

# ***Operations Performance Metrics Monthly Report***



## ***September 2018 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 08, 2018.

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## September 2018 Operations Performance Highlights

- Peak load of 31,456 MW occurred on 09/05/2018 HB 16
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- 2:30 hours of Thunder Storm Alerts were declared
- 7:20 hours of NERC TLR level 3 curtailment
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

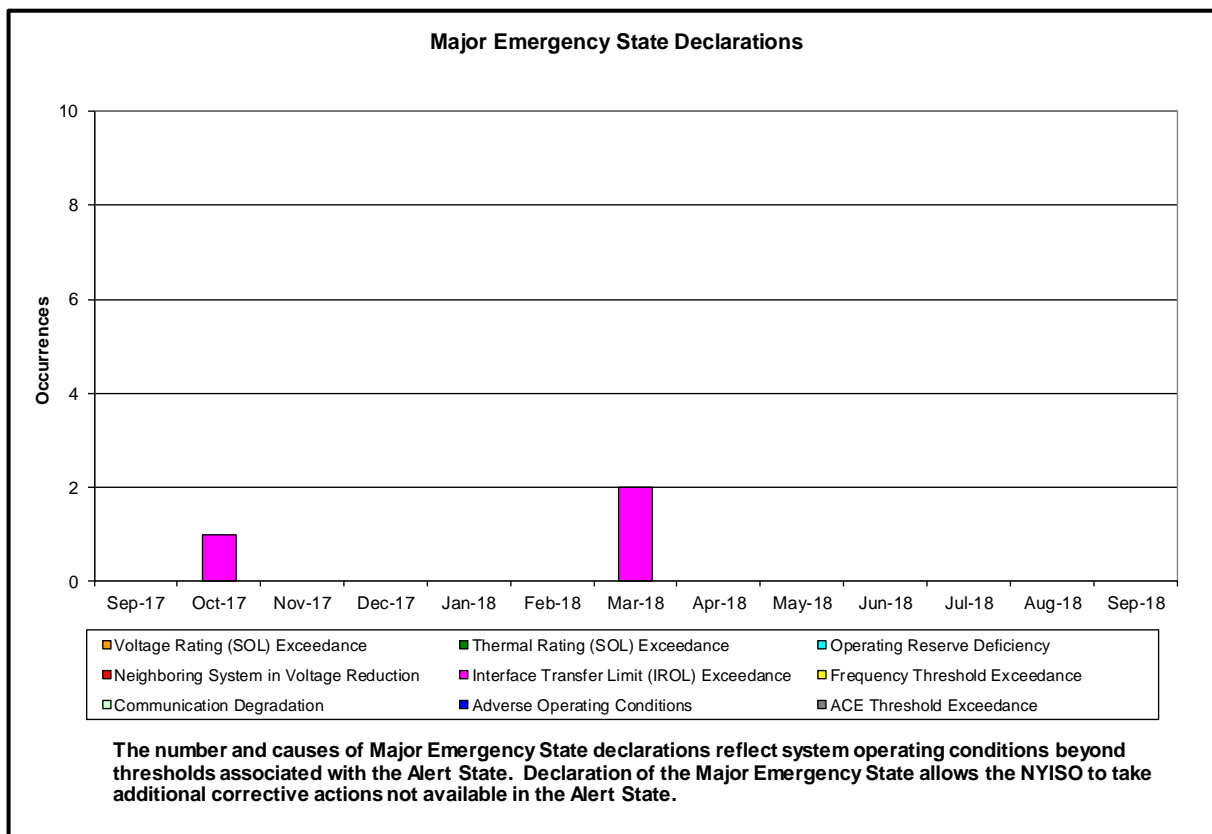
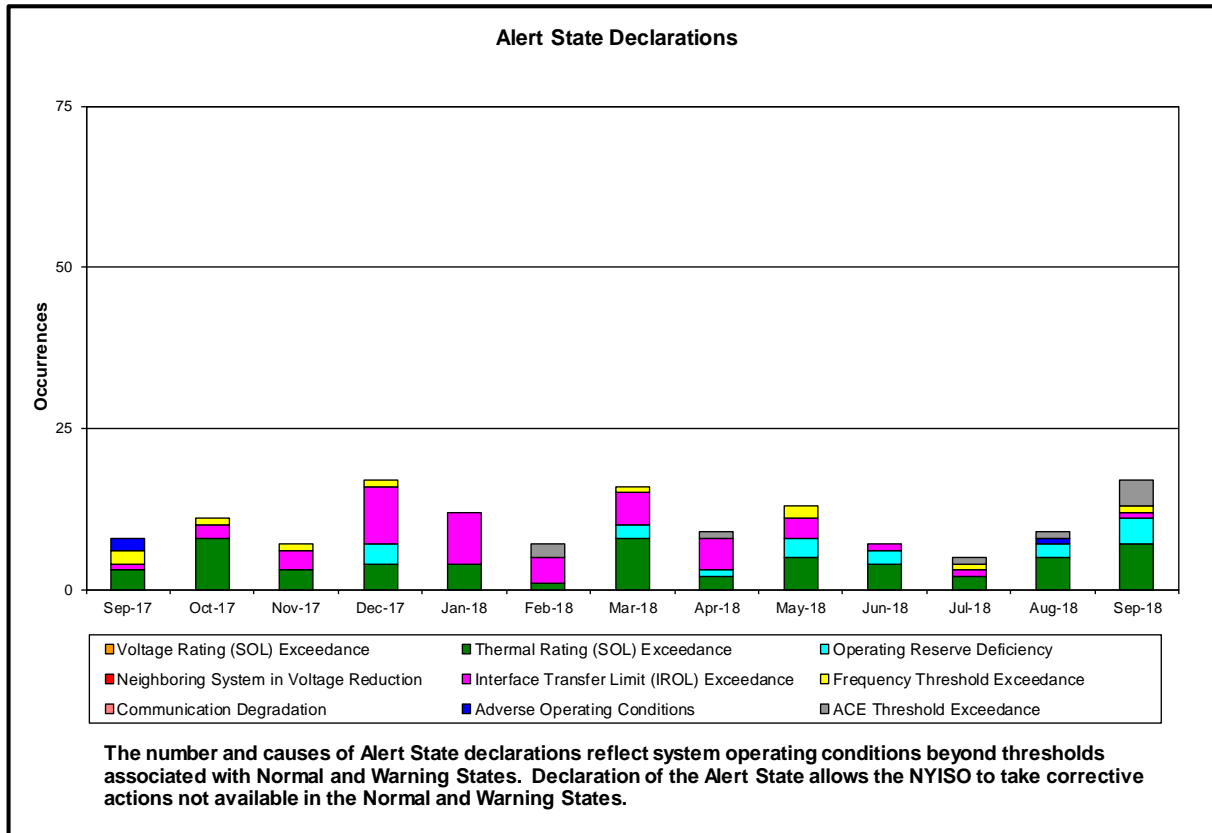
	Current Month Value (\$M)	Year-to-Date Value (\$M)
<b>NY Savings from PJM-NY Congestion Coordination</b>	\$0.82	\$10.49
<b>NY Savings from PJM-NY Coordinated Transaction Scheduling</b>	(\$0.24)	\$0.59
<b>NY Savings from NE-NY Coordinated Transaction Scheduling</b>	\$0.04	(\$0.67)
<b>Total NY Savings</b>	\$0.62	\$10.41
<b>Regional Savings from PJM-NY Coordinated Transaction Scheduling</b>	\$0.50	\$2.51
<b>Regional Savings from NE-NY Coordinated Transaction Scheduling</b>	\$0.13	\$0.67
<b>Total Regional Savings</b>	\$0.63	\$3.18

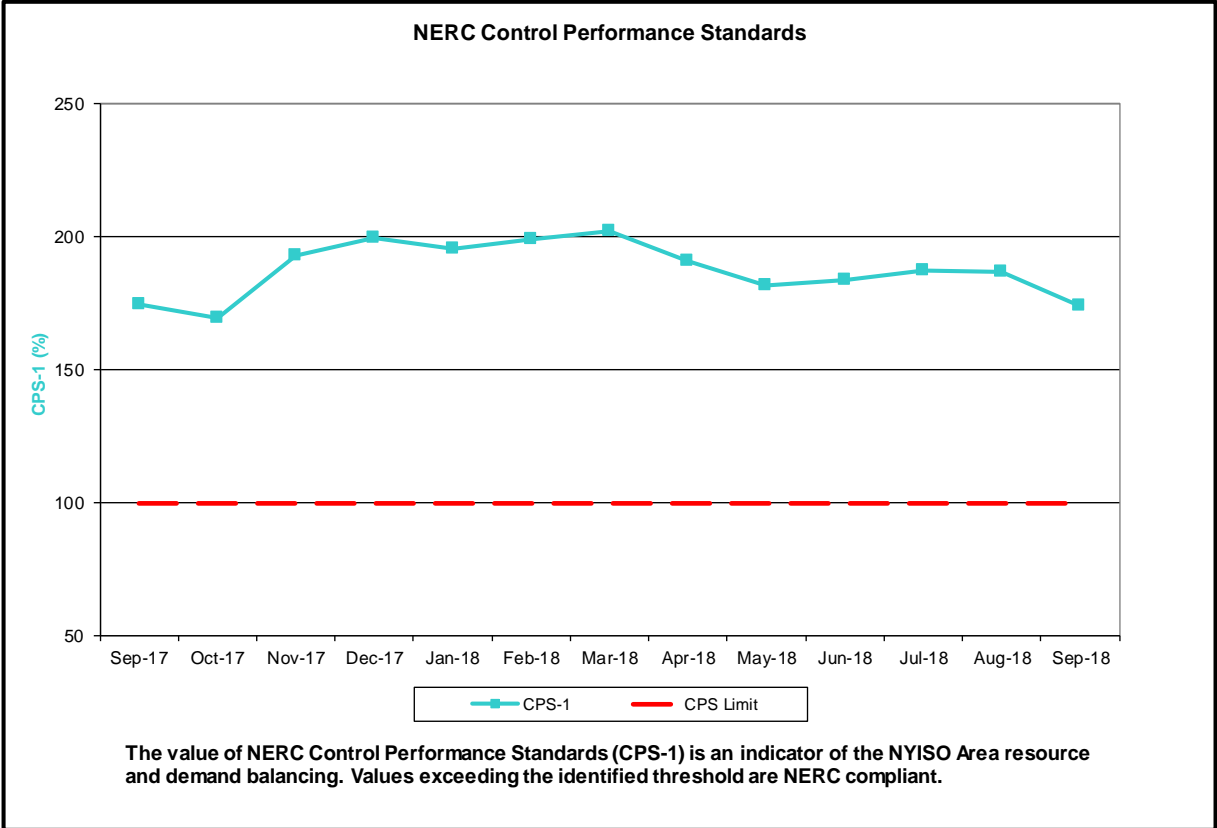
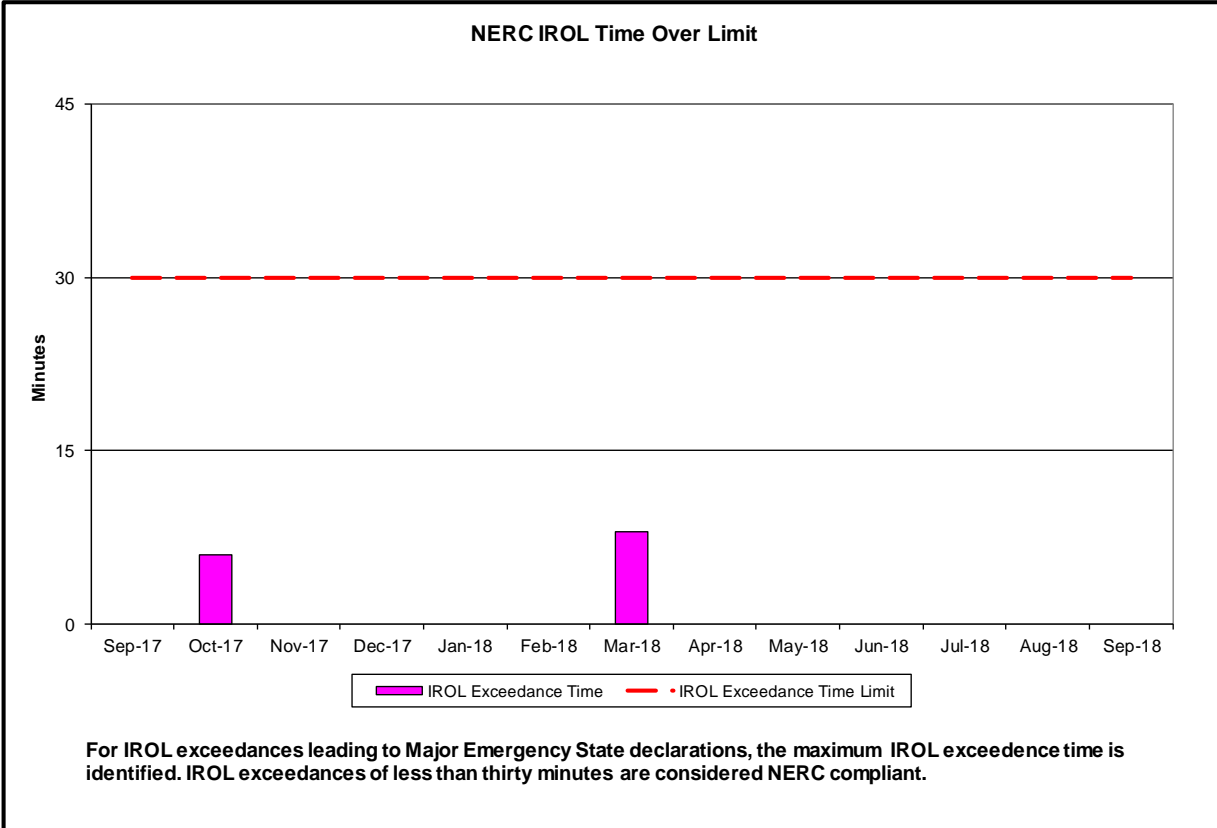
- Statewide uplift cost monthly average was (\$0.48)/MWh
- The following table identifies the Monthly ICAP Spot Market prices and the price delta.

Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
October 2018 Spot Price	\$2.52	\$8.84	\$8.84	\$6.57
September 2018 Spot Price	\$2.87	\$9.32	\$9.32	\$6.63
Delta	(\$0.35)	(\$0.48)	(\$0.48)	(\$0.06)

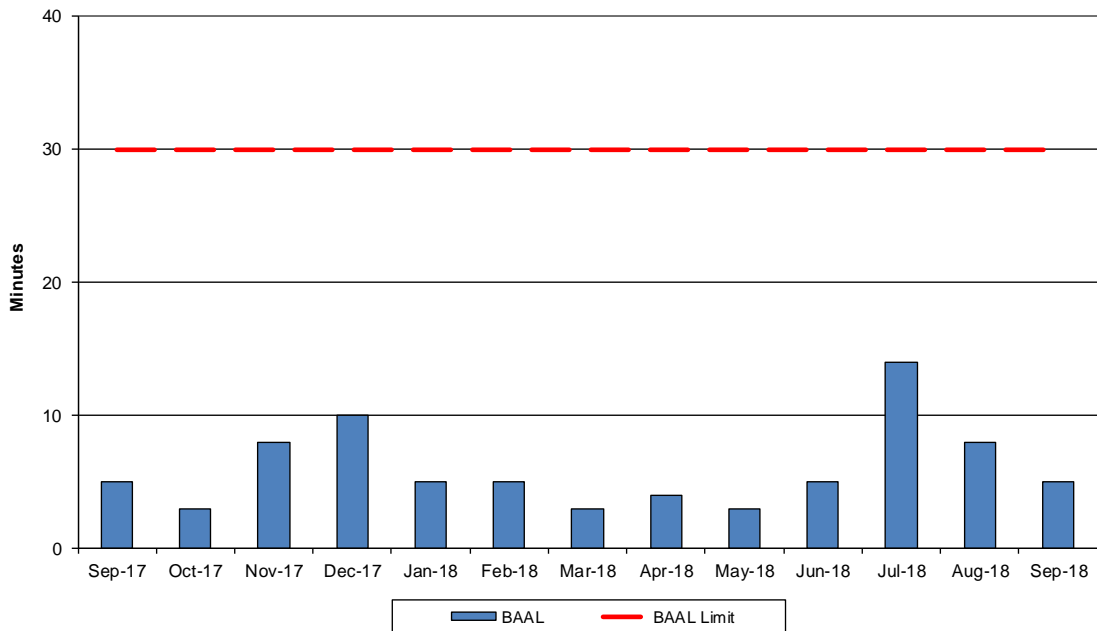
- NYC - Price decrease by \$0.48 due to increase of gen UCAP and unoffered capacity
- GHIJ - Price decrease by \$0.48 due to increase in gen UCAP and in unoffered capacity
- NYCA - Price decrease by \$0.35 due to changes in gen UCAP, unoffered capacity, imports, and exports.

