

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



## ***May 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 June 8, 2016.

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## May 2016 Operations Performance Highlights

- Peak load of 25,061 MW occurred on 05/31/2016 HB 16
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- 2 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- The Niagara distributed modeling improvement was activated in the Energy market on 05/04/2016.
- The Western New York 230kV Series Reactor and Huntley Capacitor Banks were put in service on 05/19/2016 and 05/26/2016 respectively.
- The TOTs re-conductoring of the Fraser-Coopers 345kV (#33) was completed 05/22/2016.
- The TOTS new Rock Tavern-Ramapo 345kV (#76) was placed in service on 05/27/2016.
- The TOTS Staten Island feeder unbundling project was completed on 05/30/2016.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

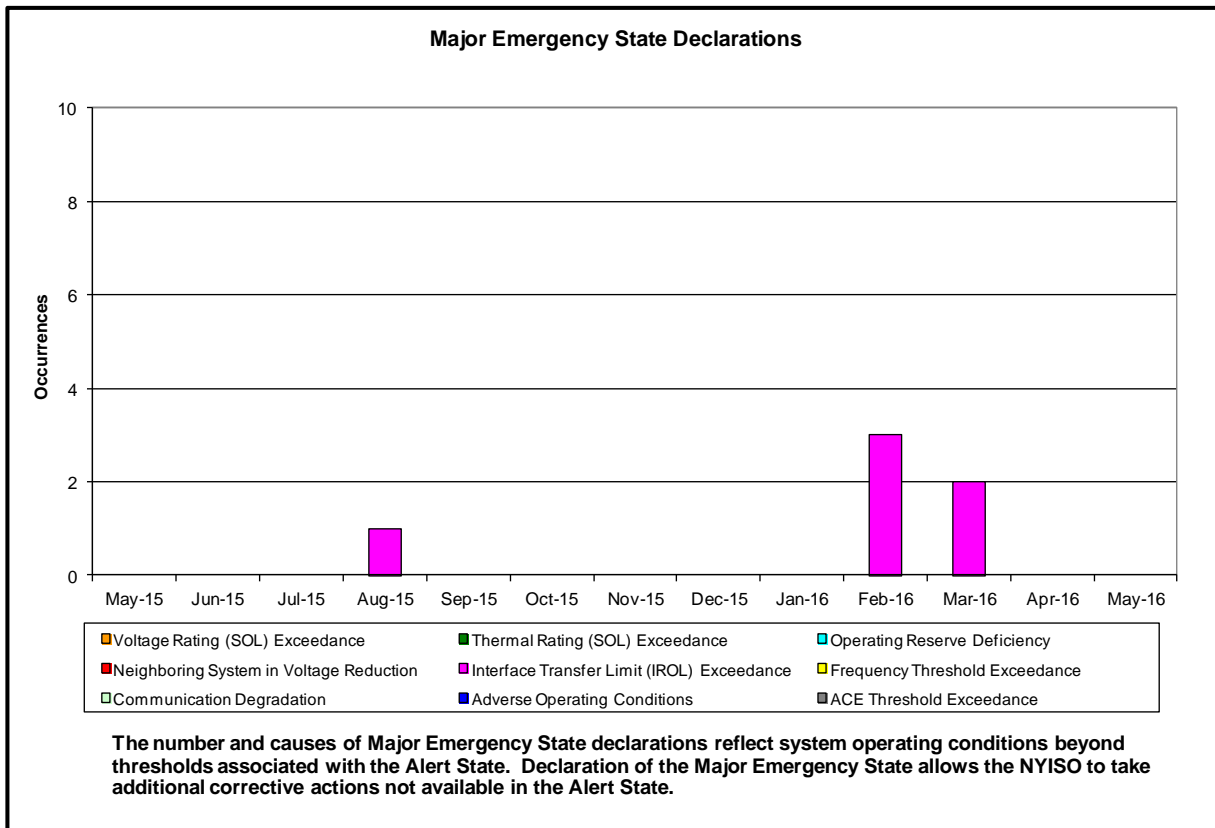
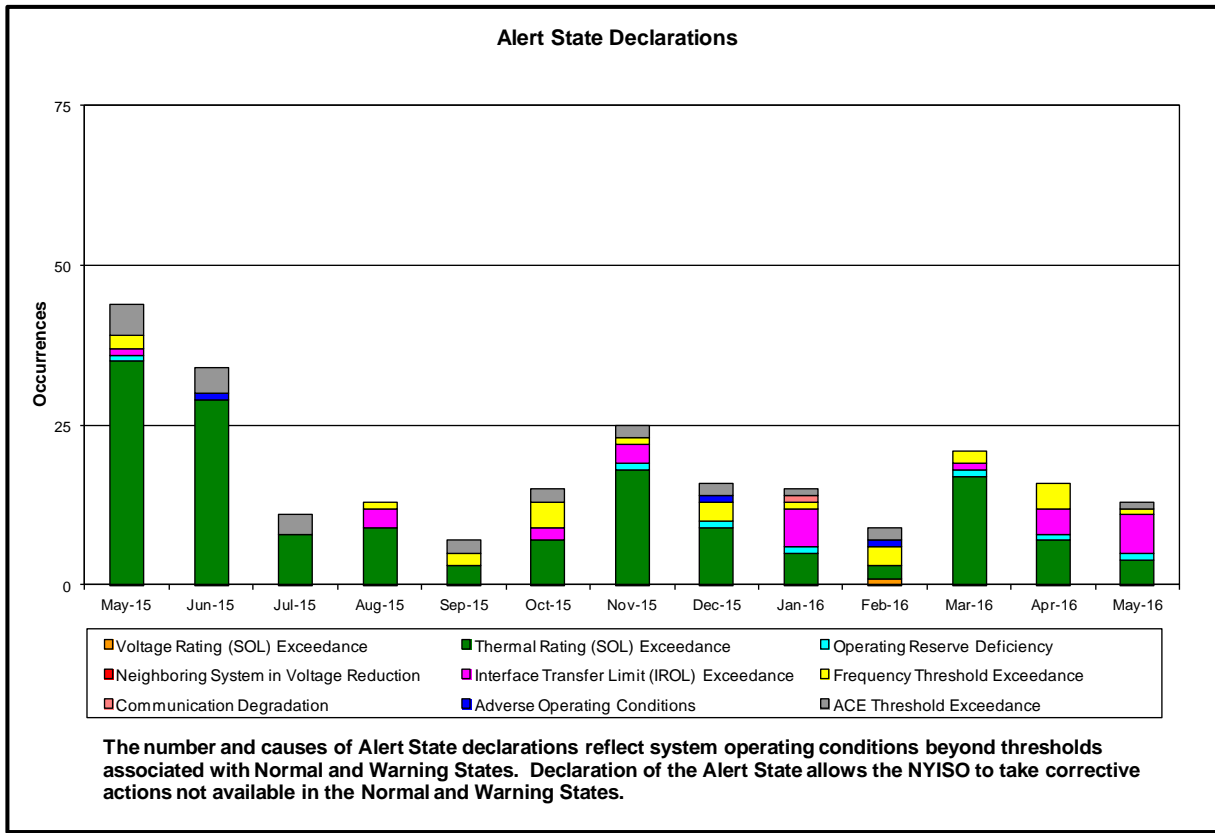
	Current Month Value (\$M)	Year-to-Date Value (\$M)
<b>NY Savings from PJM-NY Congestion Coordination</b>	\$0.73	\$14.16
<b>NY Savings from PJM-NY Coordinated Transaction Scheduling</b>	(\$0.06)	\$0.12
<b>NY Savings from NE-NY Coordinated Transaction Scheduling</b>	(\$0.05)	(\$0.85)
<b>Total NY Savings</b>	\$0.62	\$13.43
<b>Regional Savings from PJM-NY Coordinated Transaction Scheduling</b>	\$0.12	\$0.92
<b>Regional Savings from NE-NY Coordinated Transaction Scheduling</b>	\$0.21	\$0.66
<b>Total Regional Savings</b>	\$0.33	\$1.58

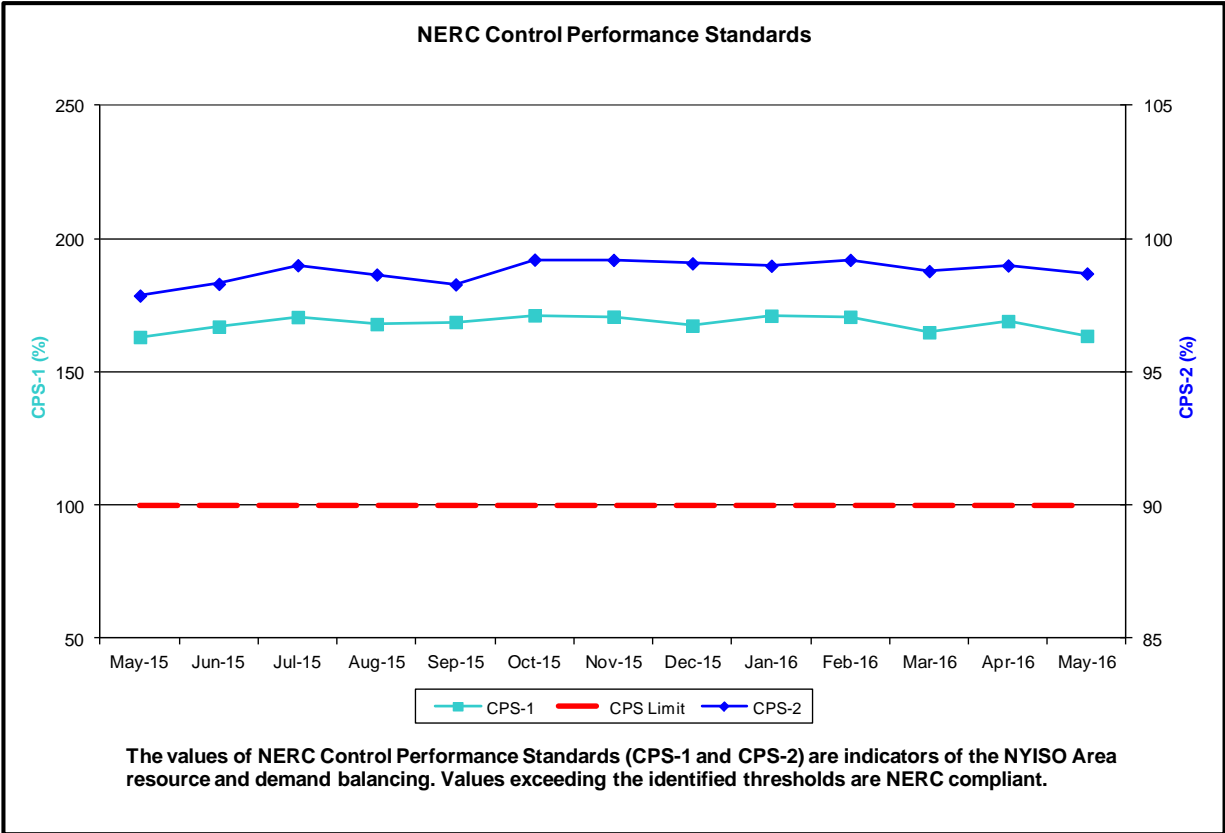
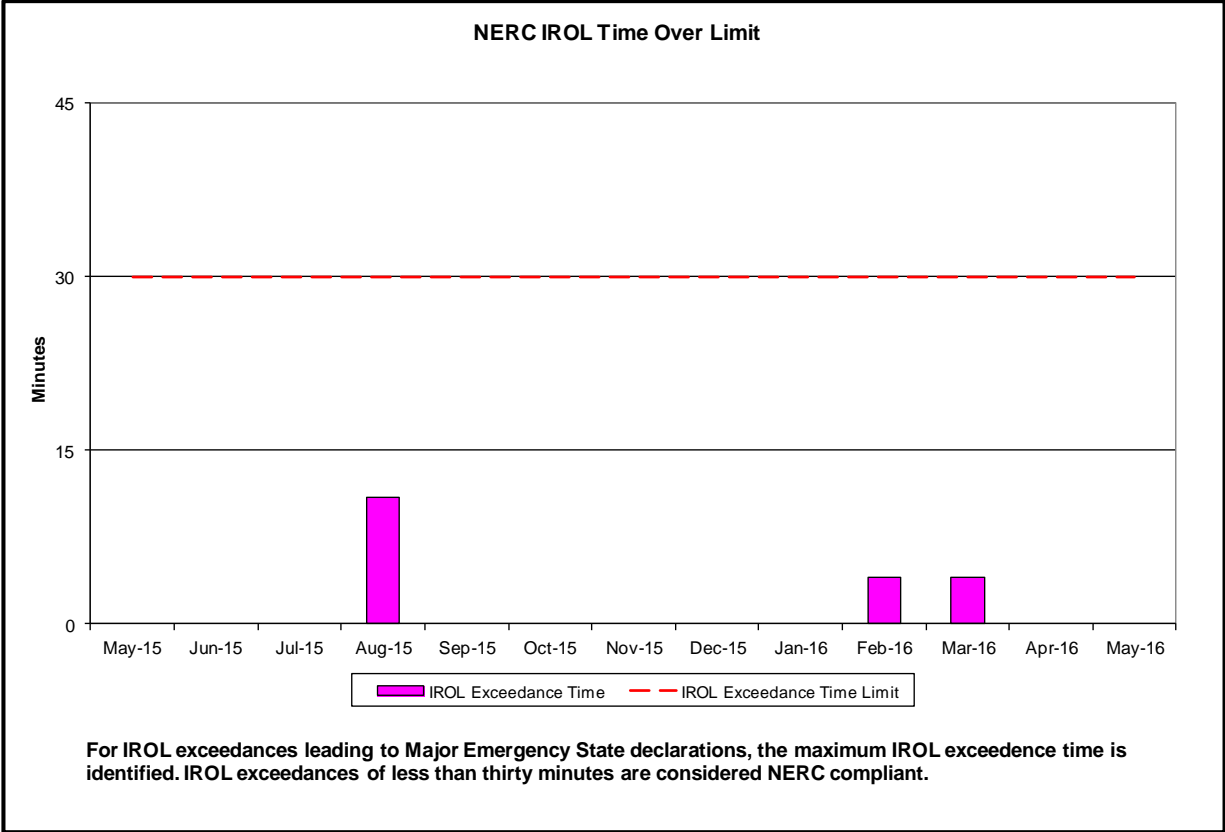
- Statewide uplift cost monthly average was **(\$0.16)/MWh**
- The following table identifies the Monthly ICAP spot market prices by locality and the price delta.

