

Operations Performance Metrics Monthly Report



September 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 October 8, 2019.

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*
 - *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*

September 2019 Operations Performance Highlights

- Peak load of 26,080 MW occurred on 09/11/2019 HB 17
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- 4 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- A Major Emergency was declared on 09/03/2019 in HB09 for the trip of the Marcy 345kV North Bus, removing the Chateaugay-Massena 765kV (#7040), Massena-Marcy 765kV (#MSU1), Marcy-Coopers Corners 345kV (#UCC2-41) and Marcy Statcom from service, causing the HQ Cedars flow to exceed 105% of its transient stability limit.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

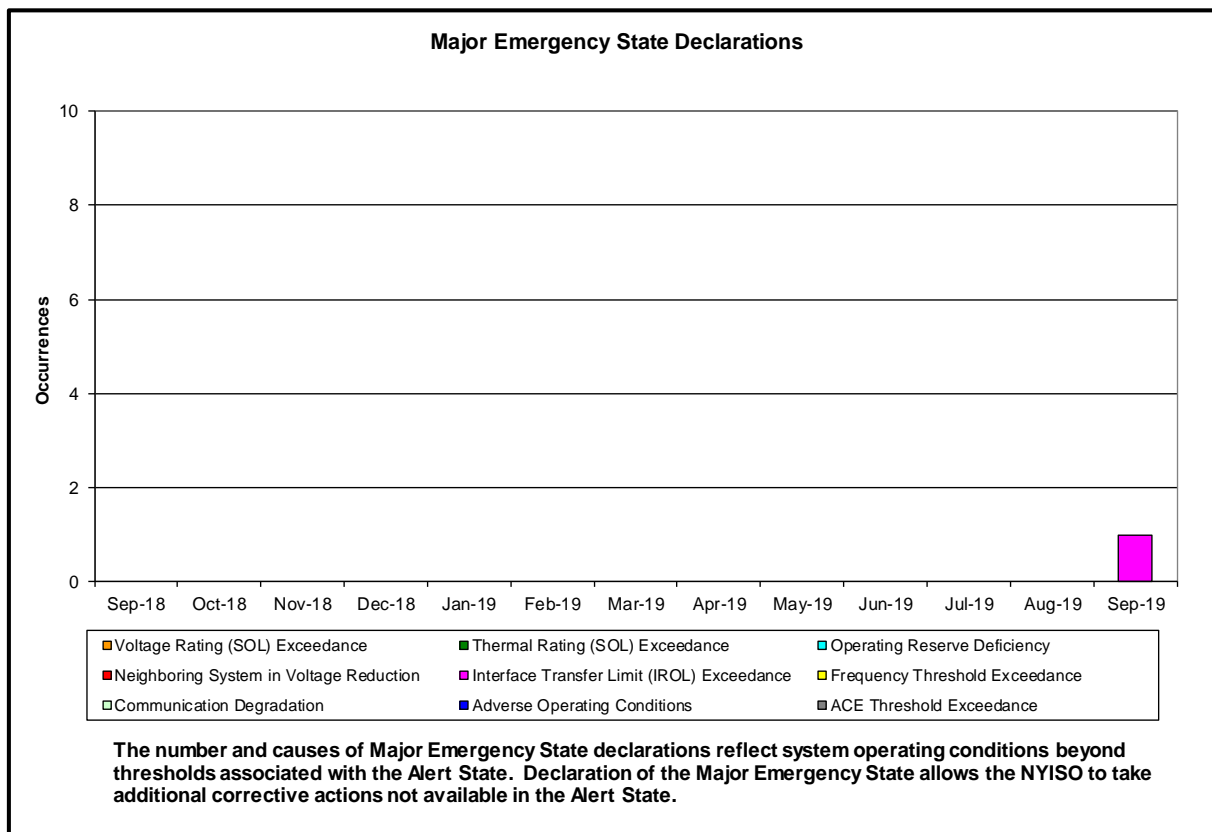
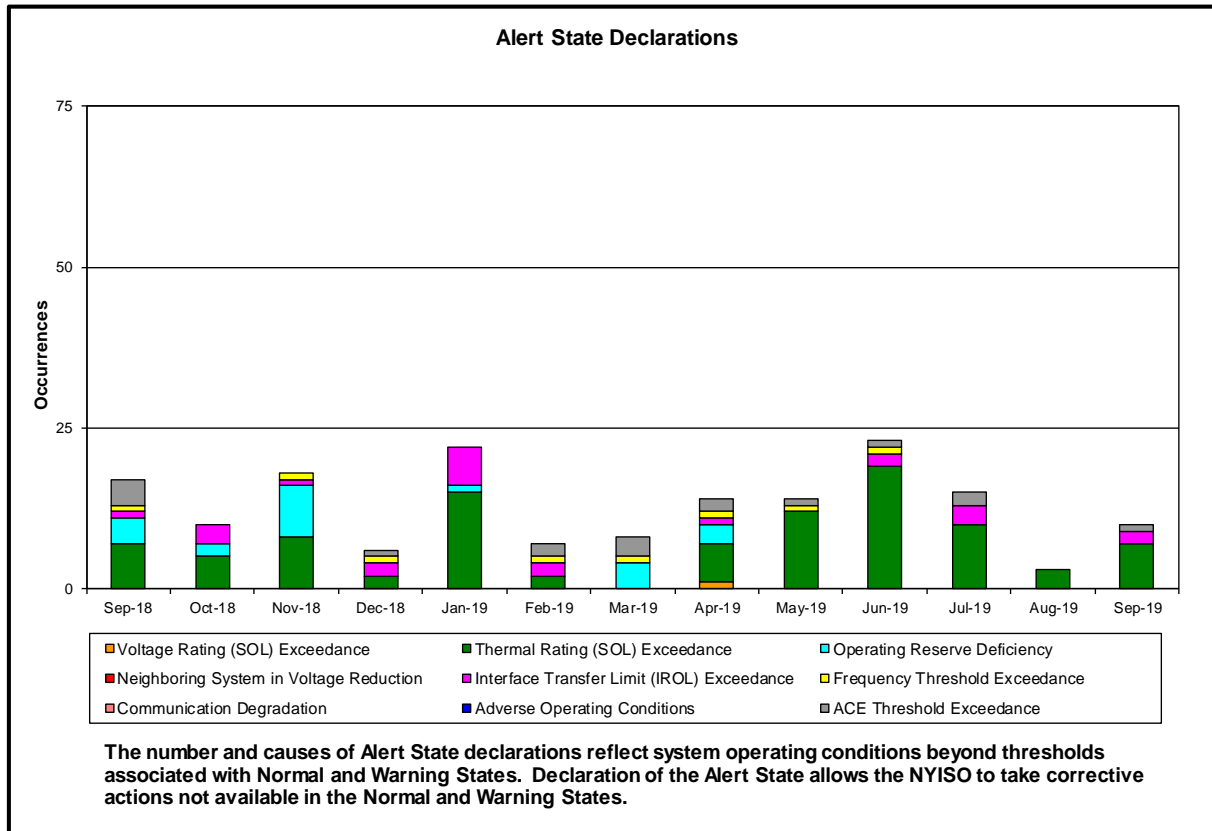
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$0.10	\$6.73
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.23)	(\$1.50)
NY Savings from NE-NY Coordinated Transaction Scheduling	\$0.45	\$0.78
Total NY Savings	\$0.32	\$6.01
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.50	\$4.45
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.08	\$0.51
Total Regional Savings	\$0.58	\$4.96

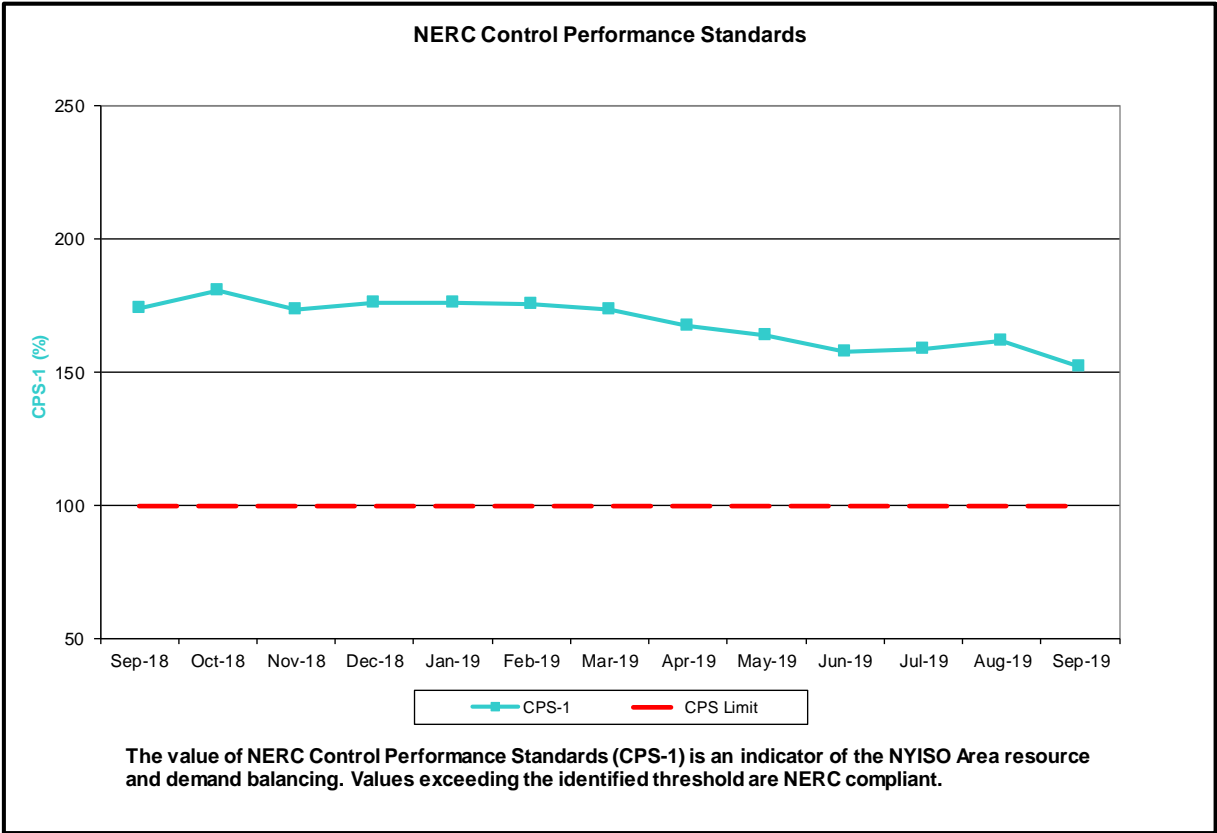
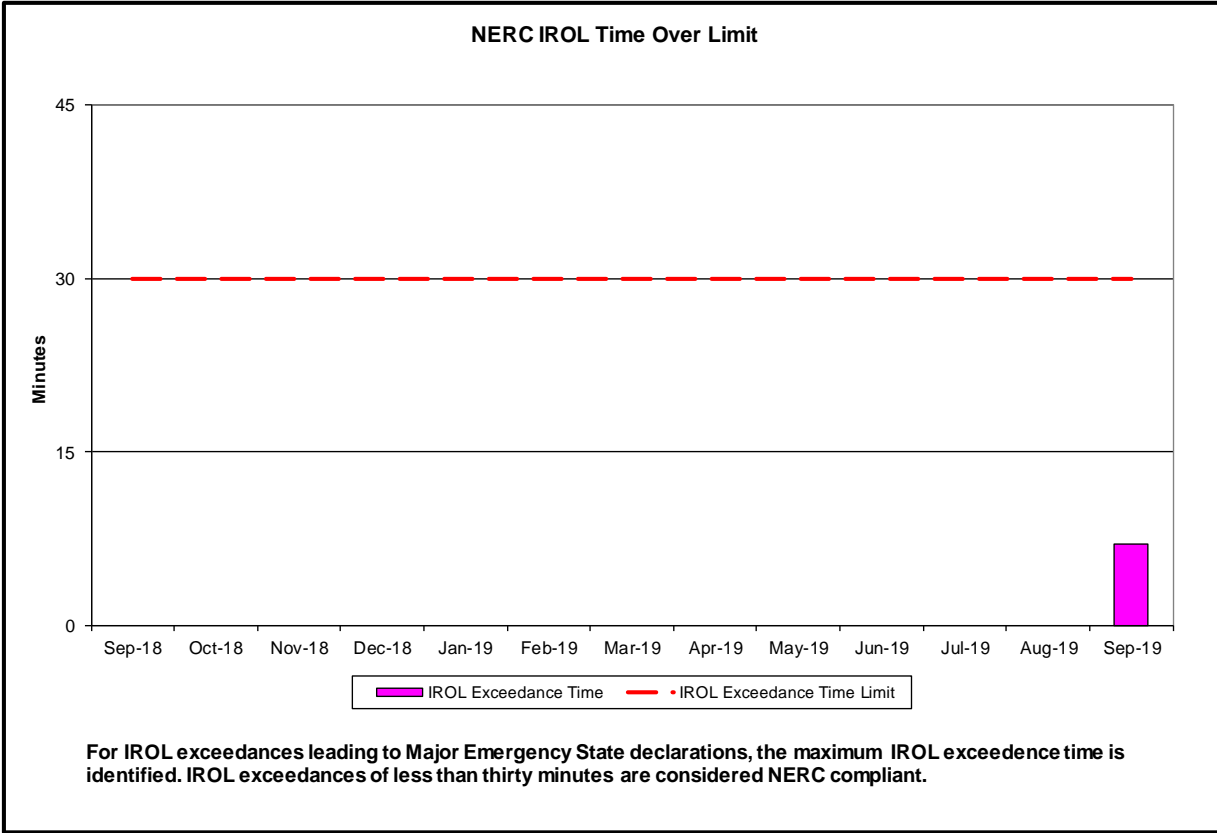
- Statewide uplift cost monthly average was (\$0.30)/MWh
- The following table identifies the Monthly ICAP spot market prices and the price delta.

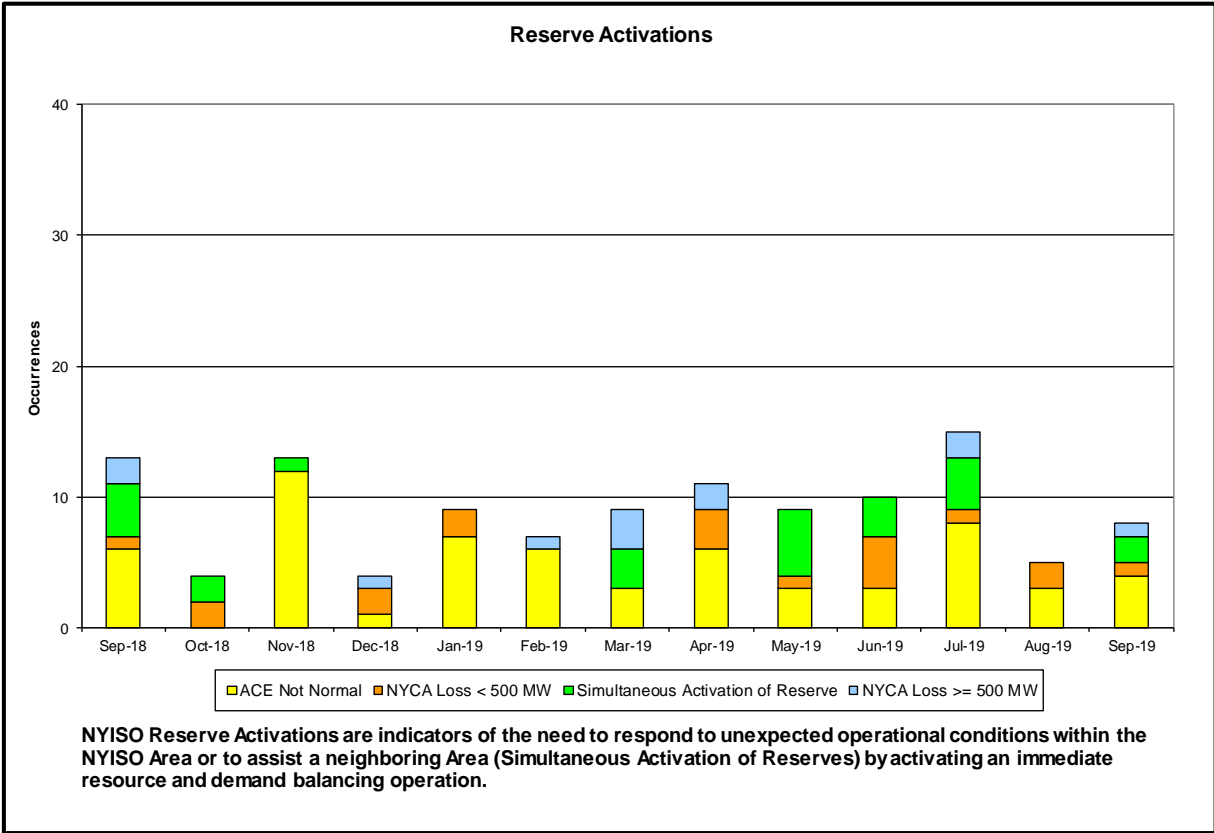
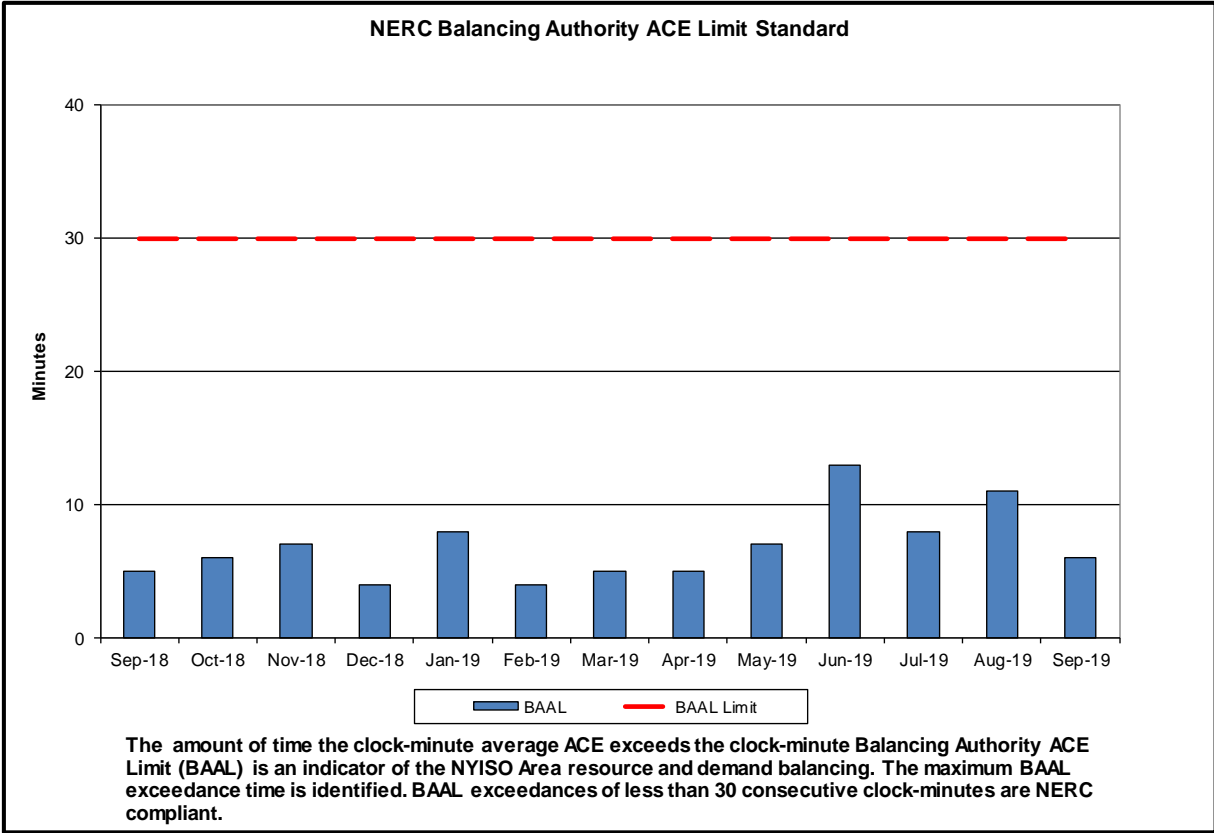
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
October 2019 Spot Price	\$0.75	\$4.51	\$13.09	\$5.52
September 2019 Spot Price	\$1.35	\$4.79	\$13.34	\$5.53
Delta	(\$0.60)	(\$0.28)	(\$0.25)	(\$0.01)

