

Operations Performance Metrics Monthly Report



December 2014 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 January 9, 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*

December 2014 Operations Performance Highlights

- Peak load of 23,095 MW occurred on 12/8/2014 HB 17
- All-time winter capability period peak load of 25,738 MW occurred on 1/7/2014 HB 18
- 0 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- The following table identifies the Broader Regional Market Coordination value,

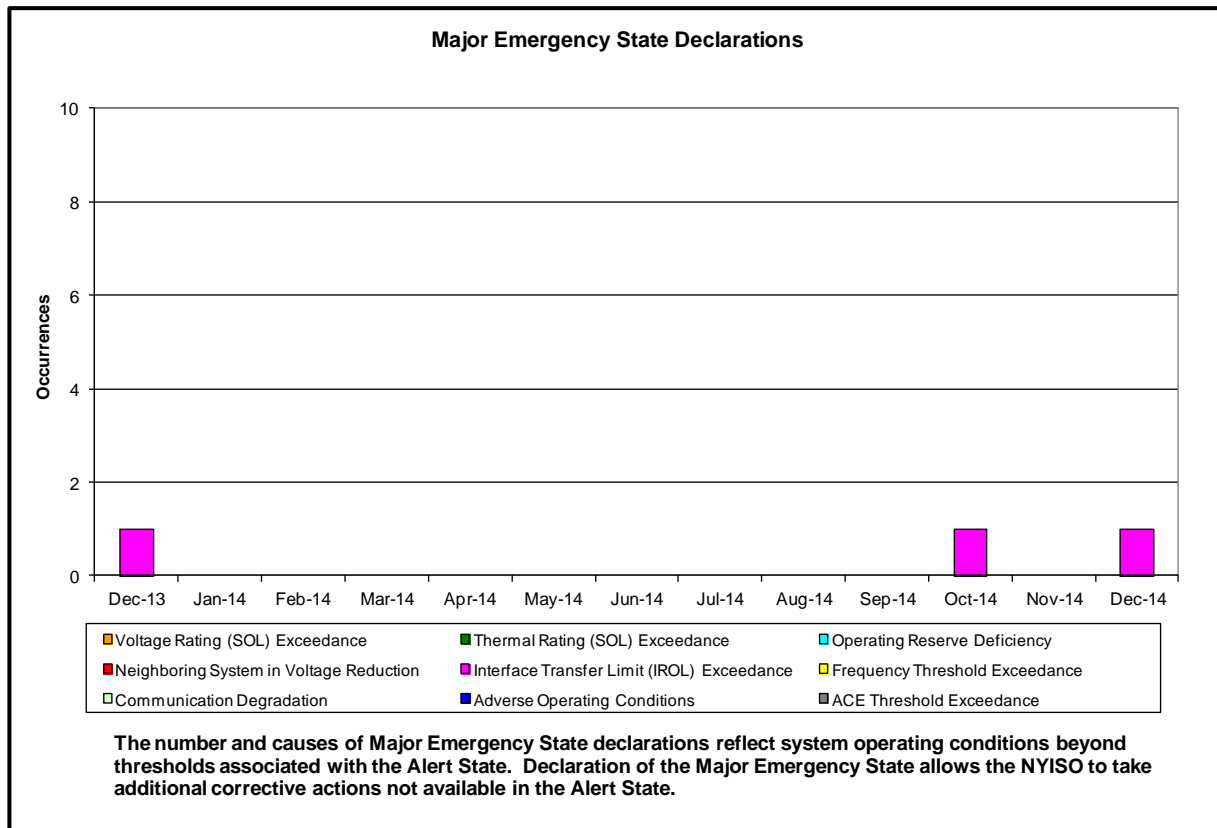
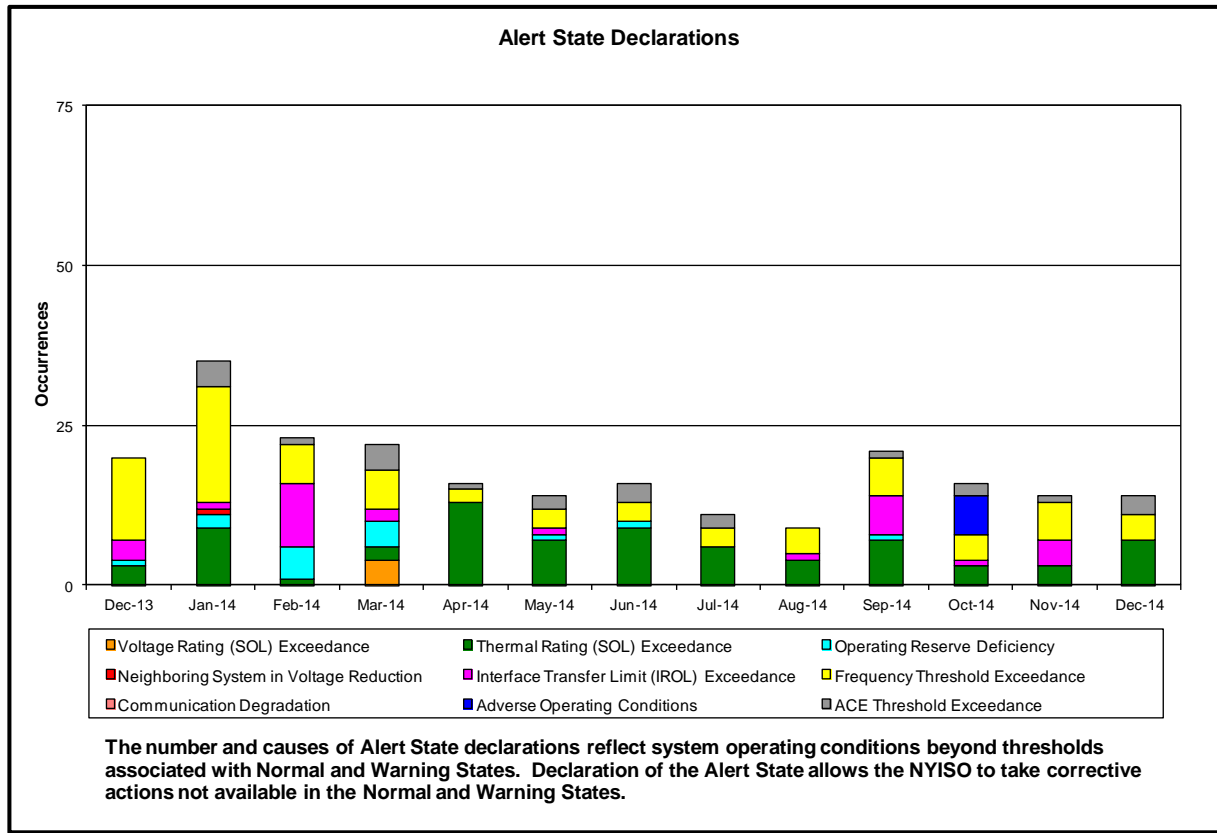
	Current Month Value (\$M)	Year-to-Date Value (\$M)
Regional Congestion Coordination	\$0.22	\$8.35
Regional PJM-NY RT Scheduling	\$0.87	\$1.22
Total	\$1.09	\$9.57

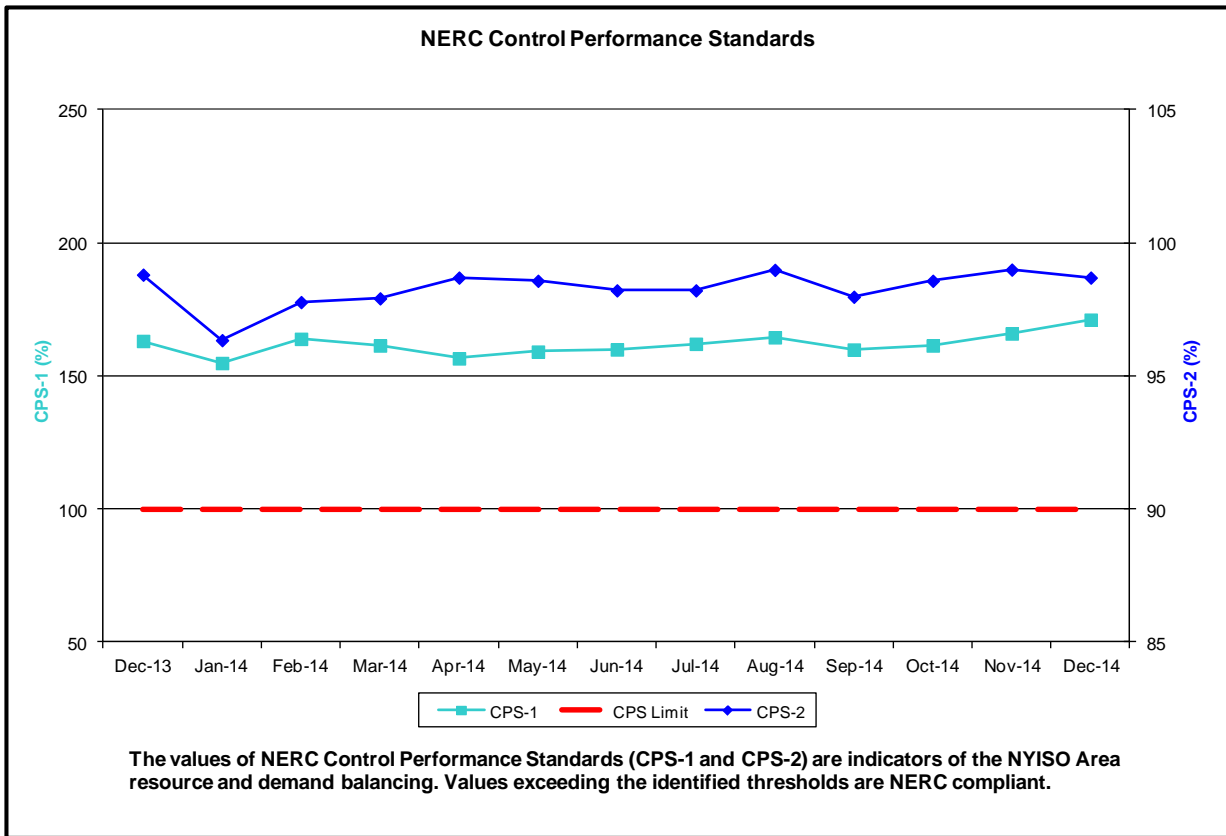
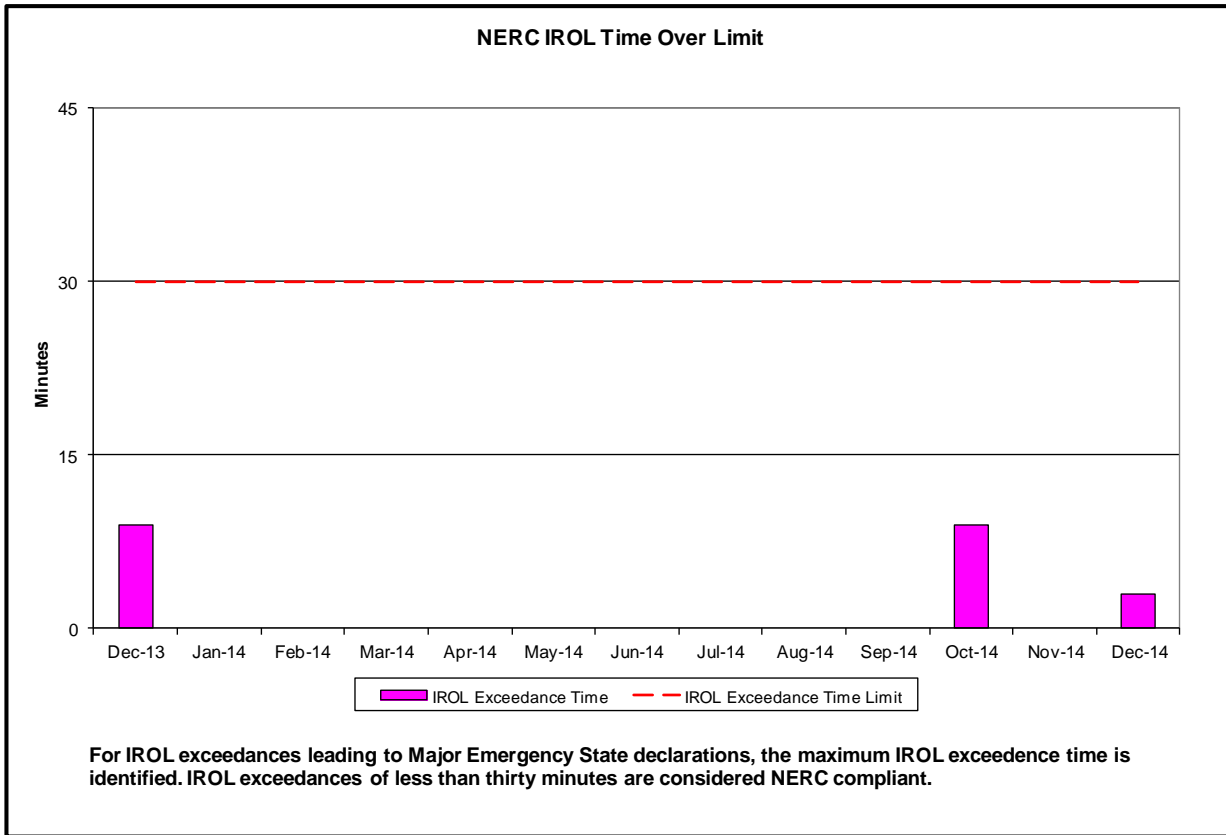
- Statewide uplift cost monthly average was \$(0.34)/MWh
- A Major Emergency was declared on December 4 when the Massena-Marcy 765kV transmission line tripped causing the Moses-South flow to exceed the interface transfer limit.
- Also on December 4, Hydro Quebec experienced forced outages on two major 735kV transmission lines in Southern Quebec resulting in 500MW of automatic load shedding in Montreal and 3100MW of export curtailments to NYISO, ISONE, and IESO. NYISO assisted Hydro Quebec with emergency energy sales.
- MIP was activated for December 3, market day.
- The following table identifies the Monthly ICAP spot market prices by locality.