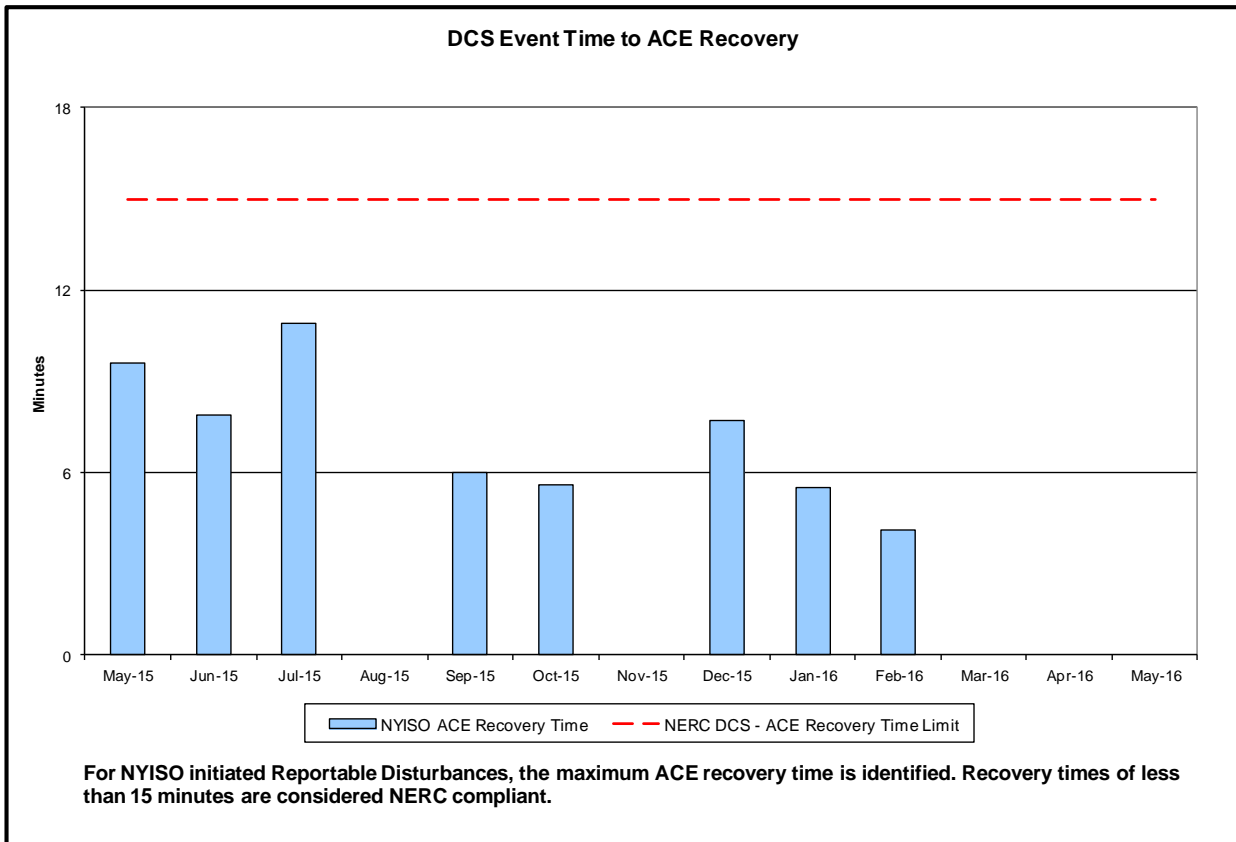
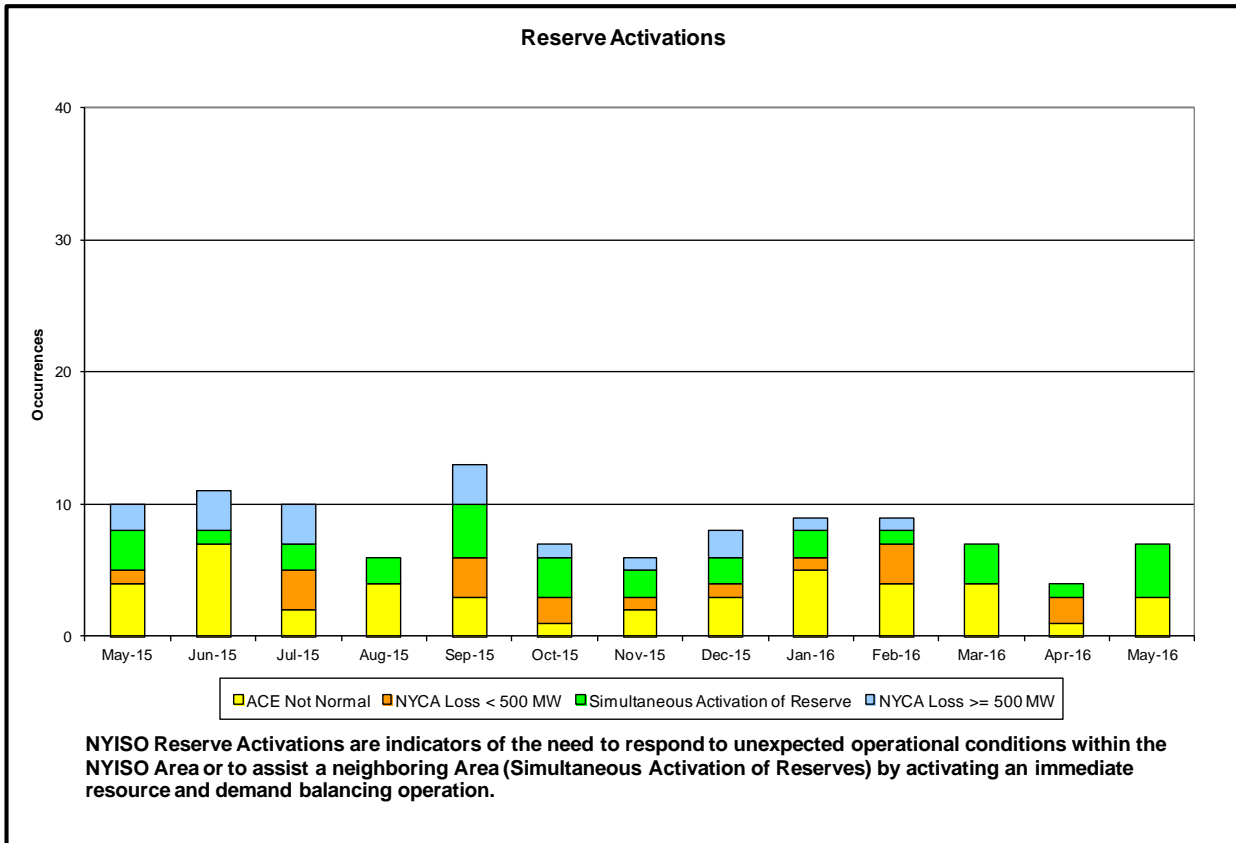
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
June 2016 Spot Price	\$4.89	\$9.28	\$12.29	\$4.89
May 2016 Spot Price	\$5.27	\$9.36	\$12.41	\$5.27
Delta	(\$0.38)	(\$0.08)	(\$0.12)	(\$0.38)

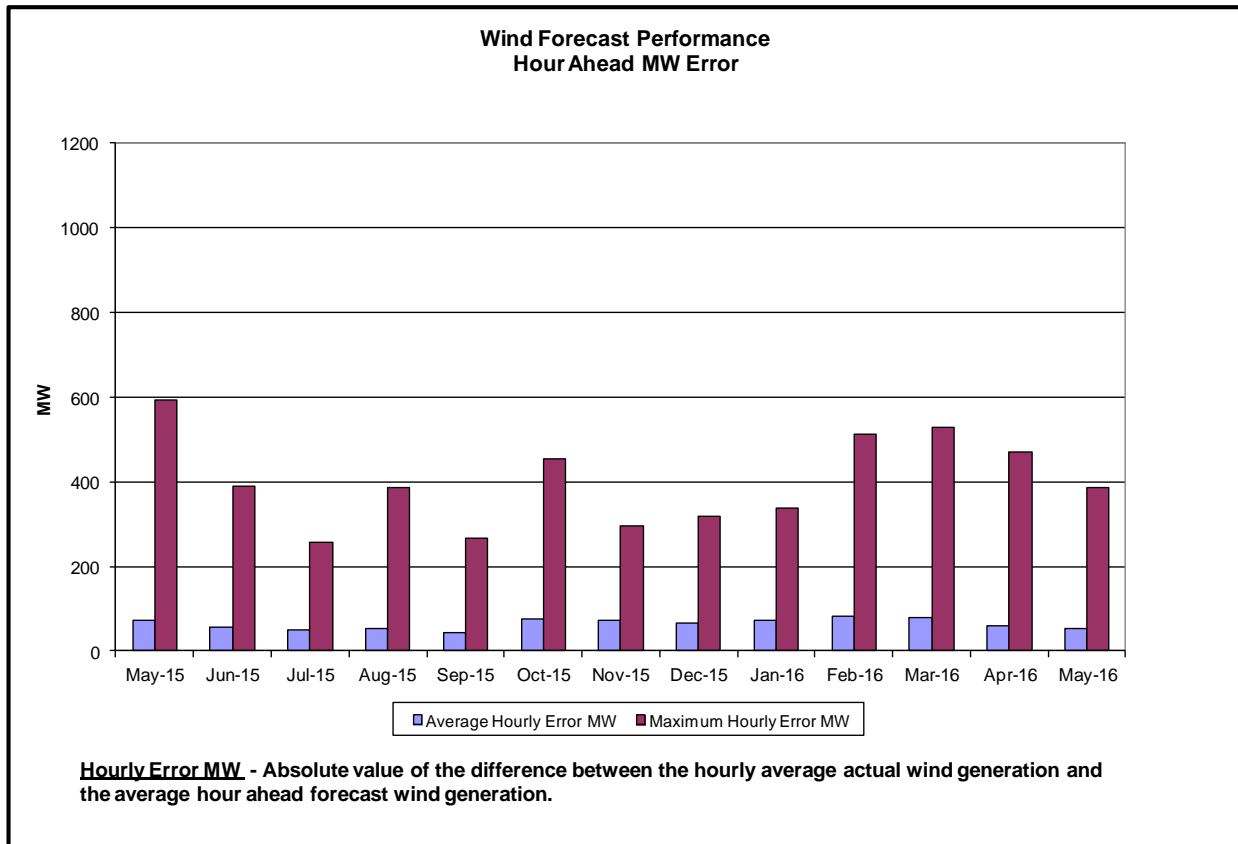
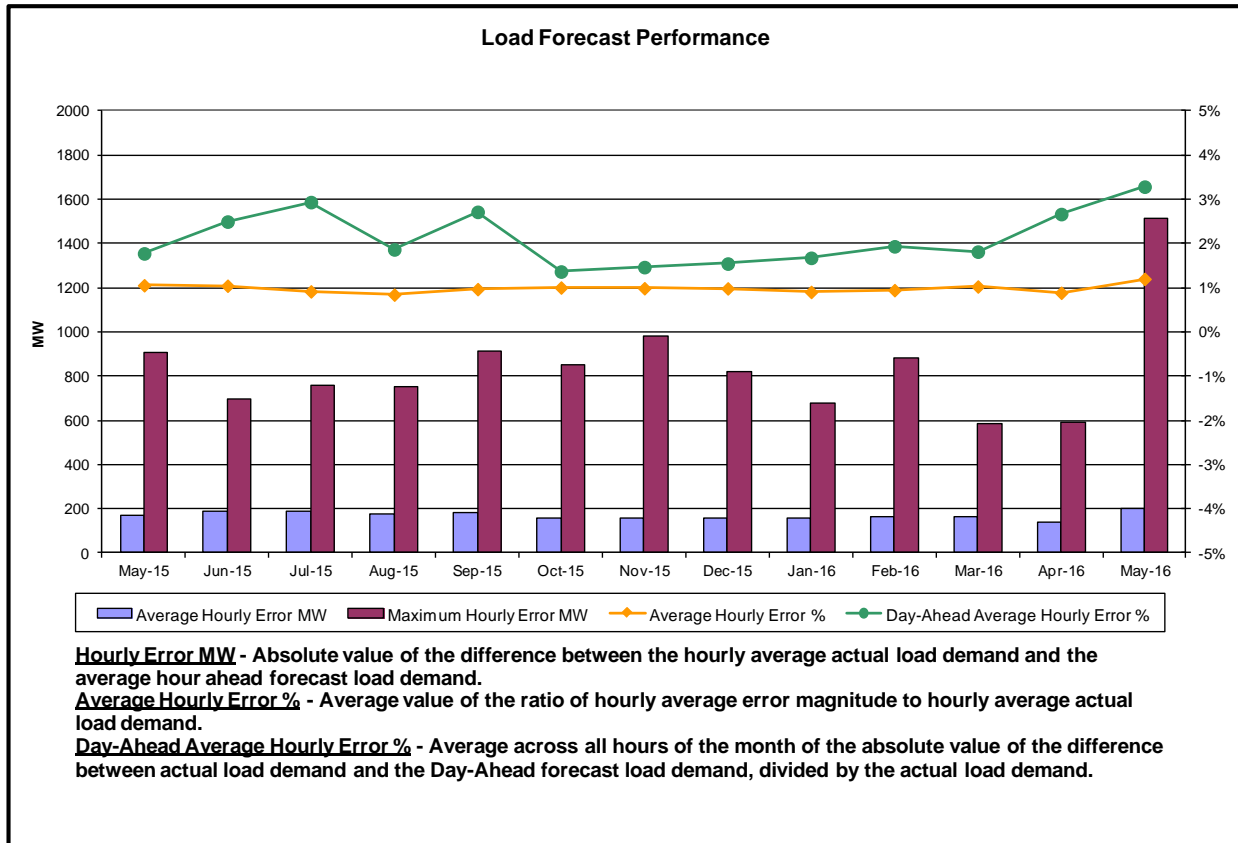
- NYC - Price decreases by \$0.12 due to increases in SCR UCAP available
- LI - Price decreases by \$0.38 due NYCA price decreasing. NYCA set the LI price for this month.
- NYCA- Price decreases by \$0.38 due to an increase in imports

