

Operations Performance Metrics Monthly Report



September 2016 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 10, 2016.

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September 2016 Operations Performance Highlights

- Peak load of 29,637 MW occurred on 09/09/2016 HB 16
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- 0 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

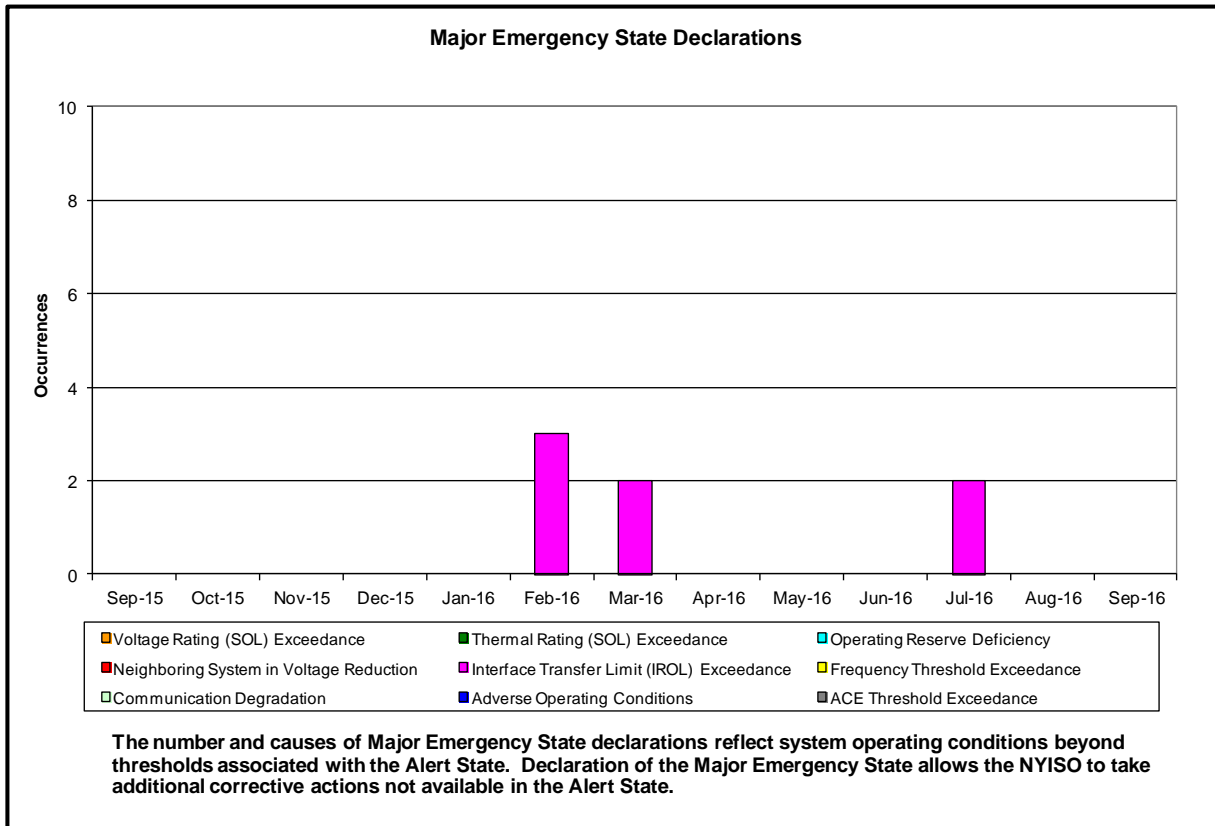
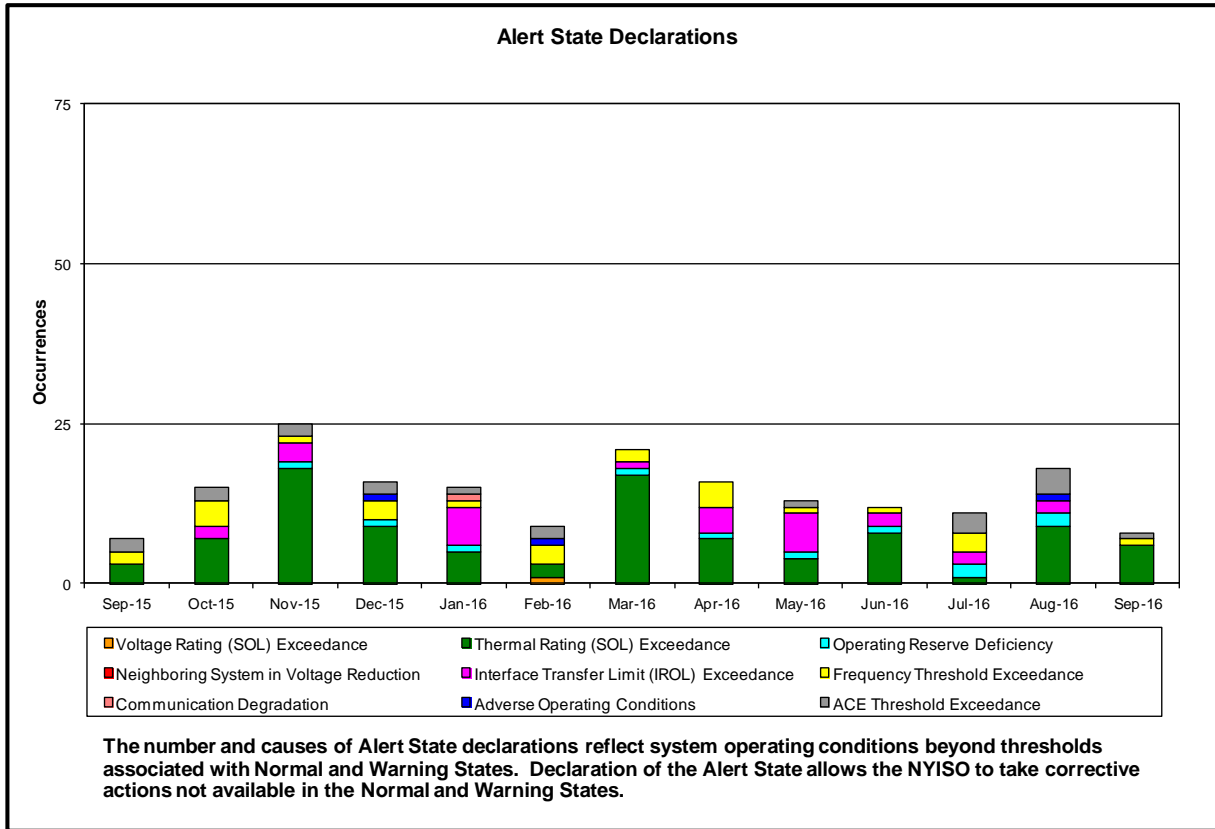
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$0.33	\$16.59
NY Savings from PJM-NY Coordinated Transaction Scheduling	\$0.00	(\$0.47)
NY Savings from NE-NY Coordinated Transaction Scheduling	(\$0.10)	(\$1.48)
Total NY Savings	\$0.23	\$14.64
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.24	\$2.01
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.11	\$1.44
Total Regional Savings	\$0.35	\$3.45

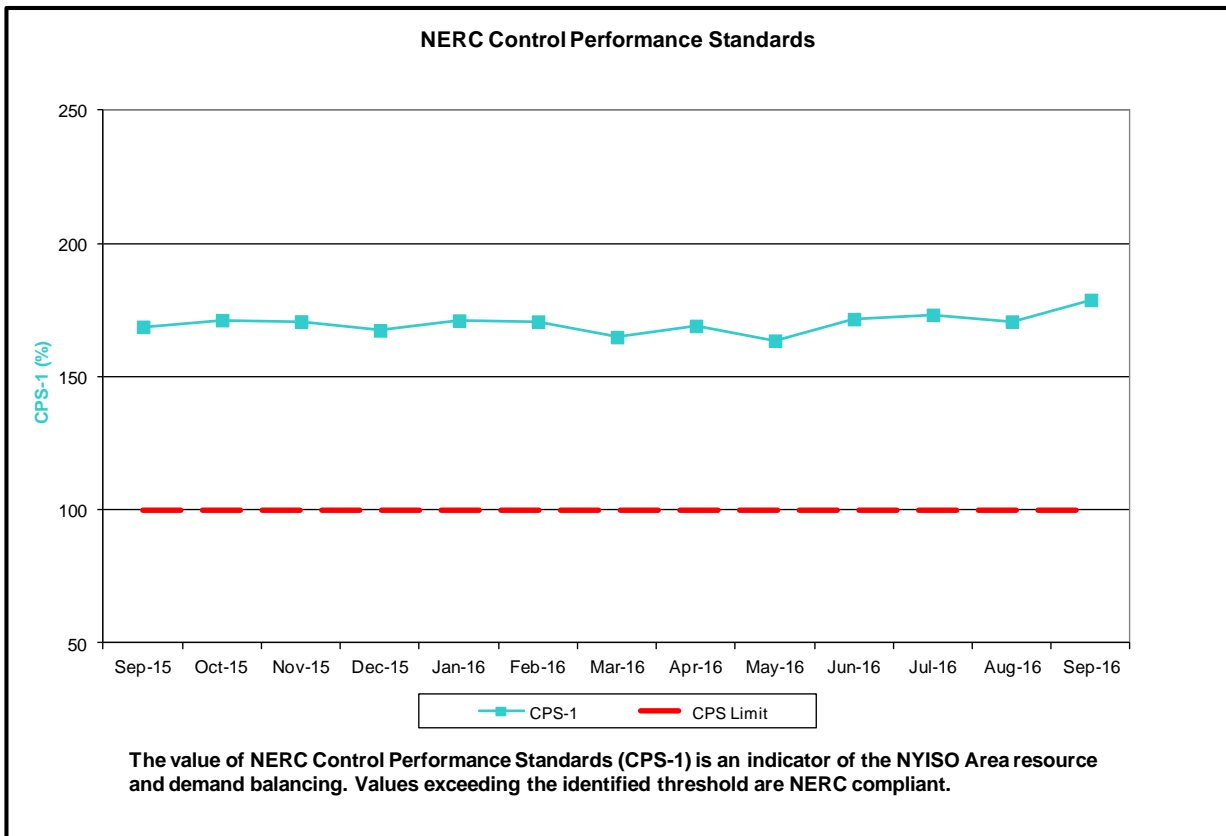
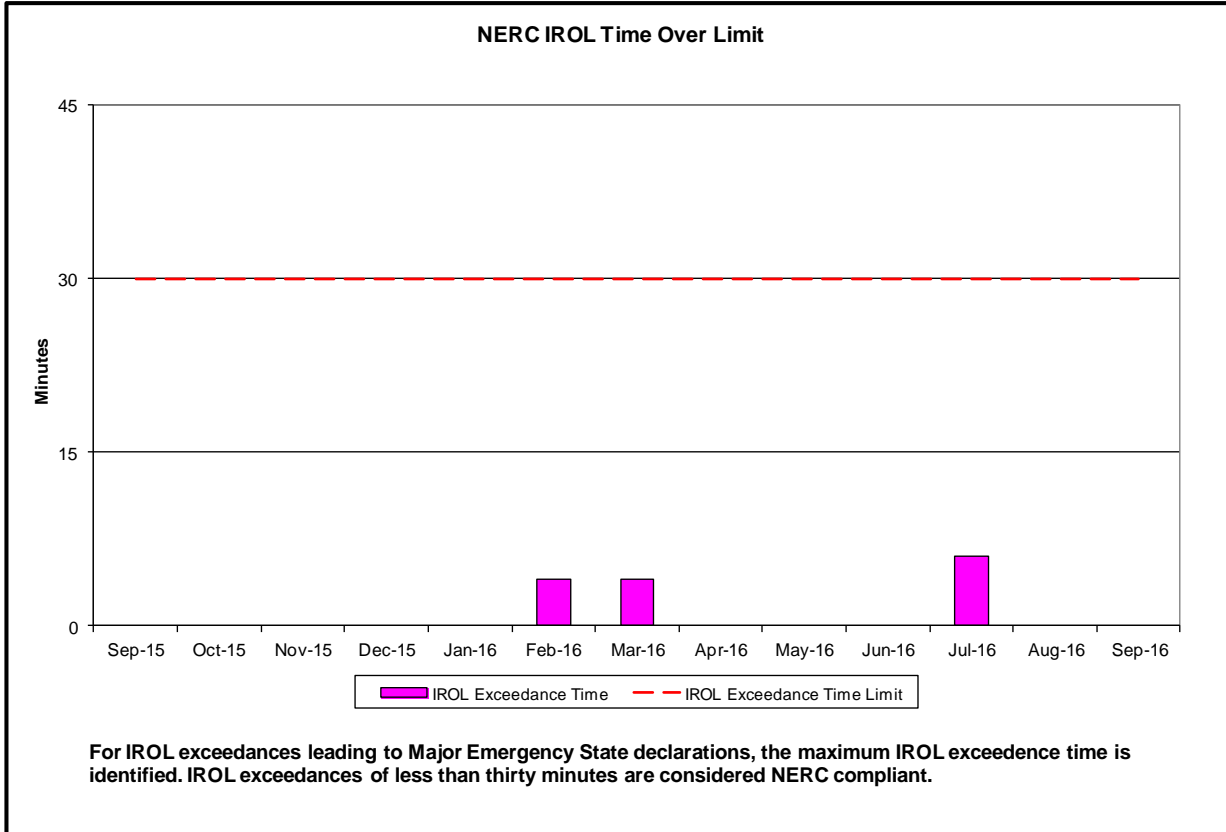
- Statewide uplift cost monthly average was (\$0.29)/MWh
- The following table identifies the Monthly ICAP spot market prices by locality and the price delta.