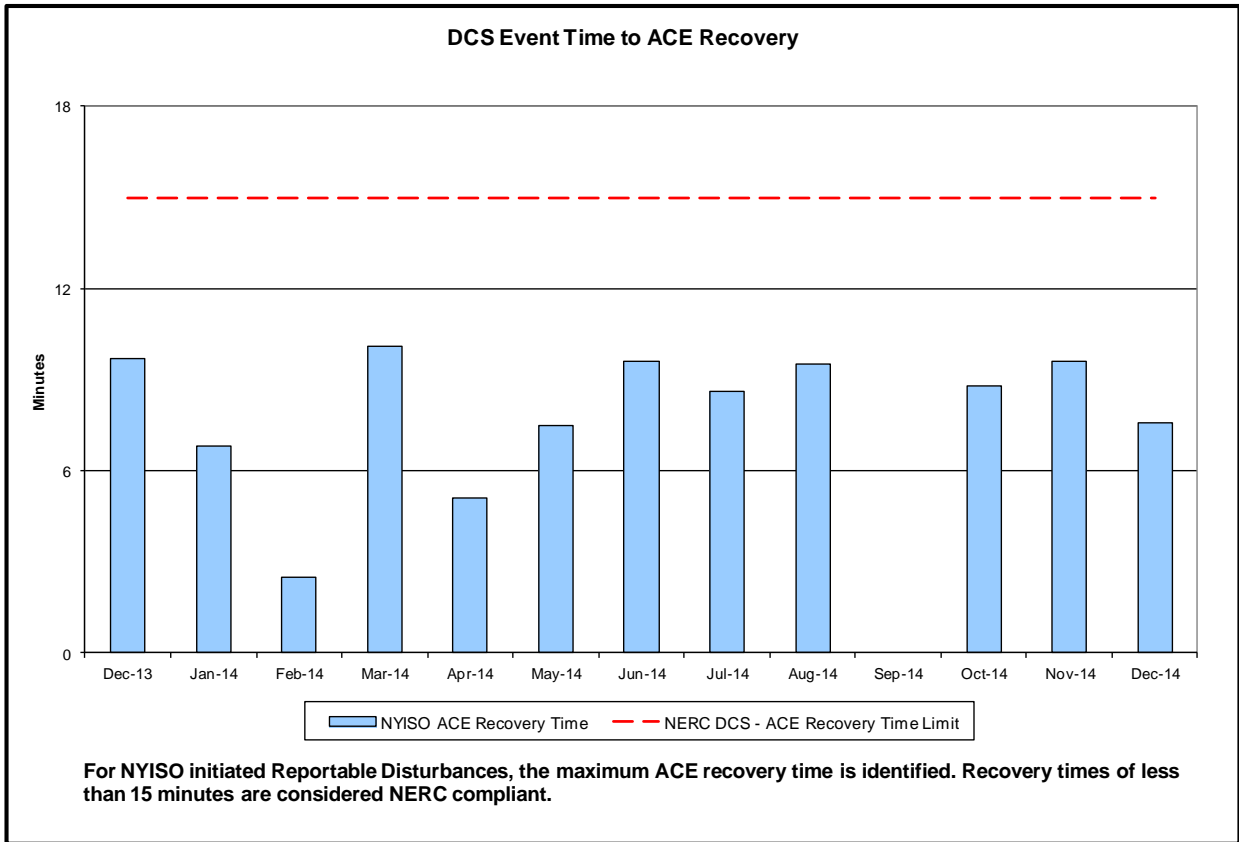
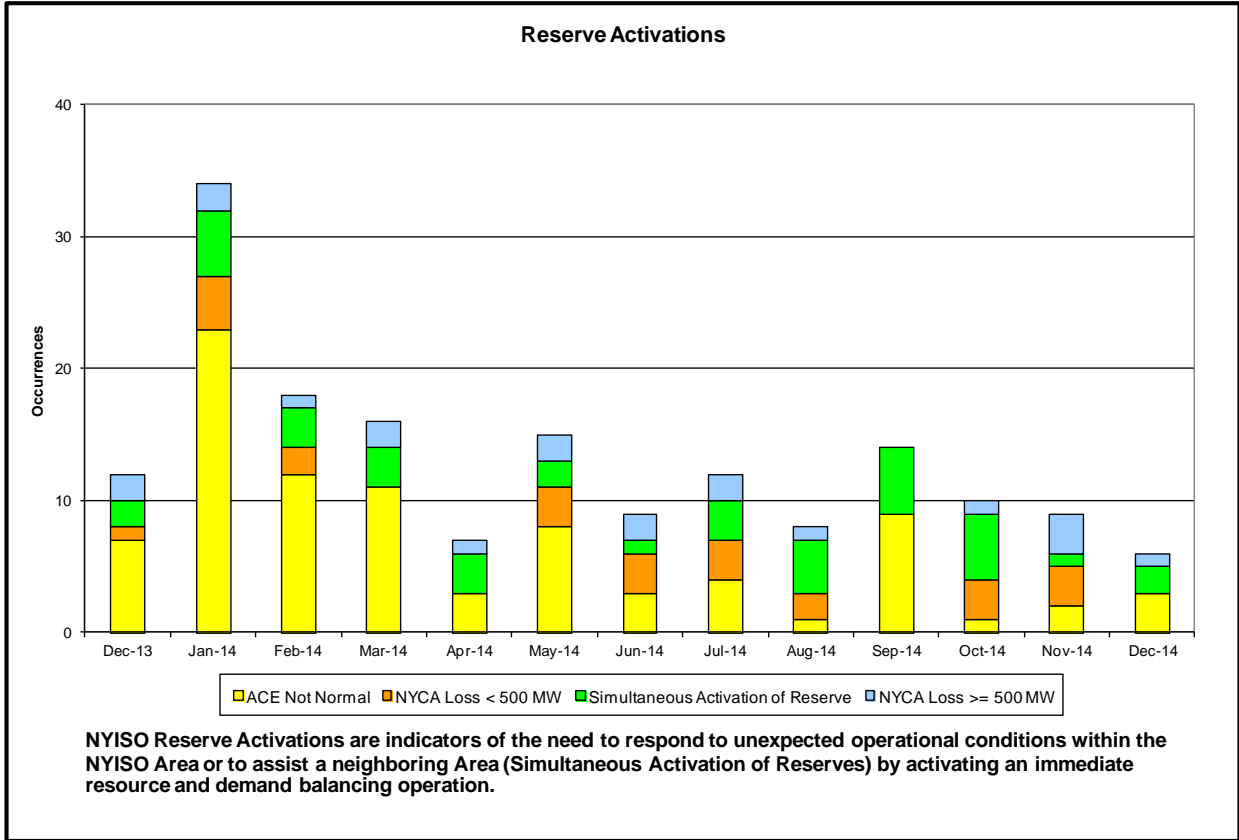
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
January 2015 Spot Price	\$2.41	\$3.76	\$8.80	\$3.20
Change from Prior Month	(\$1.09)	(\$1.00)	(\$0.07)	(\$0.30)