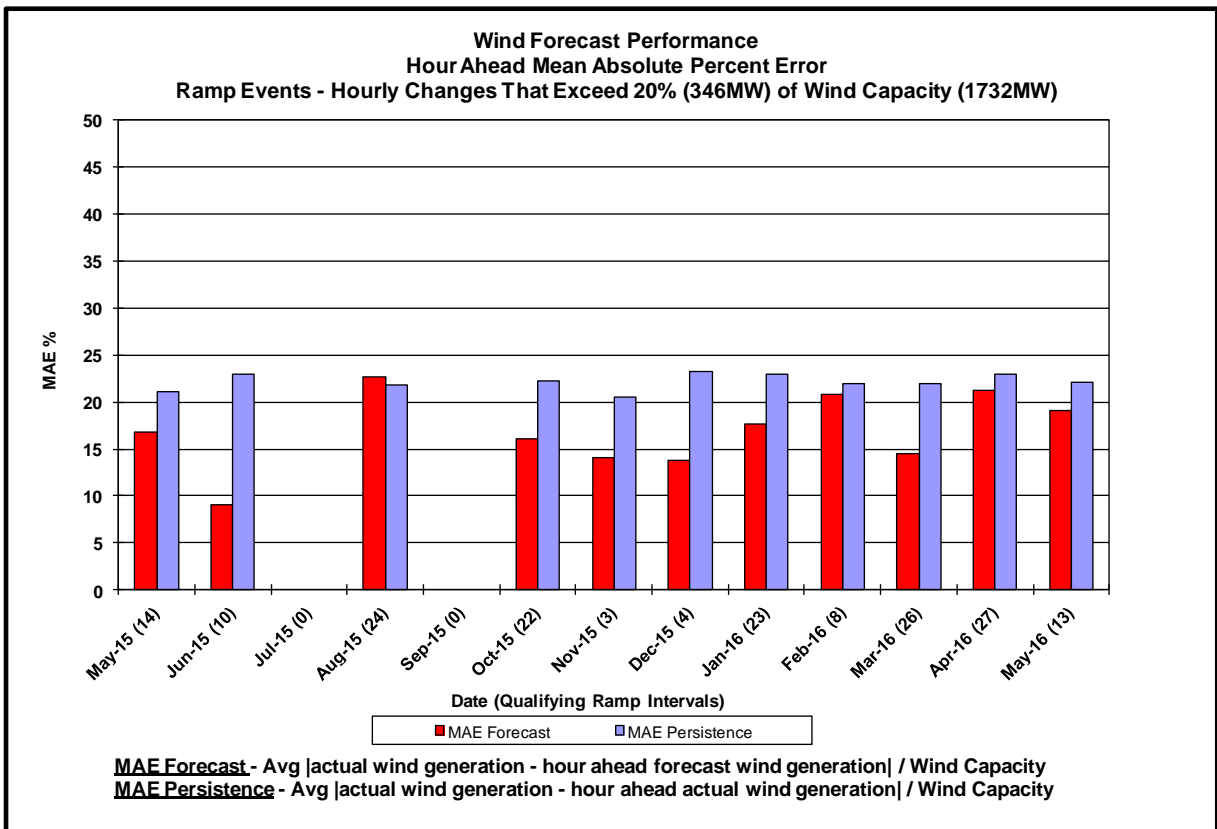
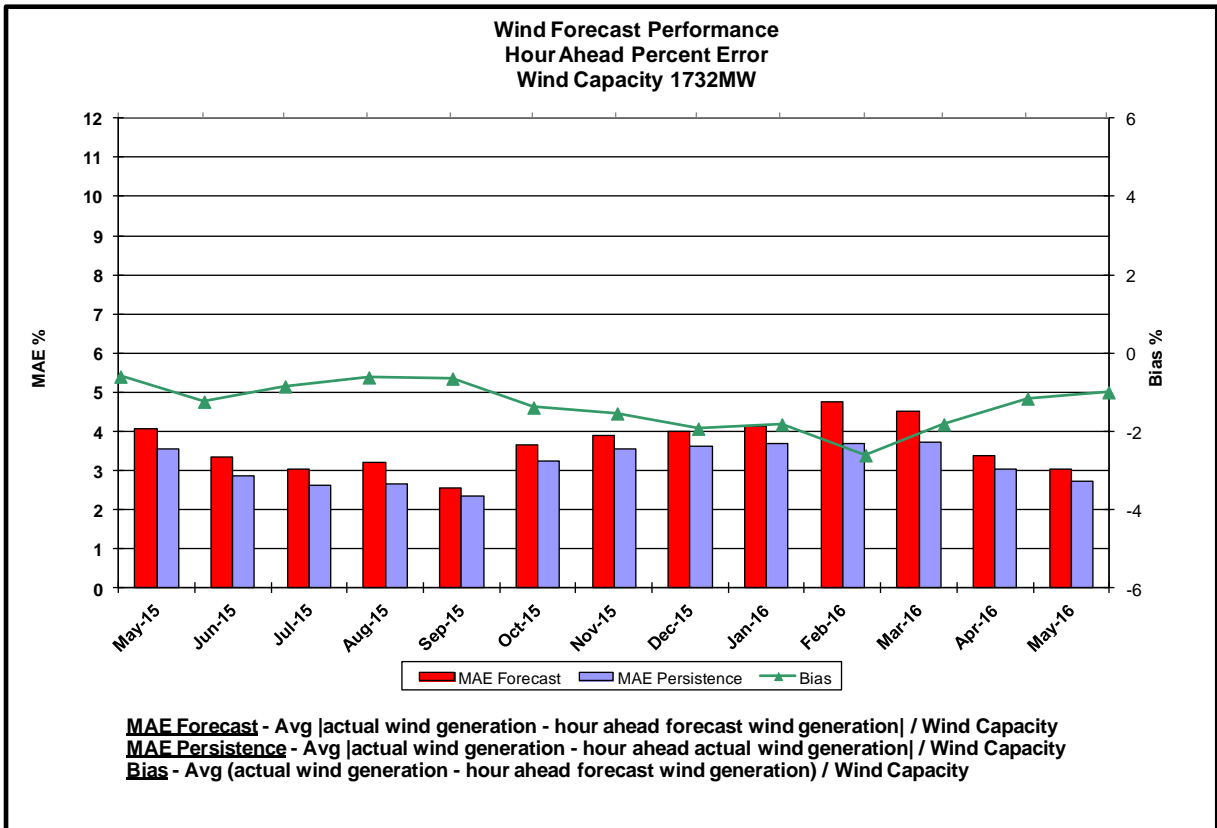
## Reliability Performance Metrics



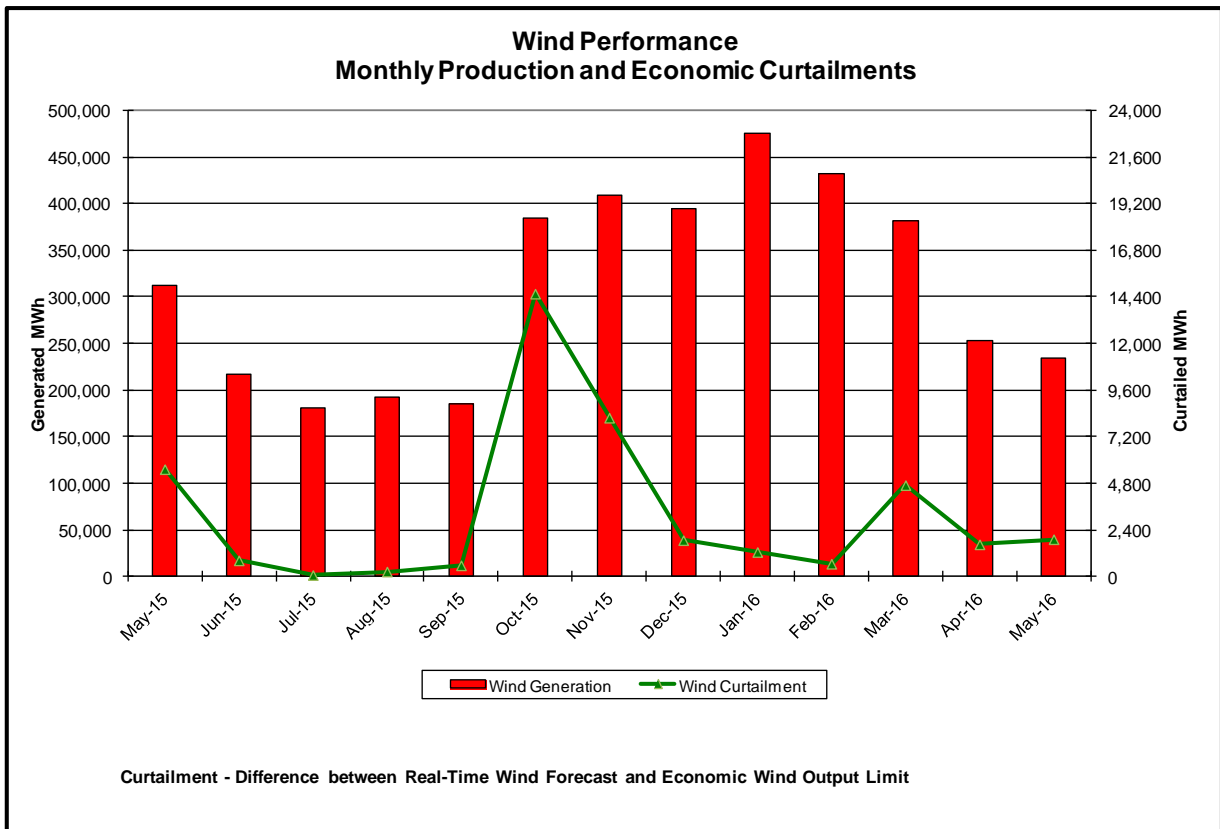
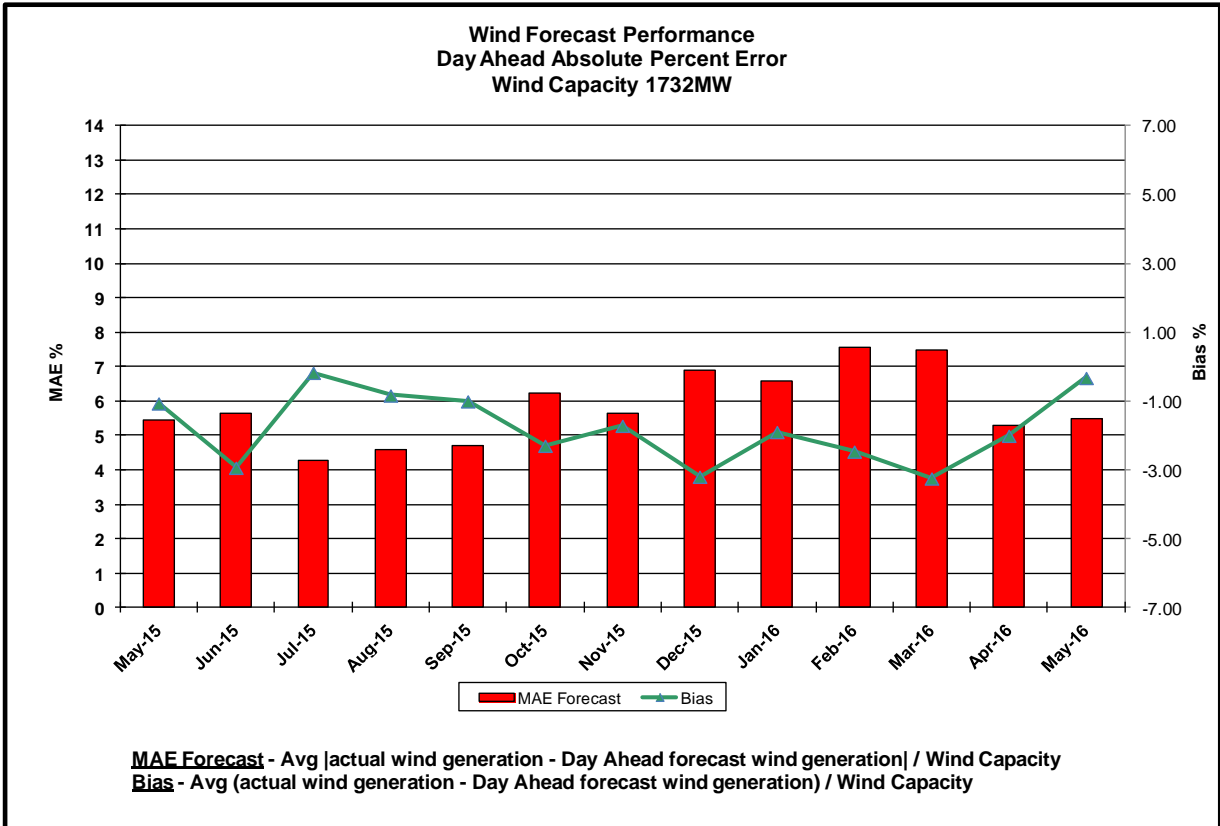


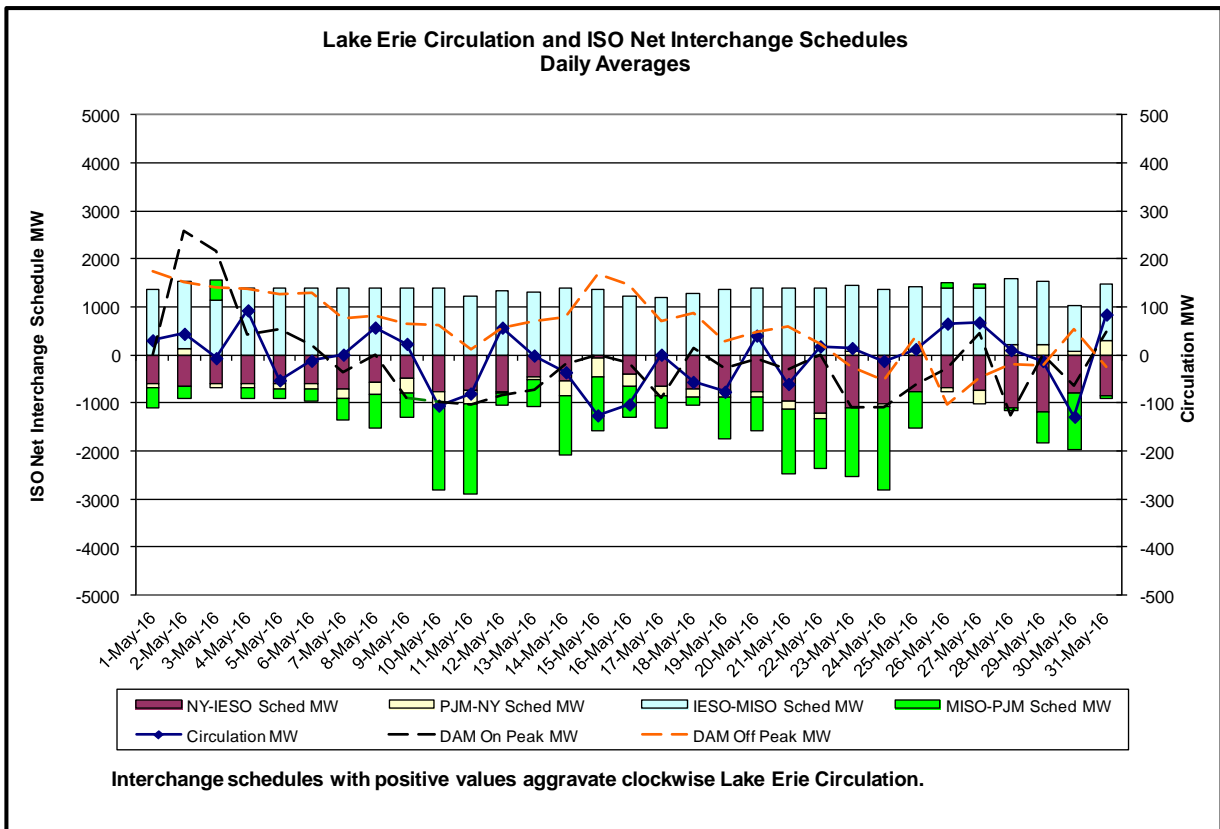
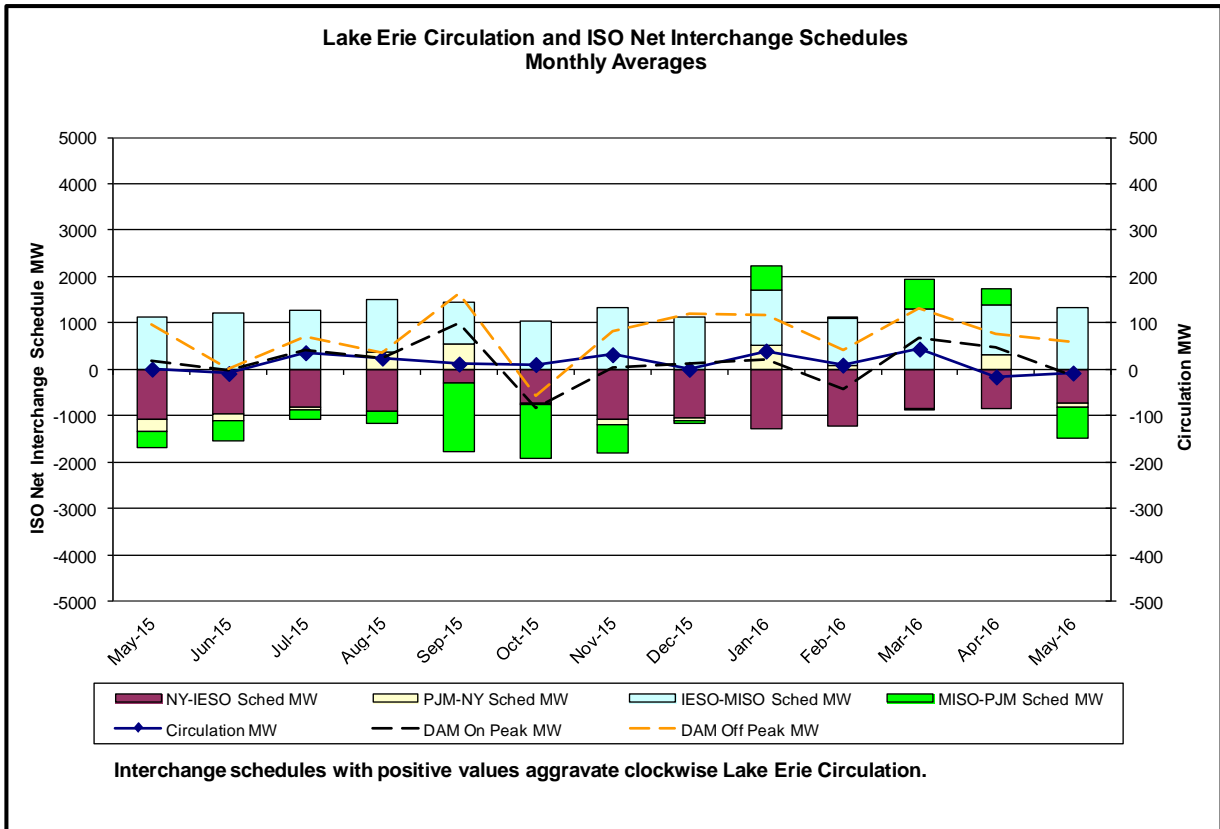