## Reliability Performance Metrics



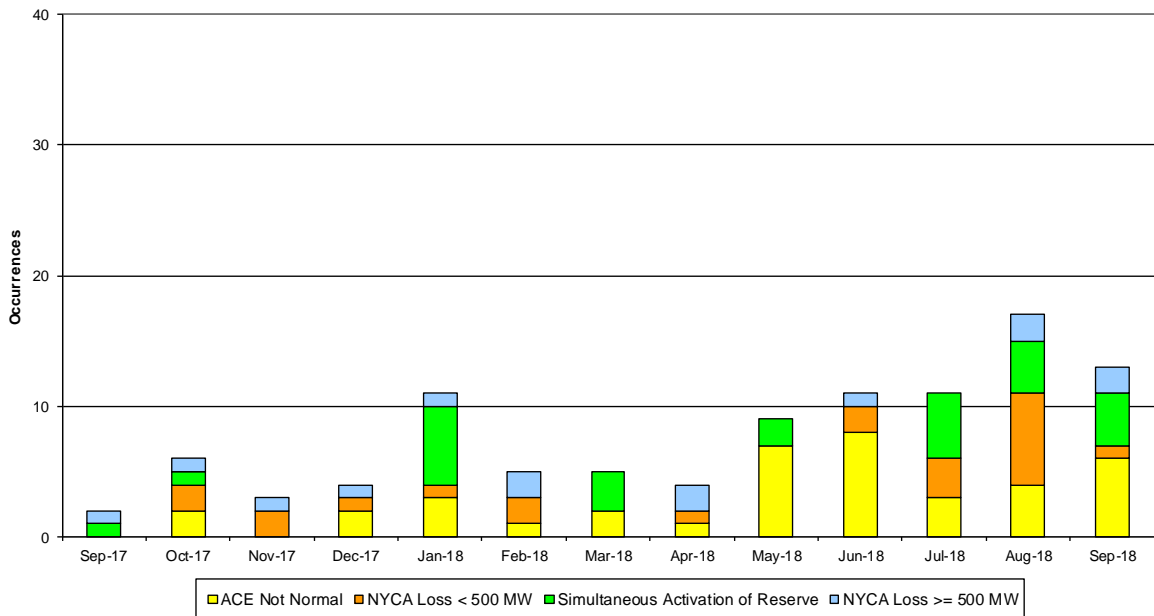


### NERC Balancing Authority ACE Limit Standard

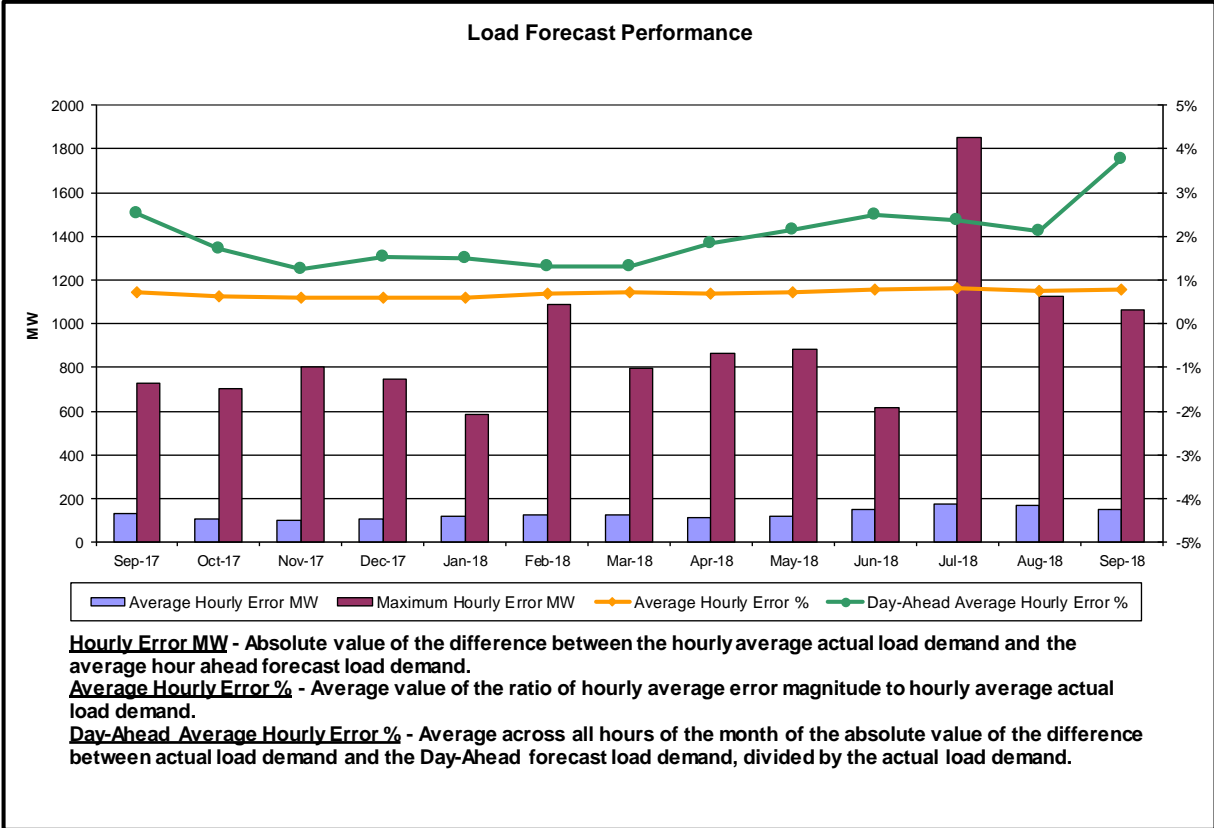
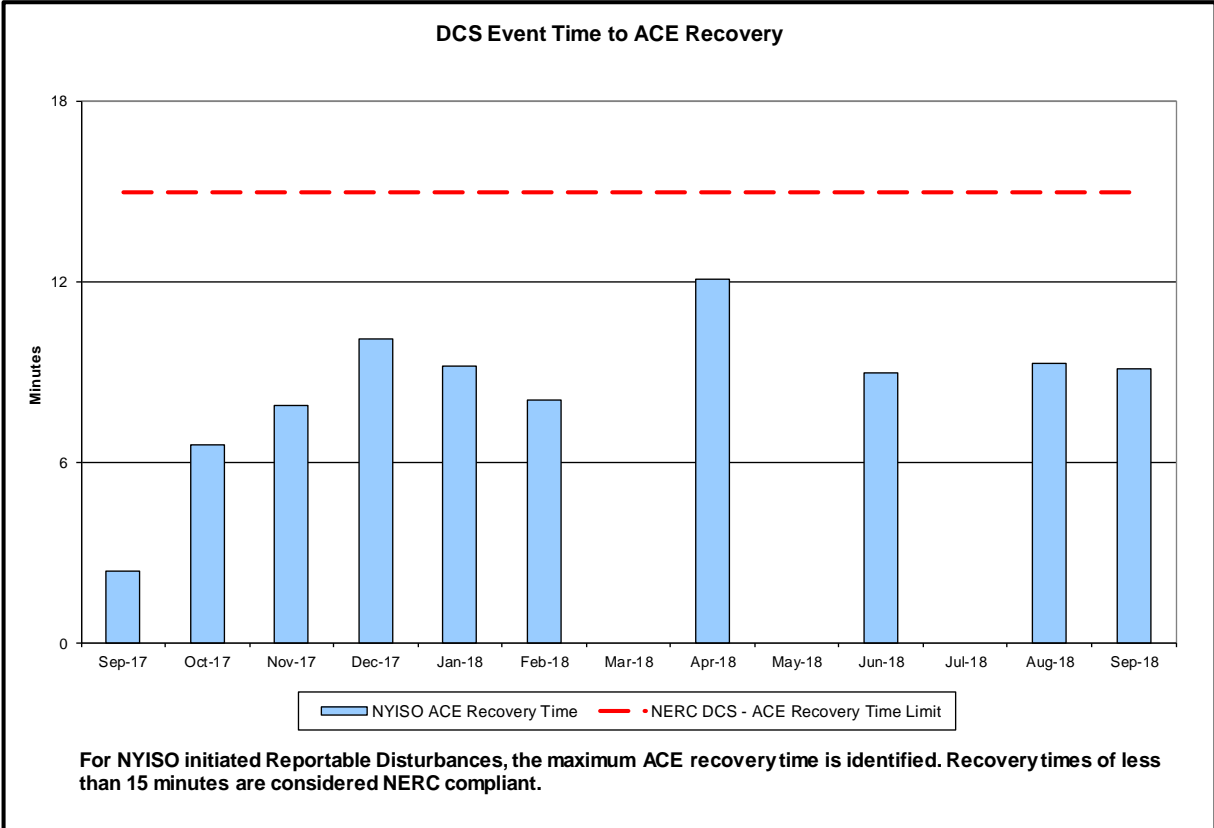


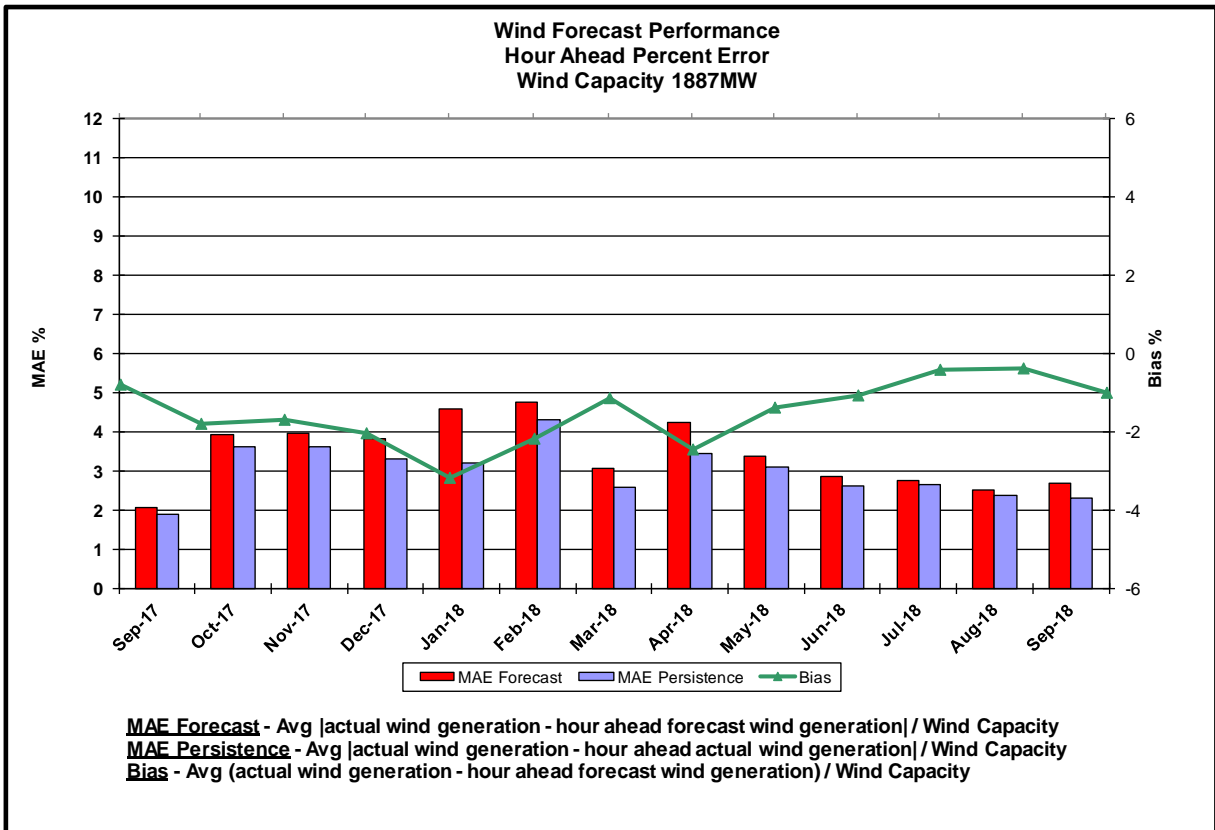
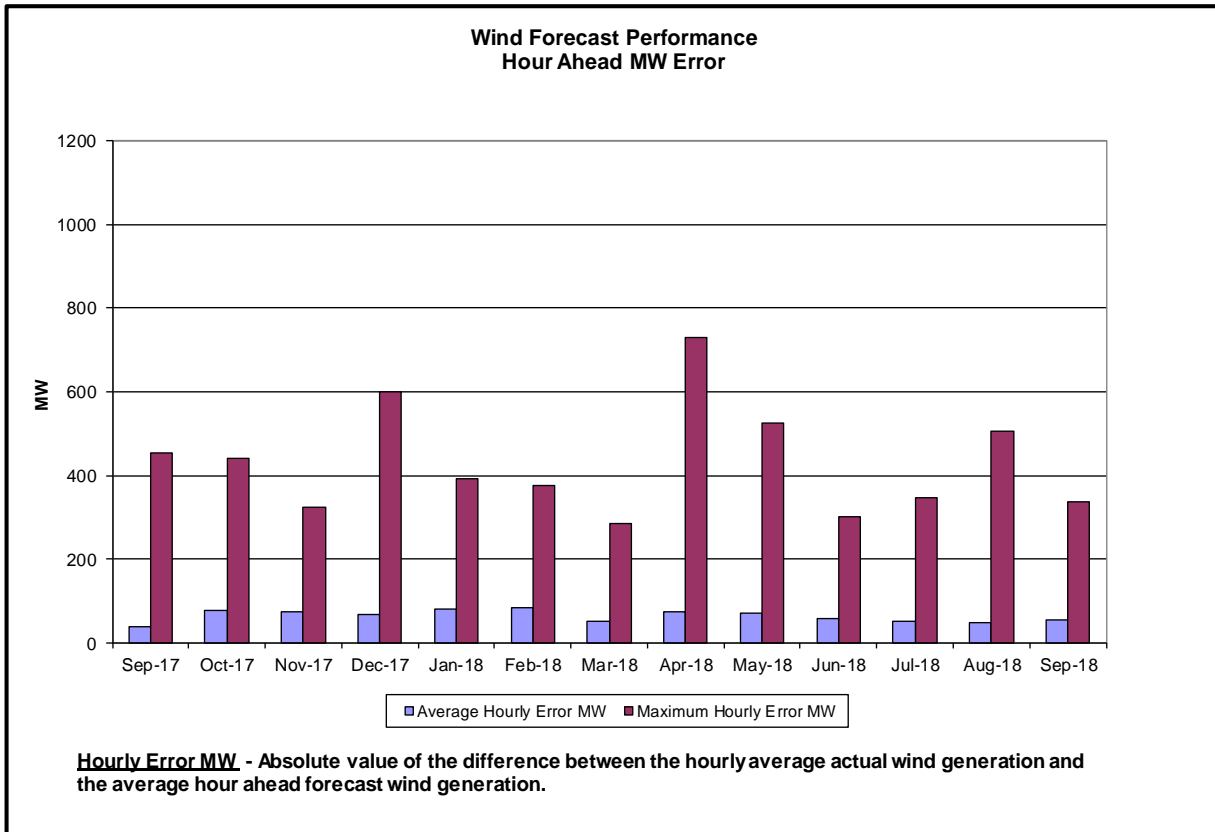
The amount of time the clock-minute average ACE exceeds the clock-minute Balancing Authority ACE Limit (BAAL) is an indicator of the NYISO Area resource and demand balancing. The maximum BAAL exceedance time is identified. BAAL exceedances of less than 30 consecutive clock-minutes are NERC compliant.

