



Monthly Report

July 2017

Table of Contents

- **Operations Performance Metrics Report**
- **Market Operation's Report**
- **Daily Loads**
- **Regulatory Filings**

Operations Performance Metrics Monthly Report



July 2017 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 August 8, 2017.

Table of Contents

- ◆ **Highlights**
 - *Operations Performance*

- ◆ **Reliability Performance Metrics**
 - *Alert State Declarations*
 - *Major Emergency State Declarations*
 - *IROL Exceedance Times*
 - *Balancing Area Control Performance*
 - *Reserve Activations*
 - *Disturbance Recovery Times*
 - *Load Forecasting Performance*
 - *Wind Forecasting Performance*
 - *Wind Performance and Curtailments*
 - *Lake Erie Circulation and ISO Schedules*

- ◆ **Broader Regional Market Performance Metrics**
 - *PAR Interconnection Congestion Coordination Monthly Value*
 - *PAR Interconnection Congestion Coordination Daily Value*
 - *Regional Generation Congestion Coordination Monthly Value*
 - *Regional Generation Congestion Coordination Daily Value*
 - *Regional RT Scheduling - PJM Monthly Value*
 - *Regional RT Scheduling - PJM Daily Value*

- ◆ **Market Performance Metrics**
 - *Monthly Statewide Uplift Components and Rate*
 - *RTM Congestion Residuals Monthly Trend*
 - *RTM Congestion Residuals Daily Costs*
 - *RTM Congestion Residuals Event Summary*
 - *RTM Congestion Residuals Cost Categories*
 - *DAM Congestion Residuals Monthly Trend*
 - *DAM Congestion Residuals Daily Costs*
 - *DAM Congestion Residuals Cost Categories*
 - *NYCA Unit Uplift Components Monthly Trend*
 - *NYCA Unit Uplift Components Daily Costs*
 - *Local Reliability Costs Monthly Trend & Commitment Hours*
 - *TCC Monthly Clearing Price with DAM Congestion*
 - *ICAP Spot Market Clearing Price*
 - *UCAP Awards*

July 2017 Operations Performance Highlights

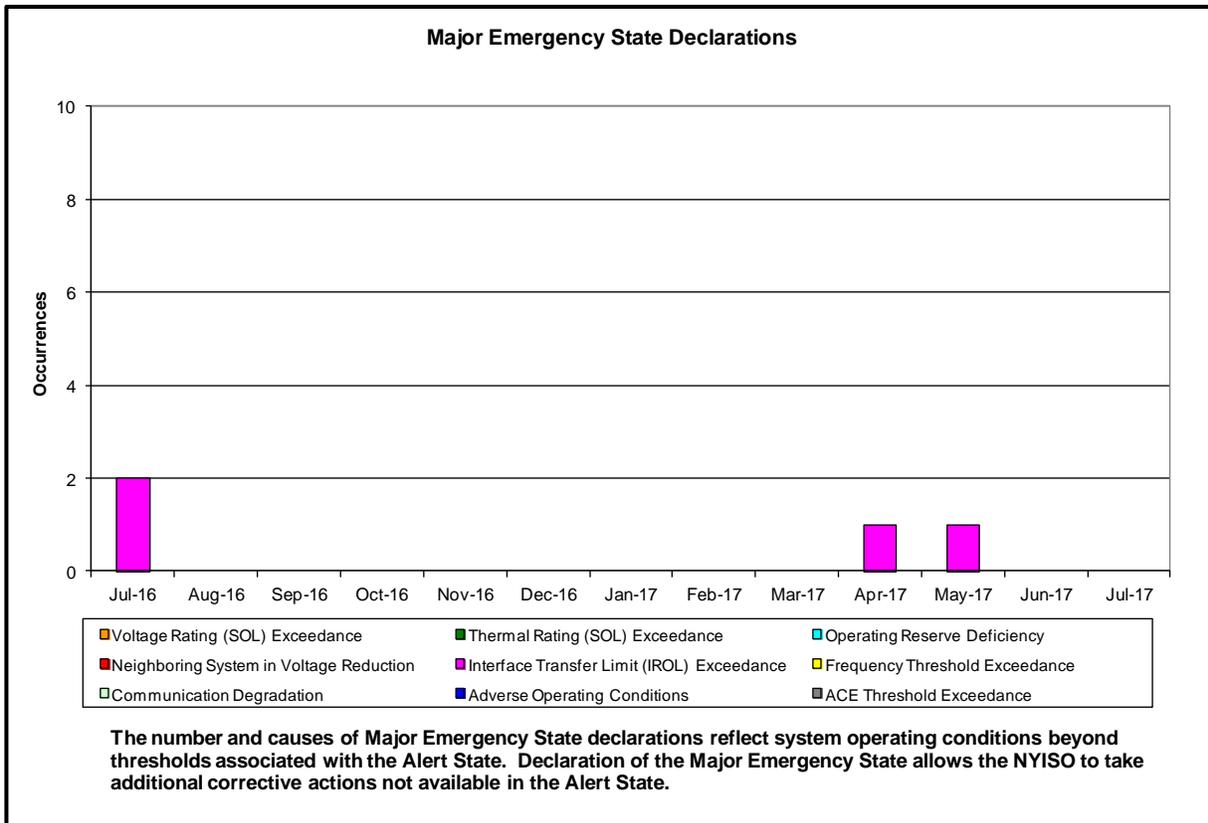
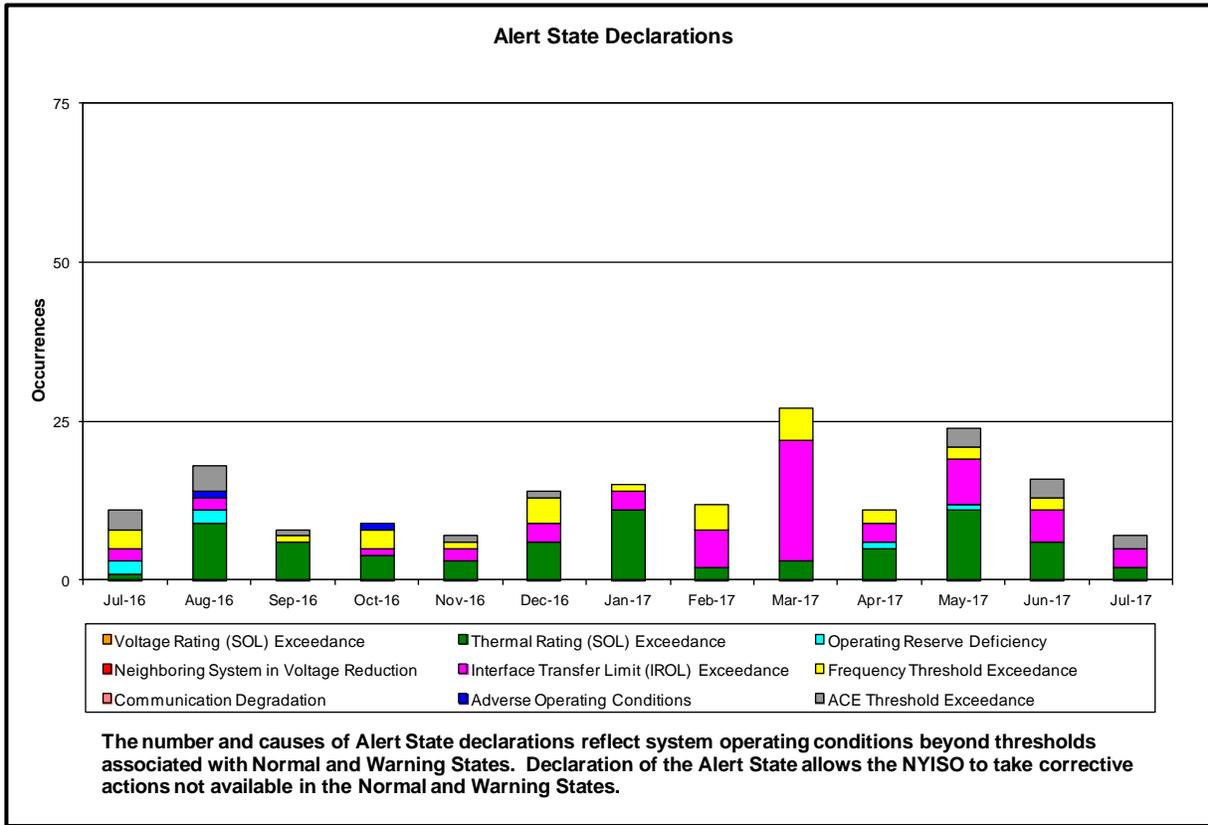
- Peak load of 29,699 MW occurred on 07/19/2017 HB 17
- All-time summer capability period peak load of 33,956 MW occurred on 7/19/2013 HB 16
- 13.9 hours of Thunder Storm Alerts were declared
- 0.5 hours of NERC TLR level 3 curtailment
- The Auburn Transmission project which mitigates NYSEG’s need to commit a Cayuga/Milliken unit for local reliability was completed on 7/12/2017.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

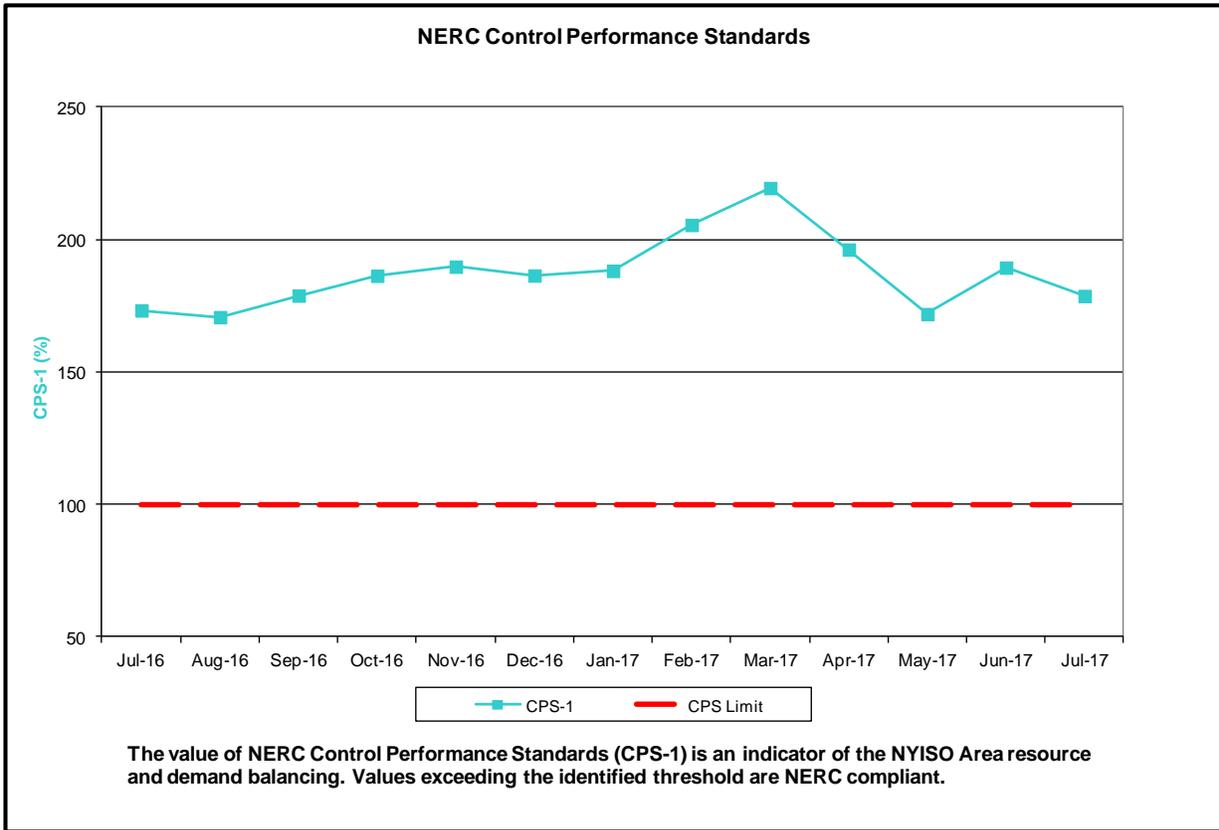
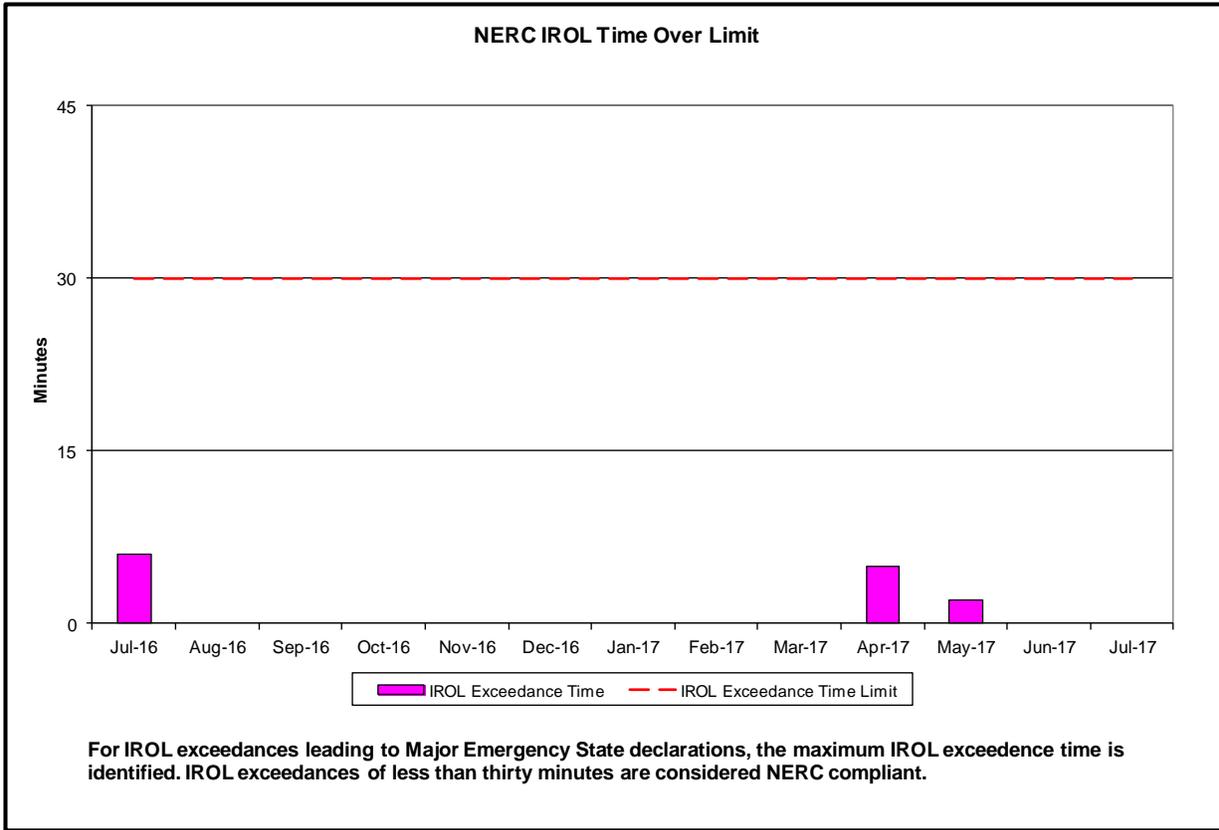
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$0.08	\$8.87
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.30)	(\$0.65)
NY Savings from NE-NY Coordinated Transaction Scheduling	(\$0.18)	(\$0.52)
Total NY Savings	(\$0.40)	\$7.70
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.31	\$1.88
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.13	\$0.73
Total Regional Savings	\$0.44	\$2.61

- Statewide uplift cost monthly average was (\$0.54)/MWh
- The following table identifies the Monthly ICAP spot market prices by locality and price delta.