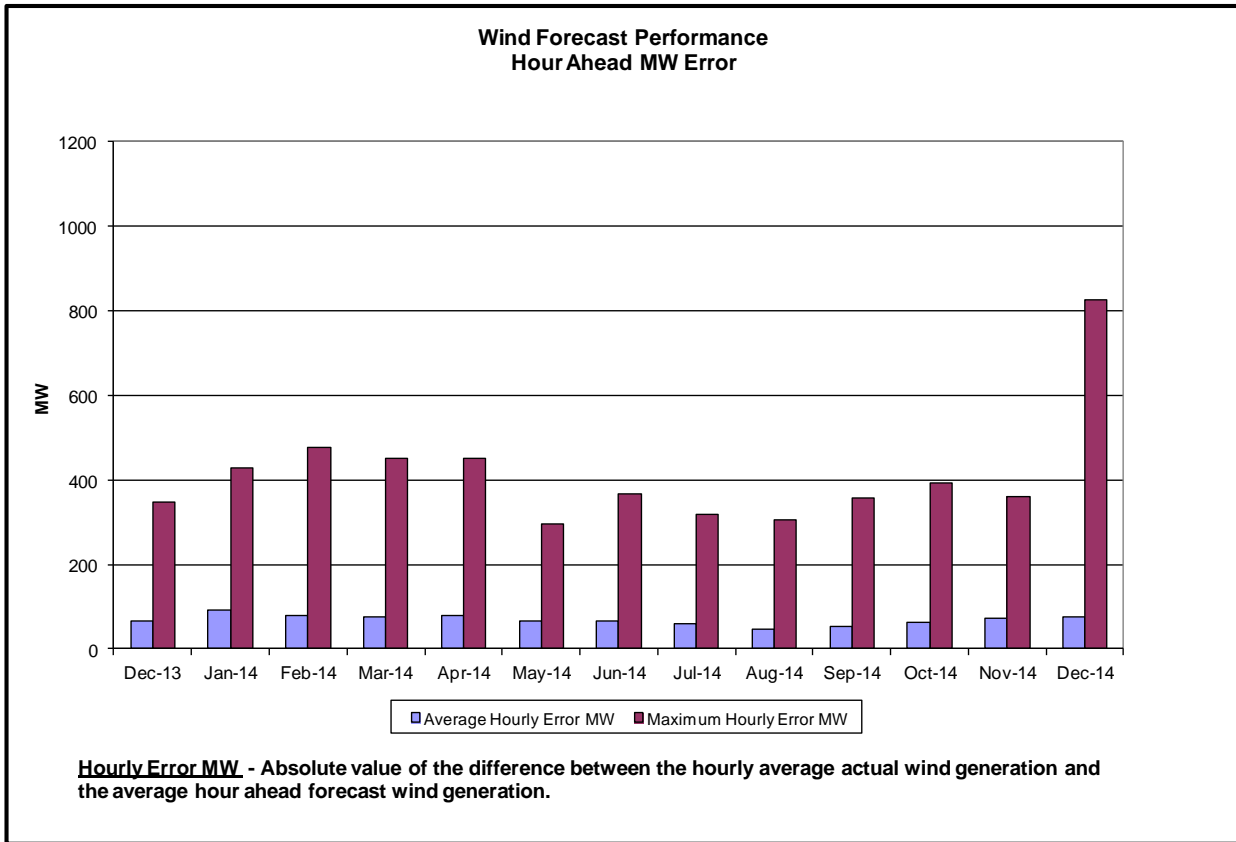
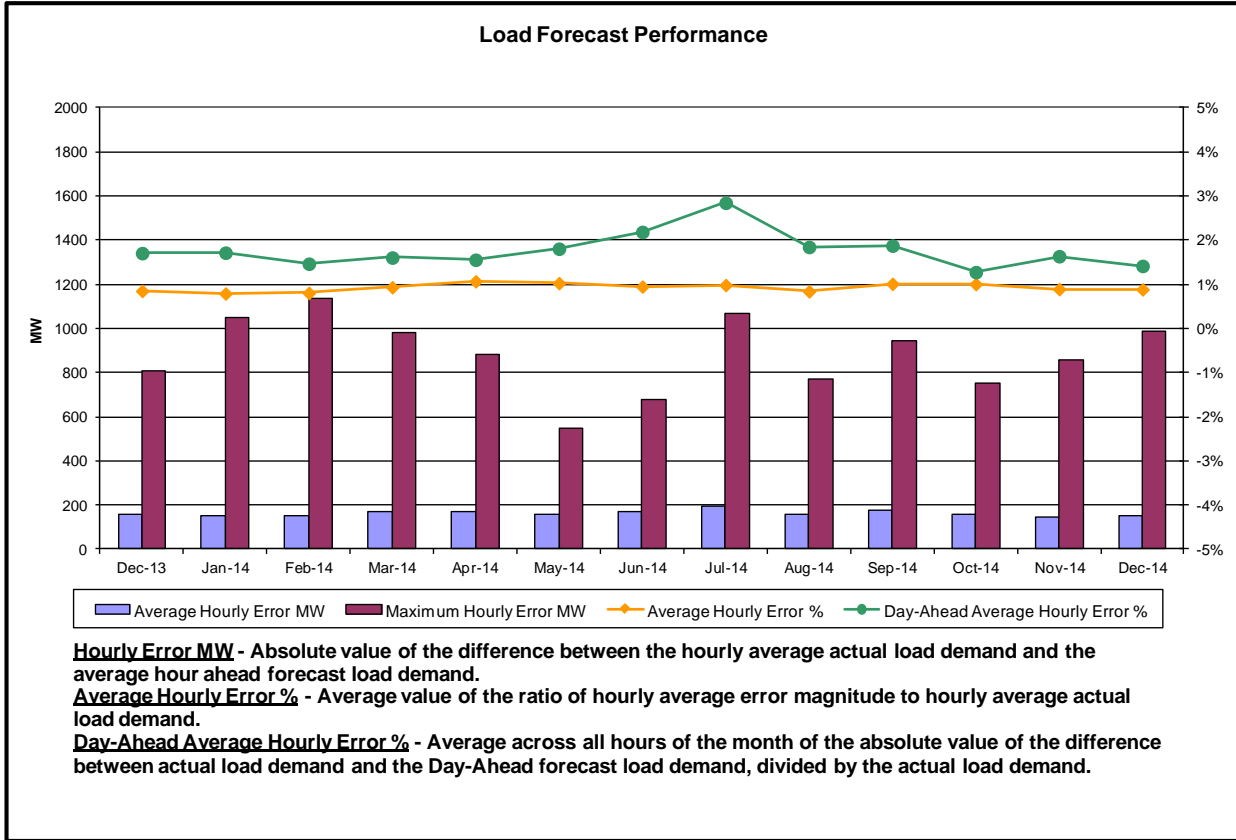
- NYCA - Price decreases by \$1.09 due to an approximate 200 MW increase in UCAP due primarily to generation and an increase of 300 MW ICAP at the HQ Interface.
- LHV - Price decreases by \$1.00 due to an increase of approximately 160 MWs of UCAP due primarily to generation.
- LI - Price decreases by \$0.30 due to LI clearing price separating from NYCA.

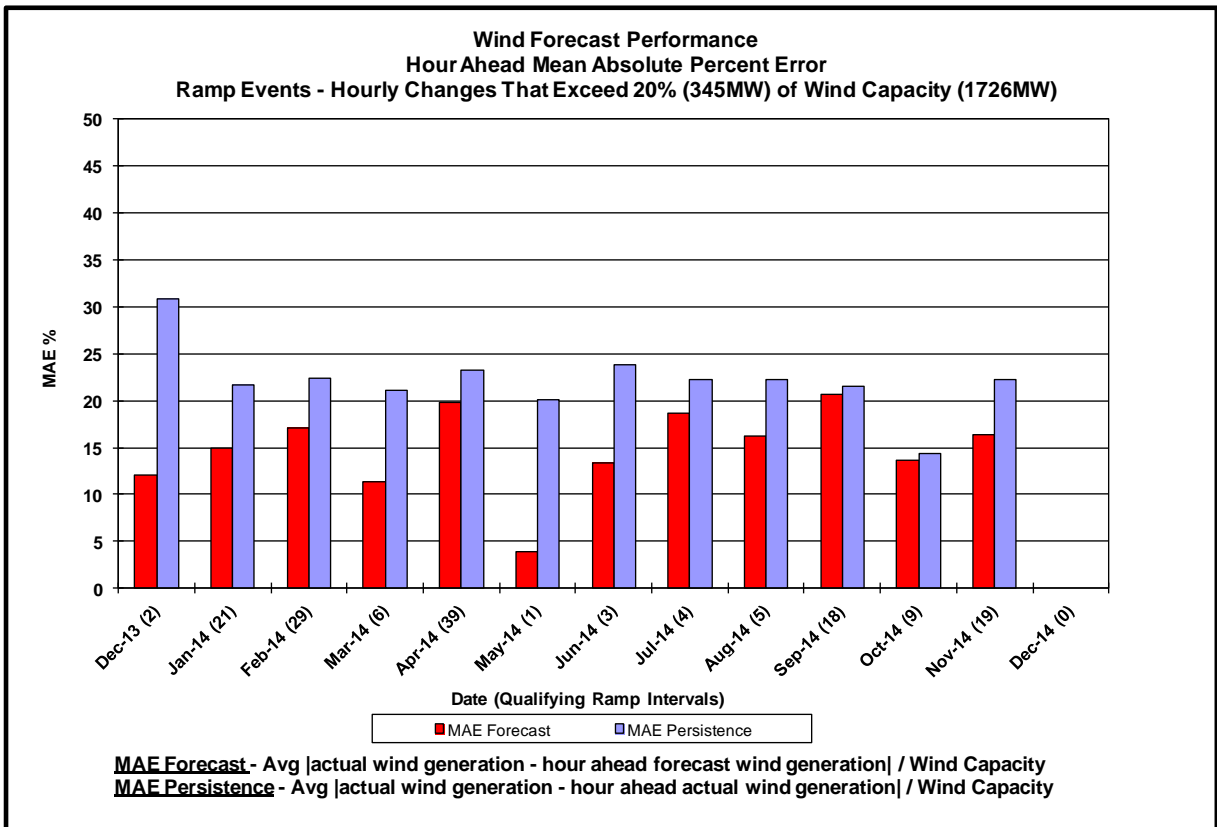
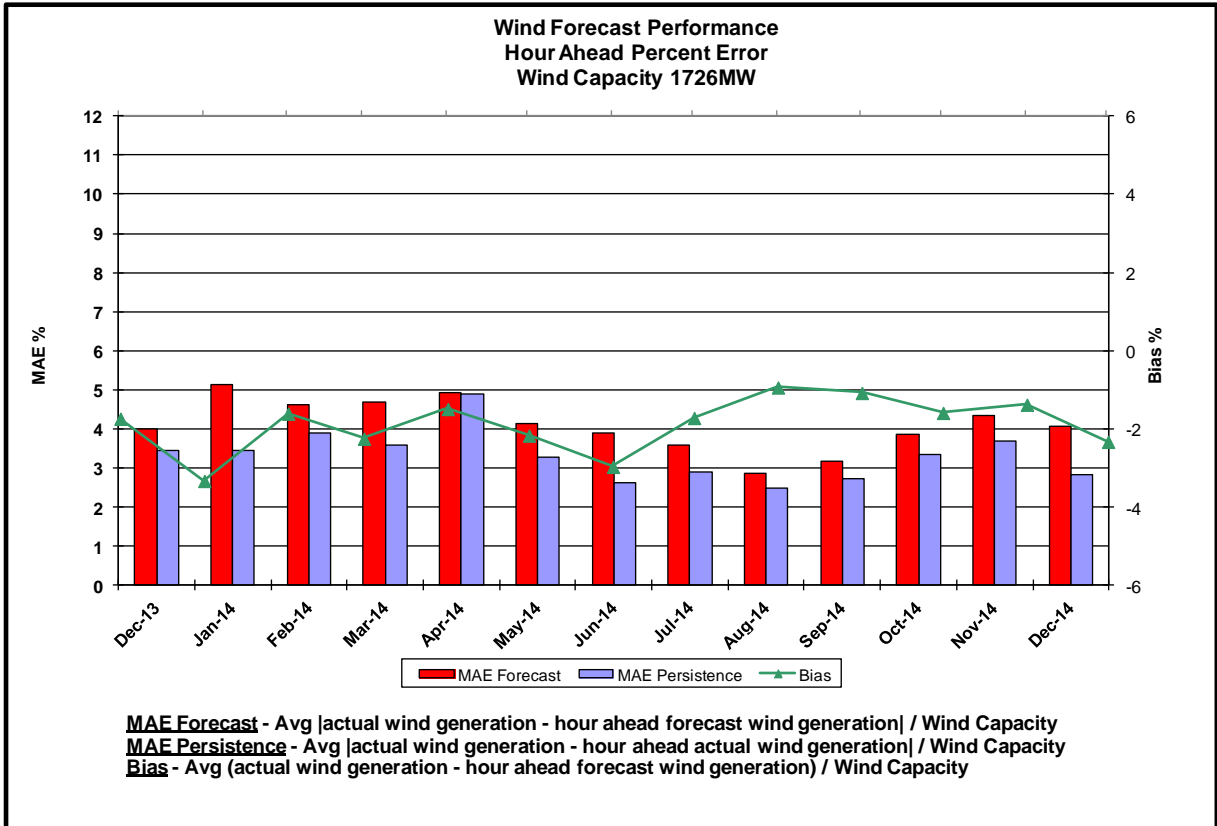
Reliability Performance Metrics