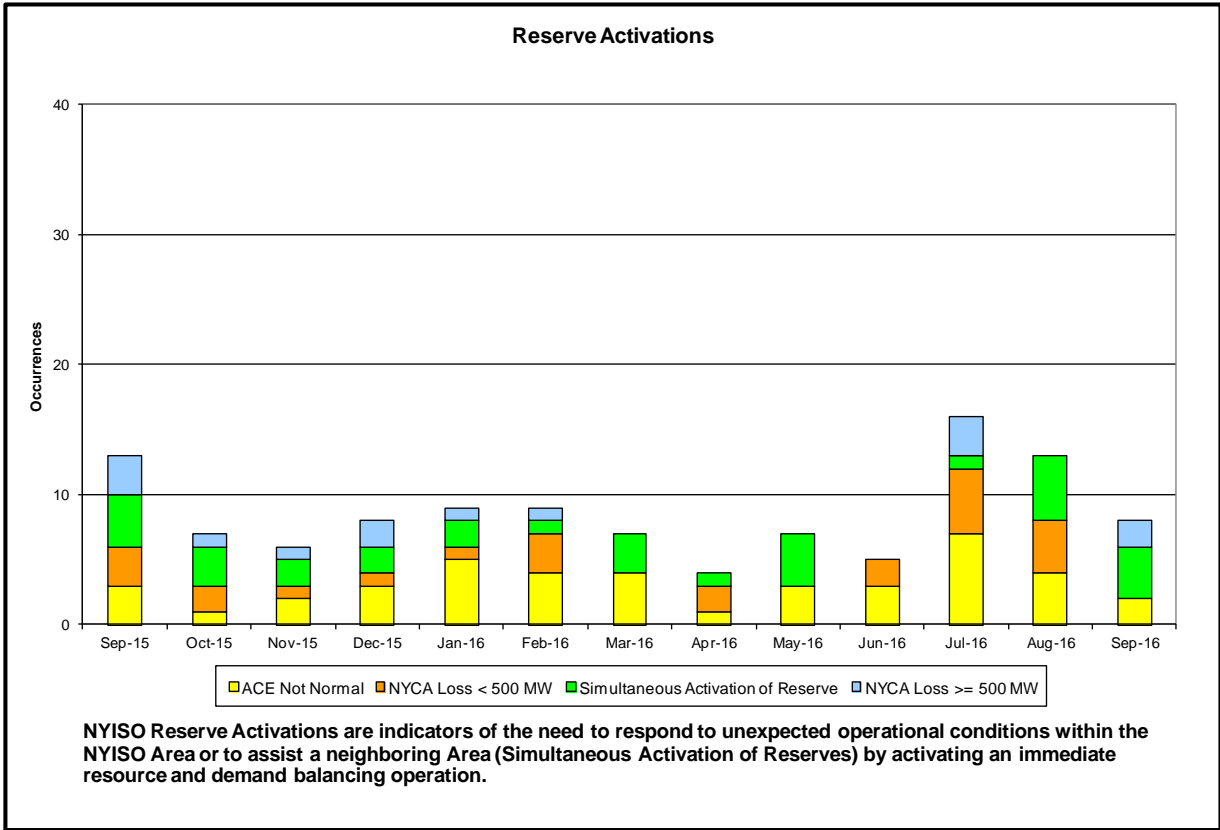
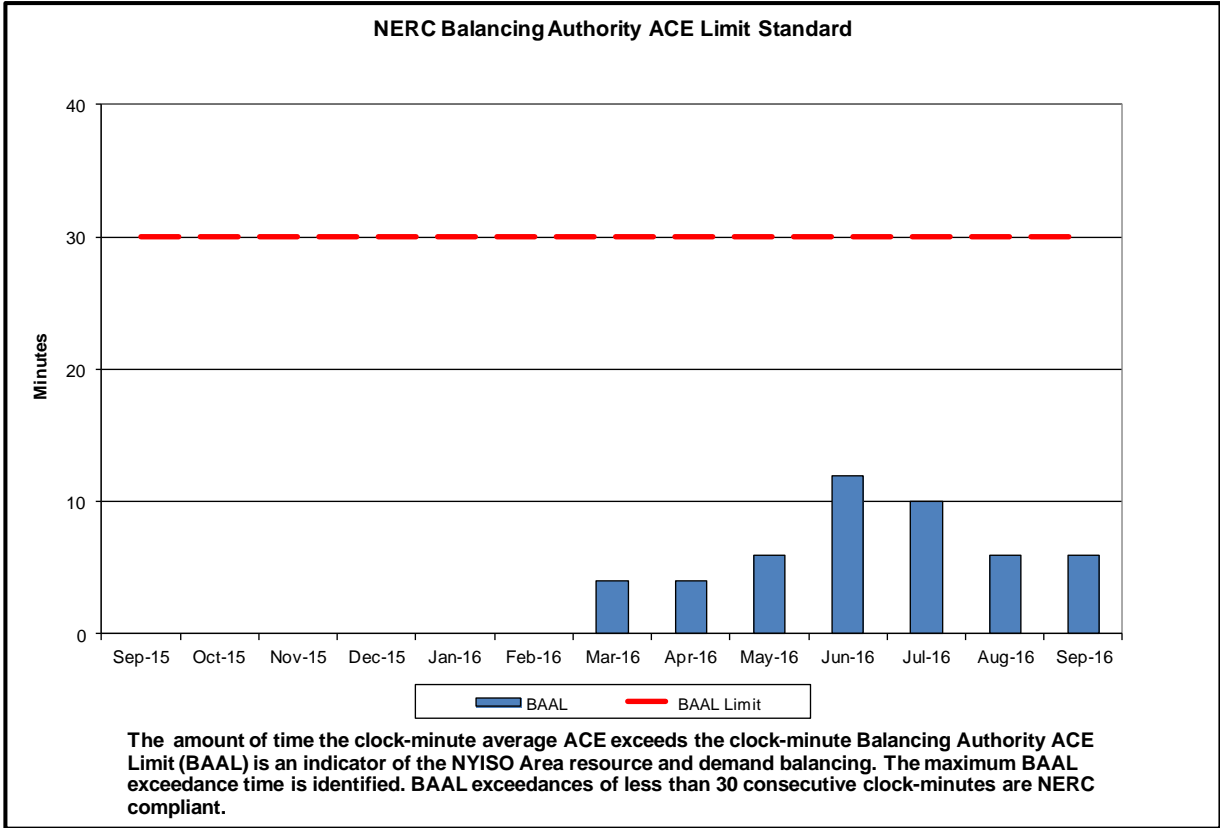
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
October 2016 Spot Price	\$3.12	\$9.16	\$12.14	\$4.34
September 2016 Spot Price	\$3.32	\$9.15	\$12.19	\$4.46
Delta	(\$0.20)	\$0.01	(\$0.05)	(\$0.12)

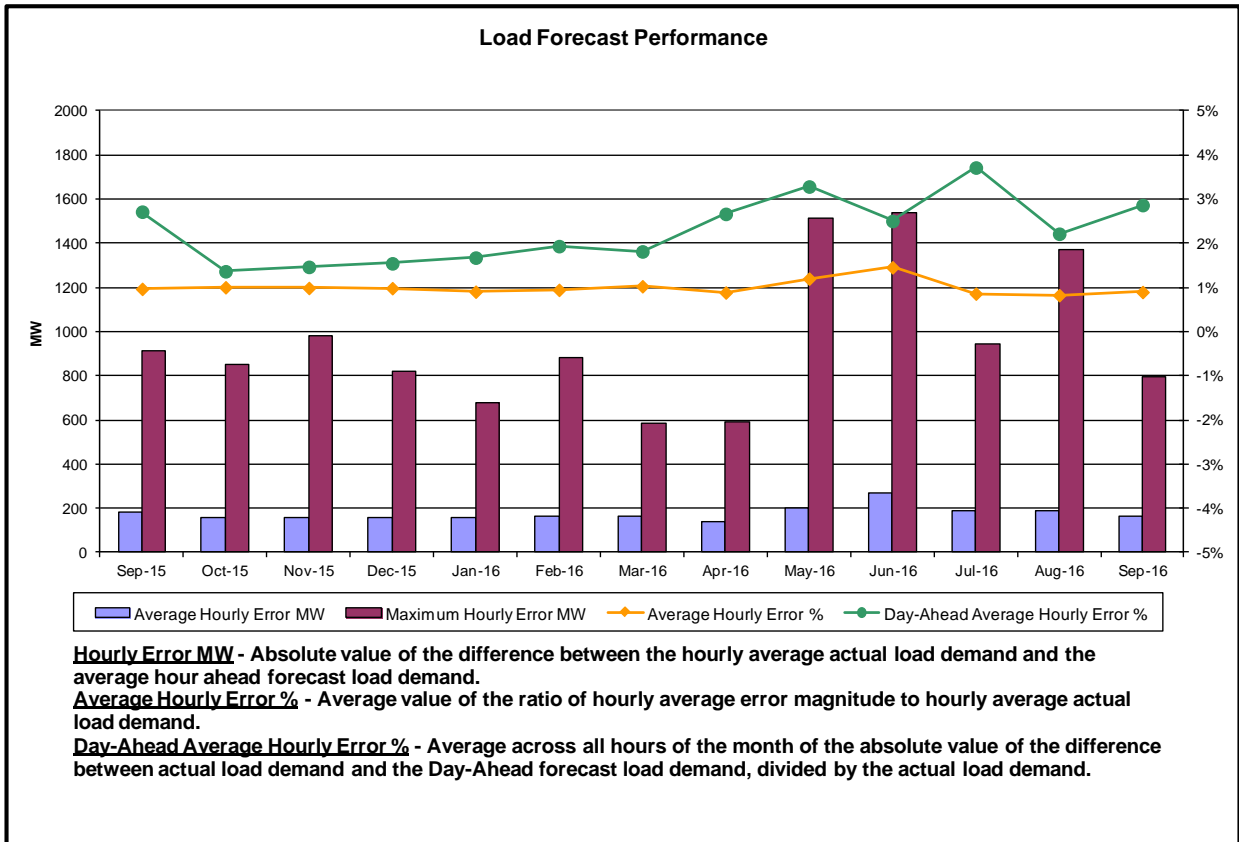
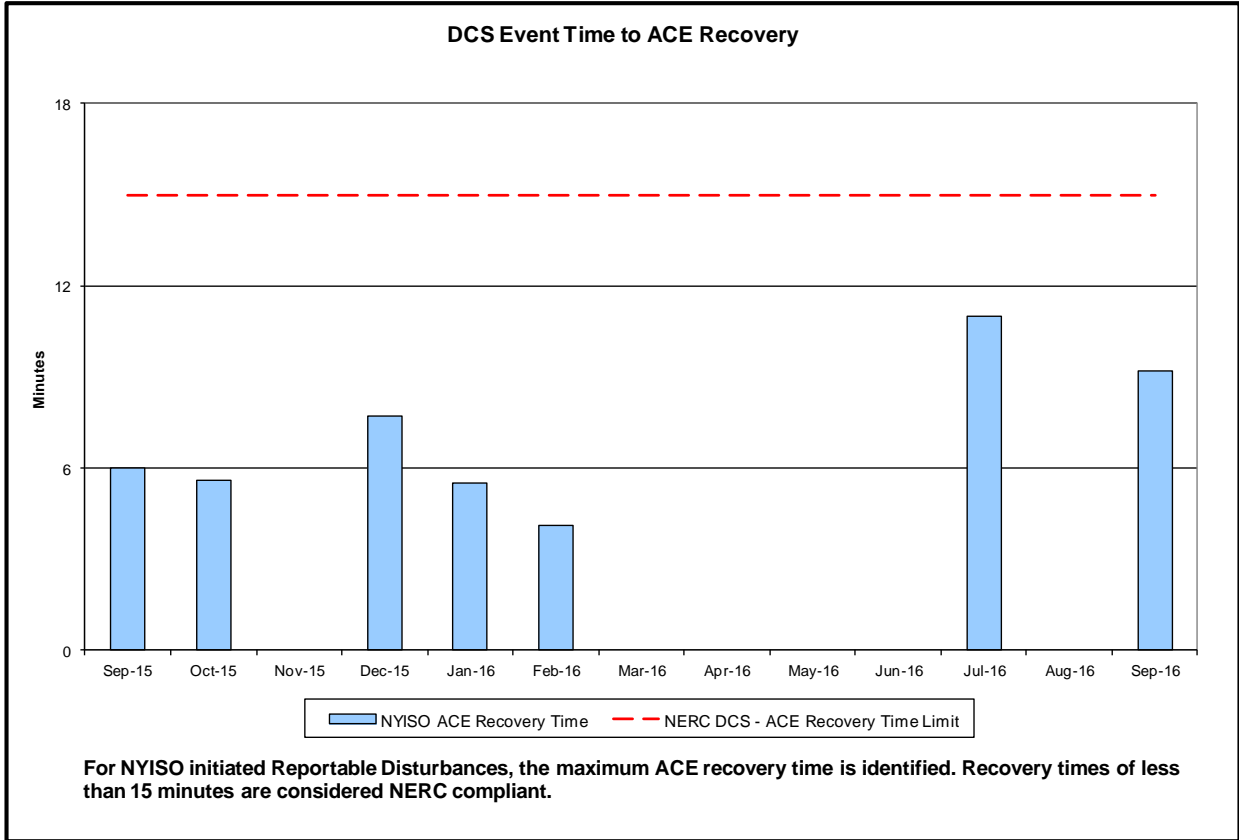
- NYCA - Price decreases by \$0.20 due to an increase in Net Imports
- LI – Price decreases by \$0.12 due to an increase in total capacity sold

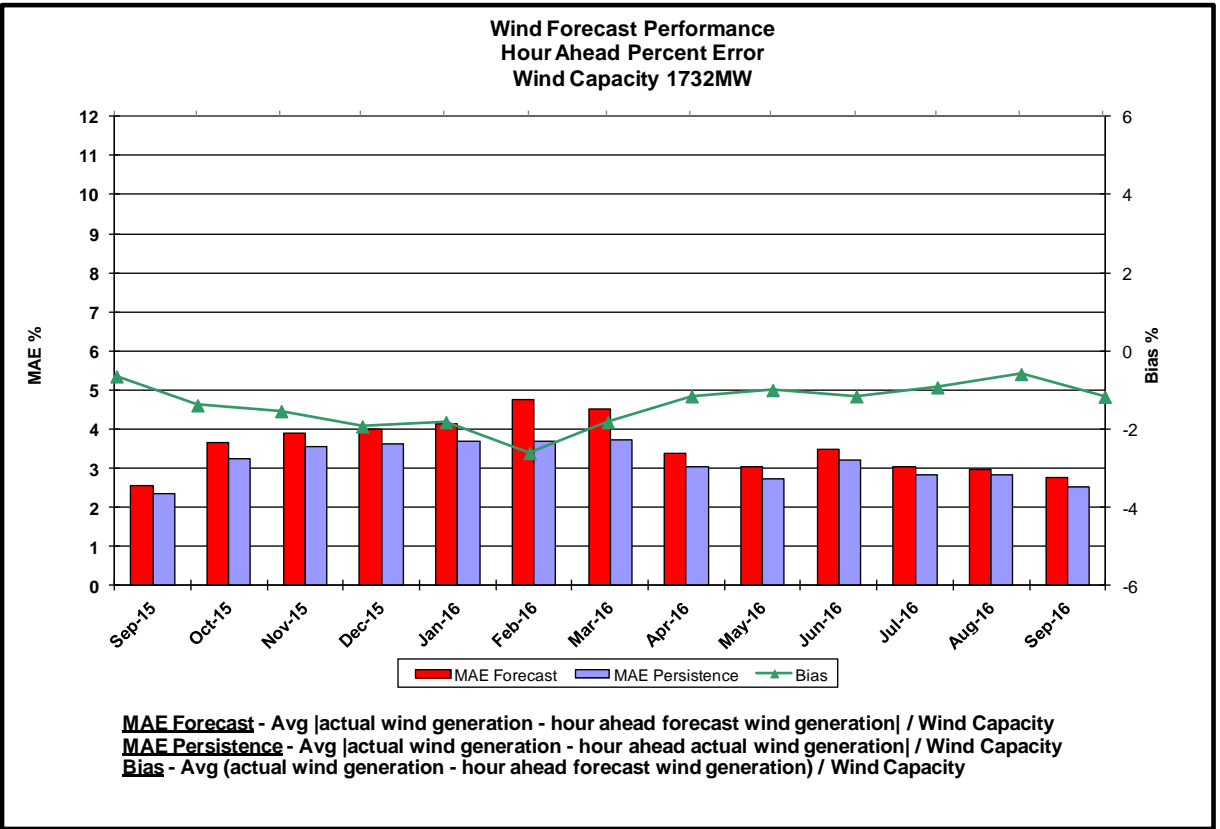
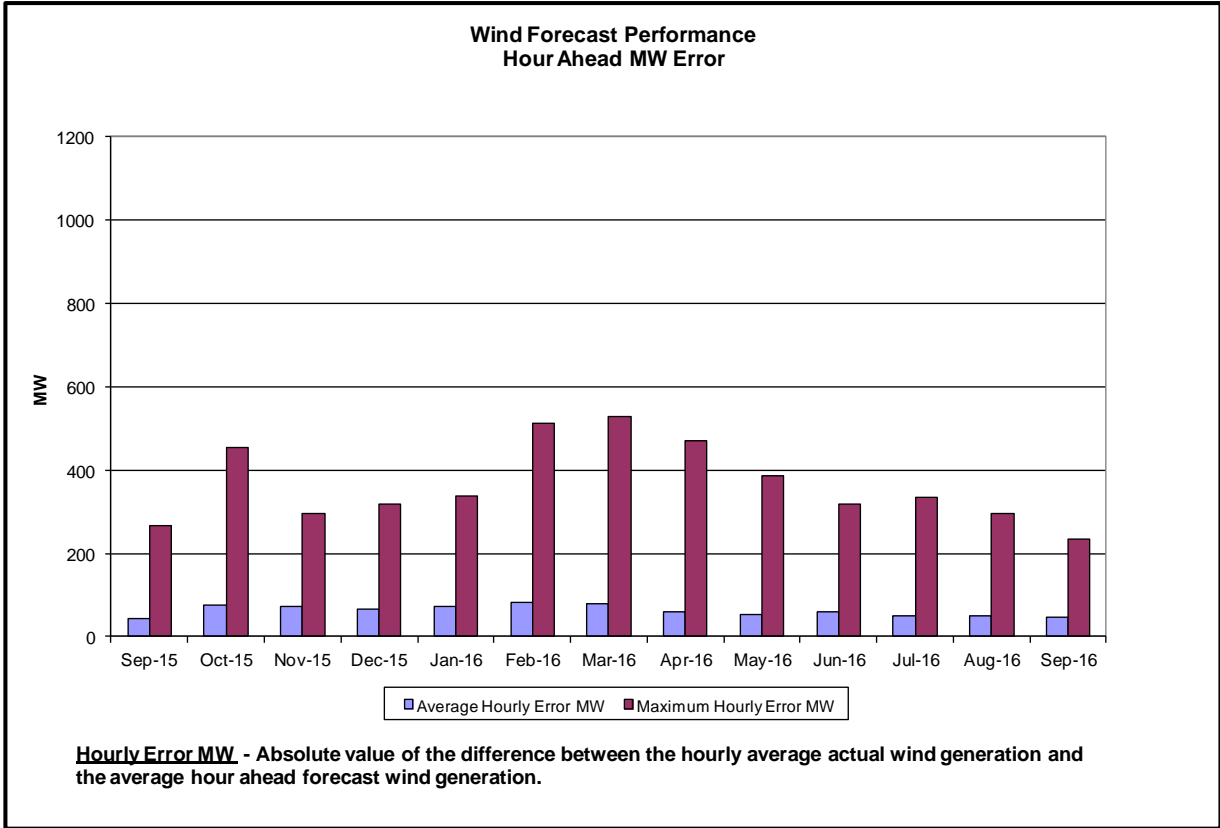
- Reliability Performance Metrics