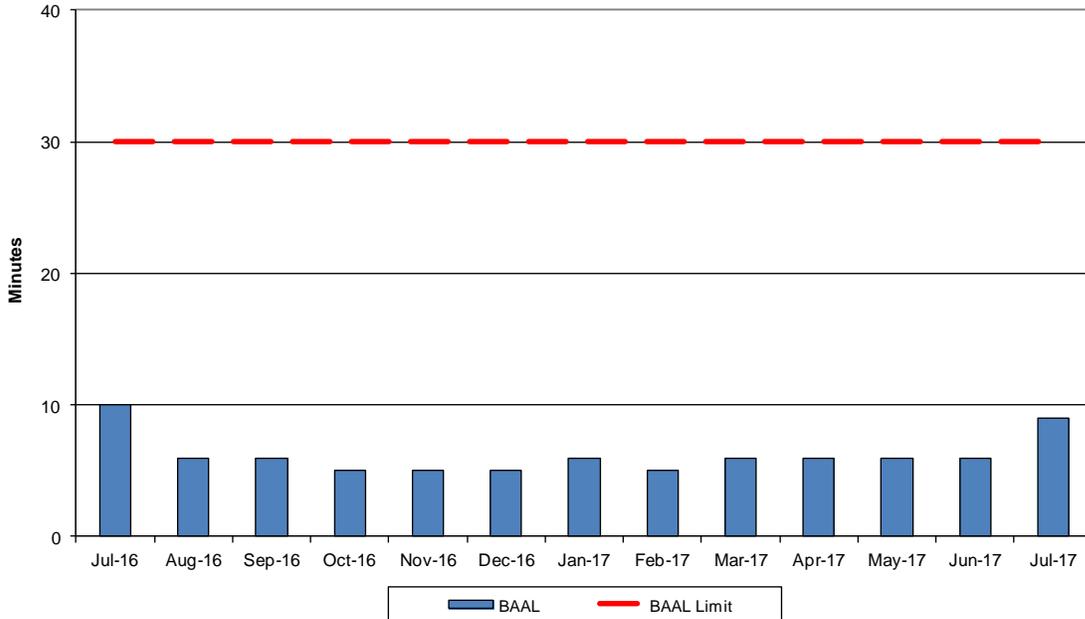
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
August 2017 Spot Price	\$2.18	\$9.69	\$9.85	\$6.67
July 2017 Spot Price	\$2.26	\$9.75	\$9.86	\$6.69
Delta	(\$0.08)	(\$0.06)	(\$0.01)	(\$0.02)

- Reliability Performance Metrics



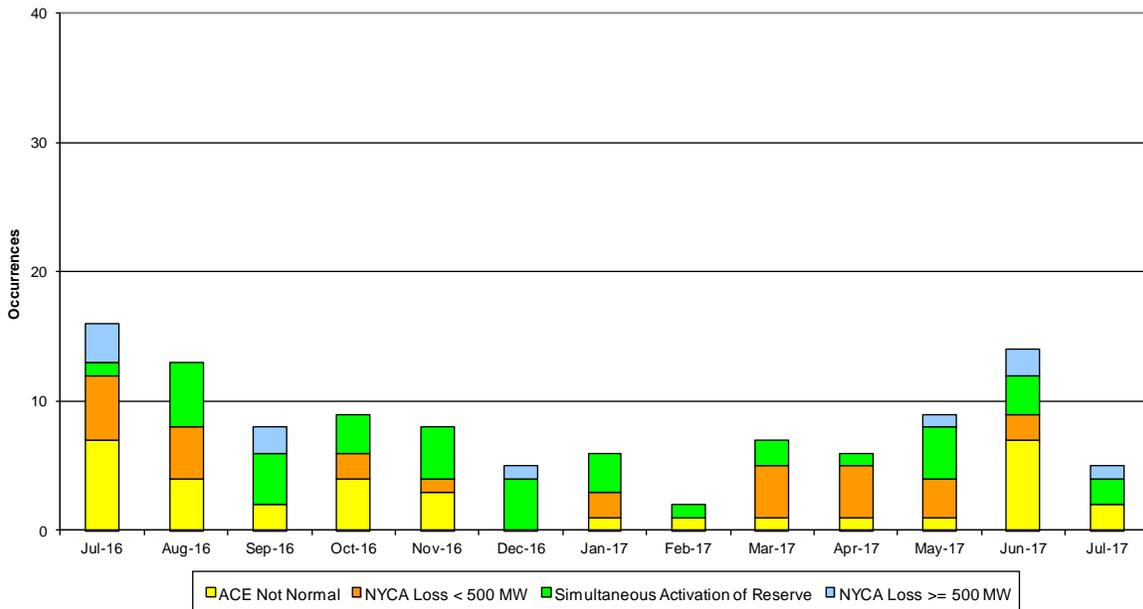


NERC Balancing Authority ACE Limit Standard



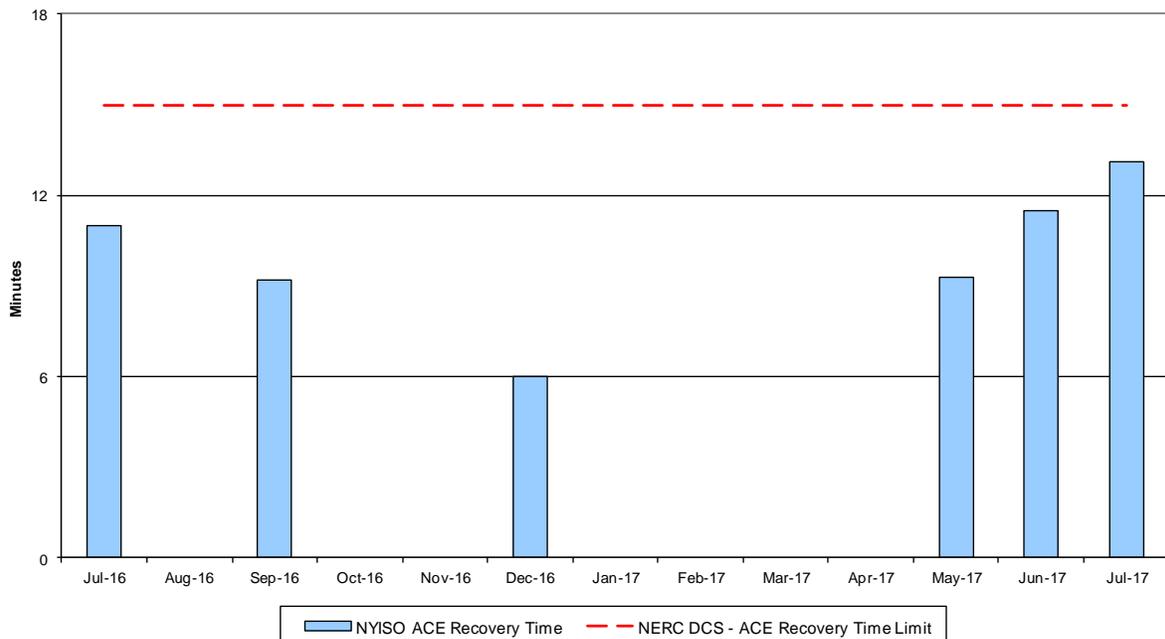
The amount of time the clock-minute average ACE exceeds the clock-minute Balancing Authority ACE Limit (BAAL) is an indicator of the NYISO Area resource and demand balancing. The maximum BAAL exceedance time is identified. BAAL exceedances of less than 30 consecutive clock-minutes are NERC compliant.

Reserve Activations



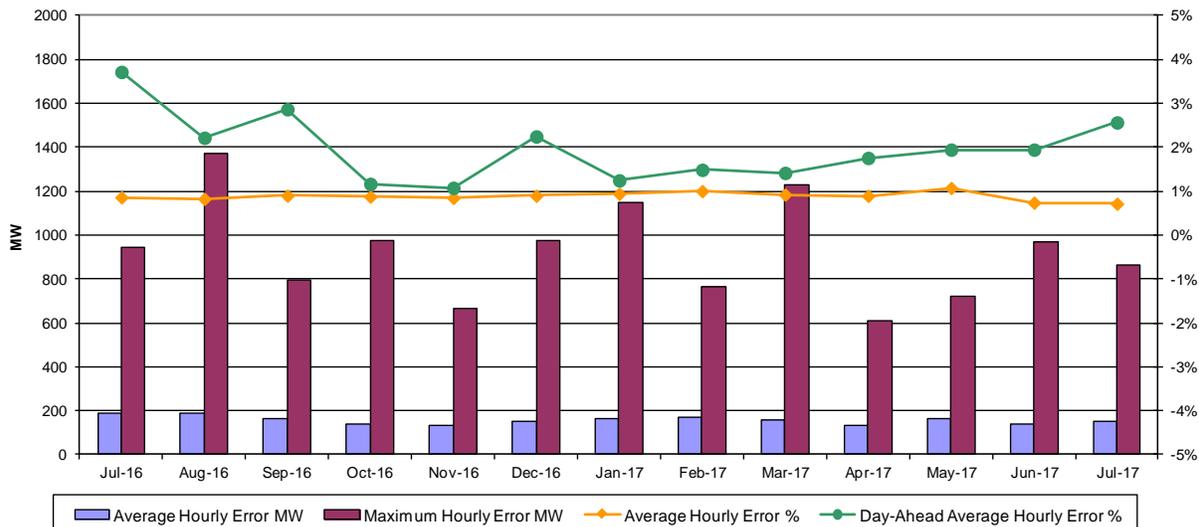
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.

DCS Event Time to ACE Recovery

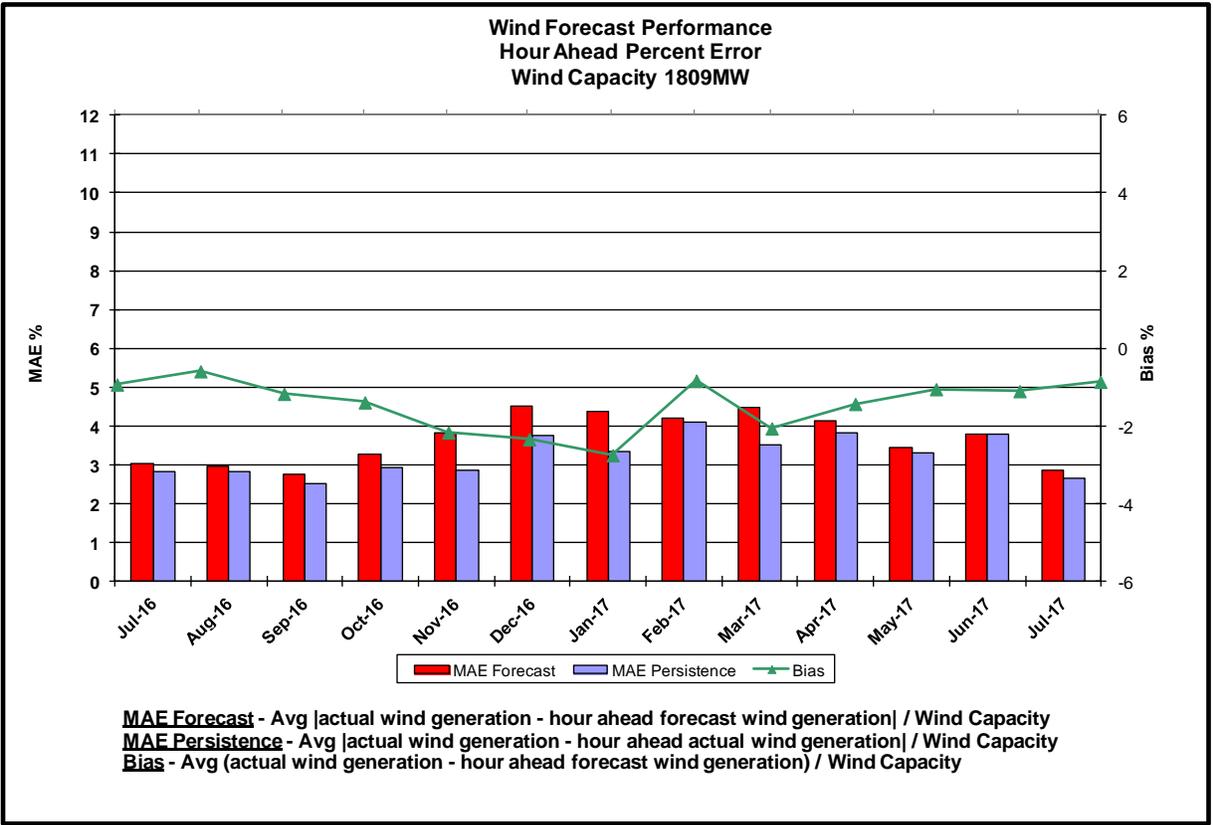
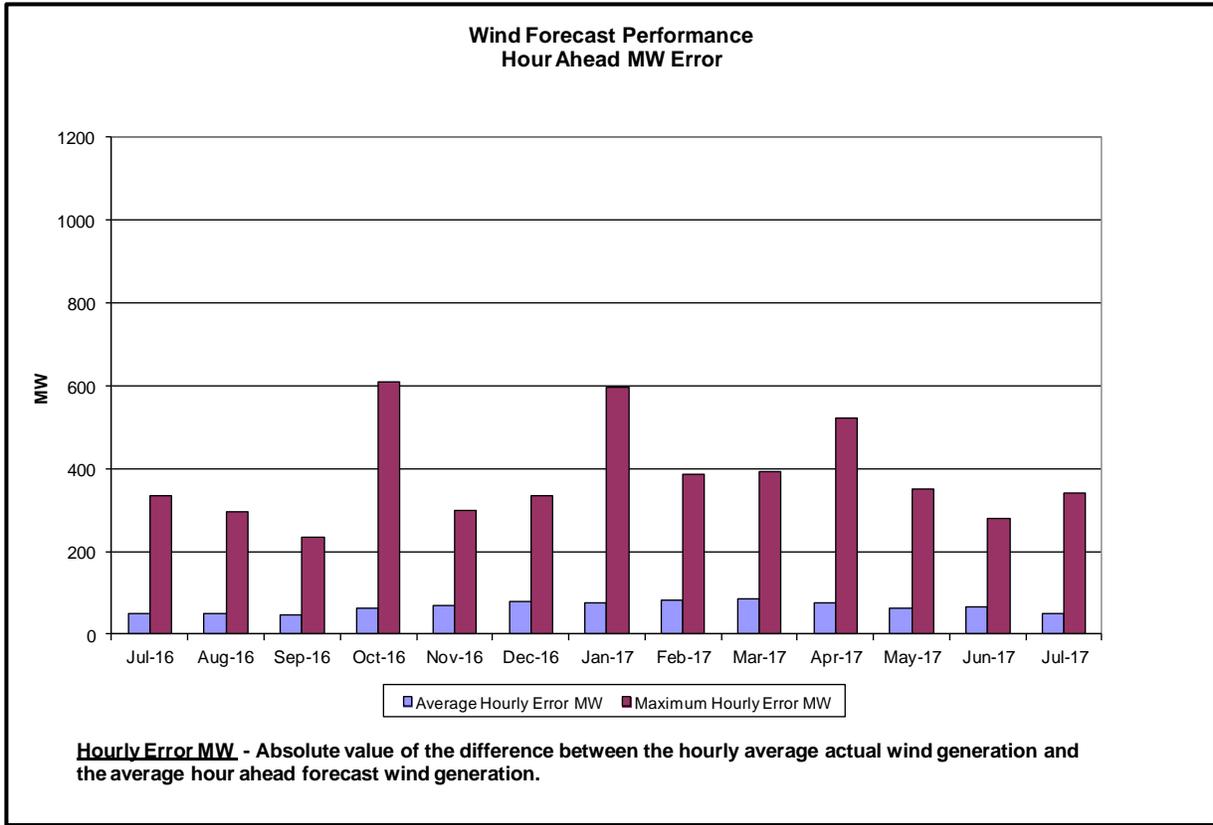


