



# Monthly Report

August 2016

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



## ***August 2016 Report***

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

Prepared by NYISO Operations Analysis and Services, based on settlements initial invoice data collected on or before September 9, 2016.

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## August 2016 Operations Performance Highlights

- Peak load of 32,076 MW occurred on 08/11/2016 HB 16
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- EDRP/SCR resources activated statewide for 8/12 for HB13:00 through 18:00
- 25 hours of Thunder Storm Alerts were declared
- 0 hours of NERC TLR level 3 curtailment
- An IESO to NYISO ICAP Memorandum of Understanding was agreed to by the NYISO and IESO regarding the import of External Capacity from Ontario beginning with the Winter 2016-2017 capability period.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

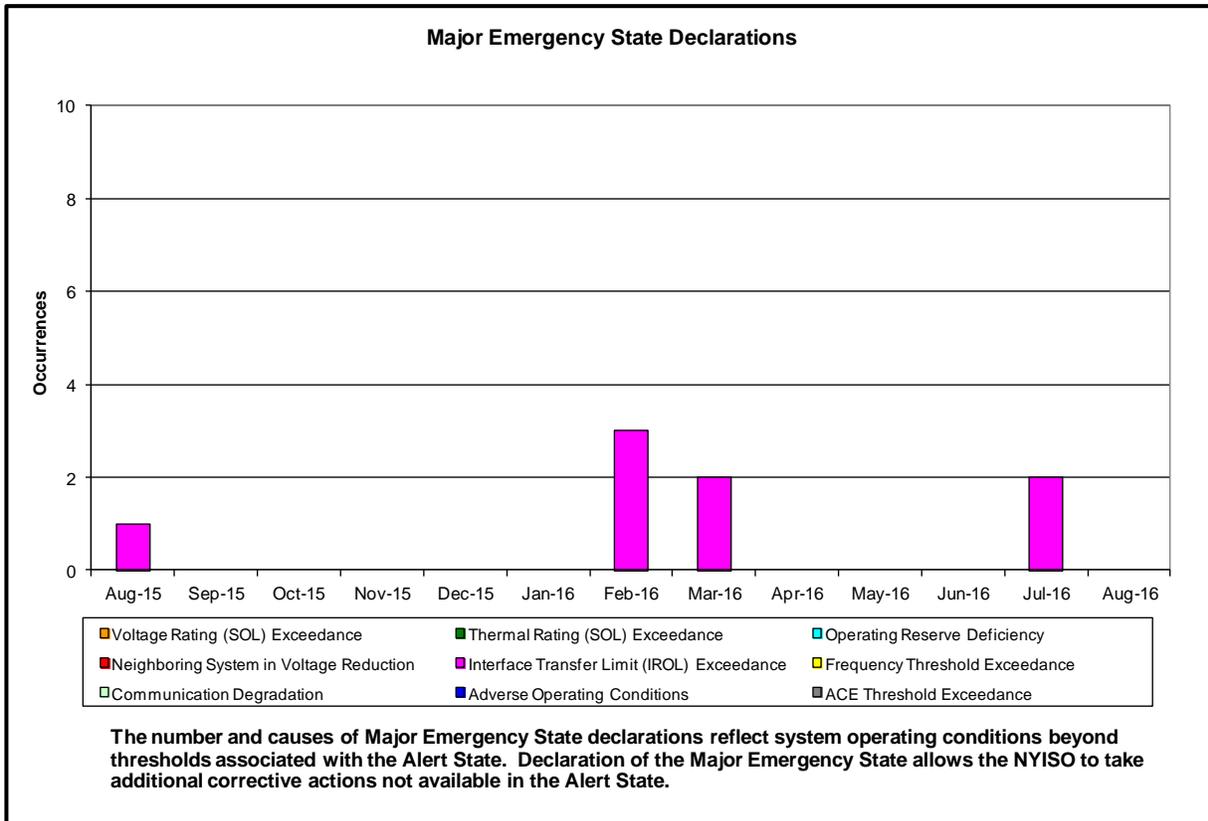
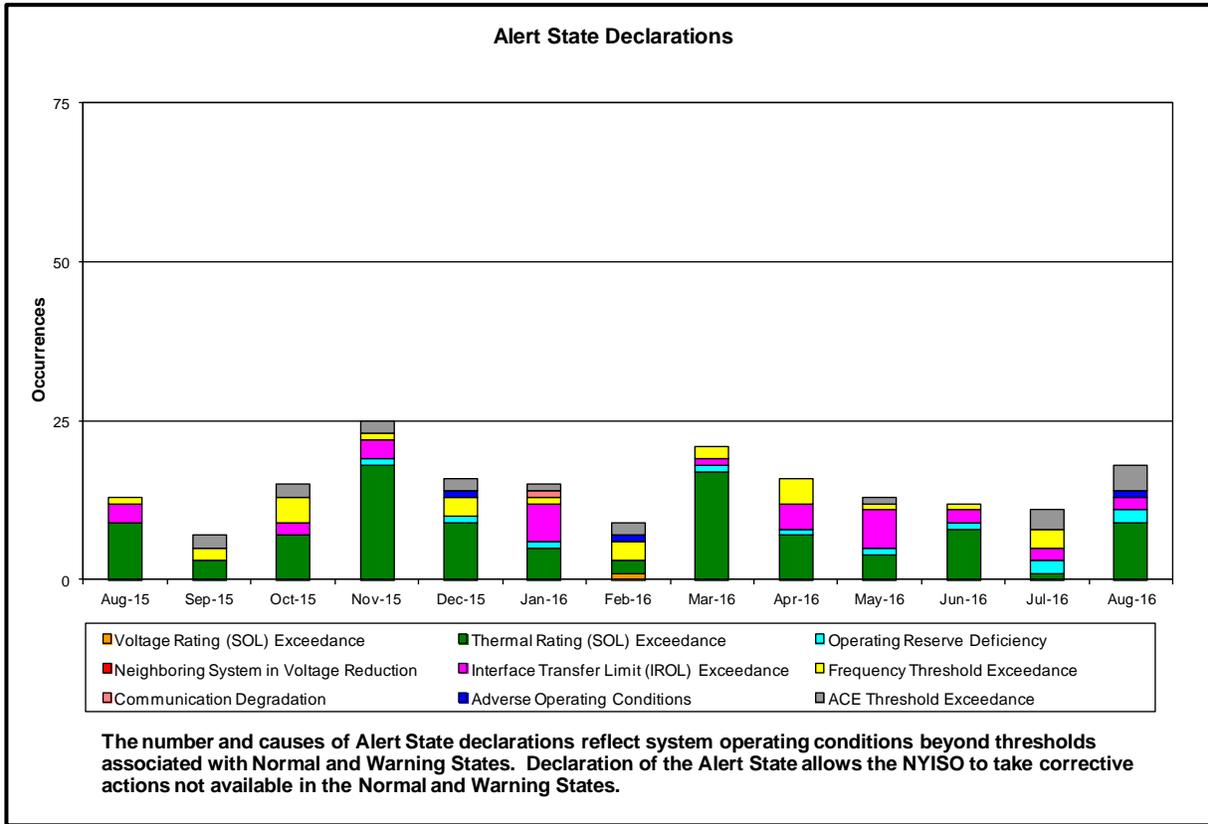
	Current Month Value (\$M)	Year-to-Date Value (\$M)
<b>NY Savings from PJM-NY Congestion Coordination</b>	\$1.19	\$16.26
<b>NY Savings from PJM-NY Coordinated Transaction Scheduling</b>	(\$0.37)	(\$0.47)
<b>NY Savings from NE-NY Coordinated Transaction Scheduling</b>	(\$0.10)	(\$1.38)
<b>Total NY Savings</b>	\$0.72	\$14.41
<b>Regional Savings from PJM-NY Coordinated Transaction Scheduling</b>	\$0.38	\$1.77
<b>Regional Savings from NE-NY Coordinated Transaction Scheduling</b>	\$0.31	\$1.33
<b>Total Regional Savings</b>	\$0.69	\$3.10

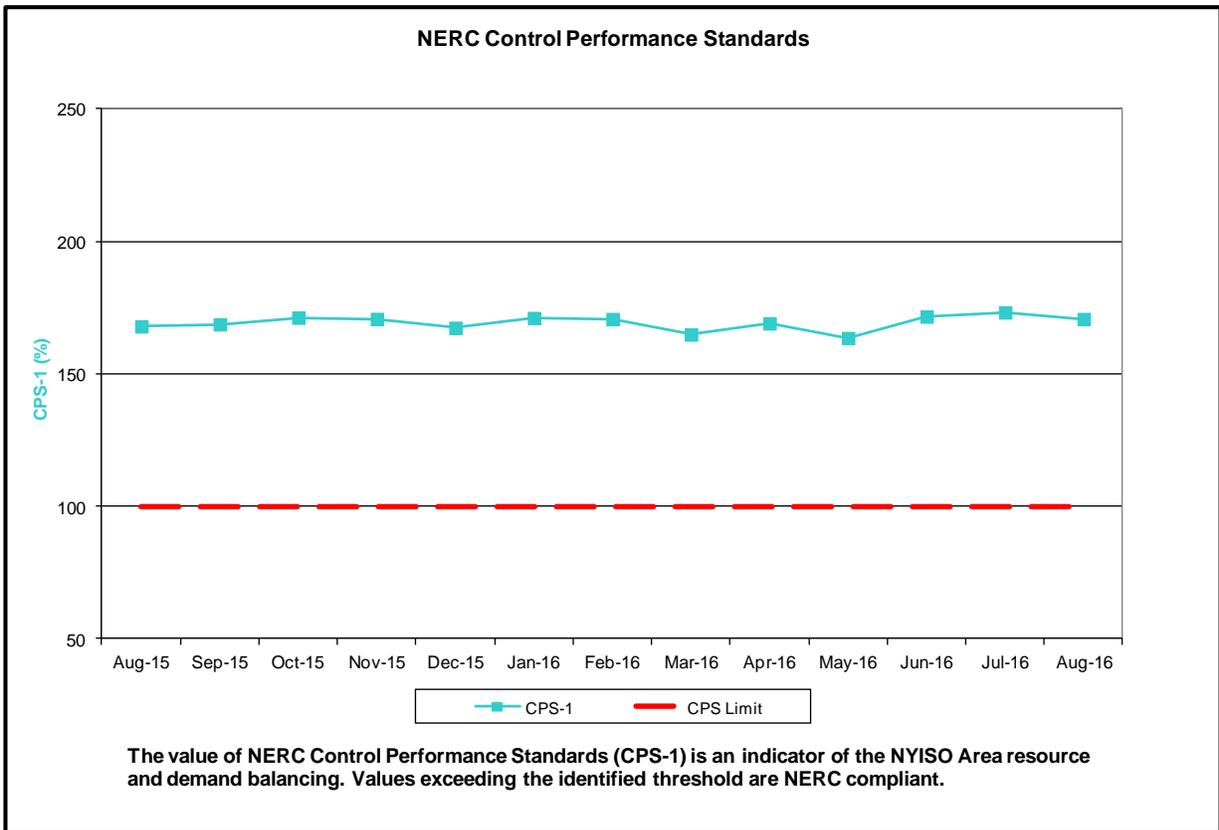
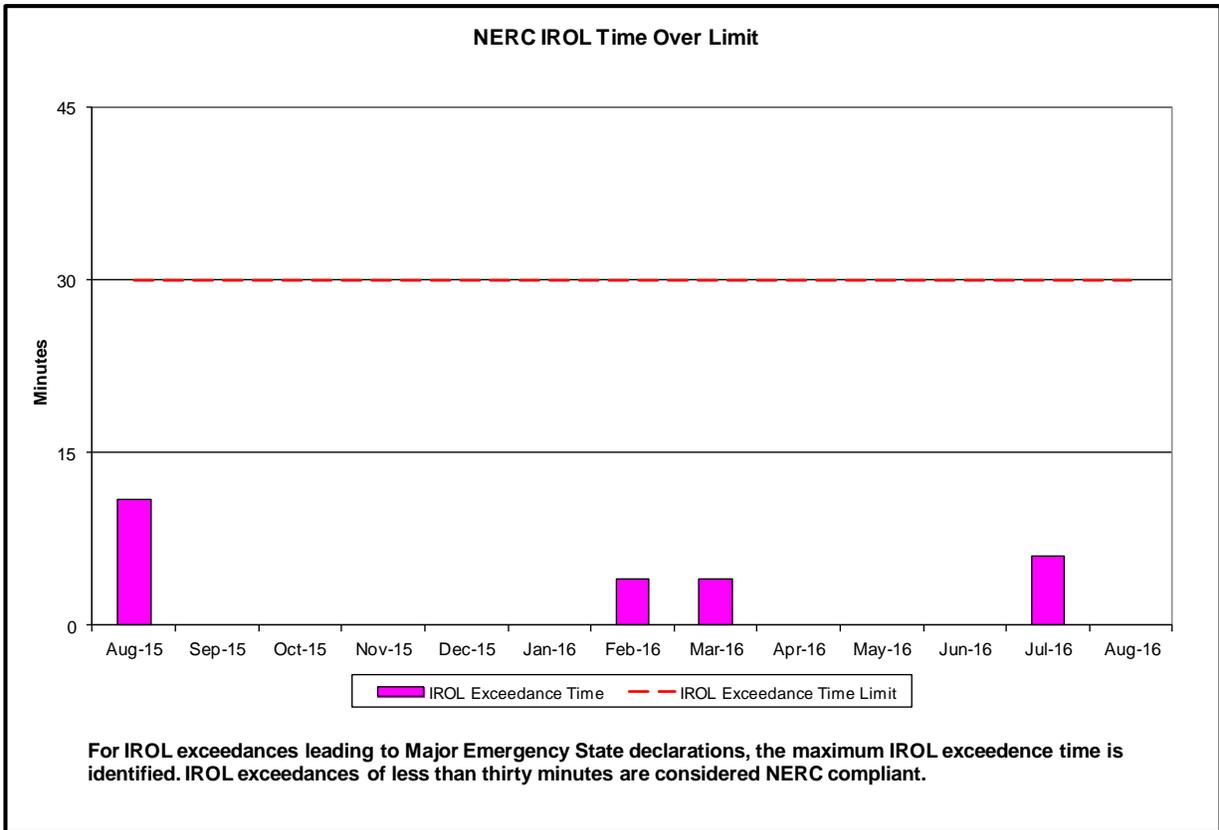
- Statewide uplift cost monthly average was (\$0.86)/MWh
- The following table identifies the Monthly ICAP spot market prices by locality and the price delta.

Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
September 2016 Spot Price	\$3.32	\$9.15	\$12.19	\$4.46
August 2016 Spot Price	\$3.64	\$9.23	\$12.21	\$4.42
Delta	(\$0.32)	(\$0.08)	(\$0.02)	\$0.04

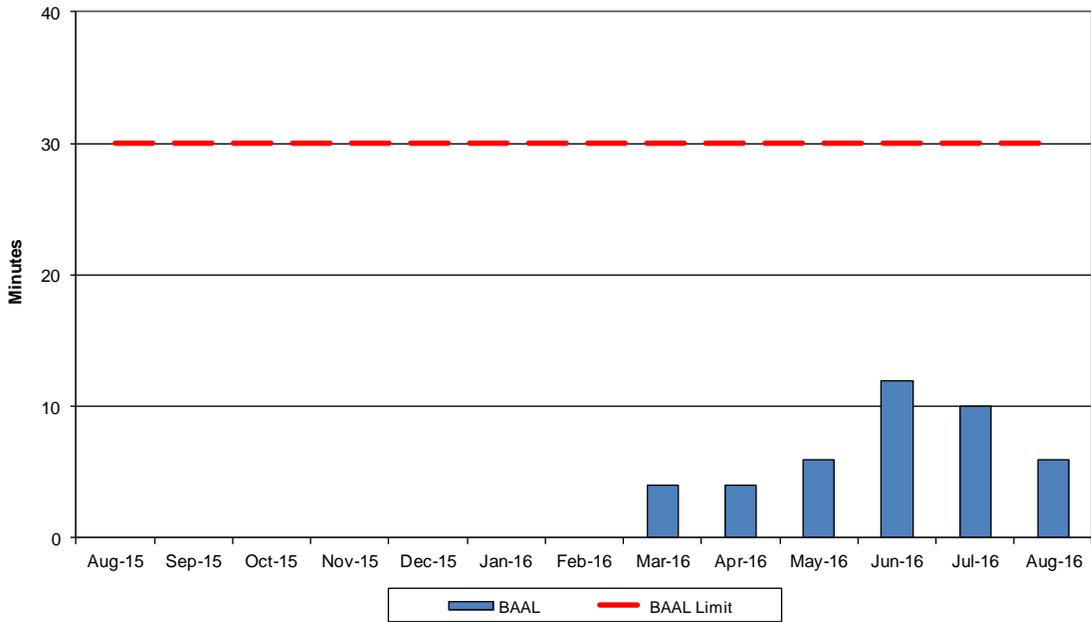
- NYCA - Price decreases by \$0.32 due to an increase in Net Imports

- Reliability Performance Metrics



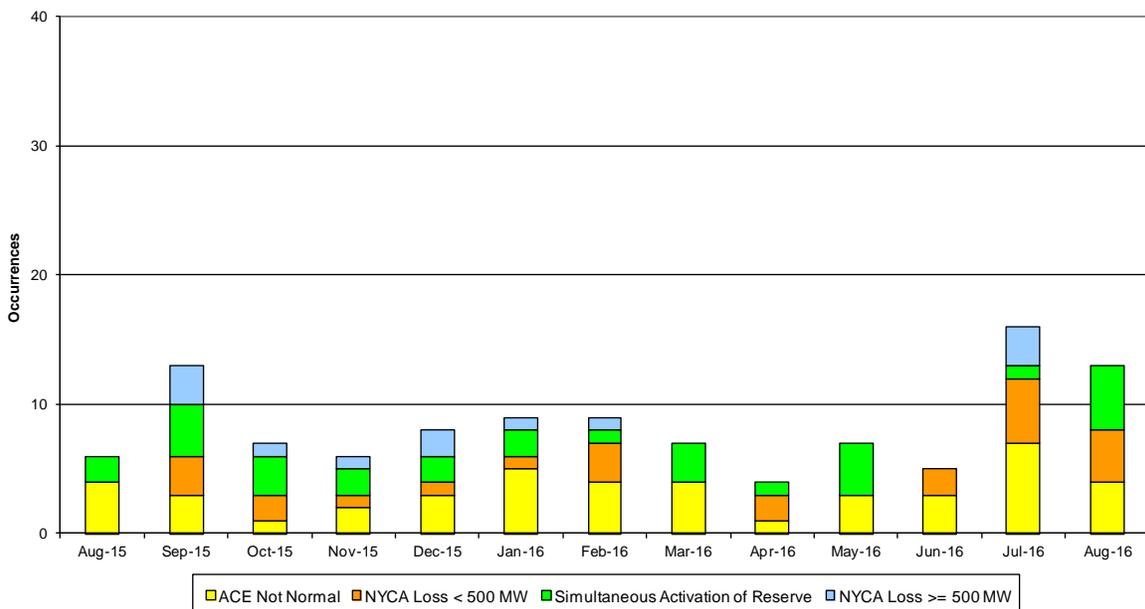


### NERC Balancing Authority ACE Limit Standard

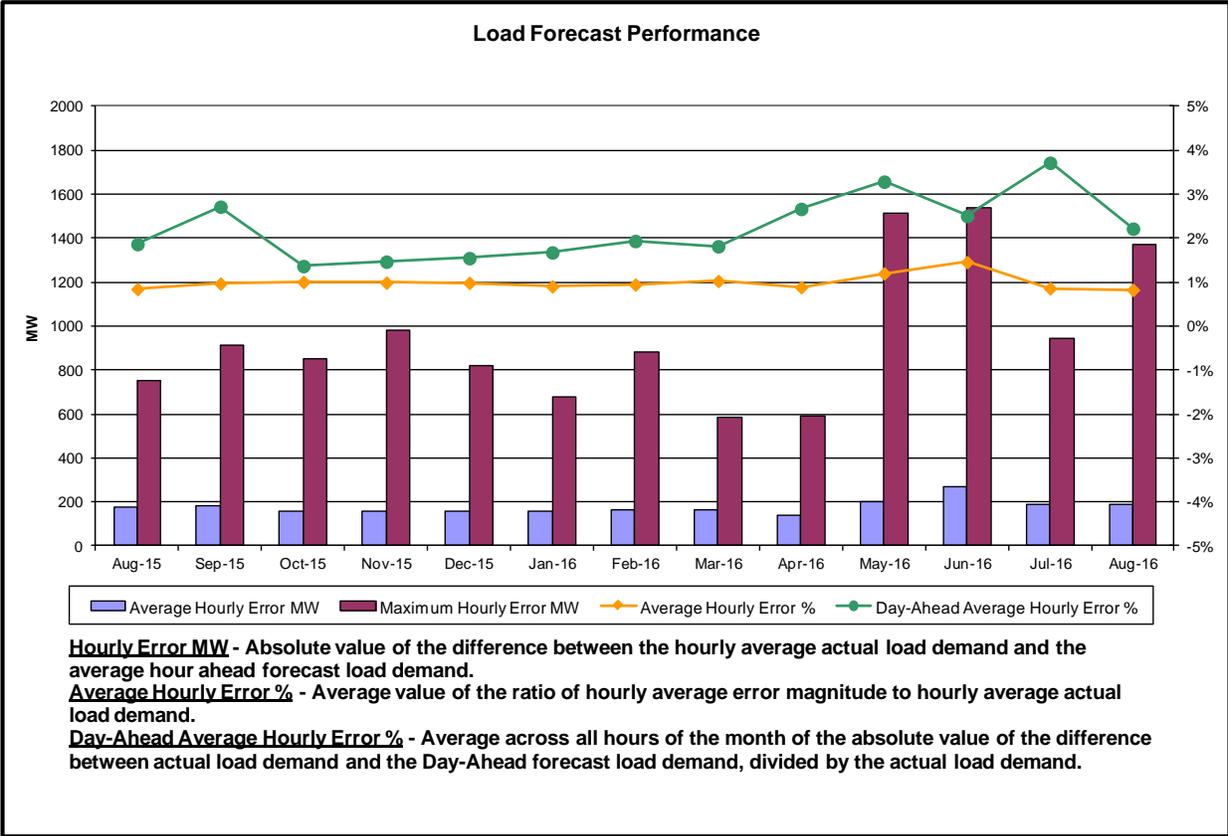
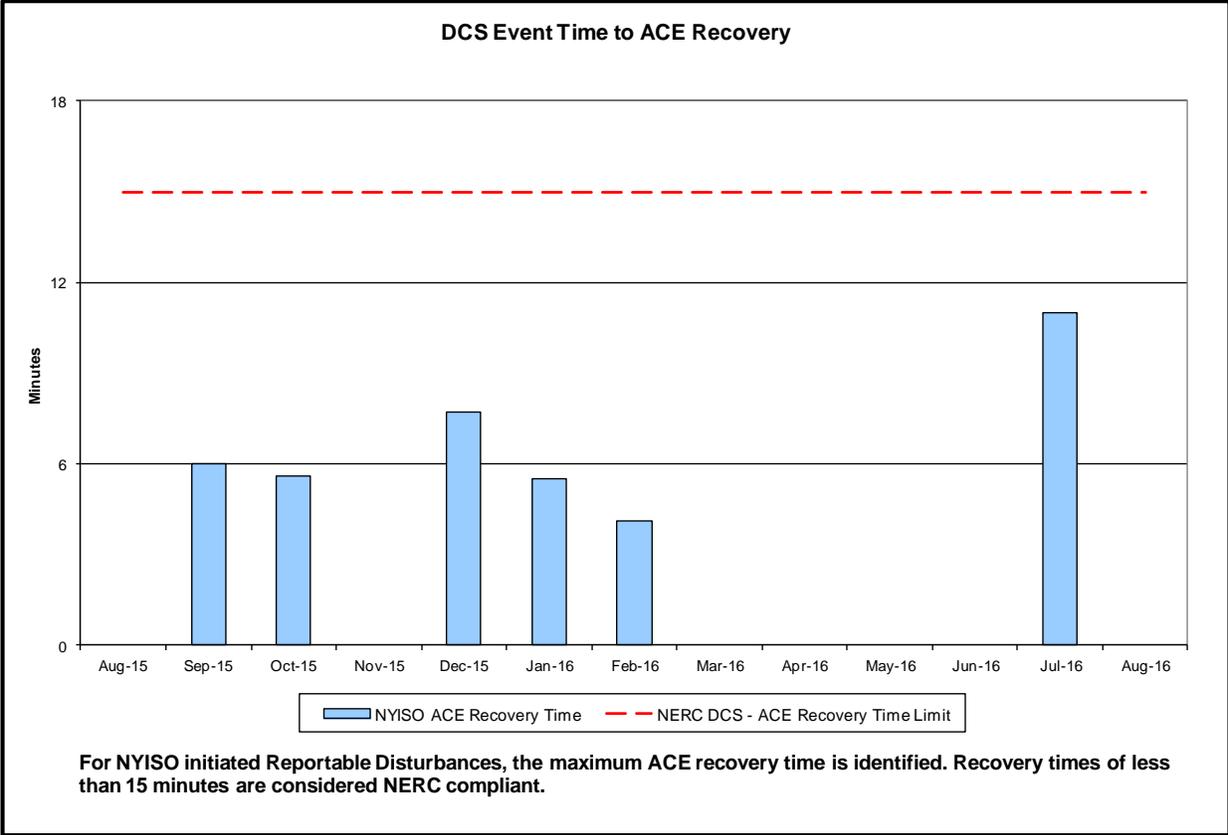


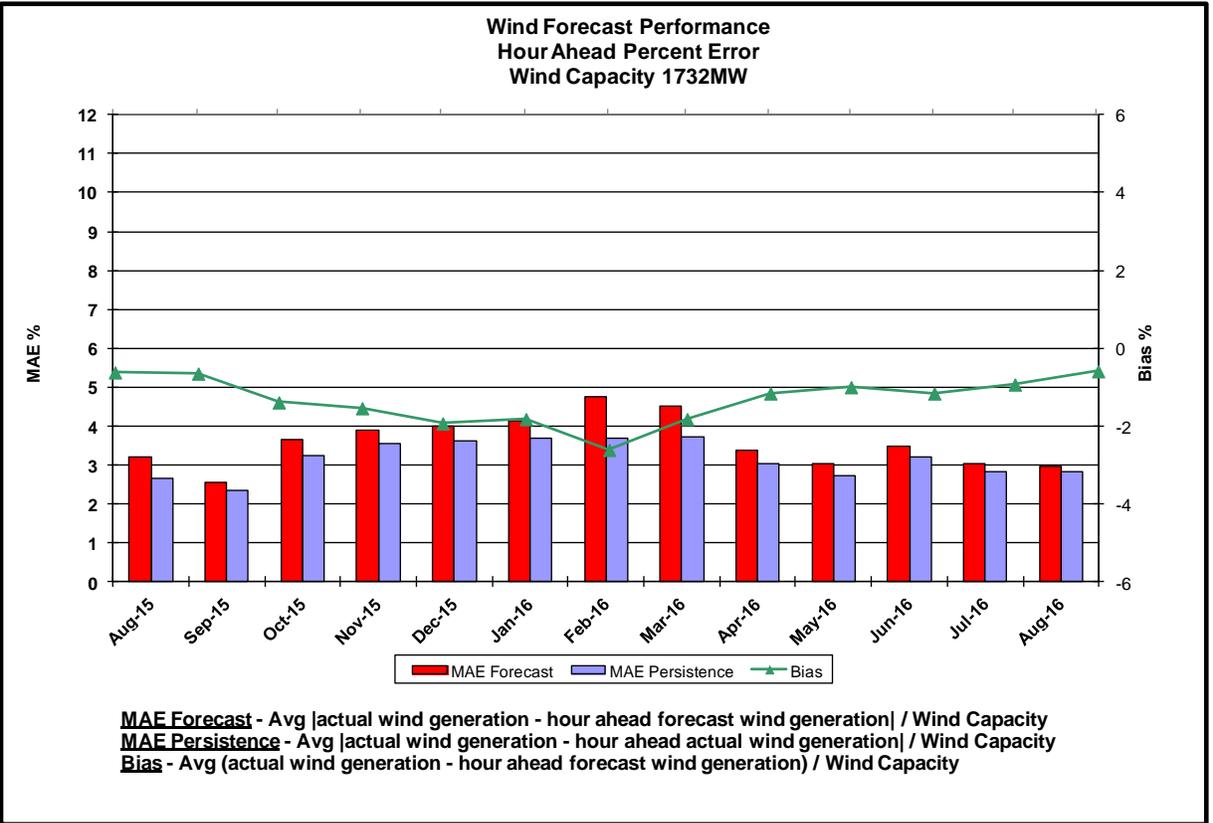
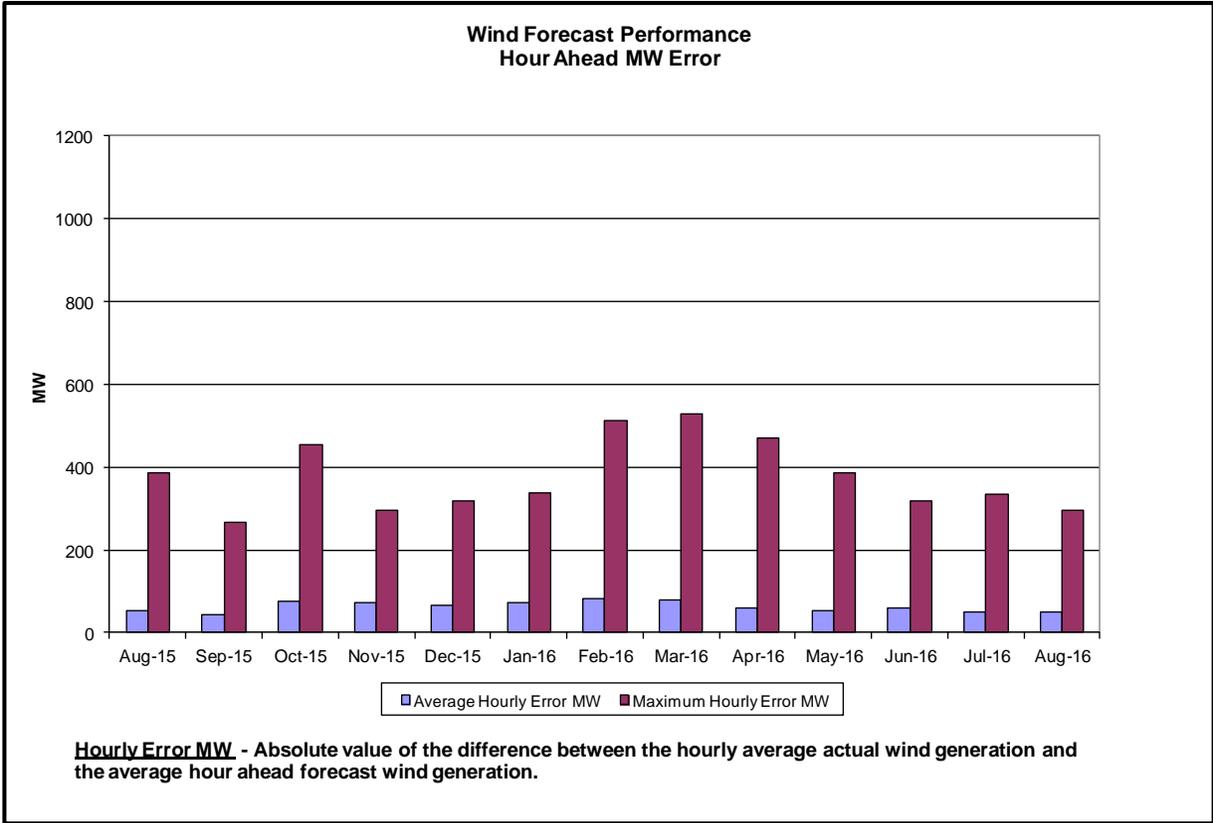
The amount of time the clock-minute average ACE exceeds the clock-minute Balancing Authority ACE Limit (BAAL) is an indicator of the NYISO Area resource and demand balancing. The maximum BAAL exceedance time is identified. BAAL exceedances of less than 30 consecutive clock-minutes are NERC compliant.

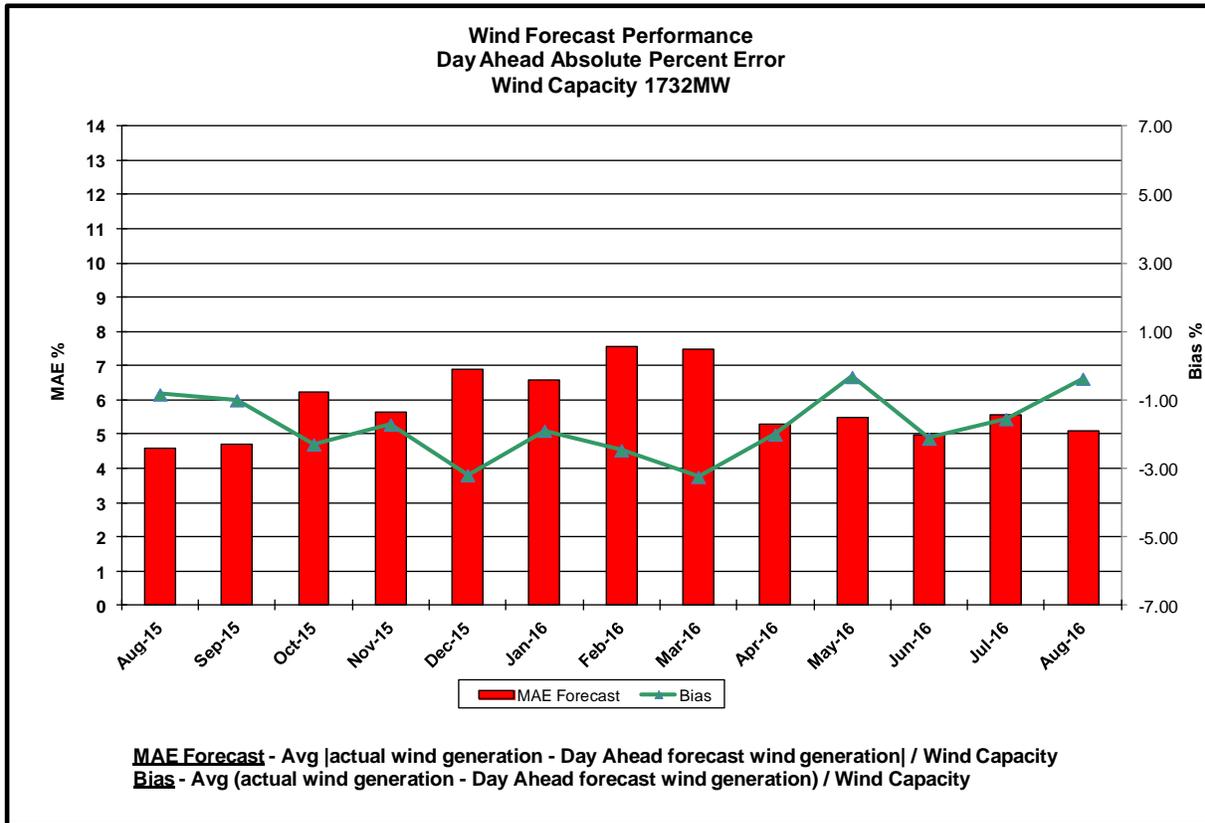
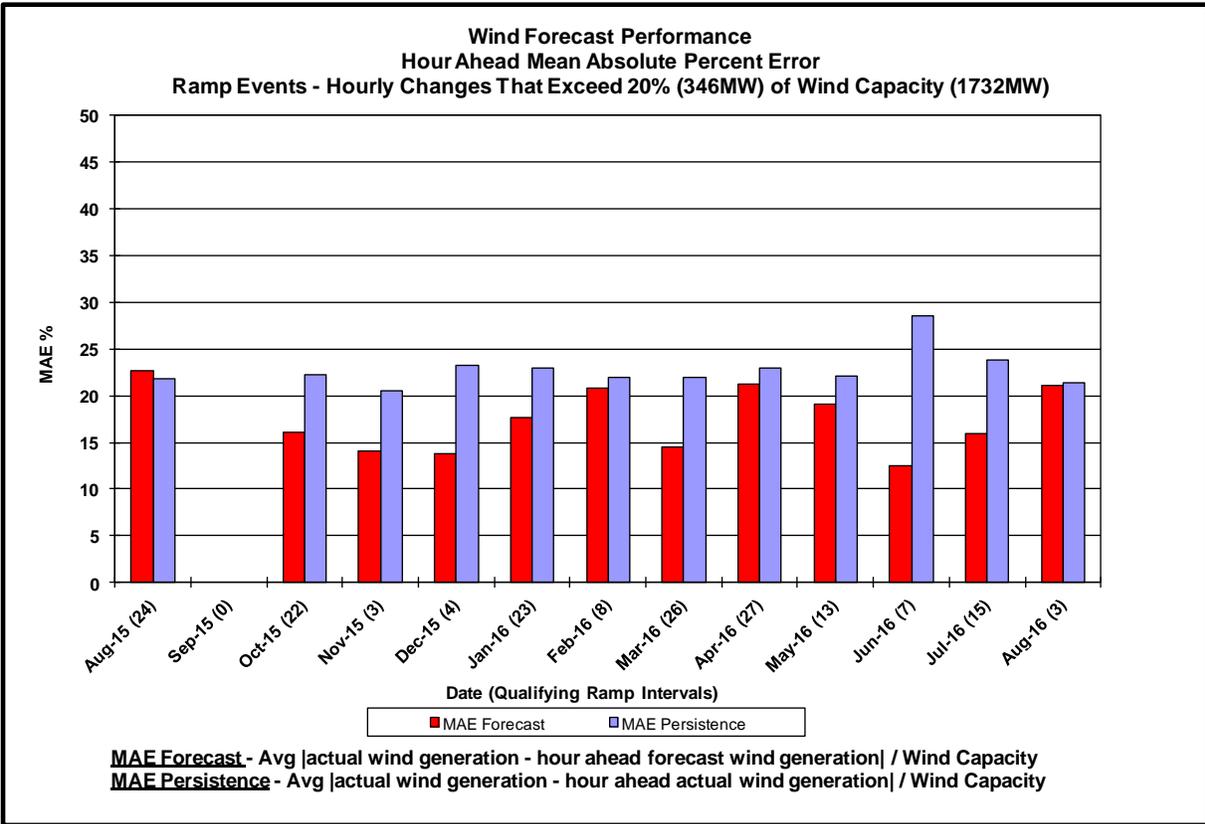
### Reserve Activations

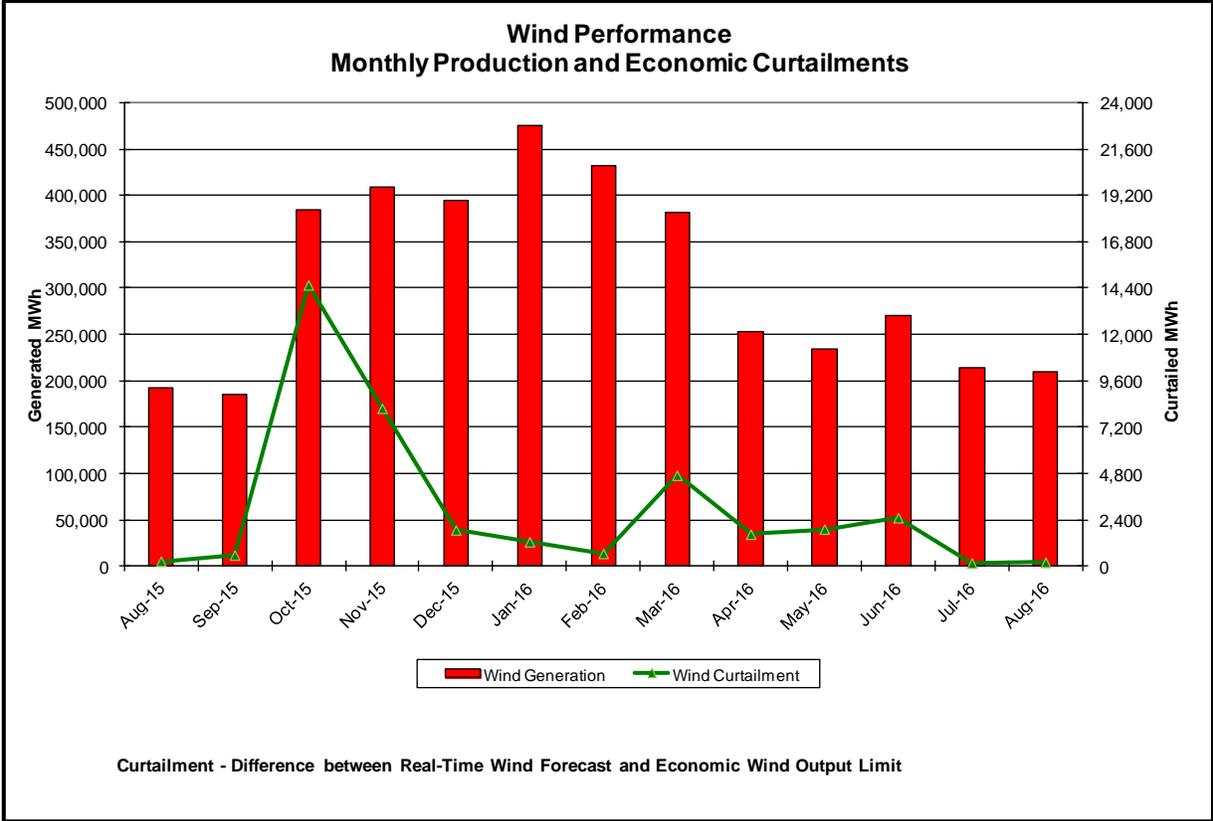


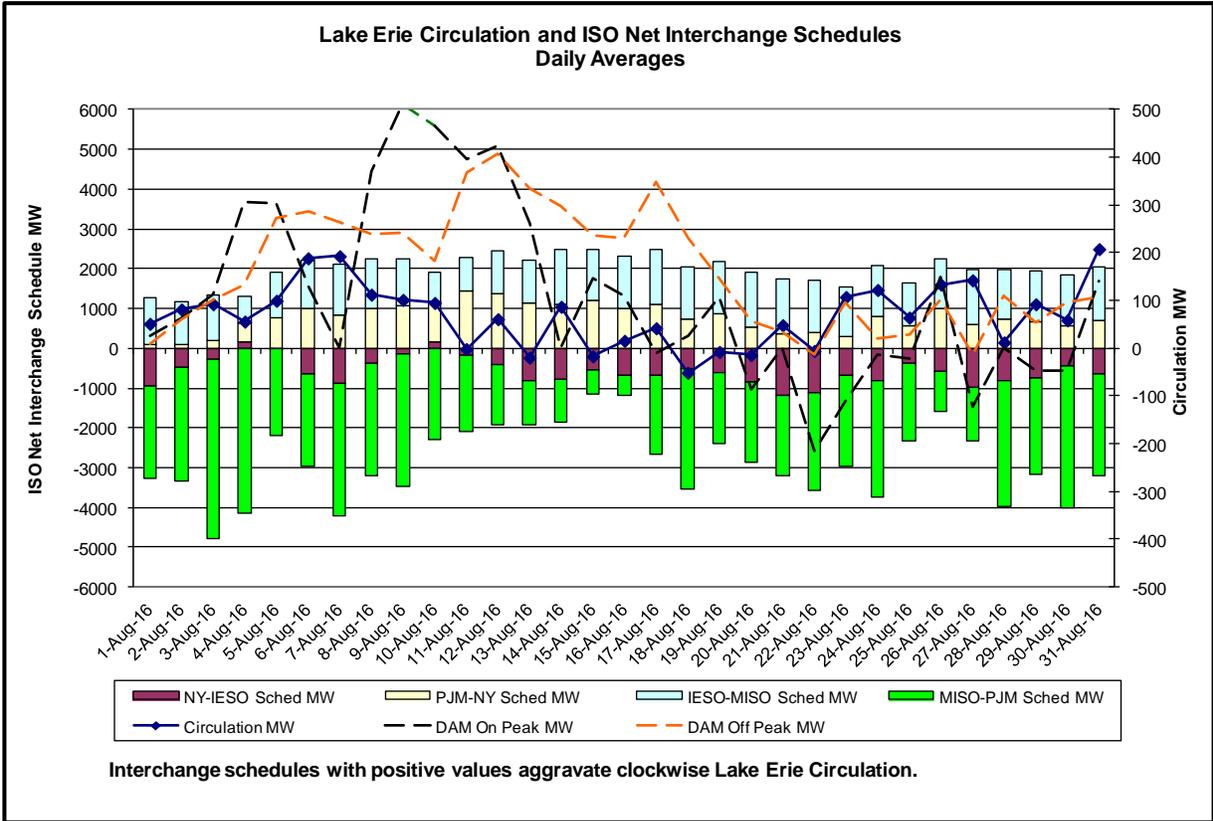
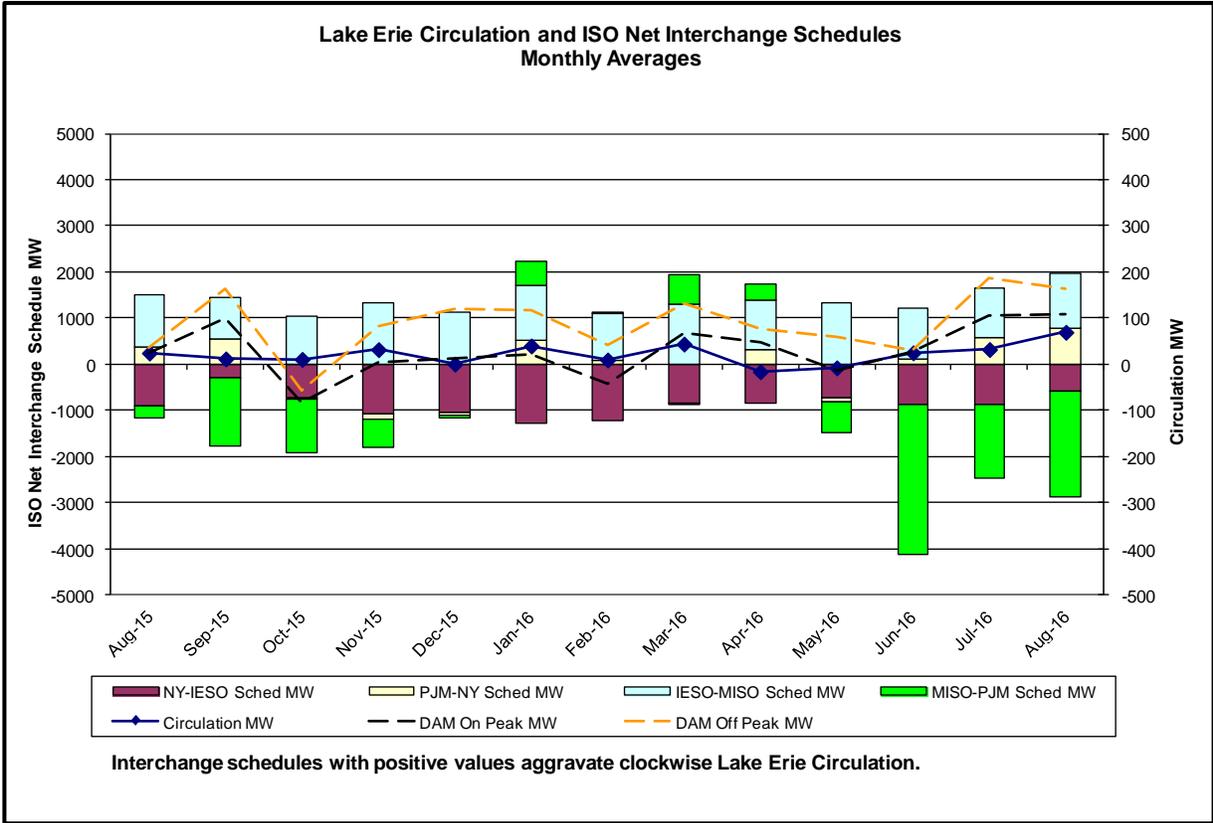
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.



