

Operations Performance Metrics Monthly Report



June 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 July 11, 2016.

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June 2016 Operations Performance Highlights

- Peak load of 26,286 MW occurred on 06/20/2016 HB 16
- 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
- 3 hours of NERC TLR level 3 curtailment
- Scarcity pricing deployed 6/21/2016
- On 6/24/2016 a fire destroyed the Ramapo PAR 3500. The Ramapo PAR scheduling ratio is now 46% and PJM-NY TTC is reduced by 400 MW.
- Implemented changes to Real Time Market LEC modeling on 6/28/2016
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

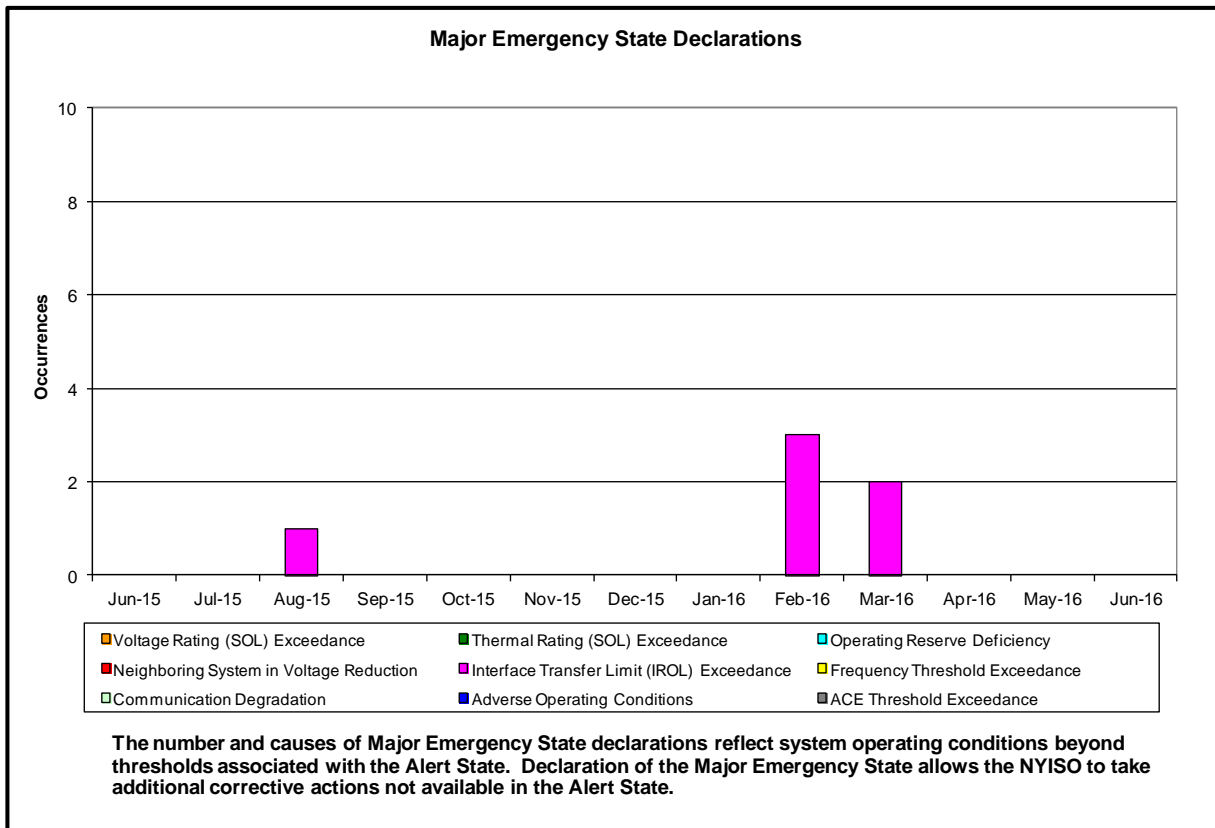
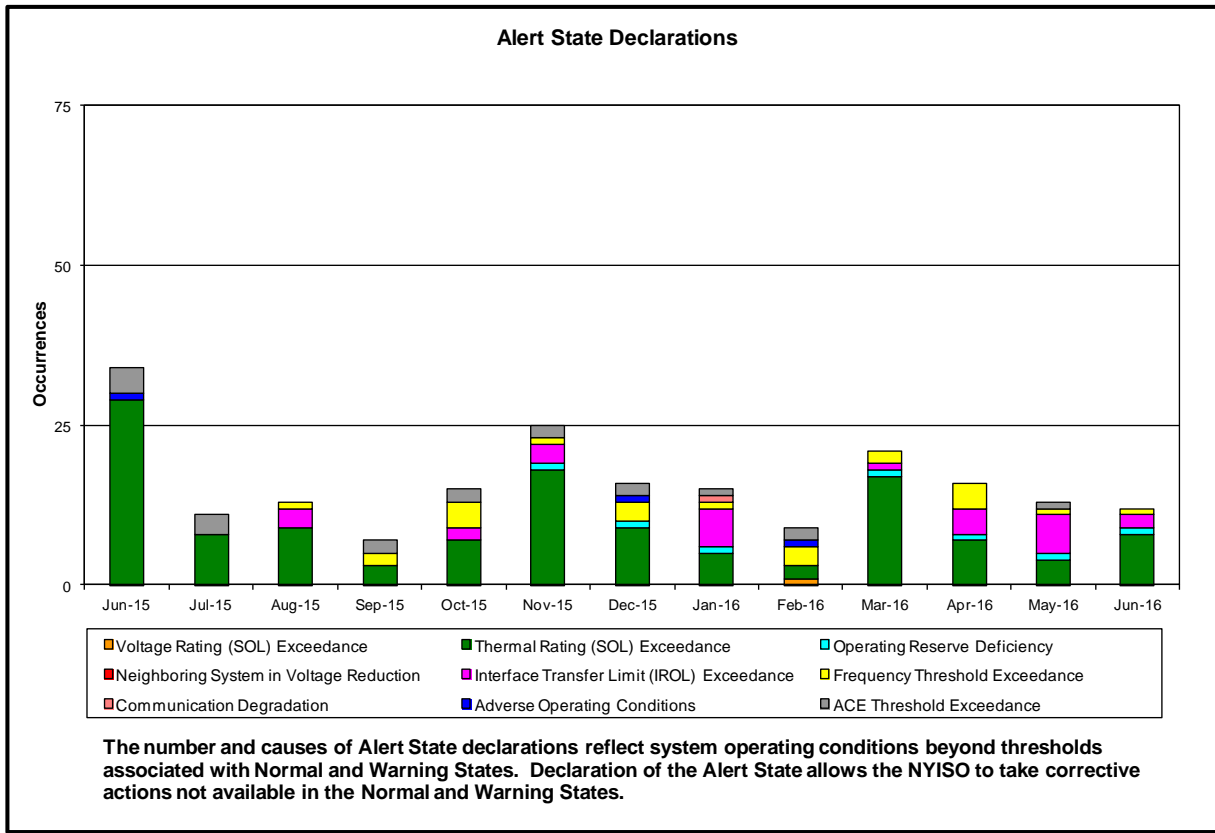
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$0.26	\$14.42
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.01)	\$0.11
NY Savings from NE-NY Coordinated Transaction Scheduling	(\$0.15)	(\$1.00)
Total NY Savings	\$0.10	\$13.53
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.19	\$1.11
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.12	\$0.78
Total Regional Savings	\$0.31	\$1.89

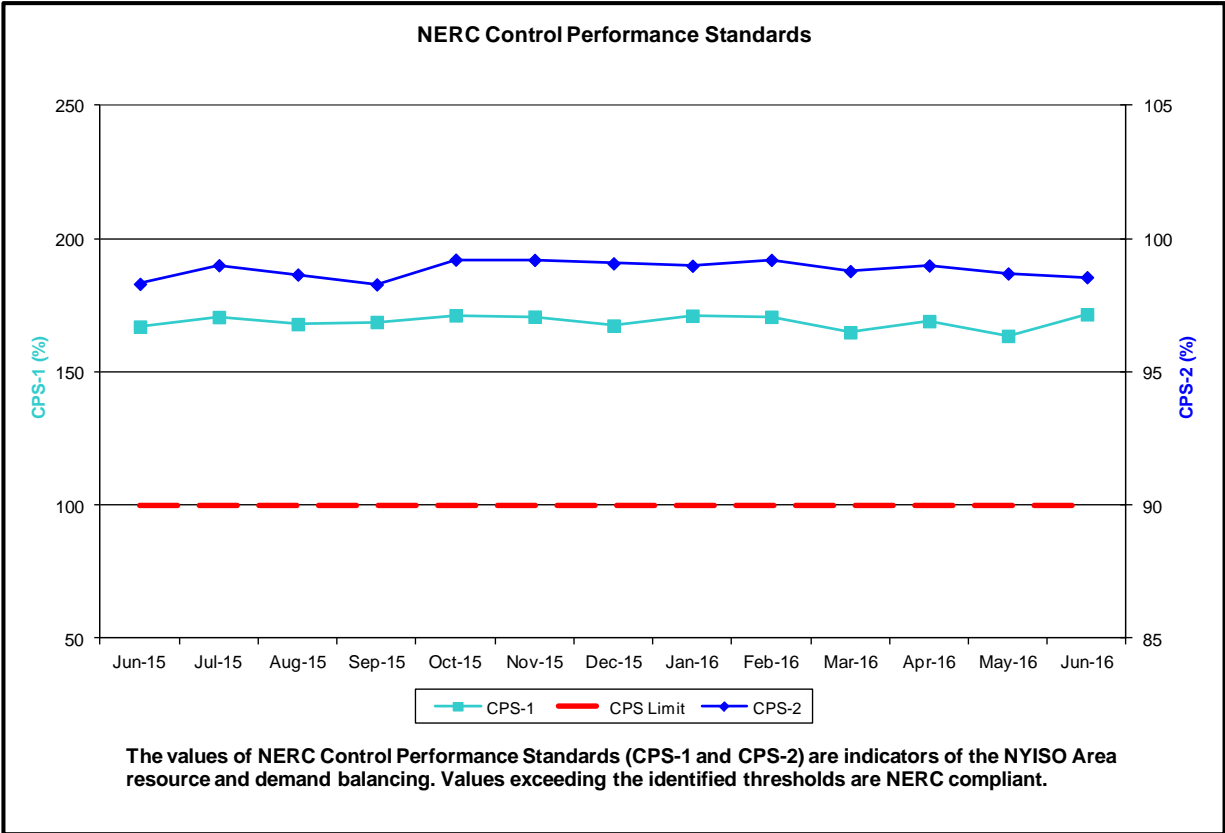
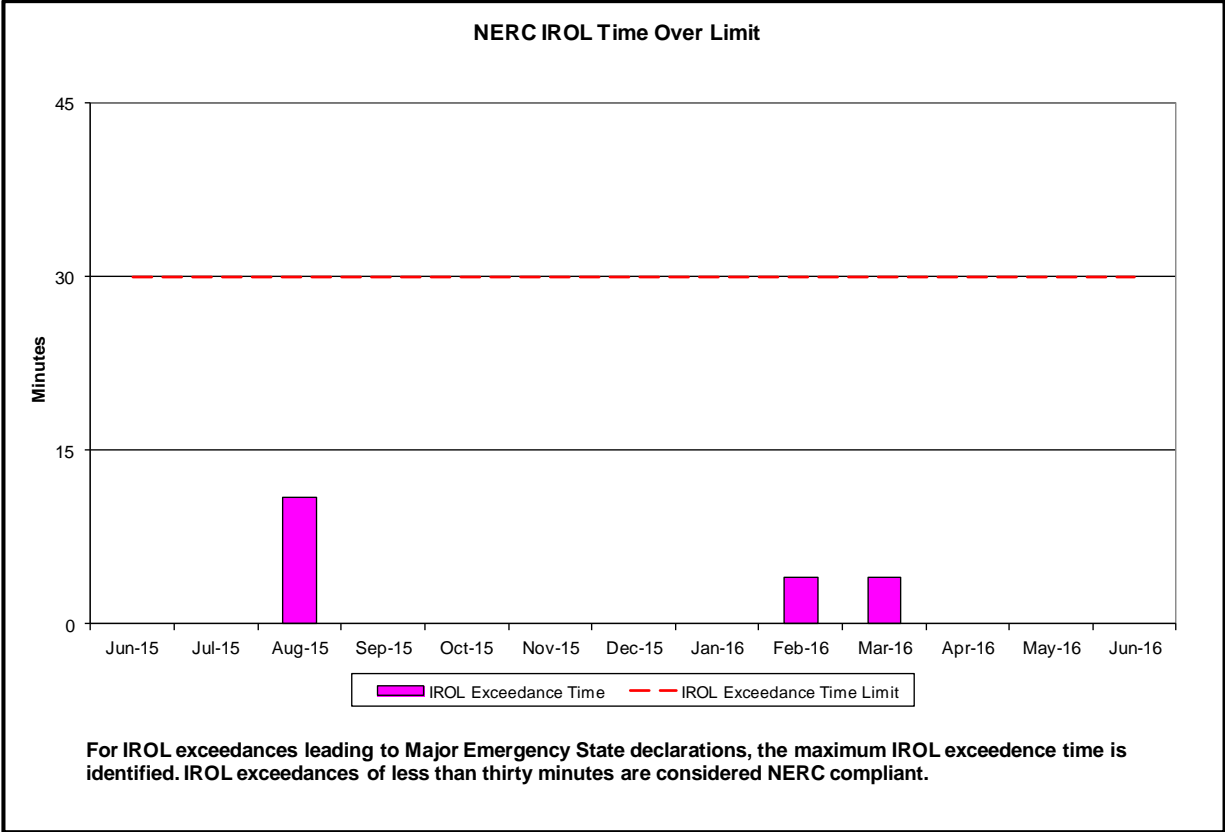
- Statewide uplift cost monthly average was (\$0.01)/MWh
- The following table identifies the Monthly ICAP spot market prices by locality and the price delta.