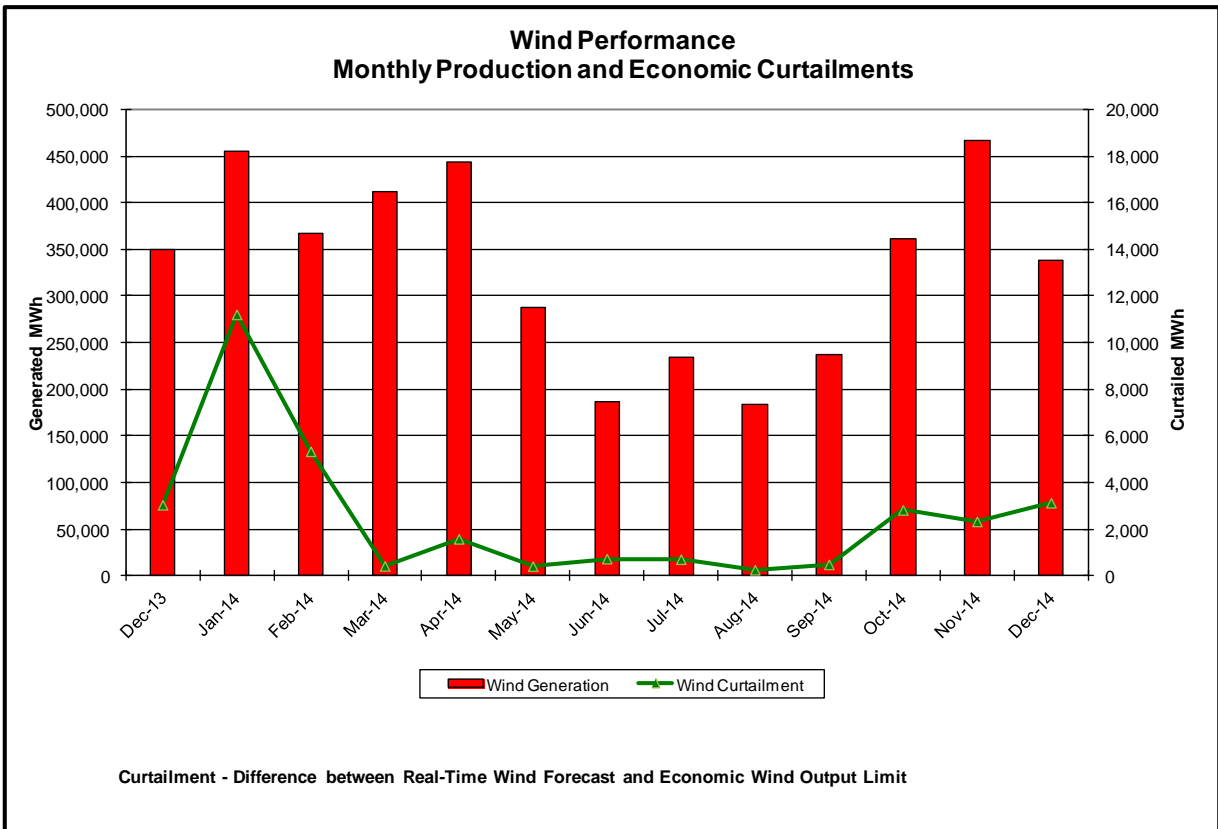
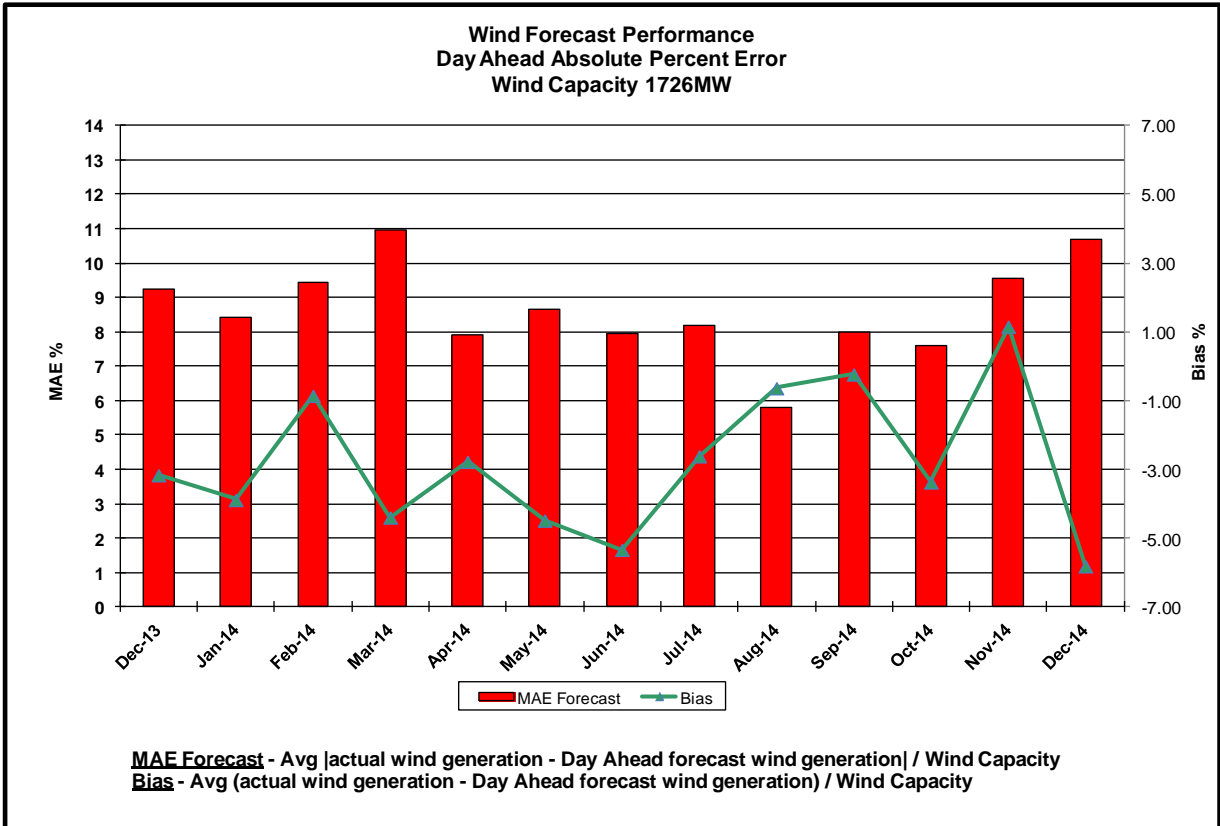