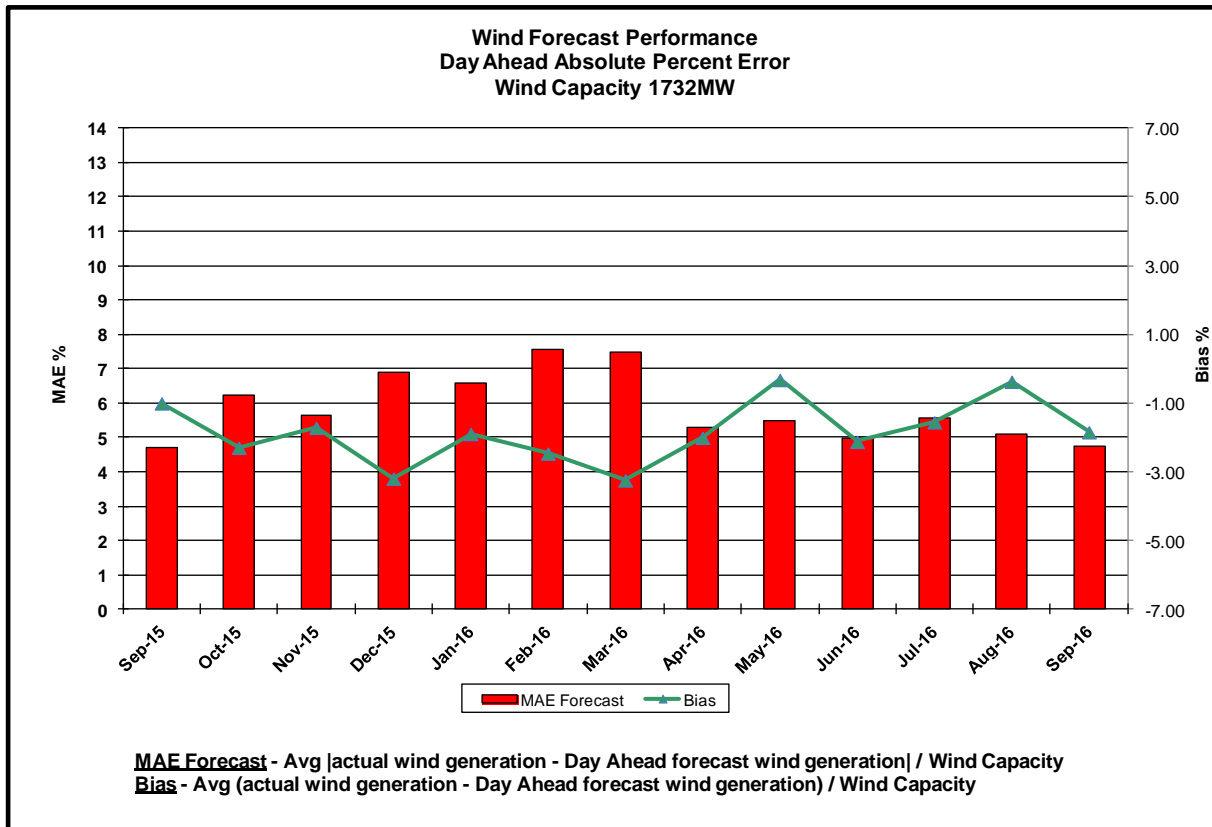
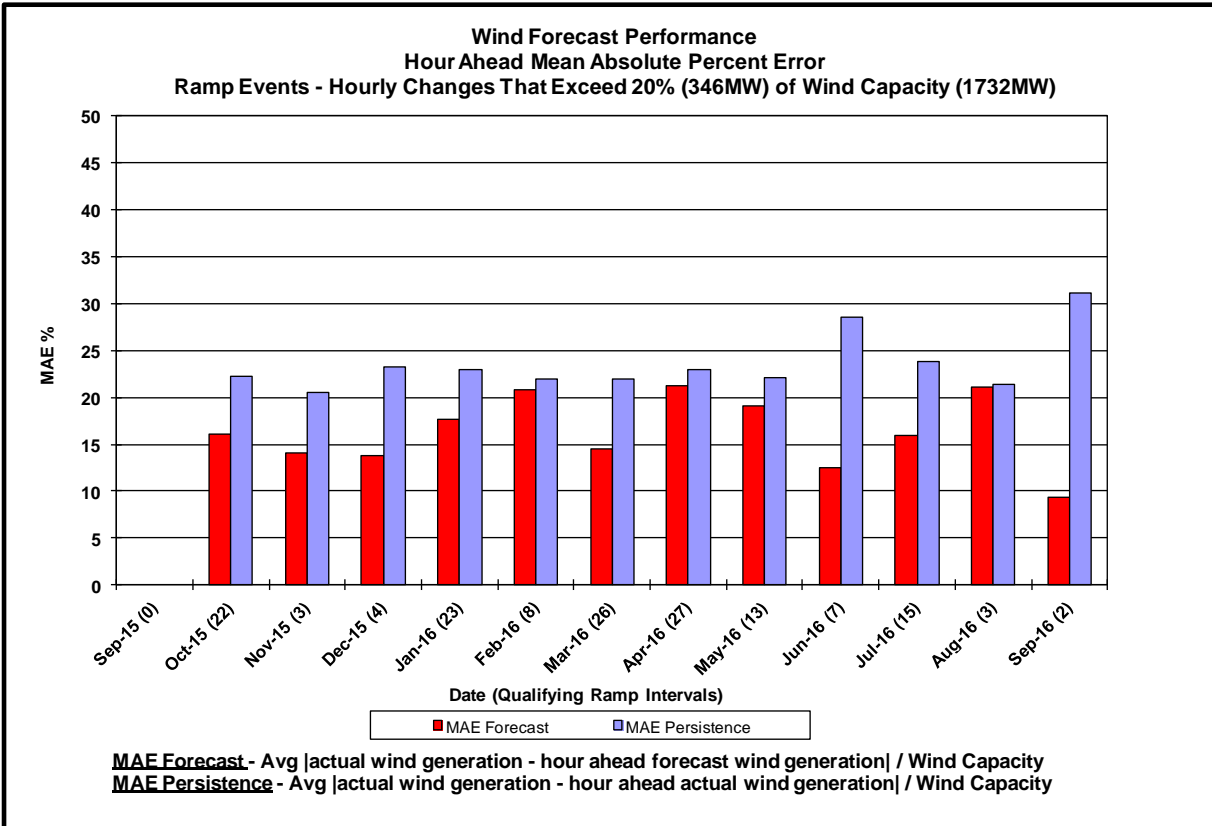


