



# Monthly Report

January 2014

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



## ***January 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 February 10, 2014.

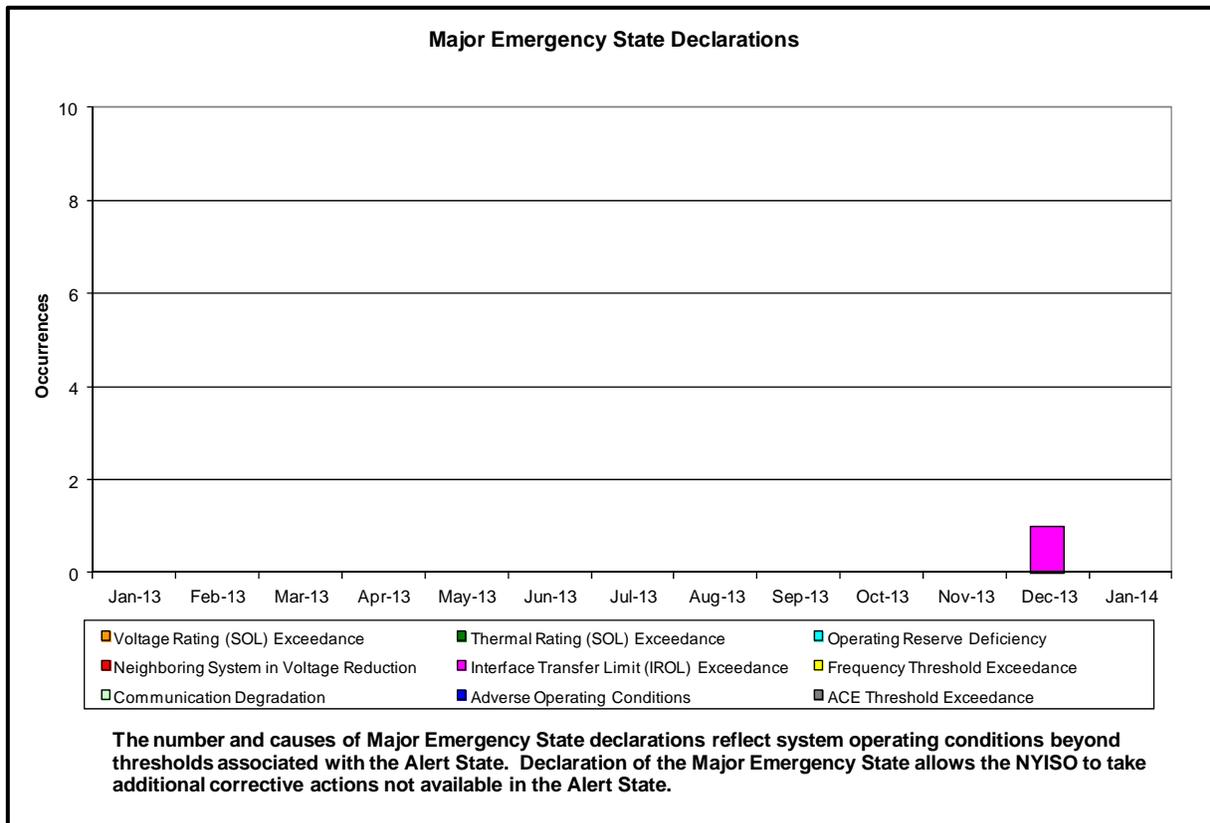
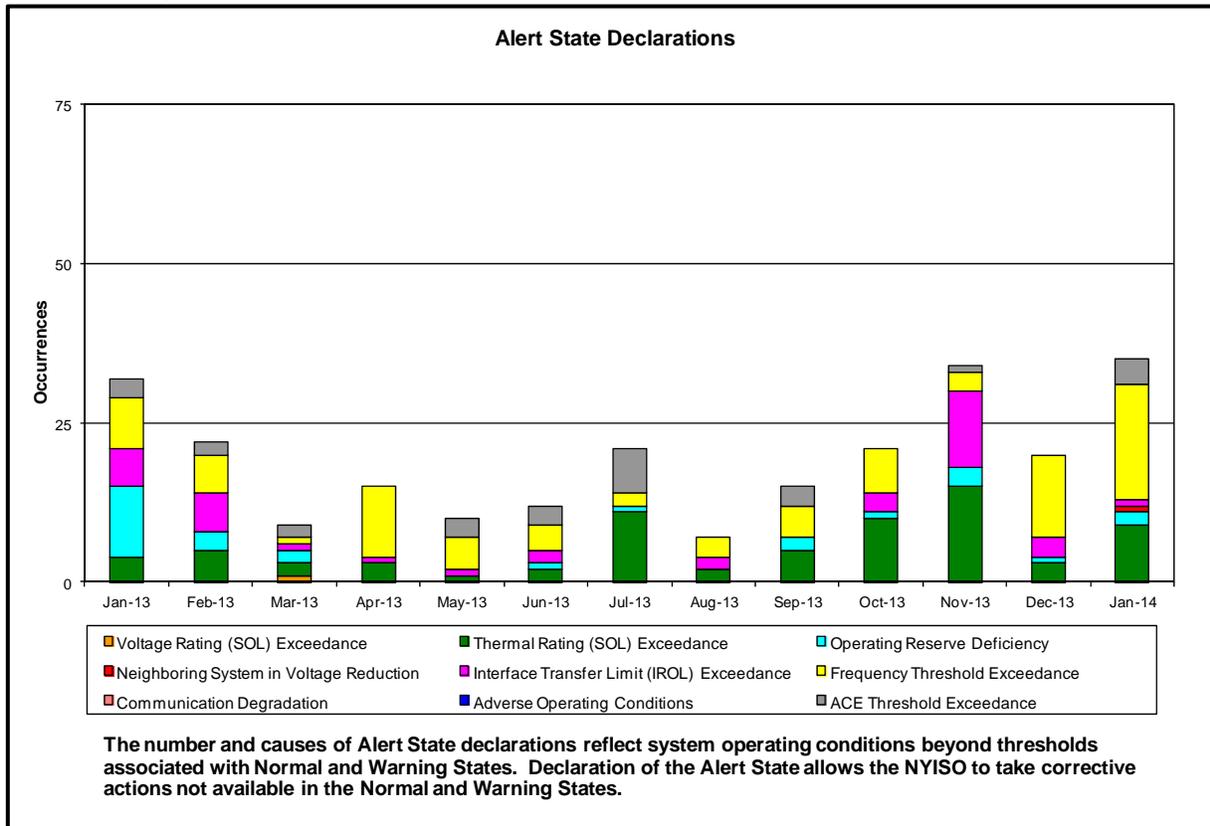
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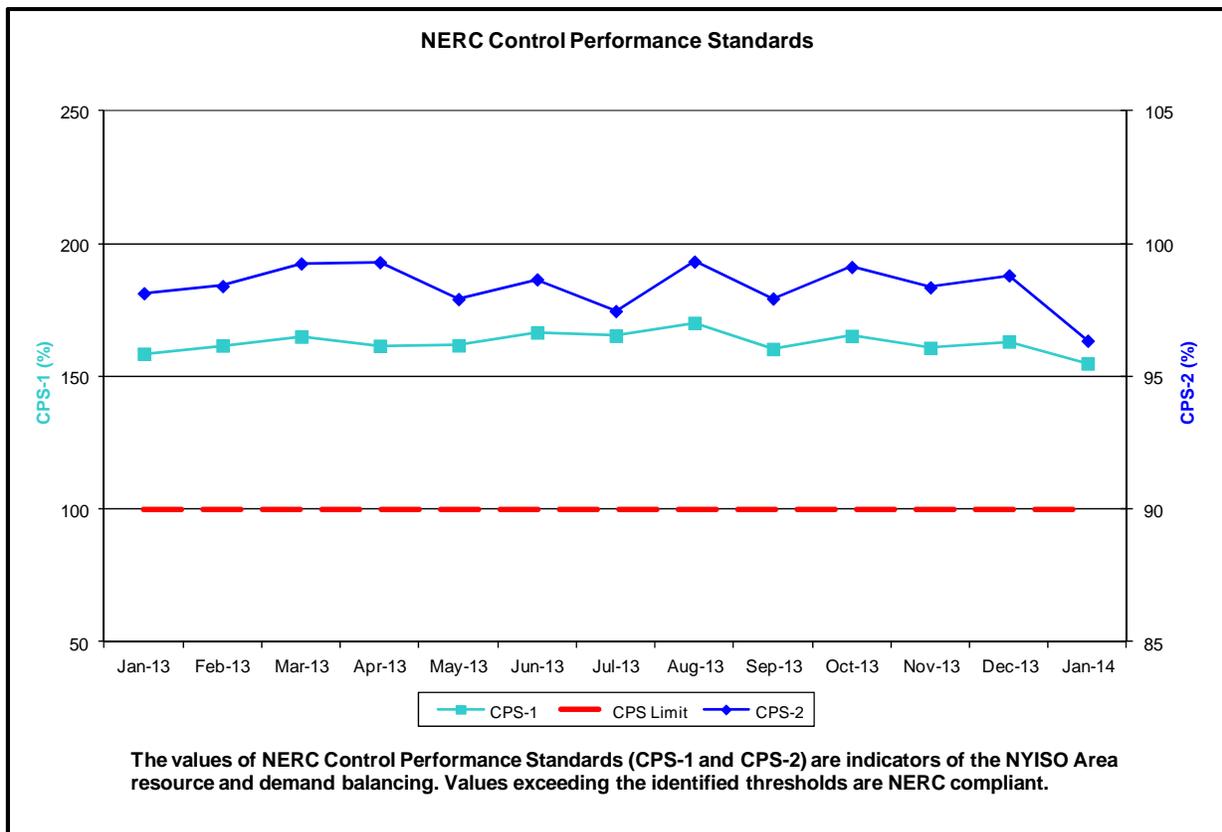
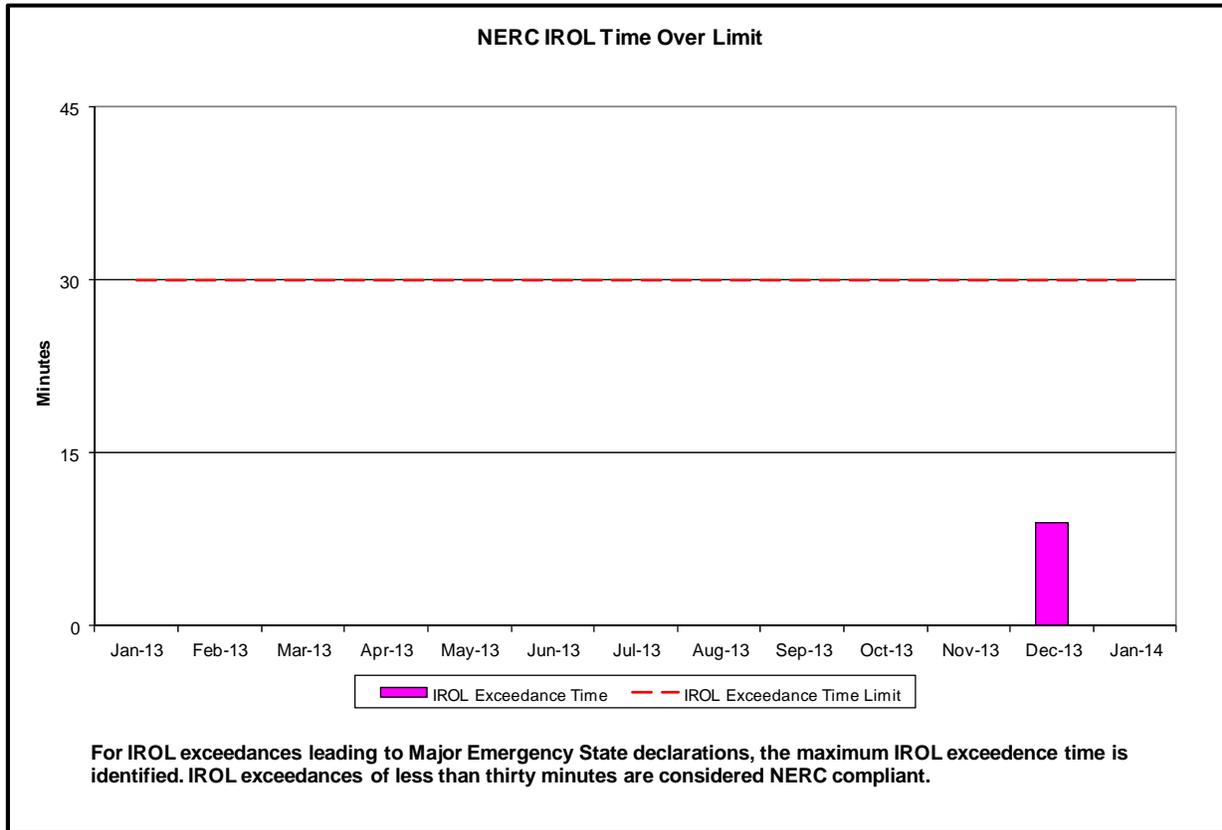
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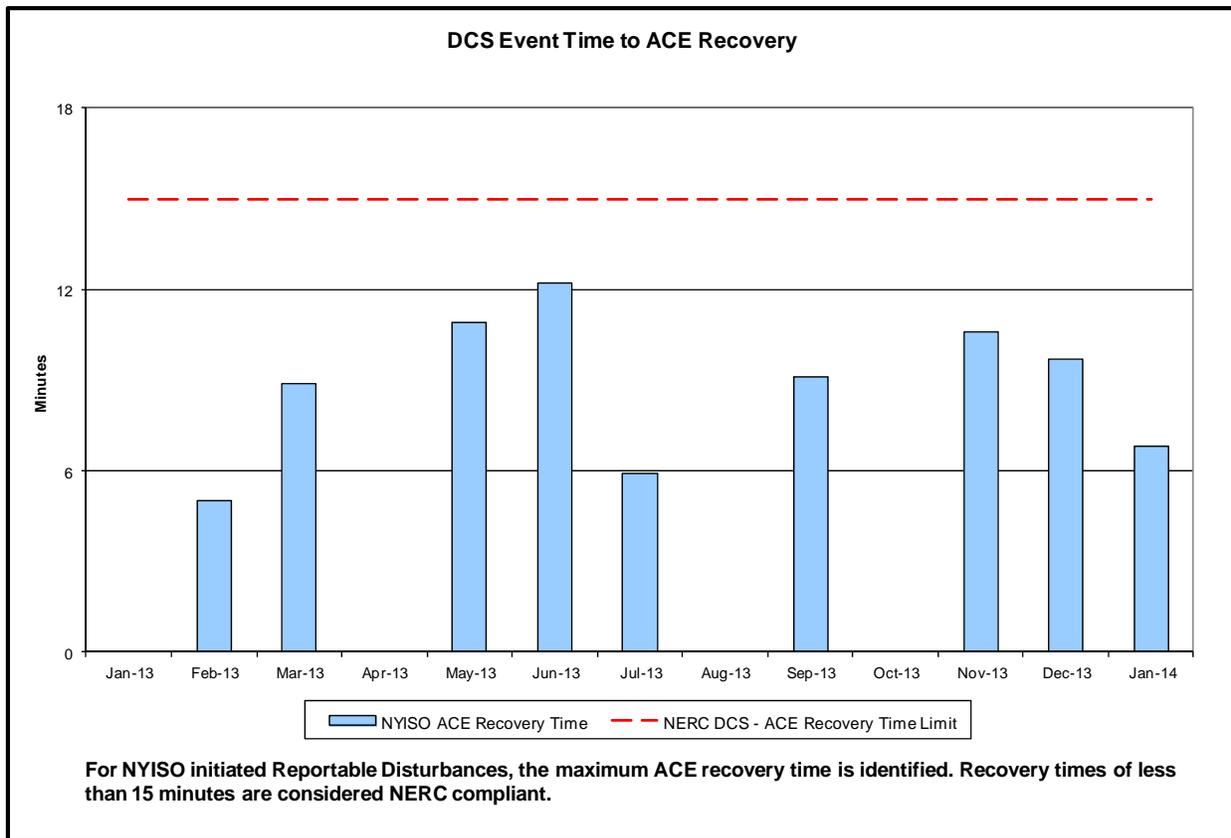
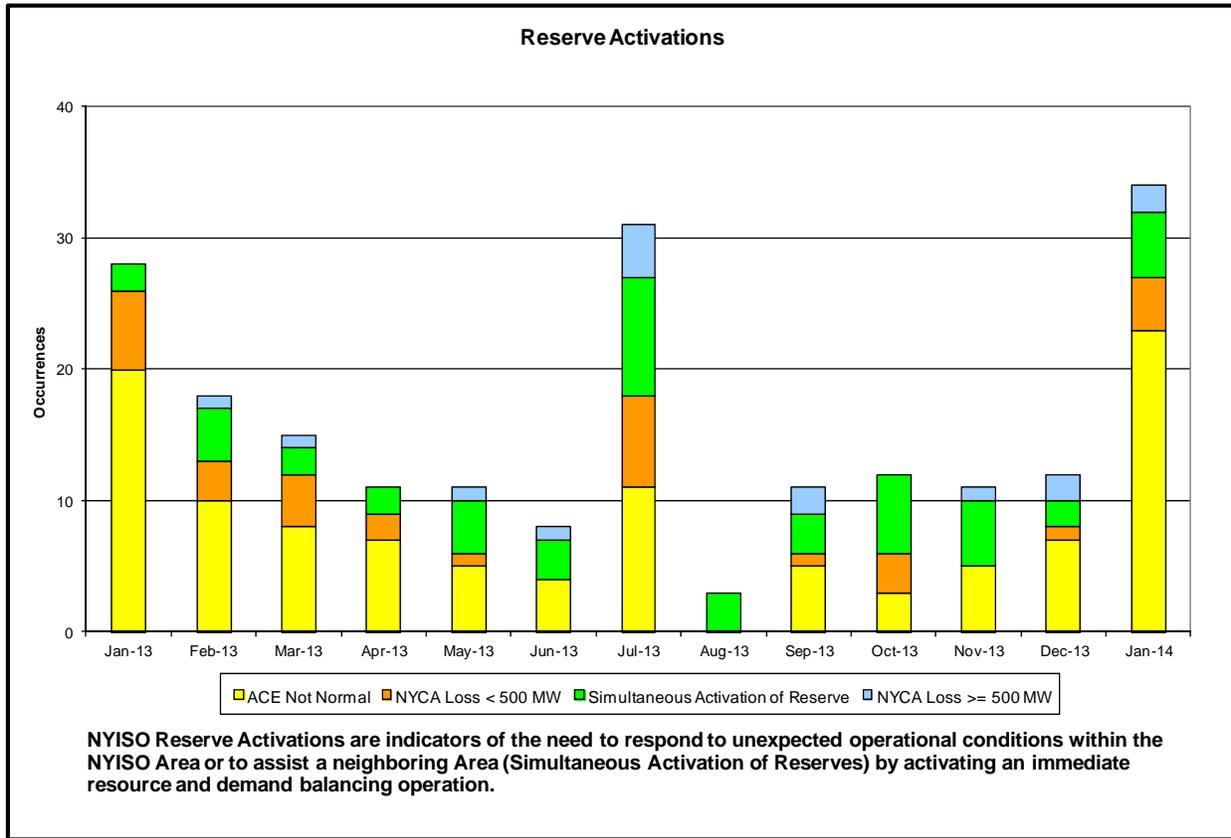
## January 2014 Operations Performance Highlights

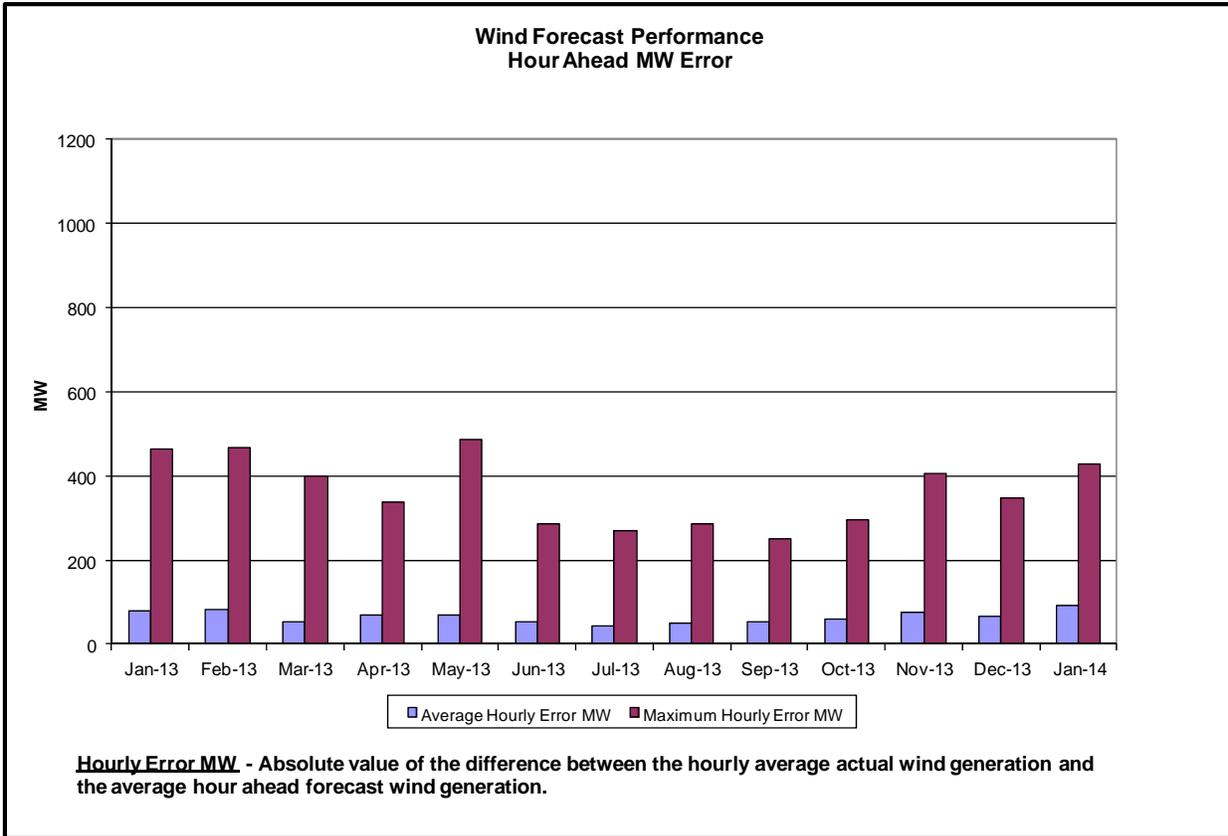
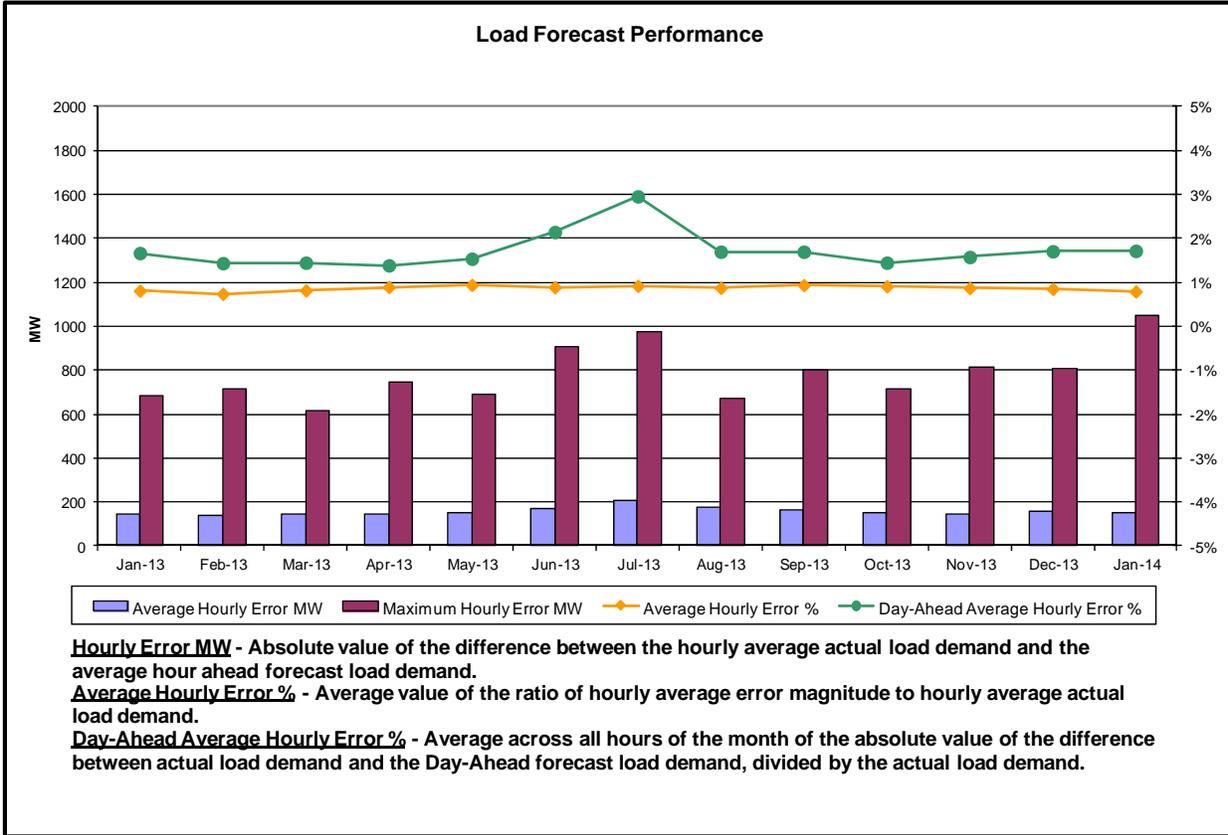
- Peak load of 25,738 MW occurred on 1/7/2014 HB 18
  - Demand response resources activated on 1/7/2014
- All-time winter capability period peak load of 25,738 MW occurred on 1/7/2014 HB 18
- 0 hours of Thunder Storm Alerts was declared
- 0 hours of NERC TLR level 3 curtailment
- Broader Regional Market Coordination monthly value was \$3.58M
- Broader Regional Market Coordination year-to-date value was \$3.58M
- Statewide uplift cost monthly average was \$(1.73)/MWh
- Local reliability uplift cost monthly average was \$1.38/MWh

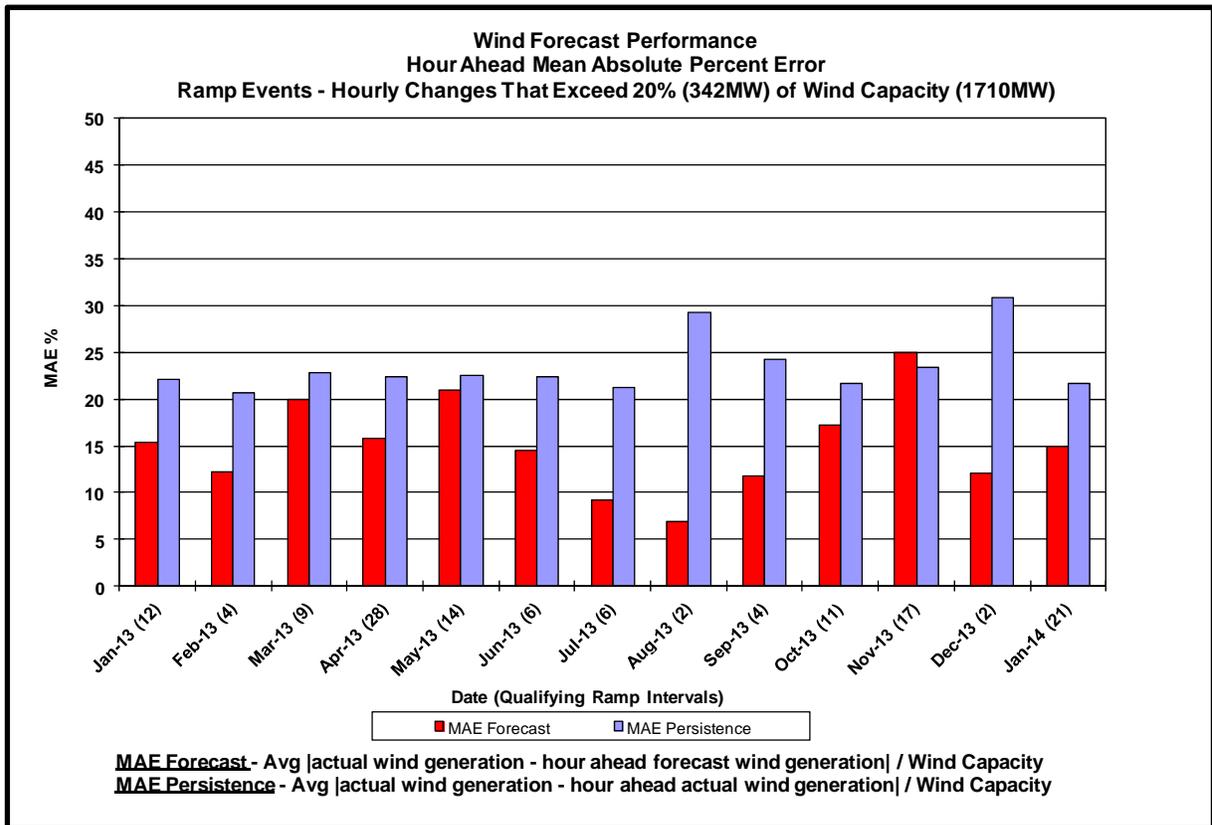
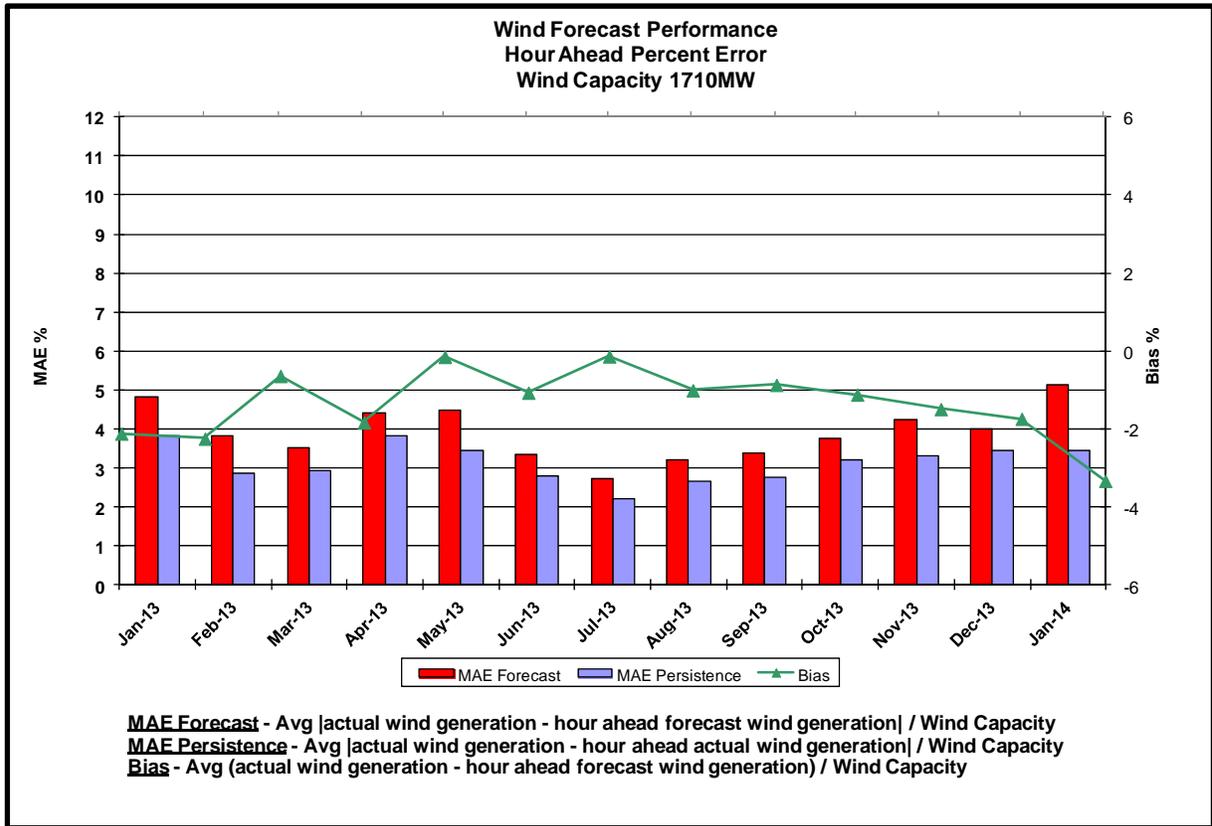
- Reliability Performance Metrics

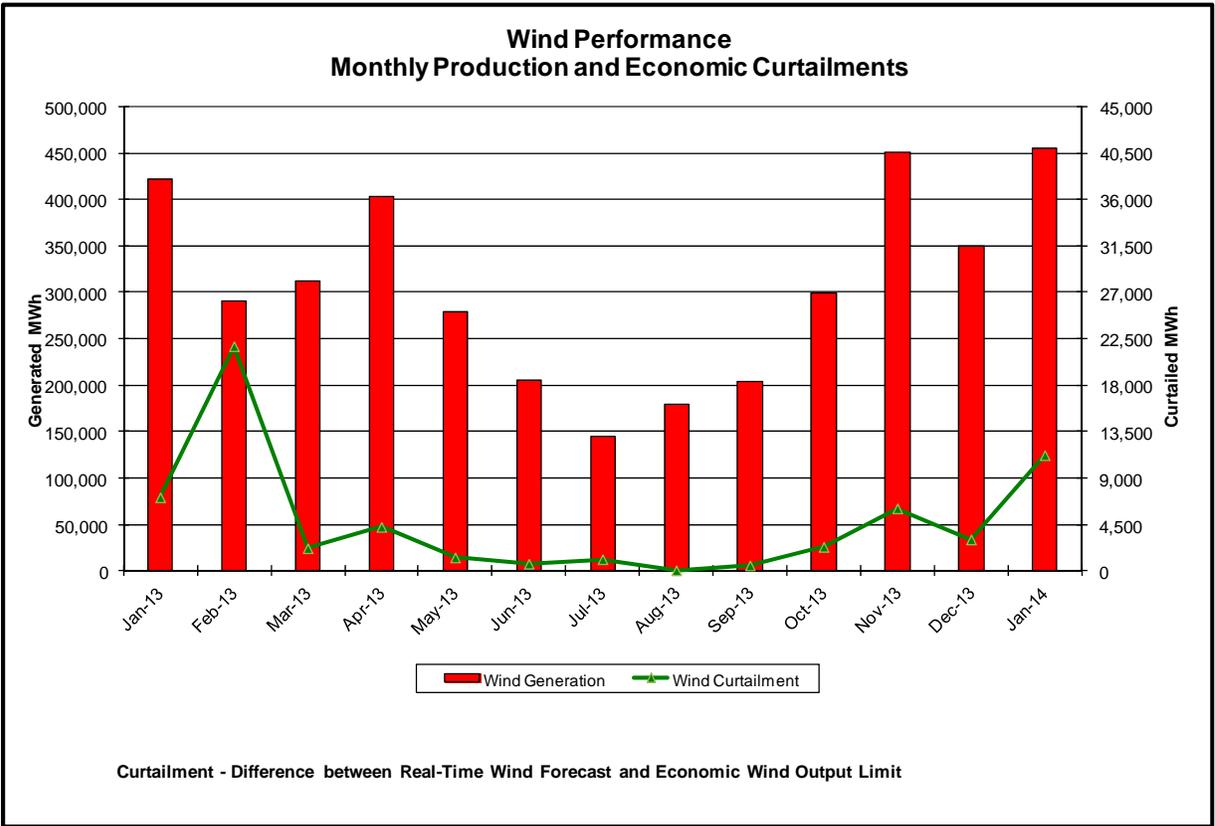
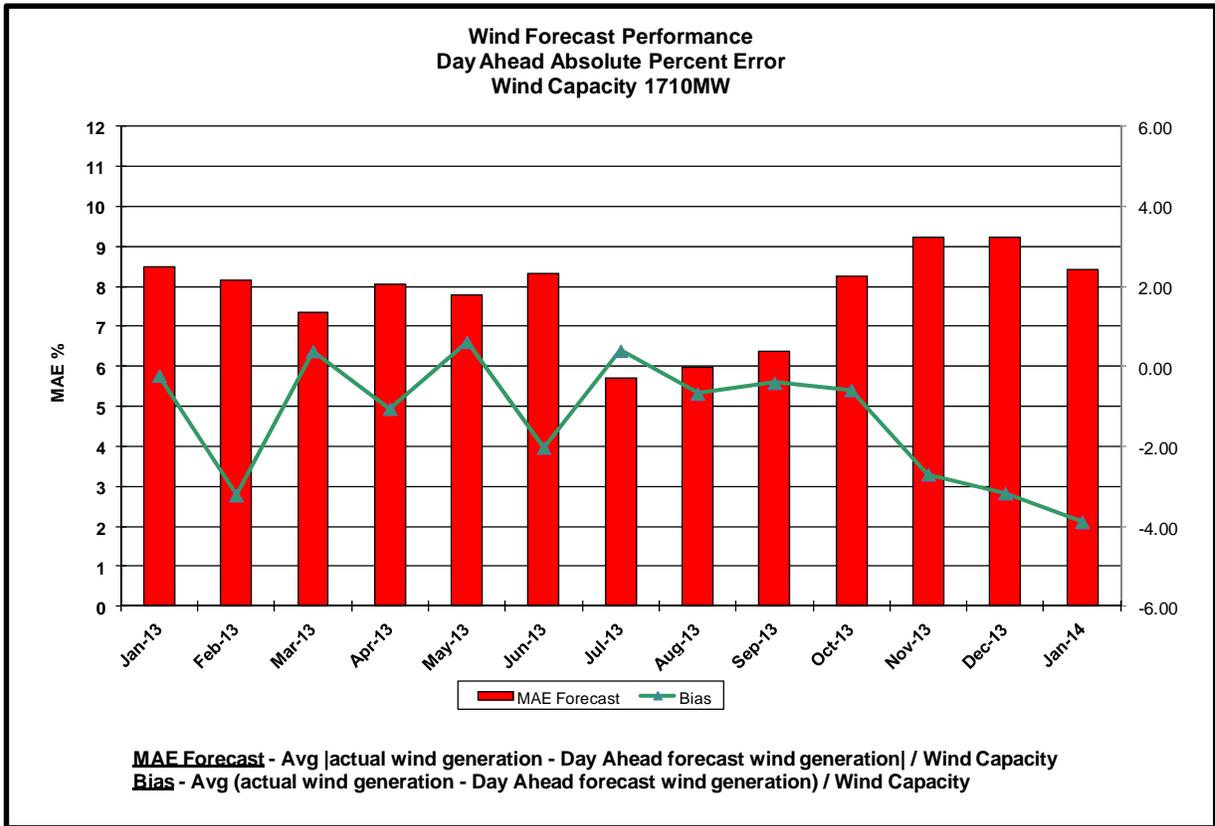