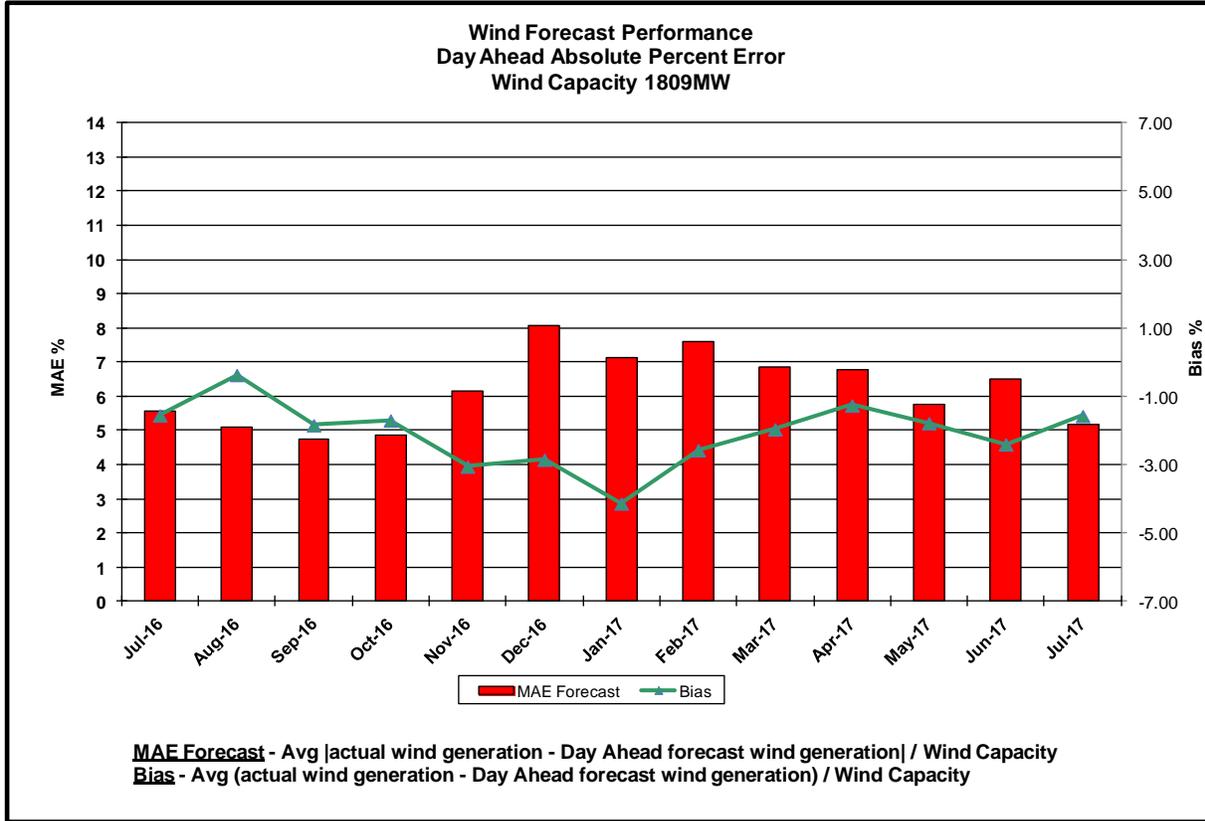
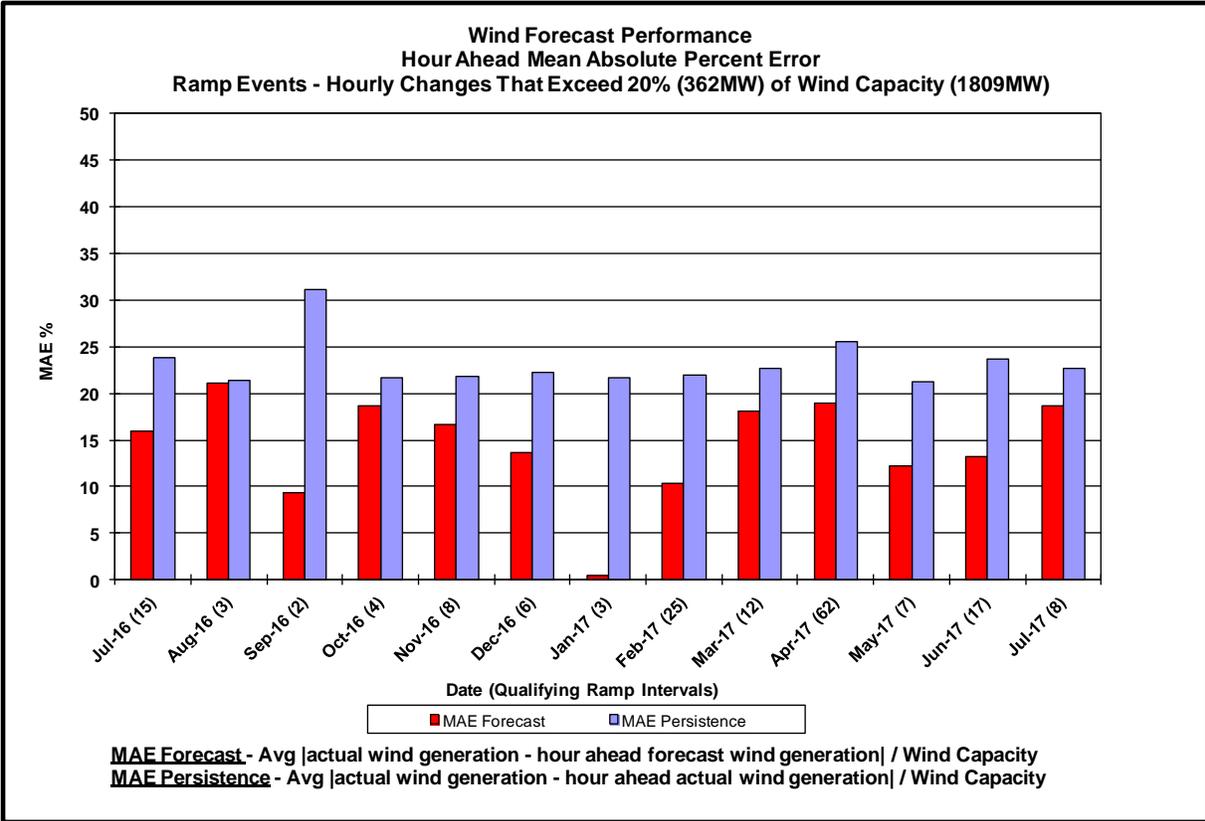
For NYISO initiated Reportable Disturbances, the maximum ACE recovery time is identified. Recovery times of less than 15 minutes are considered NERC compliant.

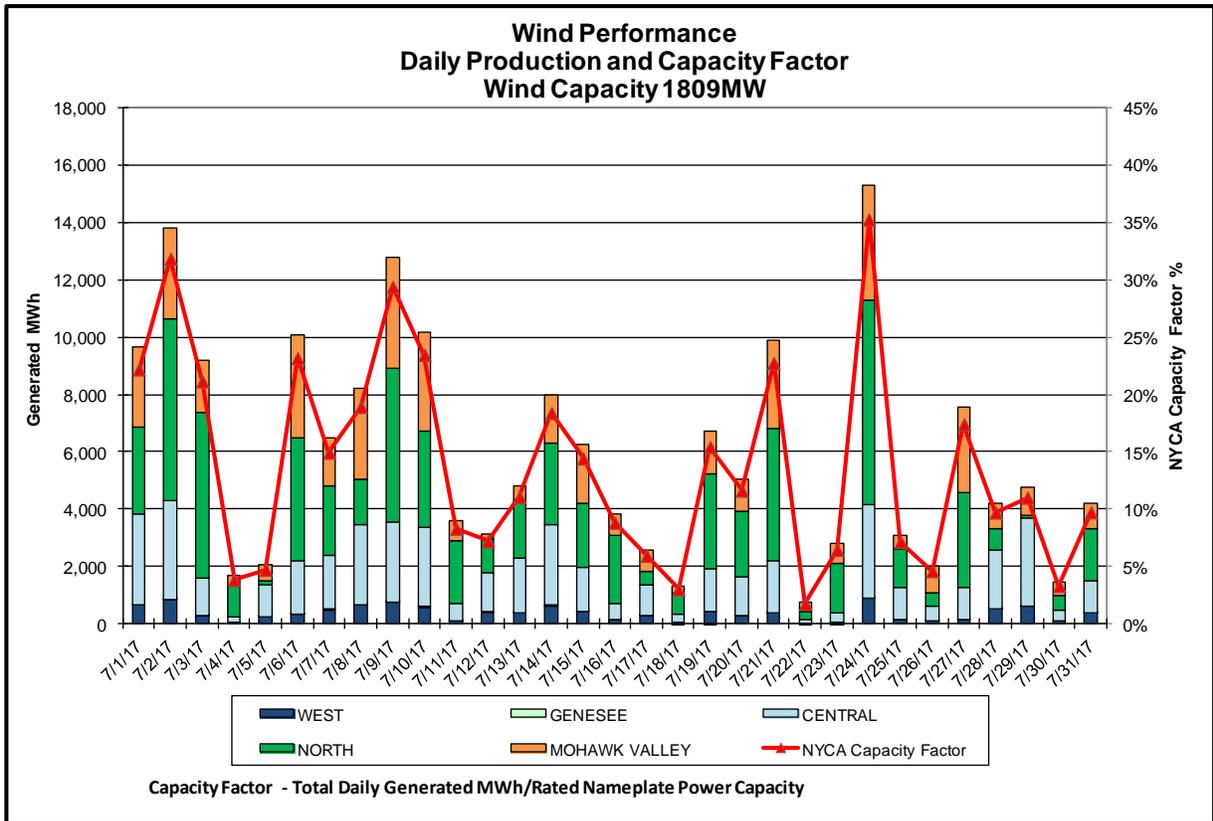
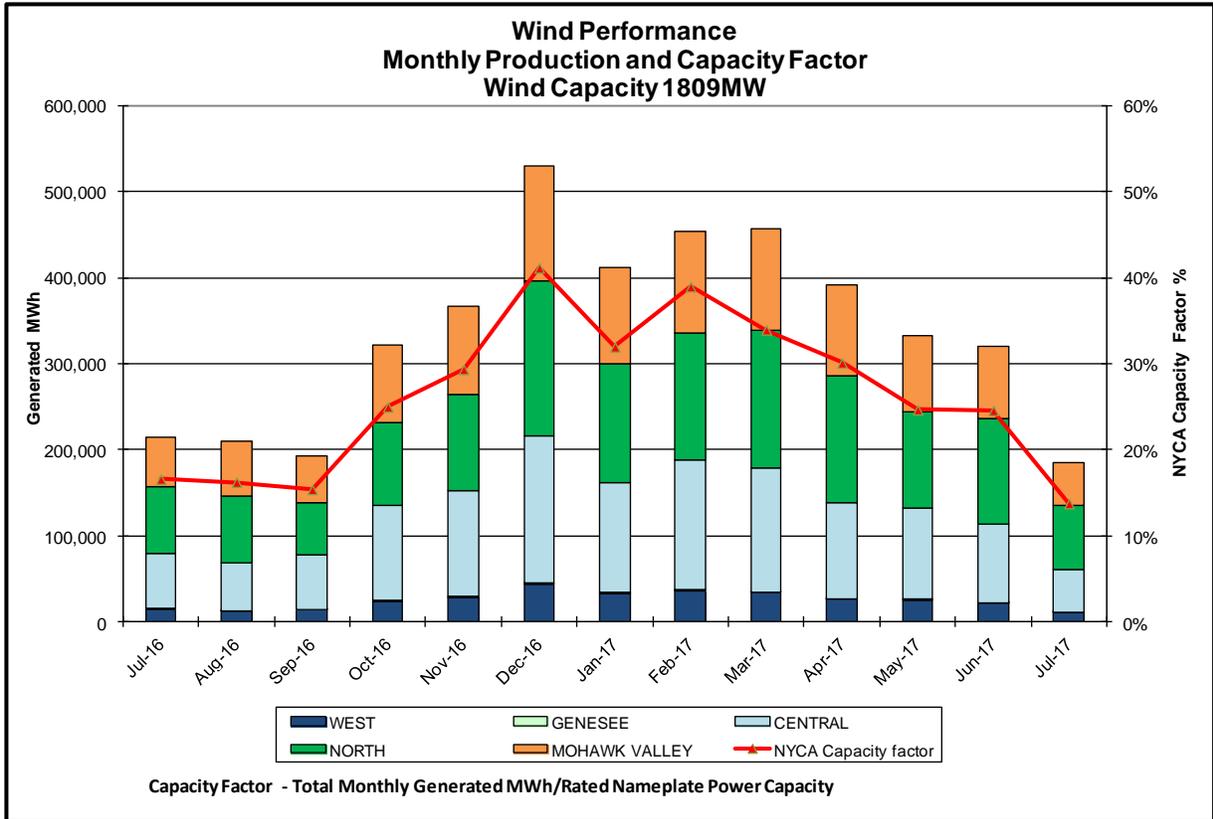
Load Forecast Performance

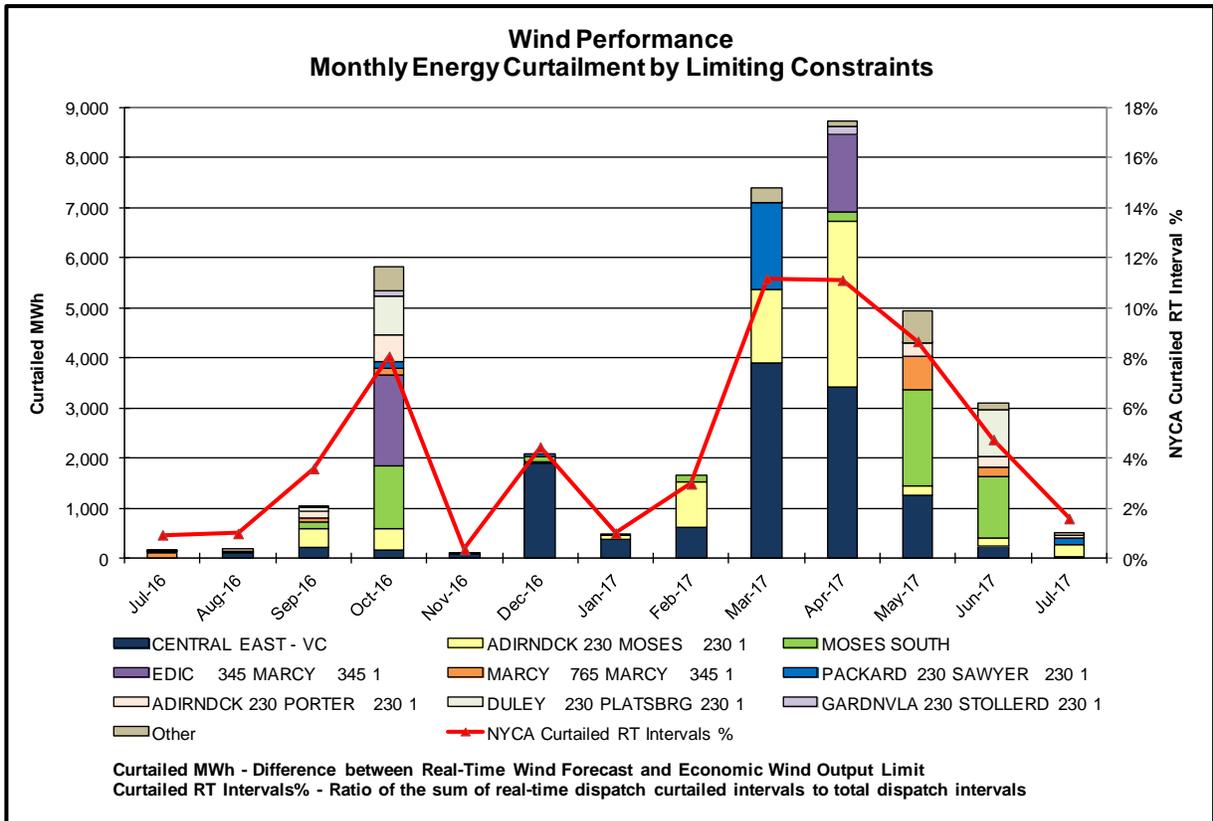
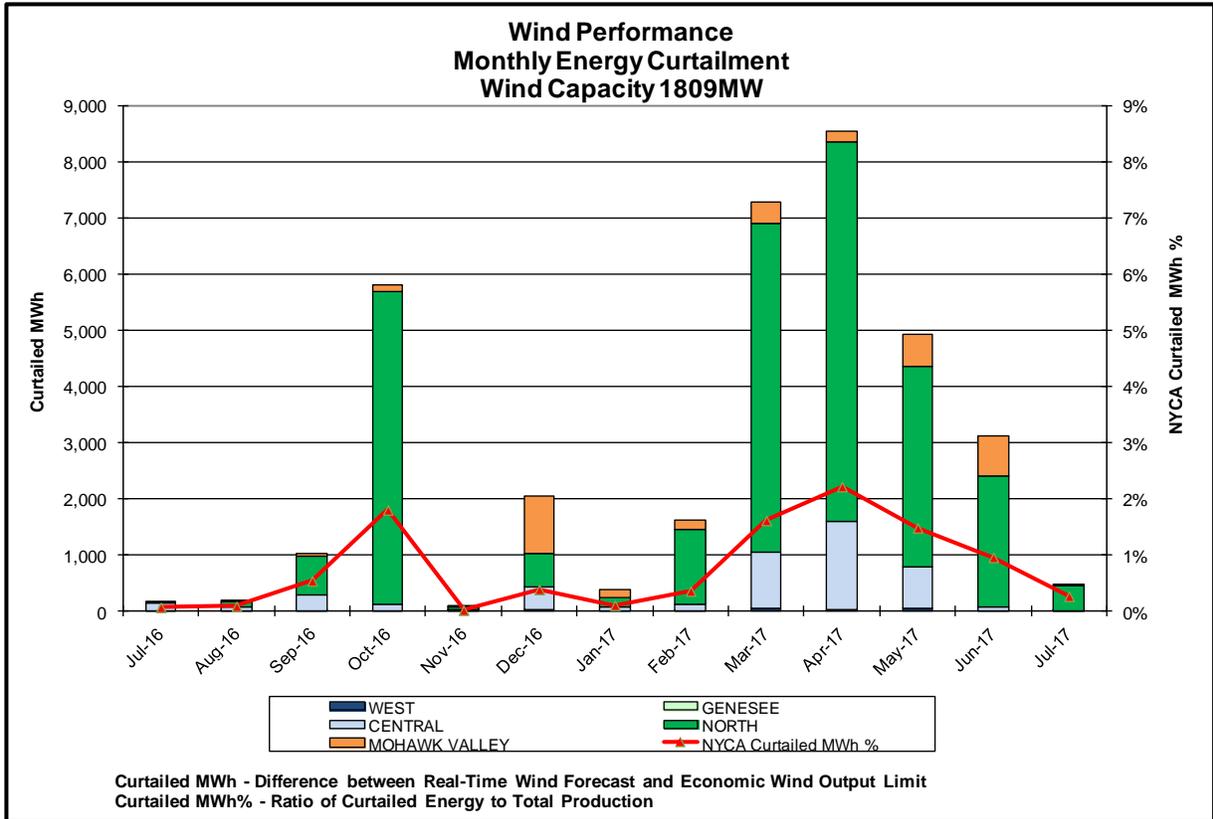