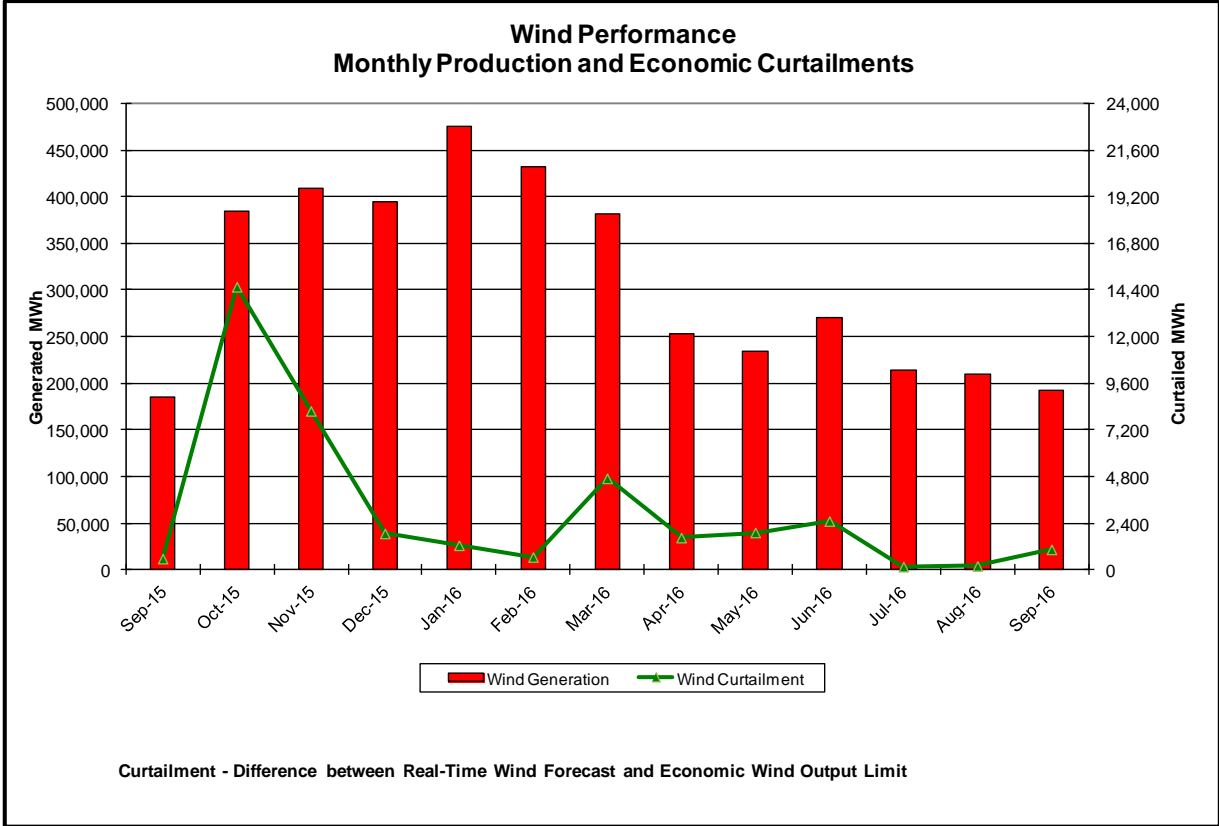


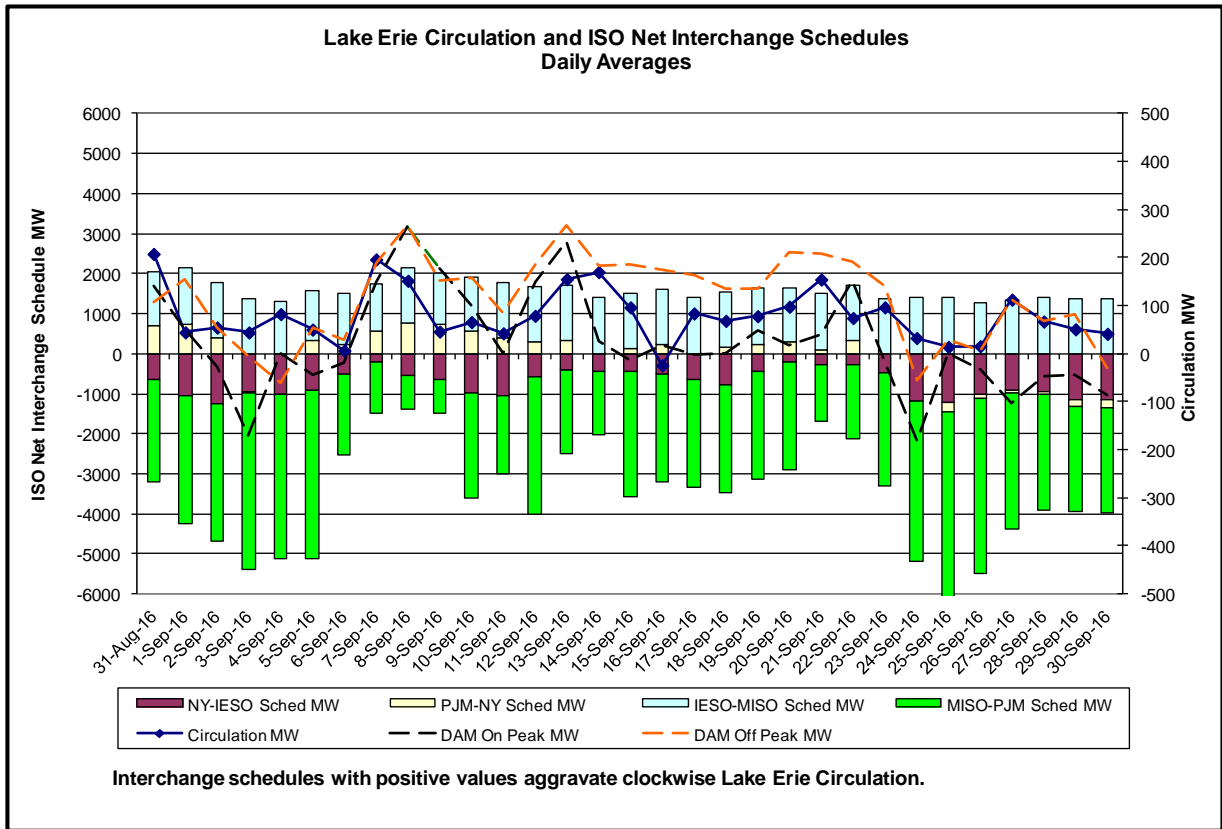
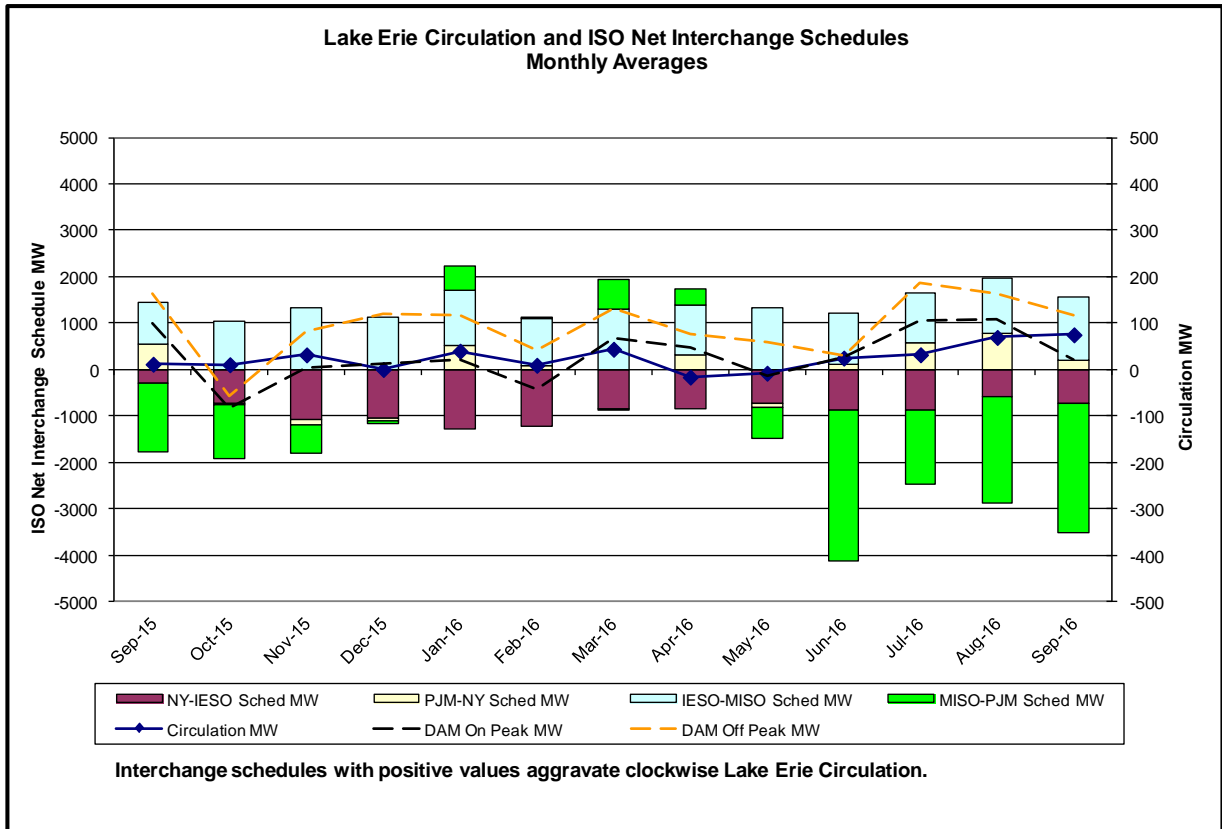




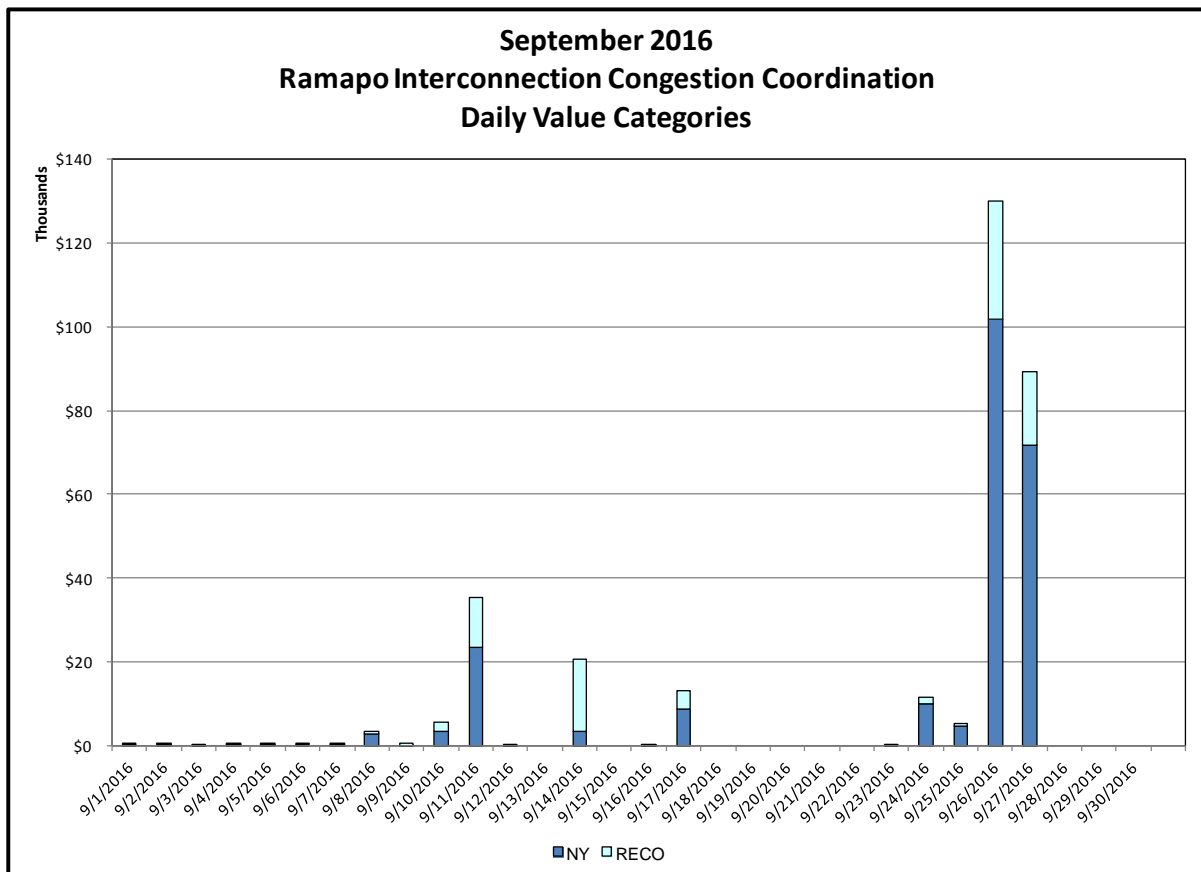
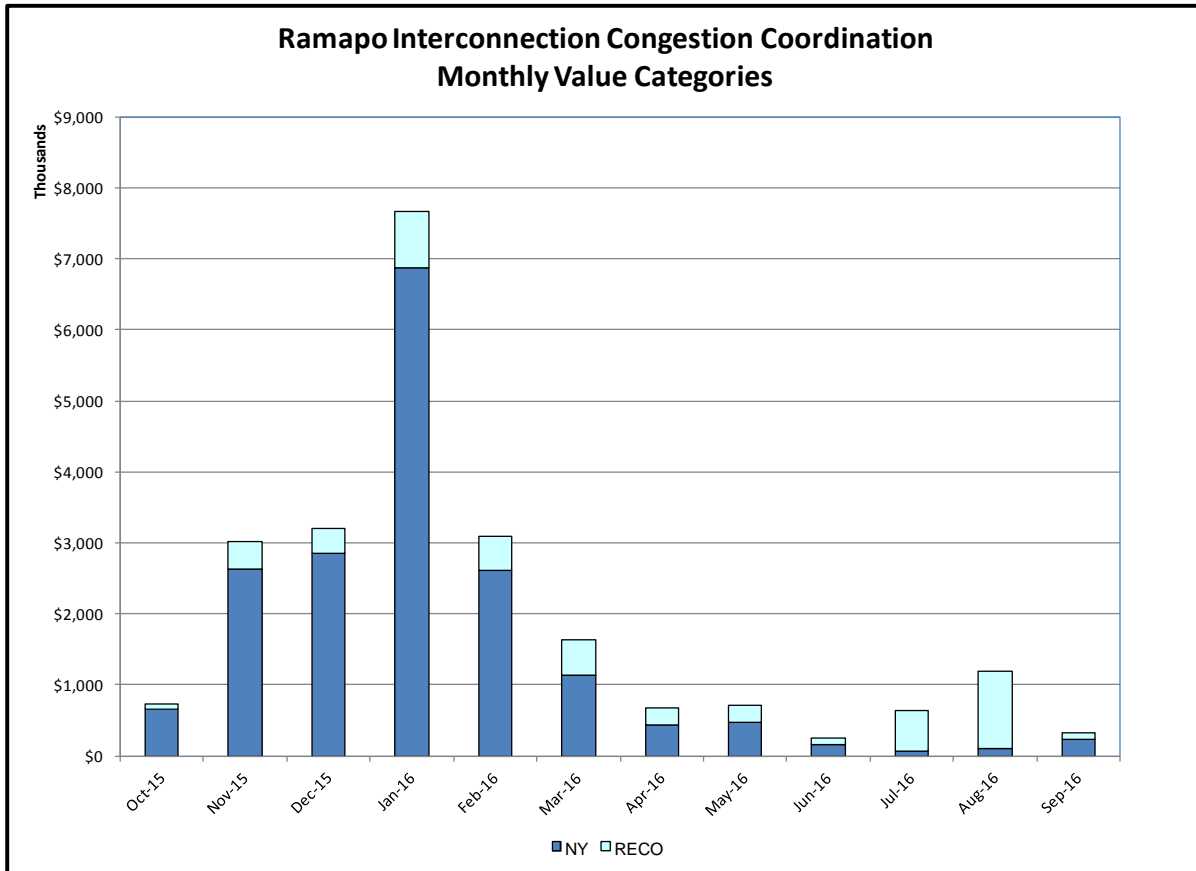






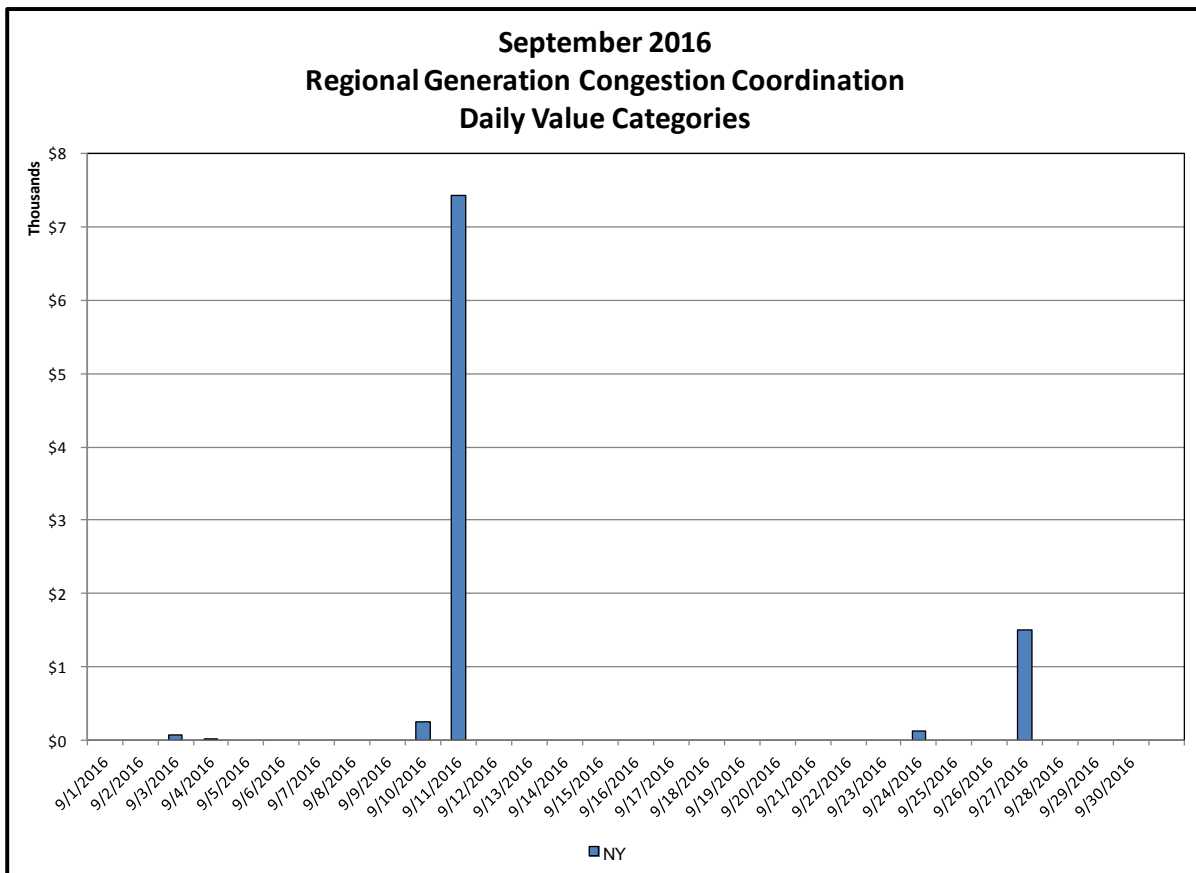
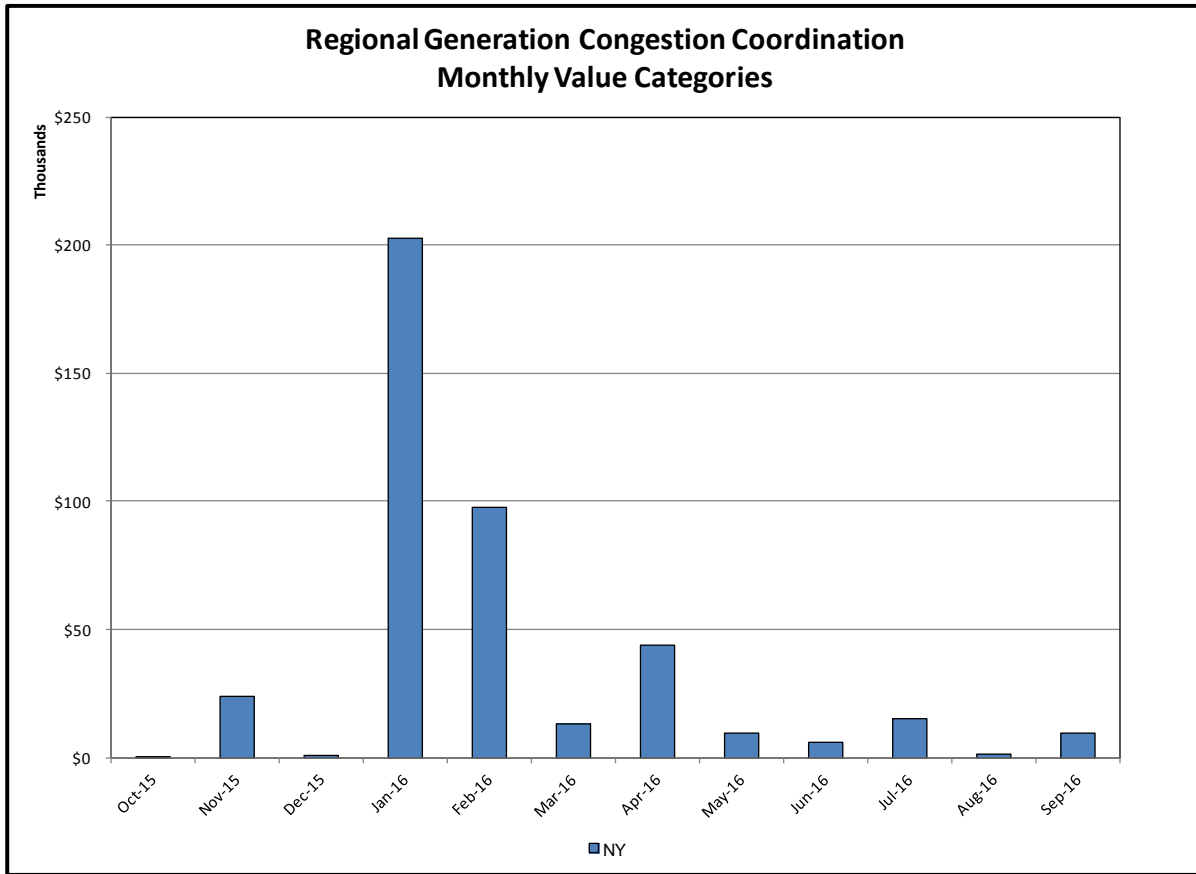


