

Operations Performance Metrics Monthly Report



November 2015 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 December 8, 2015.

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November 2015 Operations Performance Highlights

- Peak load of 21,086 MW occurred on 11/30/2015 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 automated Fuel Availability Self Reporting web application was launched this month
- The Comprehensive Shortage Pricing project was implemented on November 4th. This project established the SENY reserve region, made changes to NYCA and LI requirements, and updated the demand curve values.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

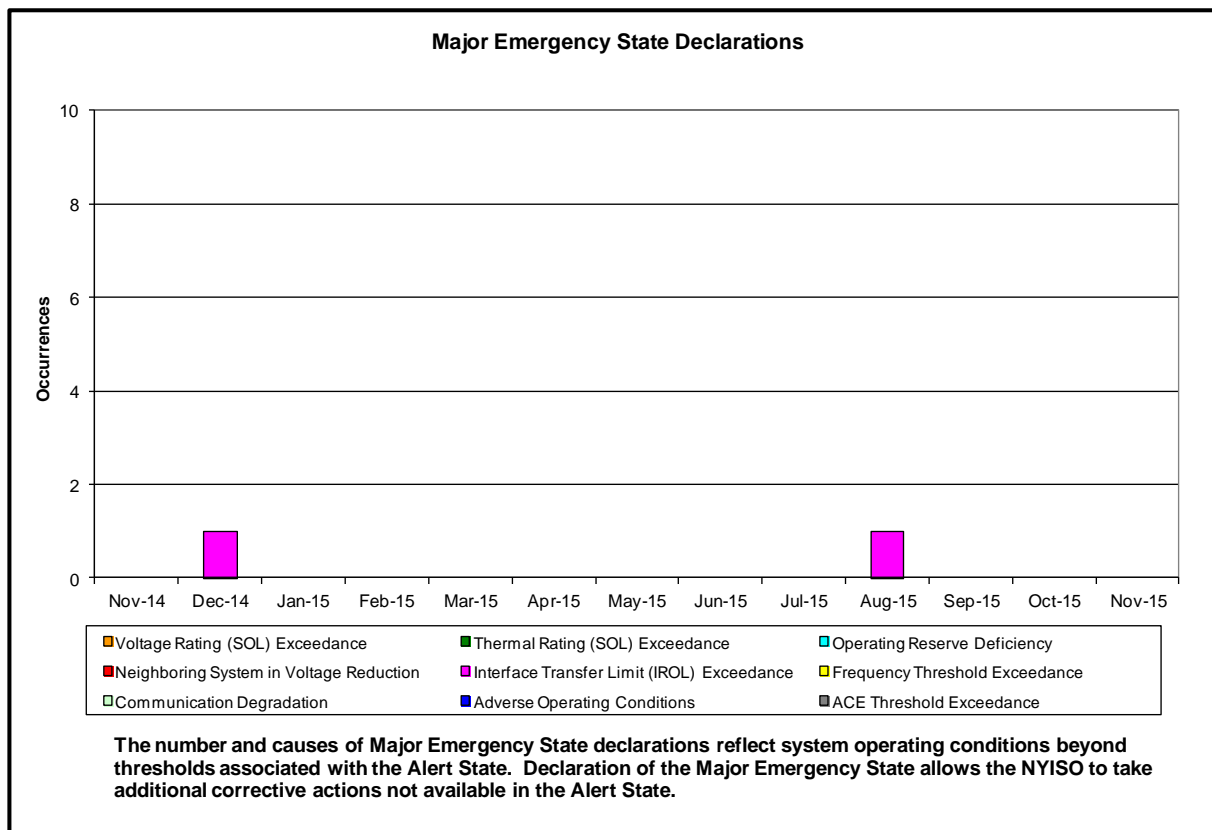
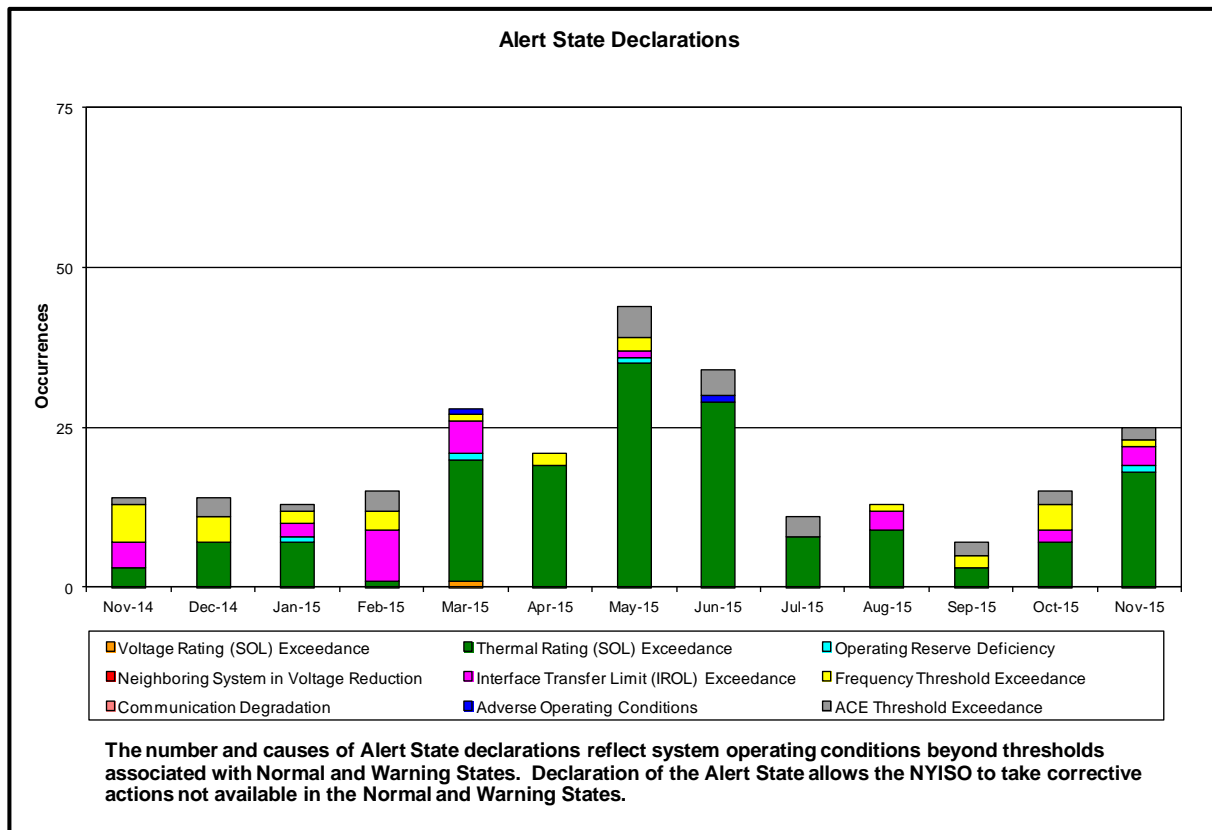
	Current Month Value (\$M)	Year-to-Date Value (\$M)
Regional Congestion Coordination	\$3.04	\$14.71
Regional PJM-NY RT Scheduling	(\$0.15)	\$2.43
Total	\$2.89	\$17.14

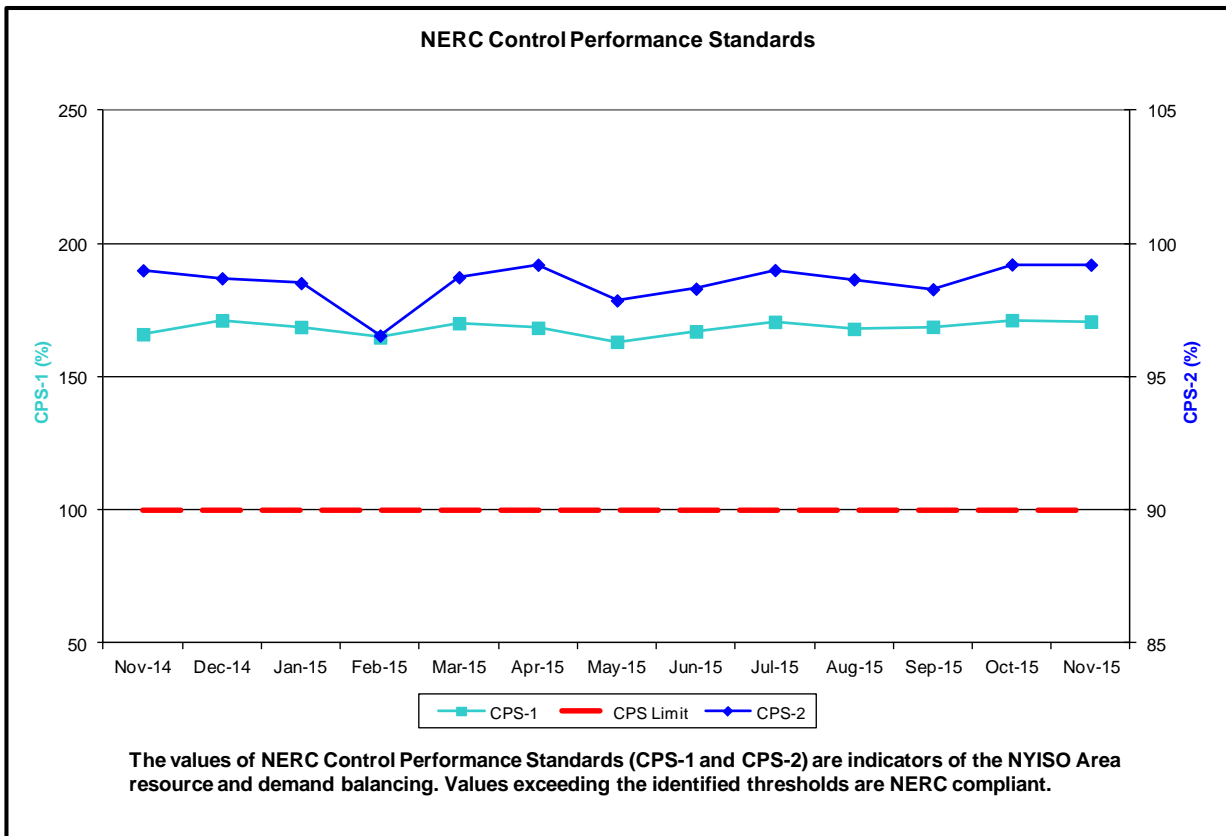
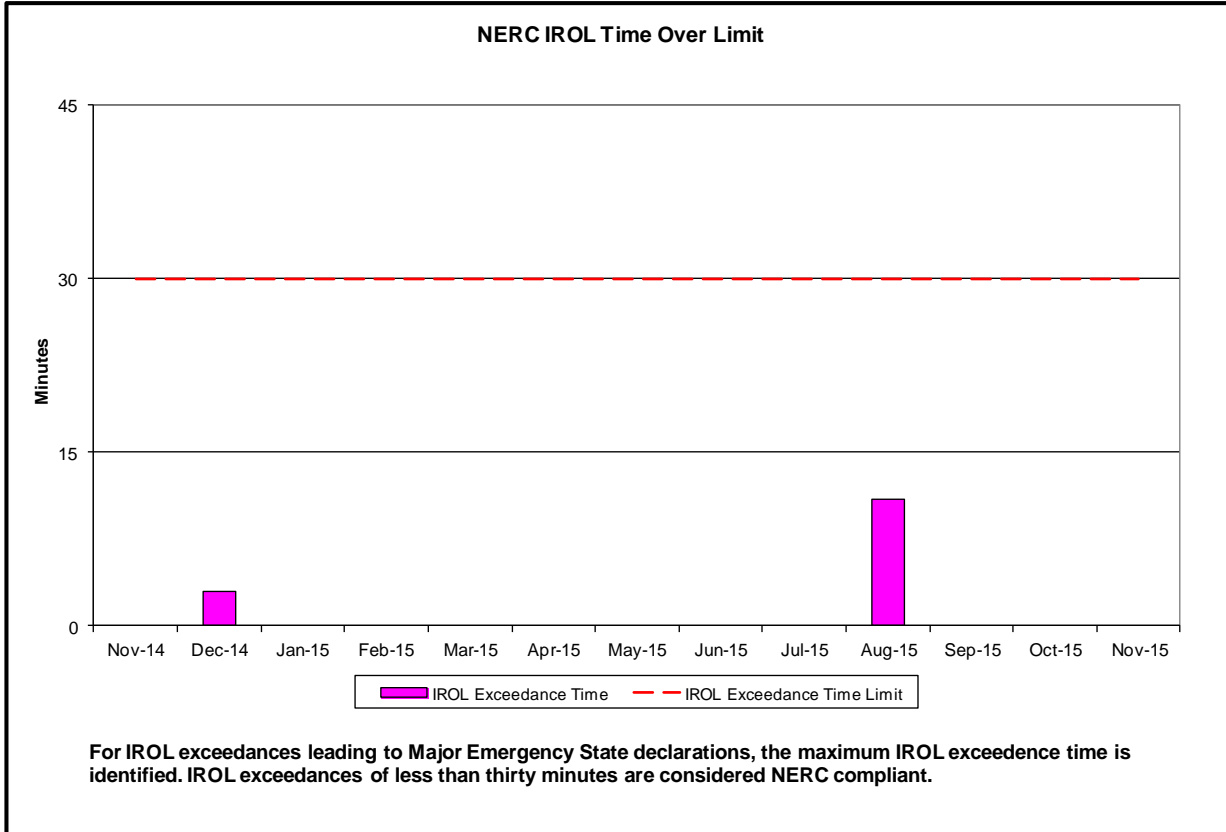
- Statewide uplift cost monthly average was \$0.21/MWh
- The following table identifies the Monthly ICAP spot market prices by locality and changes from the end of the prior Winter Capability period.

