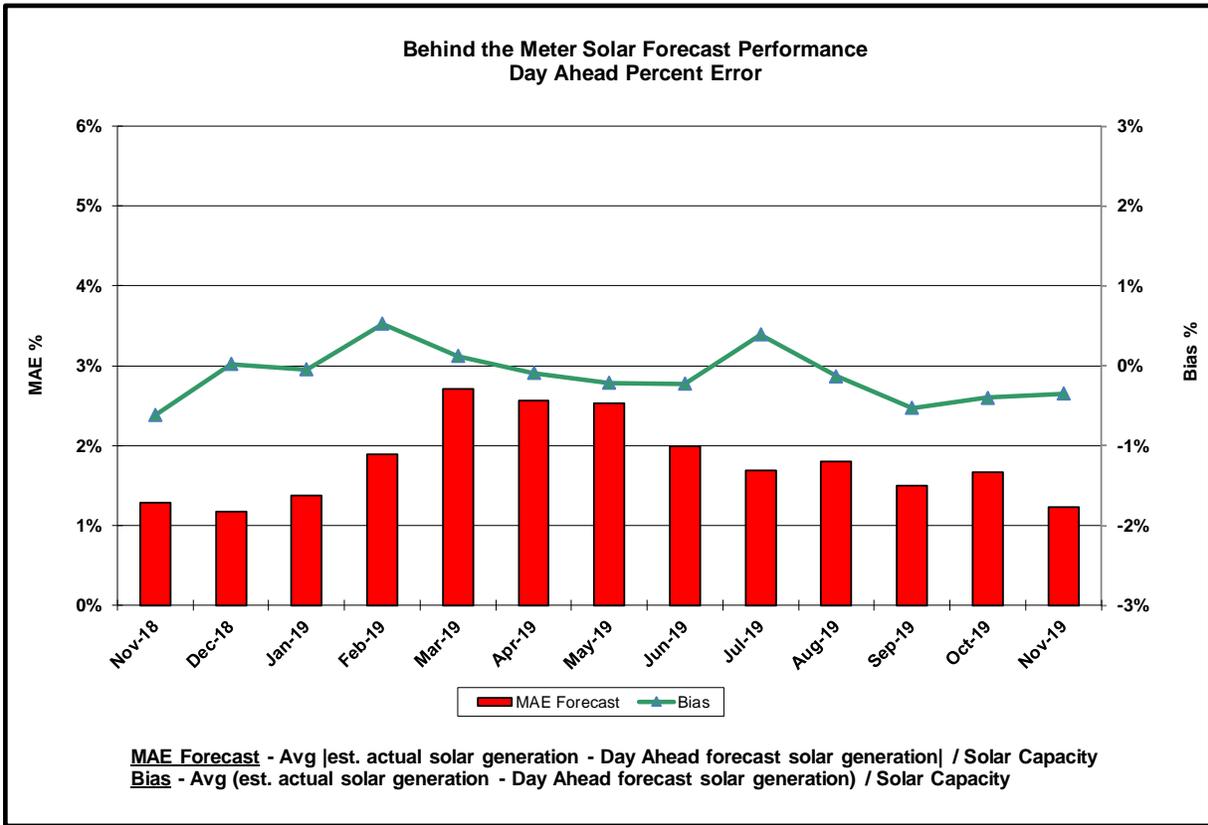


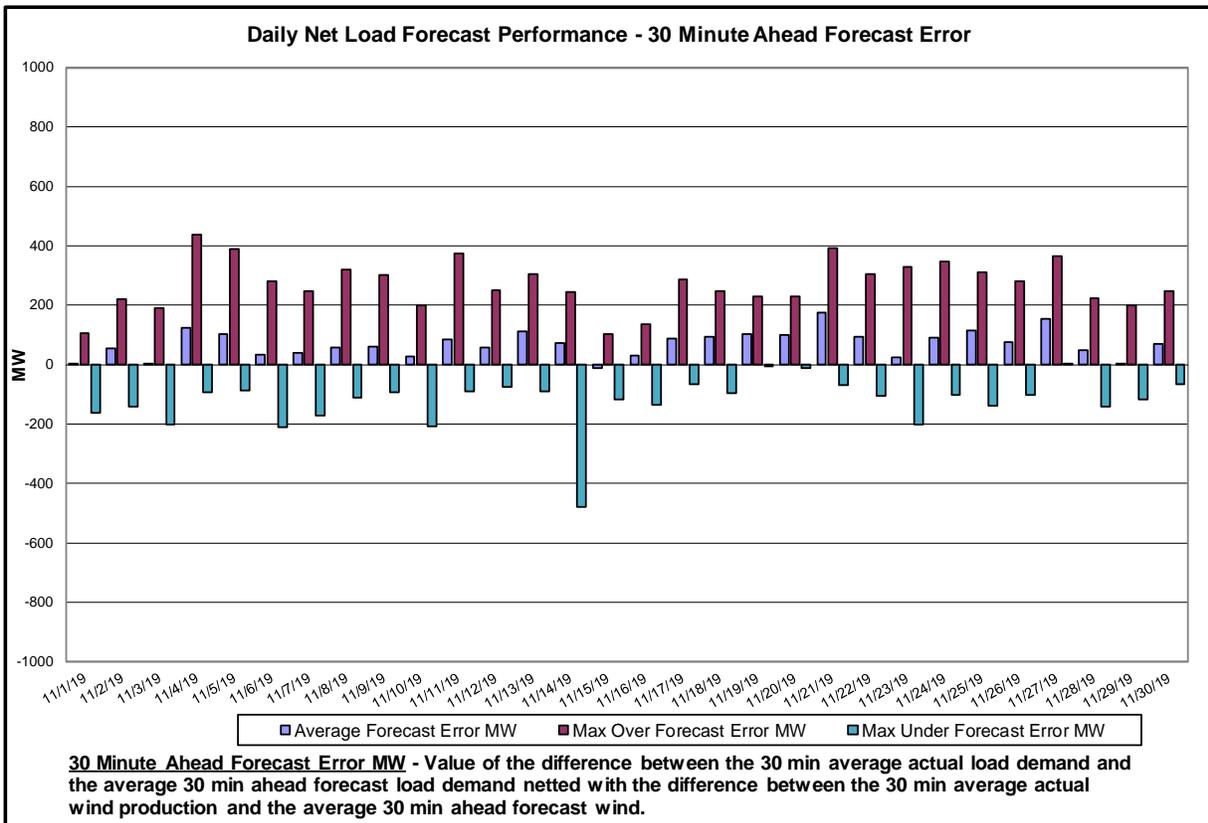
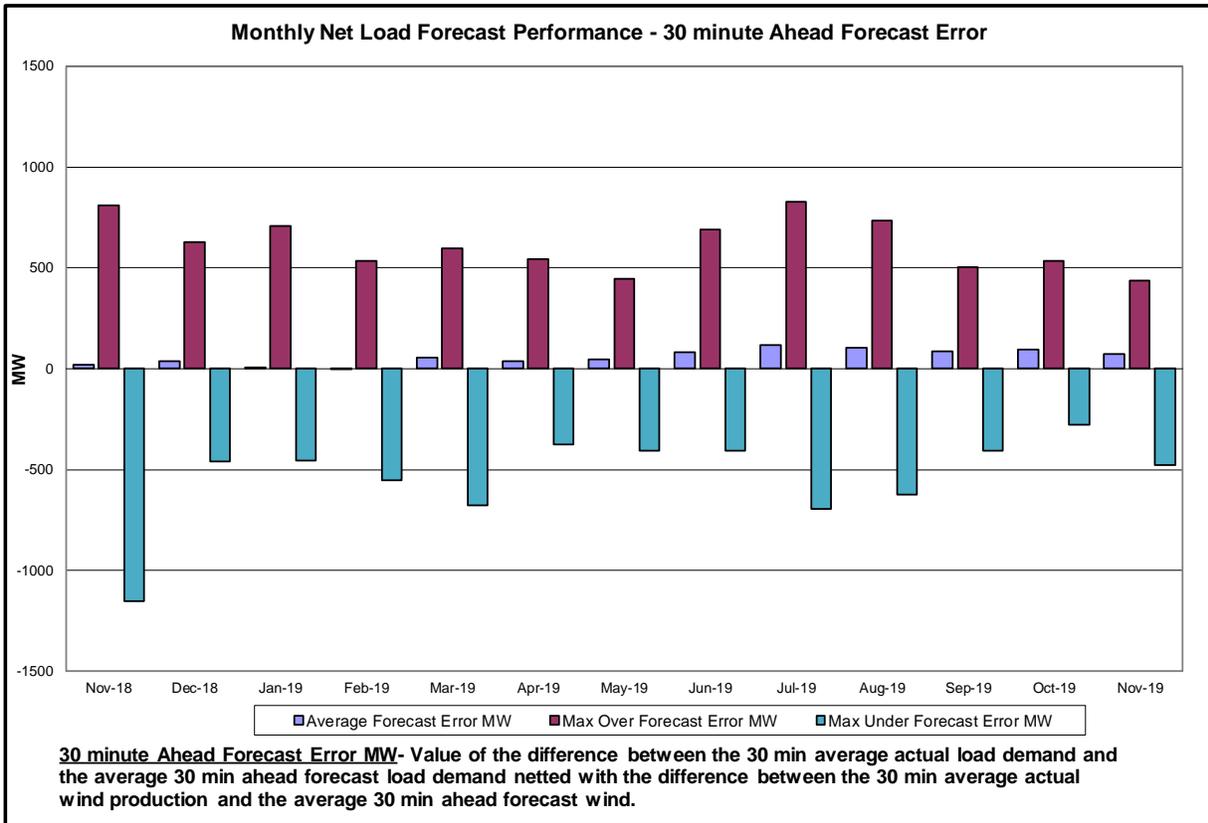