### Reserve Activations

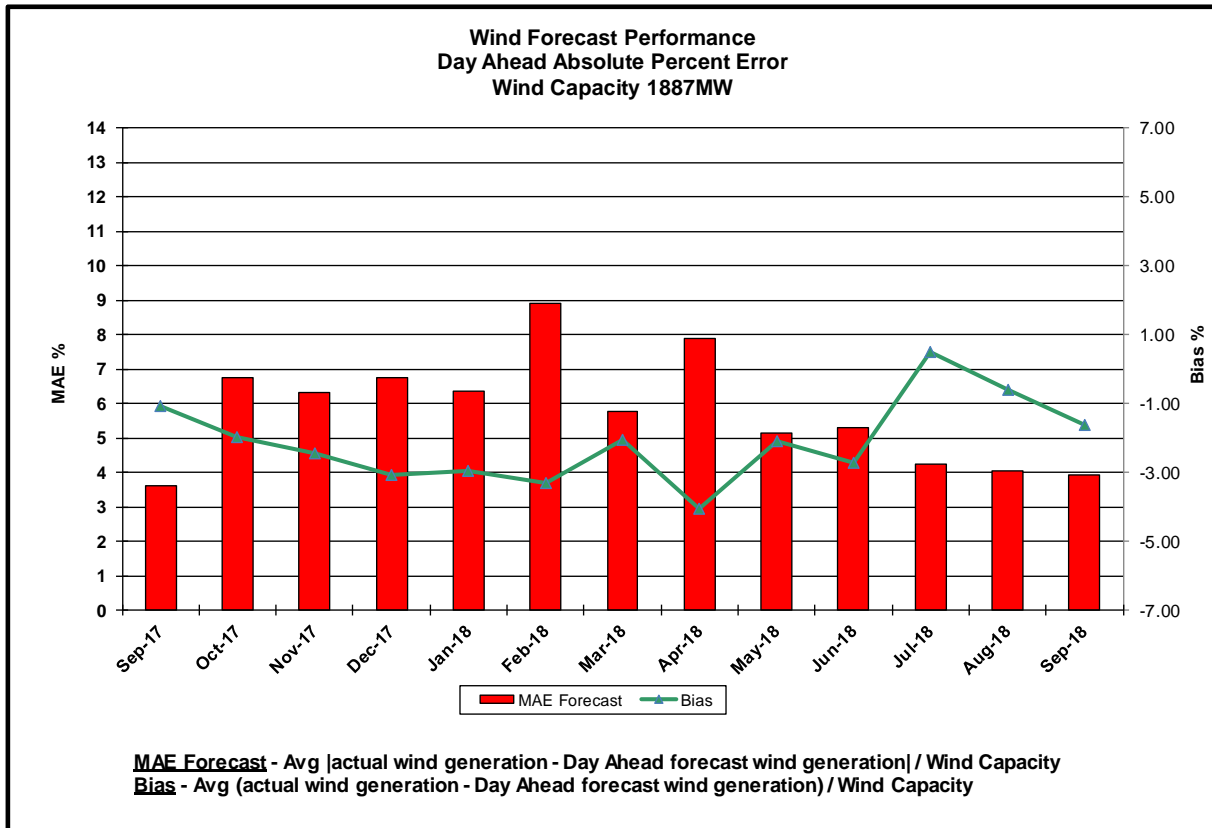
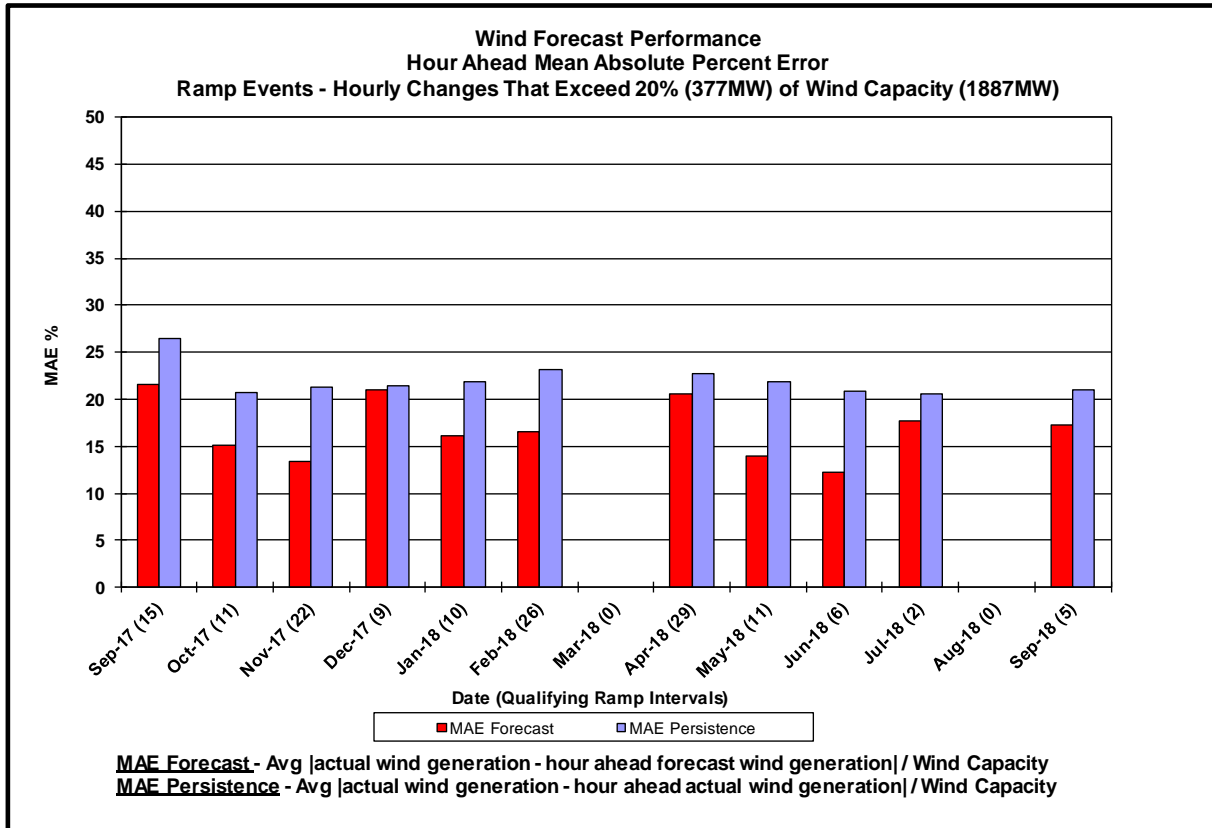


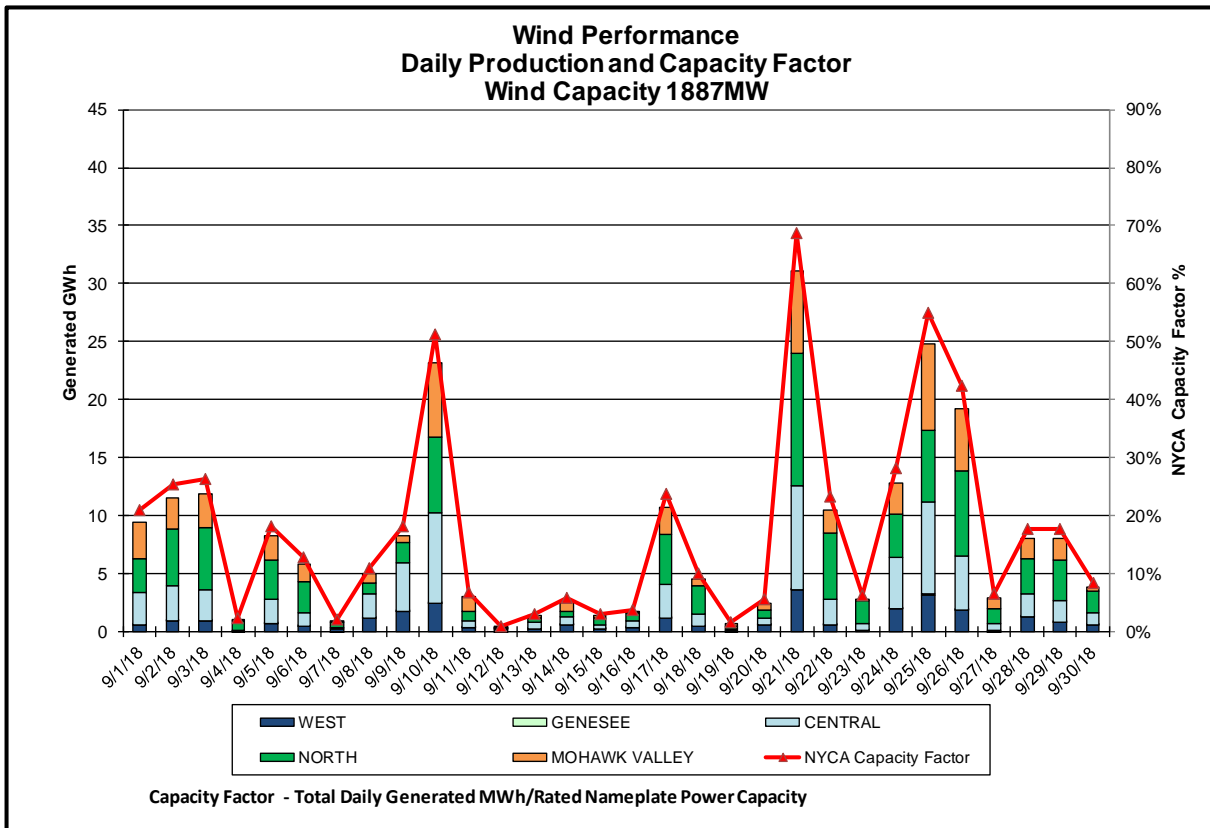
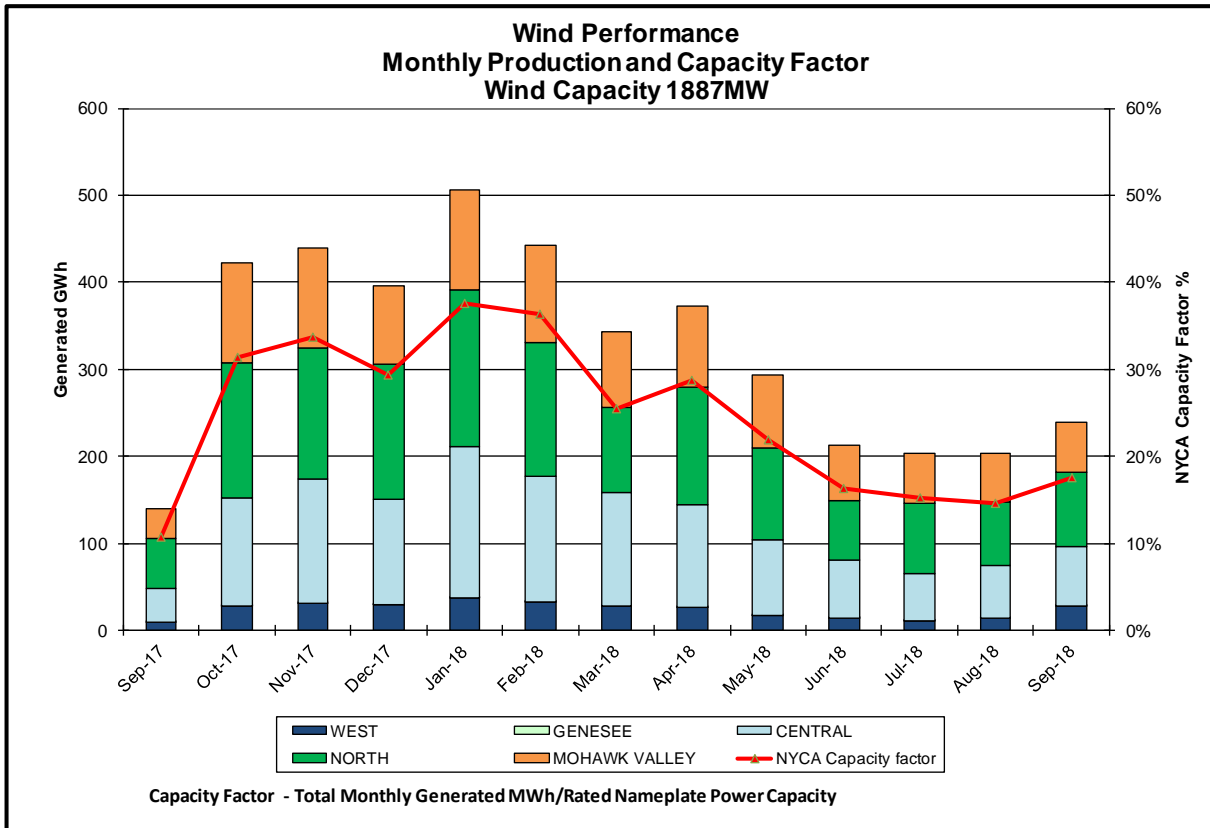
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.

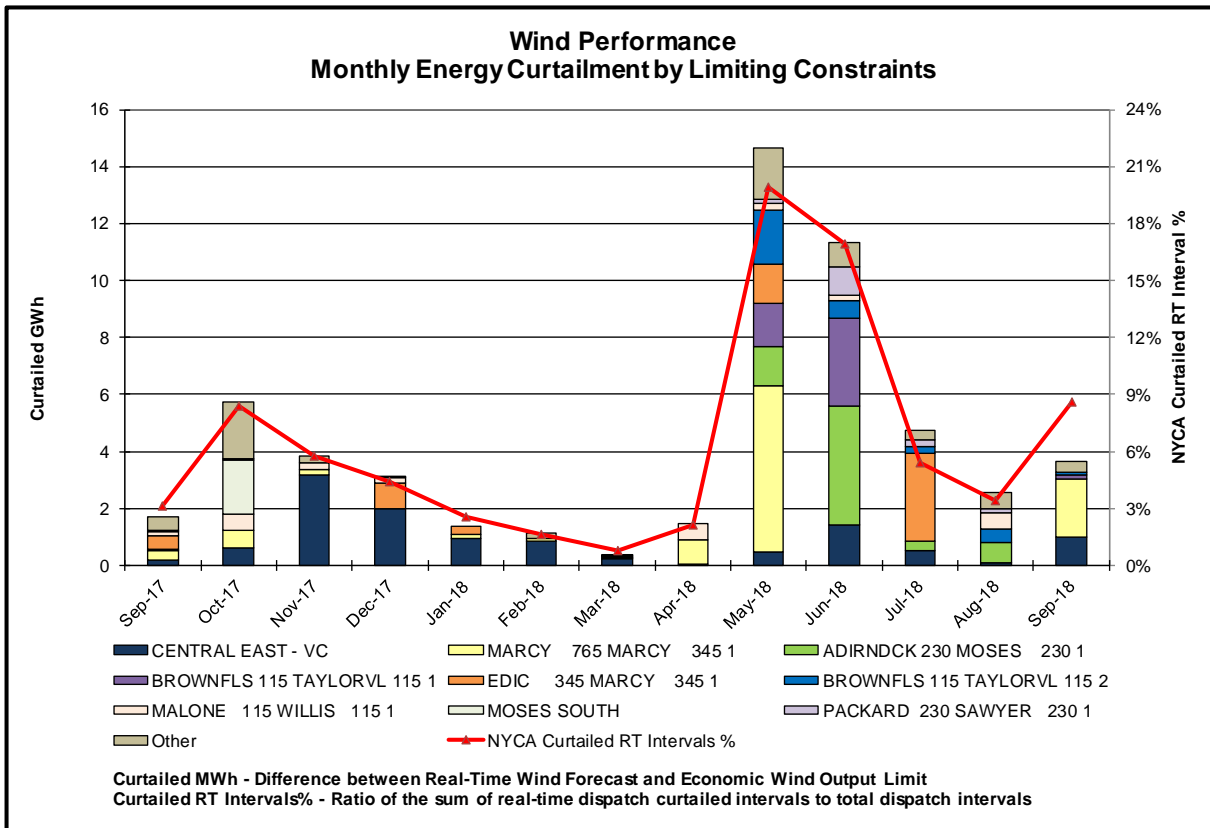
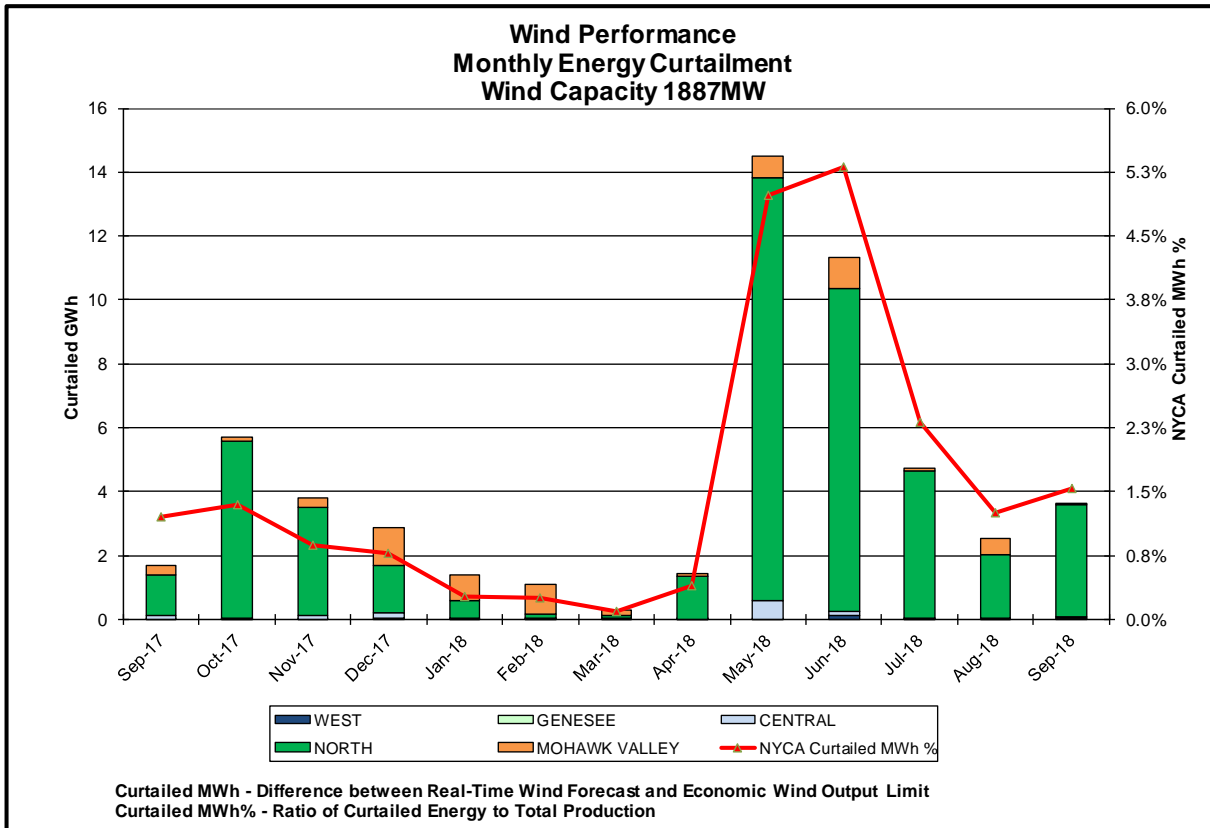