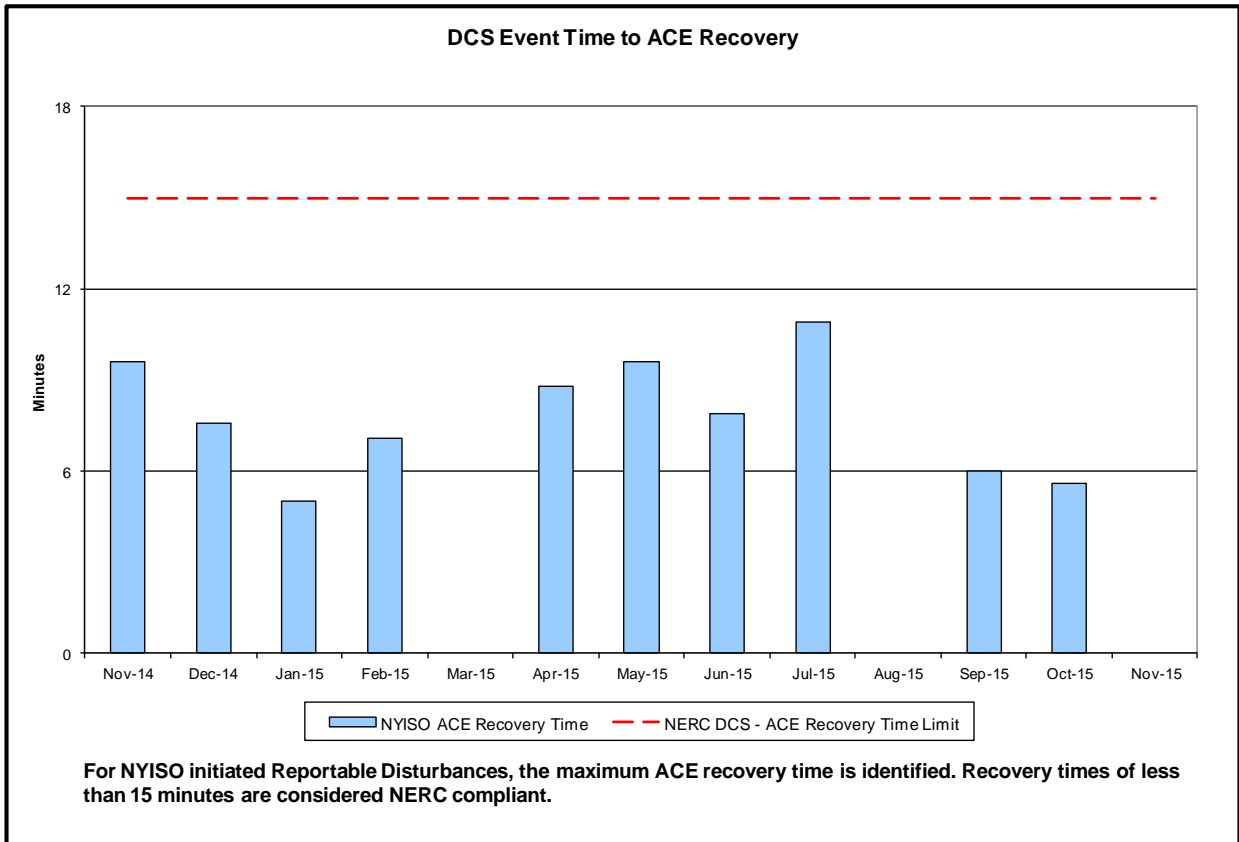
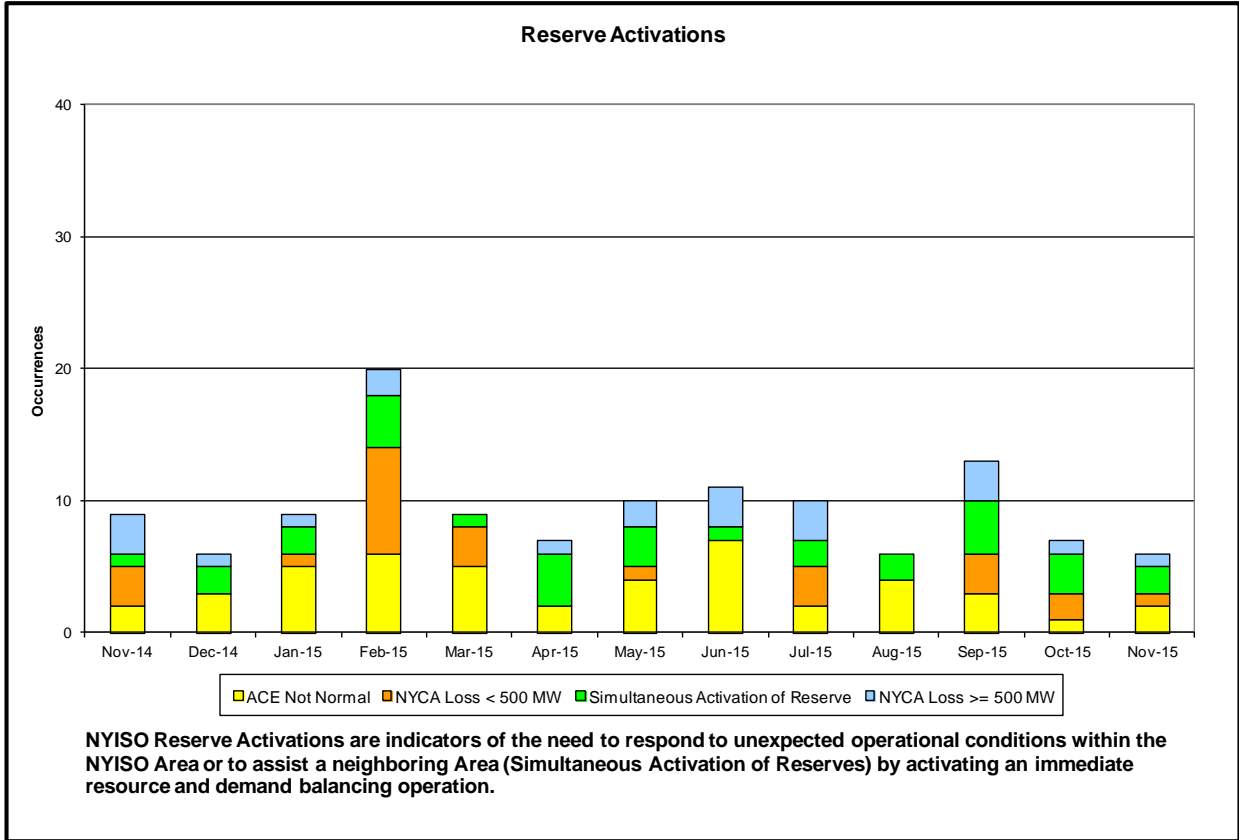
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
December 2015 Spot Price	\$1.28	\$3.48	\$6.29	\$1.85
November 2015 Spot Price	\$0.46	\$3.46	\$6.36	\$1.82
Delta	\$0.82	\$0.02	(\$0.07)	\$0.03

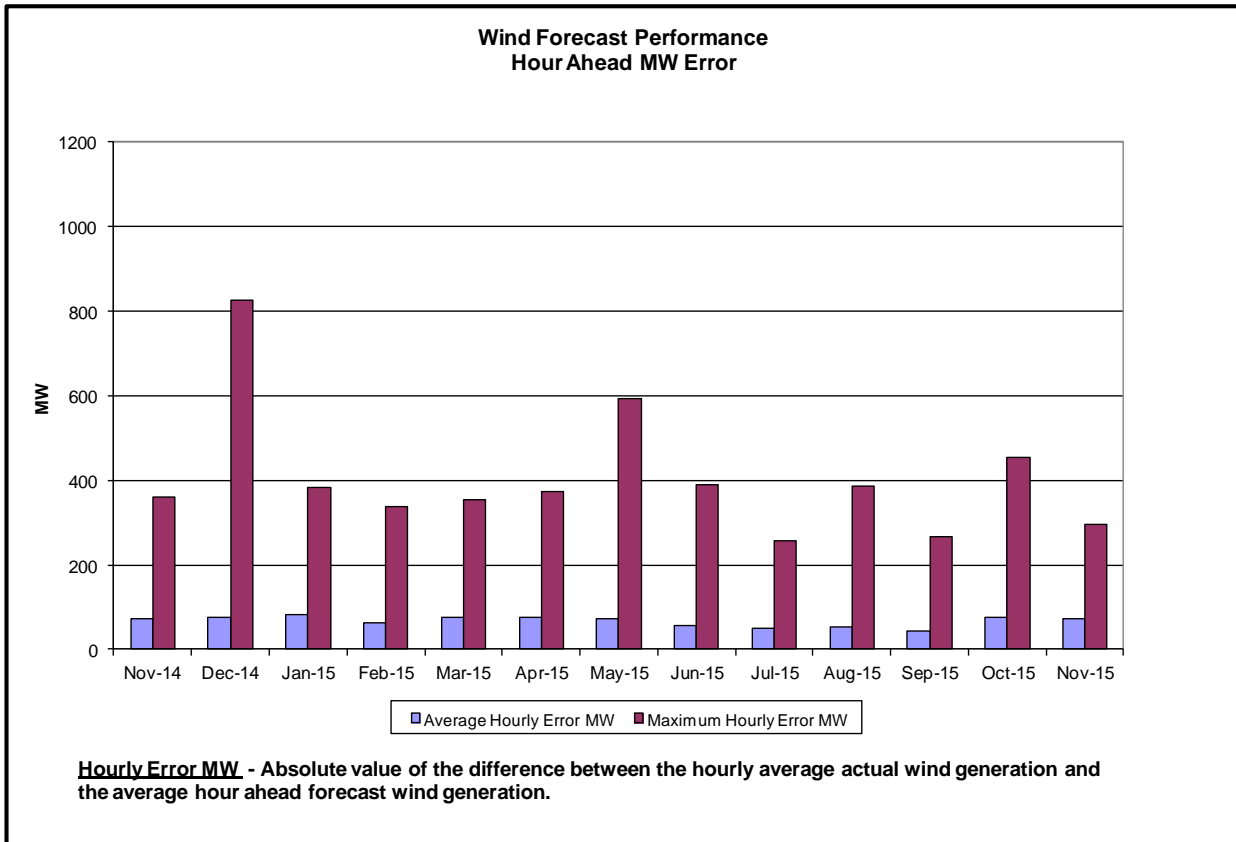
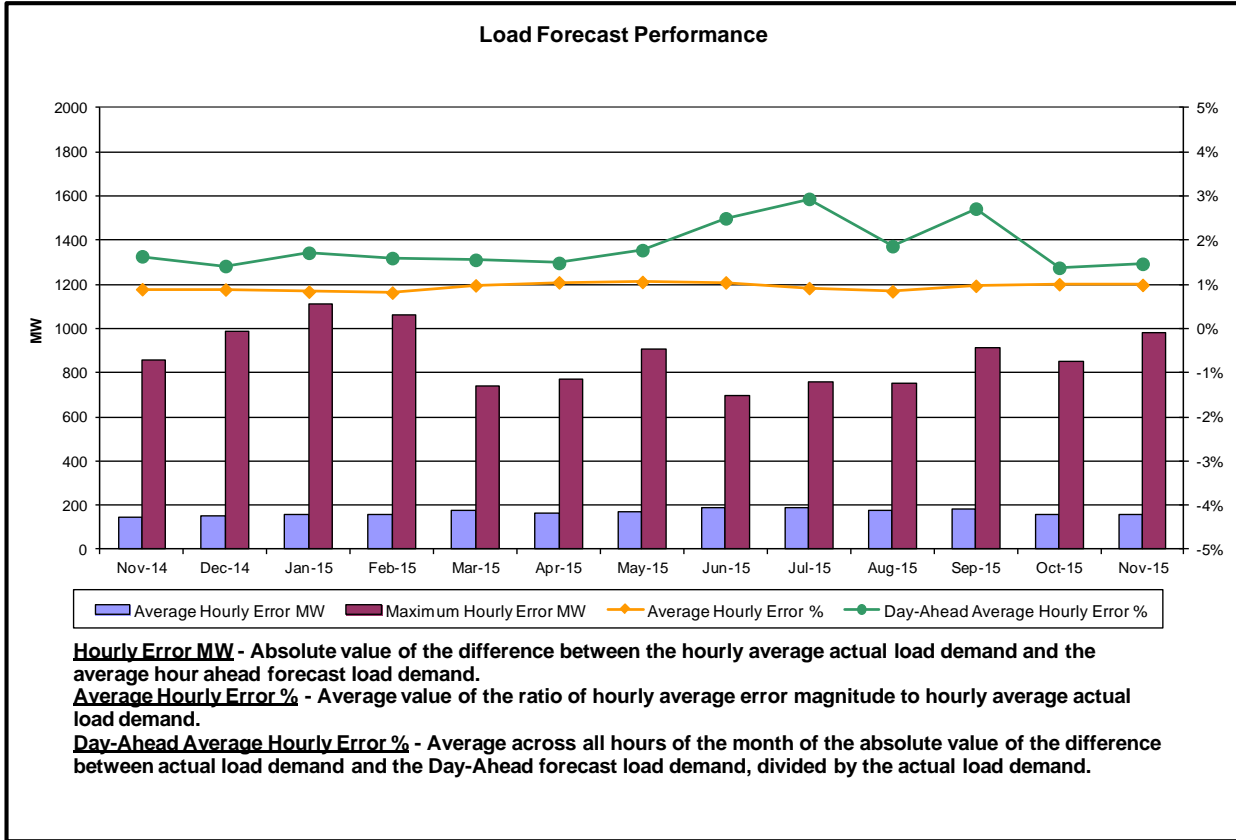
- NYCA - Price change is due to fewer Unsold MW, and a reduction in Net Imports, primarily from the HQ interface.