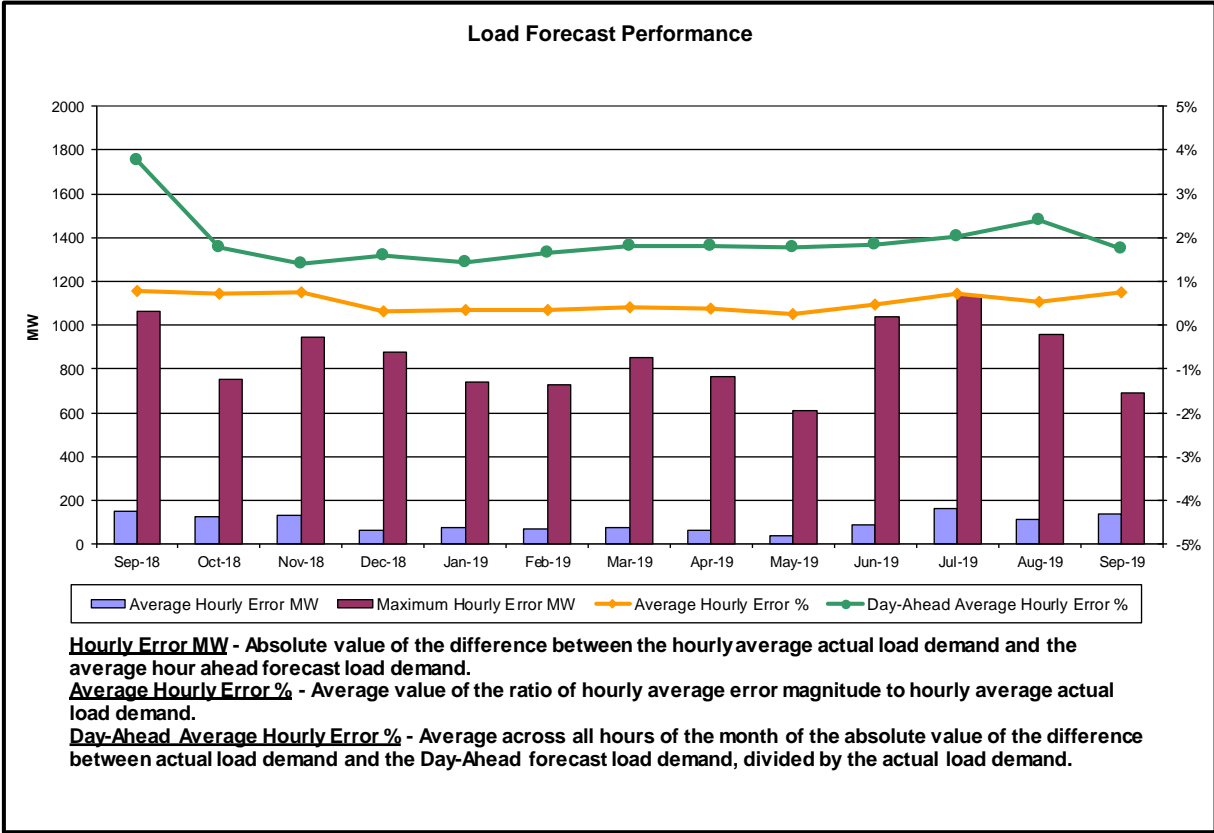
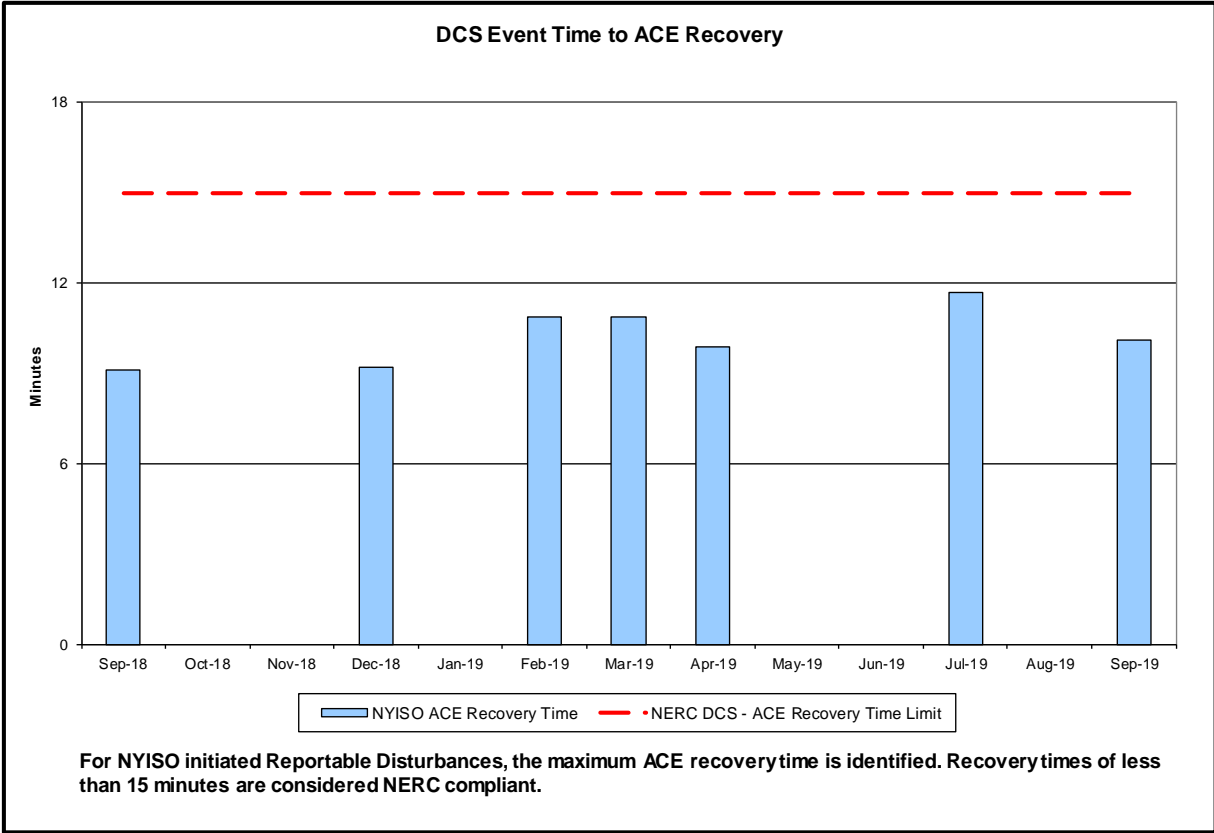
- NYC - Price is decreased by \$0.25 due to an increase in Generation/SCR UCAP available.
- GHJ - Price is decreased by \$0.28 due to an increase in Generation/SCR UCAP available.
- NYCA - Price is decreased by \$0.60 due to an increase in Generation/SCR UCAP available and an increase in net Imports.

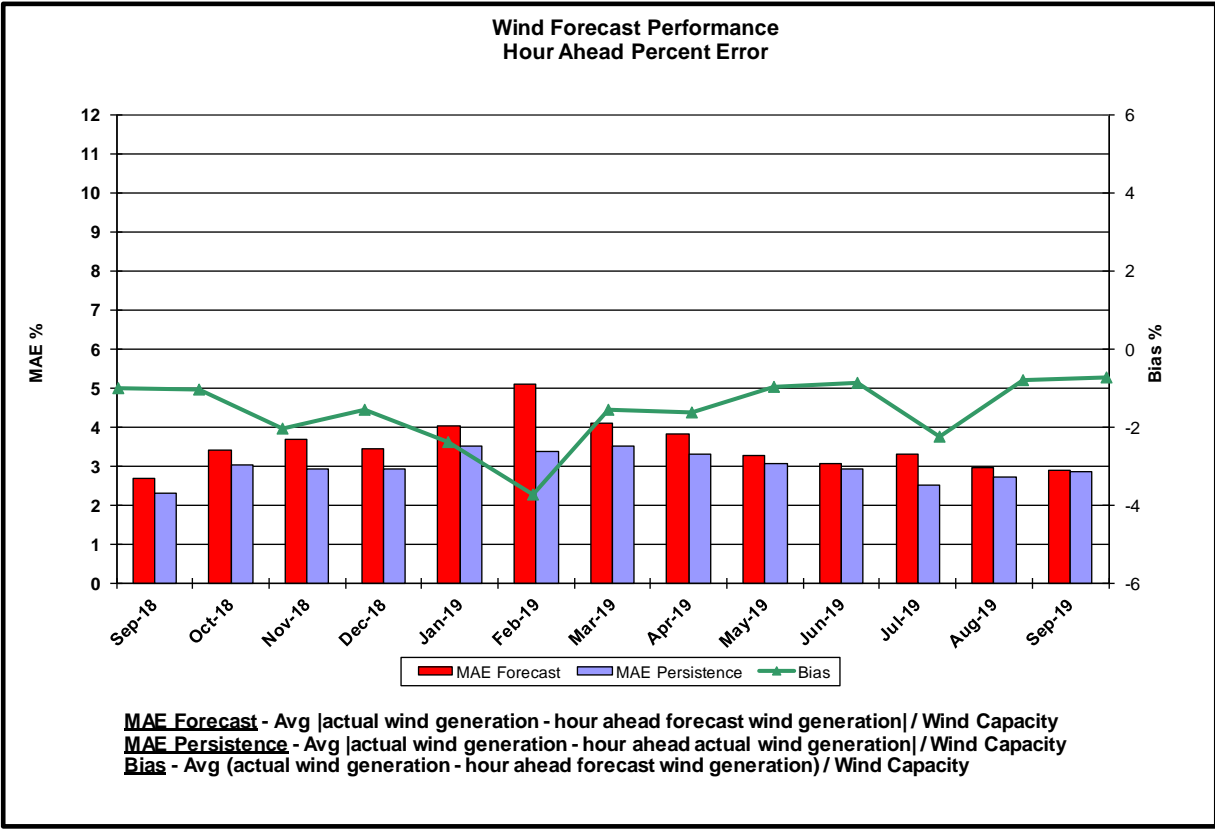
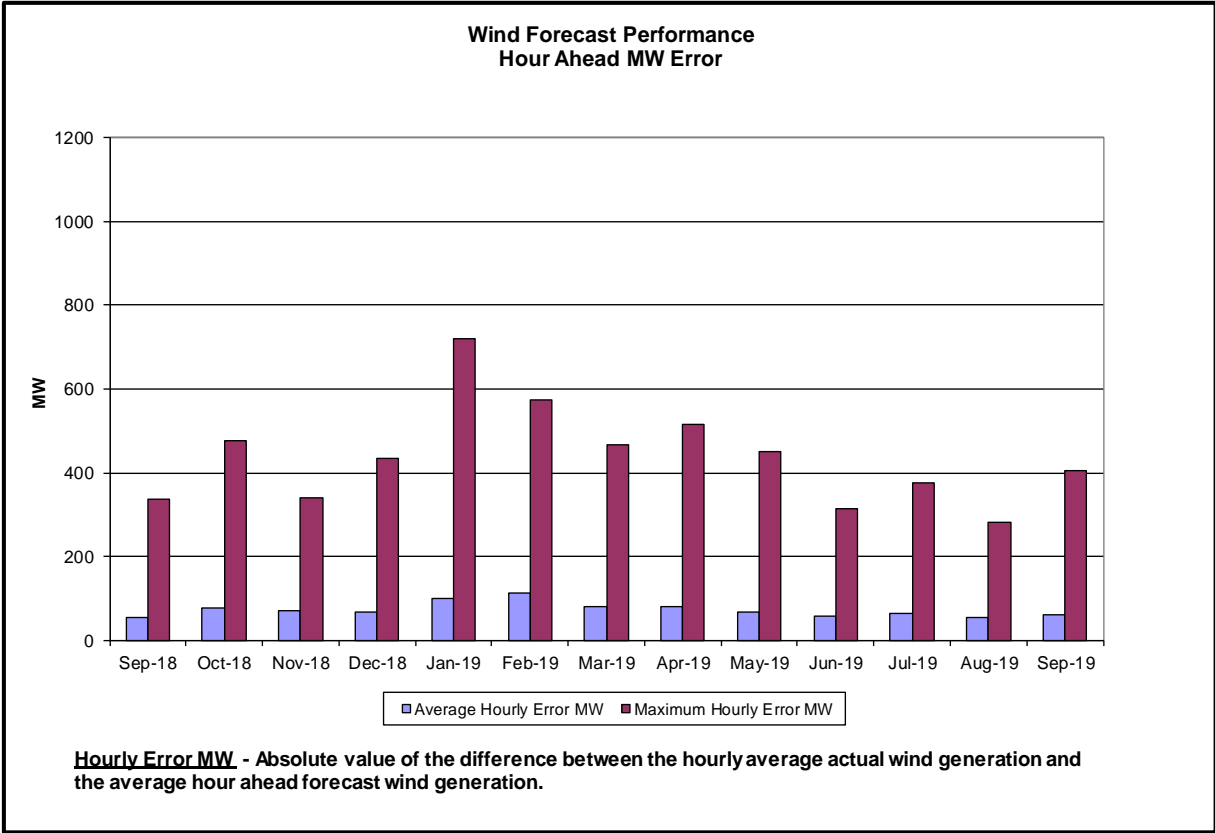
Reliability Performance Metrics

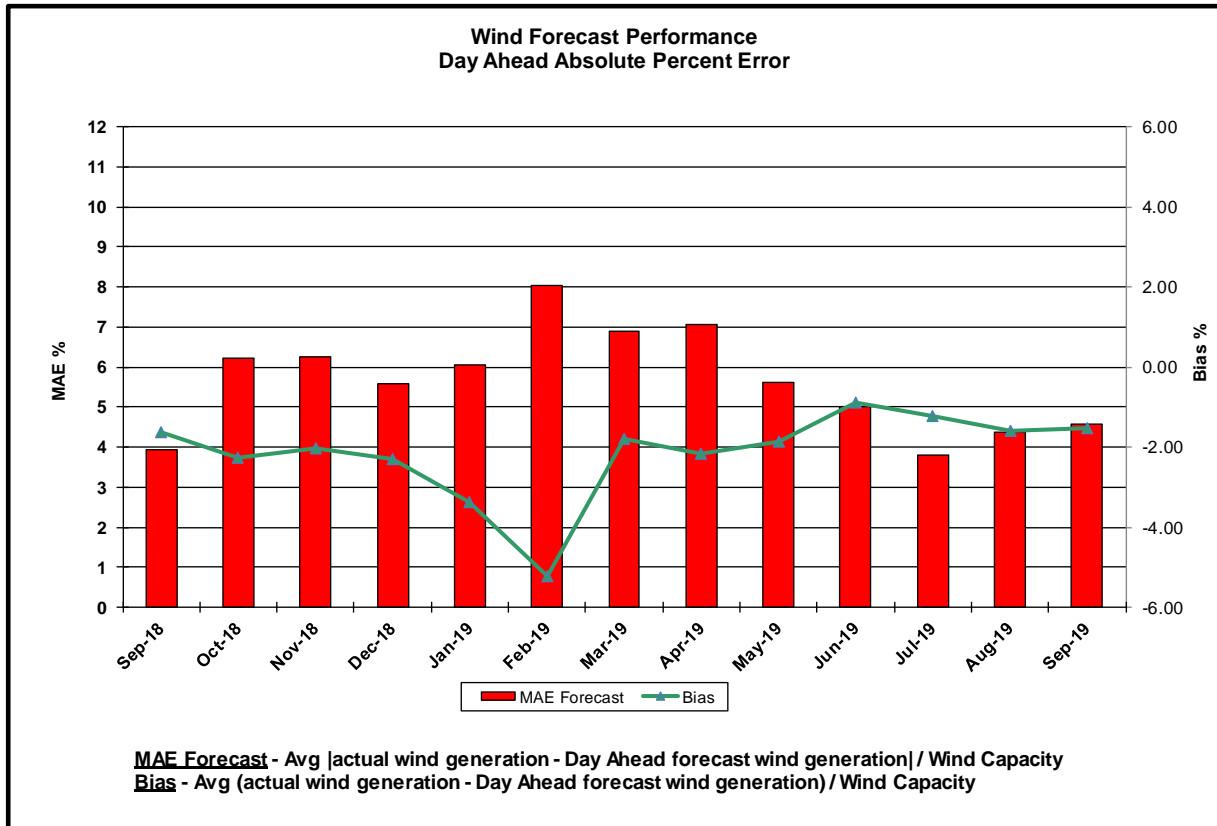
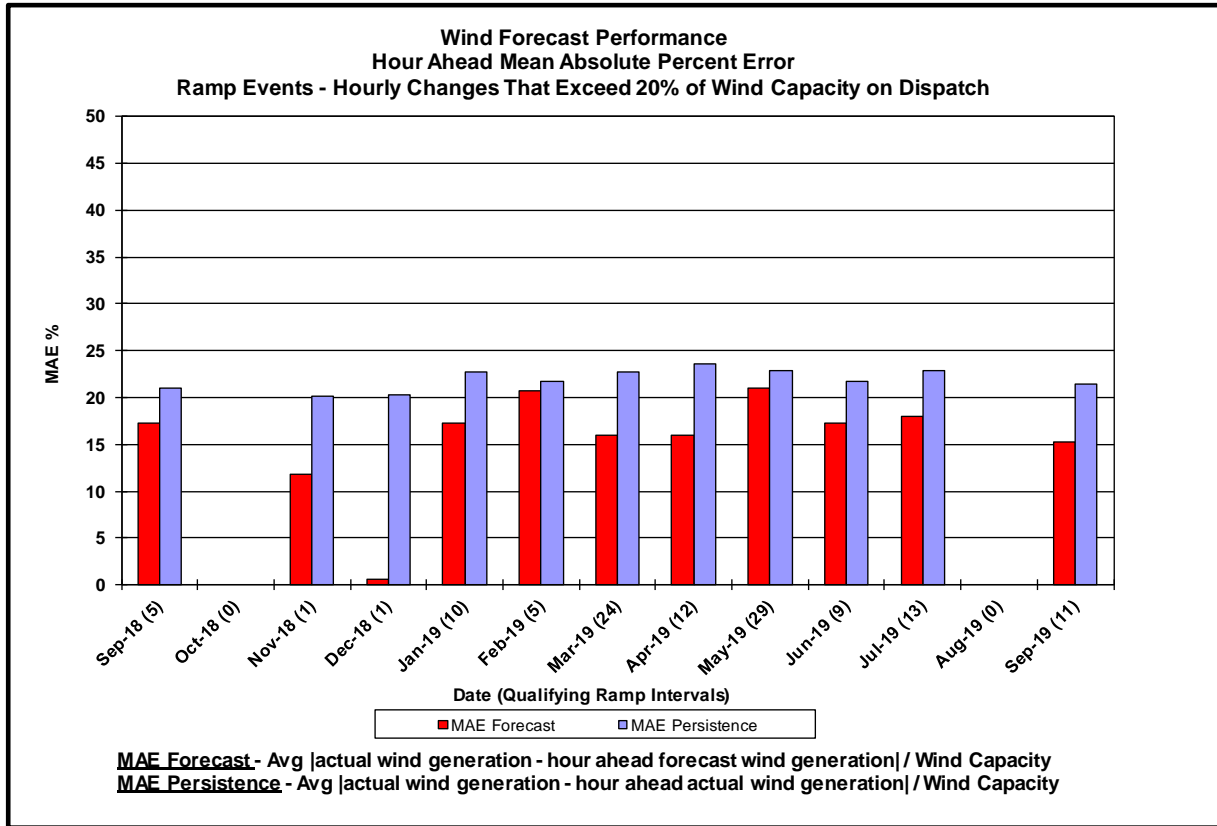