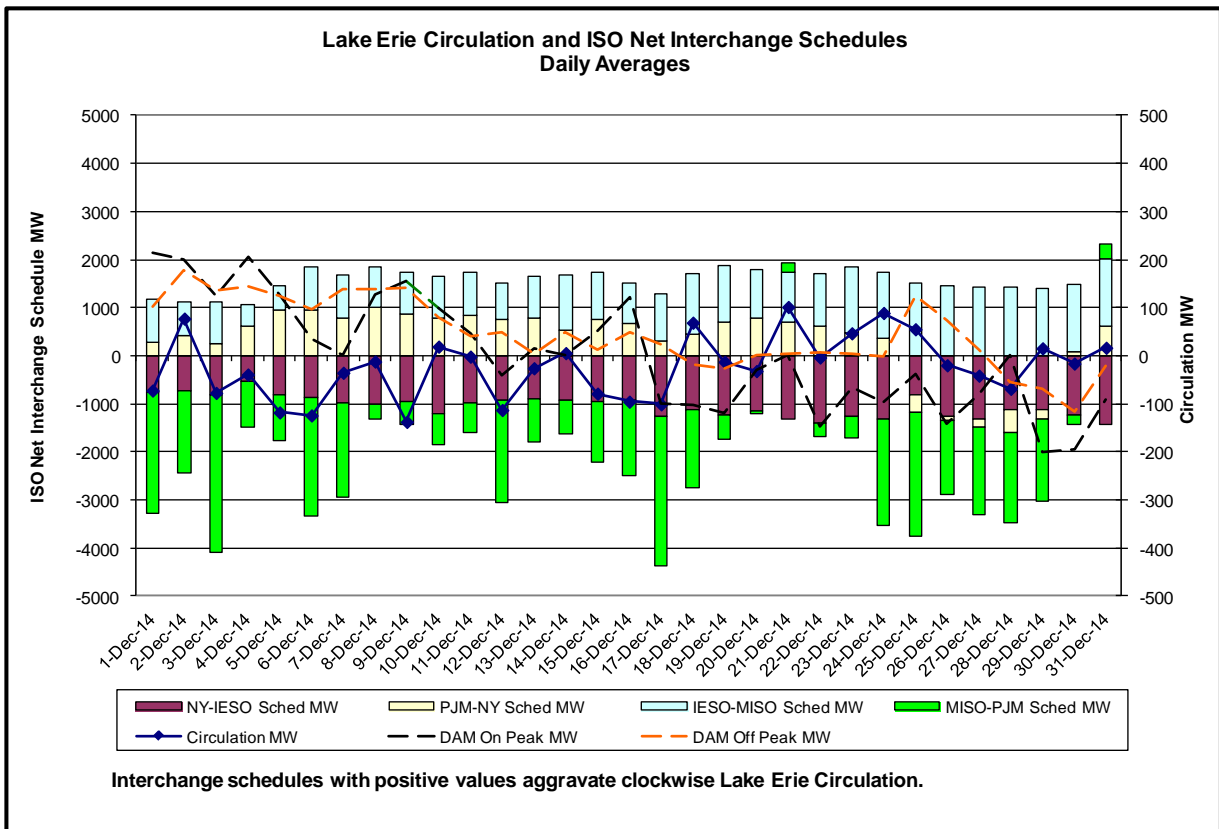
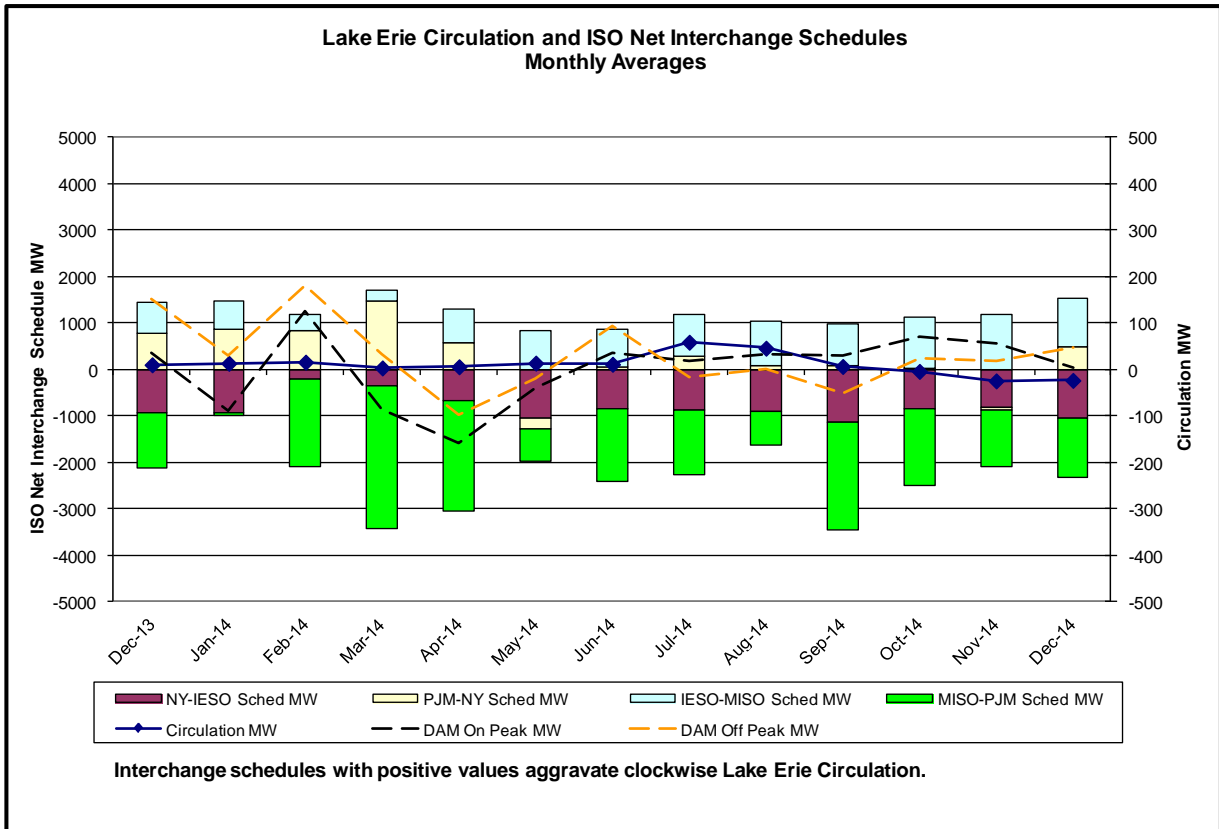




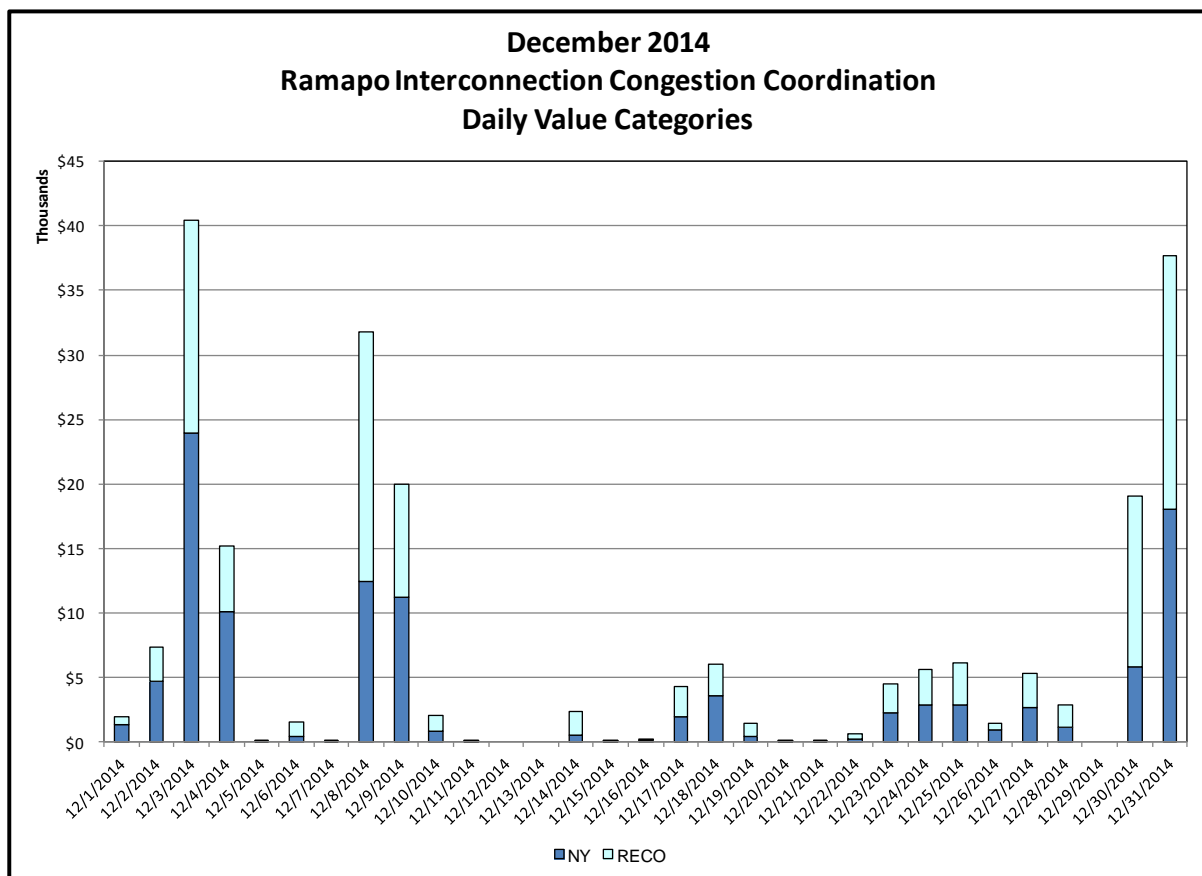
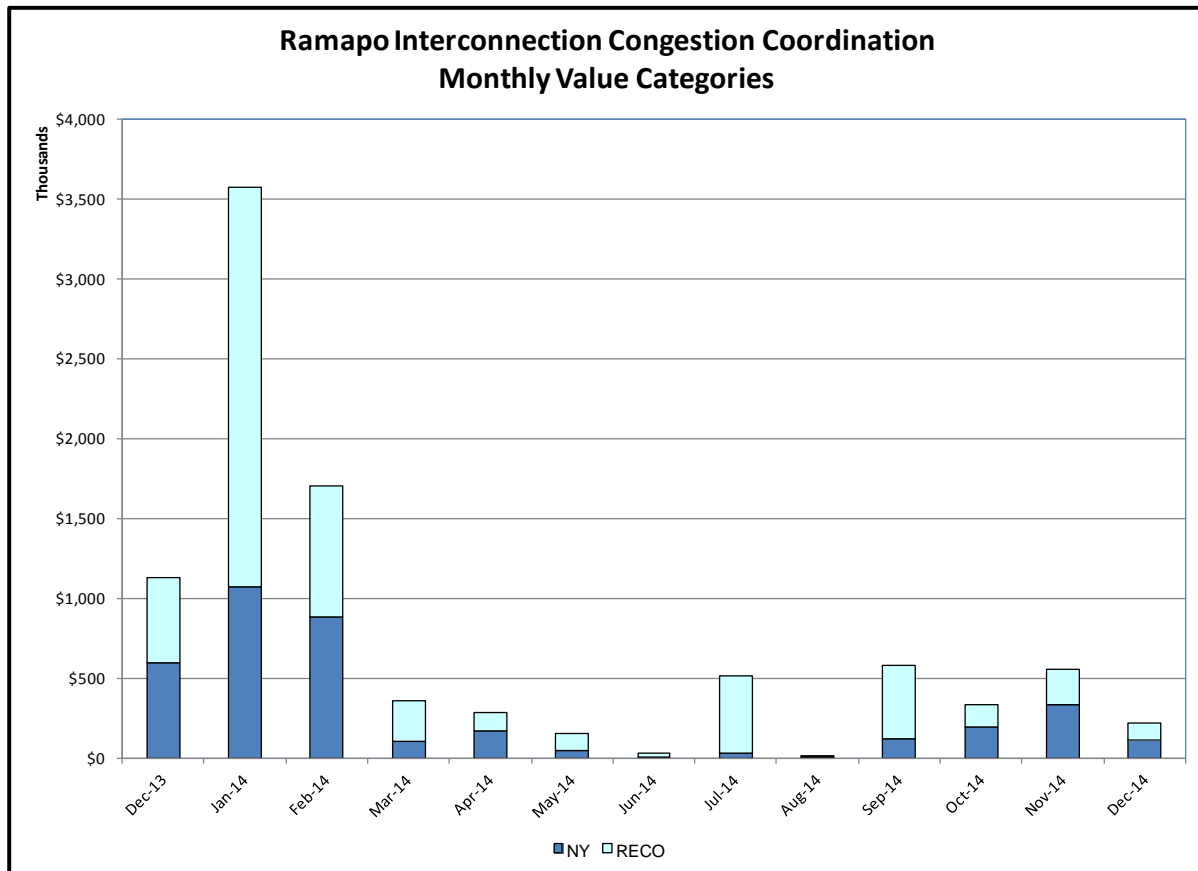