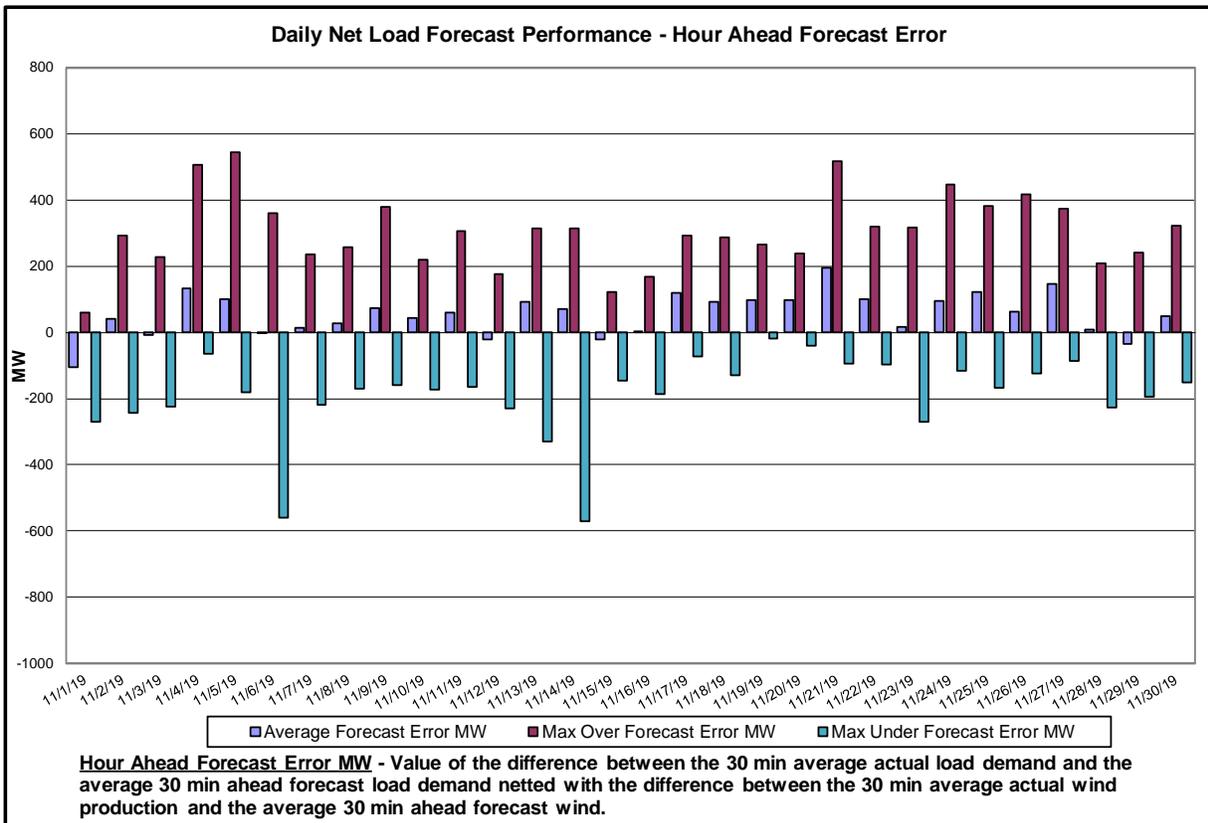
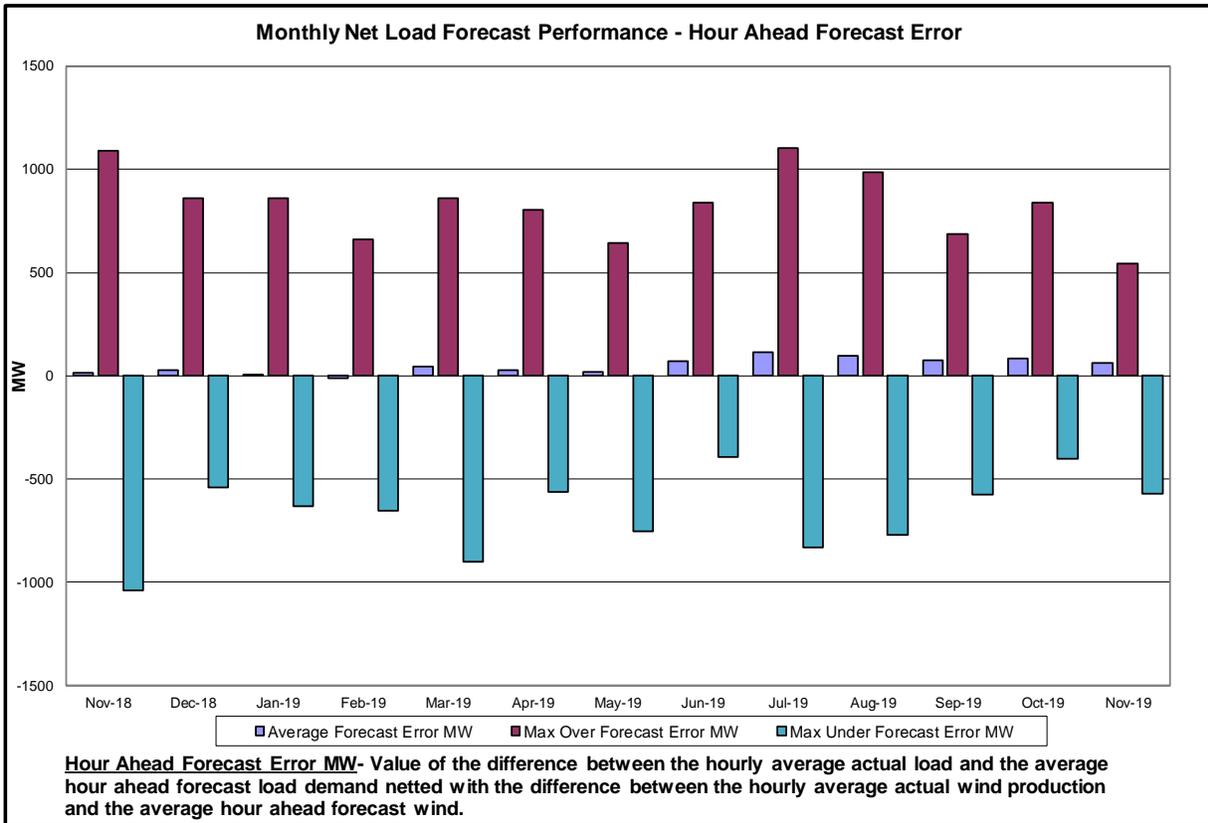


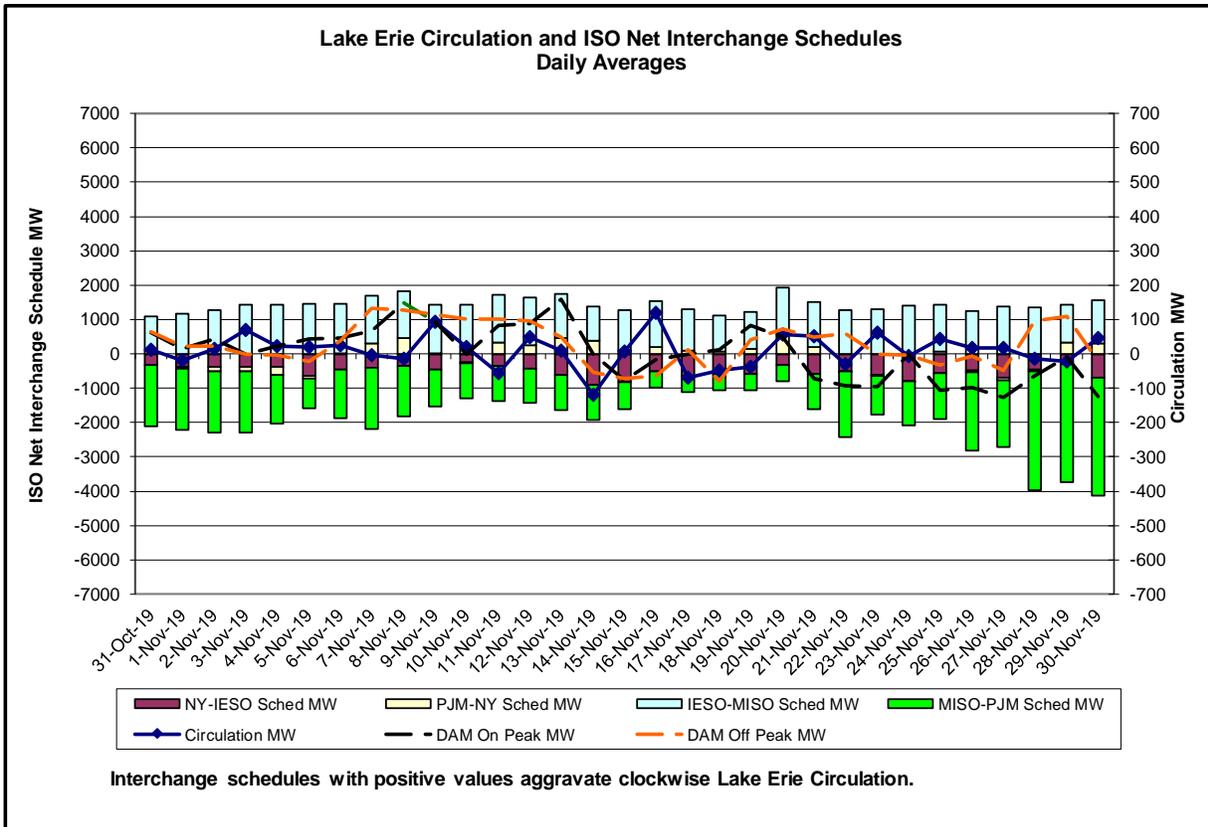
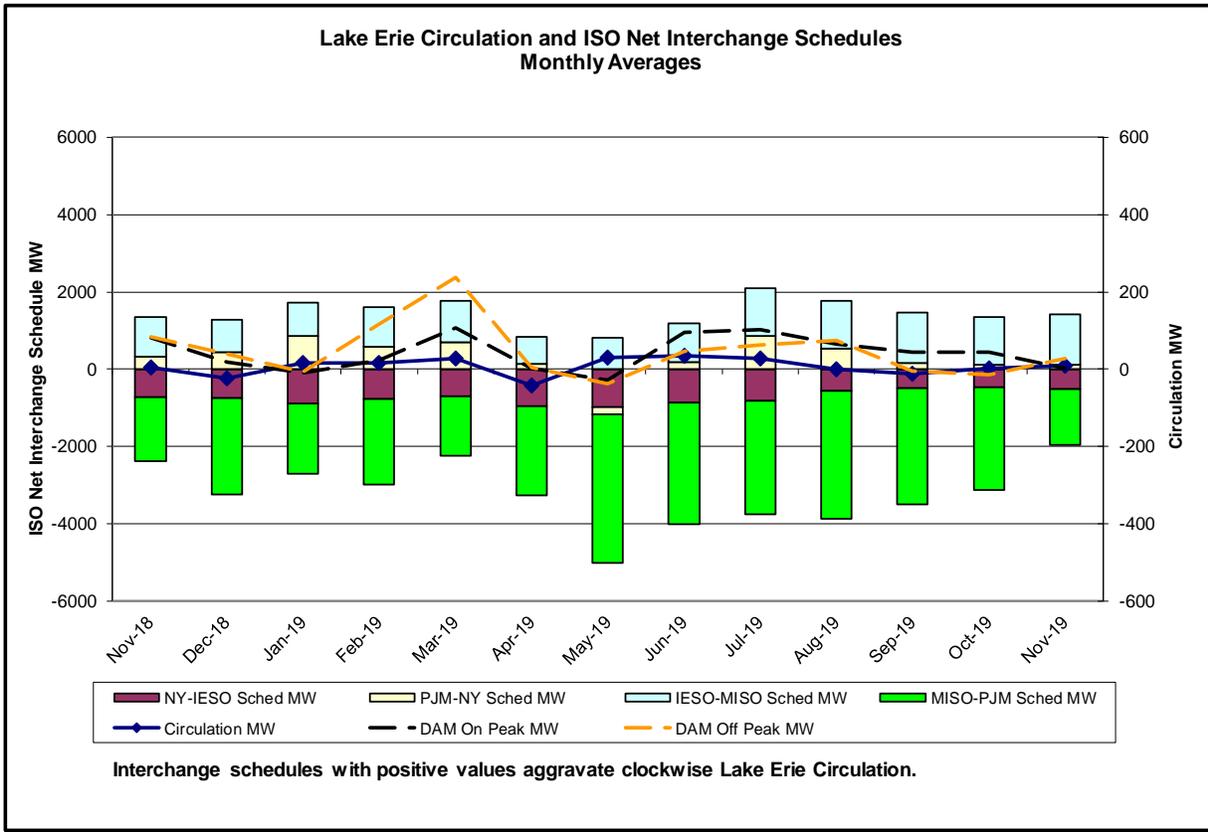