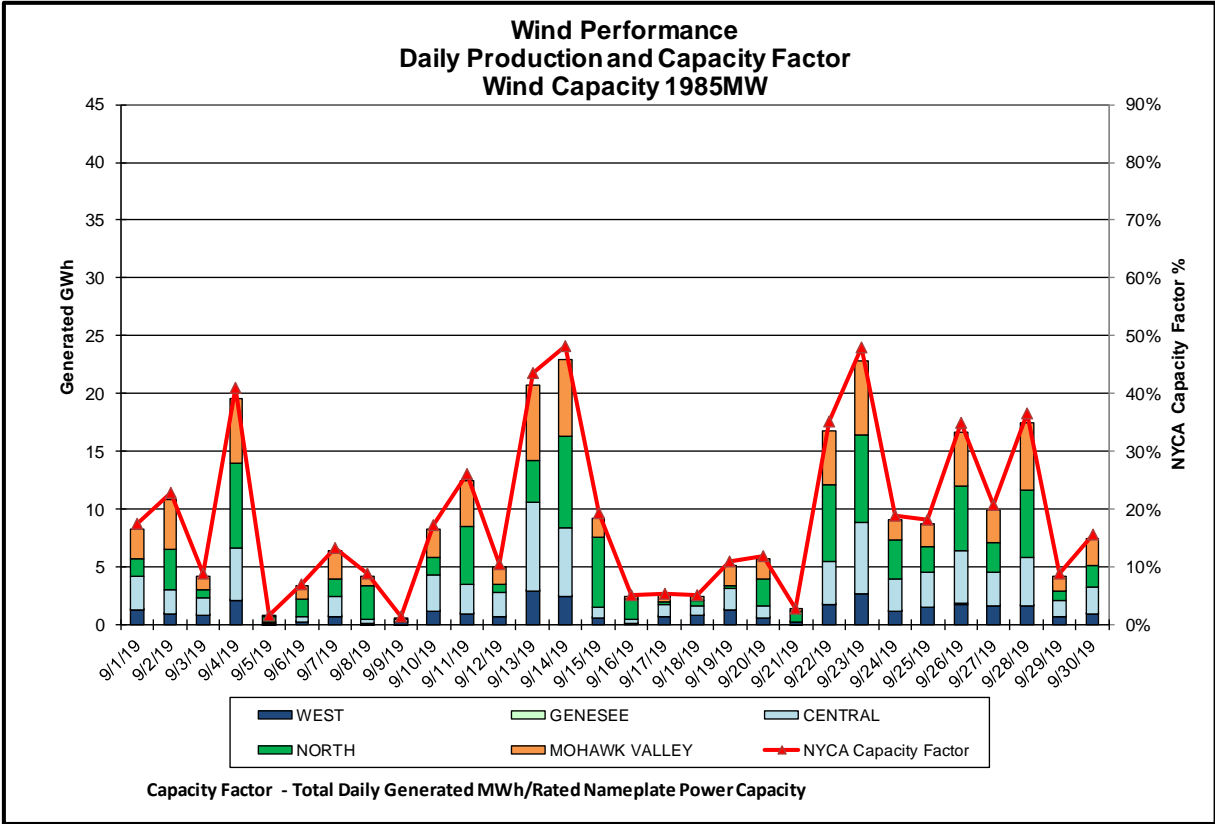
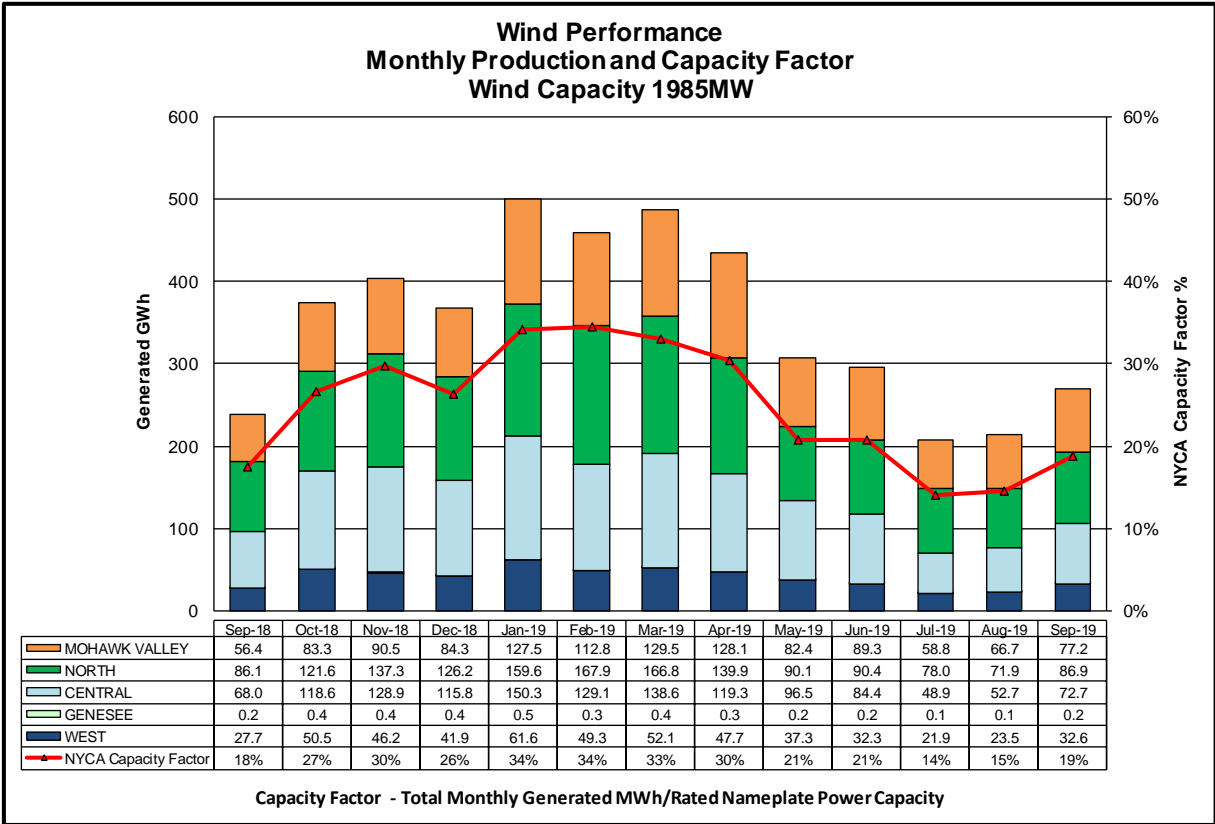


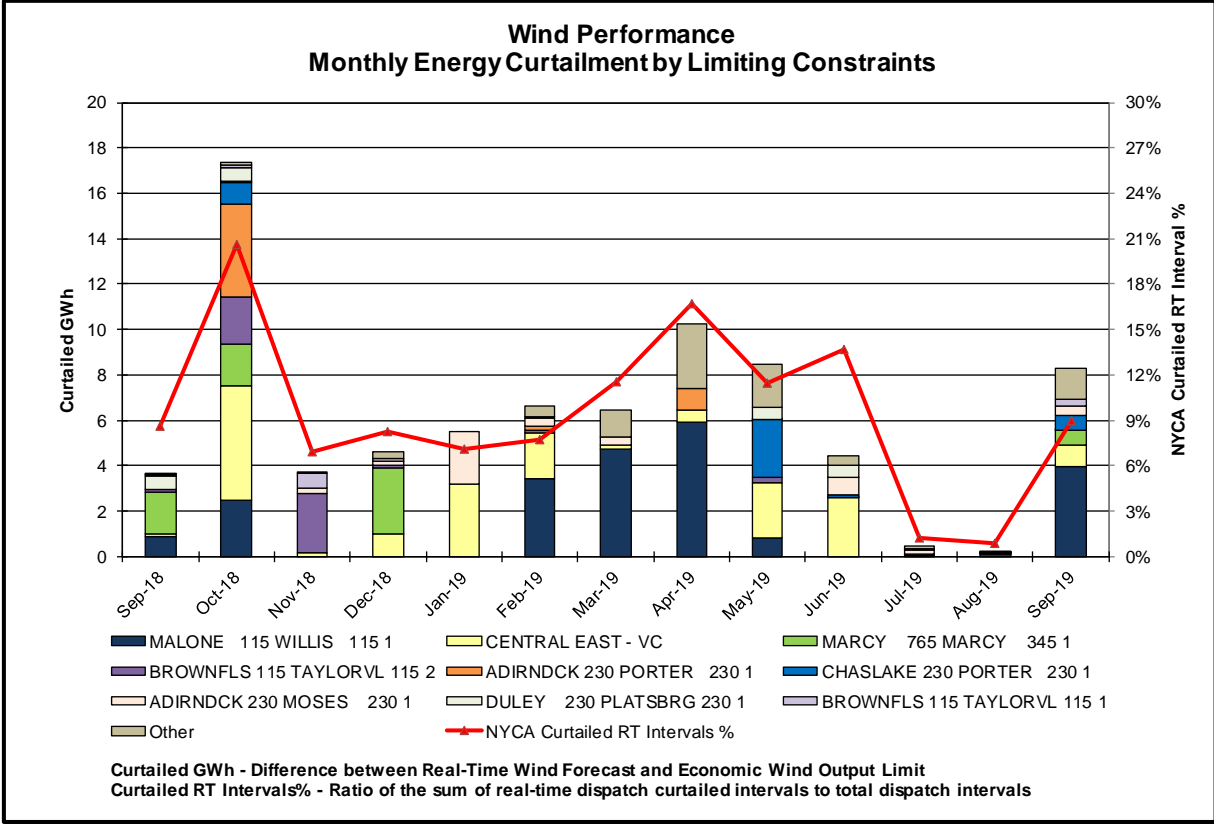
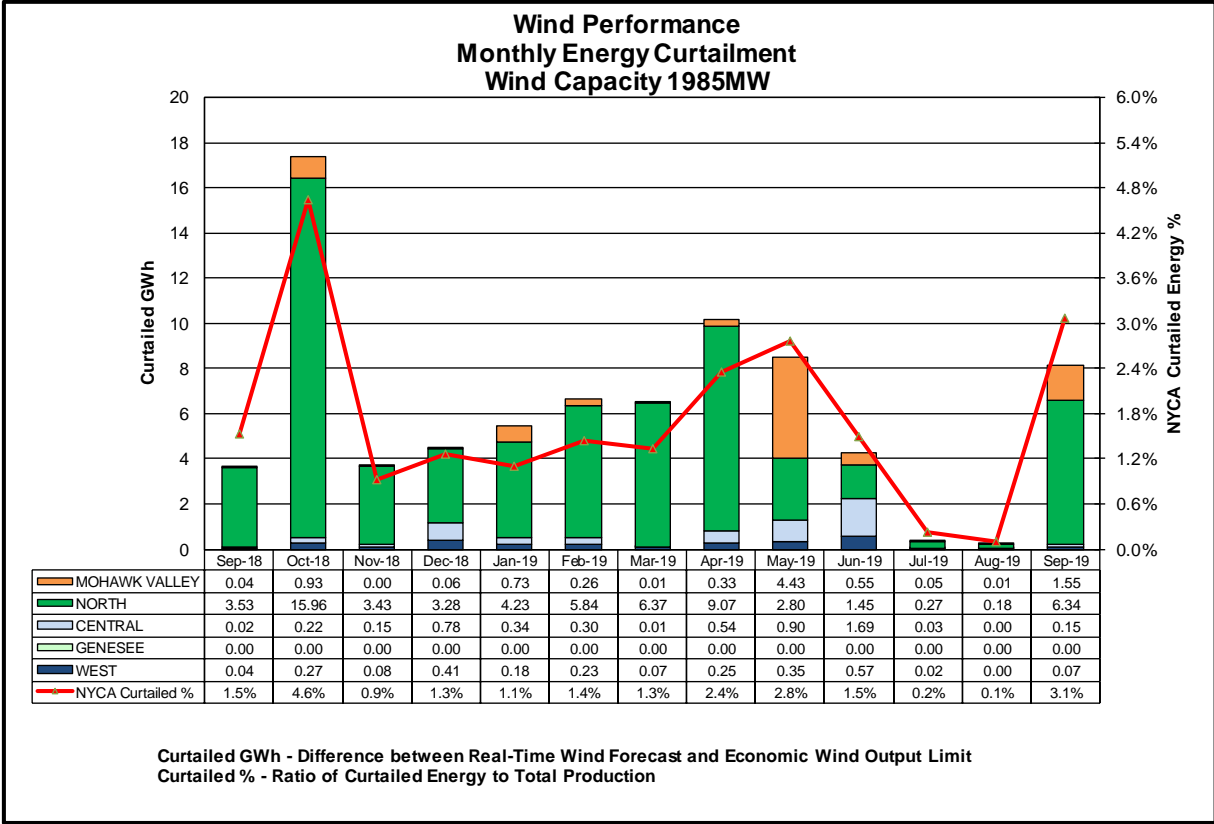


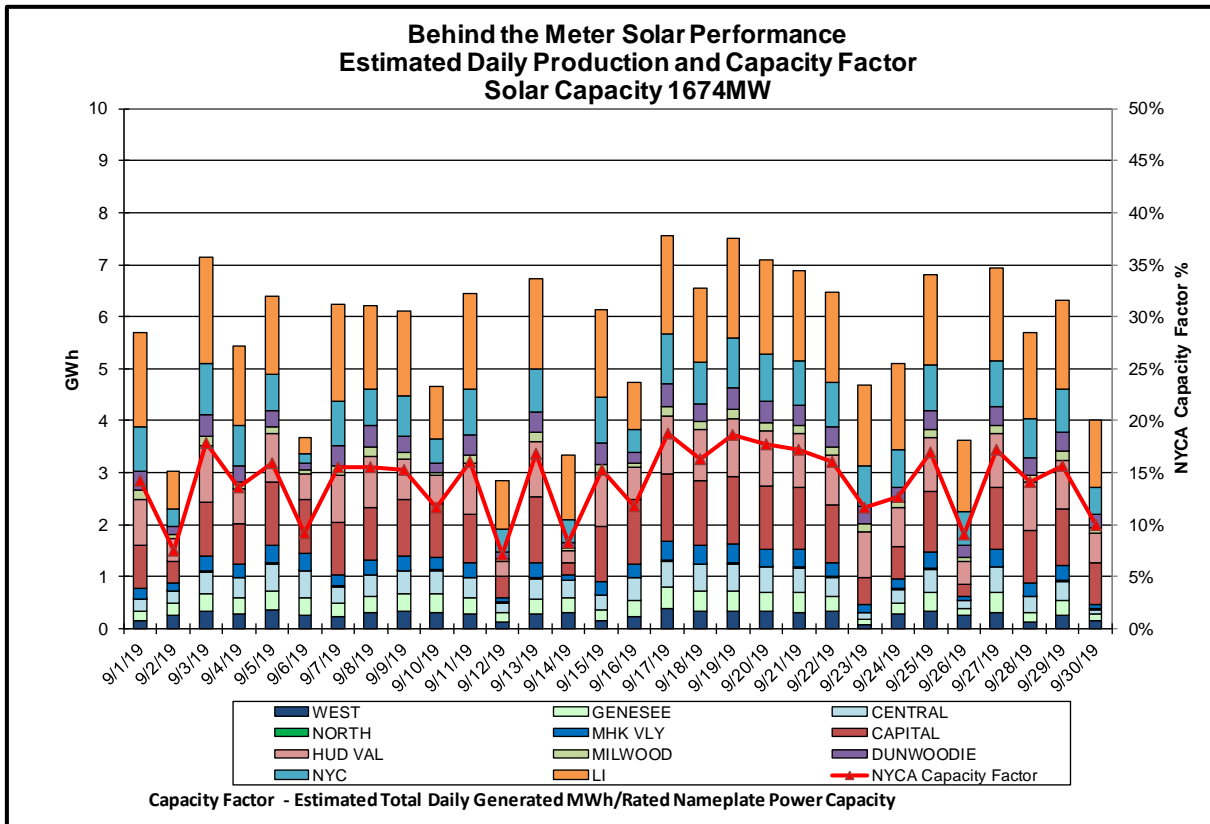
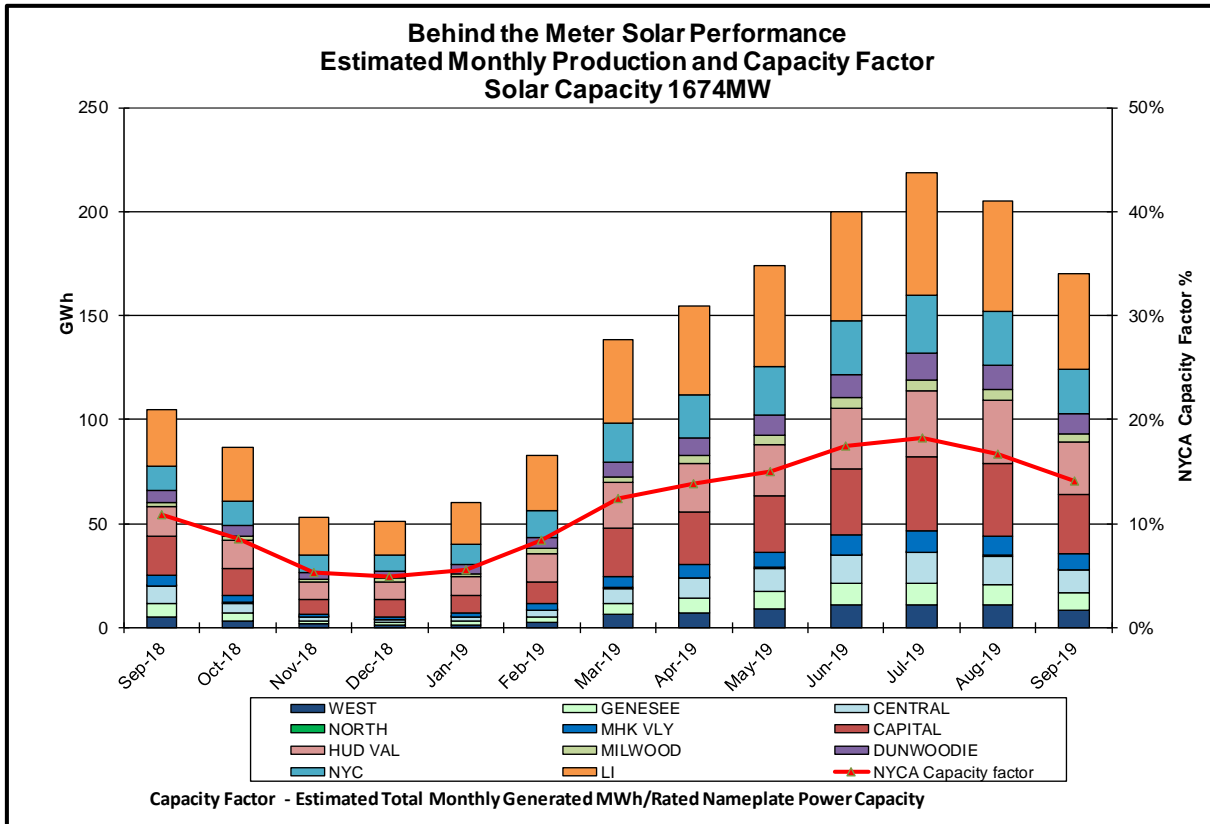