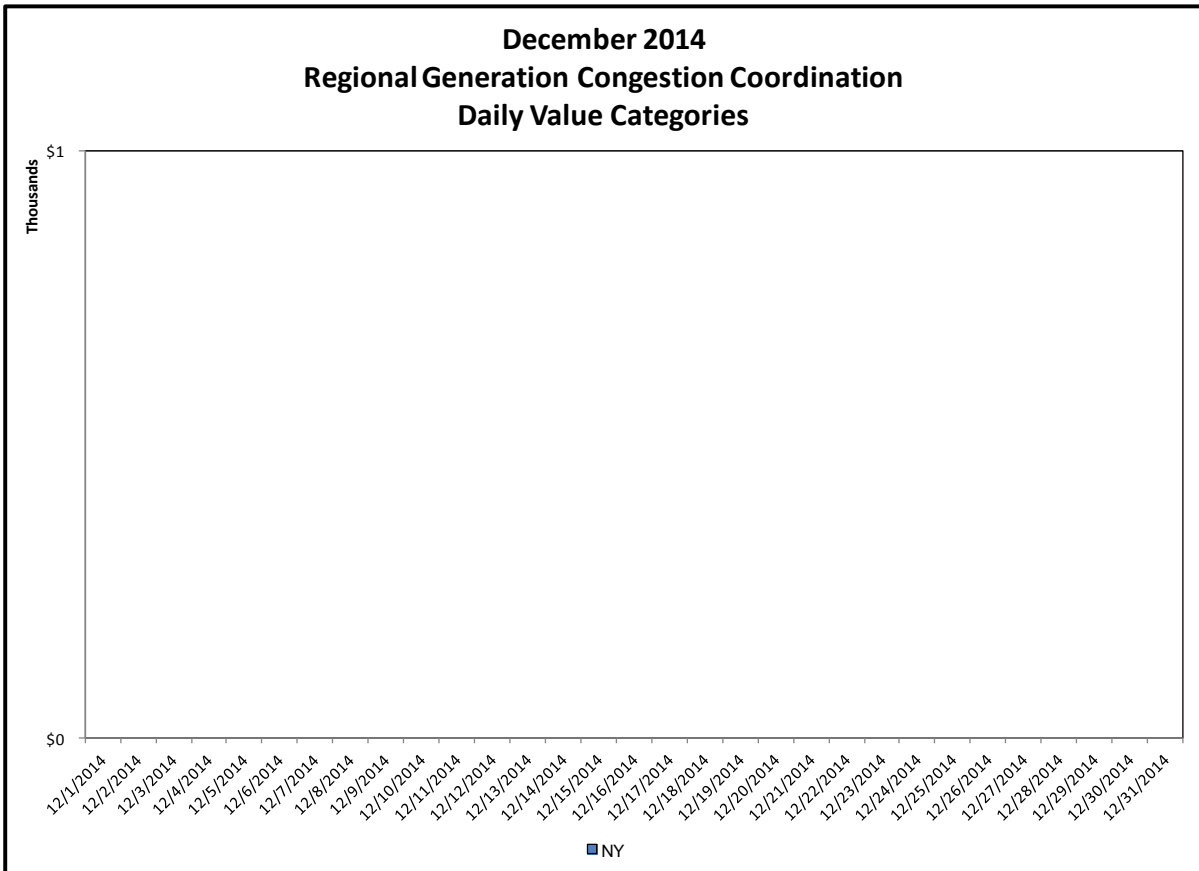
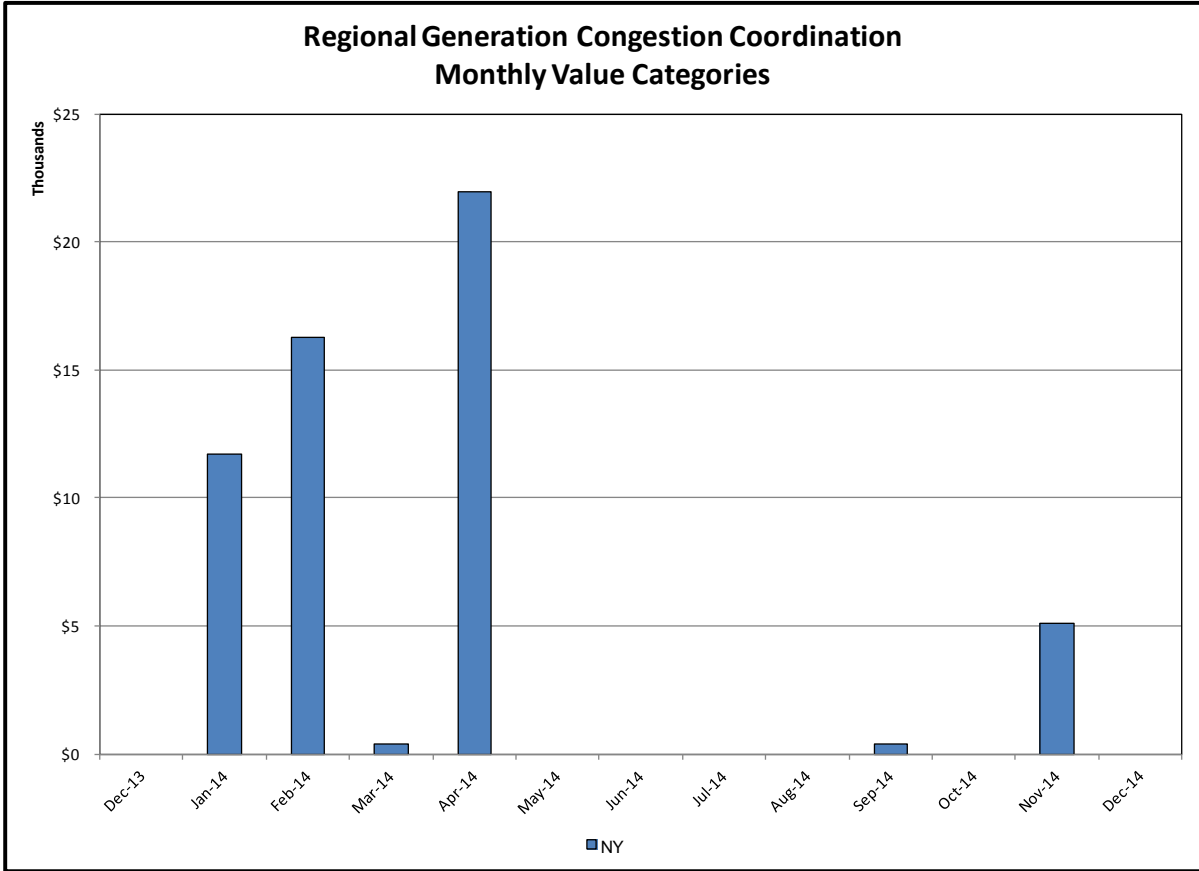


Broader Regional Market Performance Metrics



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.



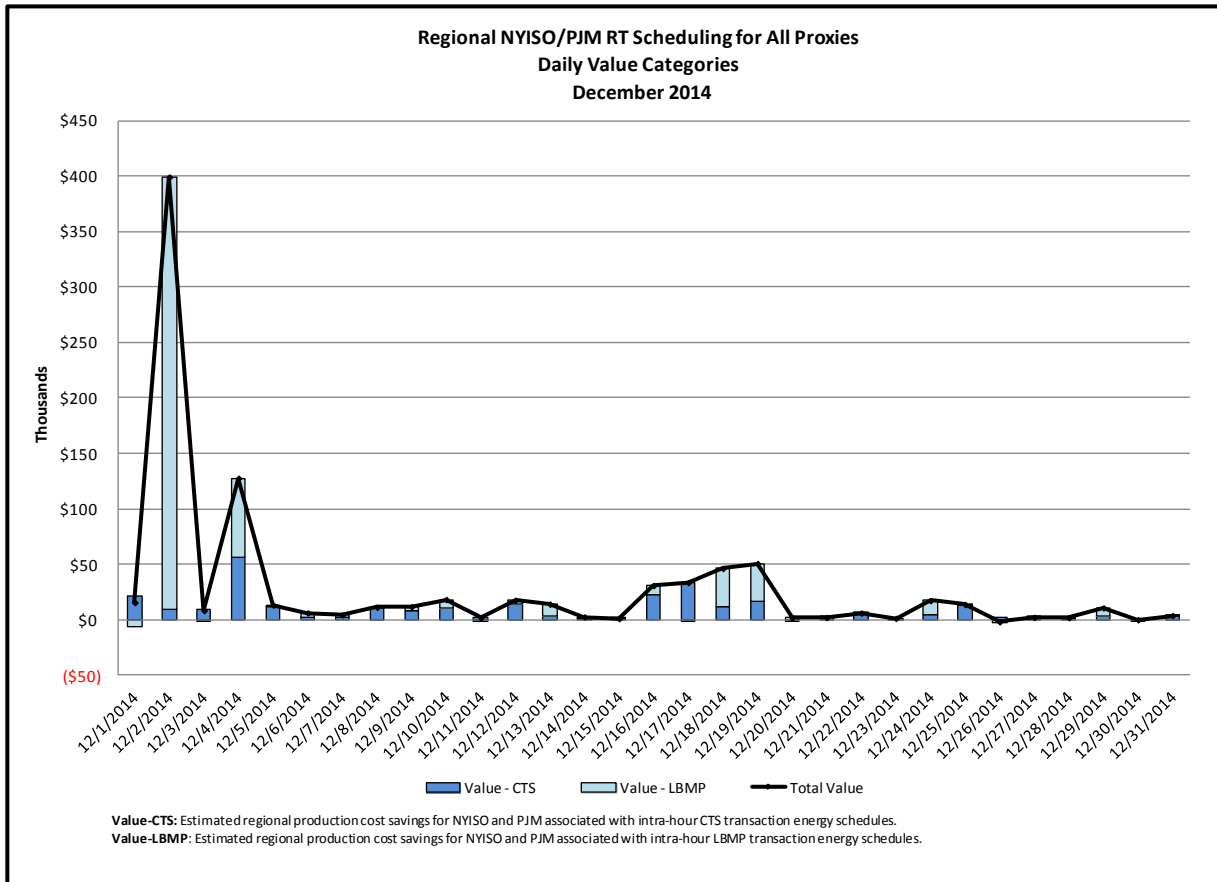
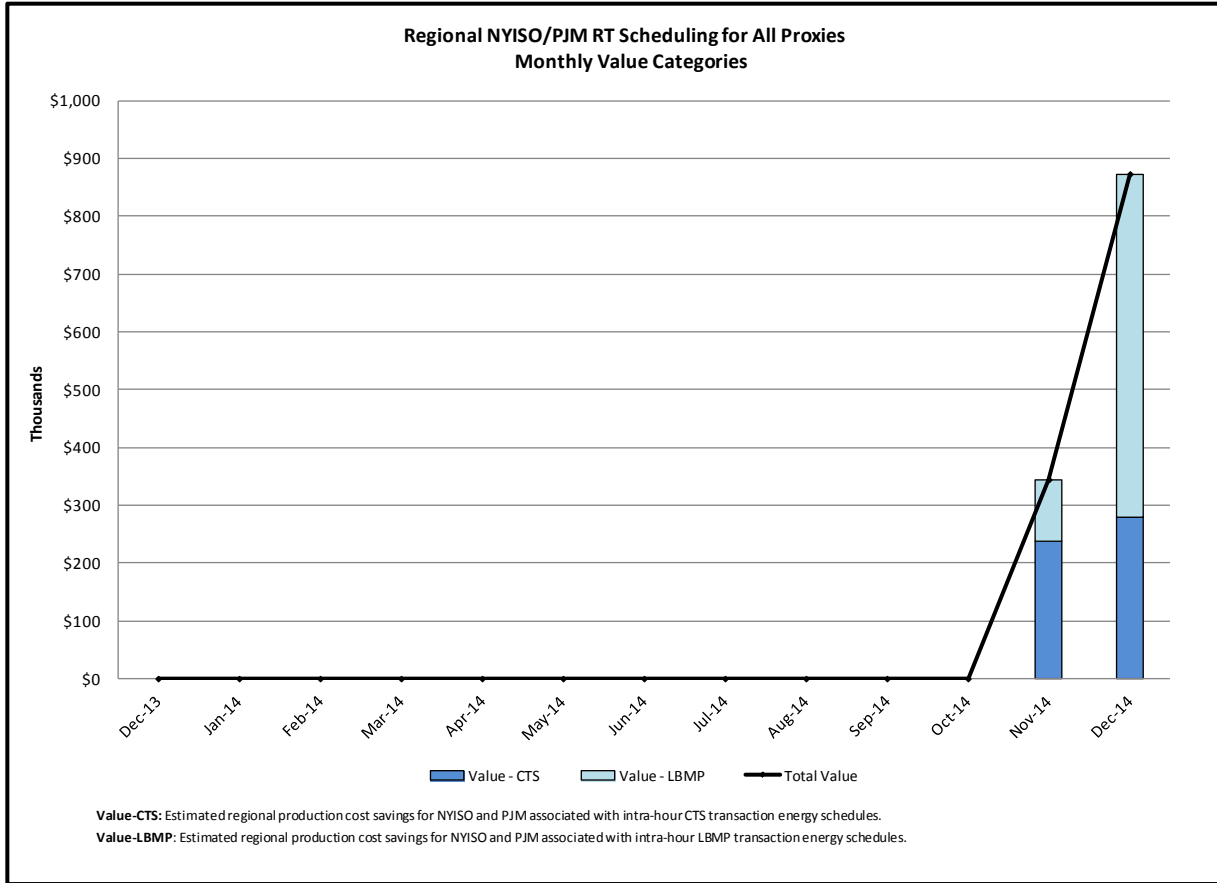
Regional Generation Congestion Coordination