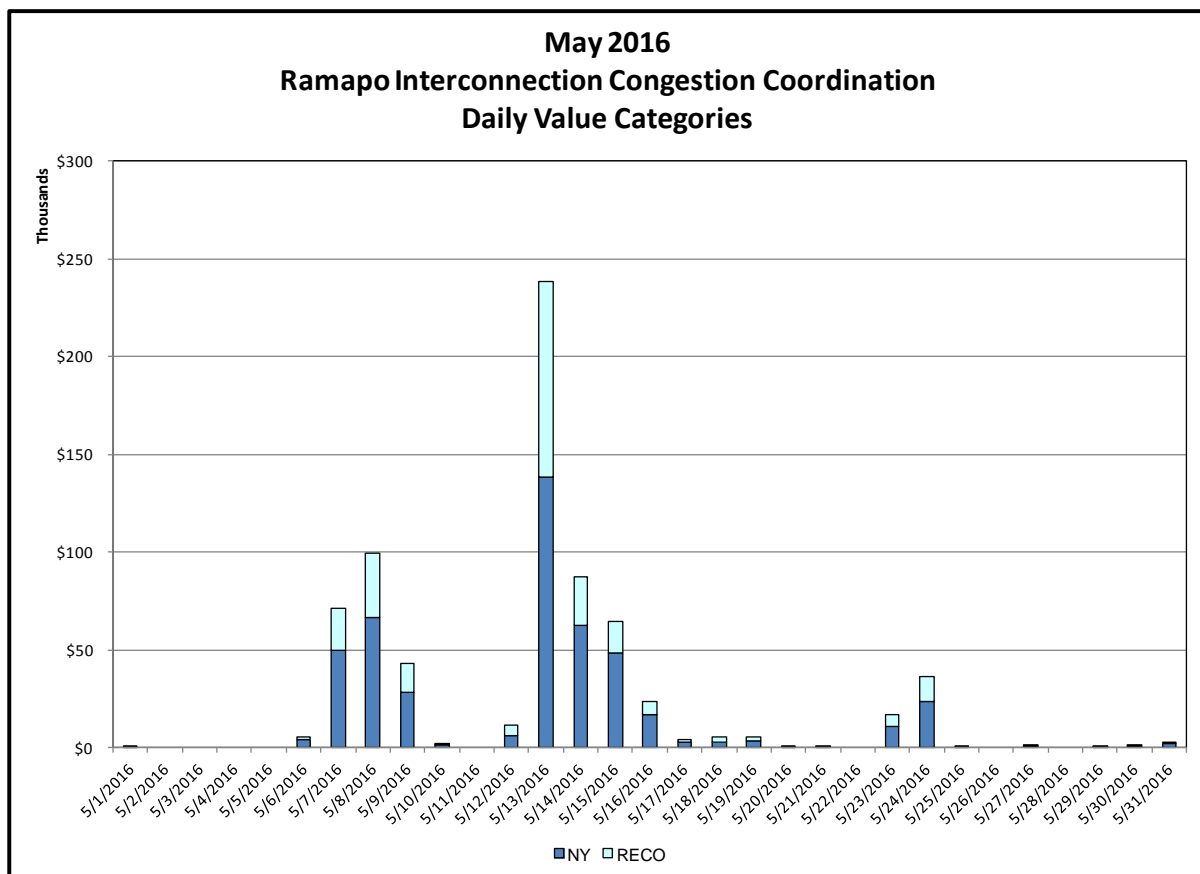
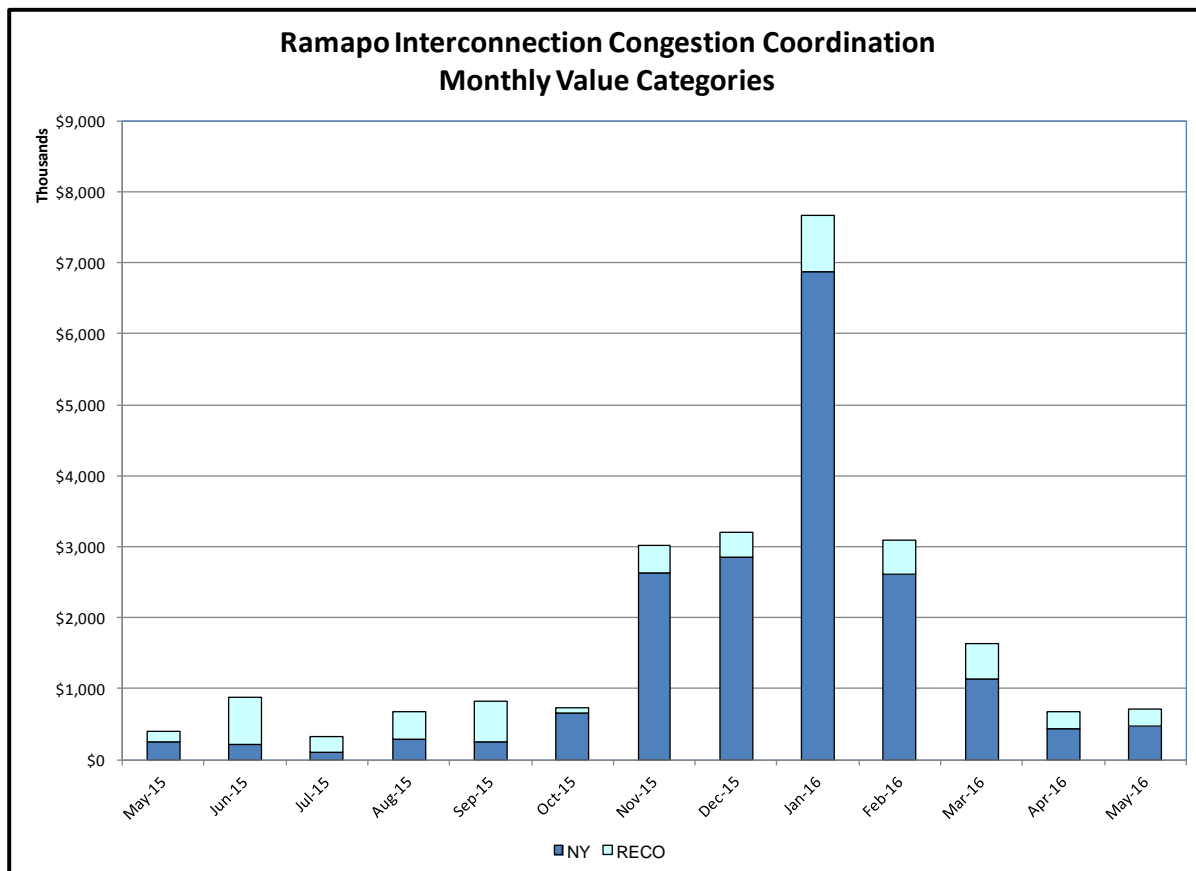






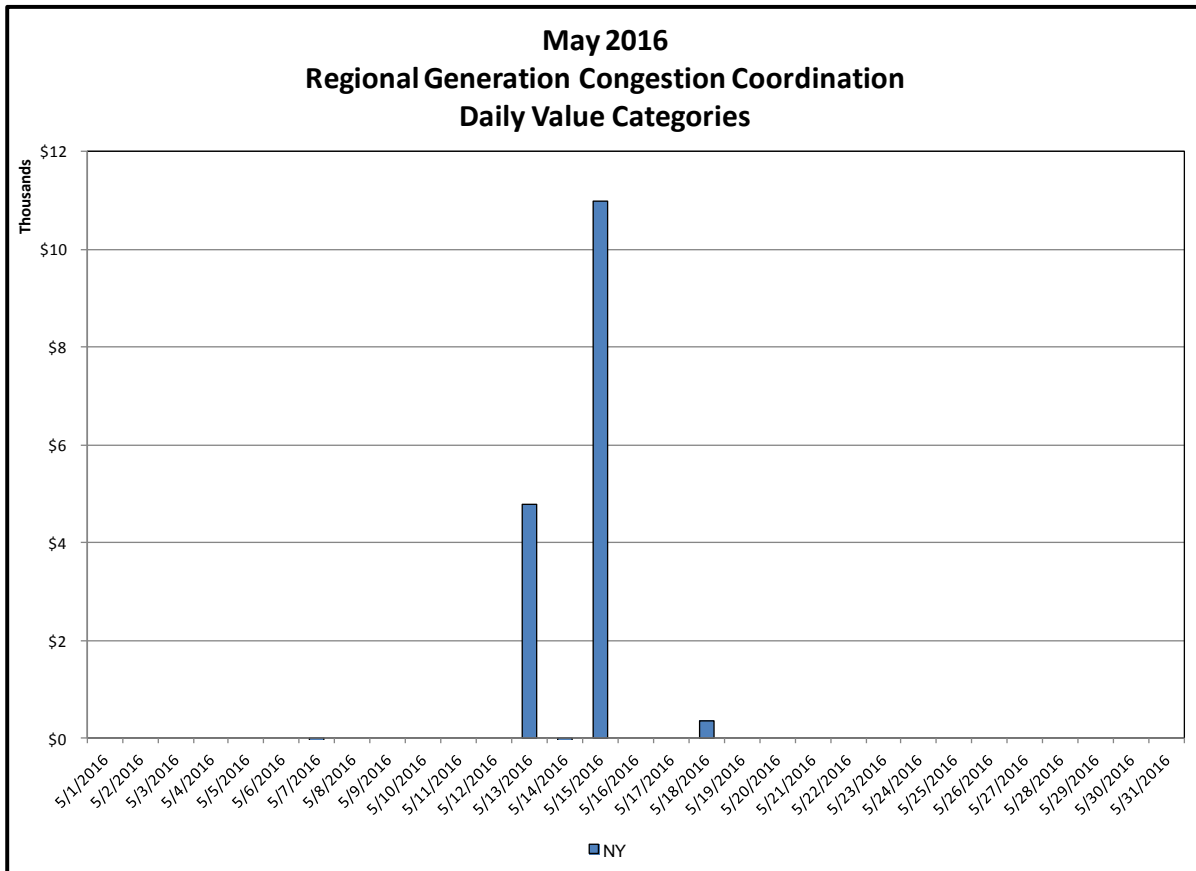
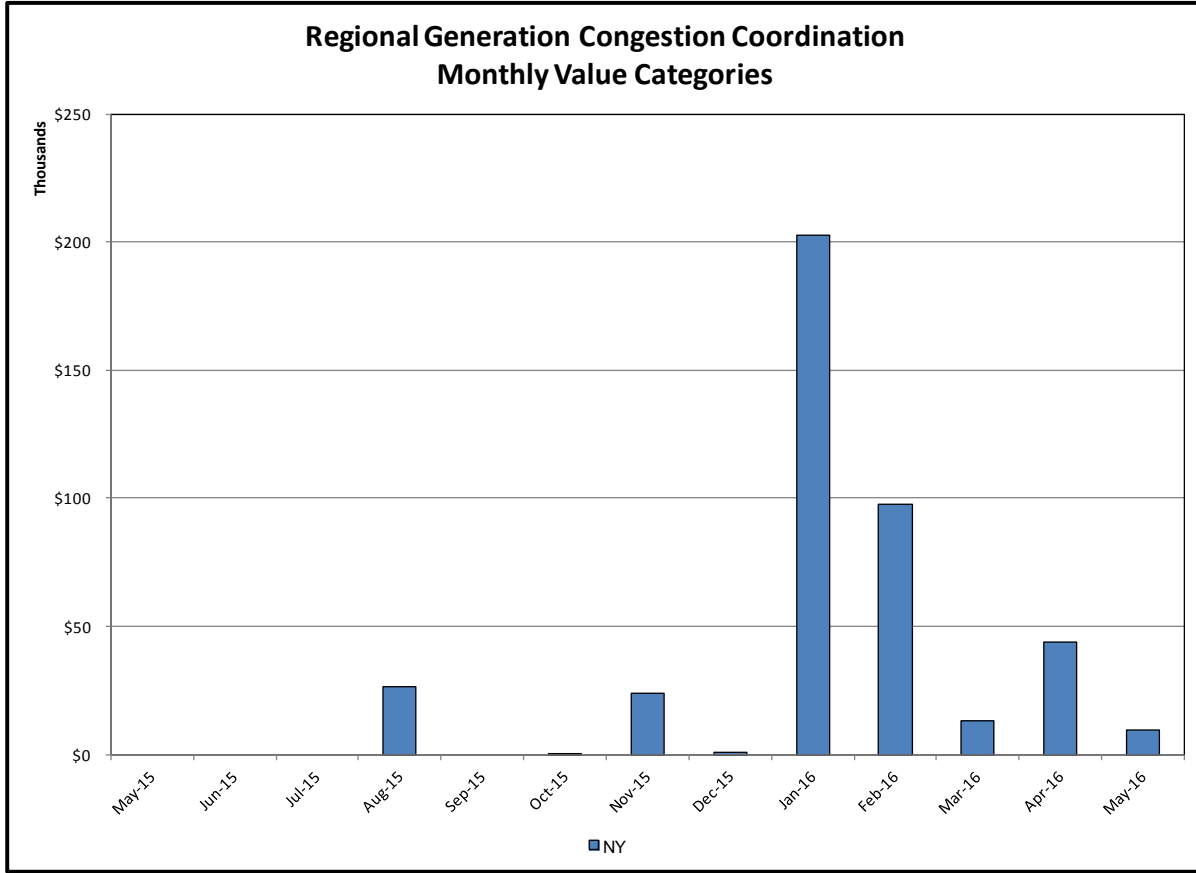