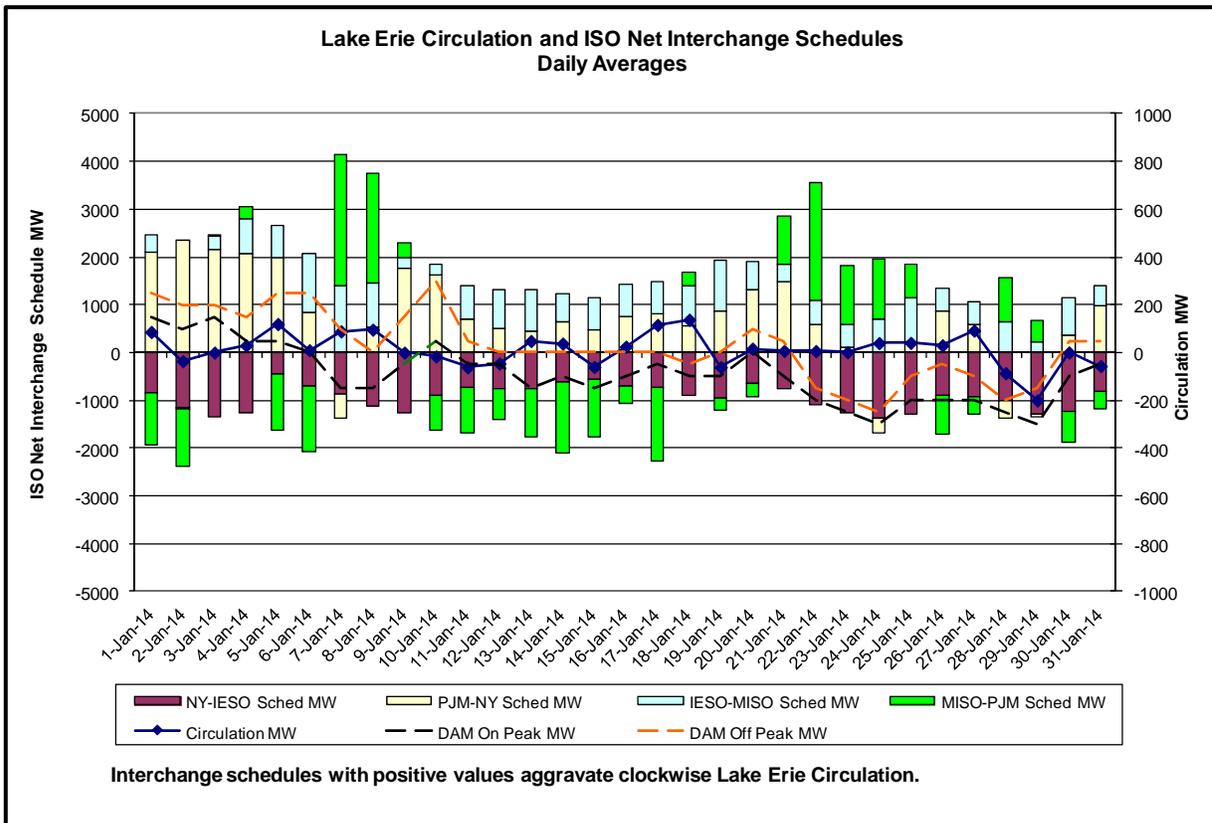
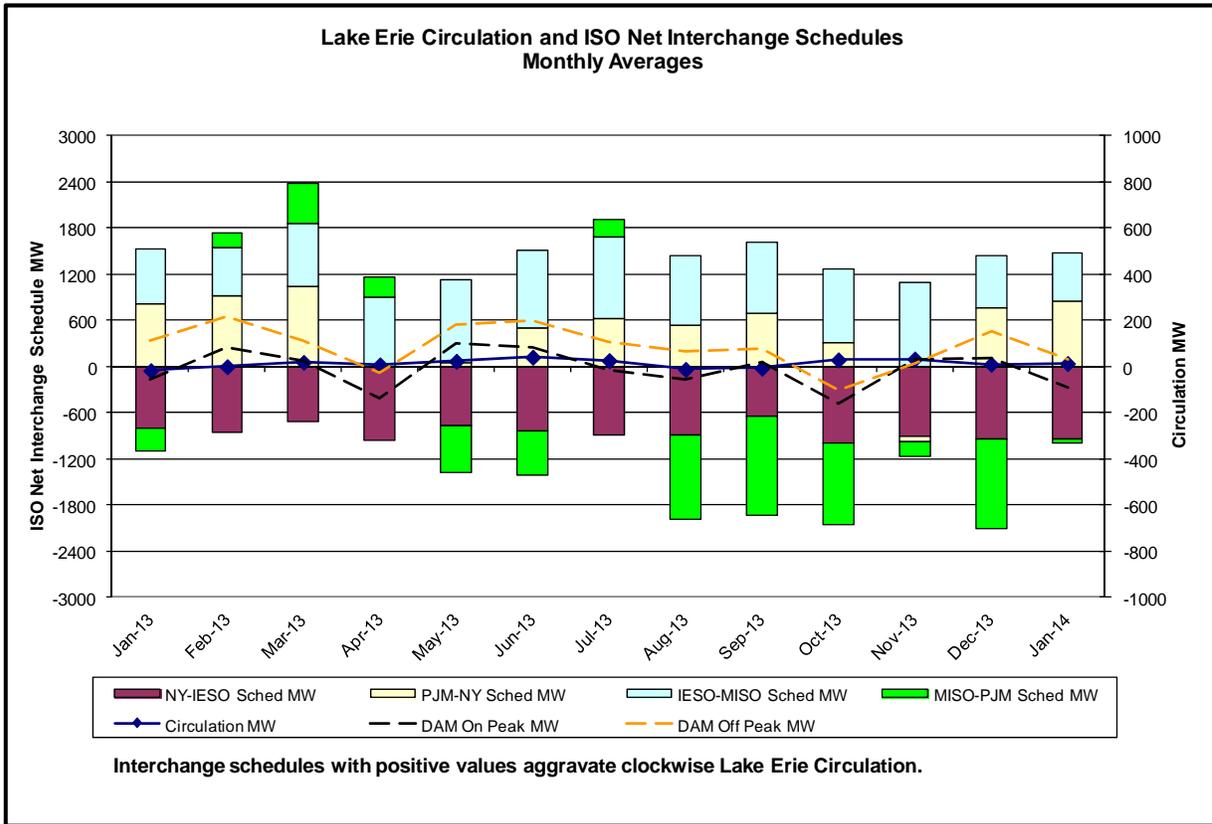




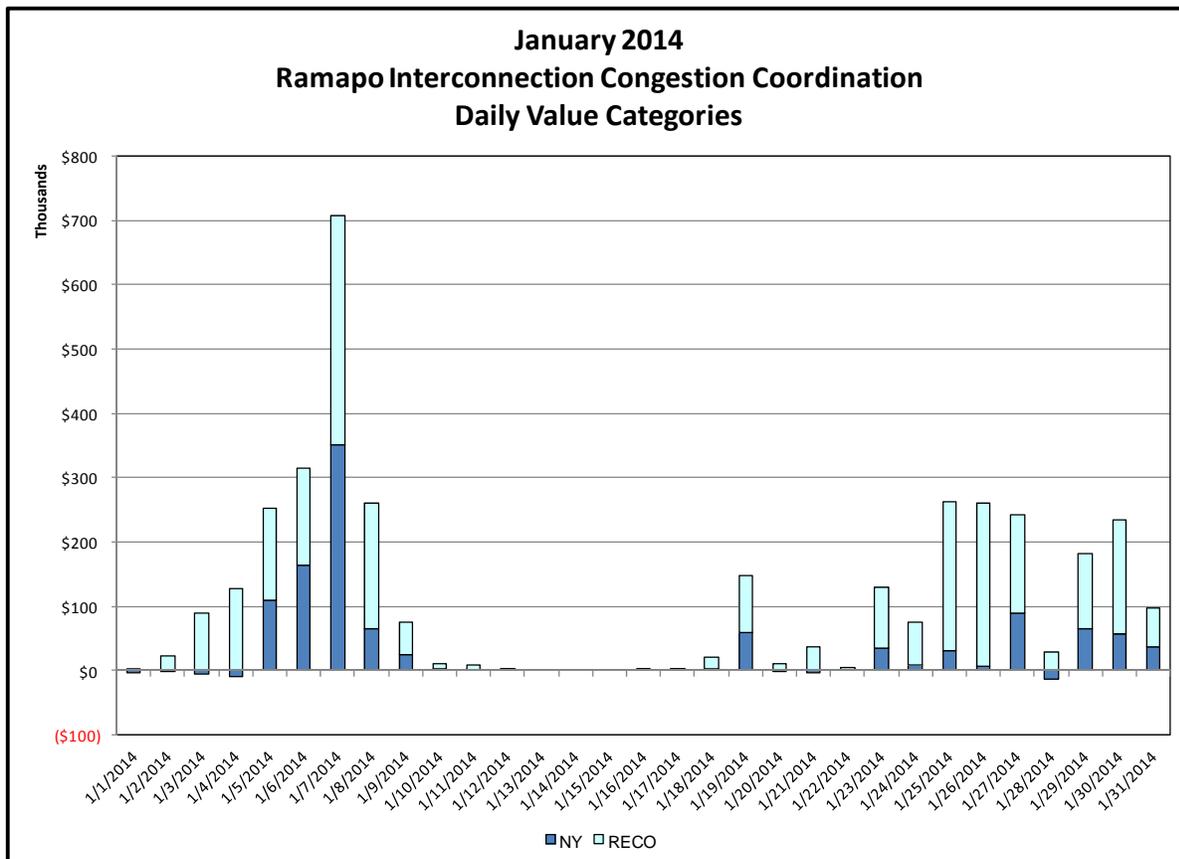
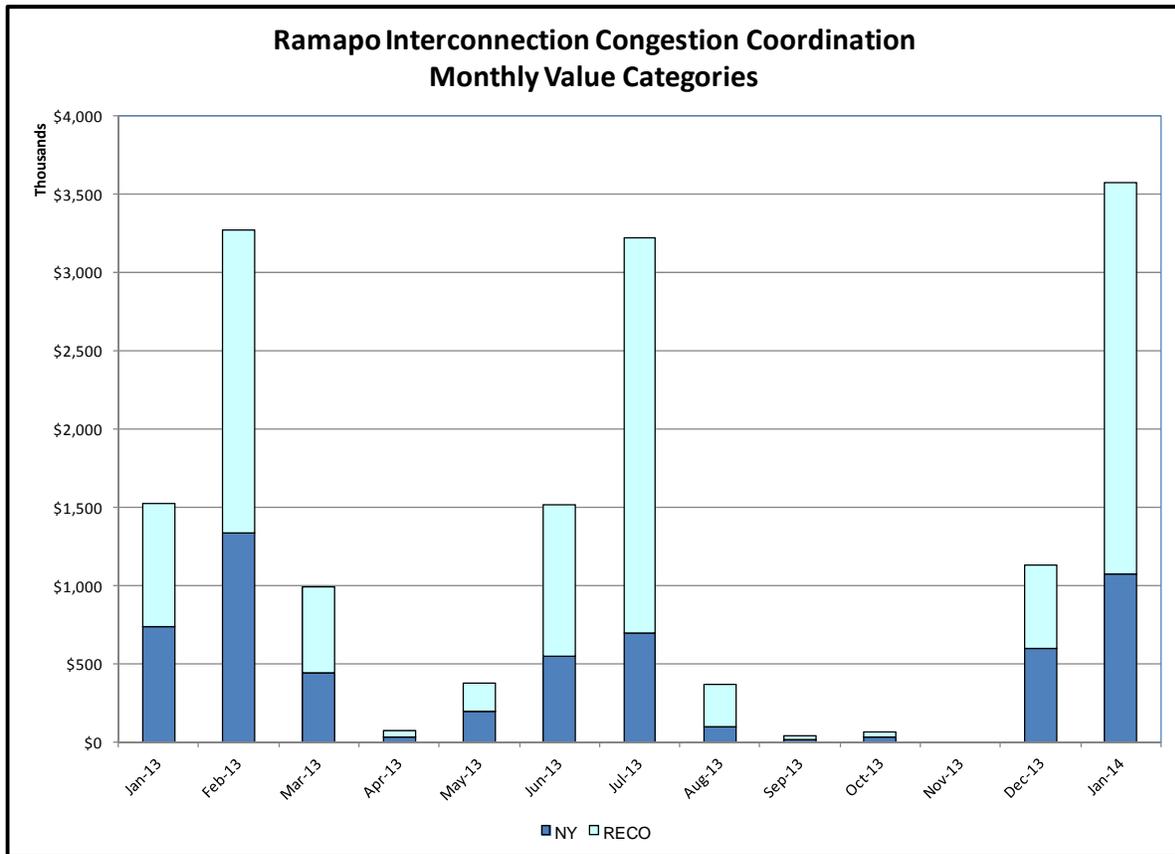






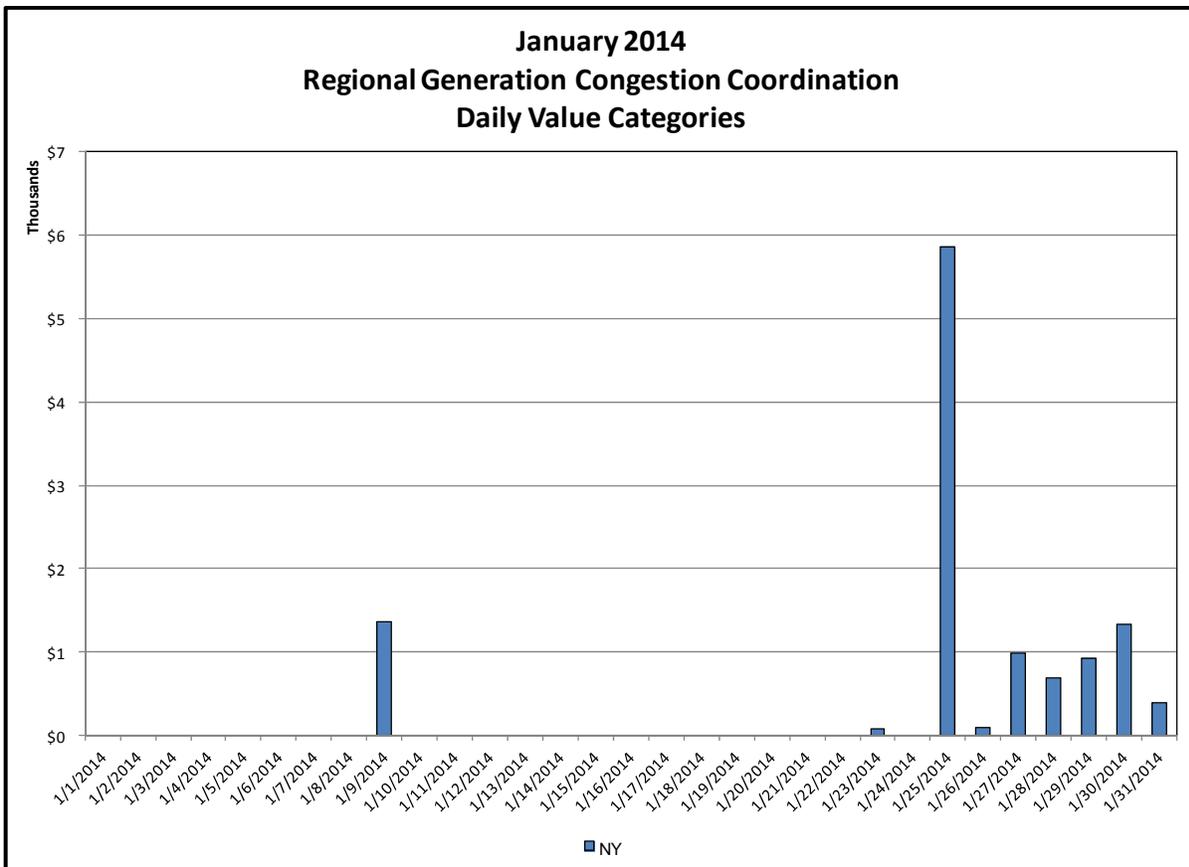
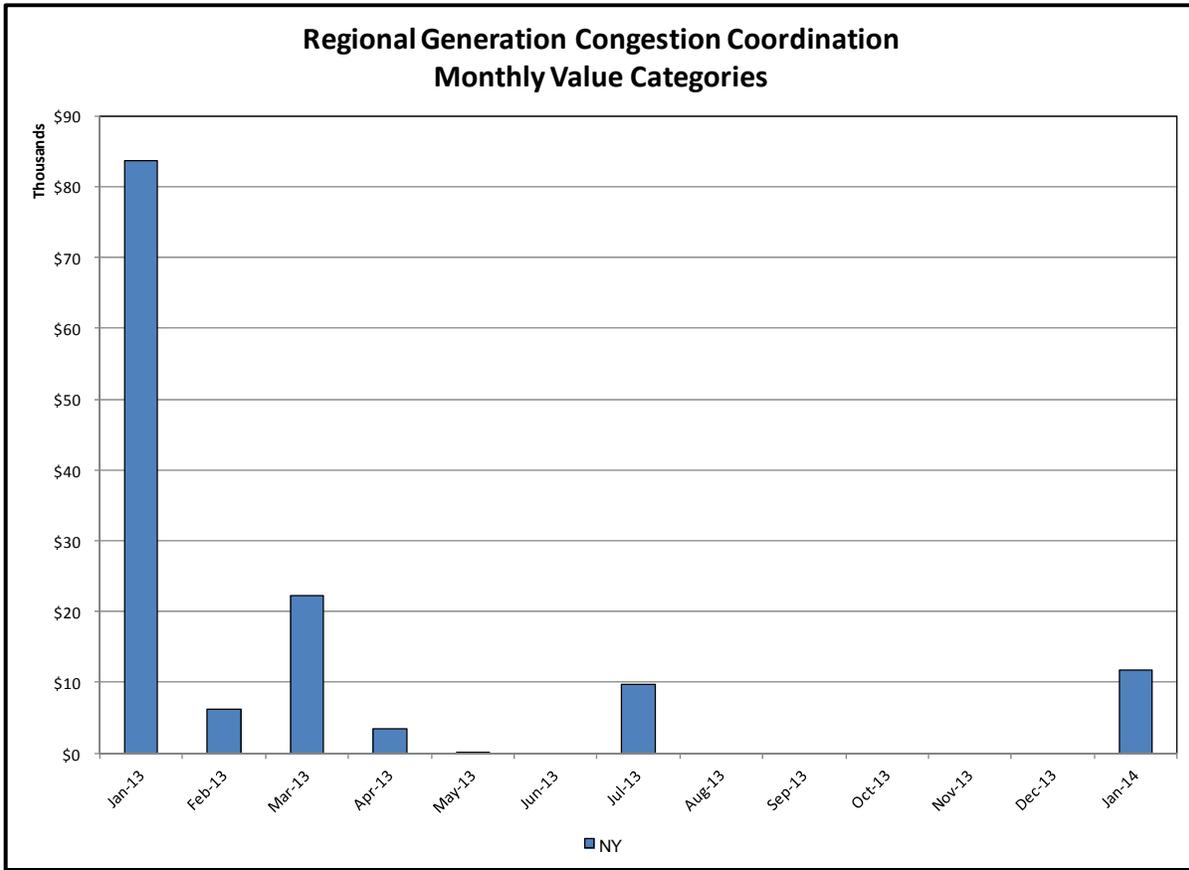


## Broader Regional Market Performance Metrics



**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

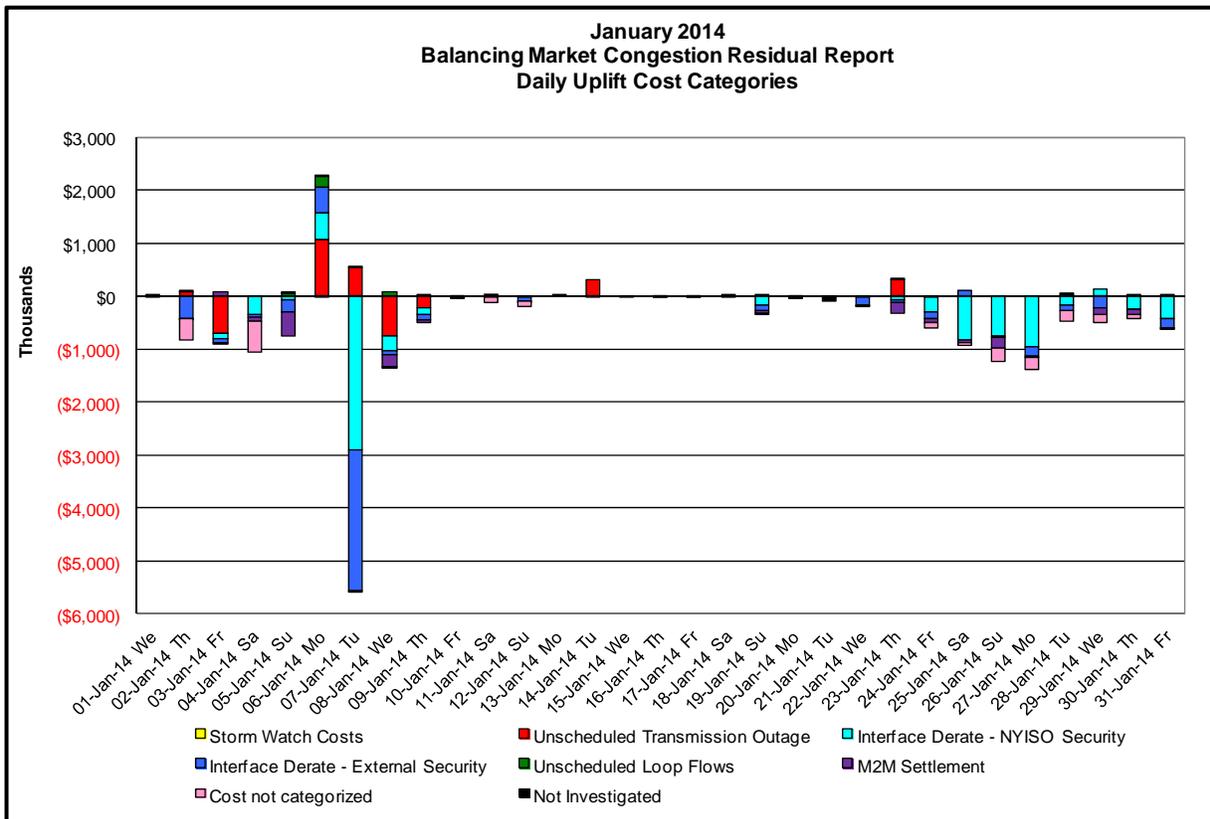
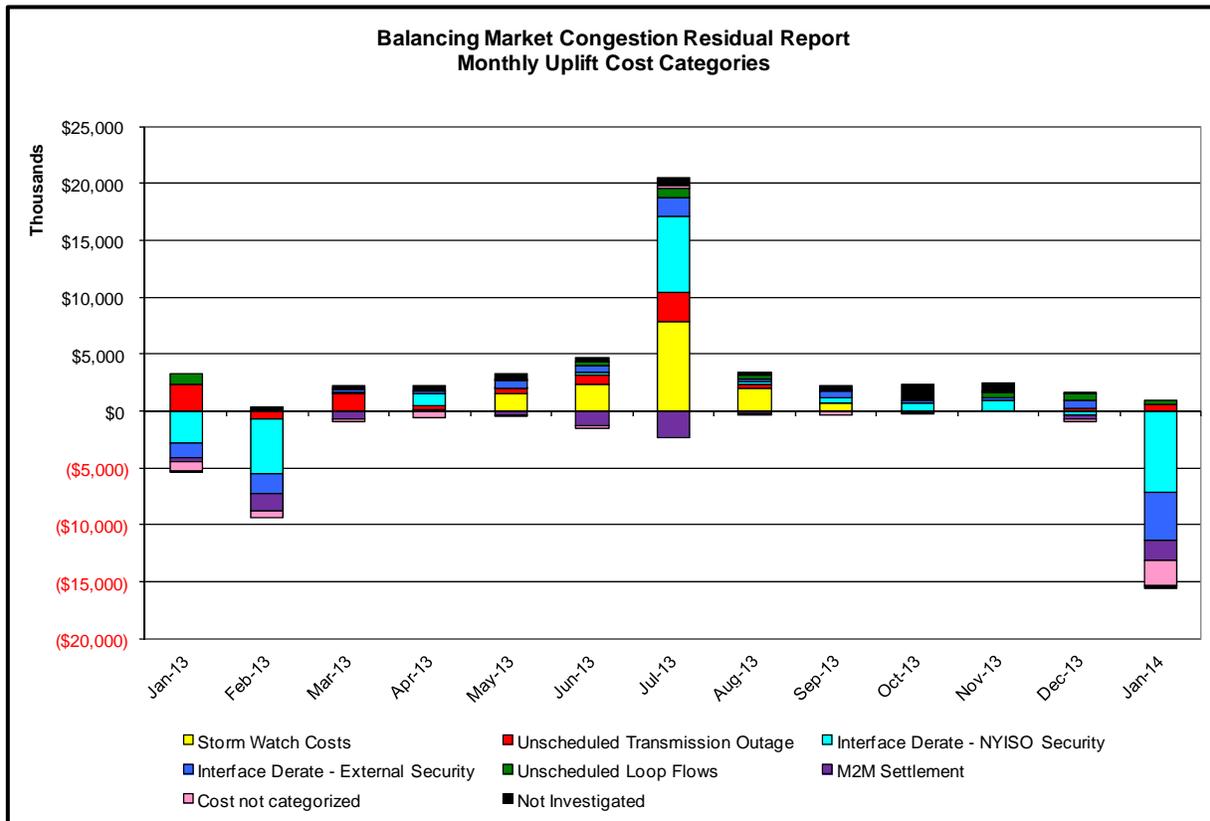
Category

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



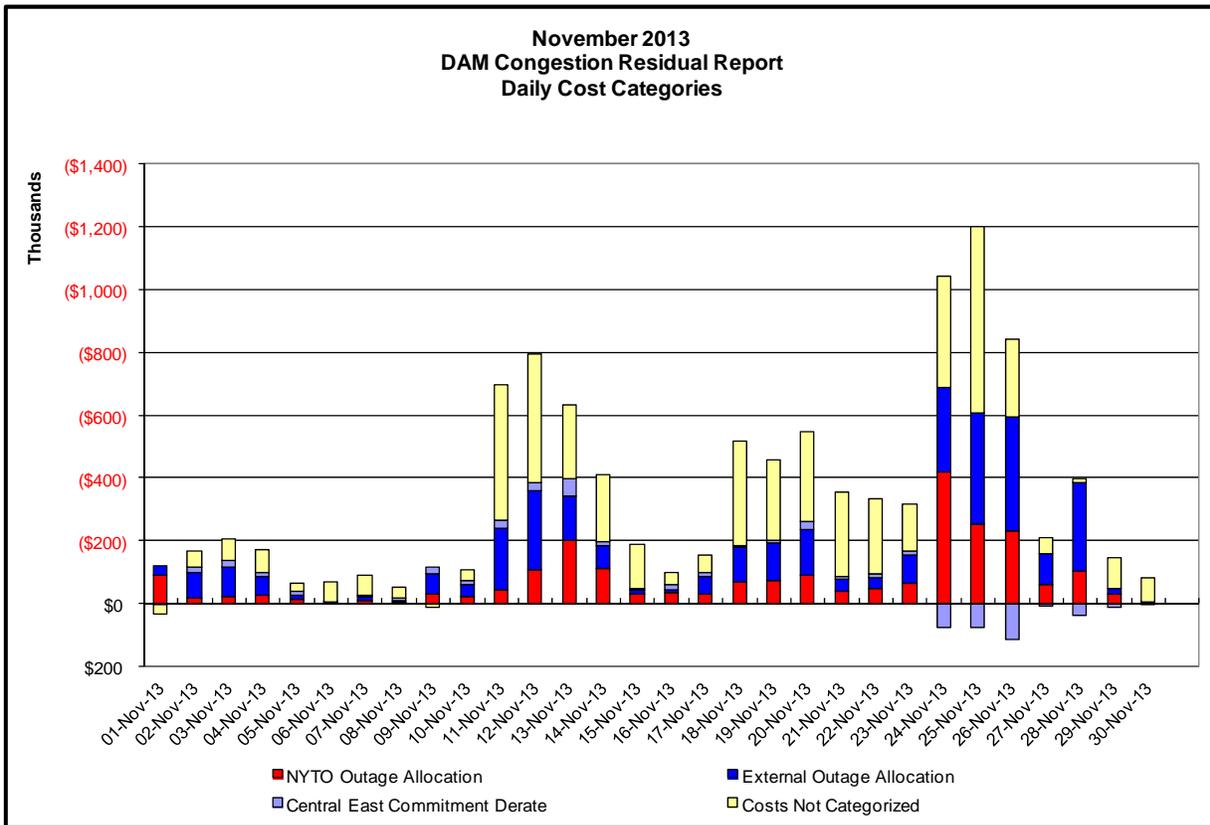
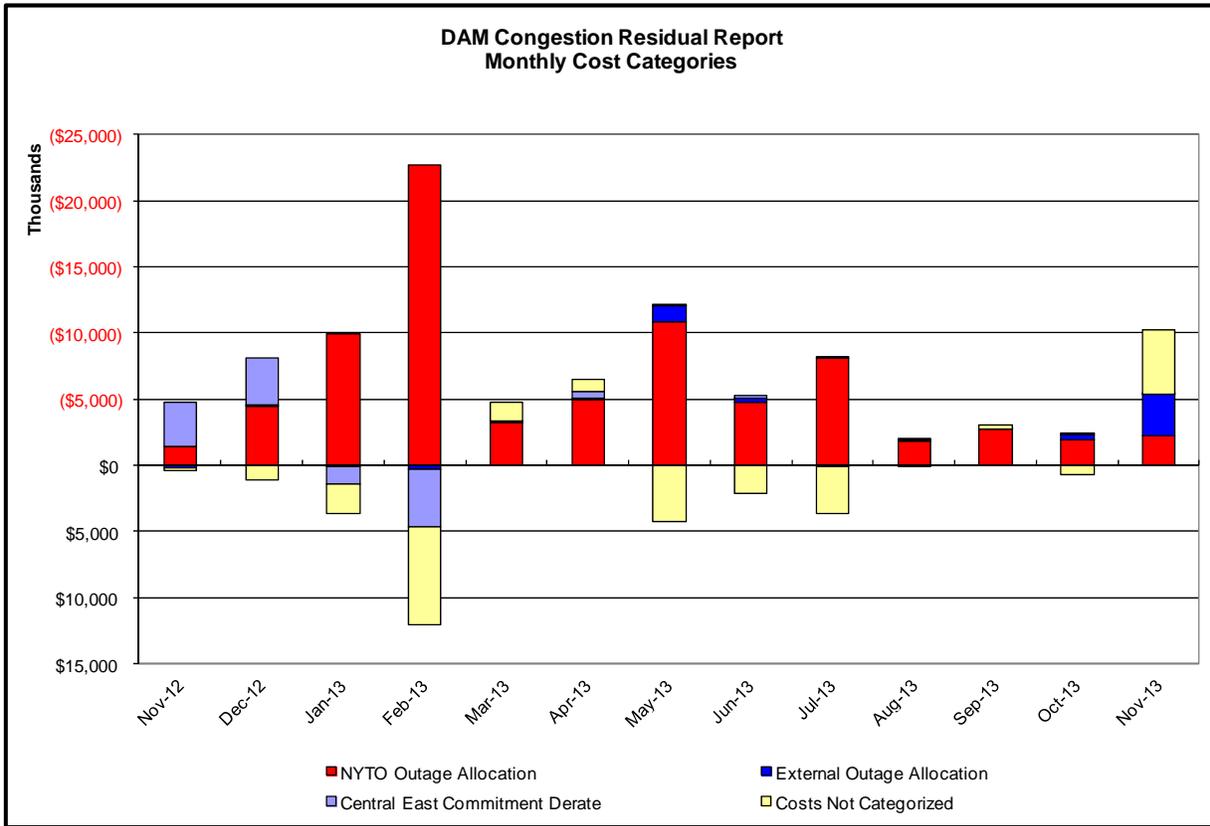
Event	Description	January Dates
	Early return to service Astoria Annex - East 13th Street 345kV (#Q35L)	24
	Early return to service Freeport-Barrett 138kV (#459)	8,9
	Early return to service Hudson-Farragut 345kV (#C3403)	3
	Extended outage Hudson-Farragut 345kV (#C3403)	2
	Extended outage Long Mountain-Pleasant Valley 345kV (#398)	14
	Forced outage PJM Neptune	3
	Forced outage Sprainbrook-East Garden City 345kV (#Y49)	6,7
	Forced outage Sprainbrook-West 49th Street 345kV (#M52)	23,24
	Forced outage Valley Stream-Jamaica 138kV (#901 L_M)	23
	Derate AstoriaE-Hellgate 138kv (#34052)	2
	Derate Central East	5,6,8,11,19,28,30
	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o SCB:SPBK(RNS2): Y49 & M29	3,5
	Derate Dysinger East	24
	Derate East 179th Street-HellGate East 138kV (#15054)	24,29
	Derate East Garden City-Valley Stream 138kV (#262) for I/o BUS:BARRETT 292 & 459 & G2	22,28,29,30
	Derate Farragut-Rainey 345kV (#61)	23,24
	Derate Farragut-Rainey 345kV (#63)	23
	Derate Freeport-Newbridge 138kV (#461)	2,7,22,28,30
	Derate Gardenville-Stolle Road 230kV (#66) for I/o TWR:GRADENVILLE 79 & 80	6
	Derate Huntley-Sawyer 230kV (#80) for I/o Sawyer-SUNY BUF 230kV (#79)	28
	Derate Kent Avenue-Vernon 138kV (#31232-1)	23
	Derate Kent Avenue-Vernon 138kV (31232-1) for I/o SCB:GOWANUS(16):42&26	23,24
	Derate Kent Avenue-Vernon 138kV (31232-1) for I/o SCB:GOWANUS(22):42231&G27&BEC	23
	Derate Kent Avenue-Vernon 138kV (31232-1) for I/o SCB:GOWANUS(8):26&CG&VFT	24
	Derate Kent Ave-Vernon 138kV (#31232-1) for I/o TWR:GOETHALS 22& 21& A2253	7
	Derate MottHaven-Dunwoodie 345kV (#71) for I/o MottHaven-Dunwoodie 345kV (#72)	24,29
	Derate Niagara-Packard 230kV (#61) for I/o TWR:PACKARD 62 & BP76	6
	Derate Queensbridge-Vernon 138kV (#31282)	23
	Derate Rainey-Vernon 138kV (#36311)	25
	Derate West 49th Street-Sprainbrook 345kV (#M51)	24
	Derate West 49th Street-Sprainbrook 345kV (#M51) for I/o SCB:SPBK(RS3):W75 & 99941	27-30
	NYCA DNI Ramp Limit	3-9,12,19,22-31
	Uprate Central East	3-9,19,22-31
	Uprate MottHaven-Dunwoodie 345kV (#71) for I/o MottHaven-Dunwoodie 345kV (#72)	27-29
	Uprate West 49th Street-Sprainbrook 345kV (#M51) for I/o SCB:SPBK(RS3):W75 & 99941	24-27,31
	HQ_CEDARS-NY Scheduling Limit	6,7,12
	HQ_CHAT DNI Ramp Limit	22-27,29,31
	HQ_CHAT Scheduling Limit	7,28
	IESO_AC DNI Ramp Limit	2,8,12,15,31
	IESO_AC-NY Scheduling Limit	2,7,9
	NE_AC - NY Scheduling Limit	4-6,9,19,31
	NE_AC DNI Ramp Limit	2,7,19,25,26,28
	NE_NNC1385 - NY Scheduling Limit	2,3,6-9,12,25
	PJM_AC DNI Ramp Limit	6-8,22-25,28,29
	PJM_AC-NY Scheduling Limit	2,7
	Lake Erie Clockwise Circulation, DAM-RTM exceeds 125MW; Central East	5,6,8,11,19,28,30,31

**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	

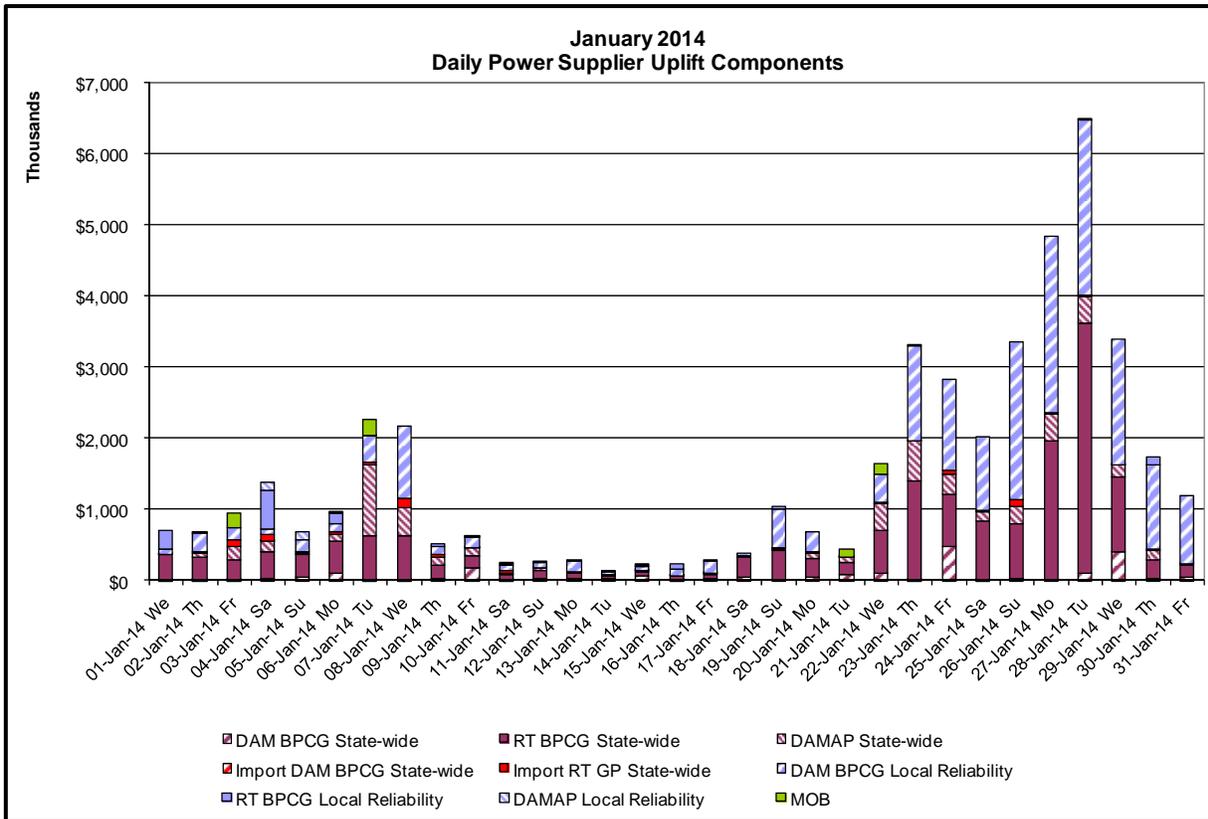
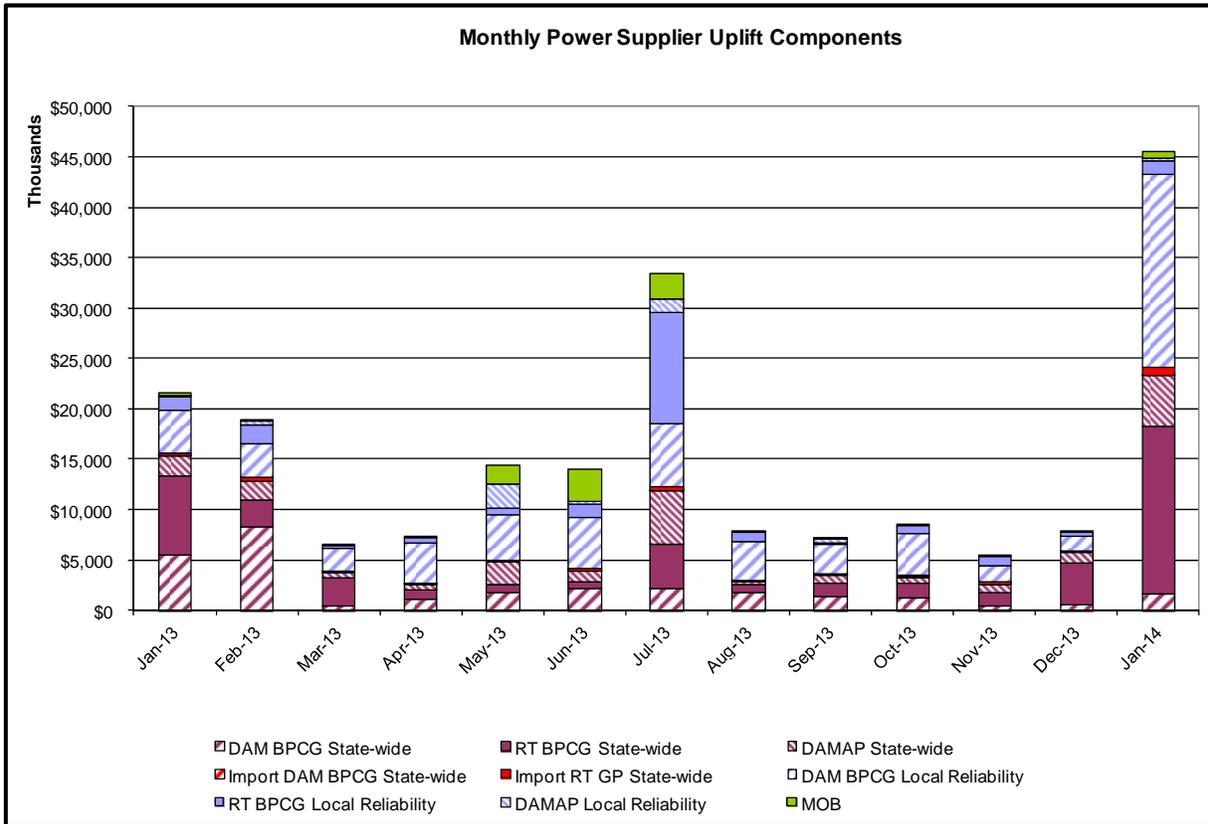
**Monthly Balancing Market Congestion Report Assumptions/Notes**