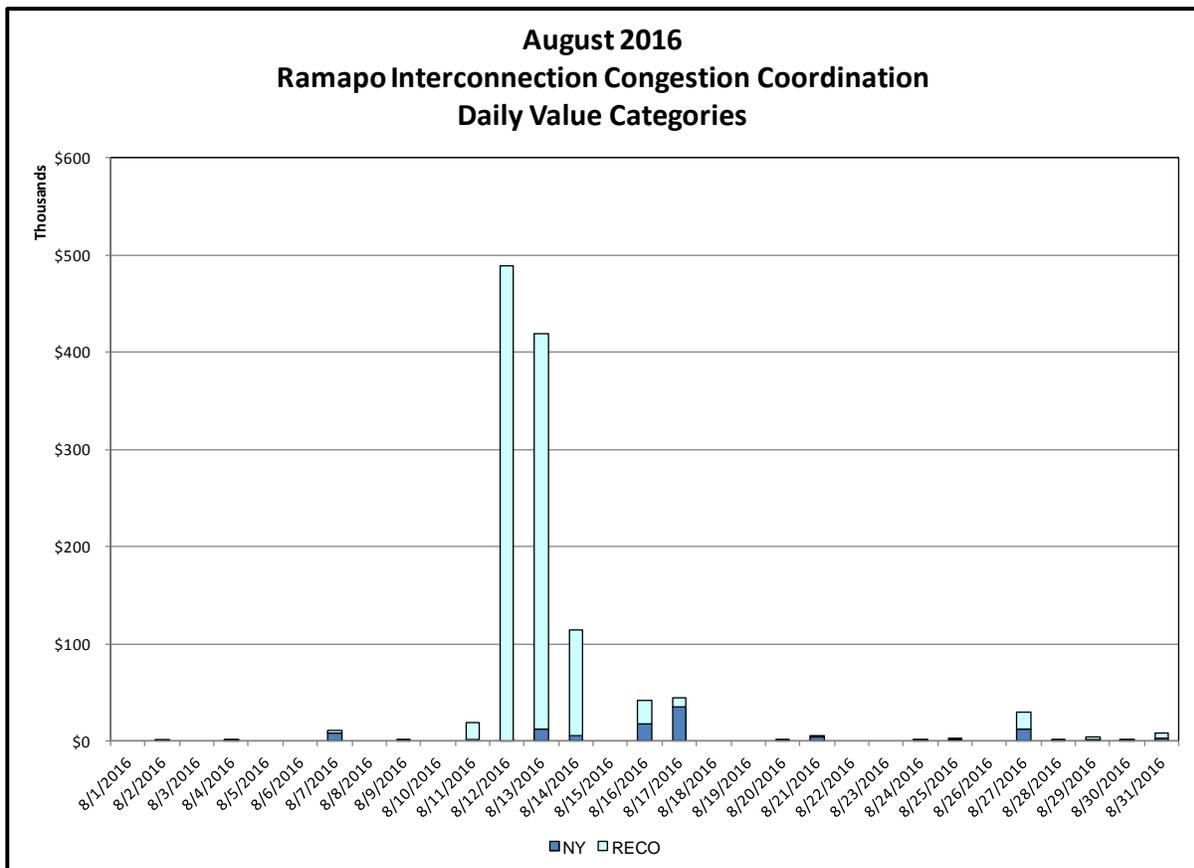
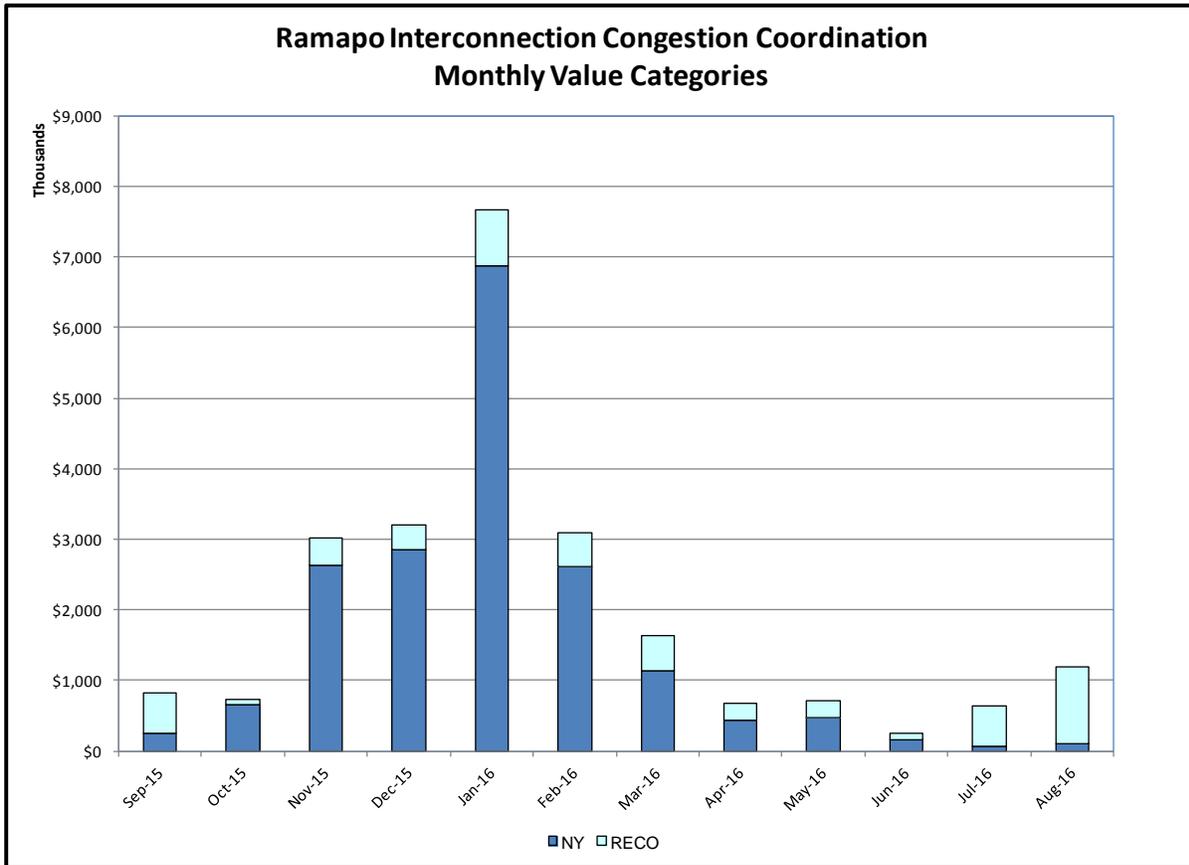






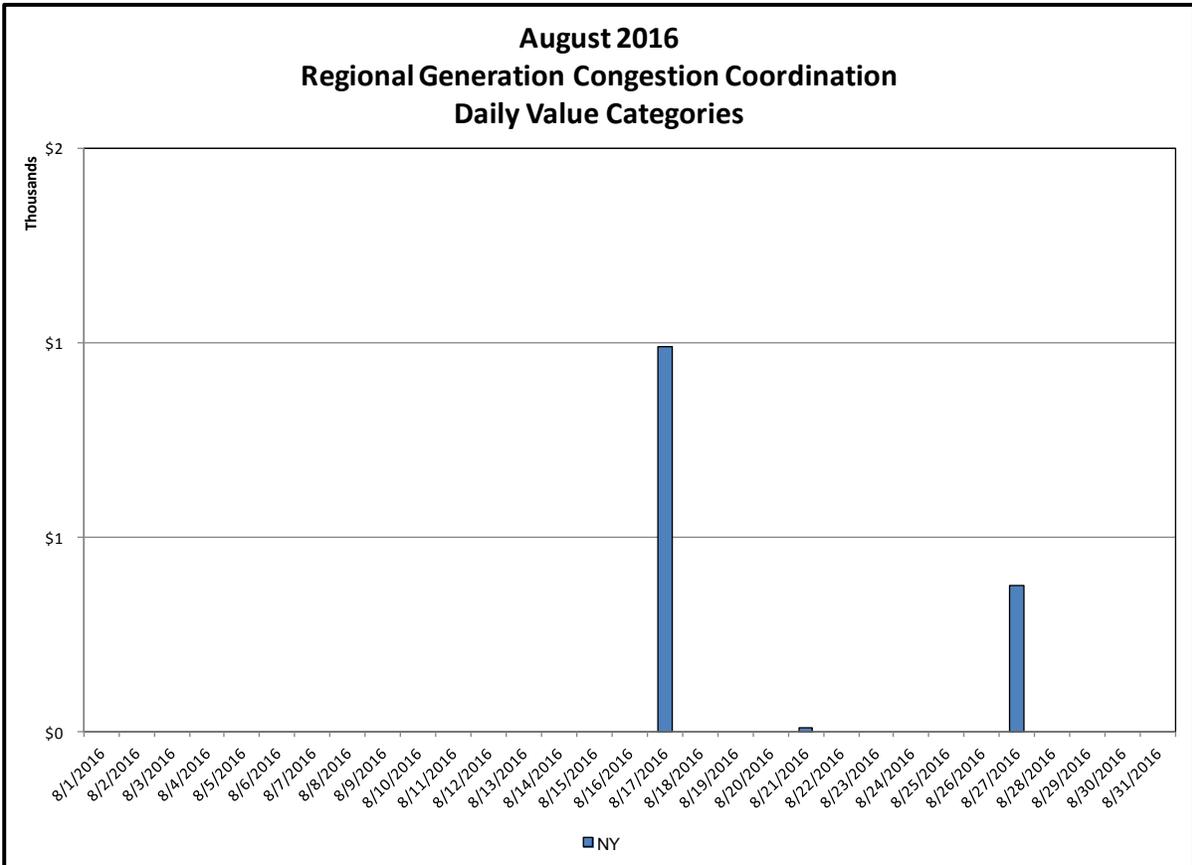
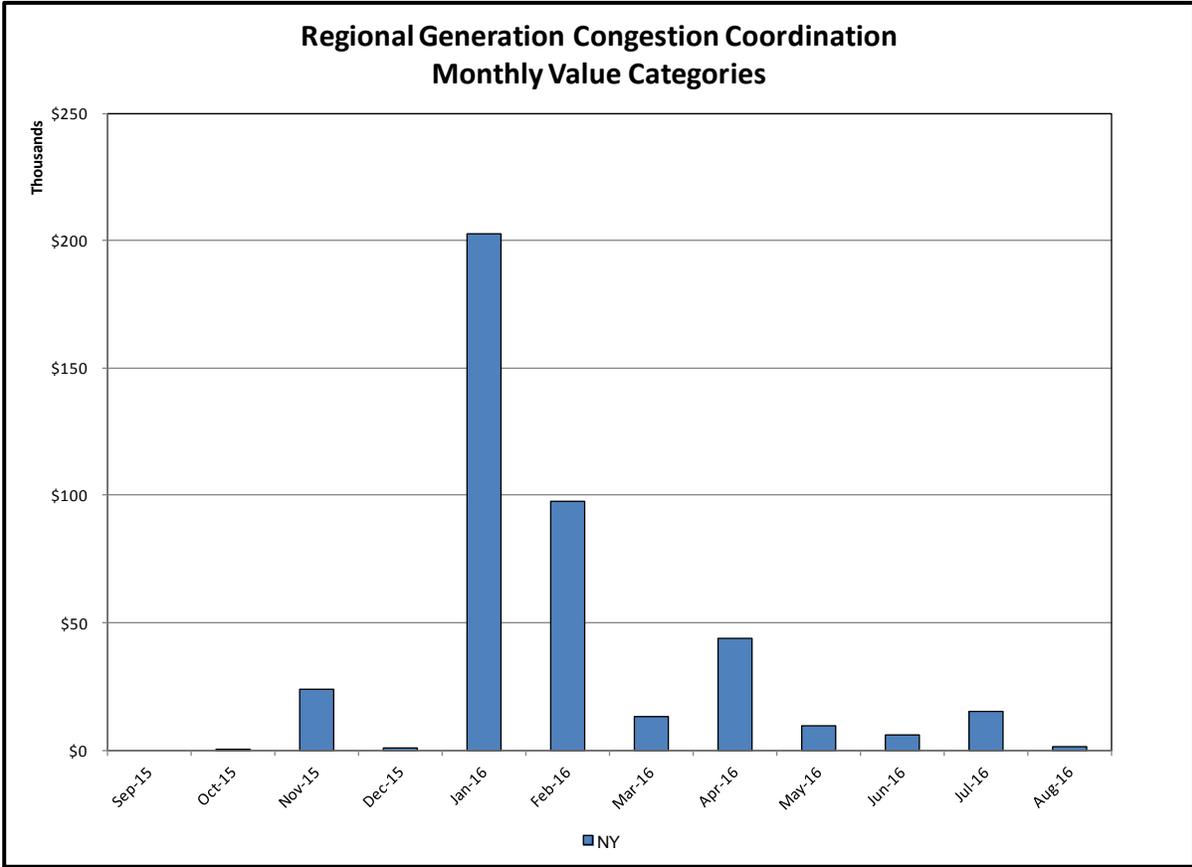


## Broader Regional Market Performance Metrics



**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.



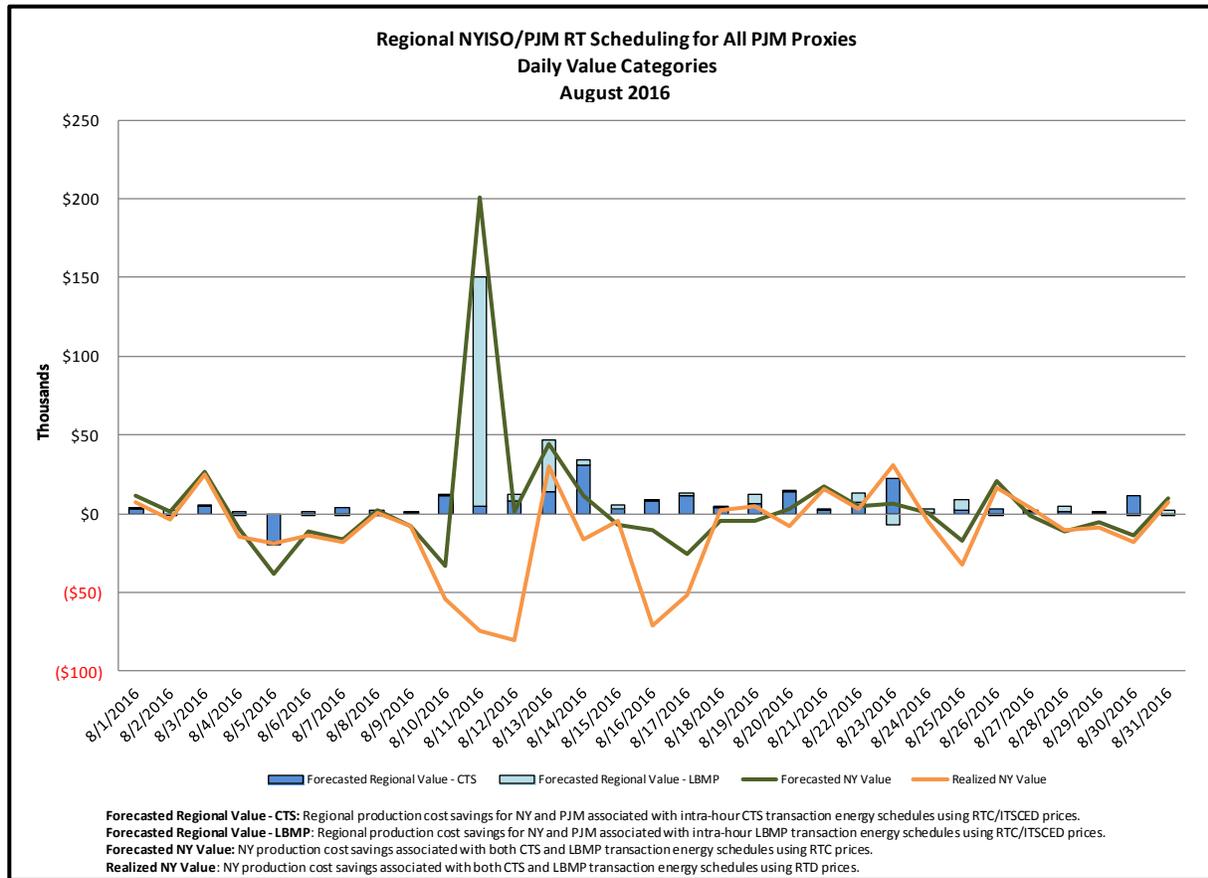
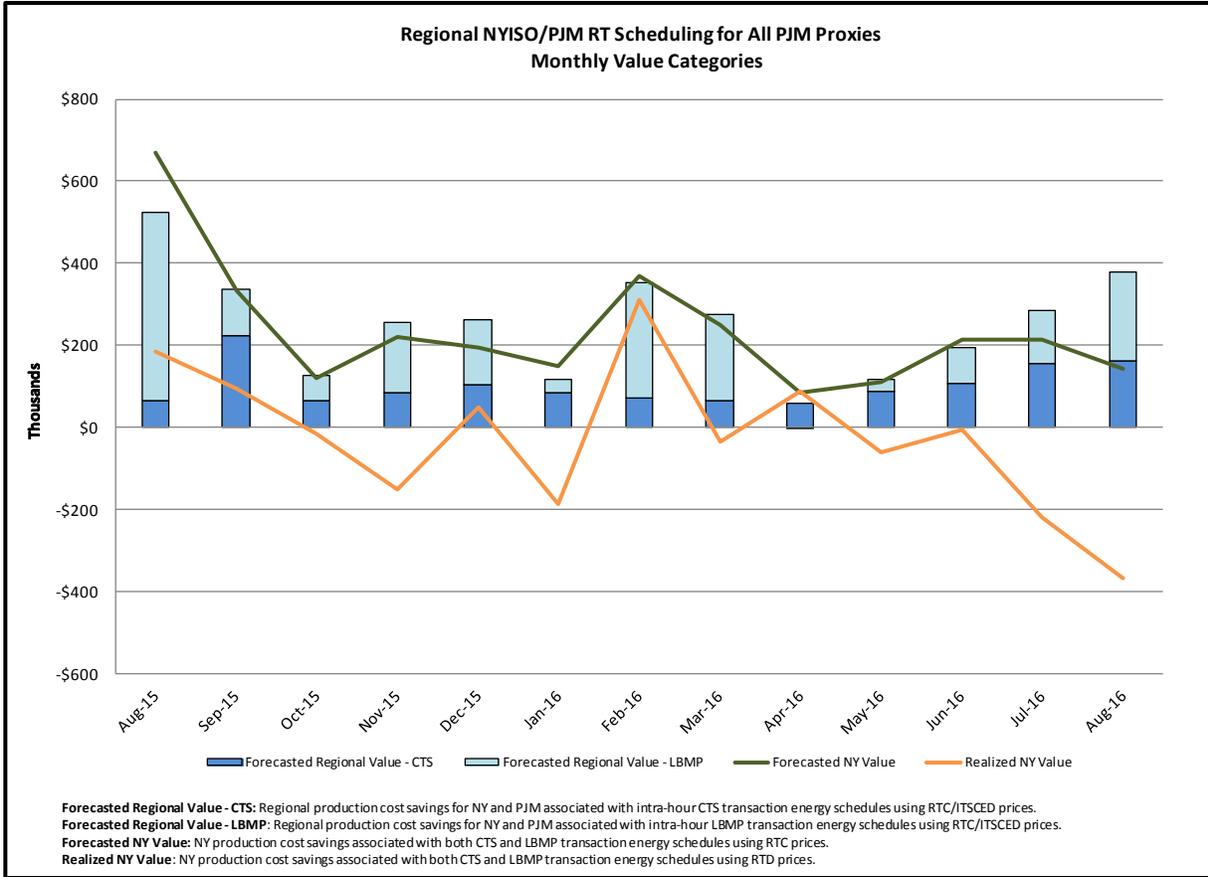
### Regional Generation Congestion Coordination

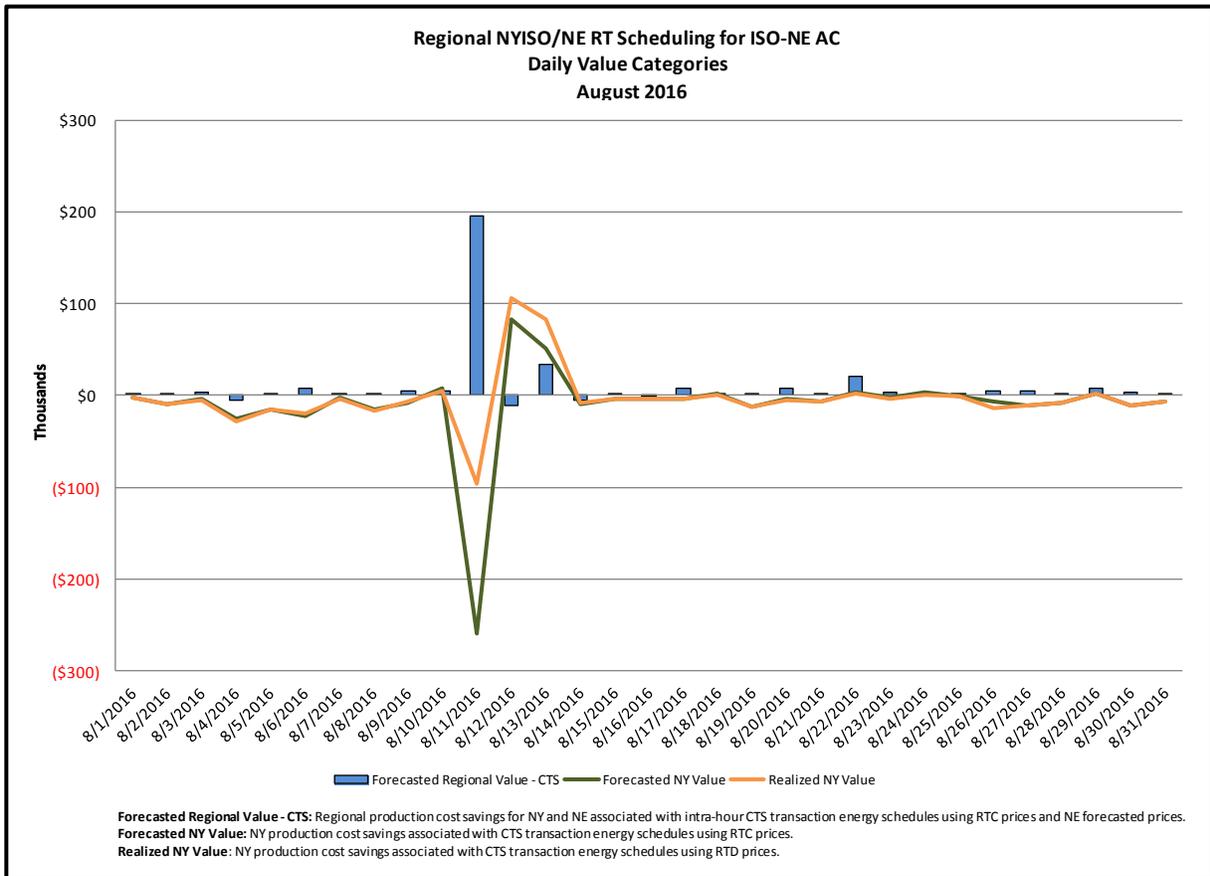
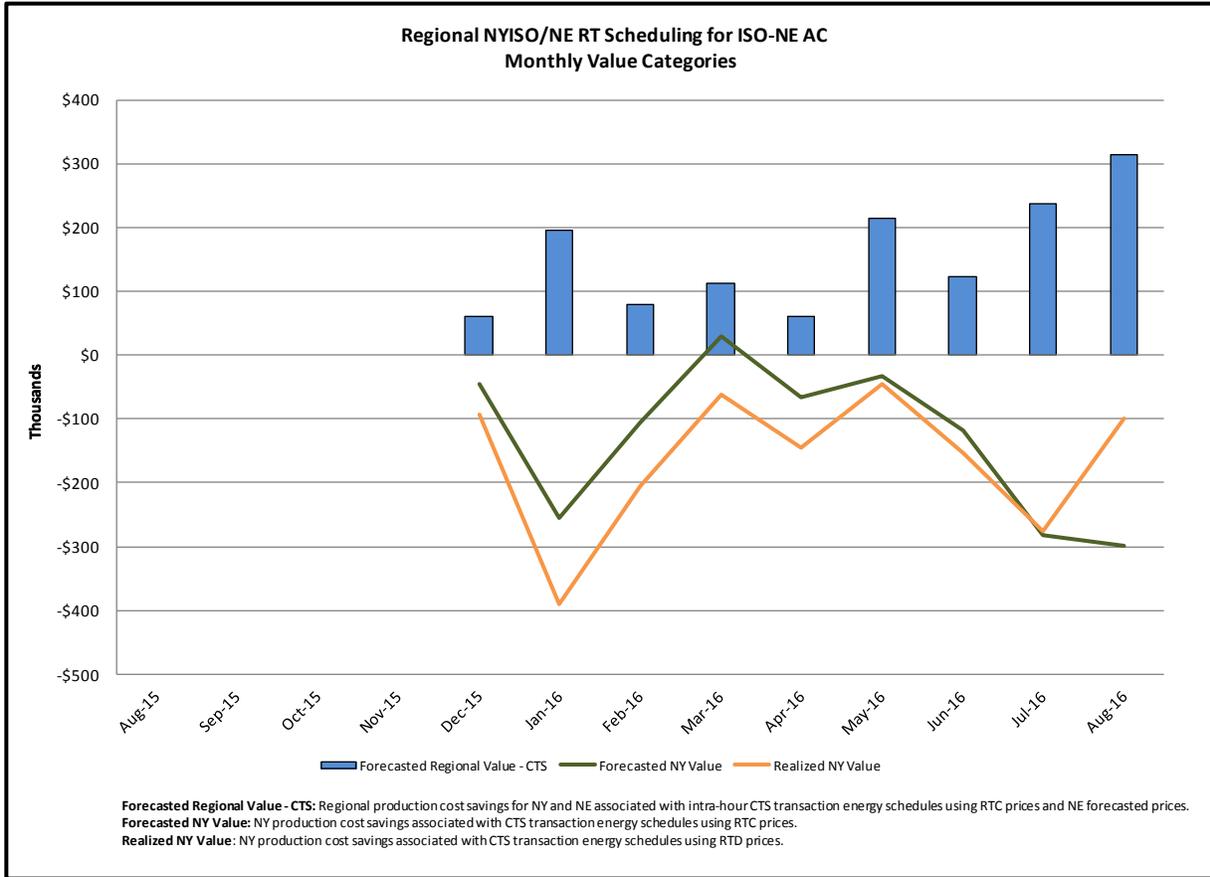
Category

NY

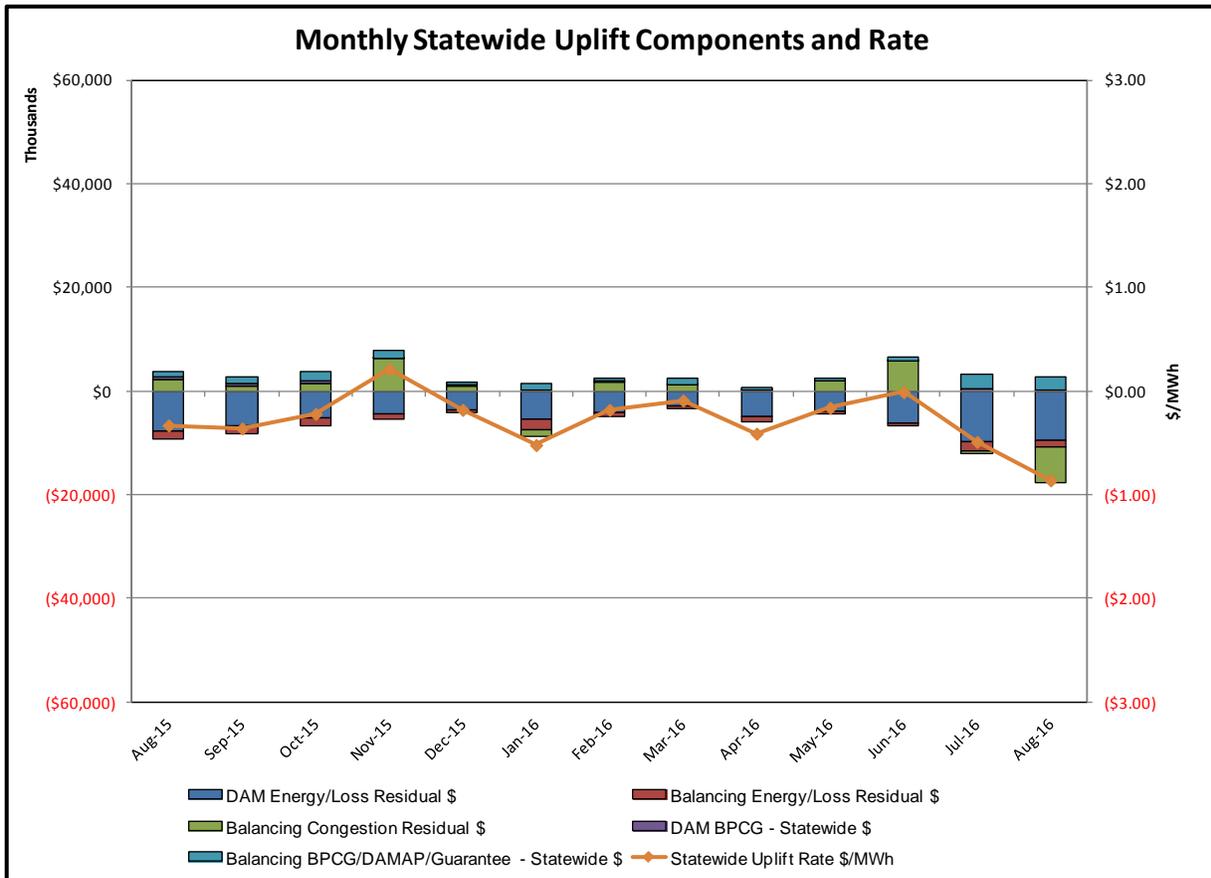
Description

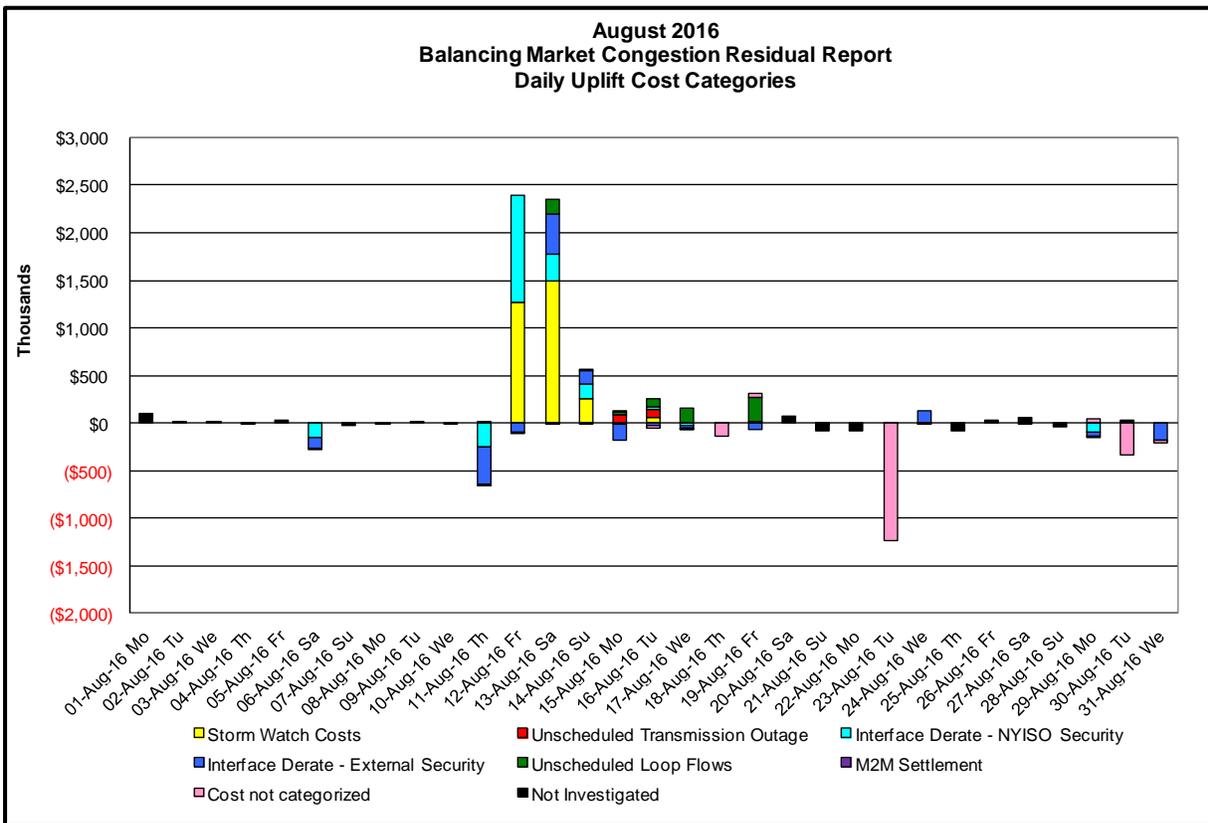
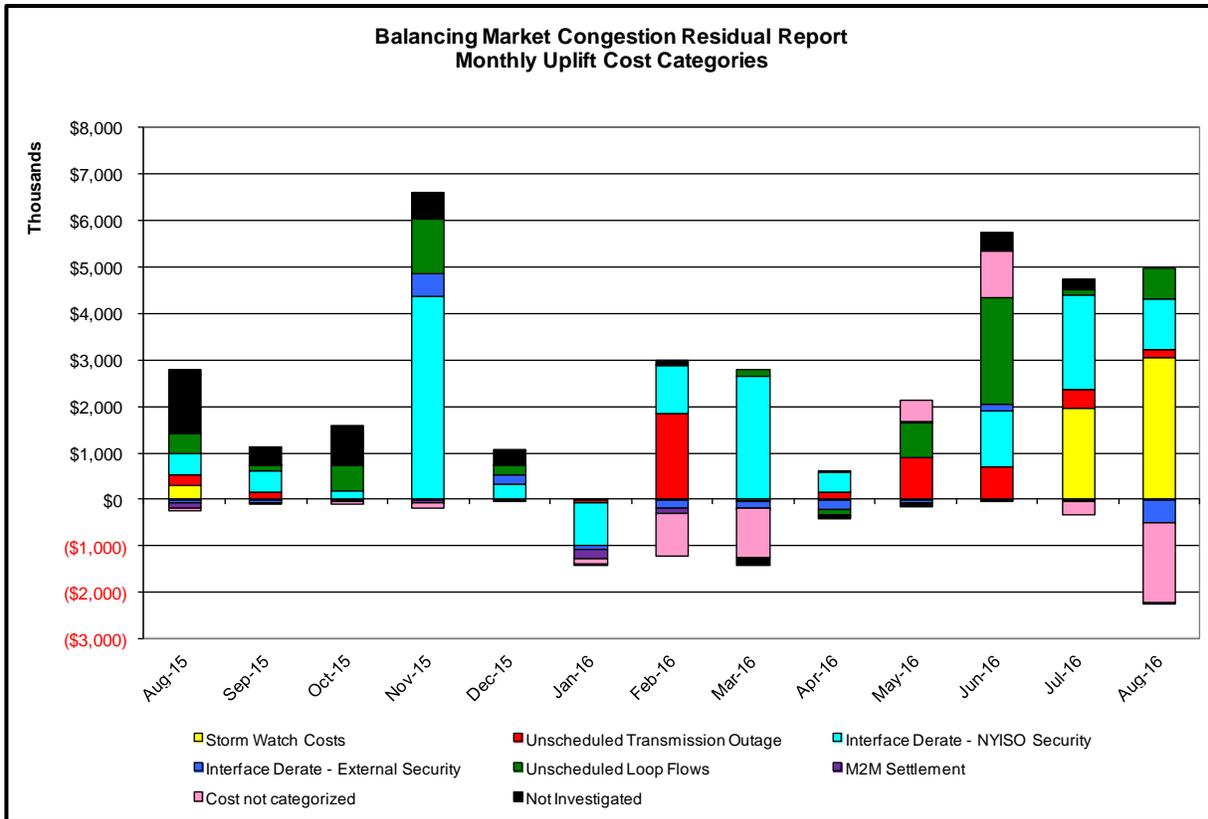
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