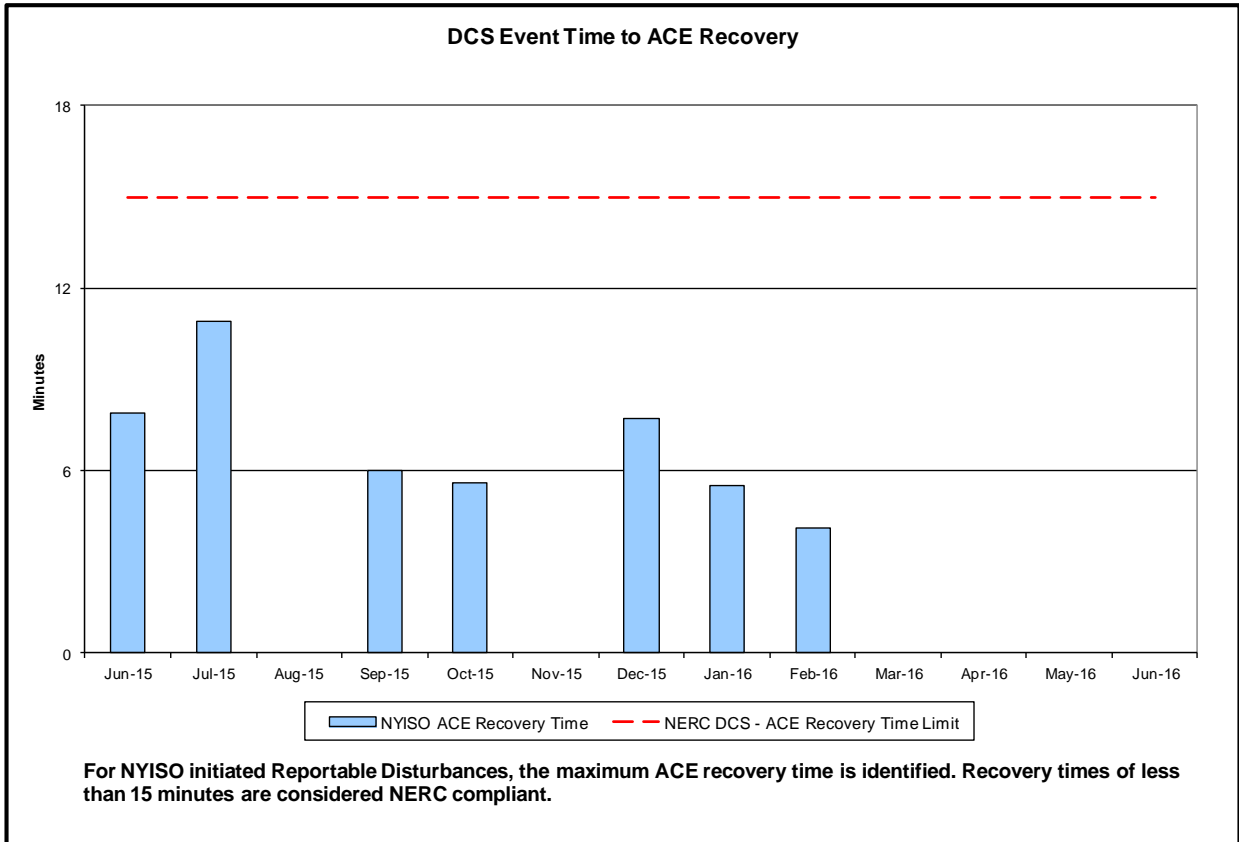
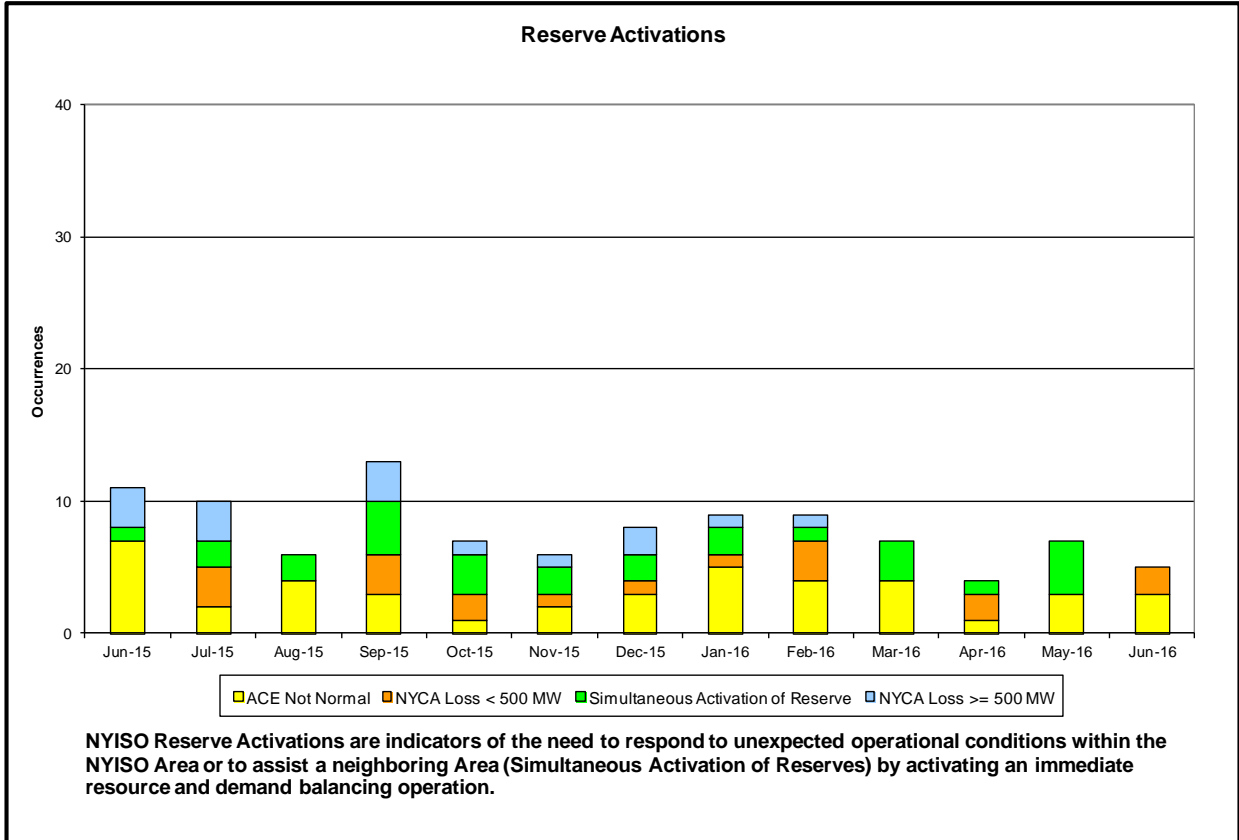
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
July 2016 Spot Price	\$4.27	\$9.25	\$12.22	\$4.37
June 2016 Spot Price	\$4.89	\$9.28	\$12.29	\$4.89
Delta	(\$0.62)	(\$0.03)	(\$0.07)	(\$0.52)

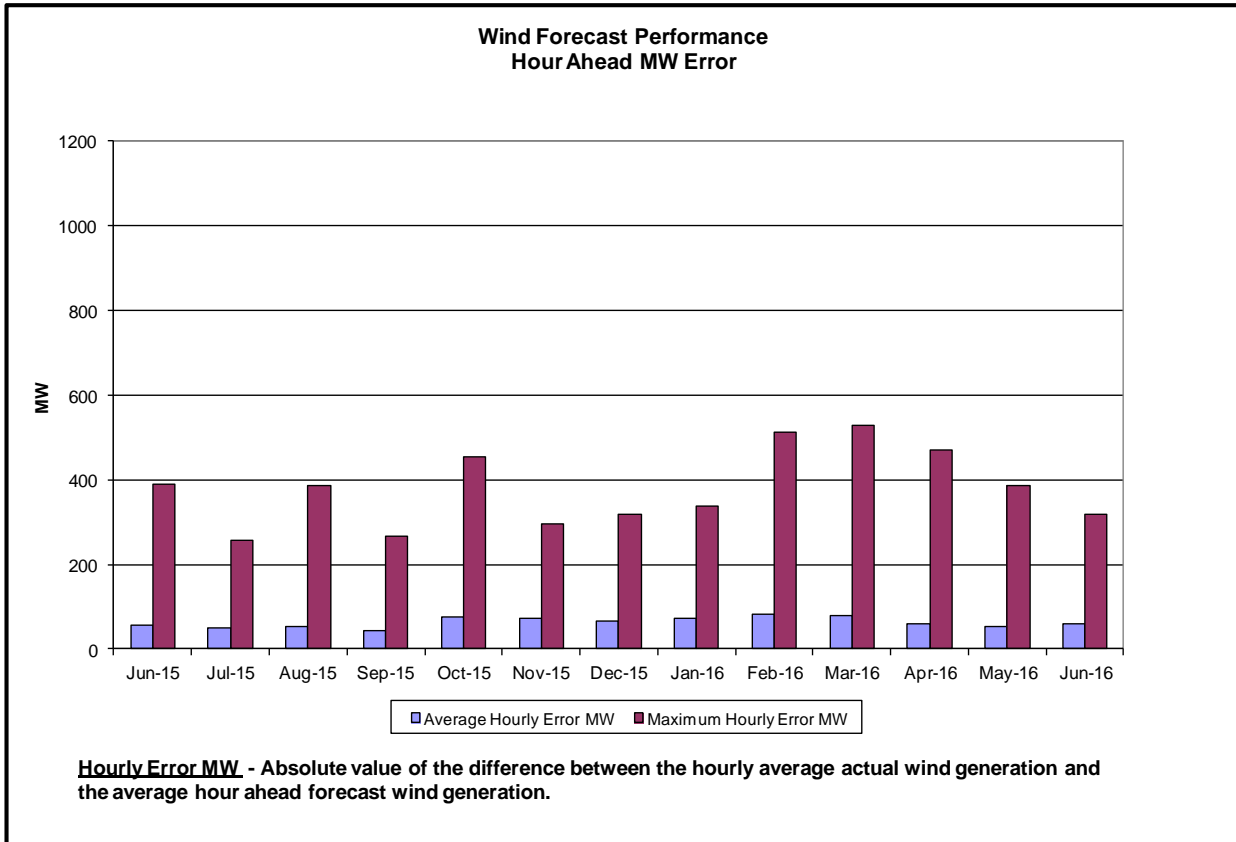
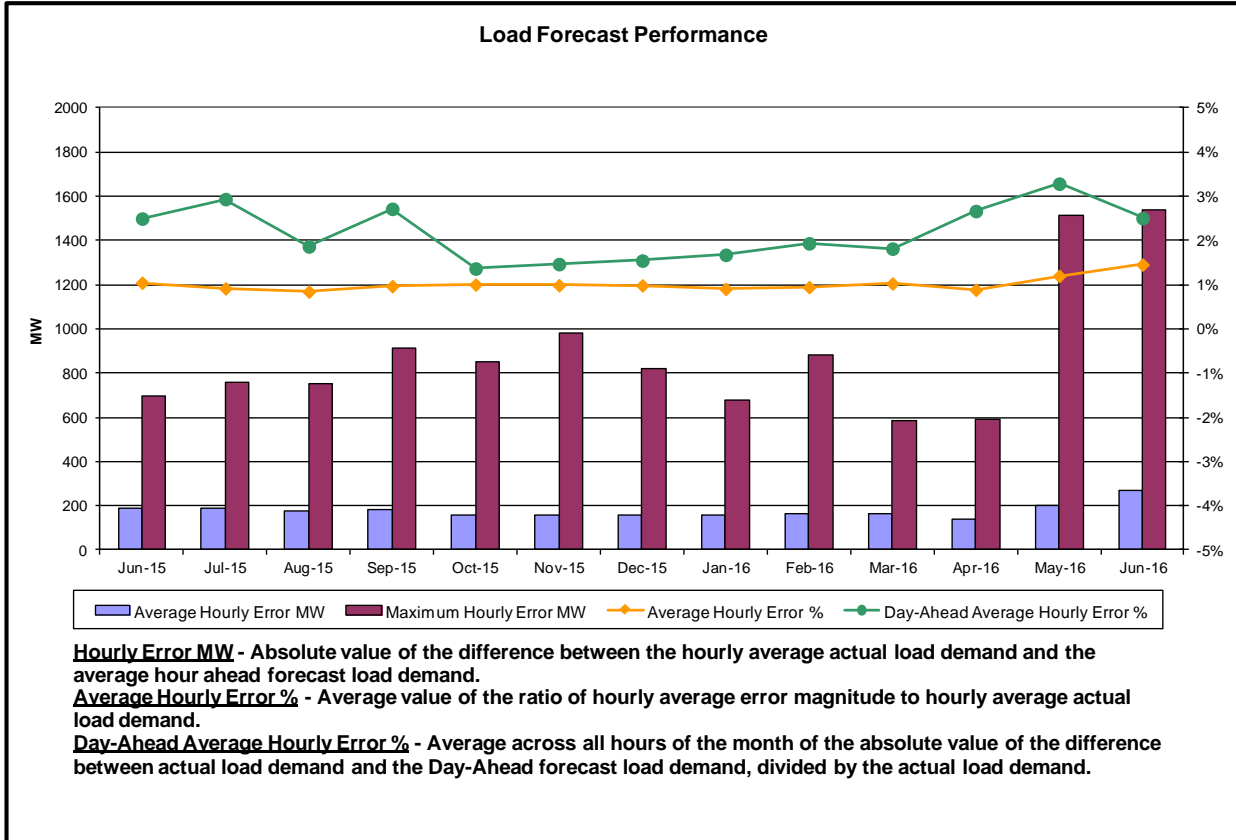
- NYCA - Price decreased by \$0.62 due to less Unoffered, less Exports, and an increase in Imports.
- LI - Price decreased by \$0.52 due to less Unoffered Capacity and separation from NYCA price.