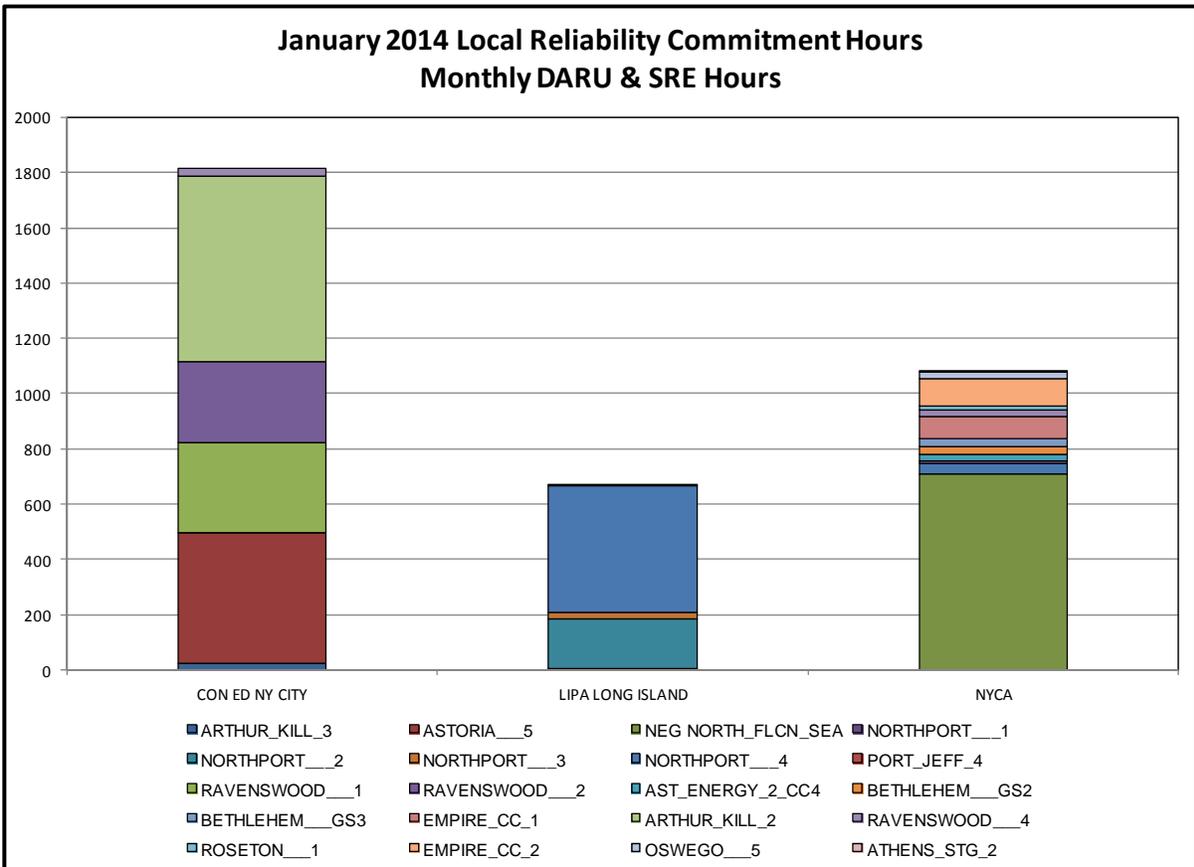
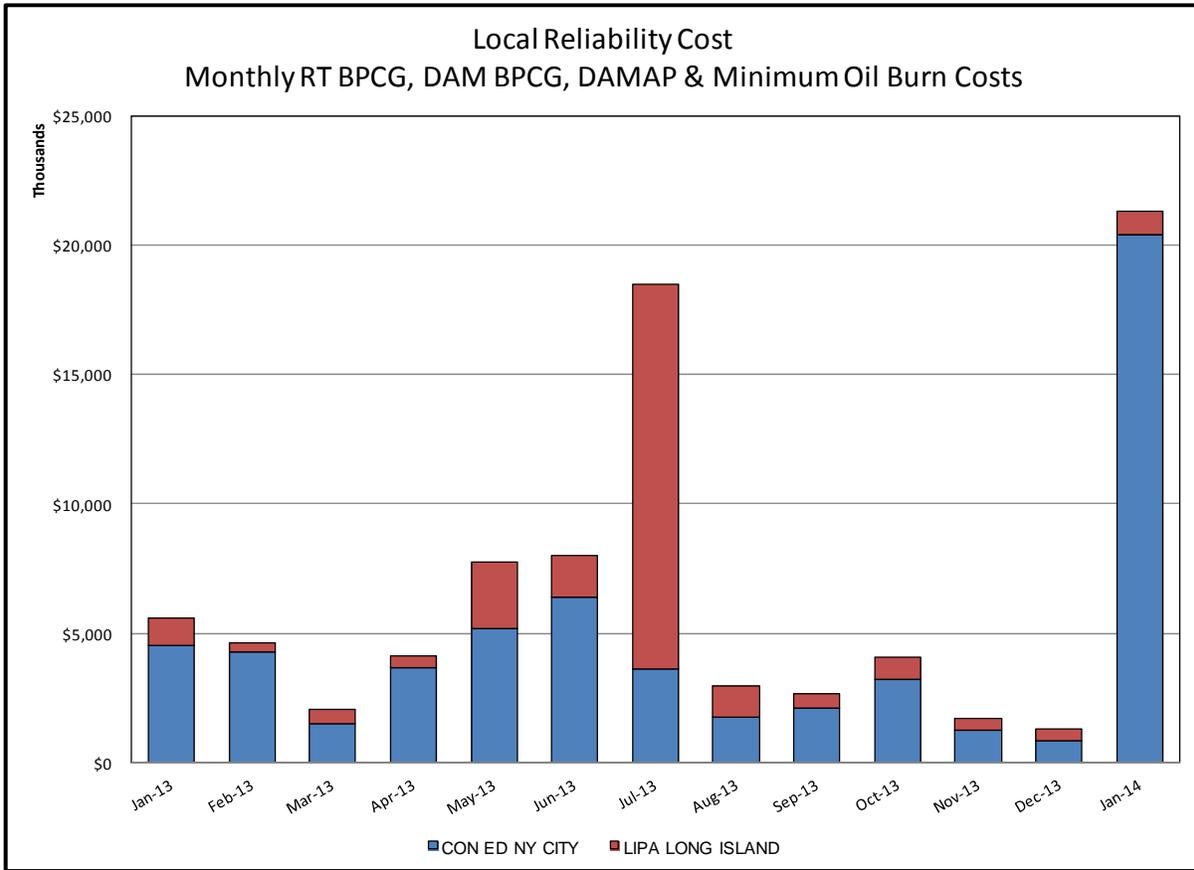
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

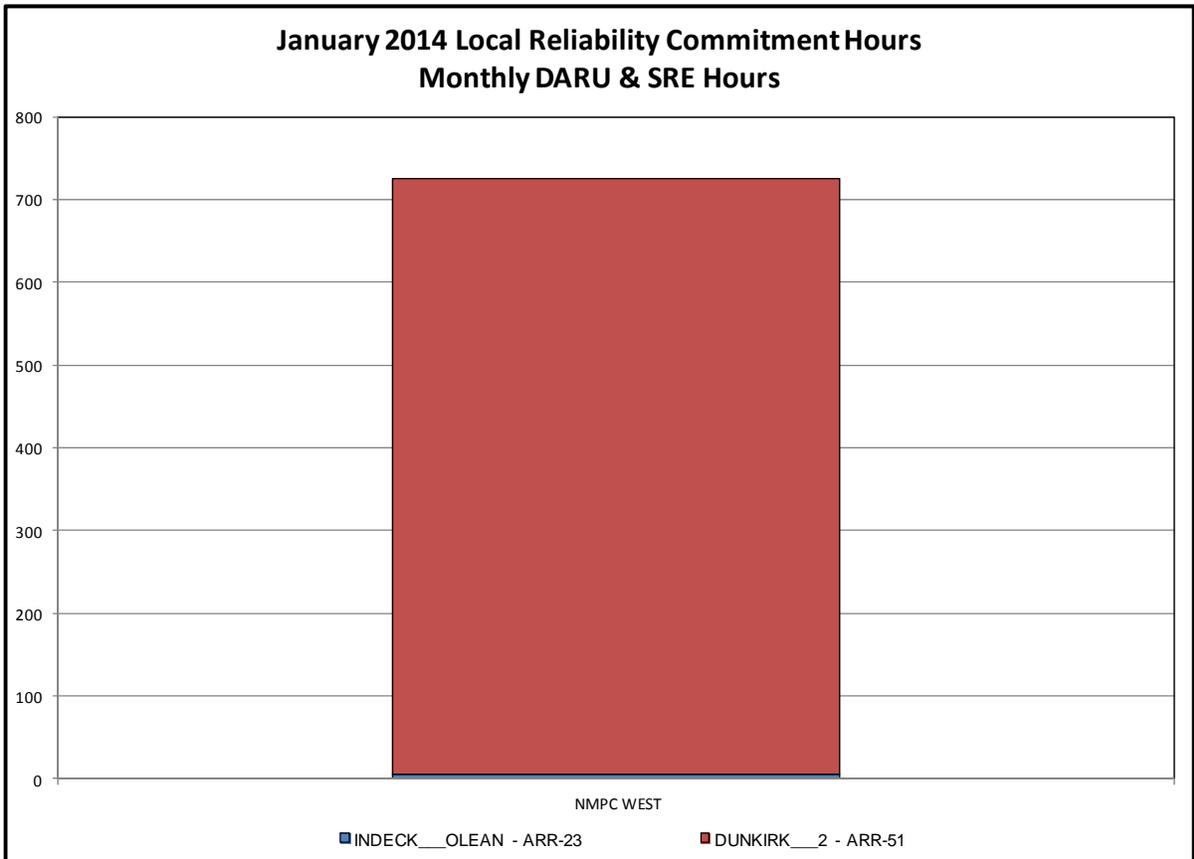
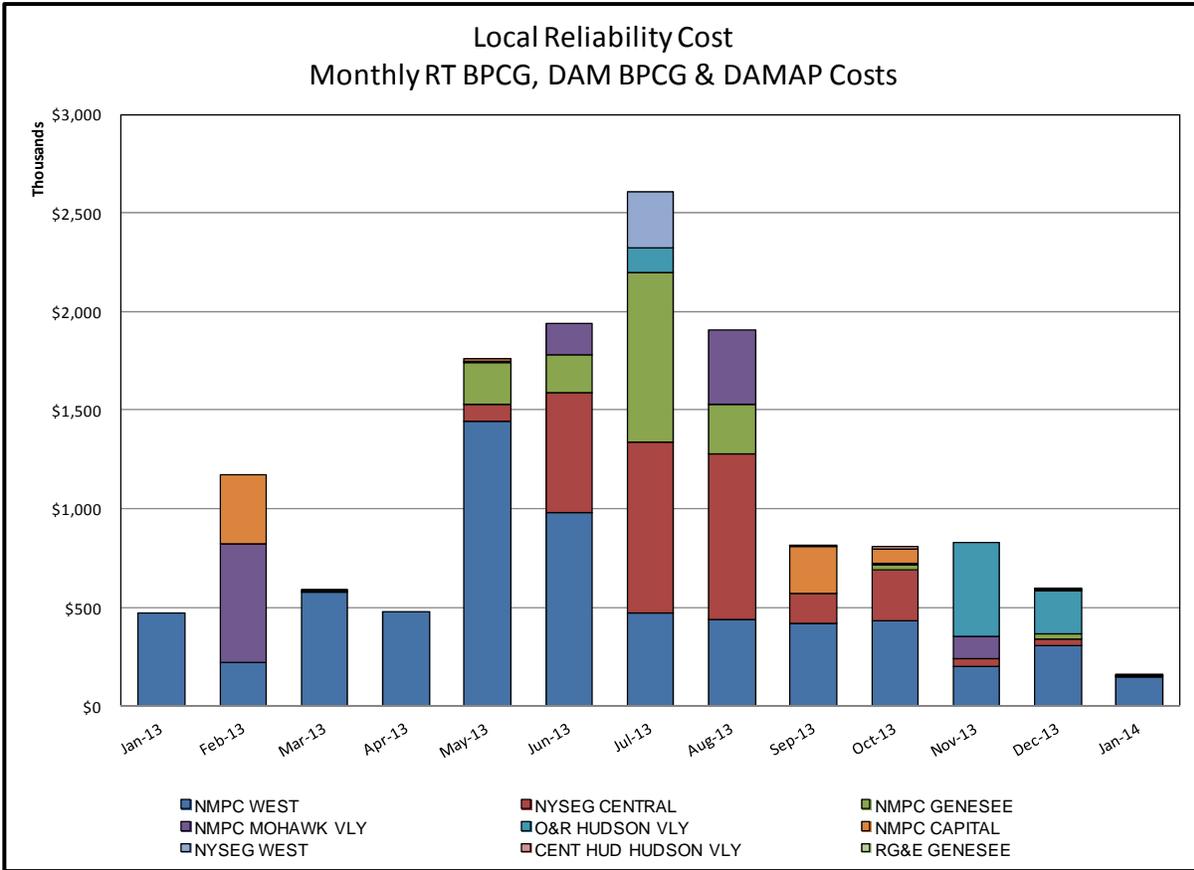


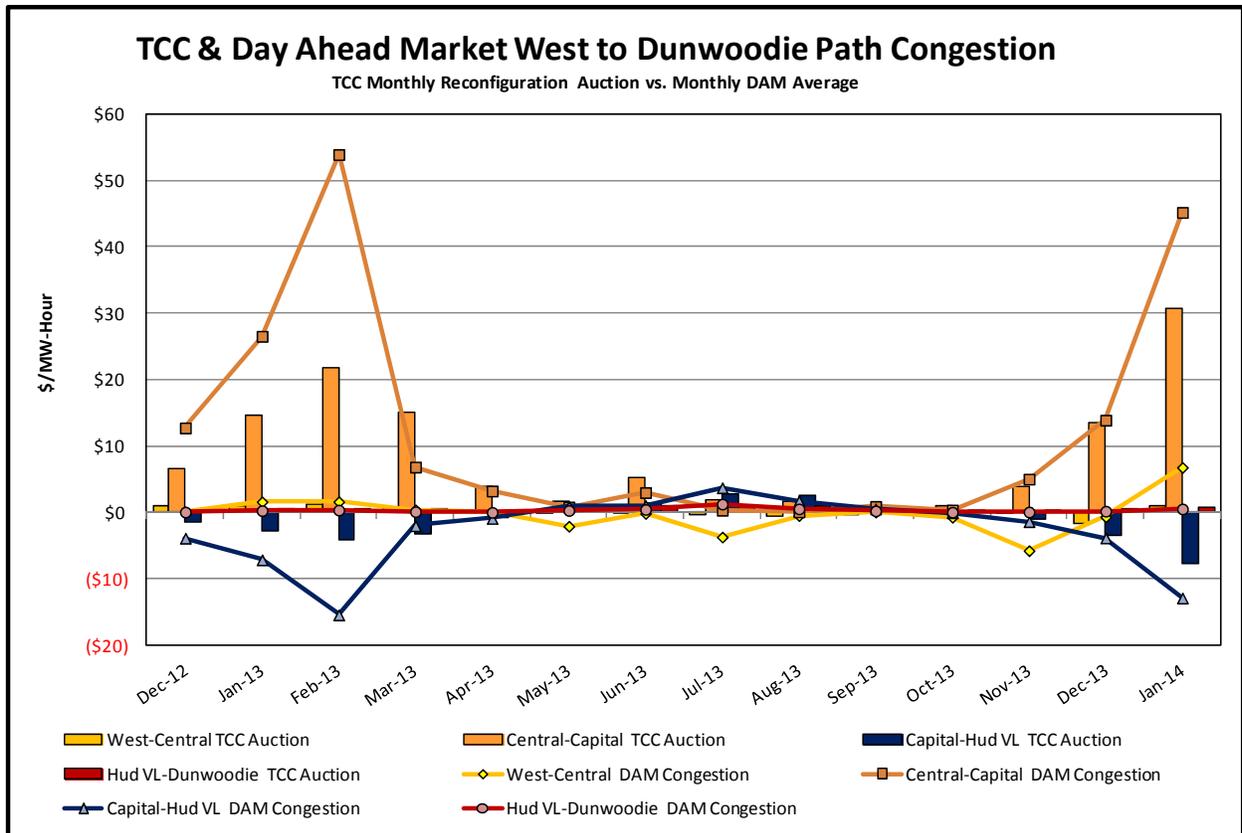
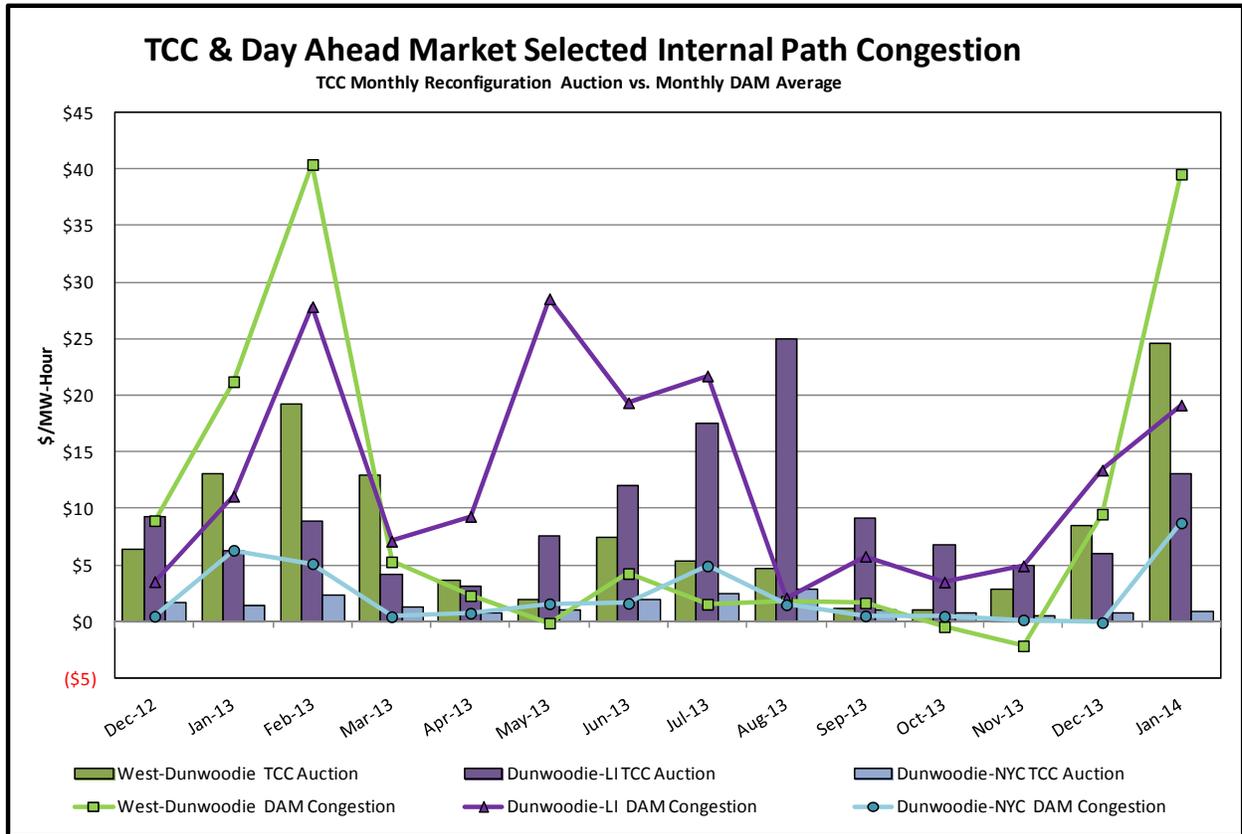
**Day-Ahead Market Congestion Residual Categories**

<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.	



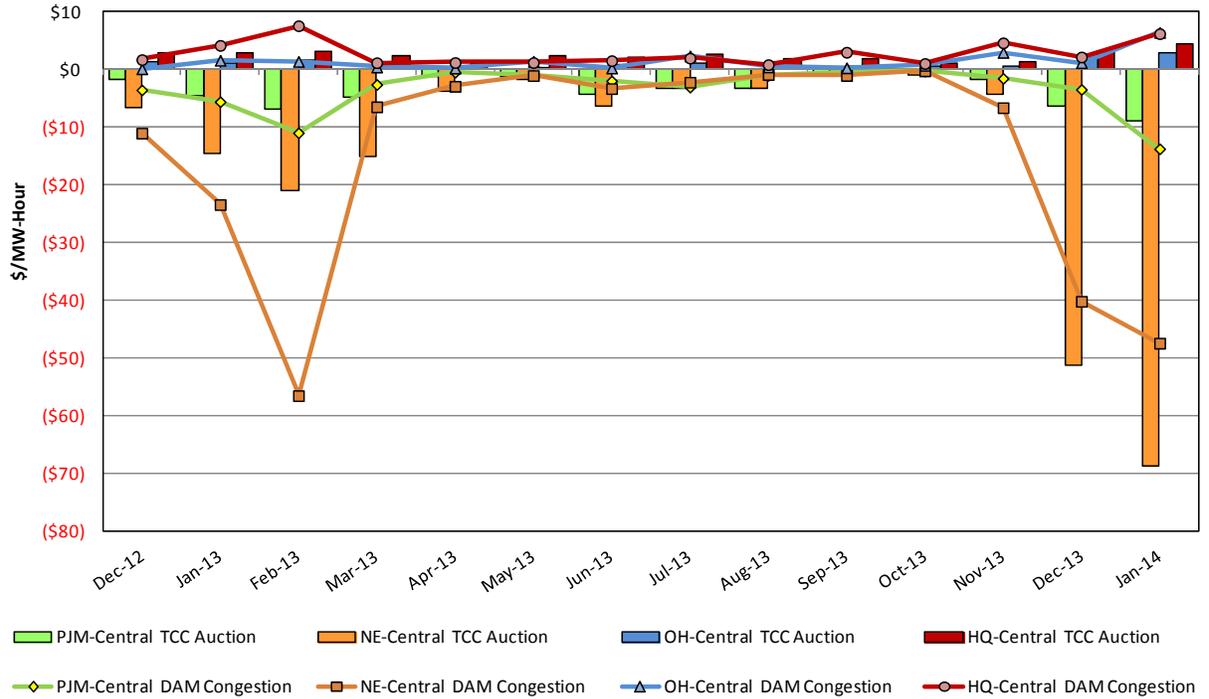


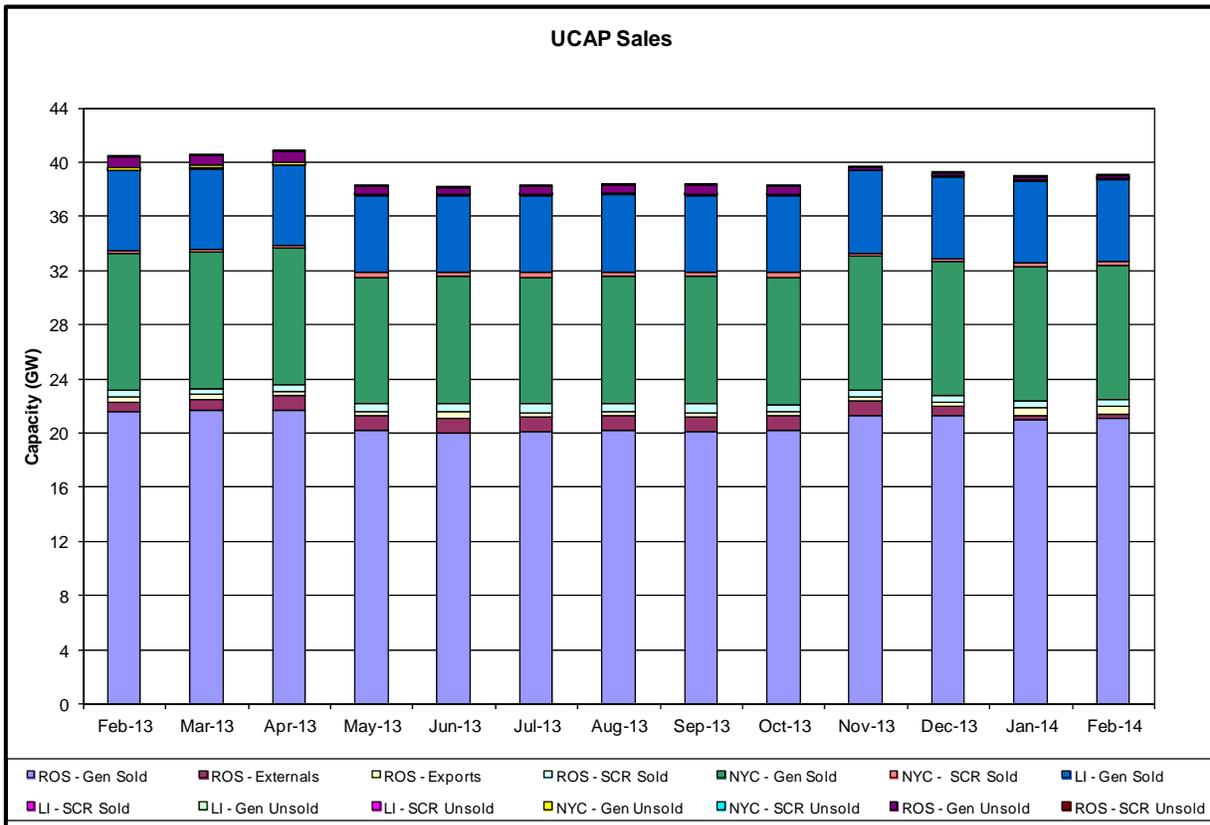
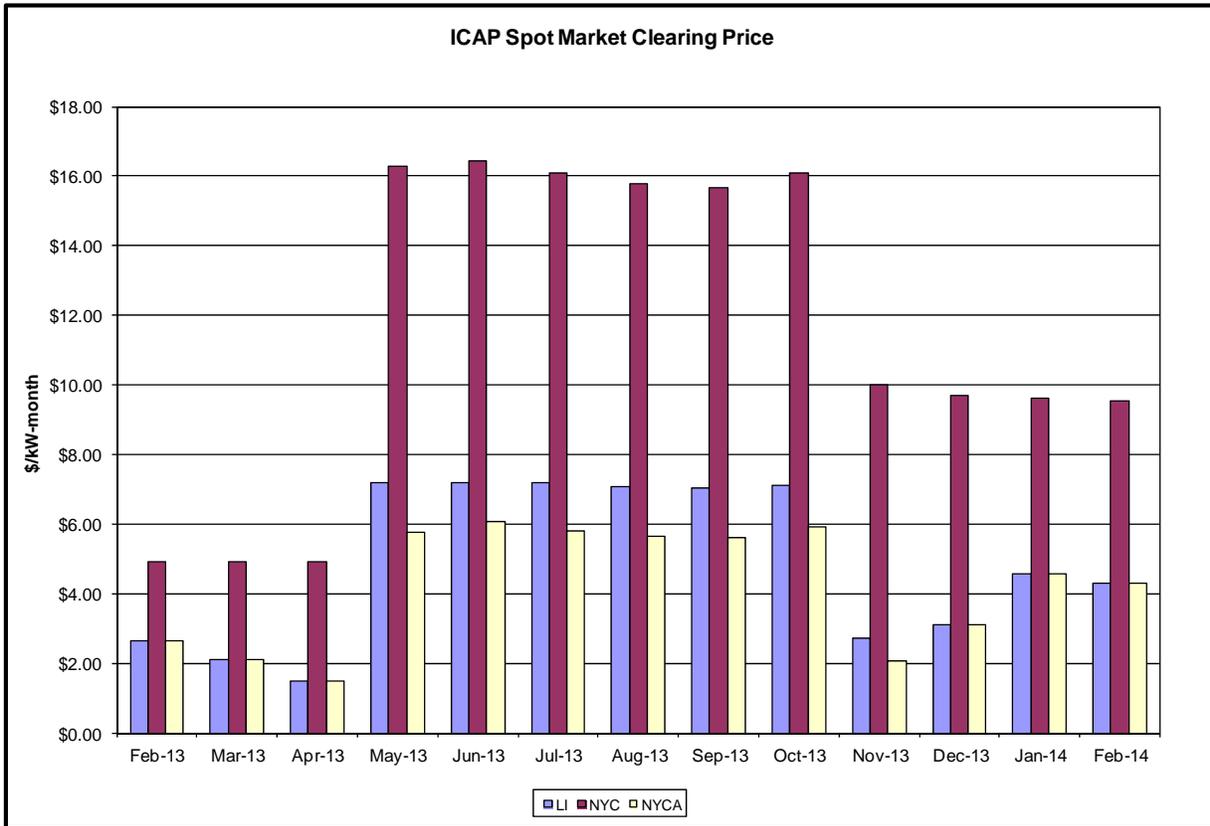




### TCC & Day Ahead Market Selected External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average

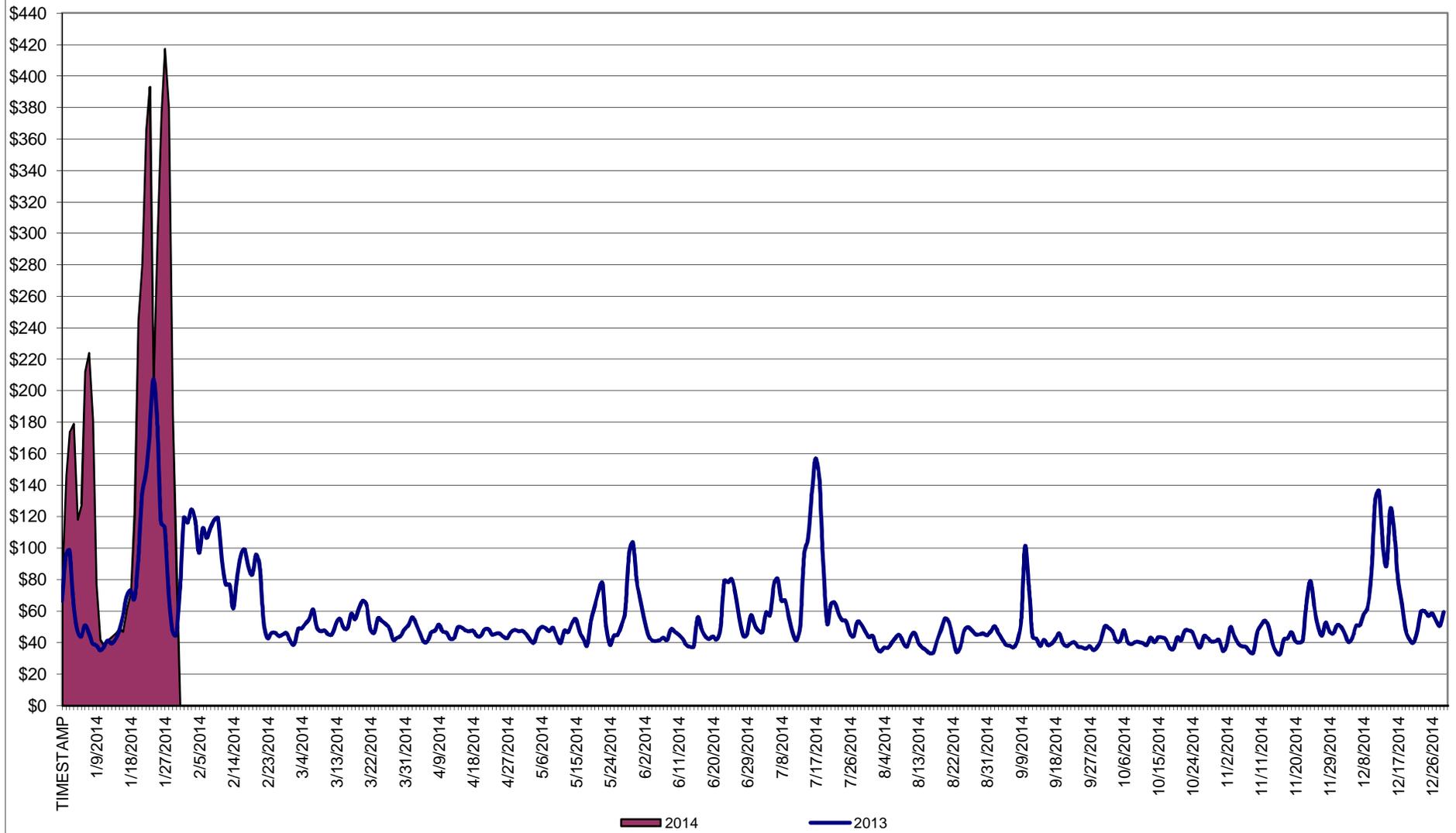




# Market Performance Highlights for January 2014

- **LBMP for January is \$183.25/MWh; 176% higher than \$66.39/MWh in December 2013 and 130% higher than \$79.77/MWh in January 2013.**
  - Day Ahead and Real Time Load Weighted LBMPs are ~170% higher compared to December.
- **January 2014 average year-to-date monthly cost of \$185.55/MWh is a 125% increase from \$82.34/MWh in January 2013.**
- **Average daily sendout is 475 GWh/day in January; higher than 450 GWh/day in December 2013 and 453 GWh/day in January 2013.**
- **Natural gas prices were higher compared to the previous month, and distillate prices were mixed compared to the previous month.**
  - Natural Gas (Transco Z6 NY) was \$27.43/MMBtu, up 394% from \$5.55/MMBtu in December.
  - Jet Kerosene Gulf Coast was \$21.65/MMBtu, down from \$21.93/MMBtu in December.
  - Ultra Low Sulfur No.2 Diesel NY Harbor was \$22.26/MMBtu, up from \$21.80/MMBtu in December.
- **Uplift per MWh is lower compared to the previous month.**
  - Uplift (not including NYISO cost of operations) is (\$0.36)/MWh; lower than (\$0.25)/MWh in December.
    - The Local Reliability Share is \$1.38/MWh, higher than \$0.12 in December.
    - The Statewide Share is (\$1.73)/MWh, lower than (\$0.37)/MWh in December.
  - TSA \$ per NYC MWh is \$0.00/MWh.
  - Total uplift costs (Schedule 1 components including NYISO Cost of Operations) are lower than December.

**Daily NYISO Average Cost/MWh (Energy & Ancillary Services)\***  
 2013 Annual Average \$59.13/MWh  
 January 2013 YTD Average \$82.34/MWh  
 January 2014 YTD Average \$185.55/MWh



\* Excludes ICAP payments.

**NYISO Average Cost/MWh (Energy and Ancillary Services) \***  
**from the LBMP Customer point of view**

<b>2014</b>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
LBMP	183.25											
NTAC	0.56											
Reserve	0.78											
Regulation	0.27											
NYISO Cost of Operations	0.69											
Uplift	(0.36)											
Uplift: Local Reliability Share	1.38											
Uplift: Statewide Share	(1.73)											
Voltage Support and Black Start	0.36											
<b>Avg Monthly Cost</b>	<b>185.55</b>											
Avg YTD Cost	185.55											
TSA \$ per NYC MWh	0.00											
<b>2013</b>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
LBMP	79.77	85.76	48.94	44.47	52.21	50.17	68.49	40.81	44.24	39.83	43.27	66.39
NTAC	0.79	0.83	0.76	0.90	0.85	0.86	0.66	0.28	0.57	0.91	1.08	0.59
Reserve	0.38	0.44	0.43	0.36	0.49	0.34	0.50	0.32	0.38	0.42	0.38	0.44
Regulation	0.13	0.13	0.10	0.11	0.09	0.13	0.11	0.13	0.13	0.16	0.13	0.12
NYISO Cost of Operations	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Uplift	0.21	(0.15)	(0.33)	0.02	0.41	0.49	2.07	0.03	(0.04)	0.16	(0.06)	(0.25)
Uplift: Local Reliability Share	0.44	0.40	0.19	0.37	0.58	0.81	1.27	0.49	0.31	0.38	0.19	0.12
Uplift: Statewide Share	(0.23)	(0.55)	(0.52)	(0.35)	(0.17)	(0.31)	0.80	(0.46)	(0.36)	(0.21)	(0.25)	(0.37)
Voltage Support and Black Start	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36
<b>Avg Monthly Cost</b>	<b>82.34</b>	<b>88.06</b>	<b>50.96</b>	<b>46.91</b>	<b>55.10</b>	<b>53.05</b>	<b>72.88</b>	<b>42.62</b>	<b>46.32</b>	<b>42.55</b>	<b>45.86</b>	<b>68.34</b>
Avg YTD Cost	82.34	85.08	74.02	67.80	65.46	63.36	65.10	62.27	60.74	59.30	58.23	59.13
TSA \$ per NYC MWh	0.00	0.00	0.00	0.04	0.58	0.61	1.52	0.43	0.22	0.01	0.00	0.00
<b>2012</b>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
LBMP	44.00	32.45	28.98	28.31	34.68	47.37	63.80	46.24	39.59	39.30	50.16	44.67
NTAC	0.85	0.80	0.68	0.71	0.72	0.77	0.58	0.65	0.57	0.70	0.75	0.83
Reserve	0.35	0.25	0.38	0.32	0.13	0.36	0.36	0.22	0.23	0.29	0.40	0.26
Regulation	0.10	0.08	0.13	0.12	0.09	0.15	0.15	0.12	0.09	0.10	0.11	0.09
NYISO Cost of Operations	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Uplift	0.44	0.17	0.00	(0.18)	(0.11)	0.61	0.23	0.22	(0.33)	1.04	0.82	(0.11)
Uplift: Local Reliability Share	0.49	0.27	0.19	0.07	0.25	0.42	0.49	0.83	0.26	0.67	0.72	0.30
Uplift: Statewide Share	(0.05)	(0.10)	(0.19)	(0.25)	(0.36)	0.19	(0.26)	(0.61)	(0.59)	0.38	0.11	(0.41)
Voltage Support and Black Start	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
<b>Avg Monthly Cost</b>	<b>46.75</b>	<b>34.75</b>	<b>31.19</b>	<b>30.29</b>	<b>36.52</b>	<b>50.27</b>	<b>66.14</b>	<b>48.46</b>	<b>41.17</b>	<b>42.44</b>	<b>53.26</b>	<b>46.74</b>
Avg YTD Cost	46.75	41.12	37.96	36.09	36.18	38.89	44.26	44.91	44.51	44.33	45.14	45.28
TSA \$ per NYC MWh	0.00	0.00	0.00	0.00	1.52	0.45	0.85	0.46	0.59	0.00	0.00	0.00

\* Excludes ICAP payments.  
Market Mitigation and Analysis  
Prepared: 2/7/2014 8:28 AM

Data reflects true-ups thru Sept 2013.



