

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



## ***March 2015 Report***

## **Operations & Reliability Department New York Independent System Operator**

Prepared by NYISO Operations Analysis and Services, based on settlements initial process data collected on or before April 8, 2015.

## **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 Curtailment Performance*
  - *Lake Erie Circulation and ISO Schedules*
  
- ◆ **Broader Regional Market Performance Metrics**
  - *Ramapo Interconnection Congestion Coordination Monthly Value*
  - *Ramapo 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*

## March 2015 Operations Performance Highlights

- Peak load of 23,122 MW occurred on 3/5/2015 HB 18
- All-time winter capability period peak load of 25,738 MW occurred on 1/7/2014 HB 18
- On March 17<sup>th</sup> the NYISO declared the Alert State, operated in Thunderstorm Alert, and reduced power flows to 90% of ratings due to the K-9 intensity solar storm.
- 10 hours of Thunder Storm Alerts were declared
- 5 hours of NERC TLR level 3 curtailment
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

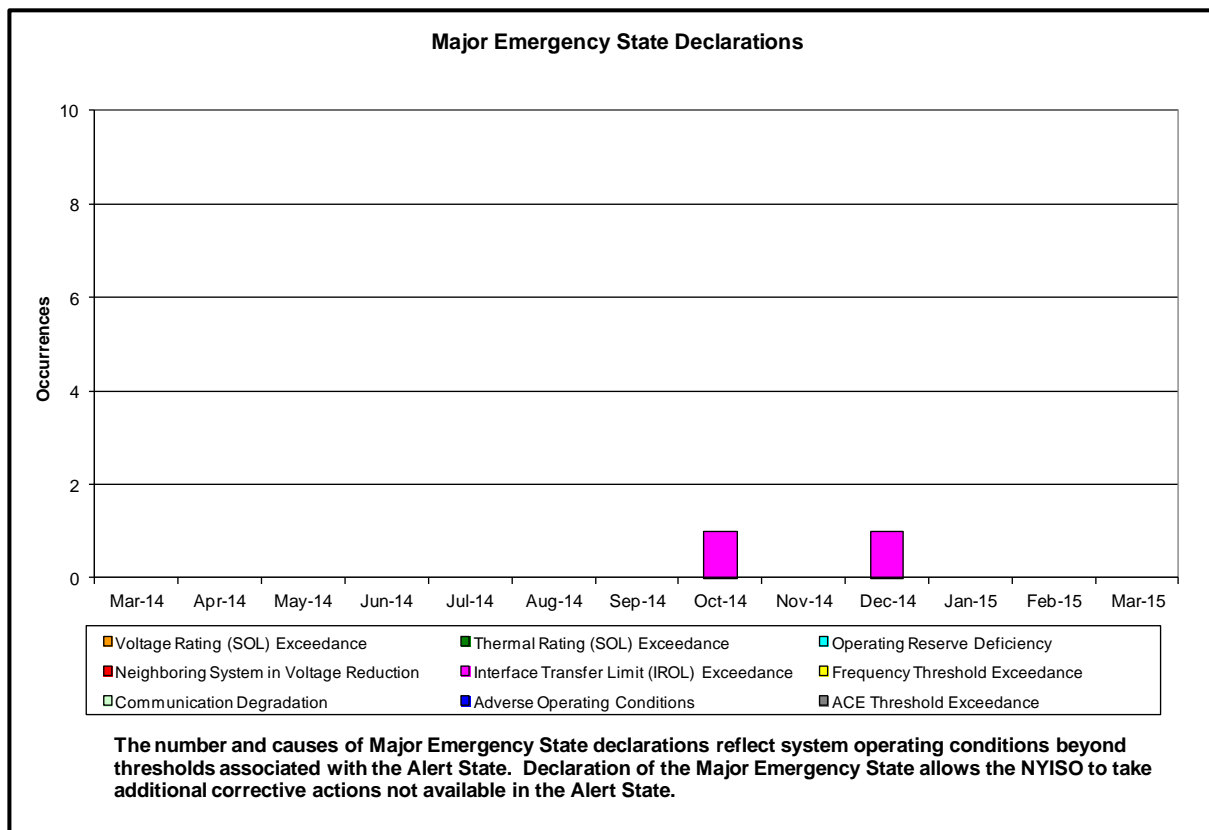
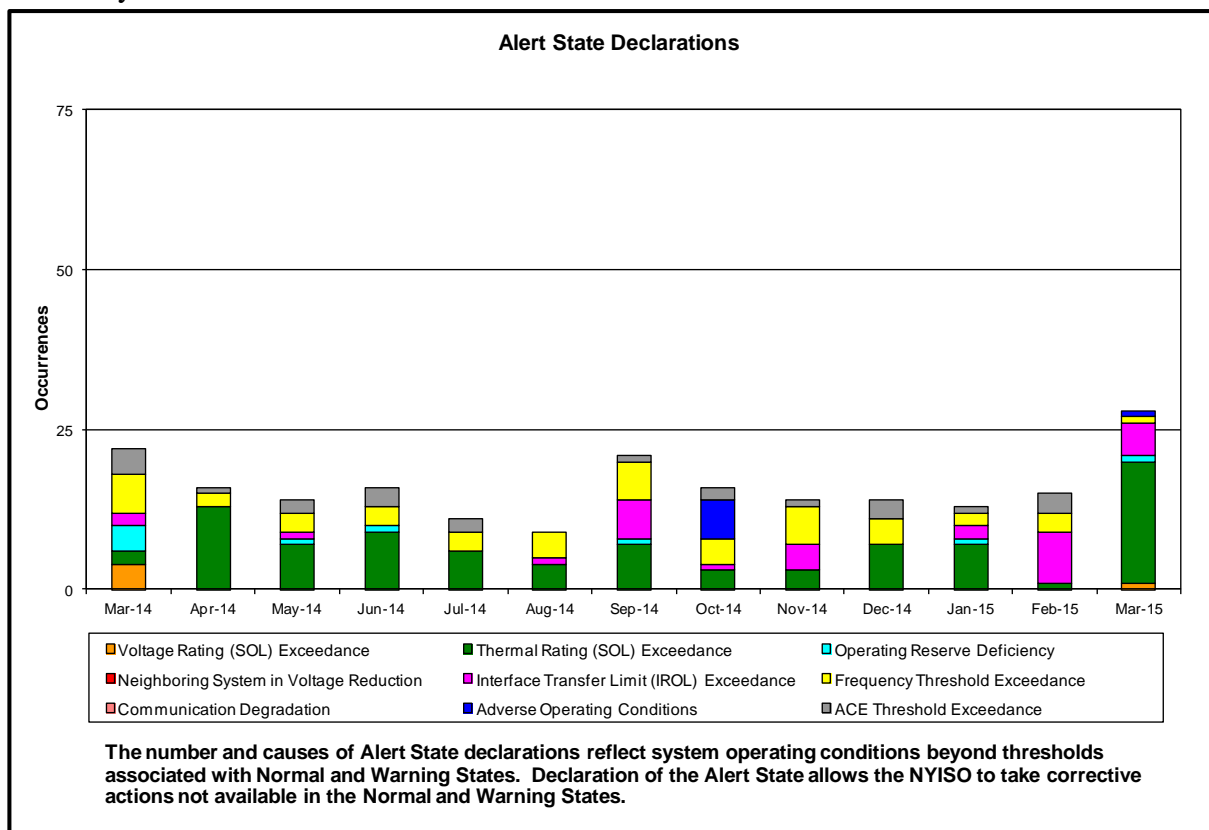
	Current Month Value (\$M)	Year-to-Date Value (\$M)
<b>Regional Congestion Coordination</b>	\$1.31	\$7.24
<b>Regional PJM-NY RT Scheduling</b>	\$0.67	\$2.26
<b>Total</b>	\$1.98	\$9.50

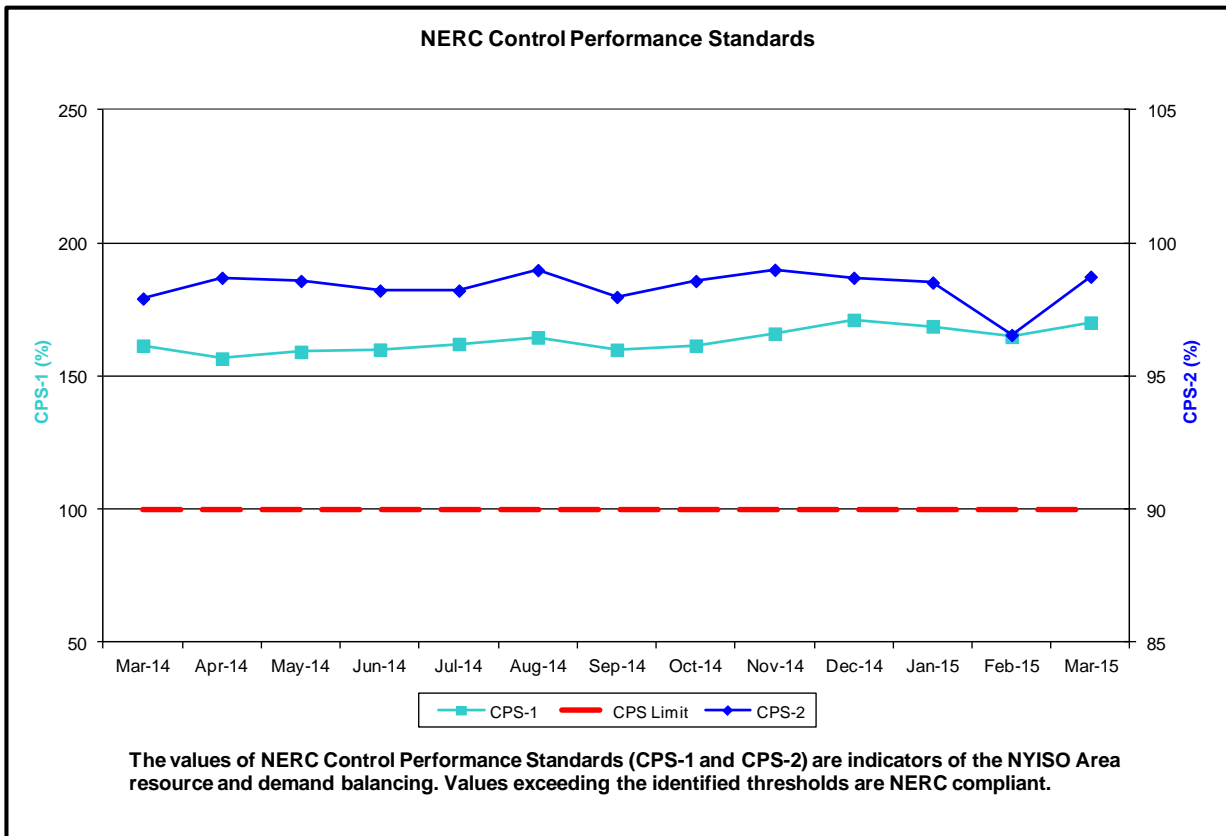
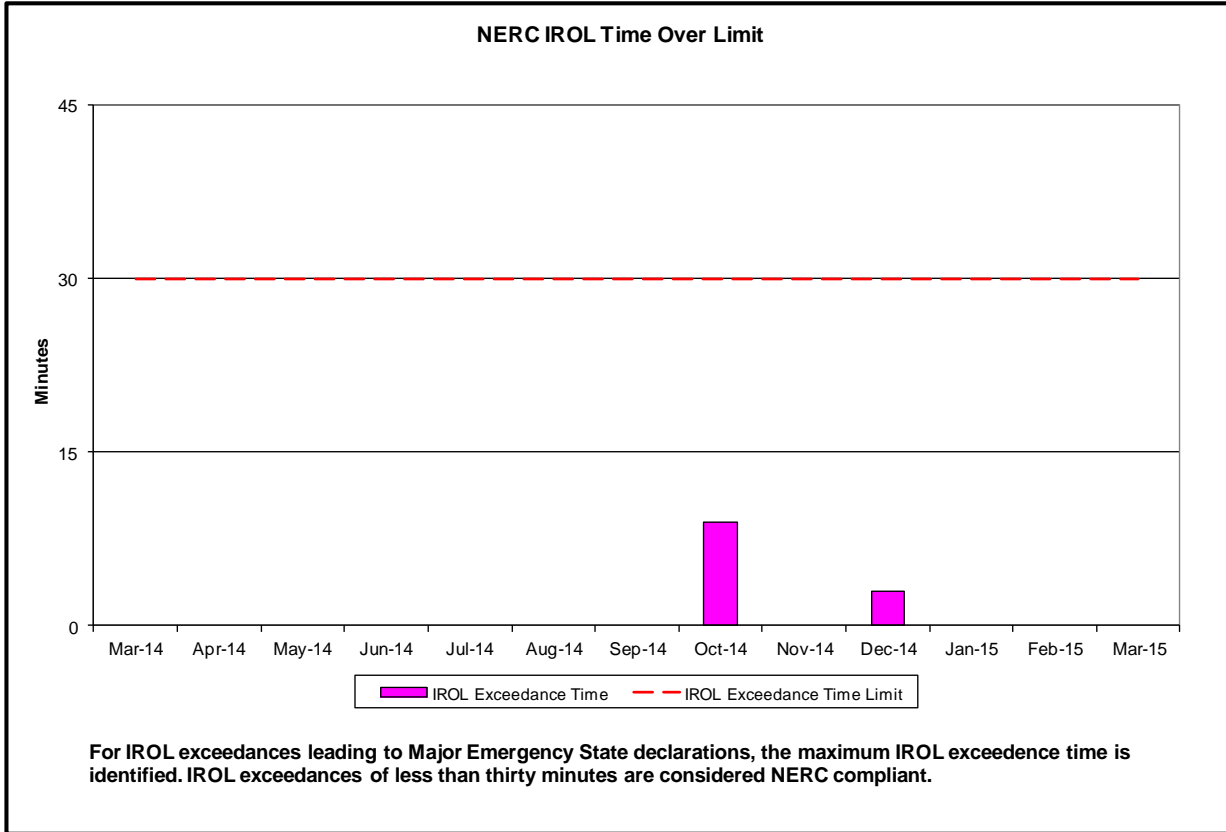
- Statewide uplift cost monthly average was **(\$0.81)/MWh**
- The following table identifies the Monthly ICAP spot market prices by locality.