Broader Regional Market Performance Metrics



Ramapo Interconnection Congestion Coordination

<u>Category</u>	<u>Description</u>
NY	Represents the value NY realizes from Market-to-Market Ramapo Coordination. When experiencing congestion, this includes (1) the estimated savings to NY for additional deliveries into NY, plus (2) PJM compensation to NY for additional deliveries into PJM (as compared to the Ramapo Target level, excluding RECO). This is net of any settlements to PJM when they are congested.
RECO	Represents the value of PJM's obligation to deliver 80% of service to RECO load over Ramapo 5018. This includes (1) the estimated reduction in NYCA congestion due to the PJM delivery of RECO over Ramapo 5018, plus (2) PJM compensation to NY for NYCA congestion for the under-delivery or inability to deliver service to RECO load over Ramapo 5018.



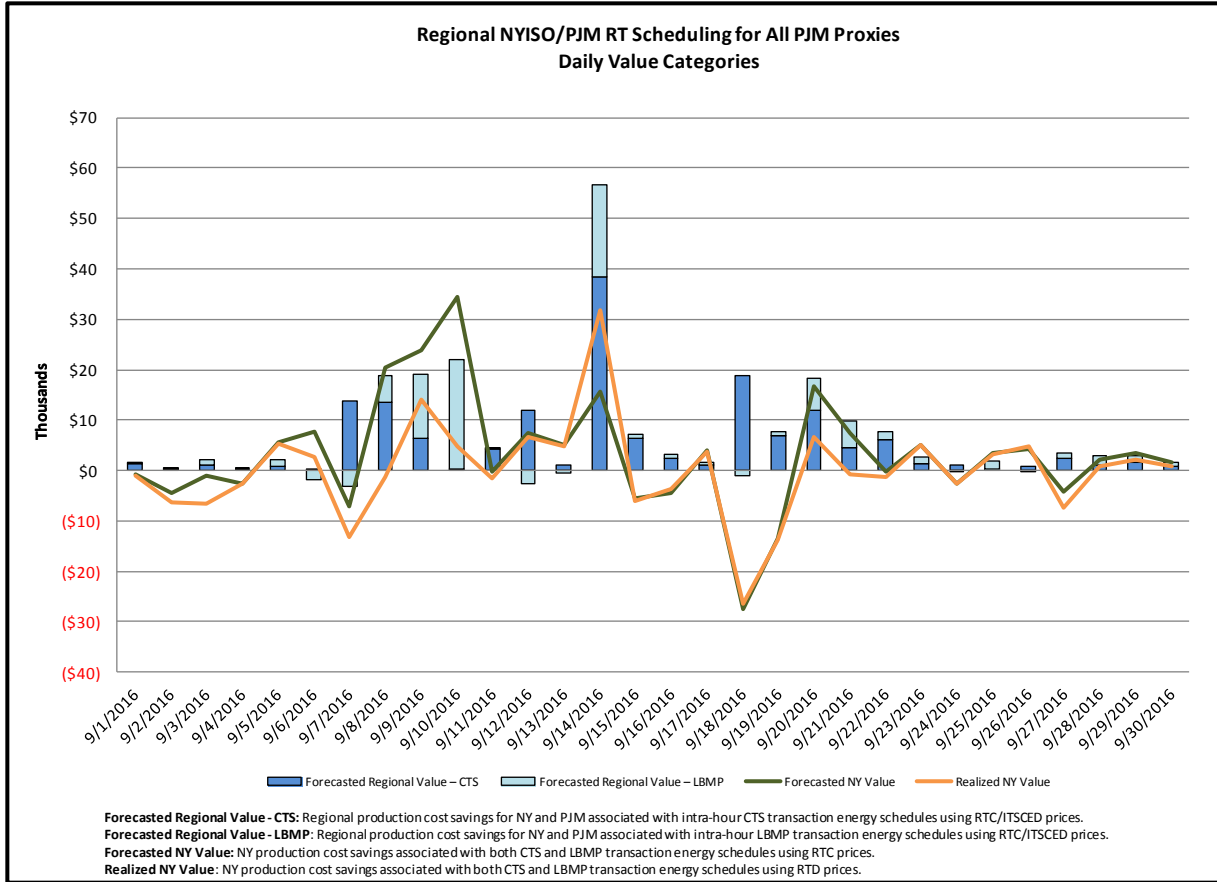
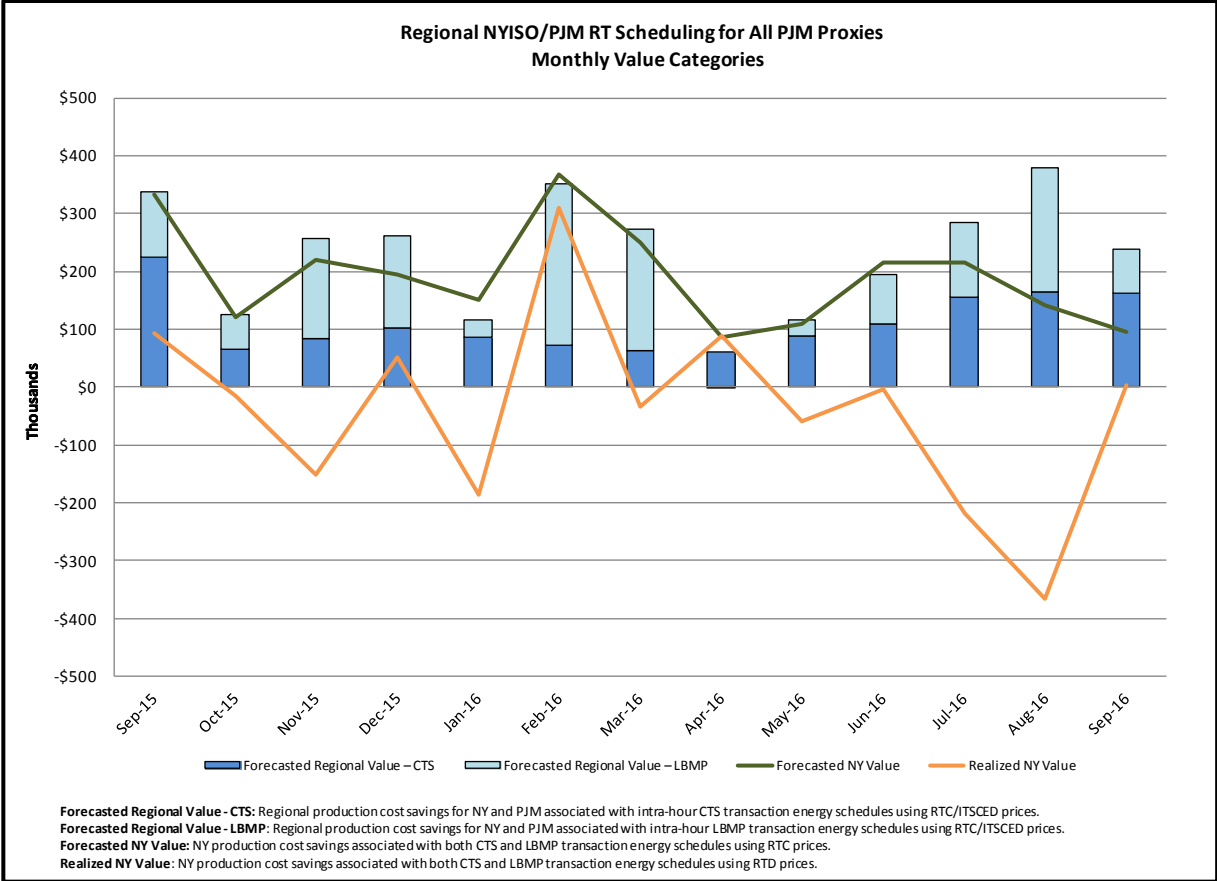
Regional Generation Congestion Coordination

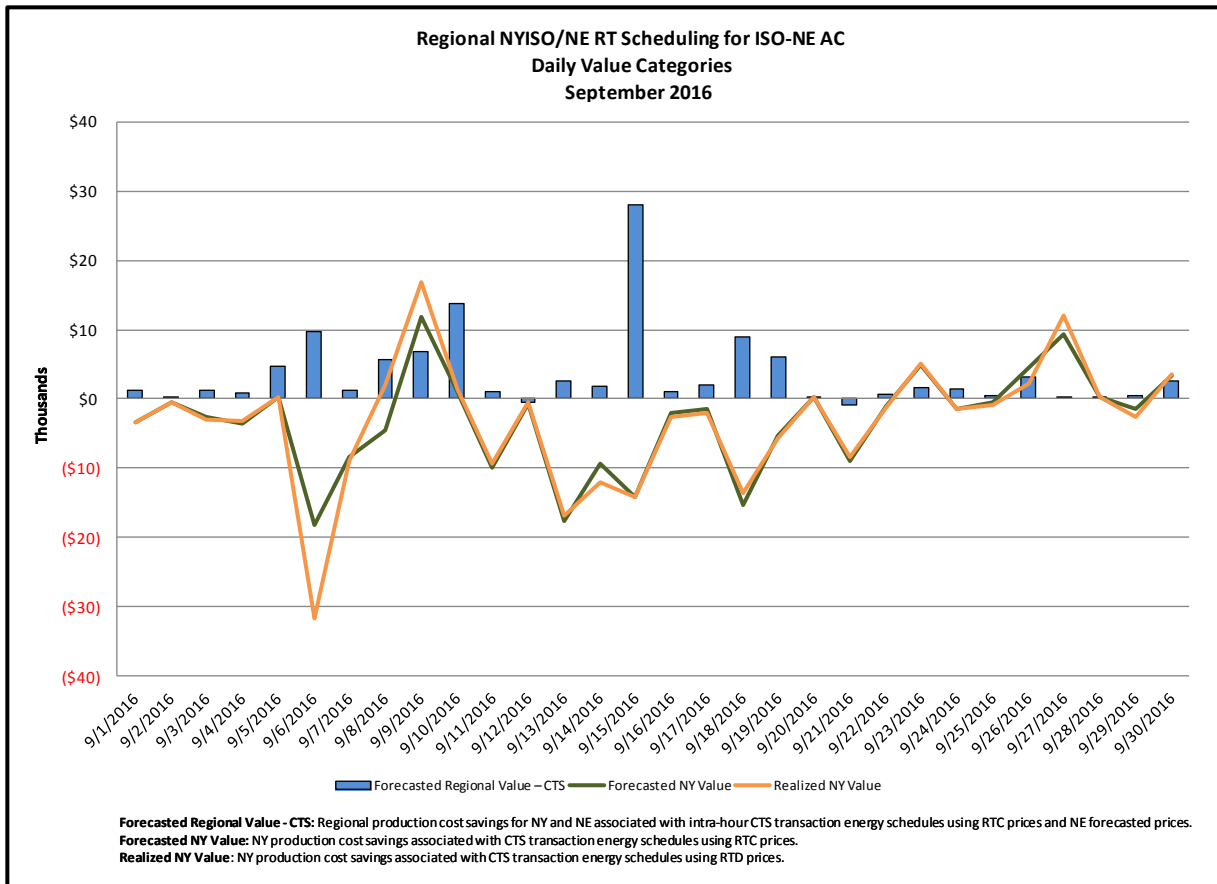
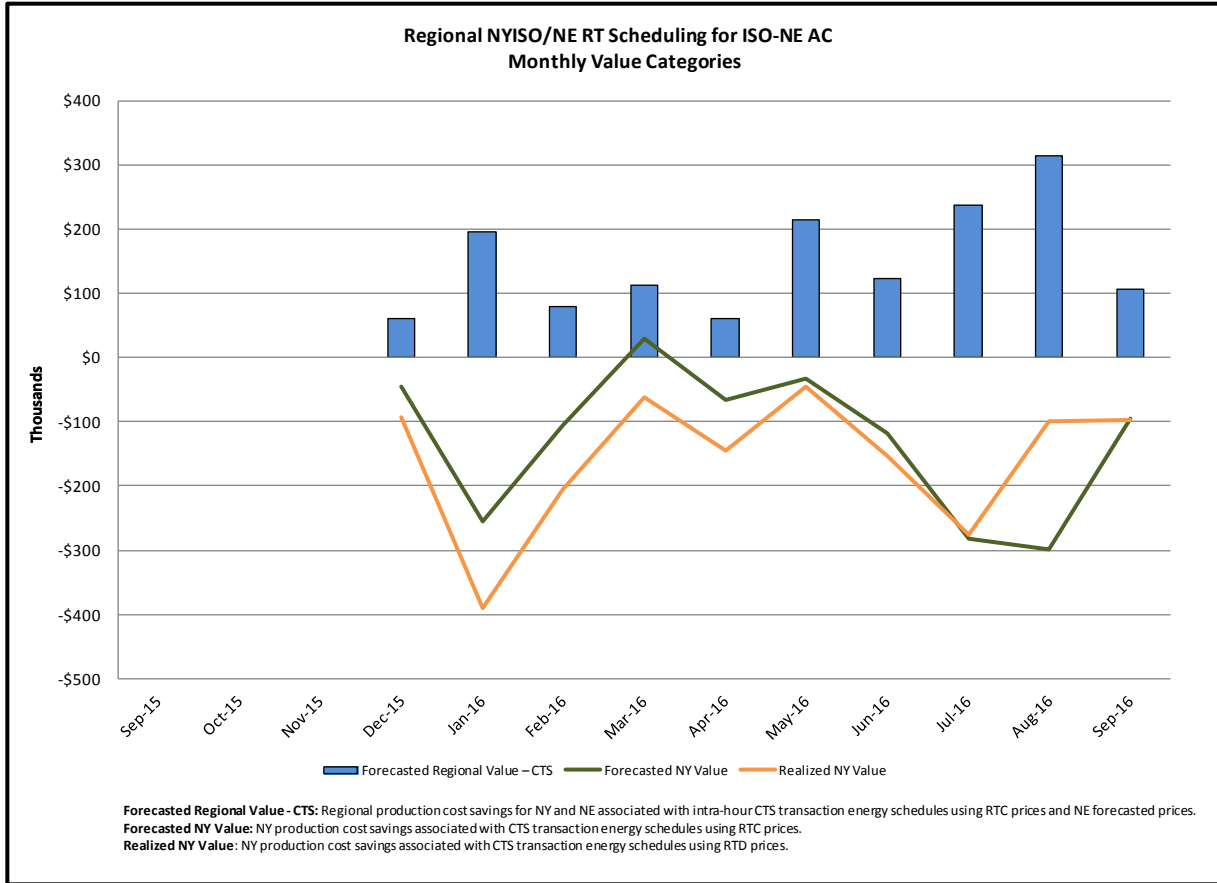
Category