## NYISO Markets Transactions

2014	January	February	March	April	May	June	July	August	September	October	November	December
<b>Day Ahead Market MWh</b>	16,034,264											
DAM LSE Internal LBMP Energy Sales	52%											
DAM External TC LBMP Energy Sales	5%											
DAM Bilateral - Internal Bilaterals	36%											
DAM Bilateral - Import/Non-LBMP Market Bilaterals	5%											
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%											
DAM Bilateral - Wheel Through Bilaterals	1%											
<b>Balancing Energy Market MWh</b>	-240,397											
Balancing Energy LSE Internal LBMP Energy Sales	-237%											
Balancing Energy External TC LBMP Energy Sales	109%											
Balancing Energy Bilateral - Internal Bilaterals	21%											
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%											
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	11%											
Balancing Energy Bilateral - Wheel Through Bilaterals	-5%											
<b>Transactions Summary</b>												
LBMP	56%											
Internal Bilaterals	37%											
Import Bilaterals	5%											
Export Bilaterals	2%											
Wheels Through	1%											
<b>Market Share of Total Load</b>												
Day Ahead Market	101.5%											
Balancing Energy +	-1.5%											
Total MWh	15,793,868											
Average Daily Energy Sendout/Month GWh	475											

2013	January	February	March	April	May	June	July	August	September	October	November	December
<b>Day Ahead Market MWh</b>	15,140,096	14,116,189	14,250,091	12,963,905	13,451,310	14,872,971	17,974,314	16,090,437	14,021,472	13,411,499	13,692,854	15,406,816
DAM LSE Internal LBMP Energy Sales	56%	55%	56%	57%	56%	57%	59%	57%	55%	51%	52%	52%
DAM External TC LBMP Energy Sales	4%	6%	3%	3%	1%	1%	1%	0%	0%	0%	3%	6%
DAM Bilateral - Internal Bilaterals	38%	37%	38%	37%	37%	36%	33%	36%	38%	41%	40%	36%
DAM Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	3%	4%	5%	5%	4%	5%	4%	4%
DAM Bilateral - Export/Non-LBMP Market Bilaterals	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	1%
DAM Bilateral - Wheel Through Bilaterals	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
<b>Balancing Energy Market MWh</b>	-471,167	-648,574	-501,253	-525,278	-501,948	-669,315	-294,946	-915,232	-759,051	-682,567	-573,122	-528,397
Balancing Energy LSE Internal LBMP Energy Sales	-131%	-117%	-127%	-123%	-133%	-115%	-189%	-113%	-120%	-123%	-134%	-131%
Balancing Energy External TC LBMP Energy Sales	33%	20%	23%	21%	35%	16%	78%	9%	11%	14%	23%	16%
Balancing Energy Bilateral - Internal Bilaterals	4%	10%	11%	3%	5%	4%	11%	3%	6%	6%	4%	13%
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	0%	1%	4%	0%	0%	0%	0%	0%
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	5%	3%	4%	5%	4%	2%	3%	1%	2%	4%	7%	5%
Balancing Energy Bilateral - Wheel Through Bilaterals	-11%	-16%	-11%	-6%	-11%	-9%	-7%	0%	1%	0%	1%	-4%
<b>Transactions Summary</b>												
LBMP	59%	59%	58%	59%	55%	56%	59%	54%	53%	49%	52%	56%
Internal Bilaterals	39%	39%	40%	39%	39%	38%	34%	39%	41%	43%	41%	38%
Import Bilaterals	0%	0%	0%	0%	4%	4%	5%	5%	4%	6%	4%	4%
Export Bilaterals	1%	1%	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%
Wheels Through	1%	0%	1%	1%	0%	1%	1%	1%	1%	1%	1%	1%
<b>Market Share of Total Load</b>												
Day Ahead Market	103.2%	104.8%	103.6%	104.2%	103.9%	104.7%	101.7%	106.0%	105.7%	105.4%	104.4%	103.6%
Balancing Energy +	-3.2%	-4.8%	-3.6%	-4.2%	-3.9%	-4.7%	-1.7%	-6.0%	-5.7%	-5.4%	-4.4%	-3.6%
Total MWh	14,668,929	13,467,615	13,748,838	12,438,627	12,949,362	14,203,656	17,679,368	15,175,205	13,262,421	12,728,932	13,119,732	14,878,419
Average Daily Energy Sendout/Month GWh	453	453	429	398	407	469	561	485	438	407	421	450

+ Balancing Energy: Load(MW) purchased at Real Time LBMP.

\* The signs for the detail section intuitively reflect the direction of power flow eliminating the use of double negatives when Balancing Energy is negative.

Notes: Percent totals may not equal 100% due to rounding.  
Virtual Transactions are not reflected in this chart.

### NYISO Markets 2014 Energy Statistics

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b><u>DAY AHEAD LBMP</u></b>												
Price *	\$155.11											
Standard Deviation	\$121.52											
Load Weighted Price **	\$164.06											
<b><u>RTC LBMP</u></b>												
Price *	\$138.41											
Standard Deviation	\$125.42											
Load Weighted Price **	\$147.06											
<b><u>REAL TIME LBMP</u></b>												
Price *	\$137.90											
Standard Deviation	\$122.32											
Load Weighted Price **	\$147.77											
Average Daily Energy Sendout/Month GWh	475											

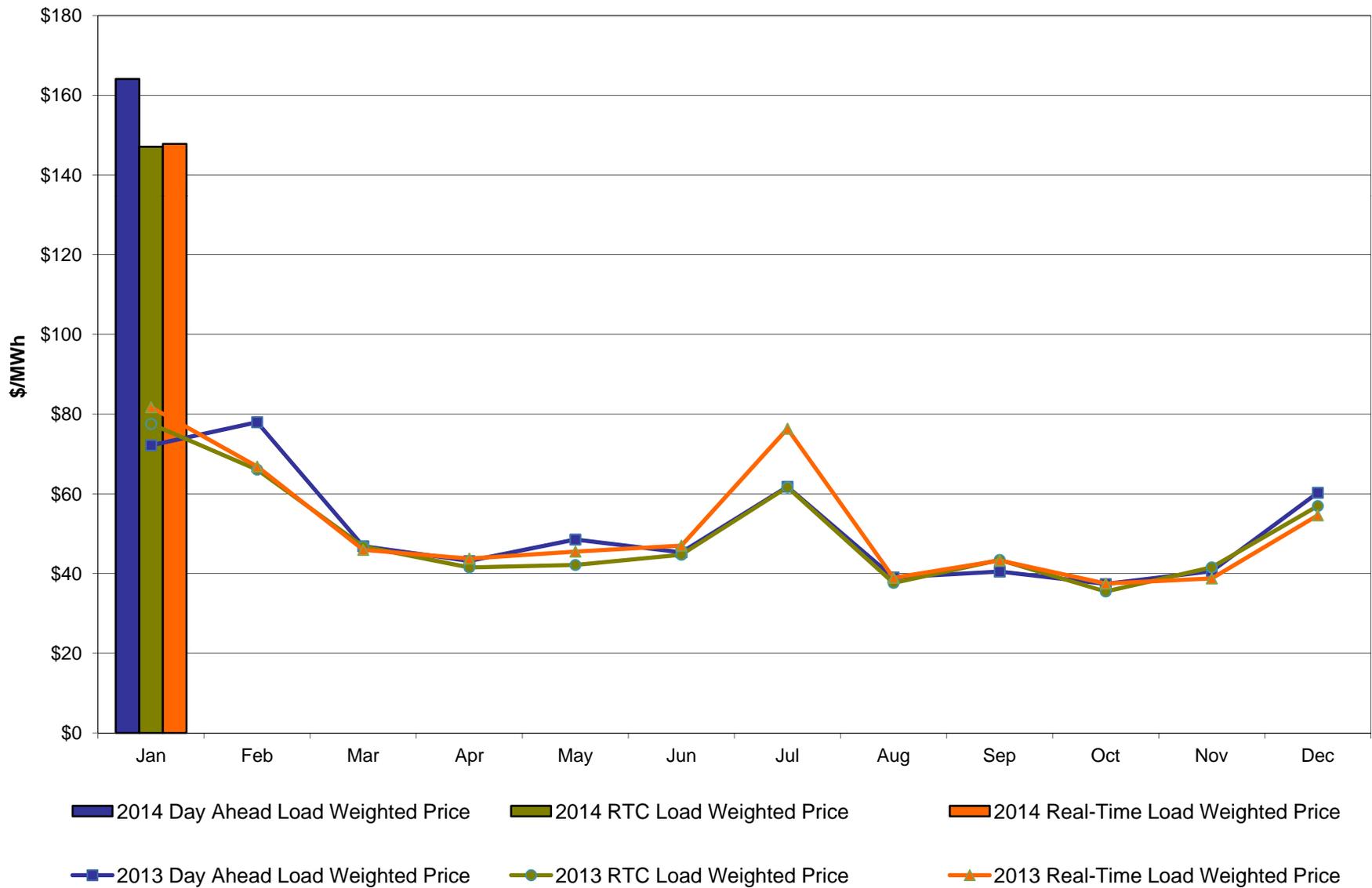
### NYISO Markets 2013 Energy Statistics

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b><u>DAY AHEAD LBMP</u></b>												
Price *	\$69.17	\$75.82	\$45.97	\$42.21	\$45.87	\$42.66	\$56.90	\$37.19	\$38.32	\$36.15	\$39.18	\$57.72
Standard Deviation	\$47.21	\$29.98	\$9.40	\$7.84	\$18.77	\$17.98	\$37.12	\$11.85	\$15.21	\$9.15	\$13.56	\$28.61
Load Weighted Price **	\$72.17	\$77.95	\$46.85	\$43.13	\$48.52	\$45.32	\$61.77	\$39.00	\$40.47	\$37.37	\$40.58	\$60.27
<b><u>RTC LBMP</u></b>												
Price *	\$73.69	\$64.15	\$45.75	\$40.50	\$39.51	\$42.00	\$55.41	\$35.90	\$39.06	\$34.08	\$39.57	\$54.53
Standard Deviation	\$88.27	\$36.96	\$22.62	\$14.79	\$24.44	\$30.96	\$58.54	\$18.35	\$60.70	\$17.38	\$30.77	\$41.66
Load Weighted Price **	\$77.52	\$66.07	\$46.79	\$41.52	\$42.14	\$44.70	\$61.64	\$37.65	\$43.41	\$35.49	\$41.56	\$56.95
<b><u>REAL TIME LBMP</u></b>												
Price *	\$76.47	\$64.87	\$45.01	\$42.74	\$42.32	\$43.93	\$65.57	\$37.03	\$39.02	\$36.02	\$37.28	\$52.49
Standard Deviation	\$83.80	\$38.96	\$16.27	\$15.96	\$26.99	\$34.72	\$89.92	\$20.11	\$36.85	\$19.07	\$25.69	\$34.01
Load Weighted Price **	\$81.71	\$66.83	\$45.94	\$43.73	\$45.50	\$47.00	\$76.32	\$38.92	\$43.28	\$37.47	\$38.75	\$54.60
Average Daily Energy Sendout/Month GWh	453	453	429	398	407	469	561	485	438	407	421	450

\* Average zonal load weighted prices.

\*\* Average zonal load weighted prices, load weighted in each hour.

### NYISO Monthly Average Internal LBMPs 2013- 2014

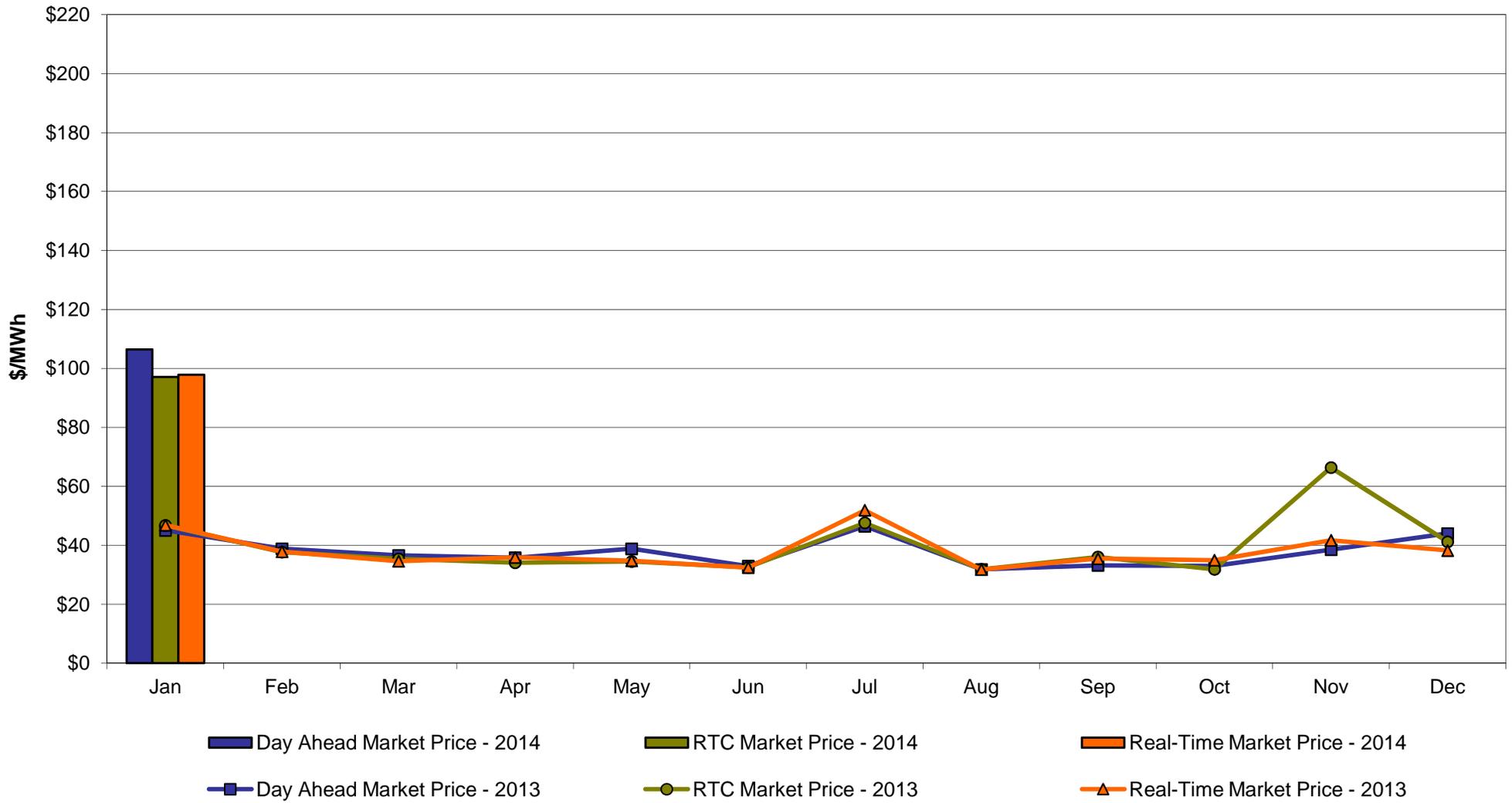


**January 2014 Zonal LBMP Statistics for NYISO (\$/MWh)**

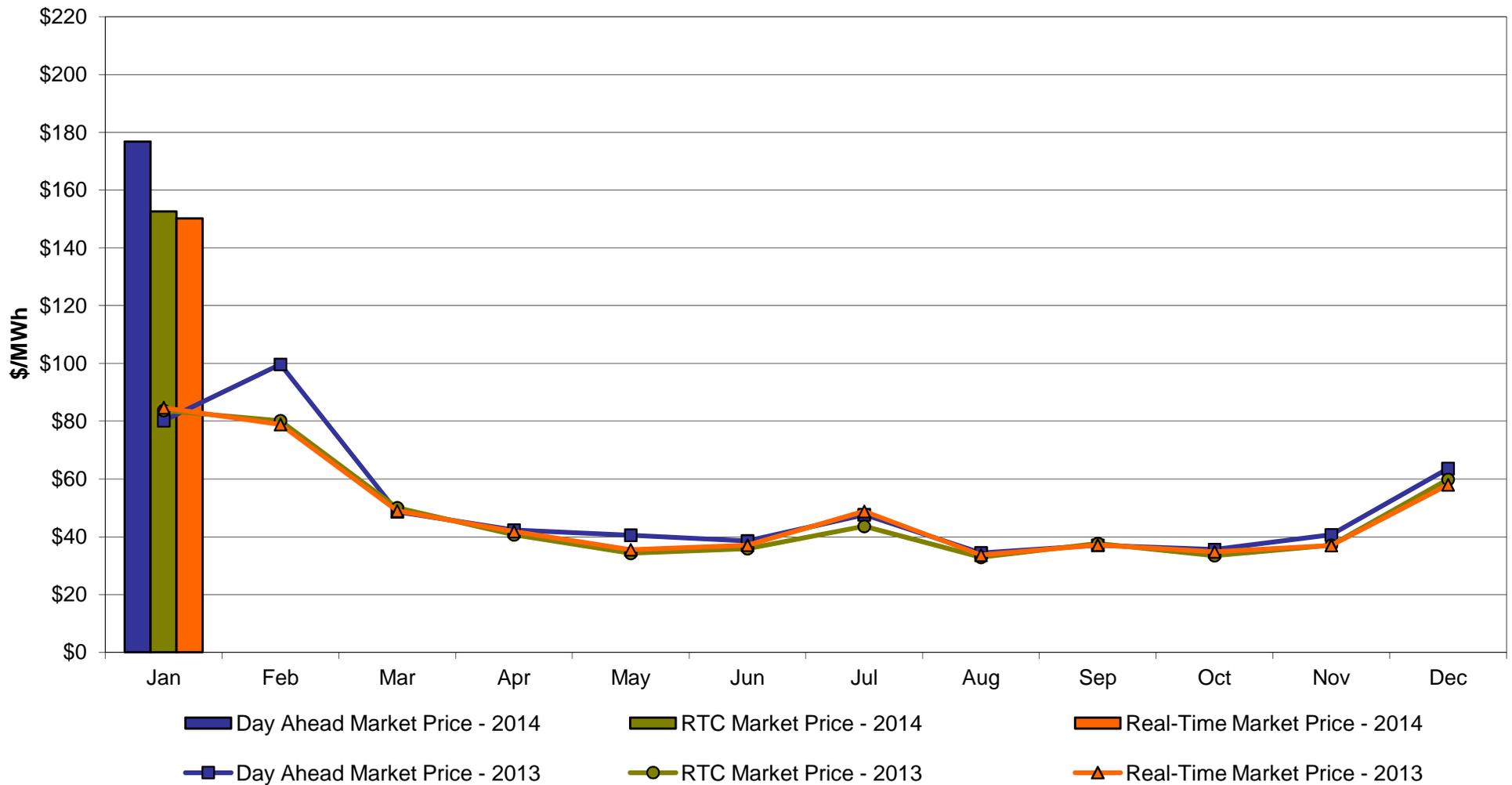
	<u>WEST</u> <u>Zone A</u>	<u>GENESEE</u> <u>Zone B</u>	<u>NORTH</u> <u>Zone D</u>	<u>CENTRAL</u> <u>Zone C</u>	<u>MOHAWK</u> <u>VALLEY</u> <u>Zone E</u>	<u>CAPITAL</u> <u>Zone F</u>	<u>HUDSON</u> <u>VALLEY</u> <u>Zone G</u>	<u>MILLWOOD</u> <u>Zone H</u>	<u>DUNWOODIE</u> <u>Zone I</u>	<u>NEW YORK</u> <u>CITY</u> <u>Zone J</u>	<u>LONG</u> <u>ISLAND</u> <u>Zone K</u>
<b><u>DAY AHEAD LBMP</u></b>											
Unweighted Price *	106.48	113.15	117.08	121.65	128.25	176.83	166.26	166.78	166.32	175.92	187.11
Standard Deviation	101.83	109.07	118.40	112.88	120.08	129.83	125.69	126.41	126.00	139.36	124.88
<b><u>RTC LBMP</u></b>											
Unweighted Price *	97.08	98.68	95.98	106.03	111.12	152.60	144.08	143.87	143.97	157.74	176.73
Standard Deviation	122.34	104.95	110.15	111.87	117.50	135.46	128.84	128.61	128.24	147.61	154.01
<b><u>REAL TIME LBMP</u></b>											
Unweighted Price *	97.87	100.84	98.19	107.72	113.12	150.20	142.77	142.51	142.65	156.31	178.52
Standard Deviation	113.49	104.02	107.28	110.05	116.62	134.46	127.72	127.70	127.28	144.91	151.04
	<u>ONTARIO</u> <u>IESO</u> <u>Zone O</u>	<u>HYDRO</u> <u>QUEBEC</u> <u>(Wheel)</u> <u>Zone M</u>	<u>HYDRO</u> <u>QUEBEC</u> <u>(Import/Export)</u> <u>Zone M</u>	<u>PJM</u> <u>Zone P</u>	<u>NEW</u> <u>ENGLAND</u> <u>Zone N</u>	<u>CROSS</u> <u>SOUND</u> <u>CABLE</u> <u>Controllable</u> <u>Line</u>	<u>NORTHPORT-</u> <u>NORWALK</u> <u>Controllable</u> <u>Line</u>	<u>NEPTUNE</u> <u>Controllable</u> <u>Line</u>	<u>LINDEN VFT</u> <u>Controllable</u> <u>Line</u>	<u>HUDSON</u> <u>Controllable</u> <u>Line</u>	<u>Dennison</u> <u>Controllable</u> <u>Line</u>
<b><u>DAY AHEAD LBMP</u></b>											
Unweighted Price *	105.00	116.67	116.67	138.68	179.30	178.31	178.22	178.08	168.71	175.45	116.31
Standard Deviation	100.58	121.78	121.78	116.21	121.74	118.21	119.78	124.93	141.04	139.34	121.88
<b><u>RTC LBMP</u></b>											
Unweighted Price *	78.07	80.84	80.19	113.17	136.32	150.63	149.64	148.23	142.15	142.16	91.32
Standard Deviation	70.74	104.22	104.27	101.18	105.08	116.43	115.72	116.51	116.70	116.28	101.81
<b><u>REAL TIME LBMP</u></b>											
Unweighted Price *	85.19	96.72	96.44	120.48	151.96	159.17	153.60	156.17	151.81	151.60	100.20
Standard Deviation	90.83	102.48	102.63	116.29	117.66	128.60	119.39	130.04	137.63	136.71	118.63

\* Straight LBMP averages

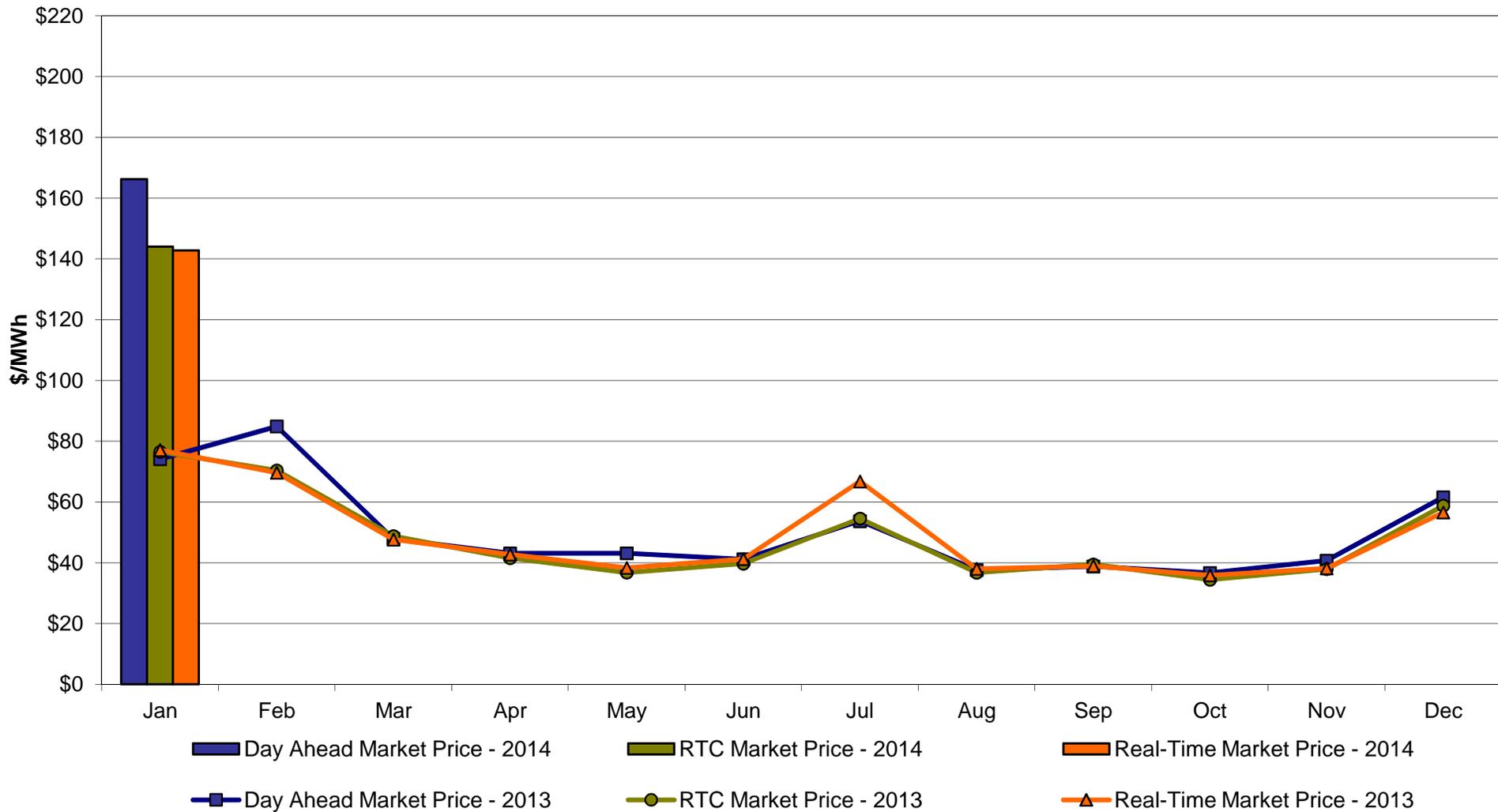
**West Zone A  
Monthly Average LBMP Prices 2013 - 2014**



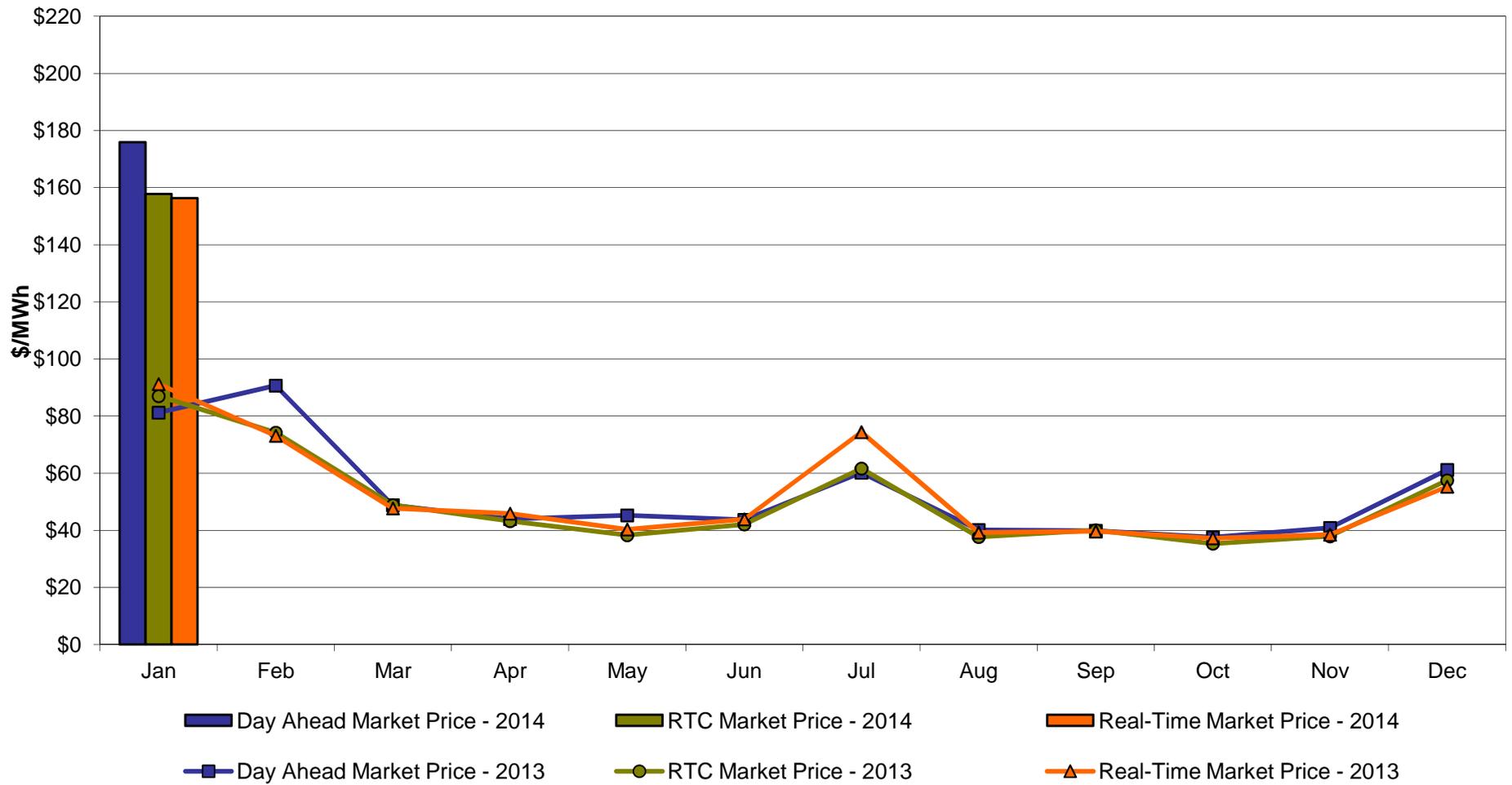
## Capital Zone F Monthly Average LBMP Prices 2013 - 2014



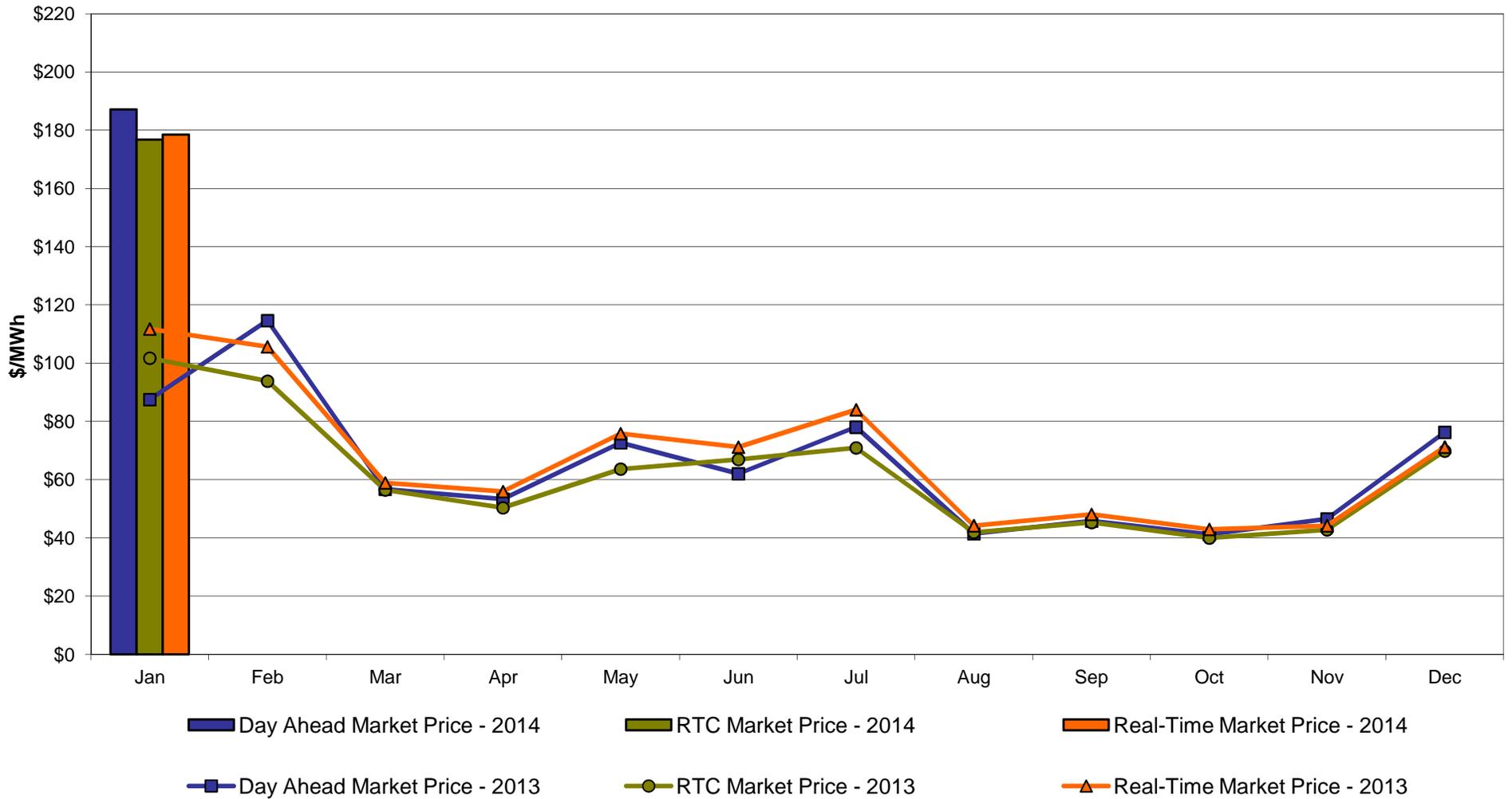
## Hudson Valley Zone G Monthly Average LBMP Prices 2013 - 2014



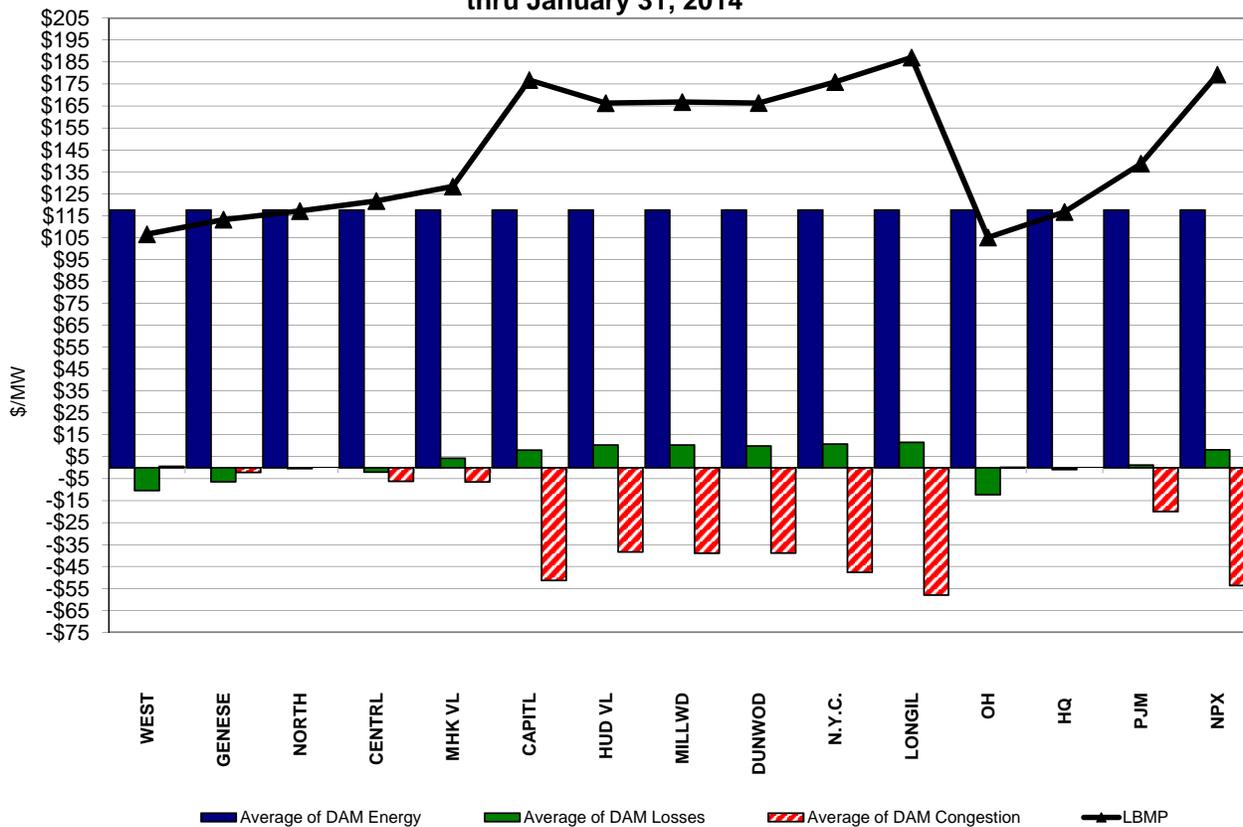
## NYC Zone J Monthly Average LBMP Prices 2013 - 2014



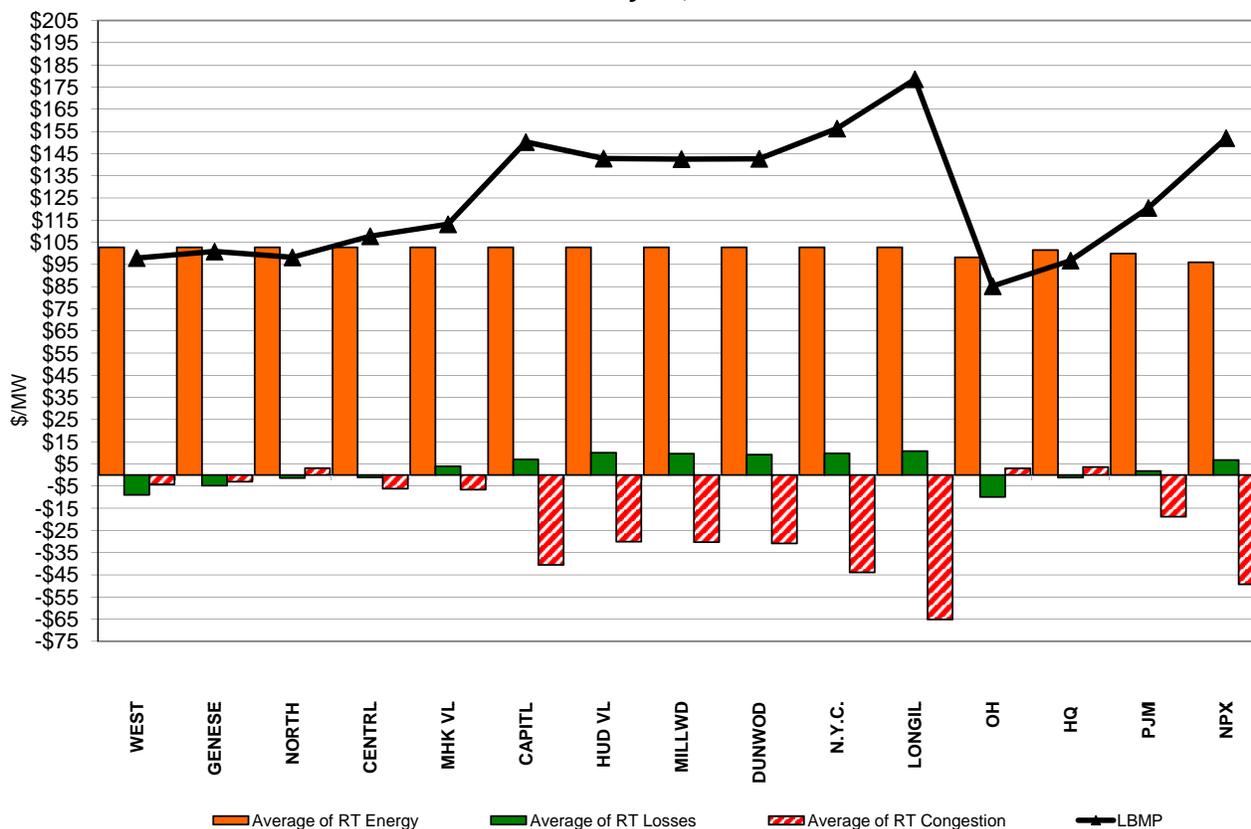
## Long Island Zone K Monthly Average LBMP Prices 2013 - 2014