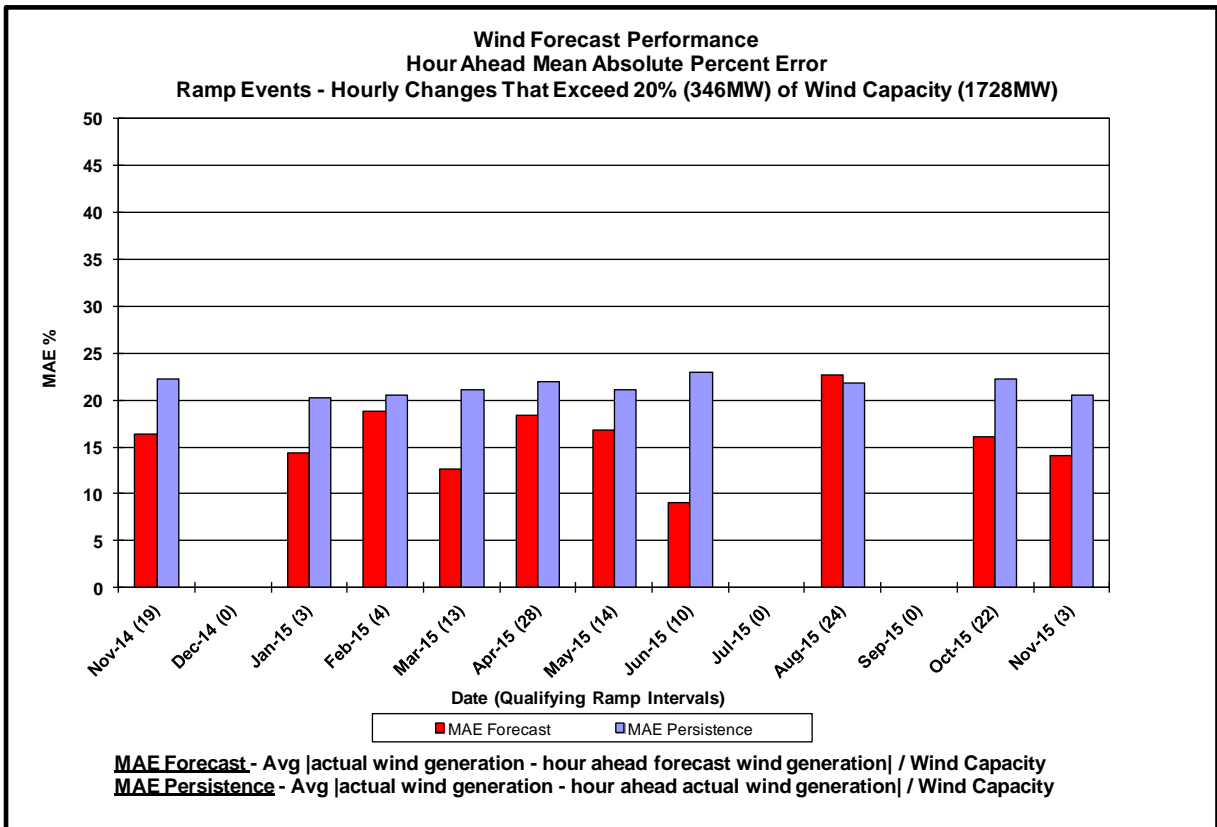
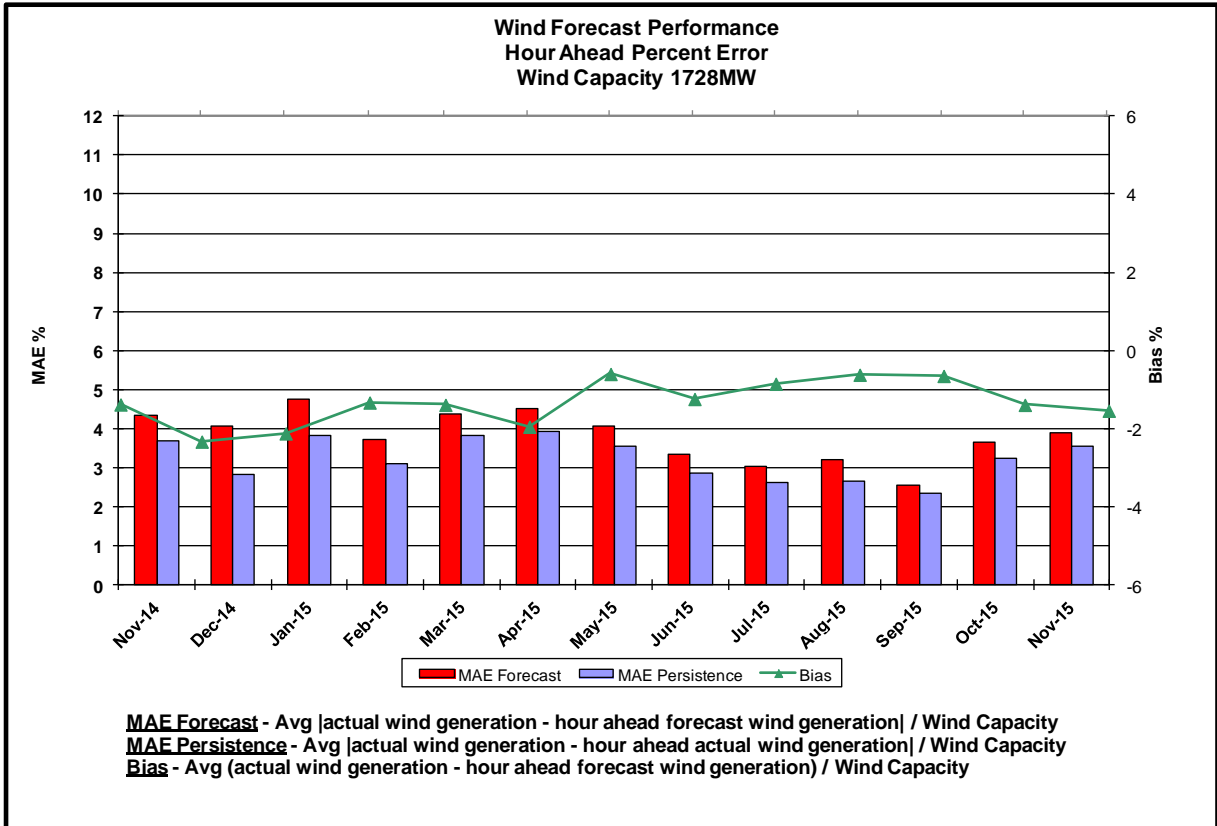
Reliability Performance Metrics

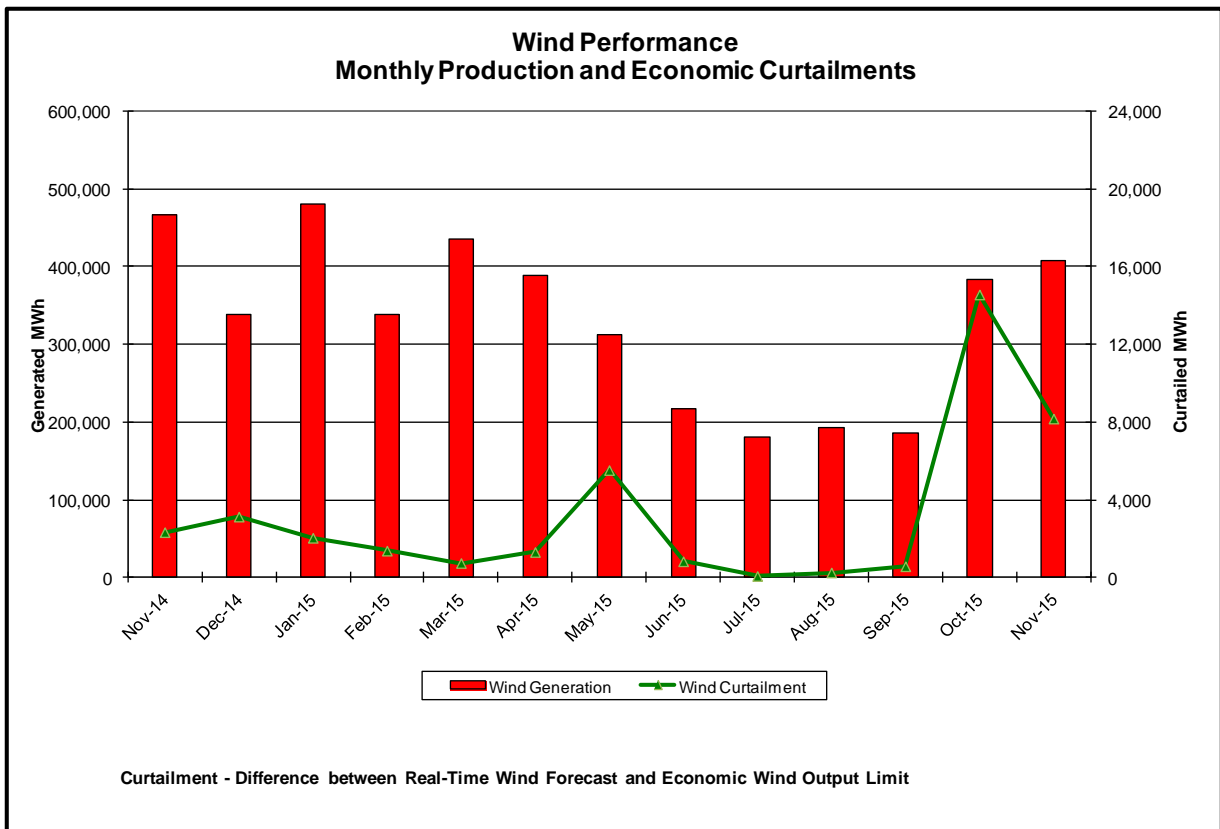
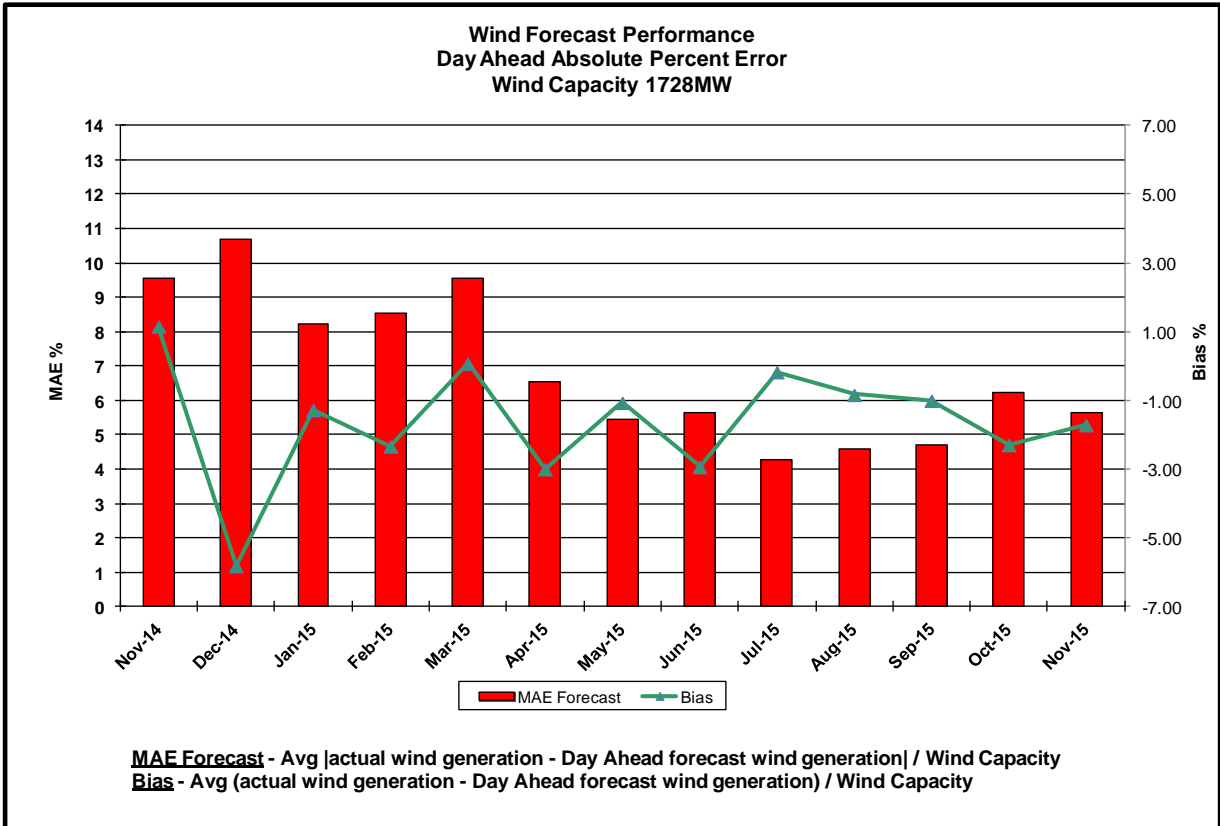