NY

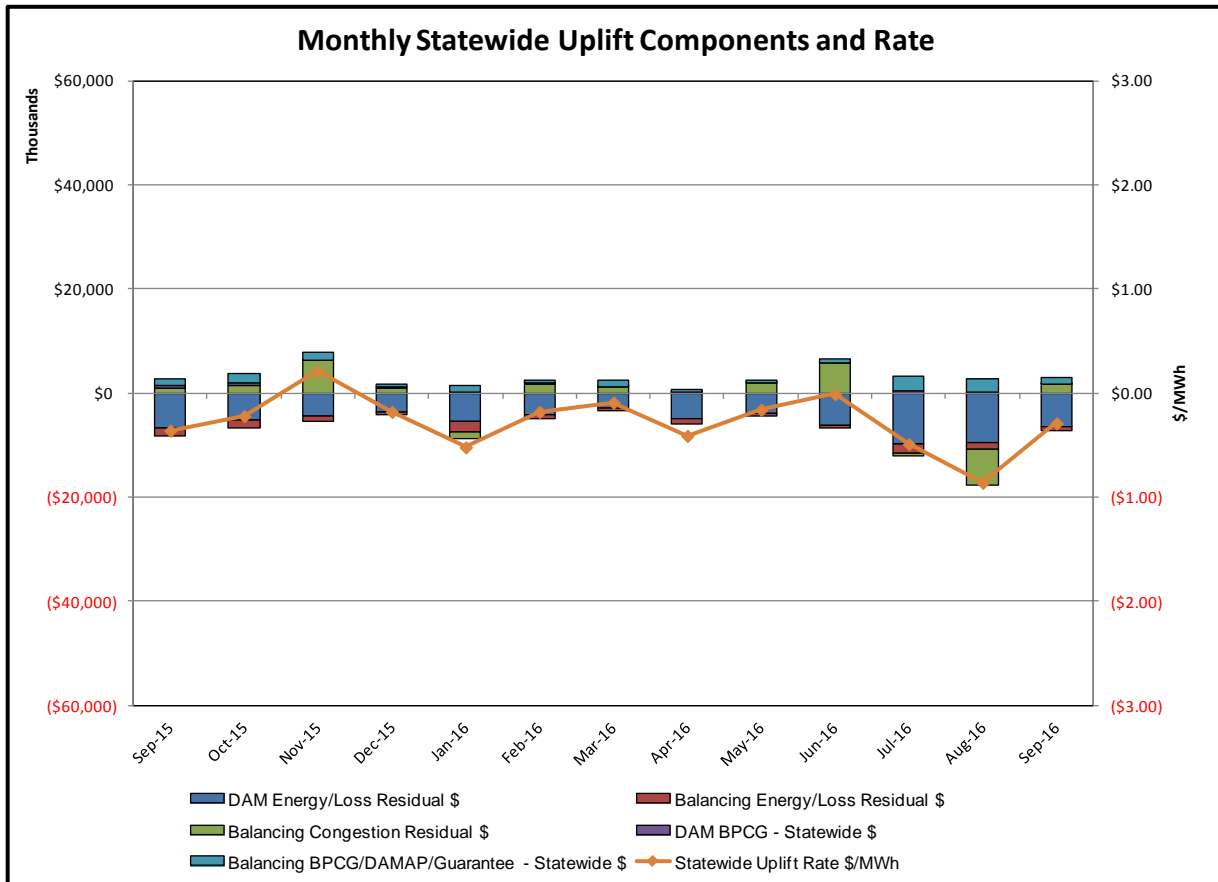
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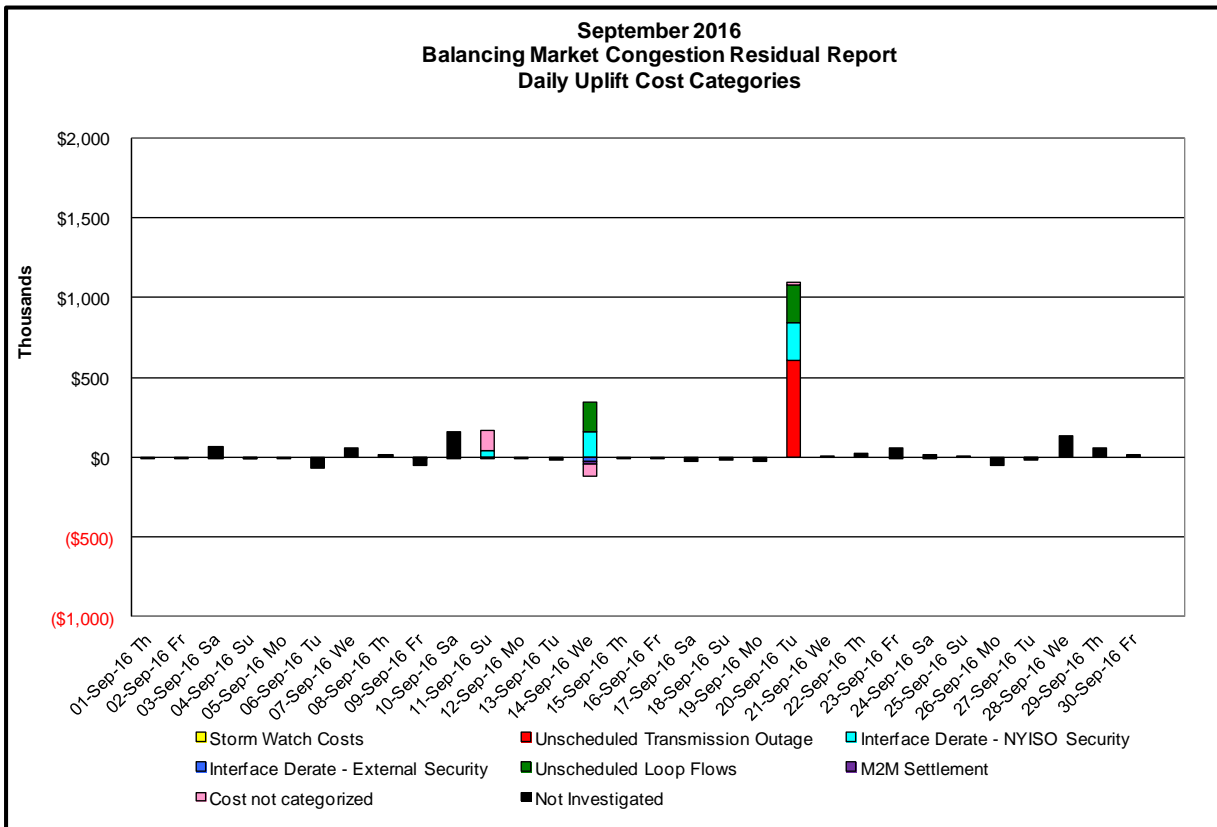
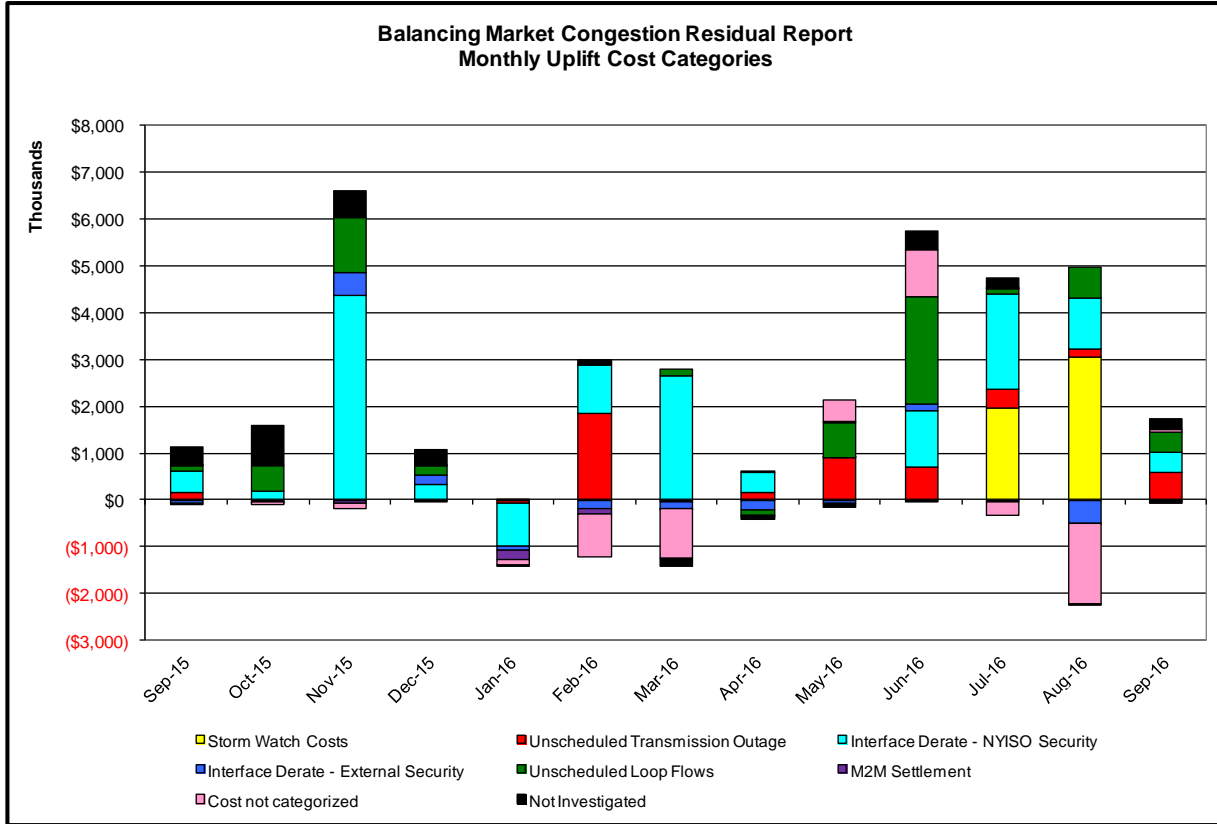
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





Market Performance Metrics





Day's investigated in September: 11, 14, 20

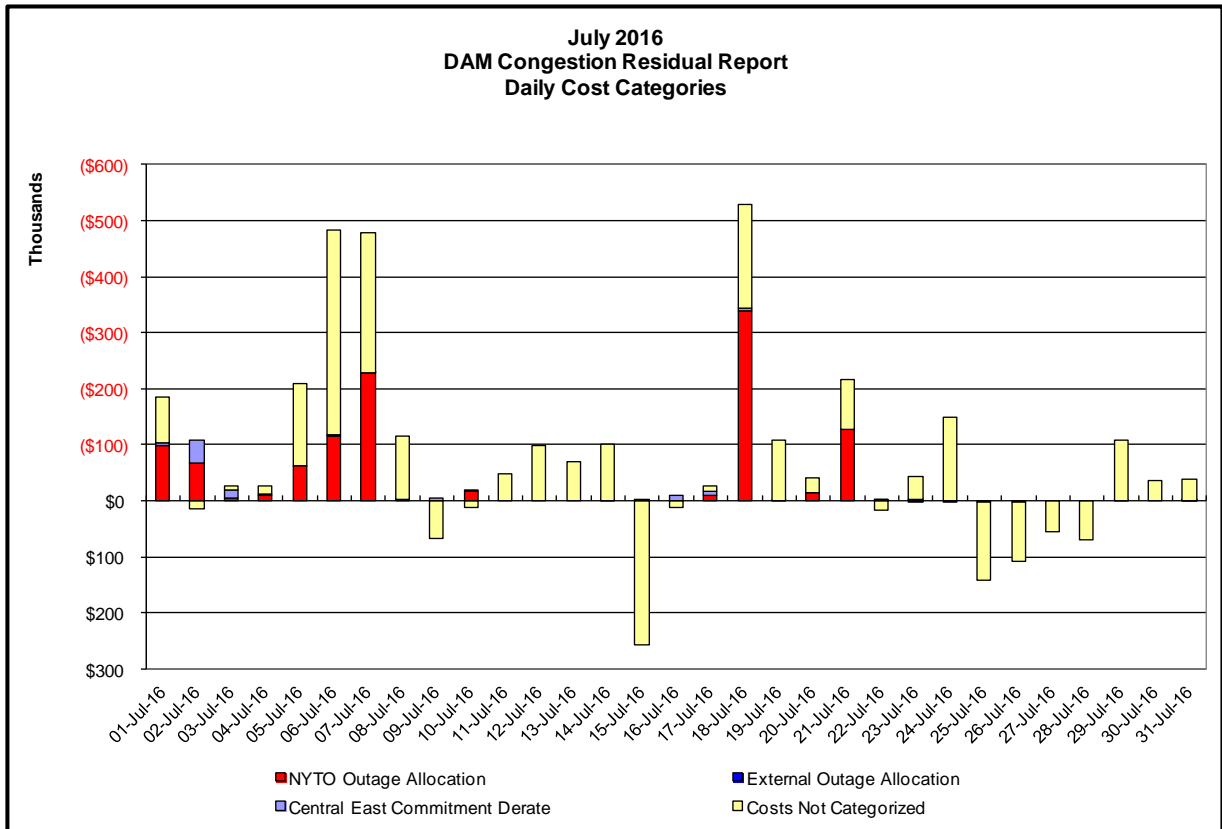
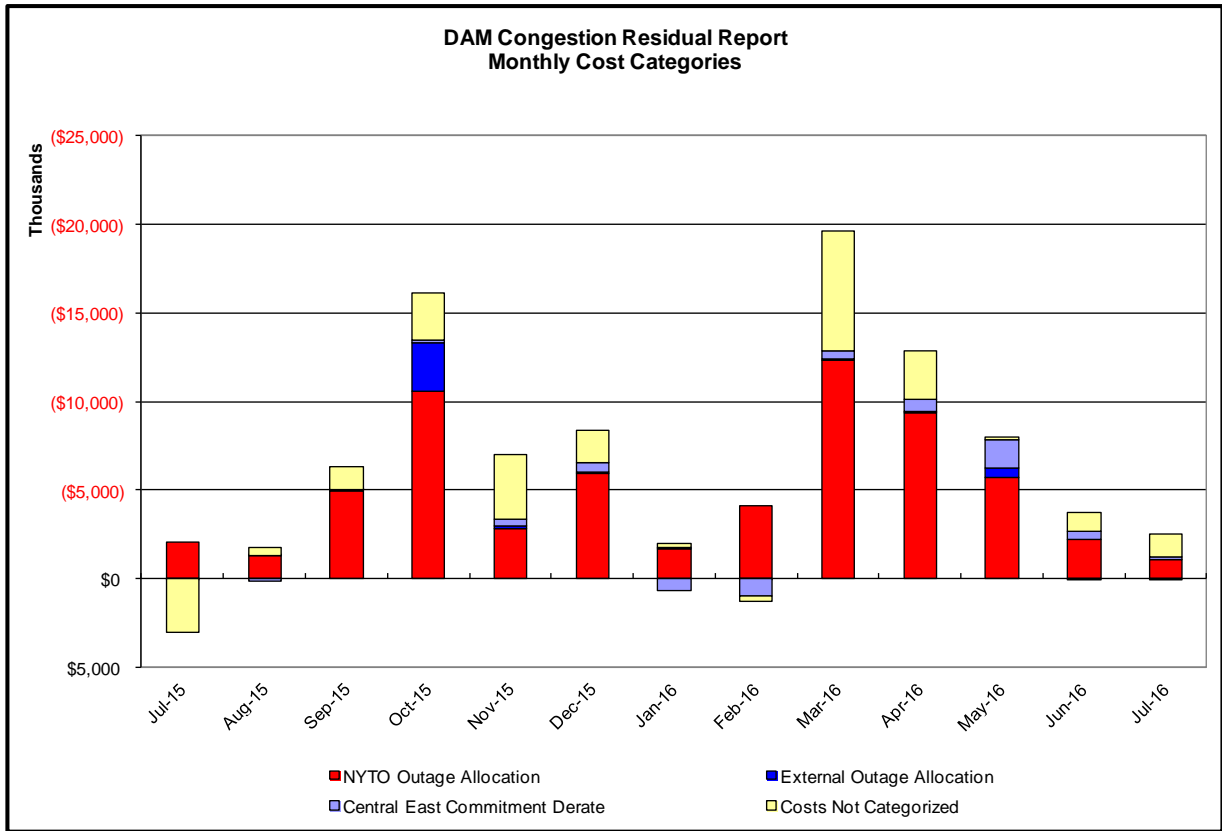
Event	Date (yyyymmdd)	Hours	Description
	9/11/2016	11-14	Derate Gowanus-Greenwood 138kV (#42231) for I/o TWR:GOETHALS 22 & 21
	9/14/2016	14, 16, 17	Derate Dunwodie-Shore Road 345kV (#Y50) for I/o Neptune HVDC TIE LINE
	9/14/2016	16	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 345kV (#77)
	9/14/2016	15	Uprate Athens-Pleasant Valley 345kV (#91) for I/o Leeds-Pleasant Valley 345kV (#92)
	9/14/2016	15	Uprate Leeds-Pleasant Valley 345kV (#92) for I/o Athens-Pleasant Valley 345kV (#91)
	9/14/2016	14, 15	NYCA DNI Ramp Limit
	9/14/2016	15	PJM_AC DNI Ramp Limit
	9/14/2016	15	NE_AC DNI Ramp Limit
	9/14/2016	17	NE_NNC1385-NY Scheduling Limit
	9/14/2016	15	NE_AC-NY Scheduling Limit
	9/14/2016	14, 16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer 230kV (#78)
	9/14/2016	14, 16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#62)
	9/20/2016	16, 17	Forced outage Moses-Adirondack 230kV (#MA2)
	9/20/2016	15-19	Extended outage Sprainbrook-East Garden City 345kV (#Y49)
	9/20/2016	13-14	Forced outage Elm Street-Seneca-Gardenville 230kV (#71)
	9/20/2016	11, 13, 14	Derate Moses-Adirondack 230kV (#MA1) for I/o SIN:MSU1&7040& HQ GN&LD PROXY
	9/20/2016	11, 13, 14, 16	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 345kV (#77)
	9/20/2016	14	NYCA DNI Ramp Limit
	9/20/2016	11, 13, 14, 16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer 230kV (#78)
	9/20/2016	13, 14	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Gardenville-Stolle Road 230kV (#66)
	9/20/2016	13	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61)
	9/20/2016	14	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#62)