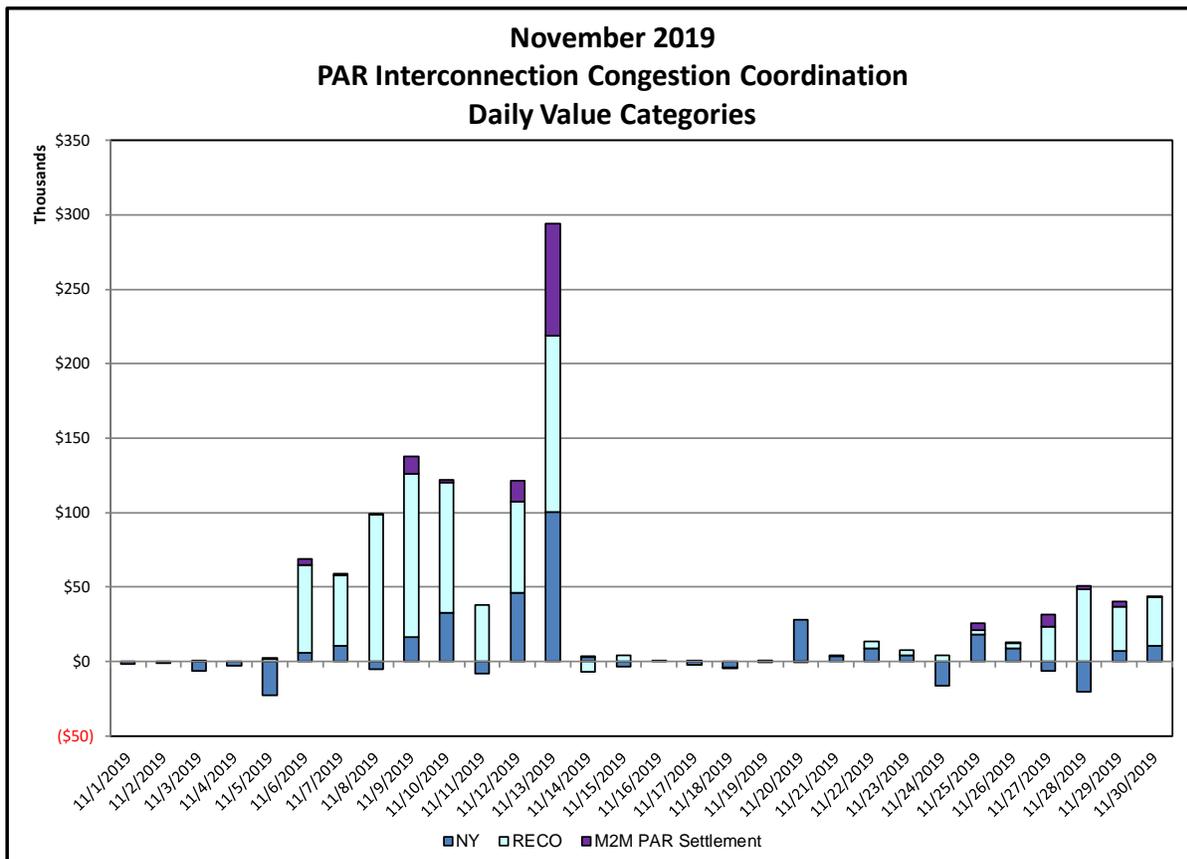
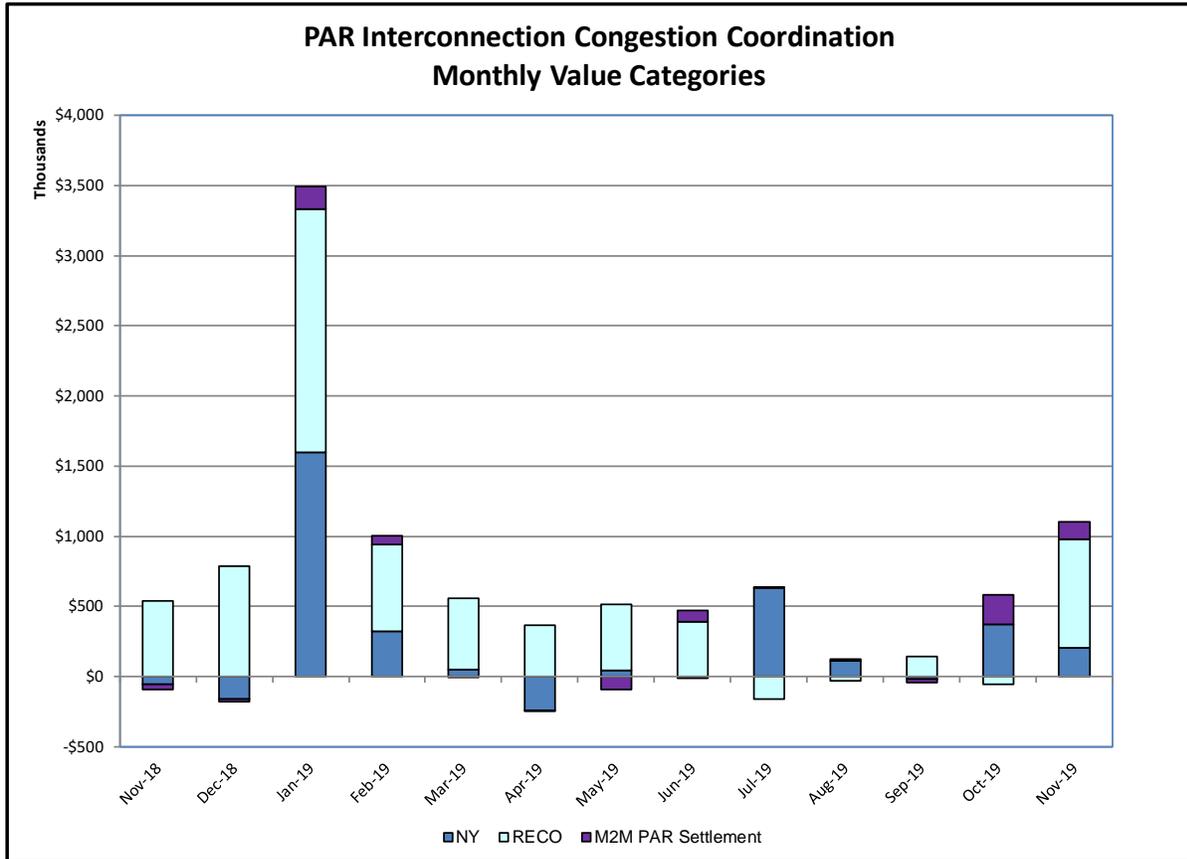






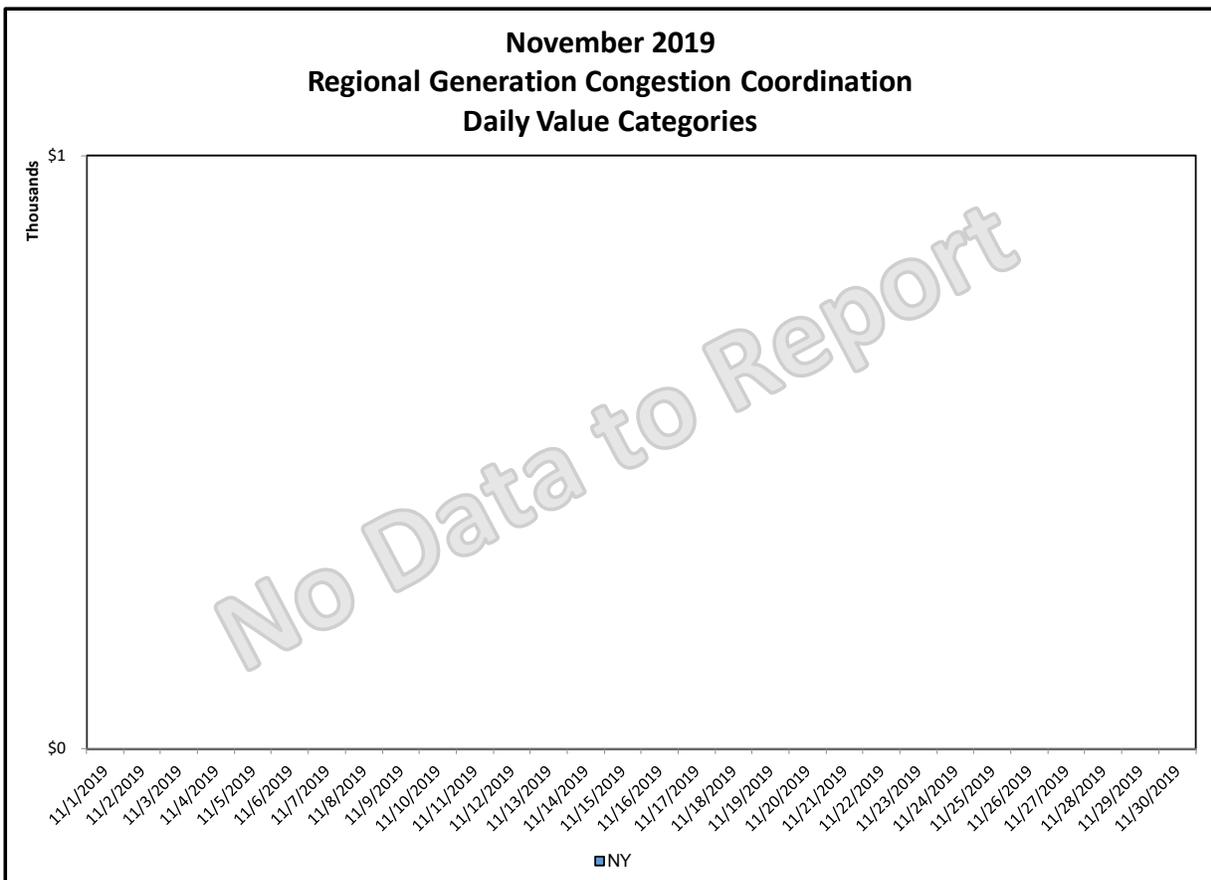
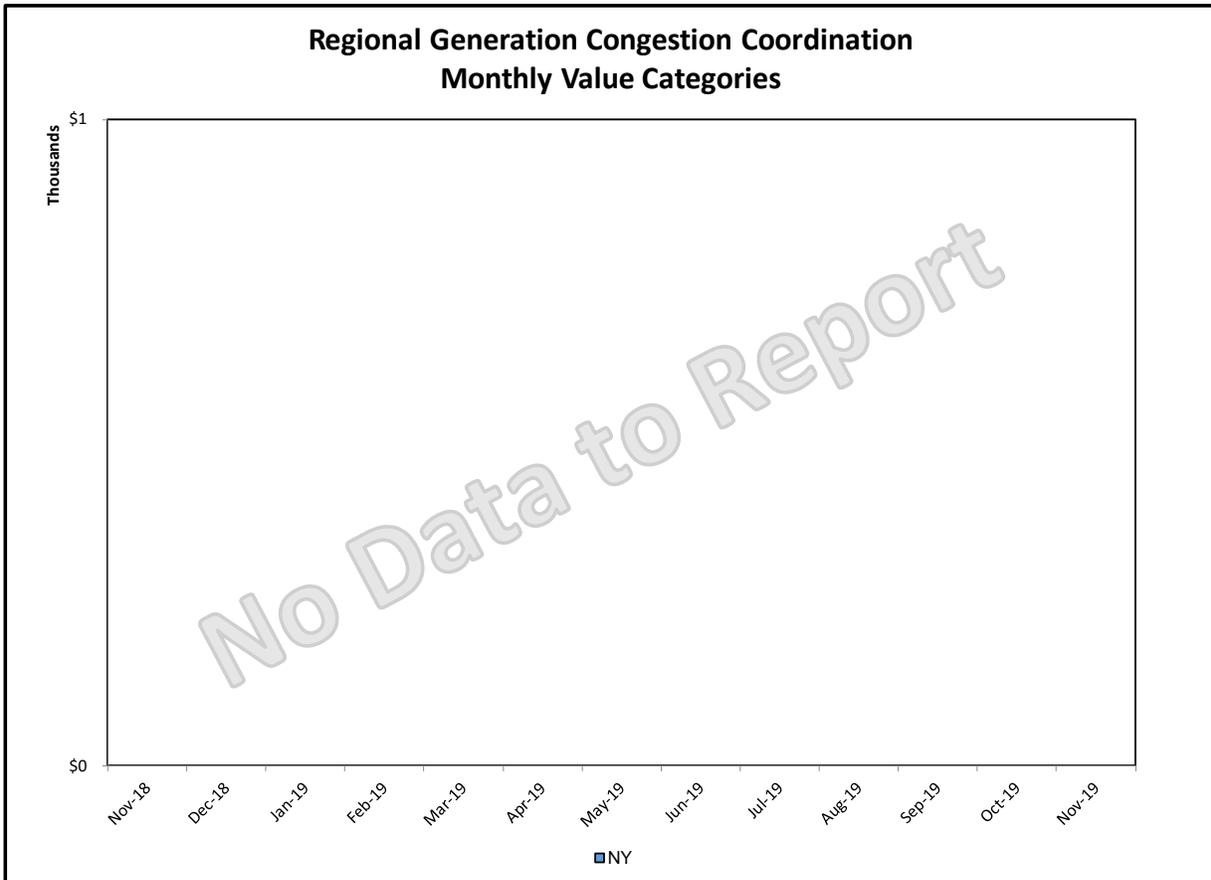


Broader Regional Market Performance Metrics



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.