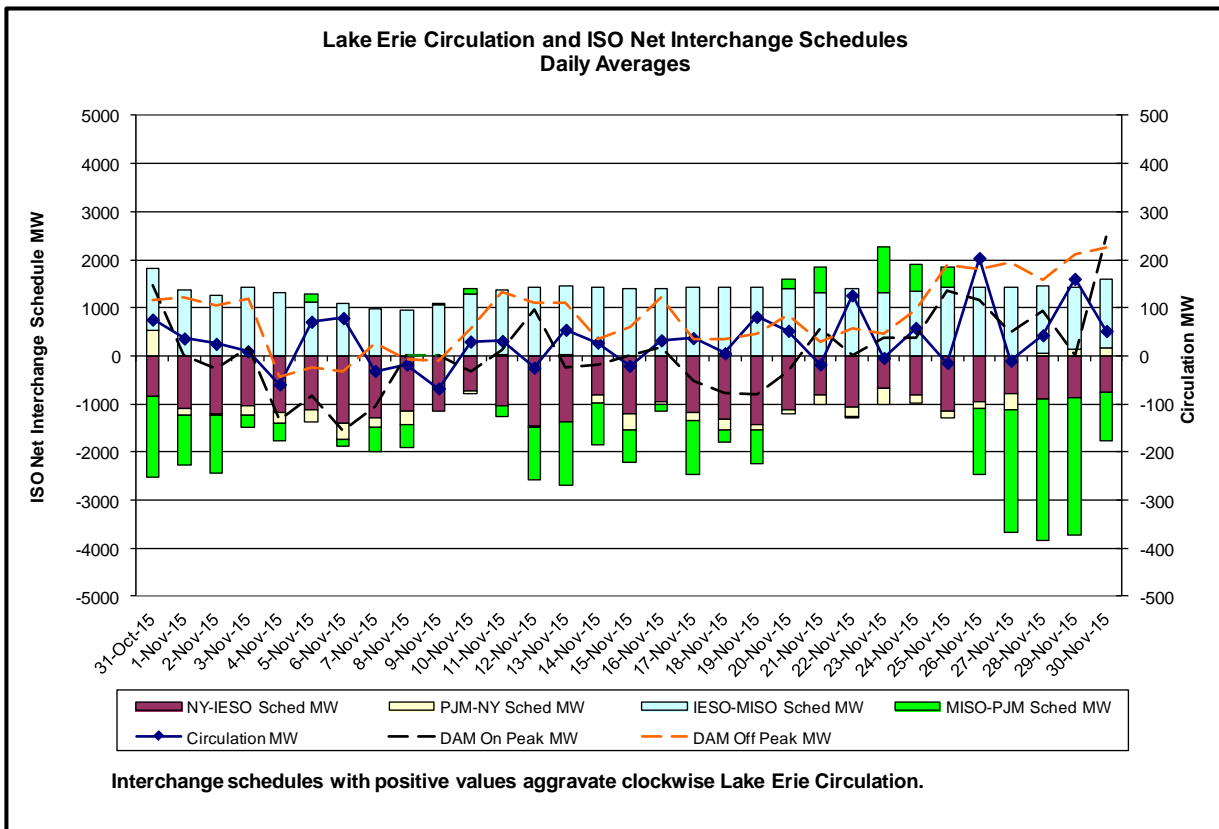
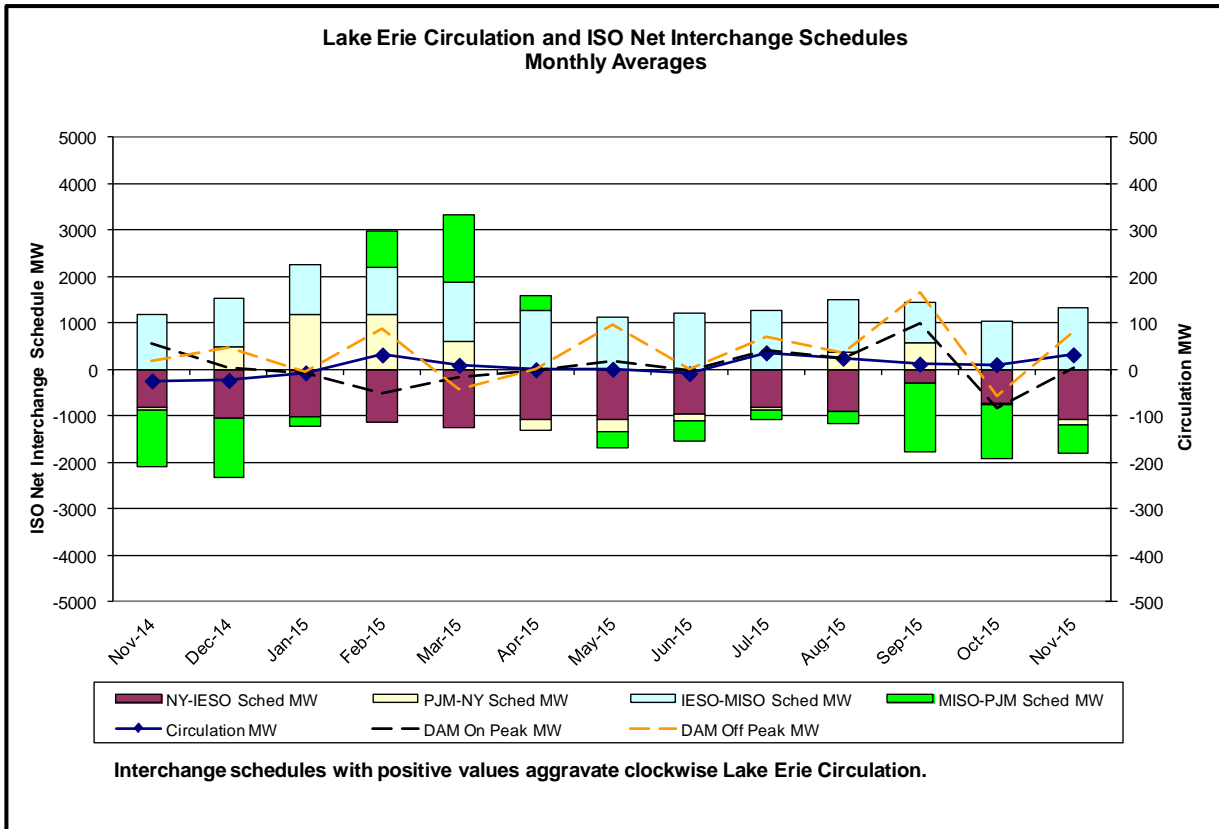




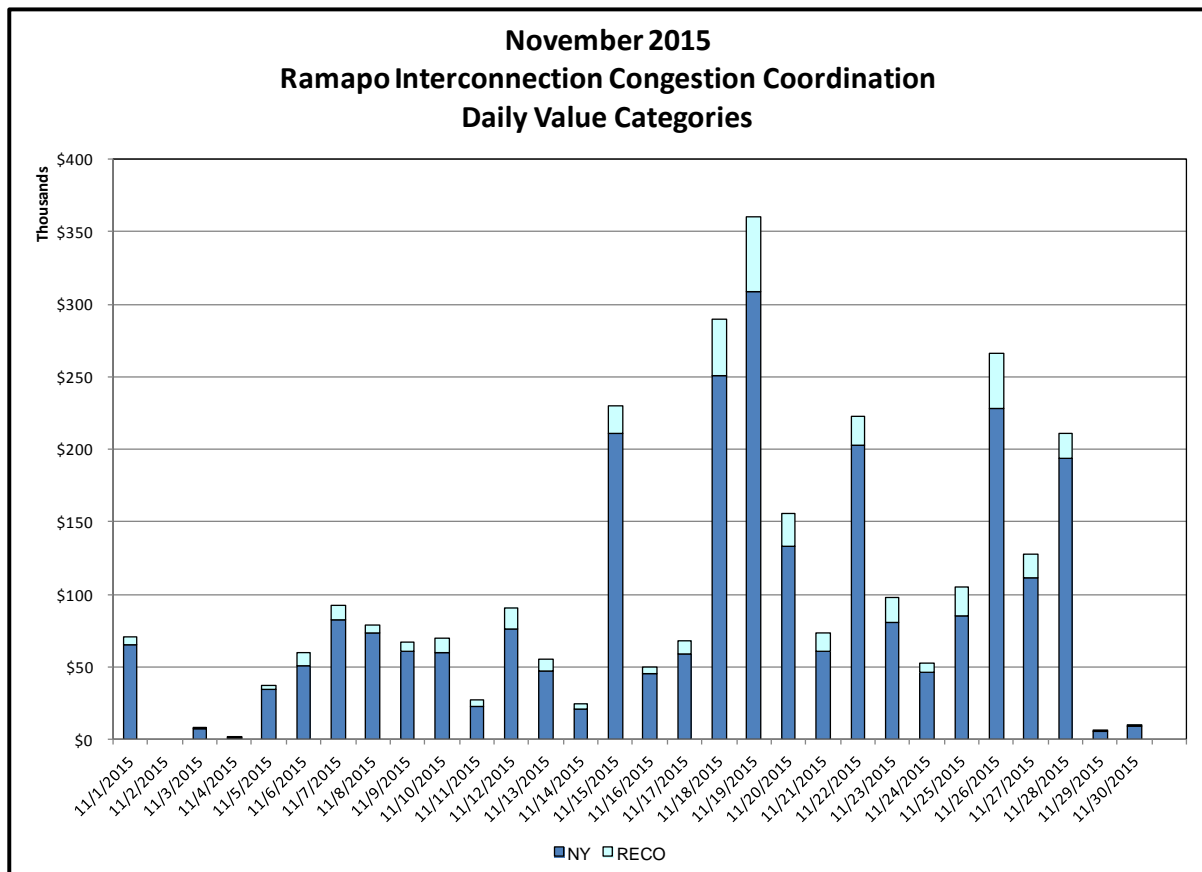
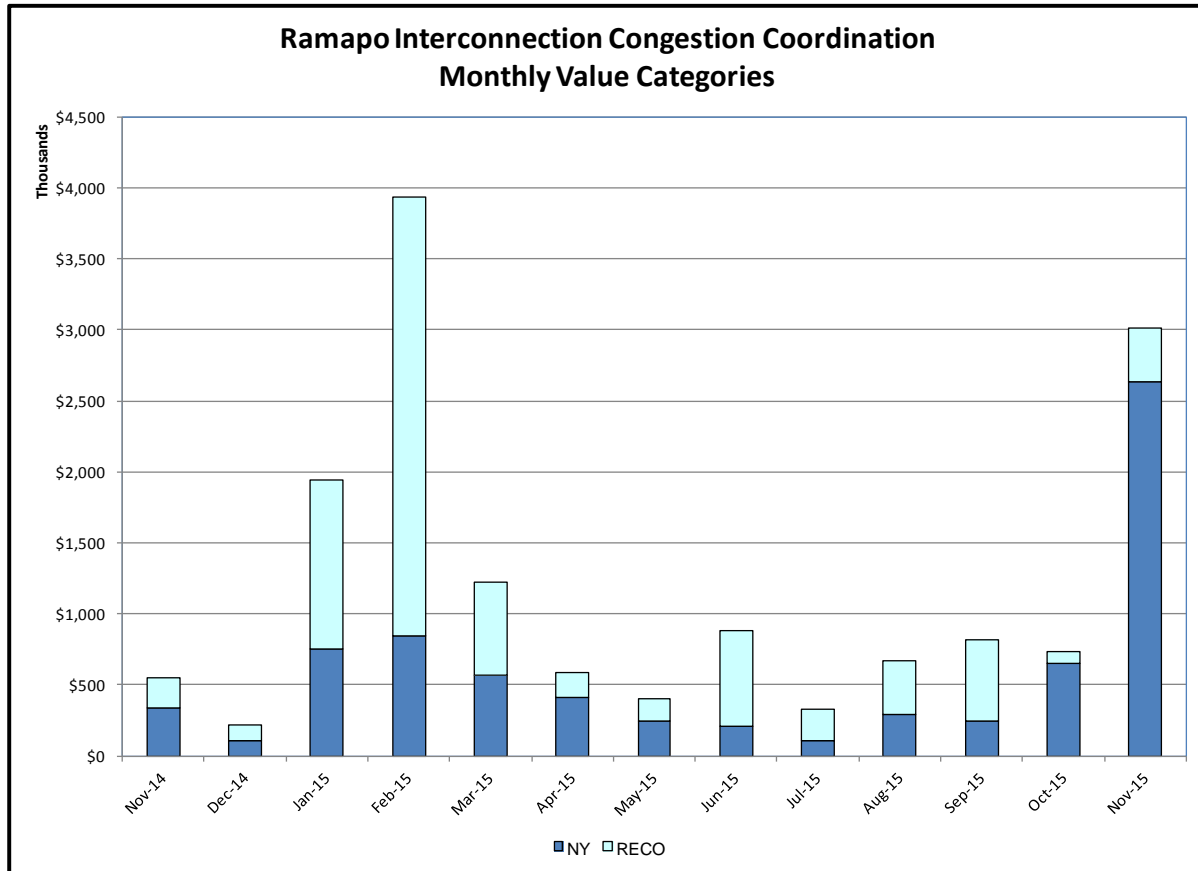






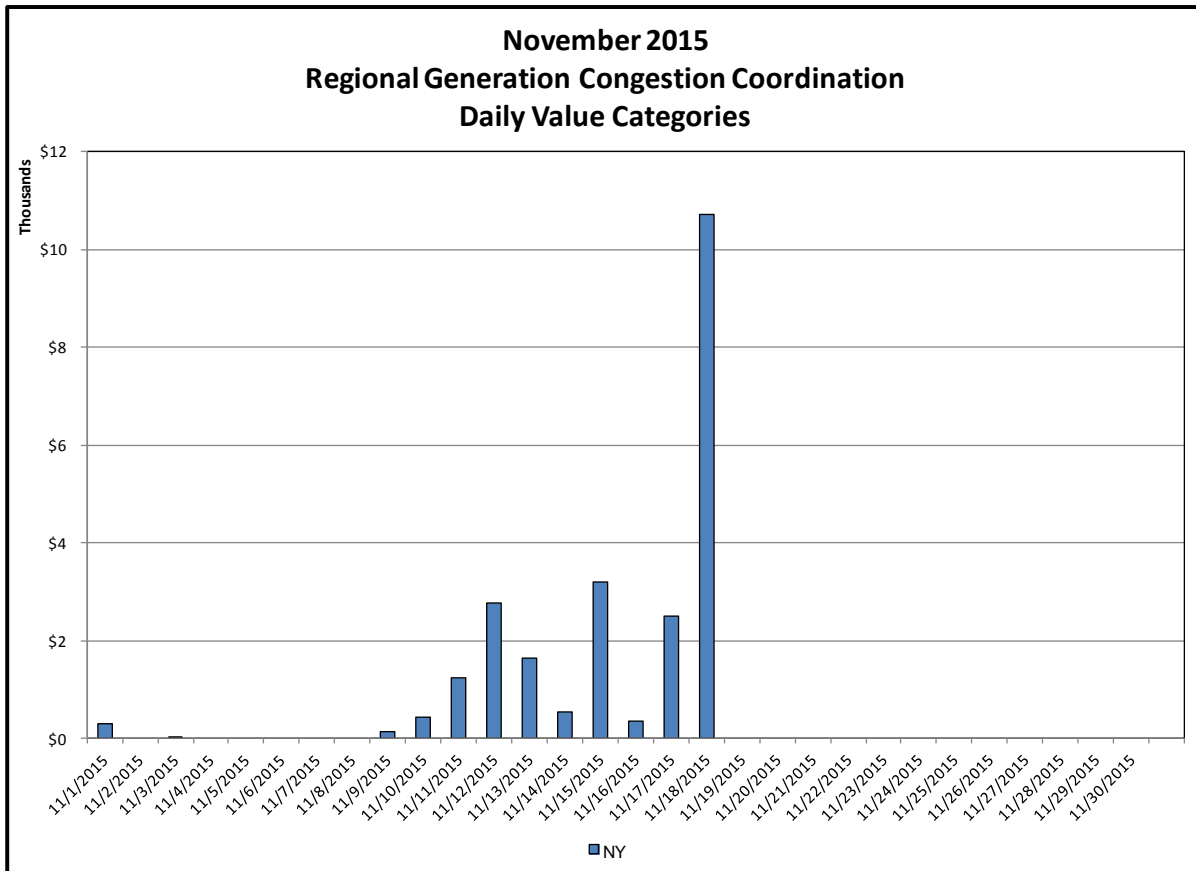
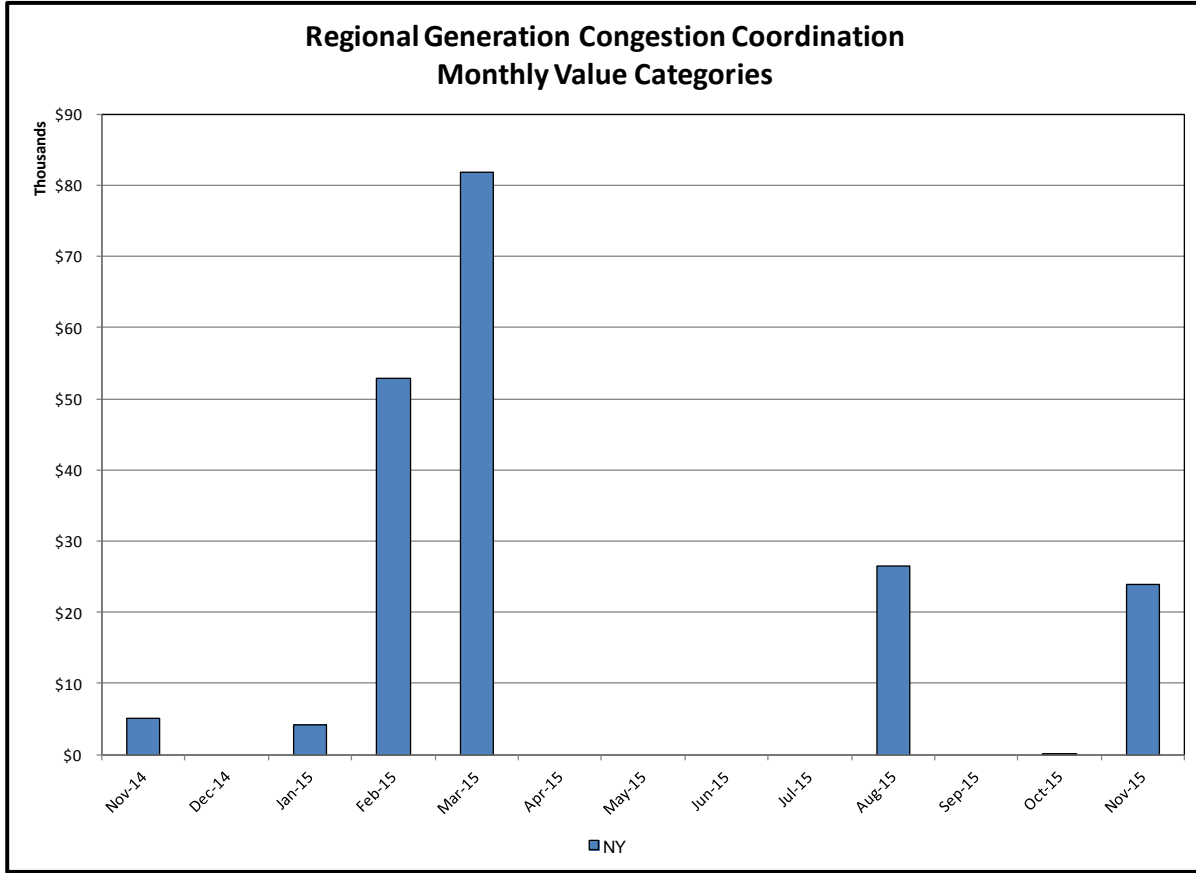