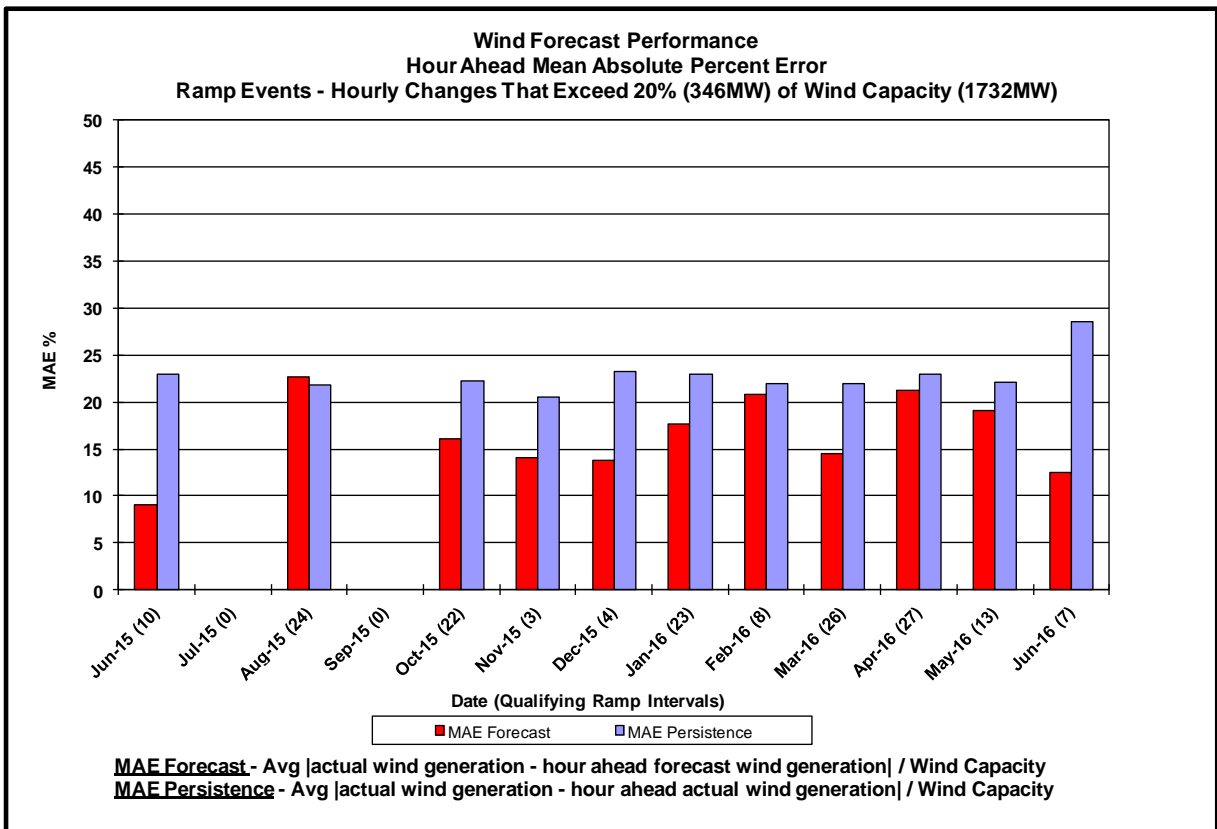
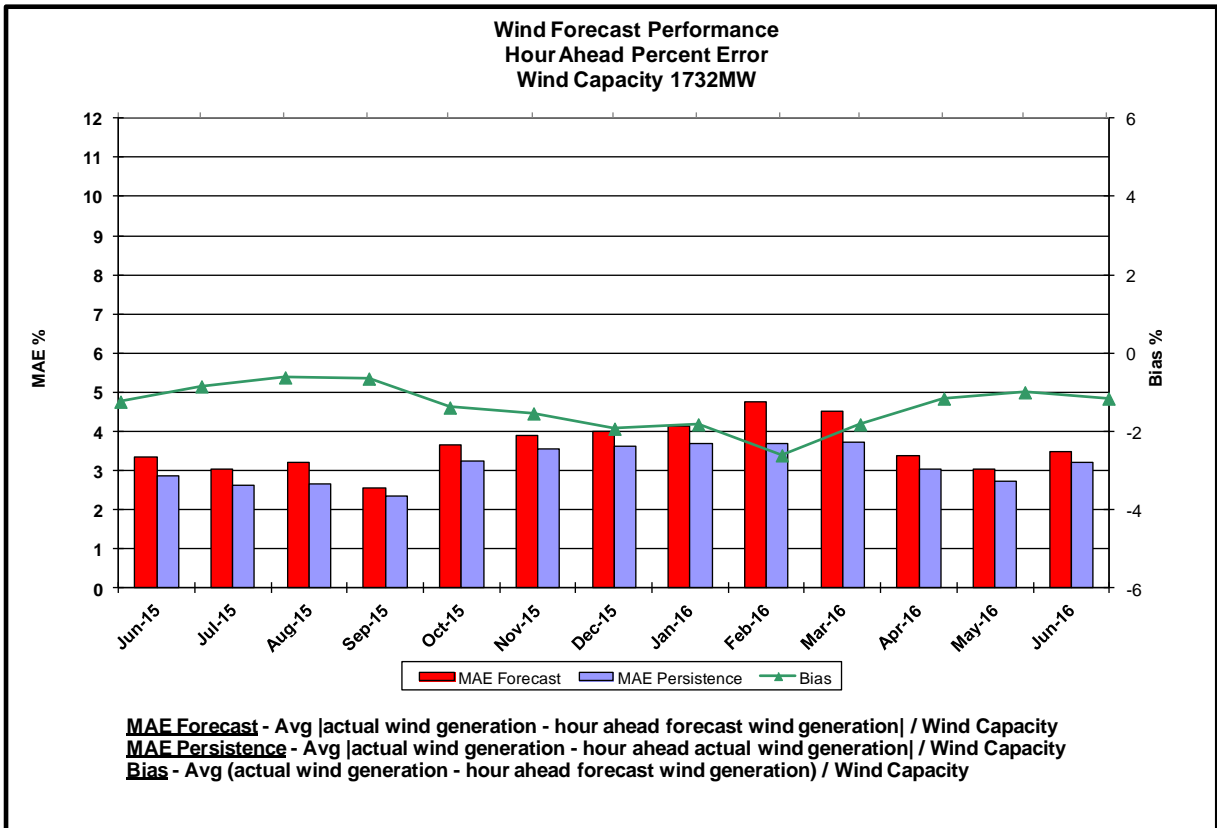
Reliability Performance Metrics

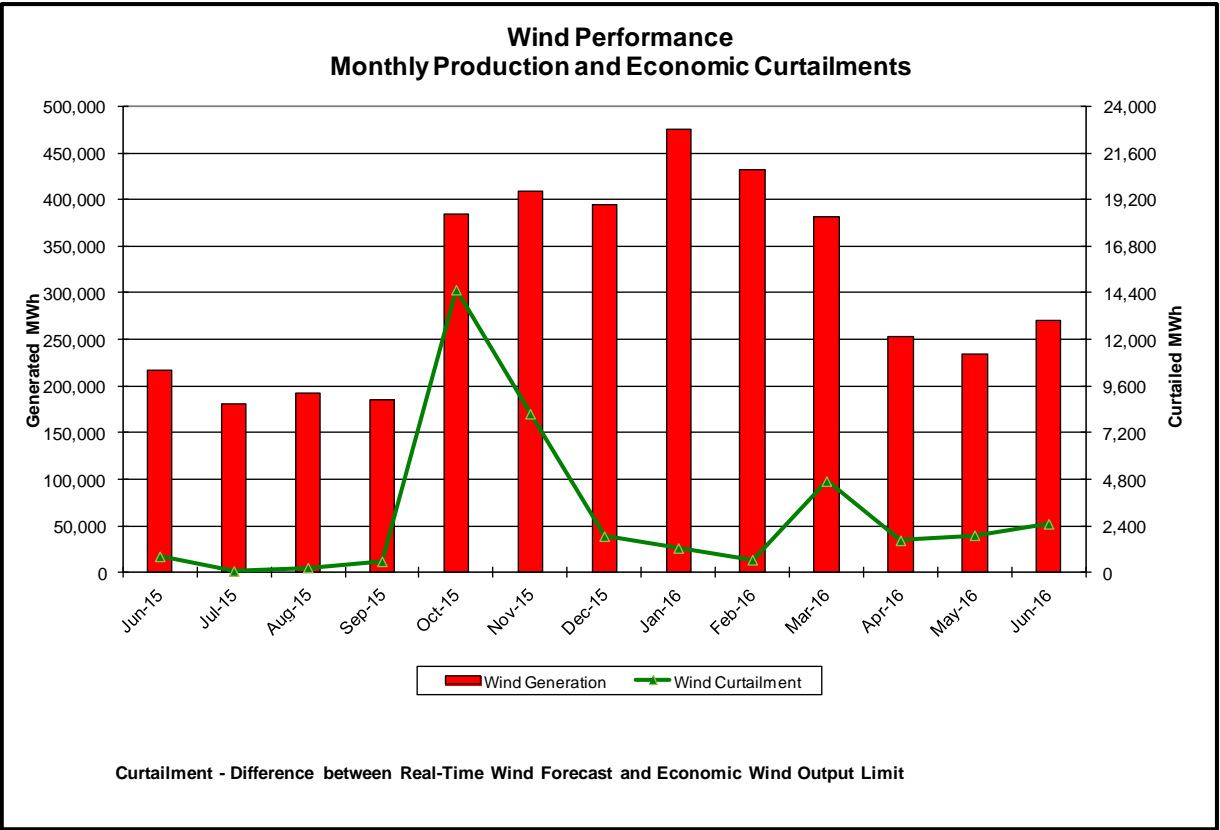
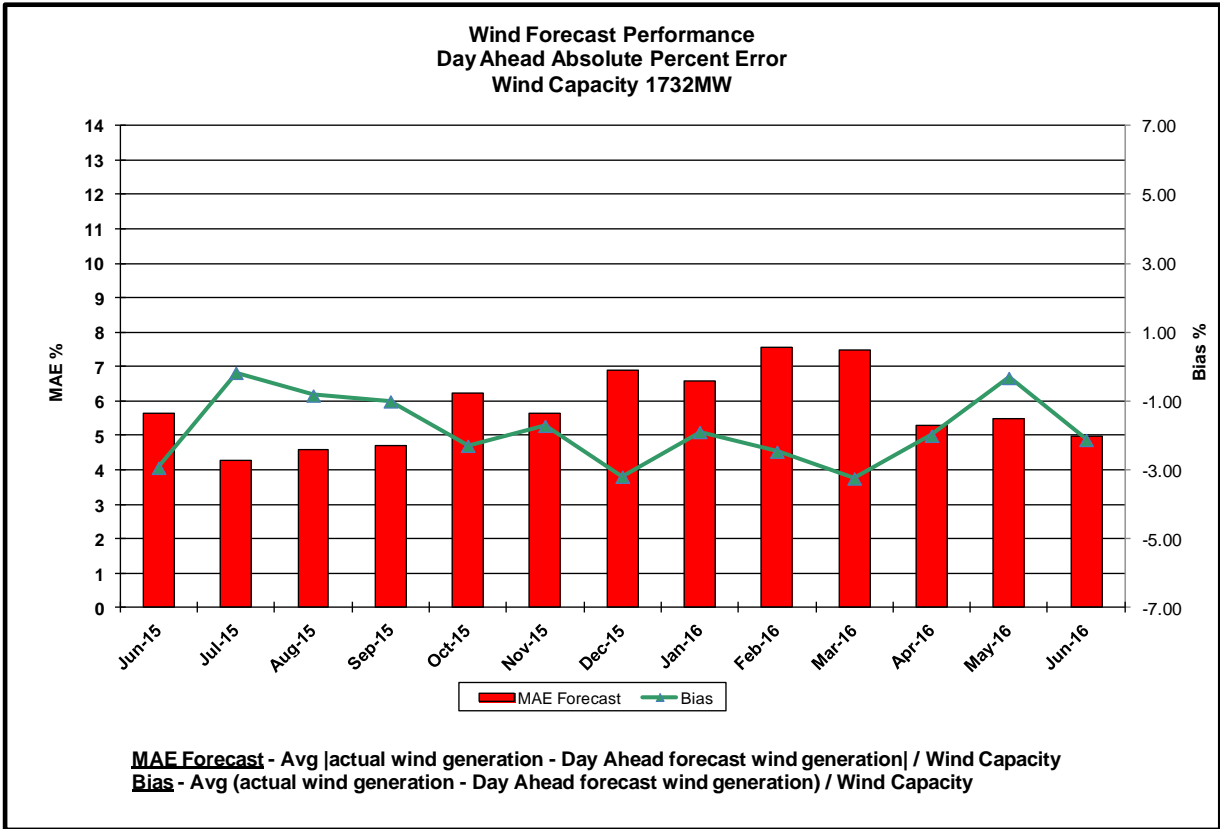


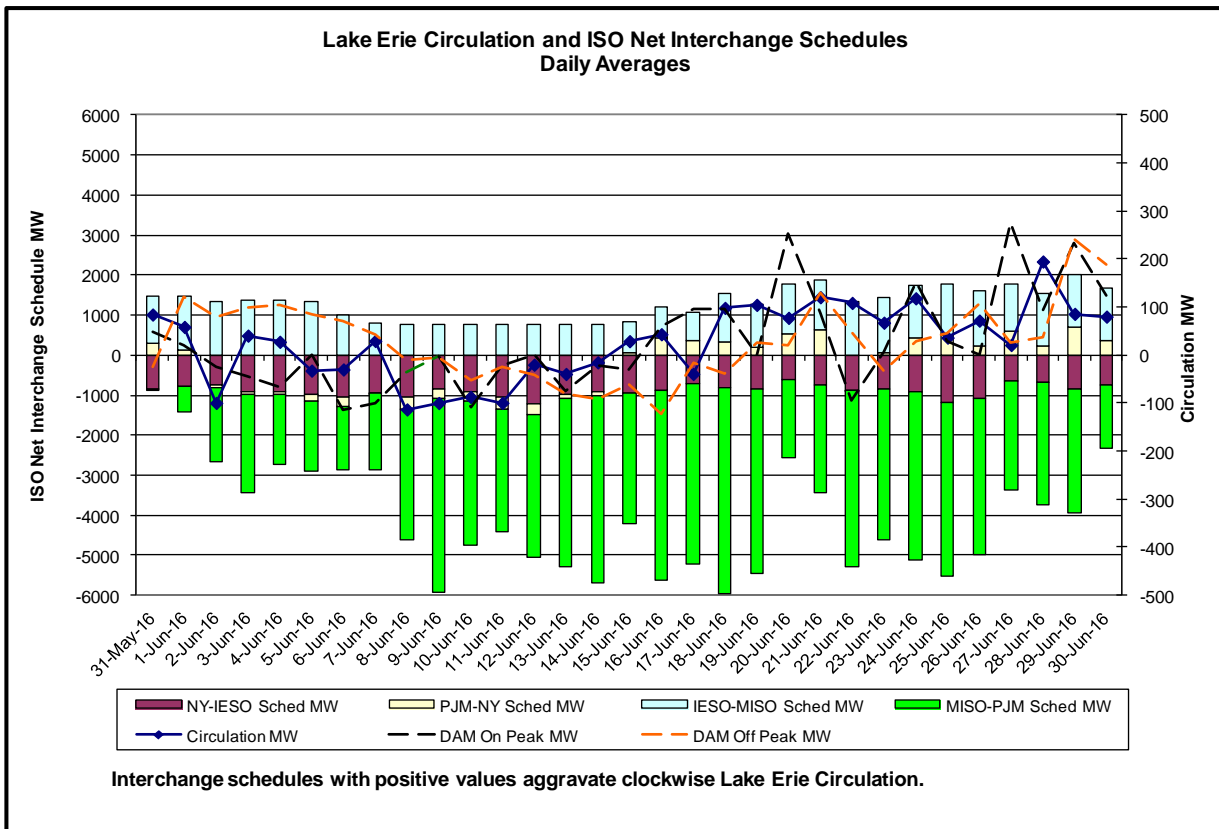
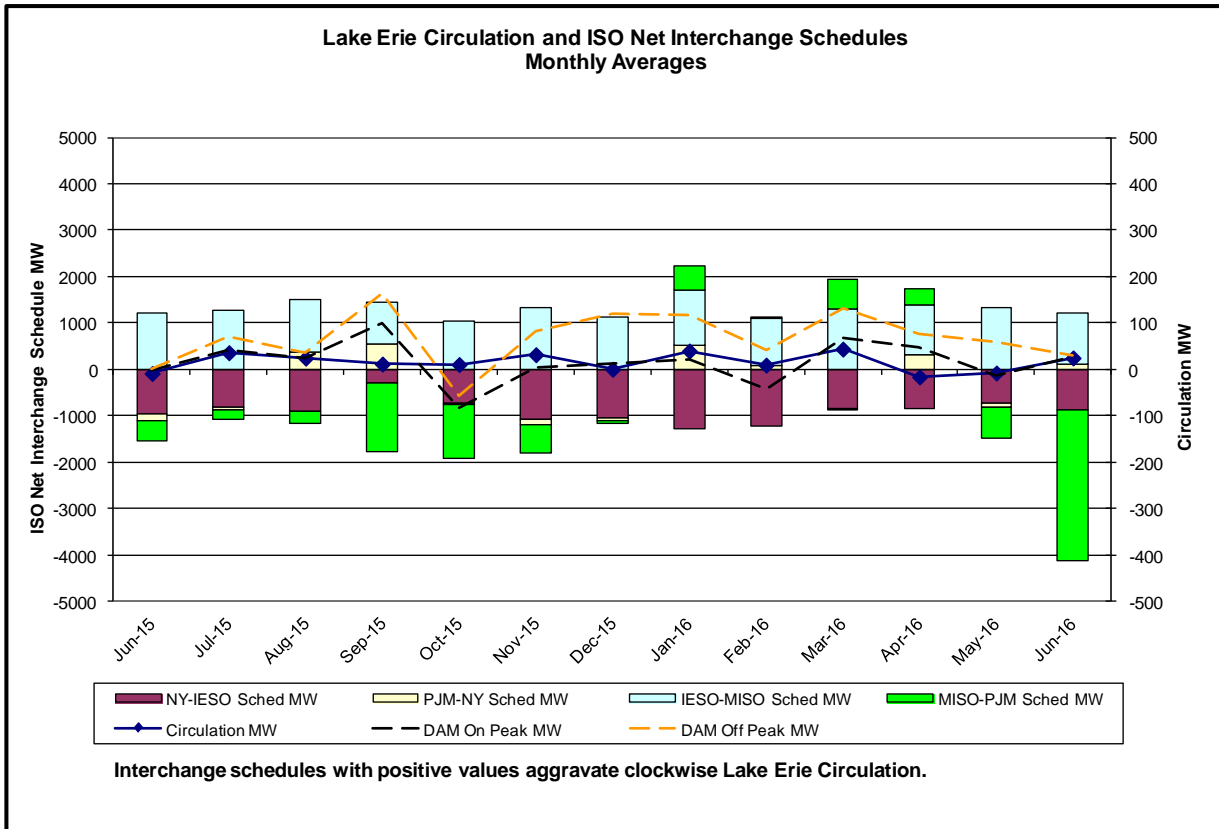