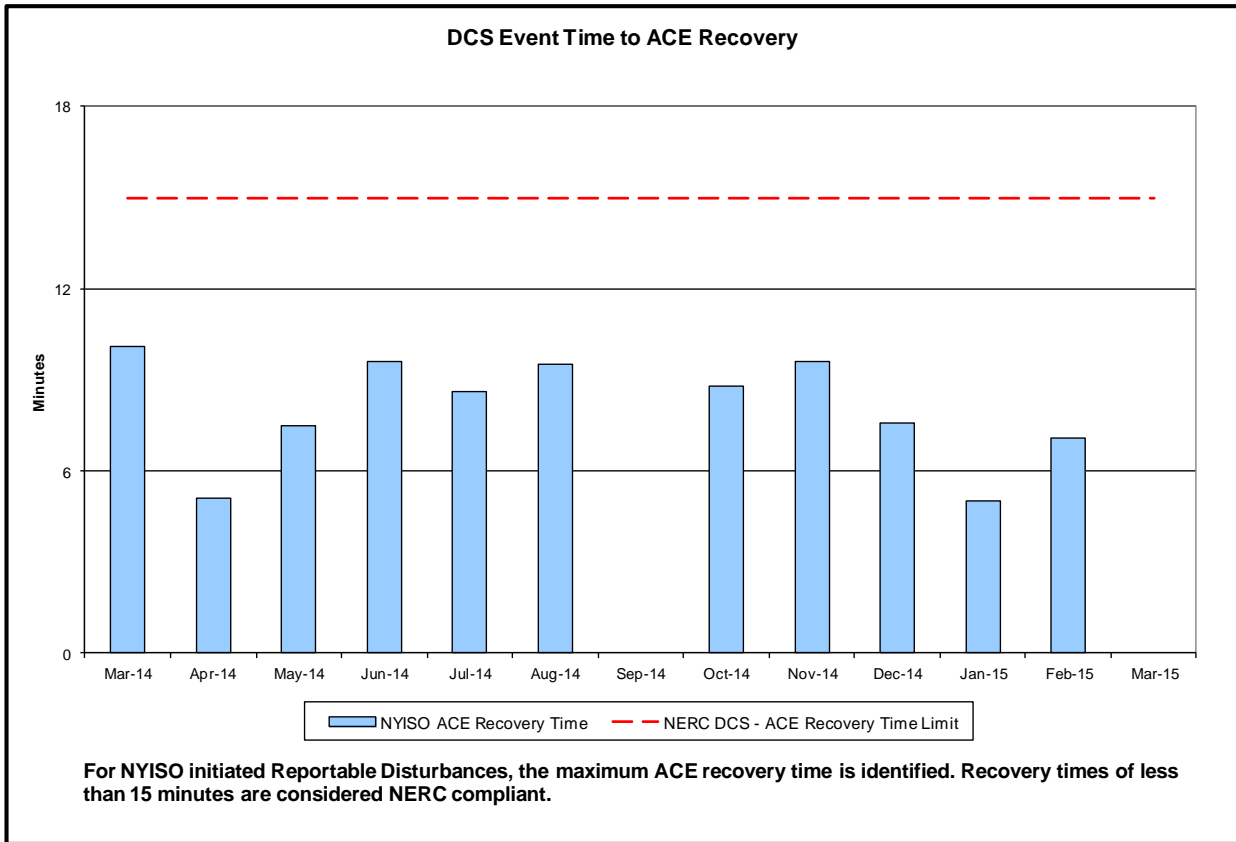
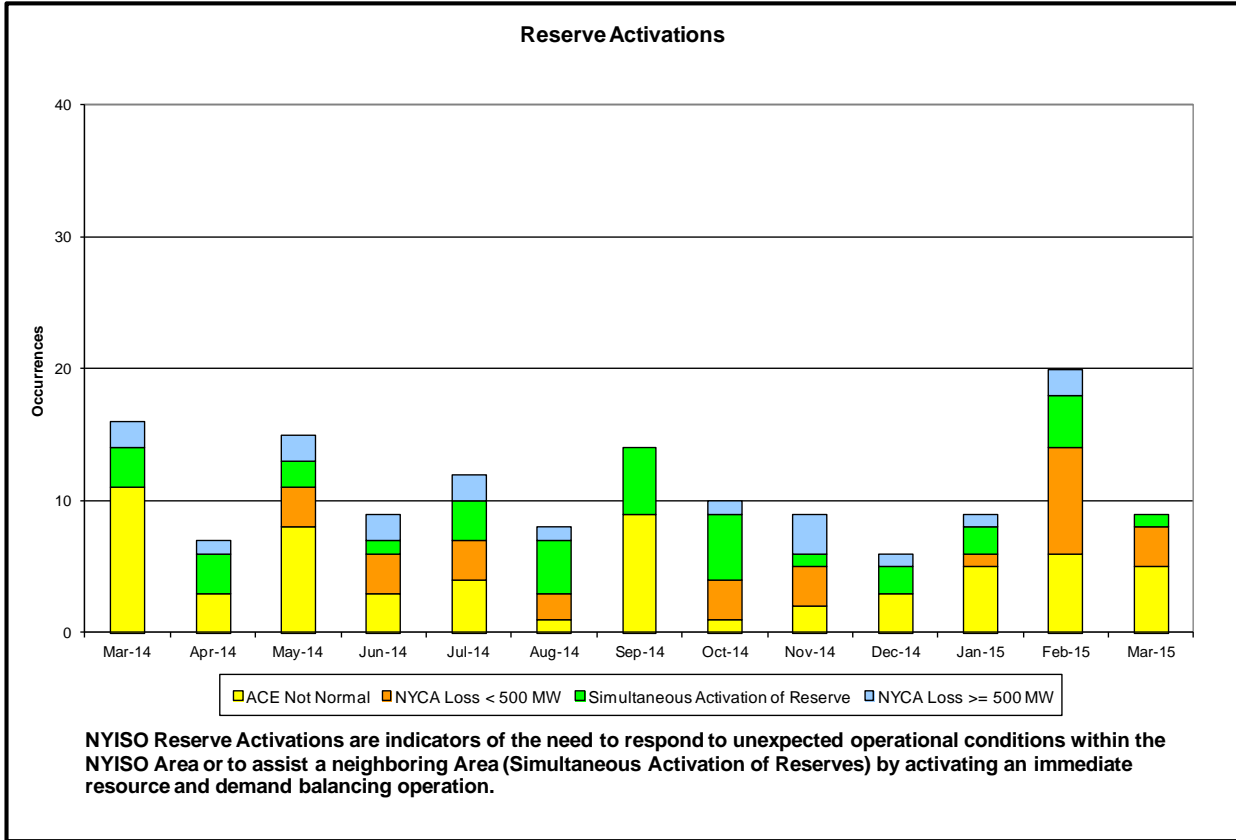
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
April 2015 Spot Price	\$0.75	\$2.82	\$7.30	\$2.92
Change from Prior Month	\$0.03	<b>(\$0.11)</b>	\$0.02	\$0.05