Broader Regional Market Performance Metrics



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.



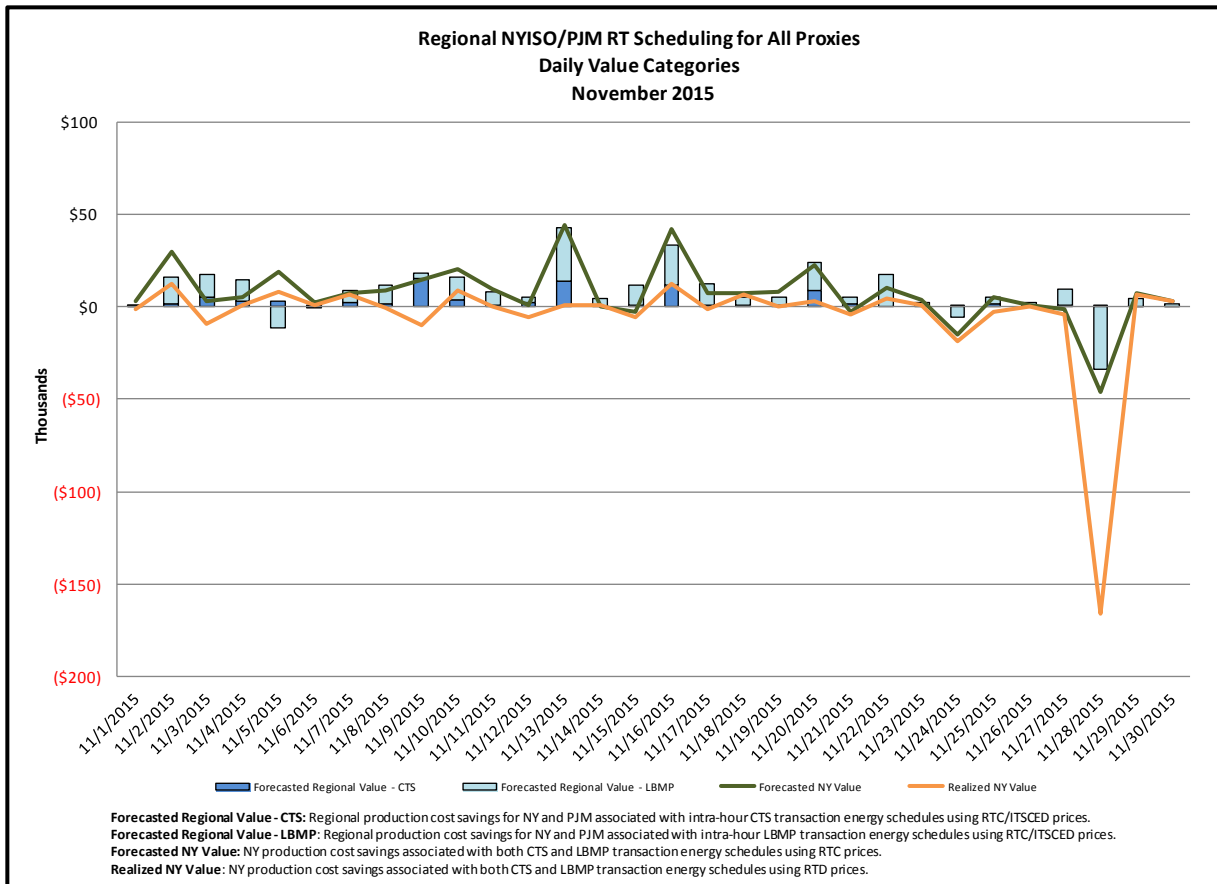
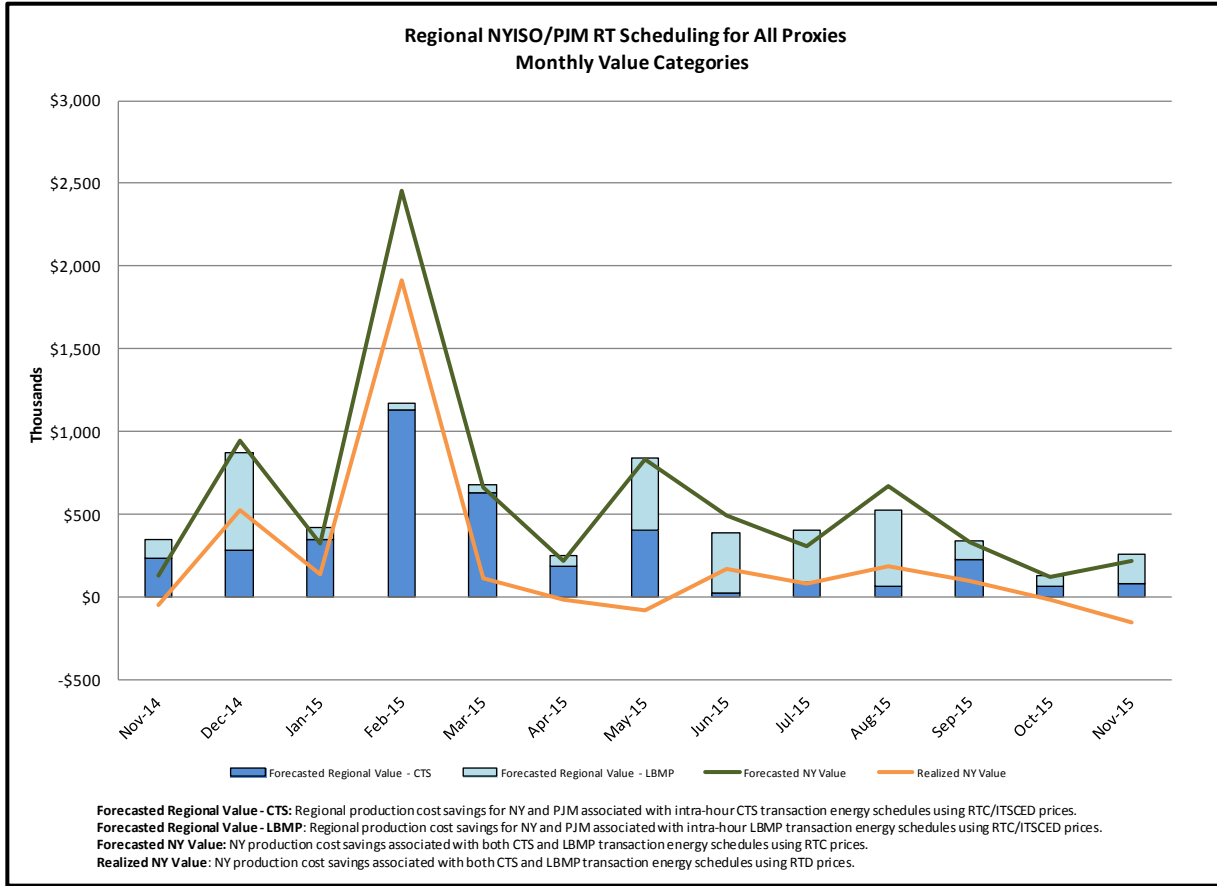
Regional Generation Congestion Coordination