### Market Performance Metrics





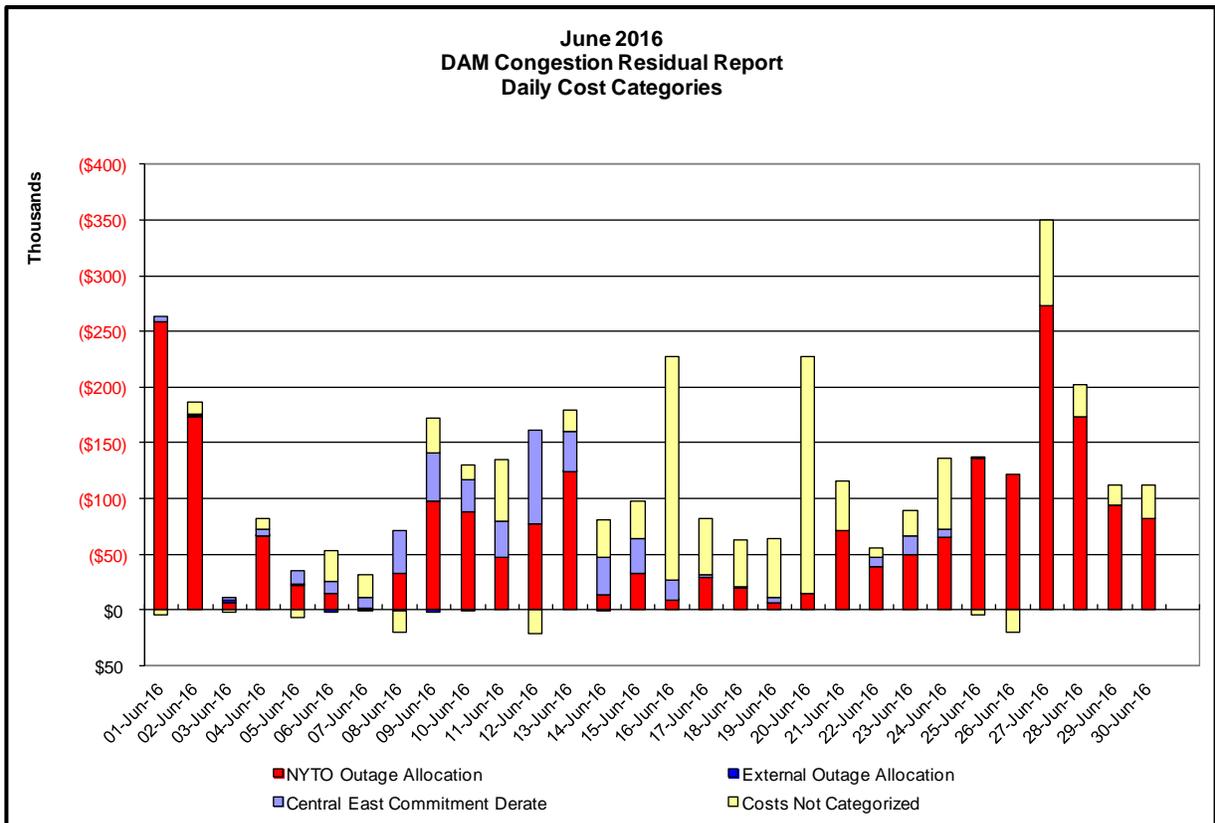
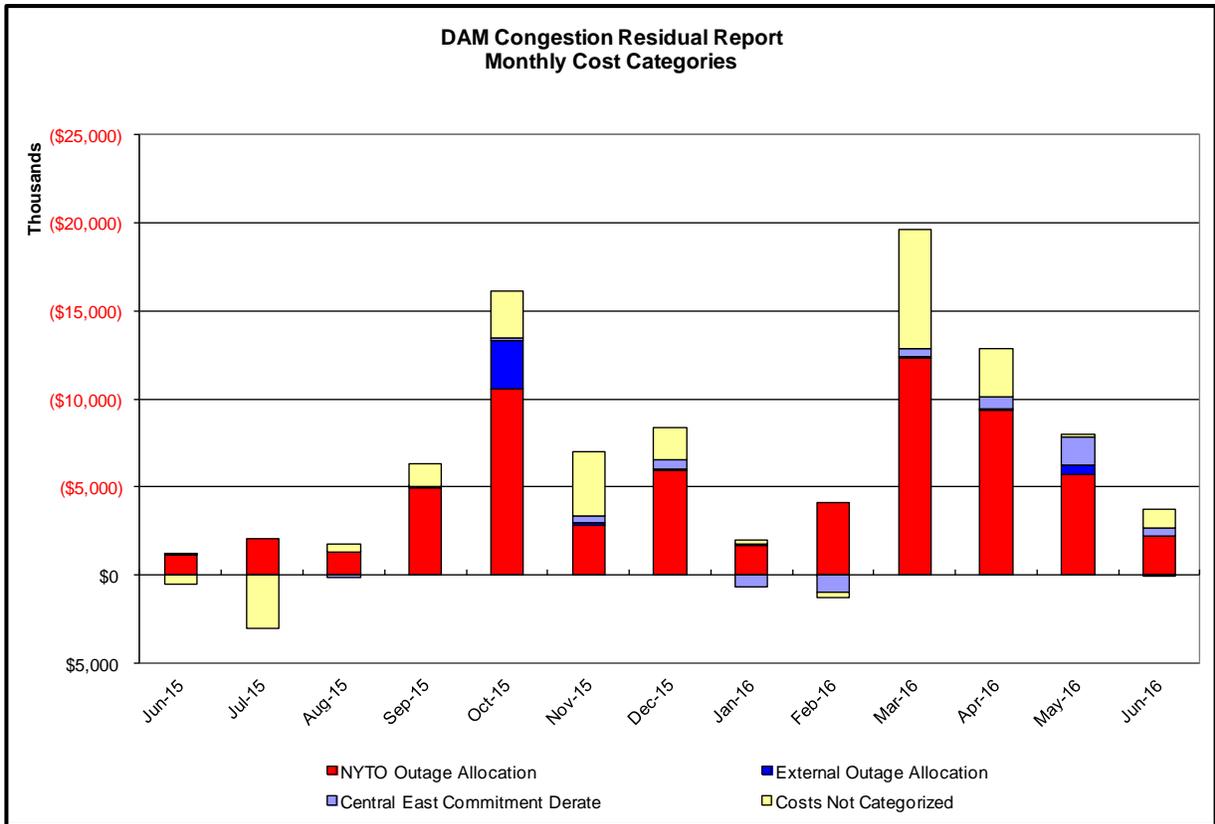
Event	Description	August Dates
	Thunder Storm Alert	11,12-14,16
	Forced outage Niagara-Packard 115kV (#192)	15,16
	Derate Dunwoodie-Shore Road 345kV (#Y50) for I/o NEPTUNE HVDC TIE LINE	12-17,19,24
	Derate East 179th Street-HellGate East 138kV (#15053/15054)	13
	Derate East 179th Street-HellGate East 138kV (#15054)	16
	Derate East 179th Street-HellGate West 138kV (#15055)	14
	Derate Gowanus-Greenwood 138kV (#42231)	13,14,16
	Derate Gowanus-Greenwood 138kV (#42231) for I/o SCB:GOWANUS(14):42&42232&R14	13,14
	Derate Gowanus-Greenwood 138kV (#42232)	13
	Derate Gowanus-Greenwood 138kV (#42232) for I/o SCB:GOWANUS(2):41&42231&R4	13,14
	Derate Gowanus-Greenwood 138kV (#42232) for I/o TWR:GOETHALS 22 & 21	13
	Derate Greenwood-Vernon 138kV (#31231) for I/o TWR:GOETHALS 22 & 21	14
	Derate Northport-Pilgrim 138kV (#677) for I/o BUS:NRTHPRT 672&679&1385&G1&IC	15
	Derate Packard-Sawyer 230kV (#77) for I/o Packard-Sawyer 230kV (#78)	30
	NYCA DNI Ramp Limit	11-14,16,17,24,29
	Uprate Athens-Pleasant Valley 345kV (#91) for I/o Leeds-Pleasant Valley 345kV (#92)	14
	Uprate Central East	17
	Uprate East 179th Street-HellGate West 138kV (#15055)	17,19,29
	Uprate Freshkills 345/138kV (#BK TA1)	14-16
	Uprate Freshkills-Willowbrook 138kV (#29211)	24
	Uprate Freshkills-Willowbrook 138kV (#29212)	6,12,14-17
	Uprate Goethals-Gowanus 345kV (#25)	12,14-16,18,24,29
	Uprate Goethals-Gowanus 345kV (#26)	11,12,14-16,24,29
	Uprate Gowanus-Greenwood 138kV (#42231)	15-17
	Uprate Gowanus-Greenwood 138kV (#42231) for I/o SCB:GOWANUS(14):42&42232&R14	15,16
	Uprate Gowanus-Greenwood 138kV (#42231) for I/o TWR:GOETHALS 22 & 21	17
	Uprate Gowanus-Greenwood 138kV (#42231/42232) for I/o TWR:GOETHALS 22 & 21	16
	Uprate Gowanus-Greenwood 138kV (#42232)	15,17
	Uprate Gowanus-Greenwood 138kV (#42232) for I/o SCB:GOWANUS(2):41&42231&R4	15-17
	Uprate Gowanus-Greenwood 138kV (#42232) for I/o TWR:GOETHALS 22 & 21	17
	Uprate Leeds-Pleasant Valley 345kV (#92) for I/o Athens-Pleasant Valley 345kV (#91)	14,29
	HQ_CHAT-NY DNI Ramp Limit	24
	HQ_CHAT-NY Scheduling Limit	12,24,31
	IESO_AC DNI Ramp Limit	11,15
	IESO_AC-NY Scheduling Limit	12
	NE_AC DNI Ramp Limit	11-14,16,17,19,23,24,29
	NE_AC-NY Scheduling Limit	6,11,12,14-17
	NE_NNC1385-NY Scheduling Limit	11,13-15,29
	PJM_AC DNI Ramp Limit	16,17
	PJM_AC-NY Scheduling Limit	11,13,14,24
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Gardenville-Stolle Road 230kV (#66)	16,19
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard 230kV (#61)	13,15-17,19
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer 230kV (#77)	13,15-17,30

**Real-Time Balancing Market Congestion Residual (Uplift Cost) Categories**

<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
Storm Watch	Zone J	Thunderstorm Alert (TSA)	TSA Activations
Unscheduled Transmission Outage	Market-wide	Reduction in DAM to RTM transfers related to unscheduled transmission outage	Forced Line Outage, Unit AVR Outages
Interface Derate - NYISO Security	Market-wide	Reduction in DAM to RTM transfers not related to transmission outage	Interface Derates due to RTM voltages
Interface Derate - External Security	Market-wide	Reduction in DAM to RTM transfers related to External Control Area Security Events	TLR Events, External Transaction Curtailments
Unscheduled Loop Flows	Market-wide	Changes in DAM to RTM unscheduled loop flows impacting NYISO Interface transmission constraints	DAM to RTM Lake Erie Loop Flows exceeding +/- 125 MW
M2M Settlement	Market-wide	Settlement result inclusive of coordinated redispatch and Ramapo flowgates	

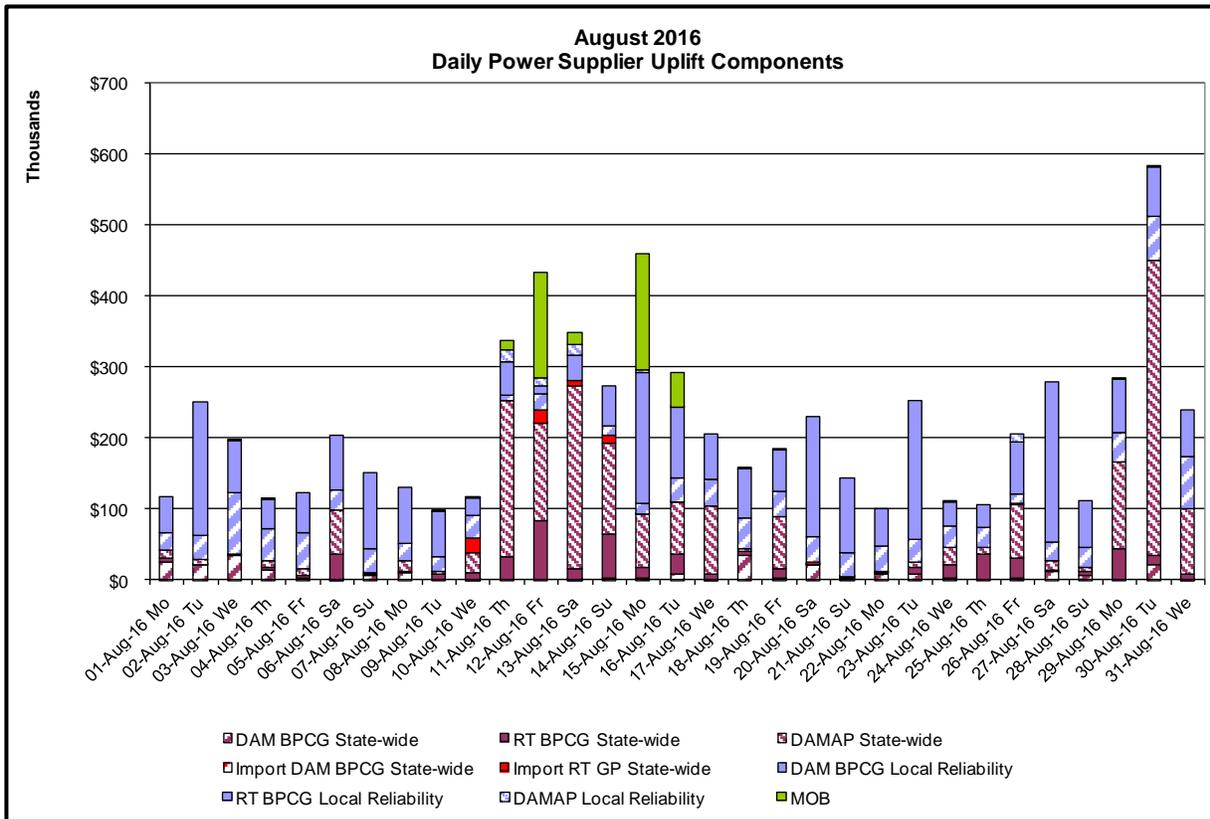
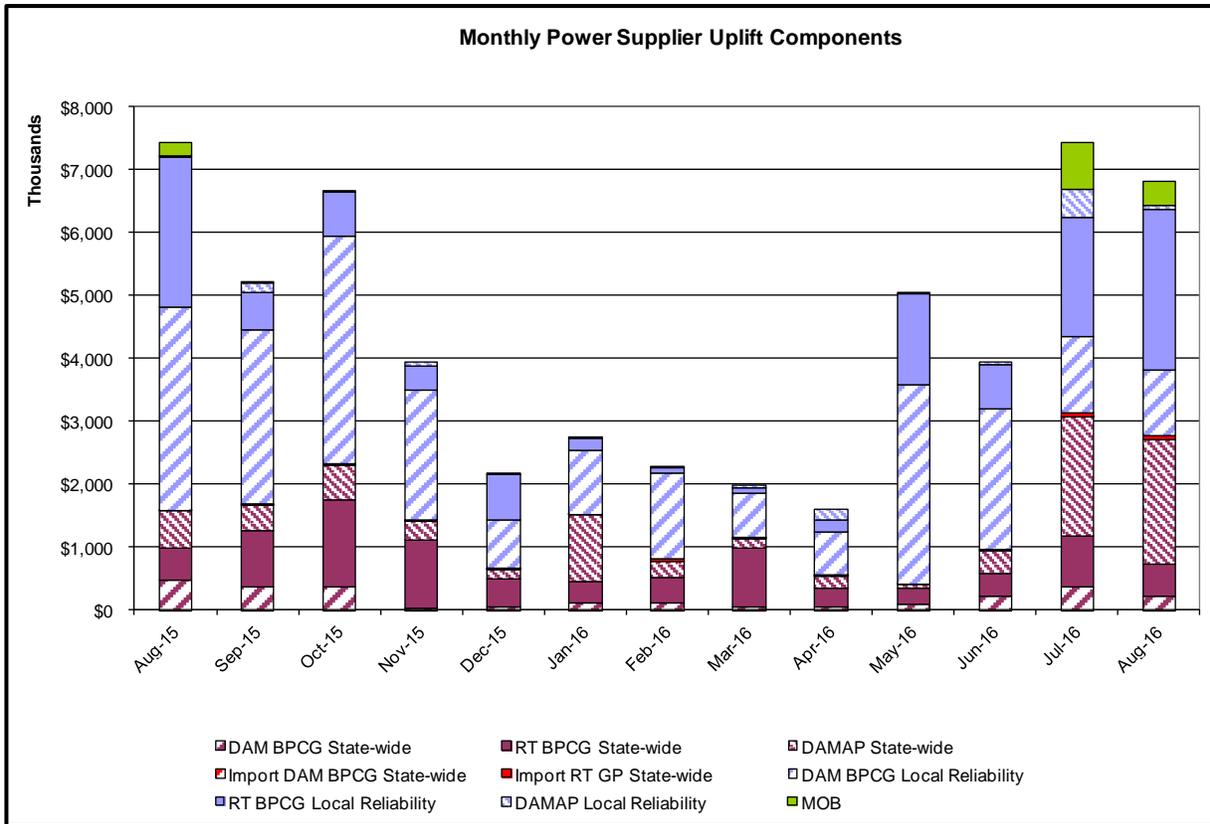
**Monthly Balancing Market Congestion Report Assumptions/Notes**

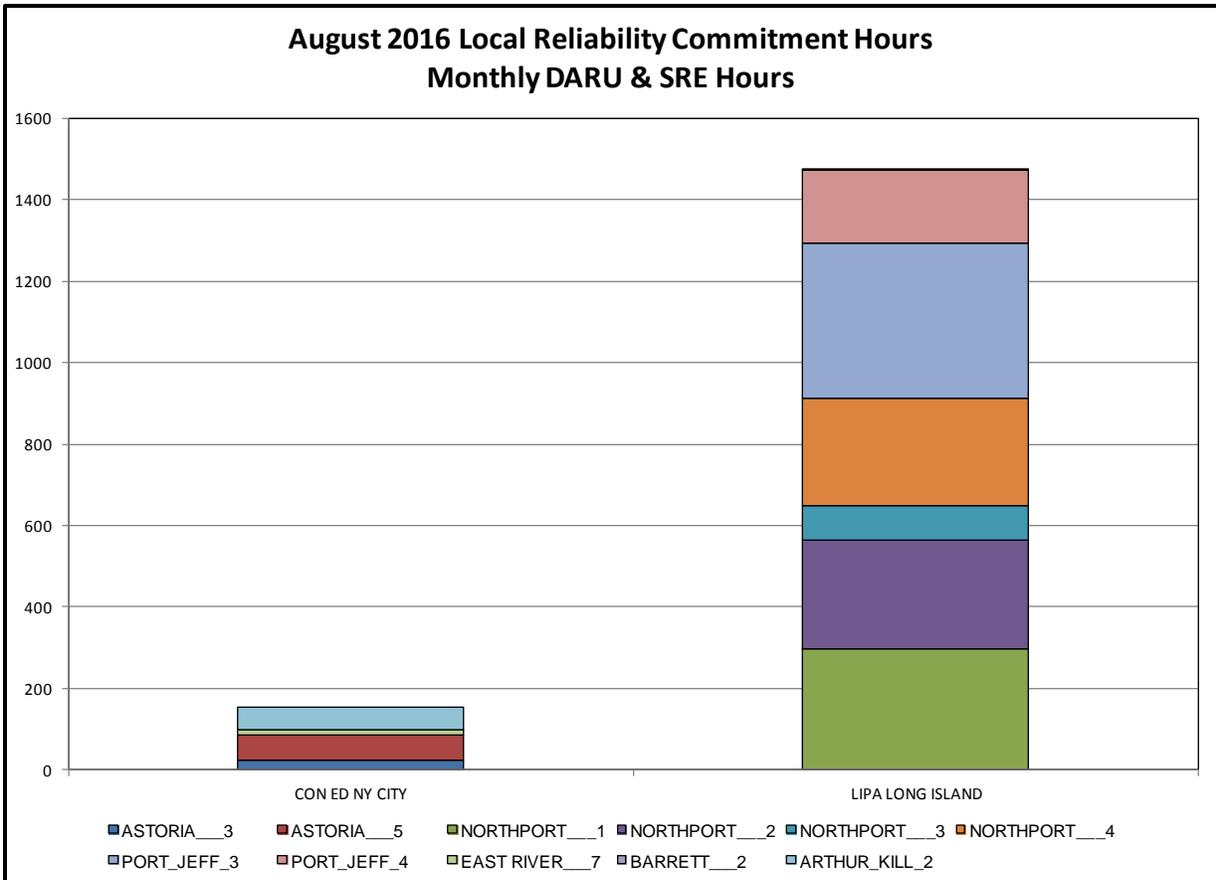
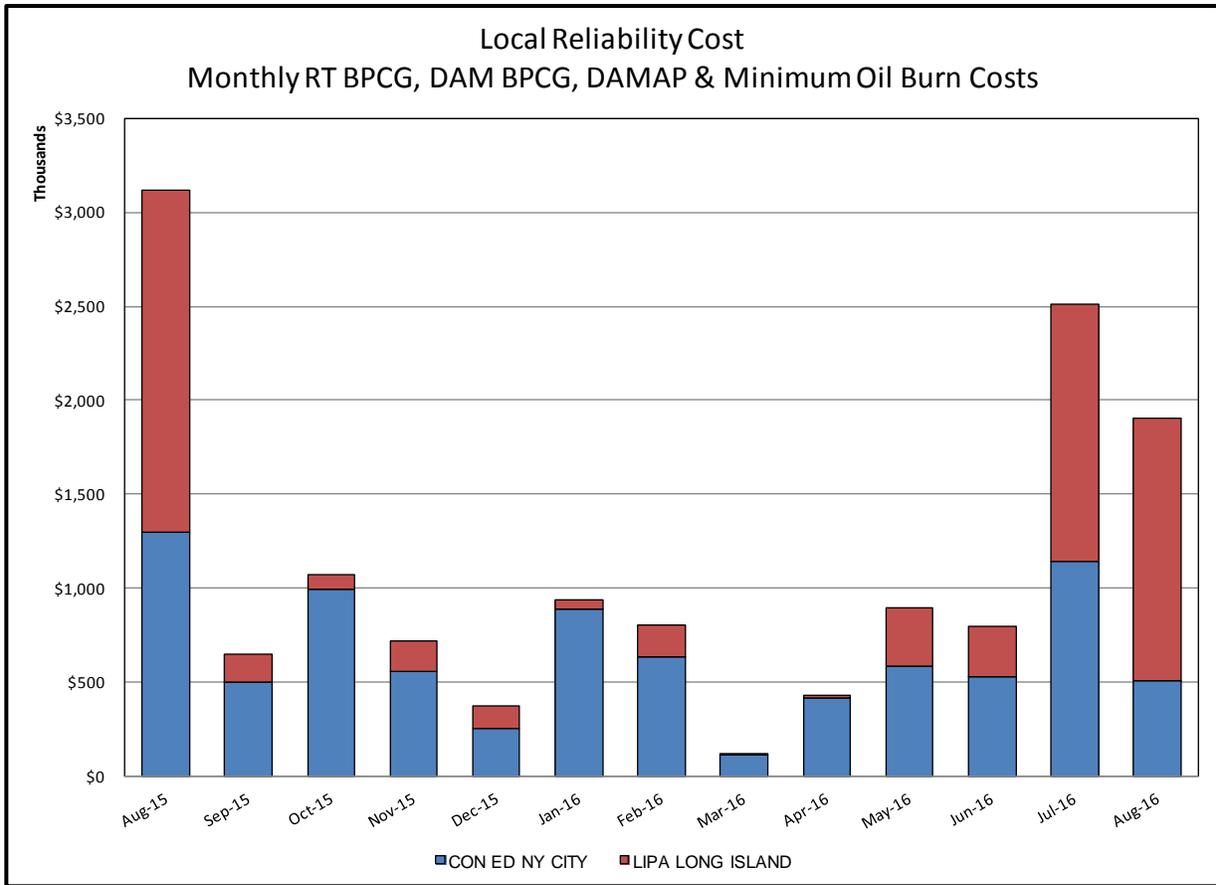
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

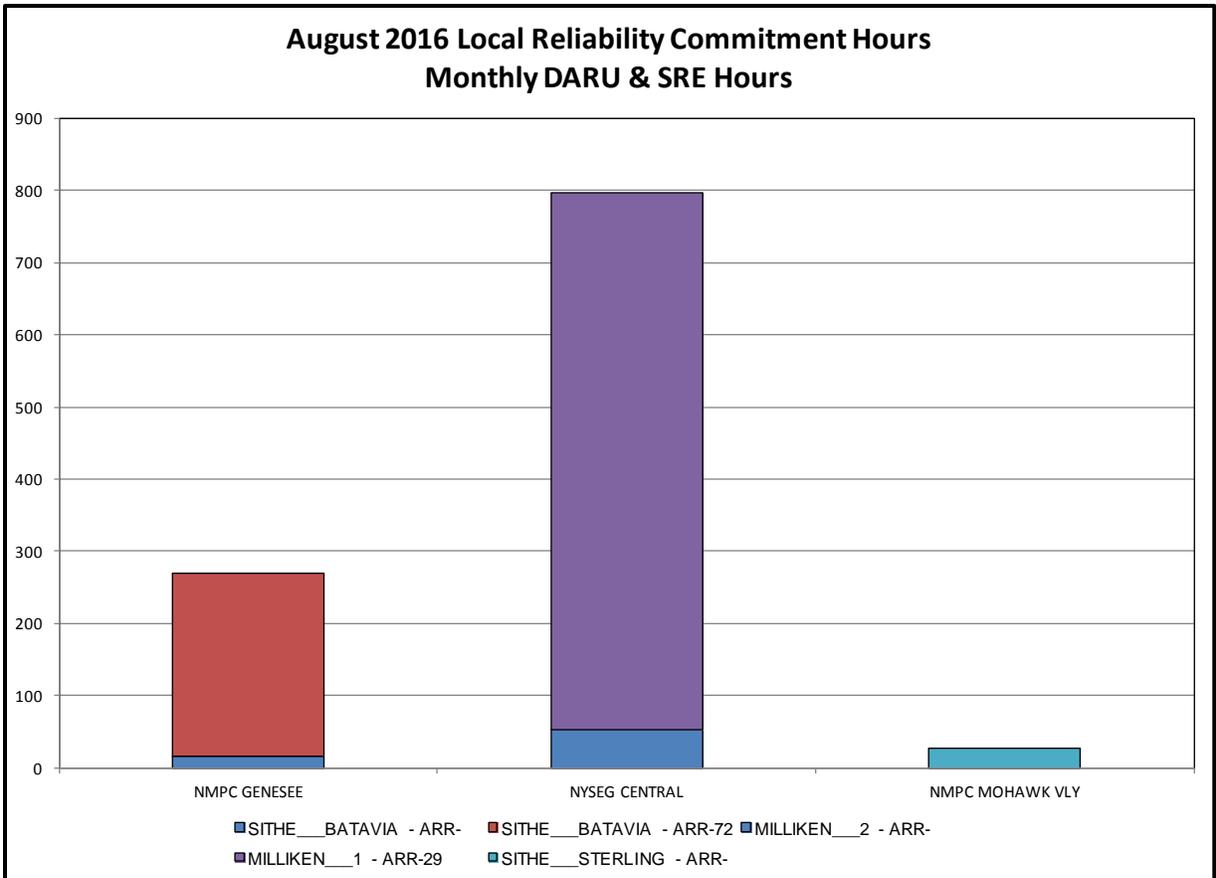
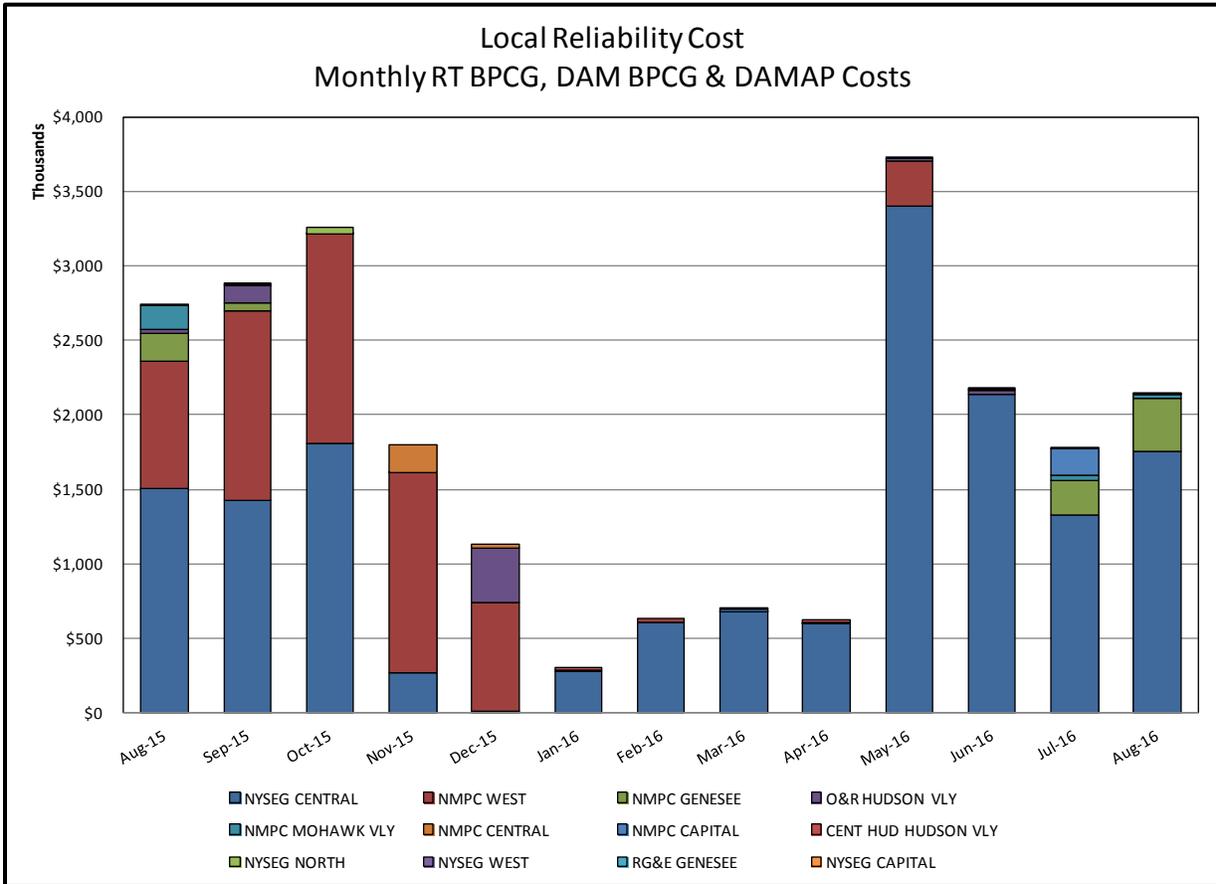


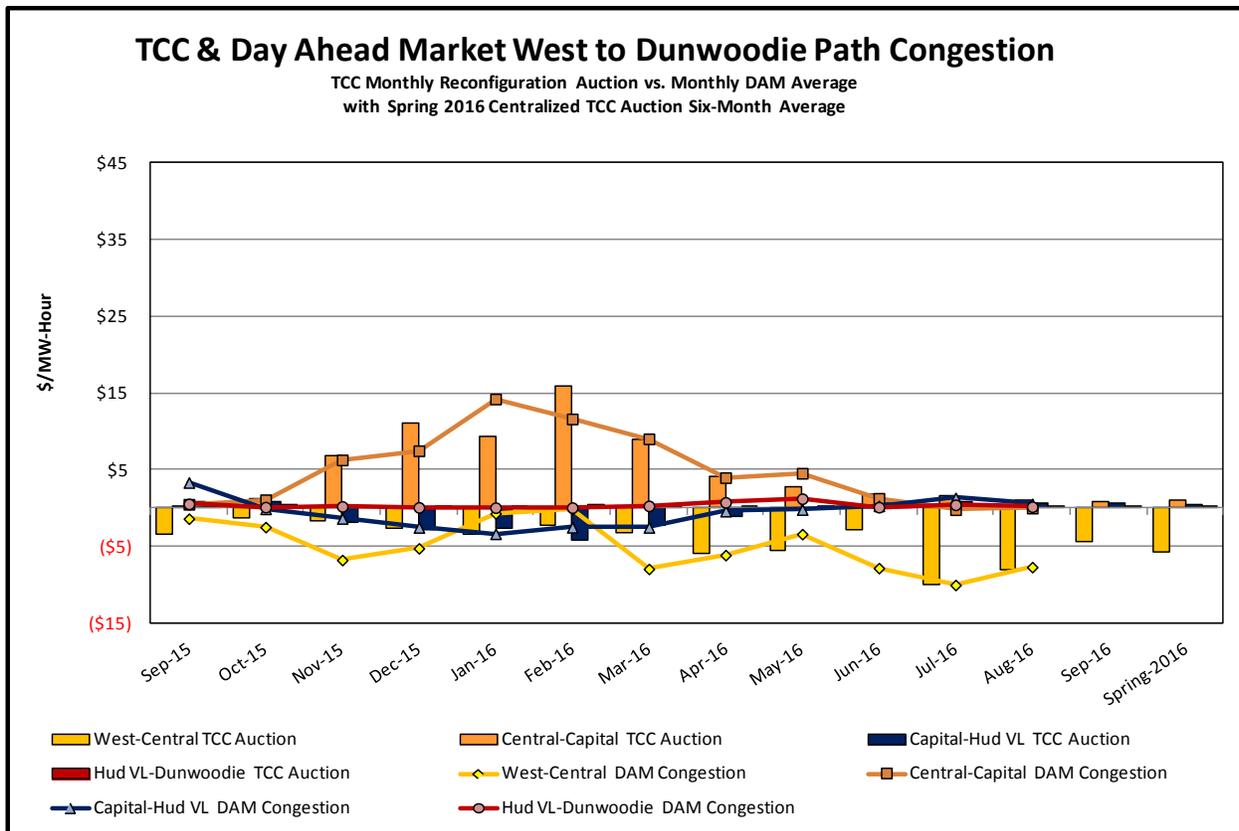
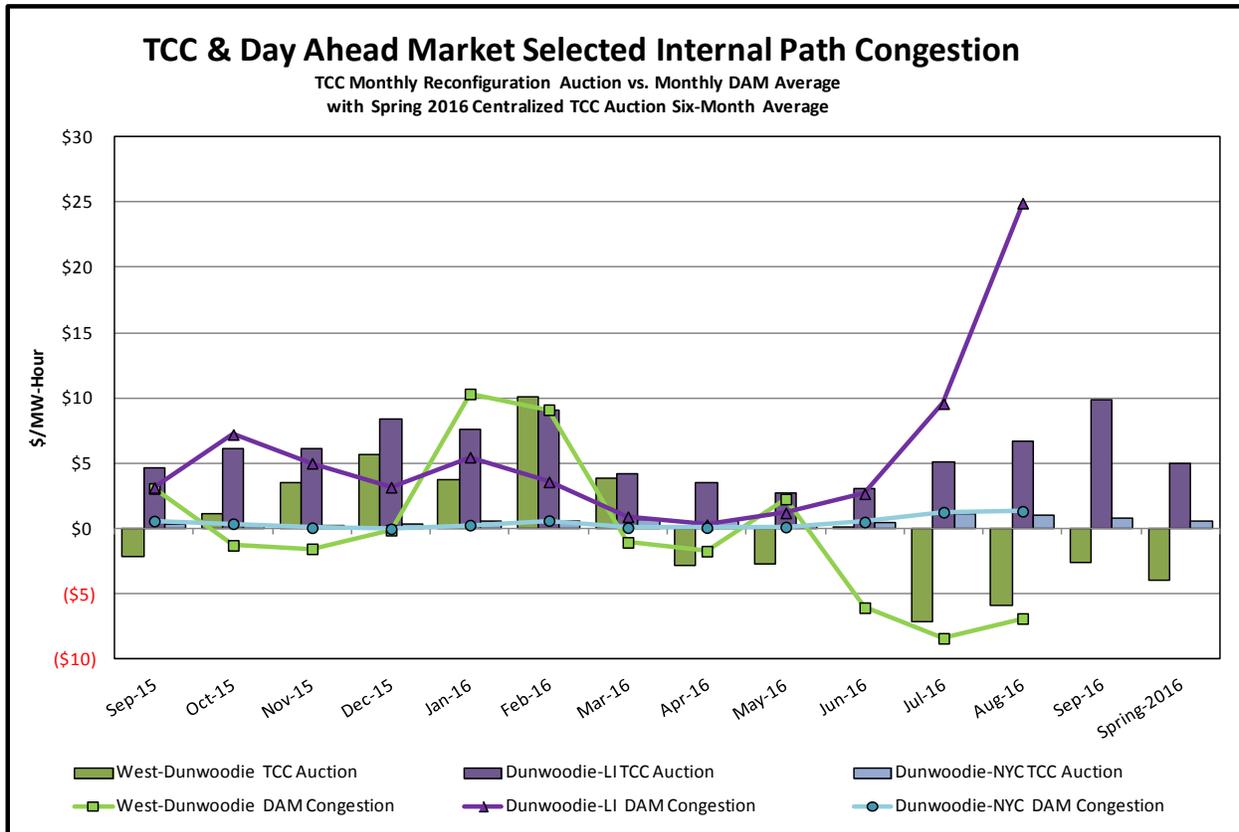
Day-Ahead Market Congestion Residual Categories

<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
NYTO Outage Allocation	Responsible TO	Direct allocation to NYTO's responsible for transmission equipment status change.	DAM scheduled outage for equipment modeled in-service for the TCC Auction.
External Outage Allocation	All TO by Monthly Allocation Factor	Direct allocation to transmission equipment status change caused by change in status of external equipment.	Tie line required out-of-service by TO of neighboring control area.
Central East Commitment Derate	All TO by Monthly Allocation Factor	Reductions in the DAM Central East_VC limit as compared to the TCC Auction limit, which are not associated with transmission line outages.	