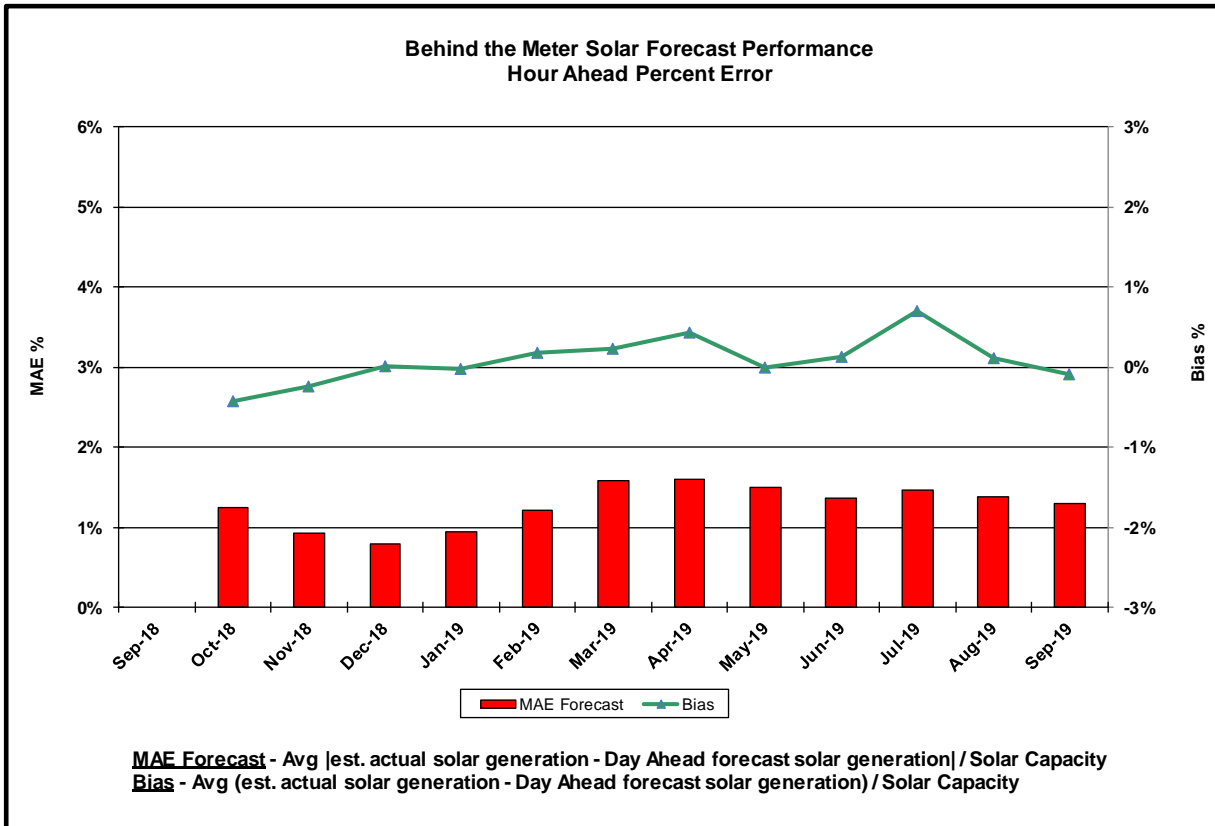
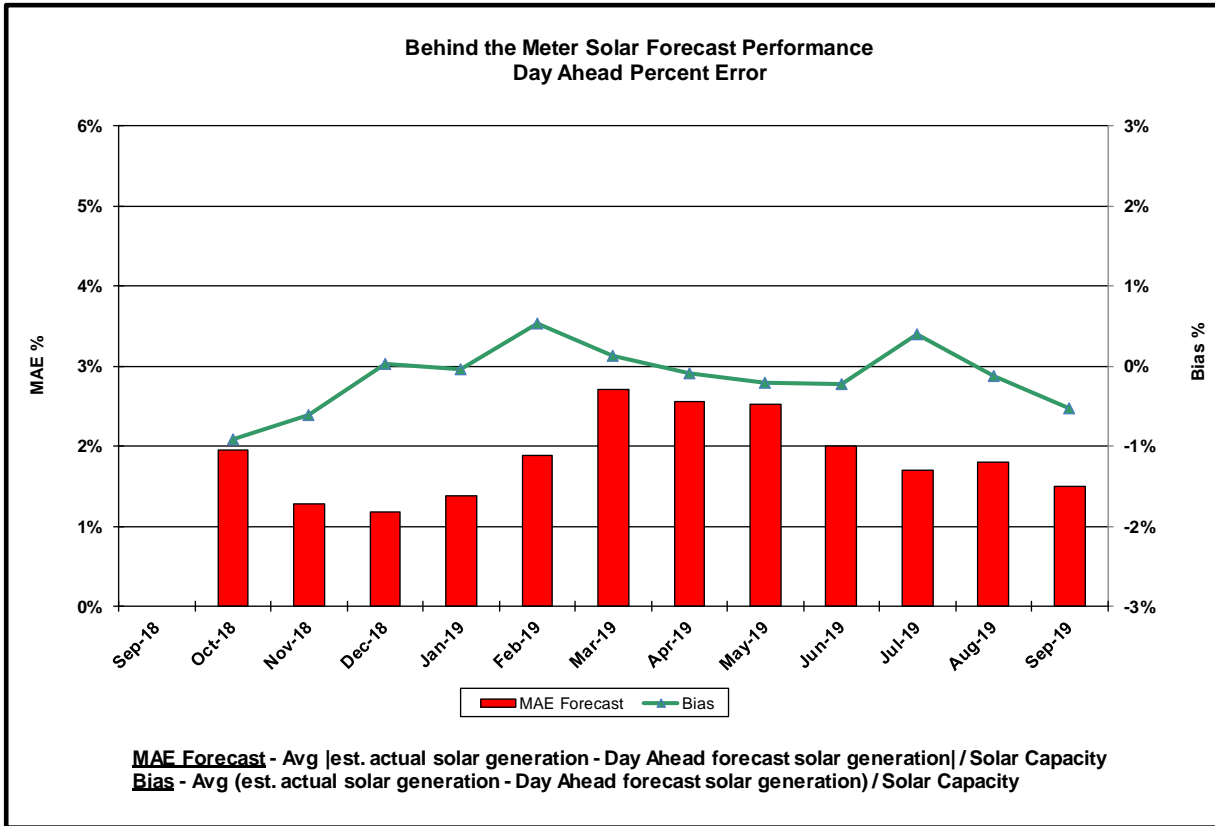


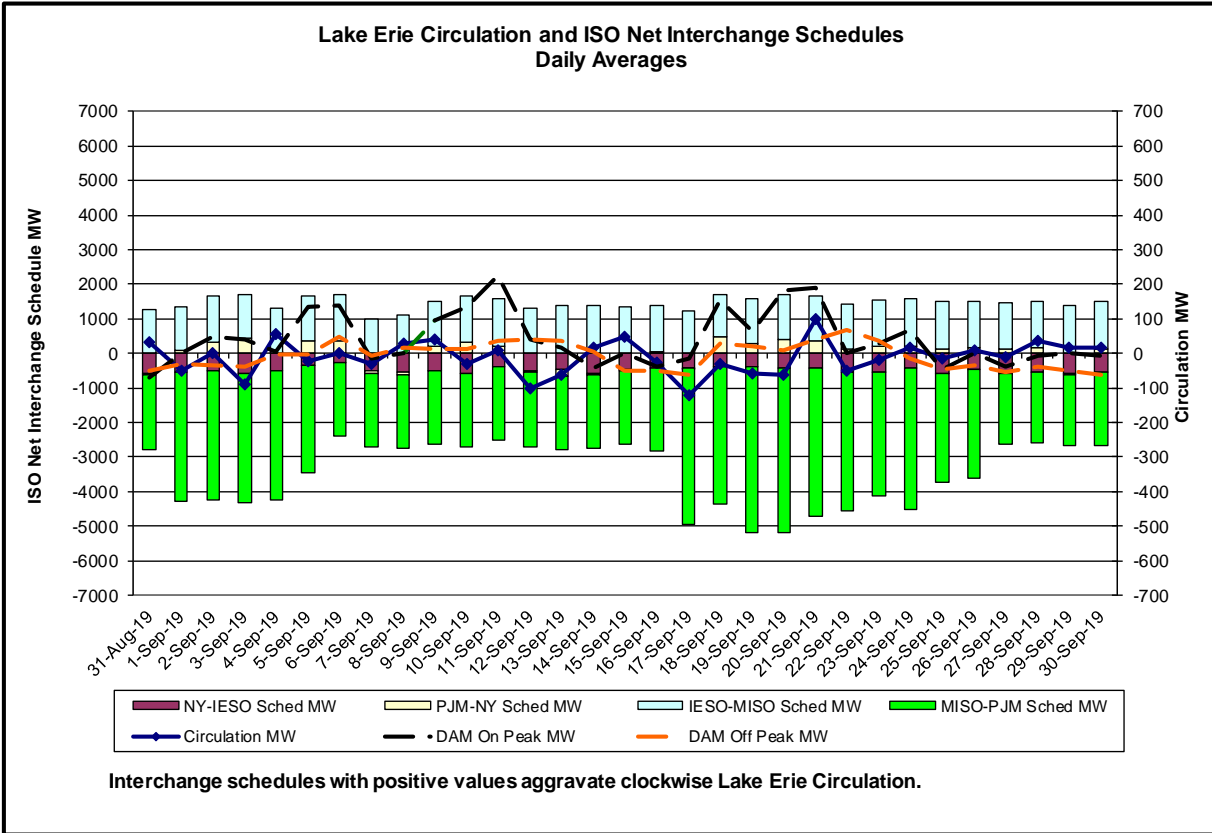
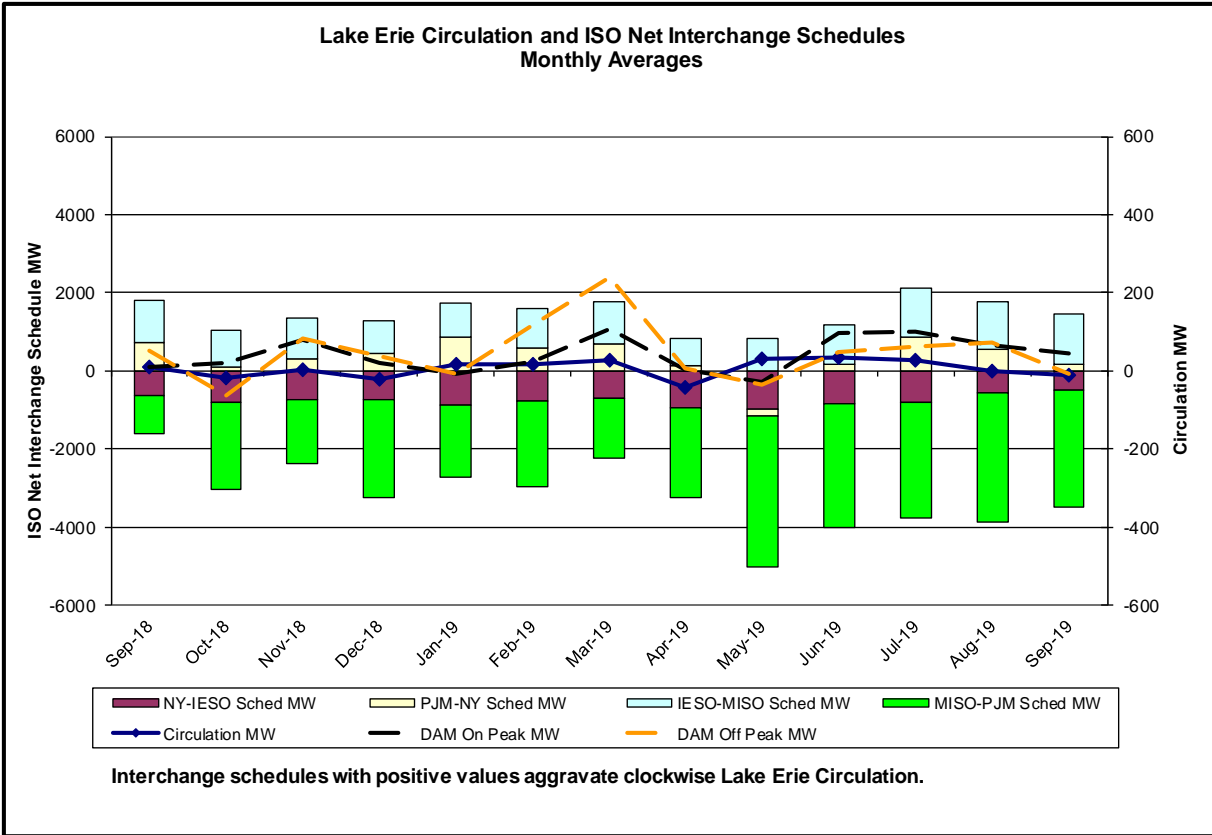