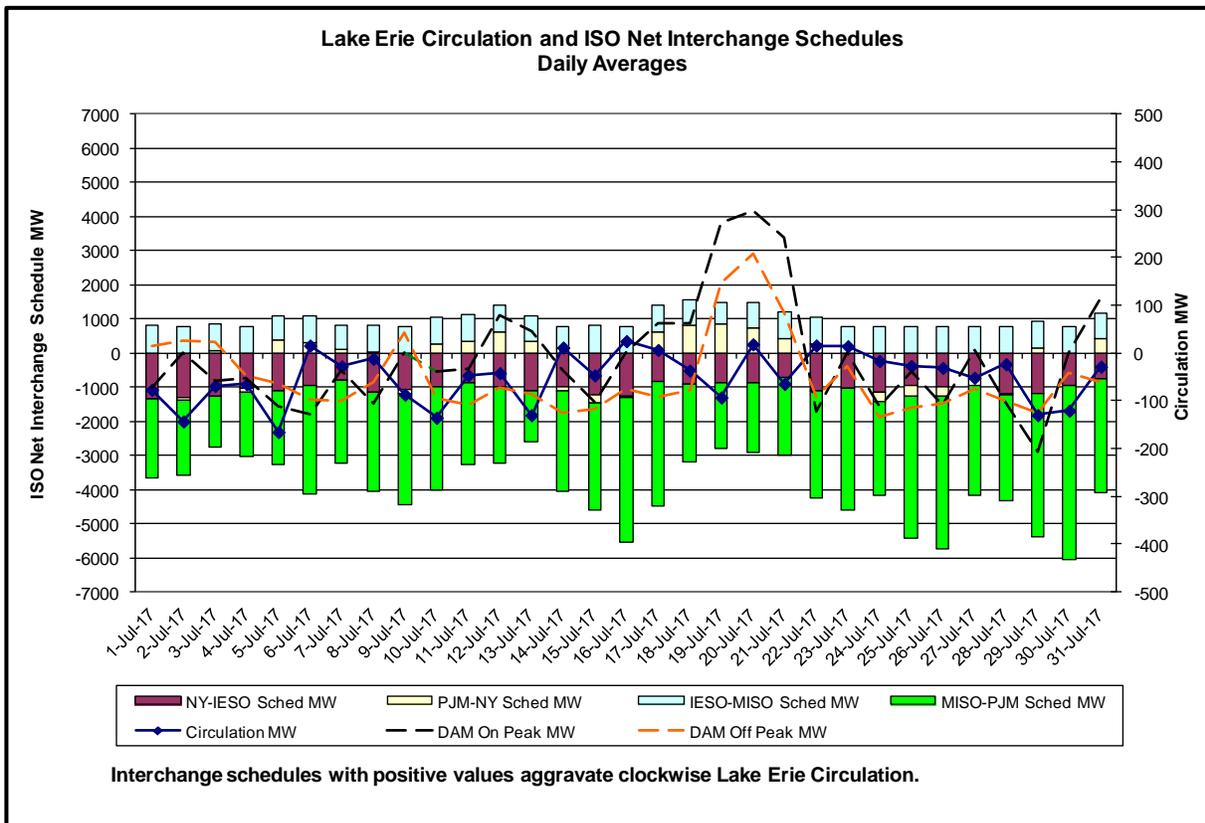
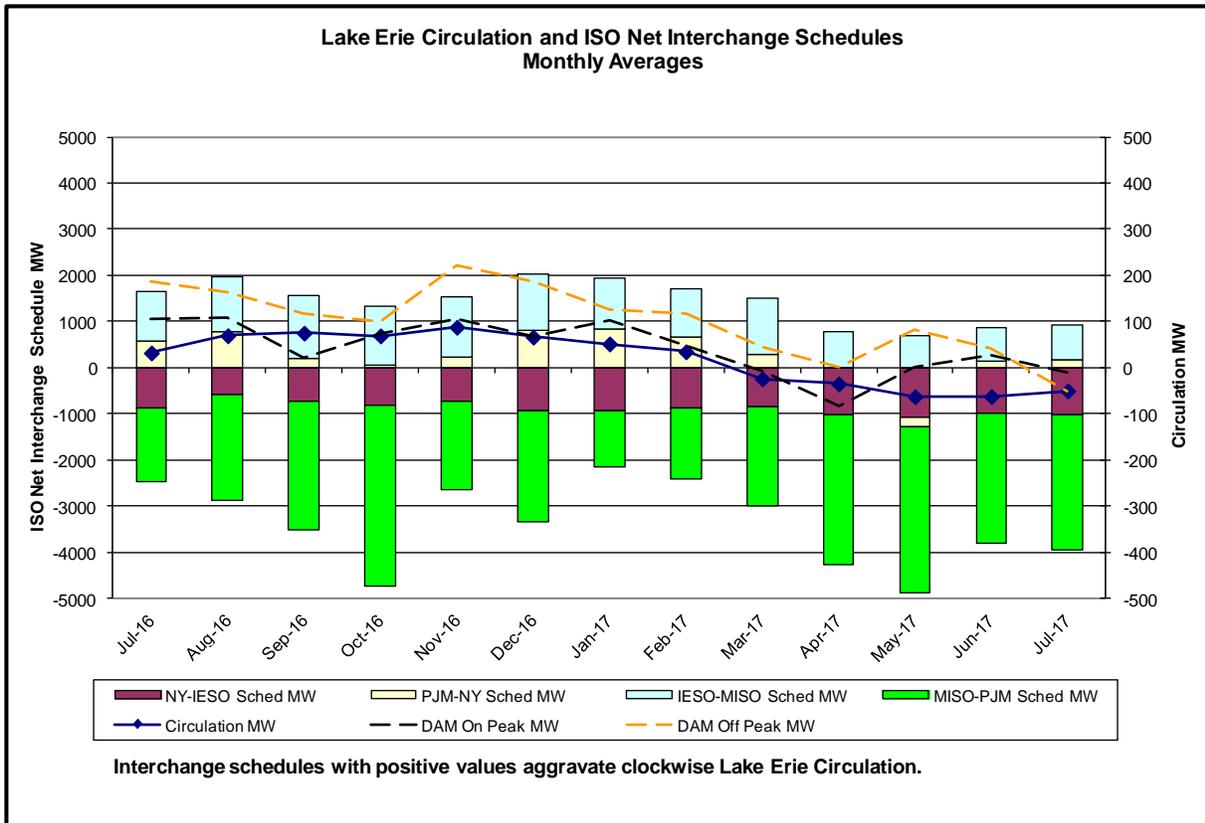
Hourly Error MW - Absolute value of the difference between the hourly average actual load demand and the average hour ahead forecast load demand.
Average Hourly Error % - Average value of the ratio of hourly average error magnitude to hourly average actual load demand.
Day-Ahead Average Hourly Error % - Average across all hours of the month of the absolute value of the difference between actual load demand and the Day-Ahead forecast load demand, divided by the actual load demand.



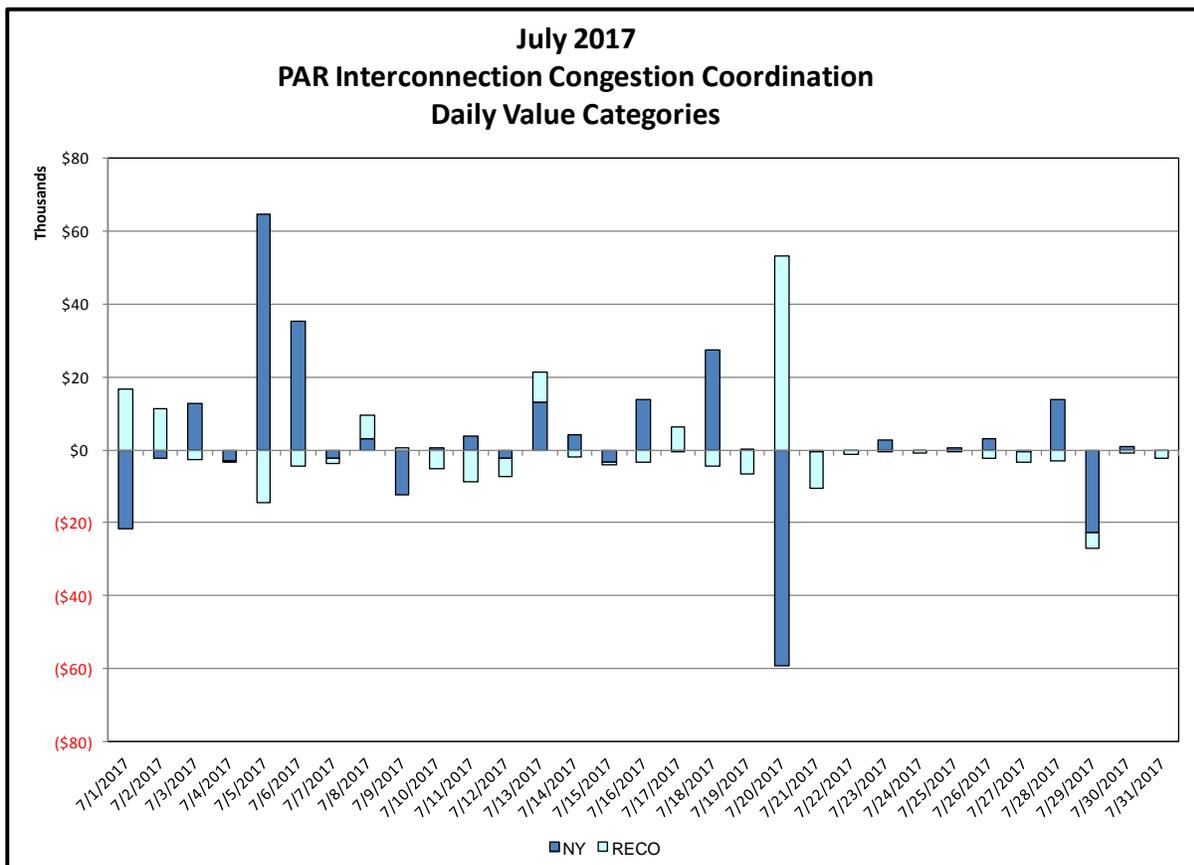
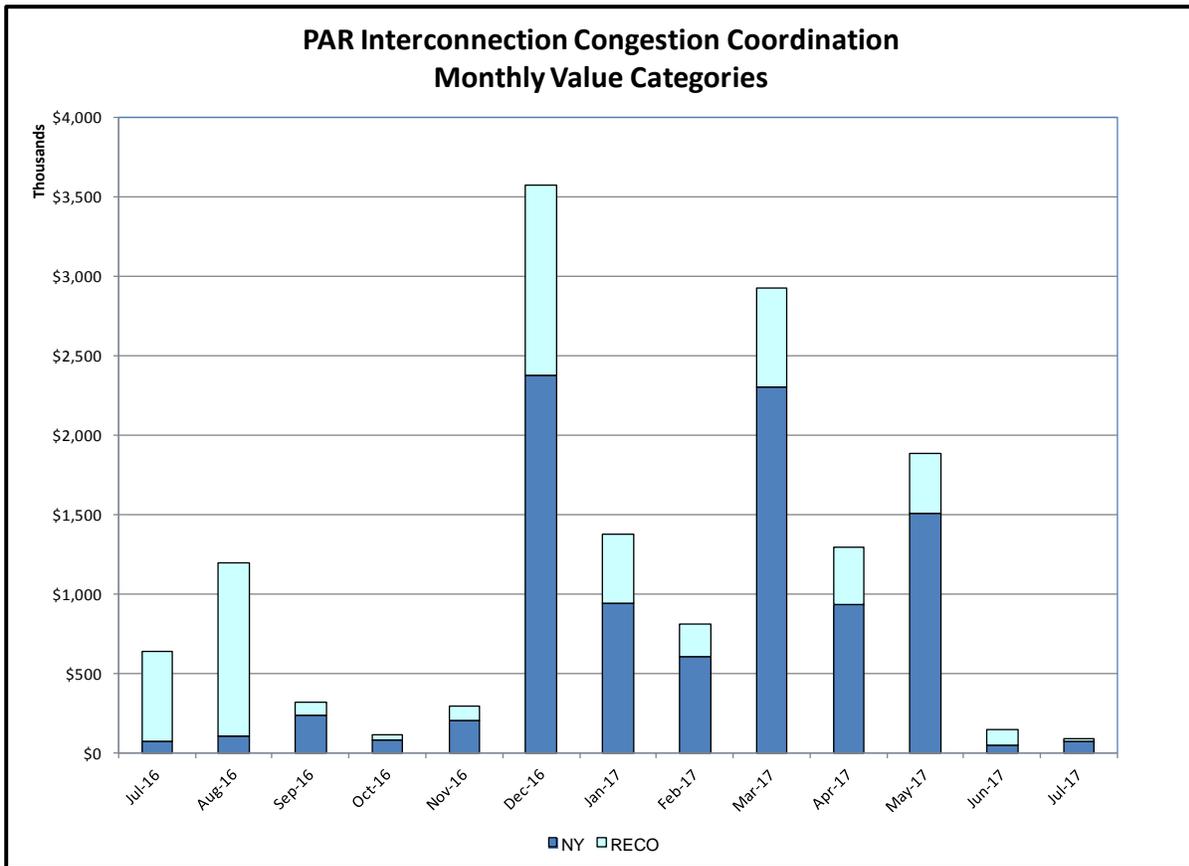






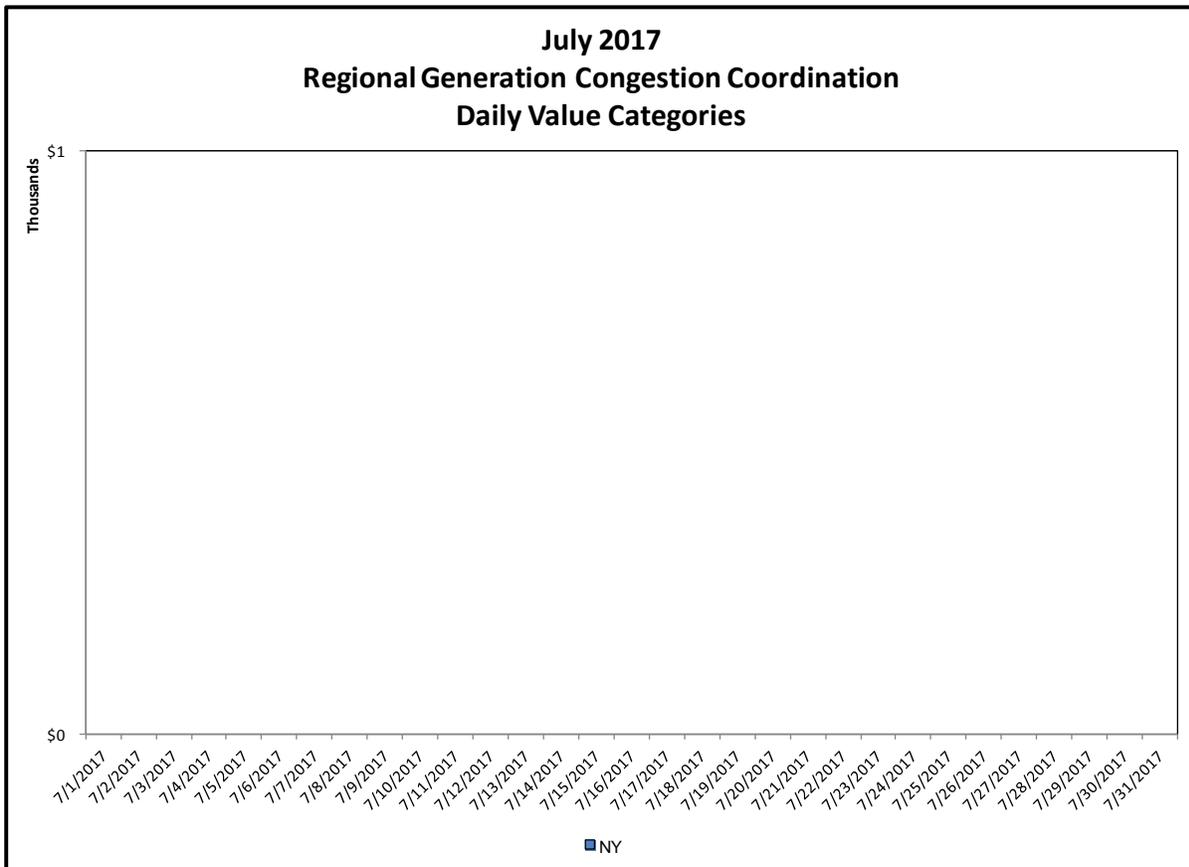
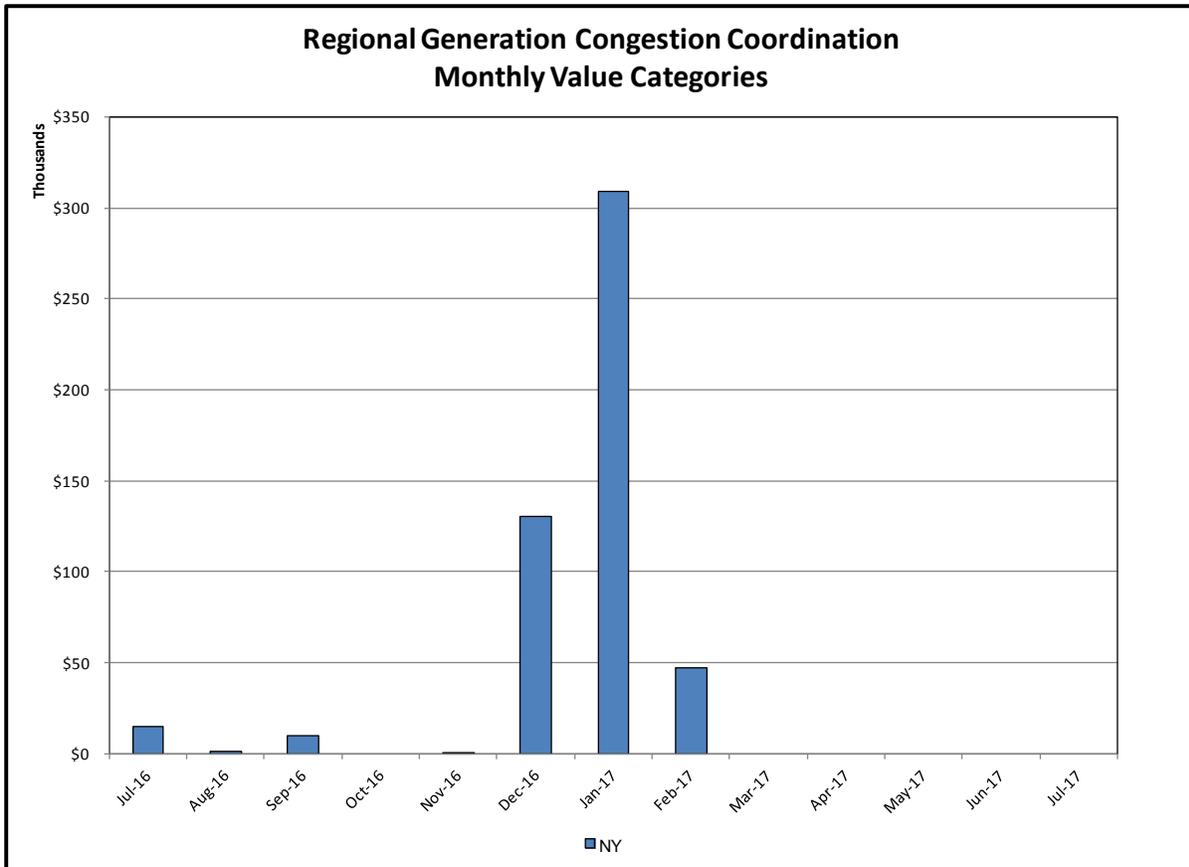