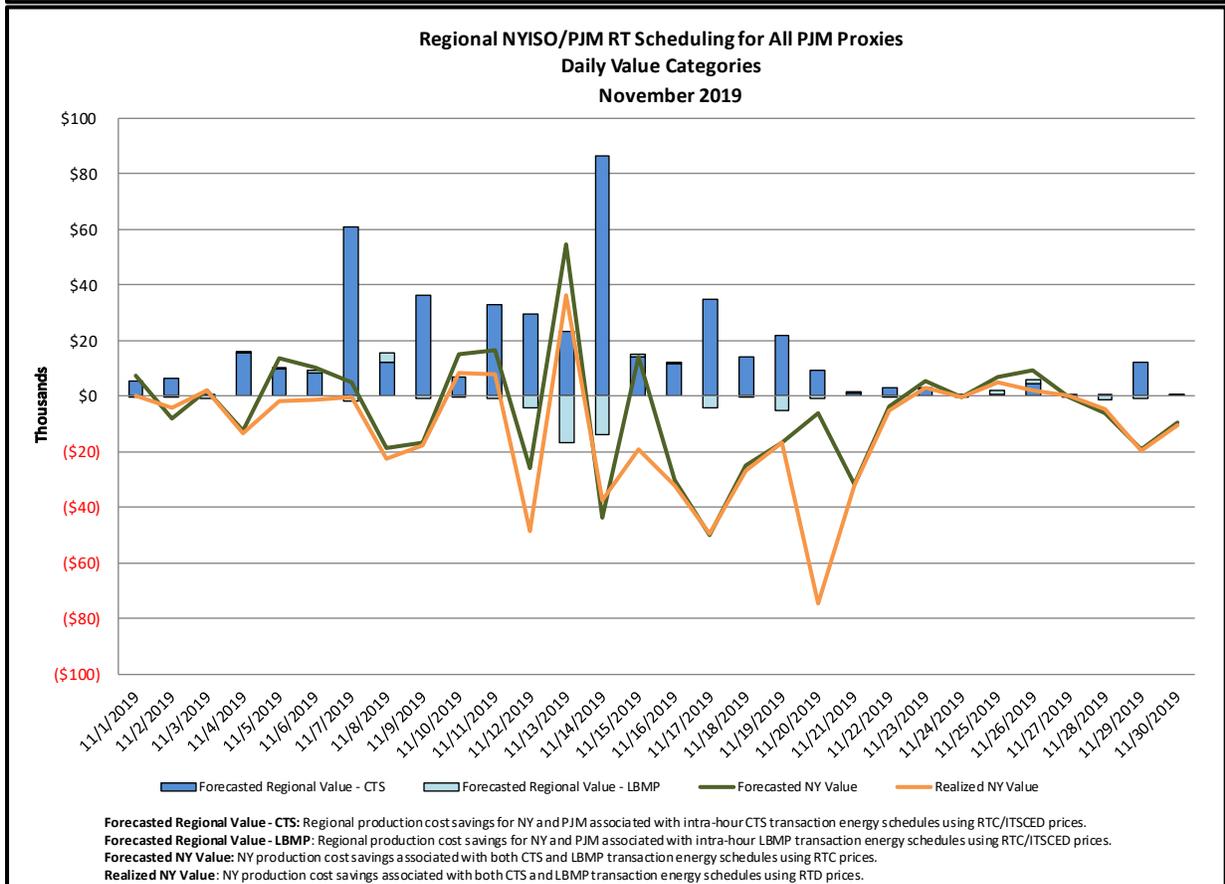
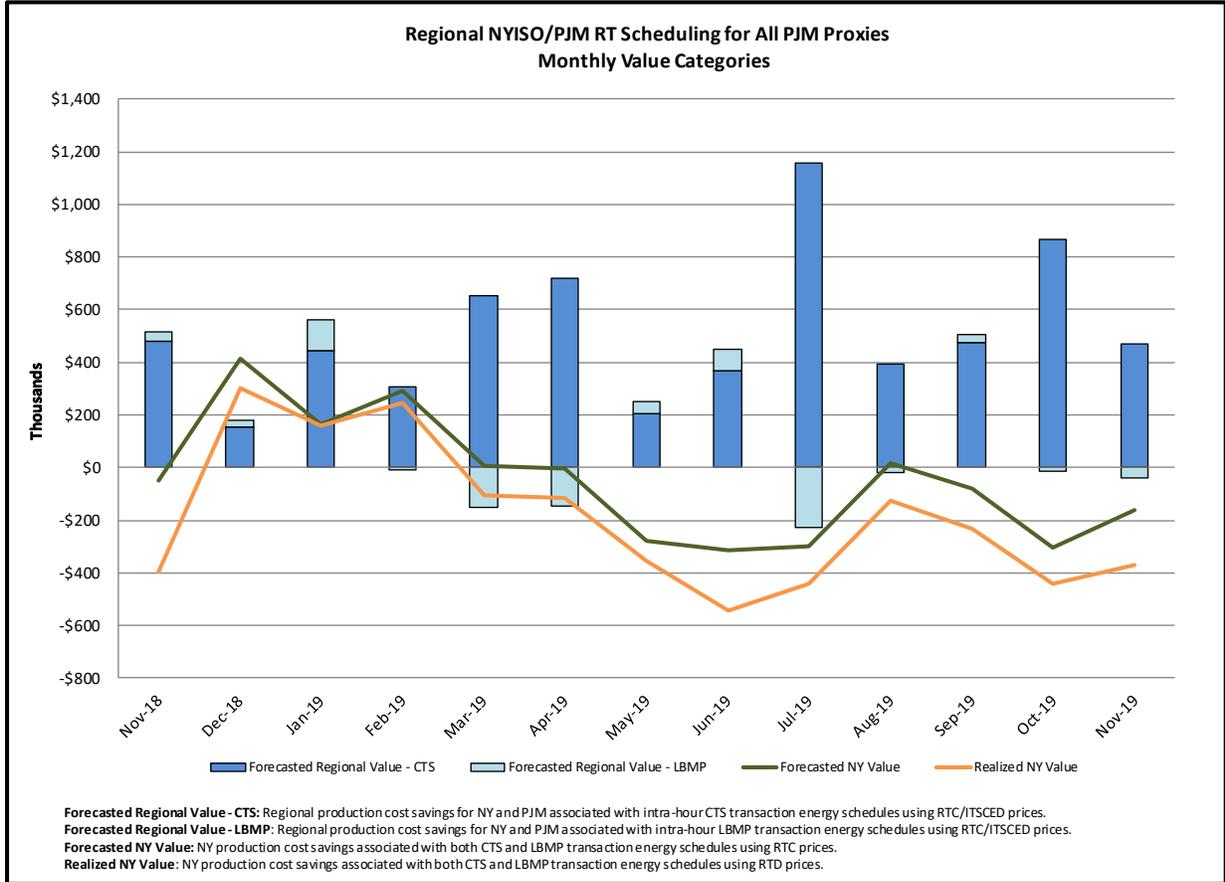
Regional Generation Congestion Coordination

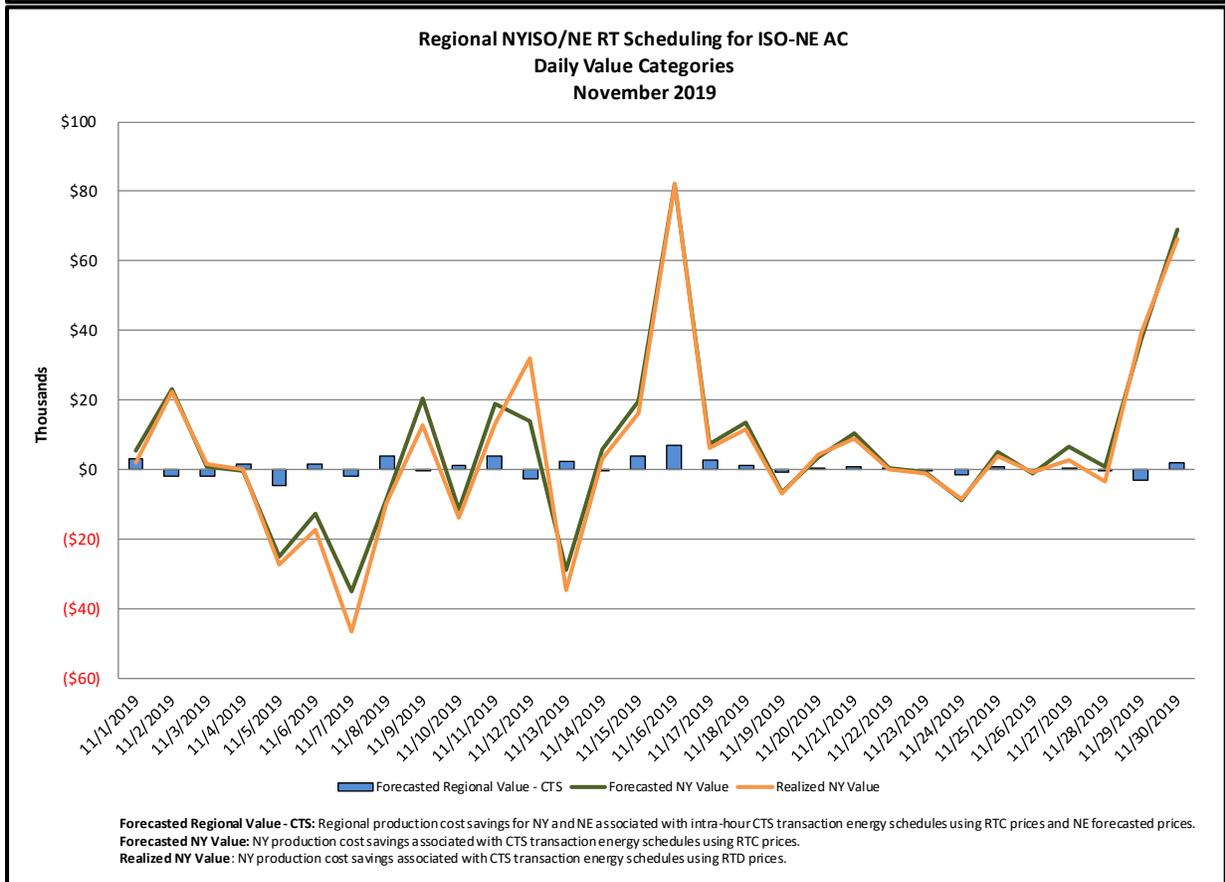
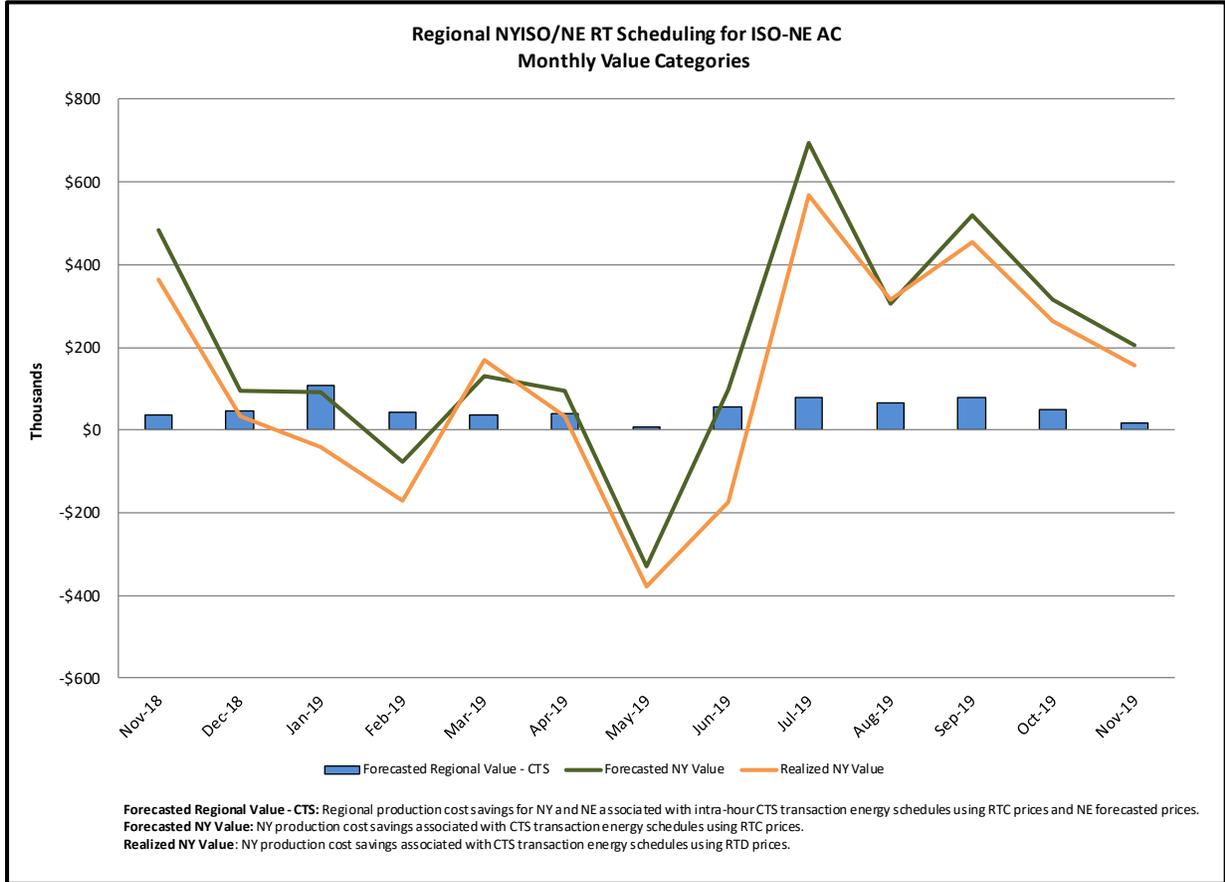
Category