**DAM Zonal Unweighted Monthly Average LBMP Components  
thru January 31, 2014**

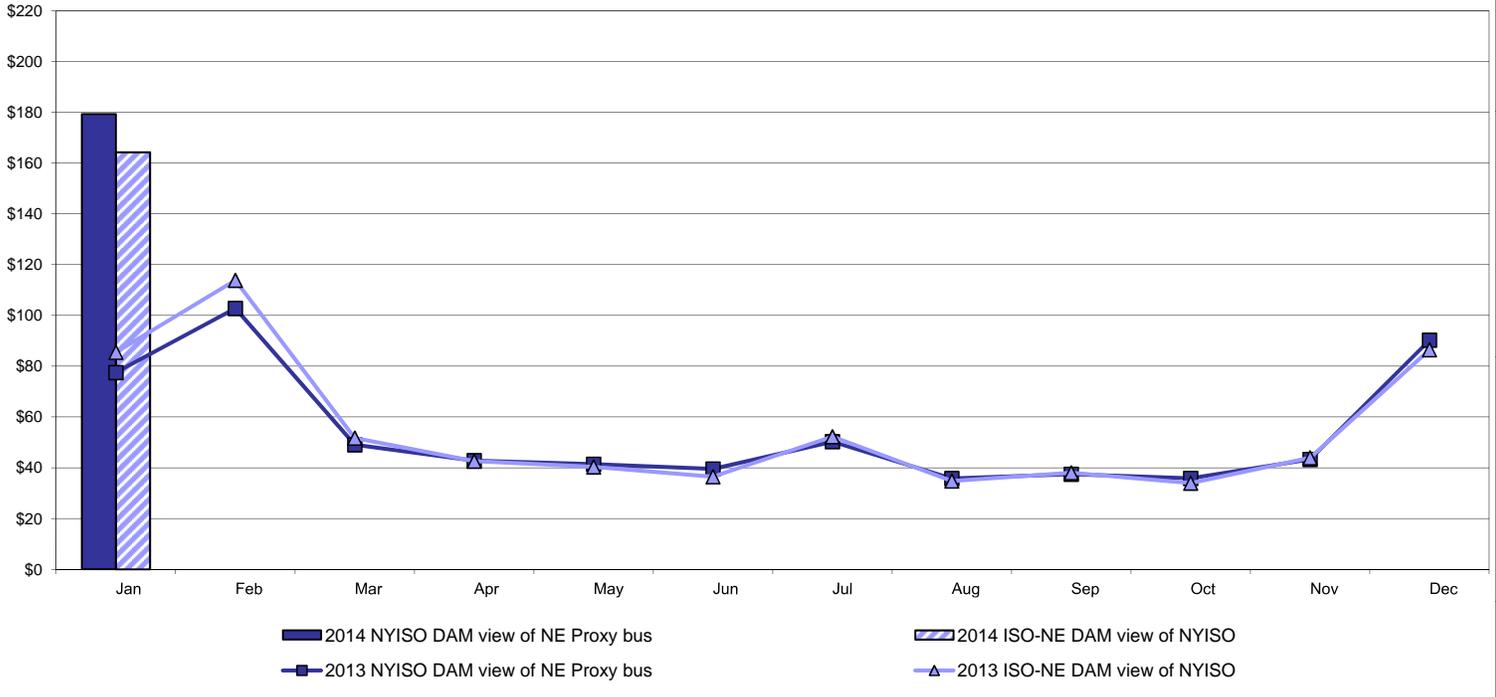


**RT Zonal Unweighted Monthly Average LBMP Components  
thru January 31, 2014**

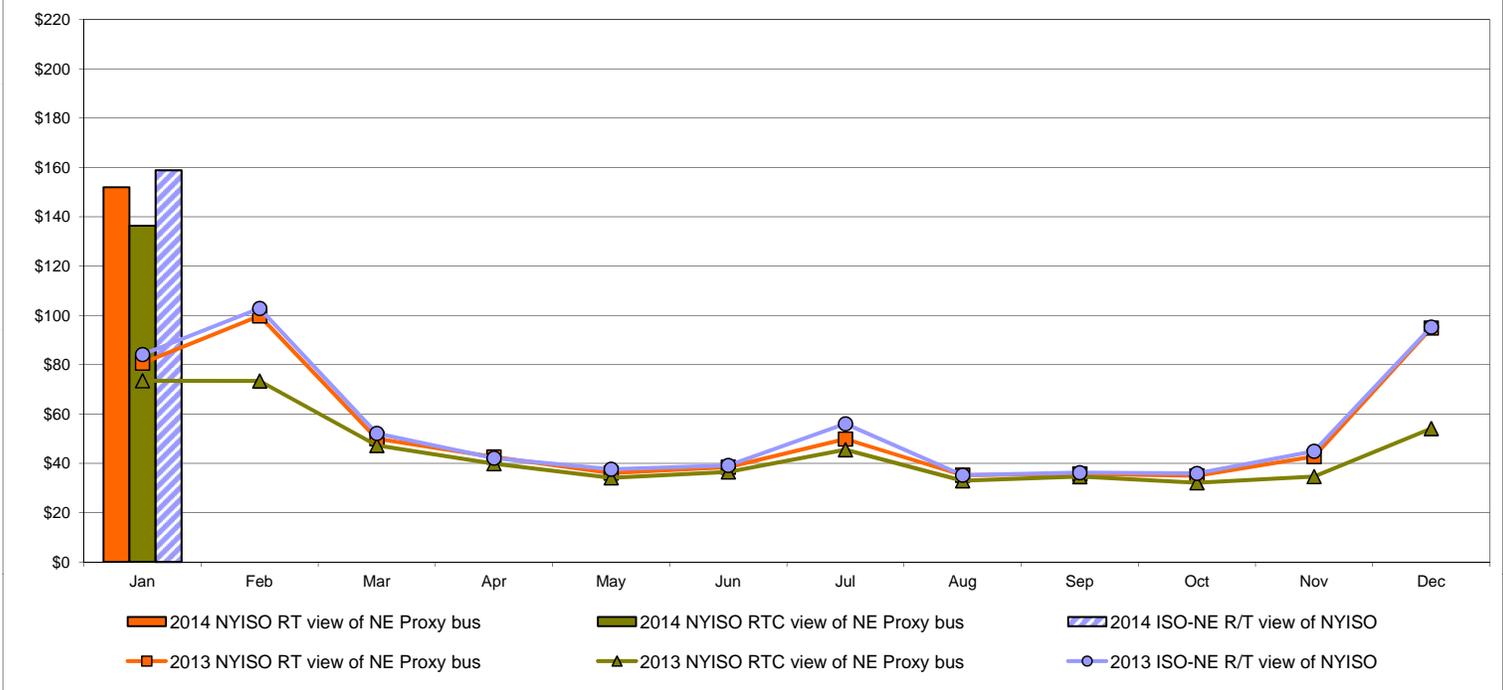


# External Comparison ISO-New England

## Day Ahead Market External Zone Comparison: ISO-NE (\$/MWh)

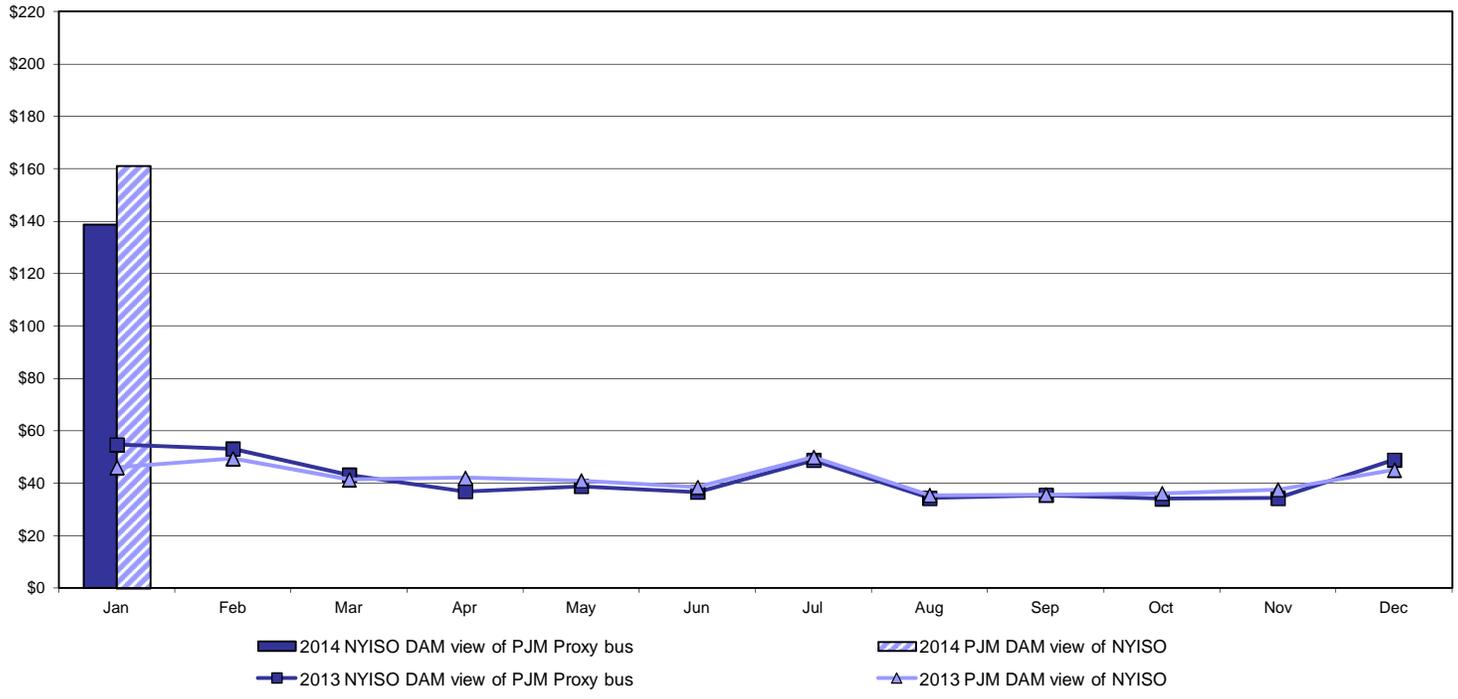


## Real Time Market External Zone Comparison: ISO-NE (\$/MWh)

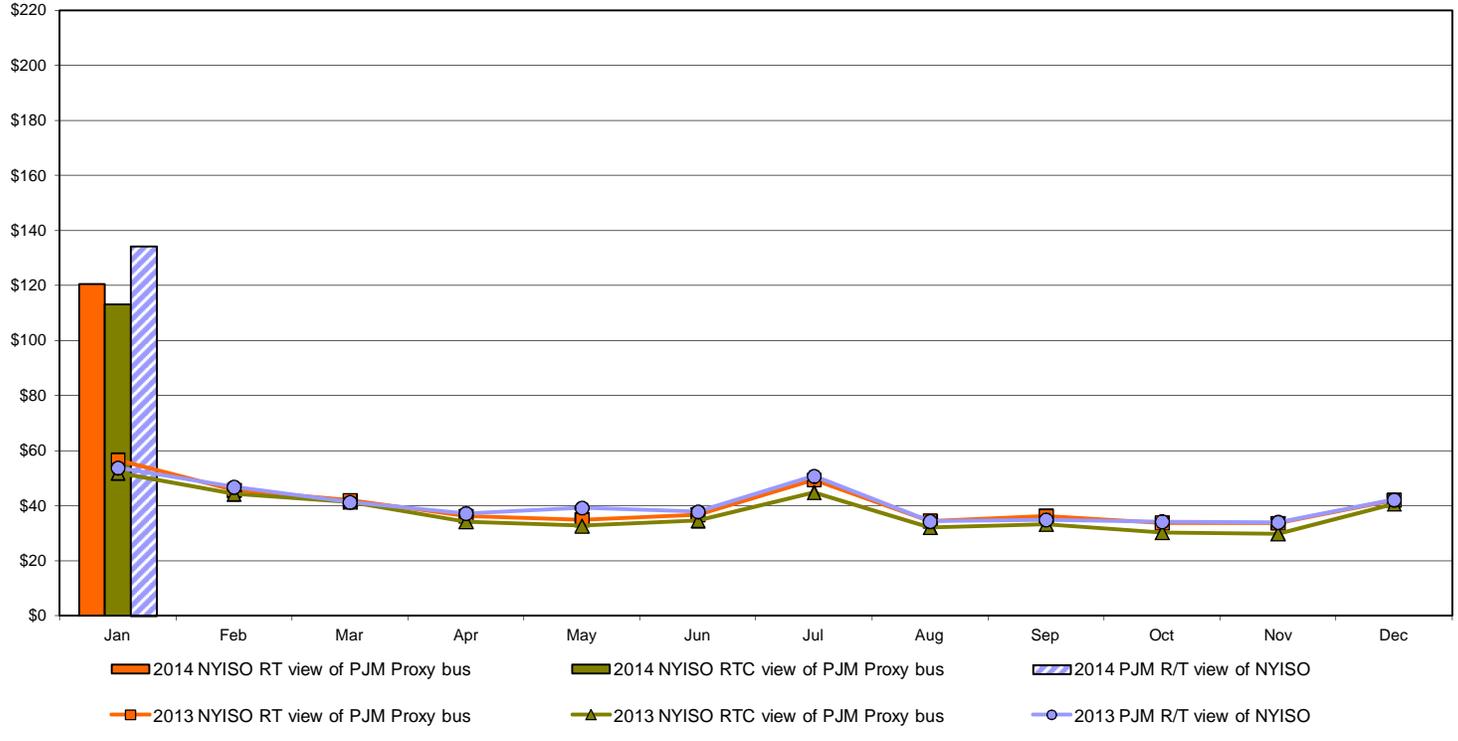


# External Comparison PJM

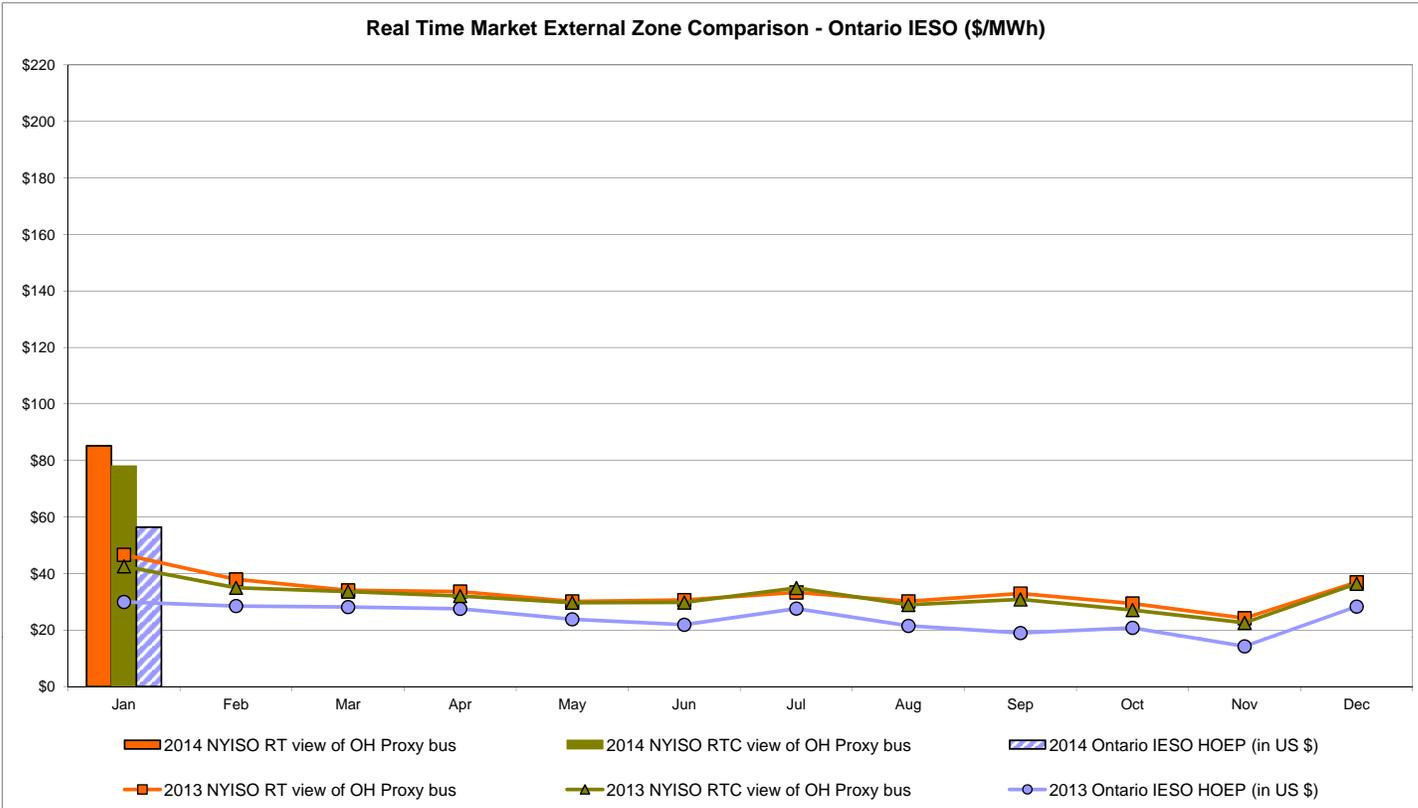
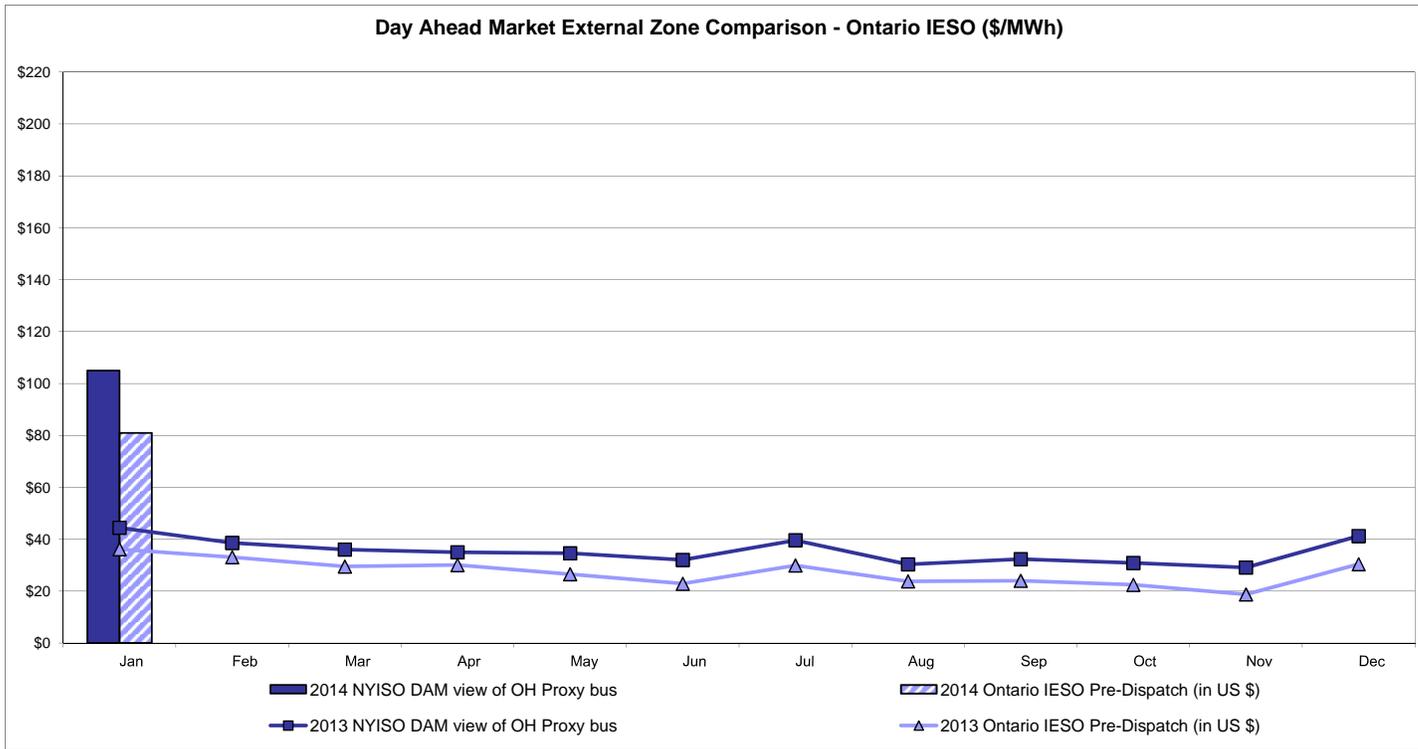
## Day Ahead Market External Zone Comparison - PJM (\$/MWh)



## Real Time Market External Zone Comparison - PJM (\$/MWh)

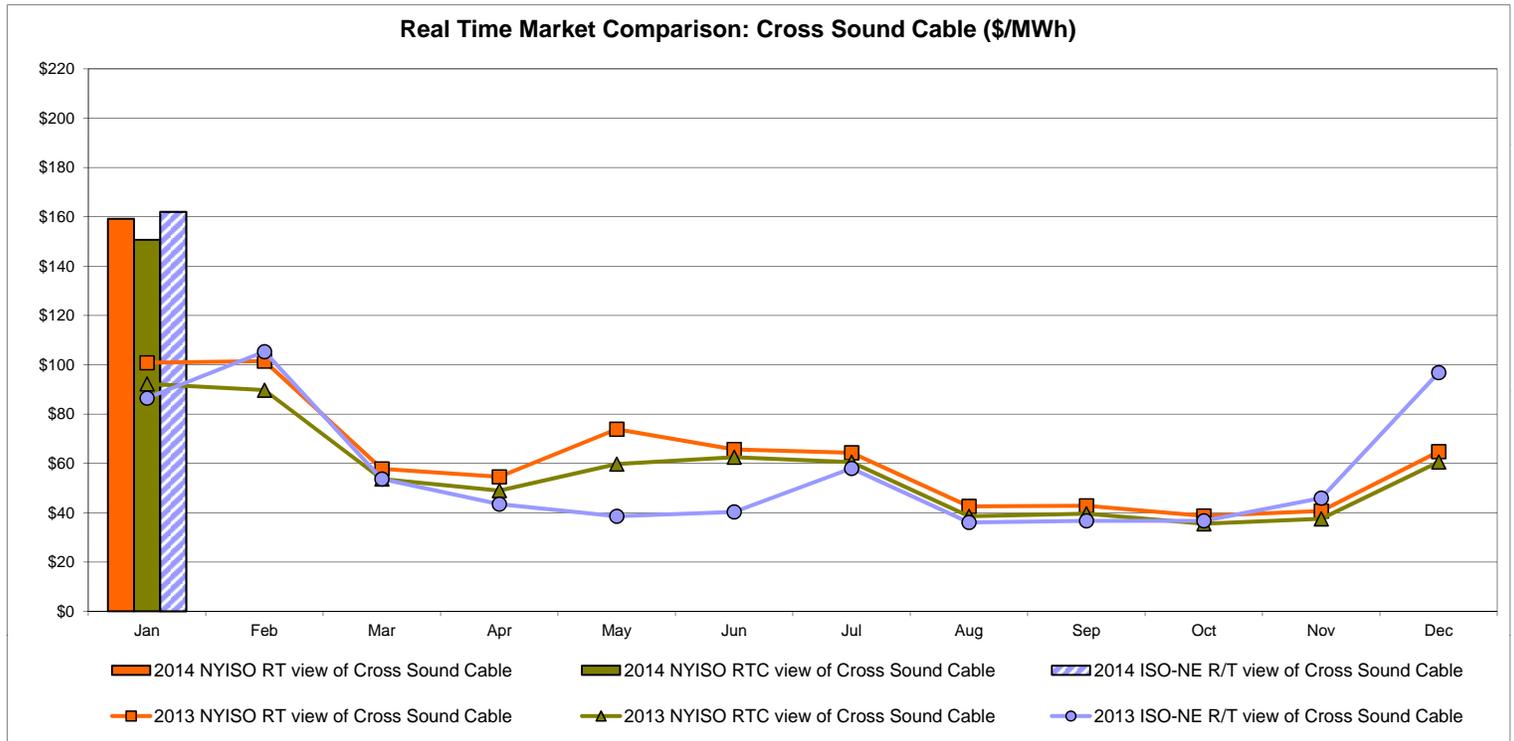
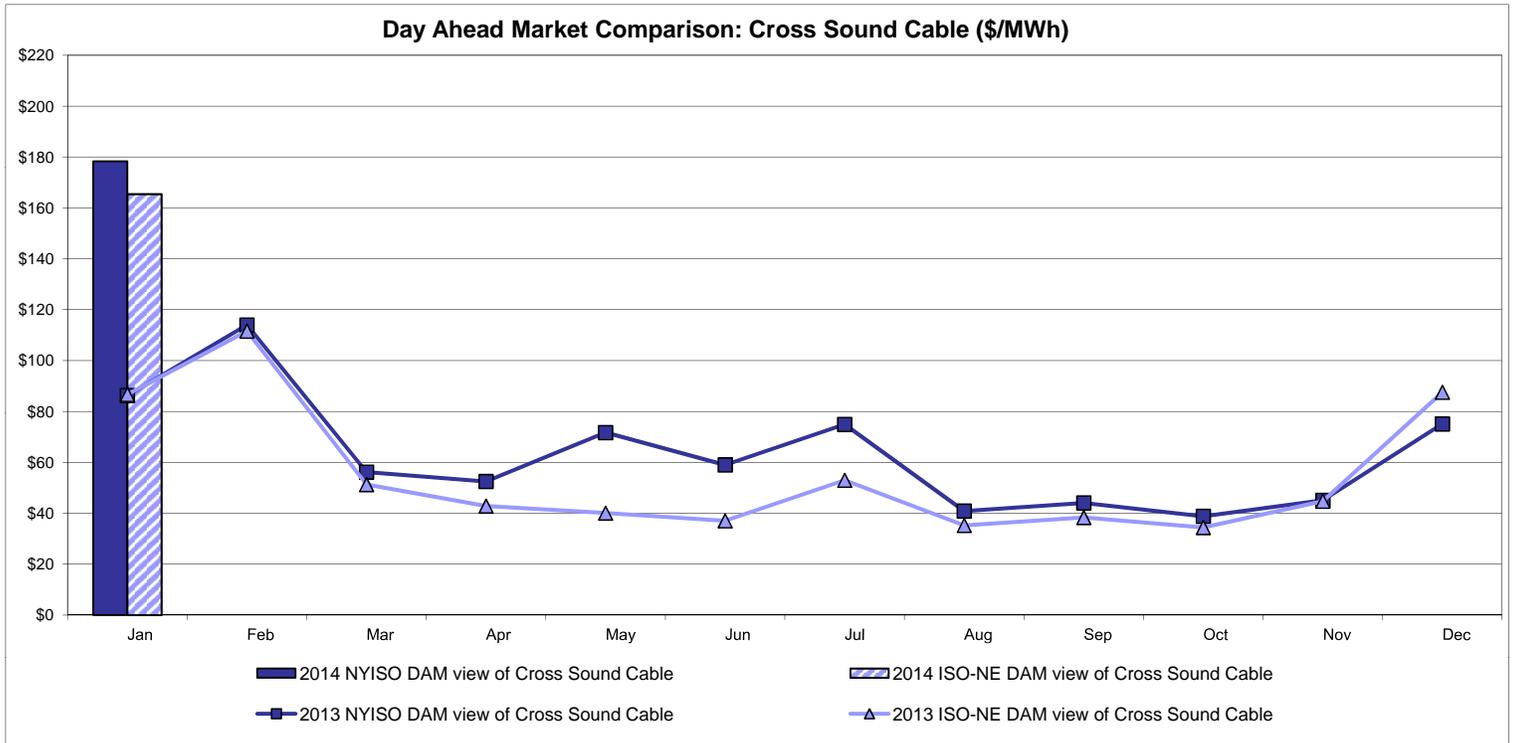


# External Comparison Ontario IESO



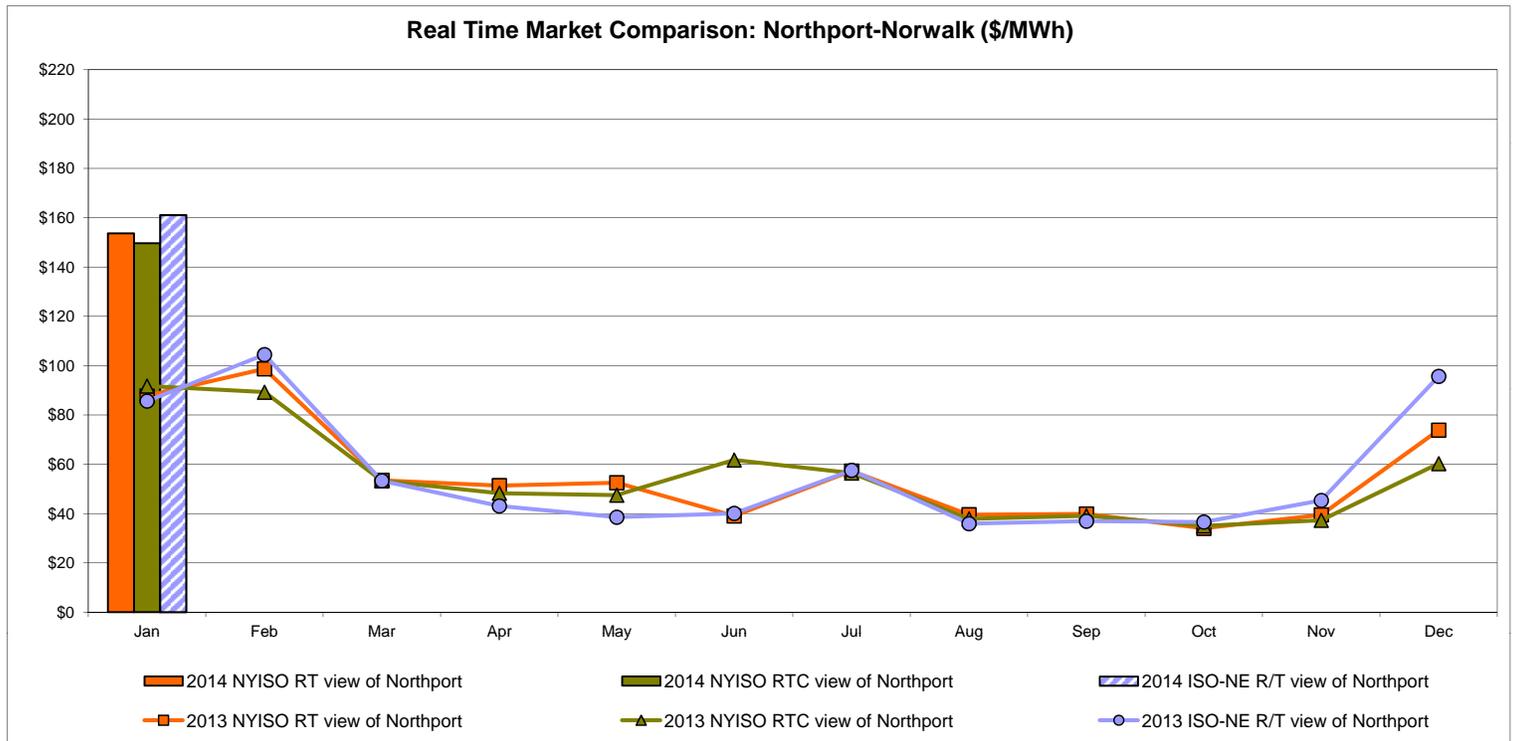
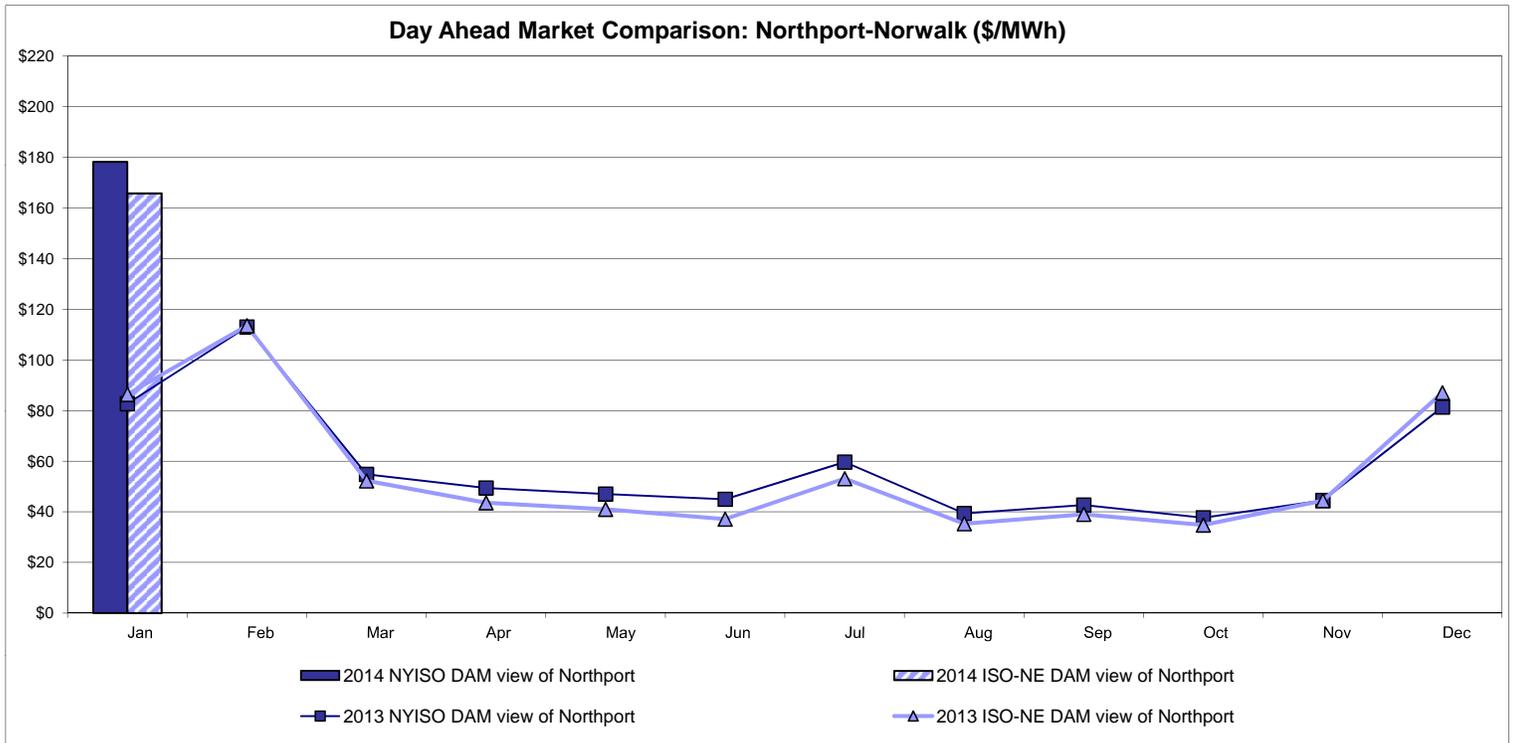
Notes: Exchange factor used for January 2014 was 0.914 to US \$  
 HOEP: Hourly Ontario Energy Price  
 Pre-Dispatch: Projected Energy Price

# External Controllable Line: Cross Sound Cable (New England)



Note:  
 ISO-NE Forecast is an advisory posting @ 18:00 day before.  
 The DAM and R/T prices at the Shorham 13899 interface are used for ISO-NE.  
 The DAM and R/T prices at the CSC interface are used for NYISO.

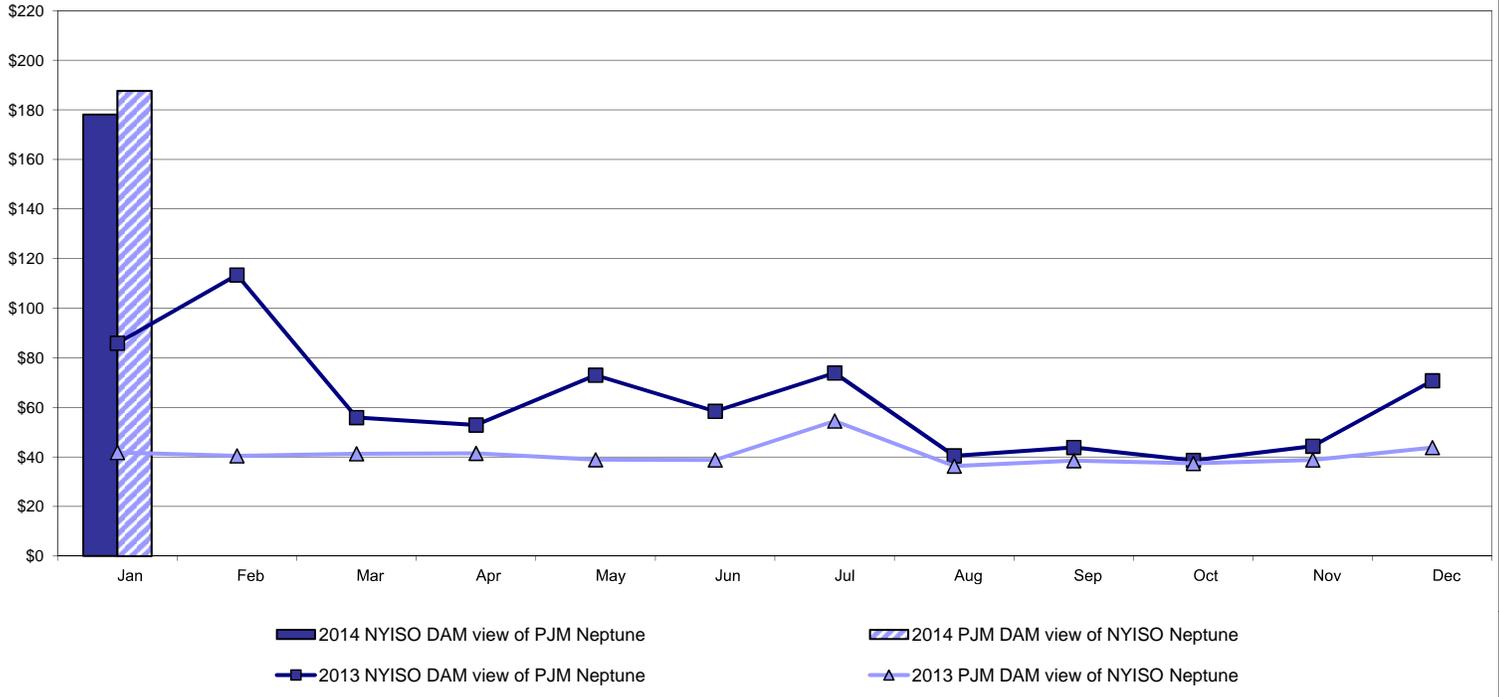
# External Controllable Line: Northport - Norwalk (New England)



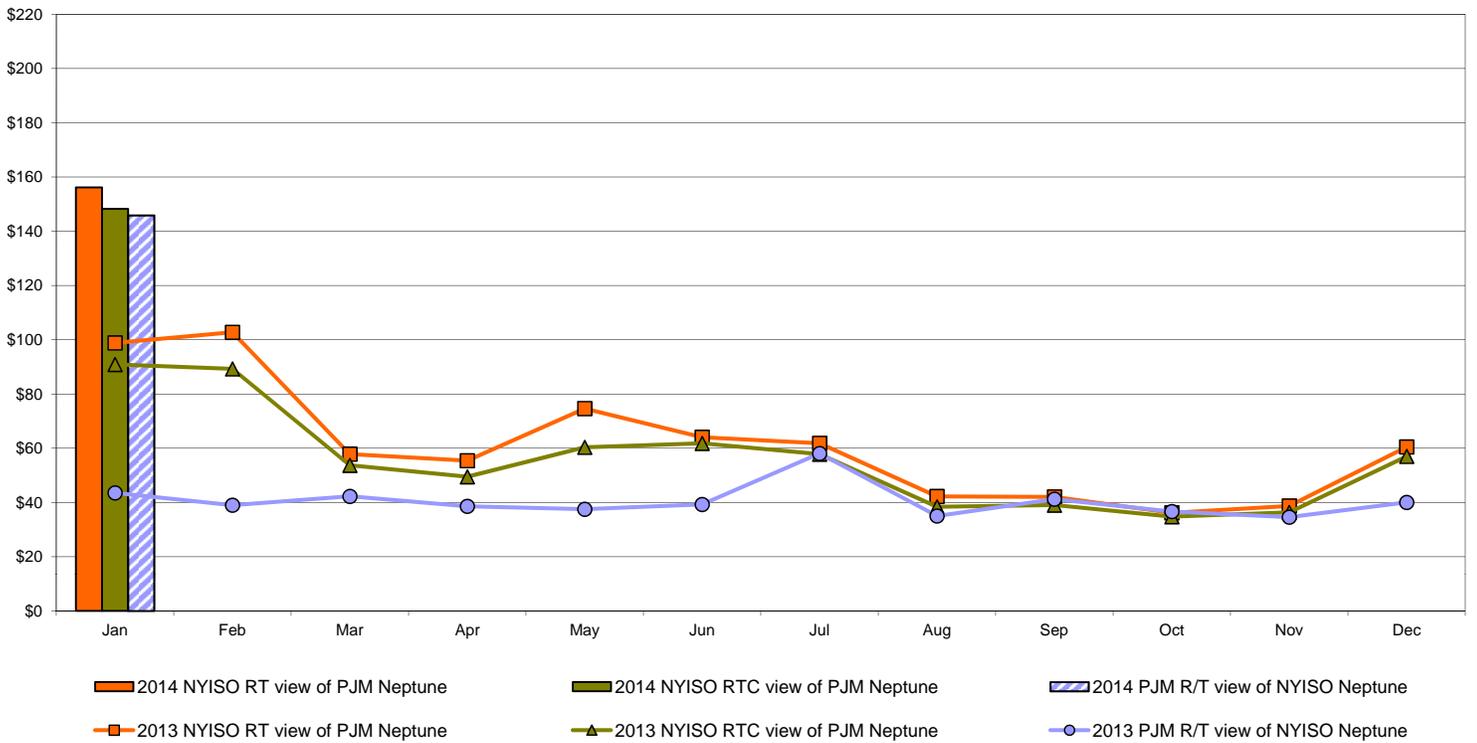
**Note:**  
 ISO-NE Forecast is an advisory posting @ 18:00 day before.  
 The DAM and R/T prices at the Northport 138 interface are used for ISO-NE.  
 The DAM and R/T prices at the 1385 interface are used for NYISO.