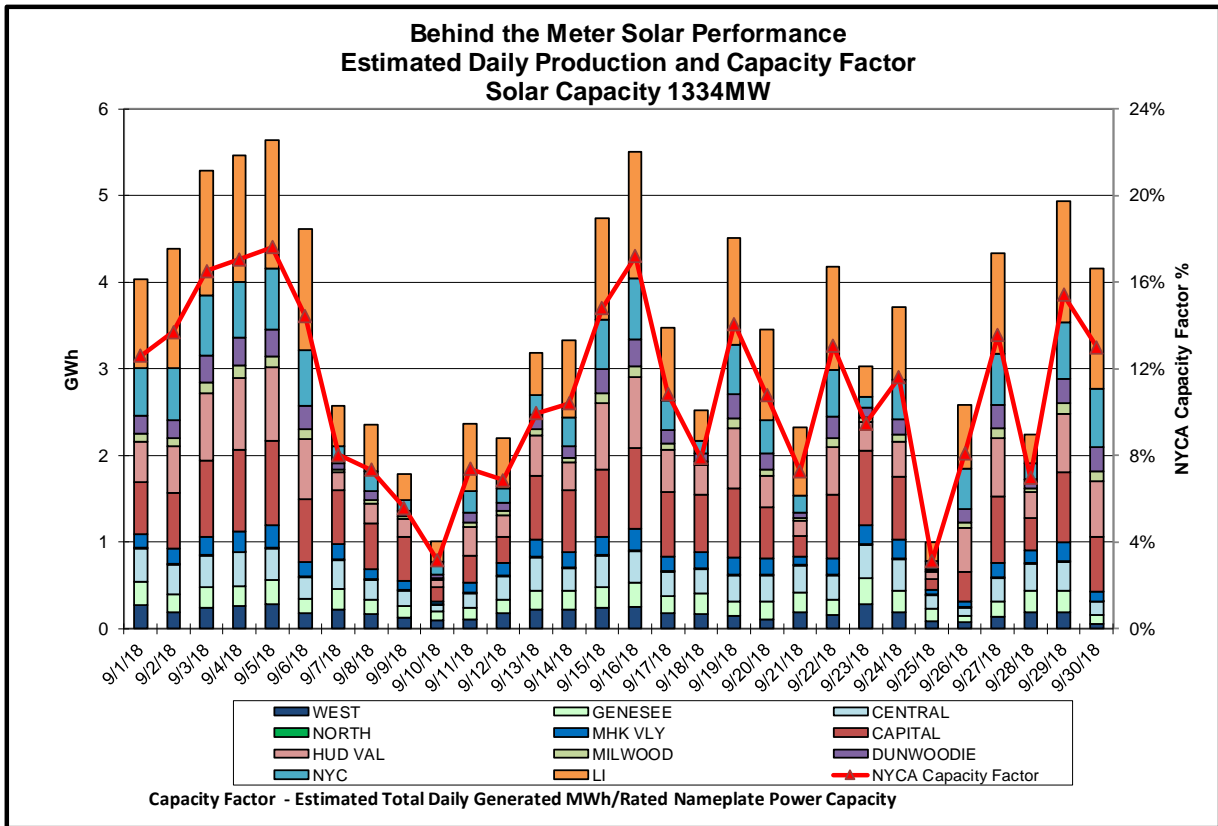
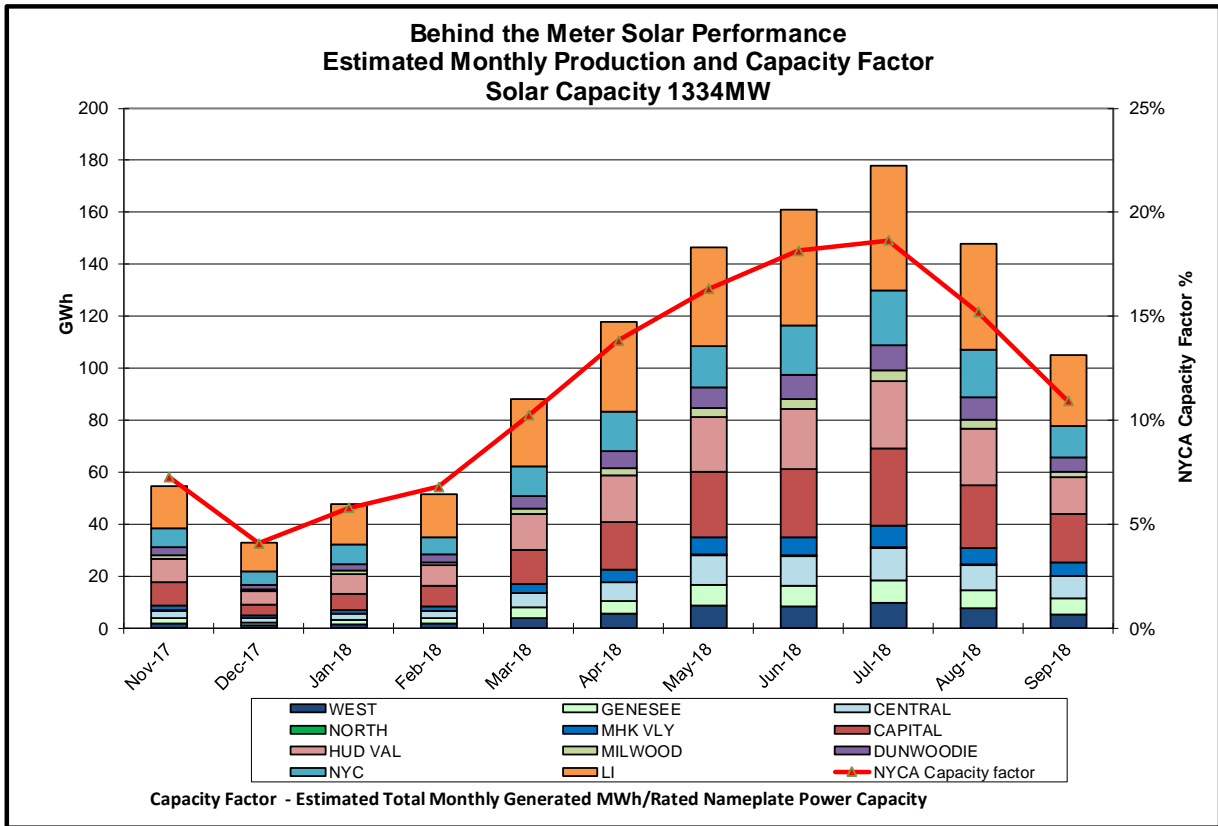


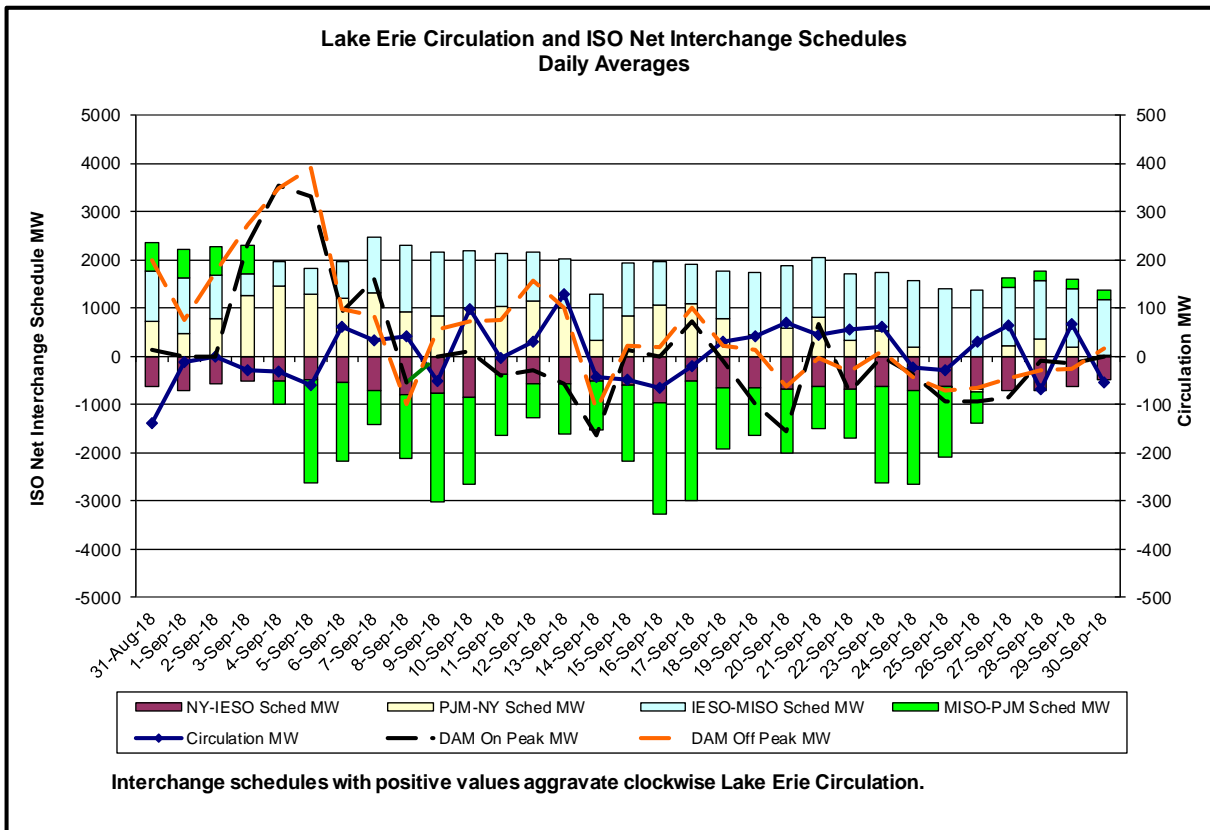
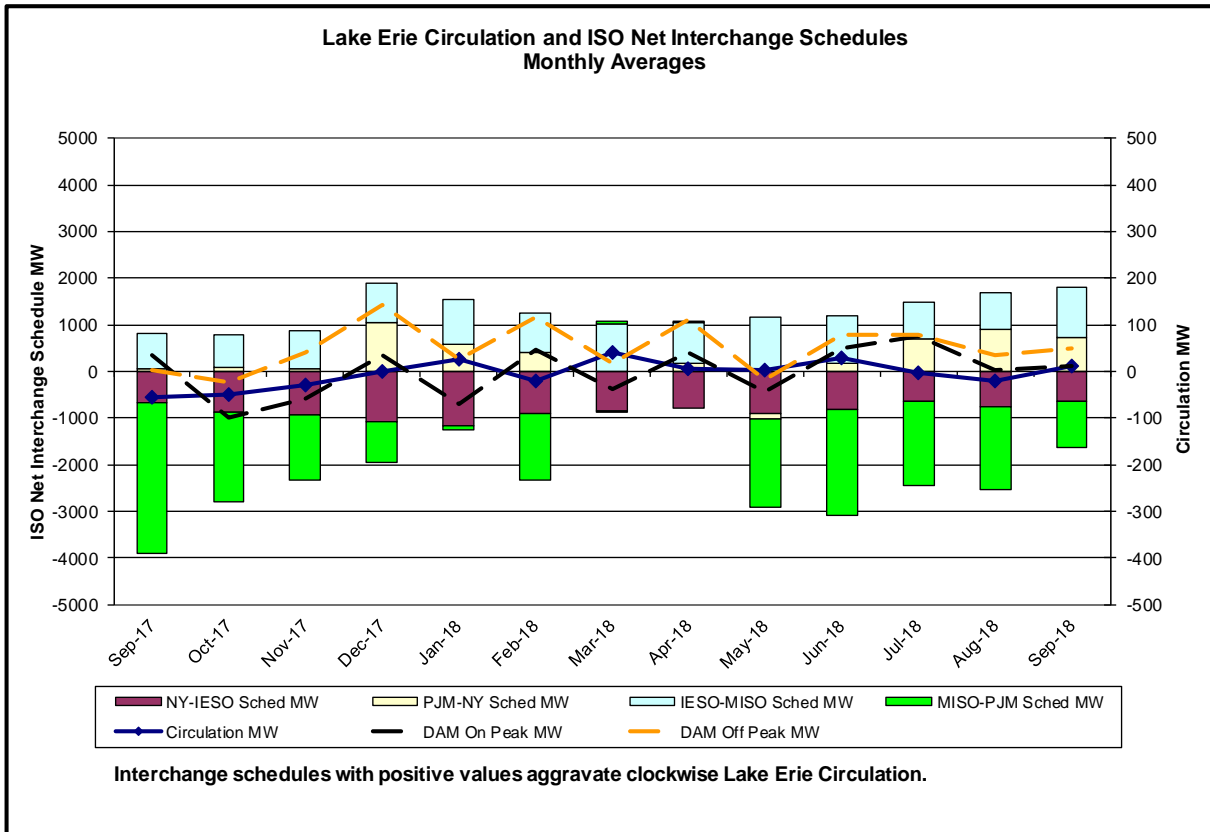




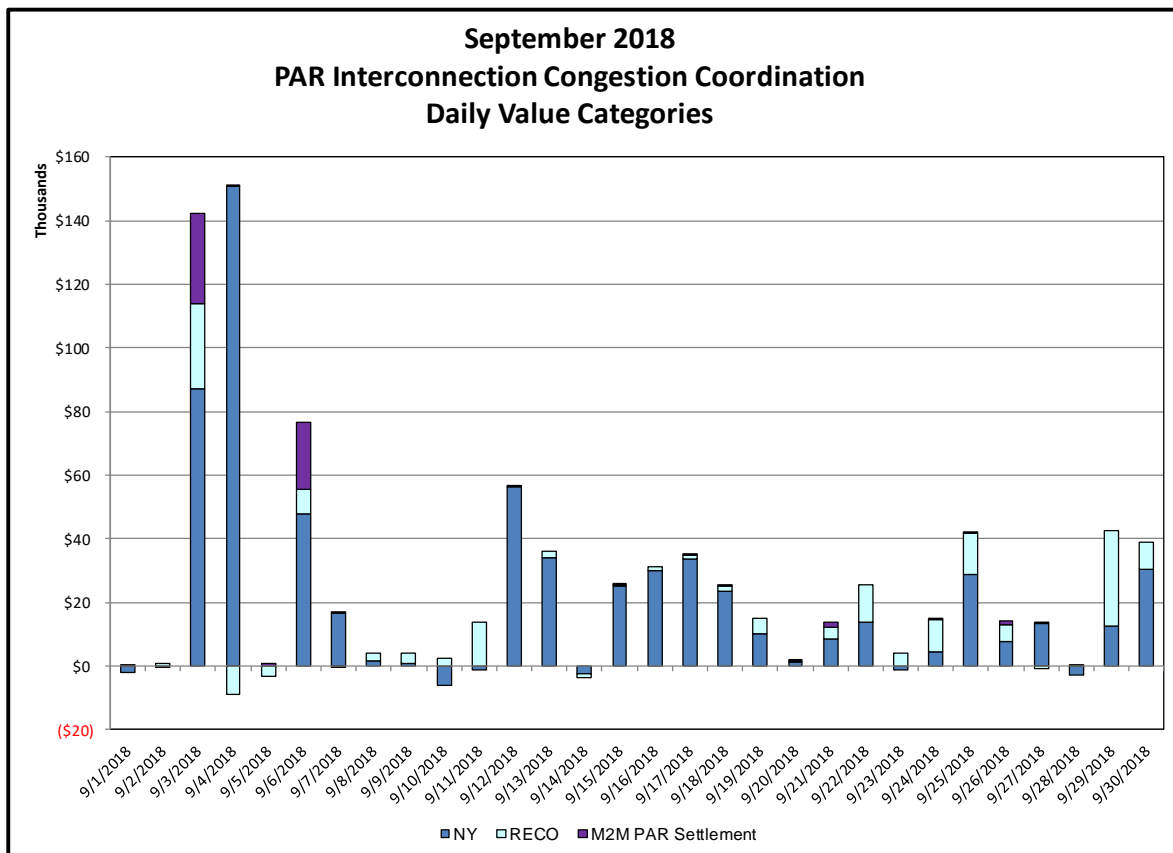
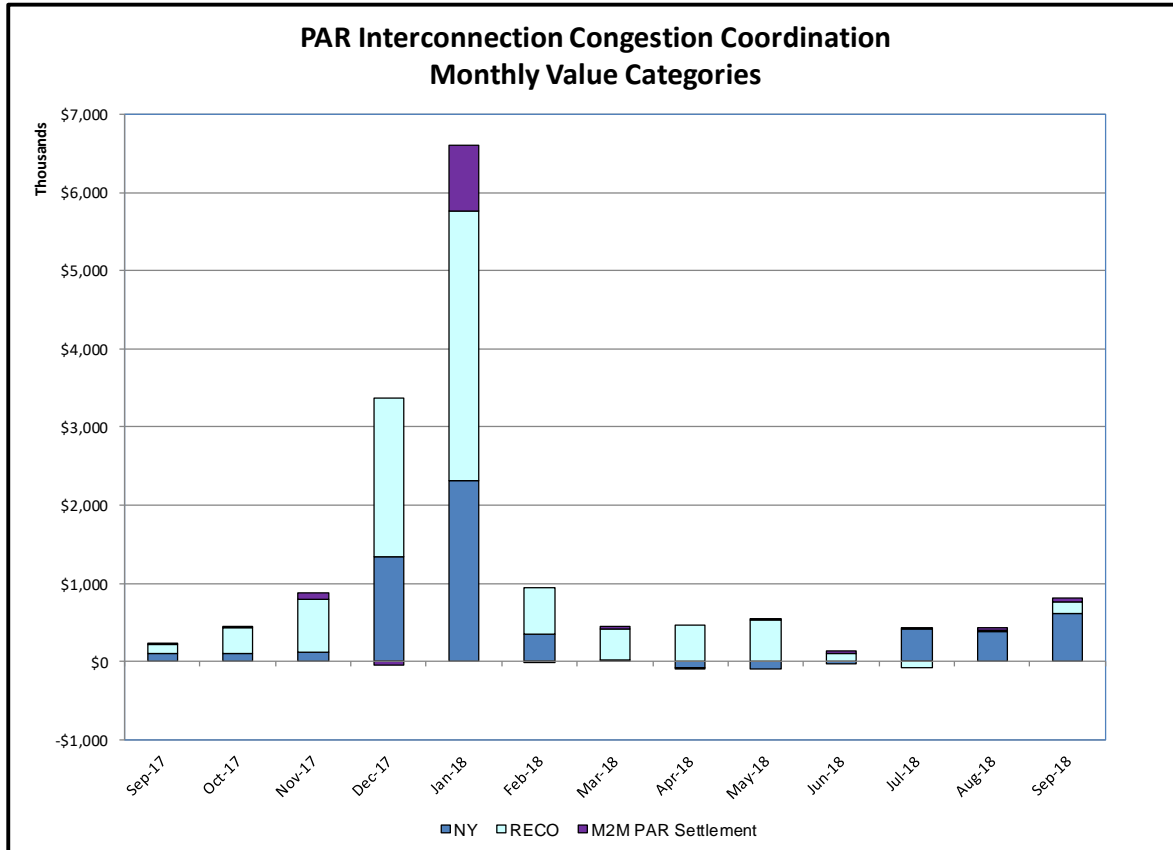