NY

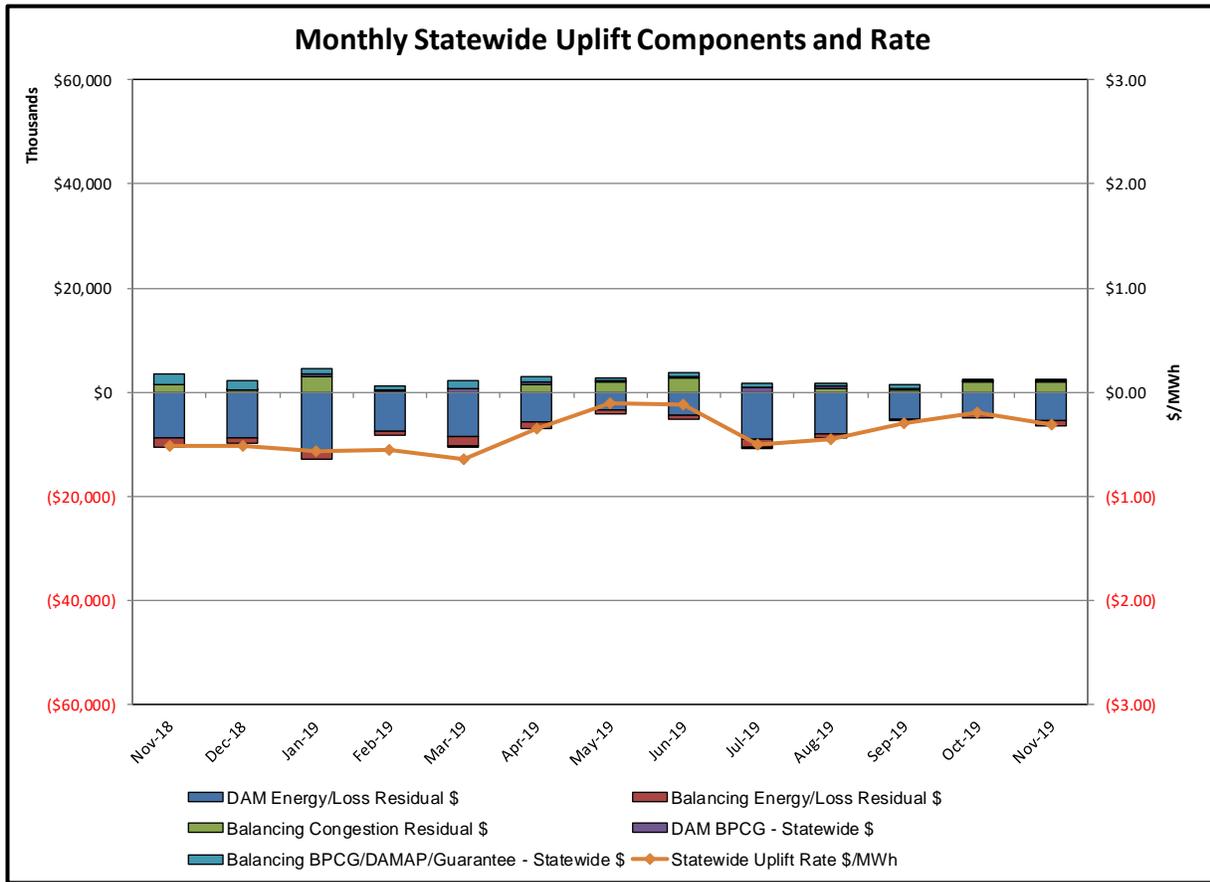
Description

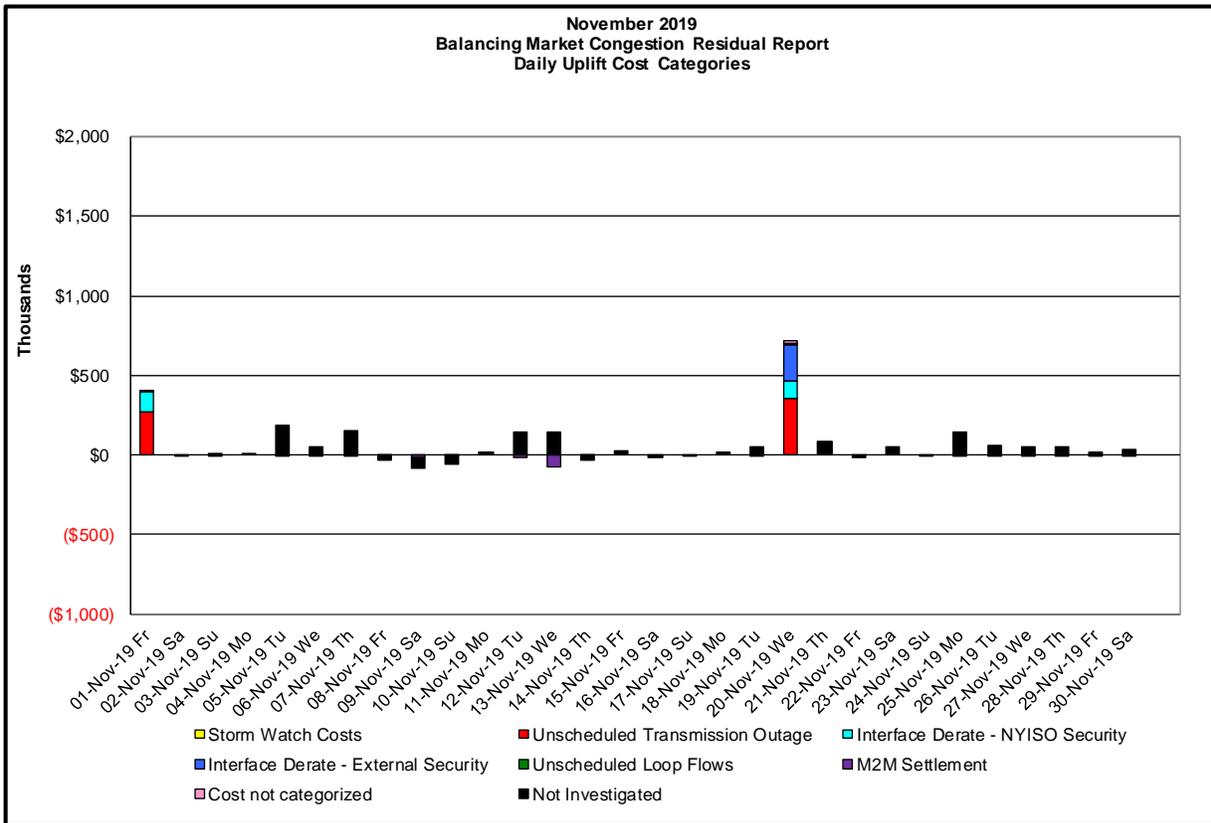
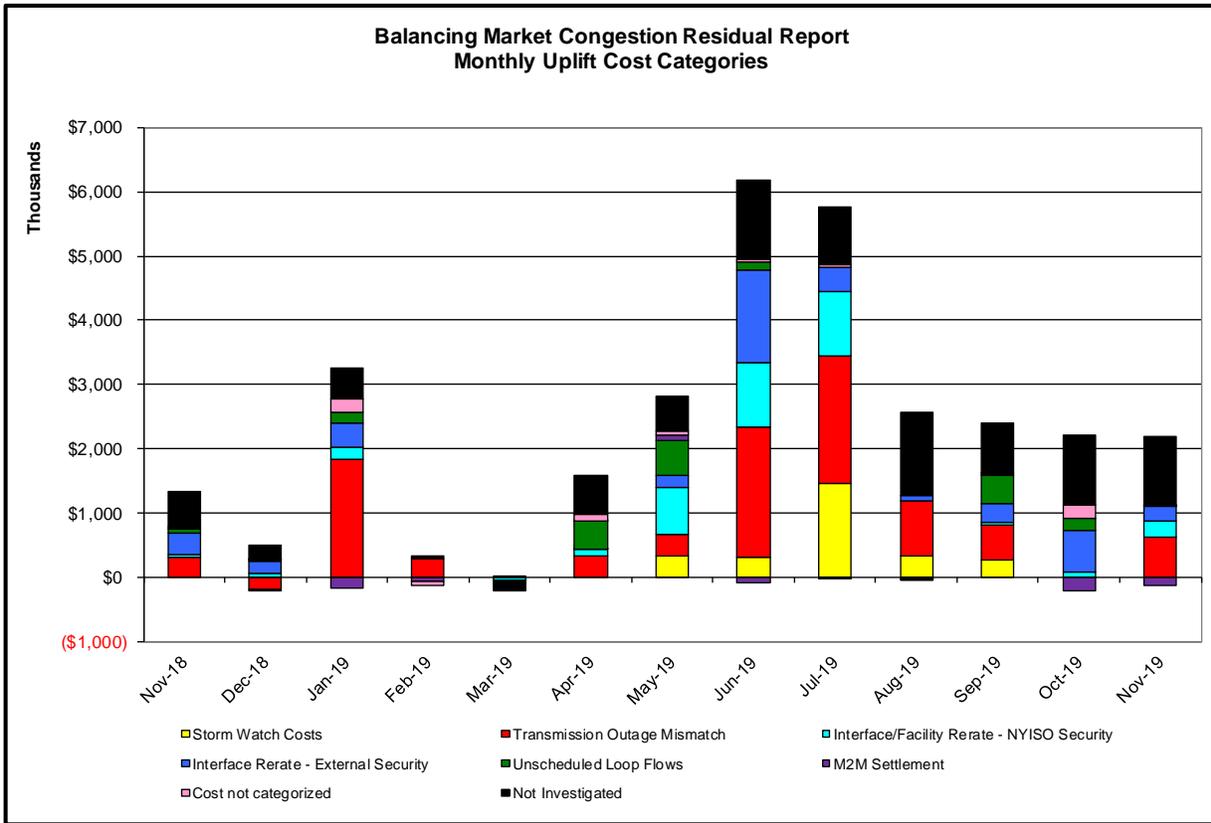
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