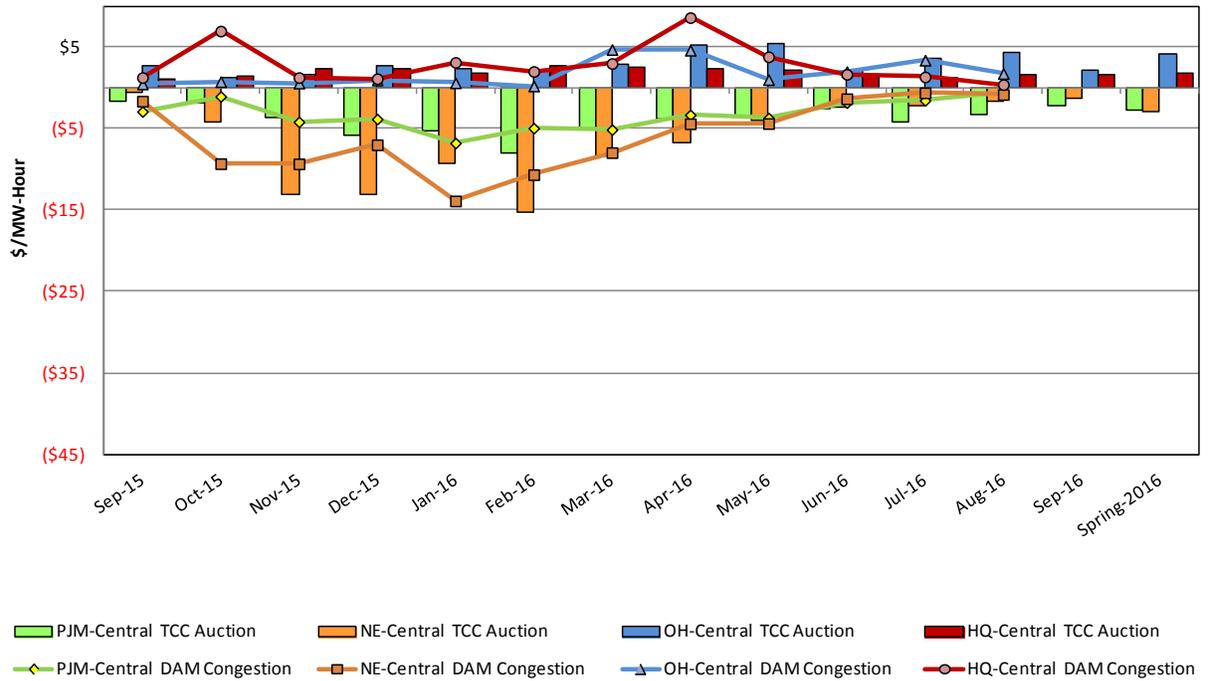


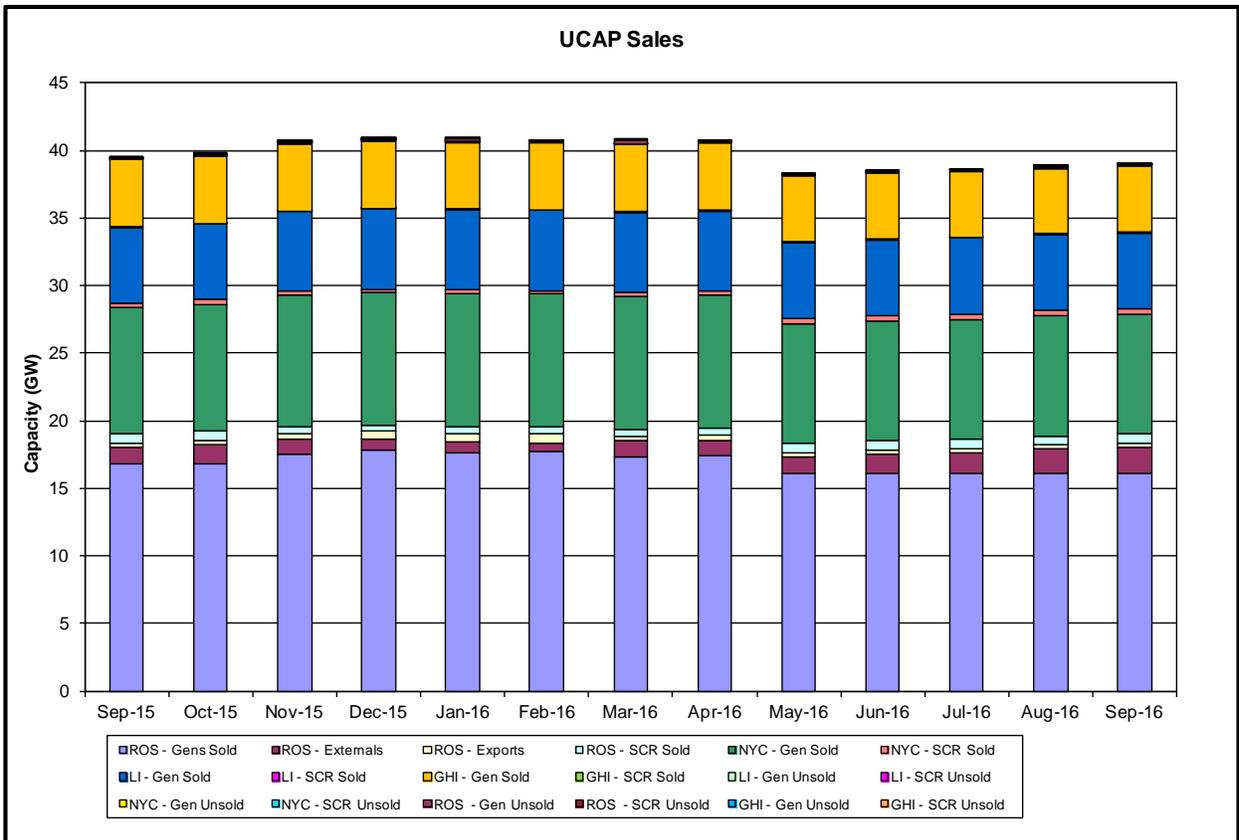
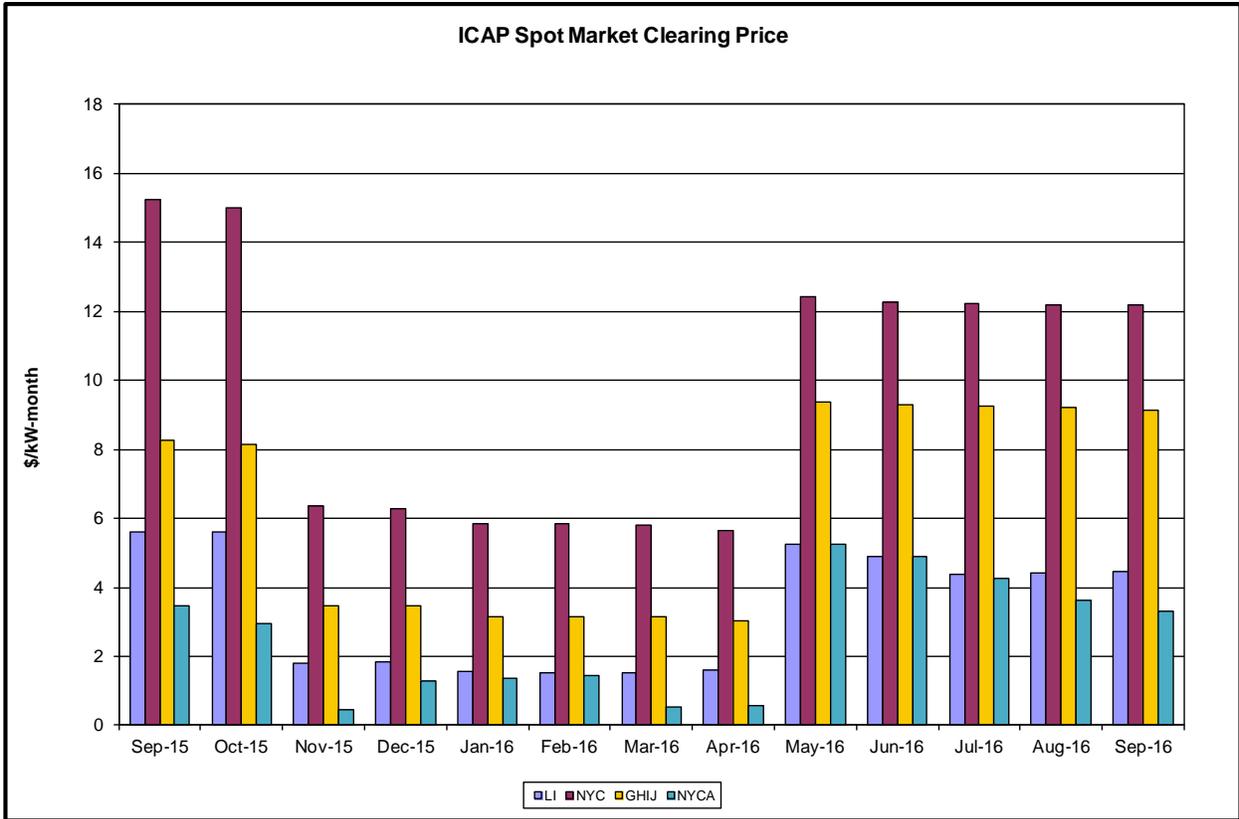




### TCC & Day Ahead Market Selected External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average  
with Spring 2016 Centralized TCC Auction Six-Month Average

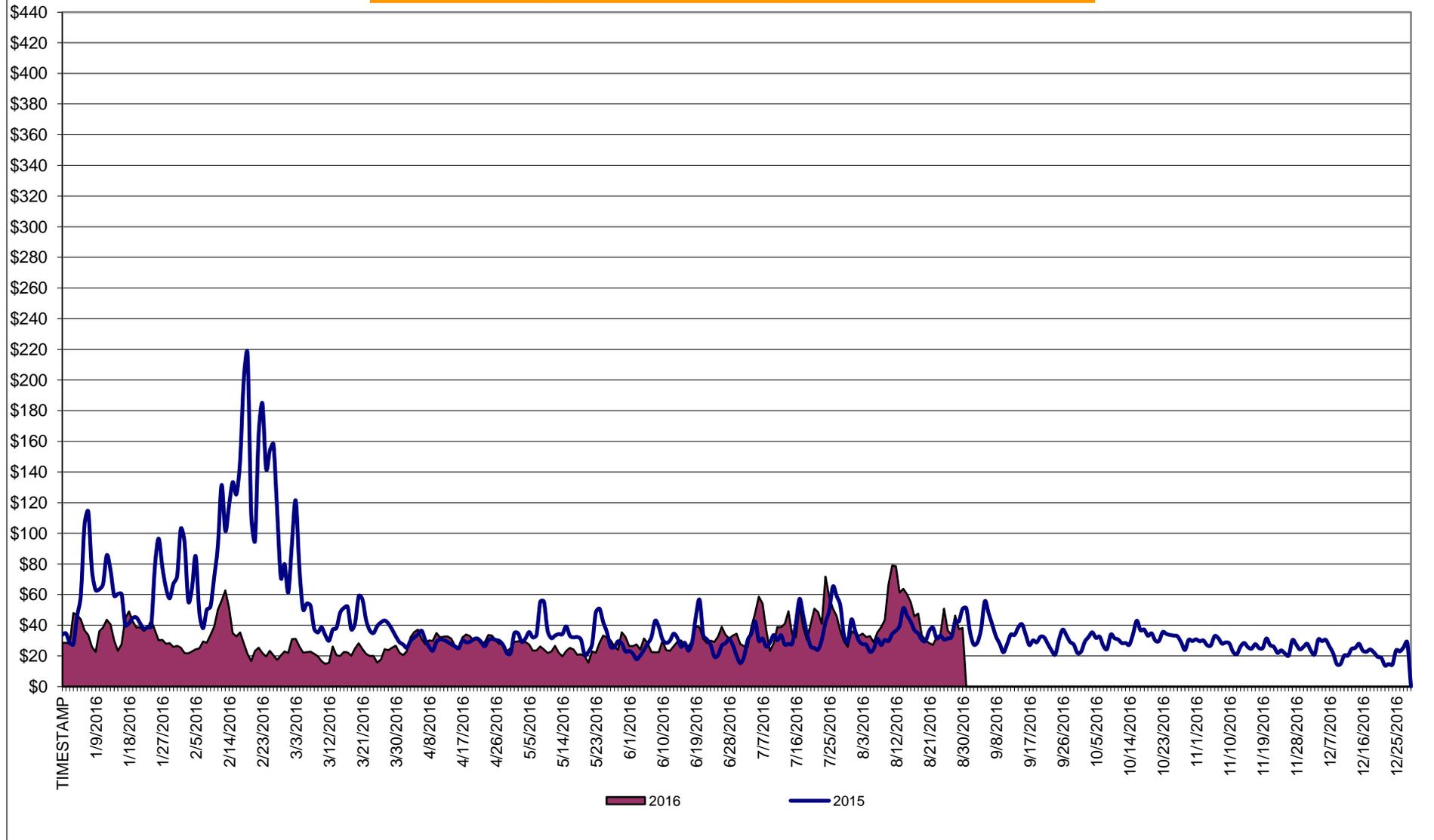




# Market Performance Highlights for August 2016

- **LBMP for August is \$42.99/MWh; higher than \$40.01/MWh in July 2016 and \$33.09/MWh in August 2015.**
  - Day Ahead and Real Time Load Weighted LBMPs are higher compared to July.
- **August 2016 average year-to-date monthly cost of \$34.43/MWh is a 31% decrease from \$50.20/MWh in August 2015.**
- **Average daily sendout is 548 GWh/day in August; higher than 532 GWh/day in July 2016 and 511 GWh/day in August 2015.**
- **Natural gas prices were lower and distillate prices were higher compared to the previous month.**
  - Natural Gas (Transco Z6 NY) was \$2.01/MMBtu, down from \$2.16/MMBtu in July.
    - Natural gas prices are down 15.7% year-over-year
  - Jet Kerosene Gulf Coast was \$9.66/MMBtu, up from \$9.42/MMBtu in July.
  - Ultra Low Sulfur No.2 Diesel NY Harbor was \$10.06/MMBtu, up from \$9.78/MMBtu in July.
    - Distillate prices are down 7.4% year-over-year
- **Uplift per MWh is lower compared to the previous month.**
  - Uplift (not including NYISO cost of operations) is (\$0.63)/MWh; lower than (\$0.26)/MWh in July.
    - Local Reliability Share is \$0.22/MWh, lower than \$0.23/MWh in July.
    - Statewide Share is (\$0.86)/MWh, lower than (\$0.49)/MWh in July.
  - TSA \$ per NYC MWh is \$1.64/MWh.
  - Total uplift costs (Schedule 1 components including NYISO Cost of Operations) are lower than July.

**Daily NYISO Average Cost/MWh (Energy & Ancillary Services)\***  
**2015 Annual Average \$44.10/MWh**  
**August 2015 YTD Average \$50.20/MWh**  
**August 2016 YTD Average \$34.43/MWh**



\* Excludes ICAP payments.

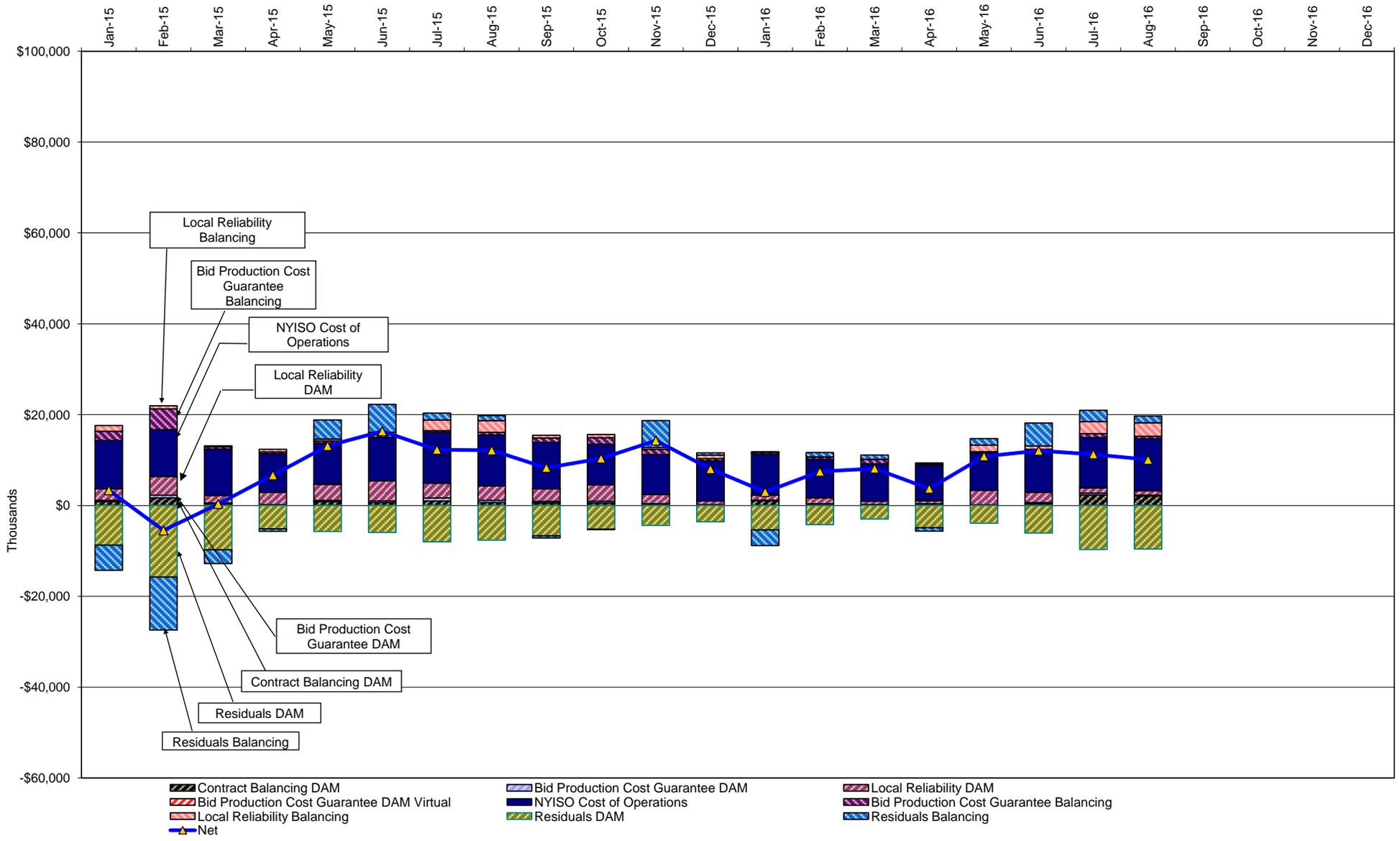
**NYISO Average Cost/MWh (Energy and Ancillary Services) \***  
**from the LBMP Customer point of view**

<b>2016</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	34.29	28.71	20.66	27.96	23.31	27.35	40.01	42.99				
NTAC	0.59	0.78	0.62	1.14	1.10	0.93	0.78	0.54				
Reserve	0.77	0.73	0.73	0.87	0.71	0.59	0.67	0.68				
Regulation	0.12	0.12	0.12	0.12	0.11	0.12	0.10	0.10				
NYISO Cost of Operations	0.64	0.65	0.65	0.64	0.65	0.66	0.65	0.65				
FERC Fee Recovery	0.09	0.10	0.11	0.10	0.09	0.09	0.07	0.06				
Uplift	(0.43)	(0.07)	(0.03)	(0.34)	0.19	0.20	(0.26)	(0.63)				
Uplift: Local Reliability Share	0.09	0.11	0.06	0.07	0.35	0.21	0.23	0.22				
Uplift: Statewide Share	(0.52)	(0.18)	(0.09)	(0.41)	(0.16)	(0.01)	(0.49)	(0.86)				
Voltage Support and Black Start	<u>0.35</u>	<u>0.36</u>	<u>0.36</u>	<u>0.35</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>				
<b>Avg Monthly Cost</b>	36.42	31.37	23.23	30.84	26.52	30.29	42.40	44.75				
Avg YTD Cost	36.42	34.02	30.68	30.71	29.85	29.93	32.32	34.43				
TSA \$ per NYC MWh	0.00	0.00	0.05	0.00	0.00	0.02	0.84	1.64				
<b>2015</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	59.61	114.37	52.09	28.36	32.98	28.20	34.77	33.09	34.40	30.05	24.83	20.91
NTAC	0.32	0.35	0.41	0.64	0.56	0.80	0.54	0.60	0.63	0.53	0.68	1.05
Reserve	0.27	0.37	0.56	0.36	0.38	0.24	0.27	0.20	0.28	0.28	0.47	0.60
Regulation	0.10	0.18	0.11	0.12	0.10	0.13	0.12	0.12	0.10	0.12	0.13	0.13
NYISO Cost of Operations	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.69	0.70	0.69
Uplift	(0.48)	(1.08)	(0.68)	(0.15)	0.26	0.33	0.04	0.03	(0.15)	0.10	0.44	(0.07)
Uplift: Local Reliability Share	0.25	0.33	0.13	0.27	0.30	0.37	0.35	0.36	0.22	0.33	0.20	0.12
Uplift: Statewide Share	(0.73)	(1.41)	(0.81)	(0.42)	(0.05)	(0.04)	(0.30)	(0.33)	(0.37)	(0.23)	0.25	(0.18)
Voltage Support and Black Start	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.39</u>	<u>0.38</u>
<b>Avg Monthly Cost</b>	60.91	115.27	53.58	30.41	35.37	30.79	36.84	35.14	36.35	32.18	27.64	23.71
Avg YTD Cost	60.91	87.74	76.64	66.82	60.96	56.02	52.77	50.20	48.59	47.17	45.66	44.10
TSA \$ per NYC MWh	0.00	0.00	0.00	0.00	0.17	0.50	0.07	0.06	0.01	0.00	0.00	0.00
<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	183.36	123.19	109.58	46.09	40.30	43.39	43.97	34.48	37.63	35.61	42.89	38.08
NTAC	0.56	0.64	0.39	1.18	0.69	0.78	0.43	0.41	0.50	0.57	0.68	0.86
Reserve	0.78	0.49	0.56	0.46	0.28	0.27	0.26	0.26	0.29	0.48	0.37	0.23
Regulation	0.27	0.21	0.22	0.13	0.12	0.12	0.12	0.13	0.11	0.12	0.11	0.08
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	0.22	0.56	0.35	(0.09)	0.07	(0.21)	(0.26)	(0.19)	(0.20)	(0.24)	(0.40)	(0.20)
Uplift: Local Reliability Share	1.43	0.75	0.62	0.15	0.51	0.32	0.29	0.27	0.26	0.26	0.24	0.13
Uplift: Statewide Share	(1.21)	(0.19)	(0.27)	(0.24)	(0.44)	(0.53)	(0.55)	(0.45)	(0.46)	(0.50)	(0.64)	(0.33)
Voltage Support and Black Start	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>	<u>0.36</u>
<b>Avg Monthly Cost</b>	186.24	126.14	112.15	48.82	42.51	45.39	45.57	36.14	39.38	37.59	44.71	40.09
Avg YTD Cost	186.24	157.93	142.77	121.97	108.36	97.84	89.46	82.60	78.07	74.63	72.06	69.31
TSA \$ per NYC MWh	0.00	0.00	0.00	0.00	0.00	0.03	0.35	0.00	0.42	0.00	0.00	0.00

\* Excludes ICAP payments.  
Market Mitigation and Analysis  
Prepared: 9/8/2016 2:26 PM

Data reflects true-ups thru December 2015.  
As of Jan. 2016, the annual FERC fee is recovered separately from Cost of Ops.

## NYISO Dollar Flows - Uplift - OATT Schedule 1 components - Data through August 31, 2016



## NYISO Markets Transactions

<b>2016</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 MWh</b>	14,760,915	13,614,754	13,413,781	12,496,141	12,959,886	14,095,904	16,950,819	17,413,898				
DAM LSE Internal LBMP Energy Sales	54%	55%	55%	57%	58%	60%	64%	63%				
DAM External TC LBMP Energy Sales	4%	2%	1%	5%	2%	1%	1%	3%				
DAM Bilateral - Internal Bilaterals	34%	34%	35%	28%	31%	30%	28%	27%				
DAM Bilateral - Import/Non-LBMP Market Bilaterals	5%	5%	5%	6%	5%	5%	4%	4%				
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	1%	2%	2%	2%	2%	1%	1%				
DAM Bilateral - Wheel Through Bilaterals	2%	2%	2%	2%	2%	2%	2%	2%				
<b>Balancing Energy Market MWh</b>	-522,919	-580,900	-741,701	-303,313	-180,848	-143,015	-86,025	224,316				
Balancing Energy LSE Internal LBMP Energy Sales	-125%	-114%	-118%	-76%	-147%	-203%	-347%	42%				
Balancing Energy External TC LBMP Energy Sales	12%	13%	19%	-13%	55%	77%	204%	56%				
Balancing Energy Bilateral - Internal Bilaterals	19%	9%	4%	8%	27%	47%	62%	28%				
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	0%	0%	0%	0%				
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	6%	5%	3%	5%	7%	10%	15%	5%				
Balancing Energy Bilateral - Wheel Through Bilaterals	-12%	-12%	-8%	-24%	-42%	-32%	-34%	-31%				
<b>Transactions Summary</b>												
LBMP	56%	56%	54%	62%	59%	61%	65%	66%				
Internal Bilaterals	36%	36%	37%	29%	32%	31%	28%	27%				
Import Bilaterals	5%	5%	6%	6%	5%	5%	4%	4%				
Export Bilaterals	2%	2%	2%	2%	2%	2%	1%	1%				
Wheels Through	1%	1%	1%	1%	2%	2%	1%	1%				
<b>Market Share of Total Load</b>												
Day Ahead Market	103.7%	104.5%	105.9%	102.5%	101.4%	101.0%	100.5%	98.7%				
Balancing Energy +	-3.7%	-4.5%	-5.9%	-2.5%	-1.4%	-1.0%	-0.5%	1.3%				
Total MWh	14,237,996	13,033,853	12,672,080	12,192,828	12,779,038	13,952,889	16,864,794	17,638,213				
Average Daily Energy Sendout/Month GWh	439	436	397	385	397	456	532	548				

<b>2015</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 MWh</b>	15,961,306	14,967,371	15,059,207	12,589,321	13,291,917	14,277,299	16,573,027	16,333,932	14,740,907	13,546,033	13,338,332	13,620,002
DAM LSE Internal LBMP Energy Sales	55%	54%	53%	55%	57%	57%	62%	61%	58%	53%	53%	55%
DAM External TC LBMP Energy Sales	5%	6%	6%	4%	2%	1%	1%	1%	3%	6%	5%	1%
DAM Bilateral - Internal Bilaterals	35%	33%	33%	33%	35%	33%	30%	31%	31%	34%	33%	35%
DAM Bilateral - Import/Non-LBMP Market Bilaterals	3%	5%	5%	6%	4%	5%	4%	4%	5%	5%	5%	5%
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	2%	1%	2%	1%	1%	1%	1%	1%	2%	2%	2%
DAM Bilateral - Wheel Through Bilaterals	0%	1%	1%	1%	0%	2%	2%	2%	2%	1%	2%	2%
<b>Balancing Energy Market MWh</b>	-650,944	-296,616	-396,739	-409,205	-331,091	-549,794	-505,637	-228,461	-33,268	-604,600	-718,787	-642,268
Balancing Energy LSE Internal LBMP Energy Sales	-149%	-247%	-192%	-147%	-142%	-106%	-120%	-139%	-345%	-115%	-110%	-115%
Balancing Energy External TC LBMP Energy Sales	30%	113%	64%	36%	35%	16%	25%	50%	110%	12%	12%	17%
Balancing Energy Bilateral - Internal Bilaterals	13%	14%	19%	5%	6%	6%	13%	25%	239%	7%	4%	5%
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	6%	8%	12%	12%	10%	4%	3%	8%	46%	5%	5%	6%
Balancing Energy Bilateral - Wheel Through Bilaterals	0%	12%	-4%	-5%	-9%	-22%	-21%	-44%	-149%	-9%	-11%	-13%
<b>Transactions Summary</b>												
LBMP	58%	59%	57%	57%	58%	57%	61%	61%	61%	56%	56%	54%
Internal Bilaterals	37%	34%	35%	35%	36%	35%	32%	32%	32%	36%	35%	37%
Import Bilaterals	3%	5%	5%	6%	4%	5%	5%	5%	5%	5%	6%	6%
Export Bilaterals	2%	2%	2%	2%	2%	1%	1%	1%	1%	2%	2%	2%
Wheels Through	0%	1%	1%	0%	0%	1%	1%	1%	1%	0%	1%	1%
<b>Market Share of Total Load</b>												
Day Ahead Market	104.3%	102.0%	102.7%	103.4%	102.6%	104.0%	103.1%	101.4%	100.2%	104.7%	105.7%	104.9%
Balancing Energy +	-4.3%	-2.0%	-2.7%	-3.4%	-2.6%	-4.0%	-3.1%	-1.4%	-0.2%	-4.7%	-5.7%	-4.9%
Total MWh	15,310,362	14,670,755	14,662,468	12,180,116	12,960,826	13,727,505	16,067,390	16,105,471	14,707,639	12,941,433	12,619,545	12,977,734
Average Daily Energy Sendout/Month GWh	462	481	436	387	409	450	512	511	473	389	396	408

+ 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 2016 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 *	\$31.01	\$25.76	\$18.63	\$26.39	\$21.07	\$24.83	\$35.24	\$38.25				
Standard Deviation	\$10.86	\$12.46	\$6.99	\$6.95	\$7.04	\$9.21	\$18.37	\$20.59				
Load Weighted Price **	\$32.13	\$26.75	\$19.37	\$27.14	\$22.12	\$26.30	\$38.29	\$41.41				
<b><u>RTC LBMP</u></b>												
Price *	\$26.12	\$24.10	\$16.41	\$23.41	\$19.96	\$24.29	\$36.22	\$45.03				
Standard Deviation	\$16.06	\$17.89	\$11.32	\$9.09	\$11.44	\$16.58	\$38.04	\$70.57				
Load Weighted Price **	\$27.16	\$25.29	\$17.11	\$24.10	\$21.23	\$25.73	\$39.42	\$50.28				
<b><u>REAL TIME LBMP</u></b>												
Price *	\$30.15	\$24.28	\$17.84	\$25.71	\$20.67	\$25.87	\$34.40	\$40.87				
Standard Deviation	\$60.09	\$18.19	\$15.06	\$16.59	\$12.84	\$19.27	\$38.56	\$52.85				
Load Weighted Price **	\$31.80	\$25.61	\$18.64	\$26.57	\$21.99	\$27.39	\$38.20	\$45.82				
Average Daily Energy Sendout/Month GWh	439	436	397	385	397	456	532	548				

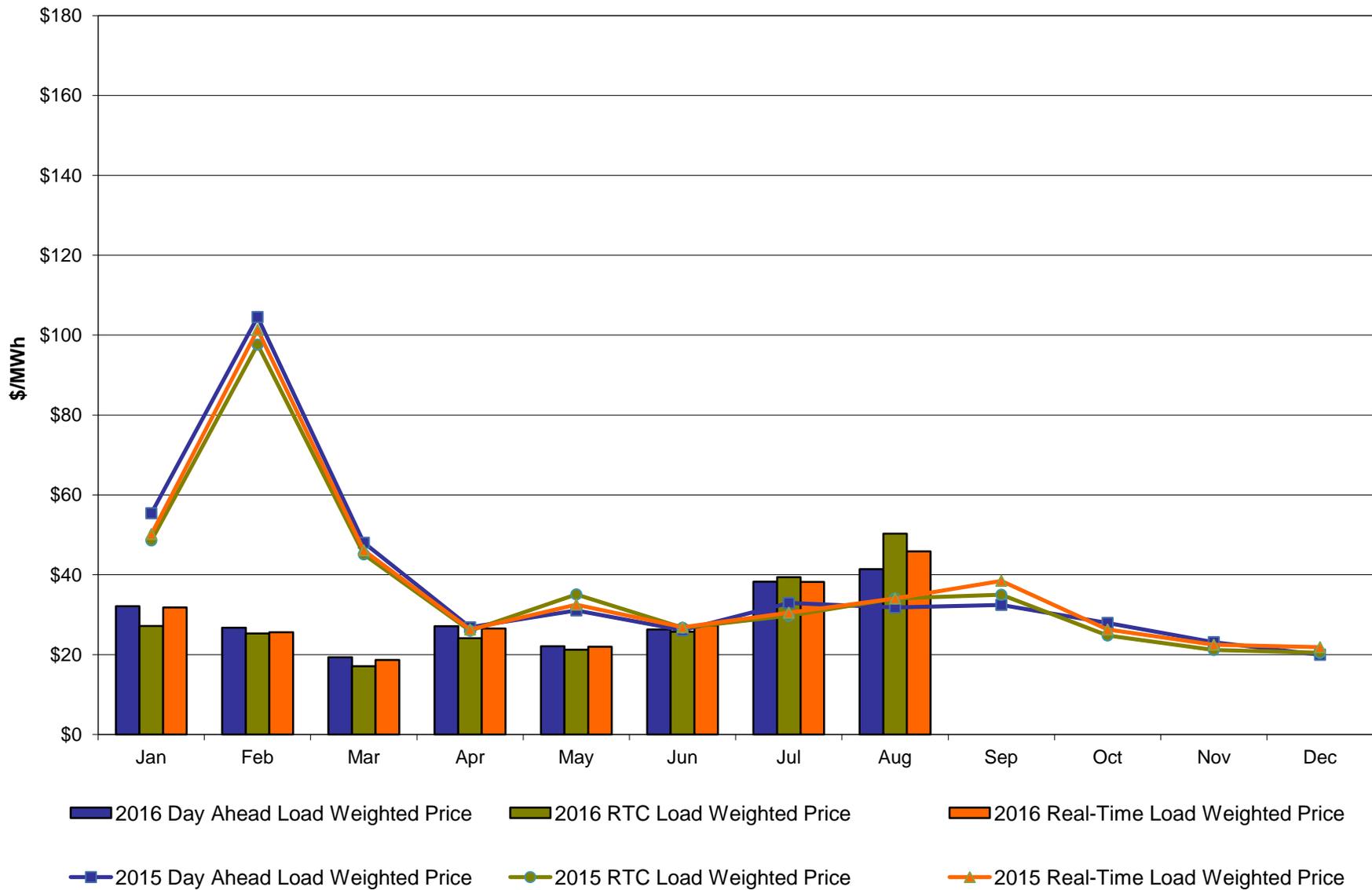
### NYISO Markets 2015 Energy Statistics

	<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 *	\$53.35	\$101.48	\$46.59	\$26.07	\$29.21	\$24.30	\$30.27	\$30.01	\$30.18	\$27.11	\$22.18	\$18.94
Standard Deviation	\$24.61	\$48.85	\$21.51	\$6.73	\$13.44	\$11.96	\$17.67	\$12.05	\$13.37	\$7.64	\$7.94	\$8.41
Load Weighted Price **	\$55.40	\$104.52	\$48.01	\$26.84	\$31.08	\$26.12	\$32.94	\$31.81	\$32.46	\$27.95	\$23.12	\$19.97
<b><u>RTC LBMP</u></b>												
Price *	\$46.98	\$95.06	\$43.43	\$25.11	\$32.85	\$24.73	\$27.51	\$31.83	\$32.39	\$23.97	\$20.07	\$19.34
Standard Deviation	\$22.84	\$47.55	\$29.42	\$12.31	\$35.40	\$24.71	\$21.84	\$23.25	\$22.99	\$10.56	\$15.66	\$14.23
Load Weighted Price **	\$48.59	\$97.62	\$45.10	\$26.00	\$35.08	\$26.73	\$29.76	\$34.04	\$34.99	\$24.79	\$21.17	\$20.46
<b><u>REAL TIME LBMP</u></b>												
Price *	\$48.51	\$98.83	\$44.38	\$25.46	\$30.39	\$23.96	\$27.71	\$31.54	\$34.82	\$25.50	\$21.33	\$20.75
Standard Deviation	\$25.99	\$52.53	\$29.07	\$12.66	\$31.69	\$31.14	\$23.42	\$26.51	\$34.85	\$12.56	\$18.76	\$19.00
Load Weighted Price **	\$50.18	\$101.34	\$46.10	\$26.28	\$32.52	\$26.86	\$30.50	\$34.05	\$38.48	\$26.29	\$22.47	\$21.86
Average Daily Energy Sendout/Month GWh	462	481	436	387	409	450	512	511	473	389	396	408

\* Average zonal load weighted prices.

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

### NYISO Monthly Average Internal LBMPs 2015- 2016

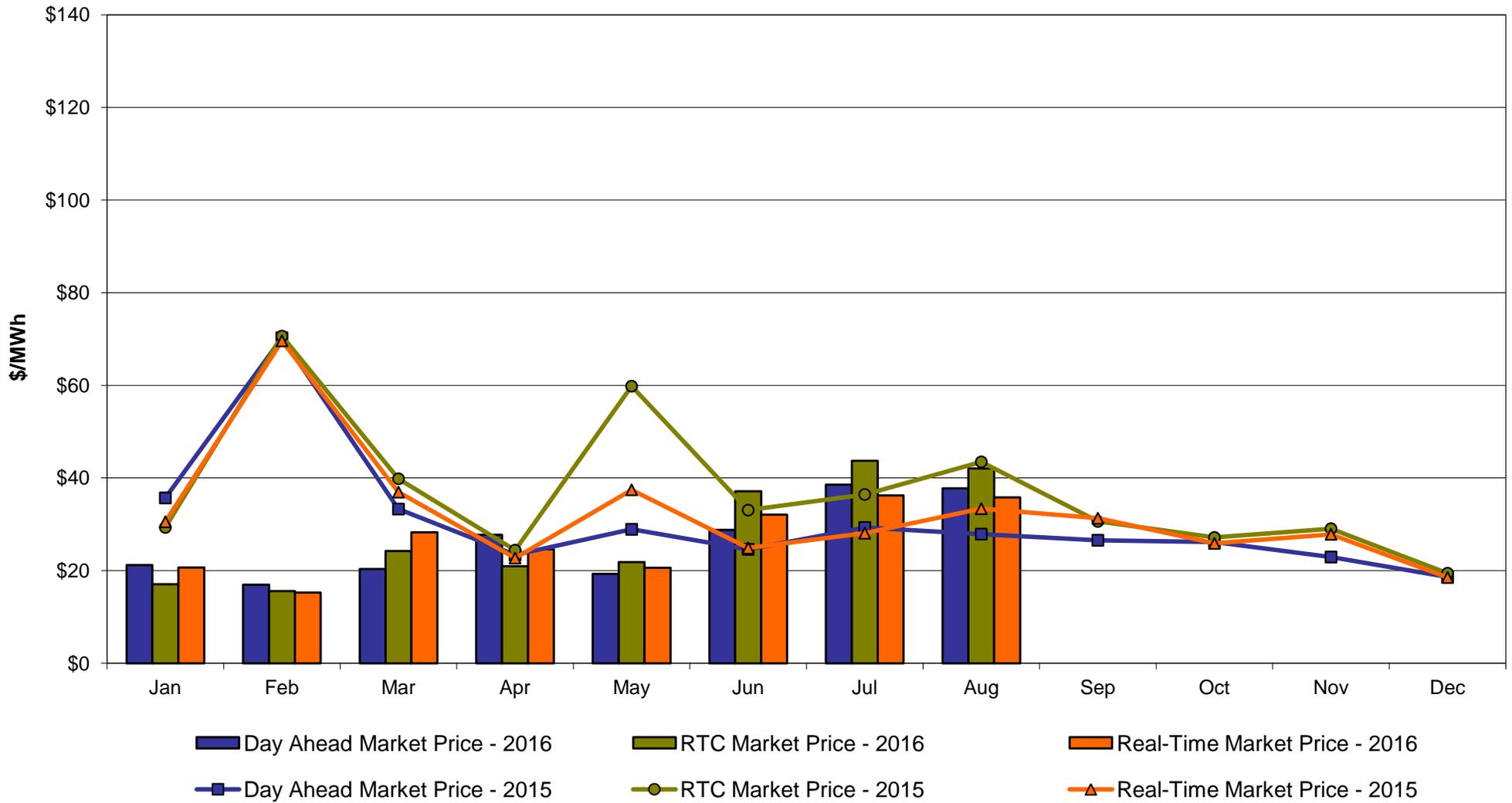


**August 2016 Zonal LBMP Statistics for NYISO (\$/MWh)**

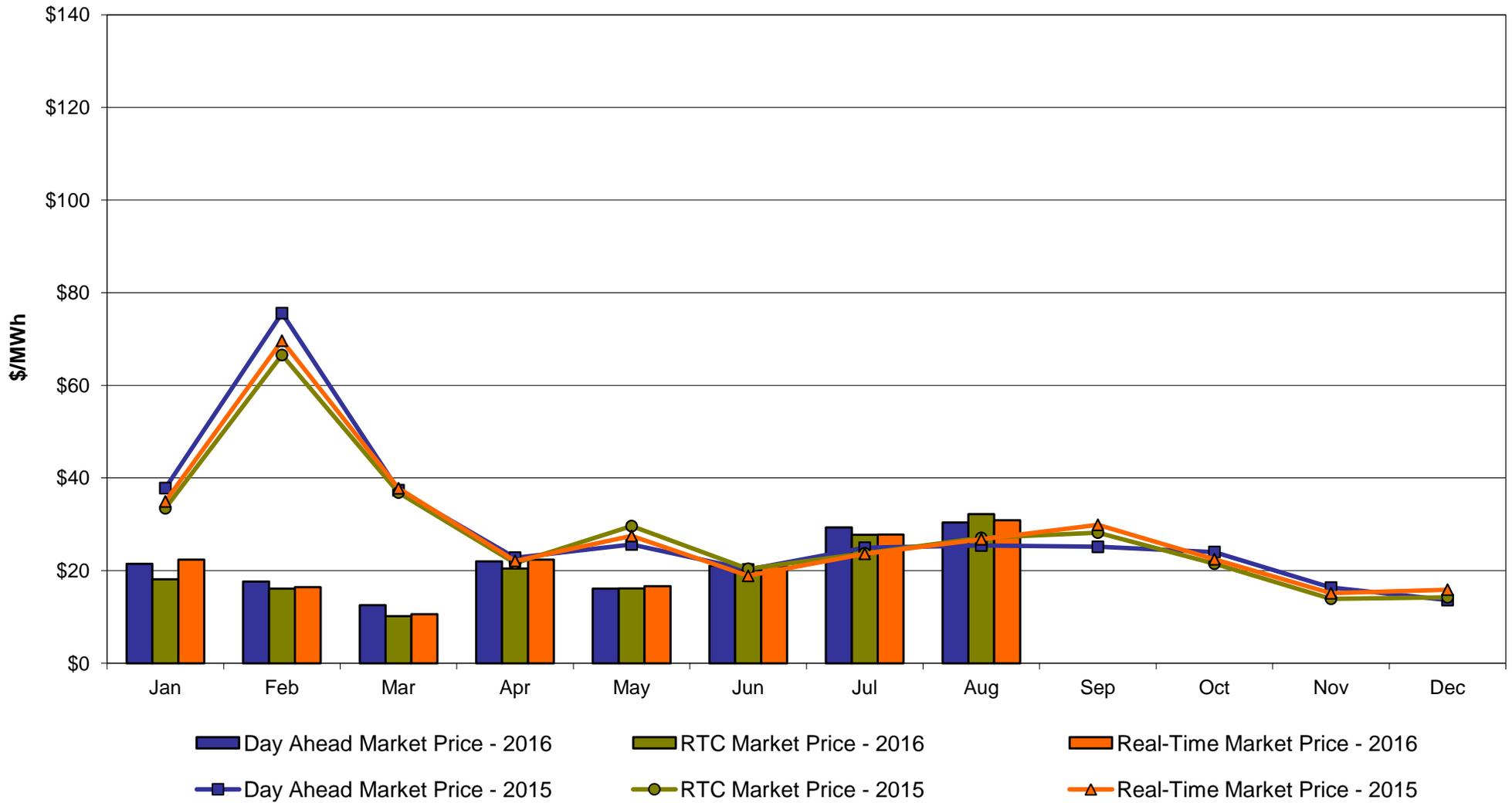
	<u>WEST Zone A</u>	<u>GENESEE Zone B</u>	<u>NORTH Zone D</u>	<u>CENTRAL Zone C</u>	<u>MOHAWK VALLEY Zone E</u>	<u>CAPITAL Zone F</u>	<u>HUDSON VALLEY Zone G</u>	<u>MILLWOOD Zone H</u>	<u>DUNWOODIE Zone I</u>	<u>NEW YORK CITY Zone J</u>	<u>LONG ISLAND Zone K</u>
<b><u>DAY AHEAD LBMP</u></b>											
Unweighted Price *	37.77	29.77	28.25	30.40	30.82	32.12	33.79	34.08	34.07	35.64	59.93
Standard Deviation	22.36	12.47	11.29	12.65	12.78	12.99	15.17	15.71	15.70	16.15	50.56
<b><u>RTC LBMP</u></b>											
Unweighted Price *	42.08	31.41	30.58	32.18	32.81	34.32	37.13	37.61	37.50	39.51	85.09
Standard Deviation	85.99	59.20	55.58	58.26	59.89	61.03	67.02	68.51	68.20	69.48	176.77
<b><u>REAL TIME LBMP</u></b>											
Unweighted Price *	35.79	30.47	29.44	30.87	31.94	33.34	37.57	38.28	38.20	41.22	59.96
Standard Deviation	50.92	36.94	34.65	36.21	37.73	37.48	55.33	59.46	59.66	61.10	108.03
	<u>ONTARIO IESO Zone O</u>	<u>HYDRO QUEBEC (Wheel) Zone M</u>	<u>HYDRO QUEBEC (Import/Export) Zone M</u>	<u>PJM Zone P</u>	<u>NEW ENGLAND Zone N</u>	<u>CROSS SOUND CABLE Controllable Line</u>	<u>NORTHPORT- NORWALK Controllable Line</u>	<u>NEPTUNE Controllable Line</u>	<u>LINDEN VFT Controllable Line</u>	<u>HUDSON Controllable Line</u>	<u>Dennison Controllable Line</u>
<b><u>DAY AHEAD LBMP</u></b>											
Unweighted Price *	27.48	28.57	28.57	31.64	33.23	58.08	38.68	47.26	32.86	34.22	27.94
Standard Deviation	11.28	11.57	11.57	13.27	14.56	47.62	16.71	33.05	12.88	15.74	11.26
<b><u>RTC LBMP</u></b>											
Unweighted Price *	27.97	28.82	28.82	32.76	39.77	74.44	57.01	57.00	32.54	37.67	30.48
Standard Deviation	55.92	54.24	54.24	48.27	74.26	155.39	126.23	107.38	69.00	67.55	55.42
<b><u>REAL TIME LBMP</u></b>											
Unweighted Price *	27.67	27.80	27.80	31.66	37.53	54.77	42.53	45.01	31.89	38.37	28.65
Standard Deviation	35.42	32.33	32.33	39.10	54.17	107.22	103.81	101.46	64.21	59.56	35.00