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

Category	Cost Assignment	Events Types	Event Examples
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	

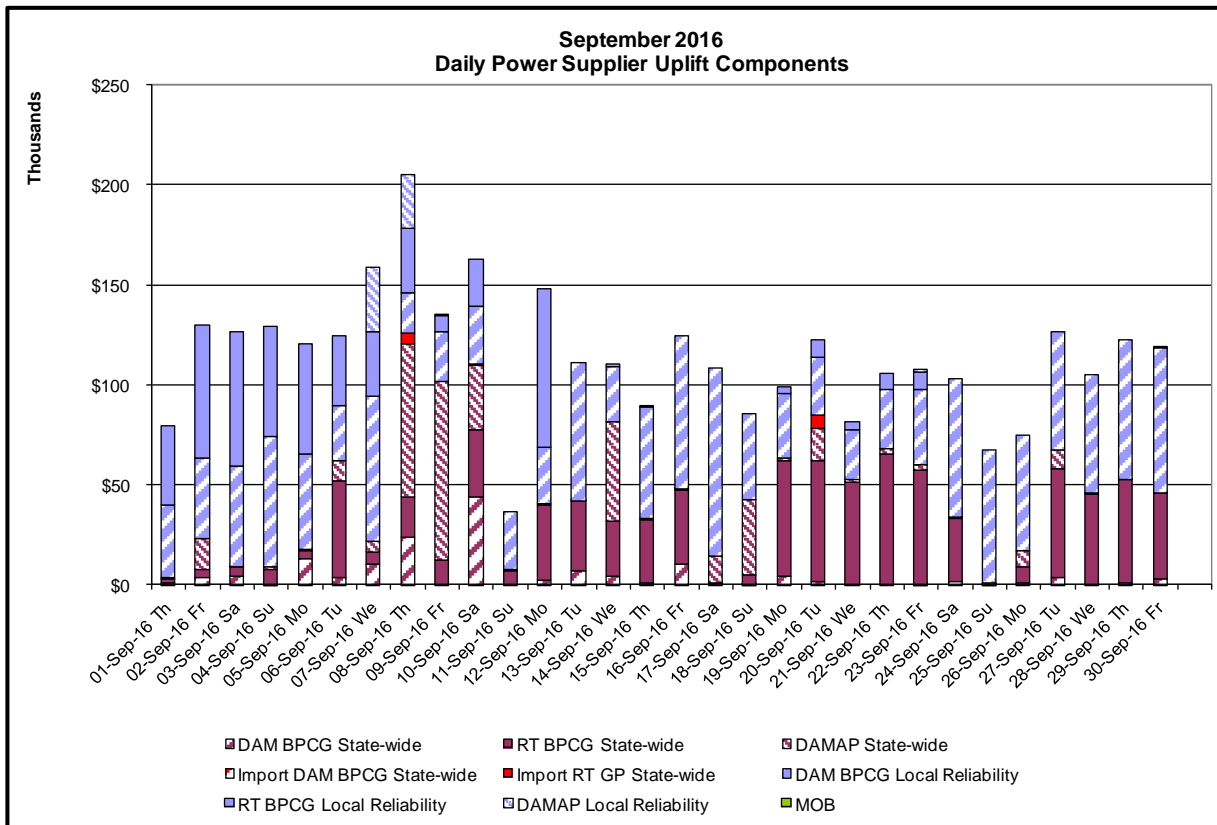
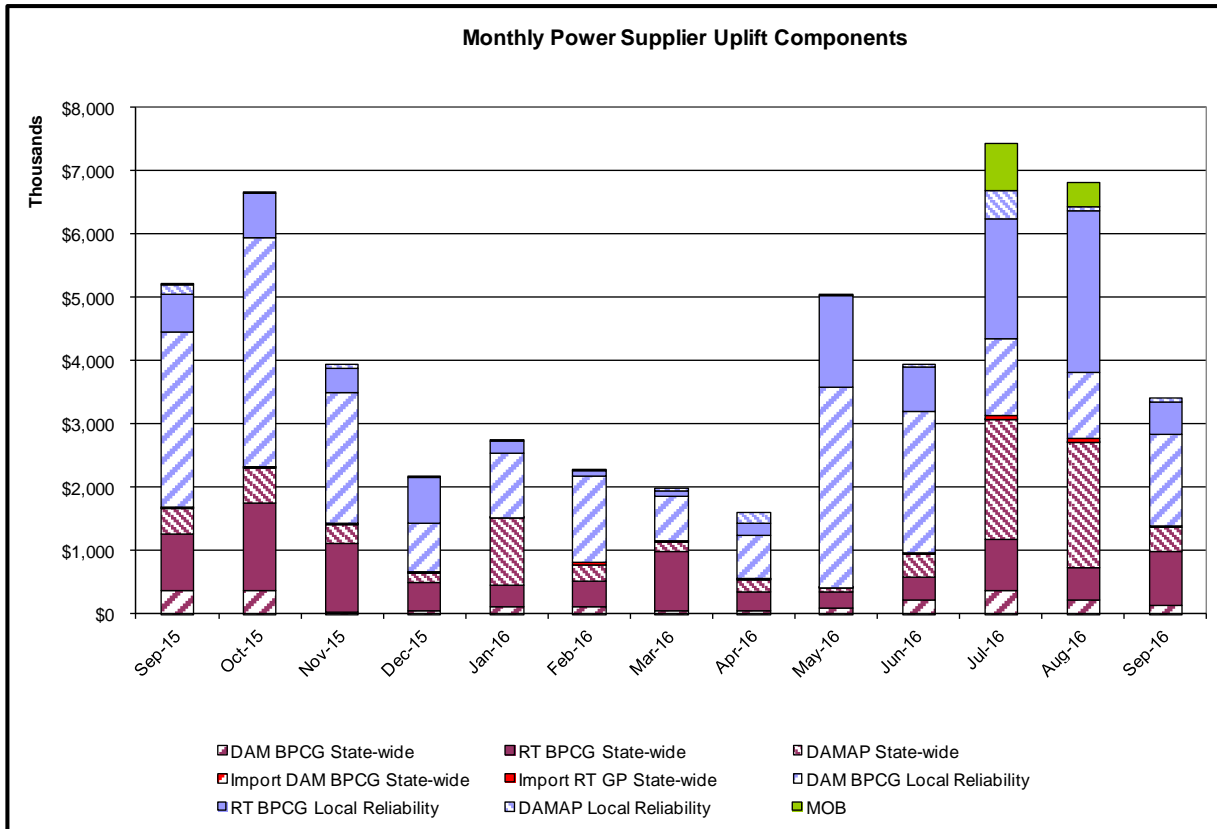
Monthly Balancing Market Congestion Report Assumptions/Notes

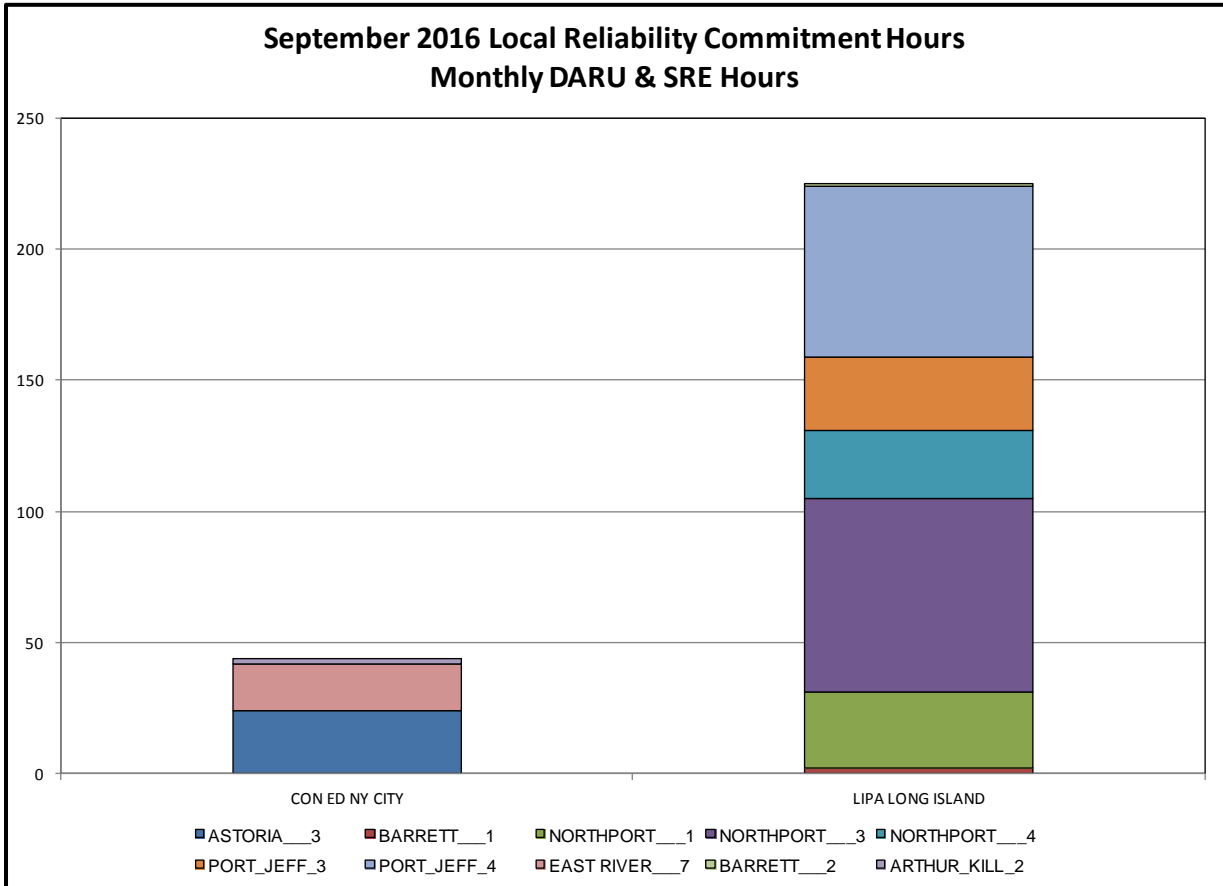
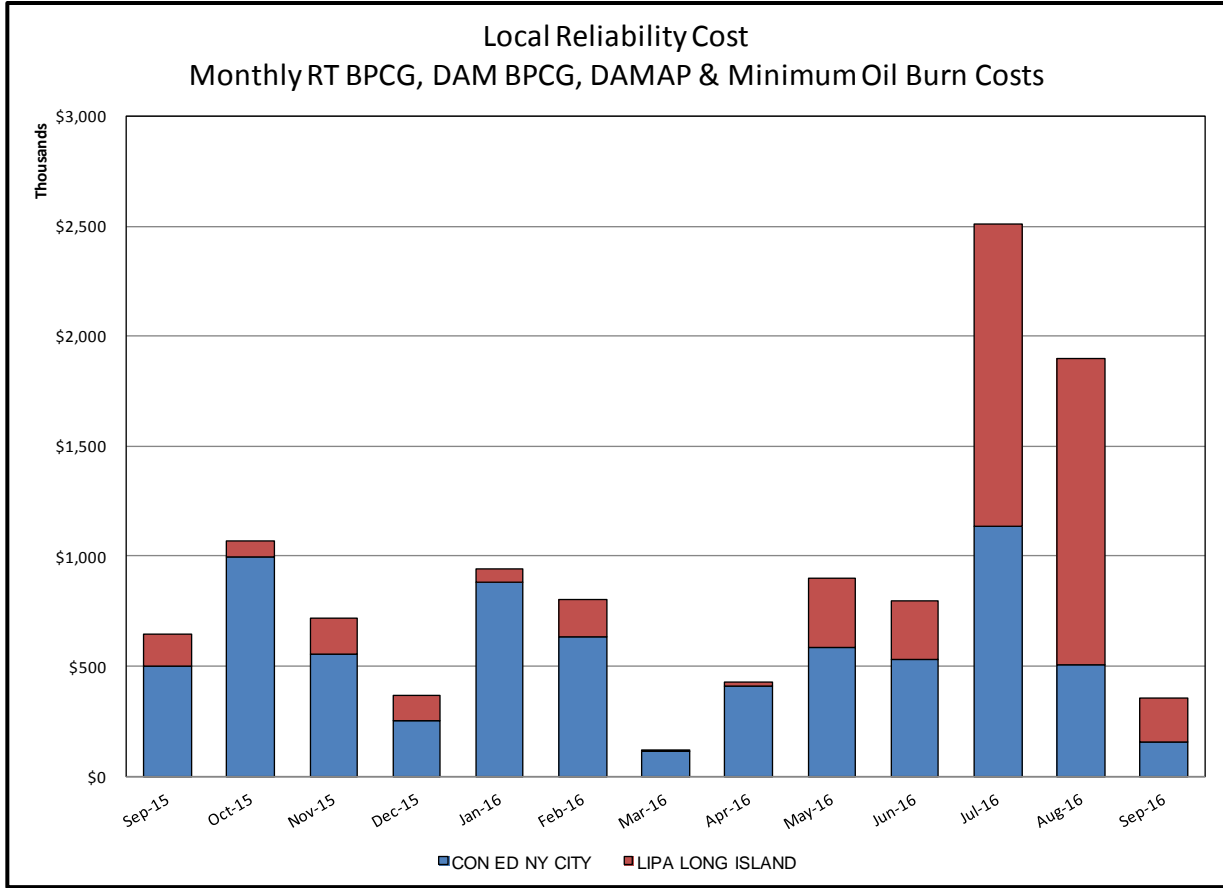
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