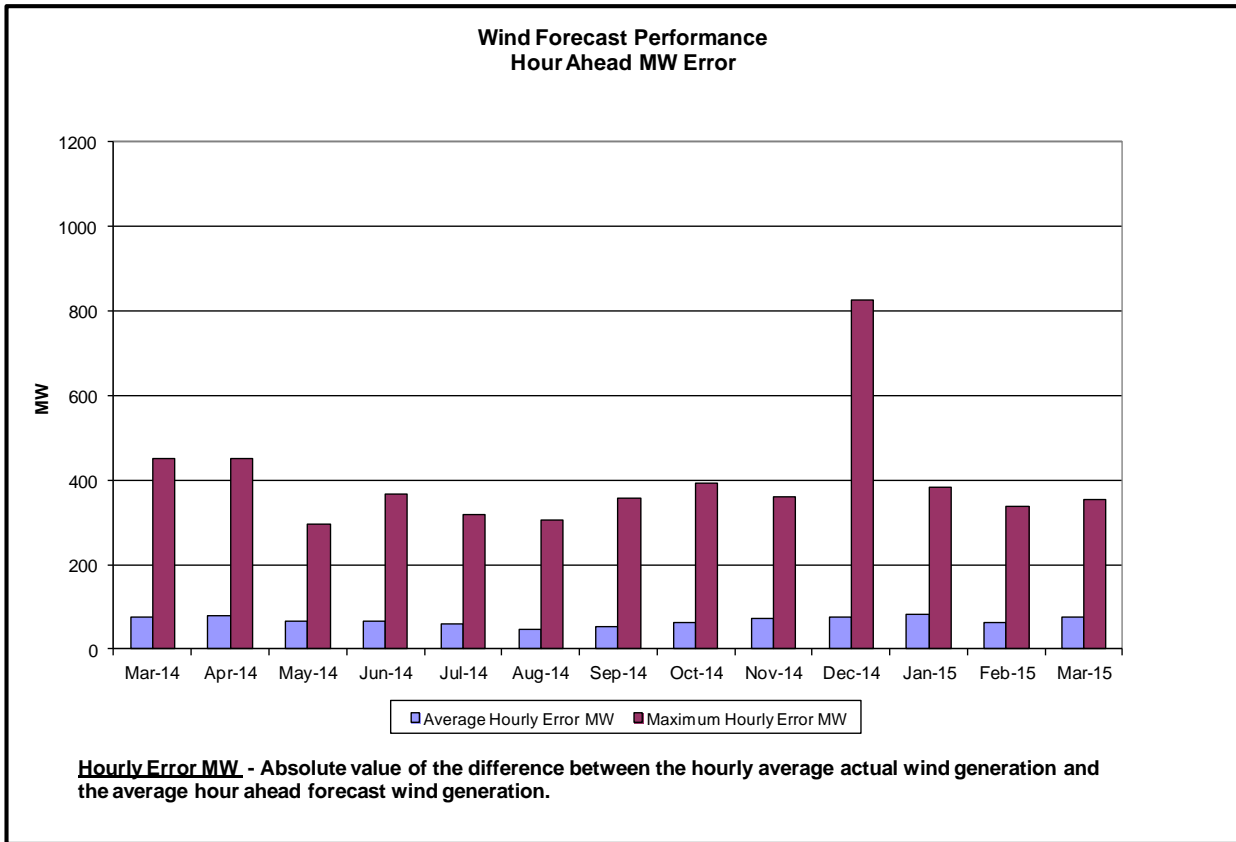
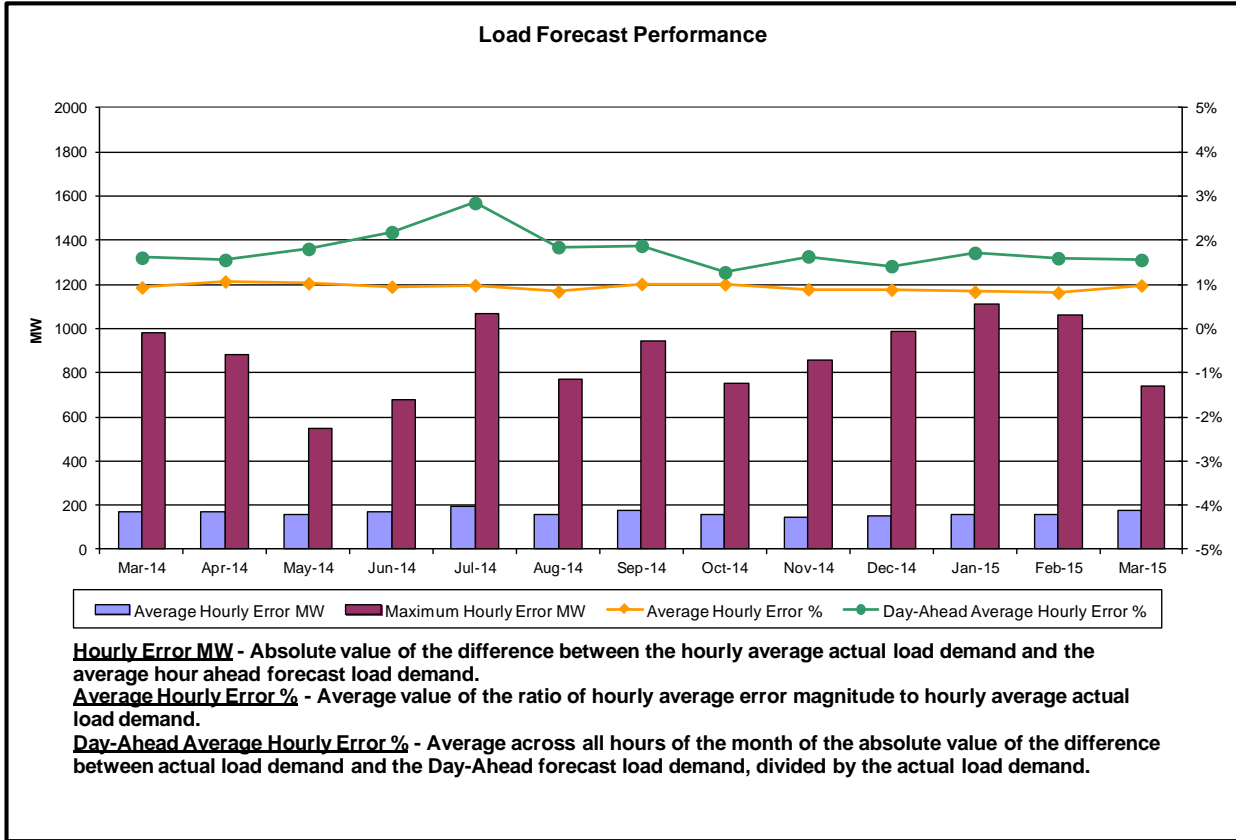
- LHV - Price decreases by \$0.11 due to an approximate increase of 20 MW internal UCAP.

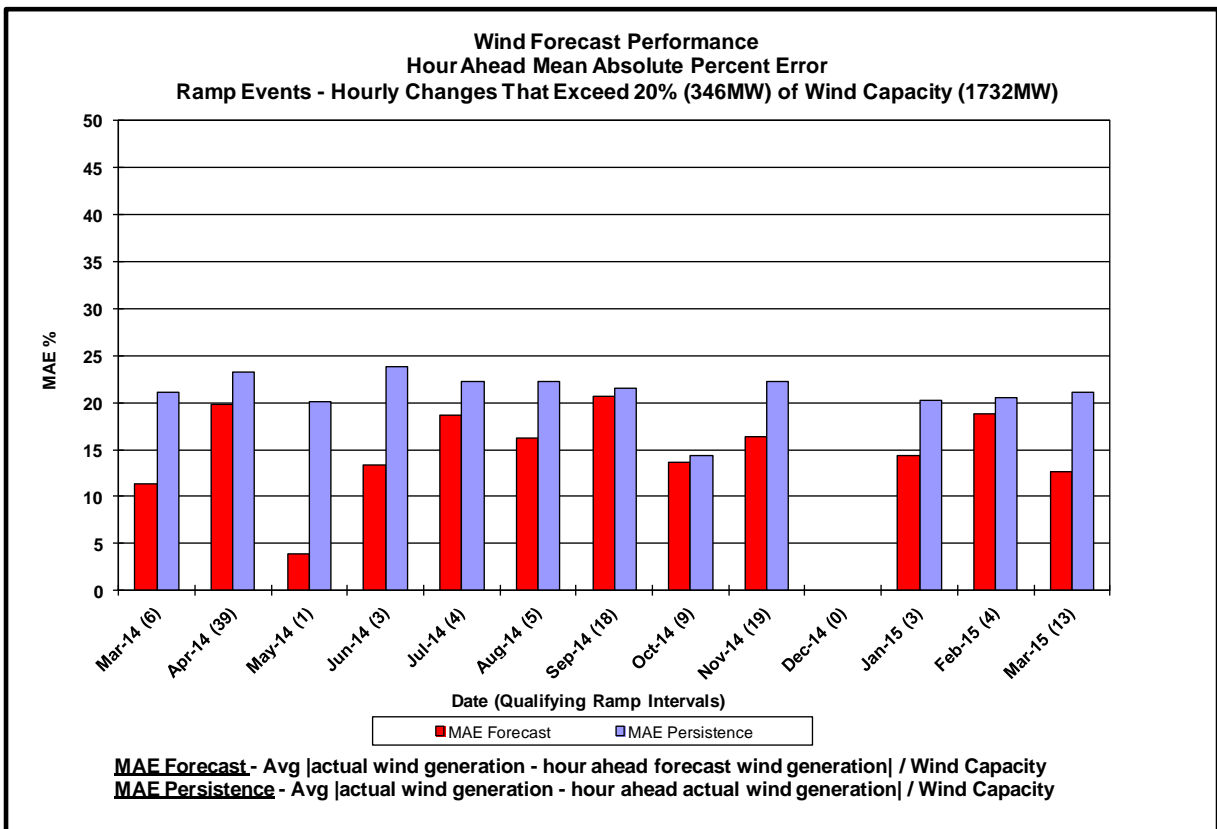
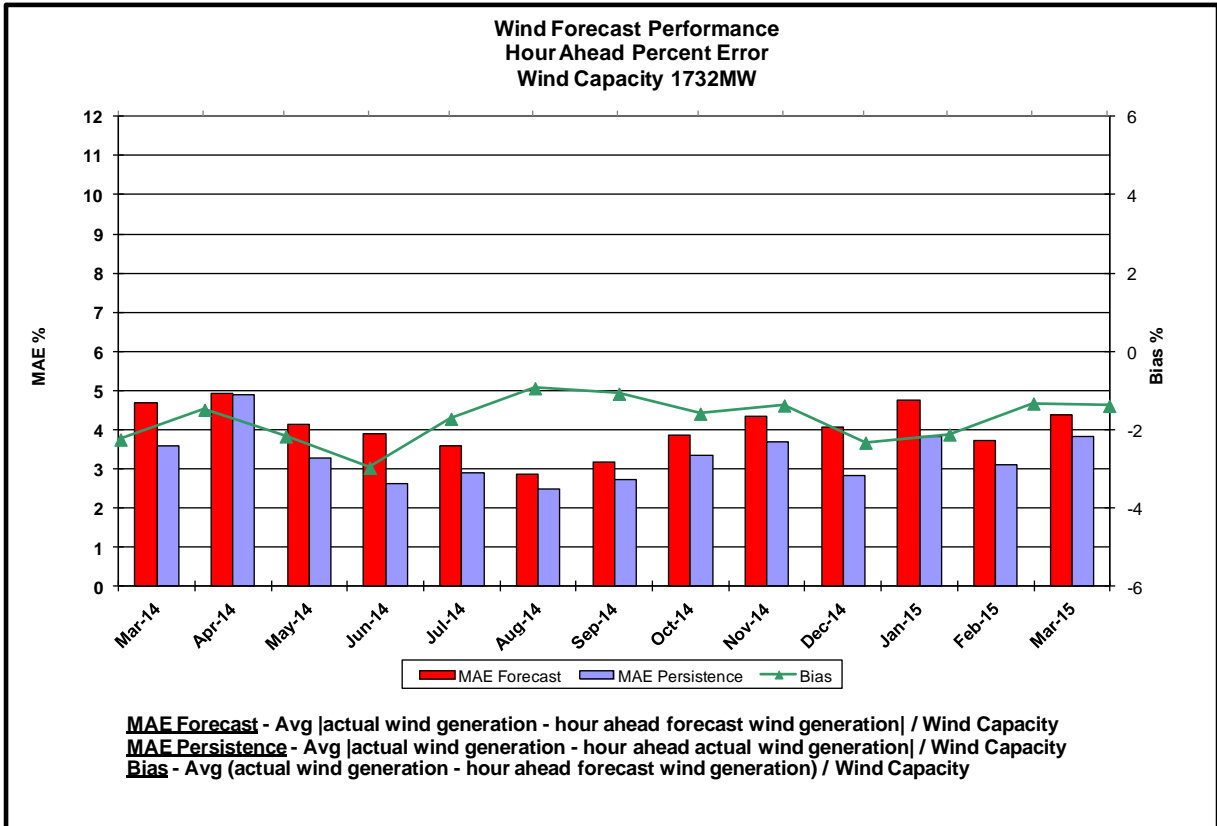
## Reliability Performance Metrics