Category

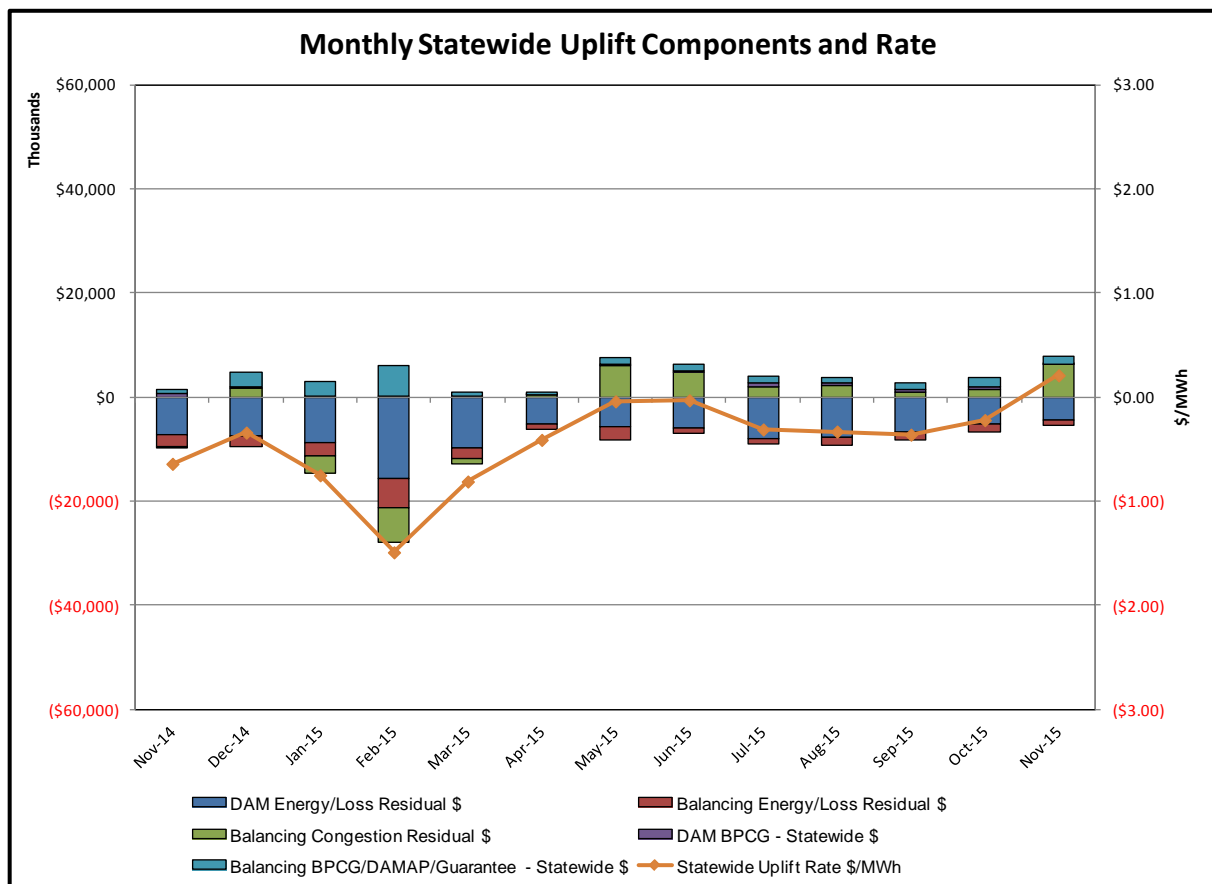
NY

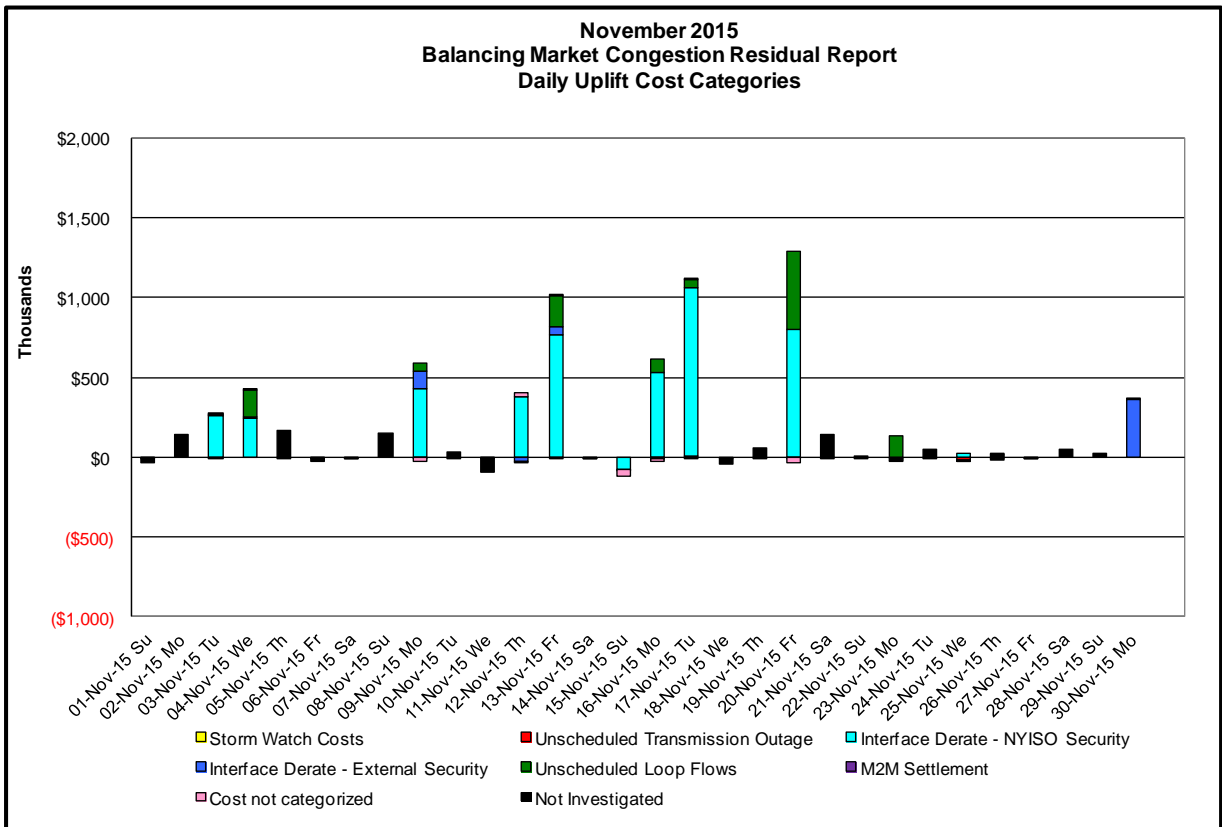
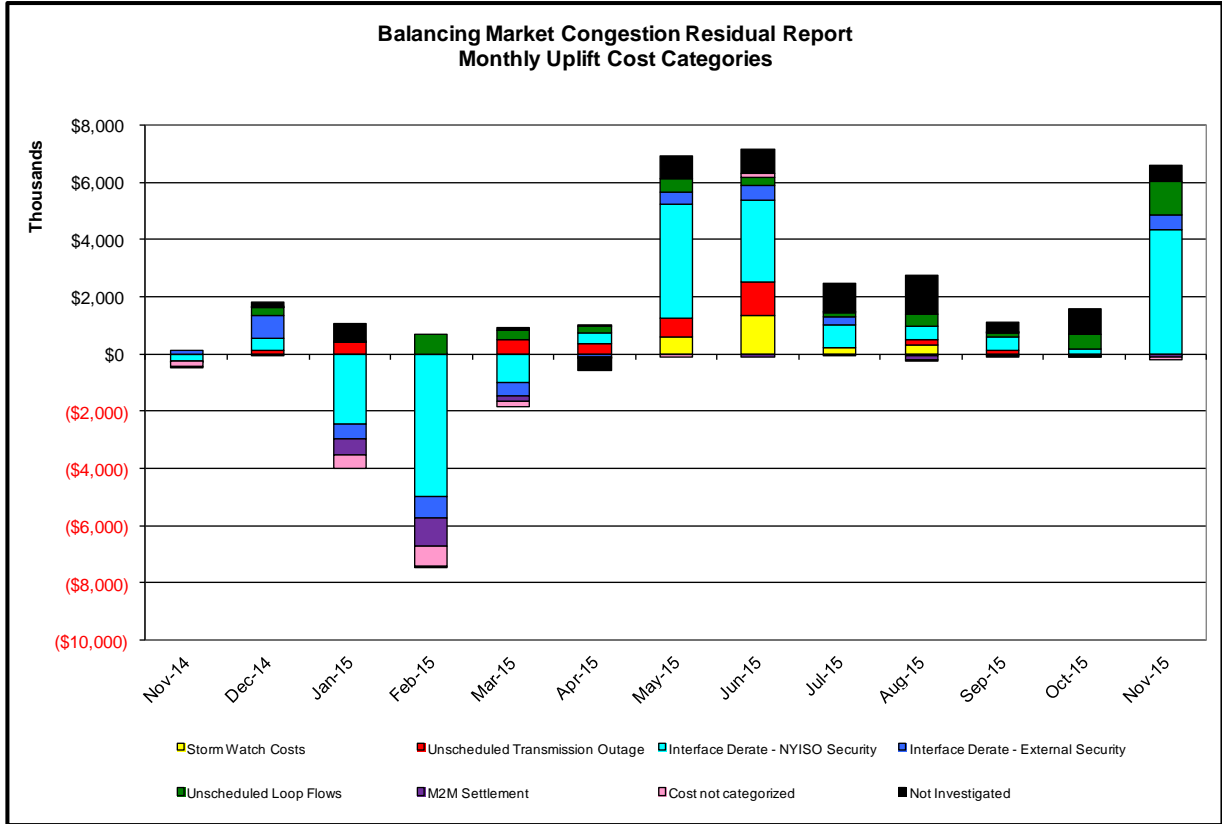
Description

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 November: 3,4,9,12,13,15,16,17,20,23,30

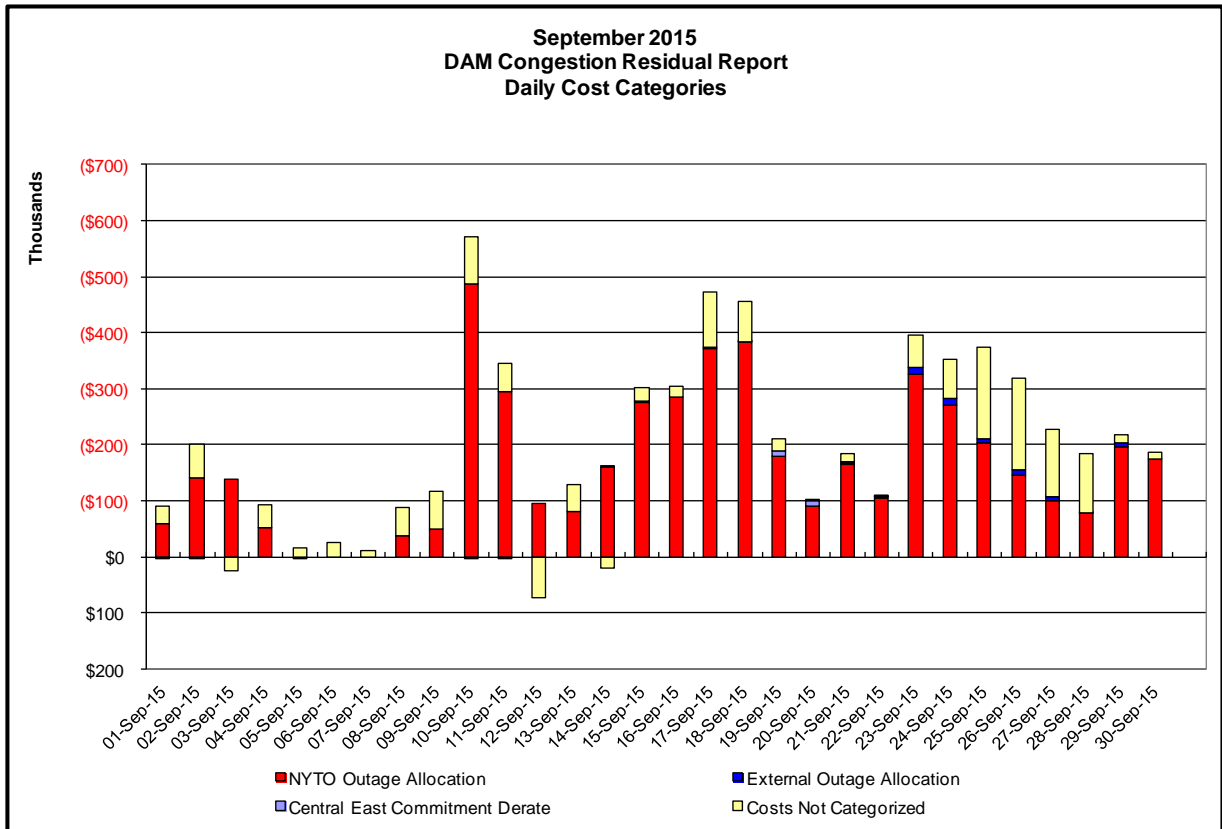
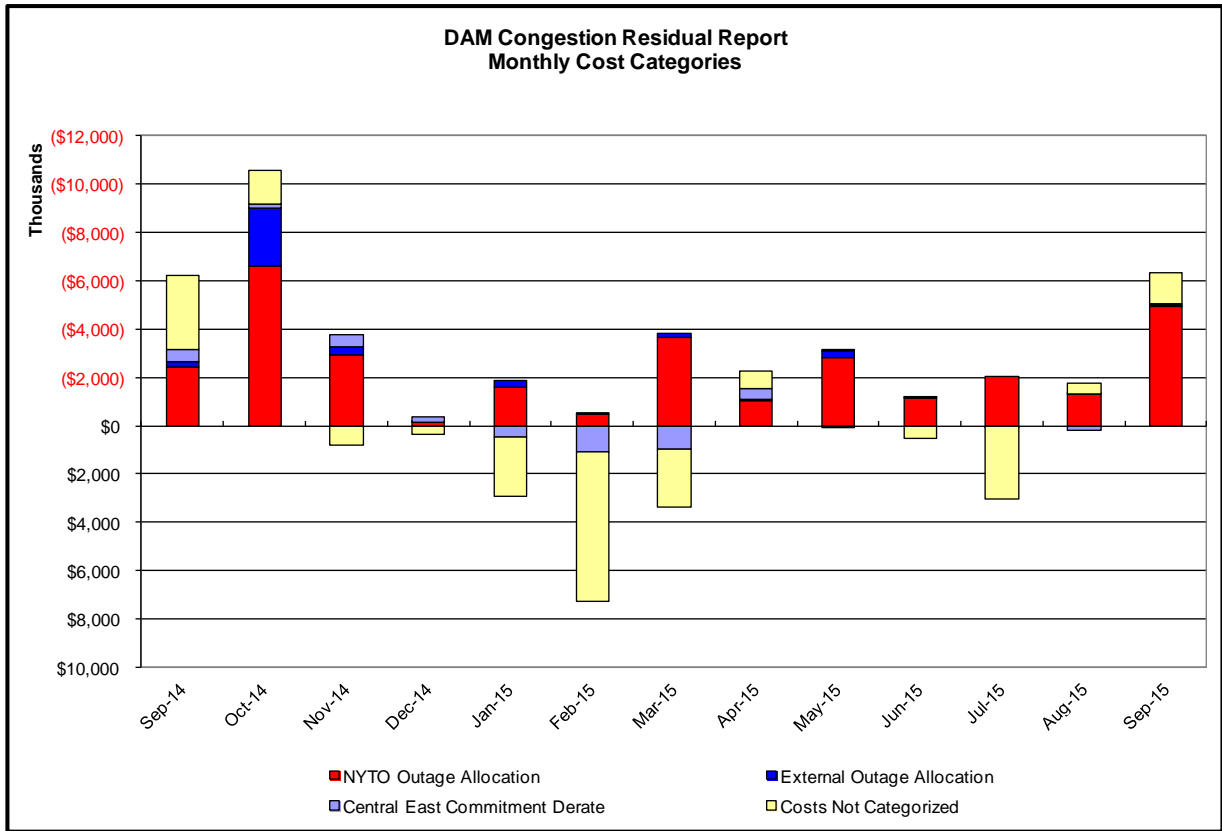
Event	Date (yyyymmdd)	Hours	Description
	11/3/2015	17-19	Derate Astoria East-Hell Gate East 138kV (#34052)
	11/3/2015	19	Derate Dunwoodie-Shore Road 345kV (#Y50)
	11/3/2015	18	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o SCB:SPBK(RNS2):Y49 & M29
	11/3/2015	17-19	Derate Farragut-Hudson Avenue 138kV (#32077)
	11/3/2015	17-19	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	11/3/2015	18	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230kV (#78)
	11/4/2015	10	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o SCB:SPBK(RNS2):Y49 & M29
	11/4/2015	10	Derate Huntley-Sawyer 230kV (#80) for I/o Packard-Sawyer 230kV (#77)
	11/4/2015	10,12-19	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	11/4/2015	17	HQ_CHAT-NY Scheduling Limit
	11/4/2015	13-19	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230kV (#78)
	11/9/2015	11,12,14-16,19	Derate Central East
	11/9/2015	14	Derate Dunwoodie-Shore Road 345kV (#Y50)
	11/9/2015	15-Oct	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o NEPTUNE HVDC TIE LINE
	11/9/2015	15,18	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o SCB:SPBK(RNS2):Y49 & M29
	11/9/2015	6,10-16,18,19	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	11/9/2015	3,23	Uprate Central East
	11/9/2015	21	Uprate East Garden City-Valley Stream (#262) 138kV for I/o SCB:NEWBRDG 1380 461 BK6
	11/9/2015	3	NE_NNC1385-NY Scheduling Limit
	11/9/2015	12,13	HQ_CHAT-NY Scheduling Limit
	11/9/2015	6	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230kV (#78)
	11/12/2015	15-17,19	Uprate Central East
	11/12/2015	10-14	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o SCB:SPBK(RNS2):Y49 & M29
	11/12/2015	15-17	Uprate East Garden City-Valley Stream (#262) 138kV for SCB:NEWBRDG 1380 461 BK6
	11/12/2015	6-8,10-14,21,22	Derate Gardenville-Stolle Road 230kV (#66) for I/o TWR:PACKARD 77 & 78
	11/12/2015	17	Derate Leeds-New Scotland 345kV #93) for I/o Leeds-Gilboa 345kV (#GL3)
	11/12/2015	7,10-14	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	11/12/2015	15-17,19	NE_AC-NY Scheduling Limit
	11/13/2015	2	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o SCB:SPBK(RNS2):Y49 & M29
	11/13/2015	6-18	Derate Gardenville-Stolle Road 230kV (#66) for I/o TWR:PACKARD 77 & 78
	11/13/2015	13-18	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	11/13/2015	2,6	NE_AC-NY Scheduling Limit
	11/13/2015	17	PJM_AC ACTIVE DNI
	11/13/2015	12-14	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230kV (#78), Gardenville-Stolle Road 230kV (#66)
	11/15/2015	1-3,7,14,16-19,22	Uprate Central East
	11/15/2015	16,17	NYCA DNI Ramp Limit
	11/16/2015	9,10,20	Derate Central East
	11/16/2015	6-15,20	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	11/16/2015	8	NYCA DNI Ramp Limit
	11/16/2015	17	IESO_AC Active DNI
	11/16/2015	6,7,14	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230kV (#78)
	11/16/2015	14	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East
	11/17/2015	1	Forced outage Gowanus-Greenwood 138kV (#42231)
	11/17/2015	21,22	Derate Dunwoodie-Shore Road 345kV (#Y50)
	11/17/2015	20,21	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o NEPTUNE HVDC TIE LINE
	11/17/2015	18-22	Derate Gardenville-Stolle Road 230kV (#66) for I/o TWR:PACKARD 77 & 78
	11/17/2015	8,9,19	Derate Greenwood-Vernon 138kV (#31232) for SCB GOW 6 W/GOET 8 O/S
	11/17/2015	1	Derate Greenwood-Vernon 138kV (#31232) for SCB:GOW(6):25&42232 G23LM O/S
	11/17/2015	6,8-16,18-21	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	11/17/2015	6,10,12	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230kV (#78)
	11/17/2015	6	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East
	11/20/2015	5,6,8,10-13,16	Derate Central East
	11/20/2015	5-13	Derate Gardenville-Stolle Road 230kV (#66) for I/o TWR:PACKARD 77 & 78
	11/20/2015	7,9-11	Derate Packard-Sawyer 230kV (#78) for I/o Packard-Sawyer 230kV (#77)
	11/20/2015	6,9,11,23	NYCA DNI Ramp Limit
	11/20/2015	5,6,7,9,12,13	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Gardenville-Stolle Road 230kV (#66)
	11/20/2015	6,7,9,11	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Packard-Sawyer 230kV (#78)
	11/20/2015	6,7,11,12,13	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East
	11/23/2015	14,15	Uprate Central East
	11/23/2015	17	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Niagara-Packard 230kV (62)
	11/30/2015	11-22	NE_AC-NY Scheduling Limit