Market Performance Metrics





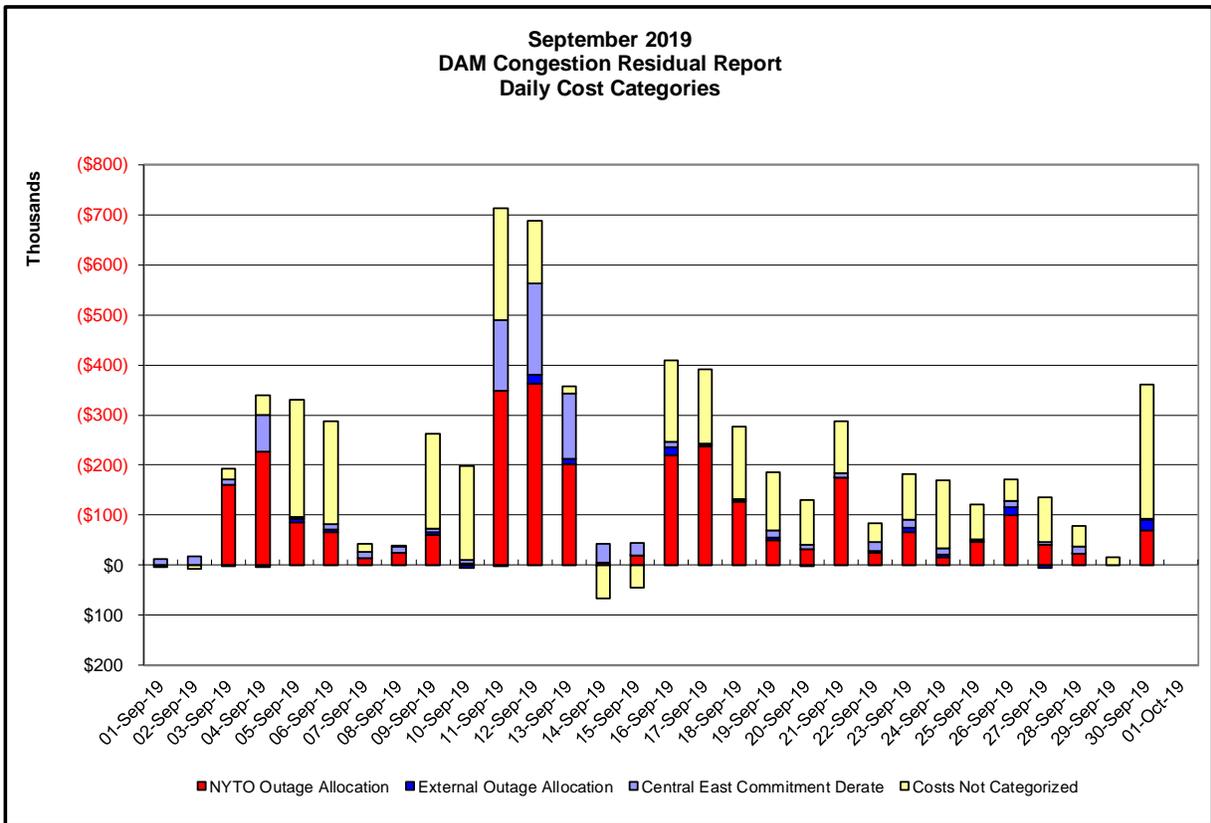
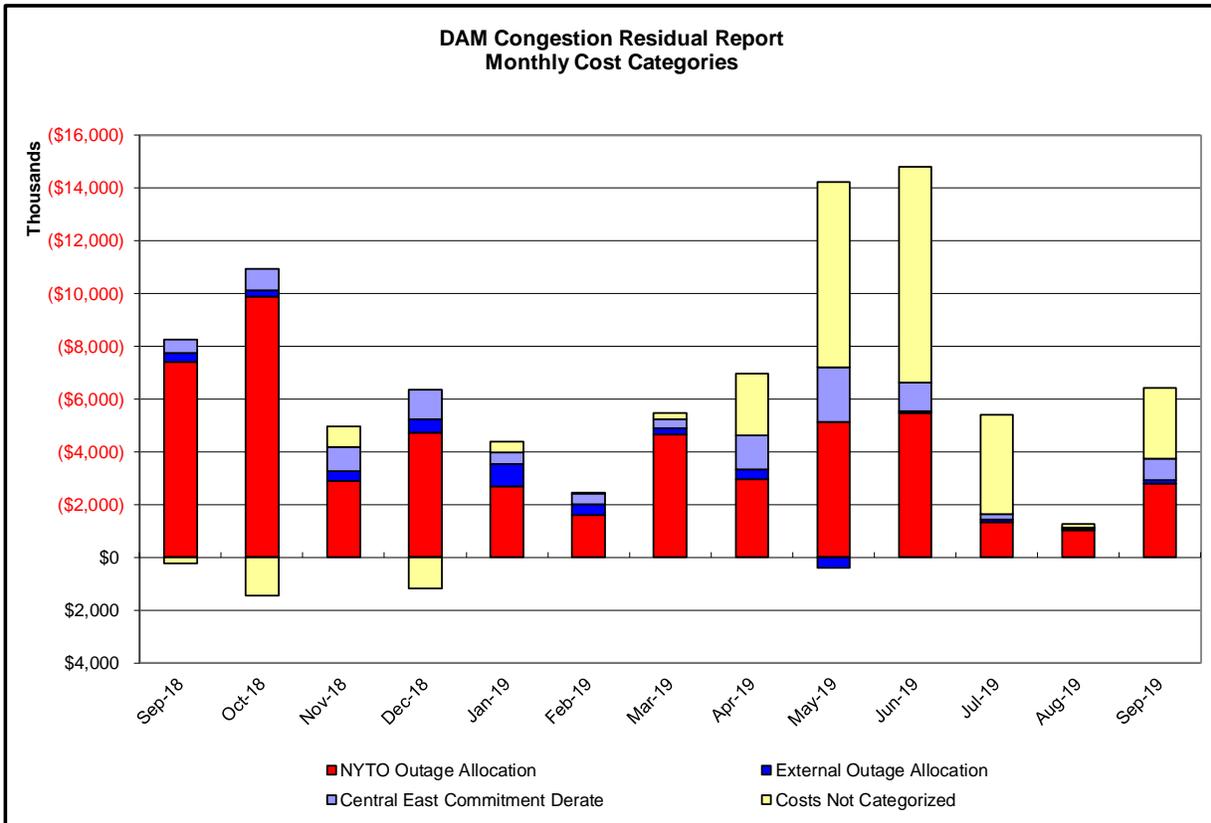
Day's investigated in November: 1, 20			
Event	Date (yyyymmdd)	Hours	Description
	11/1/2019	1-18	Forced outage Adirondack-Porter 230kV (#12)
	11/1/2019	1,6	Derate Central East
	11/1/2019	1,2,5	Derate Dunwoodie-Shore Road 345kV (#Y50)
	11/1/2019	6,9-11,16-18	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o NEPTUNE HVDC TIE LINE
	11/20/2019	3-9,11-13	Forced outage Huntley-Lockport 115kV (#37)
	11/20/2019	8,9,11-13	Forced outage Mortimor-Station 56 115kV (#24)
	11/20/2019	7-9	NYCA DNI Ramp Limit
	11/20/2019	6,11-13	IESO_AC-NY Scheduling Limit
	11/20/2019	7,8	PJM_AC ACTIVE DNI Ramp Limit
	11/20/2019	5	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West 115kV

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	

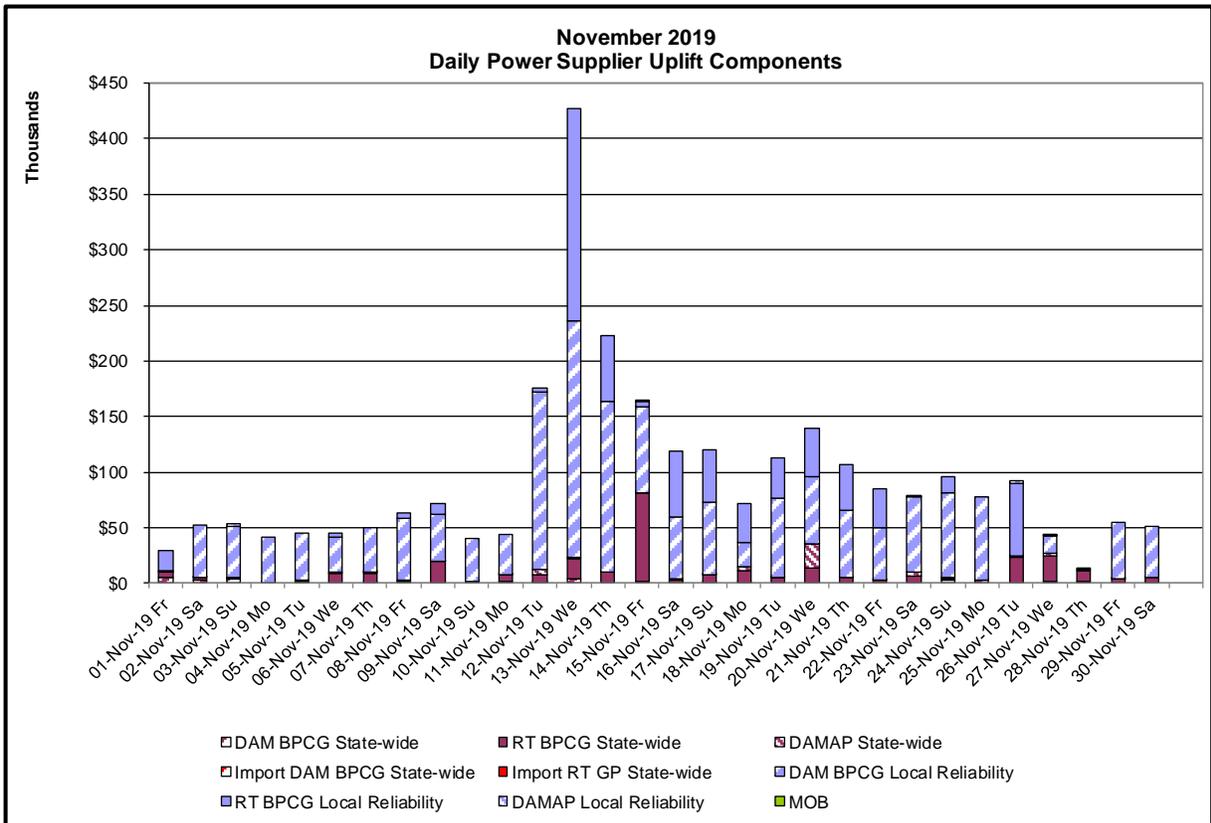
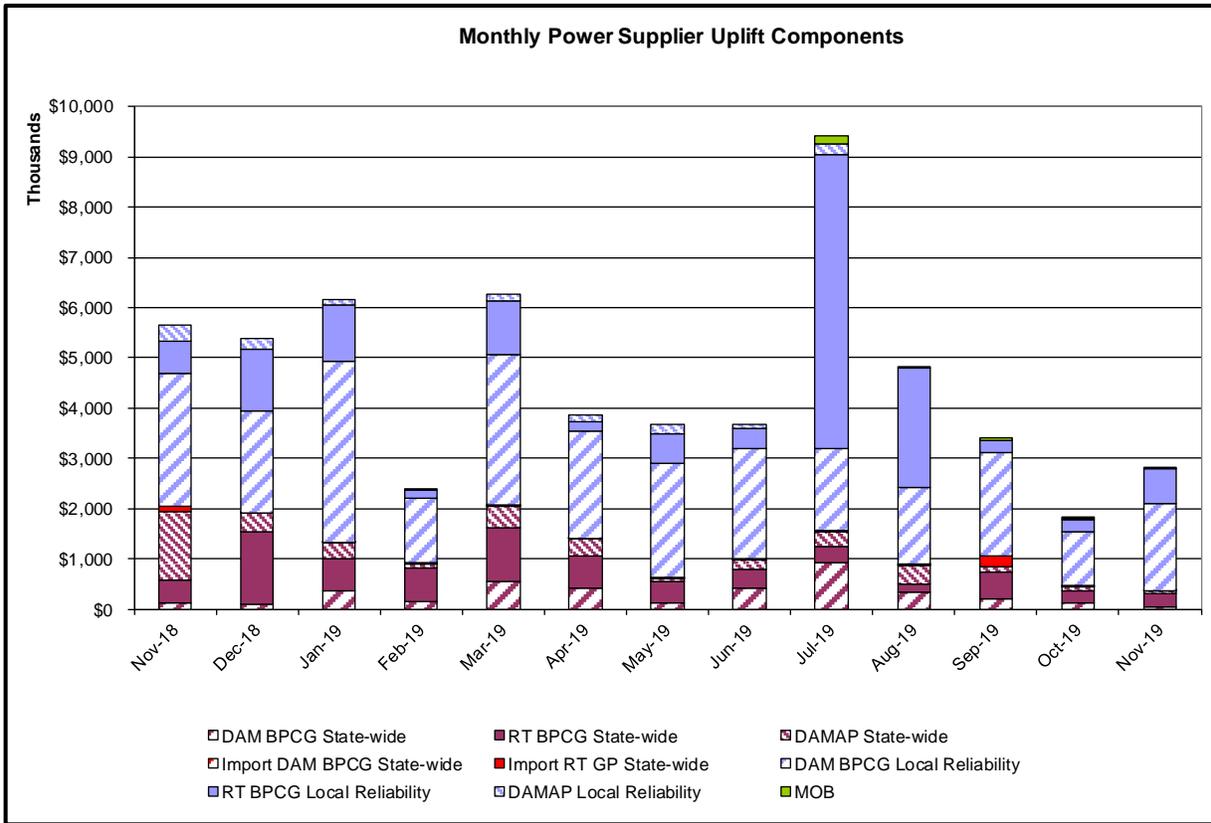
Monthly Balancing Market Congestion Report Assumptions/Notes