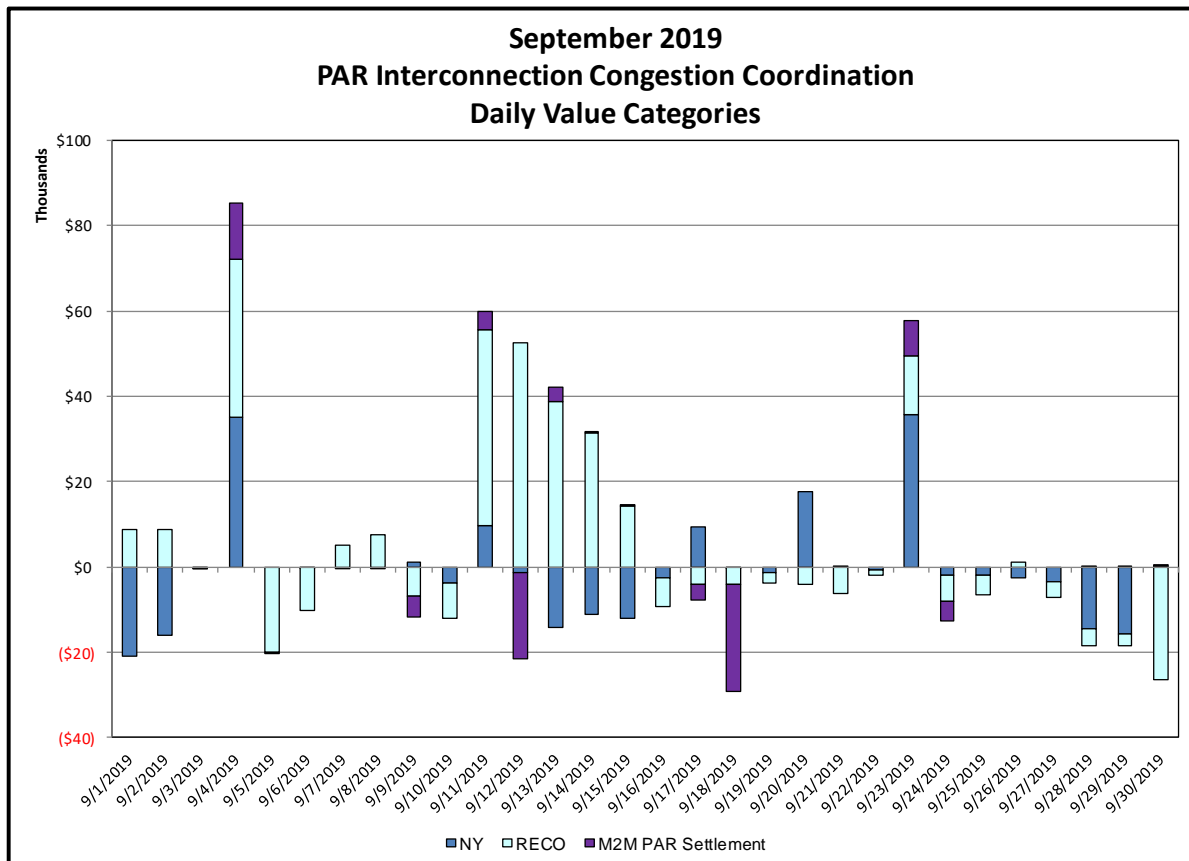
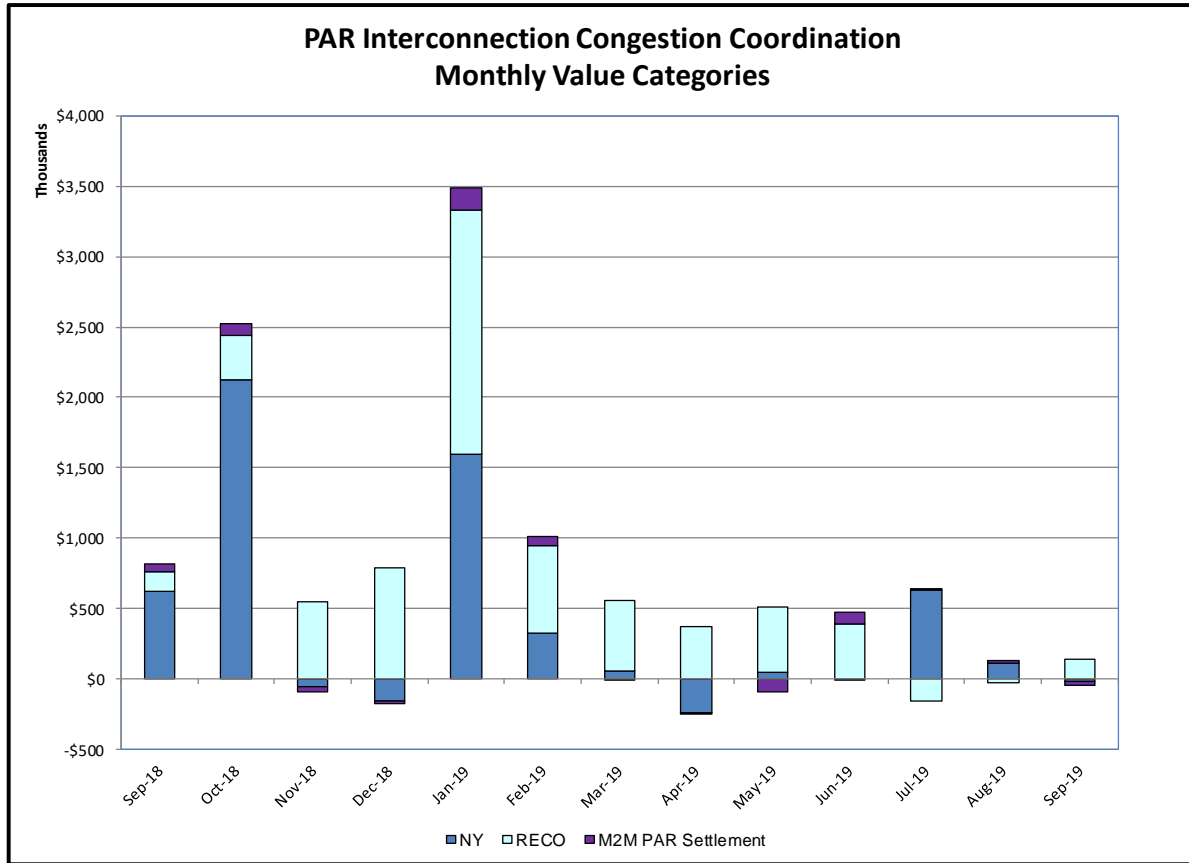






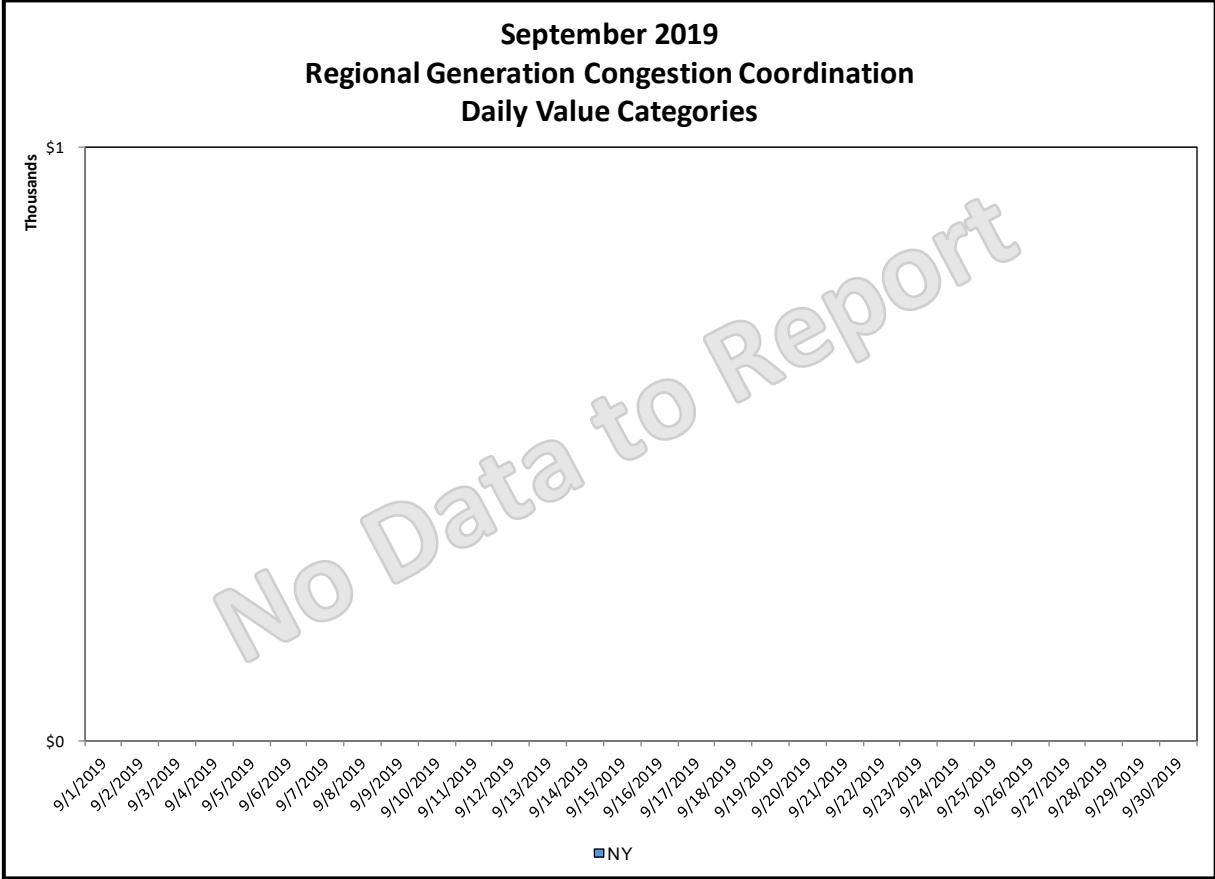
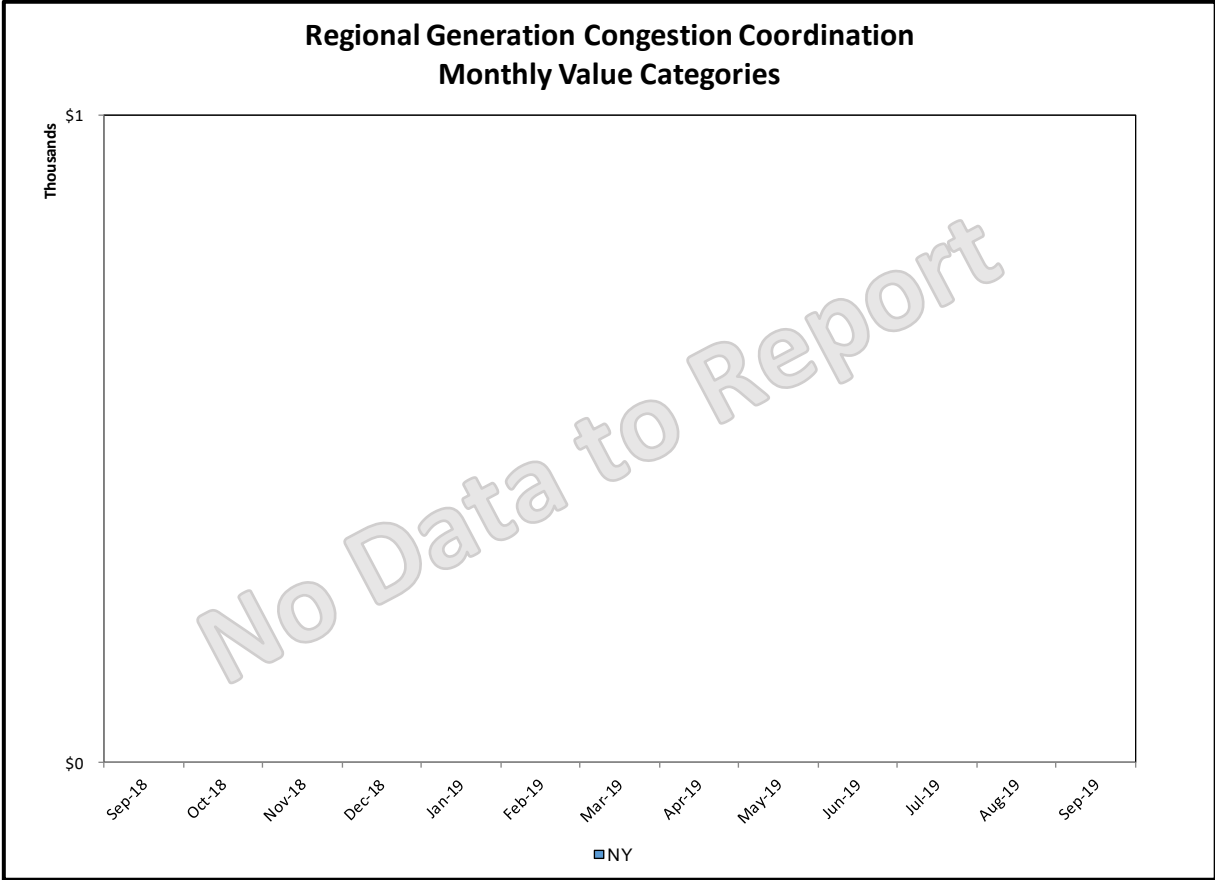


Broader Regional Market Performance Metrics



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.



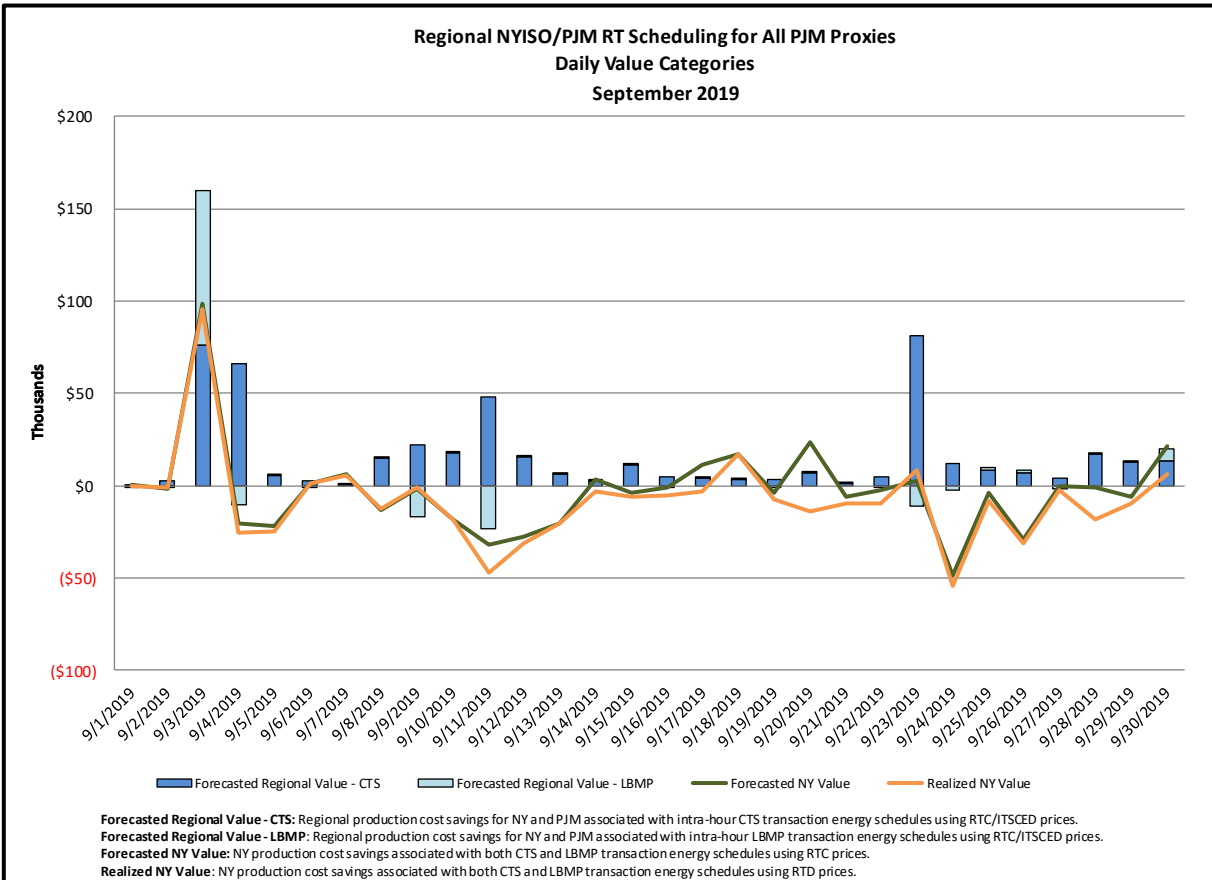
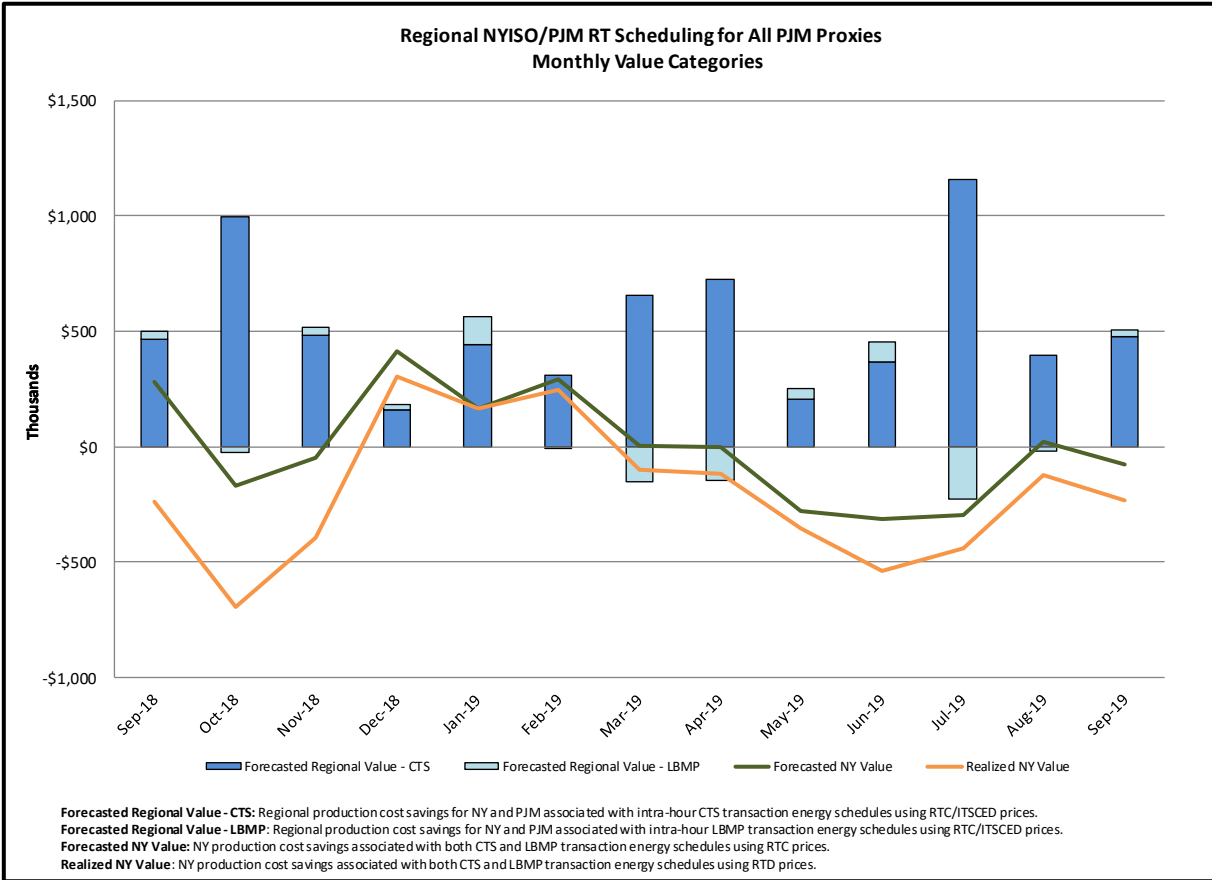
Regional Generation Congestion Coordination