Broader Regional Market Performance Metrics



PAR Interconnection Congestion Coordination

<u>Category</u>	<u>Description</u>
NY	Represents the value NY realizes from Market-to-Market PAR 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 Interconnection PAR Target levels, excluding RECO on the Ramapo PARs). This is net of any settlements to PJM when they are congested.
RECO	Represents the value of PJM's obligation to deliver 80% of service to RECO load over Ramapo 5018. This includes (1) the estimated reduction in NYCA congestion due to the PJM delivery of RECO over Ramapo 5018, plus (2) PJM compensation to NY for NYCA congestion for the under-delivery or inability to deliver service to RECO load over Ramapo 5018.



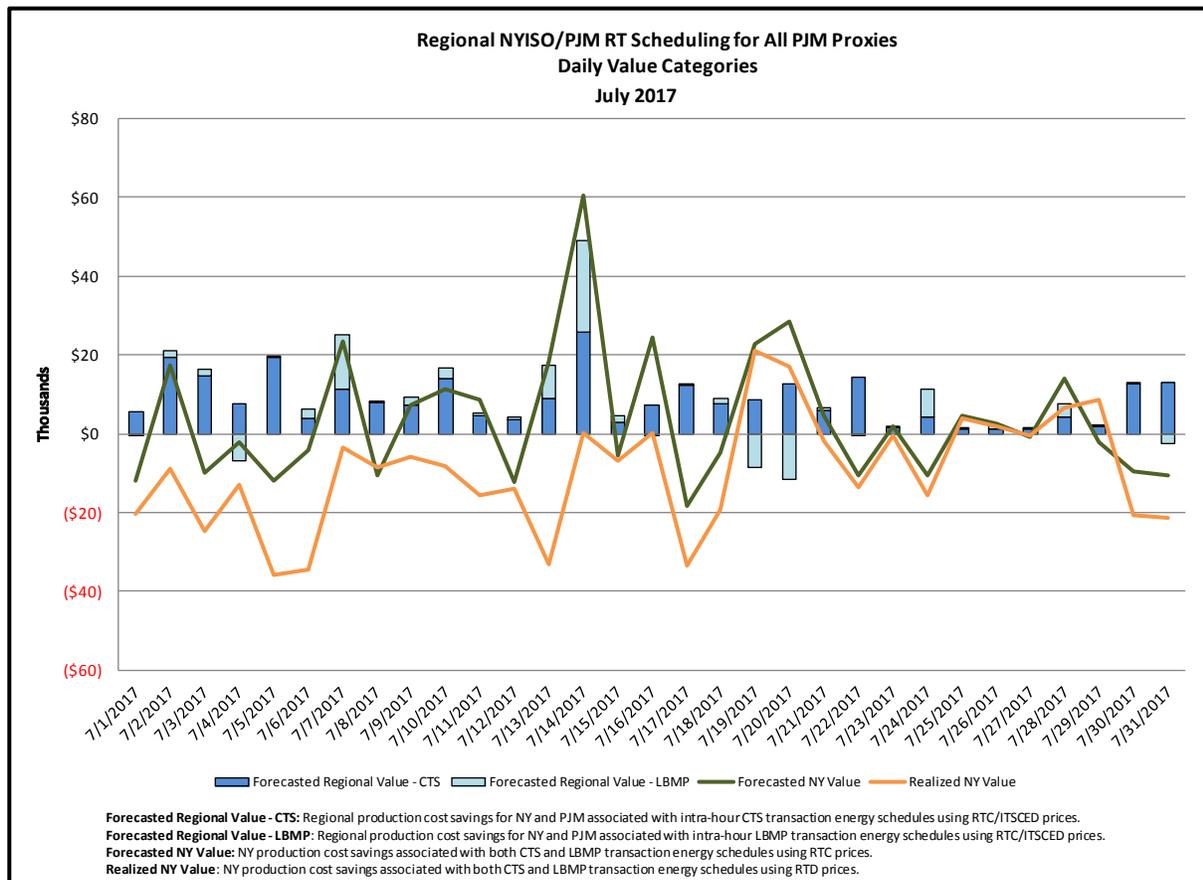
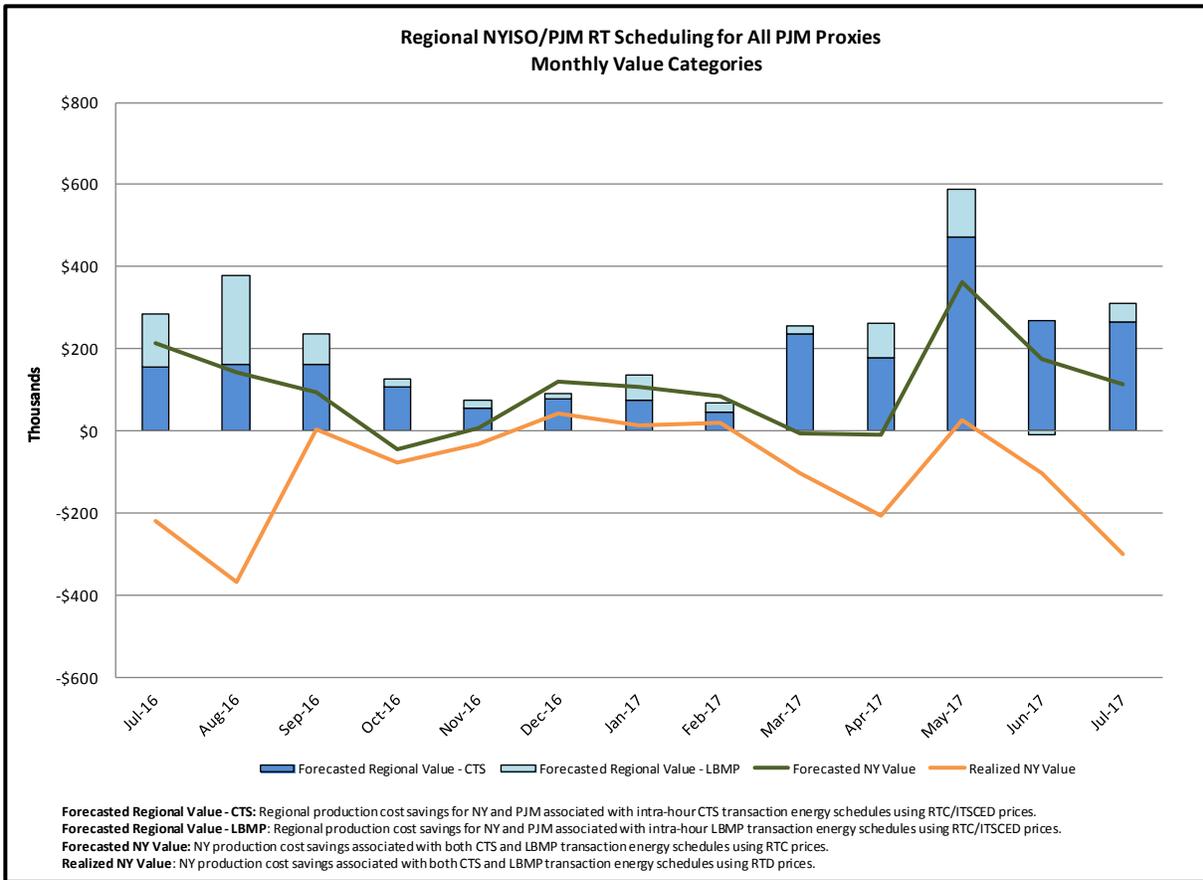
Regional Generation Congestion Coordination

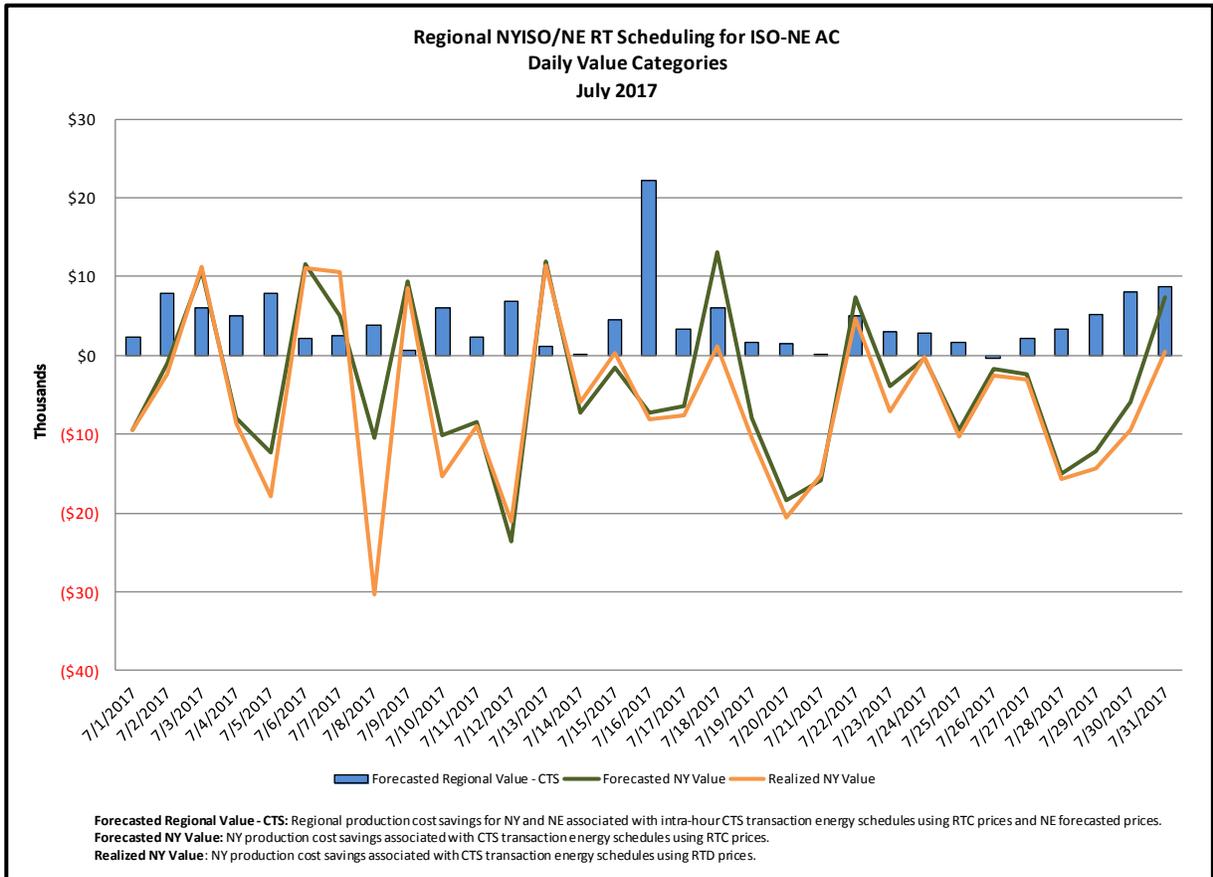
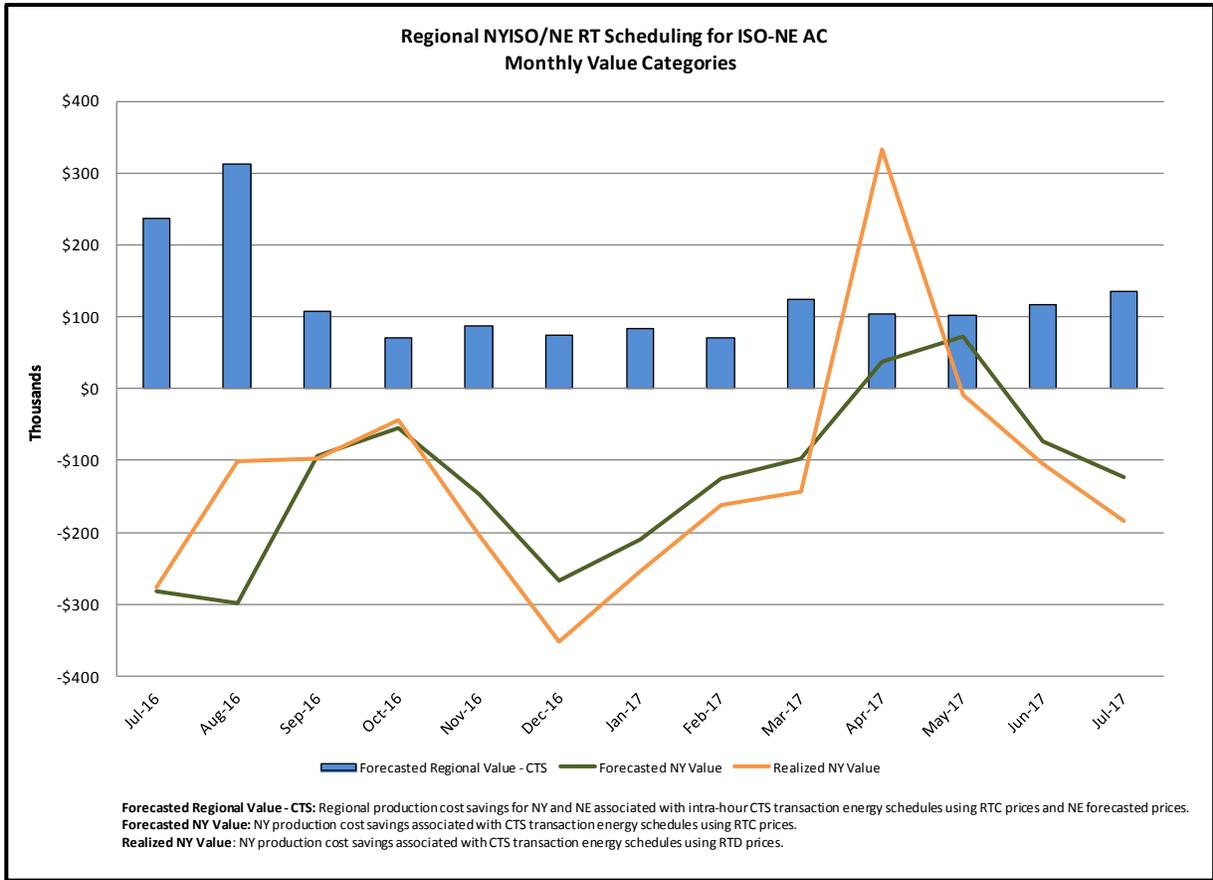
Category