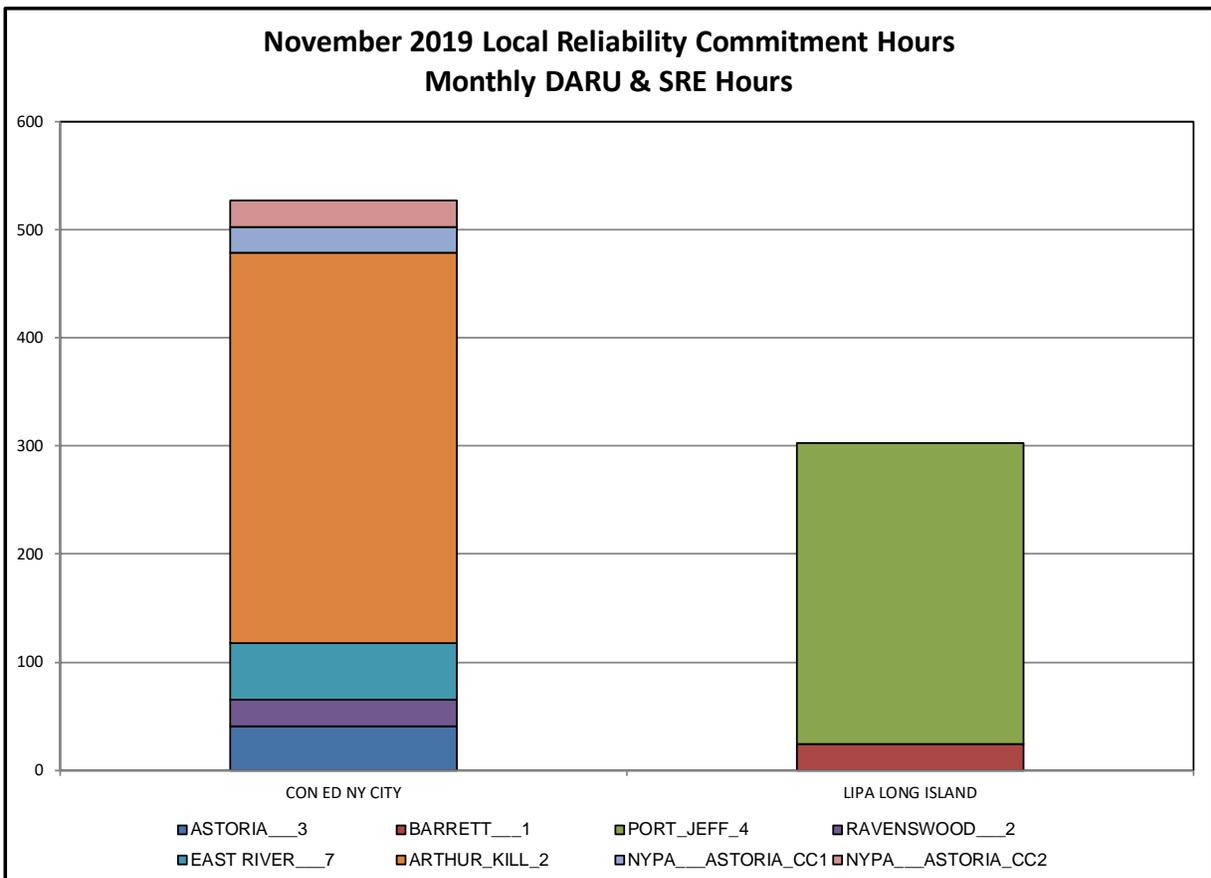
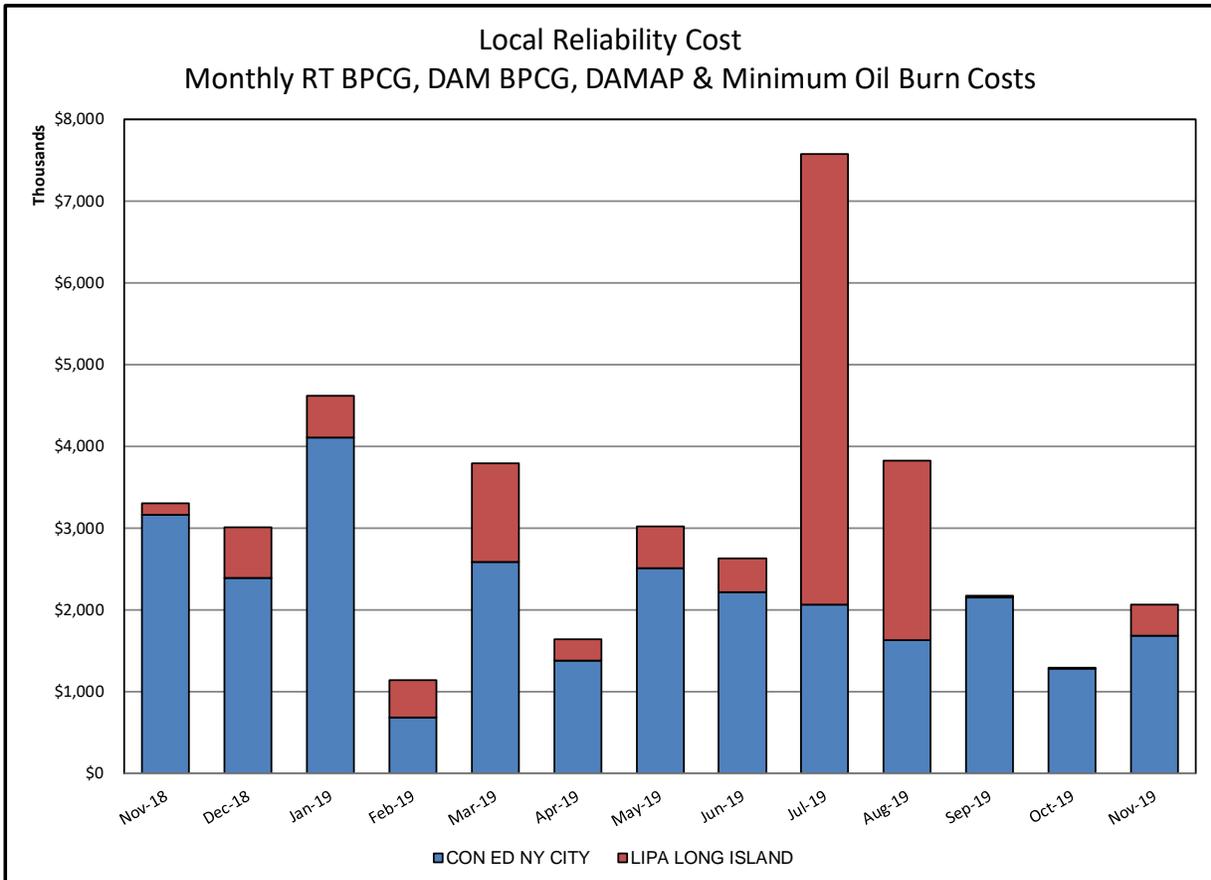
1) Storm Watch Costs are identified as daily total uplift costs
 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
 3) Uplift costs associated with multiple event types are apportioned equally by hour

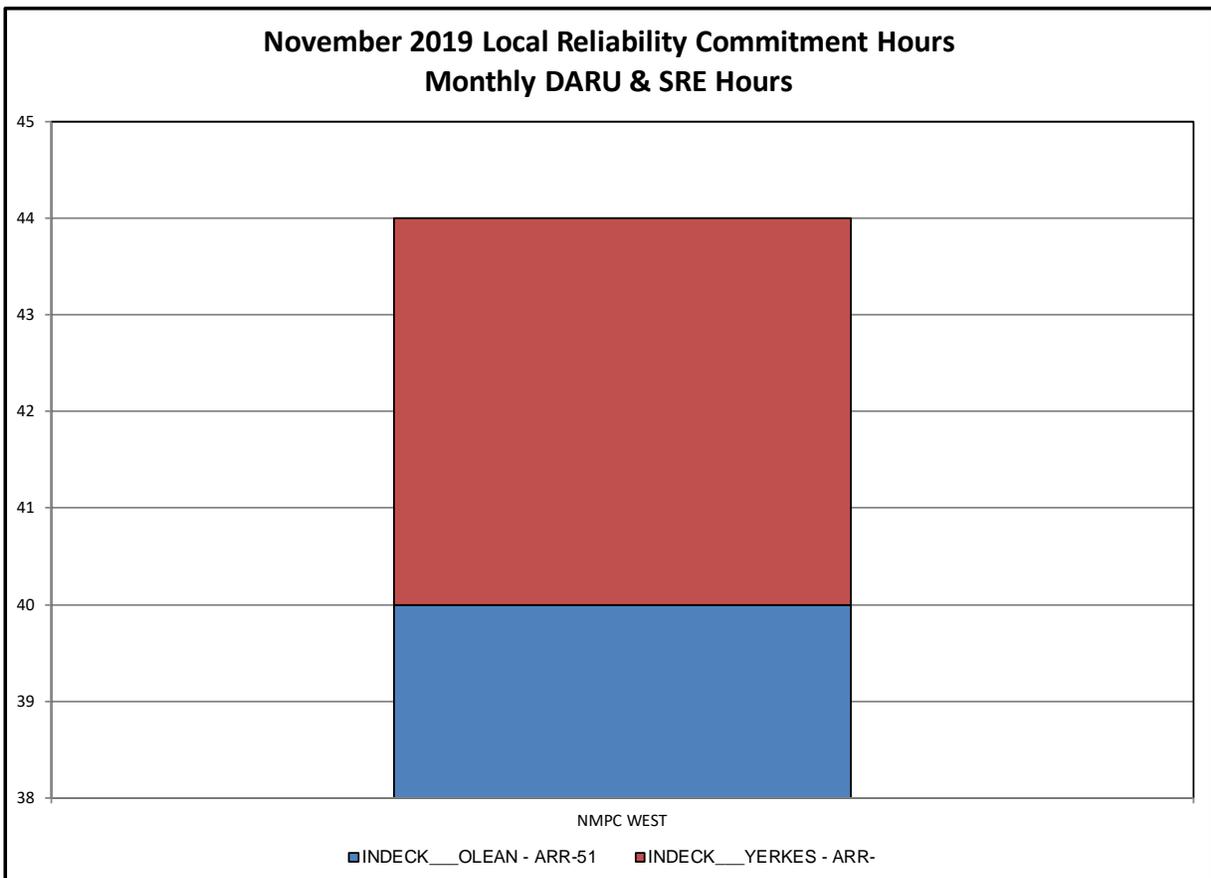
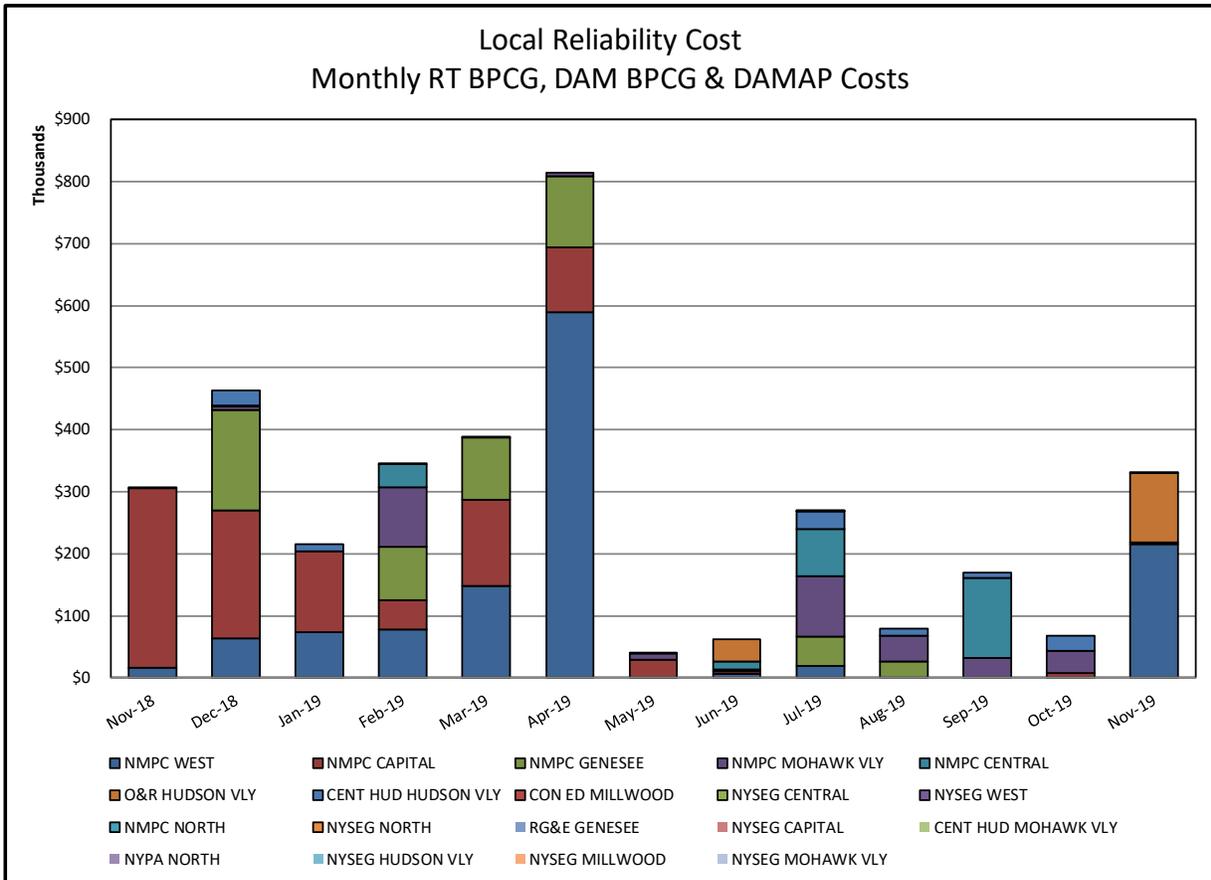