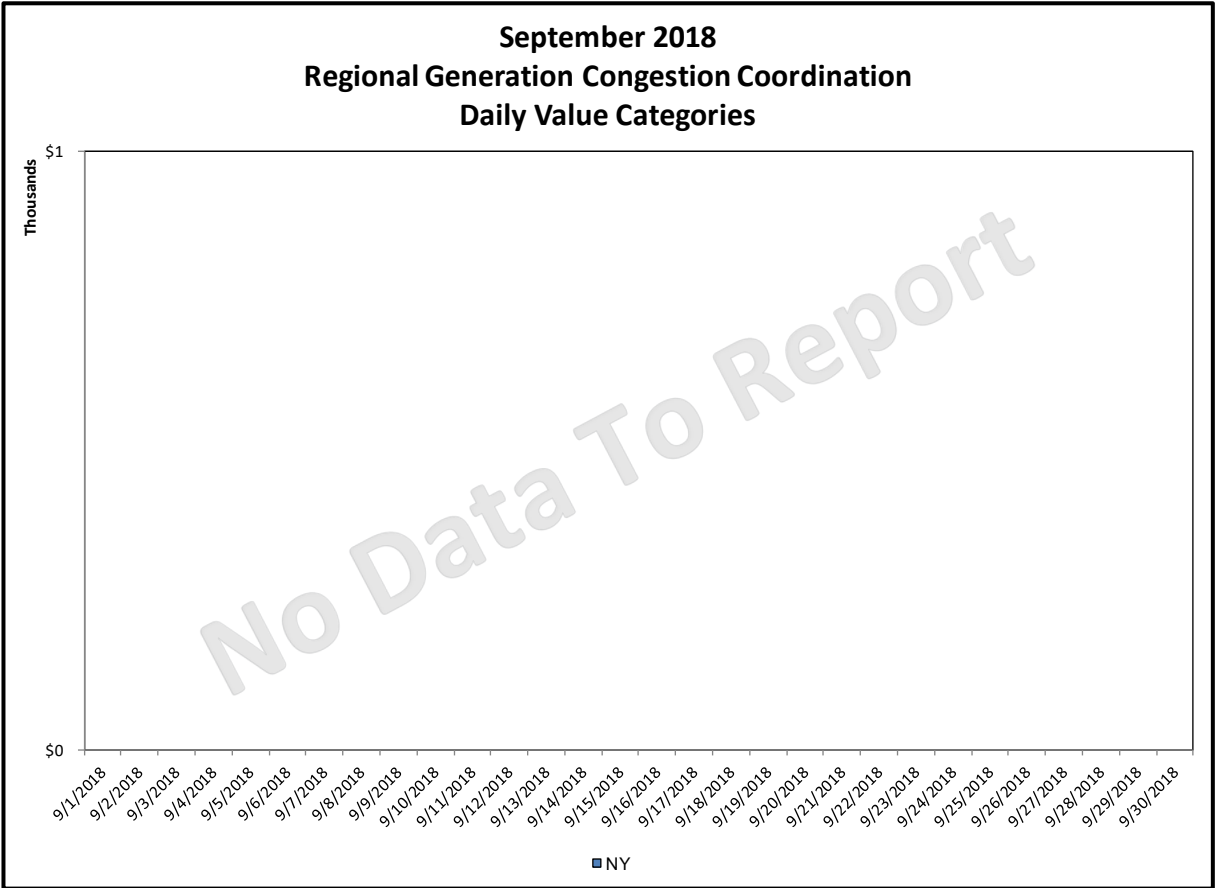
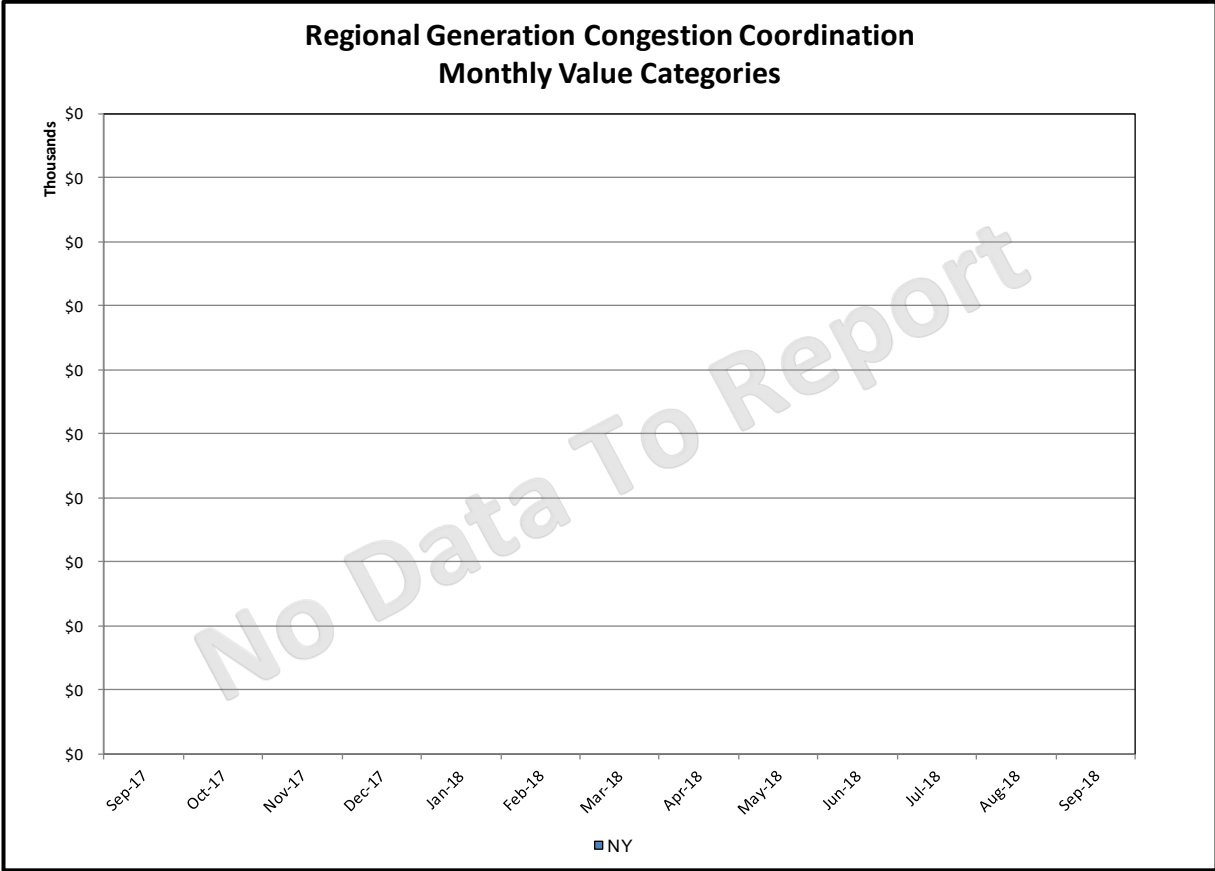


## Broader Regional Market Performance Metrics



**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.





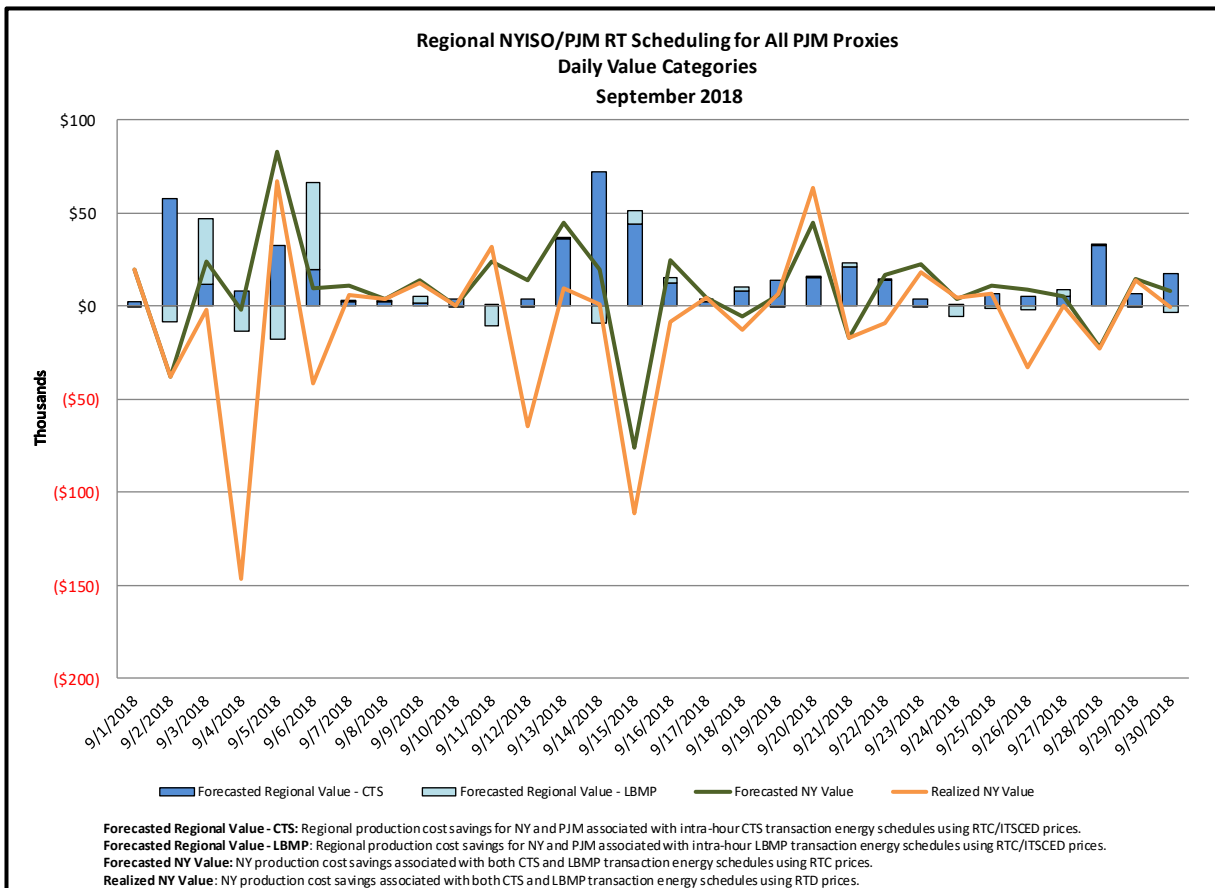
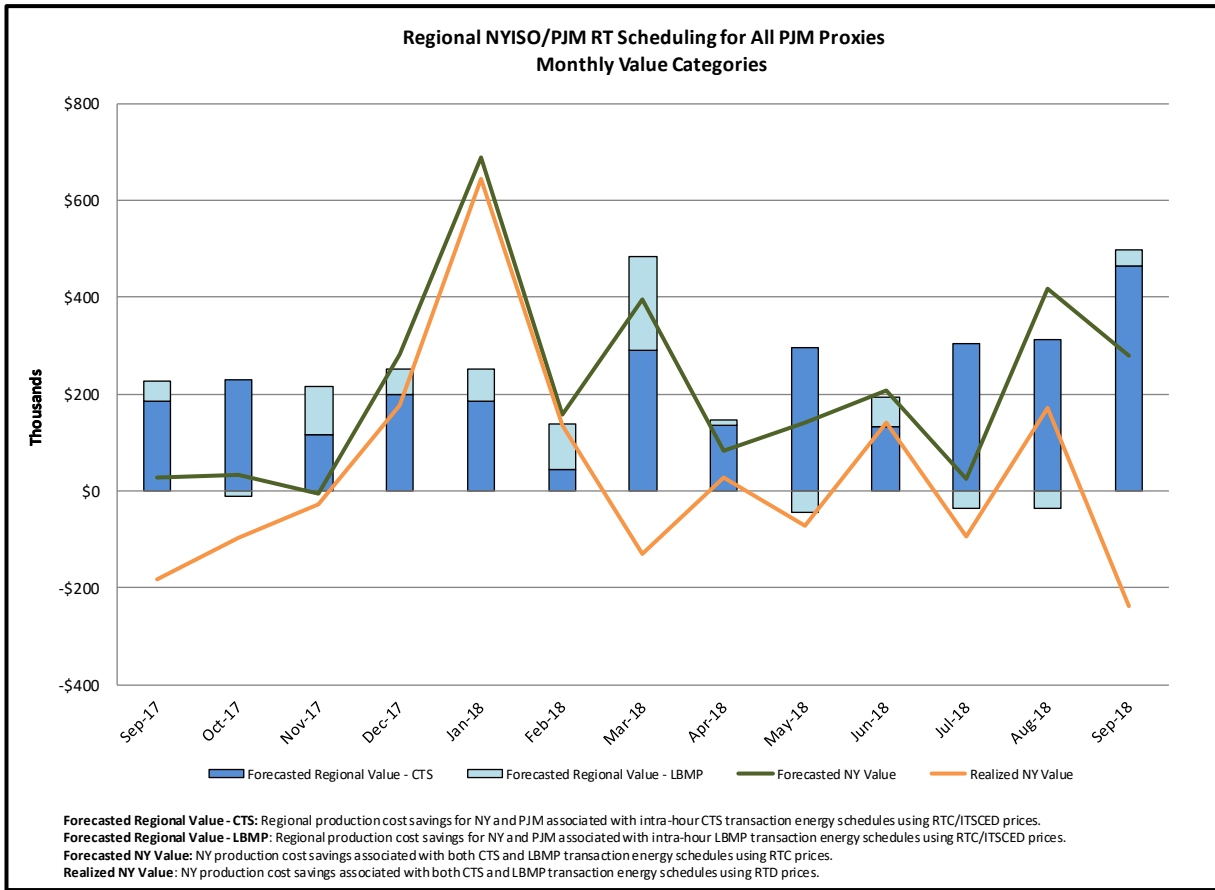
**Regional Generation Congestion Coordination**