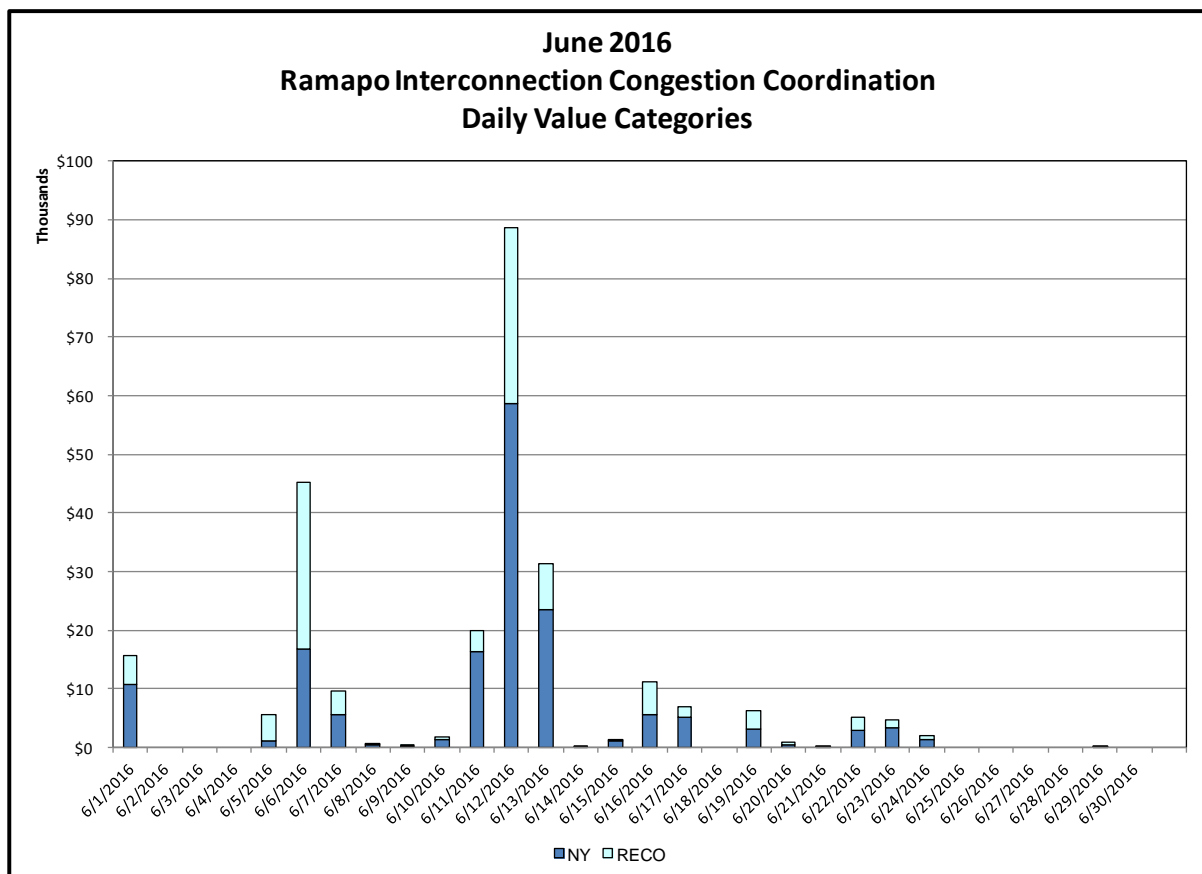
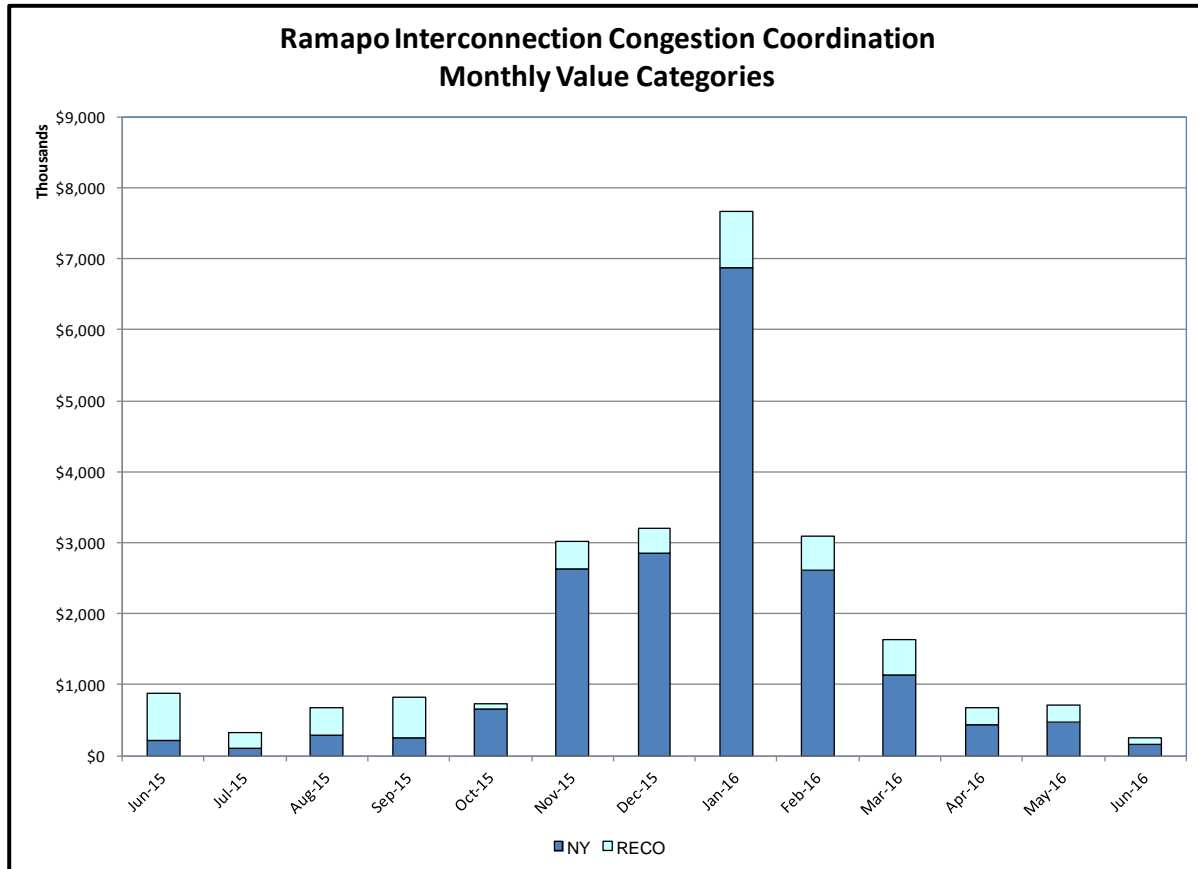






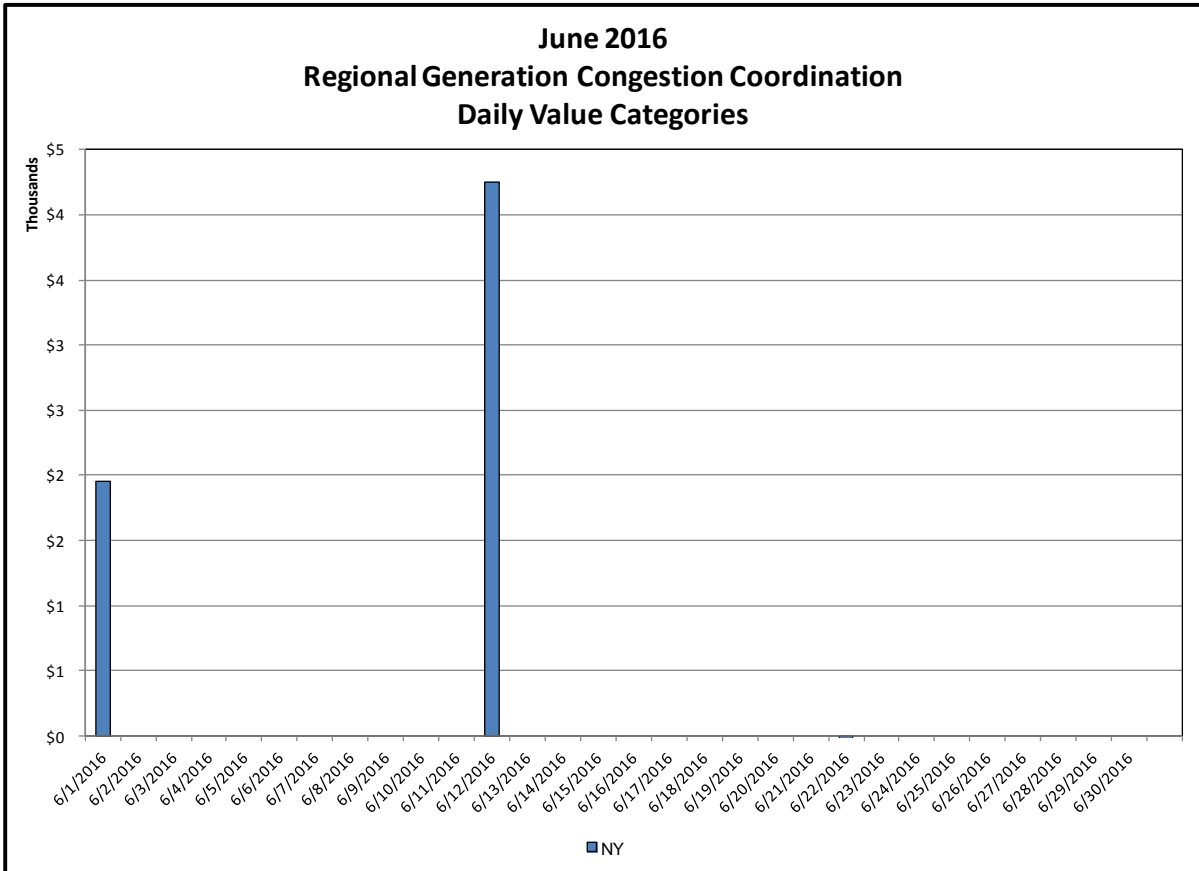
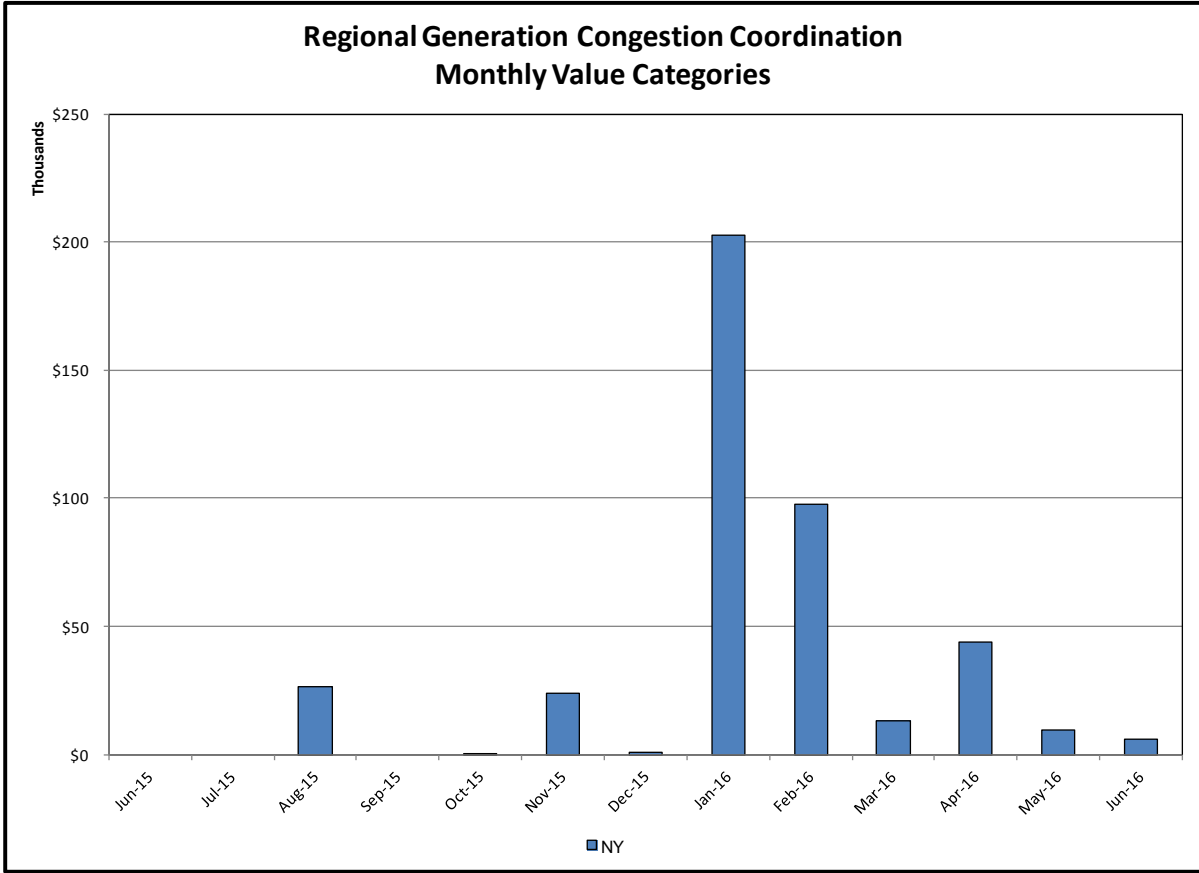


Broader Regional Market Performance Metrics



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.