\* Straight LBMP averages

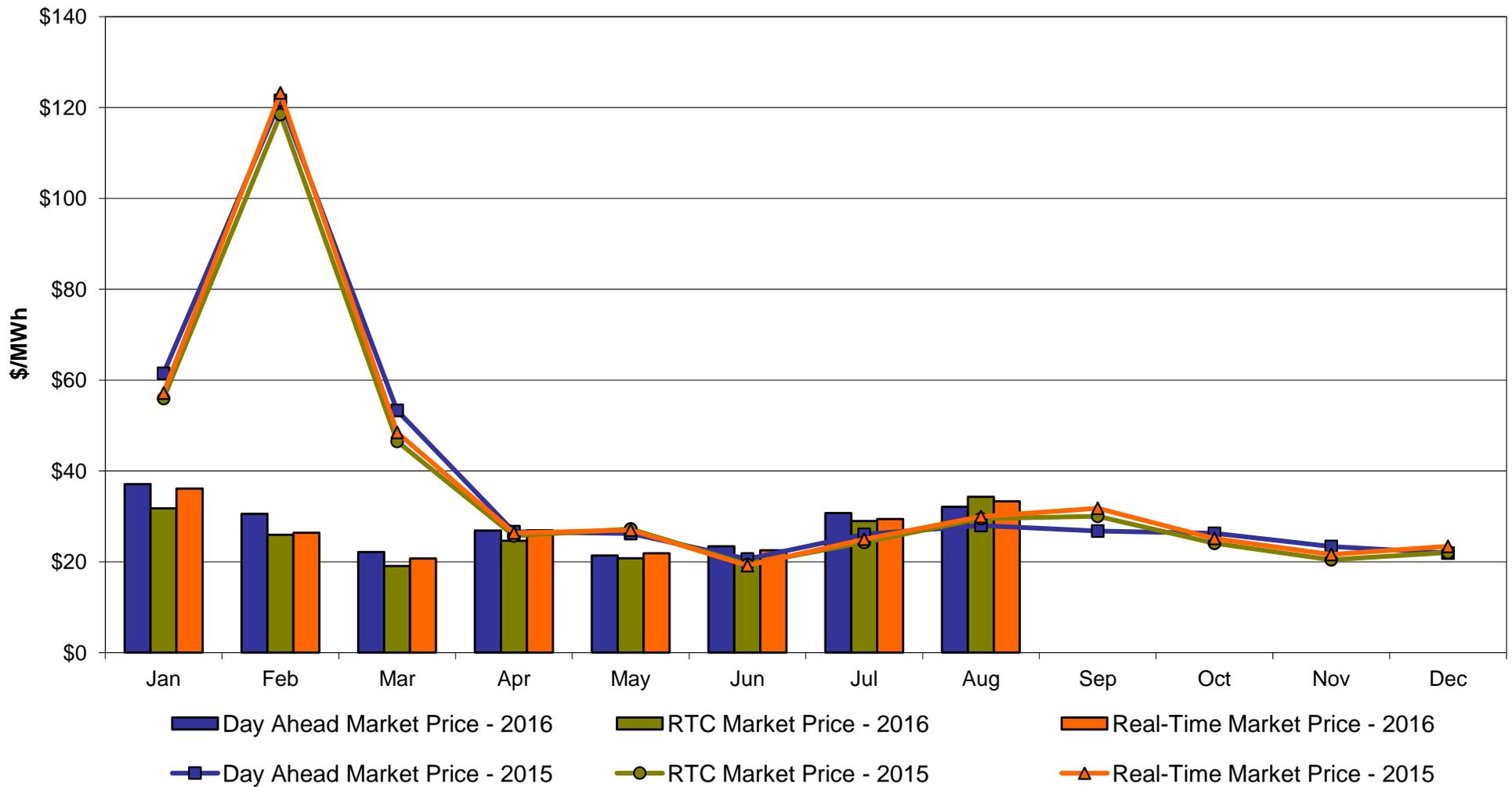
**West Zone A  
Monthly Average LBMP Prices 2015 - 2016**



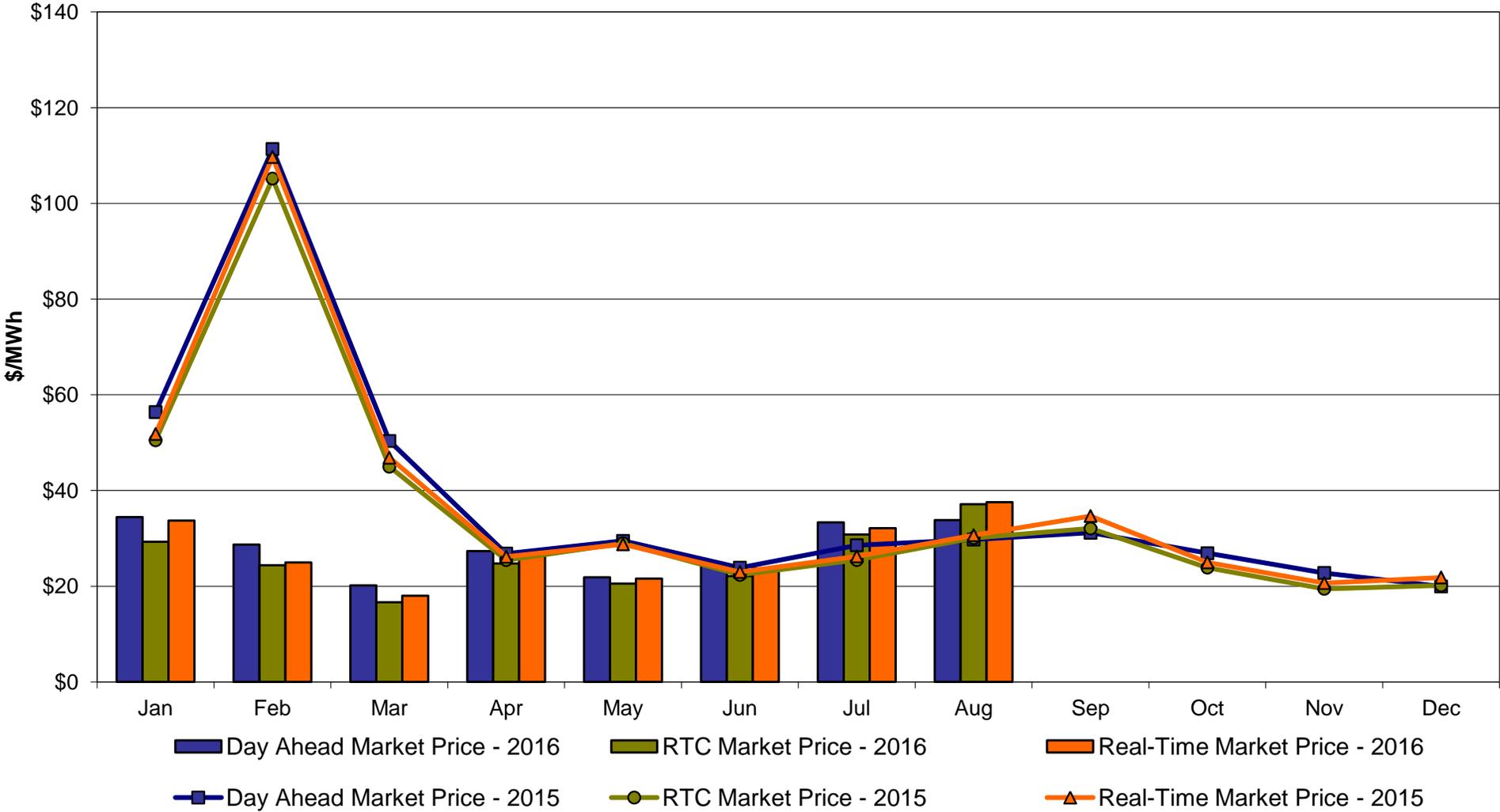
**Central Zone C  
Monthly Average LBMP Prices 2015 - 2016**



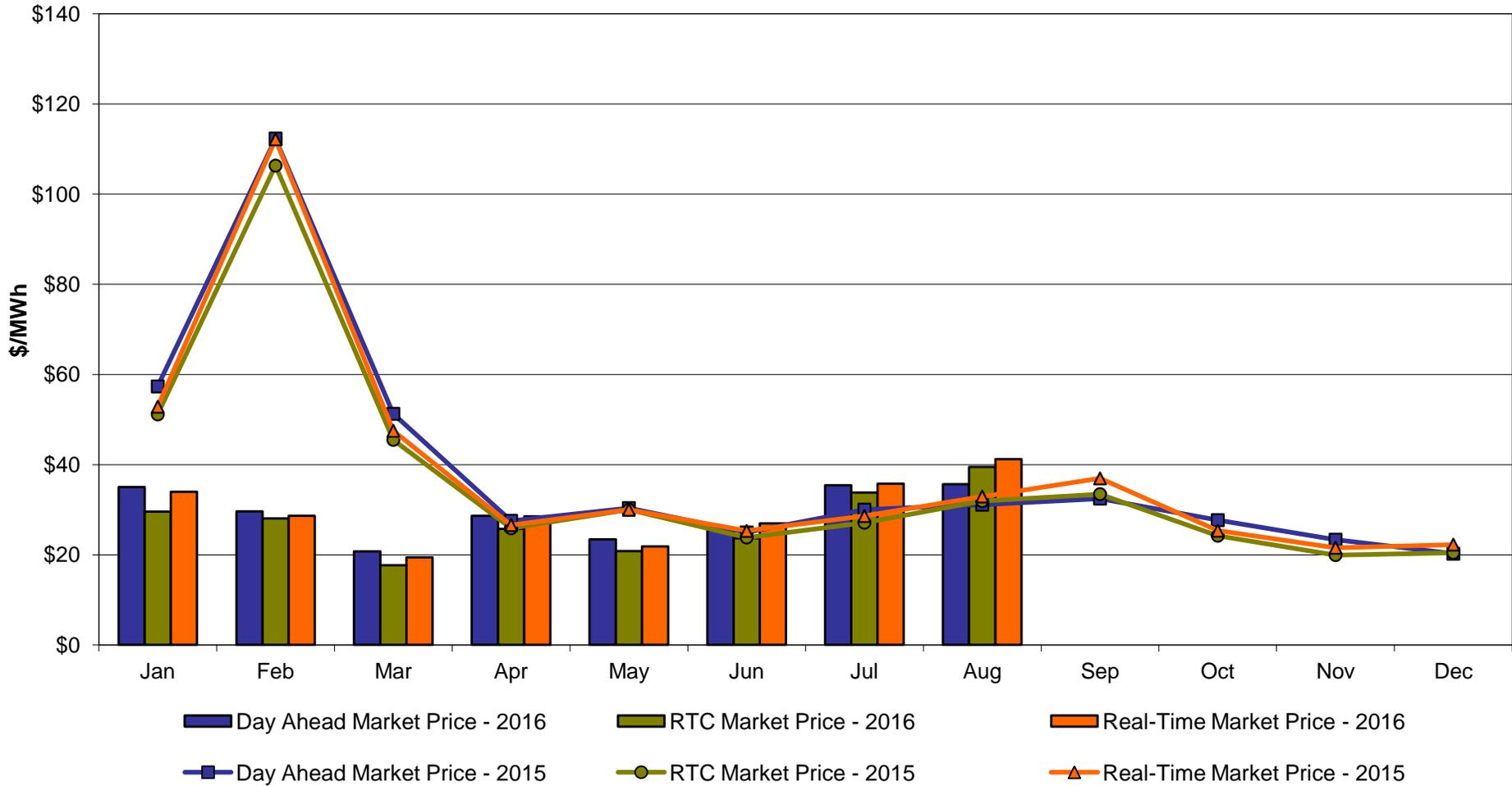
## Capital Zone F Monthly Average LBMP Prices 2015 - 2016



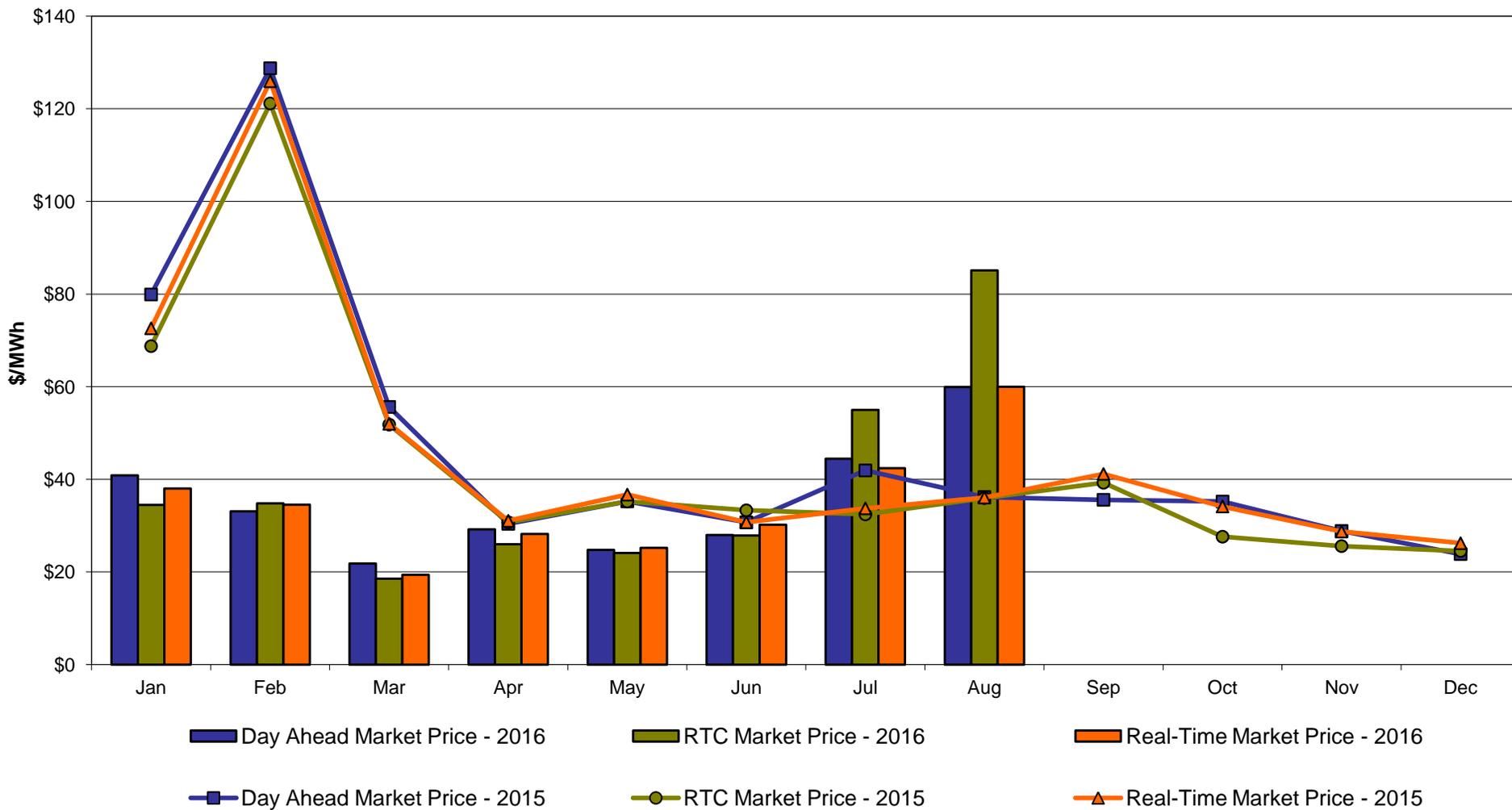
### Hudson Valley Zone G Monthly Average LBMP Prices 2015 - 2016



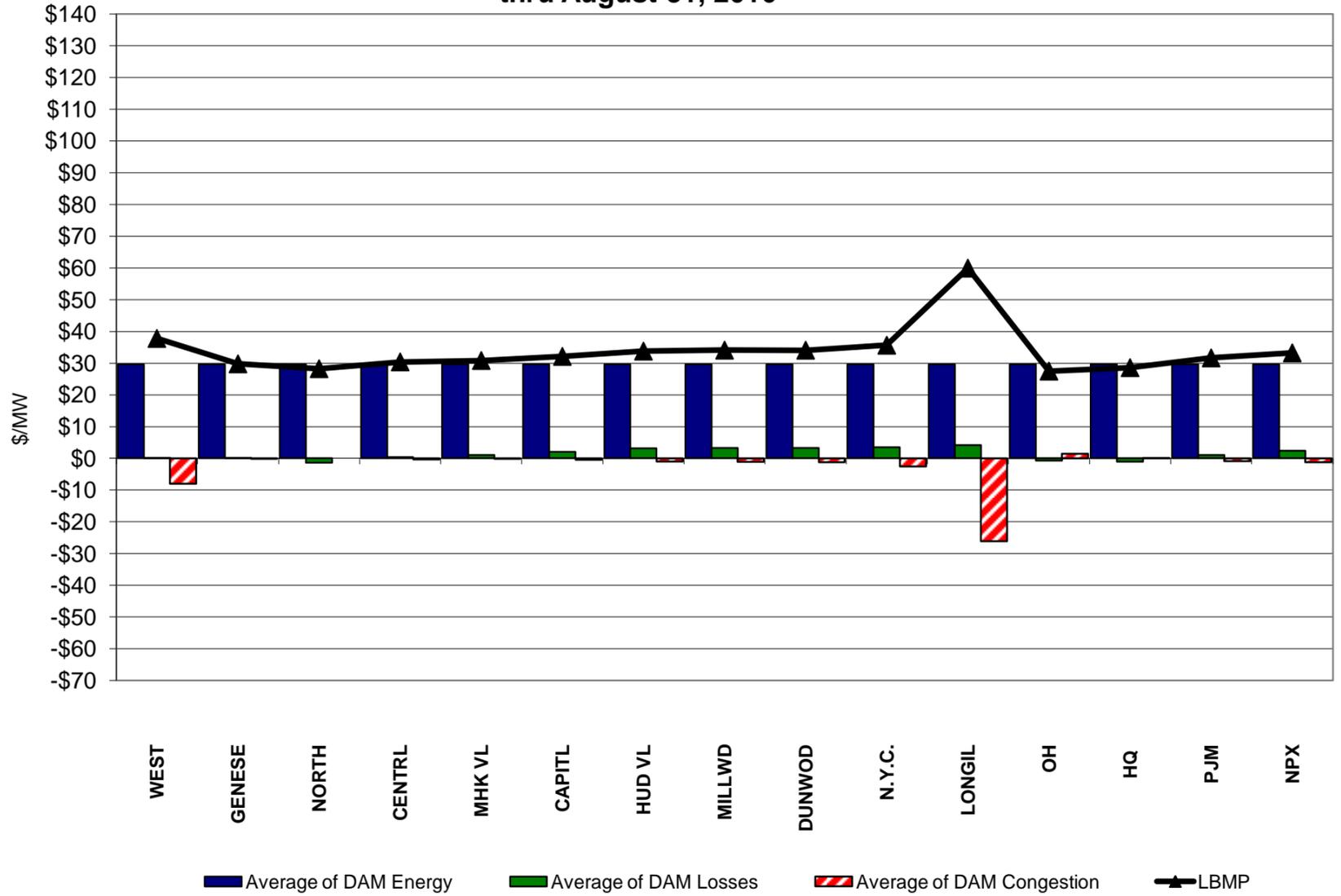
### NYC Zone J Monthly Average LBMP Prices 2015 - 2016



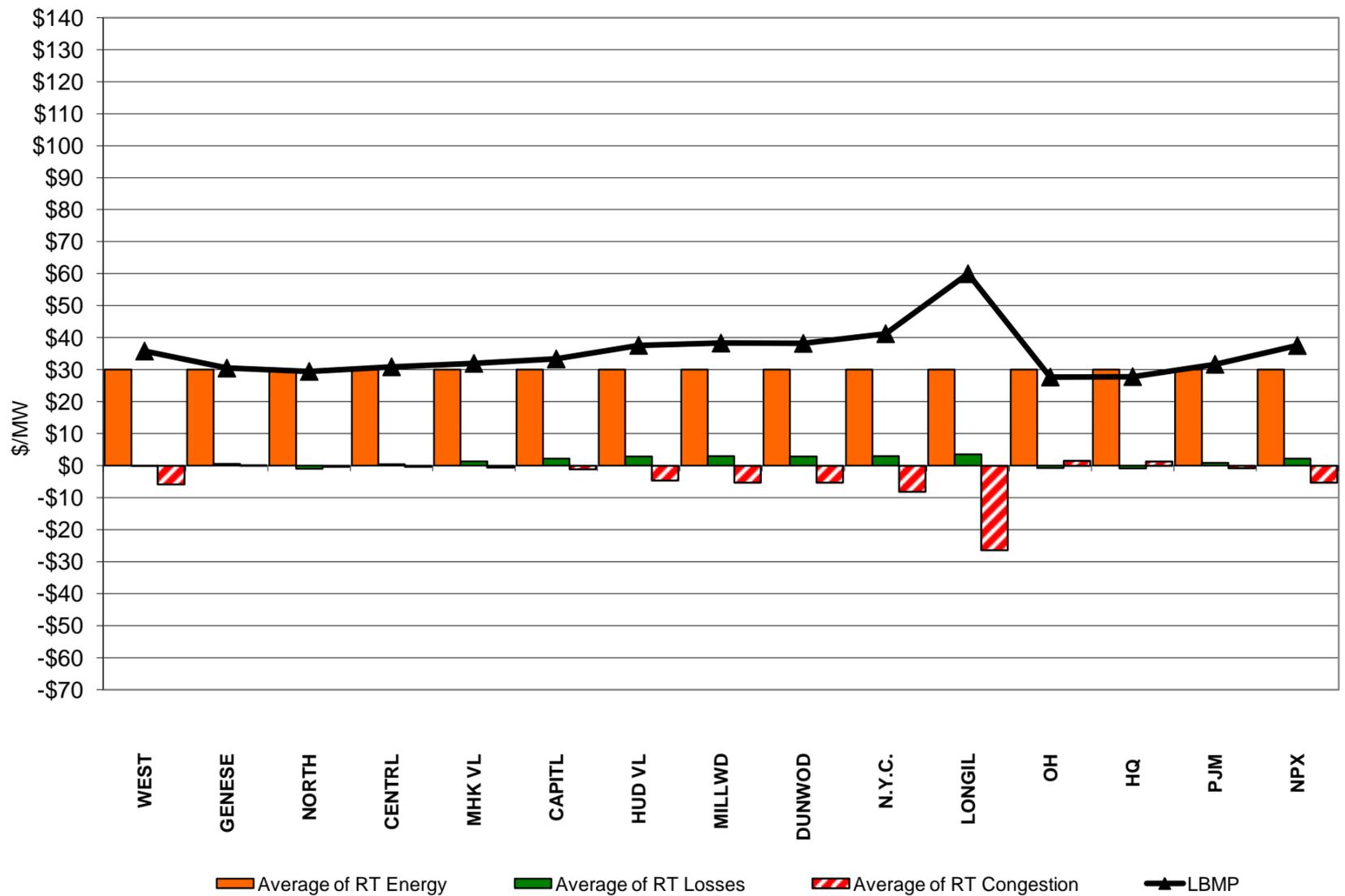
### Long Island Zone K Monthly Average LBMP Prices 2015 - 2016



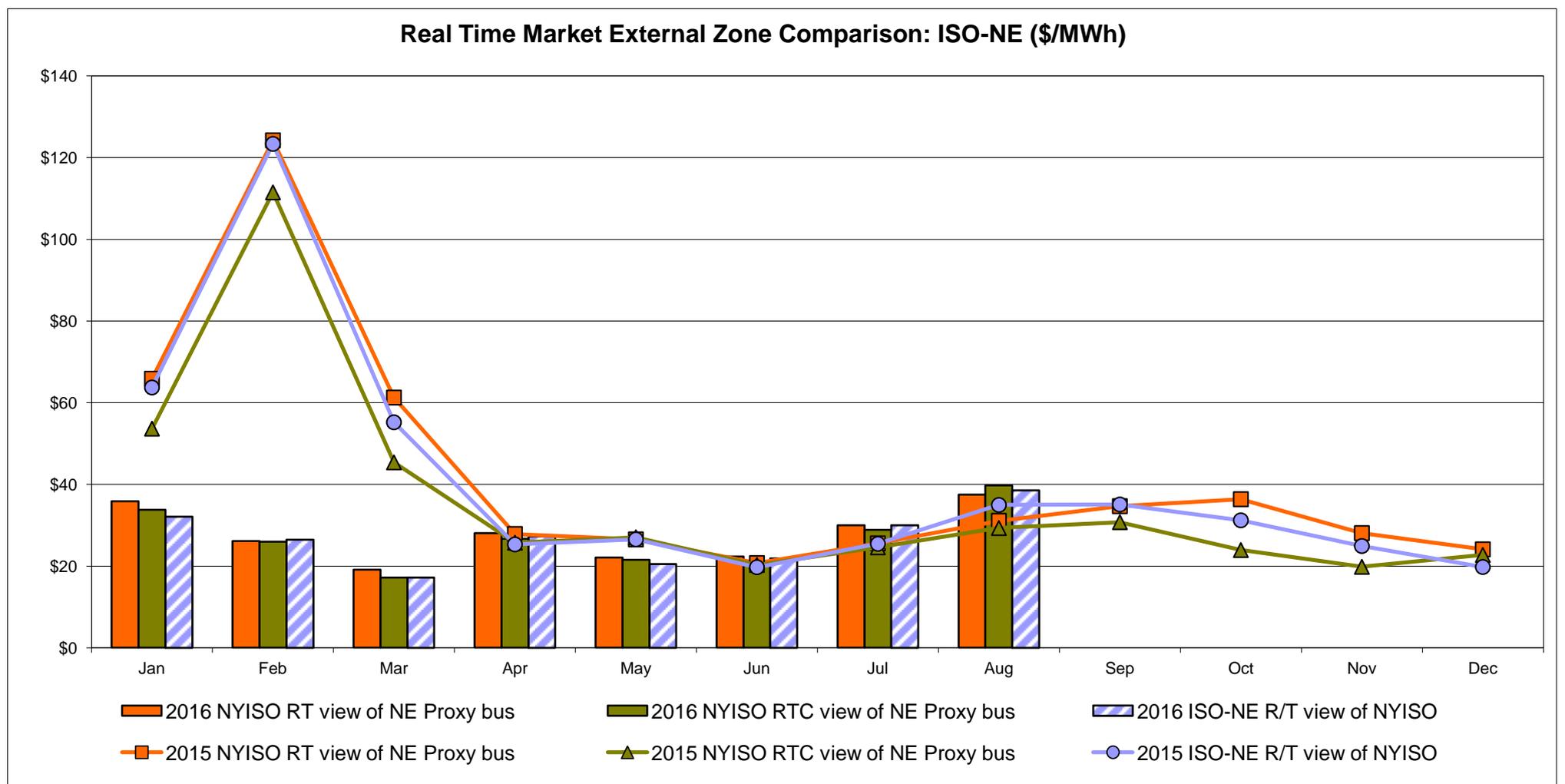
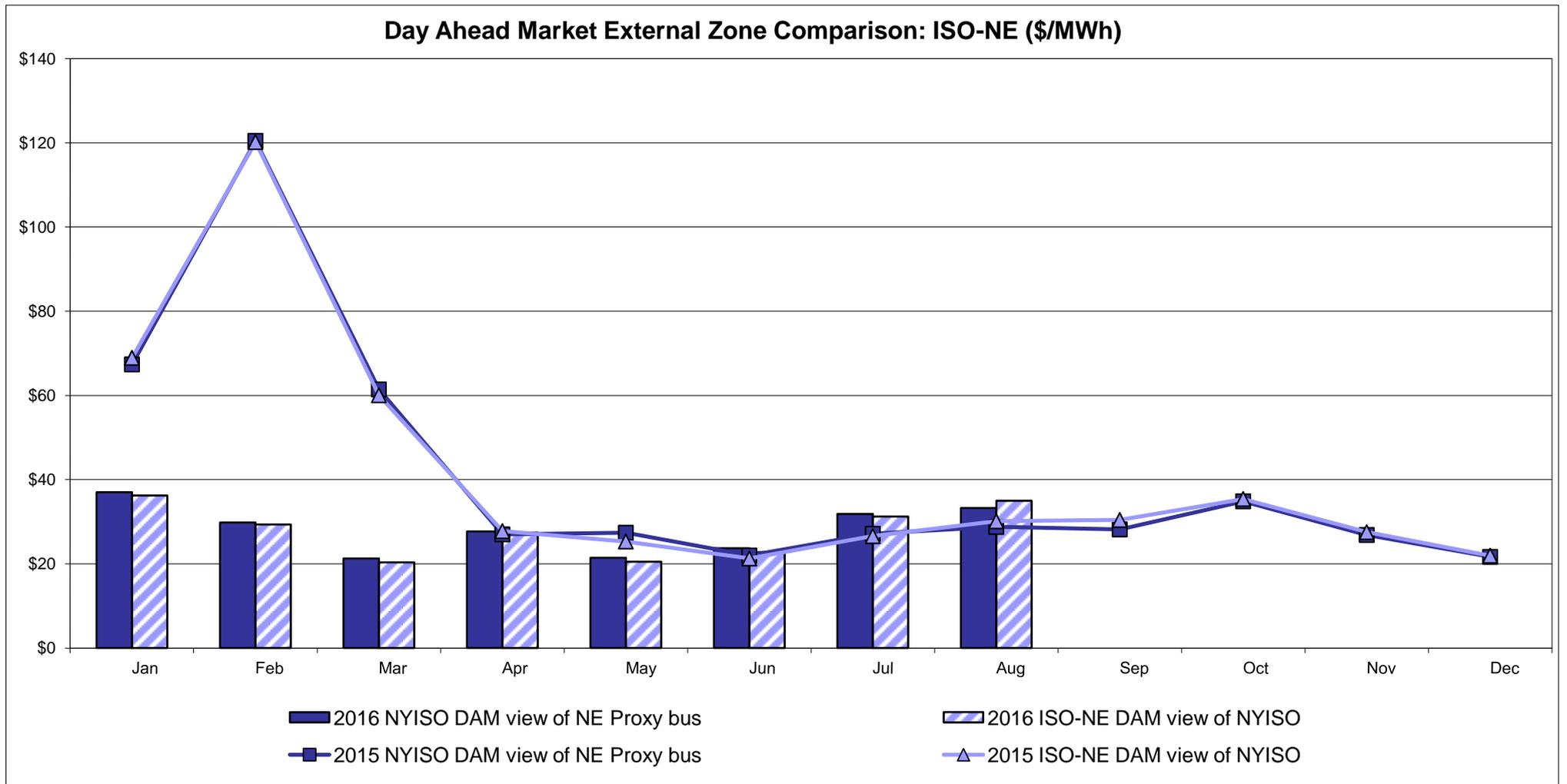
**DAM Zonal Unweighted Monthly Average LBMP Components  
thru August 31, 2016**



**RT Zonal Unweighted Monthly Average LBMP Components  
thru August 31, 2016**

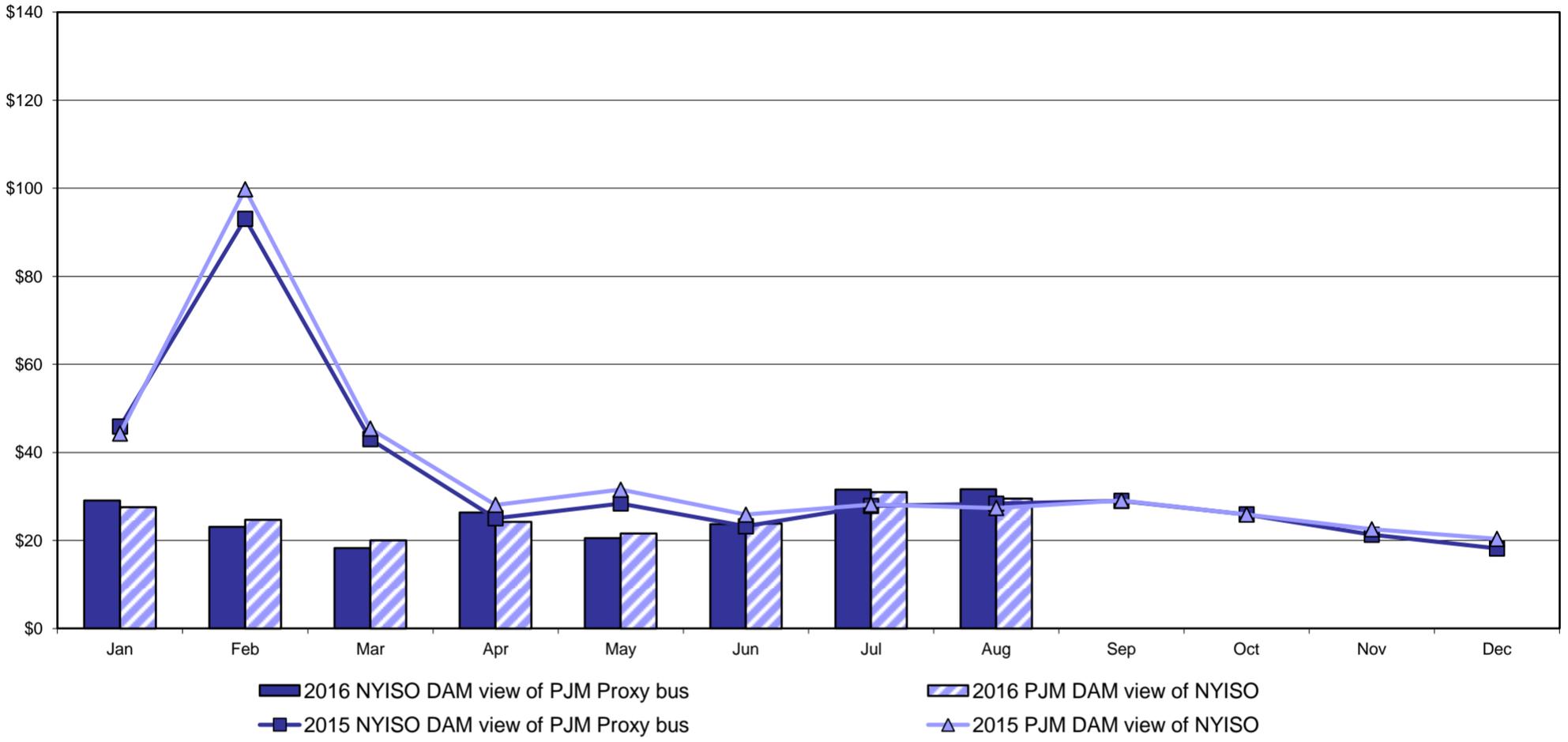


# External Comparison ISO-New England

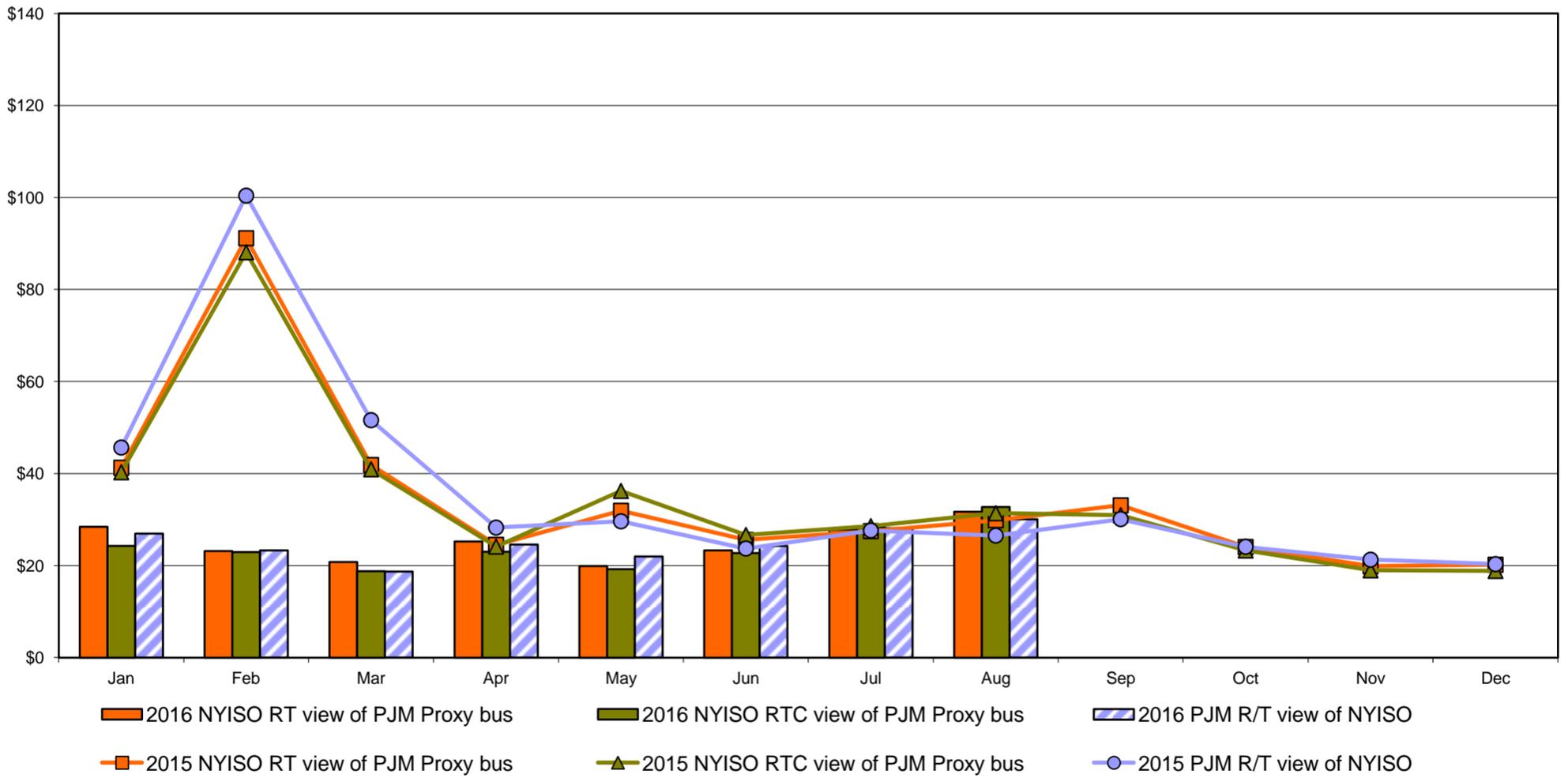


# External Comparison PJM

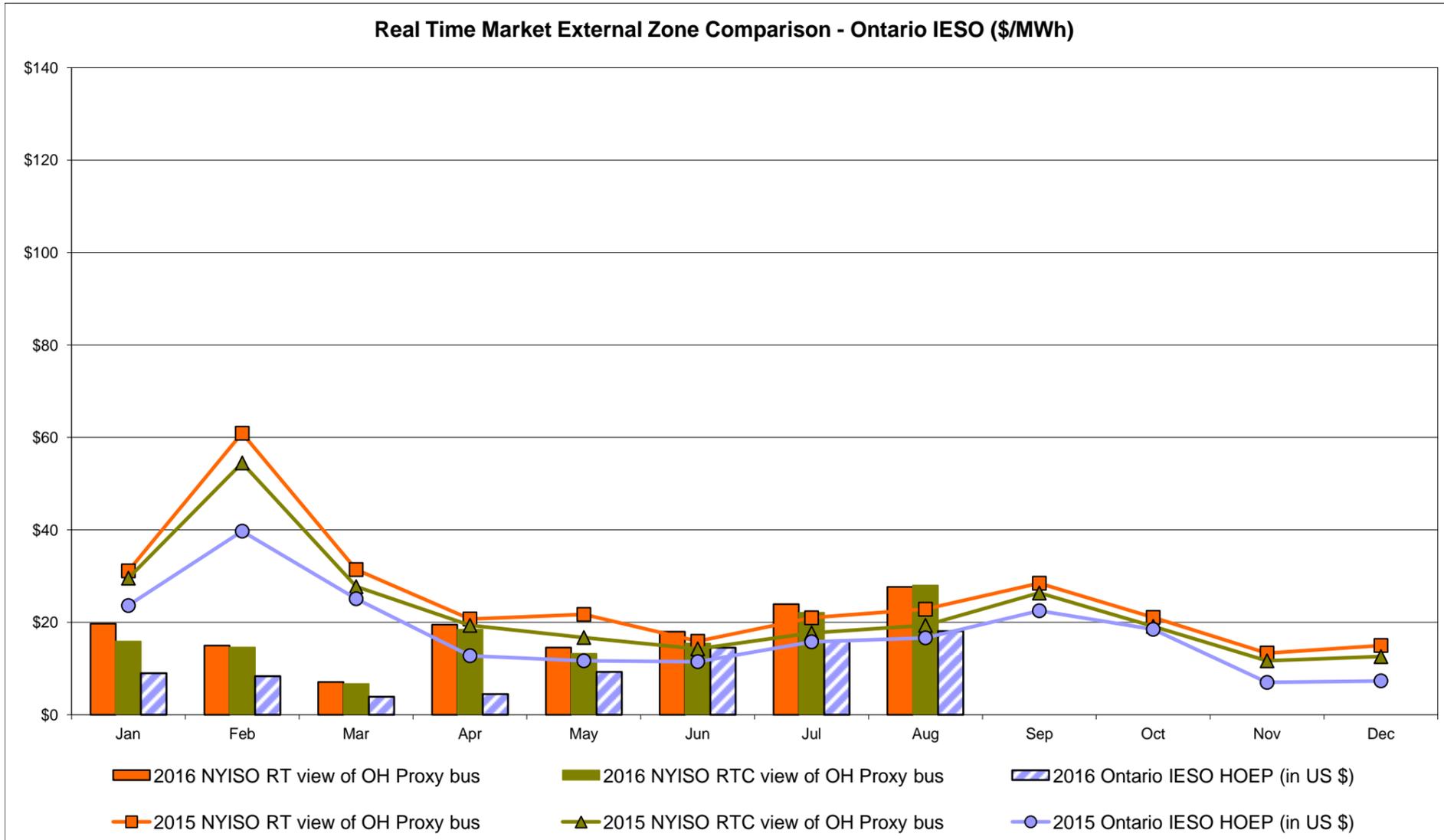
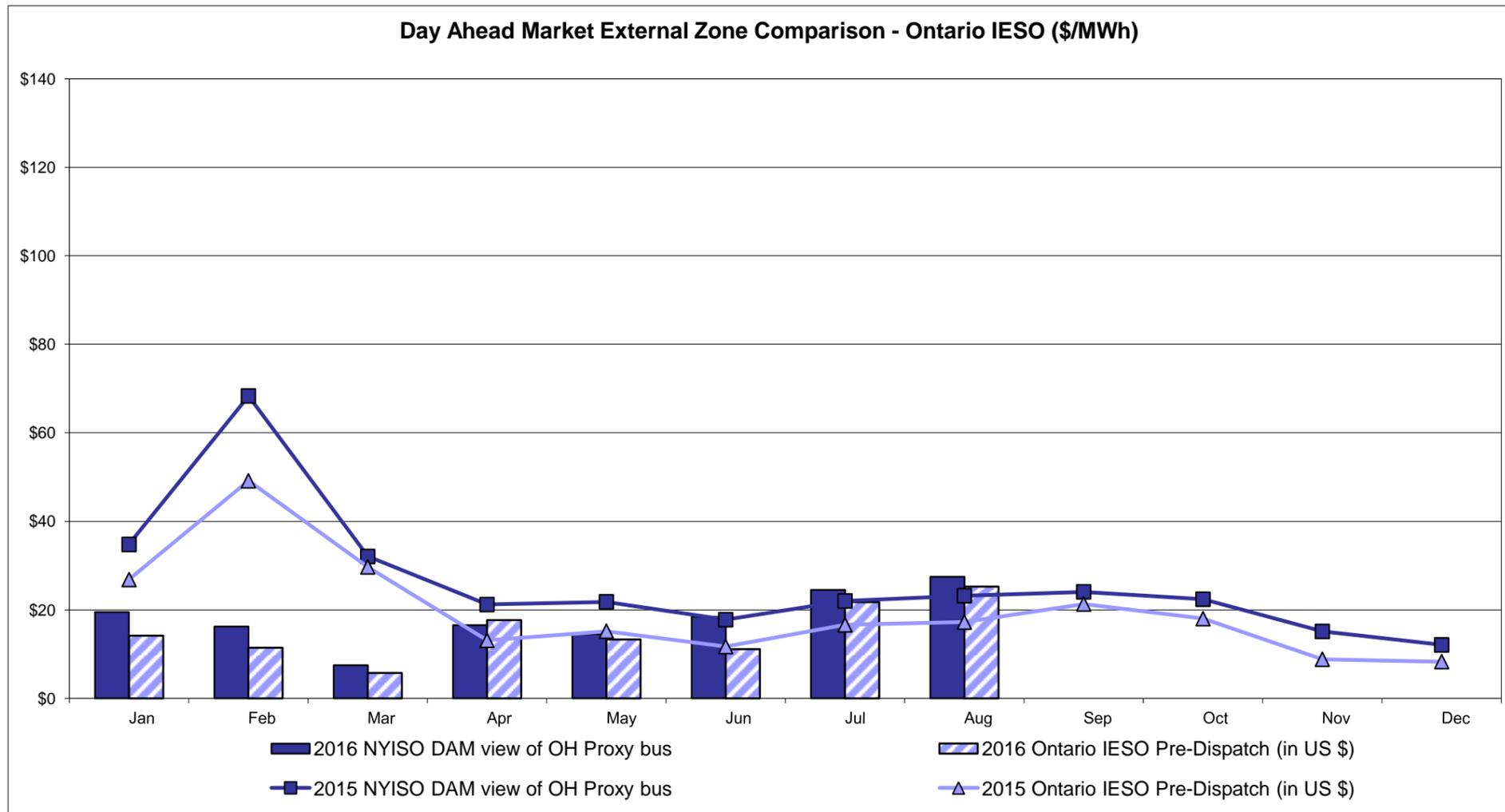
## Day Ahead Market External Zone Comparison - PJM (\$/MWh)