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	

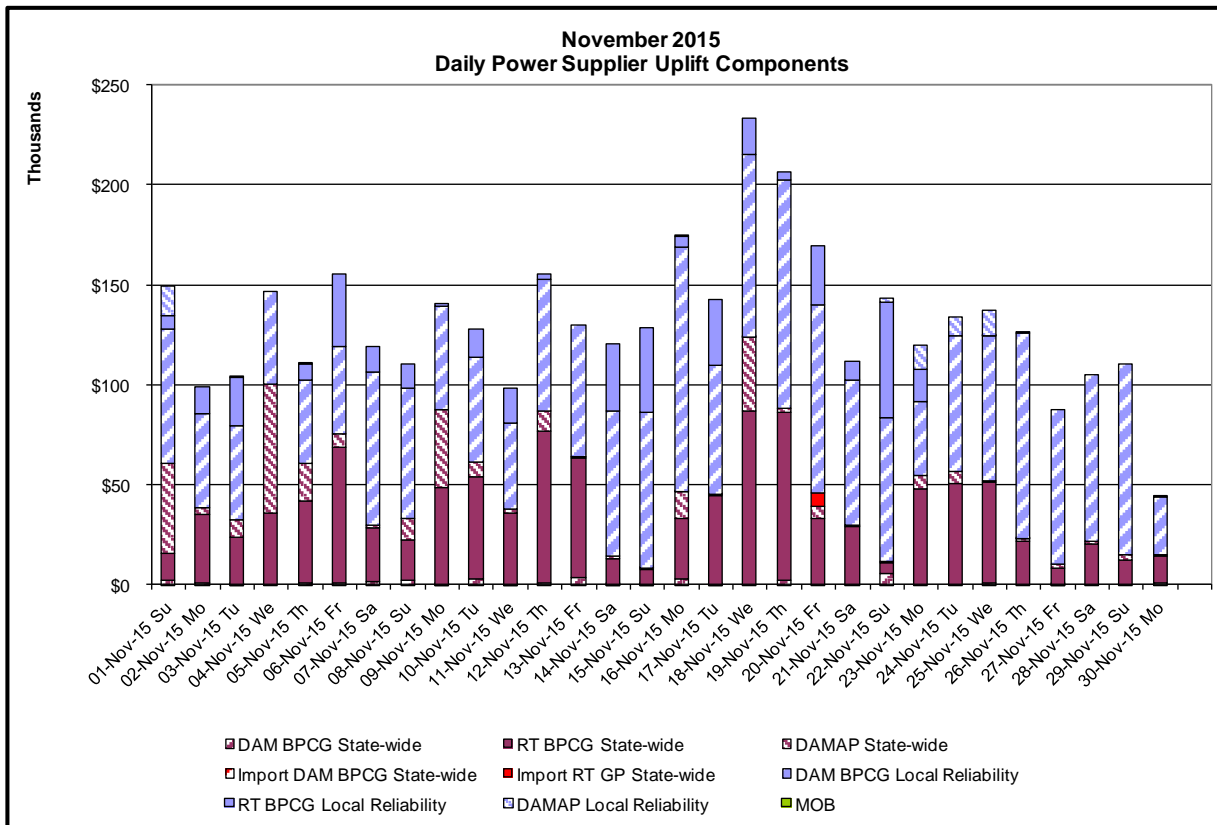
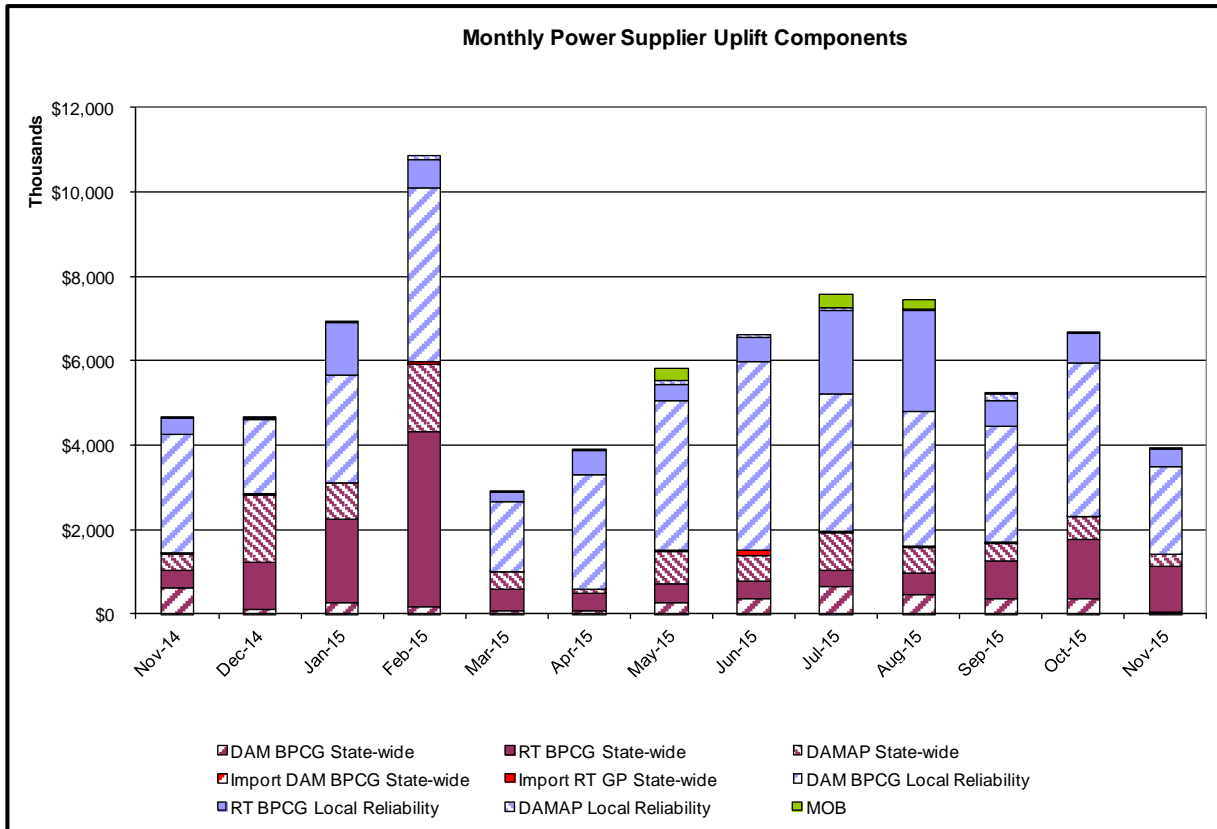
Monthly Balancing Market Congestion Report Assumptions/Notes

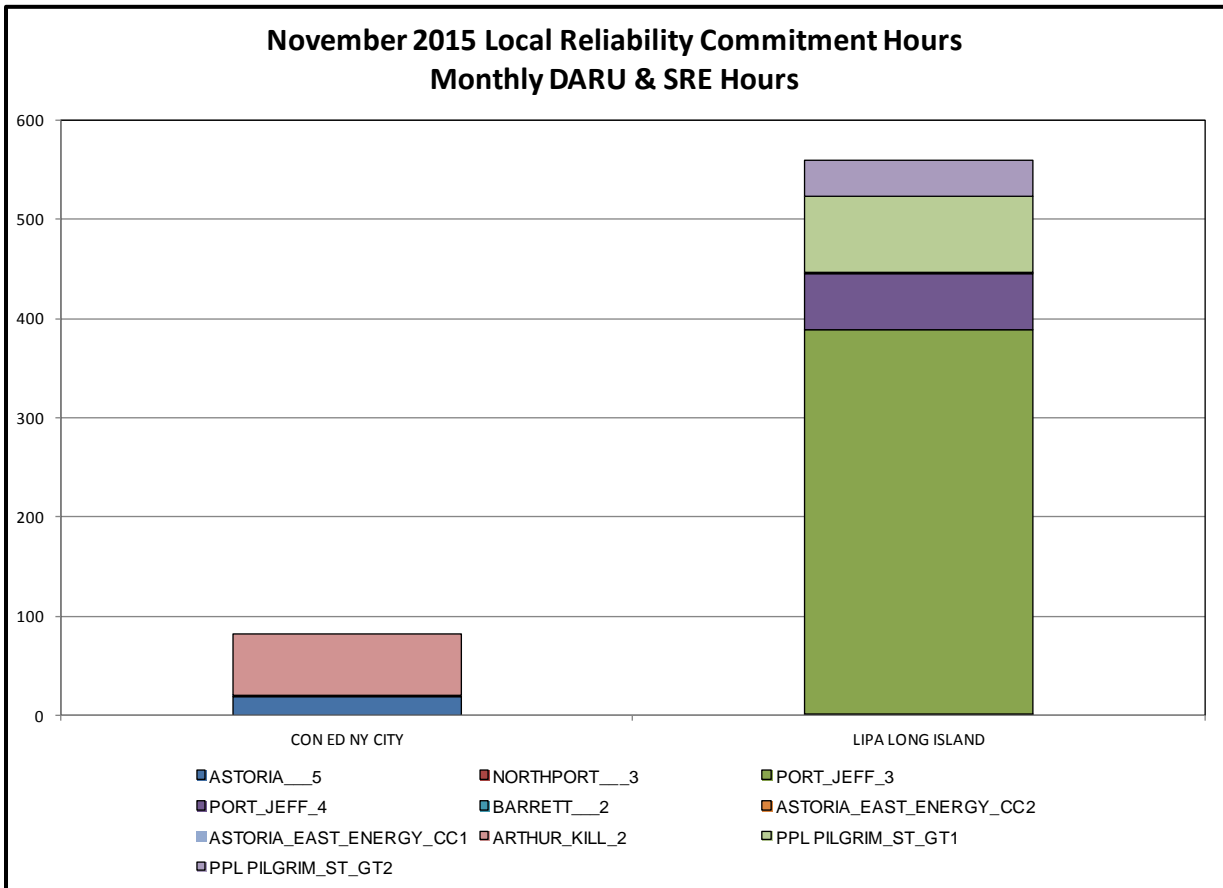
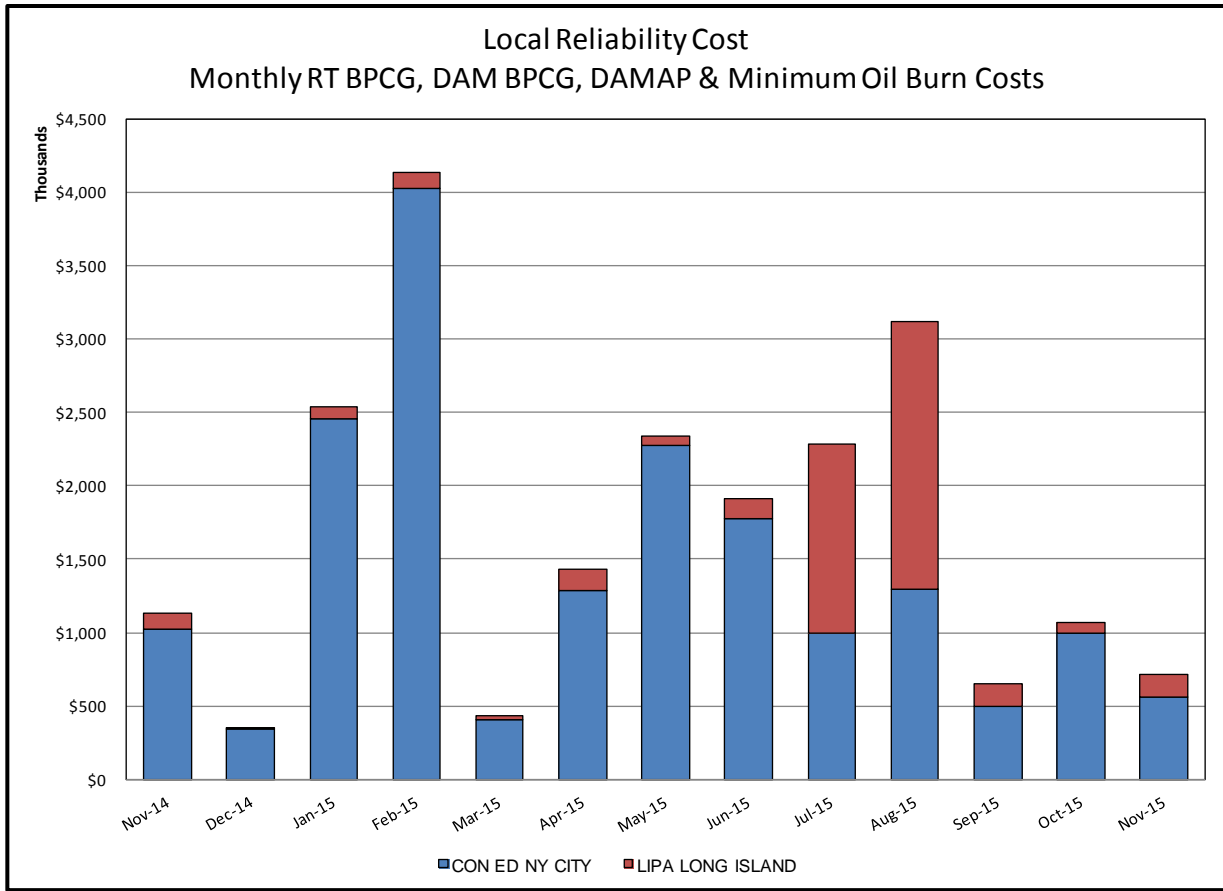
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