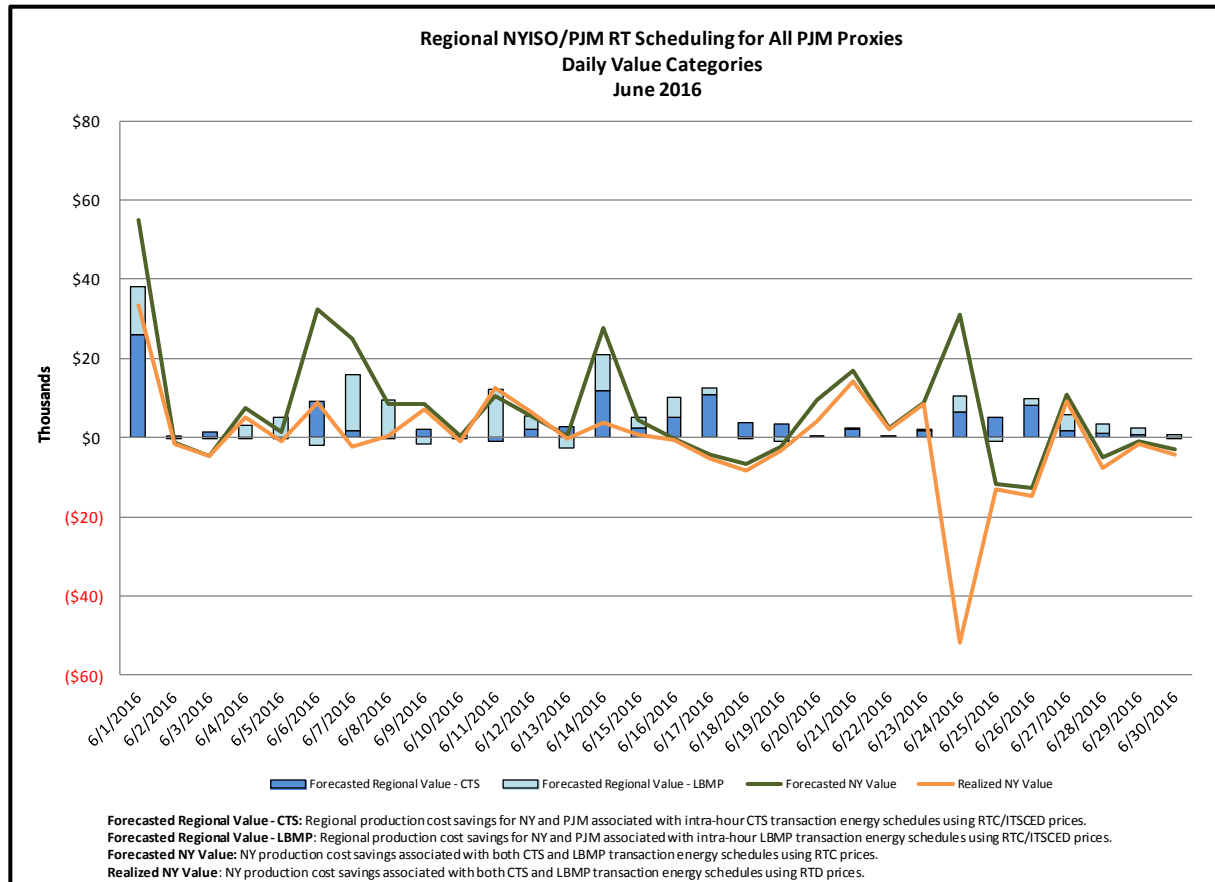
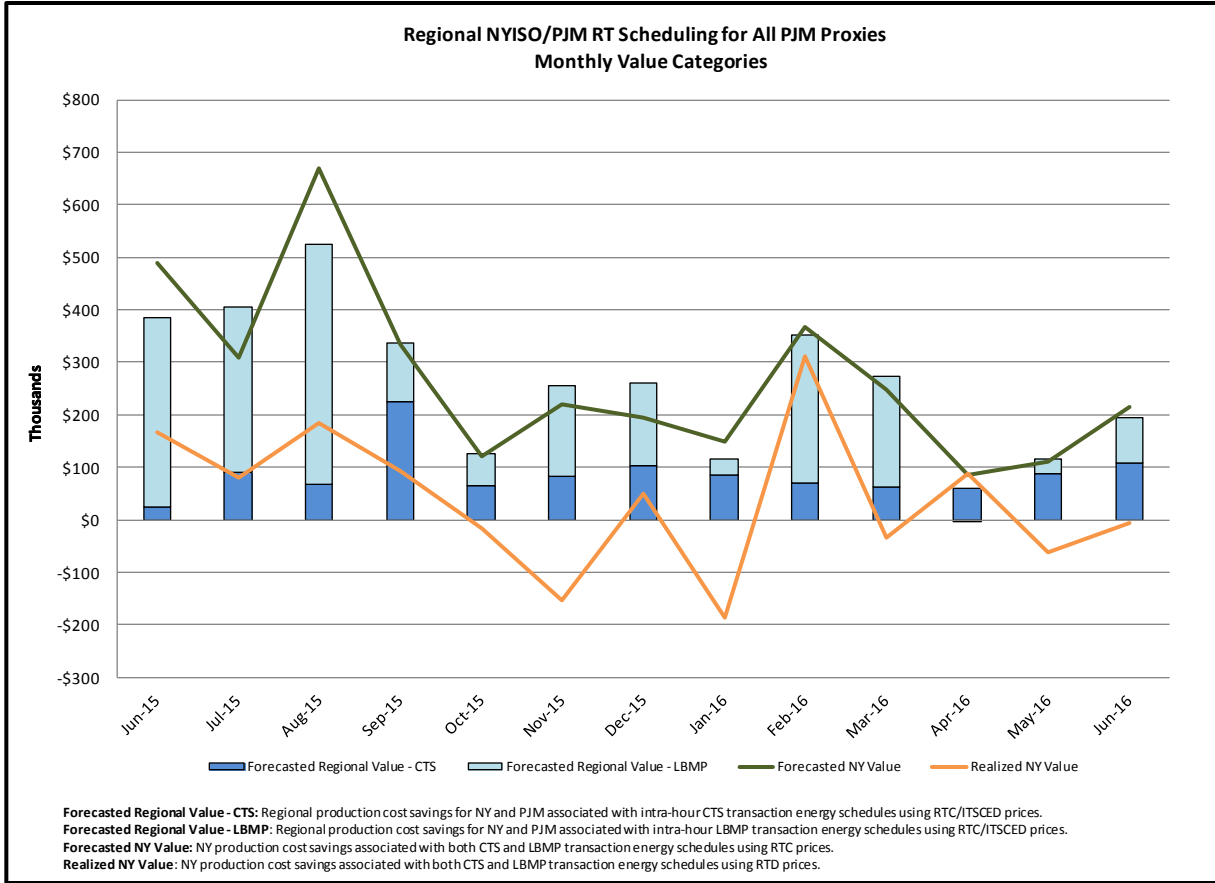
Regional Generation Congestion Coordination

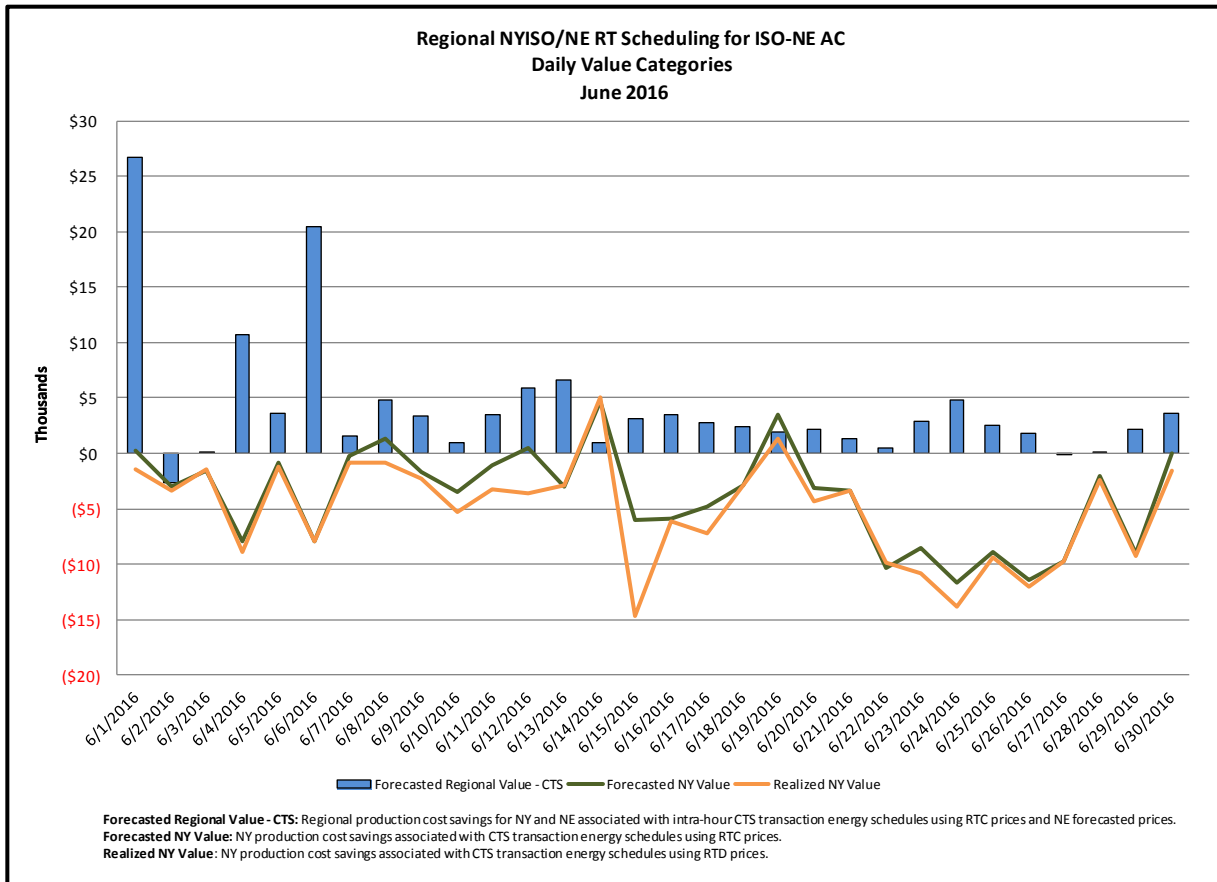
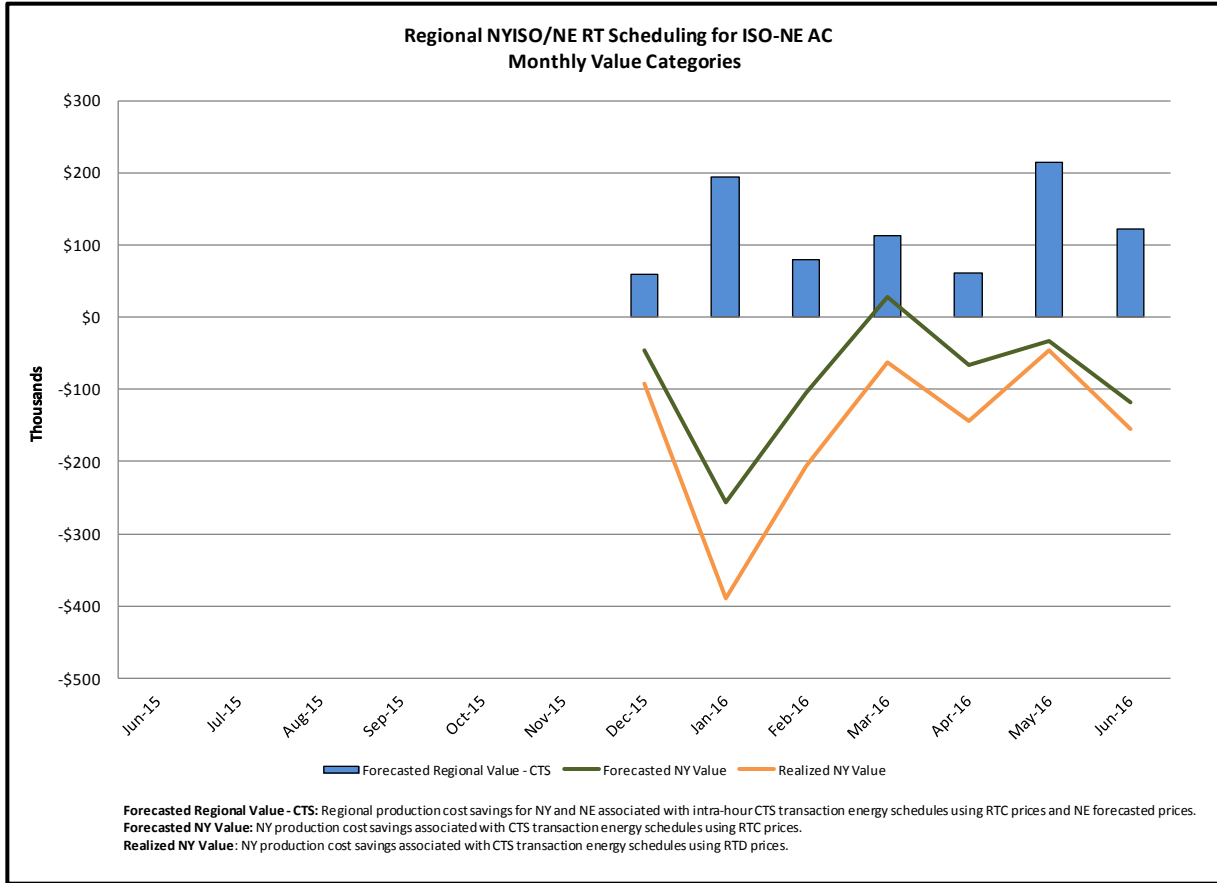
Category