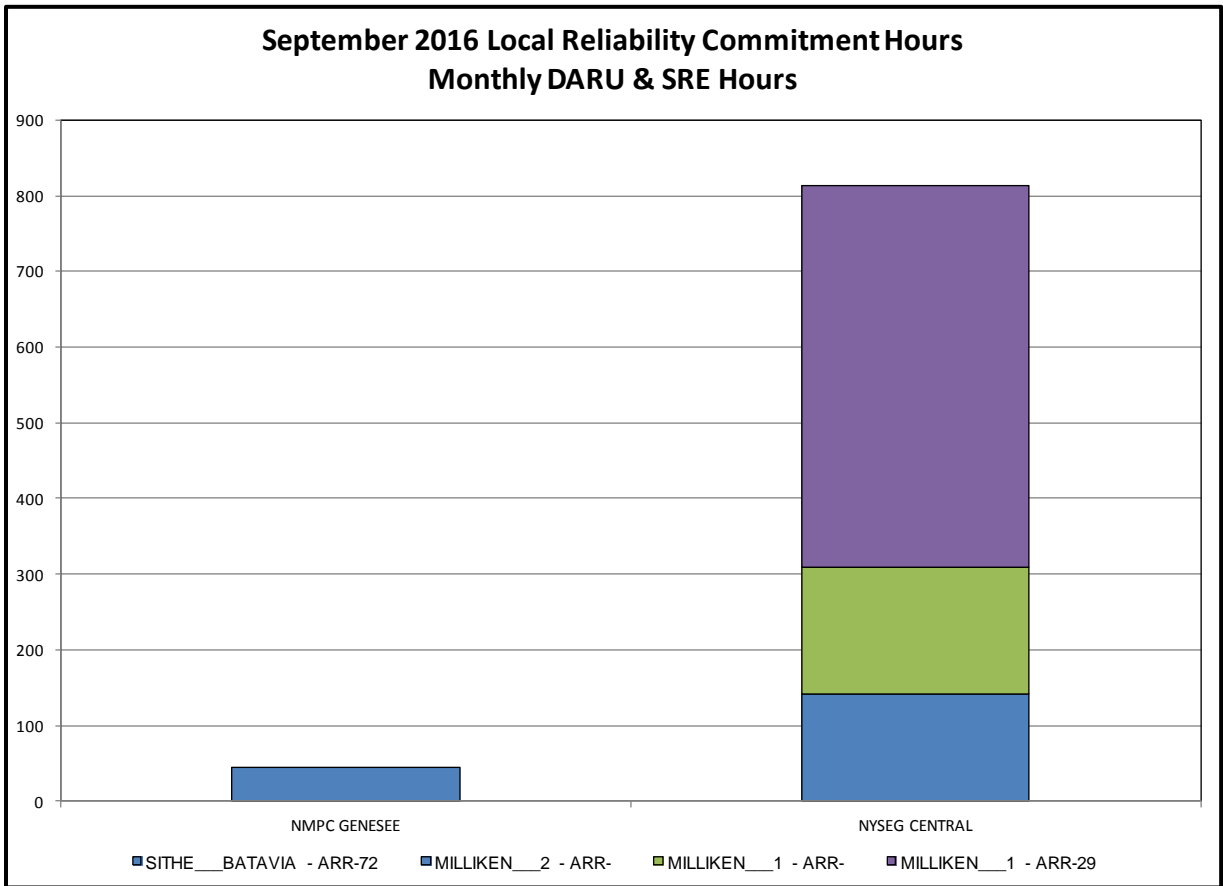
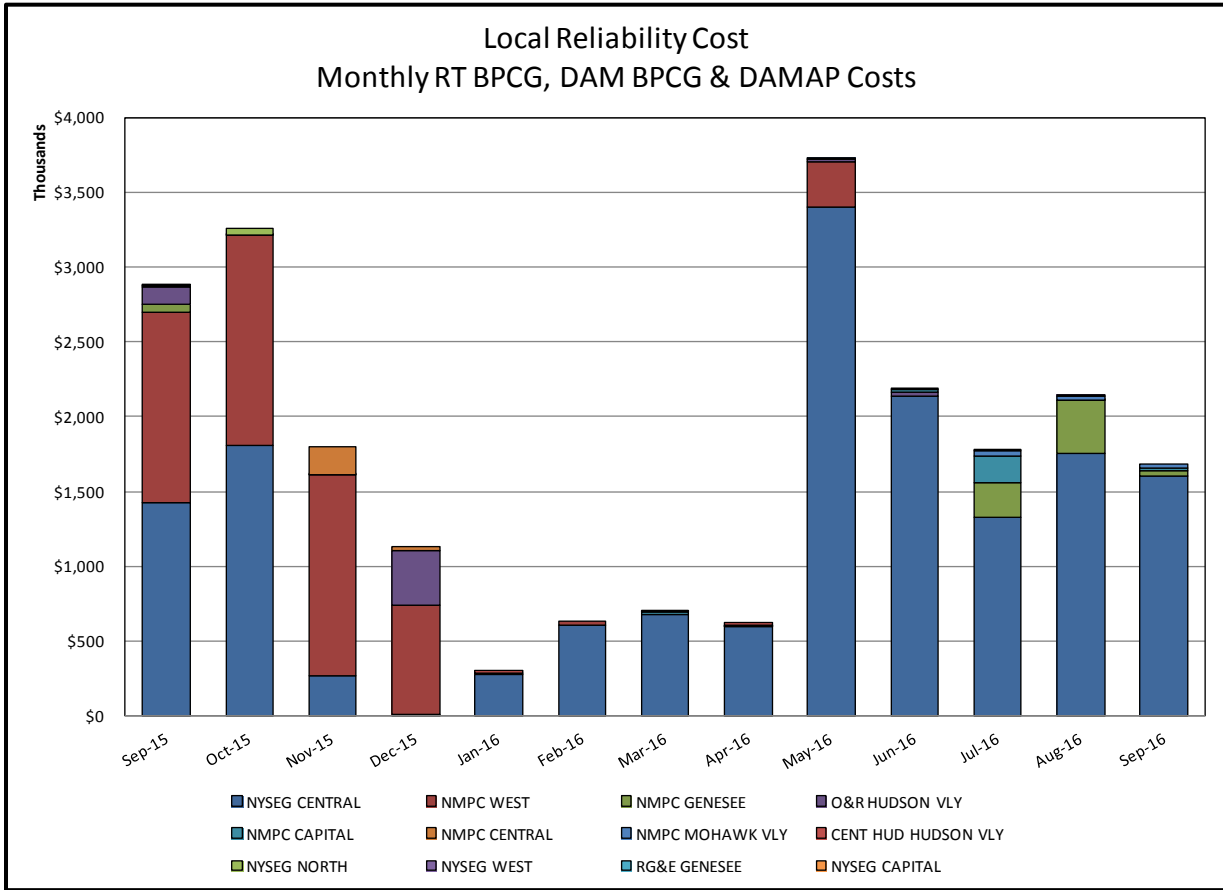


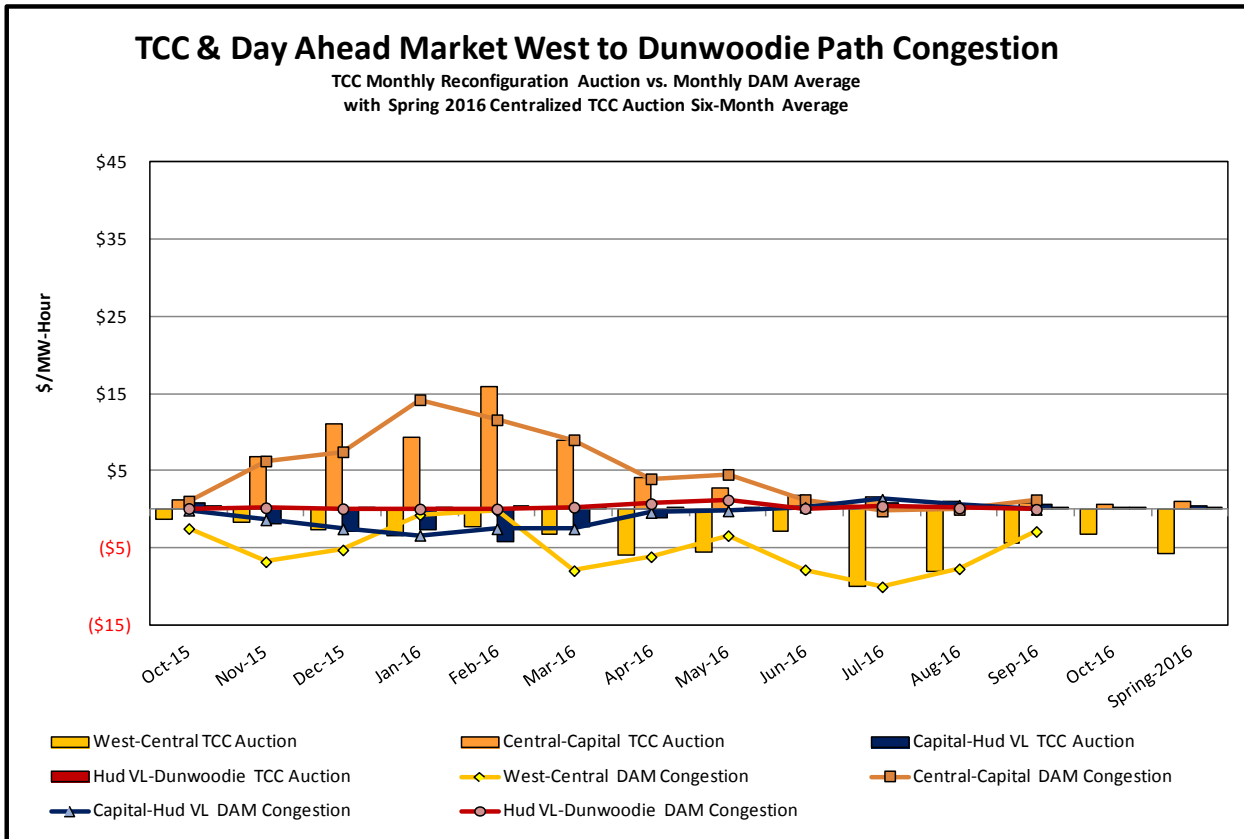
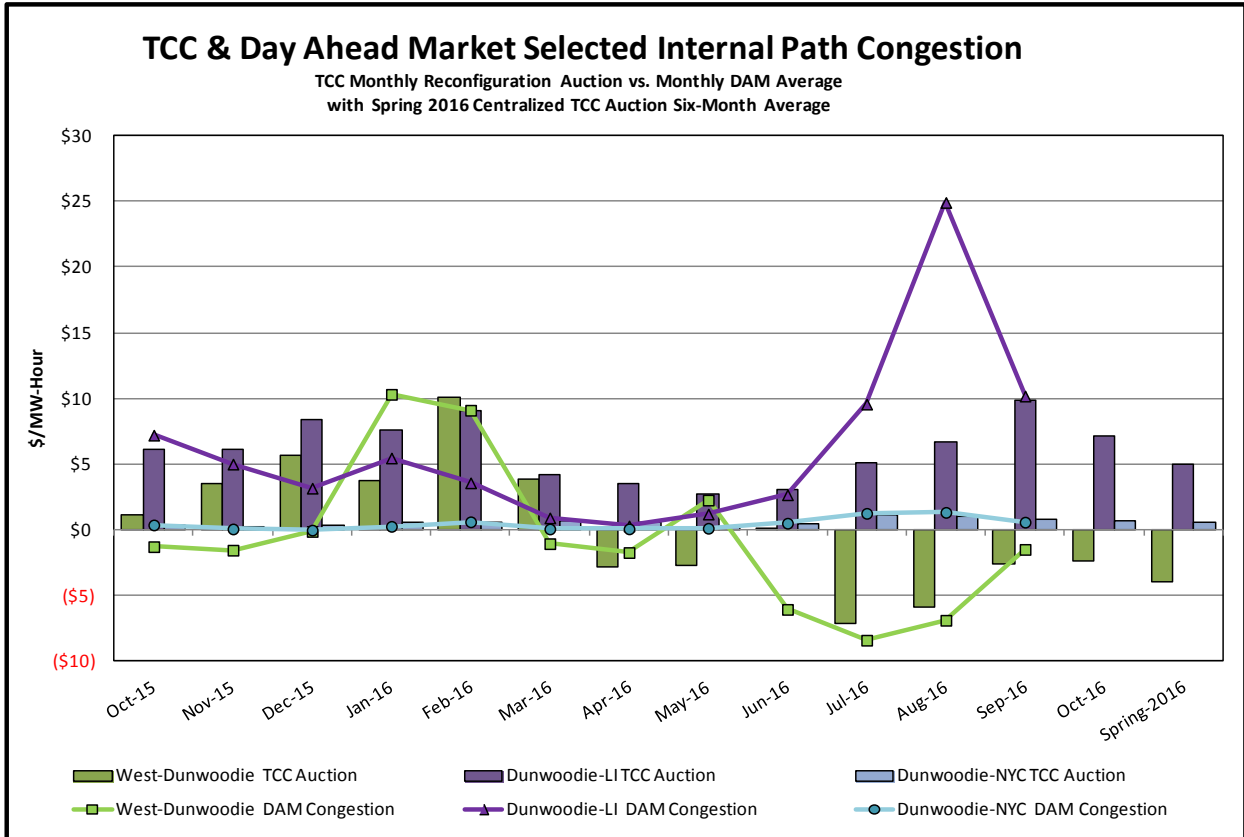
Day-Ahead Market Congestion Residual Categories

<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 External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Spring 2016 Centralized TCC Auction Six-Month Average