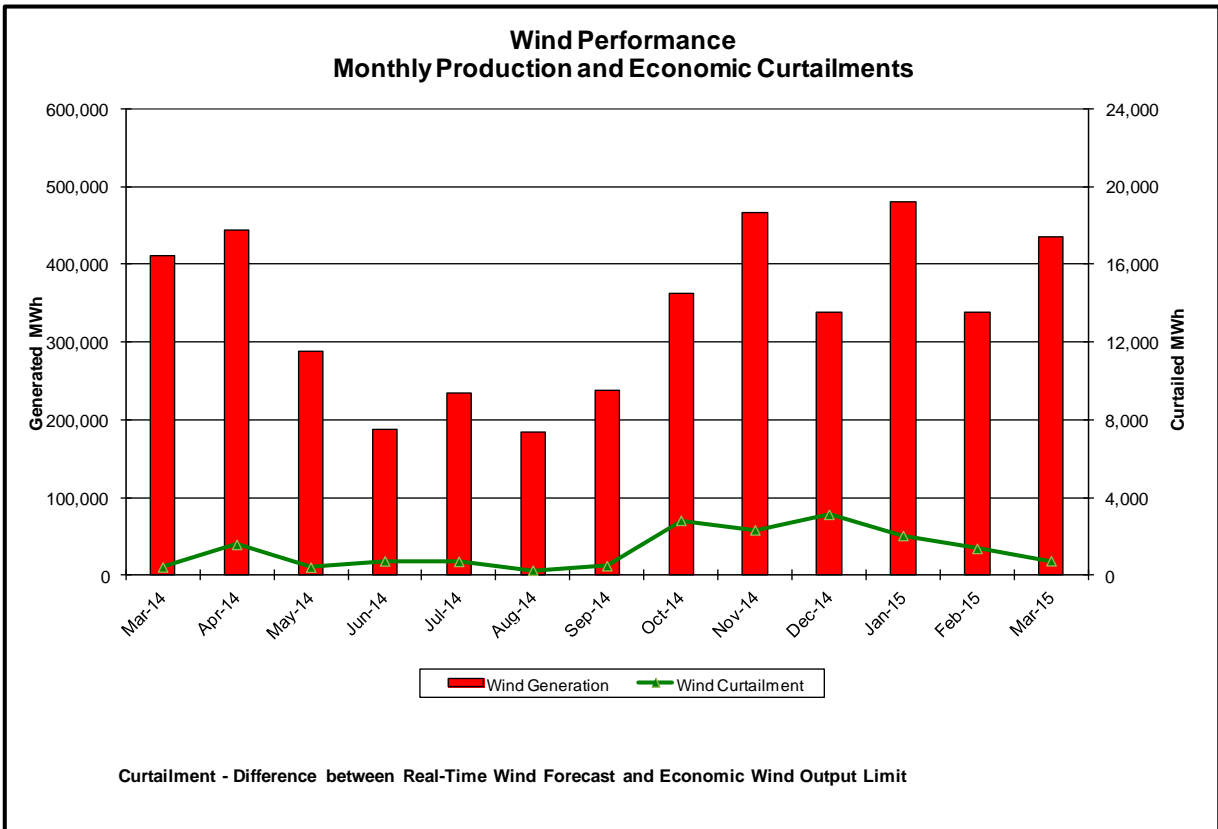
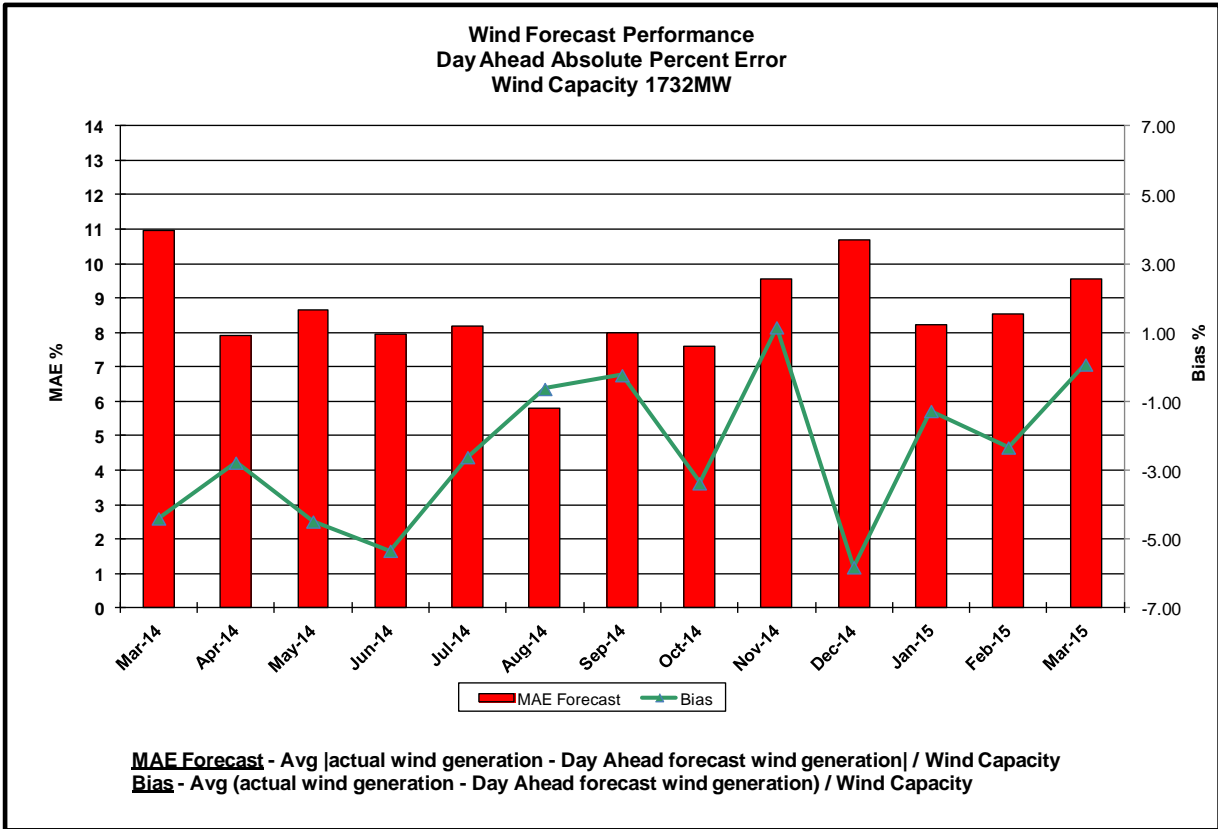


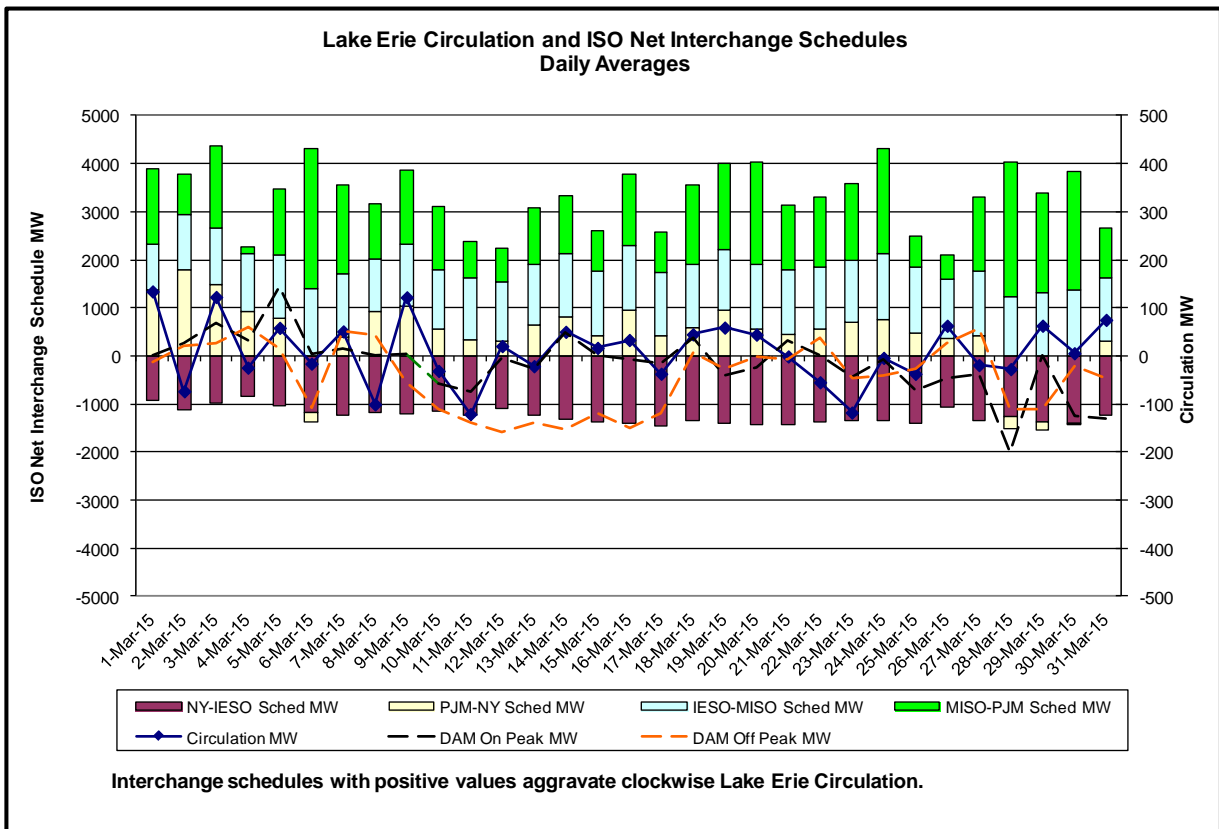
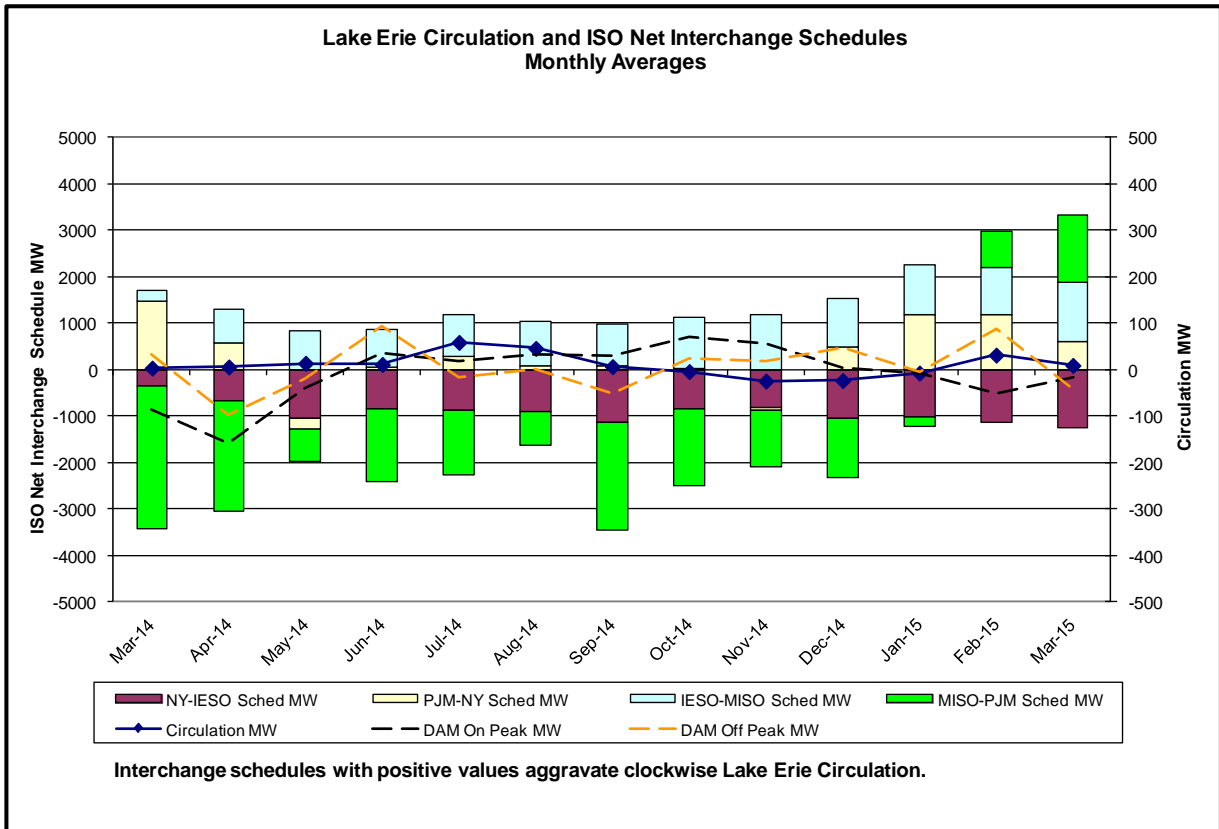