NY

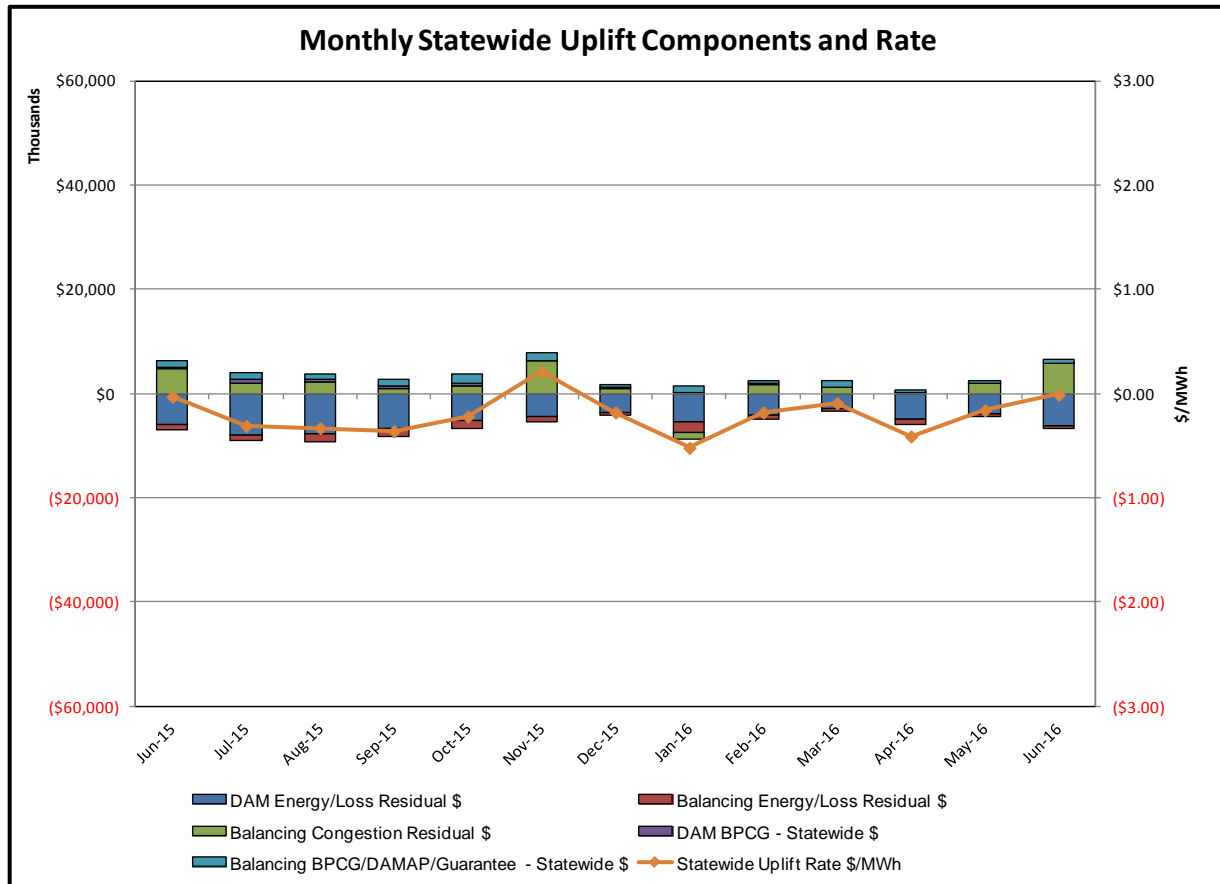
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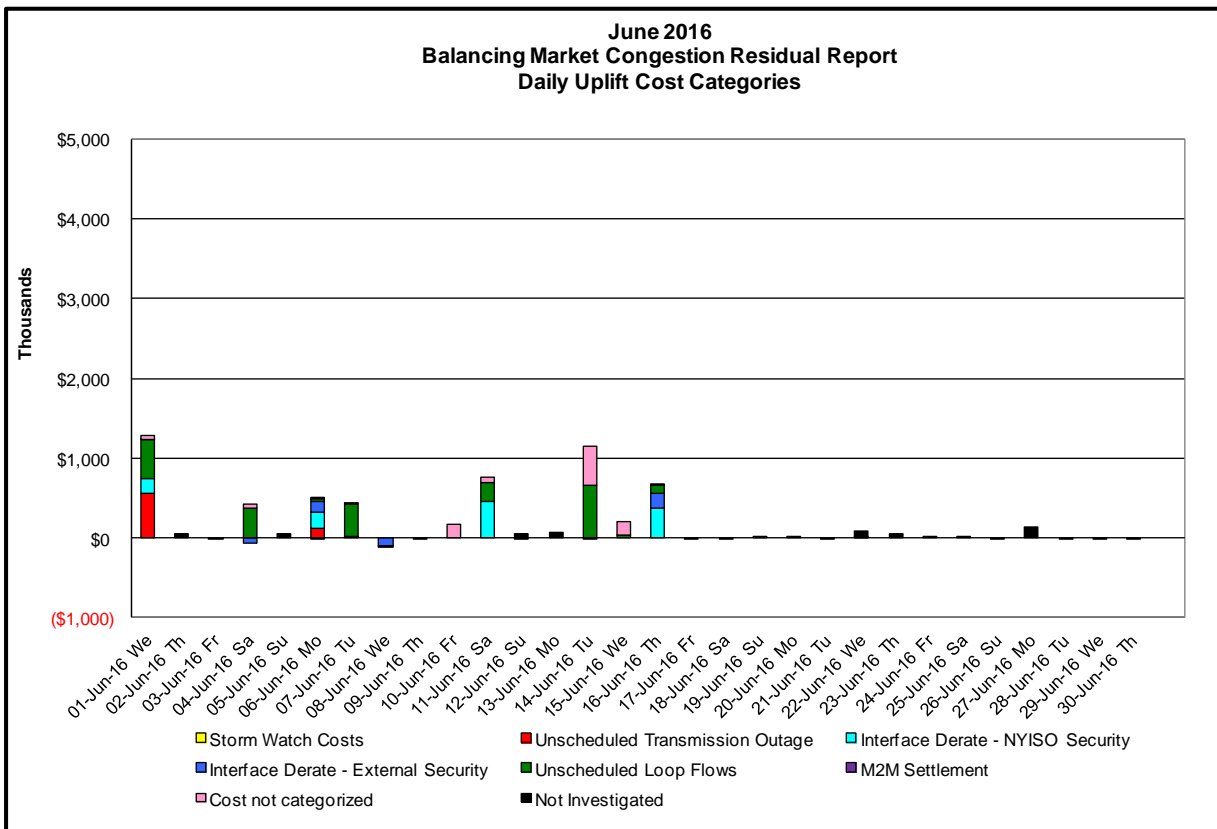
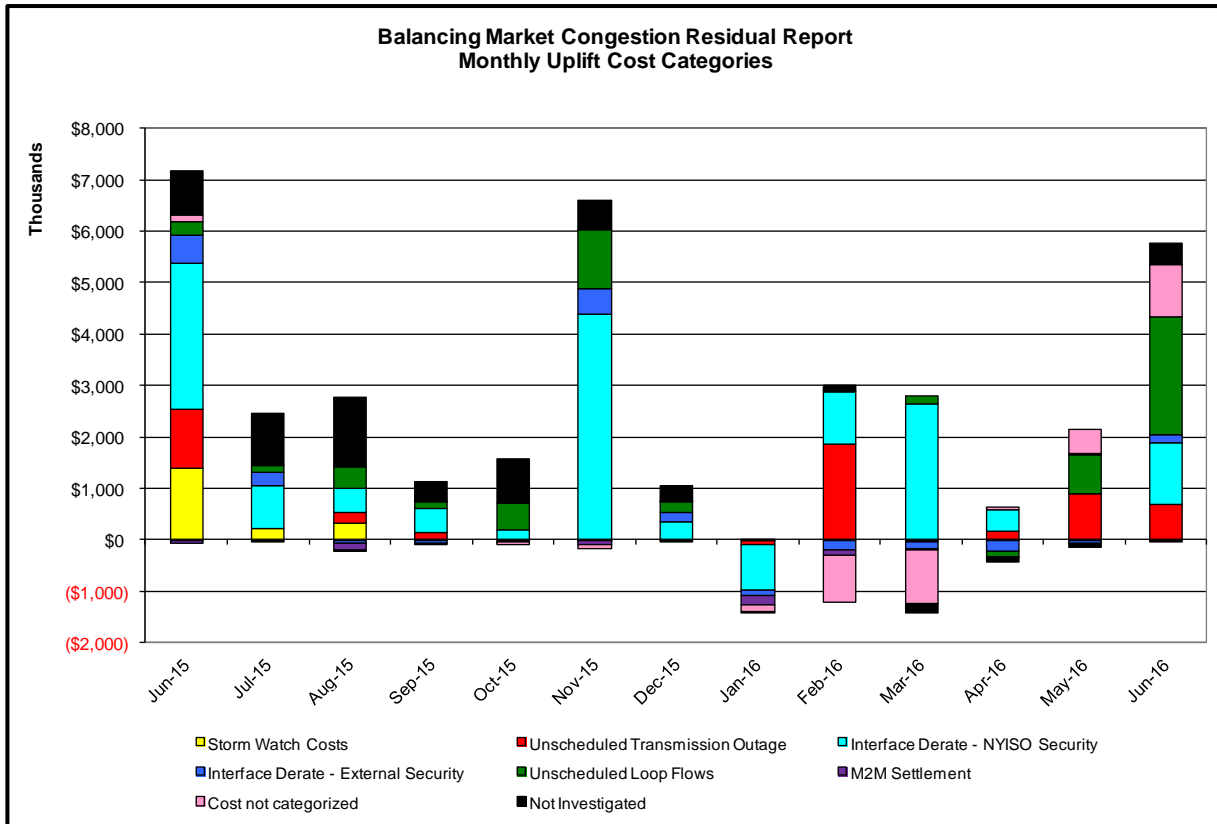
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





Market Performance Metrics





Day's investigated in June: 1,4,6,7,10,11,14,15,16

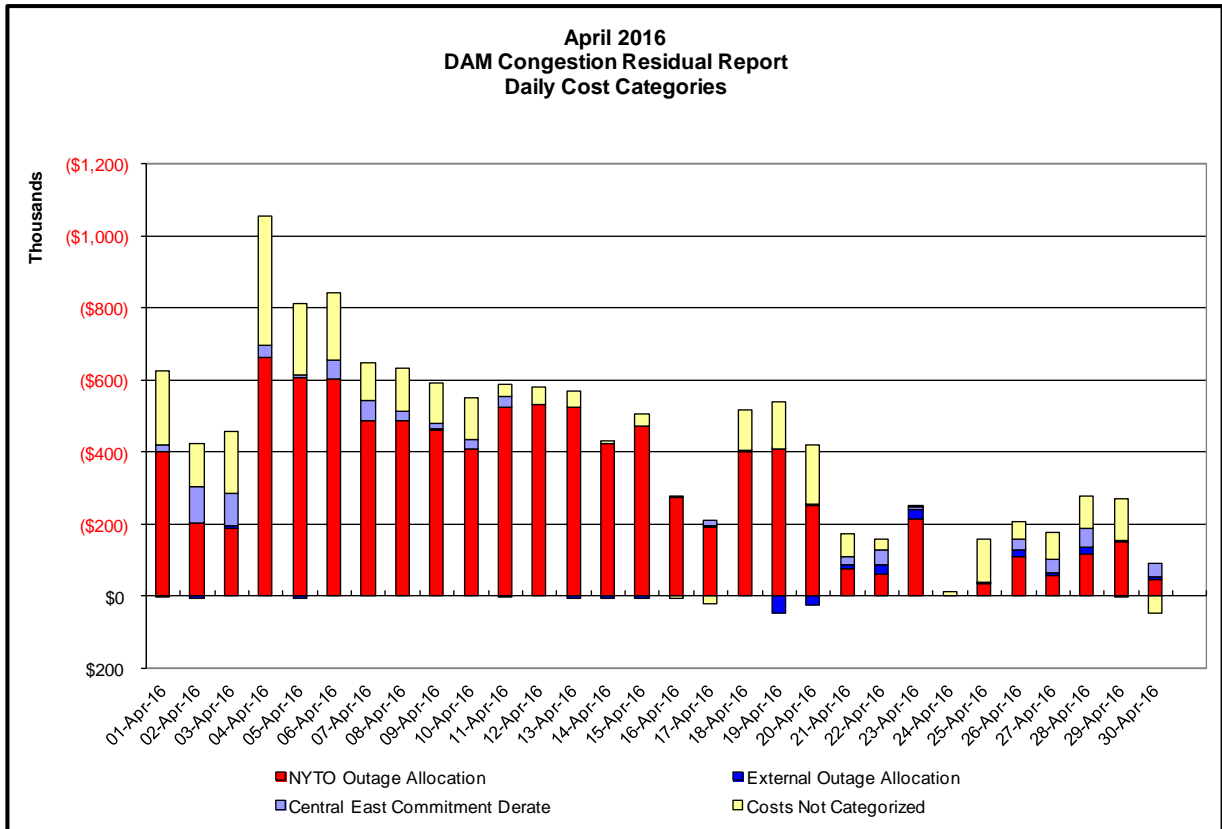
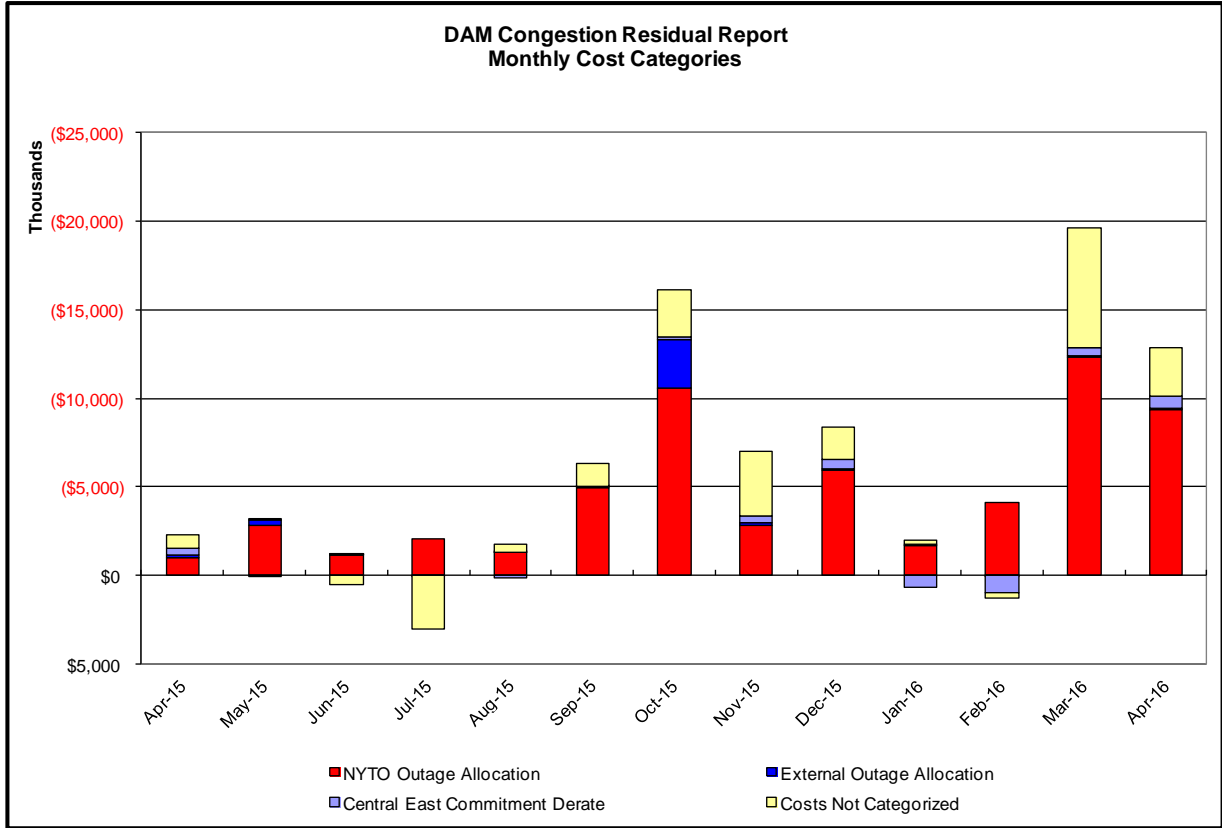
Event	Date (yyyymmdd)	Hours	Description
	6/1/2016	11,12	Forced outage Nine Mile-Clay 345kV (#8)
	6/1/2016	15	NYCA DNI Ramp Limit
	6/1/2016	15	Derate Dunwoodie-Shore 345kV (#Y50)
	6/1/2016	8,16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Gardenville-Stolle Road 230kV (#66)
	6/1/2016	7,8,15-17	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61), Packard-Sawyer 230kV (#77)
	6/4/2016	6	NE_AC ACTIVE DNI Limit
	6/4/2016	12-14	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61)
	6/6/2016	17-22	Forced outage Roseton-Hurley Avenue 345kV (#303), Roseton-East Fishkill 345kV (#305)
	6/6/2016	16,17,21,22	NYCA DNI Ramp Limit
	6/6/2016	15-17	Derate Coopers-Middletown Tap 345kV (#34)
	6/6/2016	8,10,11,14-17	Derate Moses South
	6/6/2016	19-22	HQ_CHAT-NY Scheduling Limit
	6/6/2016	21	IESO_AC DNI Ramp Limit
	6/6/2016	5,15,17-21	NE_AC ACTIVE DNI Limit
	6/6/2016	11	NE_NNC1385-NY Scheduling Limit
	6/6/2016	17	PJM_AC DNI Ramp Limit
	6/6/2016	17	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61), Gardenville-Stolle Road 230kV (#66)
	6/7/2016	13	Forced outage Roseton-Hurley Avenue 345kV (#303), Roseton-East Fishkill 345kV (#305)
	6/7/2016	12	PJM_AC DNI Ramp Limit
	6/7/2016	8-10,13,17	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61)
	6/7/2016	13	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Gardenville-Stolle Road 230kV (#66)
	6/11/2016	12	Uprate FreshKills-Willow Brook 138kV (#29211)
	6/11/2016	16-22	Derate Leeds-Hurley Avenue 345kV (#301) for I/o \$TWR 30/31 W/PV N BUS AND 398
	6/11/2016	15-19	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Gardenville-Stolle Road 230kV (#66)
	6/11/2016	16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61)
	6/14/2016	20	IESO_AC DNI Ramp Limit
	6/14/2016	17,18	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61), Packard-Sawyer 230kV (#77)
	6/15/2016	15	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61), Packard-Sawyer 230kV (#77)
	6/16/2016	14-16	Derate Gardenville-Stolle Road 230kV (#66) for I/o TWR:PACKARD 77 & 78
	6/16/2016	15	PJM_AC DNI Ramp Limit
	6/16/2016	16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61), Gardenville-Stolle Road 230kV (#66)