NY

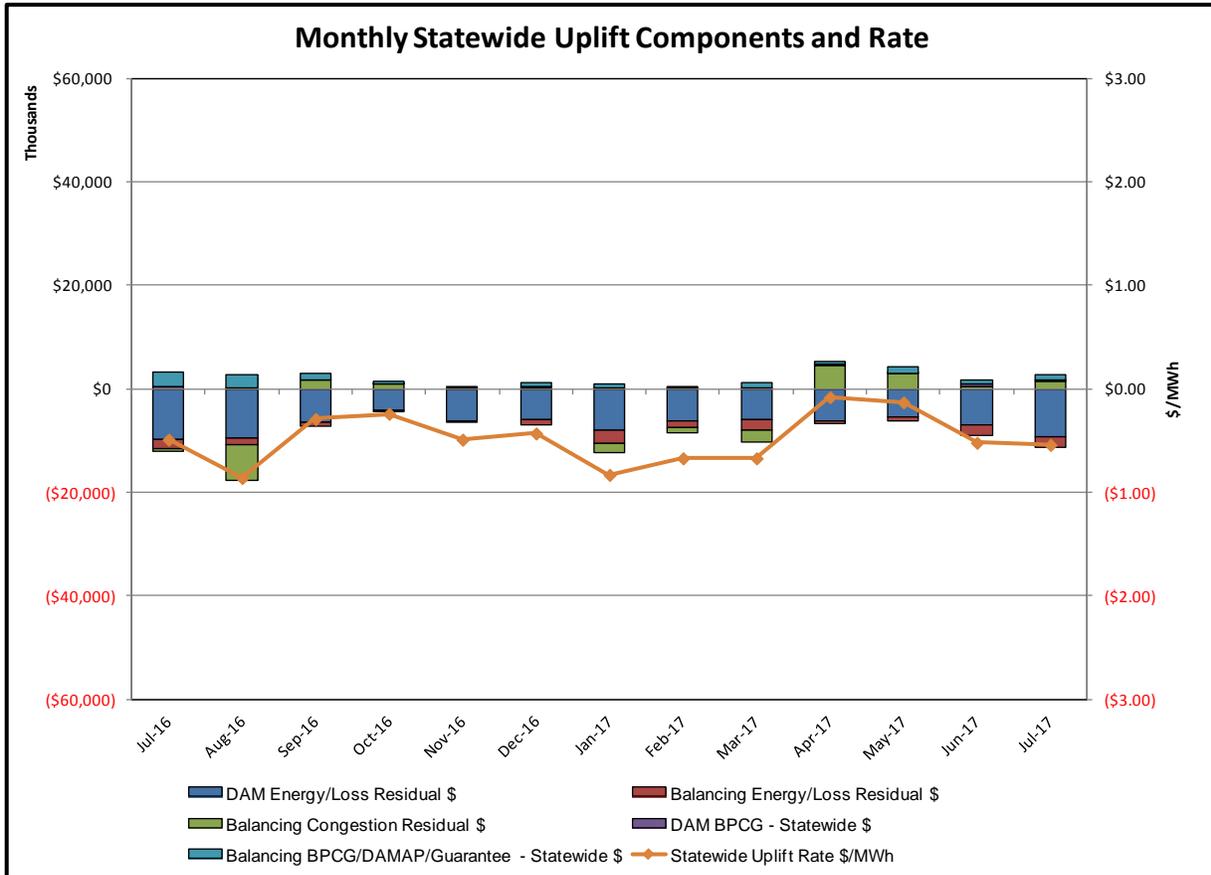
Description

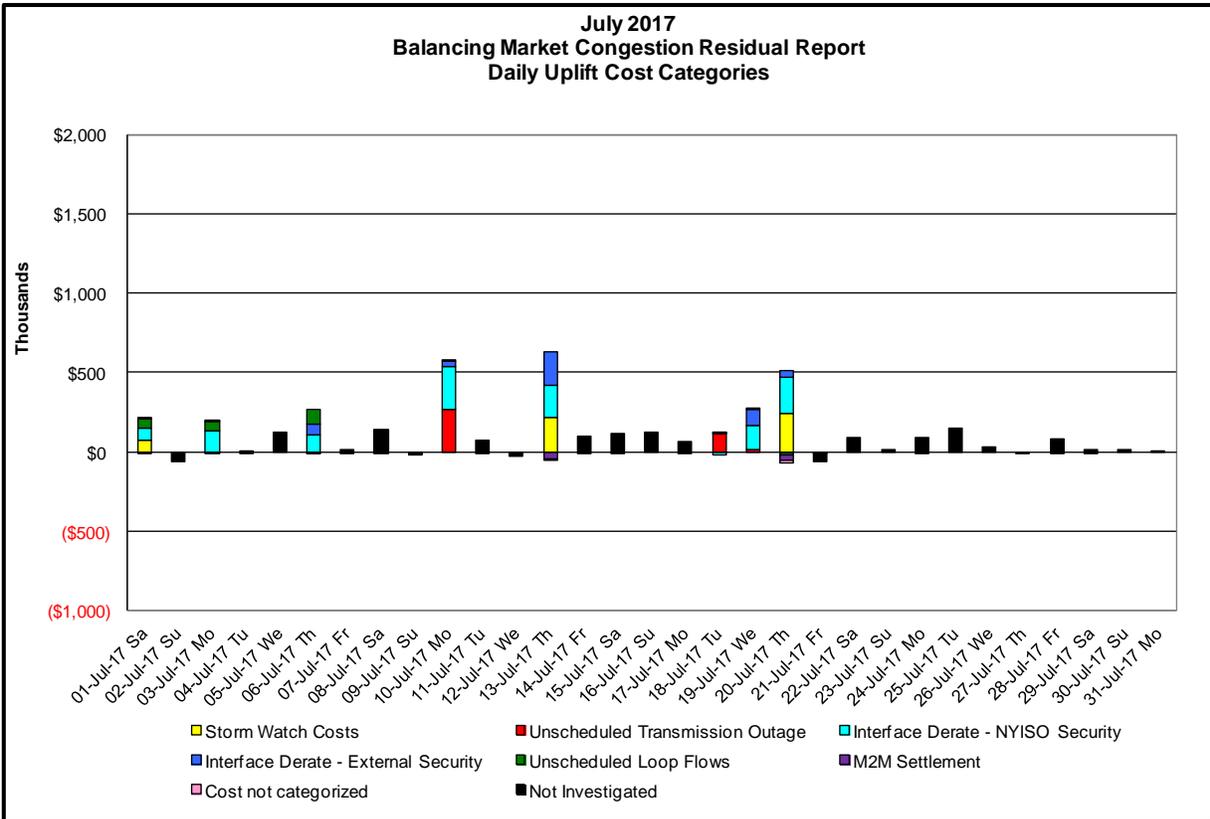
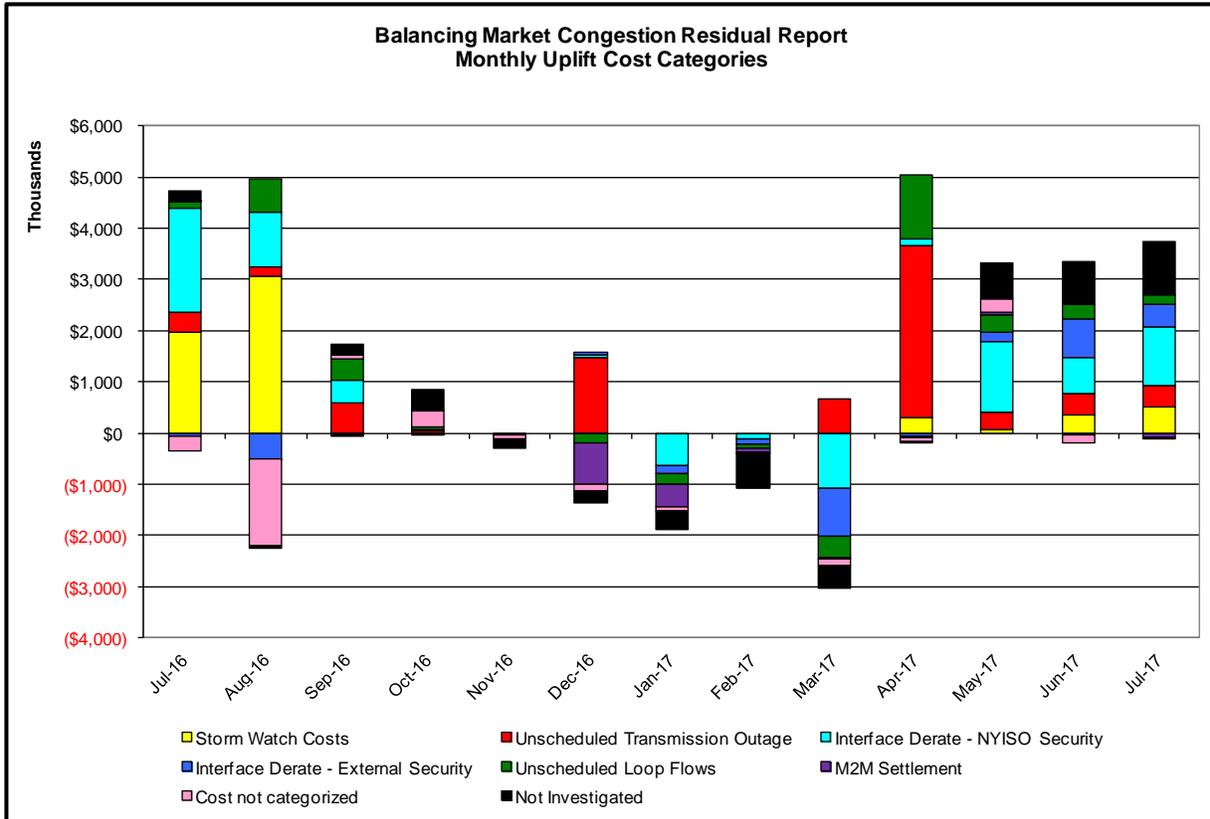
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





Market Performance Metrics





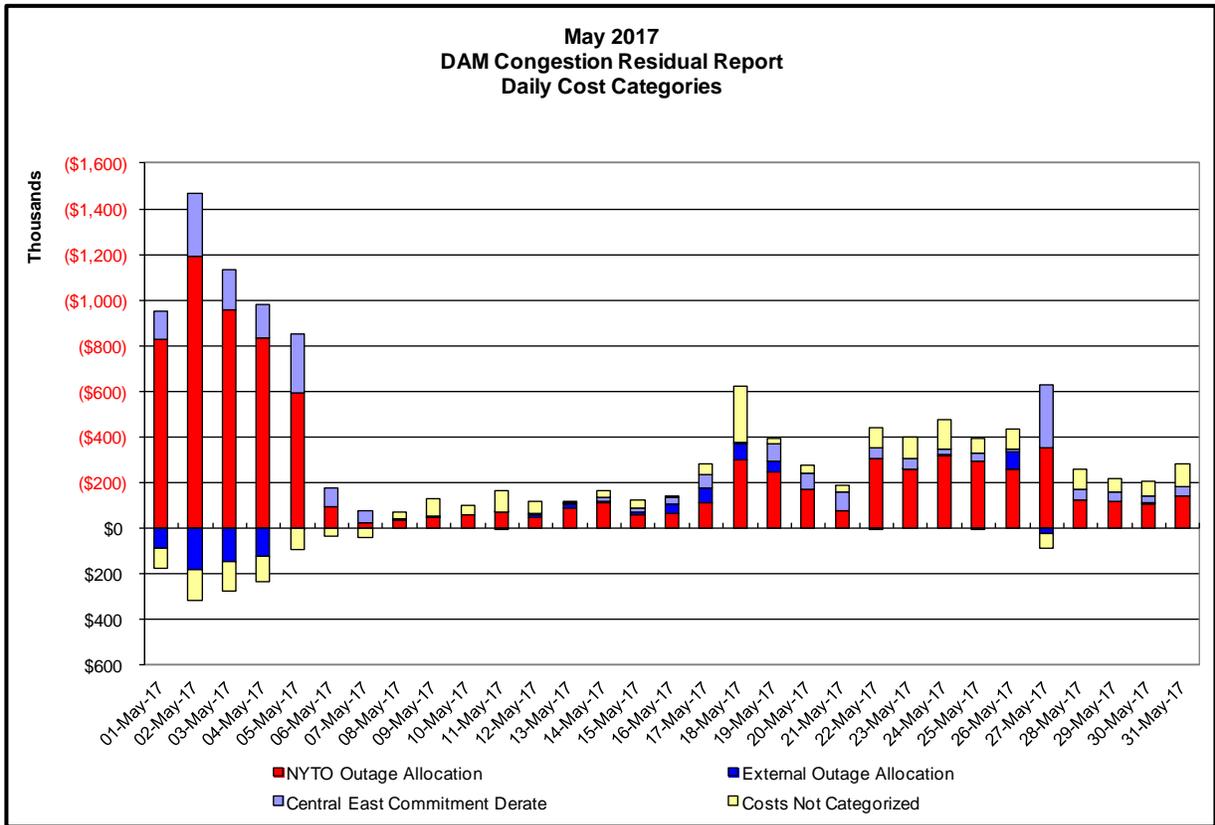
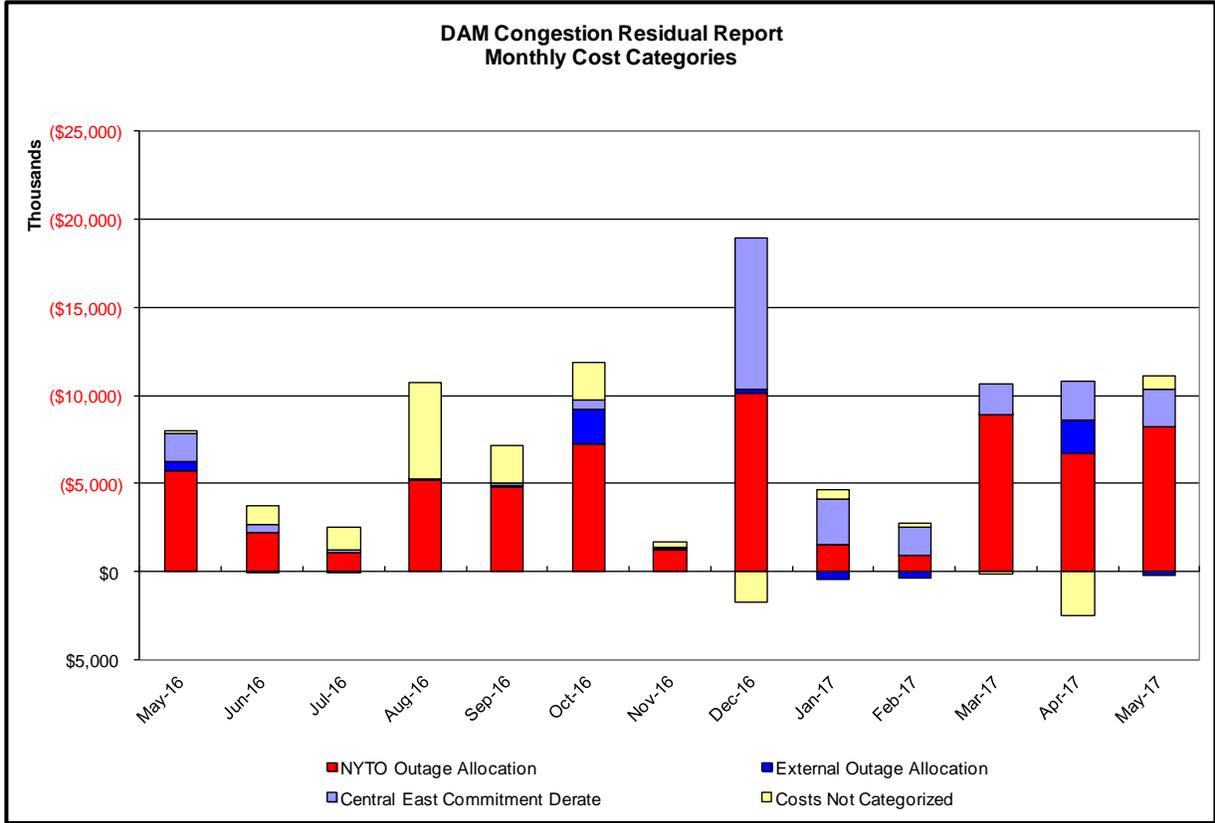
Day's investigated in July: 1,3,6,10,13,18,19,20			
Event	Date (yyyymmdd)	Hours	Description
	7/1/2017	17,18	Thunderstorm Alert
	7/1/2017	2	Uprate Central East
	7/1/2017	10	Derate Central East
	7/1/2017	9-11	Derate MottHaven-Dunwoodie 345kV (#72)
	7/1/2017	2	NE_AC DNI Ramp Limit
	7/1/2017	9,10	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer
	7/1/2017	10	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard, Central East
	7/3/2017	1,7	Uprate Central East
	7/3/2017	7	Uprate East 179th Street-Hellgate West 138kV (#15055)
	7/3/2017	9,13-15	Derate MottHaven-Dunwoodie 345kV (#72)
	7/3/2017	17	NYCA DNI Ramp Limit [-\$1k]
	7/3/2017	1	NE_AC DNI Ramp Limit
	7/3/2017	14	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer
	7/6/2017	9-12	Derate MottHaven-Dunwoodie 345kV (#71)
	7/6/2017	10,11,15	HQ_CHAT-NY Scheduling Limit
	7/6/2017	9,12-15	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer
	7/6/2017	9,12	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Niagara-Packard
	7/10/2017	12	Forced outage Massena-Marcy 765kV (#MSU1)
	7/10/2017	12	Derate Mott Haven-Dunwoodie 345kV (#71)
	7/10/2017	19	NE_AC DNI Ramp Limit
	7/10/2017	23	PJM_AC DNI Ramp Limit
	7/13/2017	13-18	Thunderstorm Alert
	7/13/2017	22	Uprate Gowanus-Greenwood 138kV (#42231) for I/o TWR:GOETHALS 22 & 21
	7/13/2017	22	Uprate Gowanus-Greenwood 138kV (#42232) for I/o TWR:GOETHALS 22 & 21
	7/13/2017	9,12-17	Derate Shore Road-Lake Success 138kV (#367) for I/o Shore Road-Lake Success 138kV (#368)
	7/13/2017	12-16	Derate Shore Road-Lake Success 138kV (#368) for I/o Shore Road-Lake Success 138kV (#367)
	7/13/2017	9,12	Derate MottHaven-Dunwoodie 345kV (#71)
	7/13/2017	2-7,9,12	HQ-CHAT-NY Scheduling Limit
	7/13/2017	16,17	NE_AC-NY Scheduling Limit
	7/13/2017	14-17	NE_AC DNI Ramp Limit
	7/13/2017	22	PJM_AC DNI Ramp Limit
	7/18/2017	8-11,13,15,17,18	Forced outage Ninemile-Clay 345kV (#8)
	7/18/2017	8,9	Derate East 179th St-Dunwoodie South 138kV (#99153)
	7/18/2017	13,15,18	Derate Shore Road-Lake Success 138kV (#367) for I/o Shore Road-Lake Success 138kV (#368)
	7/18/2017	15,17,18	Derate Shore Road-Lake Success 138kV (#368) for I/o Shore Road-Lake Success 138kV (#367)
	7/18/2017	7	Uprate Scriba-Volney (#20) for I/o Scriba-Volney (#21)
	7/18/2017	17,18	HQ-CHAT-NY Scheduling Limit
	7/19/2017	12,13	Early return-to-service Marion-Farragut 345kV (#C3403)
	7/19/2017	10,19	Uprate Gowanus-Greenwood 138kV (#42231) for I/o TWR:GOETHALS 22 & 21
	7/19/2017	10,19	Uprate Gowanus-Greenwood 138kV (#42232) for I/o TWR:GOETHALS 22 & 21
	7/19/2017	19	Uprate Scriba-Volney (#20) for I/o Scriba-Volney (#21)
	7/19/2017	13	NYCA DNI Ramp Limit
	7/19/2017	12-17	Derate Shore Road-Lake Success 138kV (#367) for I/o Shore Road-Lake Success 138kV (#368)
	7/19/2017	12,14-17	Derate Shore Road-Lake Success 138kV (#368) for I/o Shore Road-Lake Success 138kV (#367)
	7/19/2017	15,16,17	HQ-CHAT-NY Scheduling Limit
	7/20/2017	16-20	Thunderstorm Alert
	7/20/2017	15	Uprate Central East [by 5MW]
	7/20/2017	14,16-18,20,21	Derate Shore Road-Lake Success 138kV (#367) for I/o Shore Road-Lake Success 138kV (#368)
	7/20/2017	14,17	Derate Shore Road-Lake Success 138kV (#368) for I/o Shore Road-Lake Success 138kV (#367)
	7/20/2017	16	Derate Leeds-Pleasant Valley 345kV (#92) for I/o Athens-Pleasant Valley 345kV (#91)
	7/20/2017	15	Uprate Leeds-Pleasant Valley 345kV (#92) for I/o Athens-Pleasant Valley 345kV (#91)
	7/20/2017	11,19,20	NYCA DNI Ramp Limit
	7/20/2017	14	HQ-CHAT-NY Scheduling Limit
	7/20/2017	15,18	NE_AC-NY Scheduling Limit
	7/20/2017	15,19	NE_AC DNI Ramp Limit
	7/20/2017	11,15	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Packard-Sawyer
	7/20/2017	15	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East