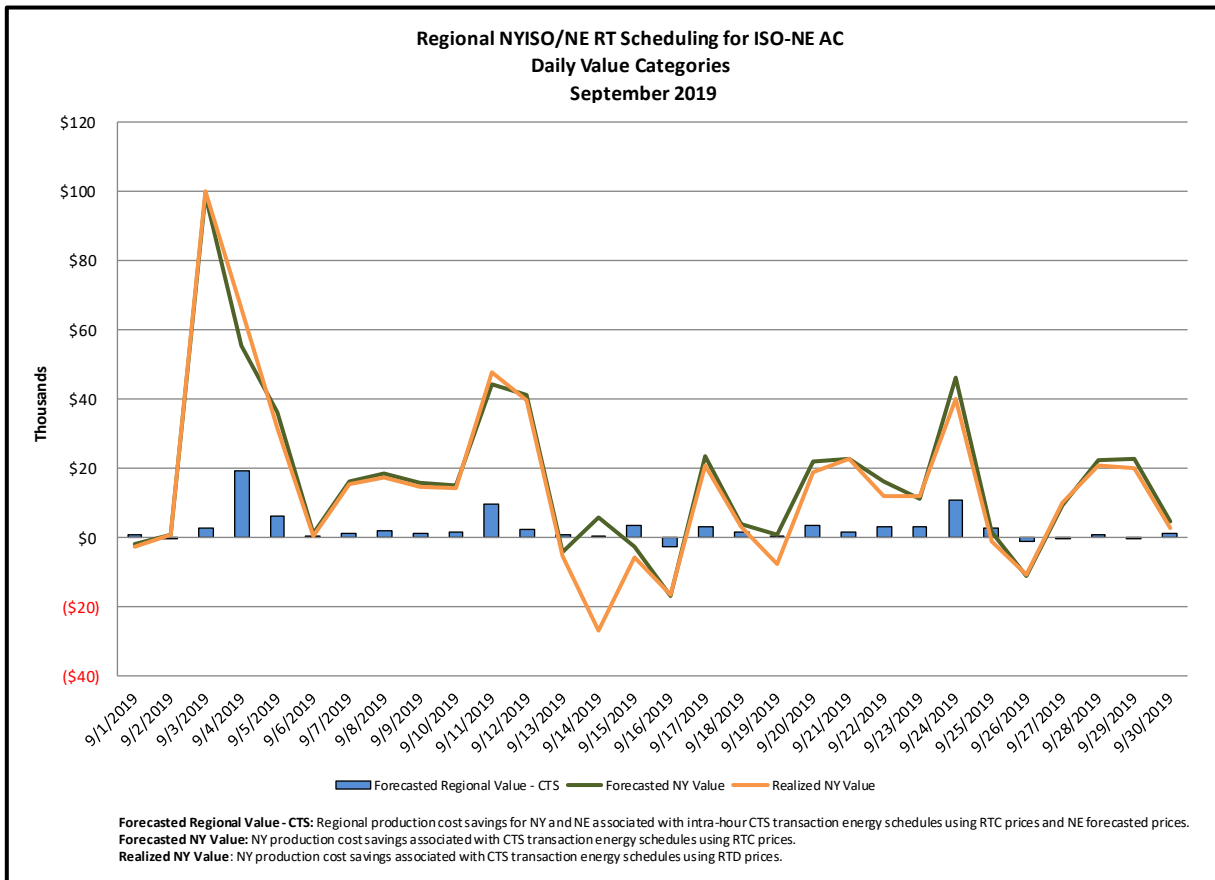
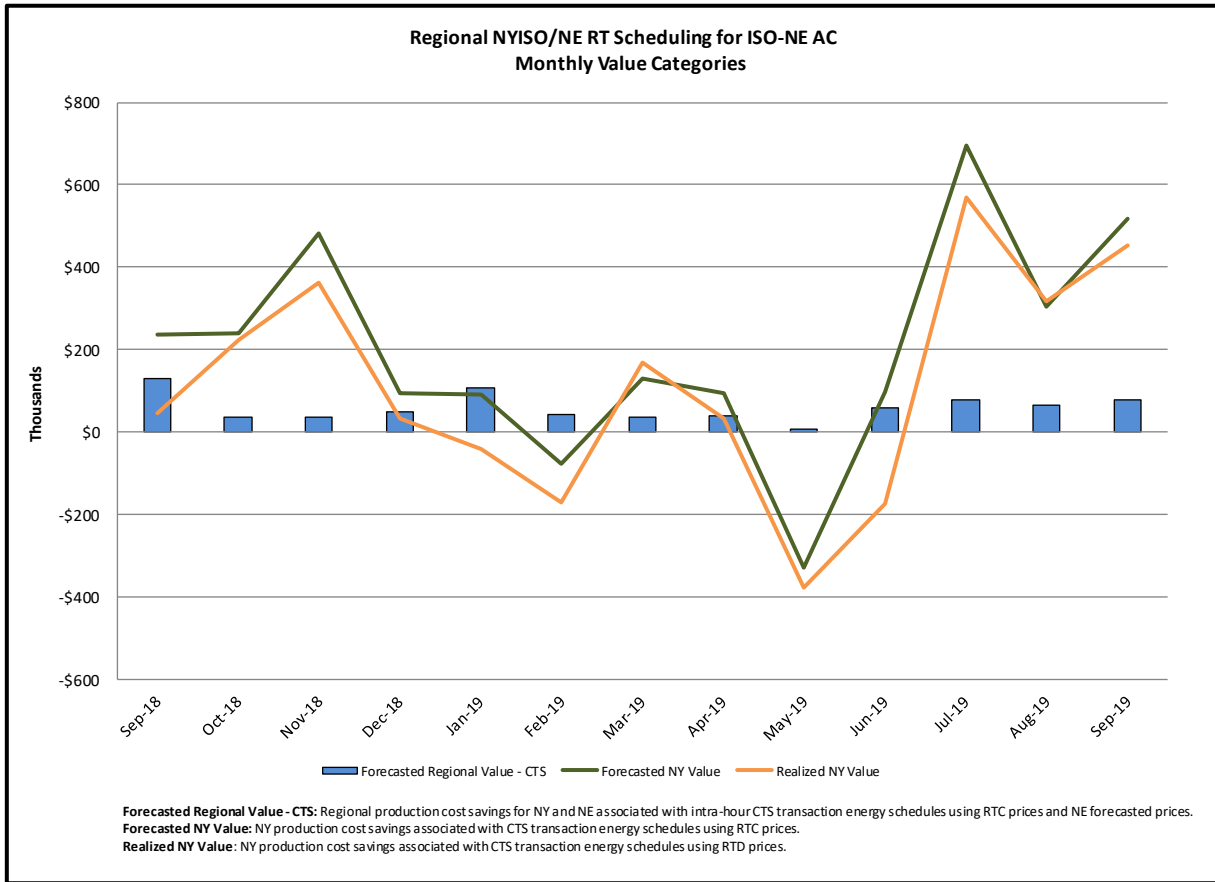
Category

NY

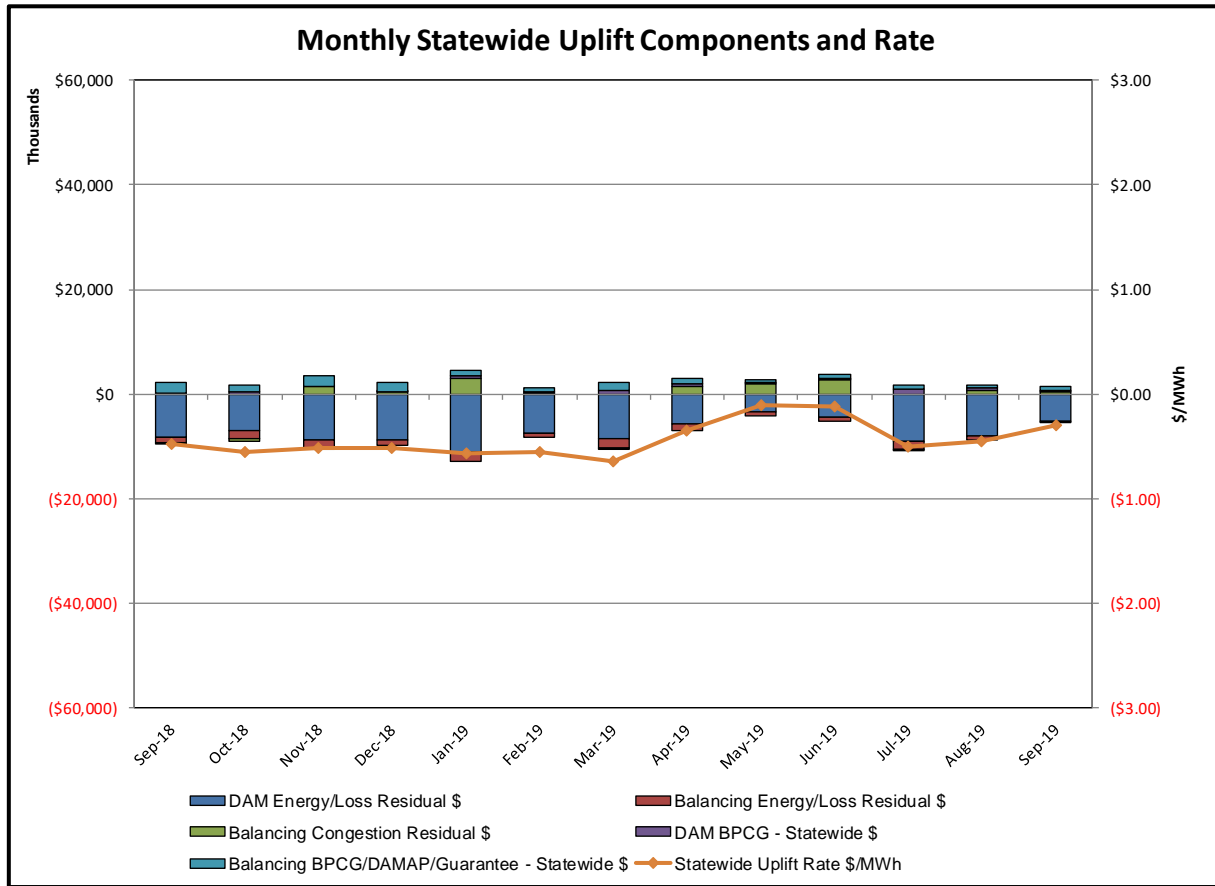
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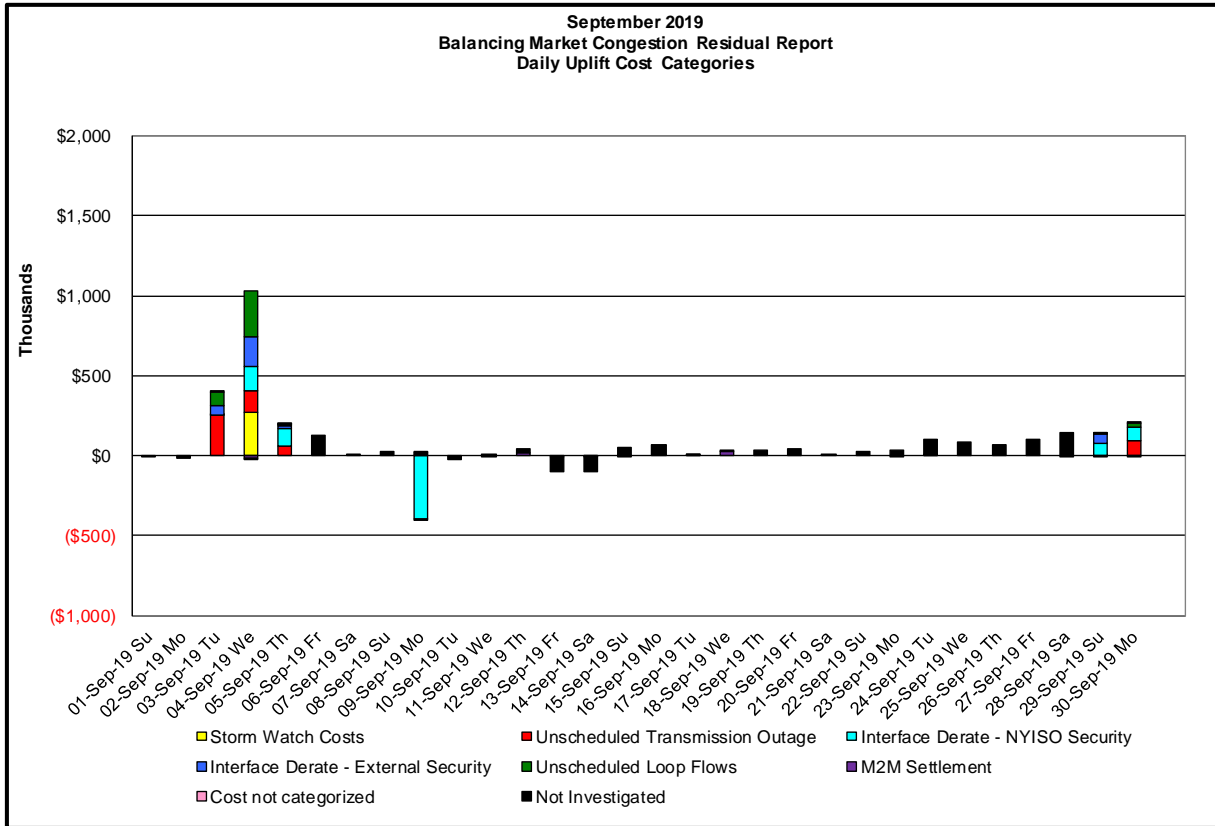
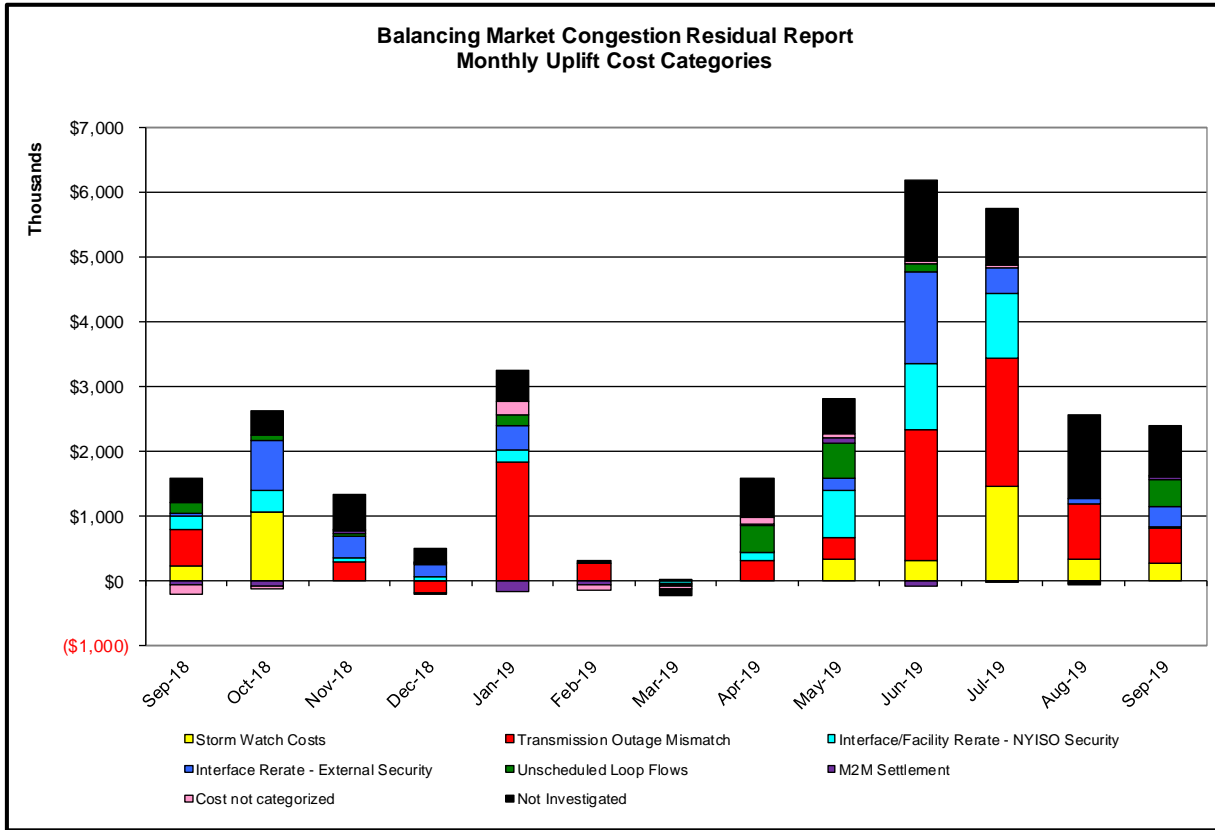
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