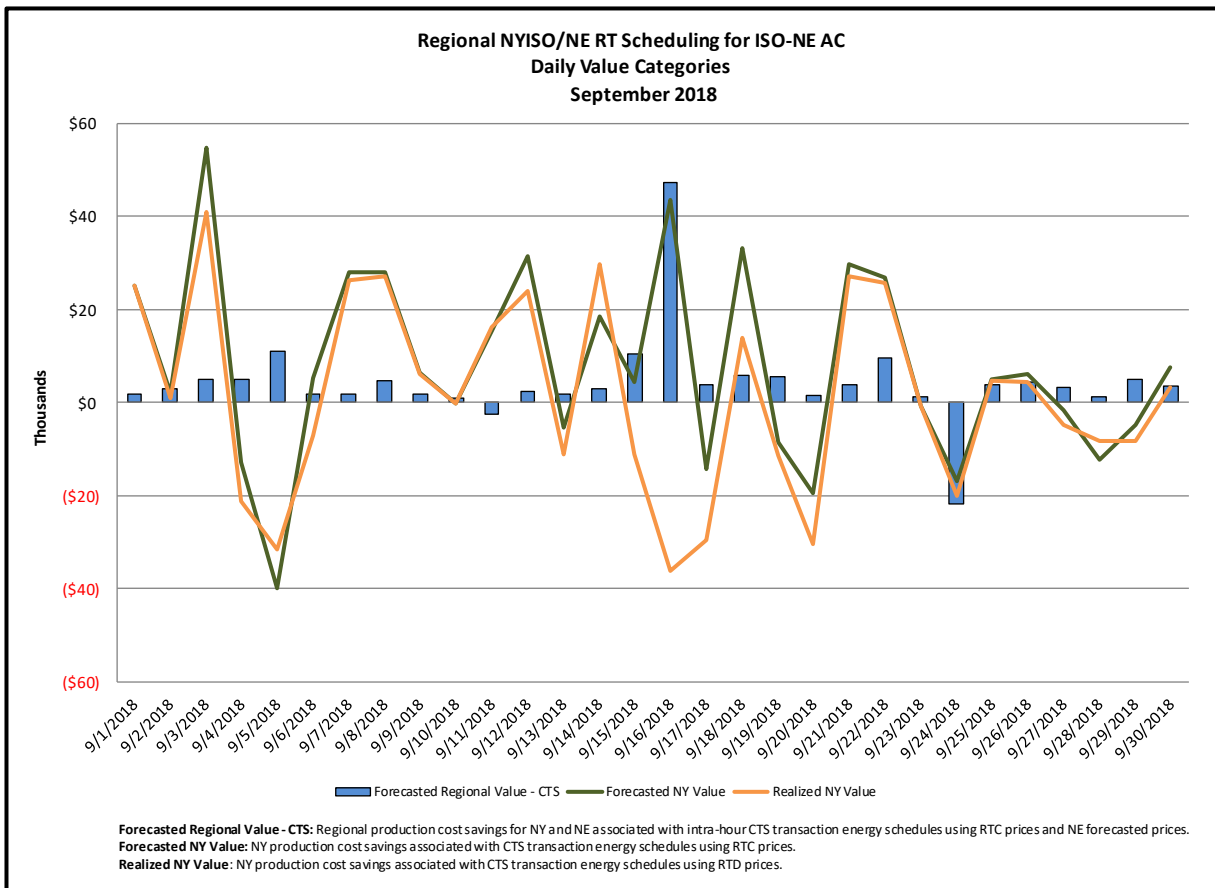
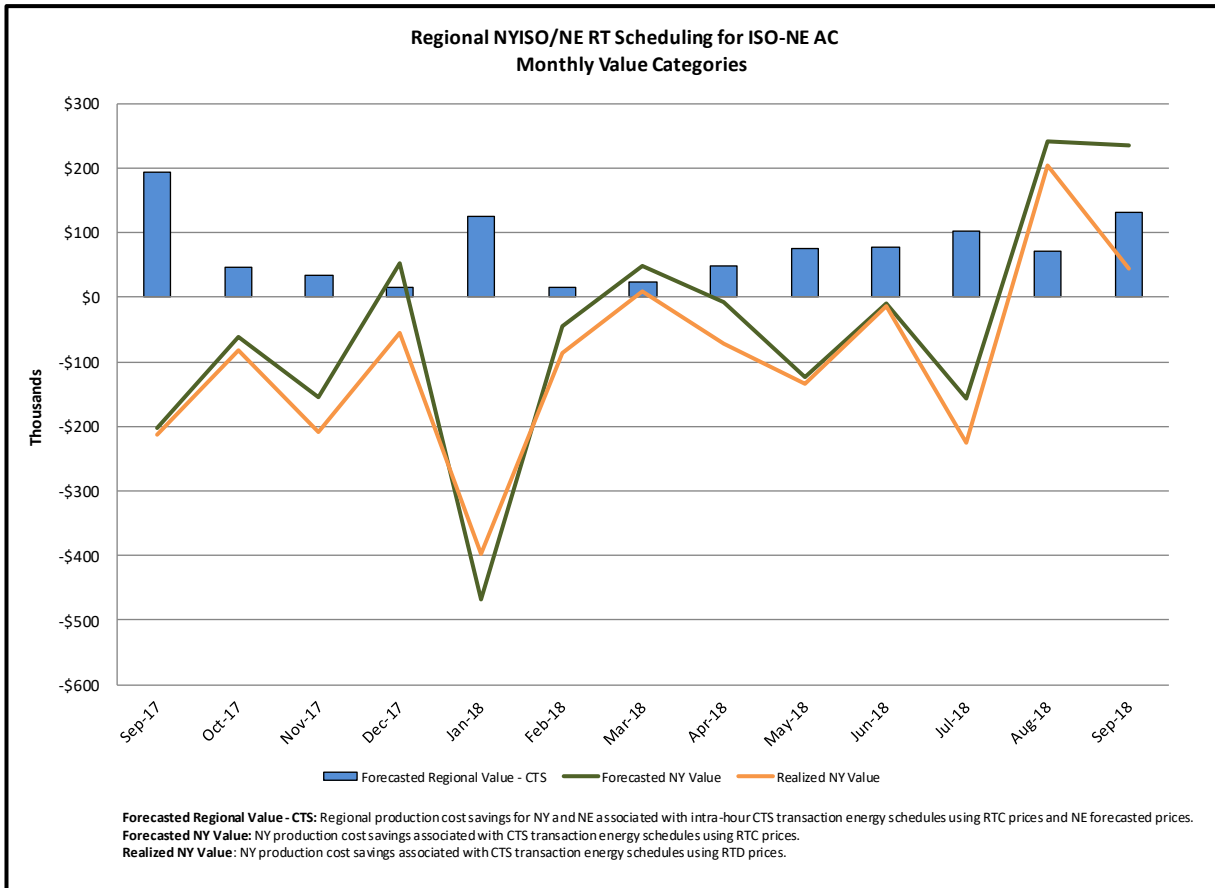
**Category**

**NY**

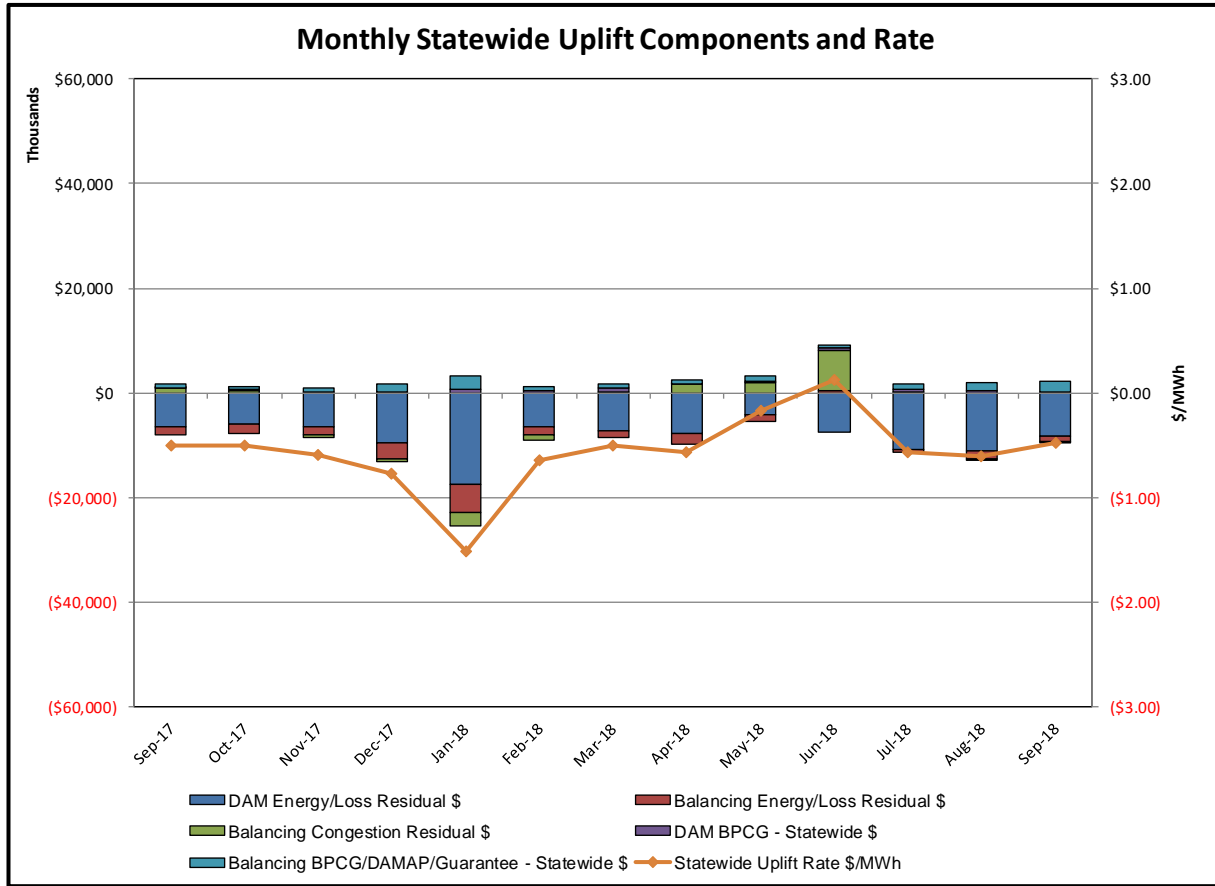
**Description**

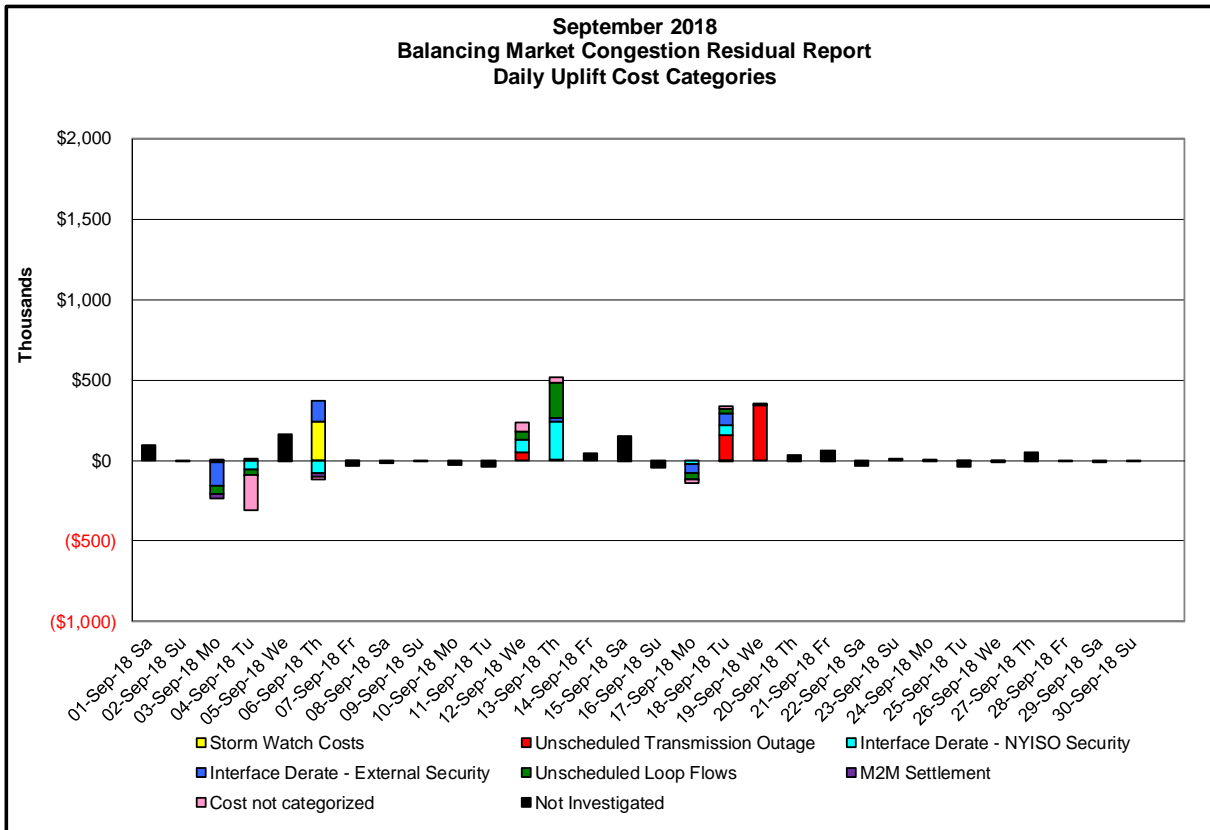
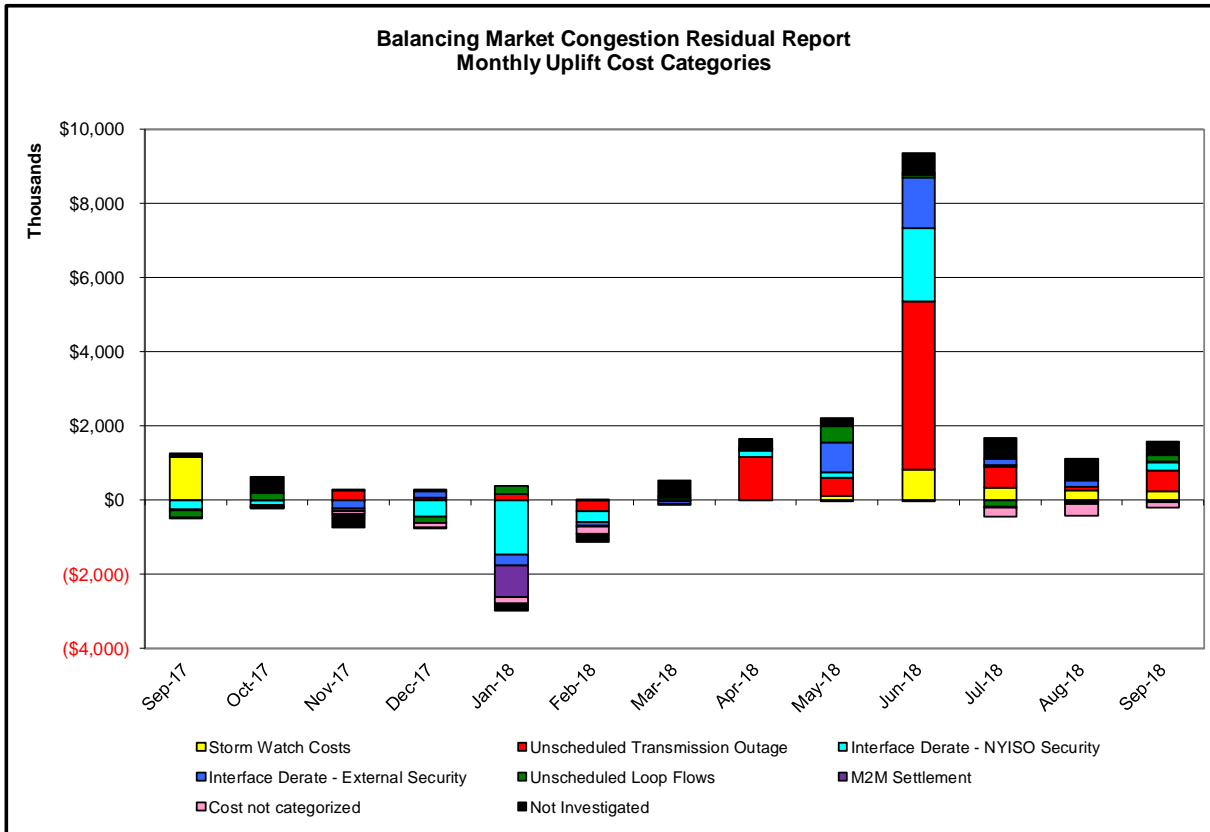
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