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	

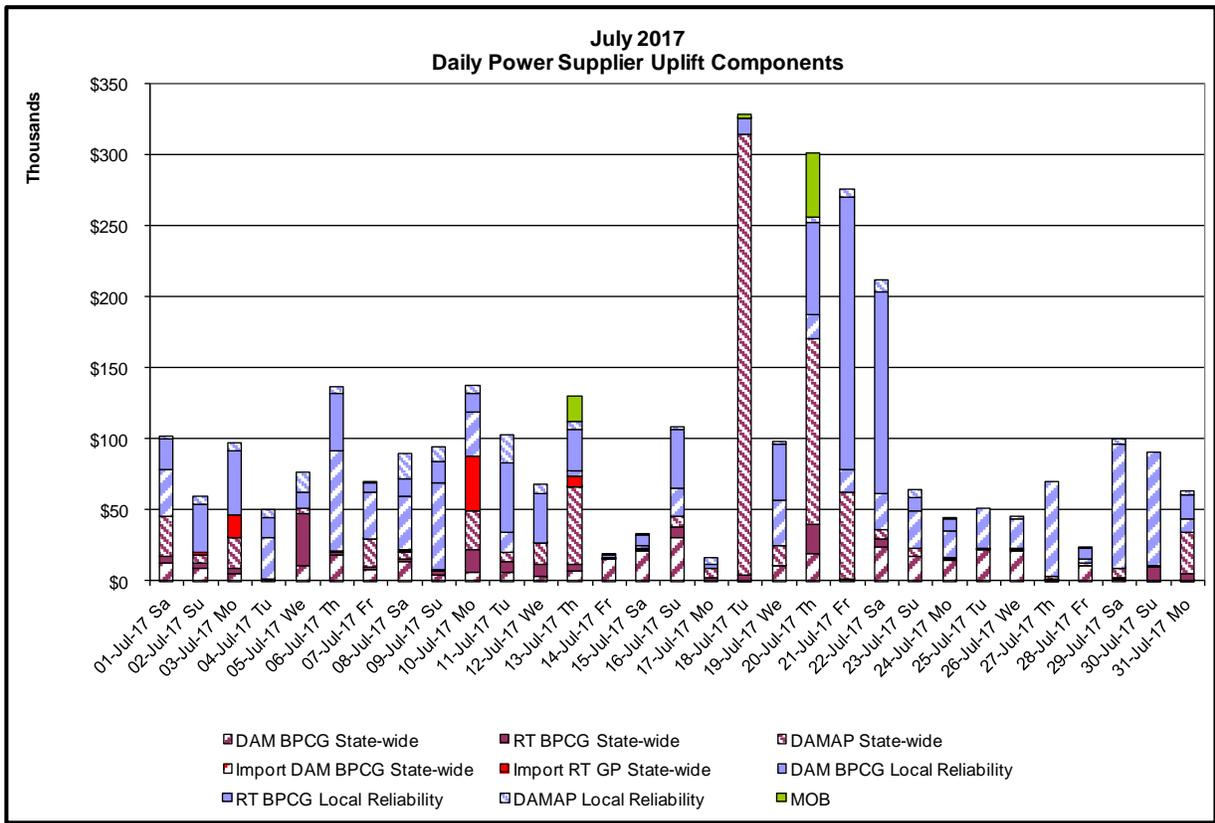
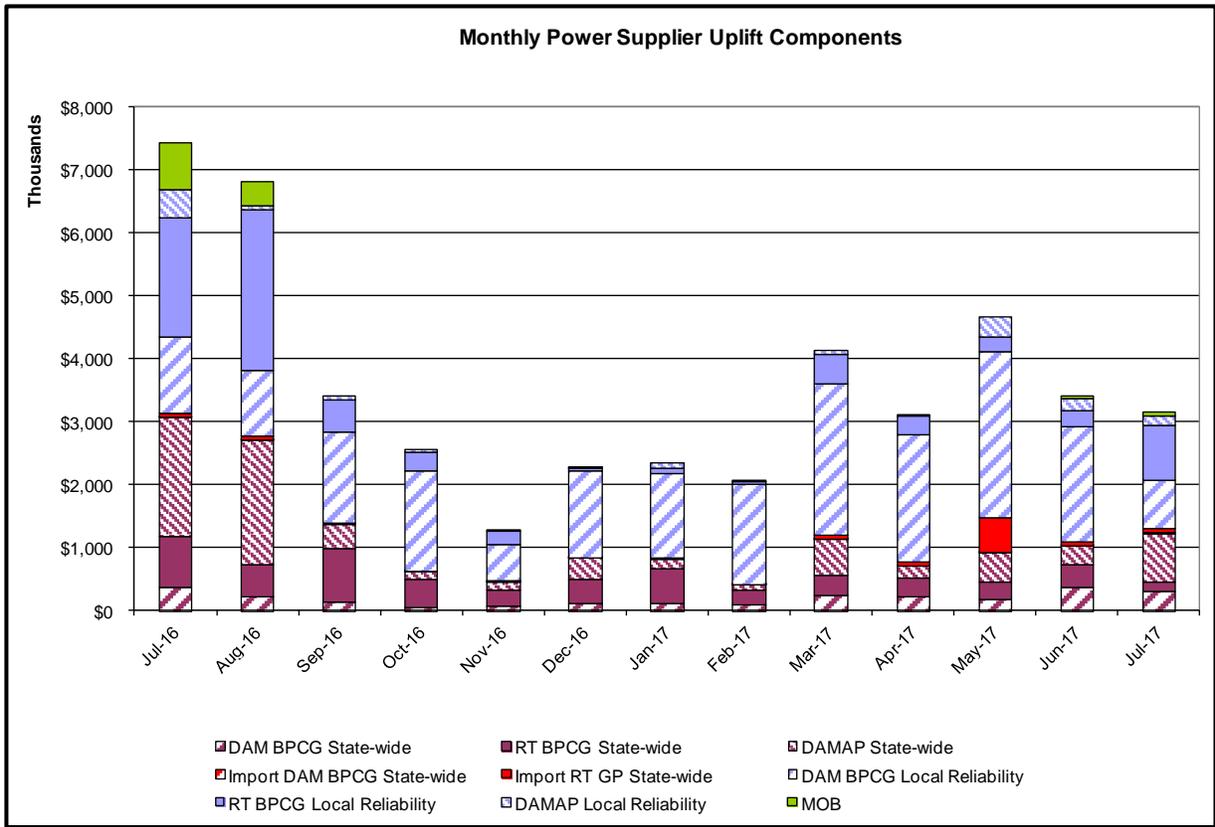
Monthly Balancing Market Congestion Report Assumptions/Notes

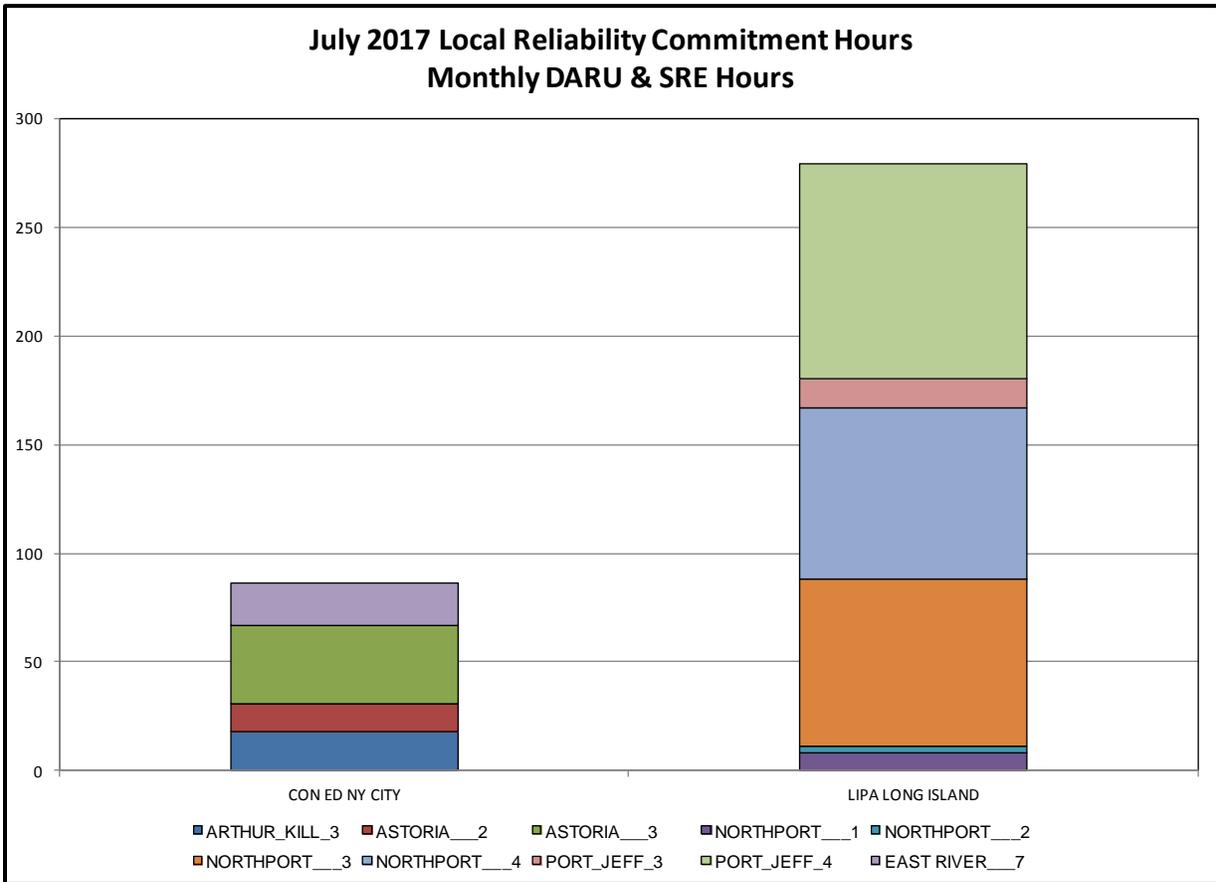
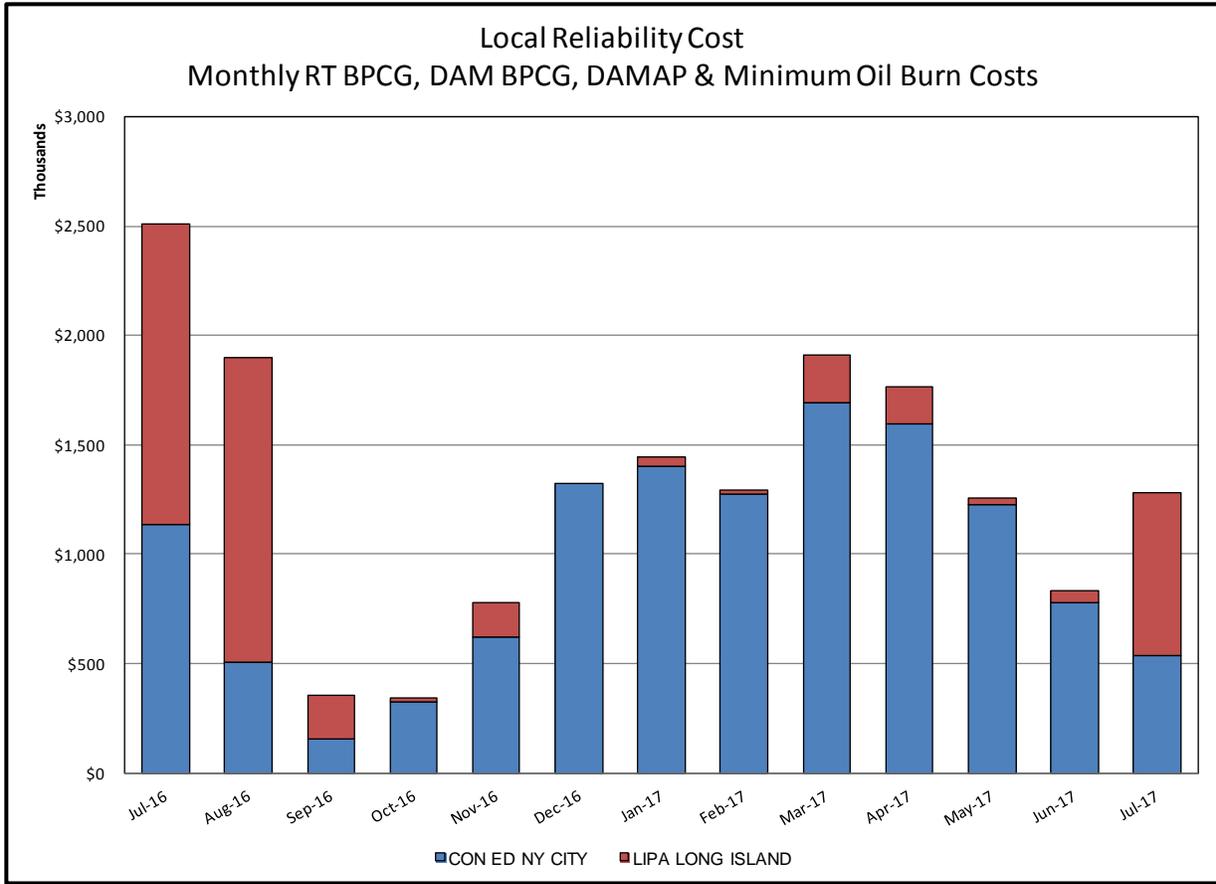
- 1) Storm Watch Costs are identified as daily total uplift costs
- 2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.
- 3) Uplift costs associated with multiple event types are apportioned equally by hour