Market Performance Metrics





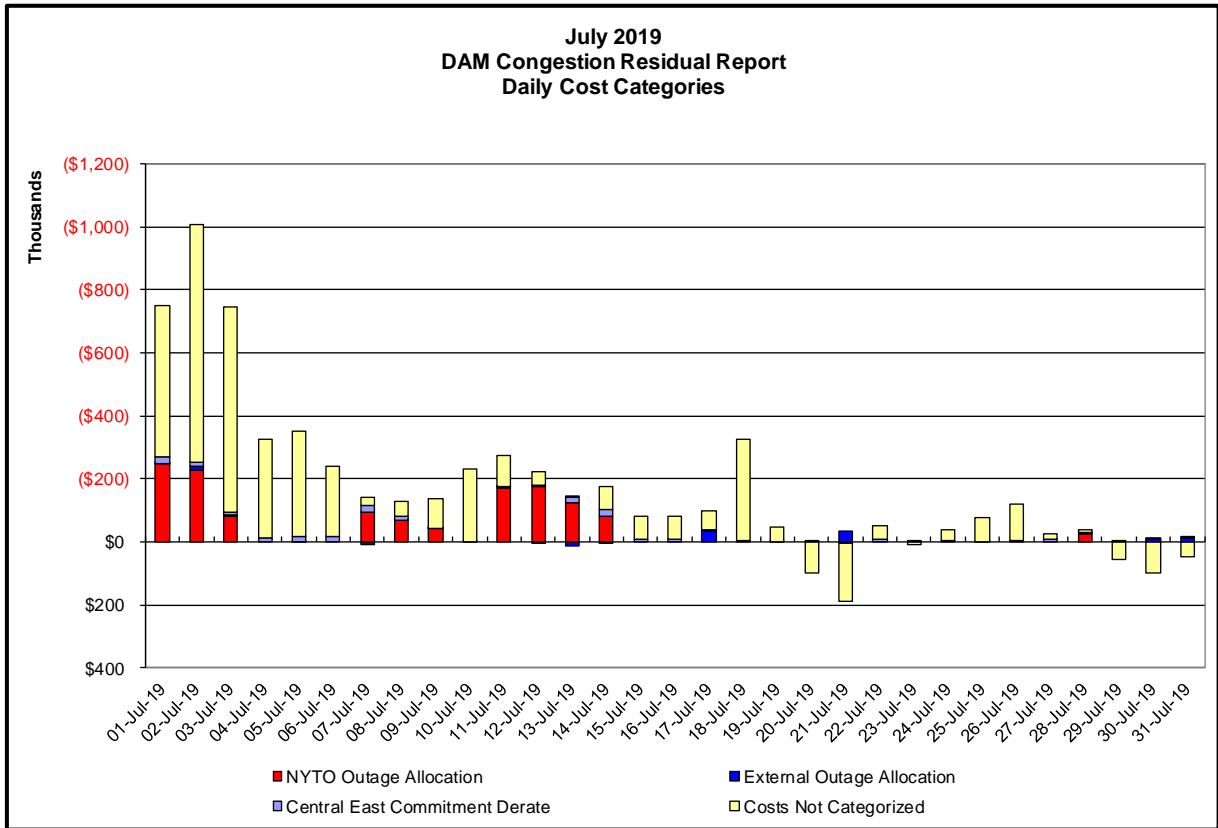
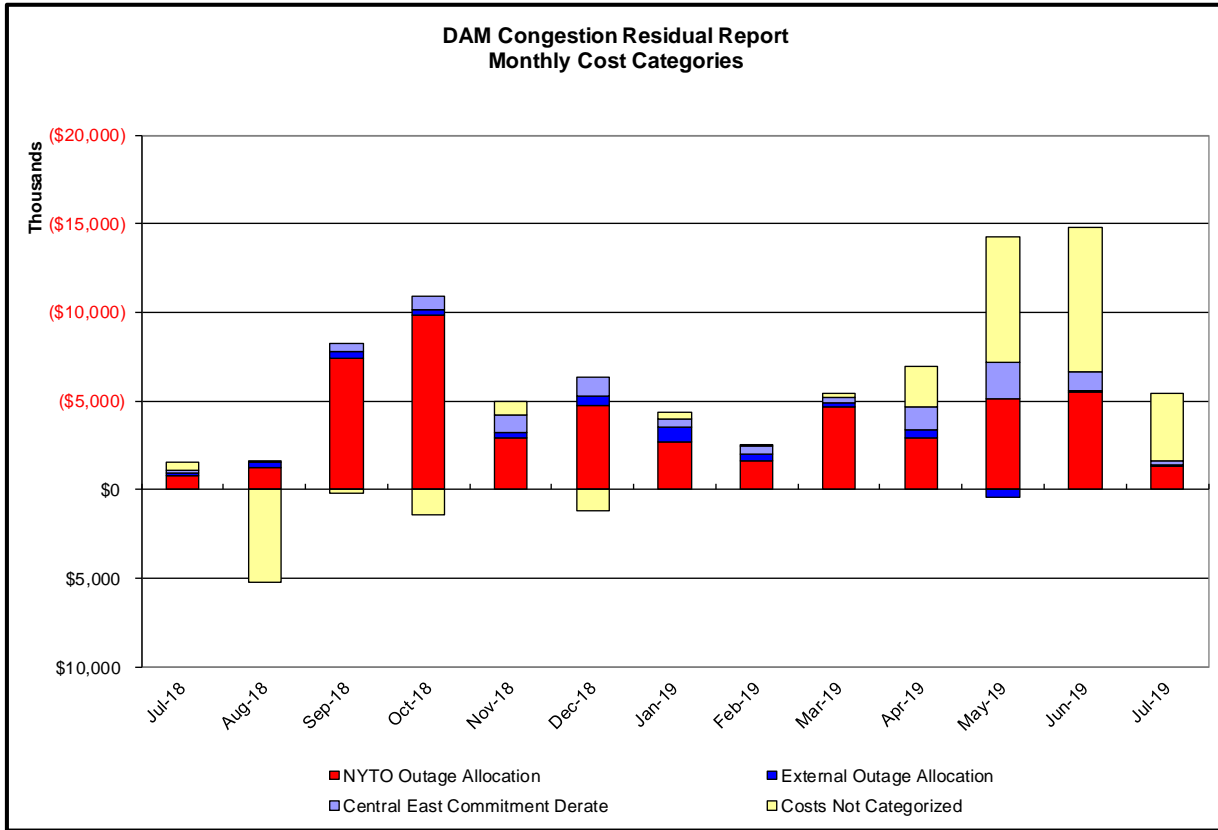
Day's investigated in September:3,4,5,9,29,30			
Event	Date (yyymmdd)	Hours	Description
	9/3/2019	9	Forced Outage Chateaugay-Massena 765kV (#7040), Massena-Marcy 765kV (#MSU-1), Marcy 765/345kV (#AT2)
	9/3/2019	9,11-14,20-22	Forced Outage of Rainey-Vernon 138kV (#36312)
	9/3/2019	21-23	Derate Marcy 765kV-345kV (#AT1) for I/o TWR:MOSES MA1 & MA2
	9/3/2019	10	Uprate East 179th Street-Hellgate 138kV (#15055)
	9/3/2019	10	Uprate Freshkills-Willowbrook 138kV (#29212)
	9/3/2019	20-22	HQ_CHAT-NY Scheduling Limit
	9/3/2019	9,10	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	9/3/2019	9,13	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West 115kV
	9/4/2019	14-18	Thunder Storm Alert, Chestror-Shoemaker 138kV (#27)
	9/4/2019	17,18	Thunder Storm Alert, Leeds-Pleasant Valley 345kV (#92)
	9/4/2019	19	Extended Outage, Marcy-New Scotland 345kV (#18)
	9/4/2019	0	Extended Outage, Marcy 765/345kV (#AT2)
	9/4/2019	10-15,18-21	Forced Outage of Rainey-Vernon 138kV (#36312)
	9/4/2019	16,18	NYCA DNI Ramp
	9/4/2019	10-14	Derate Chases Lake-Porter 230kV (#11) for I/o SCB MARCY 3102 W/ S-BUS 18LN
	9/4/2019	10	Deate East 179th Street-Hellgate 138kV (#15055)
	9/4/2019	11,12	Derate Edic-Marcy 345kV (#UE1-7) for I/o TWR:11 & UCC2-41
	9/4/2019	15,17-19	NE_AC DNI Ramp Limit
	9/4/2019	18	NE_NNC1385 - NY Scheduling Limit
	9/4/2019	11,12,14,18	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East, West 115kV
	9/5/2019	8,9,11-13	Forced Outage of Rainey-Vernon 138kV (#36312)
	9/5/2019	9,11-16,21	Derate Niagara 230/115kV (#AT1) for I/o TWR:PACKARD 62 & BP76
	9/5/2019	8,9,11-16	Derate Niagara-Packard 115kV (#192) for I/o TWR:NIAGARA 61 & 191
	9/5/2019	14	PJM_AC ACTIVE DNI Ramp Limit
	9/5/2019	12	NE_NNC1385 - NY Scheduling Limit
	9/5/2019	14	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West 115kV
	9/9/2019	13-16	Uprate Buffalo-Huntley 115kV (#130) for I/o SIN:PACKARD-WALCK_RD_129
	9/9/2019	16	Uprate Central East
	9/9/2019	15,16	Uprate Leeds-New Scotland 345kV (#93) for I/o Leeds-New Scotland 345kV (#94)
	9/9/2019	9,11	Derate Calspan-North Broadway 115kV (#181-922)
	9/9/2019	7-12	Derate Calspan-North Broadway 115kV (#181-922) for I/o TWR:PACKARD 77 & 78
	9/9/2019	10-12	Derate Niagara 230/115kV (#AT1) for I/o TWR:PACKARD 62 & BP76
	9/9/2019	12	PJM_AC ACTIVE DNI Ramp Limit
	9/9/2019	15	HQ_CHAT-NY Scheduling Limit
	9/9/2019	15,16	NE_NNC1385 - NY Scheduling Limit
	9/9/2019	7	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West 115kV
	9/29/2019	13	Forced Outage of Sprainbrook-Tremont 345kV (#X28)
	9/29/2019	13,15,17	otthaven-Dunwoodie 345kV (#71) BASE CASE
	9/29/2019	17	Derate Dunwoodie-Shore Road 345 kV (#Y50)
	9/29/2019	17	Derate Dunwoodie-Shore Road 345 kV (#Y50) for I/o SCB:SPBK(RNS2):Y49&M29&Y49_ST
	9/29/2019	13	Derate East 179th Street-DunwoodieS 138kV (#99153)
	9/29/2019	14	Uprate FreshKills-Willowbrood 138 kV (#29211)
	9/29/2019	14	Uprate Buffalo-Huntley 115kV (#130) for I/o SIN:PACKARD-WALCK_RD_129
	9/29/2019	14	Uprate E179th-Hellgate 138kV (#15055)
	9/29/2019	14	Uprate Niagara Blvd-Packard 115kV (#181-922) for I/o TWR:PACKARD 77 & 78
	9/29/2019	15	IESO_AC - NY Scheduling Limit
	9/29/2019	13	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West 115kV
	9/30/2019	18	Forced Outage of Linden-Goethals 230kV (#A2253)
	9/30/2019	20	Return to service of ELM_ST_230KV_712
	9/30/2019	8-10	Derate Motthaven-Dunwoodie 345kV (#71)
	9/30/2019	14-18	Derate Millwood-Eastview 345kV (#W85) for I/o TWR:W64& W79& W93& W99
	9/30/2019	12-13	Derate Motthaven-Dunwoodie 345kV (#72) for I/o SCB SPRAIN RS5 W/ W65/82
	9/30/2019	18	Derate Athens-Pleasant Valley 345 kV (#91) for I/o LEEDS ___-PLSNTVLY_345_92
	9/30/2019	10,12,18,19	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	

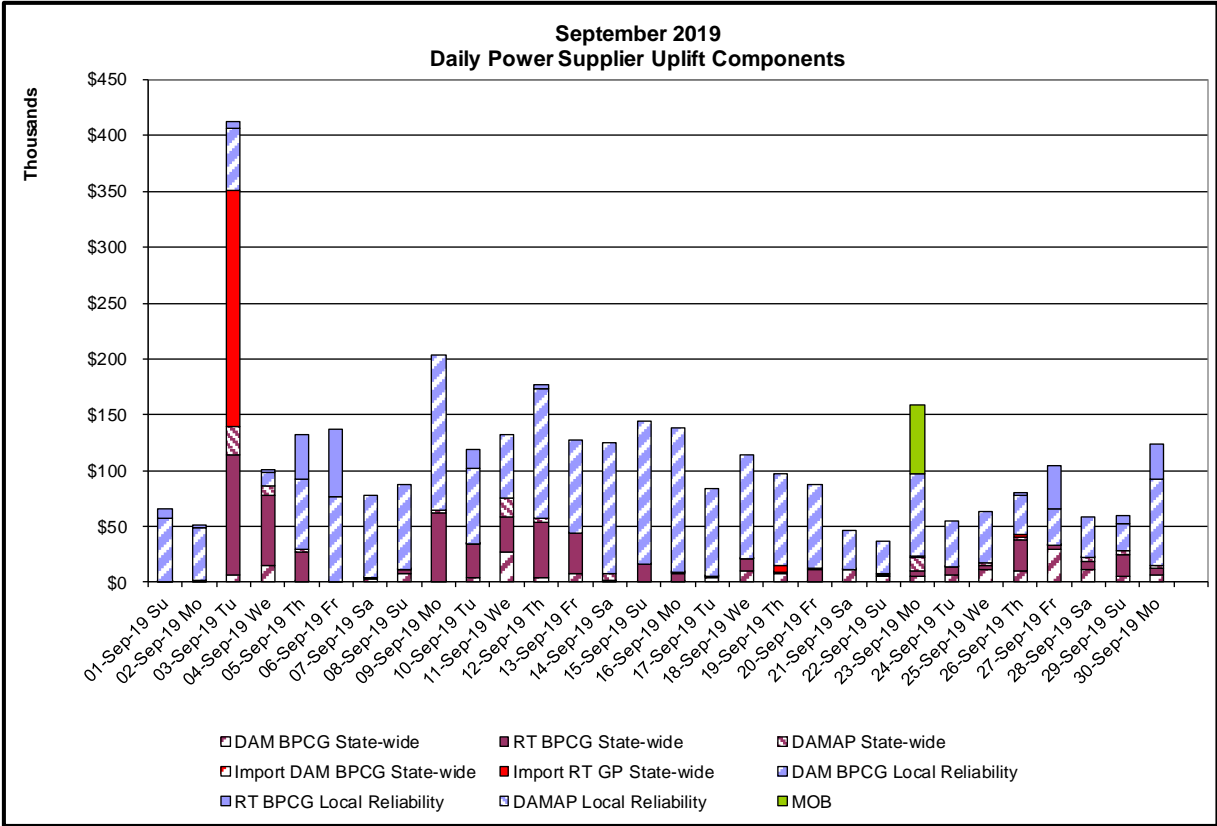
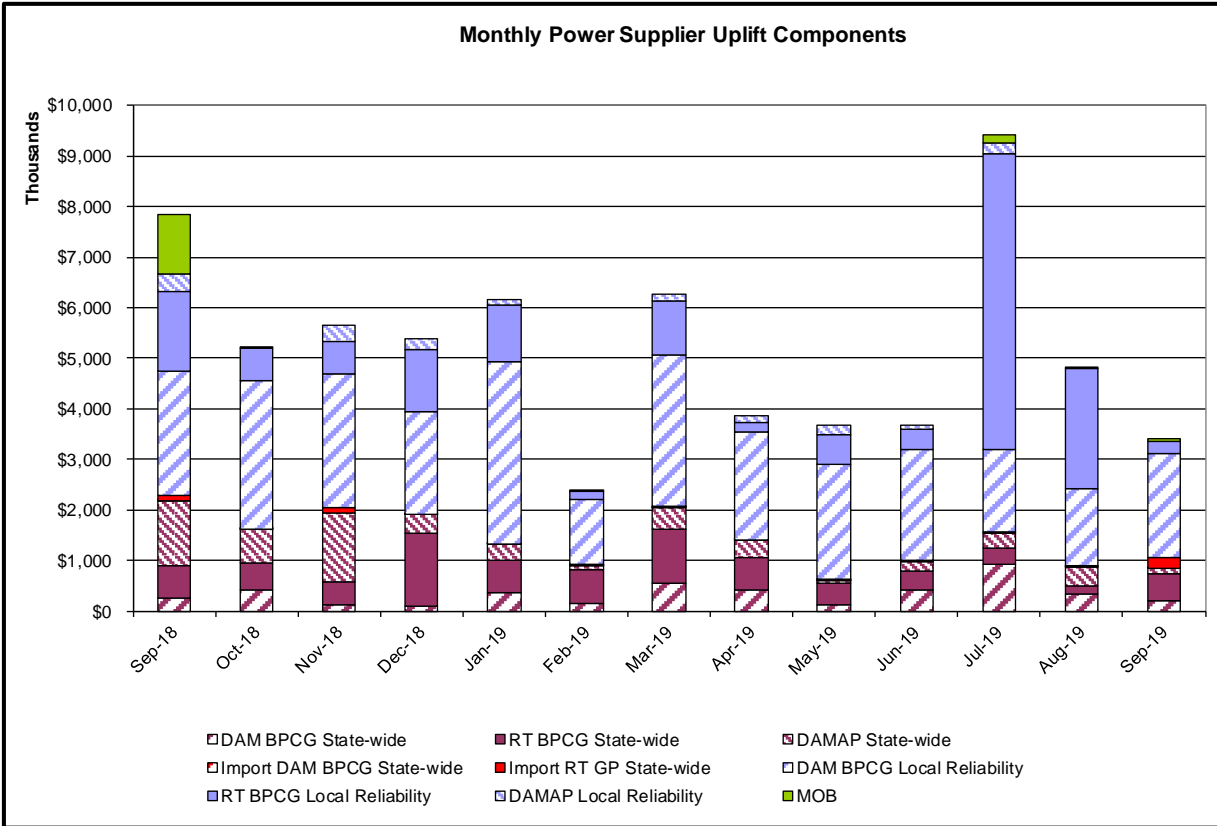
Monthly Balancing Market Congestion Report Assumptions/Notes

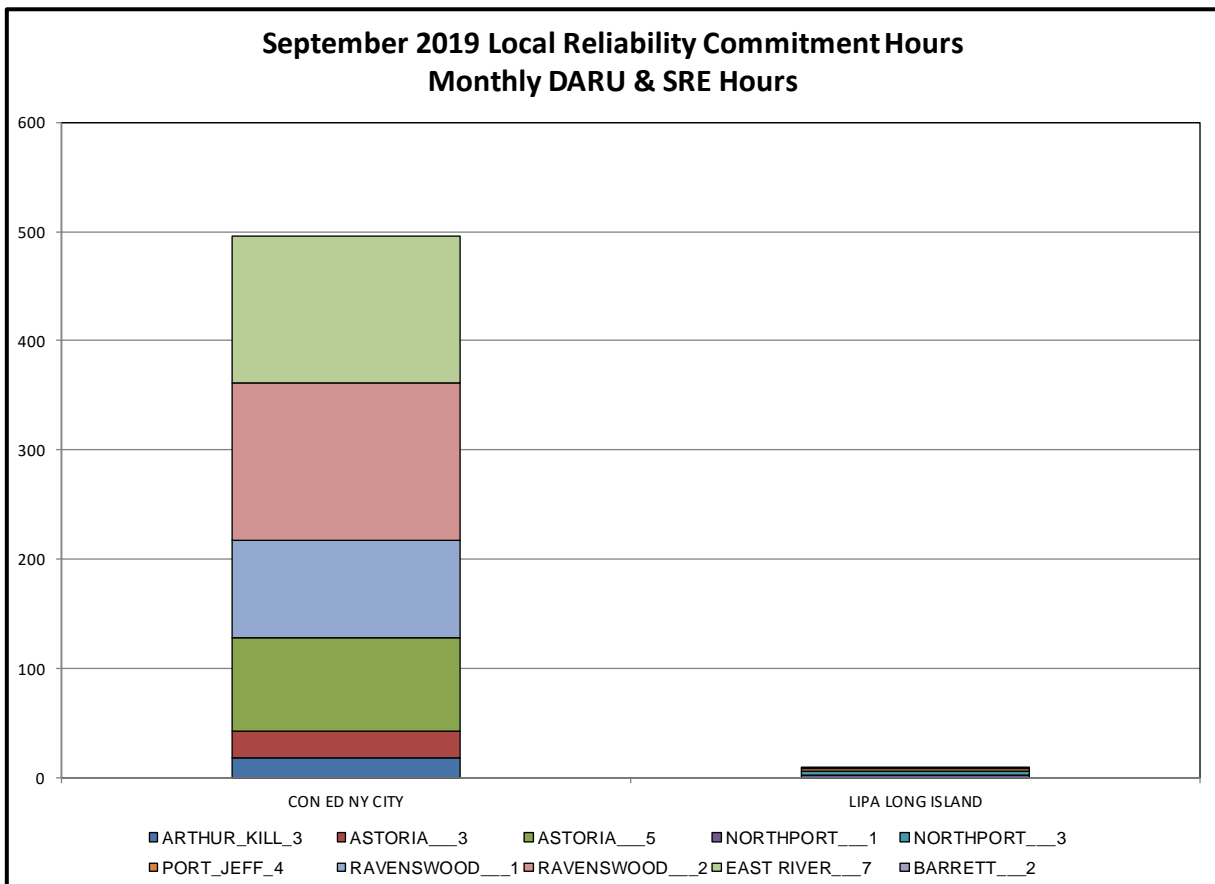
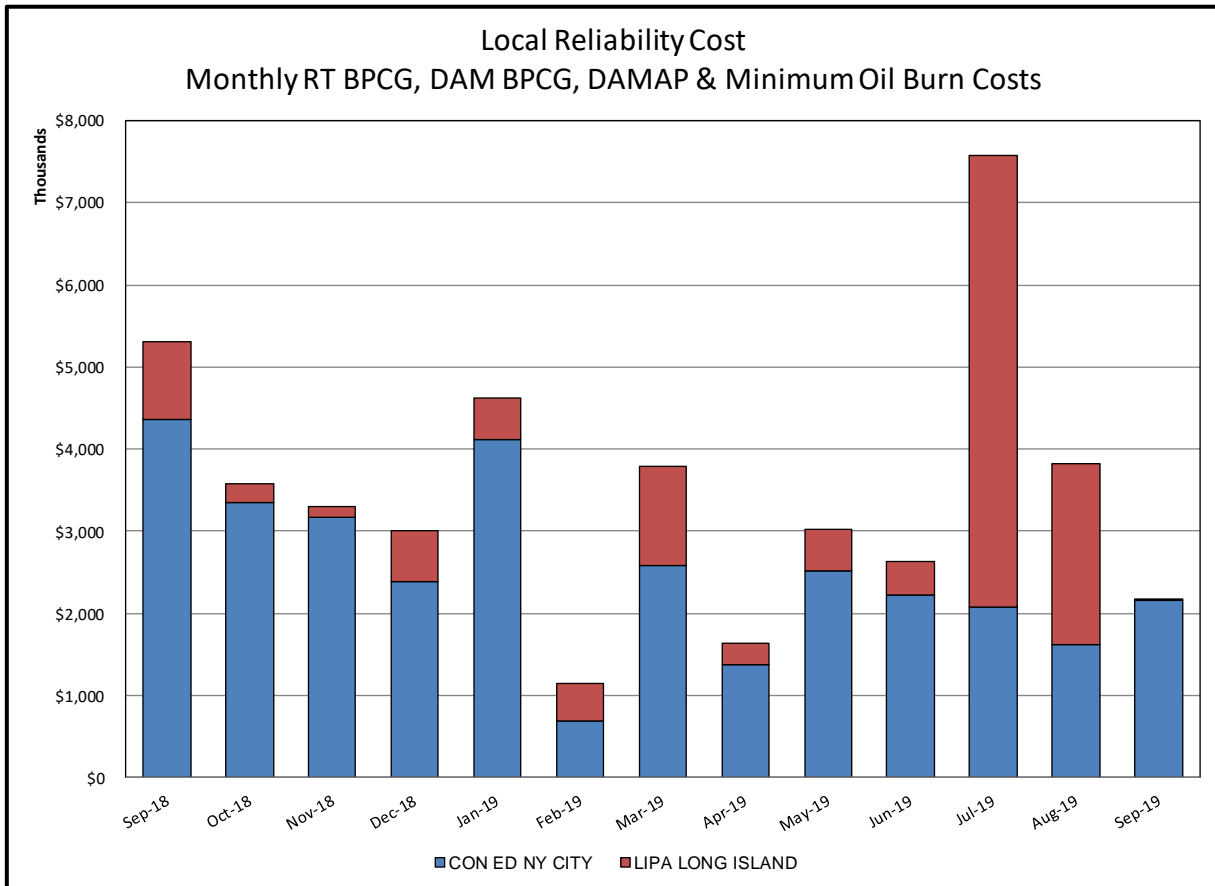
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