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	

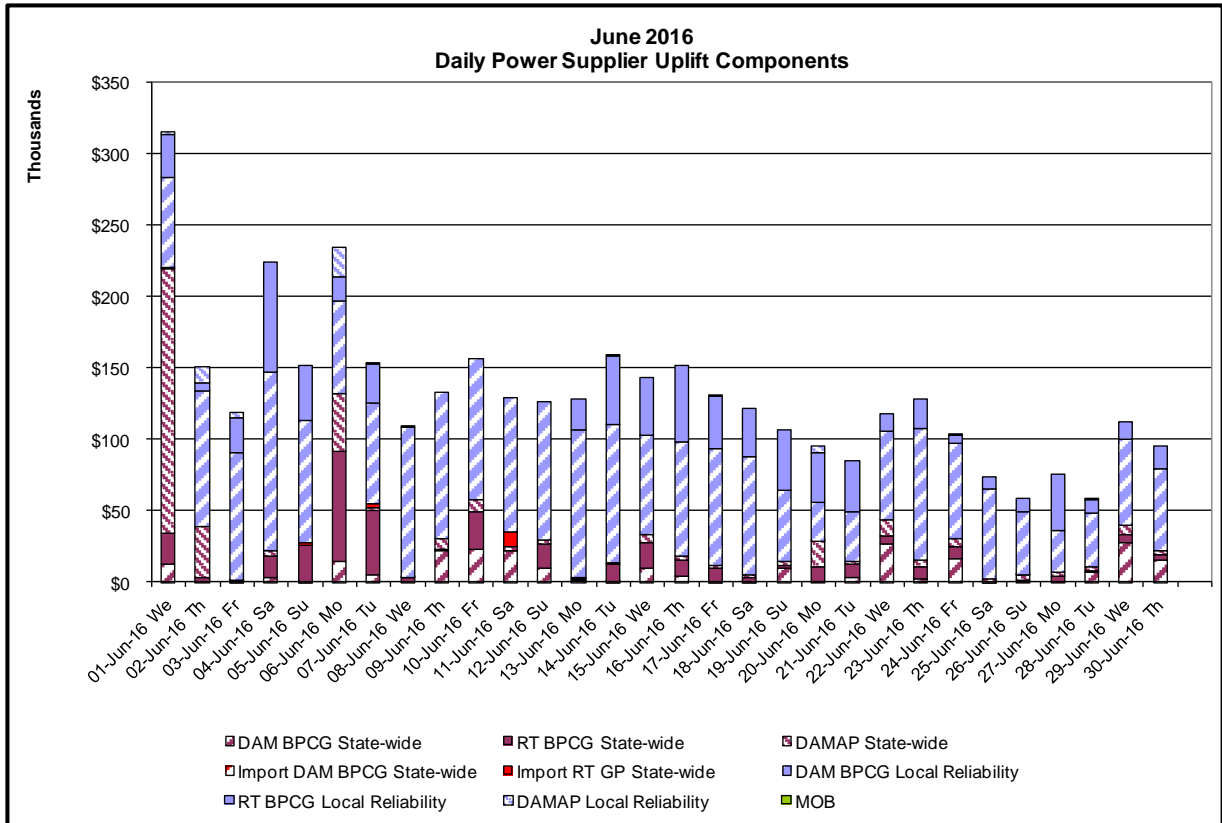
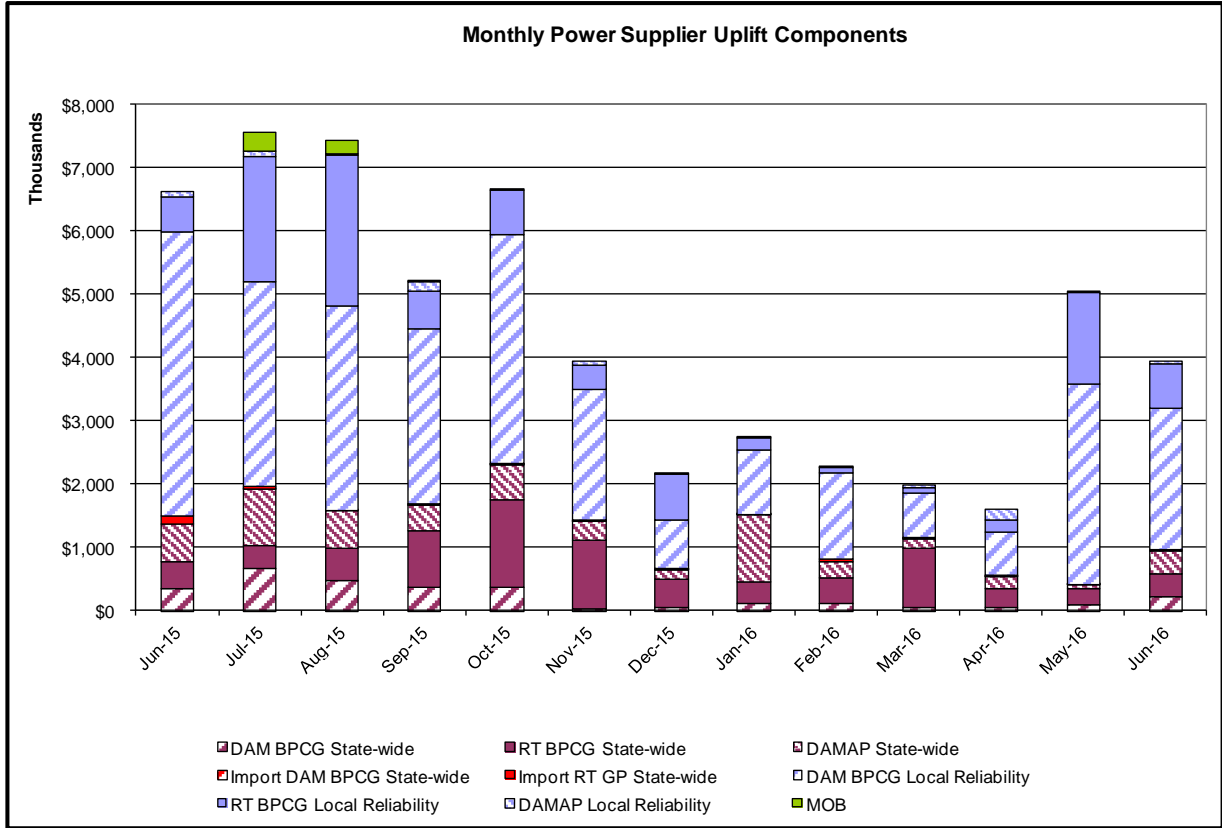
Monthly Balancing Market Congestion Report Assumptions/Notes

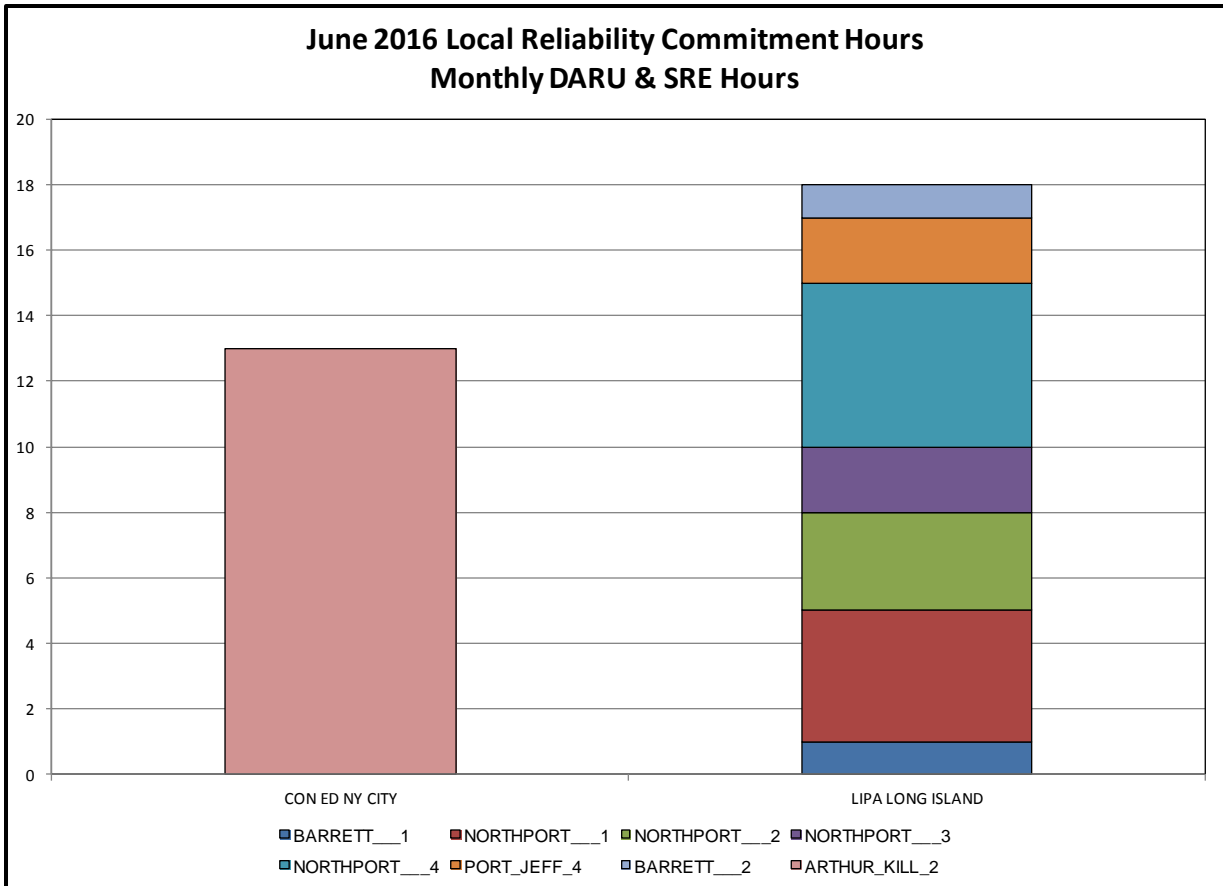
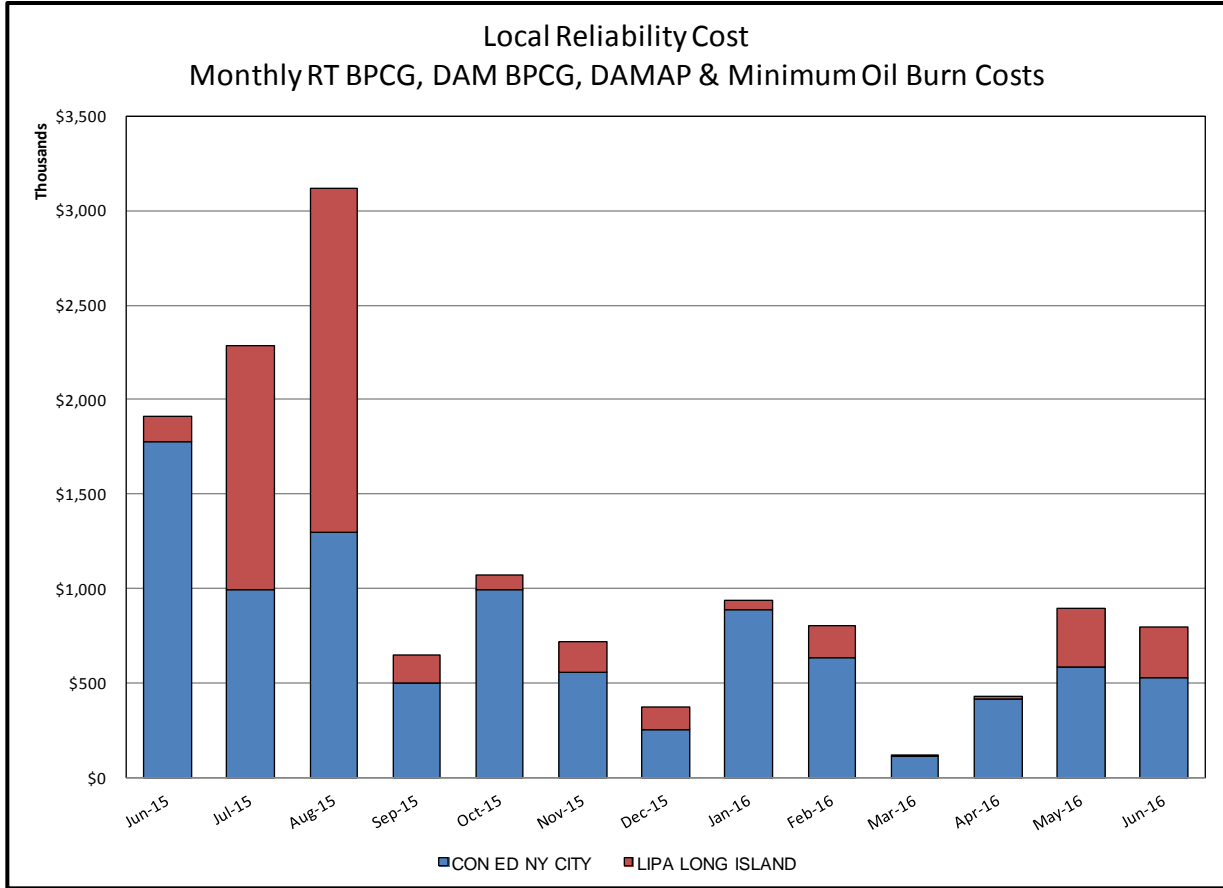
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