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

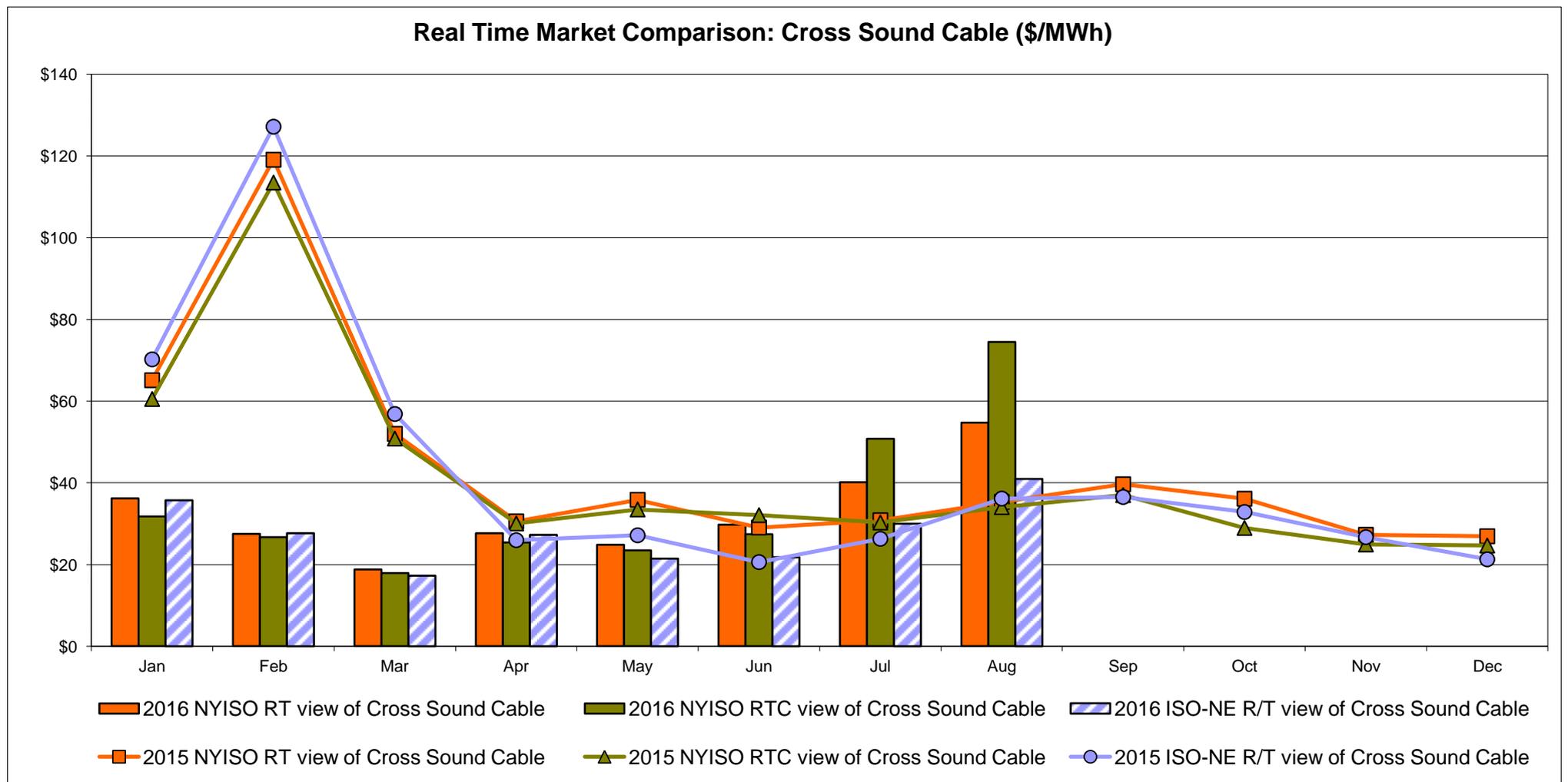
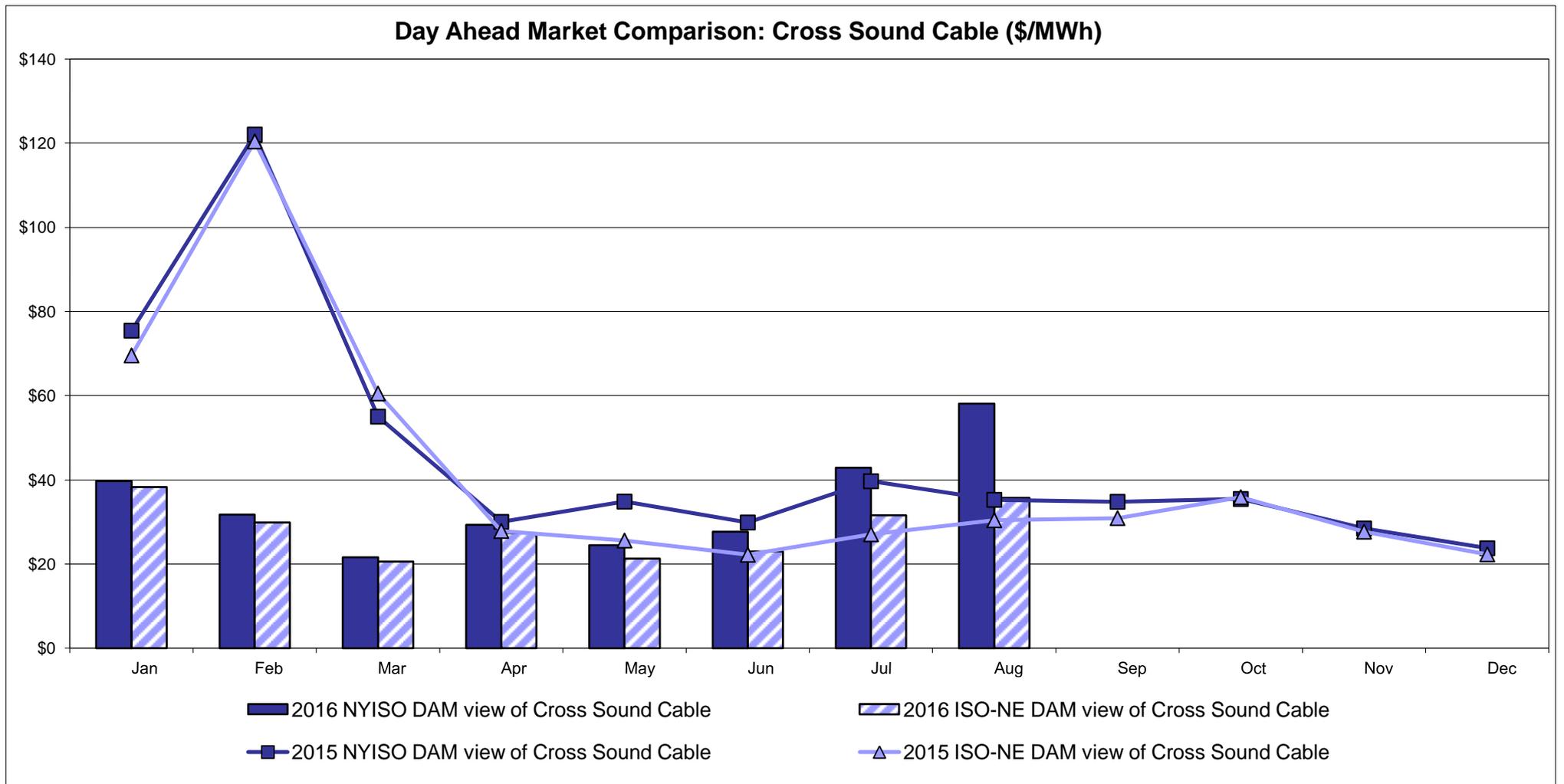


# External Comparison Ontario IESO



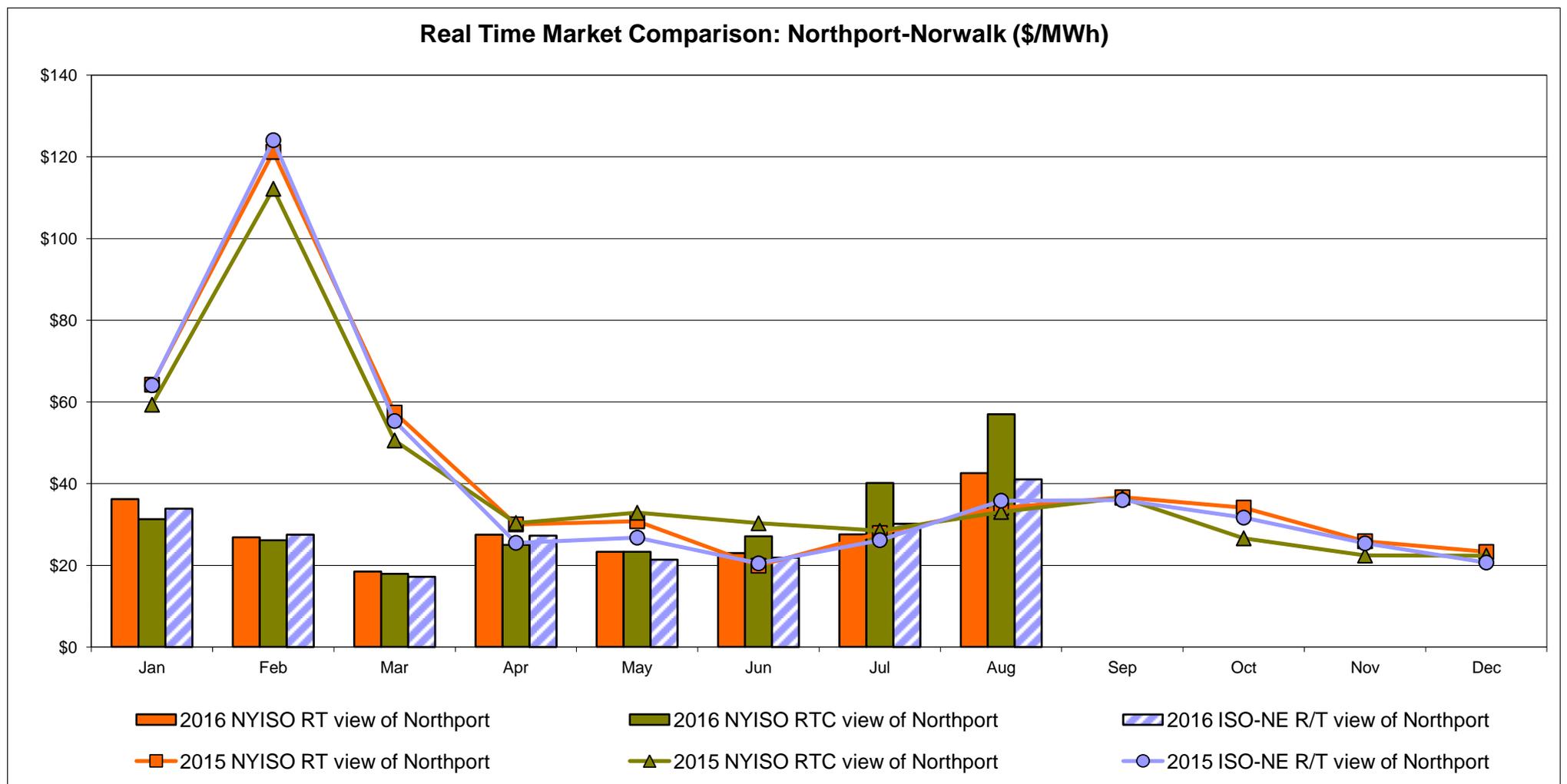
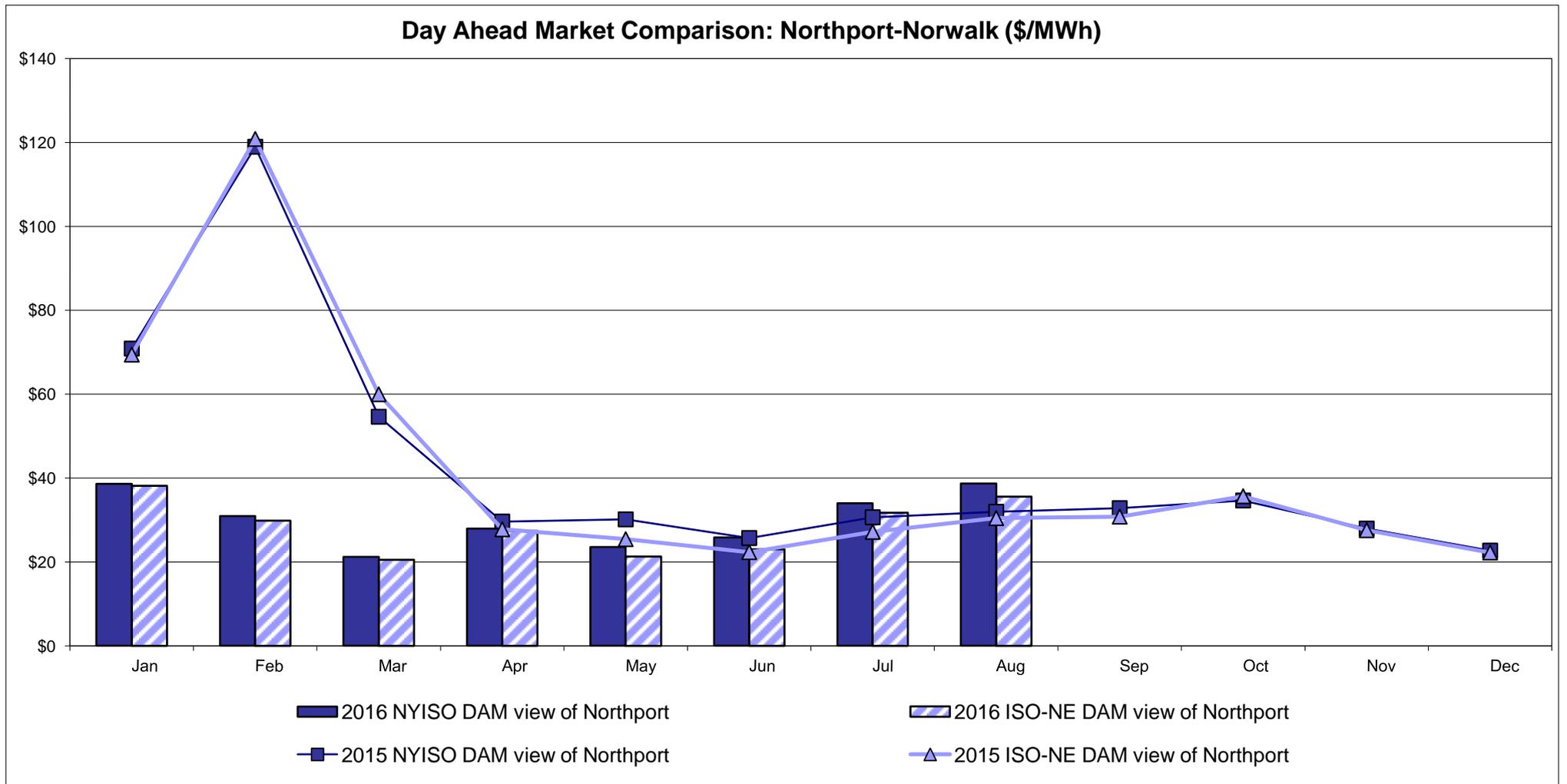
Notes: Exchange factor used for August 2016 was 0.764818356 to US  
 HOEP: Hourly Ontario Energy Price  
 Pre-Dispatch: Projected Energy Price

# 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.

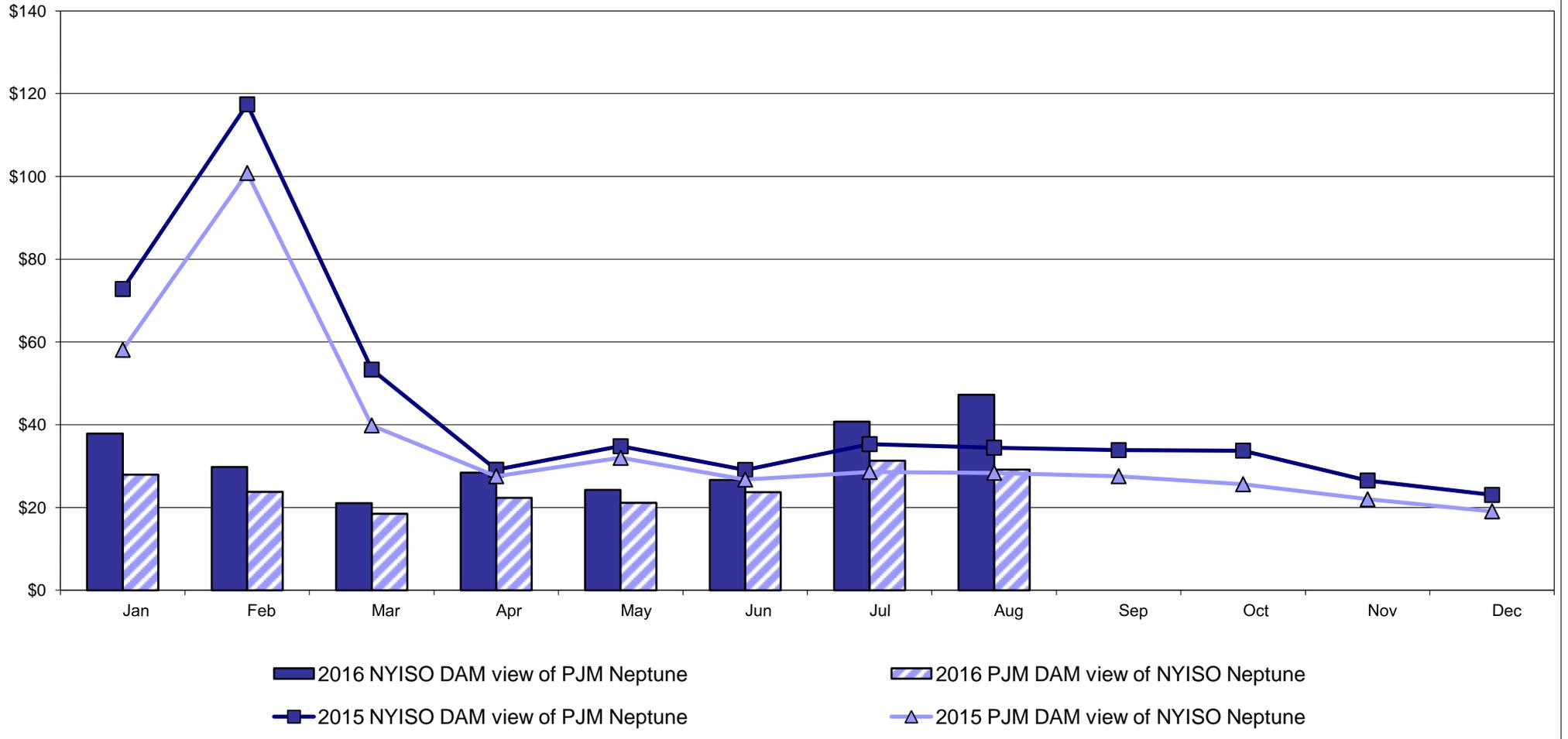
# External Controllable Line: Northport - Norwalk (New England)



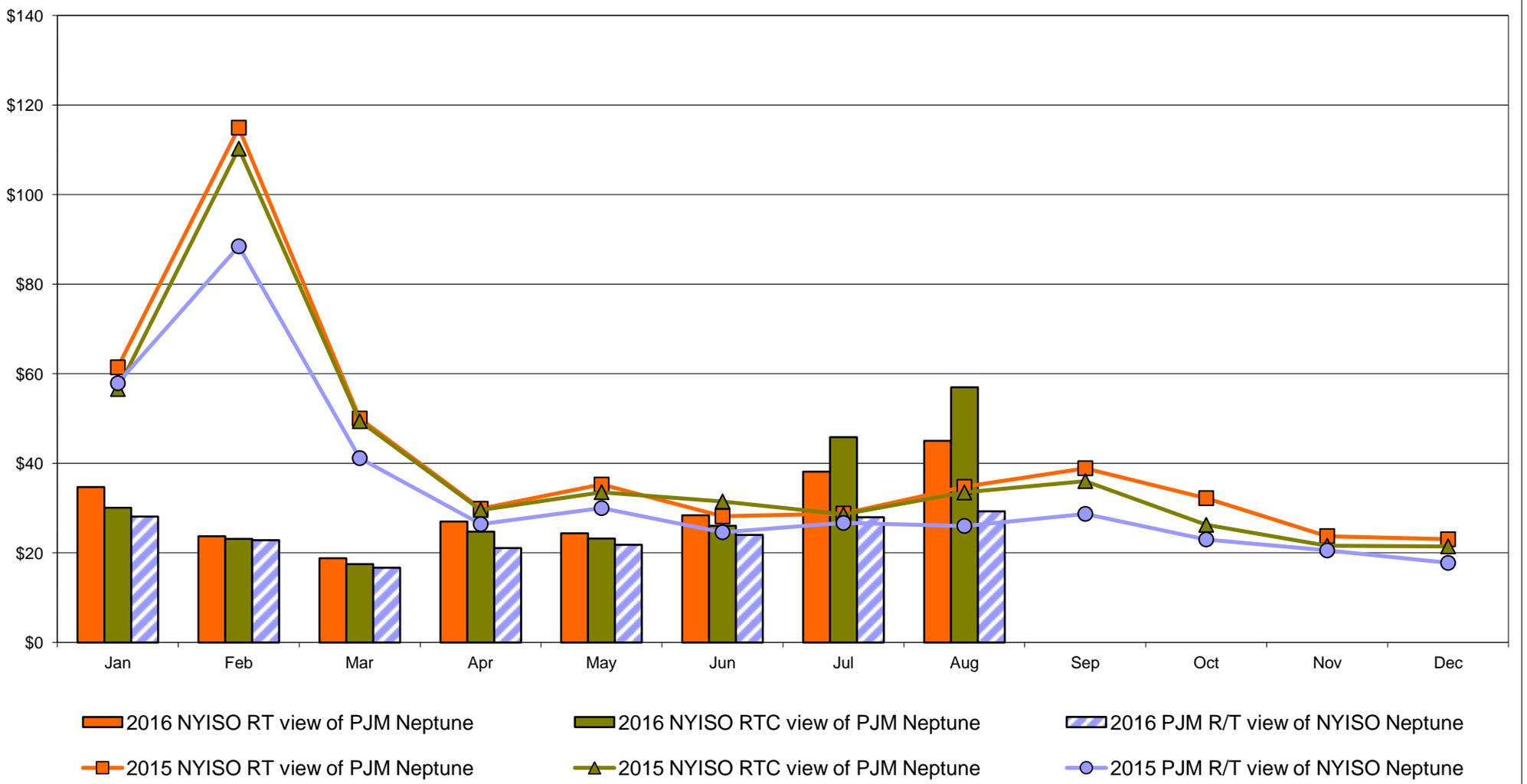
Note:  
 ISO-NE Forecast is an advisory posting @ 18:00 day before.  
 The DAM and R/T prices at the Northport 138 interface are used for ISO-NE.  
 The DAM and R/T prices at the 1385 interface are used for NYISO.

# External Controllable Line: Neptune (PJM)

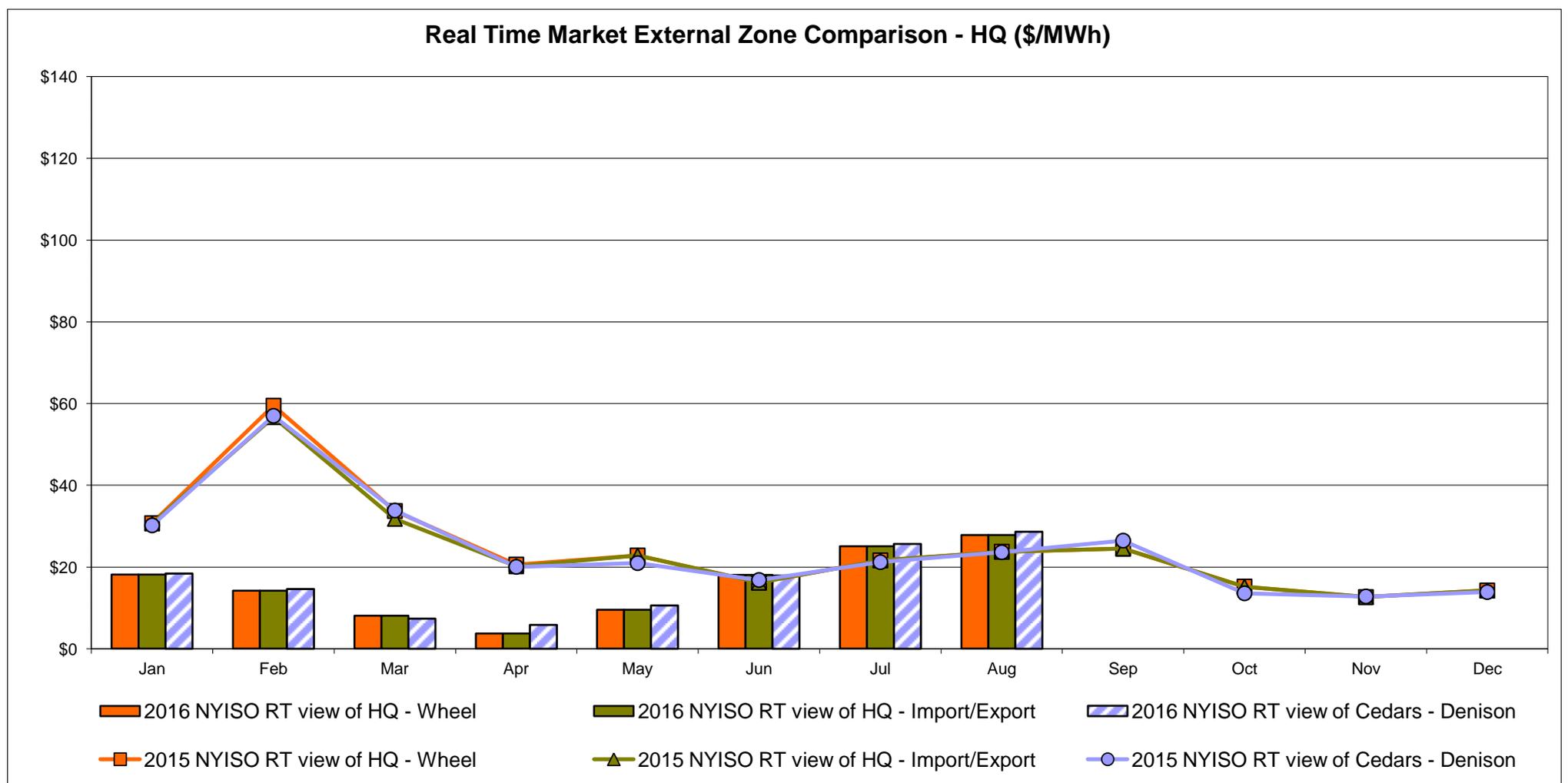
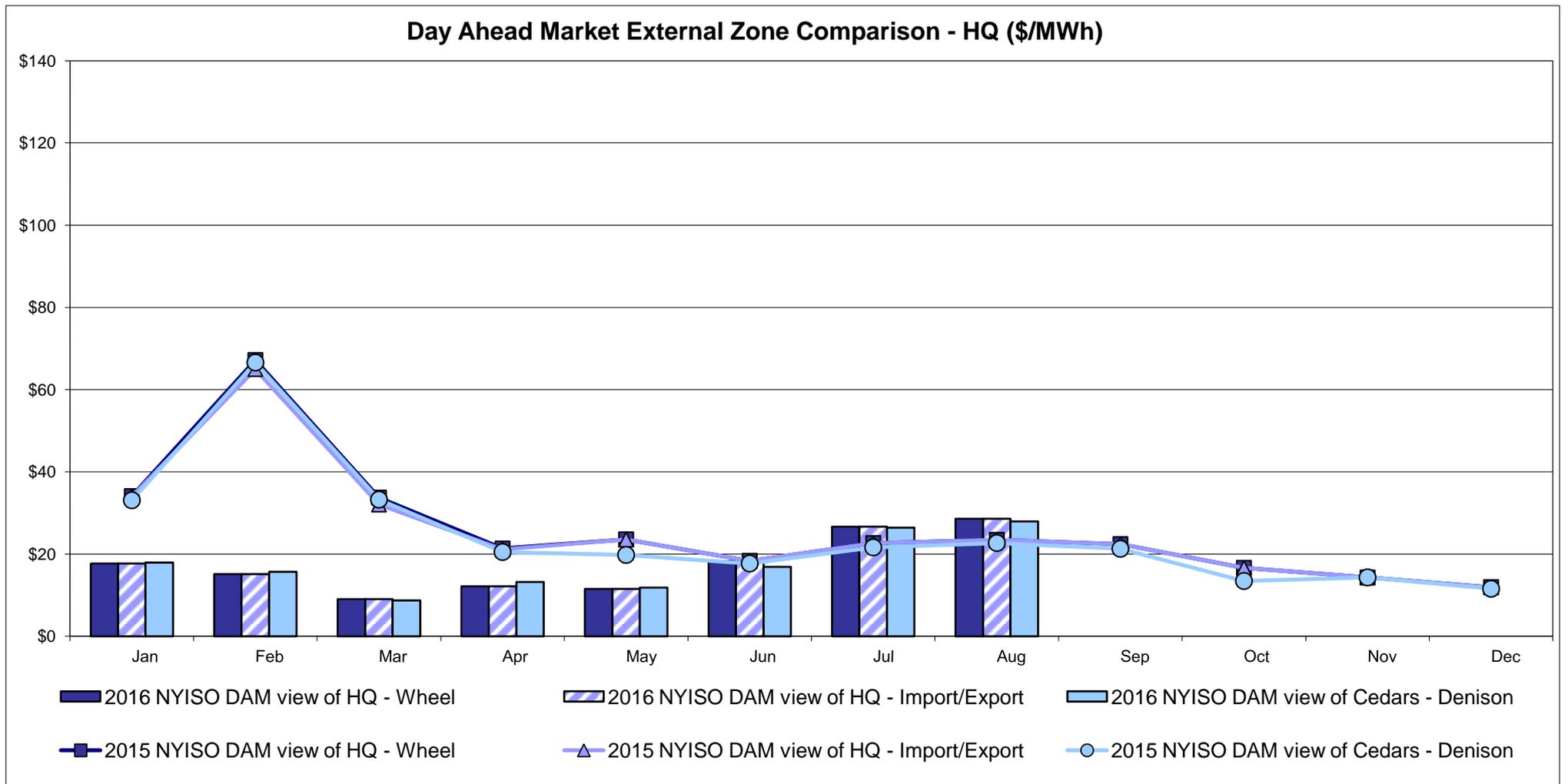
## Day Ahead Market Comparison: Neptune (\$/MWh)



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

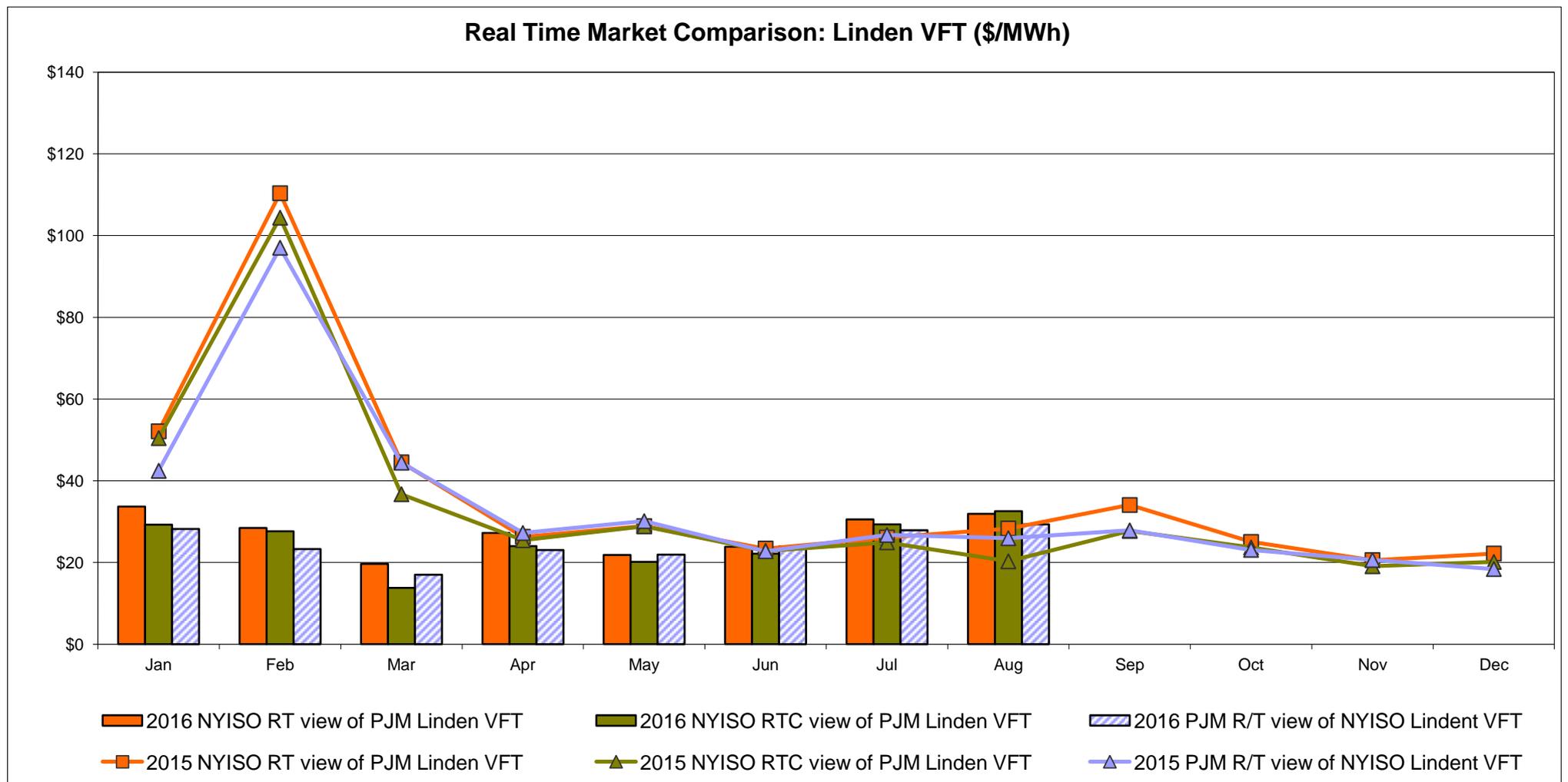
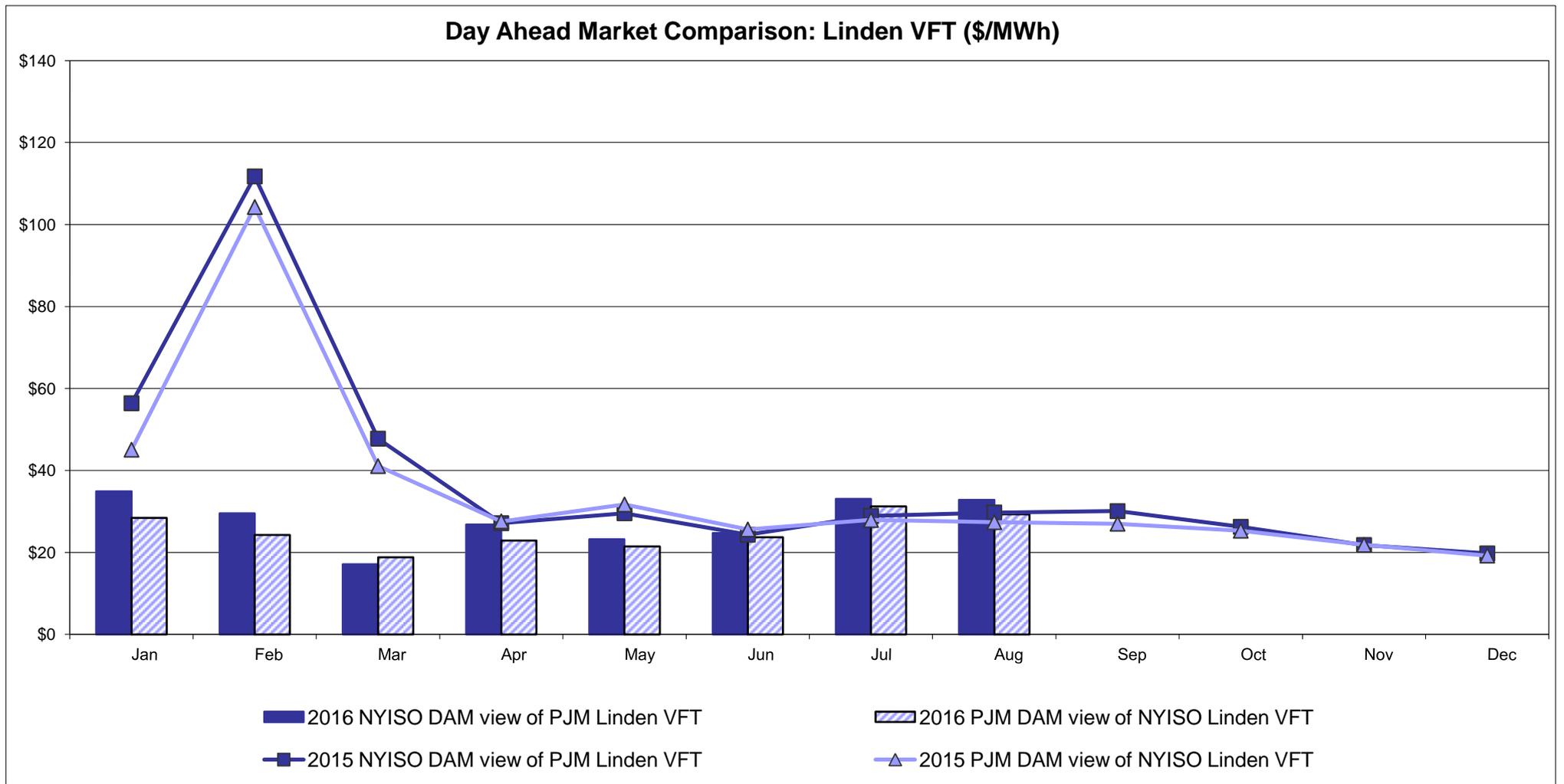