### Market Performance Metrics





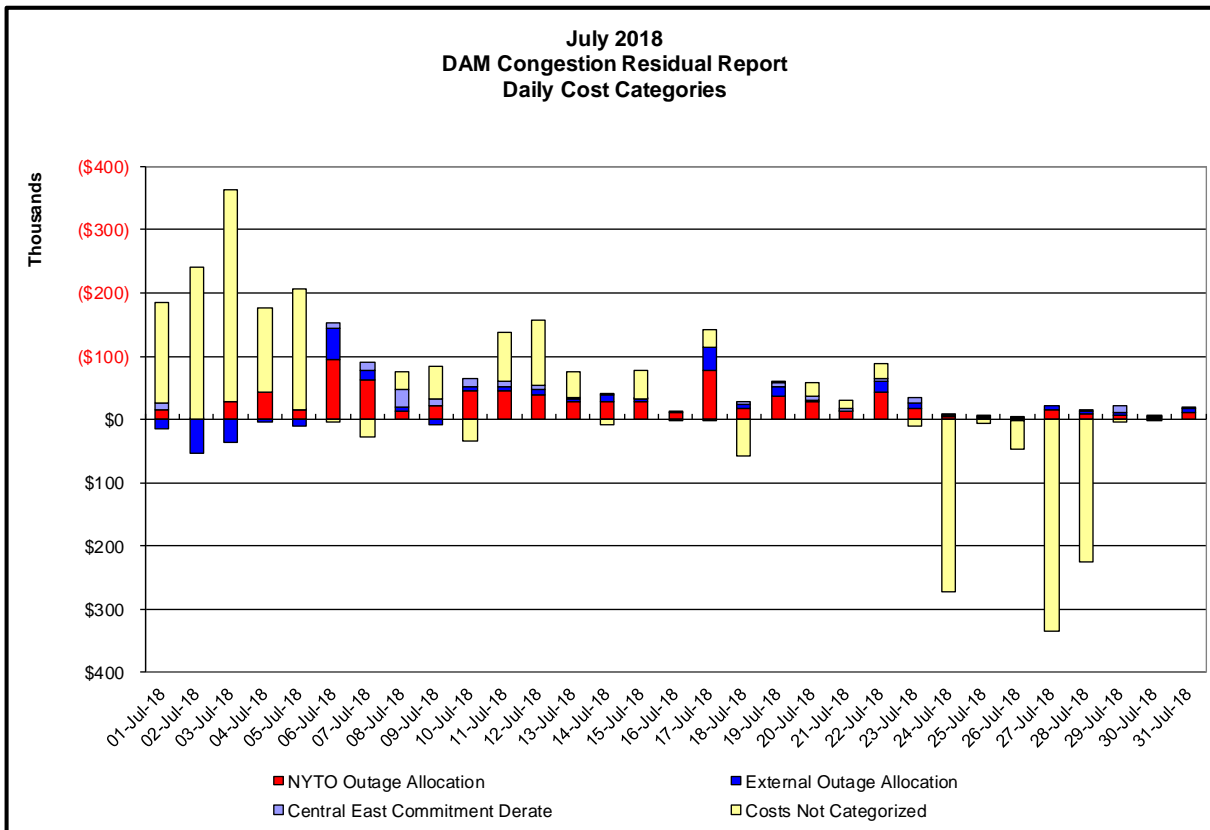
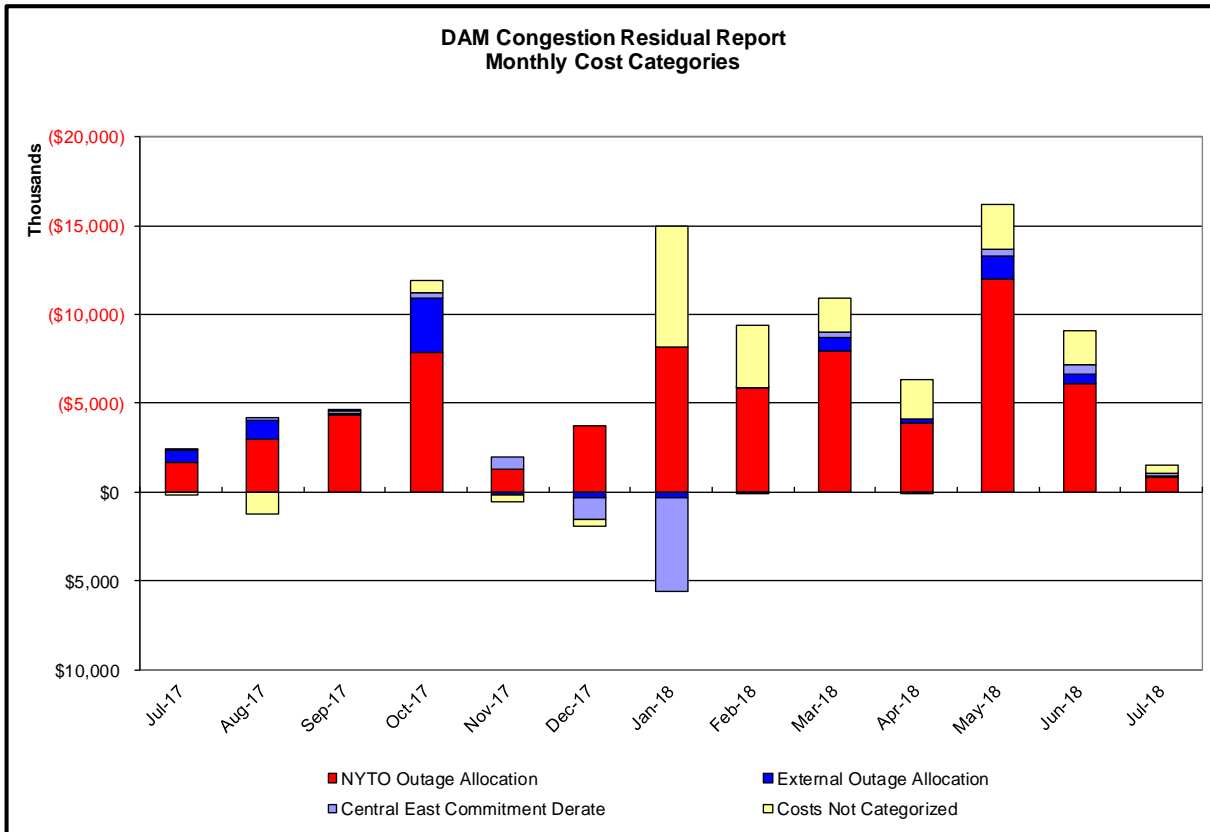
Day's investigated in September:3,4,6,12,13,17,18,19			
Event	Date (yyyymmdd)	Hours	Description
	9/3/2018	19	NYCA DNI Ramp Limit
	9/3/2018	22	HQ_Chat-NY Scheduling Limit
	9/3/2018	16,18	NE_AC - NY Scheduling Limit
	9/3/2018	9,12	NE_AC DNI Ramp Limit
	9/3/2018	19	NE_NNC1385-NY Scheduling Limit
	9/3/2018	18,19	PJM_AC - NY Scheduling Limit
	9/3/2018	18,19	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	9/4/2018	14	NYCA DNI Ramp Limit
	9/4/2018	1-3	Uprate Central East
	9/4/2018	1,3,6	Uprate Gowanus-Greenwood 138kV (#42231)/(#42232) I/o TWR:GOETHALS 22 & 21
	9/4/2018	13,14	Uprate Packard-Sawyer 230kV (#77) I/o BUS:PACKARD BK3 & 61 & 78
	9/4/2018	13	Uprate Packard-Sawyer 230kV (#78) I/o Packard-Sawyer 230kV (#77)
	9/4/2018	7,10	Derate Freshkills-Willowbrook 138kV (#29211)
	9/4/2018	7	Derate Freshkills-Willowbrook 138kV (#29212)
	9/4/2018	14	NE_AC DNI Ramp Limit
	9/4/2018	7	PJM_AC - NY Scheduling Limit
	9/4/2018	1-3	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	9/4/2018	13	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer
	9/6/2018	17-19	Thunder Storm Alert
	9/6/2018	19	NYCA DNI Ramp Limit
	9/6/2018	13	Uprate Central East
	9/6/2018	12,13	Uprate Packard-Sawyer 230kV (#77) I/o BUS:PACKARD BK3 & 61 & 78
	9/6/2018	17	NE_AC - NY Scheduling Limit
	9/6/2018	16	HQ_Chat-NY Scheduling Limit
	9/6/2018	17,19	NE_AC DNI Ramp Limit
	9/12/2018	10-16	Forced outage Sprainbrook-East Garden City 345kV (#Y49)
	9/12/2018	14	NYCA DNI Ramp limit
	9/12/2018	12,13	Derate E179thSt-Dunwoodie South 138kV (#99153)
	9/12/2018	9-12	Derate E179thSt-Hellgate 138kV (#15055)
	9/12/2018	9-16	Derate Packard-Sawyer 230kV (#77) I/o Packard-Sawyer 230kV (#78)
	9/12/2018	9-16	Derate East 13th Street-West 49th Street 345kV (#M54)
	9/12/2018	10,11,13-16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer
	9/13/2018	0	Forced outage Sprainbrook-East Garden City 345kV (#Y49)
	9/13/2018	0	Derate East 13th Street-West 49th Street 345kV (#M54)
	9/13/2018	9-15,17-19	Derate Packard-Sawyer 230kV (#77) I/o Packard-Sawyer 230kV (#78)
	9/13/2018	12,13	Derate Scriba-Volney 345kV (#20) for I/o Scriba-Volney 345kV (#21)
	9/13/2018	17-19	HQ_CEDARS-NY Scheduling Limit
	9/13/2018	10-15,17-19	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer
	9/13/2018	10	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard
	9/17/2018	0-2	Uprate Central East
	9/17/2018	0,17,19	PJM_AC - NY Scheduling Limit
	9/17/2018	4,8	NE_AC DNI Ramp Limit
	9/17/2018	4,6	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	9/18/2018	18-23	Extended Outage Marcy 765/345kV (#AT2)
	9/18/2018	18,19,21	NYCA DNI Ramp Limit
	9/18/2018	7-10	Derate Packard-Sawyer 230kV (#77) I/o Packard-Sawyer 230kV (#78)
	9/18/2018	9	IESO AC-NY Scheduling Limit
	9/18/2018	22	NE_AC DNI Ramp Limit
	9/18/2018	8-10	PJM_AC-NY Scheduling Limit
	9/18/2018	7	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Dysinger East
	9/18/2018	7-10	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer
	9/19/2018	5,9,10,21	Extended Outage Marcy 765/345kV (#AT2)
	9/19/2018	10	IESO AC-NY Scheduling Limit
	9/19/2018	16	NE_AC DNI Ramp Limit
	9/19/2018	16	PJM_AC-NY Scheduling 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
Unscheduled Transmission Outage	Market-wide	Reduction in DAM to RTM transfers related to unscheduled transmission outage	Forced Line Outage, Unit AVR Outages
Interface Derate - NYISO Security	Market-wide	Reduction in DAM to RTM transfers not related to transmission outage	Interface Derates due to RTM voltages
Interface Derate - External Security	Market-wide	Reduction 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**

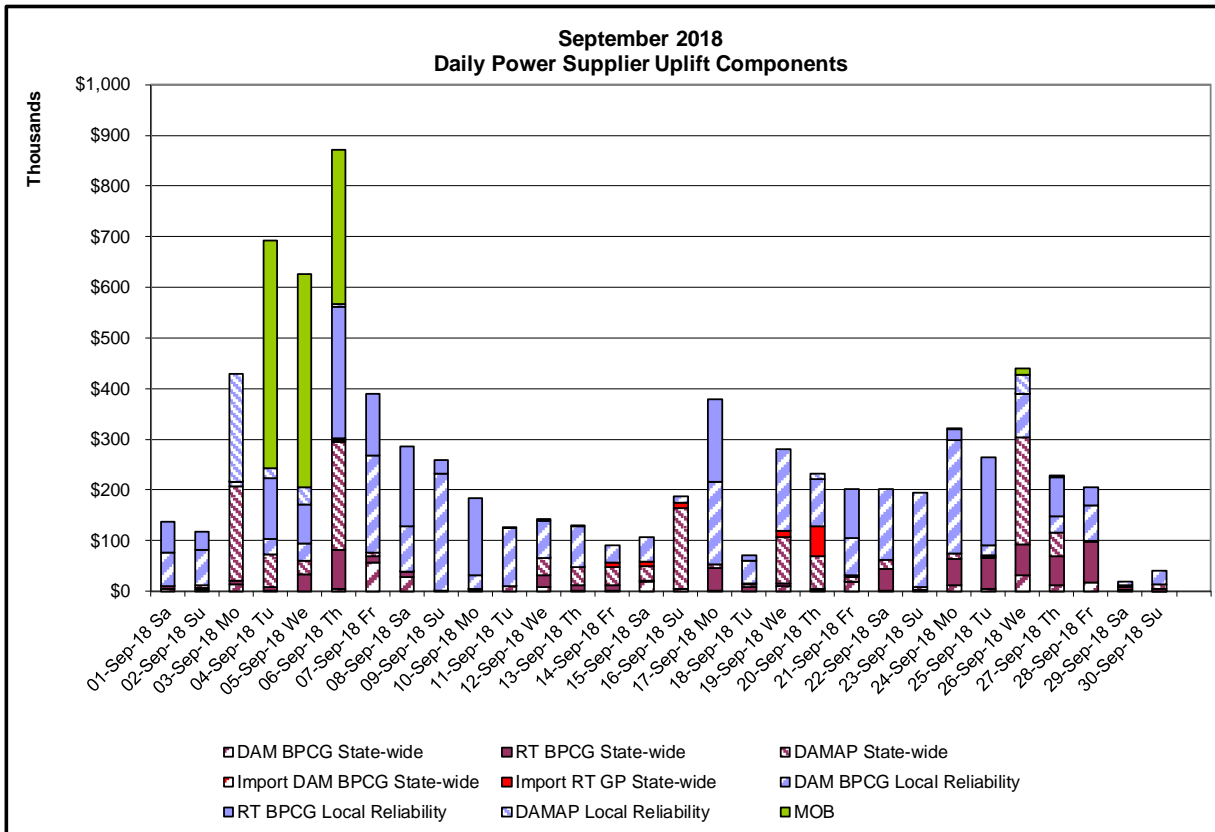
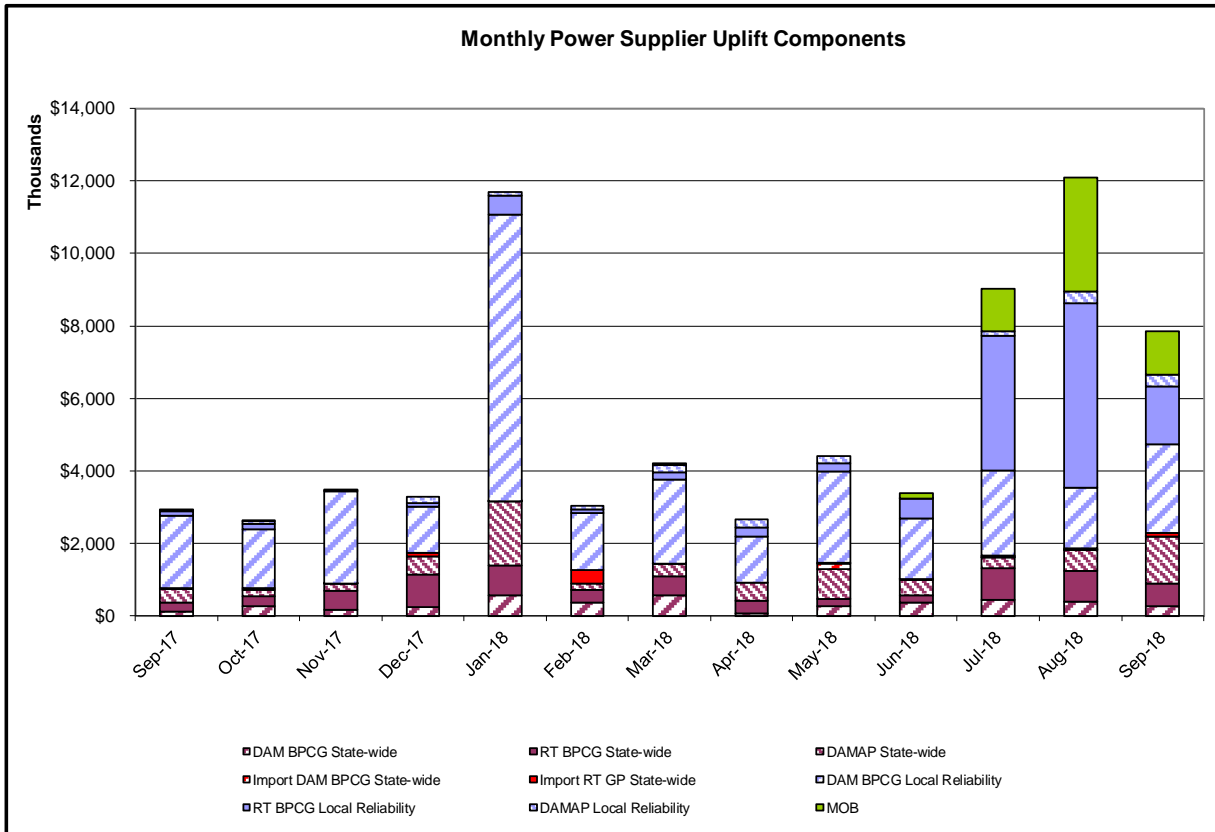
1) Storm Watch Costs are identified as daily total uplift costs  
 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.  
 3) Uplift costs associated with multiple event types are apportioned equally by hour