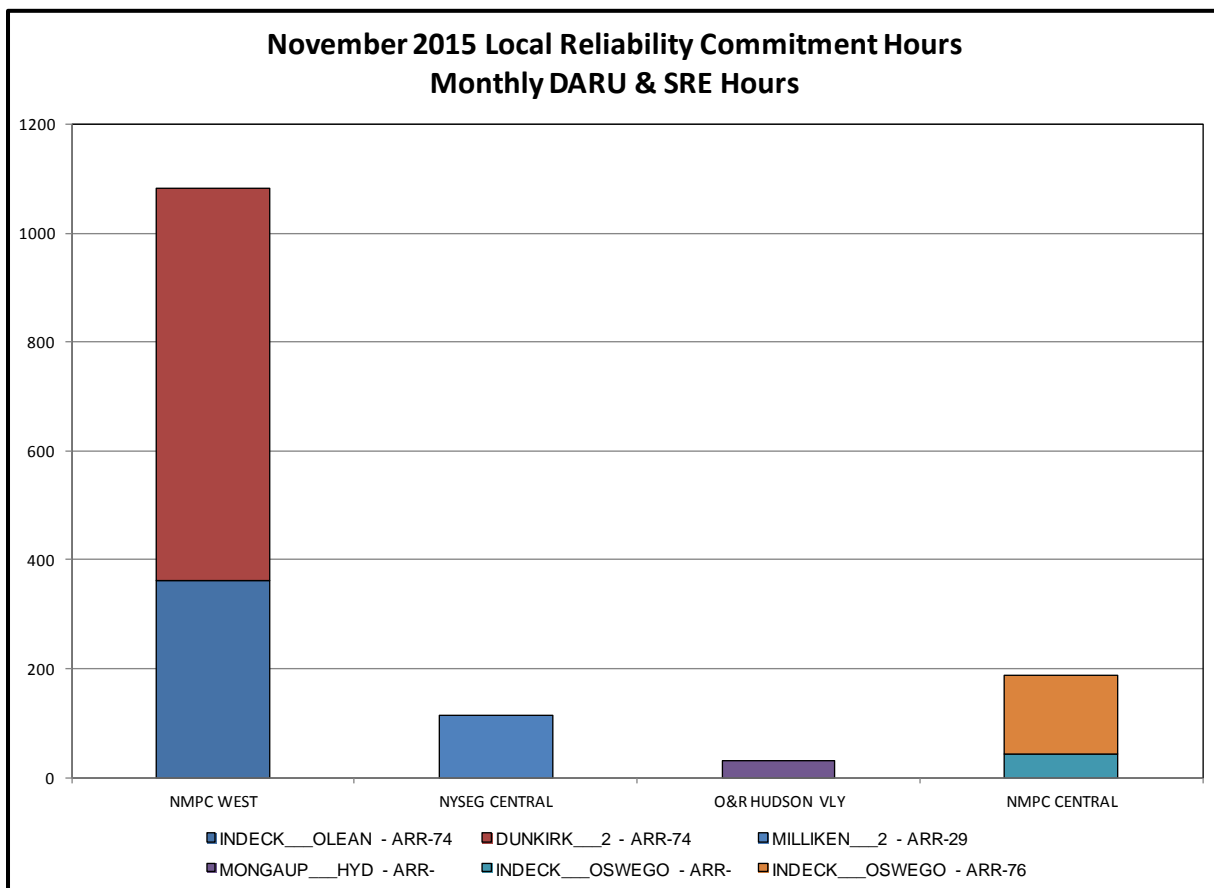
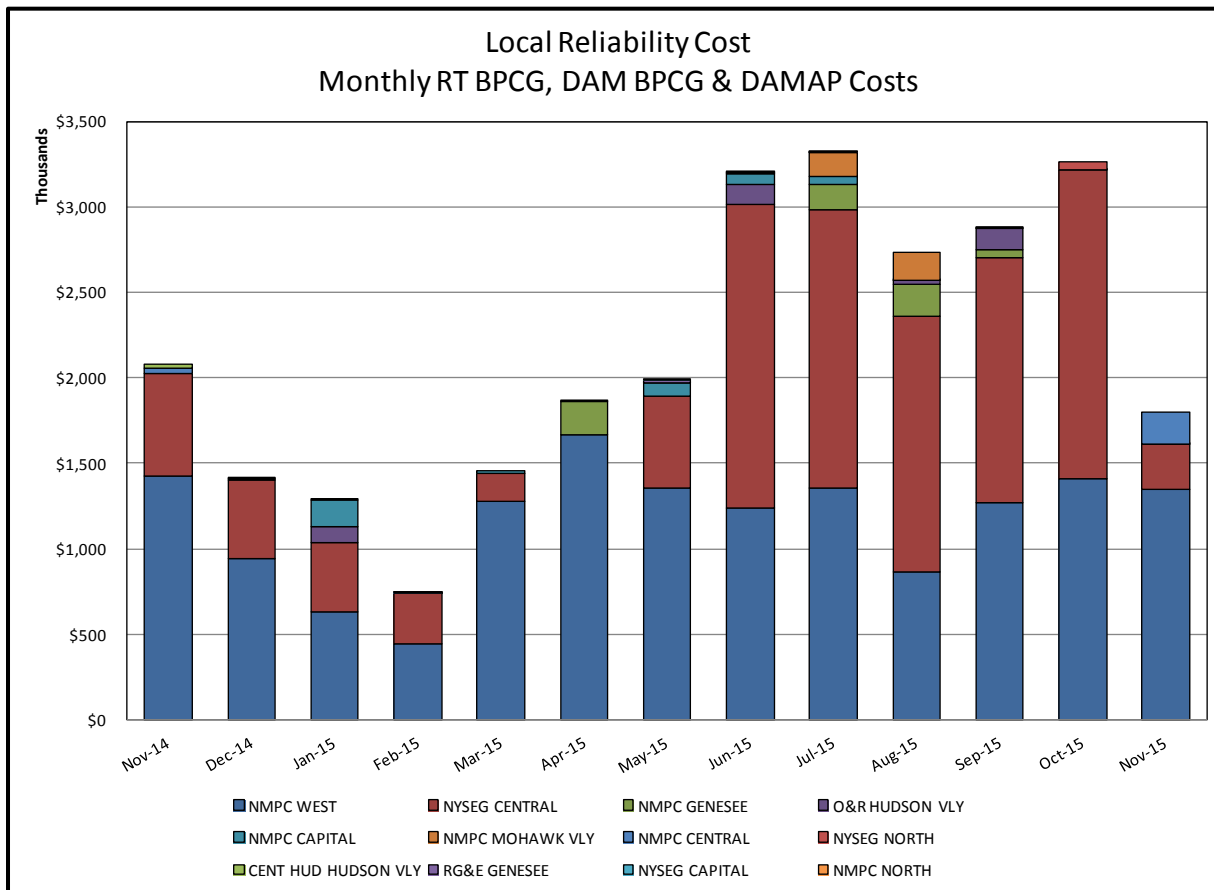


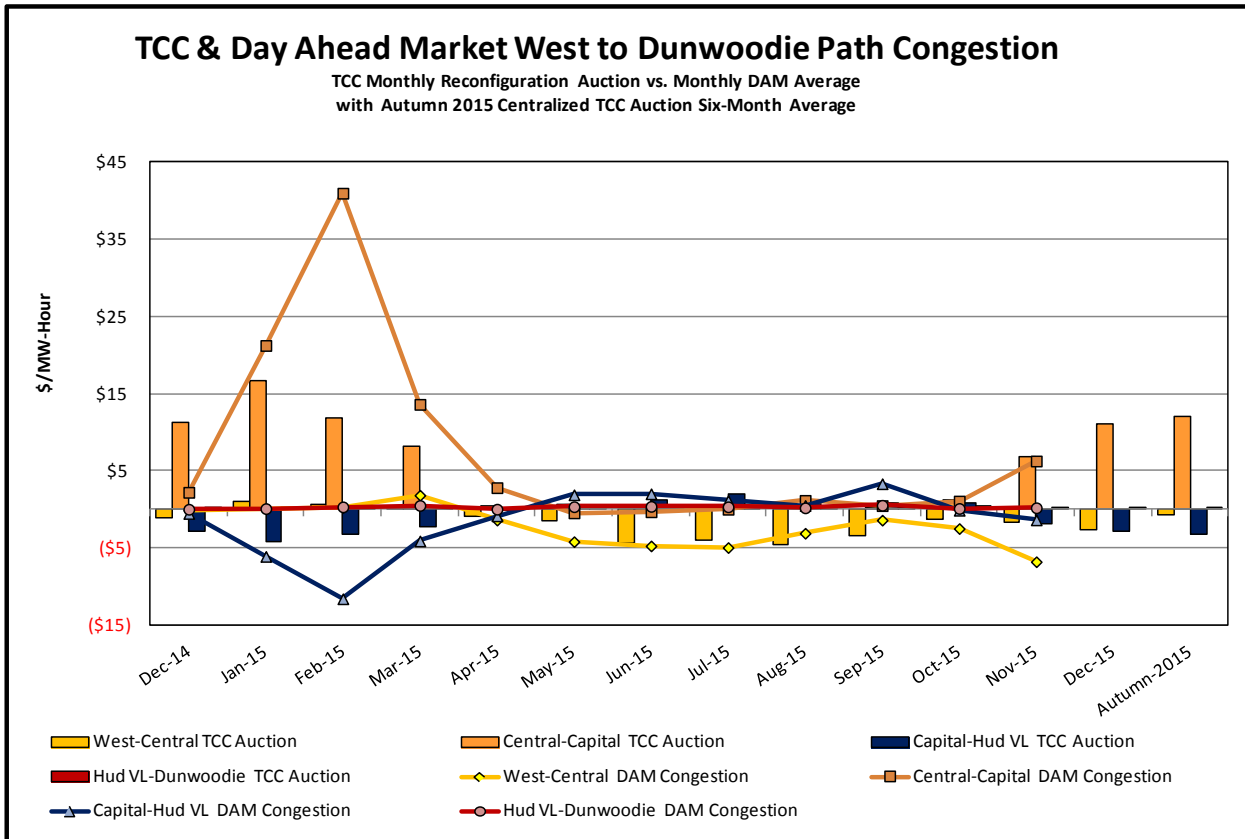
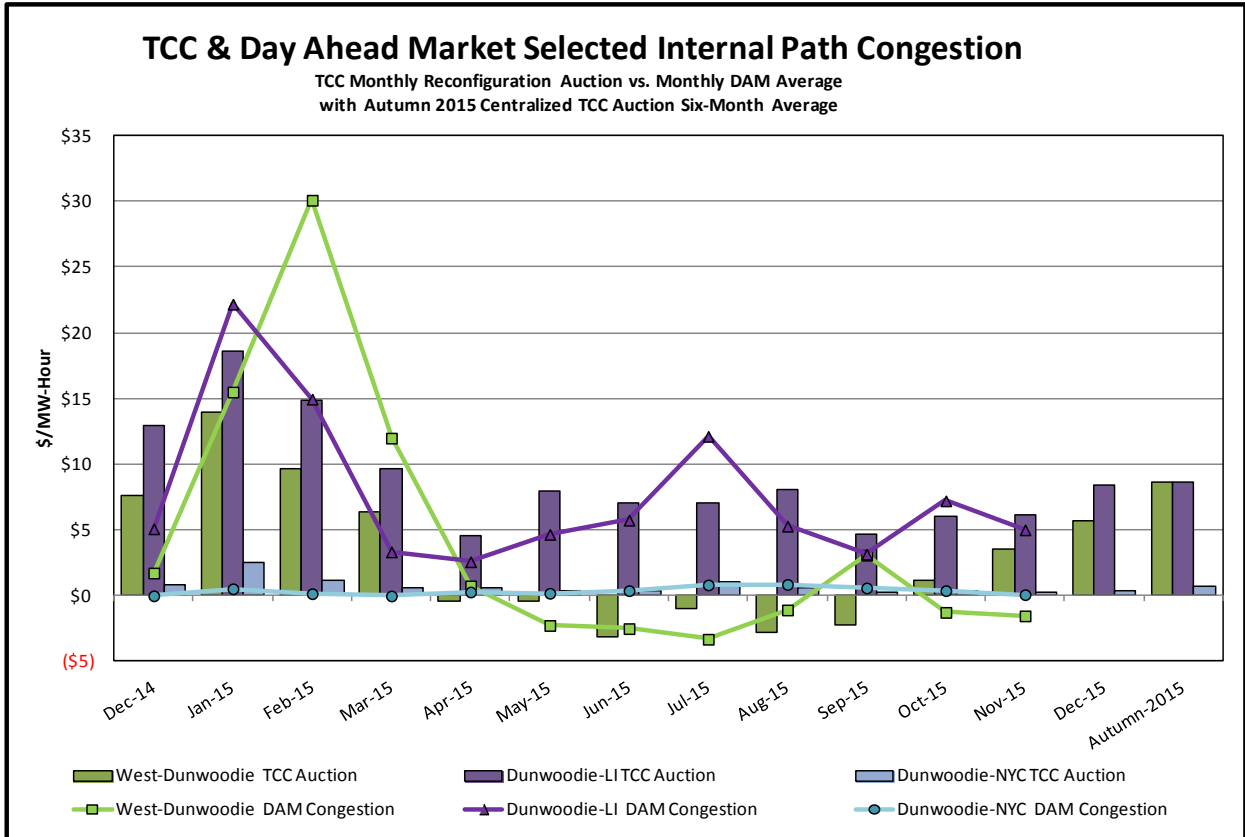
Day-Ahead Market Congestion Residual Categories

<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.	









TCC & Day Ahead Market Selected External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Autumn 2015 Centralized TCC Auction Six-Month Average