## External Controllable Line: Neptune (PJM)

**Day Ahead Market Comparison: Neptune (\$/MWh)**

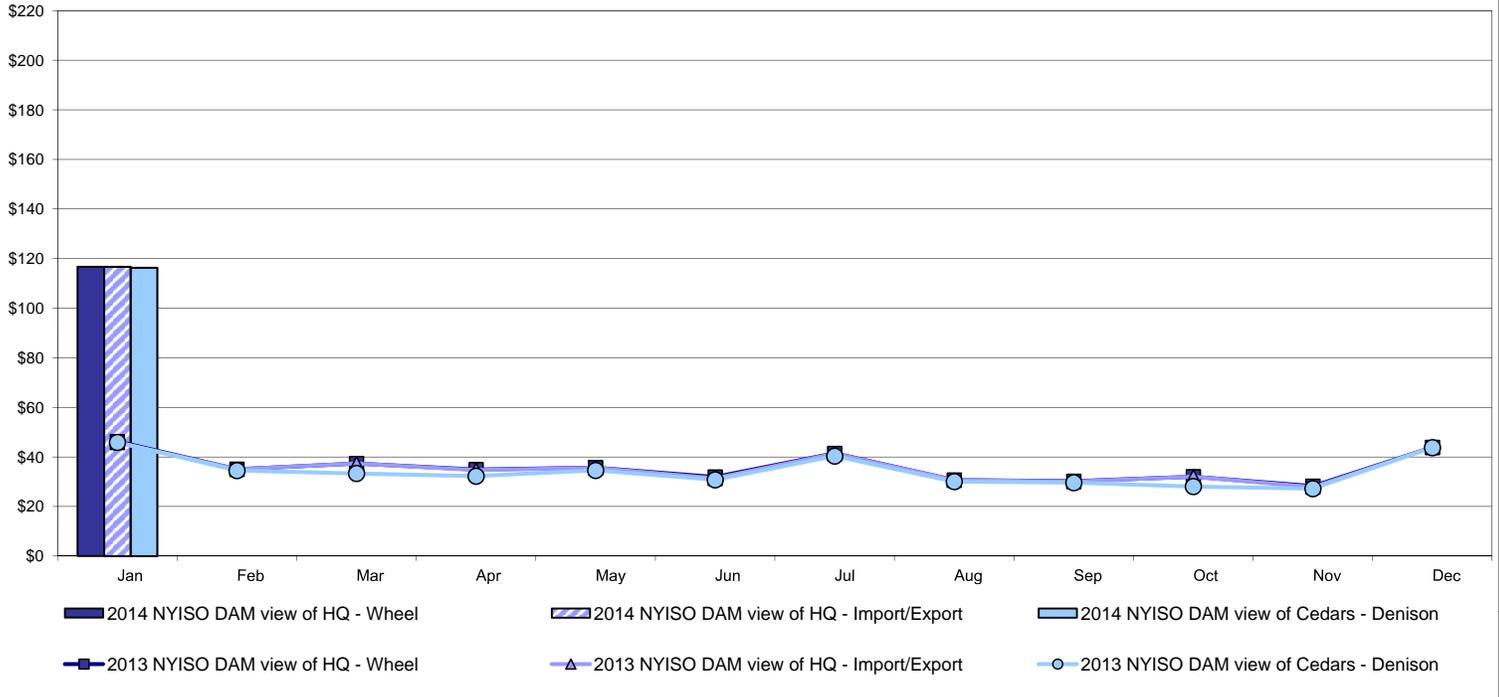


**Real Time Market Comparison: Neptune (\$/MWh)**

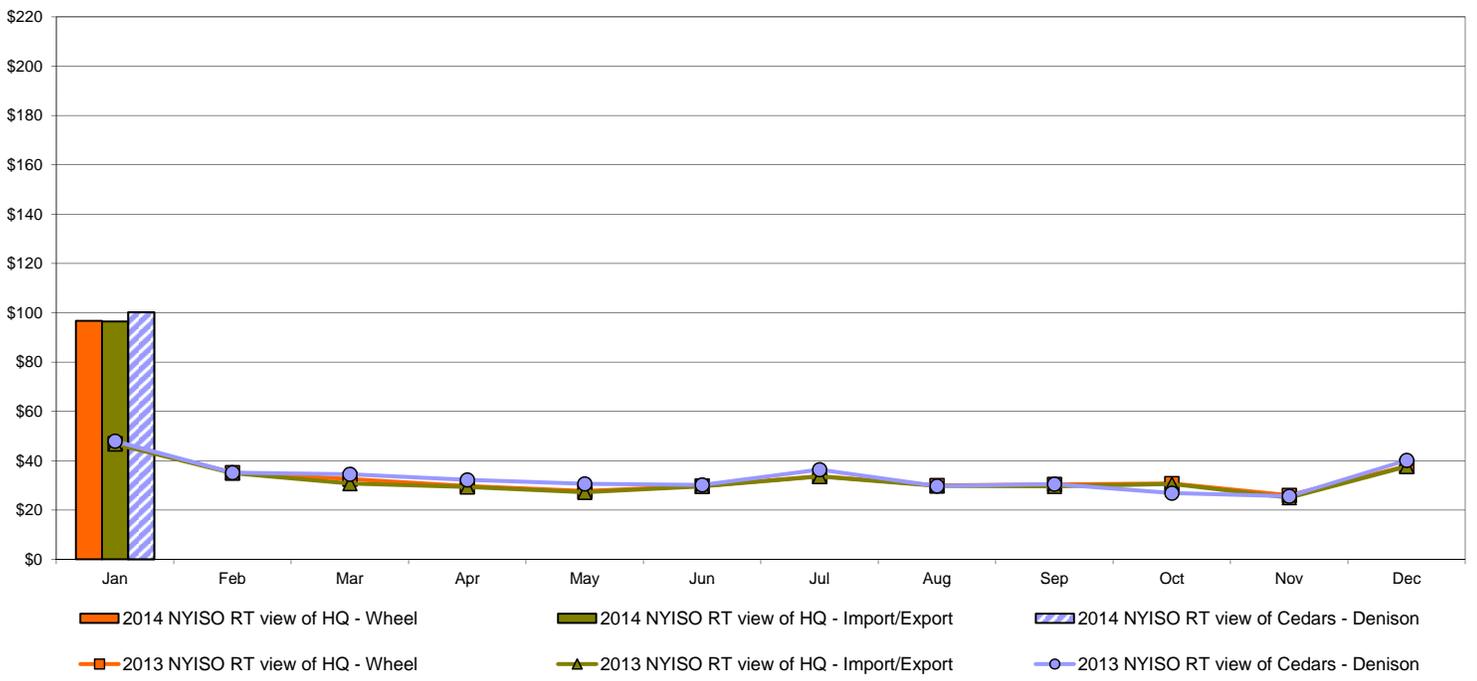


# External Comparison Hydro-Quebec

## Day Ahead Market External Zone Comparison - HQ (\$/MWh)

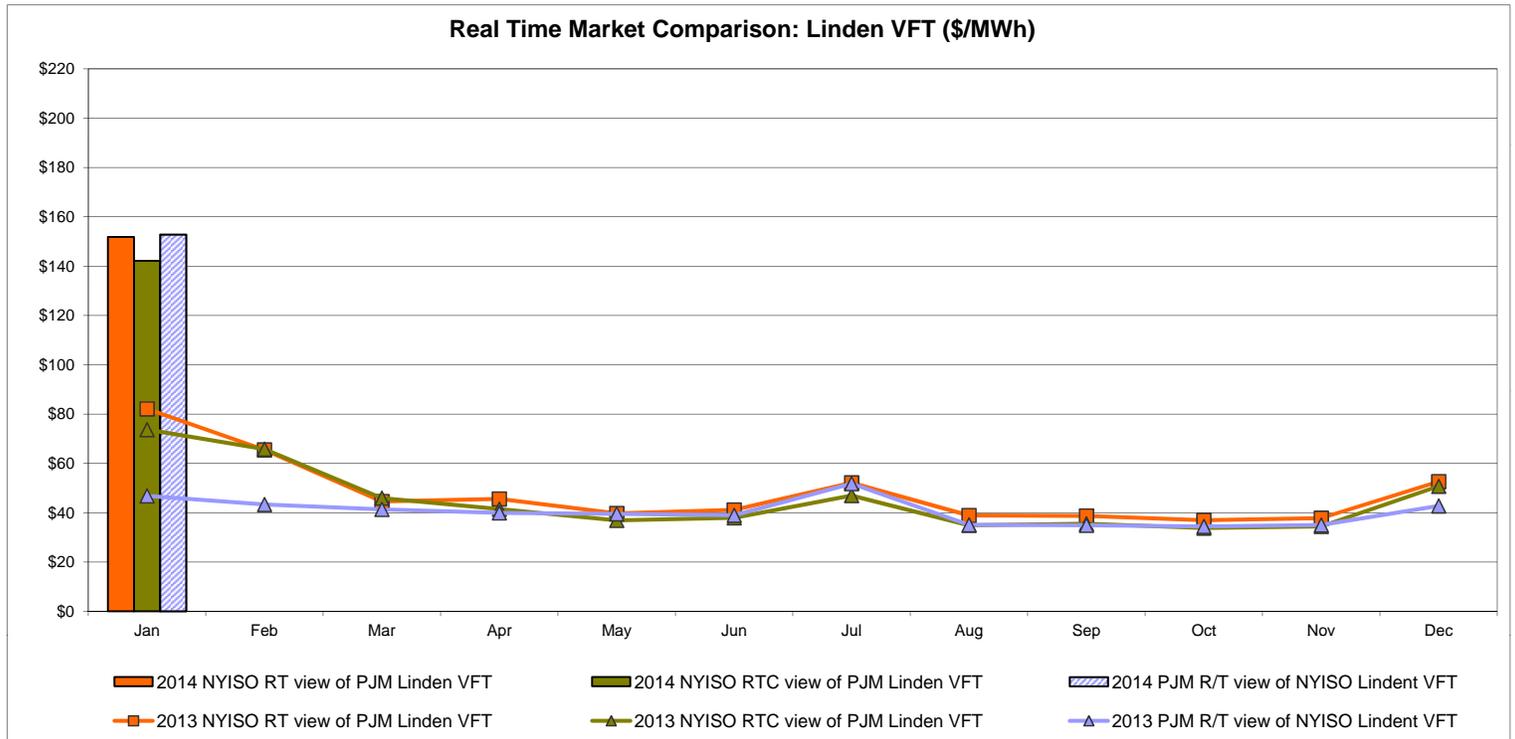
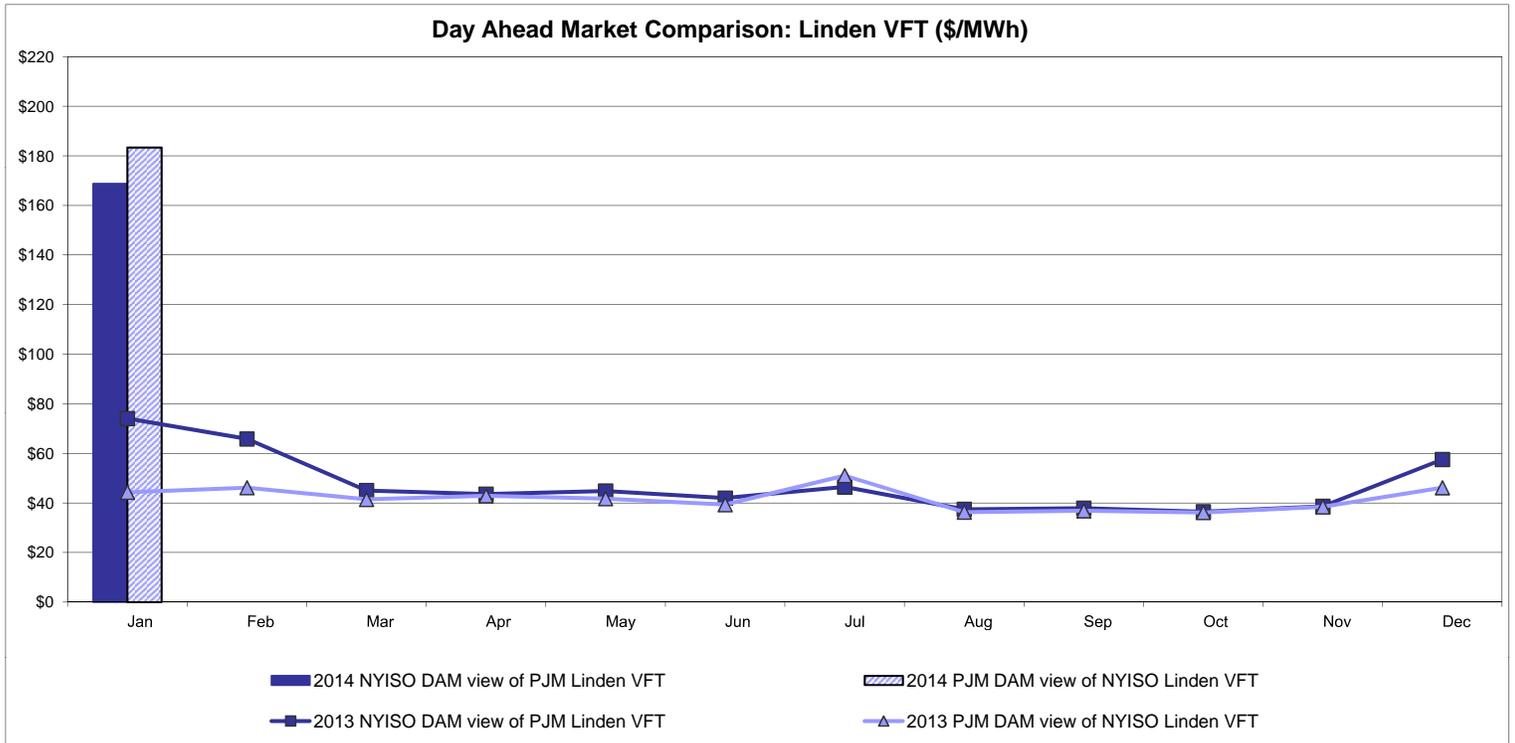


## Real Time Market External Zone Comparison - HQ (\$/MWh)

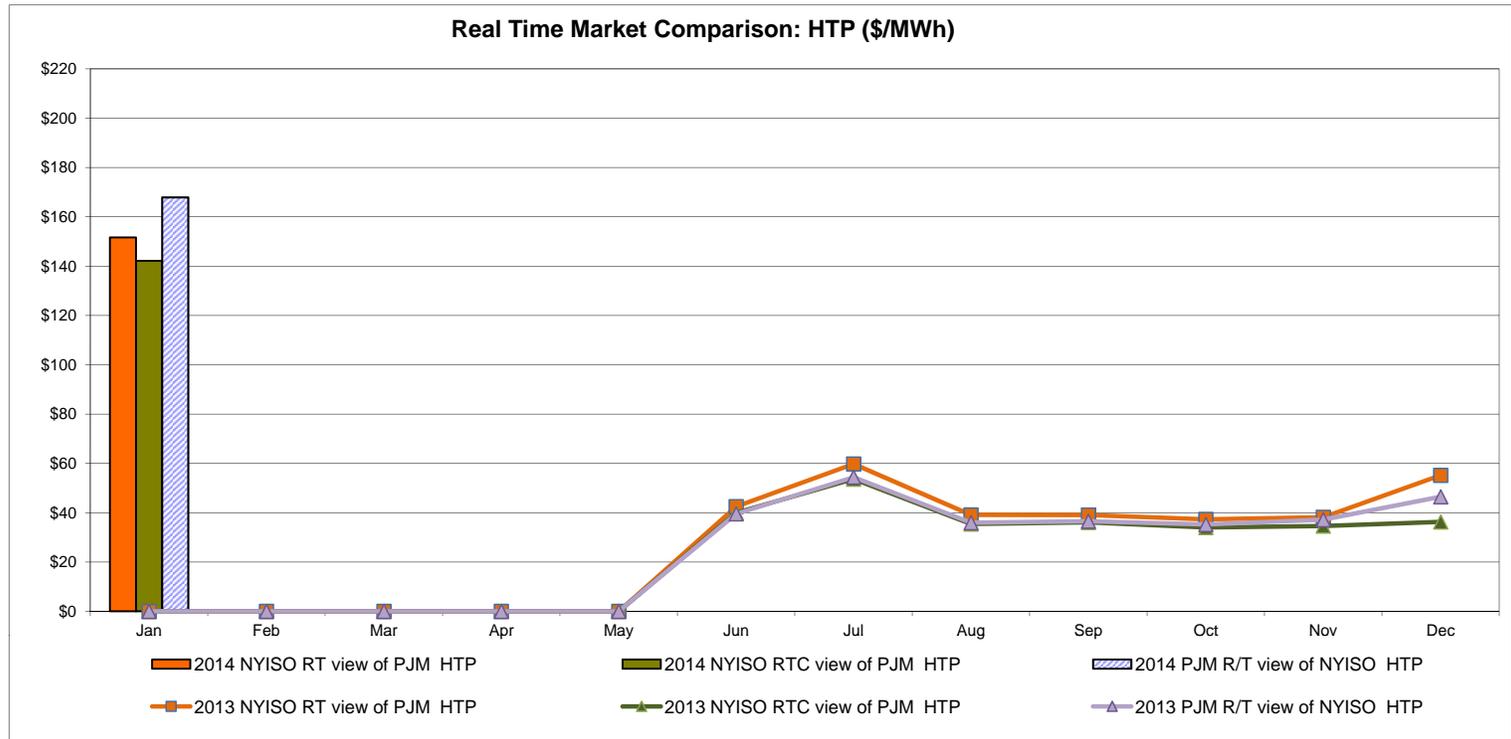
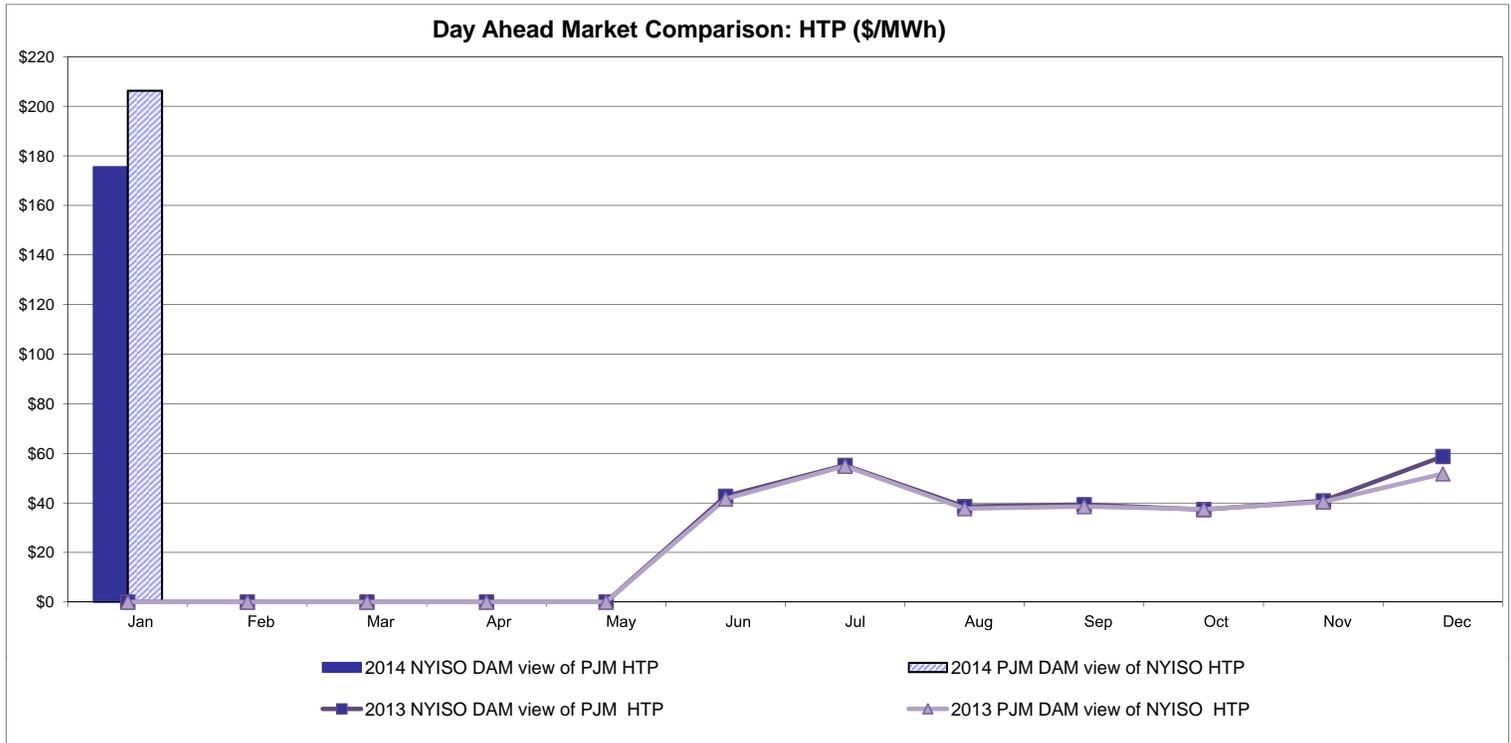


Note:  
Hydro-Quebec Prices are unavailable.

## External Controllable Line: Linden VFT (PJM)



## External Controllable Line: Hudson (PJM)

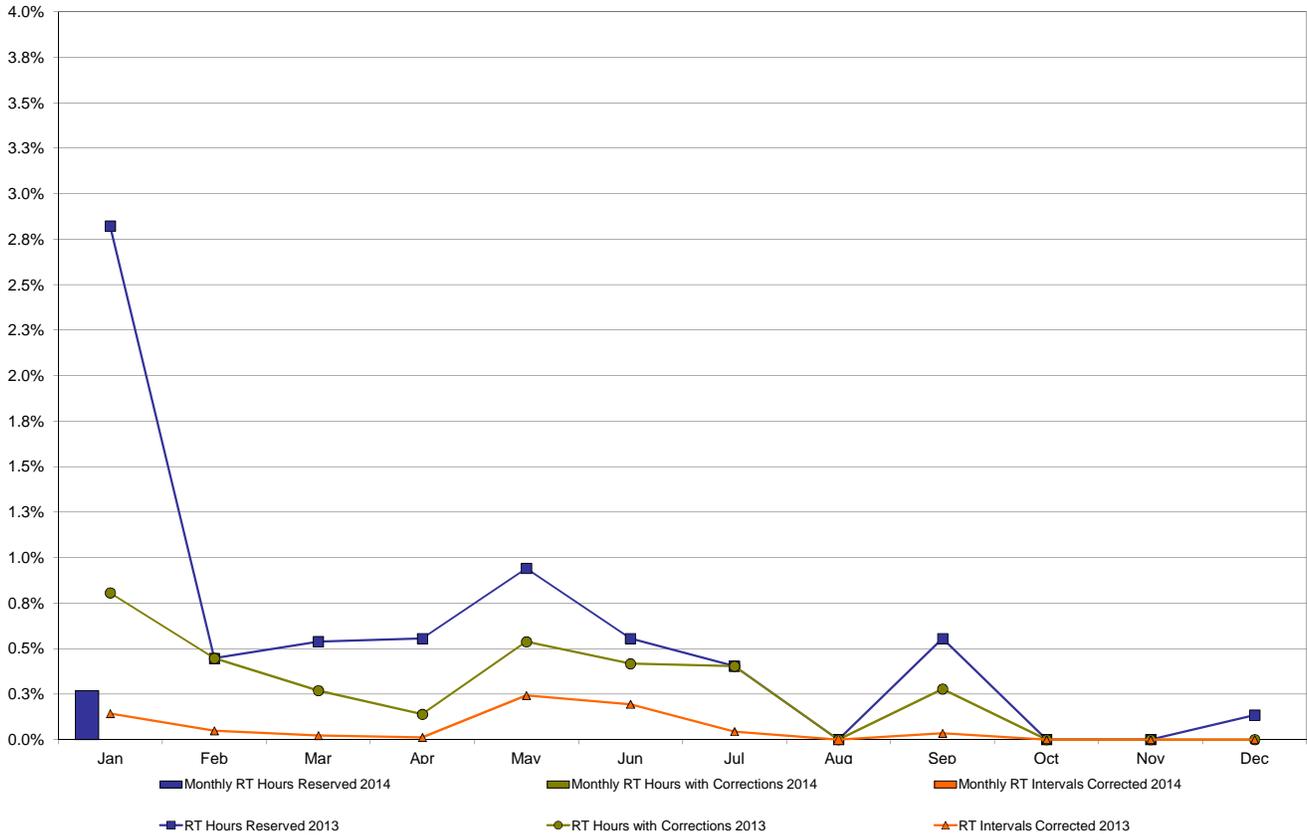


**NYISO Real Time Price Correction Statistics**

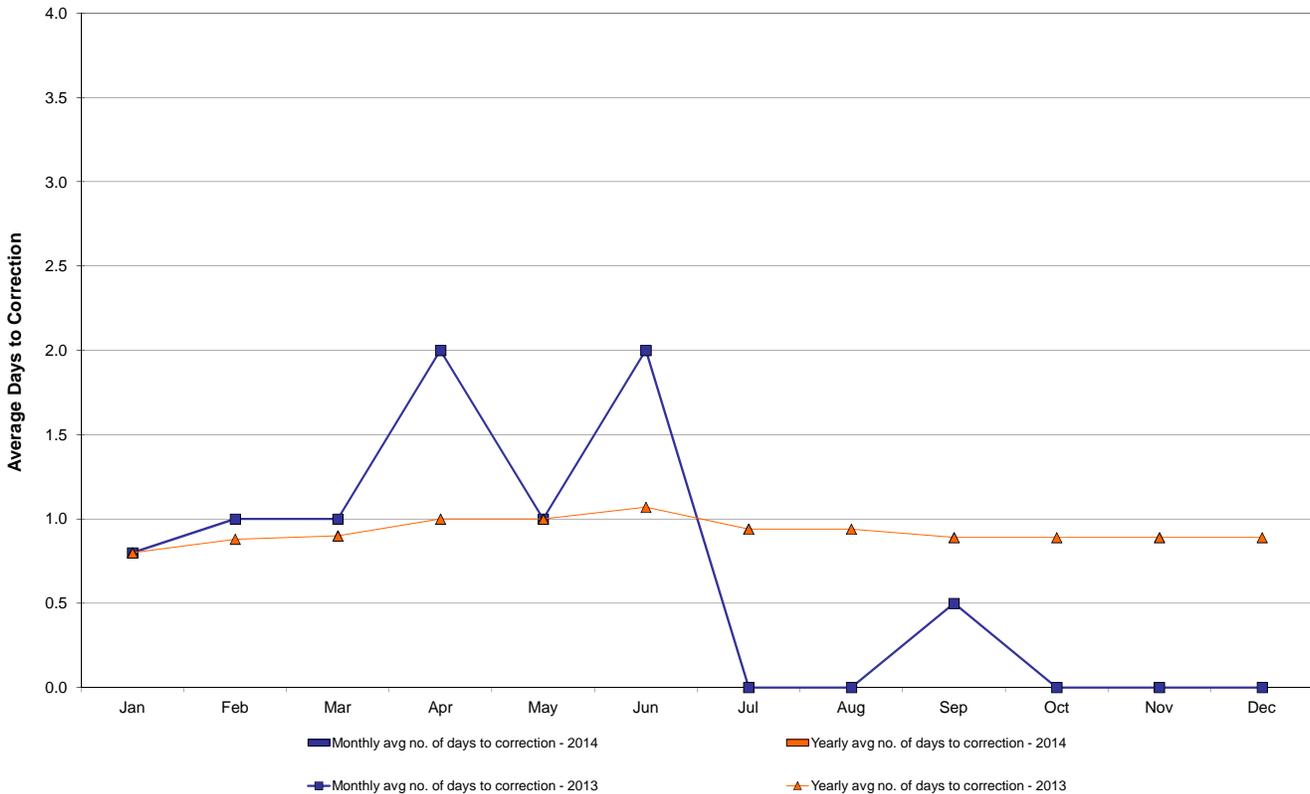
<b>2014</b>		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Hour Corrections</b>													
Number of hours with corrections	in the month	0											
Number of hours	in the month	744											
% of hours with corrections	in the month	0.00%											
% of hours with corrections	year-to-date	0.00%											
<b>Interval Corrections</b>													
Number of intervals corrected	in the month	0											
Number of intervals	in the month	9,232											
% of intervals corrected	in the month	0.00%											
% of intervals corrected	year-to-date	0.00%											
<b>Hours Reserved</b>													
Number of hours reserved	in the month	2											
Number of hours	in the month	744											
% of hours reserved	in the month	0.27%											
% of hours reserved	year-to-date	0.27%											
<b>Days to Correction *</b>													
Avg. number of days to correction	in the month	0.00											
Avg. number of days to correction	year-to-date	0.00											
<b>Days Without Corrections</b>													
Days without corrections	in the month	31											
Days without corrections	year-to-date	31											
<b>2013</b>		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Hour Corrections</b>													
Number of hours with corrections	in the month	6	3	2	1	4	3	3	0	2	0	0	0
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744	721	744
% of hours with corrections	in the month	0.81%	0.45%	0.27%	0.14%	0.54%	0.42%	0.40%	0.00%	0.28%	0.00%	0.00%	0.00%
% of hours with corrections	year-to-date	0.81%	0.64%	0.51%	0.42%	0.44%	0.44%	0.43%	0.38%	0.37%	0.33%	0.30%	0.27%
<b>Interval Corrections</b>													
Number of intervals corrected	in the month	13	4	2	1	22	17	4	0	3	0	0	0
Number of intervals	in the month	9,104	8,230	9,026	8,727	9,083	8,740	9,079	9,002	8,760	9,041	8,854	9,073
% of intervals corrected	in the month	0.14%	0.05%	0.02%	0.01%	0.24%	0.19%	0.04%	0.00%	0.03%	0.00%	0.00%	0.00%
% of intervals corrected	year-to-date	0.14%	0.10%	0.07%	0.06%	0.10%	0.11%	0.10%	0.09%	0.08%	0.07%	0.07%	0.06%
<b>Hours Reserved</b>													
Number of hours reserved	in the month	21	3	4	4	7	4	3	0	4	0	0	1
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744	721	744
% of hours reserved	in the month	2.82%	0.45%	0.54%	0.56%	0.94%	0.56%	0.40%	0.00%	0.56%	0.00%	0.00%	0.13%
% of hours reserved	year-to-date	2.82%	1.69%	1.30%	1.11%	1.08%	0.99%	0.90%	0.79%	0.76%	0.69%	0.62%	0.58%
<b>Days to Correction *</b>													
Avg. number of days to correction	in the month	0.80	1.00	1.00	2.00	1.00	2.00	0.00	0.00	0.50	0.00	0.00	0.00
Avg. number of days to correction	year-to-date	0.80	0.88	0.90	1.00	1.00	1.07	0.94	0.94	0.89	0.89	0.89	0.89
<b>Days Without Corrections</b>													
Days without corrections	in the month	26	25	29	29	28	29	29	31	28	31	30	31
Days without corrections	year-to-date	26	51	80	109	137	166	195	226	254	285	315	346

\* Calendar days from reservation date.

### Percentage of Real-Time Corrections

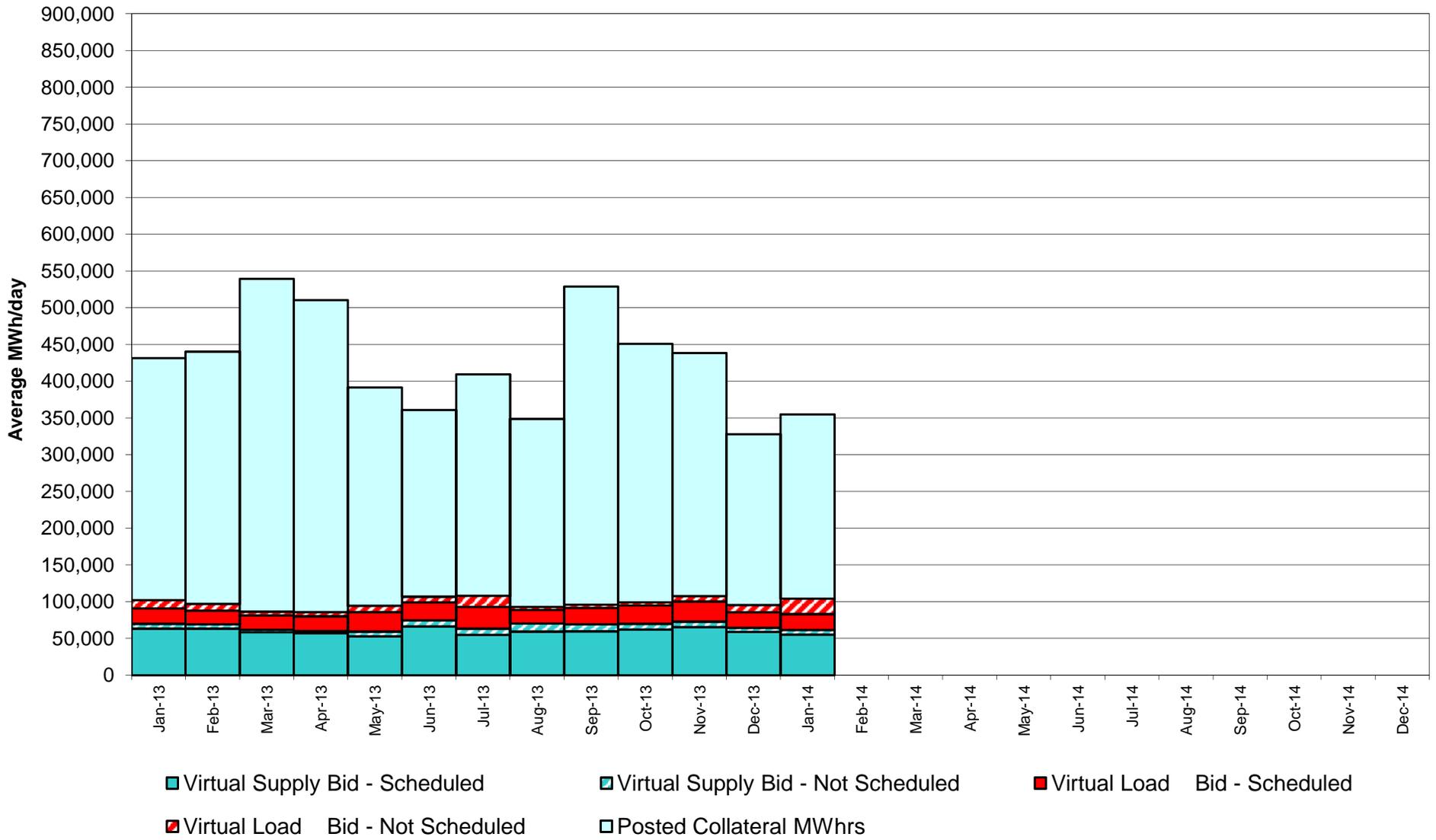


### Annual average time period for making Price Corrections (from reservation date) \*

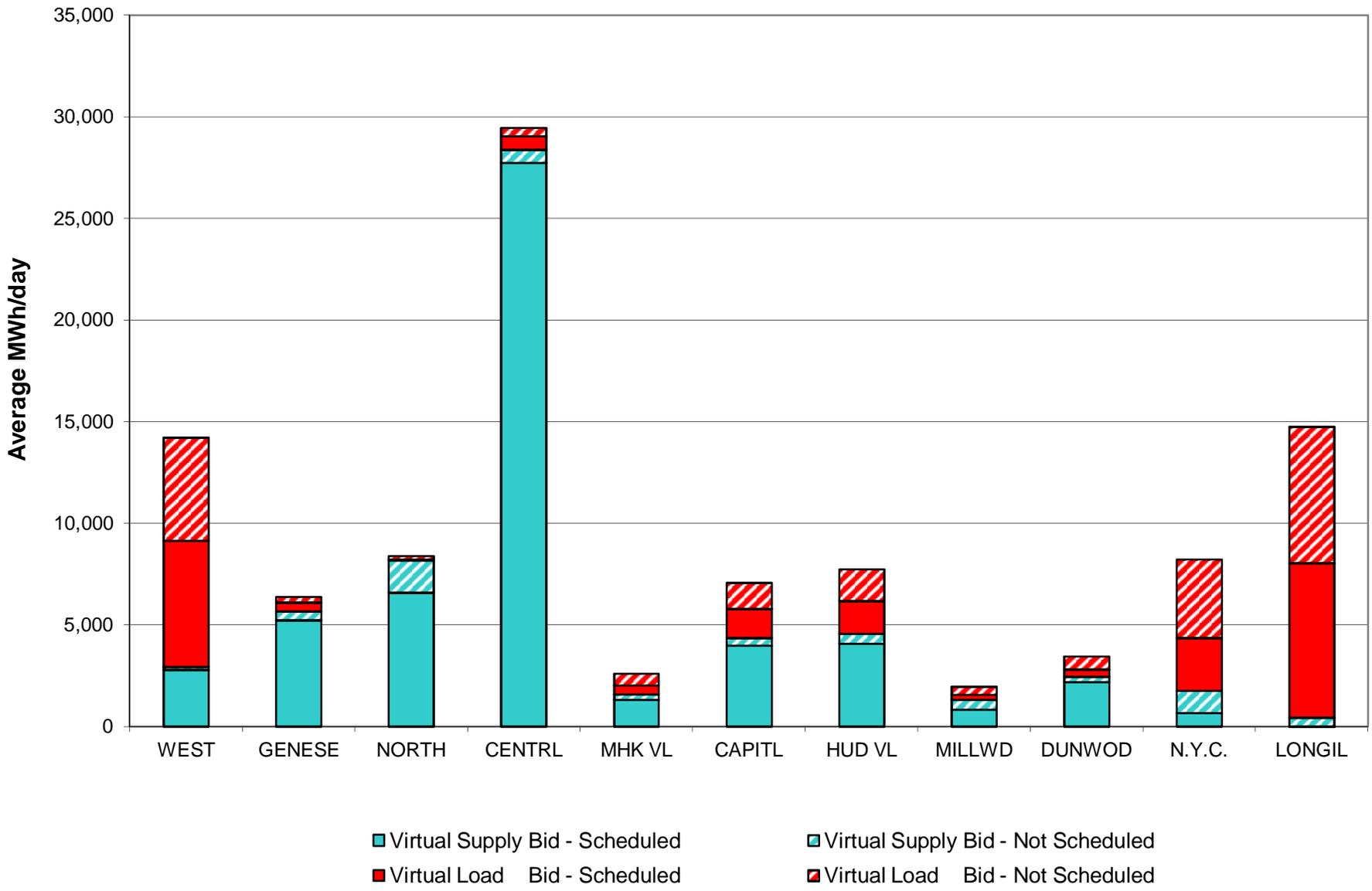


\* Calendar days from reservation date.