# External Comparison Hydro-Quebec

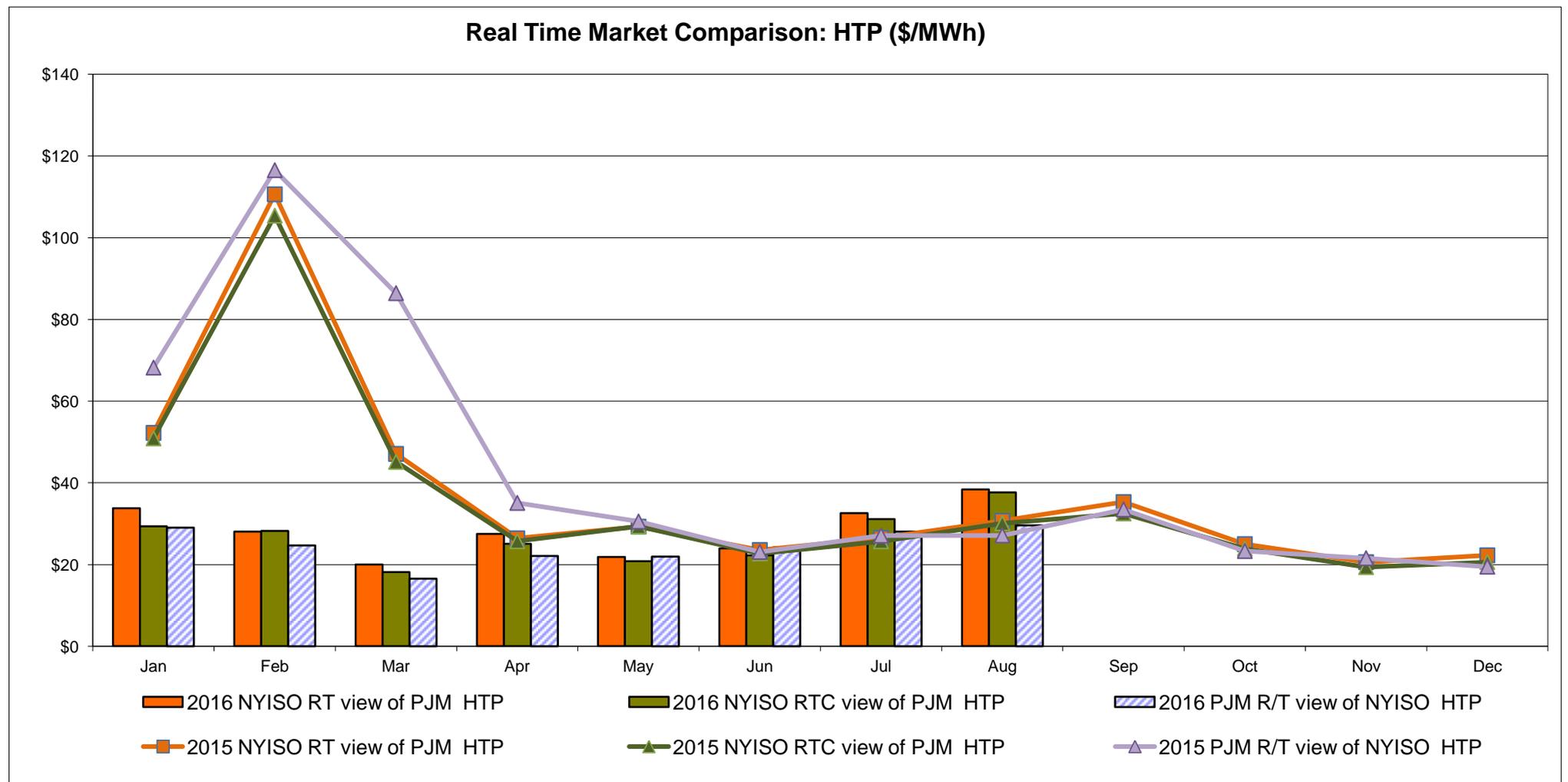
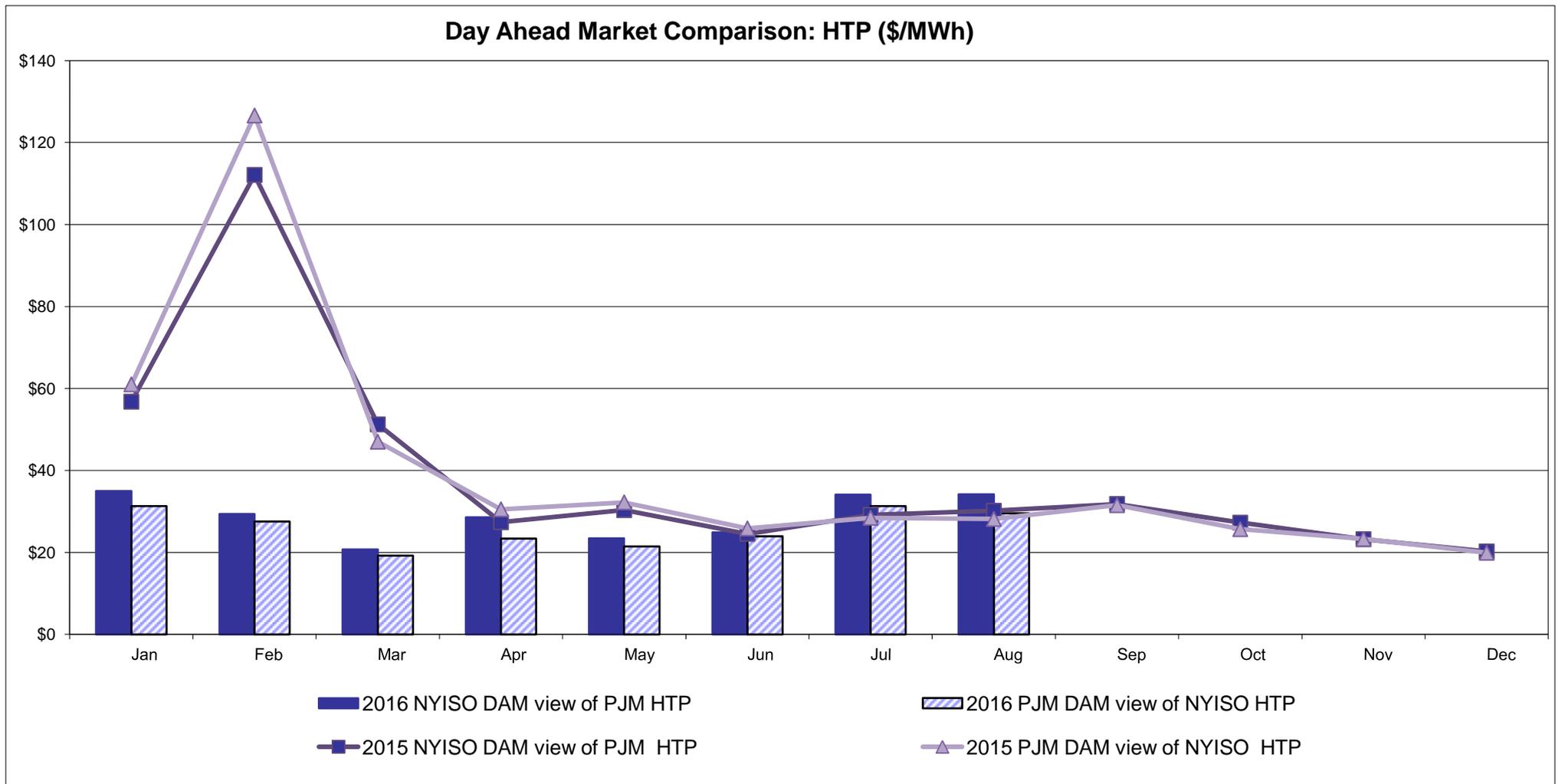


Note:  
Hydro-Quebec Prices are unavailable.

# External Controllable Line: Linden VFT (PJM)



## External Controllable Line: Hudson (PJM)

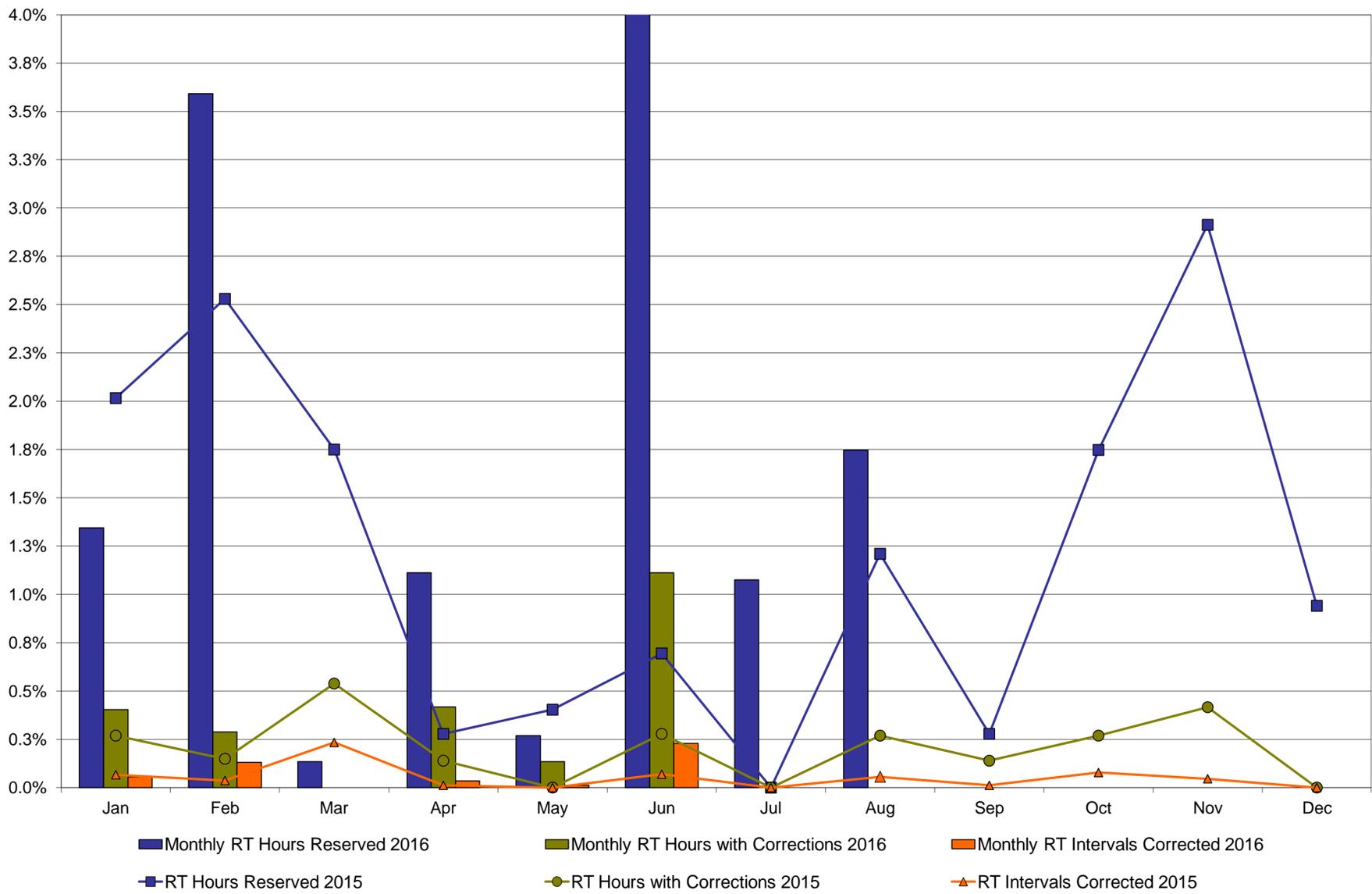


### NYISO Real Time Price Correction Statistics

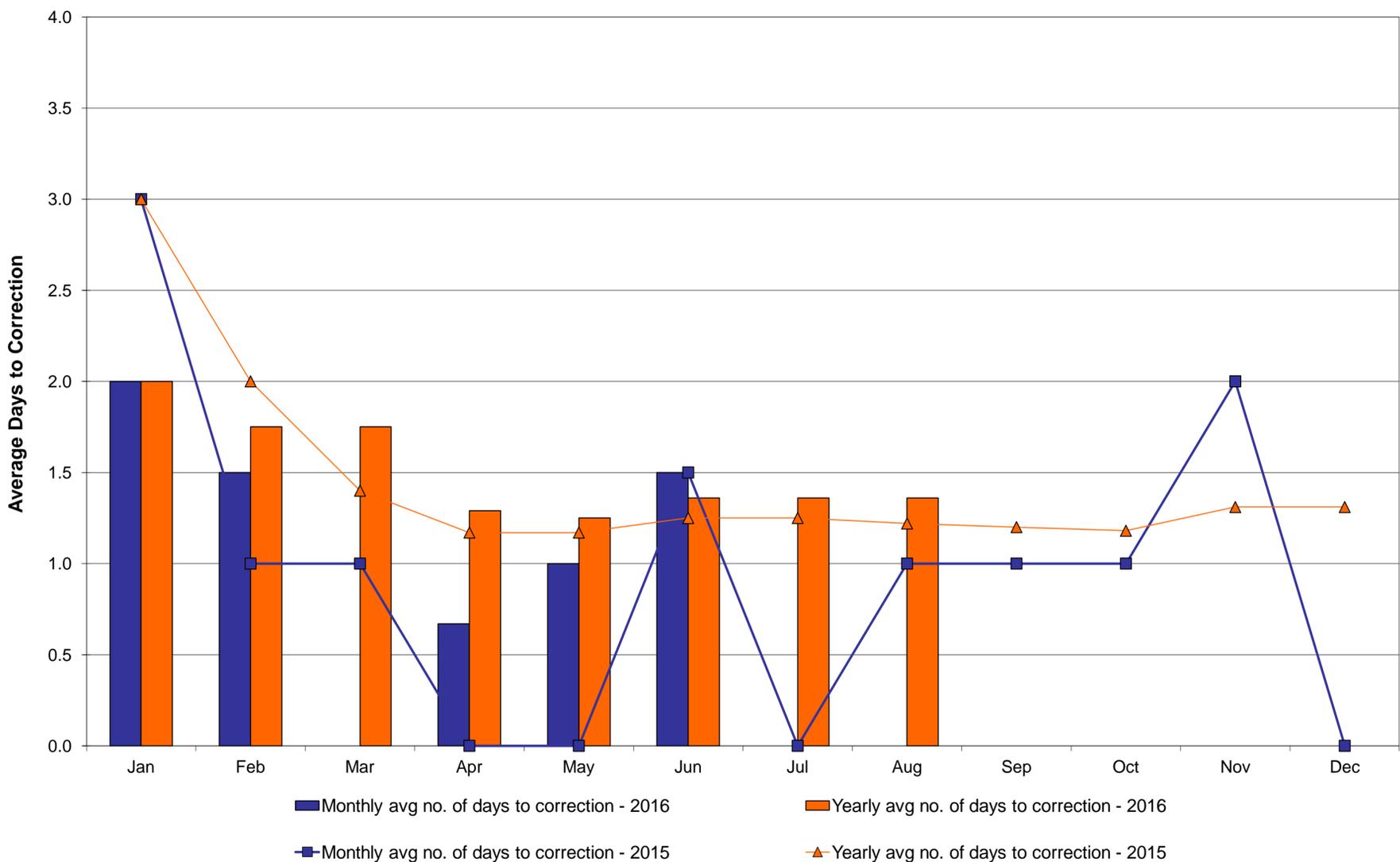
2016		January	February	March	April	May	June	July	August	September	October	November	December
<b>Hour Corrections</b>													
Number of hours with corrections	in the month	3	2	0	3	1	8	0	0				
Number of hours	in the month	744	696	743	720	744	720	744	744				
% of hours with corrections	in the month	0.40%	0.29%	0.00%	0.42%	0.13%	1.11%	0.00%	0.00%				
% of hours with corrections	year-to-date	0.40%	0.35%	0.23%	0.28%	0.25%	0.39%	0.33%	0.29%				
<b>Interval Corrections</b>													
Number of intervals corrected	in the month	5	11	0	3	1	20	0	0				
Number of intervals	in the month	9,000	8,440	8,995	8,724	8,987	8,725	9,038	9,048				
% of intervals corrected	in the month	0.06%	0.13%	0.00%	0.03%	0.01%	0.23%	0.00%	0.00%				
% of intervals corrected	year-to-date	0.06%	0.09%	0.06%	0.05%	0.05%	0.08%	0.06%	0.06%				
<b>Hours Reserved</b>													
Number of hours reserved	in the month	10	25	1	8	2	32	8	13				
Number of hours	in the month	744	696	743	720	744	720	744	744				
% of hours reserved	in the month	1.34%	3.59%	0.13%	1.11%	0.27%	4.44%	1.08%	1.75%				
% of hours reserved	year-to-date	1.34%	2.43%	1.65%	1.52%	1.26%	1.79%	1.68%	1.69%				
<b>Days to Correction *</b>													
Avg. number of days to correction	in the month	2.00	1.50	0.00	0.67	1.00	1.50	0.00	0.00				
Avg. number of days to correction	year-to-date	2.00	1.75	1.75	1.29	1.25	1.36	1.36	1.36				
<b>Days Without Corrections</b>													
Days without corrections	in the month	29	27	31	27	30	24	31	31				
Days without corrections	year-to-date	29	56	87	114	144	168	199	230				
2015		January	February	March	April	May	June	July	August	September	October	November	December
<b>Hour Corrections</b>													
Number of hours with corrections	in the month	2	1	4	1	0	2	0	2	1	2	3	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	0.27%	0.15%	0.54%	0.14%	0.00%	0.28%	0.00%	0.27%	0.14%	0.27%	0.42%	0.00%
% of hours with corrections	year-to-date	0.27%	0.21%	0.32%	0.28%	0.22%	0.23%	0.20%	0.21%	0.20%	0.21%	0.22%	0.21%
<b>Interval Corrections</b>													
Number of intervals corrected	in the month	6	3	21	1	0	6	0	5	1	7	4	0
Number of intervals	in the month	9,066	8,231	9,005	8,696	9,032	8,731	9,025	8,987	8,728	9,008	8,743	8,975
% of intervals corrected	in the month	0.07%	0.04%	0.23%	0.01%	0.00%	0.07%	0.00%	0.06%	0.01%	0.08%	0.05%	0.00%
% of intervals corrected	year-to-date	0.07%	0.05%	0.11%	0.09%	0.07%	0.07%	0.06%	0.06%	0.05%	0.06%	0.06%	0.05%
<b>Hours Reserved</b>													
Number of hours reserved	in the month	15	17	13	2	3	5	0	9	2	13	21	7
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744	721	744
% of hours reserved	in the month	2.02%	2.53%	1.75%	0.28%	0.40%	0.69%	0.00%	1.21%	0.28%	1.75%	2.91%	0.94%
% of hours reserved	year-to-date	2.02%	2.26%	2.08%	1.63%	1.38%	1.27%	1.08%	1.10%	1.01%	1.08%	1.25%	1.22%
<b>Days to Correction *</b>													
Avg. number of days to correction	in the month	3.00	1.00	1.00	0.00	0.00	1.50	0.00	1.00	1.00	1.00	2.00	0.00
Avg. number of days to correction	year-to-date	3.00	2.00	1.40	1.17	1.17	1.25	1.25	1.22	1.20	1.18	1.31	1.31
<b>Days Without Corrections</b>													
Days without corrections	in the month	30	27	28	29	31	28	31	30	29	30	28	31
Days without corrections	year-to-date	30	57	85	114	145	173	204	234	263	293	321	352

\* Calendar days from reservation date.

### Percentage of Real-Time Corrections

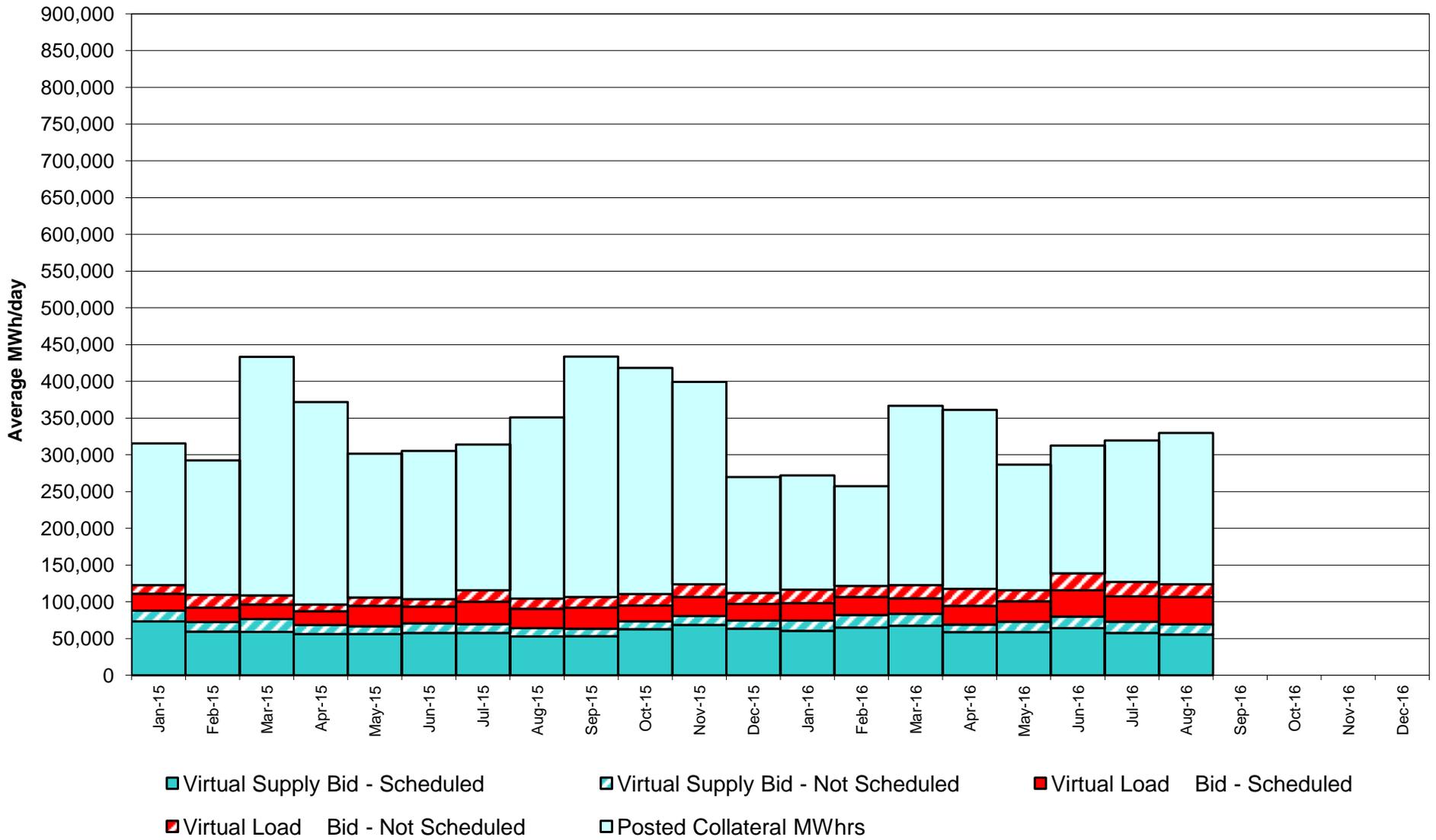


### Annual average time period for making Price Corrections (from reservation date) \*

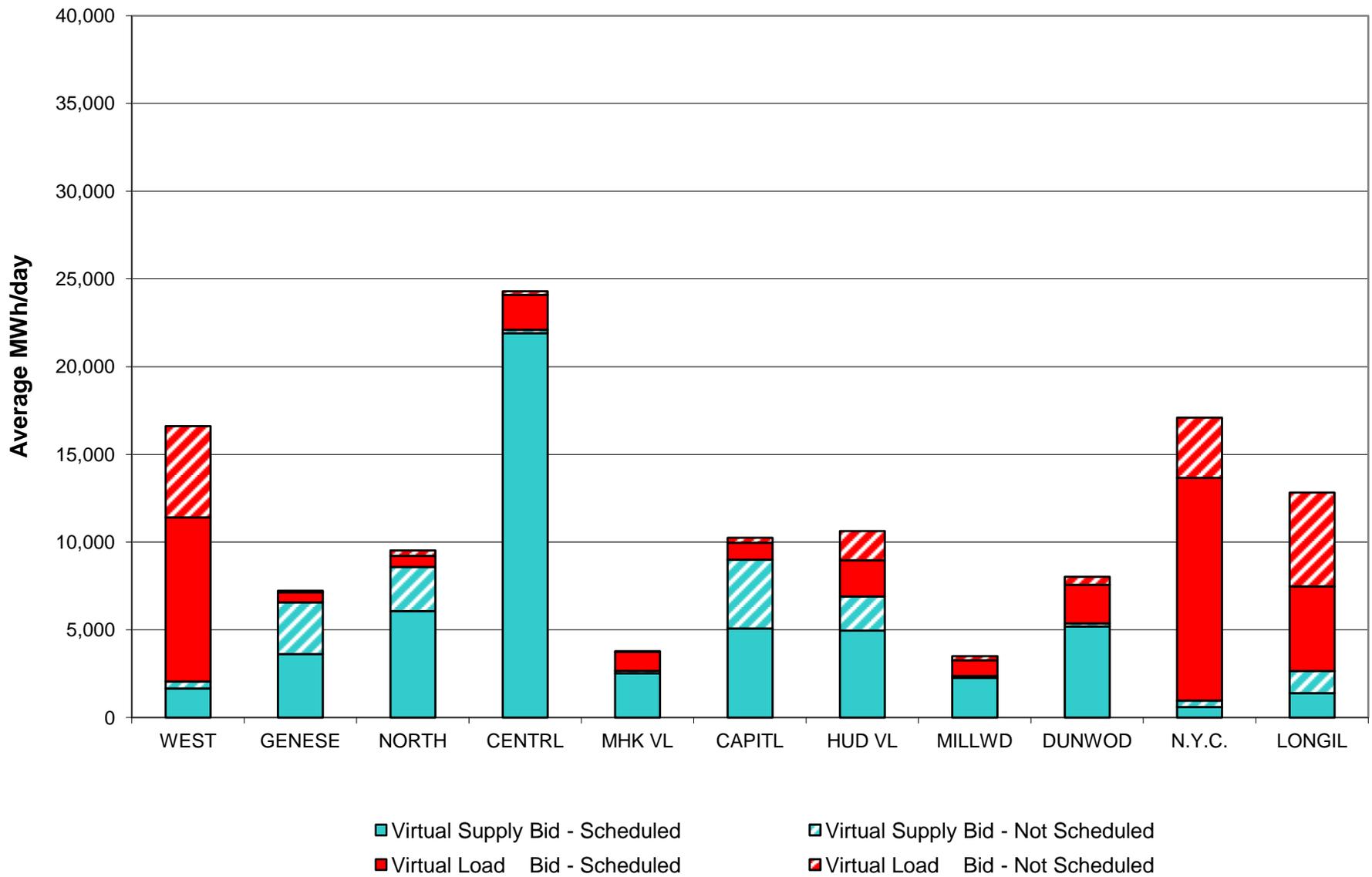


\* Calendar days from reservation date.

## NYISO Virtual Trading Average MWh per day



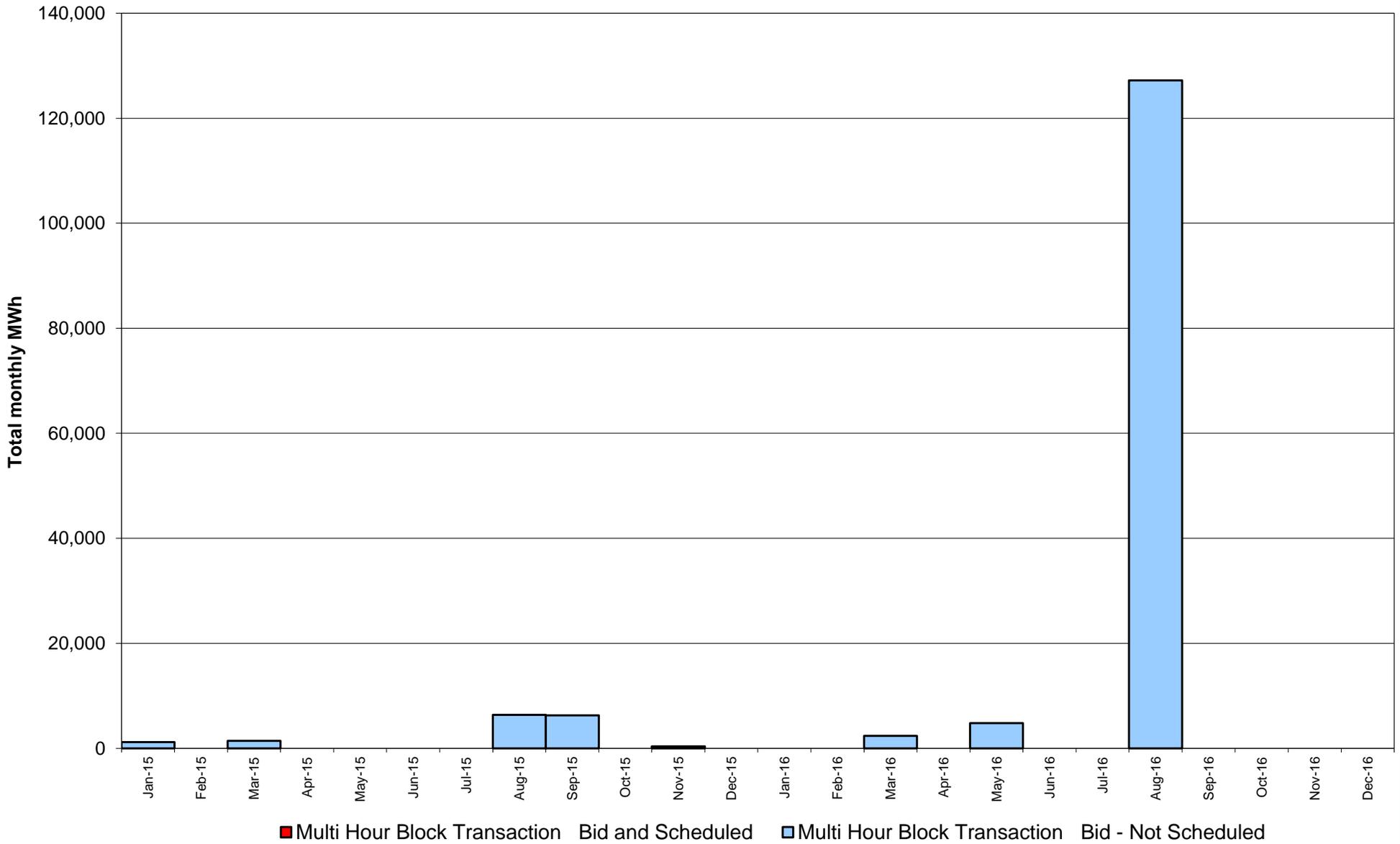
### Virtual Load and Supply Zonal Statistics through August 31, 2016



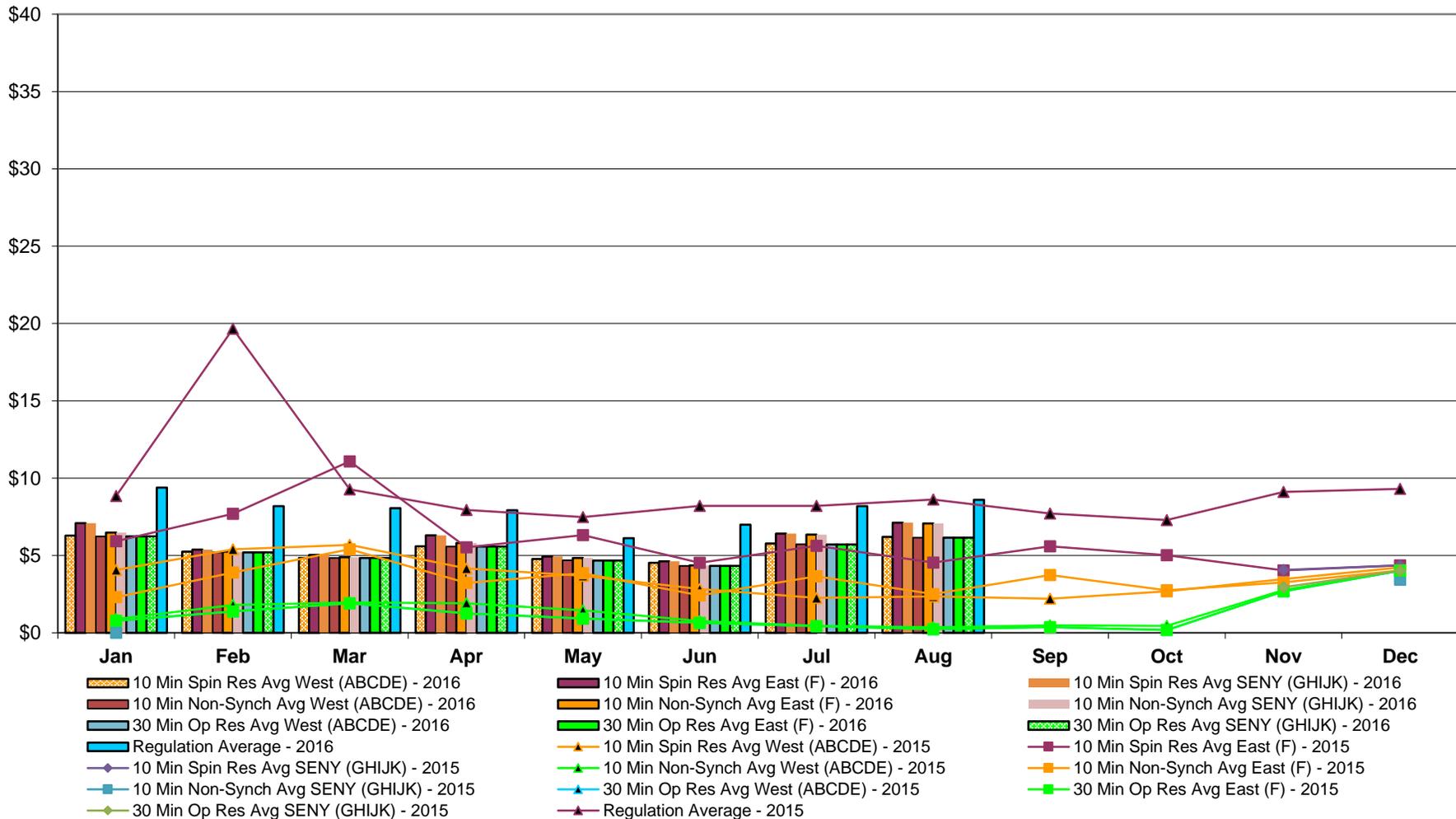
**Virtual Load and Supply Zonal Statistics (Average MWh/day) - 2016**

		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-16	8,416	4,440	2,862	419	<b>MHK VL</b>	Jan-16	463	92	2,024	146	<b>DUNWOD</b>	Jan-16	402	216	3,262	61
	Feb-16	7,967	3,554	2,706	521		Feb-16	544	80	2,329	611		Feb-16	803	185	3,555	269
	Mar-16	7,947	7,233	2,564	720		Mar-16	440	49	2,695	931		Mar-16	460	100	4,207	304
	Apr-16	11,544	10,793	1,645	263		Apr-16	735	55	2,236	317		Apr-16	277	48	4,840	190
	May-16	8,896	4,966	2,511	678		May-16	673	33	2,036	588		May-16	660	435	6,261	431
	Jun-16	13,365	10,864	1,364	609		Jun-16	605	139	2,887	447		Jun-16	996	208	4,433	347
	Jul-16	8,357	6,943	2,167	612		Jul-16	830	123	3,170	244		Jul-16	1,953	578	4,363	313
	Aug-16	9,364	5,185	1,663	391		Aug-16	1,071	52	2,517	144		Aug-16	2,194	450	5,201	174
	Sep-16						Sep-16						Sep-16				
	Oct-16						Oct-16						Oct-16				
	Nov-16						Nov-16						Nov-16				
	Dec-16						Dec-16						Dec-16				
<b>GENESE</b>	Jan-16	1,030	638	3,868	2,421	<b>CAPITL</b>	Jan-16	2,195	1,472	4,568	3,470	<b>N.Y.C.</b>	Jan-16	2,862	4,976	2,531	648
	Feb-16	795	923	3,461	3,707		Feb-16	1,593	684	5,140	3,581		Feb-16	3,281	4,752	2,390	403
	Mar-16	824	1,113	5,340	3,764		Mar-16	960	238	5,023	2,071		Mar-16	1,838	4,229	1,239	748
	Apr-16	448	1,398	6,028	1,718		Apr-16	1,410	198	6,433	1,645		Apr-16	3,263	4,302	1,221	336
	May-16	411	125	3,793	2,664		May-16	1,885	251	5,843	2,876		May-16	4,517	3,352	1,425	472
	Jun-16	501	323	4,945	2,340		Jun-16	959	119	6,428	4,625		Jun-16	7,465	3,847	930	245
	Jul-16	615	312	3,785	2,492		Jul-16	1,152	271	5,755	3,969		Jul-16	10,899	3,980	692	341
	Aug-16	576	80	3,626	2,944		Aug-16	964	274	5,085	3,917		Aug-16	12,696	3,433	599	363
	Sep-16						Sep-16						Sep-16				
	Oct-16						Oct-16						Oct-16				
	Nov-16						Nov-16						Nov-16				
	Dec-16						Dec-16						Dec-16				
<b>NORTH</b>	Jan-16	274	312	7,038	3,010	<b>HUD VL</b>	Jan-16	1,036	1,609	6,763	2,202	<b>LONGIL</b>	Jan-16	6,153	3,761	700	985
	Feb-16	499	215	7,169	3,894		Feb-16	1,008	1,135	9,550	3,078		Feb-16	6,539	3,211	814	869
	Mar-16	338	107	6,127	4,874		Mar-16	964	510	10,835	1,568		Mar-16	6,305	3,906	1,090	411
	Apr-16	666	332	8,237	3,363		Apr-16	821	1,176	9,231	1,566		Apr-16	5,087	4,696	1,511	215
	May-16	556	157	6,029	4,034		May-16	1,488	911	6,686	1,490		May-16	5,837	4,419	1,331	431
	Jun-16	519	445	7,892	4,126		Jun-16	1,392	1,684	7,583	1,398		Jun-16	7,178	4,811	1,377	786
	Jul-16	517	310	5,791	3,043		Jul-16	1,699	1,290	5,809	2,344		Jul-16	5,383	5,288	1,195	1,215
	Aug-16	630	314	6,066	2,521		Aug-16	2,064	1,663	4,961	1,948		Aug-16	4,823	5,354	1,395	1,259
	Sep-16						Sep-16						Sep-16				
	Oct-16						Oct-16						Oct-16				
	Nov-16						Nov-16						Nov-16				
	Dec-16						Dec-16						Dec-16				
<b>CENTRL</b>	Jan-16	954	502	25,792	259	<b>MILLWD</b>	Jan-16	304	114	1,211	60	<b>NYISO</b>	Jan-16	24,086	18,132	60,619	13,680
	Feb-16	975	212	26,176	301		Feb-16	403	145	1,477	100		Feb-16	24,407	15,096	64,766	17,335
	Mar-16	1,076	70	26,818	564		Mar-16	182	60	1,462	239		Mar-16	21,332	17,615	67,399	16,195
	Apr-16	1,124	159	15,555	284		Apr-16	186	26	1,913	101		Apr-16	25,563	23,182	58,849	9,998
	May-16	2,369	250	21,046	367		May-16	471	121	1,743	264		May-16	27,763	15,021	58,704	14,296
	Jun-16	2,285	469	23,910	277		Jun-16	489	121	2,582	449		Jun-16	35,754	23,031	64,331	15,648
	Jul-16	2,117	385	22,271	529		Jul-16	868	103	2,732	238		Jul-16	34,388	19,583	57,728	15,341
	Aug-16	1,984	204	21,918	187		Aug-16	894	234	2,267	104		Aug-16	37,261	17,244	55,297	13,952
	Sep-16						Sep-16						Sep-16				
	Oct-16						Oct-16						Oct-16				
	Nov-16						Nov-16						Nov-16				
	Dec-16						Dec-16						Dec-16				

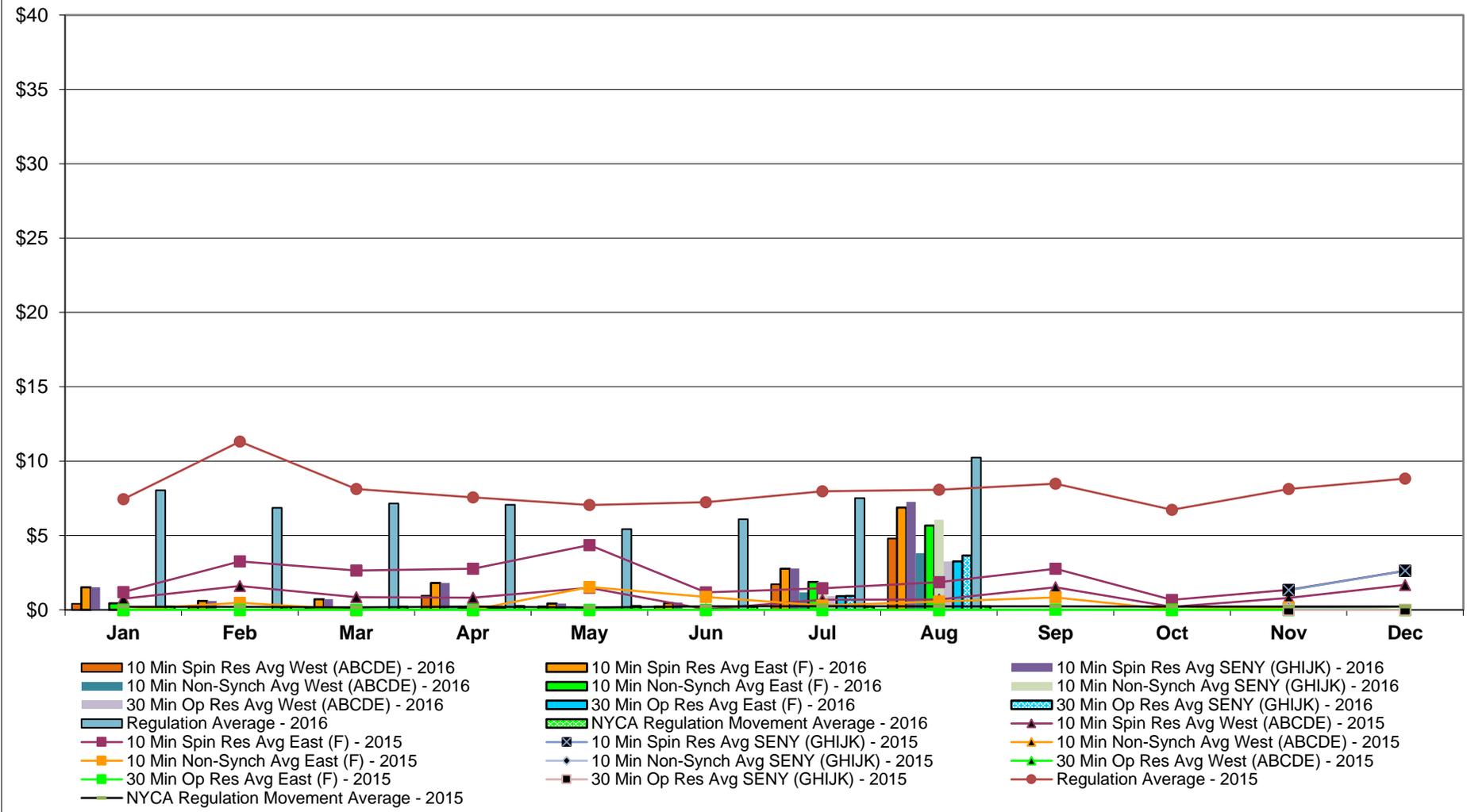
## NYISO Multi Hour Block Transactions Monthly Total MWh