## Broader Regional Market Performance Metrics



**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.



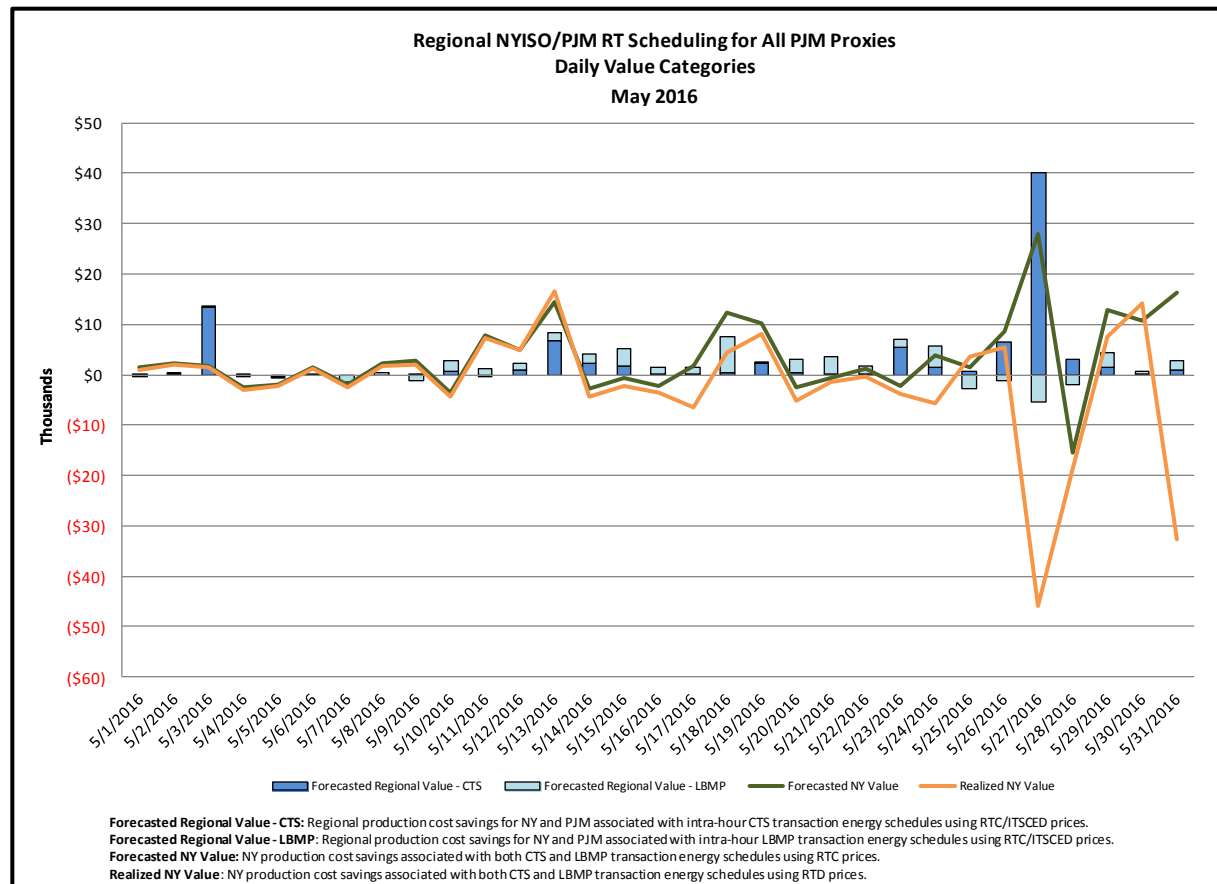
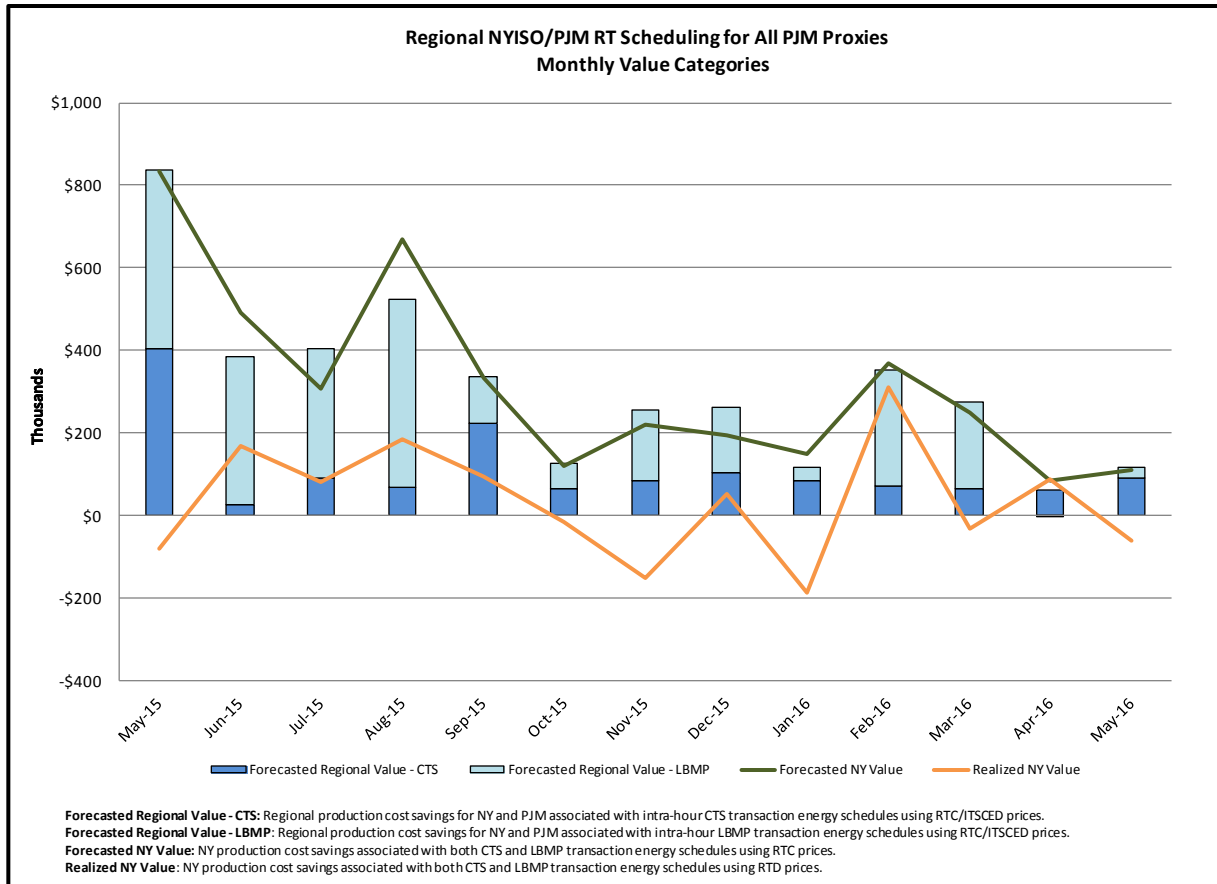
### Regional Generation Congestion Coordination

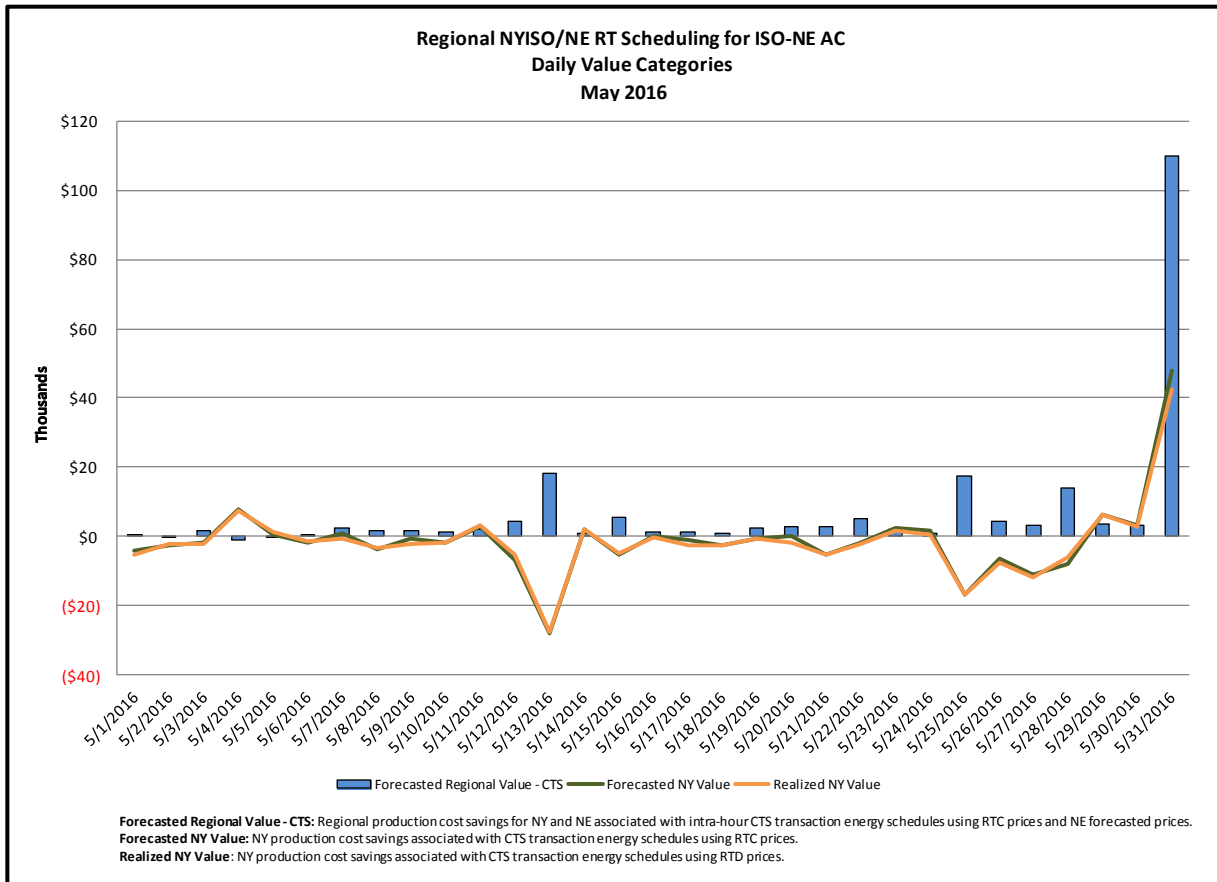
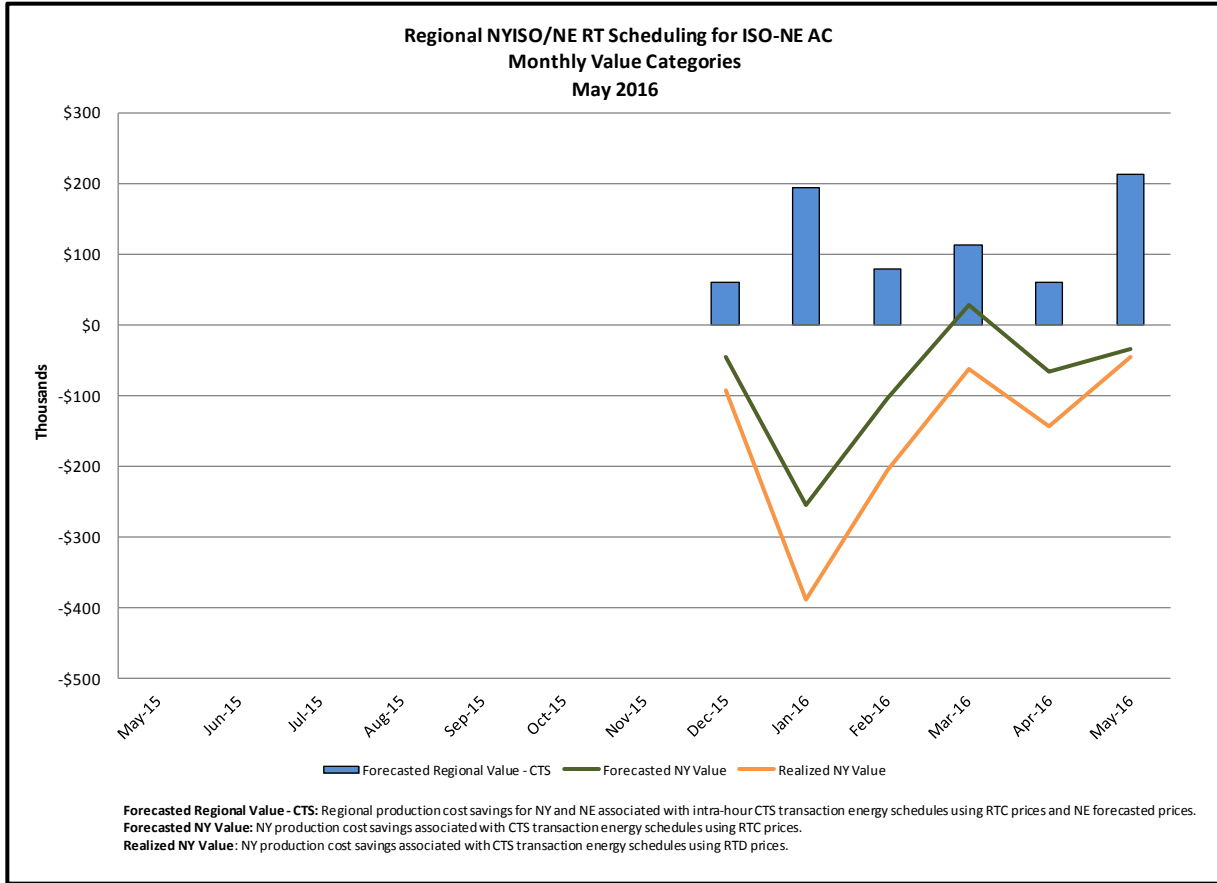
Category

NY

Description

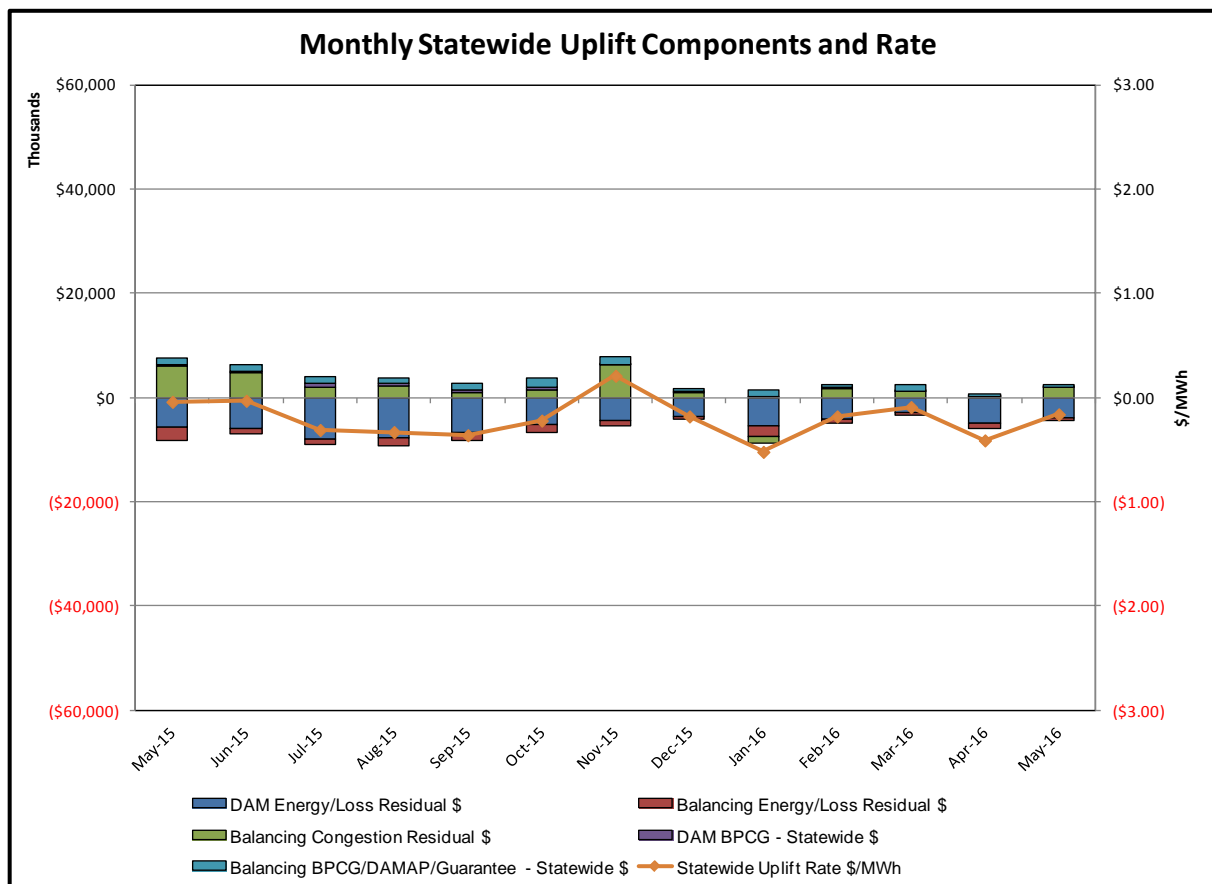
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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