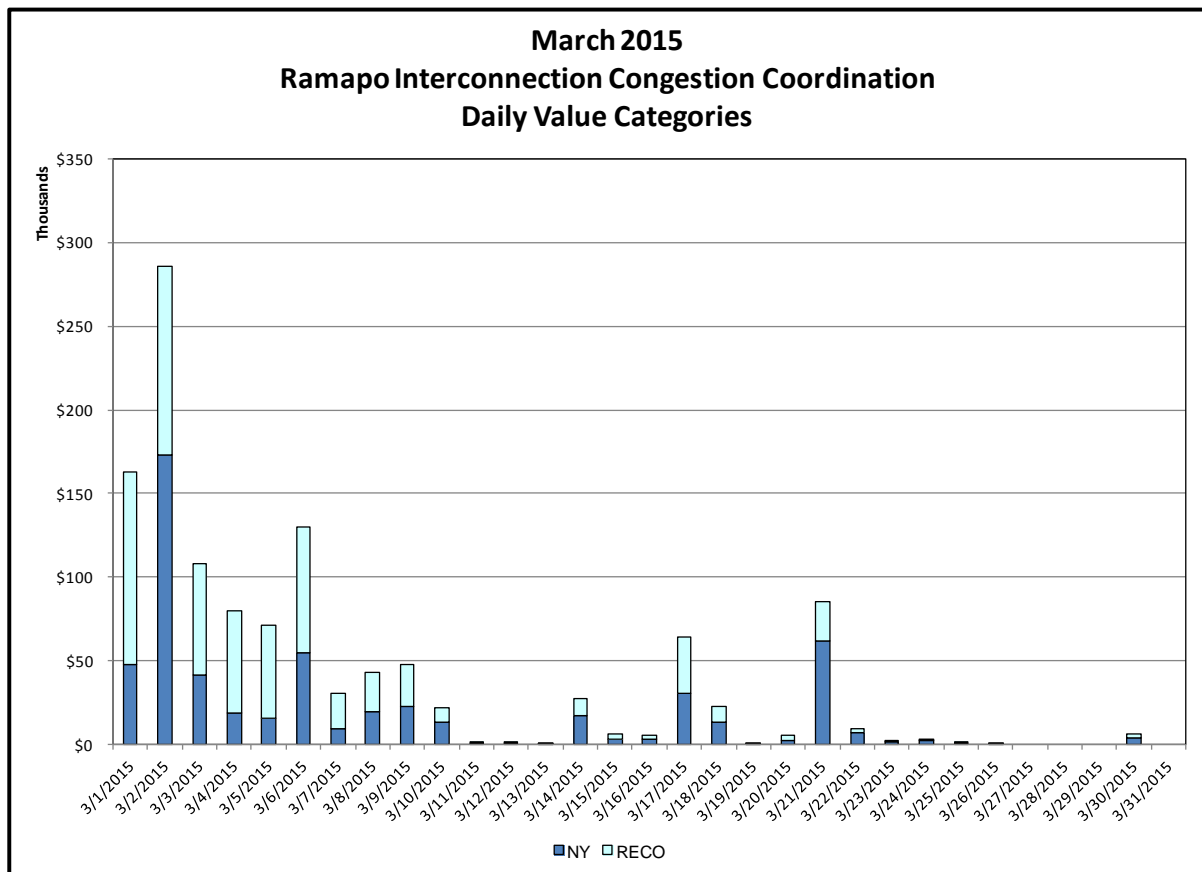
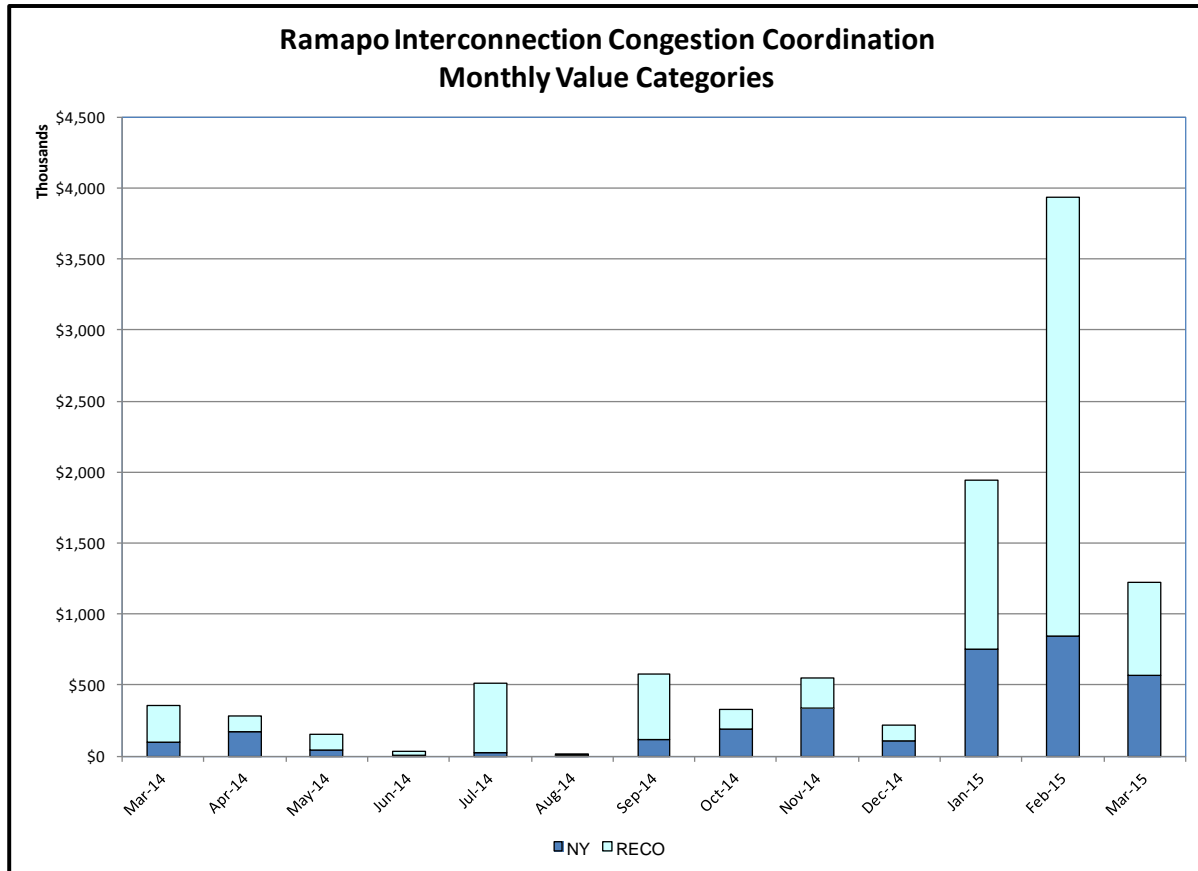