## NYISO Virtual Trading Average MWh per day



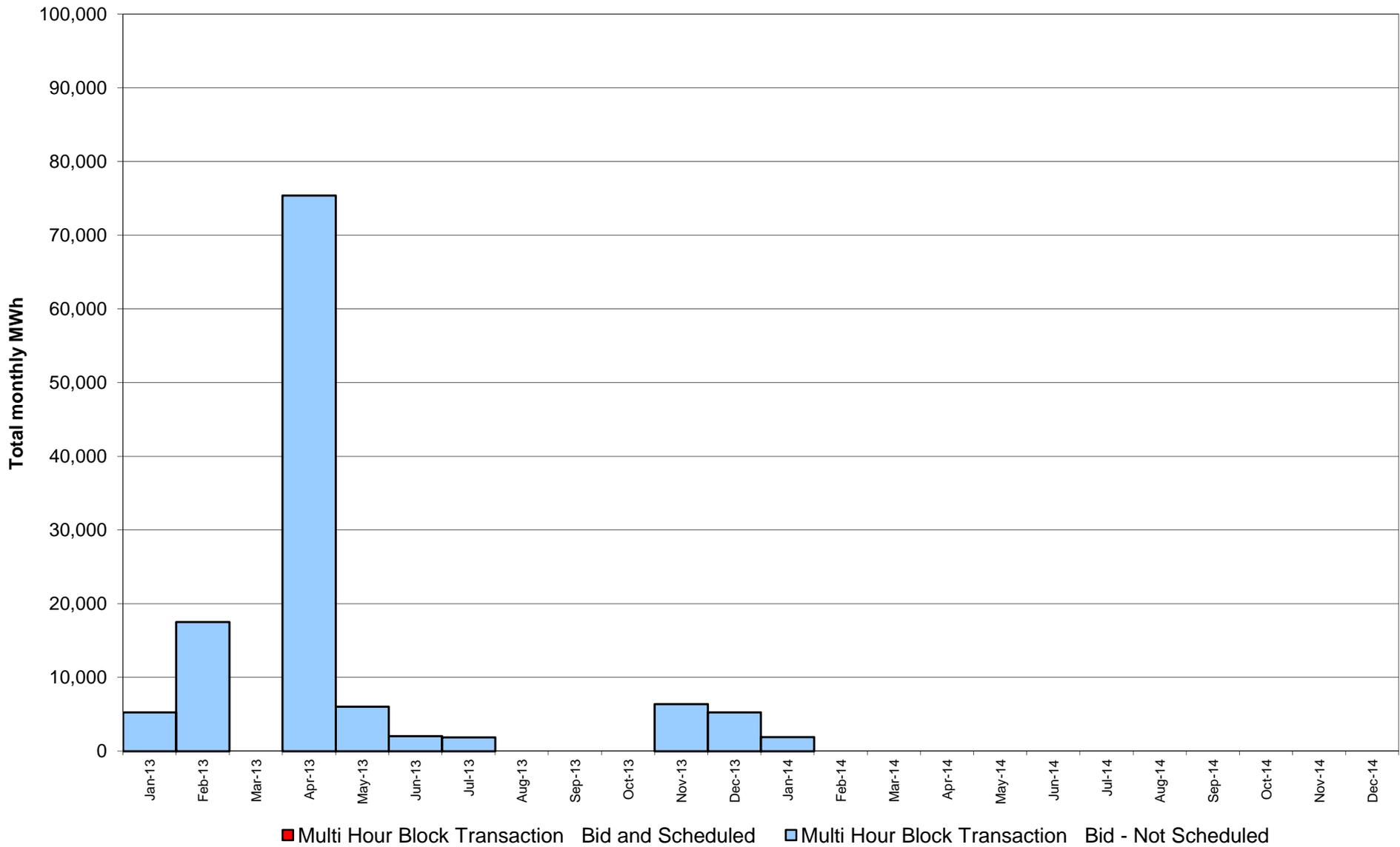
### Virtual Load and Supply Zonal Statistics through January 31, 2014



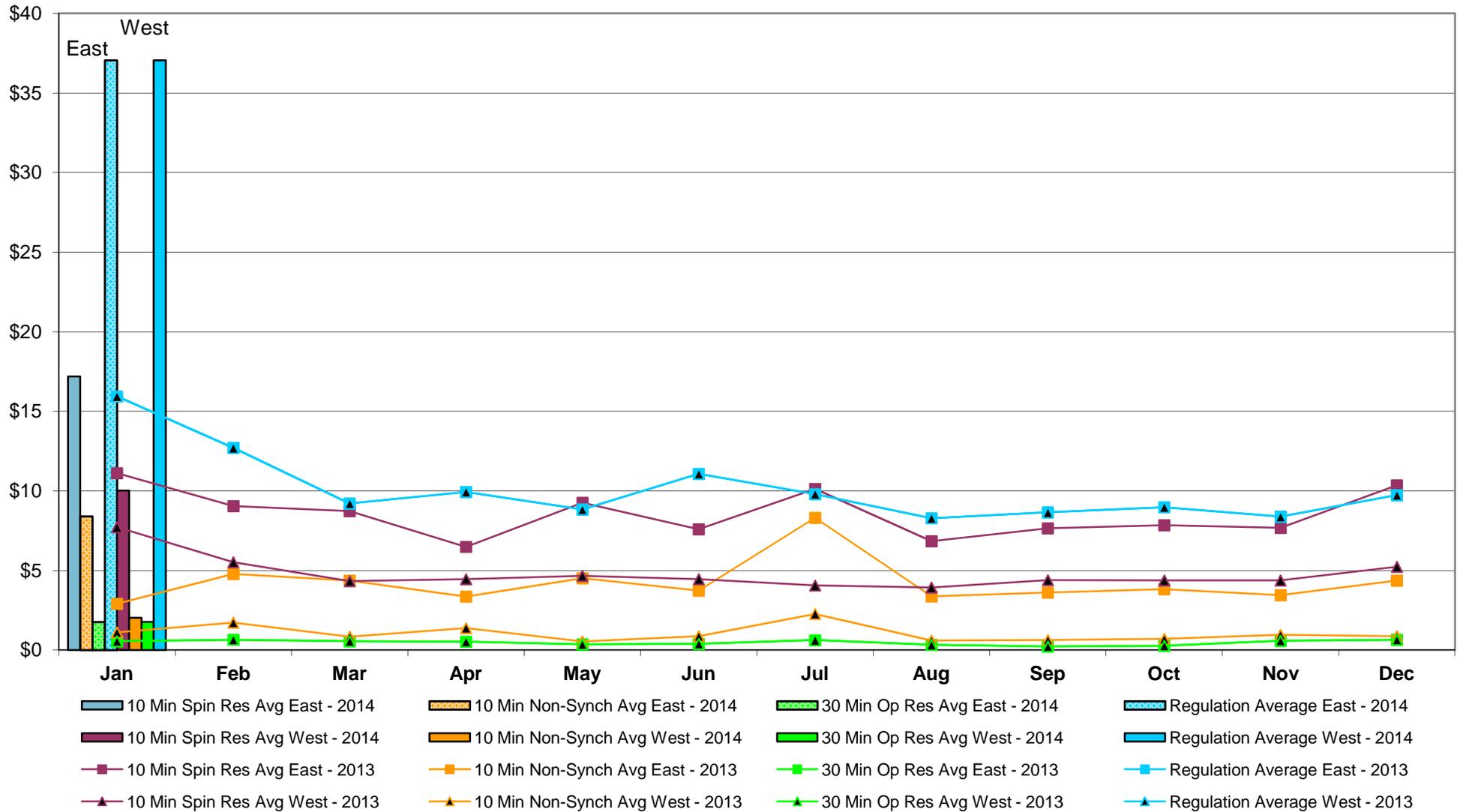
**Virtual Load and Supply Zonal Statistics (Average MWh/day) - 2014**

		Virtual Load Bid		Virtual Supply Bid				Virtual Load Bid		Virtual Supply Bid				Virtual Load Bid		Virtual Supply Bid		
Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled	Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled	Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled	
<b>WEST</b>	Jan-14	6,213	5,063	2,777	155	<b>MHK VL</b>	Jan-14	429	587	1316	260	<b>DUNWOD</b>	Jan-14	354	631	2182	268	
	Feb-14						Feb-14						Feb-14					
	Mar-14						Mar-14						Mar-14					
	Apr-14						Apr-14						Apr-14					
	May-14						May-14						May-14					
	Jun-14						Jun-14						Jun-14					
	Jul-14						Jul-14						Jul-14					
	Aug-14						Aug-14						Aug-14					
	Sep-14						Sep-14						Sep-14					
	Oct-14						Oct-14						Oct-14					
	Nov-14						Nov-14						Nov-14					
	Dec-14						Dec-14						Dec-14					
<b>GENESE</b>	Jan-14	434	279	5,230	425	<b>CAPITL</b>	Jan-14	1439	1278	3985	379	<b>N.Y.C.</b>	Jan-14	2627	3843	666	1083	
	Feb-14						Feb-14						Feb-14					
	Mar-14						Mar-14						Mar-14					
	Apr-14						Apr-14						Apr-14					
	May-14						May-14						May-14					
	Jun-14						Jun-14						Jun-14					
	Jul-14						Jul-14						Jul-14					
	Aug-14						Aug-14						Aug-14					
	Sep-14						Sep-14						Sep-14					
	Oct-14						Oct-14						Oct-14					
	Nov-14						Nov-14						Nov-14					
	Dec-14						Dec-14						Dec-14					
<b>NORTH</b>	Jan-14	47	168	6,579	1,592	<b>HUD VL</b>	Jan-14	1612	1554	4091	466	<b>LONGIL</b>	Jan-14	7605	6704	59	375	
	Feb-14						Feb-14						Feb-14					
	Mar-14						Mar-14						Mar-14					
	Apr-14						Apr-14						Apr-14					
	May-14						May-14						May-14					
	Jun-14						Jun-14						Jun-14					
	Jul-14						Jul-14						Jul-14					
	Aug-14						Aug-14						Aug-14					
	Sep-14						Sep-14						Sep-14					
	Oct-14						Oct-14						Oct-14					
	Nov-14						Nov-14						Nov-14					
	Dec-14						Dec-14						Dec-14					
<b>CENTRL</b>	Jan-14	675	392	27,758	624	<b>MILLWD</b>	Jan-14	235	401	848	470	<b>NYISO</b>	Jan-14	21670	20900	55491	6098	
	Feb-14						Feb-14						Feb-14					
	Mar-14						Mar-14						Mar-14					
	Apr-14						Apr-14						Apr-14					
	May-14						May-14						May-14					
	Jun-14						Jun-14						Jun-14					
	Jul-14						Jul-14						Jul-14					
	Aug-14						Aug-14						Aug-14					
	Sep-14						Sep-14						Sep-14					
	Oct-14						Oct-14						Oct-14					
	Nov-14						Nov-14						Nov-14					
	Dec-14						Dec-14						Dec-14					

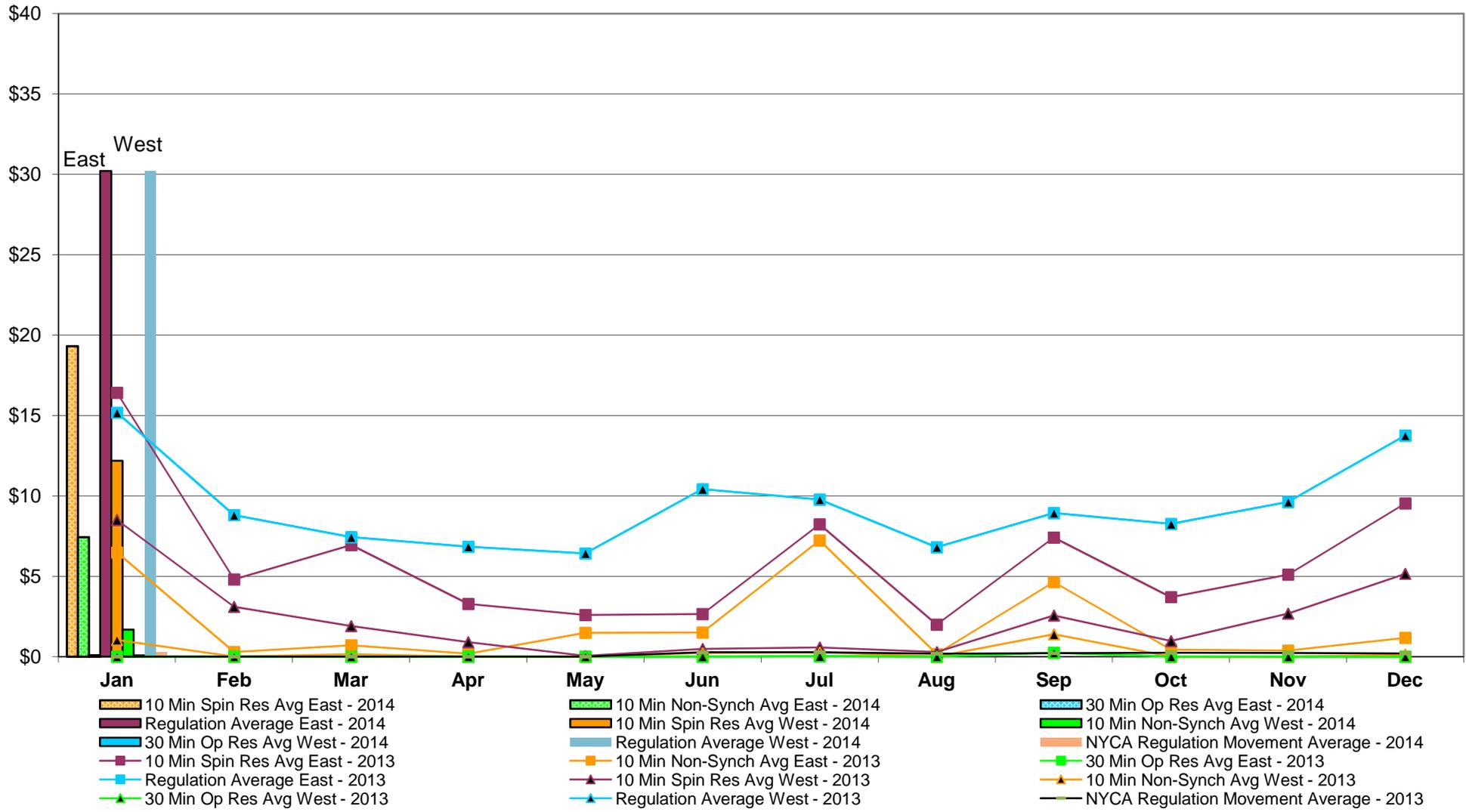
## NYISO Multi Hour Block Transactions Monthly Total MWh



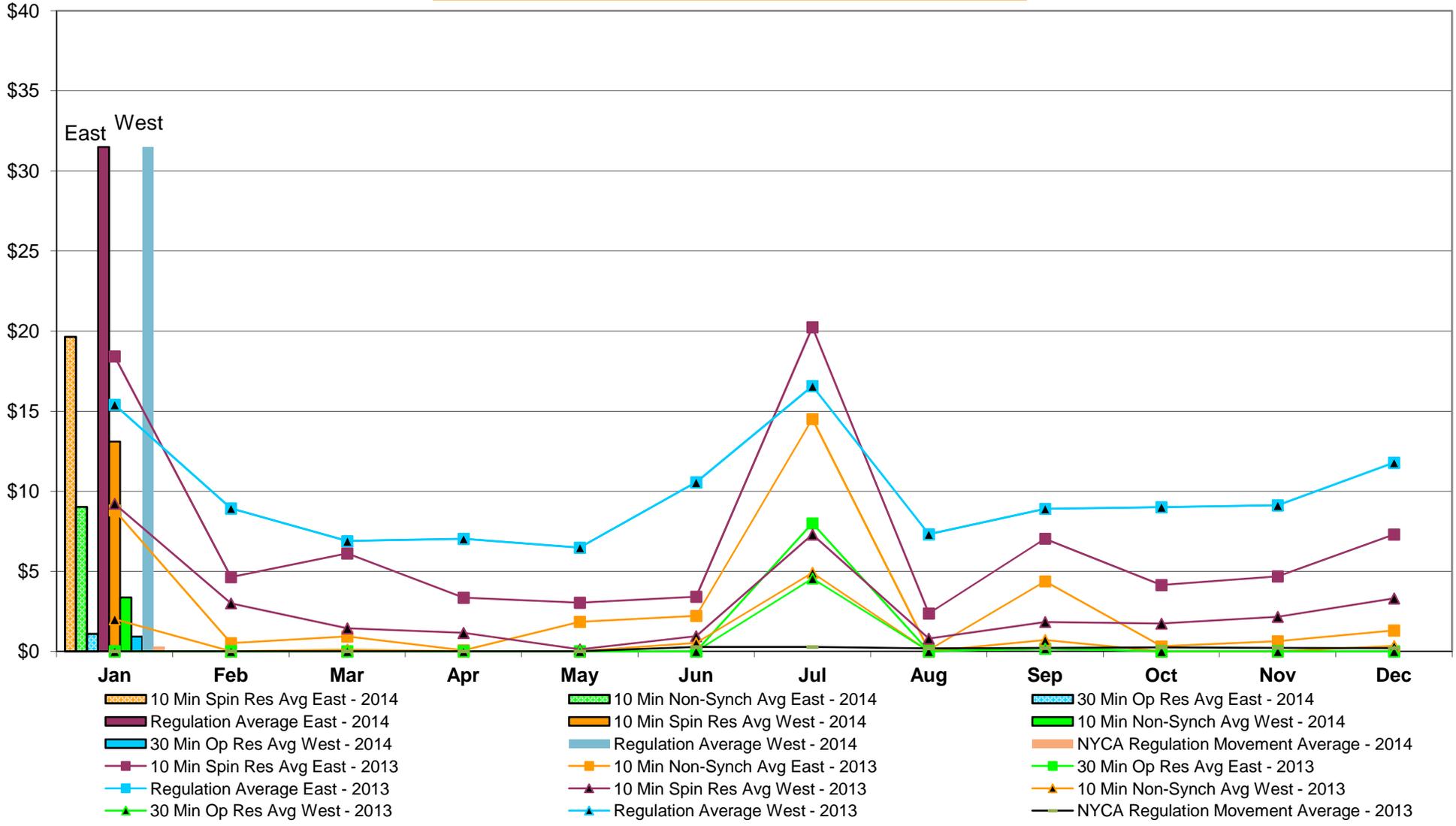
## NYISO Monthly Average Ancillary Service Prices Day Ahead Market 2013 - 2014



## NYISO Monthly Average Ancillary Service Prices RTC Market 2013 - 2014



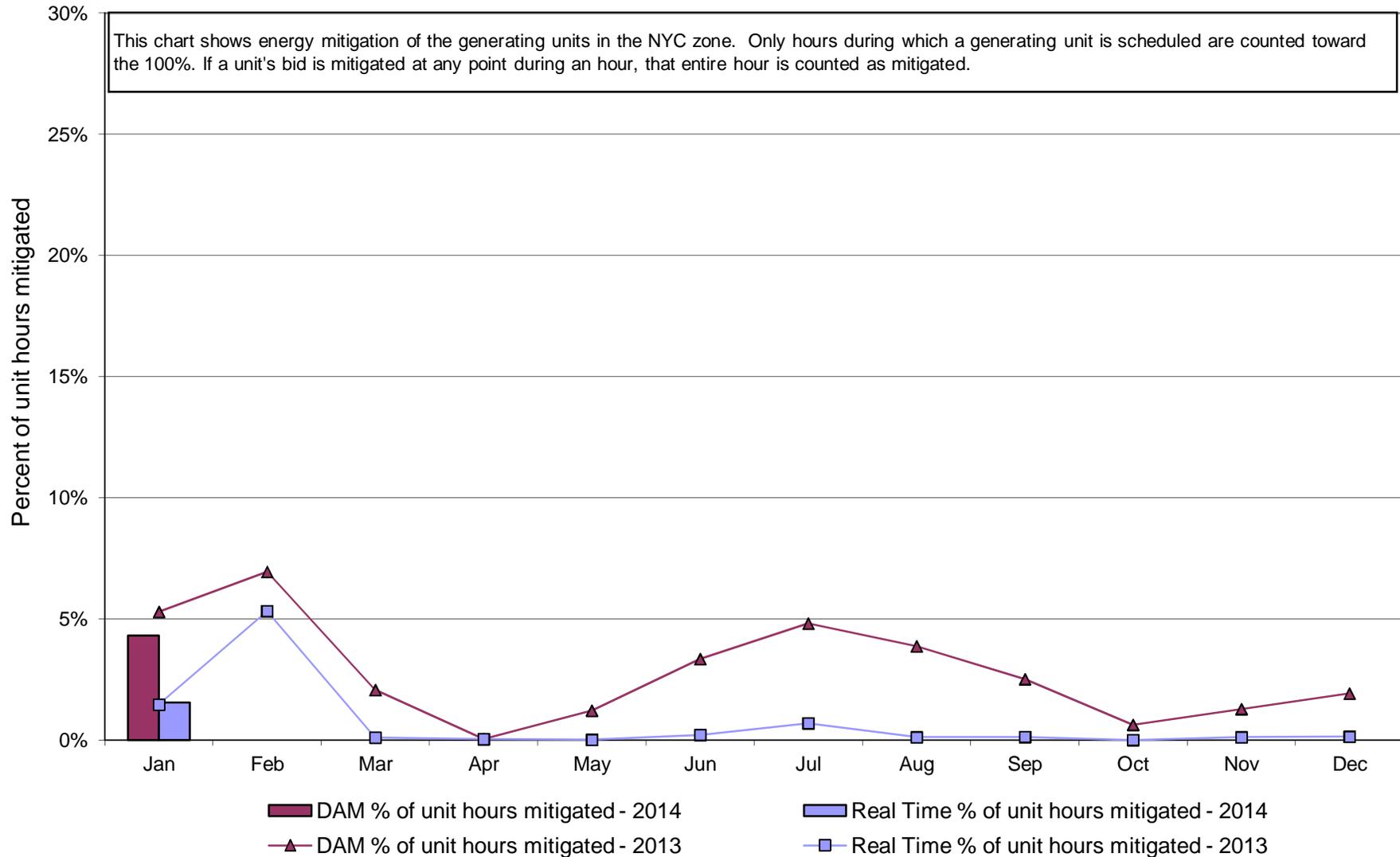
## NYISO Monthly Average Ancillary Service Prices Real Time Market 2013 - 2014



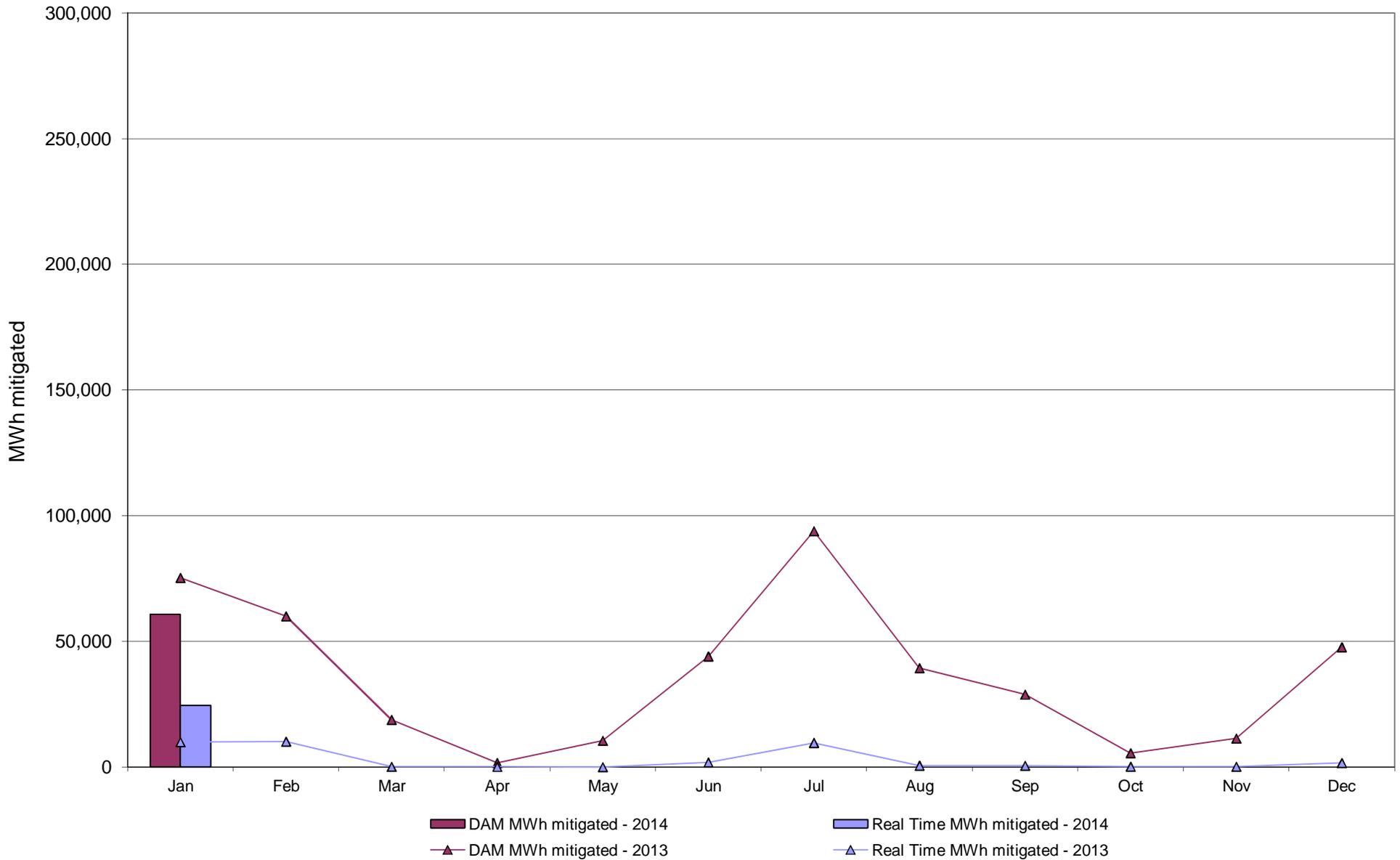
**NYISO Markets Ancillary Services Statistics - Unweighted Price (\$/MWH)**

<b>2014</b>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Day Ahead Market</b>												
10 Min Spin East	17.19											
10 Min Spin West	10.02											
10 Min Non Synch East	8.40											
10 Min Non Synch West	2.02											
30 Min East	1.77											
30 Min West	1.77											
Regulation East	37.05											
Regulation West	37.05											
<b>RTC Market</b>												
10 Min Spin East	19.32											
10 Min Spin West	12.18											
10 Min Non Synch East	7.43											
10 Min Non Synch West	1.68											
30 Min East	0.08											
30 Min West	0.08											
Regulation East	30.21											
Regulation West	30.21											
NYCA Regulation Movement	0.28											
<b>Real Time Market</b>												
10 Min Spin East	19.64											
10 Min Spin West	13.10											
10 Min Non Synch East	9.03											
10 Min Non Synch West	3.37											
30 Min East	1.10											
30 Min West	0.92											
Regulation East	31.50											
Regulation West	31.50											
NYCA Regulation Movement	0.27											
<b>2013</b>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Day Ahead Market</b>												
10 Min Spin East	11.12	9.05	8.73	6.49	9.25	7.59	10.13	6.84	7.65	7.85	7.68	10.35
10 Min Spin West	7.72	5.53	4.34	4.46	4.67	4.46	4.06	3.94	4.40	4.38	4.37	5.23
10 Min Non Synch East	2.91	4.79	4.36	3.36	4.52	3.73	8.31	3.37	3.62	3.82	3.45	4.37
10 Min Non Synch West	1.11	1.73	0.84	1.38	0.55	0.88	2.27	0.60	0.63	0.70	0.96	0.87
30 Min East	0.56	0.65	0.56	0.53	0.36	0.40	0.62	0.33	0.23	0.28	0.59	0.65
30 Min West	0.56	0.65	0.56	0.53	0.36	0.40	0.62	0.33	0.23	0.28	0.59	0.65
Regulation East	15.94	12.70	9.21	9.93	8.84	11.07	9.80	8.29	8.65	8.98	8.38	9.74
Regulation West	15.94	12.70	9.21	9.93	8.84	11.07	9.80	8.29	8.65	8.98	8.38	9.74
<b>RTC Market</b>												
10 Min Spin East	16.42	4.81	6.94	3.28	2.59	2.65	8.23	1.99	7.40	3.70	5.11	9.53
10 Min Spin West	8.50	3.10	1.90	0.90	0.05	0.48	0.57	0.29	2.56	0.97	2.68	5.16
10 Min Non Synch East	6.48	0.28	0.70	0.18	1.48	1.50	7.23	0.16	4.63	0.44	0.38	1.17
10 Min Non Synch West	1.04	0.00	0.15	0.00	0.00	0.22	0.26	0.00	1.39	0.00	0.00	0.13
30 Min East	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.24	0.00	0.00	0.00
30 Min West	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.24	0.00	0.00	0.00
Regulation East	15.18	8.81	7.43	6.84	6.42	10.42	9.77	6.81	8.93	8.26	9.63	13.75
Regulation West	15.18	8.81	7.43	6.84	6.42	10.42	9.77	6.81	8.93	8.26	9.63	13.75
NYCA Regulation Movement	0.00	0.00	0.00	0.00	0.00	0.27	0.28	0.18	0.21	0.24	0.22	0.20
<b>Real Time Market</b>												
10 Min Spin East	18.42	4.63	6.12	3.35	3.03	3.41	20.24	2.37	7.03	4.14	4.68	7.29
10 Min Spin West	9.22	3.00	1.44	1.15	0.13	0.94	7.29	0.80	1.83	1.73	2.16	3.31
10 Min Non Synch East	8.81	0.52	0.93	0.06	1.84	2.22	14.51	0.07	4.37	0.31	0.63	1.31
10 Min Non Synch West	2.00	0.00	0.10	0.00	0.00	0.53	4.91	0.00	0.70	0.00	0.00	0.34
30 Min East	0.00	0.00	0.00	0.00	0.00	0.00	7.99	0.00	0.17	0.00	0.00	0.00
30 Min West	0.00	0.00	0.00	0.00	0.00	0.00	4.55	0.00	0.17	0.00	0.00	0.00
Regulation East	15.40	8.92	6.89	7.03	6.48	10.55	16.57	7.32	8.90	9.00	9.12	11.78
Regulation West	15.40	8.92	6.89	7.03	6.48	10.55	16.57	7.32	8.90	9.00	9.12	11.78
NYCA Regulation Movement	0.00	0.00	0.00	0.00	0.00	0.27	0.27	0.19	0.21	0.24	0.22	0.20

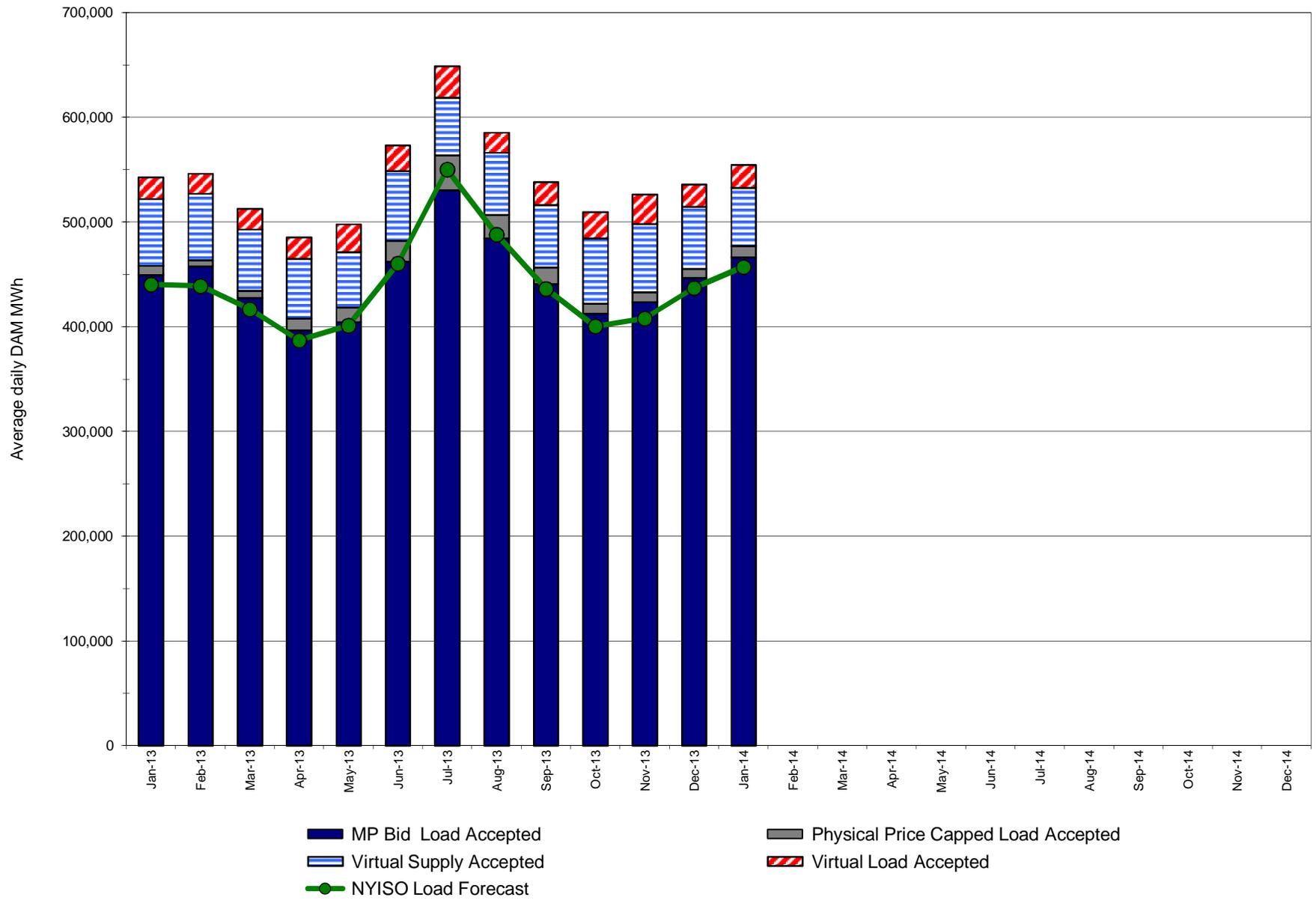
## NYISO In City Energy Mitigation - AMP (NYC Zone) 2013 - 2014 Percentage of committed unit-hours mitigated



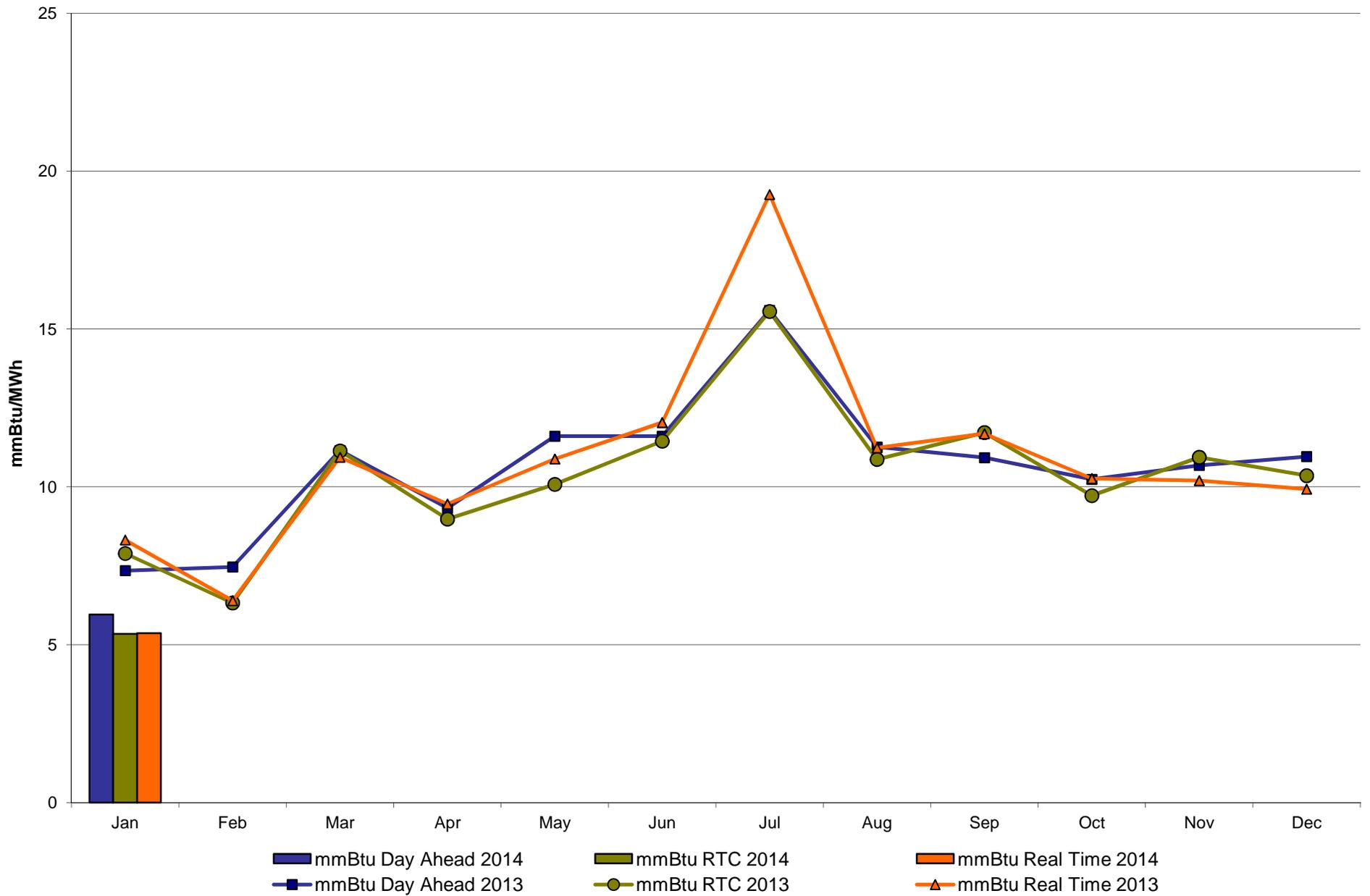
**NYISO In City Energy Mitigation (NYC Zone) 2013 - 2014  
Monthly megawatt hours mitigated**