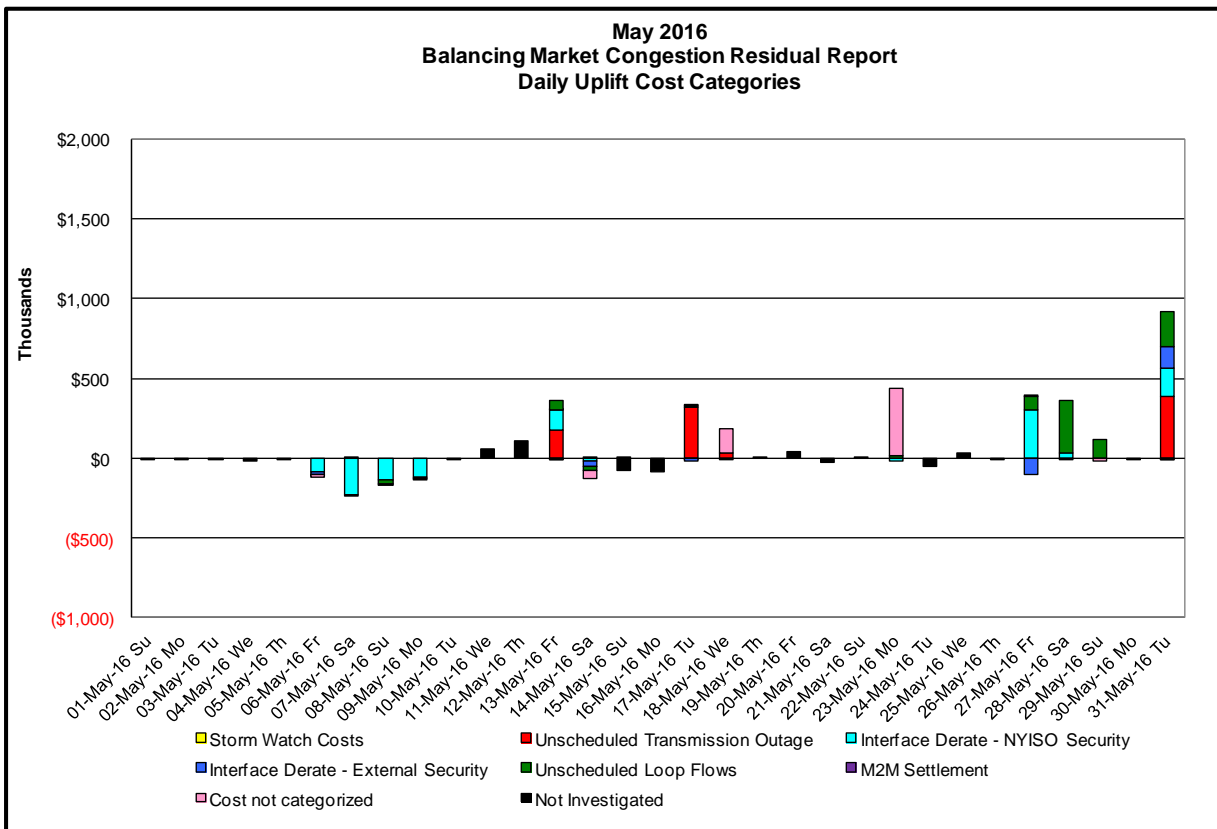
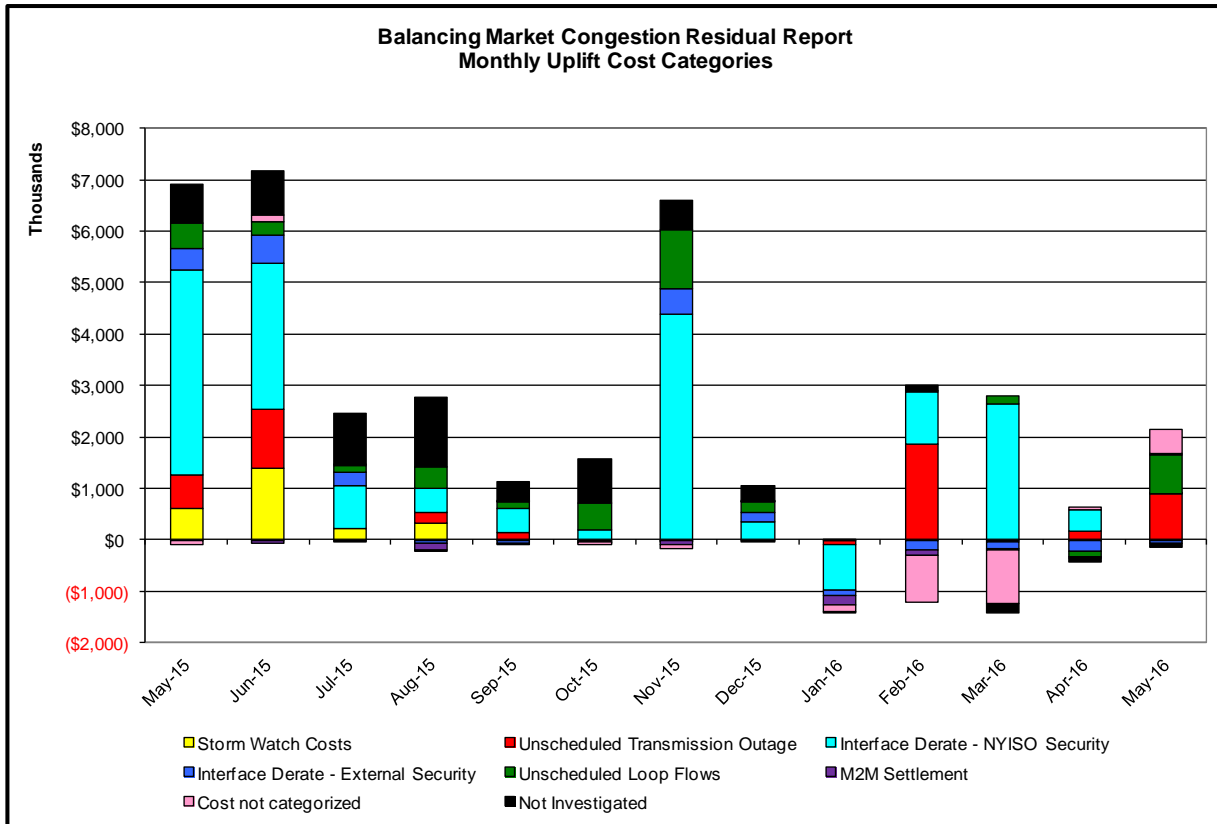






## Market Performance Metrics





Day's investigated in May: 6,7,8,9,13,14,17,18,23,27,28,29,31

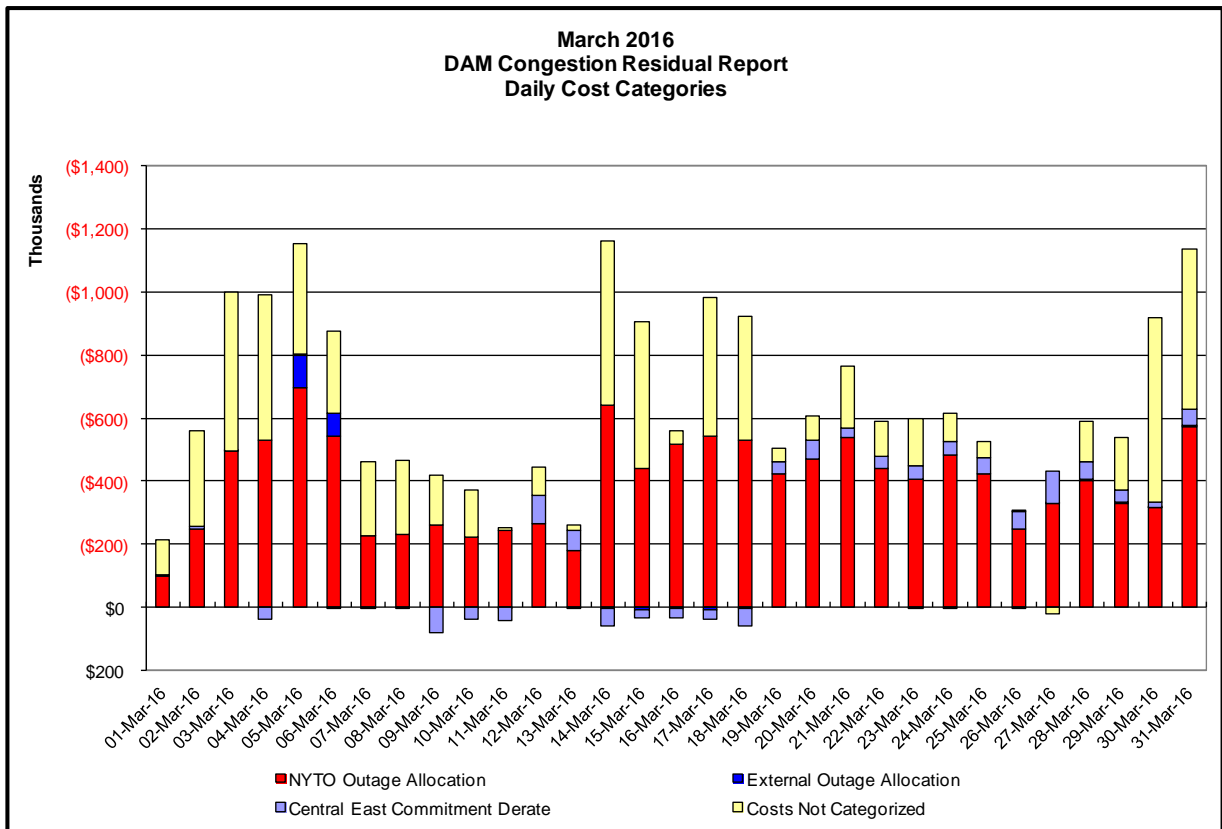
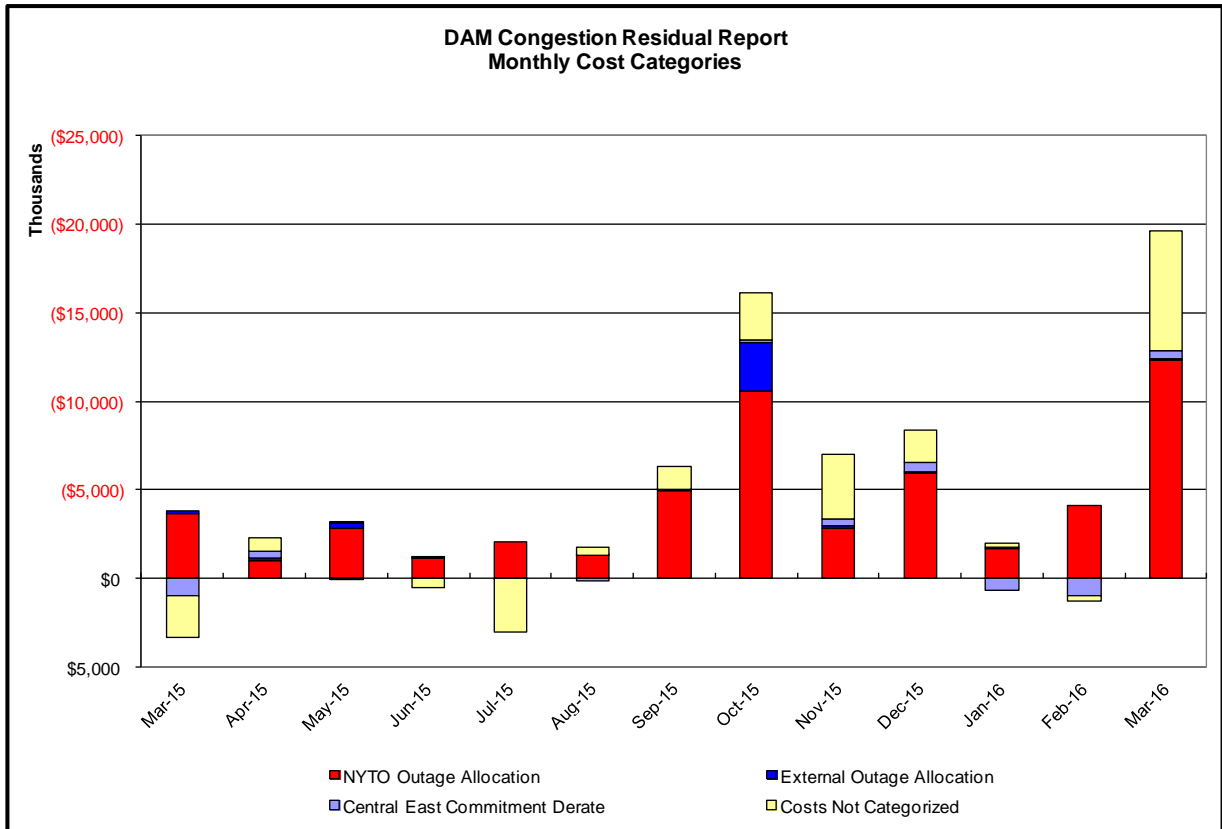
Event	Date (yyyymmdd)	Hours	Description
	5/6/2016	19,22,23	Uprate Central East
	5/6/2016	10,12,14-23	Uprate Dunwoodie-Pleasantville 345kv (#W89) for I/o \$MIDDLETP & TWR:PV F30&F31
	5/6/2016	10,12,18-23	Uprate Dunwoodie-Shore Road 345kv (#Y50) for I/o SCB:SPNBK(RNS2):Y49&M29&Y49_ST
	5/6/2016	16,17	IESO_AC-NY Scheduling Limit
	5/6/2016	23	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	5/7/2016	19,23	NYCA DNI Ramp Limit
	5/7/2016	0-23	Uprate Central East
	5/7/2016	6-10	Uprate Dunwoodie-Shore Road 345kv (#Y50) for I/o SCB:SPNBK(RNS2):Y49&M29&Y49_ST
	5/7/2016	22	NE_AC DNI Ramp Limit
	5/8/2016	1,7-23	Uprate Central East
	5/8/2016	10-13,19-21	Uprate Farragut-Hudson Avenue 138kv (#32077)
	5/8/2016	0	NYCA DNI Ramp Limit
	5/8/2016	8,9,14,22,23	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	5/9/2016	0-11,13-20	Uprate Central East
	5/9/2016	6,10	Uprate Farragut-Hudson Avenue 138kv (#32077)
	5/9/2016	12	IESO_AC-NY Scheduling Limit
	5/9/2016	1,2	NE_AC DNI Ramp Limit
	5/13/2016	1-19	Forced outage Marcy-Fraser Annex 345kv (#UCC2-41)
	5/13/2016	20,21	NYCA DNI Ramp Limit
	5/13/2016	0,20,21	Uprate Astoria Annex-East 13th Street 345kv (#Q35M)
	5/13/2016	0,23	Uprate Central East
	5/13/2016	1-19	Derate East 179th Street-Hell Gate East 138kv (#15053)
	5/13/2016	0,20,21	Uprate Farragut-Hudson Avenue 138kv (#32077)
	5/13/2016	20	NE_AC-NY Scheduling Limit
	5/13/2016	5-7,21	NE_AC DNI Ramp Limit
	5/13/2016	2,14-18	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	5/14/2016	0-5	Uprate Central East
	5/14/2016	4	Uprate Farragut-Hudson Avenue 138kv (#32077)
	5/14/2016	0,1	NE_AC DNI Ramp Limit
	5/14/2016	14-16,20,21	PJM_AC-NY Scheduling Limit
	5/14/2016	12,20-22	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	5/17/2016	5-8,11-14,18-20	Forced outage Sprainbrook-East Garden City 345kv (#Y49)
	5/17/2016	8,11-14,18	Extended outage Pleasantville-Dunwoodie 345kv (#W89)
	5/17/2016	15	Uprate Central East
	5/17/2016	10-12,14,15,20	NE_NNC1385-NY Scheduling Limit
	5/17/2016	14,18	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	5/18/2016	19-21	Forced outage Sprainbrook-East Garden City 345kv (#Y49)
	5/23/2016	3,15-18,23	Uprate Central East
	5/23/2016	19	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East, Niagara-Packard 230kv (#61)
	5/27/2016	13-15	NYCA DNI Ramp Limit
	5/27/2016	11	Derate East Garden City-Valley Stream 138kv (#462) for I/o SCB:NEWBRDG 1380 461 BK6
	5/27/2016	7	IESO_AC DNI Ramp Limit
	5/27/2016	14	PJM_AC-NY Scheduling Limit
	5/27/2016	14,16,17	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer 230kv (#77)
	5/28/2016	10	Derate Astoria-Hell Gate East 138kv (#34052)
	5/28/2016	10,11	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer 230kv (#77), Niagara-Packard 230kv (#61)
	5/29/2016	11	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer 230kv (#77), Niagara-Packard 230kv (#61)
	5/31/2016	8-16	Forced outage Porter-Chases Lake 230kv (#11)
	5/31/2016	13-17,19-22	Extended outage Chateauguay DC Pole 1
	5/31/2016	15,16	NYCA DNI Ramp Limit
	5/31/2016	5	NE_AC-NY Scheduling Limit
	5/31/2016	5,15	NE_AC DNI Ramp Limit
	5/31/2016	5,15	PJM_AC DNI Ramp Limit
	5/31/2016	8,11,14,16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer 230kv (#77)
	5/31/2016	14,16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kv (#61)
	5/31/2016	14	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Leeds-New Scotland 345kv (#93)