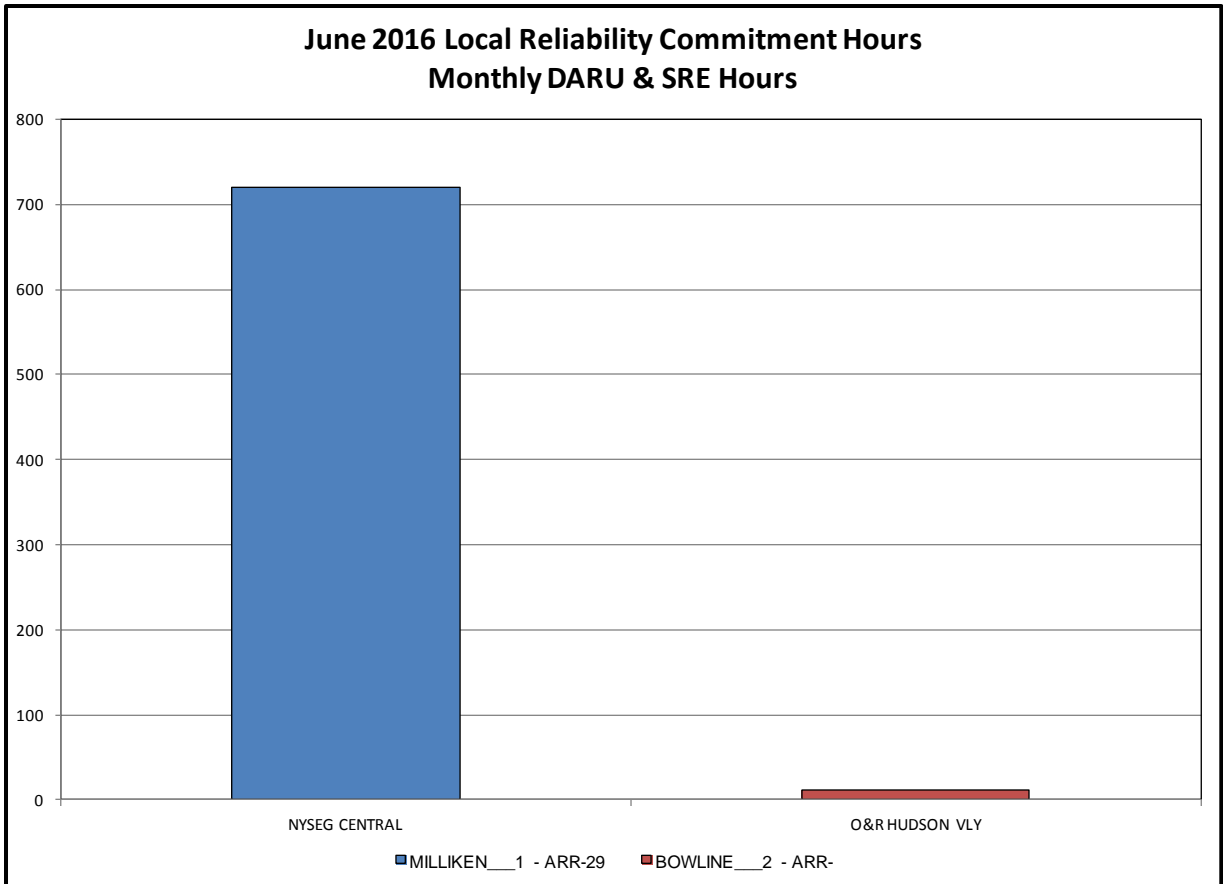
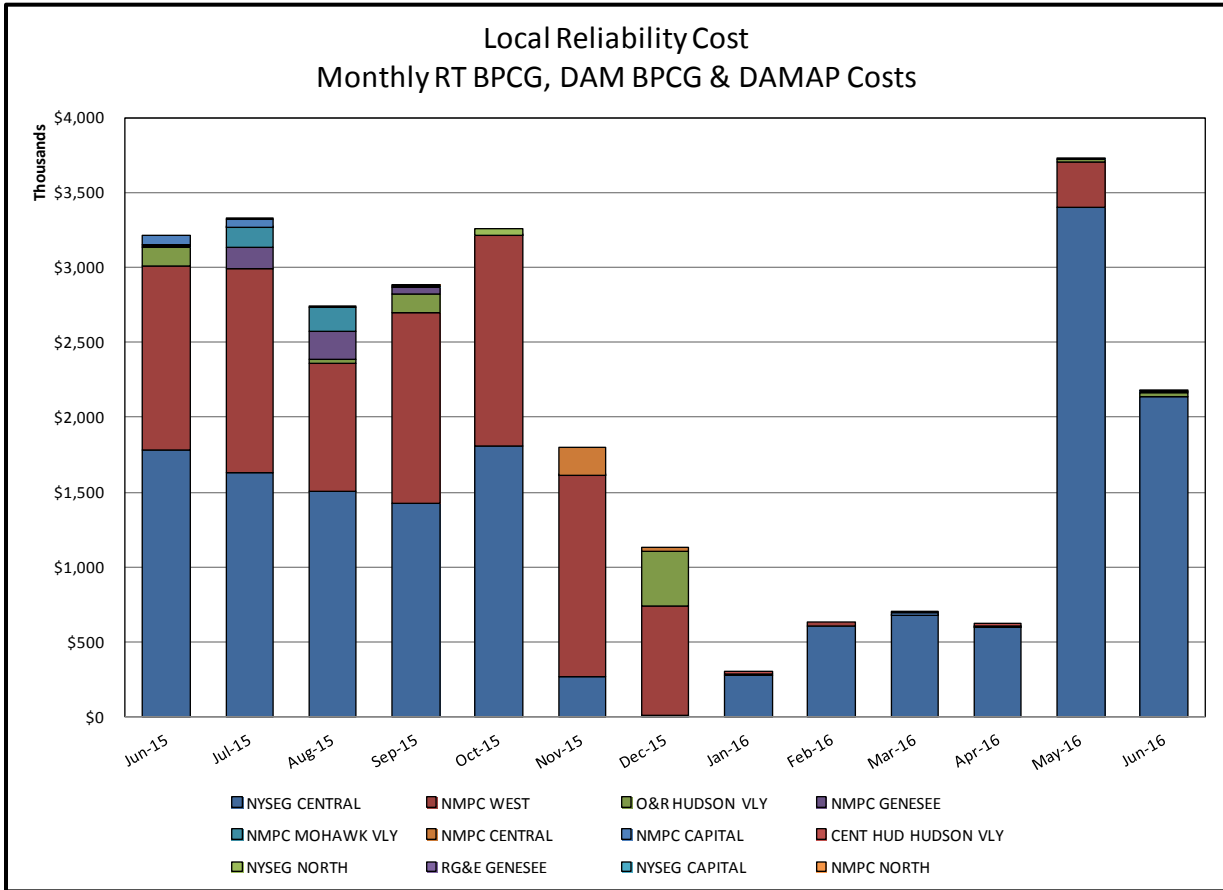


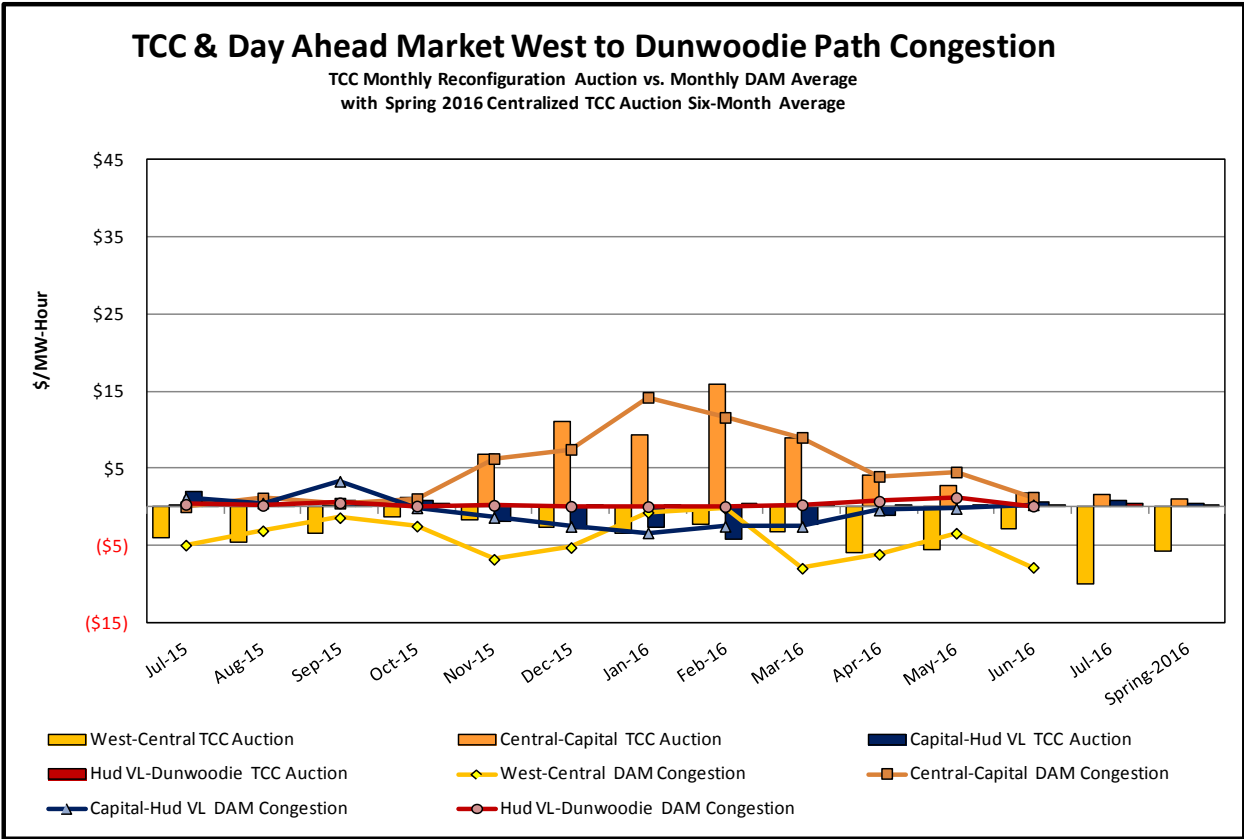
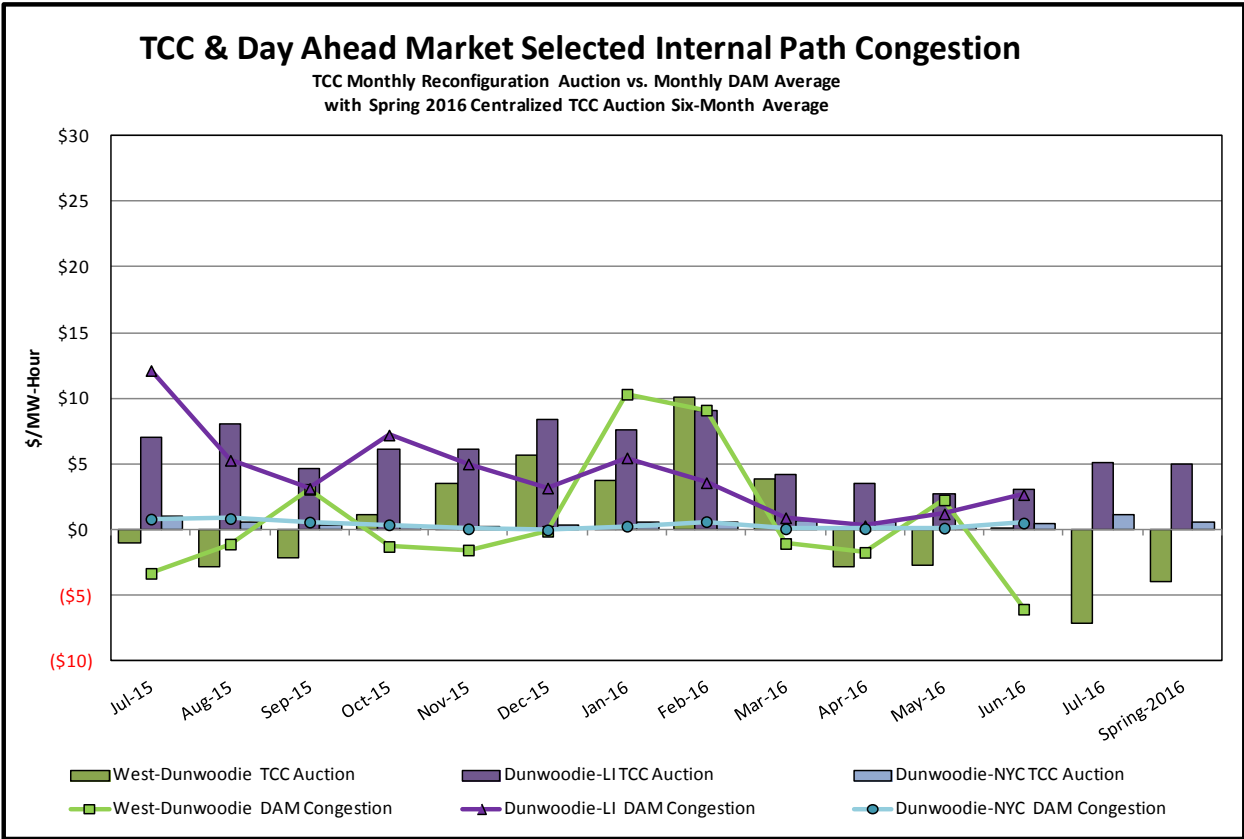
Day-Ahead Market Congestion Residual Categories

<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 External Path Congestion

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