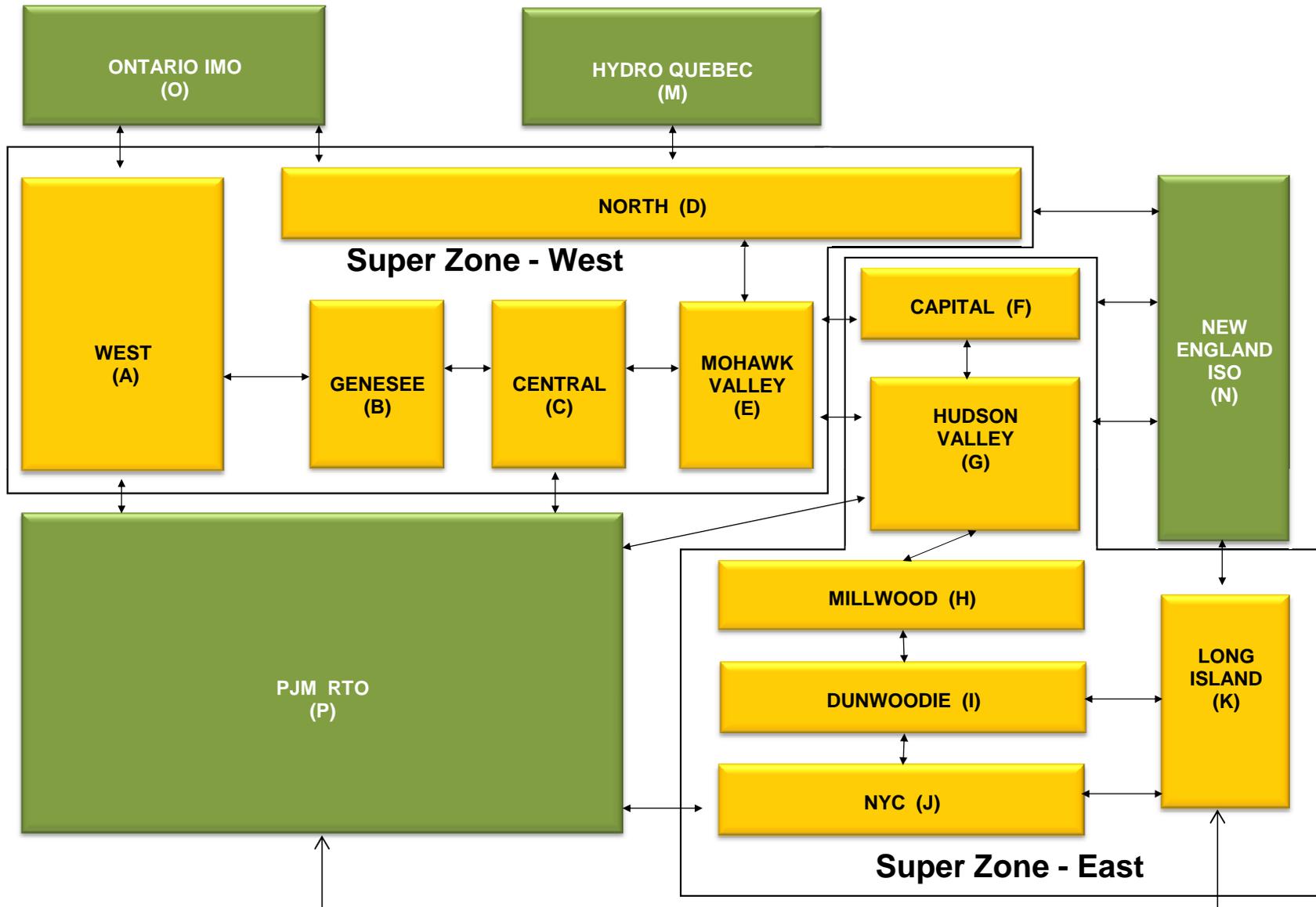
### NYISO Average Daily DAM Load Bid Summary



## Monthly Implied Heat Rate 2013-2014



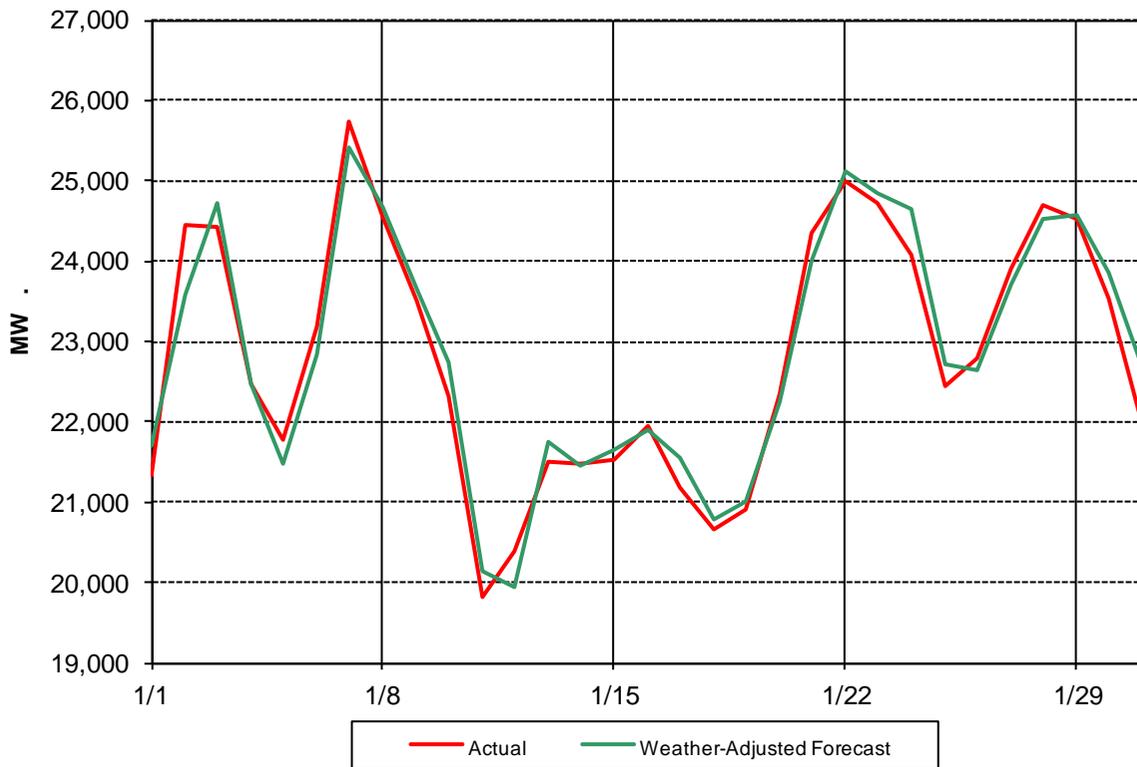
# NYISO LBMP ZONES



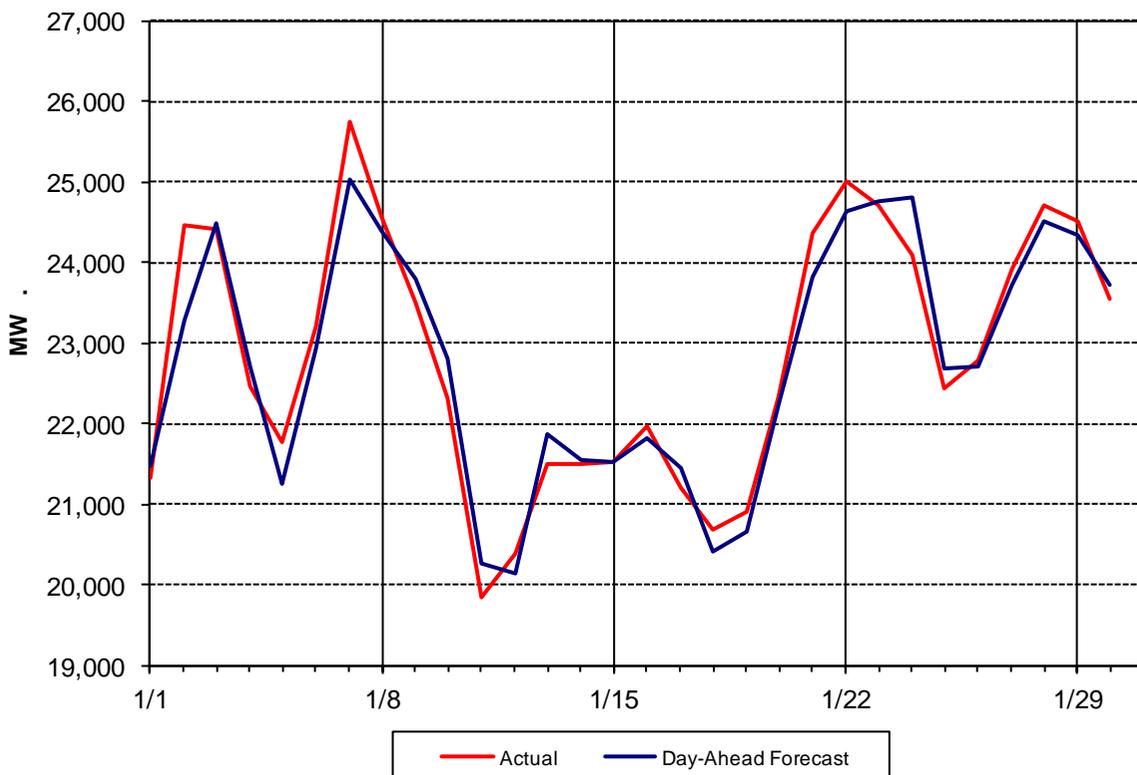
**Billing Codes for Chart 4-C**

<b>Chart - C Category Name</b>	<b>Billing Code</b>	<b>Billing Category Name</b>
Bid Production Cost Guarantee Balancing	81203	Balancing NYISO Bid Production Cost Guarantee - Internal Units
Bid Production Cost Guarantee Balancing	81204	Balancing NYISO Bid Production Cost Guarantee - External Units
Bid Production Cost Guarantee Balancing	81205	Balancing NYISO Bid Production Cost Guarantee Expenditure due to Curtailed Imports
Bid Production Cost Guarantee Balancing	81208	Balancing NYISO Bid Production Cost Guarantee - Internal Units
Bid Production Cost Guarantee Balancing	81209	Balancing NYISO Bid Production Cost Guarantee - External Units
Bid Production Cost Guarantee Balancing	81213	Balancing NYISO Bid Production Cost Guarantee Expenditure due to Curtailed Imports
Bid Production Cost Guarantee DAM	81201	DAM NYISO Bid Production Cost Guarantee - Internal Units
Bid Production Cost Guarantee DAM	84001	EDRP/SCR Demand Response - Local
Bid Production Cost Guarantee DAM	84101	EDRP/SCR Demand Response - NYISO Wide
Bid Production Cost Guarantee DAM	81401	DAM Price Responsive Load Program
Bid Production Cost Guarantee DAM	81202	DAM NYISO Bid Production Cost Guarantee - External Units
Bid Production Cost Guarantee DAM	81206	DAM NYISO Bid Production Cost Guarantee - Internal Units
Bid Production Cost Guarantee DAM	81207	DAM NYISO Bid Production Cost Guarantee - External Units
Bid Production Cost Guarantee DAM Virtual	81501	DAM Virtual Bid Production Cost Guarantee
DAM Contract Balancing	81315	DAM Contract Balancing
DAM Contract Balancing	81317	DAM Contract Balancing
Local Reliability Balancing	81002	Balancing Local Reliability Bid Production Cost Guarantee
Local Reliability Balancing	83901	Margin Restoration (MOB) Revenue
Local Reliability DAM	81001	DAM Local Reliability Bid Production Cost Guarantee
NYISO Cost of Operations	80901	NYISO Cost Of Operations
NYISO Cost of Operations	80902	NYISO Cost Of Operations
NYISO Cost of Operations	83501	NYISO Cost Of Operations
NYISO Cost of Operations	83502	NYISO Cost Of Operations
Residuals Balancing	81302	Balancing Market Energy Residual
Residuals Balancing	81304	Balancing Market Loss Residual
Residuals Balancing	81305	Balancing Market Congestion Balancing
Residuals Balancing	81306	Emergency Energy Purchases
Residuals Balancing	81307	Emergency Energy Sales
Residuals Balancing	81309	Balancing Market Energy Residual
Residuals Balancing	81311	Balancing Market Loss Residual
Residuals Balancing	81312	Balancing Market Congestion Balancing
Residuals Balancing	81313	Emergency Energy Purchases
Residuals Balancing	81314	Emergency Energy Sales
Residuals DAM	81301	Day Ahead Market Energy Residual
Residuals DAM	81303	Day Ahead Market Loss Residual
Residuals DAM	81308	Day Ahead Market Energy Residual
Residuals DAM	81310	Day Ahead Market Loss Residual

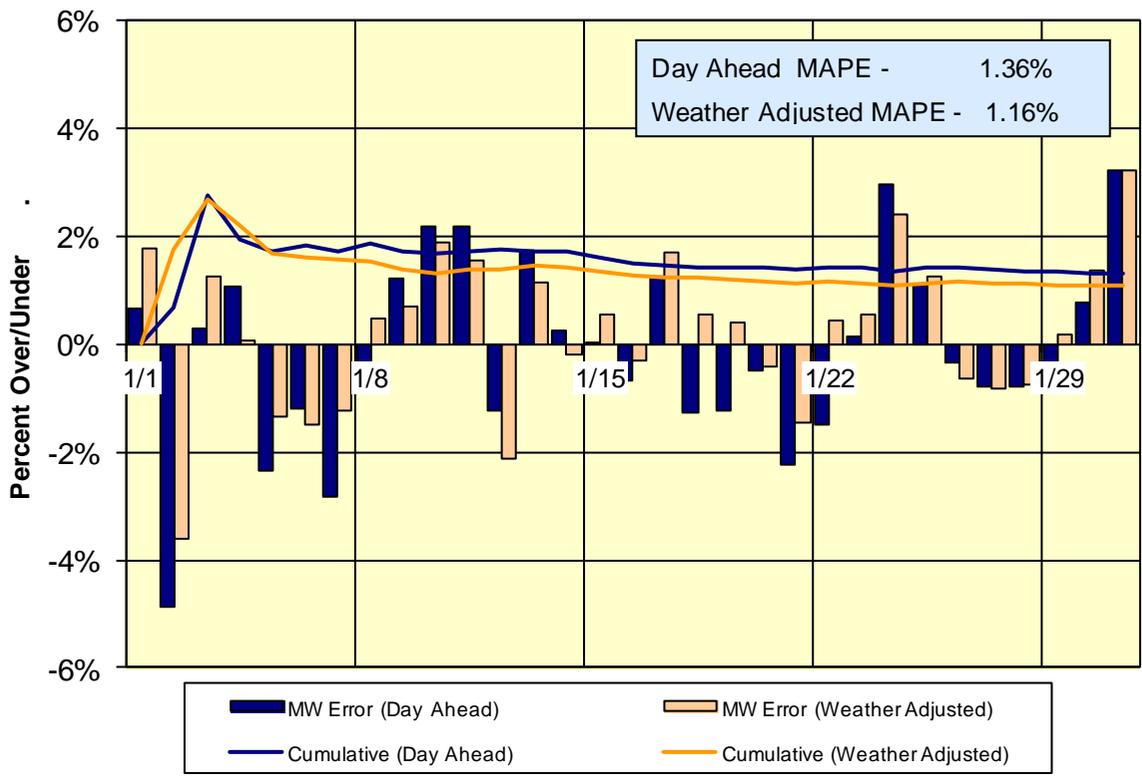
**NYISO Daily Peak Load - January 2014  
Actual vs Weather-Adjusted Forecast**



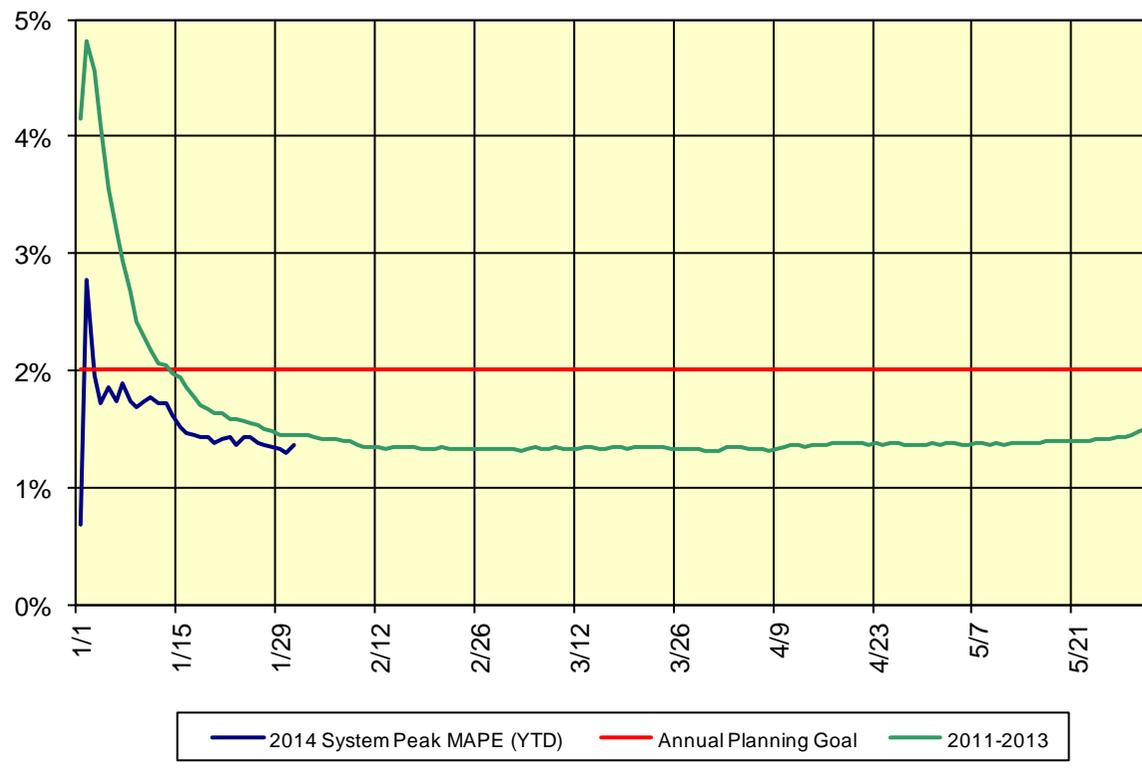
**NYISO Daily Peak Load - January 2014  
Actual vs Forecast**



### Day Ahead Peak Forecast - January 2014 Percent Error - Actual & Weather Adjusted



### Day-Ahead Forecast Accuracy - Cumulative Performance 2014 Year-to-Date





**Project** **Status and Milestone Deliverables**

**Business Intelligence Products**

**Business Intelligence Roadmap: Data Integration**

**Status:** The purpose of this multi-year project is to improve the Business Intelligence IT service model at NYISO. Planning and design commenced in 2013 with plans to undertake a study in 2014 to identify a data integration and storage technology product for purchase, with implementation to follow in 2015. The data integration and storage solution will provide NYISO the capability to move large data sets to and from business partners and among internal systems in a sustainable manner. The system will have the ability to perform impact analysis and data quality monitoring, which are key to maintaining quality and controlling risk in an increasingly partner integrated environment.

**Deliverables:** The focus of this project in 2014 is the completion of a study to recommend a product for procurement in 2015.

**Electric Quarterly Report (EQR) Enhancements**

**Status:** FERC has updated the required information and format for providing EQR reports. NYISO Market Participants have benefited from a report generated out of DSS for many years. Market Participants have requested NYISO to update the existing report with additional information and formatting to better match the newer FERC requirements. Updating the existing report will require additional data to be loaded in to DSS as well as changes to the existing reports.

**Deliverables:** The 2014 project will focus on delivering enhancements to existing reports to align with the additional FERC requirements.

**Public Website Technology Upgrade**

**Status:** The purpose of this project is to upgrade the underlying technology for the NYISO public website. The existing technology will be replaced with a more cost-effective solution by using Microsoft SharePoint to maintain and post documents to the public website.

**Deliverables:** The 2014 project deliverable is the deployment of the technology upgrade.



**Project** **Status and Milestone Deliverables**

**Capacity Market Products**

**Additional Capacity Zones**

**Status:** Additional Capacity Zones is a FERC Mandate and a response to the Independent Market Advisor’s 2009 State of the Market Report. Implementation is in progress with the ICAP Automated Market System software deployment planned for Q1 2014 in advance of the Summer Capability Period. This is a significant software effort that requires extensive regression testing. This effort is coupled with the Additional Capacity Zones mitigation software changes and all tariff revisions specific to new capacity zones and mitigation within new capacity zones.

**Deliverables:** The 2014 project deliverable is the software deployment.

**ICAP Auction Validation and Reporting**

**Status:** The purpose of this project is to provide multiple NYISO Business Owners access to the same data set utilizing updated technology that is supported by IT. The scope of this project includes replacing Access queries with an ICAP universe and reporting tools.

**Deliverables:** The 2014 project deliverable is the development of the functional requirements and plans for a software deployment in 2015.

**ICAP Reference System**

**Status:** Market Mitigation and Analysis (MMA) collects extensive financial data from generation owners in order to perform the ICAP market mitigation measures. Now that the data collection process is standardized, efficiency and transparency could be gained by creating a web-based data portal that would allow MPs to upload and review their data. The NYISO and its consultants could use the data portal in the review process and to facilitate discussions with MPs.

The anticipated deliverable is a Web-based software application, similar in concept to the Reference Level Software (RLS), but with different functionality. This software will enable MMA to complete pre-mitigation determinations for new capacity zones in an automated and timely manner. Software development was completed in 2013.



**Project** **Status and Milestone Deliverables**

**Deliverables:** The 2014 project deliverable is the completion of testing and the software deployment.

**Demand Response Products**

Demand Response – Real Time Energy Market

**Status:** NYISO will focus on the development of market rules and identification of software changes required to permit demand response entities to participate in the NYISO’s real-time energy market. BIC and OC approved the Market Design concepts for this multi-year project in December 2012. Business Requirements were approved in 2013.

**Deliverables:** Obtaining stakeholder approval on the market design is the focus of the project in 2014.

SCR Provisional ACL Phase

**Status:** The SCR Program is the largest of the NYISO’s demand response programs, both in the number of individual demand side resources and MW. Since the SCR baseline changes were implemented in April 2011, the NYISO has received a significant number of comments, including three market participant presentations at the ICAPWG, regarding SCRs enrolled with a Provisional ACL. One of the presentations related to using the Provisional ACL as a way to allow resources to account for an increase in load since the last Capability Period, which would allow the SCR to offer more capacity. The scope of the project is intended to address four key areas from stakeholder comments:

- 1) Address allowance for the use of Provisional ACL for SCRs that change RIPs;
- 2) Review the limitation on Provisional ACL for three consecutive Capability Periods;
- 3) Review SCR Load Zone Peak Hours for Winter ACL; and
- 4) Address increased baseline with reporting process to increase ACL values within a Capability Period.



Project	Status and Milestone Deliverables
	<p>The first phase was successfully deployed in October 2013.</p> <p><b>Deliverables:</b> The focus of the 2014 project is the deployment of the next phase of software changes.</p>
SCR Baseline Study	<p><b>Status:</b> This project will evaluate the current Average Coincident Load (ACL) against a number of alternative response baseline calculations using a Customer Baseline Load (CBL) for SCRs. In February 2011, when the NYISO proposed, and stakeholders accepted, the change to the SCR baseline from Average Peak Monthly Demand (APMD) to ACL, the NYISO committed to conducting a study to evaluate an additional set of baseline calculations for measuring event response. The objective of the study is to determine if there is a method of estimating response to an event that will provide a better estimate of event response than the ACL. The study is complete.</p> <p><b>Deliverables:</b> The focus of the 2014 project is a NYISO Management response to the study completed at the end of 2013.</p>
Order 745 – Day Ahead Demand Response Program (DADRP) Compliance	<p><b>Status:</b> NYISO planned to implement the net benefits test in March 2012 based on the compliance filing submitted in August 2011. However, implementation was placed on hold pending a response from FERC. Also, as part of the compliance obligation, NYISO completed a study in August 2012 to evaluate the feasibility of incorporating a dynamic net benefits test into the day-ahead and real-time unit commitment and scheduling processes. A compliance filing detailing the results of the feasibility study was submitted to FERC in September 2012. FERC issued an Order on May 16, 2013 in response to NYISO’s August 2011 filing. NYISO requested a 60-day extension on the compliance filing, which was subsequently approved for August 14. Also, NYISO requested rehearing on the cost allocation methodology.</p>



**Project** **Status and Milestone Deliverables**

**Deliverables:** Upon receipt of responses from FERC regarding the August 14, 2013 compliance filing and the request for rehearing, NYISO will evaluate the responses and determine a feasible implementation date.

**Energy Market Products**

Coordinated Transaction Scheduling (CTS) with New England

**Status:** In 2012 FERC accepted the joint filings of NYISO and ISONE to implement CTS. CTS will enable Market Participants to submit transaction bid costs as an arbitrage spread value, instead of today's \$/MW pair. This spread will be merged with ISONE's supply curve and then optimized by NY for transaction scheduling. To help facilitate this new trading and to insure proper data transparency between the ISOs and the MPs, a new common bid platform will be built and run by NYISO. In addition, data will be exchanged between NY and NE to help facilitate settlements and operator interaction.

**Deliverables:** The focus of this project in 2014 will be development completed of all systems needed to begin joint testing in March 2015 and activate CTS with NE in Q4 2015.

Coordinated Transaction Scheduling with PJM

**Status:** The State of the Market has recommended that NYISO continue to work with its neighbors to provide market efficiencies from transaction scheduling. This project will look to expand upon the work and concepts outlined in CTS with NE to improve transaction scheduling inefficiencies that can occur between PJM's physical transaction modeling and NYISO's economic based scheduling models. A market design concept was completed in 4<sup>th</sup> quarter 2012. NYISO and PJM Stakeholders approved the market design in 2013. Software development was completed at the end of 2013.

**Deliverables:** The focus of this project in 2014 is the software deployment, joint testing and implementation.



**Project** **Status and Milestone Deliverables**

Scheduling and Pricing:  
Graduated Transmission  
Demand Curve

**Status:** The 2012 State of the Market (SOM) recommends the NYISO consider the feasibility and potential impacts on reliability and system security from using a graduated Transmission Shortage Cost. The SOM states, "RTD uses a "Transmission Shortage Cost" that limits the re-dispatch costs that may be incurred to \$4,000/MWh when managing congestion. However, our analysis suggests that this level may be higher than necessary to maintain reliability during some brief shortages." The single 'penalty point' is too high and may result in ineffective generation re-dispatch in response to transmission constraints given established operating practices and capabilities. A graduated demand curve will improve the accuracy of the Transmission Shortage Cost and will make for a more efficient commitment and dispatch actions, and set more efficient prices.

**Deliverables:** The focus of this project in 2014 is FERC approval of tariff changes and implementation of the software changes.

**Enterprise Products**

Enterprise Project Management  
(EPM): Phases II and III

**Status:** In 2012 NYISO implemented Microsoft Project 2010 on the EPMLive application to provide NYISO with up-to-date project scheduling and tracking tools, centralized and consistent project reporting for improved portfolio management, and improved project team collaboration. Additional phases will continue the implementation of the EPMLive application to provide a centralized system with enterprise time reporting, and an enterprise view of project demand, resource capacity, project costs, and resource utilization to support key decision making processes. In 2013 the EPMLive time tracking module was configured to align with the requirements of the Enterprise Cost Management (ECM) initiative and the business requirements for resource management were approved.

**Deliverables:** 2014 deliverables include an enterprise implementation of the time tracking functionality, followed by deployment of resource management functionality for project management and resource capacity planning.



Project	Status and Milestone Deliverables
Enterprise Technology Monitoring	<p><b>Status:</b> This purpose of this project is to provide IT with the necessary toolset to effectively manage the NYISO technology portfolio. Investment in new tools and processes is necessary to maintain the availability of business services, including Market to Market and Smart Grid applications that require infrastructure not technically compatible with NYISO’s current monitoring platform. This project will define an enterprise monitoring strategy and build a foundational solution that is capable of monitoring all core infrastructure services. Subsequent initiatives will deploy the monitoring strategy for all critical business services and enable proactive monitoring of key services to prevent and reduce downtime.</p> <p><b>Deliverables:</b> The project deliverable for 2014 is a deployment.</p>
Identity and Access Management (IAM)	<p><b>Status:</b> This multi-year project is NYISO’s top security priority for mitigating cyber security risks. To enhance NYISO’s security posture and improve compliance with NERC Critical Infrastructure Protection (CIP) standards, the NYISO is in progress on this initiative to enable and control cyber access to its critical technology systems, and physical access to NYISO facilities, for employees and contractors.</p> <p><b>Deliverables:</b> The focus of this project in 2014 is implementation to complete the migration of existing functionality to a supported system prior to the vendor’s retirement of the current product in 2014, and to expand IAM access control to CIP assets in support of the NYISO cyber security strategy.</p>
Stakeholder Services Suite	<p><b>Status:</b> To improve customer service and satisfaction, the NYISO has included the creation of a Stakeholder Services Suite of tools in its 2013-2017 Strategic Plan. The vision for this multi-year initiative is to improve relationships between the NYISO and its stakeholders by providing NYISO team members with comprehensive views of current and historical customer inquiries that enable more effective responses to customer requests. The Customer Relationship Management (CRM) solution will enable the NYISO Stakeholder</p>



**Project** **Status and Milestone Deliverables**

and Member Relations (SMR) team to better manage customer interactions from initial contact, to registration, training, and ongoing communication. The CRM solution will also provide customers a self-service, web-based portal to view inquiry status and manage contact information.

**Deliverables:** The focus of this project in 2014 is a deployment.

**Finance Products**

Credit Management System:  
Enhanced Market Participant  
Data Access

**Status:** This project includes several changes to the Credit Management System (CMS) to provide additional access to data for Market Participants and related automation of tasks. This project will provide MPs with access to FERC Order 741 minimum participation data while also automating and providing the Credit Department with better tools to track the required certifications, capitalization, risk procedures, and verification. This project will also include automation of collateral calls for the TCC, DADRP, DSASP, and WTSC markets to send notifications to the MPs to provide consistency across markets in the collateral call notification process.

**Deliverables:** The focus of this project in 2014 is implementation of the software changes.

Oracle Financials Upgrade

**Status:** The purpose of this project is to upgrade the existing application to an enhanced and more technologically advanced version of Oracle Financials to better support the existing functionality of the Finance team and to allow the team to perform at a higher level of efficiency. An upgrade will provide the Finance team the ability to utilize improved and more user friendly functions in the existing modules. Also, an upgrade to the latest version will allow the team to take advantage of new modules and functionality to further automate manual processes for procurement and utilize additional functionality for accounts payable, sub-ledger accounting and reporting tools. The software upgrade is in process.



Project	Status and Milestone Deliverables
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	<b>Deliverables:</b> The focus of this project in 2014 is completion of the software upgrade.
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Procurement Enhancements	<b>Status:</b> The purpose of this project is to provide tools for two main groups of functionality, process automation and data analytics, in order to aid the procurement team in alleviating their manual work processes and making more timely procurement decisions. <b>Deliverables:</b> The focus of this project in 2014 is completion of the functional requirements.
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Operations & Reliability Products	
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Energy Management System (EMS) Visualization	<b>Status:</b> This project is the continuation of the 2012-2013 projects to design and develop a software system capable of collating and displaying operationally relevant information to Operators and support staff in the control center. Leveraging the tools and infrastructure, additional capabilities will be developed. <b>Deliverables:</b> The focus of this project in 2014 is implementation of software changes.
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FERC Funded Project	<b>Status:</b> The NYISO's ability to simulate the Day-Ahead Market was instrumental to the success of FERC's Office of Enforcement ("OE") actions against Constellation. As such, the FERC OE is requesting that all ISOs develop the capabilities demonstrated by the NYISO, and in NYISO's specific case, to expand upon on current fundamental analysis capabilities. One million dollars in funding was provided to the NYISO as part of the Constellation Settlement. After consideration and review of numerous possible enhancements, MMA has settled on two primary categories of modifications to the market operations software (Ranger) that meet the FERC OE's requirements:
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**Project** **Status and Milestone Deliverables**

1. RTS Simulation Capability:
2. Enhancements to Simulation Results Reporting and Simulation Data Input (MMA Ranger "Area" Enhancements)

Phase 2 of this project, will utilize the remaining funds to enhance MMA's SAS reporting capabilities.

**Deliverables:** The 2014 project is the continuation of the 2013 FERC Funded Re-Run Capability project. The team focused on development in 2013. The 2014 project will allow the team to complete testing the new functionality and implement it in the MMA Ranger area.

Ranger Optimization & Performance Enhancements

**Status:** The NYISO's unit commitment and economic dispatch process utilizes Lagrangian Relaxation (LR) and MINOS technologies. These are being replaced across the industry with Mixed Integer Programming (MIP)/linear programming optimization approach. The NYISO is the last remaining Ventyx/ABB customer on legacy LR/MINOS, which was developed in the late 1970s. MIP provides increased constraint modeling flexibility through high level modeling languages and current compiler and system optimization development, as well as greater IT support. The vendor completed software development in 2013.

**Deliverables:** The focus of this project in 2014 is completion of testing and implementation.

**Planning and TCC Market Products**

FERC Order 1000

**Status:** As required in Order 1000, the NYISO made compliance filings to address transmission planning and cost allocation requirements. In order to maintain consistency between these new filings, tariff language and the NYISO manuals, policies and procedures implementing them, there is a need to update and/or create such documents. Order 1000



Project	Status and Milestone Deliverables
	<p>requires the NYISO to update policies and procedures currently used in the RPP-Reliability Planning Process ("RPP", formerly known as the "Comprehensive Reliability Planning Process" or "CRPP") and, to a lesser extent, CARIS – Congestion Assessment &amp; Resource Integration Study. These System and Resource Planning (SRP) documents will incorporate changes to manuals, rate schedules, Tariff(s) and supporting documents.</p> <p><b>Deliverables:</b> The focus of this project in 2014 is the updating of the NYISO policies and procedures, fillings and Tariff language as a result of or related to Order 1000.</p>
TCC Centralized Auction Rounds	<p><b>Status:</b> The NYISO has a tariff obligation to conduct four auction rounds per TCC product offered in Centralized TCC Auctions unless the New York Transmission Owners reach unanimous consent and provide the NYISO a waiver to conduct fewer than four rounds. Market Participants have indicated through discussion in stakeholder committee meetings, other feedback and TCC auction surveys that they would prefer fewer rounds and a shorter overall auction cycle.</p> <p><b>Deliverables:</b> The focus of this project in 2014 is to complete the study and discuss with stakeholders.</p>
TCC Revenue Allocation Automation	<p><b>Status:</b> The NYISO collects TCC revenue from the administration of the TCC Markets and the allocation of Fixed Price TCCs. The allocation of revenue associated with the TCC Markets to the Transmission Owners is currently a manual process performed by TCC Market Operations (TMO) staff using Excel and SAS toolsets. The scope of this project will be limited to the automation of allocation of revenue from the TCC Markets. The NYISO is currently working with the NY Transmission Owners to determine an agreeable methodology for the distribution of revenue from the allocation of Fixed Price TCCs. At such a time that the NYISO has an agreed upon methodology with the NY Transmission Owners, the NYISO will evaluate if automation of the Fixed Price TCC revenue allocation</p>



Project	Status and Milestone Deliverables
	<p>process can be incorporated into this project.</p> <p><b>Deliverables:</b> The focus of this project in 2014 is development completion by end of year.</p>

## Summary Description of Regulatory Filings, Investigations and Rulemakings and Related Orders in NYISO Matters - January 2014

<b>Filing Date</b>	<b>Filing Summary</b>	<b>Docket</b>	<b>Order Date</b>	<b>Order Summary</b>
11/25/2013	NYISO 205 filing re: removal of MST Attachment M-1 and related OATT provisions	ER14-461-000	01/07/2014	Letter order accepting revisions effective 01/29/2014, as requested
11/29/2013	NYISO 205 filing re: revisions to MST Section 5.14.1.2 to define the demand curves for the Installed Capacity market for the 2014/2015, 2015/2016, and 2016/2017 Capability Years	ER14-500-000	01/28/2014	Order accepting revisions effective 01/28/2014 subject to a compliance filing within 30 days (i.e., 02/27/2014)
12/03/2013	NYISO compliance filing re: removal of obsolete or moot provisions from the MST, which provide for (i) the increase of the reference level cap on 10-Minute Non-Synchronized Reserves from \$5.00/MWh to \$10.00/MWh and (ii) the increase of the bid limit on New York City Day-Ahead Market Spinning Reserves from \$5.00/MWh to \$10.00/MWh or less	ER13-298-002	01/17/2014	Letter order accepting revisions effective 09/25/2013, as requested
12/16/2013	NYISO 205 filing re: interconnection process improvements concerning the evaluation of increases in the energy capability of existing generating facilities	ER14-627-000	01/23/2014	Letter order accepting revisions effective 02/14/14, as requested
12/20/2013	NYISO filing re: request for issuance of protective order to govern access to any information that NYISO may designate as "Protected Materials" when it makes its compliance filing in the HTP v. NYISO proceeding	EL12-98-000	01/14/2014	Order granting motion and issuing a protective order and non-disclosure certificate
01/02/2014	NYISO filing re: notice of return of Ramapo PARs to normal operation and termination of the waiver issued on 05/17/2013	ER13-1424-000		
01/06/2014	IRC comments re: support of the NERC motion requesting that FERC delay action on the NOPR concerning proposed transmission operations and interconnection reliability operations reliability standards	RM13-12-000 RM13-14-000 RM13-15-000	01/14/2014	Order granting NERC motion to defer action on proposed NOPR until 01/31/2015, including deferral of the comment due date
01/08/2014	NYISO filing re: post technical conference comments concerning centralized capacity markets in RTOs and ISOs	AD13-7-000		
01/09/2014	NYISO filing re: answer to various third party comments and protests of its 11/29/2013 filing of proposed revised ICAP demand curves	ER14-500-000	01/28/2014	Order accepting revisions effective 01/28/2014 subject to a compliance filing within 30 days (i.e., 02/27/2014)

<b>Filing Date</b>	<b>Filing Summary</b>	<b>Docket</b>	<b>Order Date</b>	<b>Order Summary</b>
01/10/2014	NYISO filing re: answer to a third party protest of its 12/06/2013 filing of proposed tariff amendments to implement external coordinated transaction scheduling with PJM	ER14-552-000		
01/10/2014	NYISO compliance filing and request for shortened comment period and expedited action re: MST Section 5.14.2 revisions to clarify how shortfall penalties and deficiency charges are to be assessed under that section in light of the proposed revisions accepted by the 12/04/13 order in this docket	ER14-39-000		
01/14/2014	NYISO filing re: notice of market participant termination from the ISO-administered markets	No Docket No.		
01/15/2014	NYISO filing re: annual informational report on demand side management programs	ER01-3001-000		
01/15/2014	NYISO filing re: request for extension of time to submit compliance filing in response to 11/21/13 order concerning the scaling factor methodology for the calculation of projected energy and ancillary services revenues in buyer-side capacity market power mitigation determinations for merchant transmission facilities	EL12-98-000		
01/21/2014	NYISO motion to intervene and comment re: the NYSRC Installed Reserve Margin Requirement filing	ER14-916-000		
01/21/2014	NYISO filing re: a limited answer to the Indicated Suppliers answer and the TC Ravenswood request for evidentiary hearing in the Demand Curve reset proceeding	ER14-500-000	01/28/2014	Order accepting revisions effective 01/28/2014 subject to a compliance filing within 30 days (i.e., 02/27/2014)
01/21/2014	NYISO filing re: answer to the HTP request for rehearing and clarification in the HTP v. NYISO proceeding concerning the buyer side mitigation rules	EL12-98-001		
01/21/2014	NYISO filing re: petition for temporary tariff waiver related to determinations that NYISO expects to make under the BSM Rules and a request for expedited action by 2/21/14	ER14-1125-000		
01/22/2014	NYISO filing re: request for a limited temporary waiver of tariff provisions establishing bid restrictions	ER14-1138-000		
01/23/2014	NYISO filing re: comments to the NYSPSC in support of Installed Reserve Margin proposed by the NYSRC for the 2014-2015 Capability Year	Case No. 07-E-0088		

<b>Filing Date</b>	<b>Filing Summary</b>	<b>Docket</b>	<b>Order Date</b>	<b>Order Summary</b>
01/27/2014	IRC filing to the EPA re: paper concerning the EPA CO2 rule – IRC reliability safety valve and regional compliance measurement and proposals	No Docket No.		
01/30/2014	NYISO filing re: answer to comments and protests concerning its request for a limited temporary waiver of tariff provisions establishing bid restrictions	ER14-1138-000		