**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	

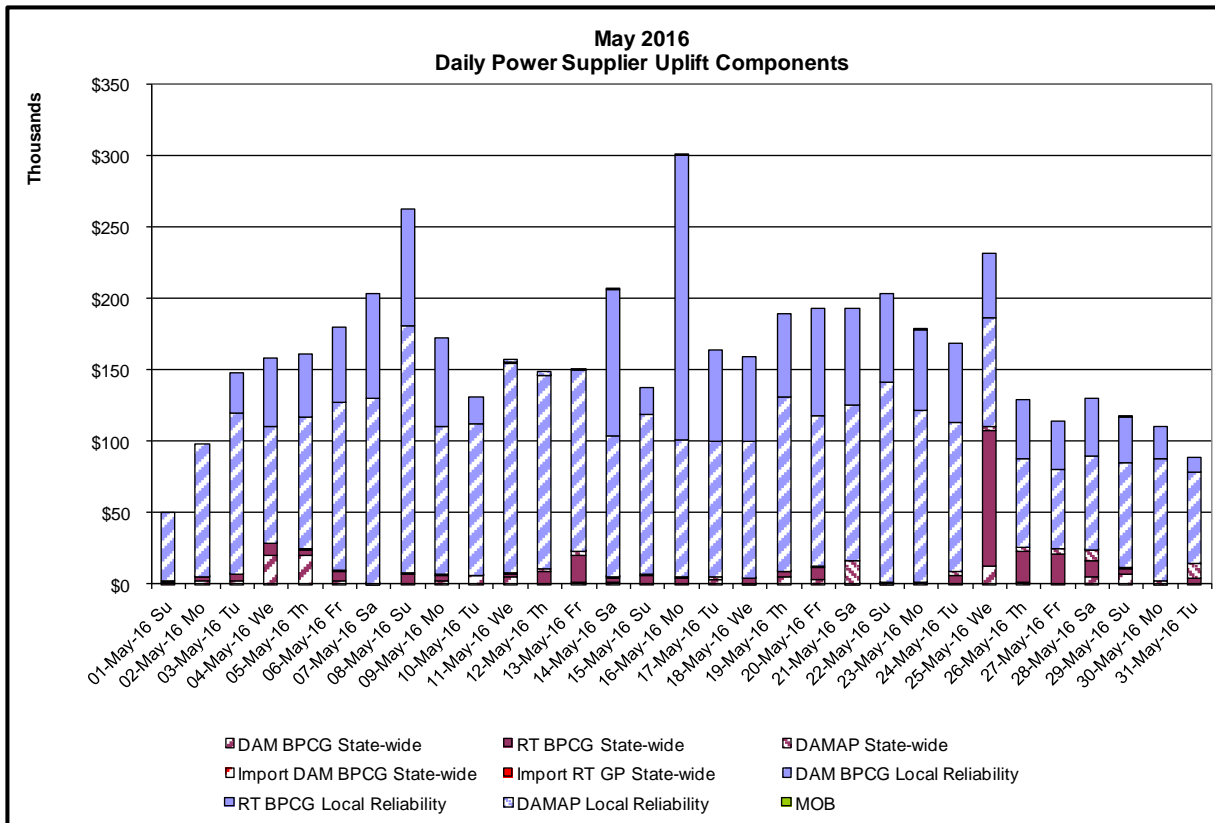
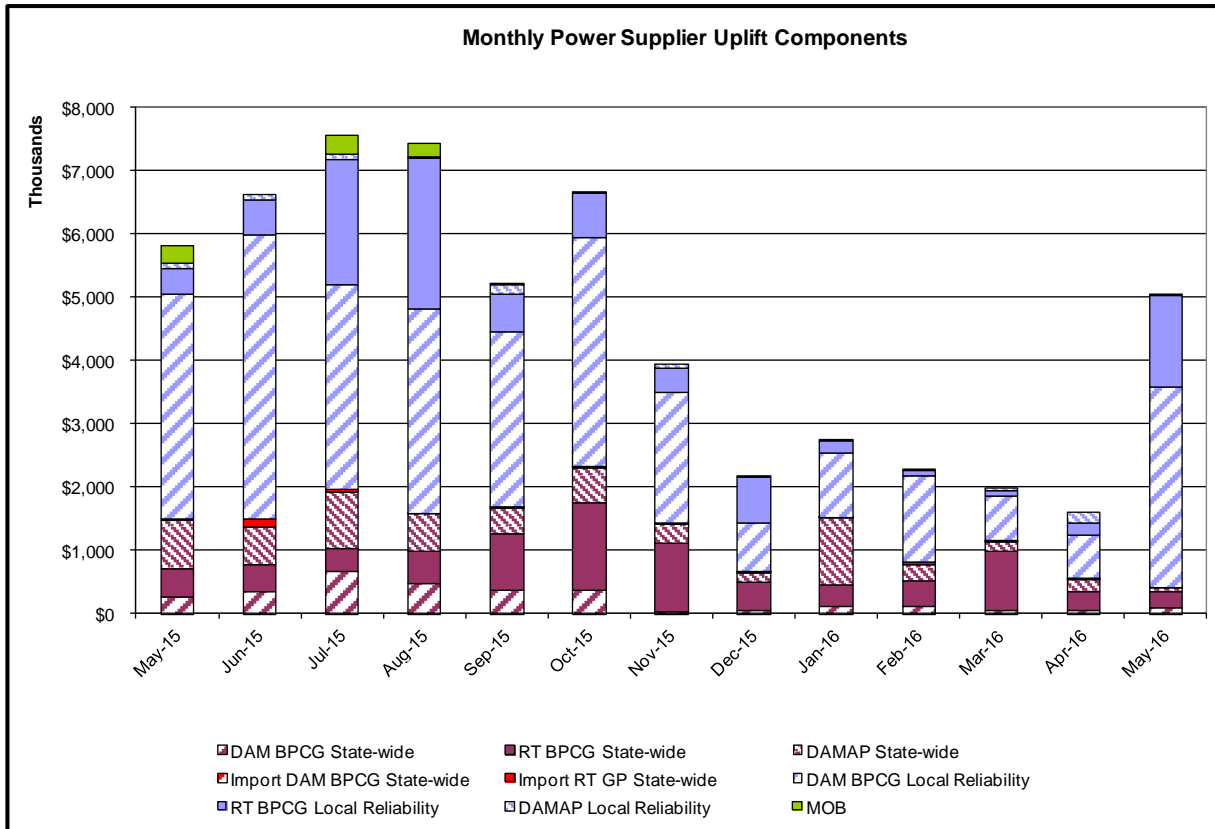
**Monthly Balancing Market Congestion Report Assumptions/Notes**

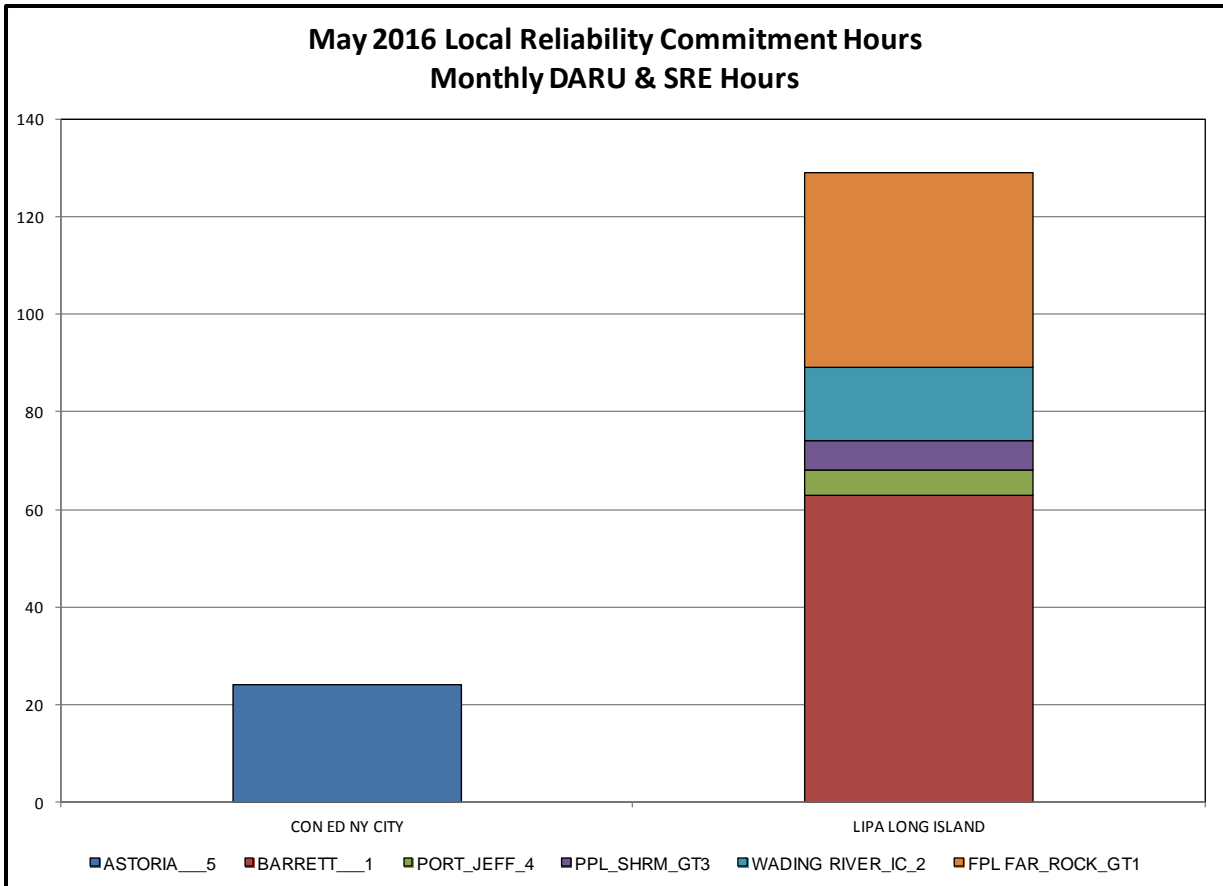
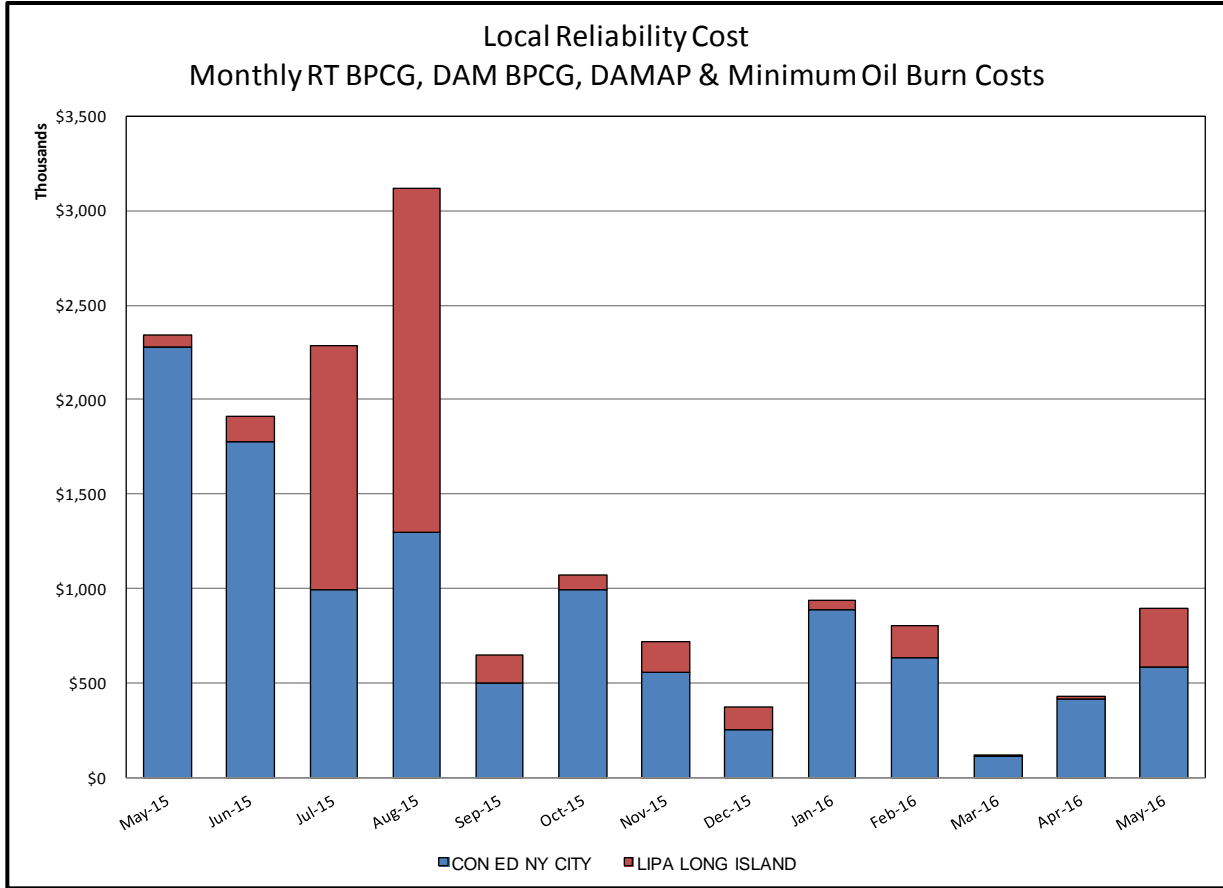
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour



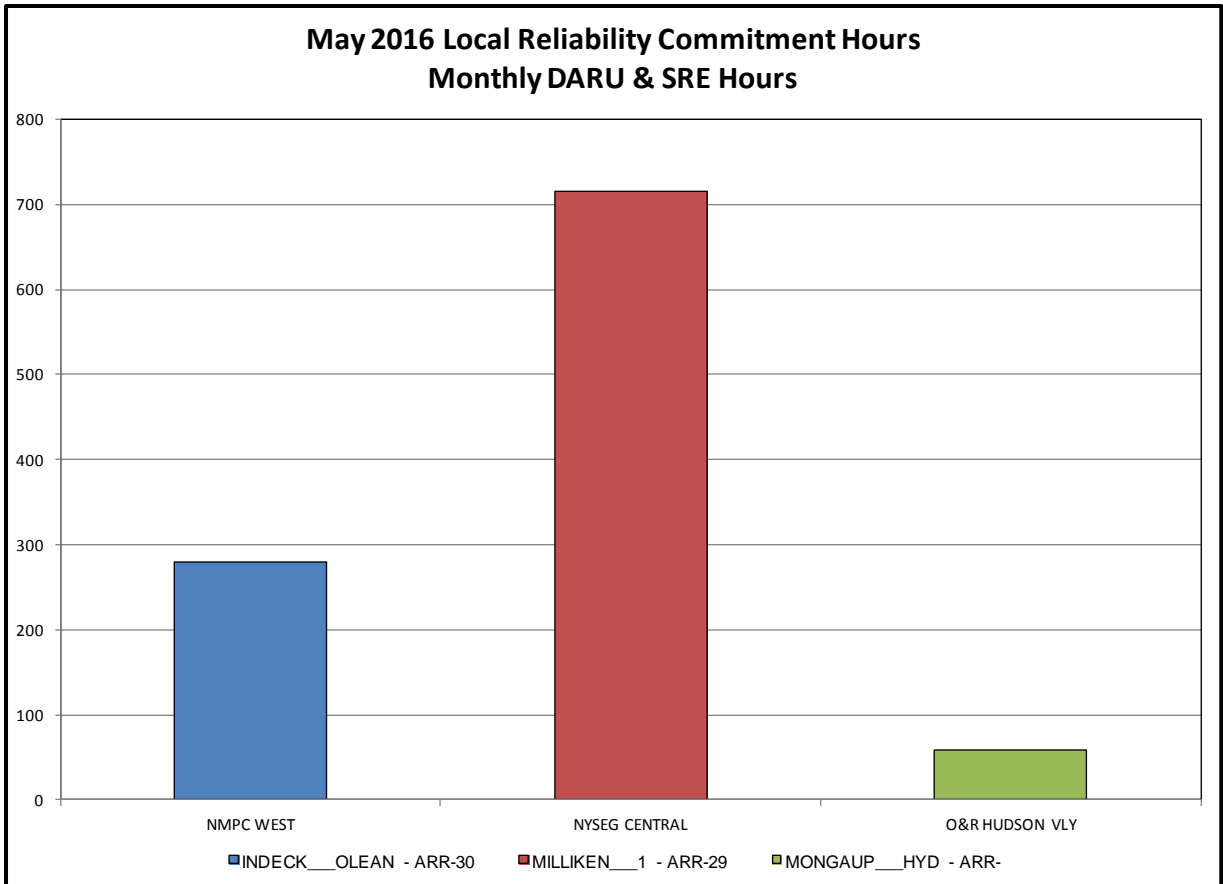
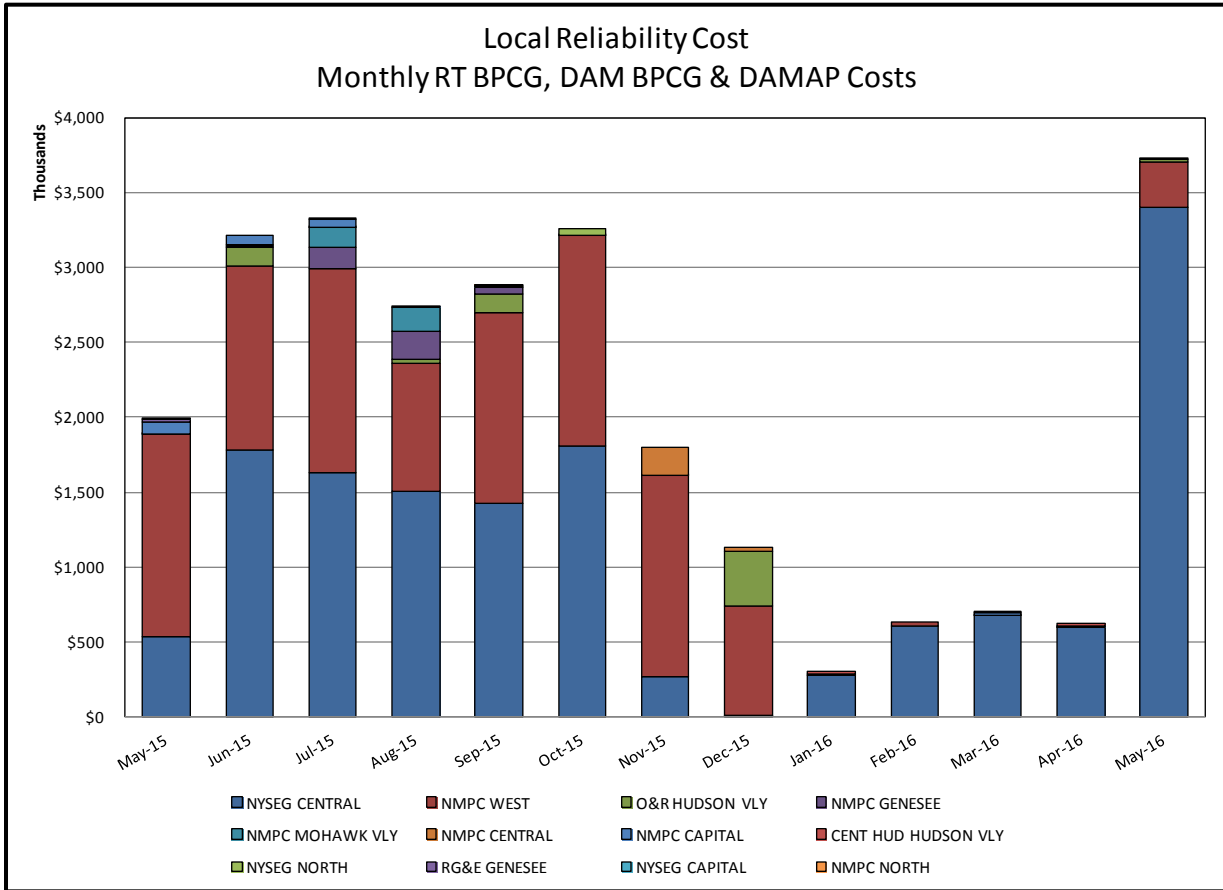
**Day-Ahead Market Congestion Residual Categories**

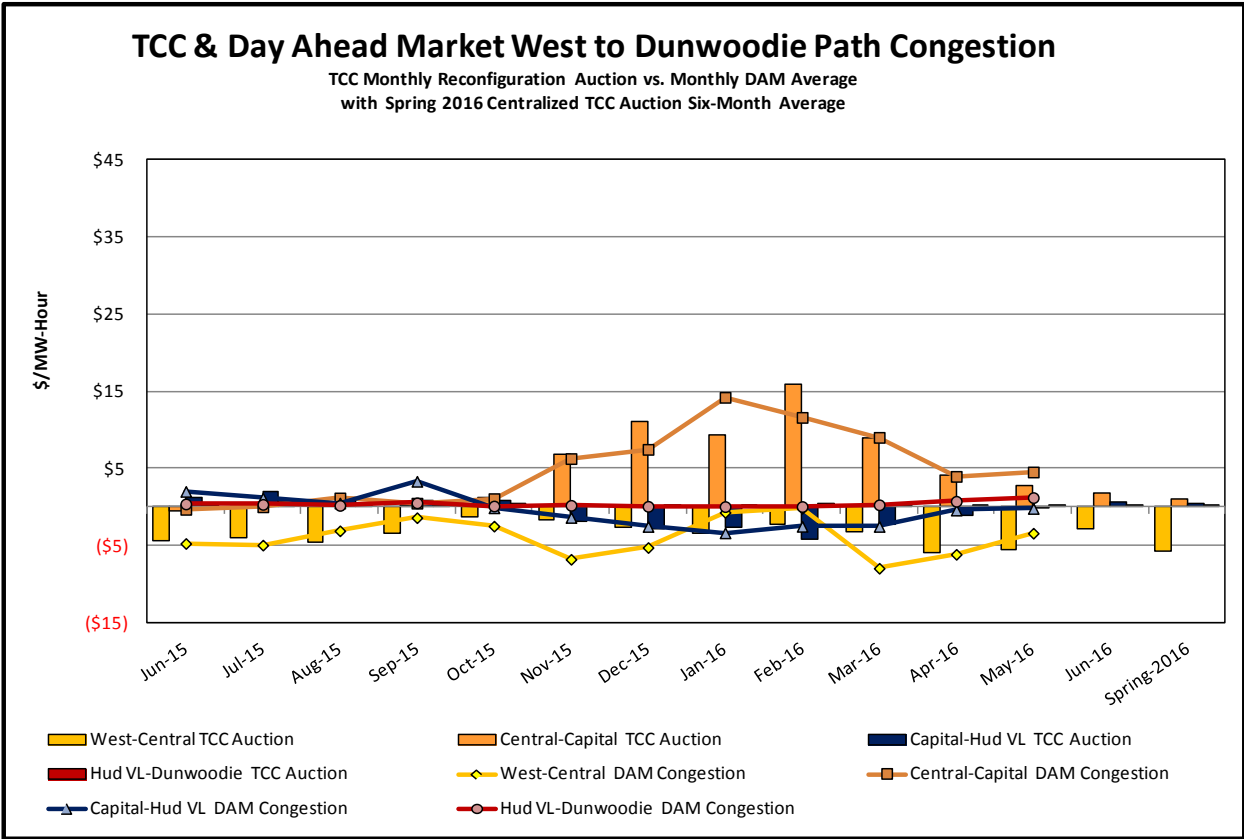
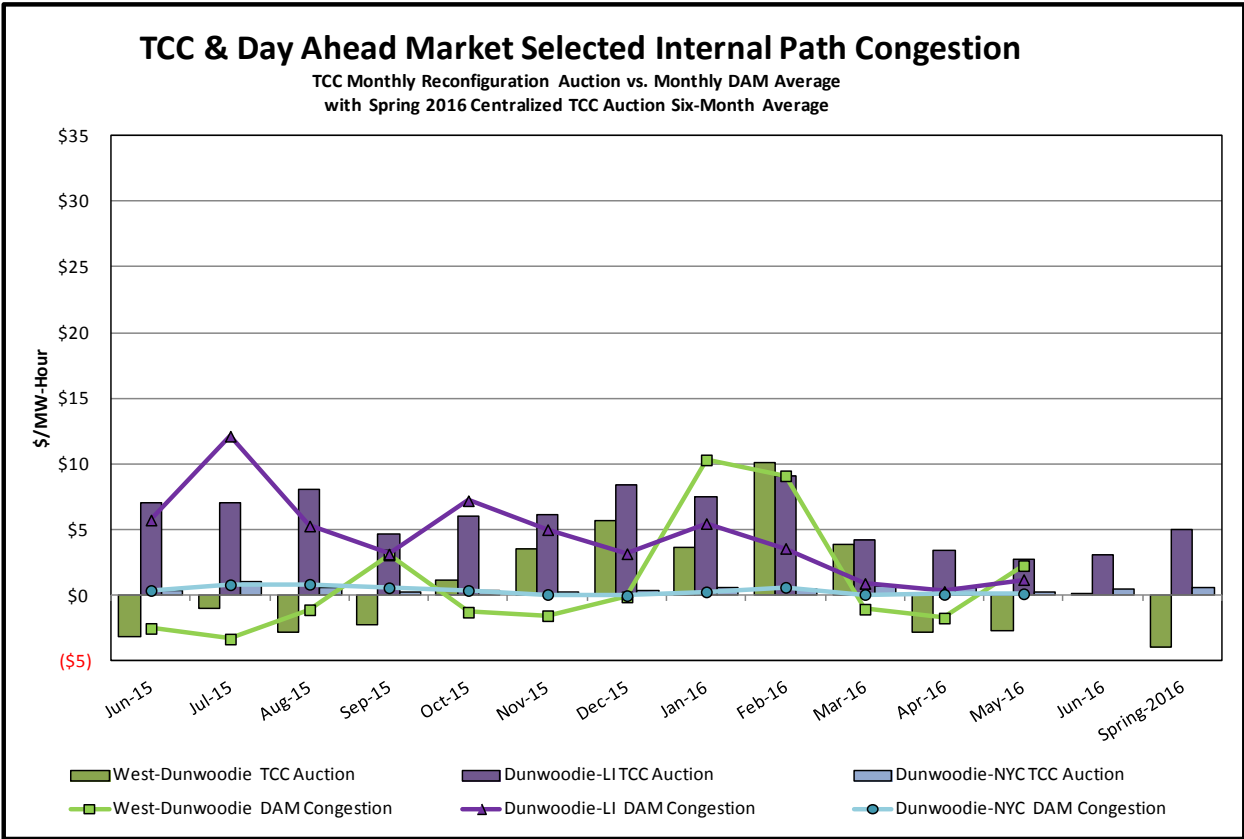
<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
NYTO Outage Allocation	Responsible TO	Direct allocation to NYTO's responsible for transmission equipment status change.	DAM scheduled outage for equipment modeled in-service for the TCC Auction.
External Outage Allocation	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