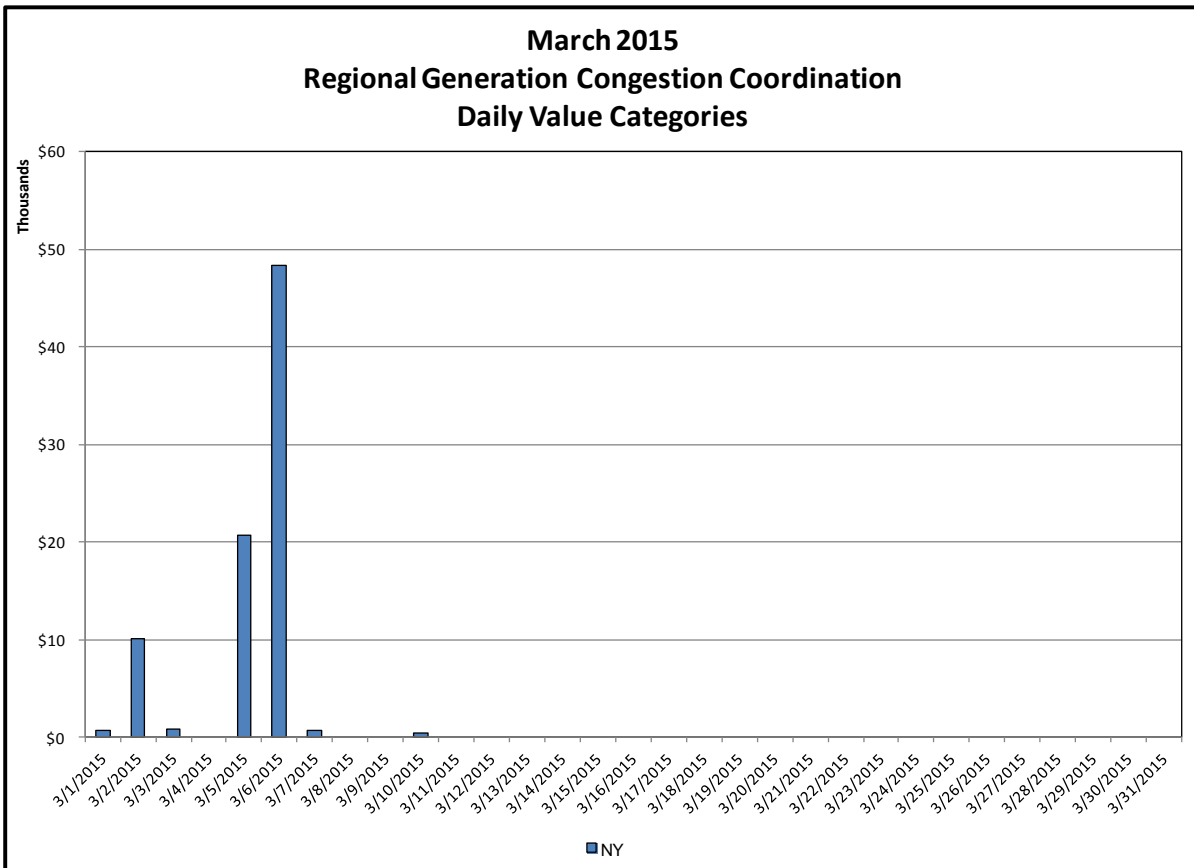
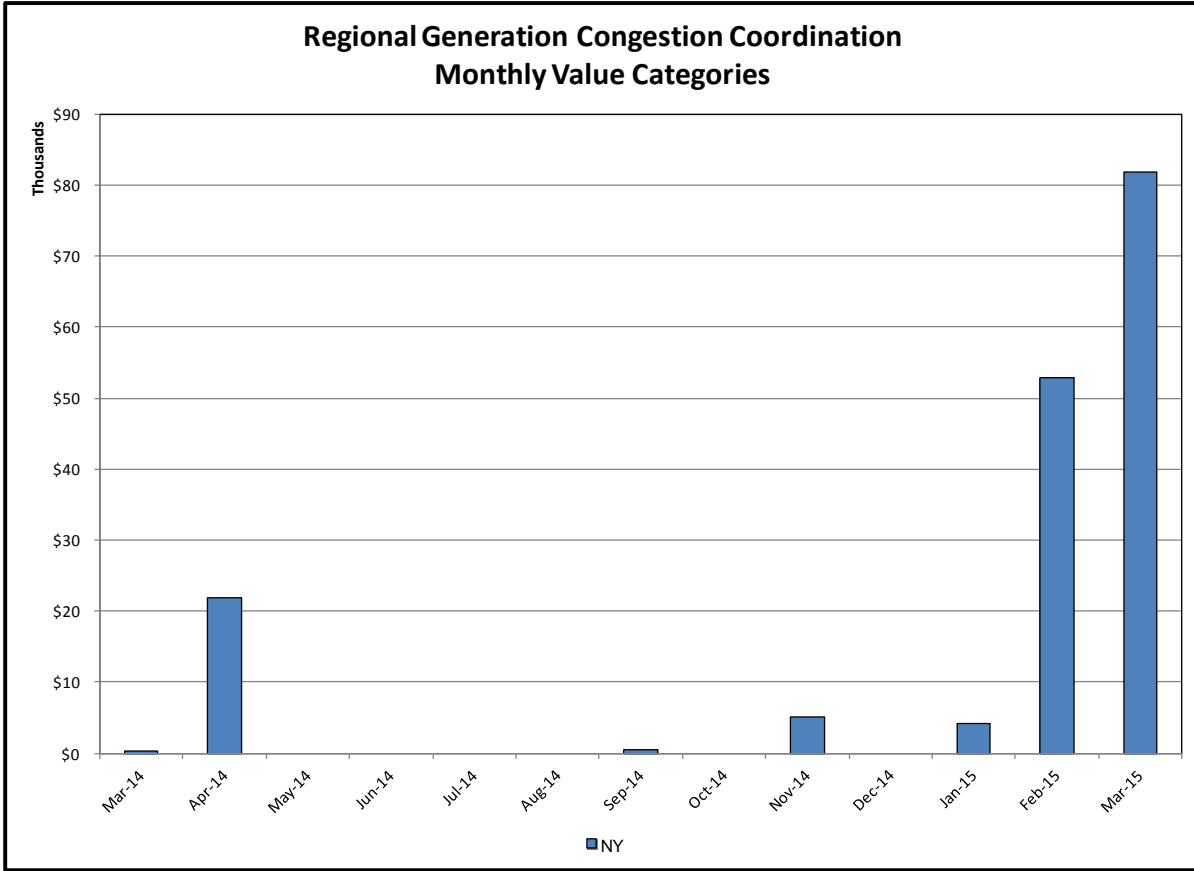


## Broader Regional Market Performance Metrics



**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.



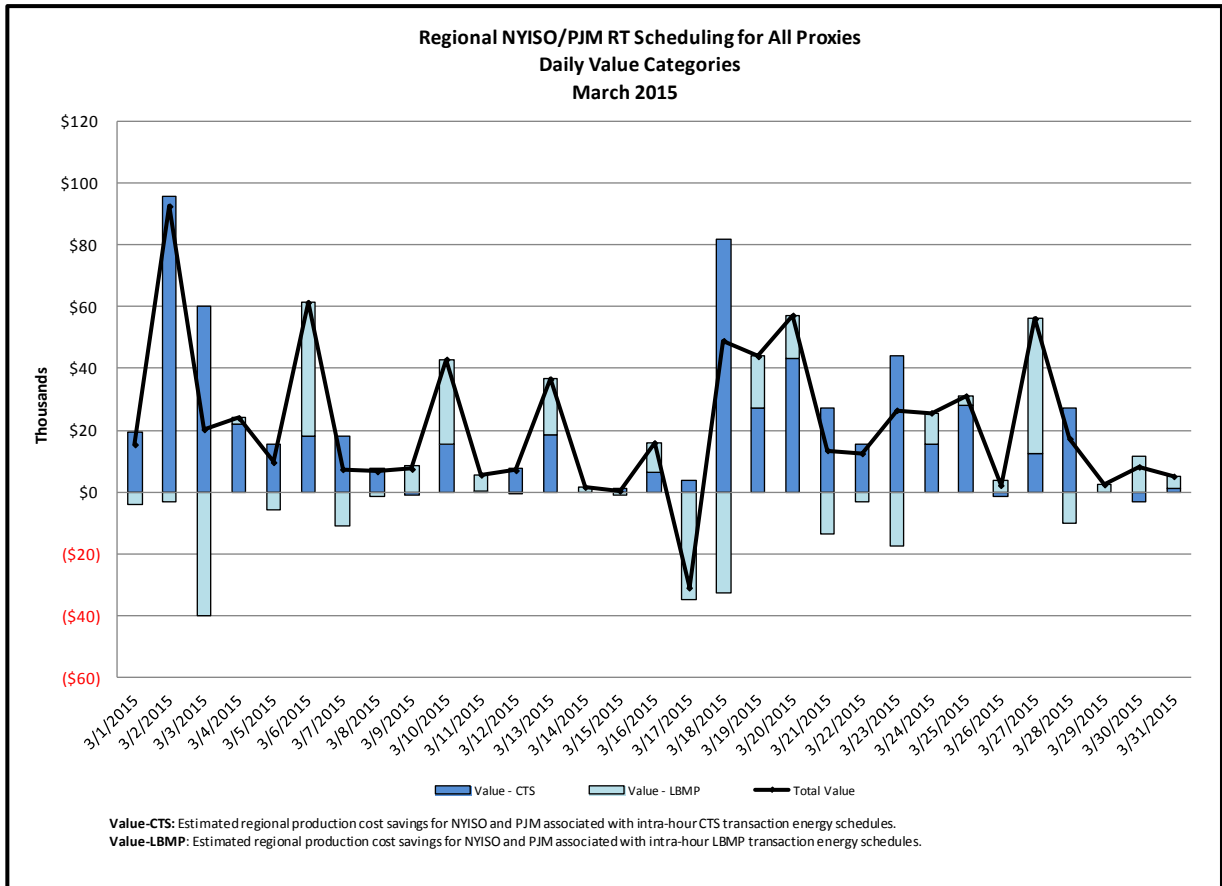
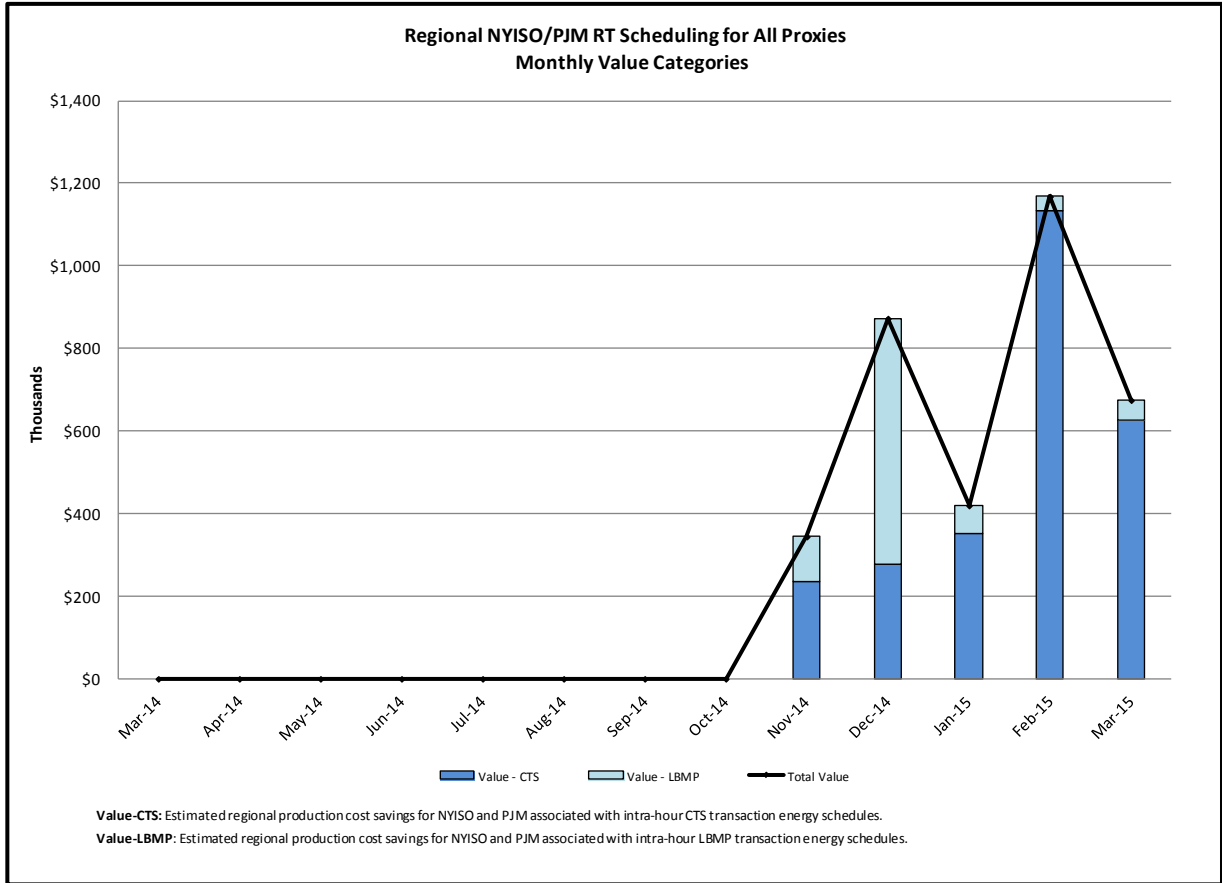
**Regional Generation Congestion Coordination**