Category

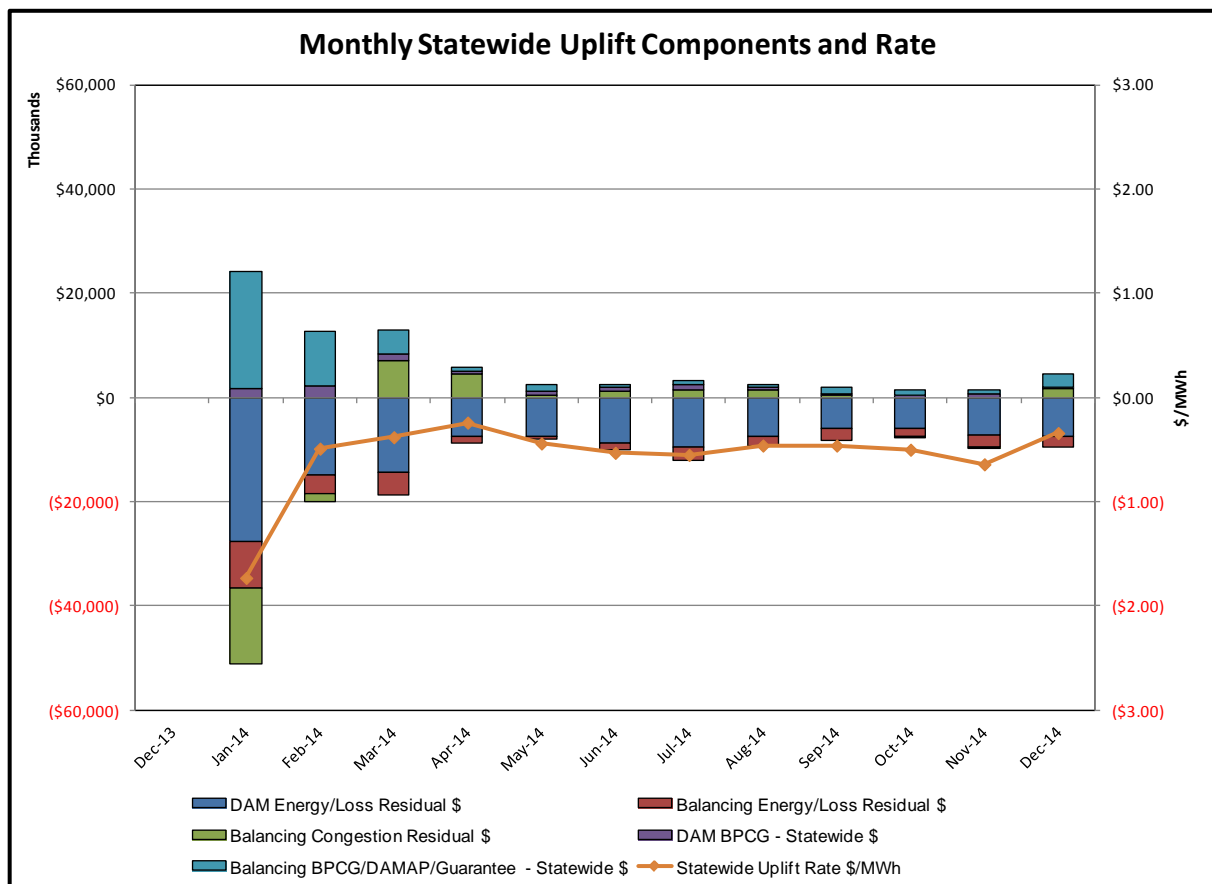
NY

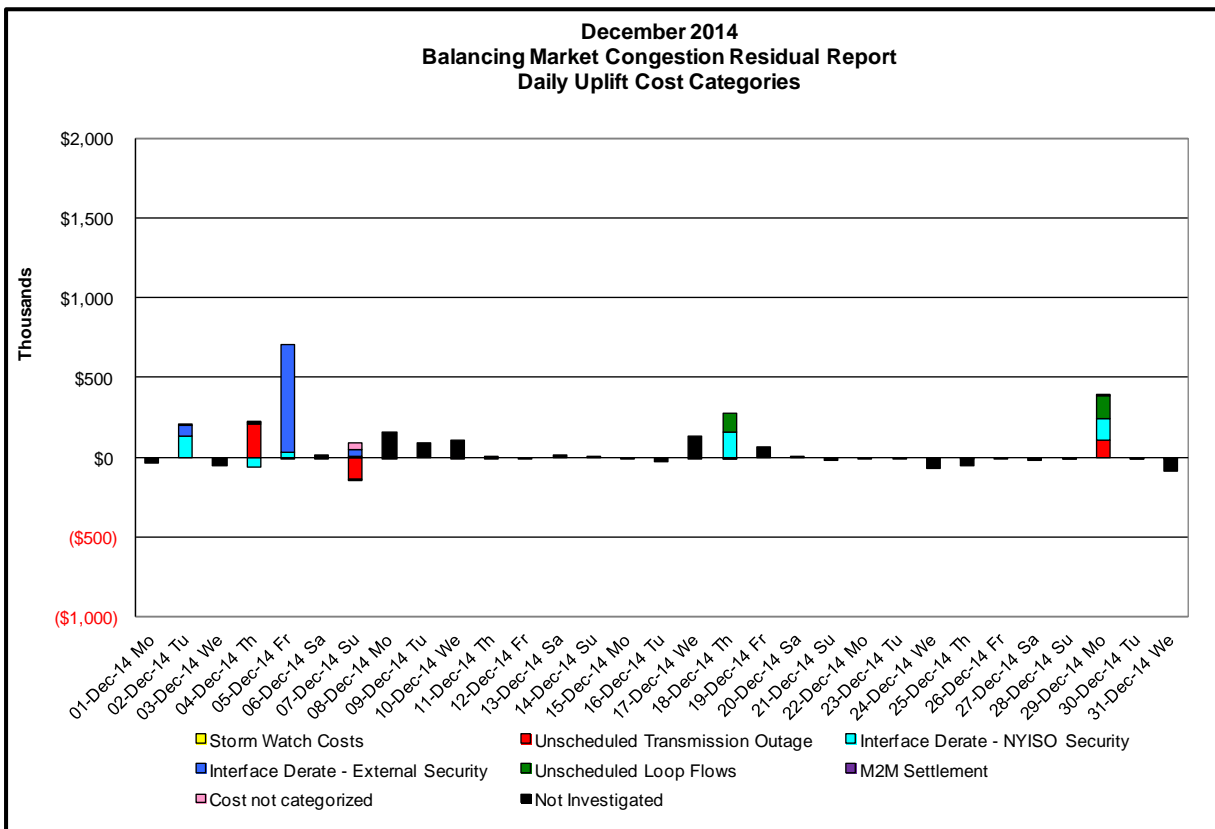
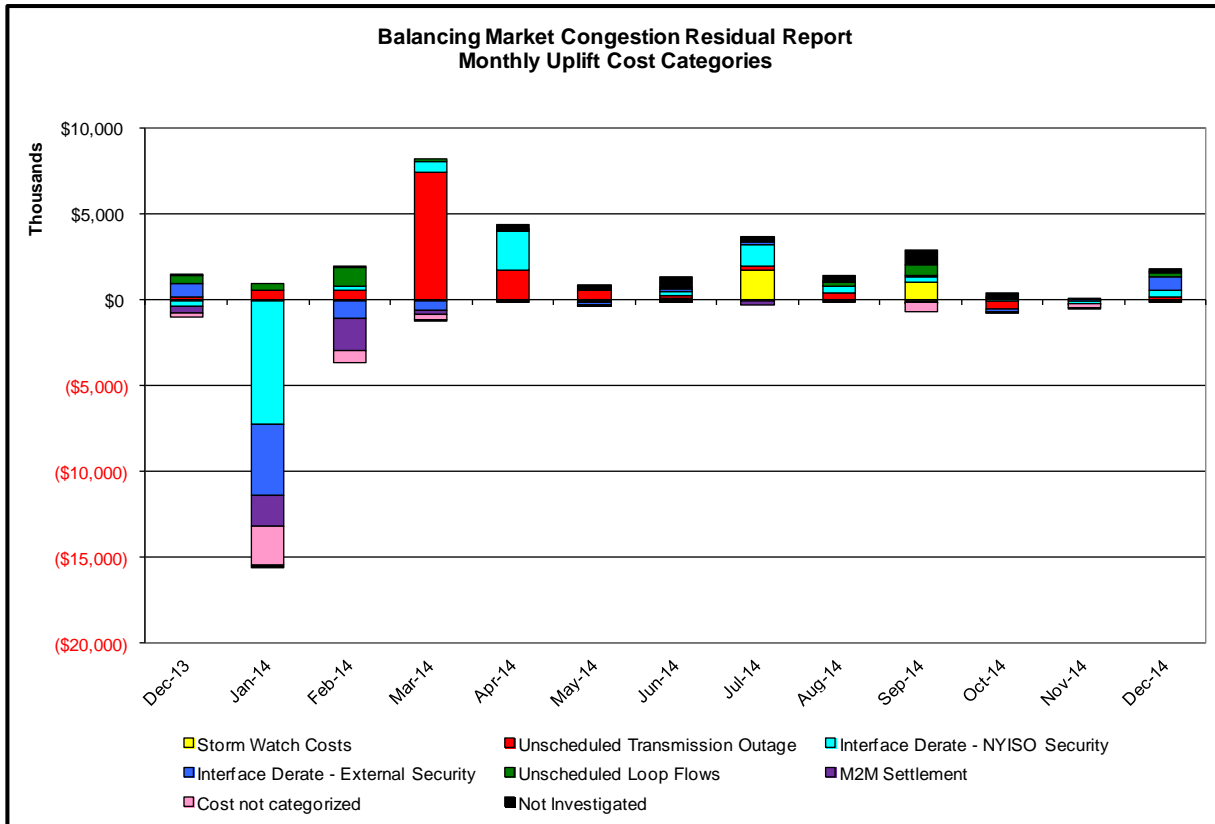
Description