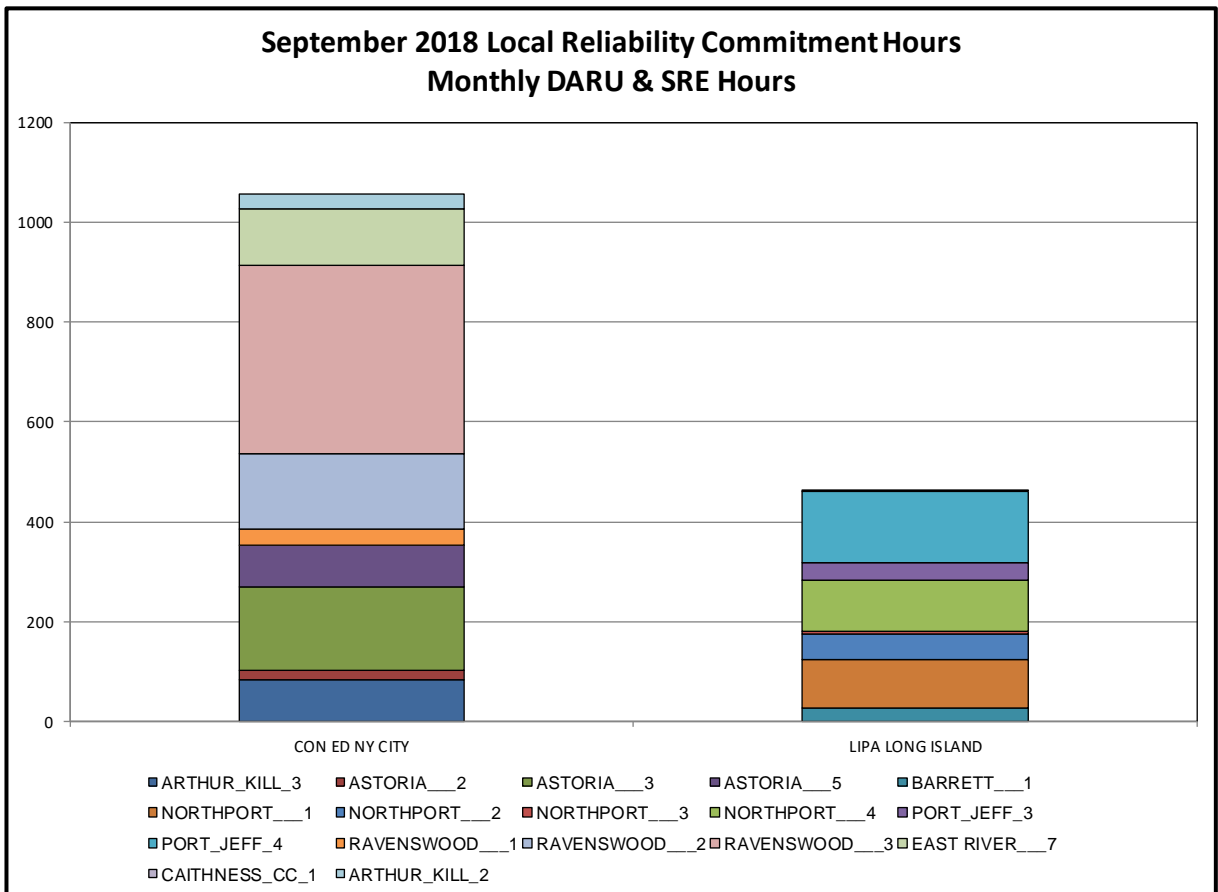
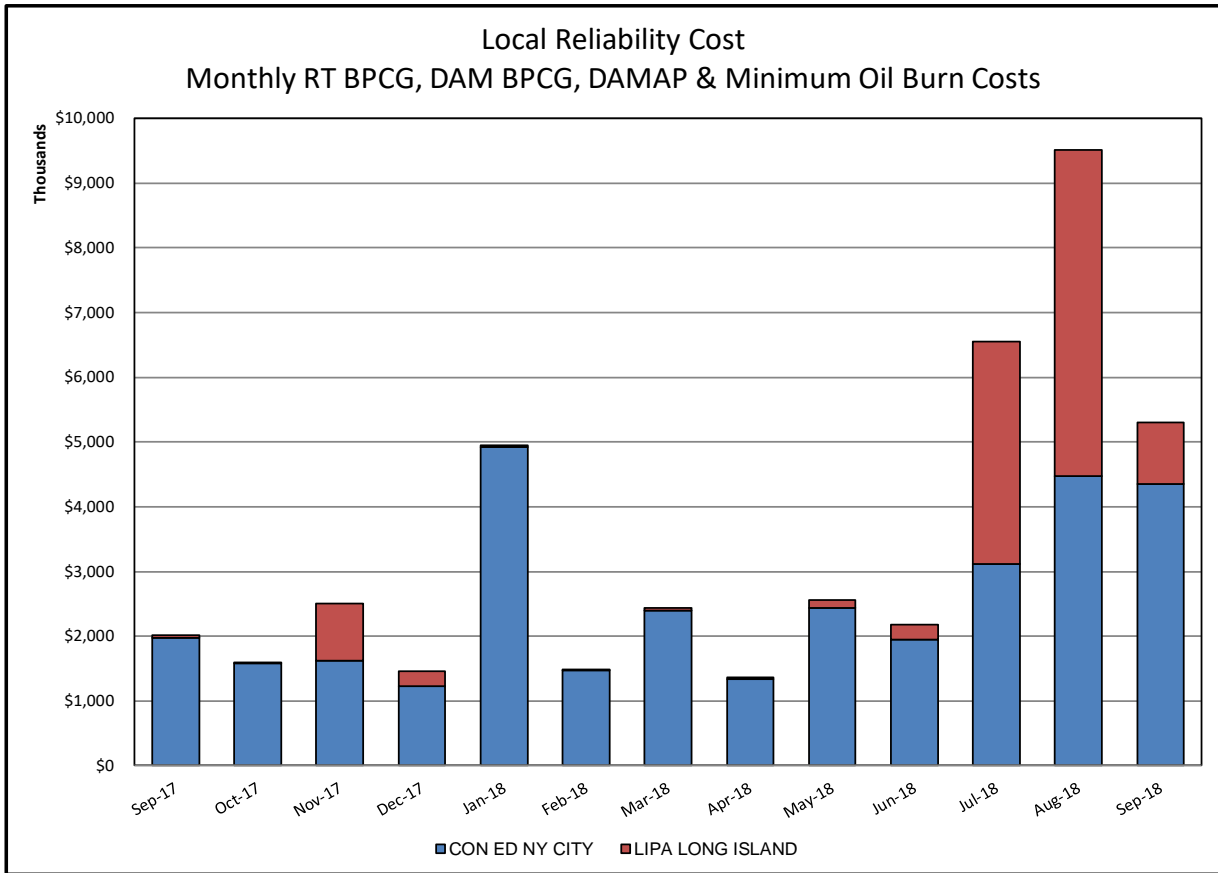


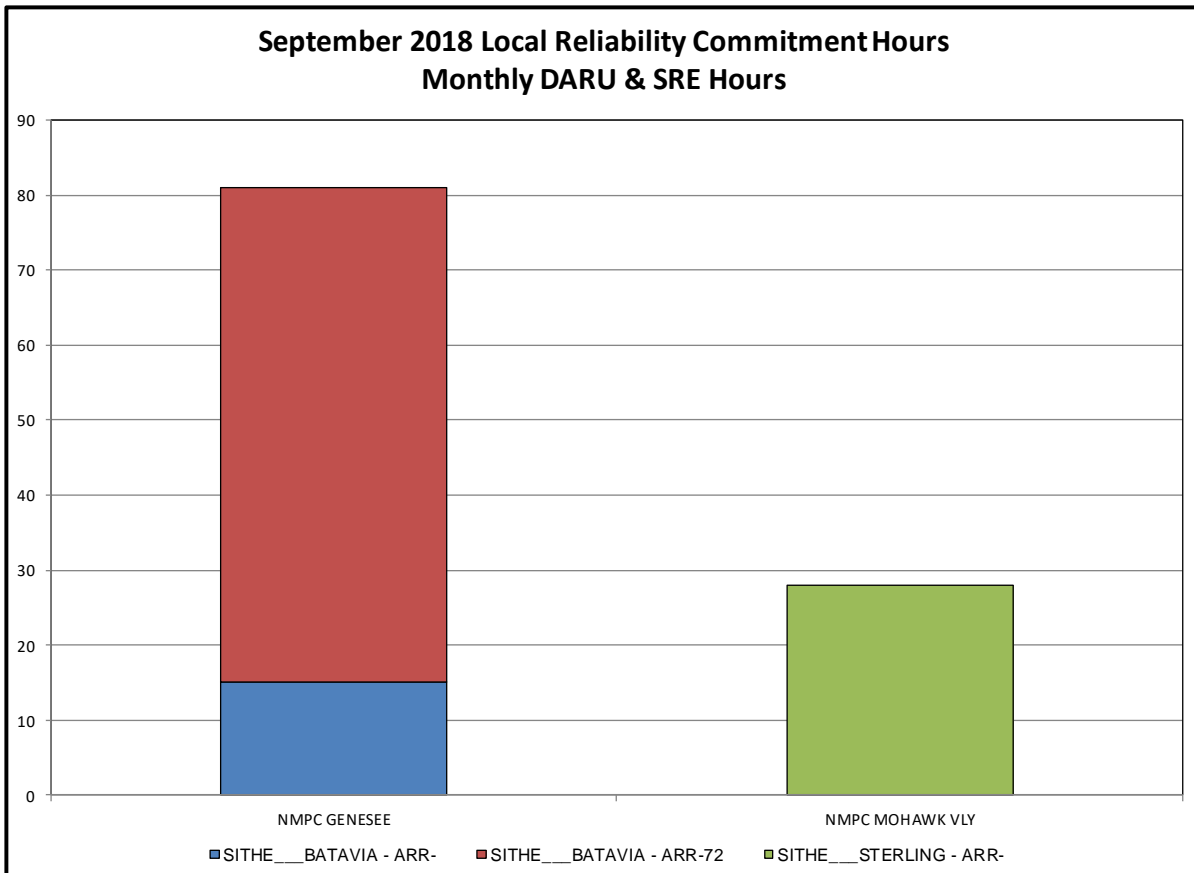
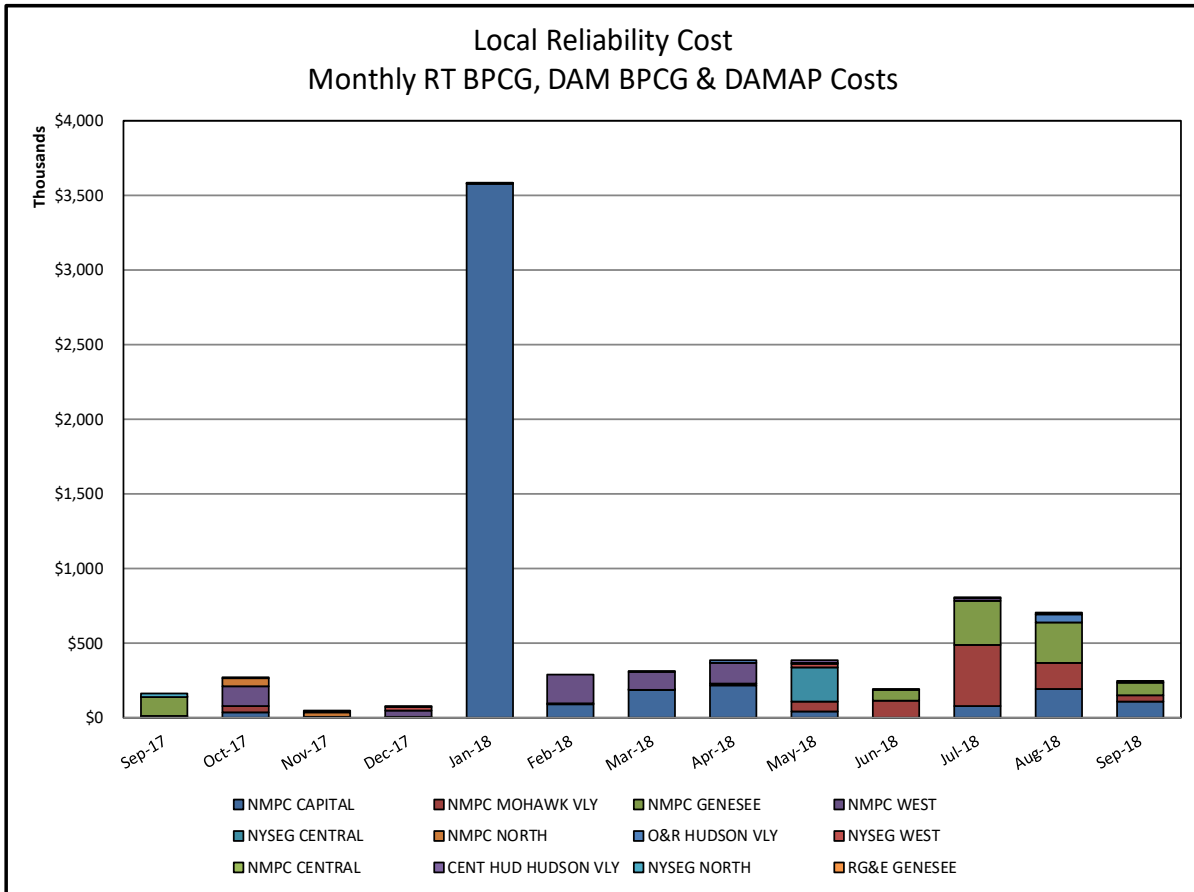


**Day-Ahead Market Congestion Residual Categories**

<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.	

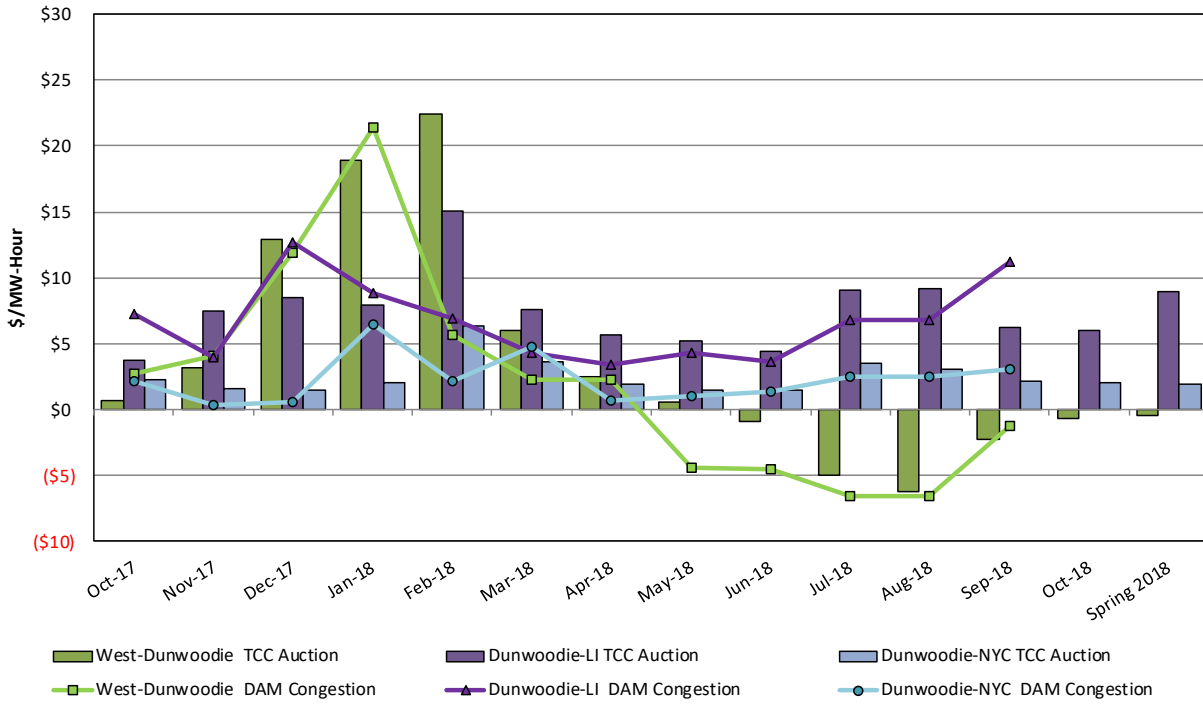






### TCC & Day Ahead Market Selected Internal Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average with Spring 2018 Centralized TCC Auction Six-Month Average



### TCC & Day Ahead Market West to Dunwoodie Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average with Spring 2018 Centralized TCC Auction Six-Month Average