**Category**

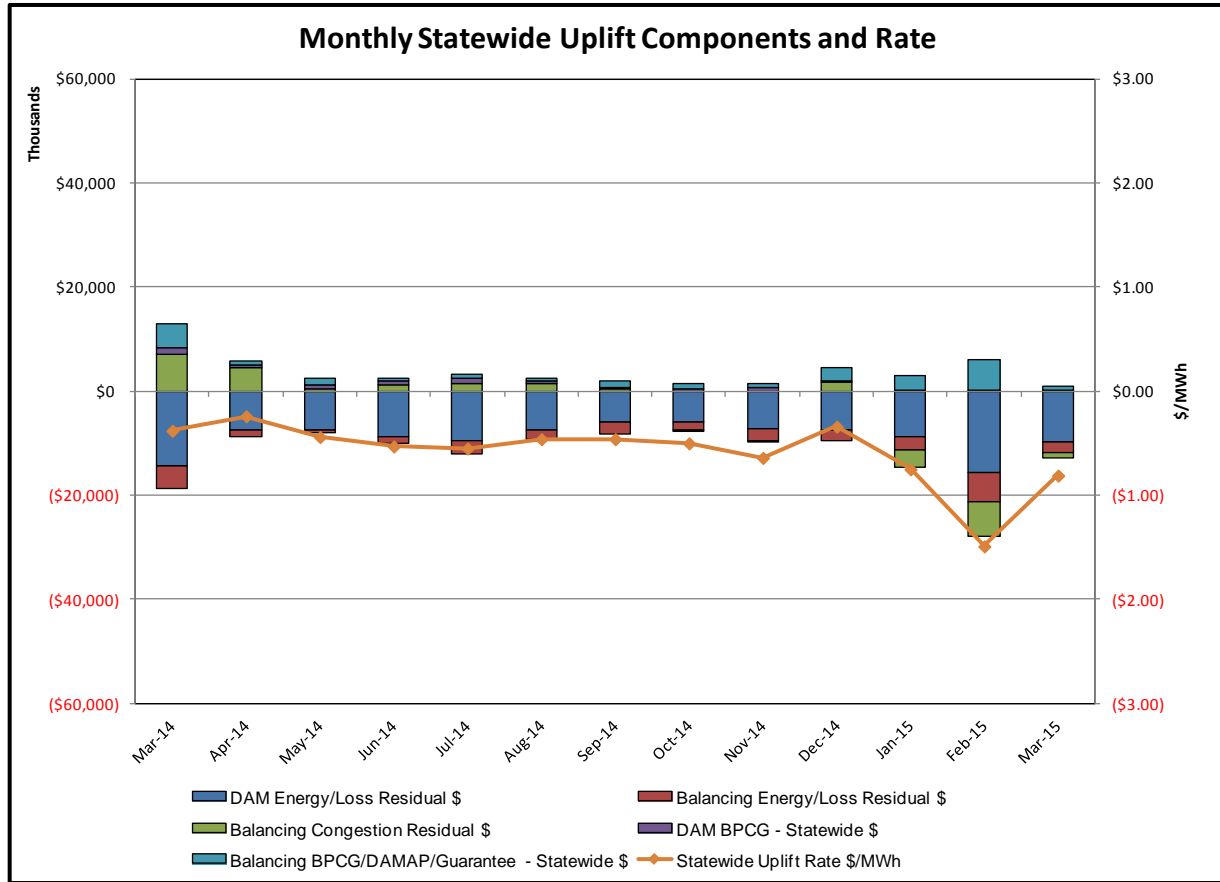
NY

**Description**

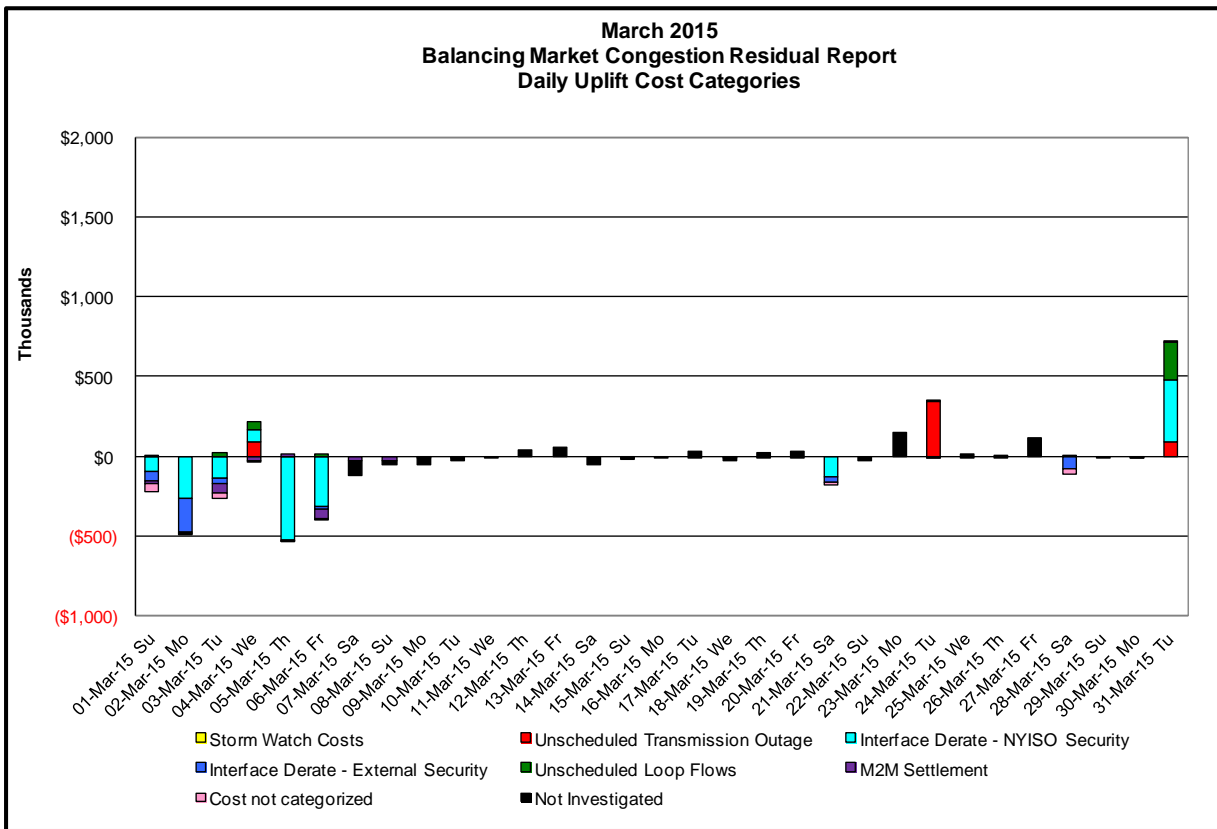
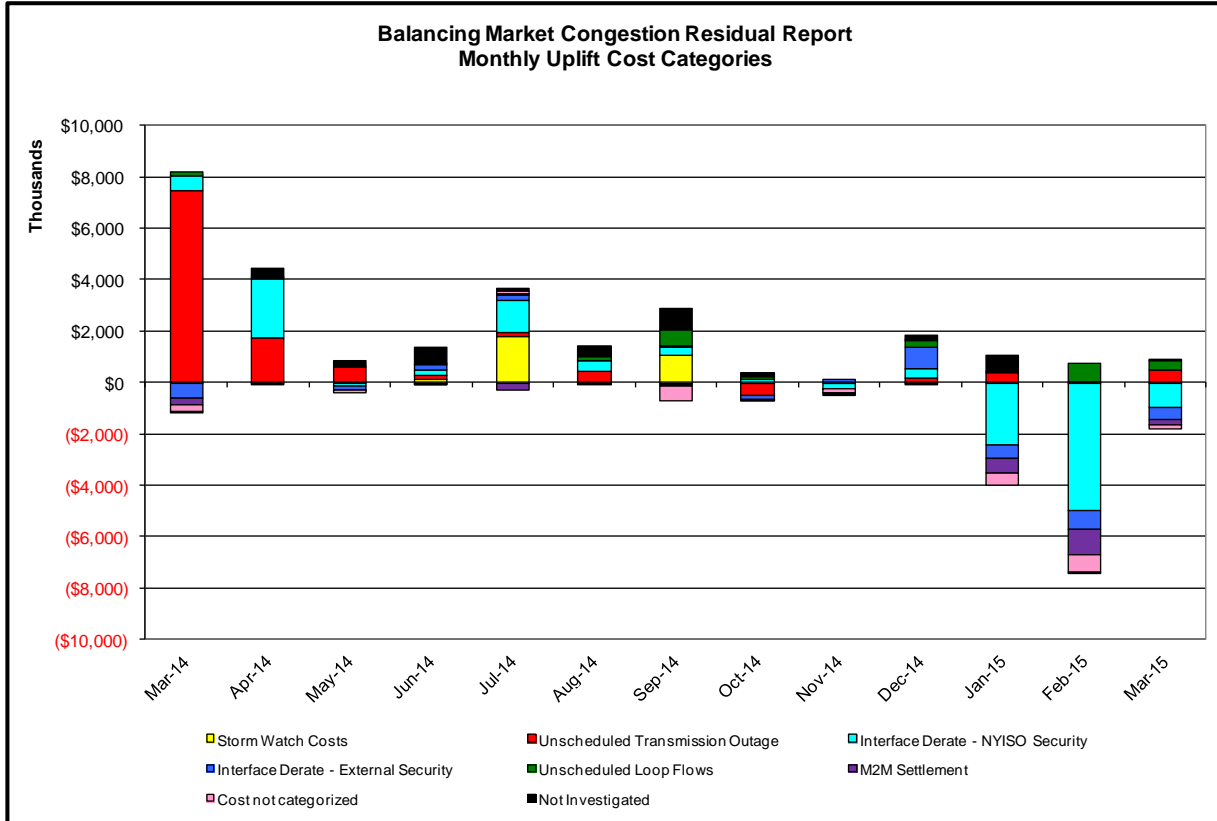
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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