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





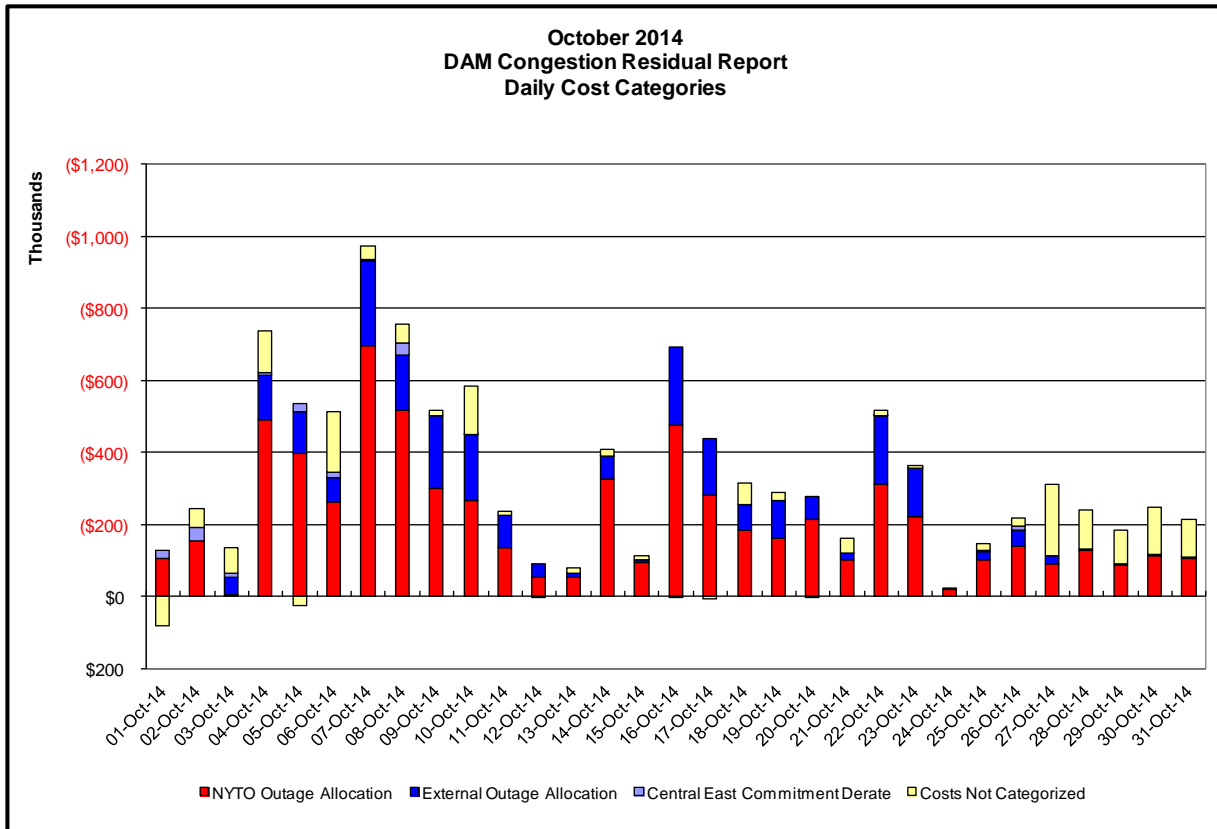
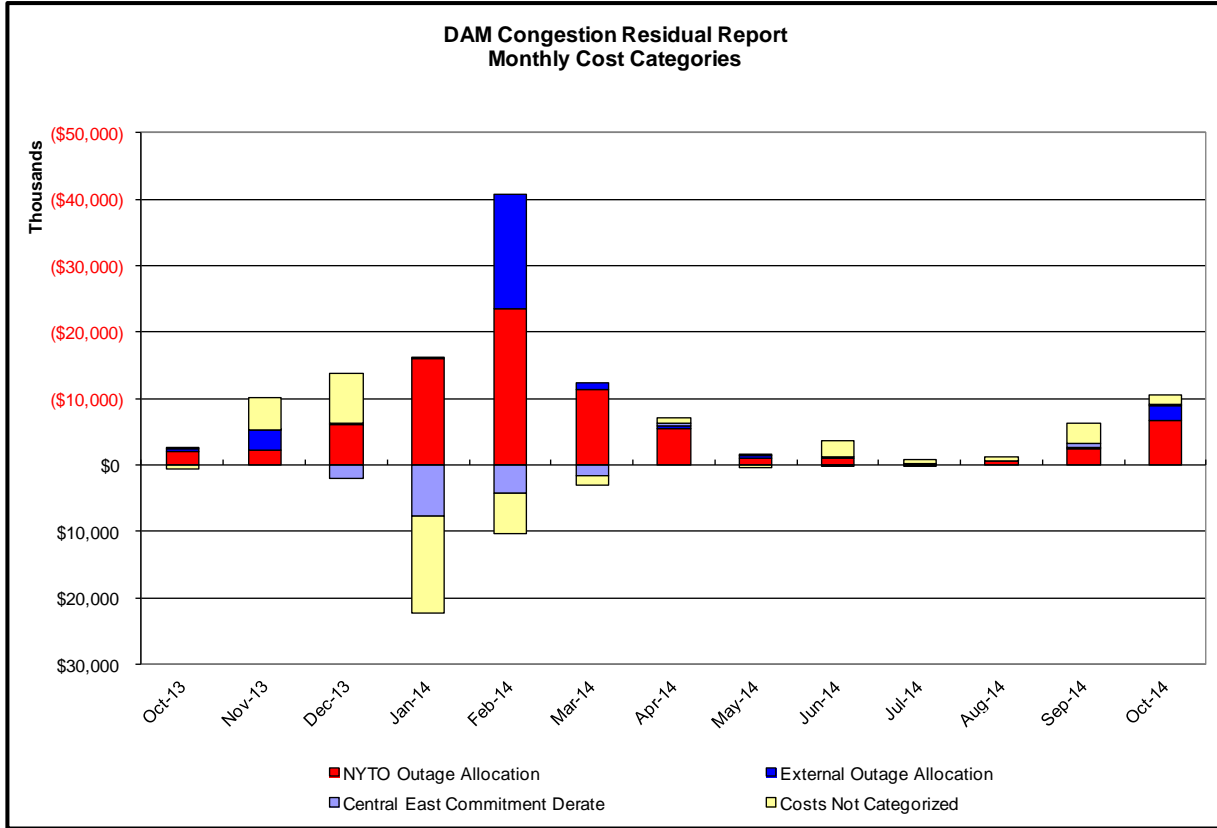
Day's investigated in December: 2,4,5,7,18,29		
Event	Date (yyyymmdd)	Description
	12/2/2014	11,17 NYCA DNI Ramp Limit
	12/2/2014	22 Derate Central East
	12/2/2014	11-13,20,22,23 HQ_CHAT-NY Scheduling Limit
	12/2/2014	11-13 HQ_CEDARS-NY Scheduling Limit
	12/4/2014	11 Forced outage Massena-Marcy 765kV (#MSU1), Chateaugay-Massena 765kV (#7040), Chat_DC_GC1
	12/4/2014	16,18 Forced outage Chat_DC_GC1
	12/4/2014	0-4 Uprate Central East
	12/4/2014	0,1 Uprate Dunwoodie-Shore Road 345kV (#Y50)
	12/4/2014	10,16,18,20 Derate East 179th Street-Hell Gate East 138kV (#15054)
	12/4/2014	19 Uprate Farragut-Hudson Avenue 138kV (#32079)
	12/4/2014	2,9,16-18,20 NYCA DNI Ramp Limit
	12/4/2014	9,10,15 HQ_CHAT-NY Scheduling Limit
	12/4/2014	13 HQ_CHAT DNI Ramp Limit
	12/5/2014	12 NYCA DNI Ramp Limit
	12/5/2014	5,9,11-17,19,20 HQ_CHAT-NY Scheduling Limit
	12/5/2014	11-20 HQ_CEDARS-NY Scheduling Limit
	12/7/2014	22,23 Forced outage Newbridge-Duffy Avenue 345kV (#501) & Neptune-Duffy Avenue 345kV
	12/7/2014	12,13 Derate Dunwoodie-Shore Road 345kV (#Y50) for SCB:SPBK(RNS2):Y49 & M29
	12/7/2014	12,13,16-20 HQ_CEDARS-NY Scheduling Limit
	12/7/2014	19 IESO_AC DNI Ramp Limit
	12/7/2014	16 NE_AC-NY Scheduling Limit
	12/18/2014	2 Uprate Central East
	12/18/2014	7-20 Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	12/18/2014	7 NYCA DNI Ramp Limit
	12/18/2014	7-17,20 Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard Sawyer (#78)
	12/29/2014	12-16 Extended outage Berkshire-Alps 345kV (#393)
	12/29/2014	16 Forced outage Linden VFT-Linden CG 345kV (#V-3022)
	12/29/2014	16,17 Extended outage Sawyer-Packard 230kV (#77) & Packard-Niagara 230kV (#62)
	12/29/2014	9-17 Derate Packard-Sawyer 230kV (#78) for I/o Robinson Rd-Stolle Rd 230kV (#65)
	12/29/2014	9-17 Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard Sawyer (#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.	