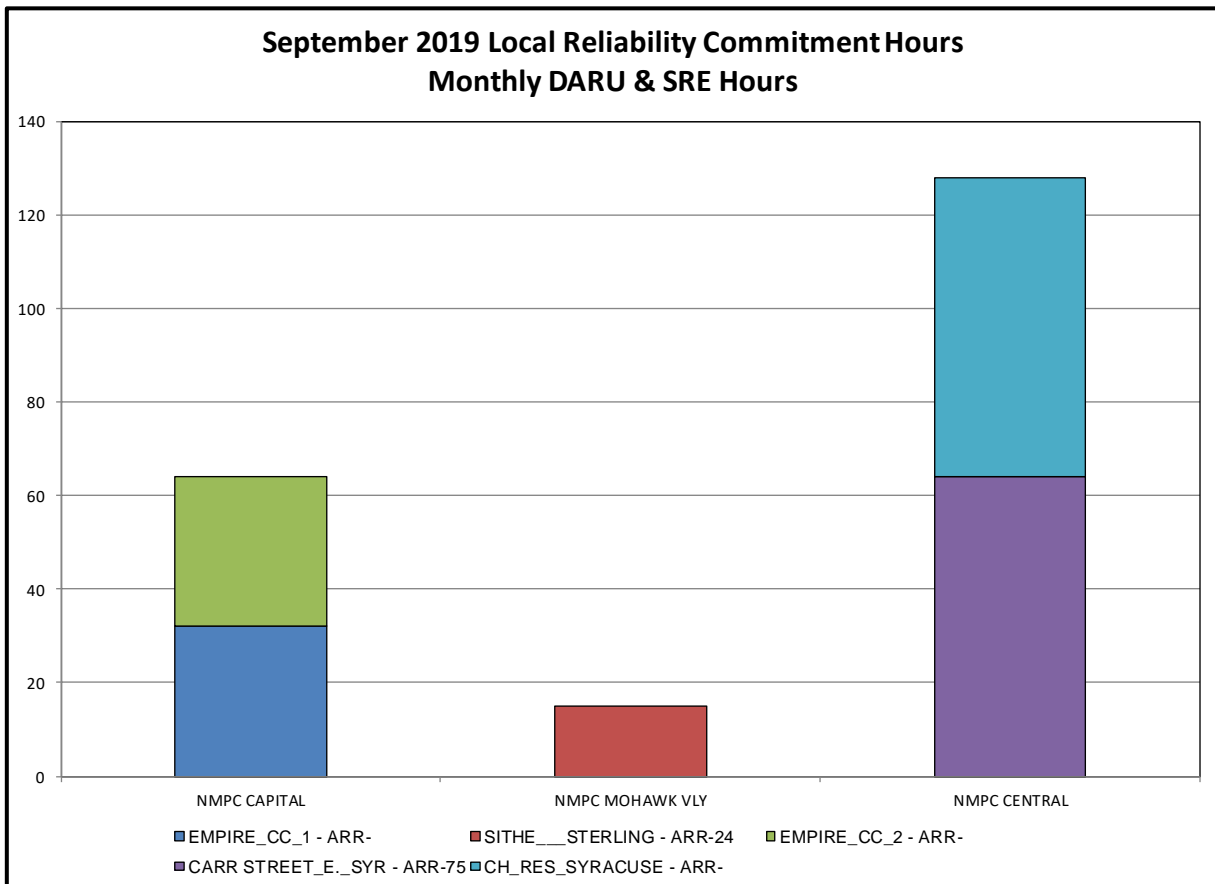
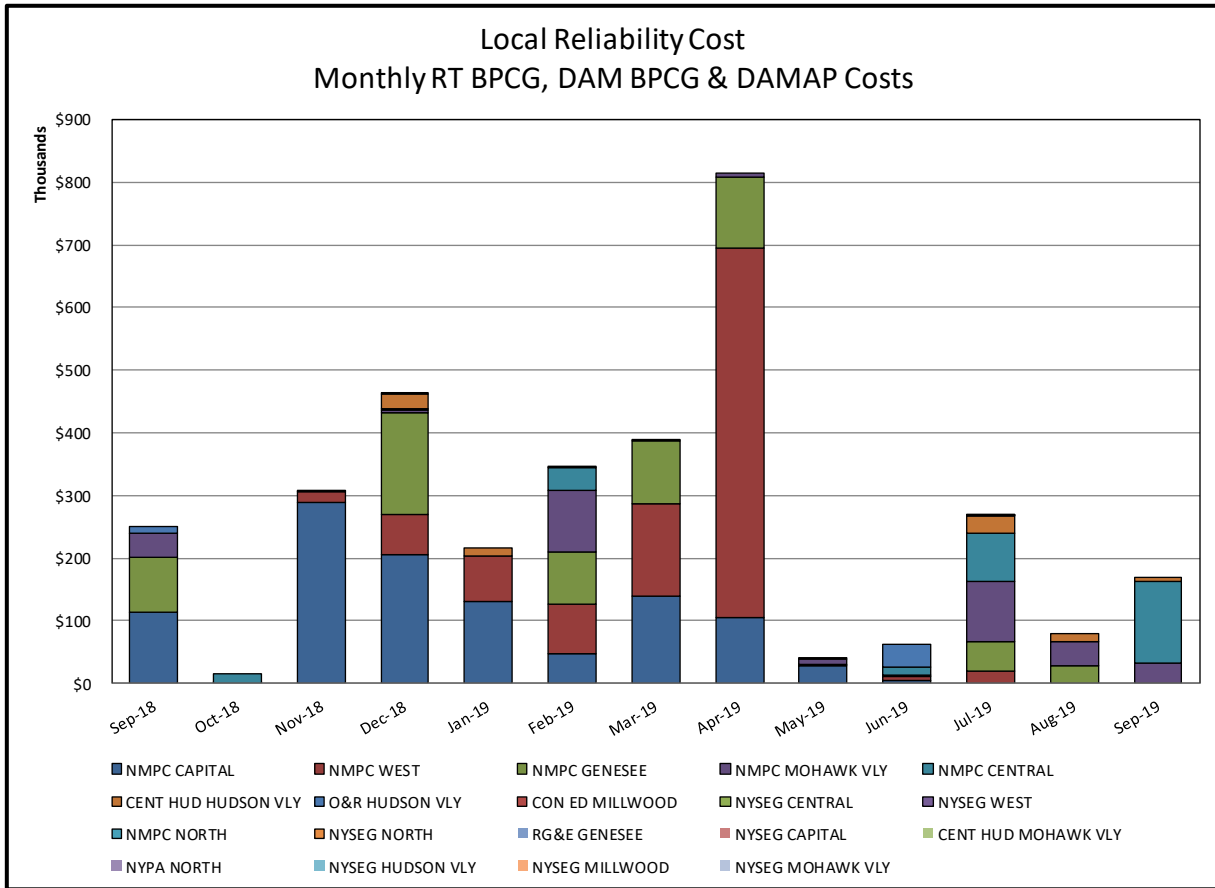


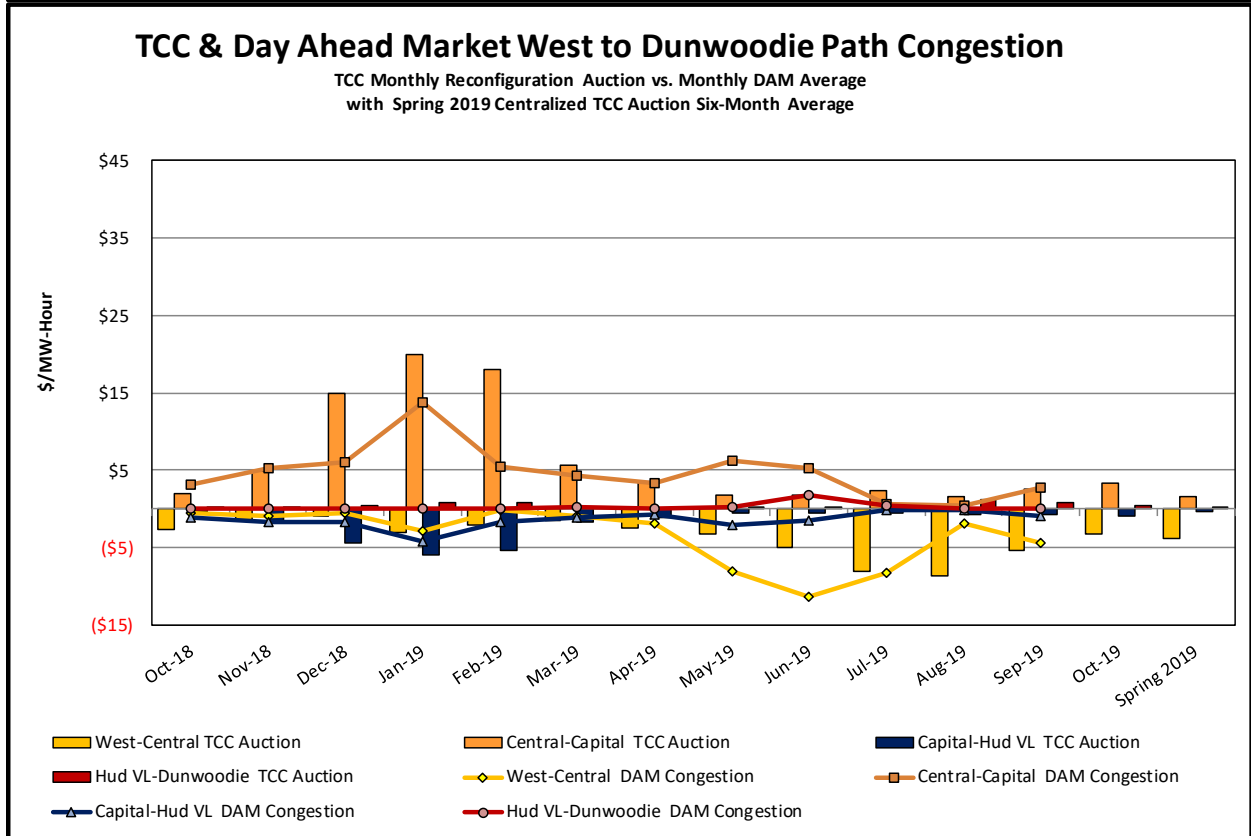
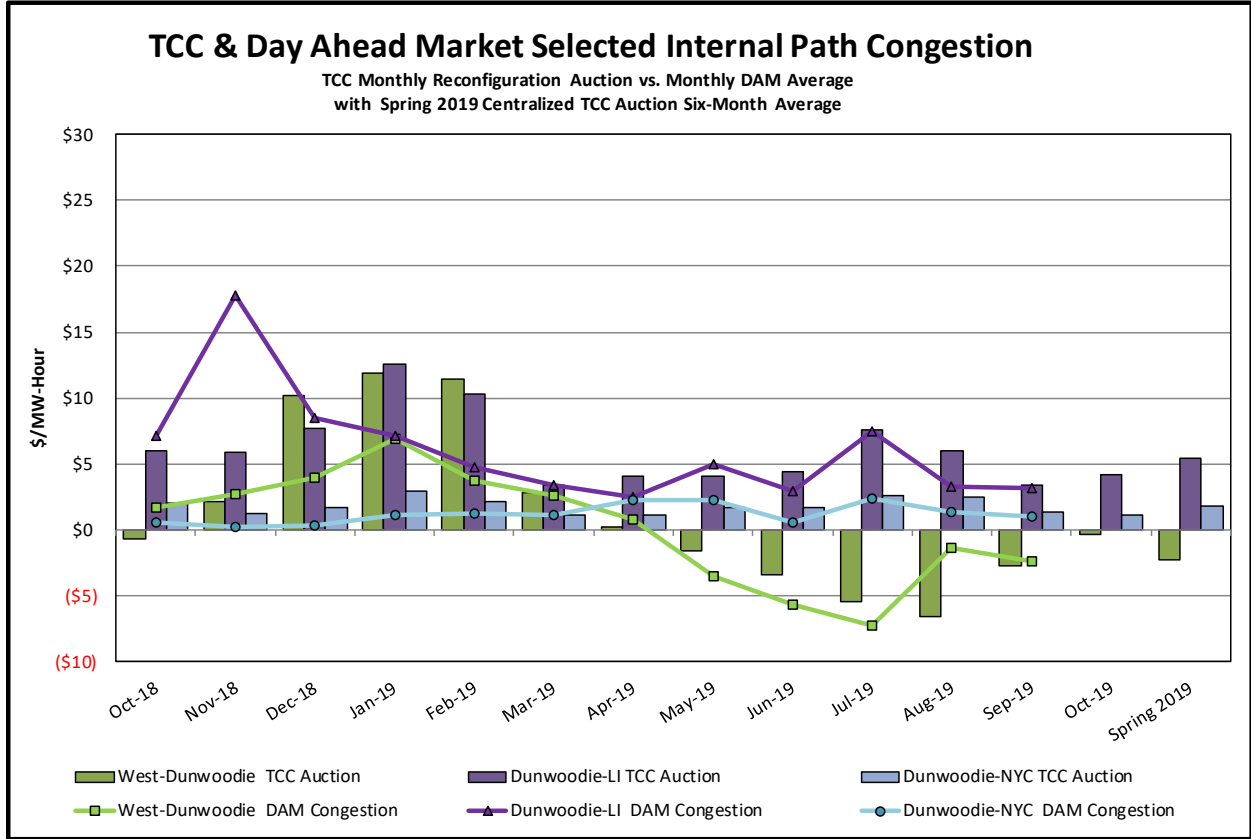
Day-Ahead Market Congestion Residual Categories

<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.	



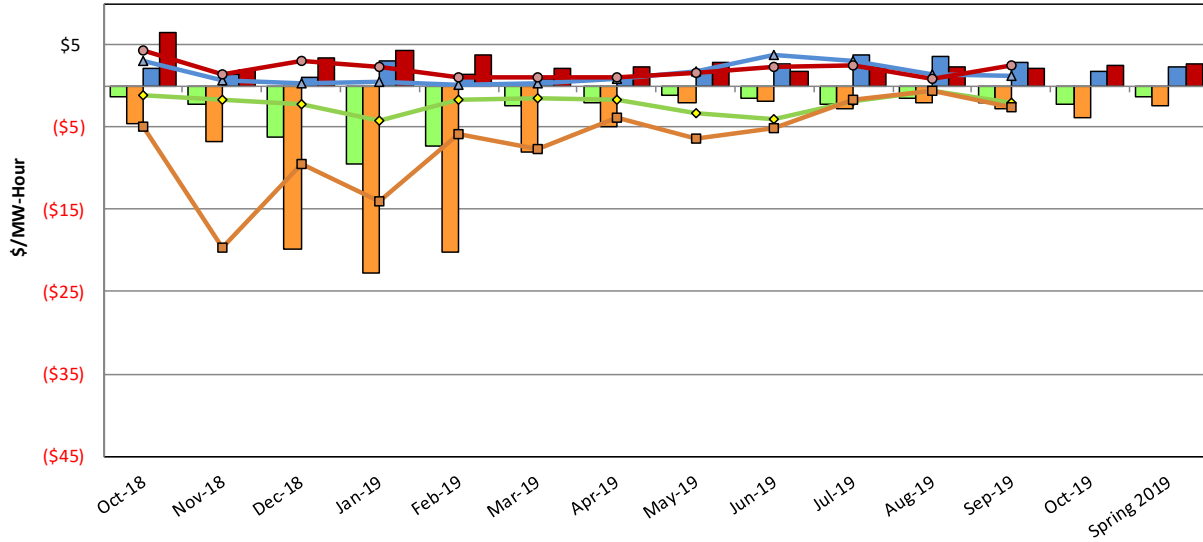






TCC & Day Ahead Market Selected External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Spring 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