## Market Performance Metrics







Day's investigated in March: 1,2,3,4,5,6,21,24,28,31

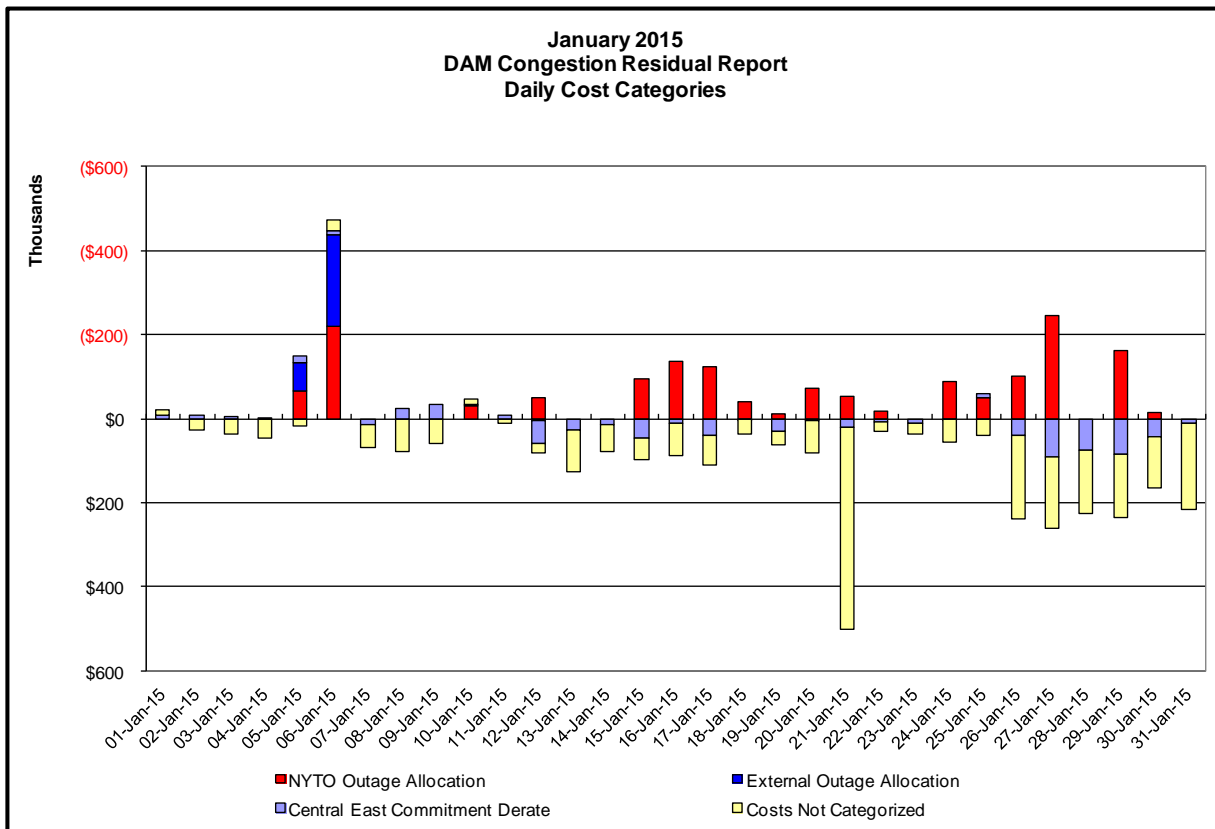
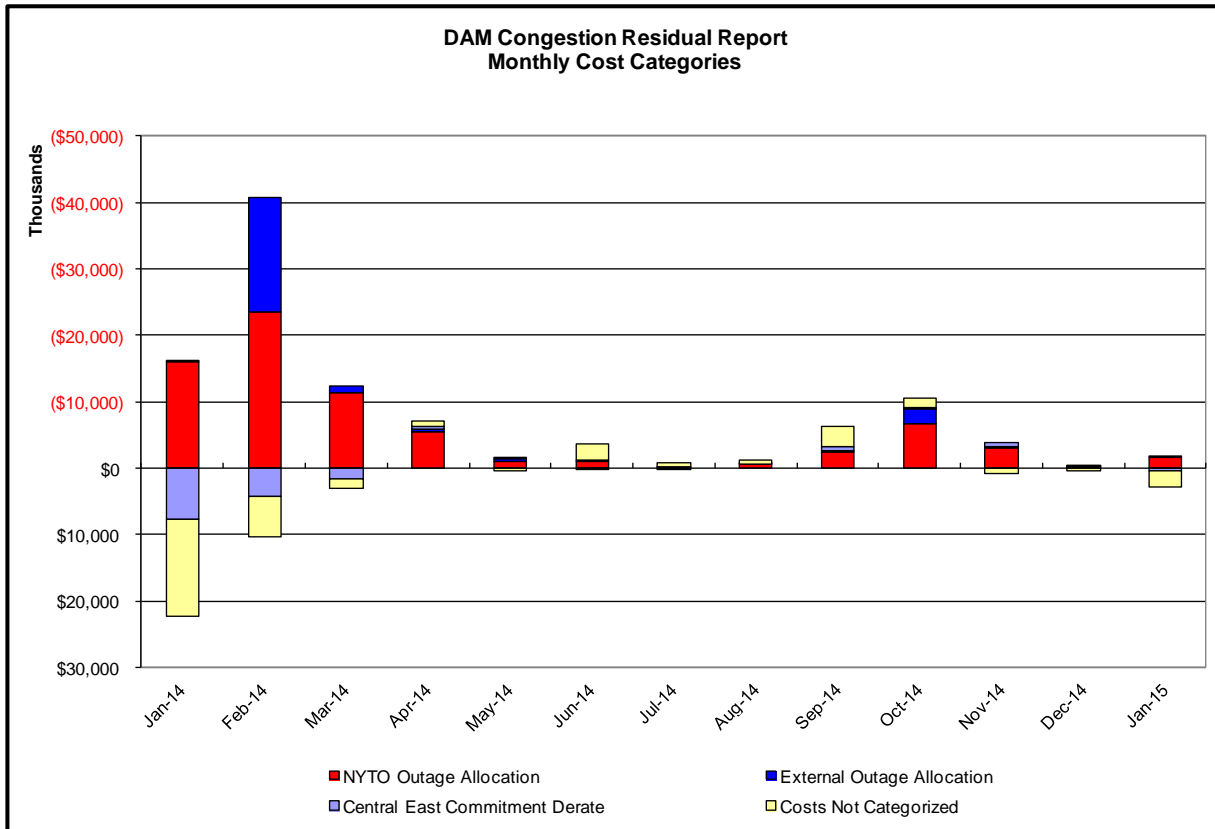
Event	Date (yyymmdd)	Hours	Description
	3/1/2015	0,19-21	NYCA DNI Ramp Limit
	3/1/2015	0,2,4,6,7	Uprate Central East
	3/1/2015	12	Derate Central East
	3/1/2015	12	IESO_AC DNI Ramp Limit
	3/1/2015	5-8,10,13,20-22	NE_NNC1385-NY Scheduling Limit
	3/1/2015	12	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East
	3/2/2015	10-21	NYCA DNI Ramp Limit
	3/2/2015	7	Uprate Central East
	3/2/2015	6-9,13,14,16	NE_NNC1385-NY Scheduling Limit
	3/2/2015	10,14	PJM_AC-NY Scheduling Limit
	3/3/2015	6,7,10,14,15,21	NYCA DNI Ramp Limit
	3/3/2015	1	Derate Central East
	3/3/2015	0	Derate Gowanus-Greenwood 138kV (#42231) for I/o SCB:GOWANUS(14):42&42232
	3/3/2015	0	Derate Greenwood-Vernon 138kV (#31231) for I/o FARRAGUT-GOWANUS 345 42
	3/3/2015	0,1	Derate Farragut-Gowanus 345kV (#42)
	3/3/2015	6,7,9-13	Uprate Dysinger East
	3/3/2015	6,10,21	NE_NNC1385-NY Scheduling Limit
	3/3/2015	15,21	PJM_AC DNI Ramp Limit
	3/3/2015	0,1	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East
	3/4/2015	11-16,18	Forced outage of Marcy-Coopers 345kV (#UC2-41)
	3/4/2015	6	NYCA DNI Ramp Limit
	3/4/2015	6	Uprate Dysinger East
	3/4/2015	11-14,16,18	Derate Gowanus-Greenwood 138kV (#42231) for I/o SCB:GOWANUS(14):42&42232
	3/4/2015	11-13	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East
	3/5/2015	10,12-21	Uprate Dysinger East
	3/5/2015	10,14	Uprate Central East
	3/5/2015	8,9,14,21	NYCA DNI Ramp Limit
	3/5/2015	21,23	PJM_AC DNI Ramp Limit
	3/6/2015	1,4,14,15,17,20-22	Uprate Central East
	3/6/2015	19	Derate Packard-Sawyer 230kV (#78) I/o Packard-Sawyer 230kV (#79)
	3/6/2015	19	Derate Dunwoodie-Shore Road 345kV (#Y50) SCB:SPBK(RNS2):Y49 & M29
	3/6/2015	1,4-6,9-13	Uprate Dysinger East
	3/6/2015	1,6,8,11,14,17,19-22	NYCA DNI Ramp Limit
	3/6/2015	8,17,20	HQ_CHAT-NY Scheduling Limit
	3/6/2015	17,20	NE_NNC1385-NY Scheduling Limit
	3/6/2015	8	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230KV (#78), Dysinger East
	3/21/2015	8,10,11	NYCA DNI Ramp Limit
	3/21/2015	8-14,16-19,21	Uprate Central East
	3/21/2015	10-14	Uprate FoxHills-Willow Brook 138kV (#29212) for I/o SCB:GOWANUS(14):42&42232
	3/21/2015	11,13,17	NE_AC-NY Scheduling Limit
	3/21/2015	18	NE_NNC1385-NY Scheduling Limit
	3/24/2015	11	Late Return to Service of Berkshire-Alps 345kV (#393)
	3/24/2015	12,15-23	Forced outage of Chateaugay_DC_G2
	3/24/2015	7	Late Return to Service of Farragut-Gowanus 345kV (#41)
	3/24/2015	12	Derate Packard-Sawyer 230kV (#78) I/o Packard-Sawyer 230kV (#77)
	3/24/2015	12,21	NYCA DNI Ramp Limit
	3/28/2015	10	NYCA DNI Ramp Limit
	3/28/2015	18	Derate Dunwoodie-Shore Road 345kV (#Y50) SCB:SPBK(RNS2):Y49 & M29
	3/28/2015	18,20	Derate Packard-Sawyer 230kV (#78) I/o Packard-Sawyer 230kV (#77)
	3/28/2015	15	NE_AC-NY Scheduling Limit
	3/28/2015	10,12-16	NE_NNC1385-NY Scheduling Limit
	3/28/2015	8,10	PJM_AC-NY Scheduling Limit
	3/31/2015	16-23	Forced outage Northfield-Berkshire 345kV (#312)
	3/31/2015	10-12	Derate Niagara-Packard 230kV (#61) for I/o TWR:PACKARD 62 & BP76
	3/31/2015	7,8	Derate Niagara-Packard 230kV (#62) for I/o TWR:NIAGARA 61 & 64
	3/31/2015	7,11-13,16-20	Derate Packard-Sawyer 230kV (#78) I/o Packard-Sawyer 230kV (#77)
	3/31/2015	7,8,11,12	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Niagara-Packard (#61/62)
	3/31/2015	7,11-13,16-19	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230KV (#78)

**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 Clockwise Lake Erie Loop Flows greater than 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.	