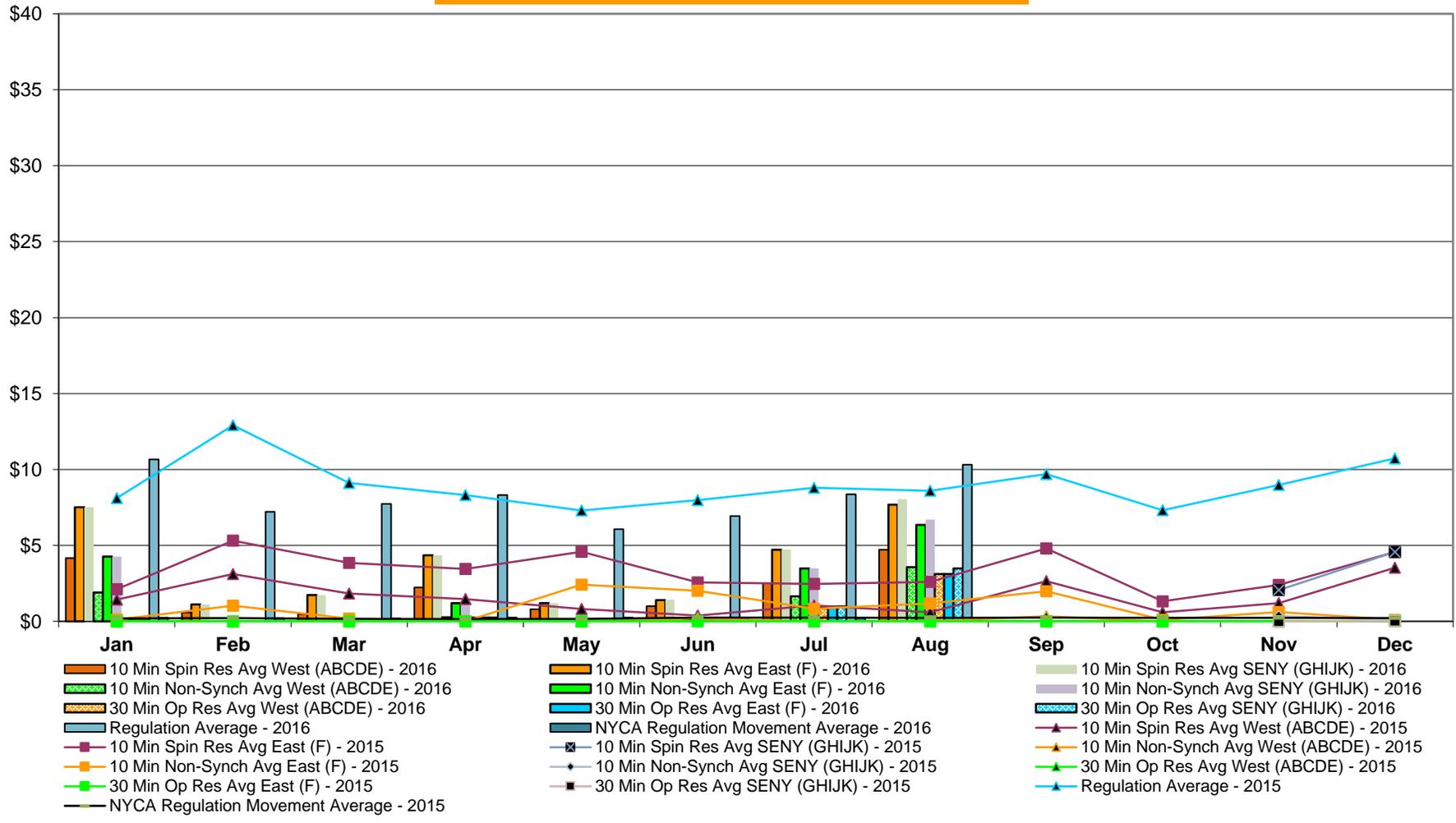
### NYISO Monthly Average Ancillary Service Prices Day Ahead Market 2015 - 2016



## NYISO Monthly Average Ancillary Service Prices RTC Market 2015 - 2016



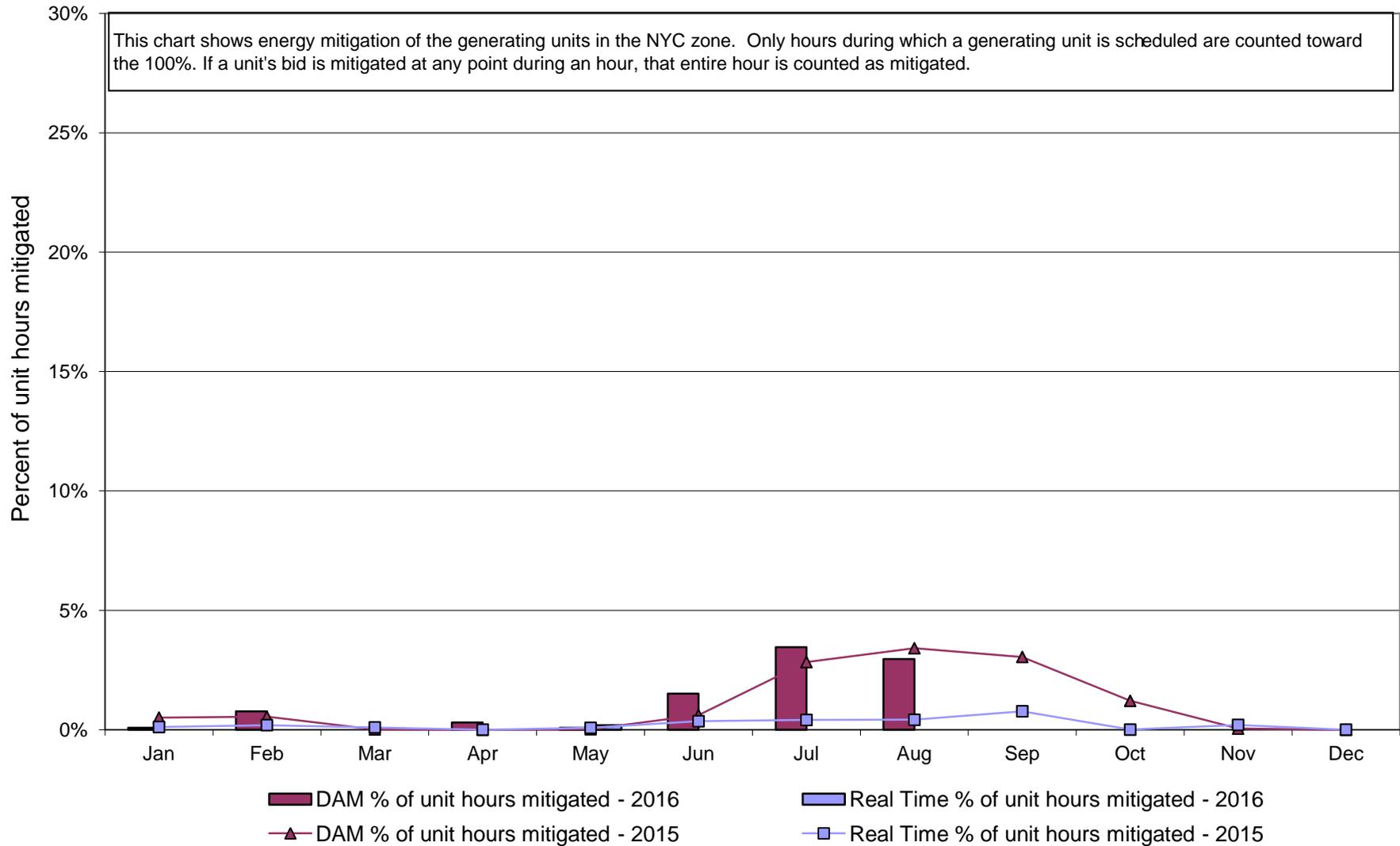
### NYISO Monthly Average Ancillary Service Prices Real Time Market 2015 - 2016



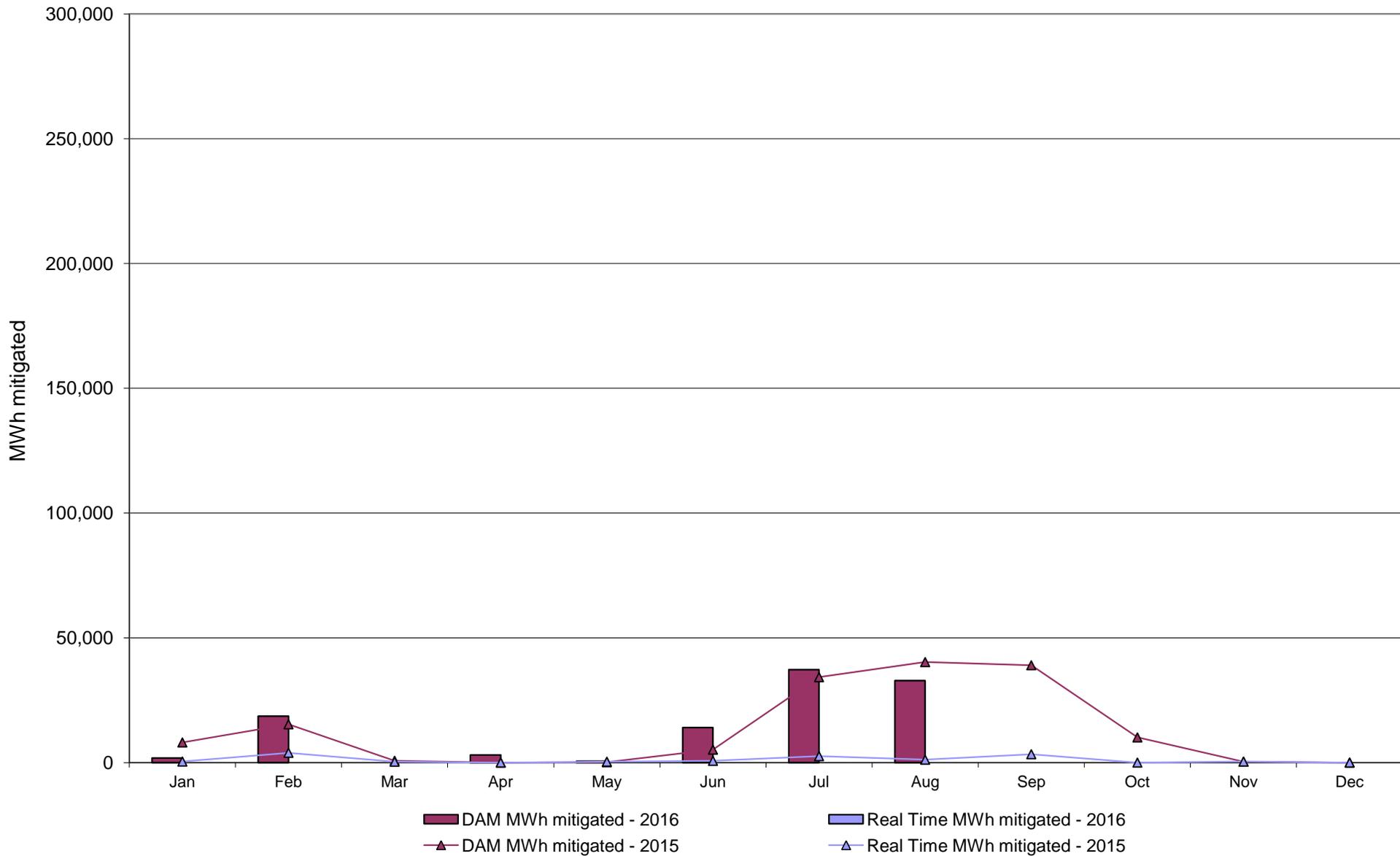
## NYISO Markets Ancillary Services Statistics - Unweighted Price (\$/MWH)

2016	January	February	March	April	May	June	July	August	September	October	November	December
<b>Day Ahead Market</b>												
10 Min Spin SENY (GHIJK)	7.09	5.38	5.04	6.31	4.93	4.62	6.41	7.12				
10 Min Spin East (F)	7.09	5.38	5.04	6.31	4.93	4.62	6.41	7.12				
10 Min Spin West (ABCDE)	6.28	5.25	4.84	5.60	4.77	4.52	5.78	6.20				
10 Min Non Synch SENY (GHIJK)	6.47	5.25	4.88	5.80	4.83	4.36	6.34	7.07				
10 Min Non Synch East (F)	6.47	5.25	4.88	5.80	4.83	4.36	6.34	7.07				
10 Min Non Synch West (ABCDE)	6.23	5.20	4.84	5.58	4.68	4.32	5.72	6.15				
30 Min SENY (GHIJK)	6.23	5.20	4.84	5.58	4.67	4.32	5.70	6.15				
30 Min East (F)	6.23	5.20	4.84	5.58	4.67	4.32	5.70	6.15				
30 Min West (ABCDE)	6.23	5.20	4.84	5.58	4.67	4.32	5.70	6.15				
Regulation	9.39	8.19	8.05	7.93	6.11	7.00	8.19	8.61				
<b>RTC Market</b>												
10 Min Spin SENY (GHIJK)	1.53	0.59	0.71	1.81	0.43	0.49	2.79	7.26				
10 Min Spin East (F)	1.53	0.59	0.71	1.81	0.43	0.46	2.77	6.88				
10 Min Spin West (ABCDE)	0.42	0.26	0.08	0.95	0.23	0.24	1.72	4.80				
10 Min Non Synch SENY (GHIJK)	0.45	0.00	0.17	0.14	0.05	0.05	1.89	6.06				
10 Min Non Synch East (F)	0.45	0.00	0.17	0.14	0.05	0.02	1.87	5.67				
10 Min Non Synch West (ABCDE)	0.04	0.00	0.00	0.14	0.04	0.02	1.18	3.80				
30 Min SENY (GHIJK)	0.01	0.00	0.00	0.14	0.04	0.04	0.94	3.65				
30 Min East (F)	0.01	0.00	0.00	0.14	0.04	0.02	0.93	3.27				
30 Min West (ABCDE)	0.01	0.00	0.00	0.14	0.04	0.02	0.93	3.27				
Regulation	8.04	6.86	7.15	7.07	5.43	6.09	7.51	10.25				
NYCA Regulation Movement	0.23	0.21	0.20	0.25	0.25	0.23	0.23	0.24				
<b>Real Time Market</b>												
10 Min Spin SENY (GHIJK)	7.51	1.12	1.73	4.34	1.19	1.43	4.73	8.04				
10 Min Spin East (F)	7.51	1.12	1.73	4.34	1.19	1.40	4.72	7.68				
10 Min Spin West (ABCDE)	4.17	0.58	0.48	2.23	0.79	1.00	2.51	4.72				
10 Min Non Synch SENY (GHIJK)	4.26	0.00	0.22	1.20	0.06	0.15	3.49	6.70				
10 Min Non Synch East (F)	4.26	0.00	0.22	1.20	0.06	0.11	3.48	6.34				
10 Min Non Synch West (ABCDE)	1.89	0.00	0.00	0.26	0.03	0.04	1.65	3.56				
30 Min SENY (GHIJK)	0.06	0.00	0.00	0.25	0.03	0.07	0.98	3.48				
30 Min East (F)	0.06	0.00	0.00	0.25	0.03	0.04	0.97	3.12				
30 Min West (ABCDE)	0.06	0.00	0.00	0.25	0.03	0.04	0.97	3.12				
Regulation	10.66	7.21	7.73	8.30	6.06	6.92	8.37	10.31				
NYCA Regulation Movement	0.23	0.22	0.20	0.25	0.25	0.23	0.23	0.24				
<b>2015</b>												
<b>Day Ahead Market</b>												
10 Min Spin SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.06	4.36
10 Min Spin East (F)	5.92	7.69	11.09	5.53	6.31	4.53	5.62	4.54	5.60	5.02	4.03	4.36
10 Min Spin West (ABCDE)	4.07	5.40	5.68	4.16	3.69	2.84	2.26	2.36	2.20	2.68	3.47	4.22
10 Min Non Synch SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.44	4.03
10 Min Non Synch East (F)	2.30	3.89	5.40	3.22	3.84	2.42	3.66	2.51	3.74	2.75	3.27	4.03
10 Min Non Synch West (ABCDE)	0.90	1.79	1.97	1.91	1.45	0.77	0.45	0.36	0.49	0.45	2.77	4.02
30 Min SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.95	4.02
30 Min East (F)	0.77	1.38	1.91	1.26	0.93	0.64	0.43	0.24	0.37	0.18	2.69	4.02
30 Min West (ABCDE)	0.77	1.38	1.91	1.26	0.93	0.64	0.43	0.24	0.37	0.18	2.69	4.02
Regulation	8.84	19.65	9.27	7.94	7.48	8.20	8.20	8.61	7.71	7.29	9.10	9.30
<b>RTC Market</b>												
10 Min Spin SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.33	2.62
10 Min Spin East (F)	1.20	3.27	2.64	2.77	4.36	1.18	1.44	1.86	2.76	0.67	1.35	2.62
10 Min Spin West (ABCDE)	0.74	1.61	0.86	0.81	1.48	0.04	0.69	0.70	1.53	0.20	0.81	1.68
10 Min Non Synch SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.17	0.01
10 Min Non Synch East (F)	0.01	0.48	0.01	0.00	1.54	0.87	0.28	0.57	0.84	0.01	0.16	0.01
10 Min Non Synch West (ABCDE)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
30 Min SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	0.00
30 Min East (F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
30 Min West (ABCDE)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
Regulation	7.45	11.32	8.13	7.56	7.06	7.24	7.97	8.07	8.49	6.73	8.12	8.83
NYCA Regulation Movement	0.21	0.21	0.16	0.22	0.16	0.24	0.25	0.23	0.24	0.23	0.22	0.22
<b>Real Time Market</b>												
10 Min Spin SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.06	4.57
10 Min Spin East (F)	2.12	5.31	3.84	3.44	4.59	2.56	2.47	2.59	4.79	1.32	2.40	4.57
10 Min Spin West (ABCDE)	1.44	3.11	1.83	1.46	0.81	0.38	1.04	0.59	2.65	0.59	1.20	3.53
10 Min Non Synch SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.35	0.09
10 Min Non Synch East (F)	0.12	1.03	0.17	0.01	2.41	2.01	0.83	1.19	1.97	0.09	0.61	0.09
10 Min Non Synch West (ABCDE)	0.00	0.00	0.00	0.00	0.00	0.19	0.00	0.02	0.33	0.00	0.00	0.05
30 Min SENY (GHIJK)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	0.03
30 Min East (F)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.03
30 Min West (ABCDE)	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.03
Regulation	8.12	12.91	9.11	8.32	7.30	7.97	8.80	8.60	9.69	7.32	8.98	10.73
NYCA Regulation Movement	0.20	0.21	0.17	0.15	0.16	0.24	0.24	0.24	0.24	0.23	0.22	0.21

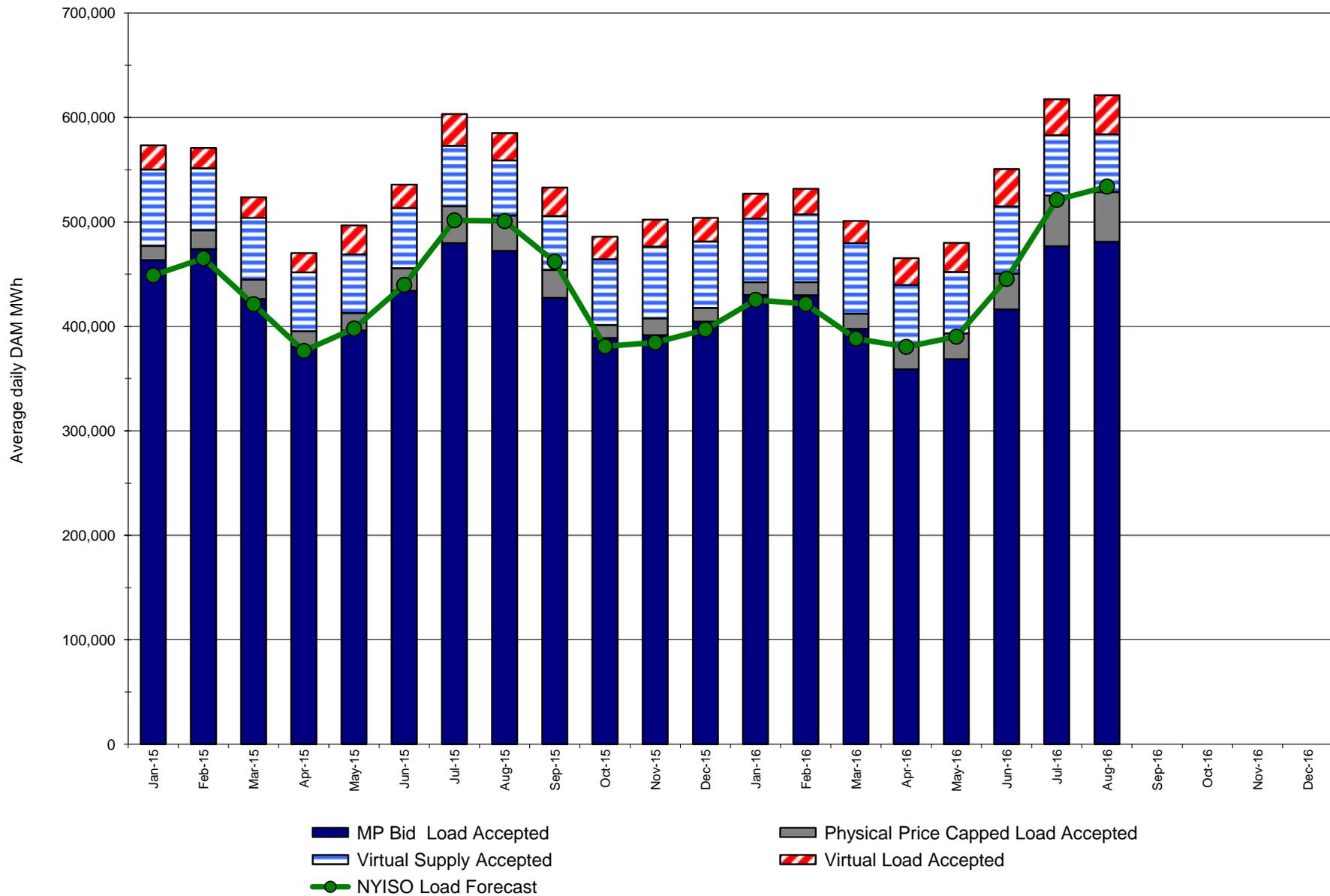
## NYISO In City Energy Mitigation - AMP (NYC Zone) 2015 - 2016 Percentage of committed unit-hours mitigated



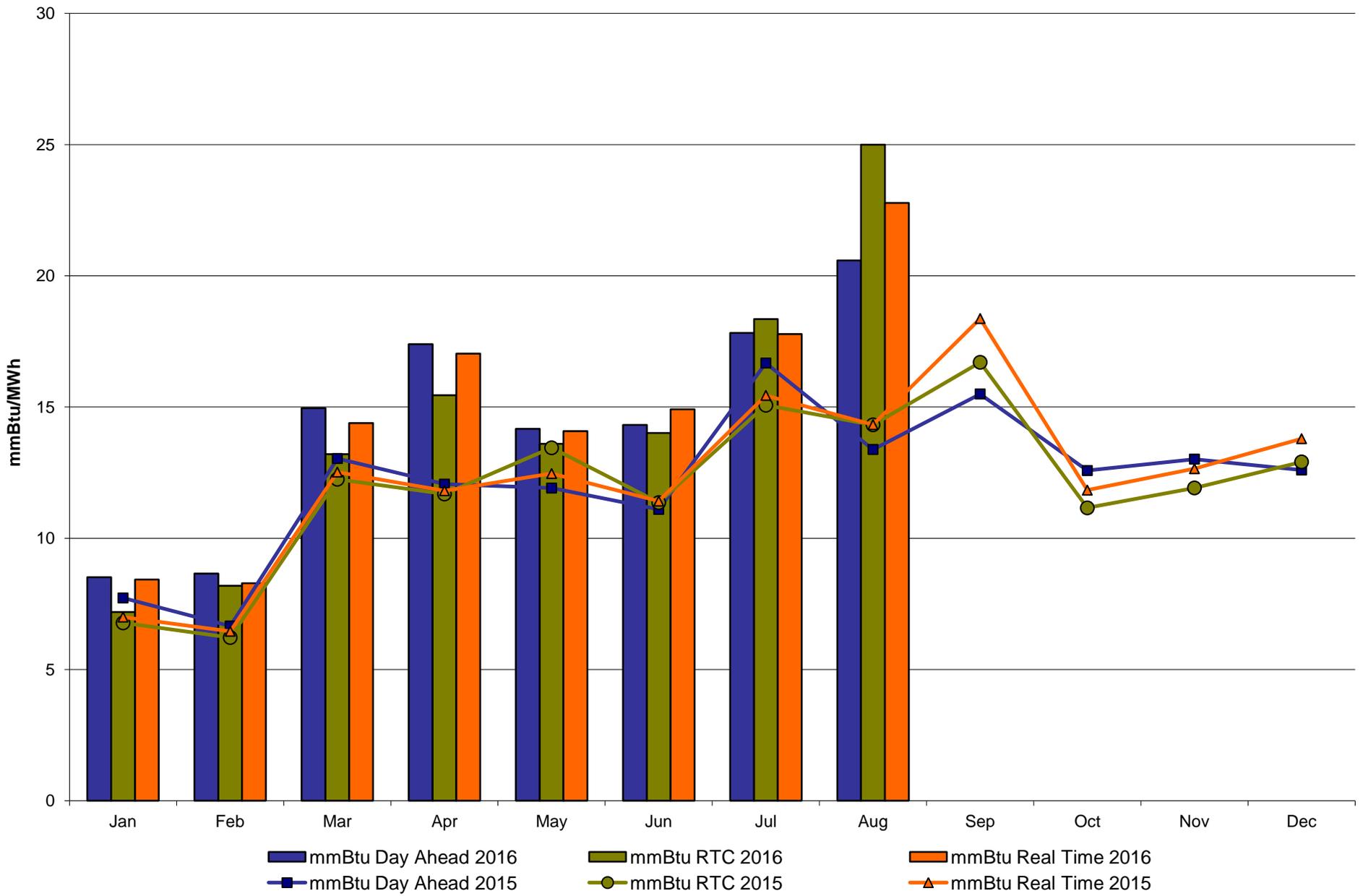
**NYISO In City Energy Mitigation (NYC Zone) 2015 - 2016**  
**Monthly megawatt hours mitigated**



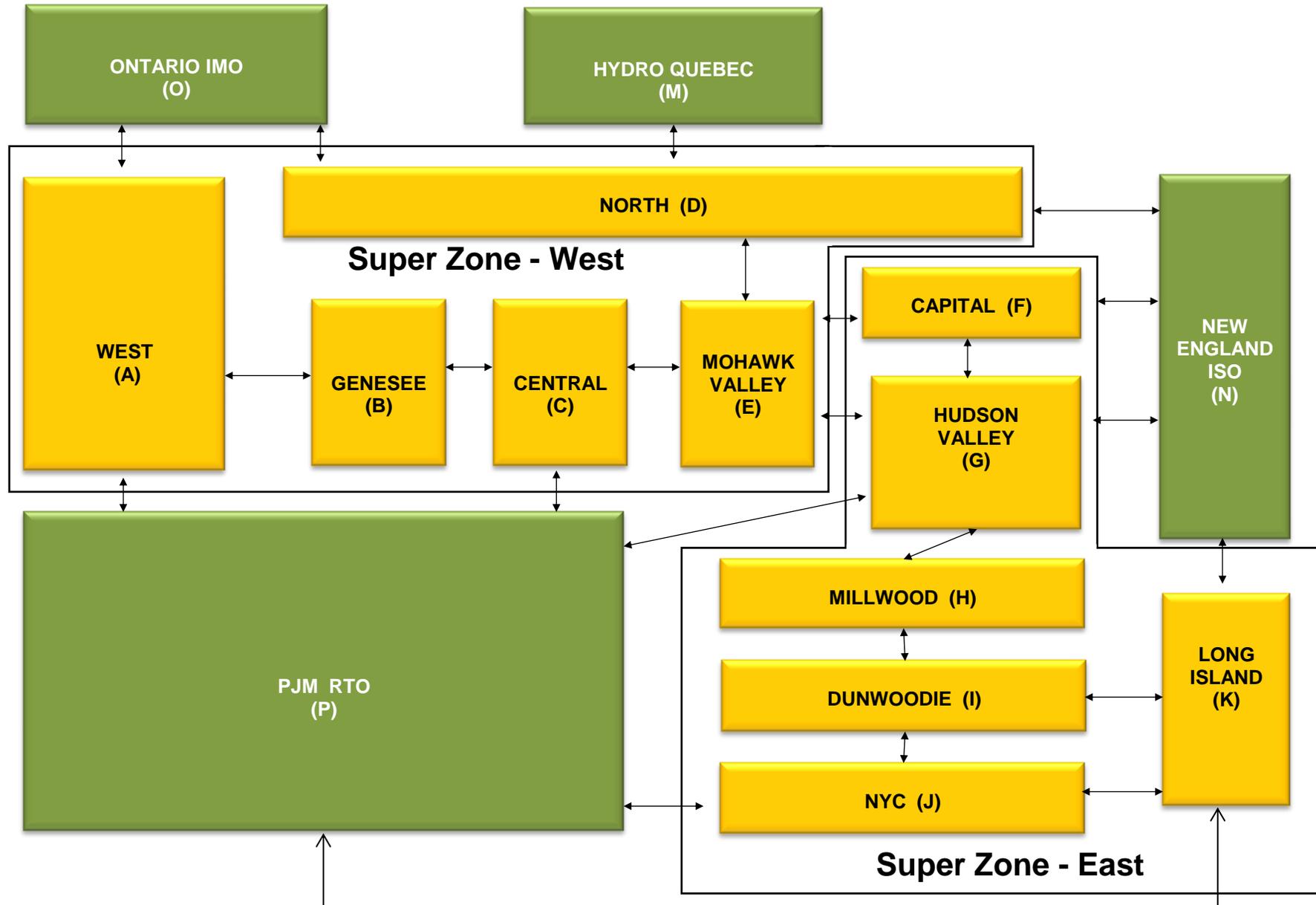
### NYISO Average Daily DAM Load Bid Summary



## Monthly Implied Heat Rate 2015-2016



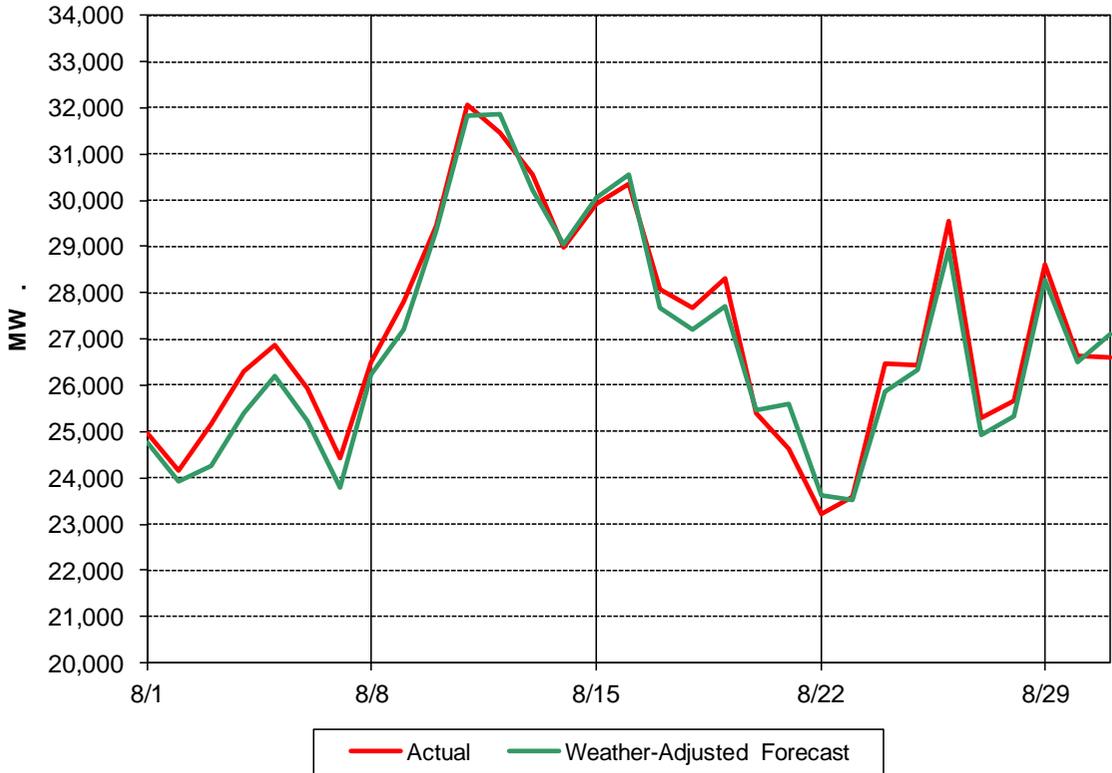
# NYISO LBMP ZONES



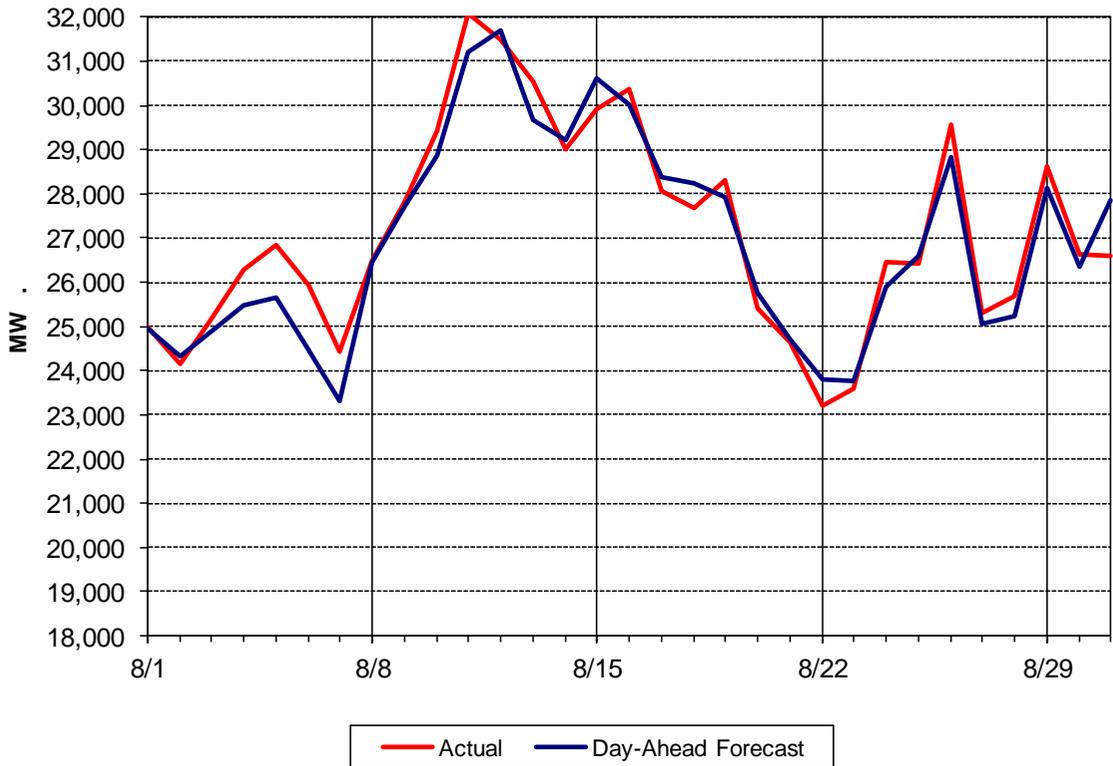
**Billing Codes for Chart C**

<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

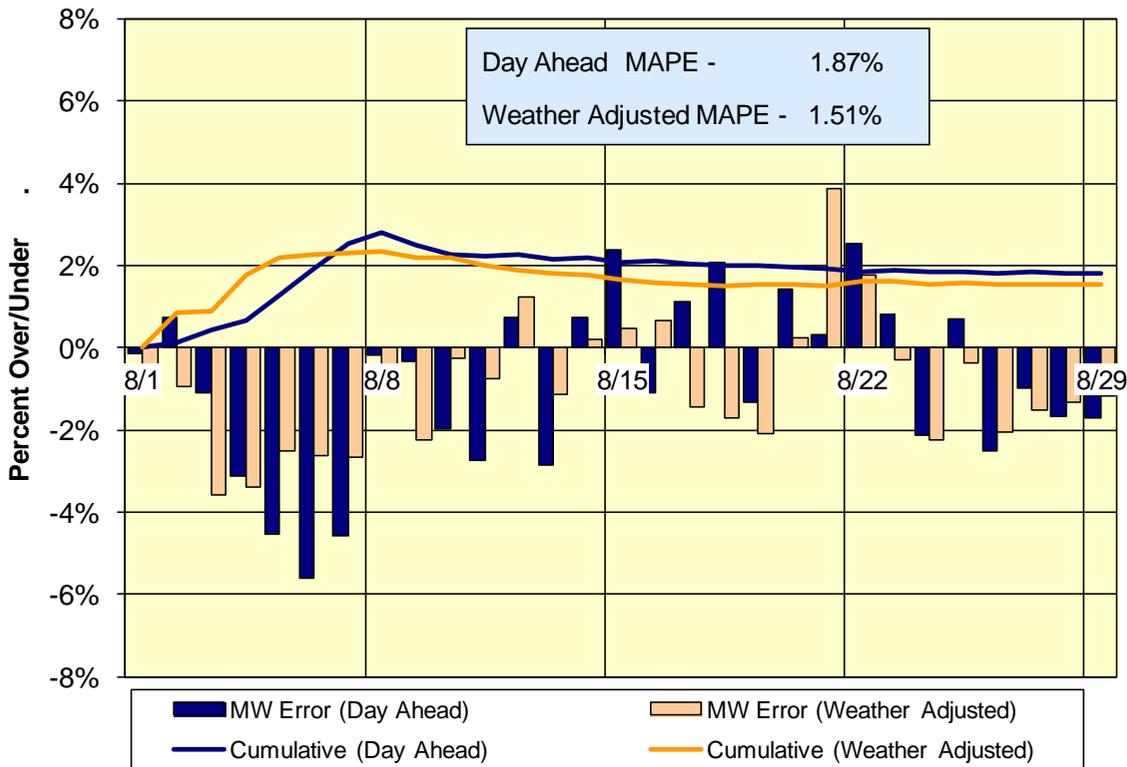
**NYISO Daily Peak Load - August 2016  
Actual vs. Weather-Adjusted Forecast**



**NYISO Daily Peak Load - August 2016  
Actual vs. Forecast**



### Day Ahead Peak Forecast - August 2016 Percent Error - Actual & Weather Adjusted



### Day-Ahead Forecast Accuracy - Cumulative Performance 2016 Year-to-Date



## Summary Description of Regulatory Filings, Investigations, Rulemakings and Related Orders in NYISO Matters – August 2016

<b>Filing Date</b>	<b>Filing Summary</b>	<b>Docket</b>	<b>Order Date</b>	<b>Order Summary</b>
06/20/2016	NYISO filing re: proposed tariff revisions concerning NYISO's cost allocation methodology for its reliability planning process	ER16-1968-000	08/12/2016	FERC letter order accepted the revisions effective 08/19/2016 , as requested
07/12/2016	NYISO and NYPA joint filing re: executed Large Generator Interconnection Agreement (SA 2276) among NYISO, NYPA and Jericho Rise Wind Farm	ER16-2183-000	08/17/2016	FERC letter order accepted the agreement effective 06/29/2016, as requested
08/01/2016	NYISO filing re: Major Emergency Report notifying FERC that an Emergency State existed in the NYCA on 07/30/2016	EY16-6-000		
08/08/2016	NYISO filing re: comments in response to the 06/22/2016 State Register NOPR in Consideration of NYISO's Western New York Proposed Public Policy Transmission Need Viability and Sufficiency Assessment	PSC Case No. 14-E-0454		
08/09/2016	NYISO 205 filing re: recovery of shortfalls in annual operating costs	ER16-2396-000		
08/11/2016	NYISO confidential filing to the NYPSC re: Quarterly Reliability Project Tracking Report (April 2016) that charts the current development status of proposed generation and transmission projects	PSC Matter No. 10-02007		
08/11/2016	NYISO confidential filing to the NYPSC re: Quarterly Reliability Project Tracking Report (July 2016) that charts the current development status of proposed generation and transmission projects	PSC Matter No. 10-02007		
08/12/2016	NYISO confidential filing to the NYPSC re: Reliability Commitment Data for the three-month period ending 07/31/2016	PSC Matter No. 10-02007		
08/19/2016	NYISO compliance filing re: establish procedures for allocating revenues received from the sale of Historic Fixed Price Transmission Congestion Contracts	ER16-2444-000		
08/25/2016	NYISO filing re: FERC Form 3-Q Quarterly Financial Report of electric utilities, licensees, and natural gas companies for 2016/Q2	No Docket No.		
08/30/2016	NYISO confidential filing to the NYPSC re: nuclear generator data	PSC Matter No. 10-02007		

08/31/2016	NYISO filing to the NYPSC re: response to data request concerning the proposed AC transmission upgrade public policy requirements projects	PSC Case No. 00-E-1380		
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