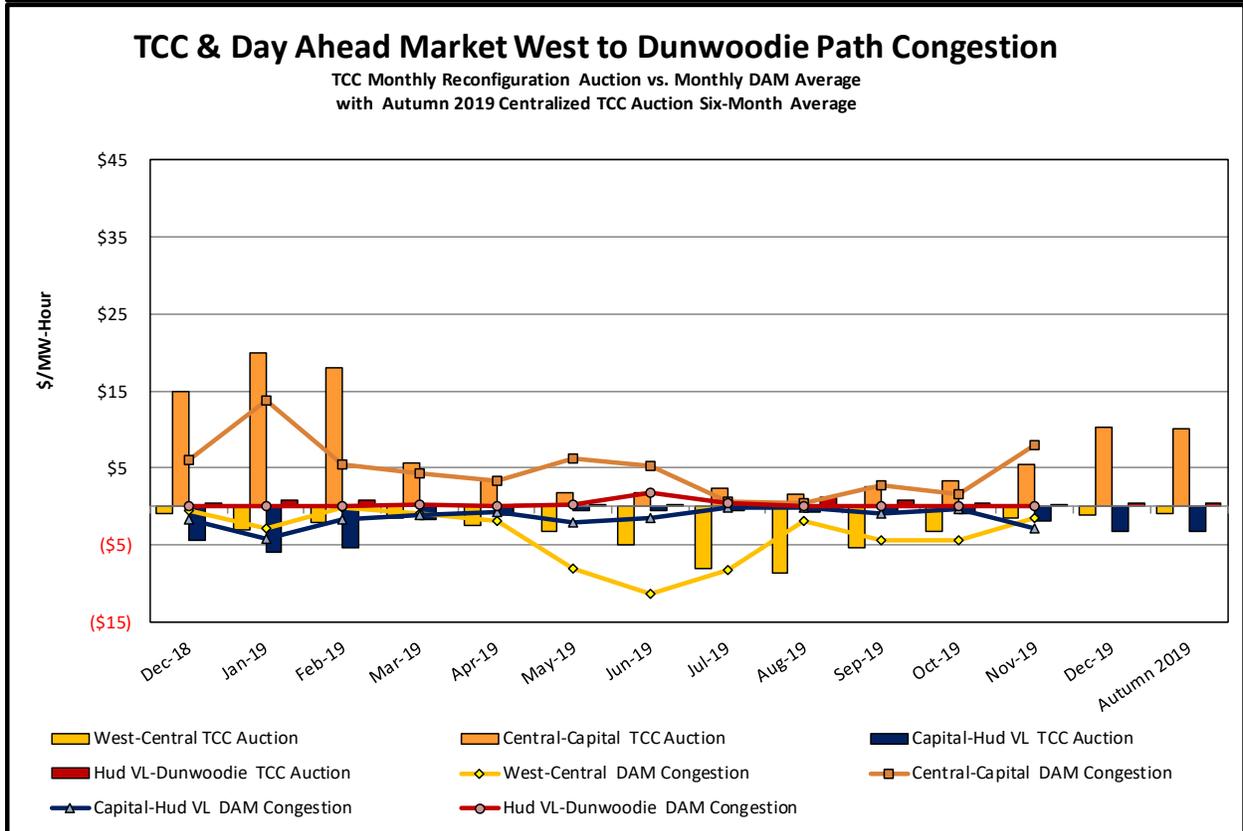
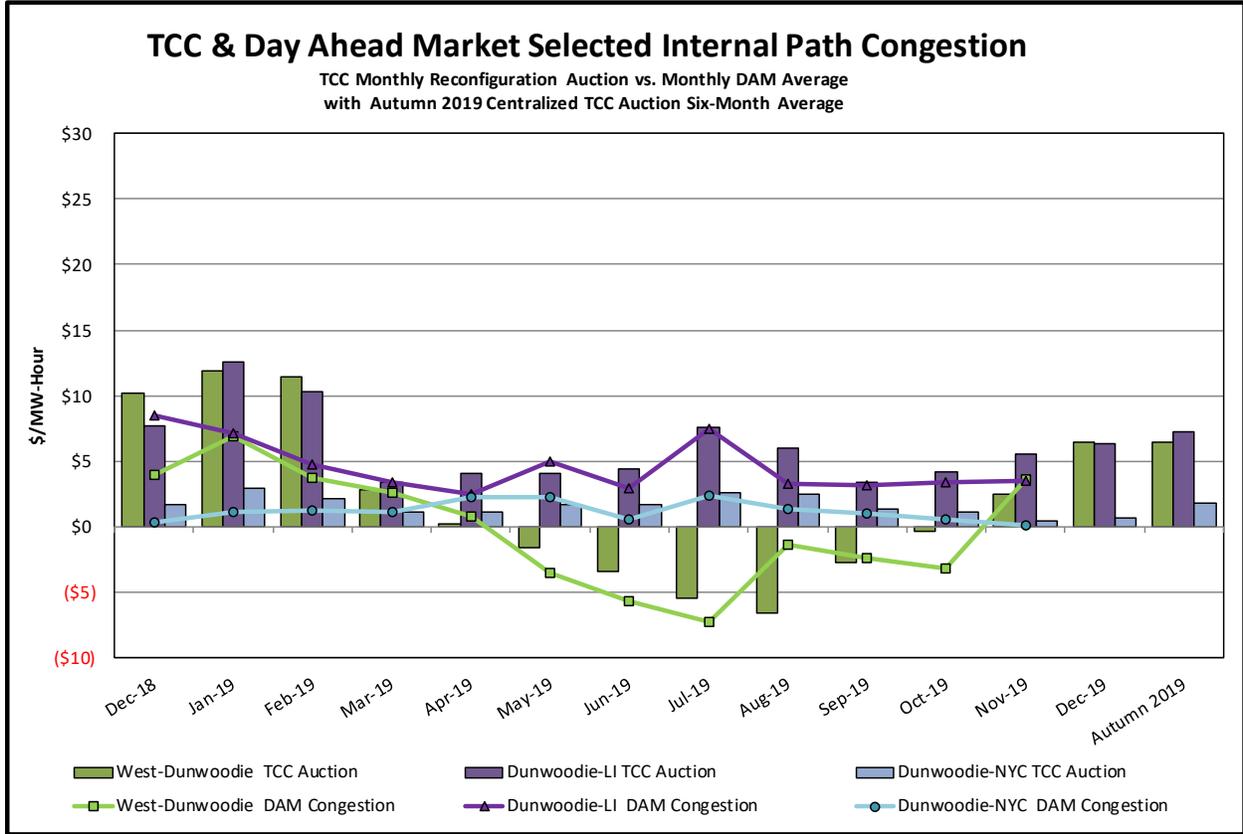
Day-Ahead Market Congestion Residual Categories

<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.
External Outage Allocation	All TO by Monthly Allocation Factor	Direct allocation to transmission equipment status change caused by change in status of external equipment.	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.	



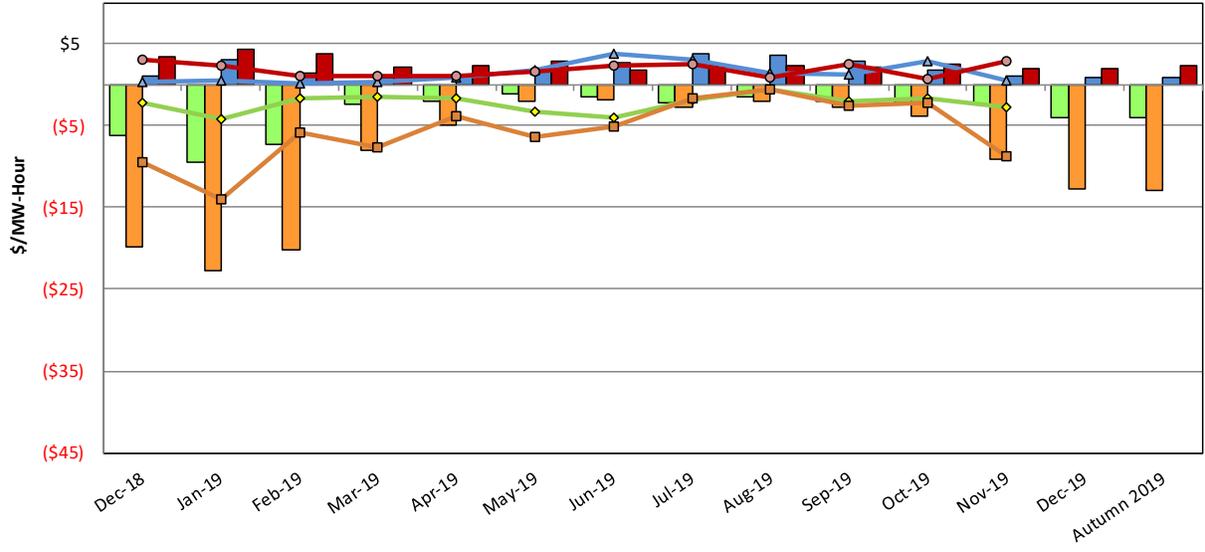






TCC & Day Ahead Market Selected External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Autumn 2019 Centralized TCC Auction Six-Month Average



■ PJM-Central TCC Auction ■ NE-Central TCC Auction ■ OH-Central TCC Auction ■ HQ-Central TCC Auction
◆ PJM-Central DAM Congestion ◆ NE-Central DAM Congestion ▲ OH-Central DAM Congestion ● HQ-Central DAM Congestion