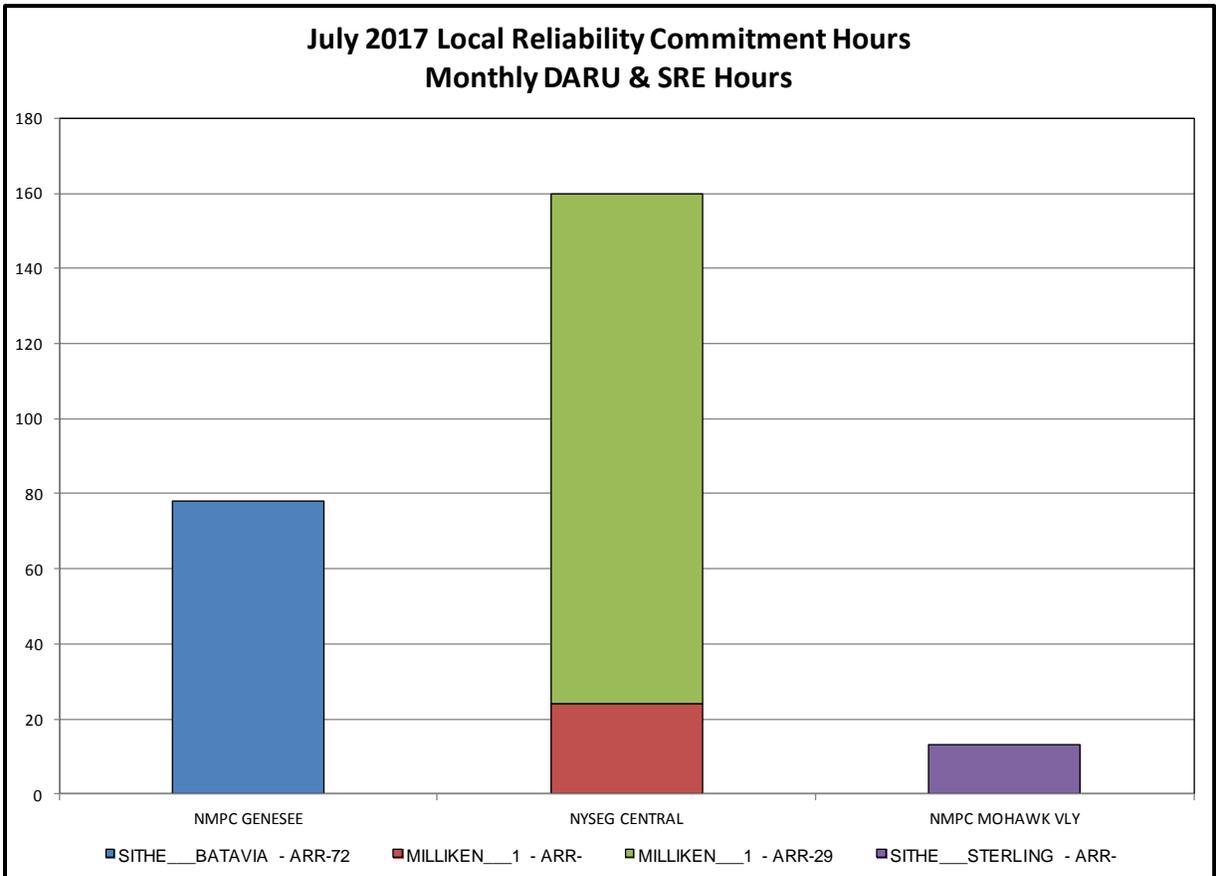
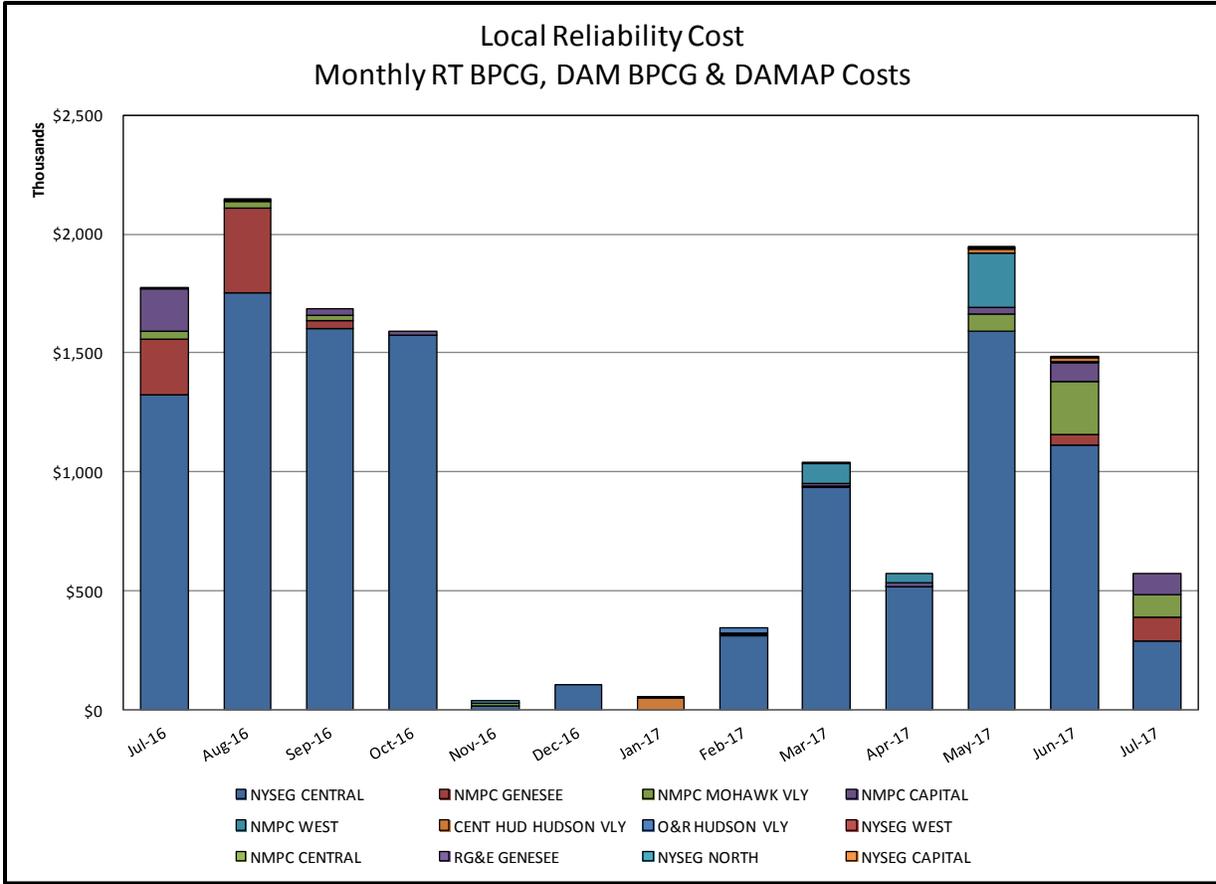


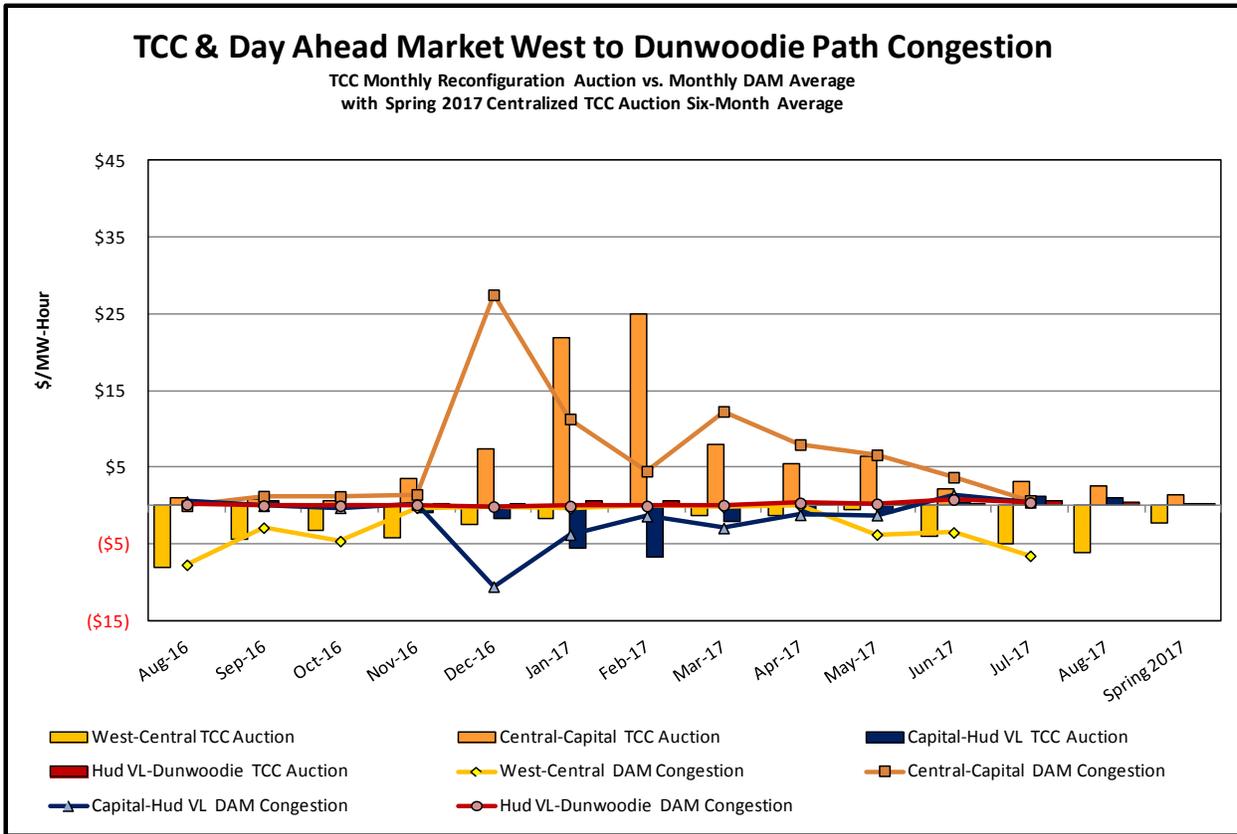
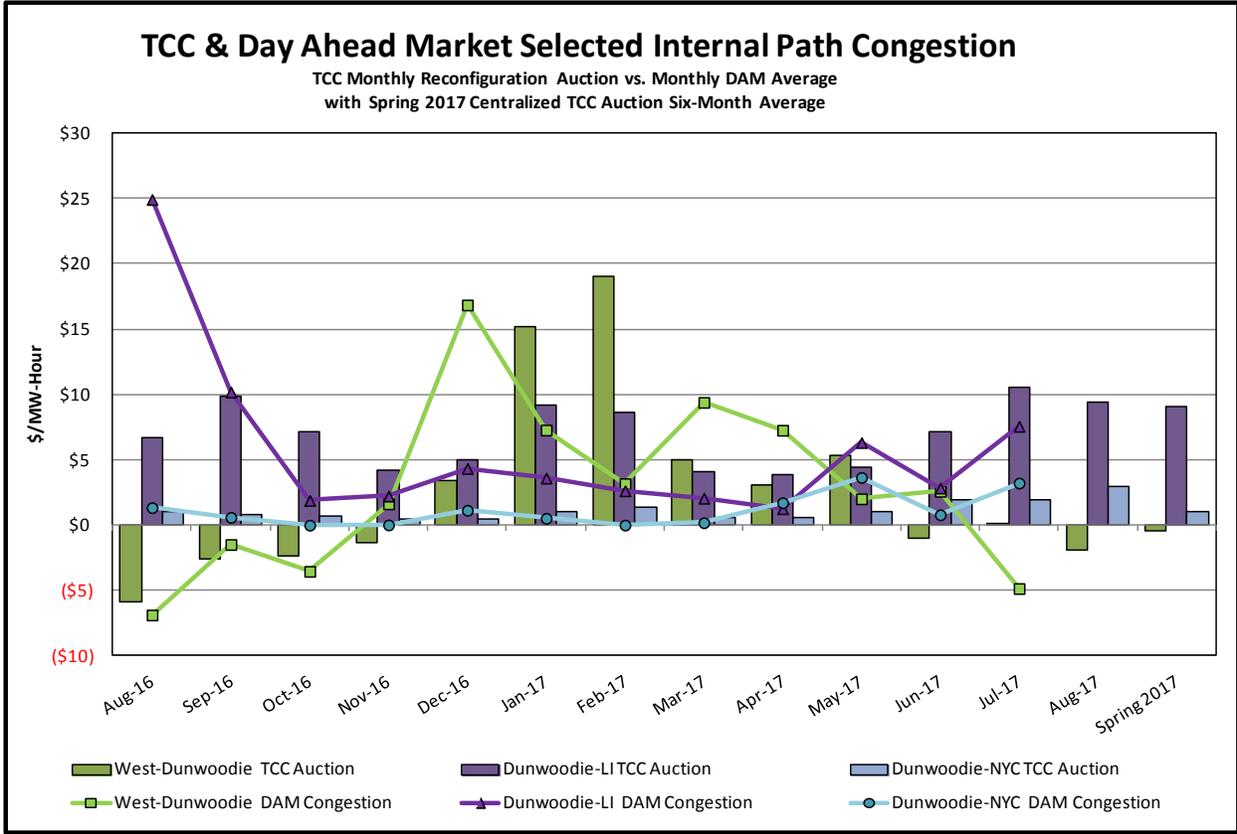
Day-Ahead Market Congestion Residual Categories

<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.	



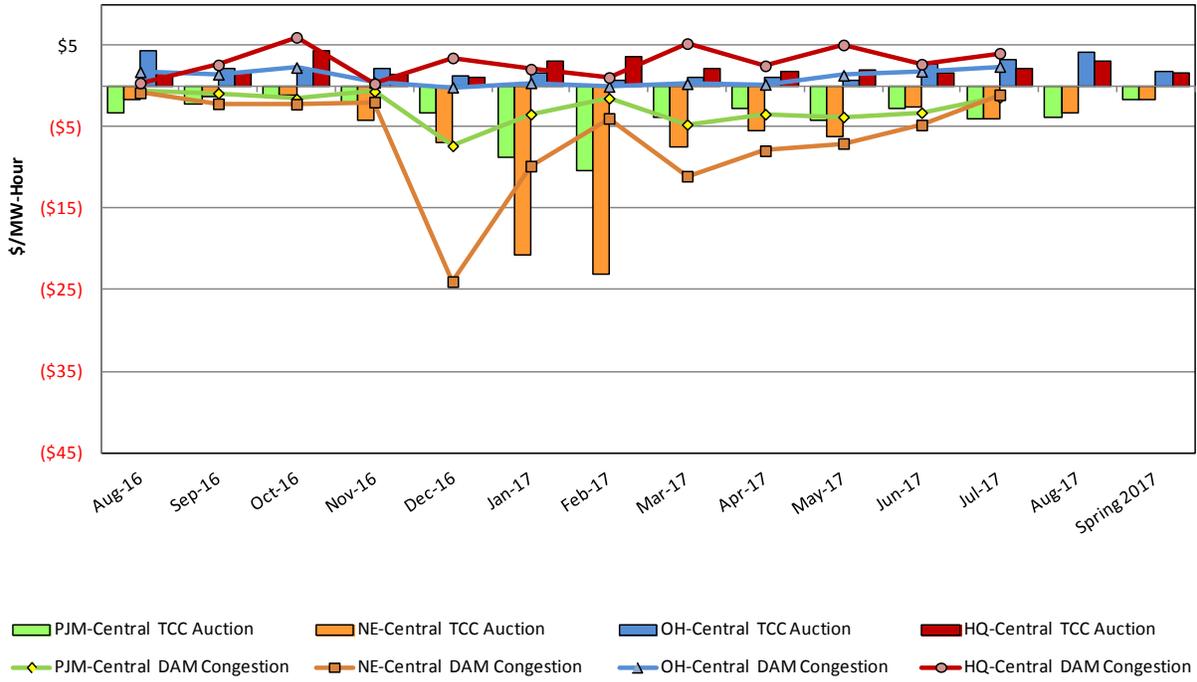


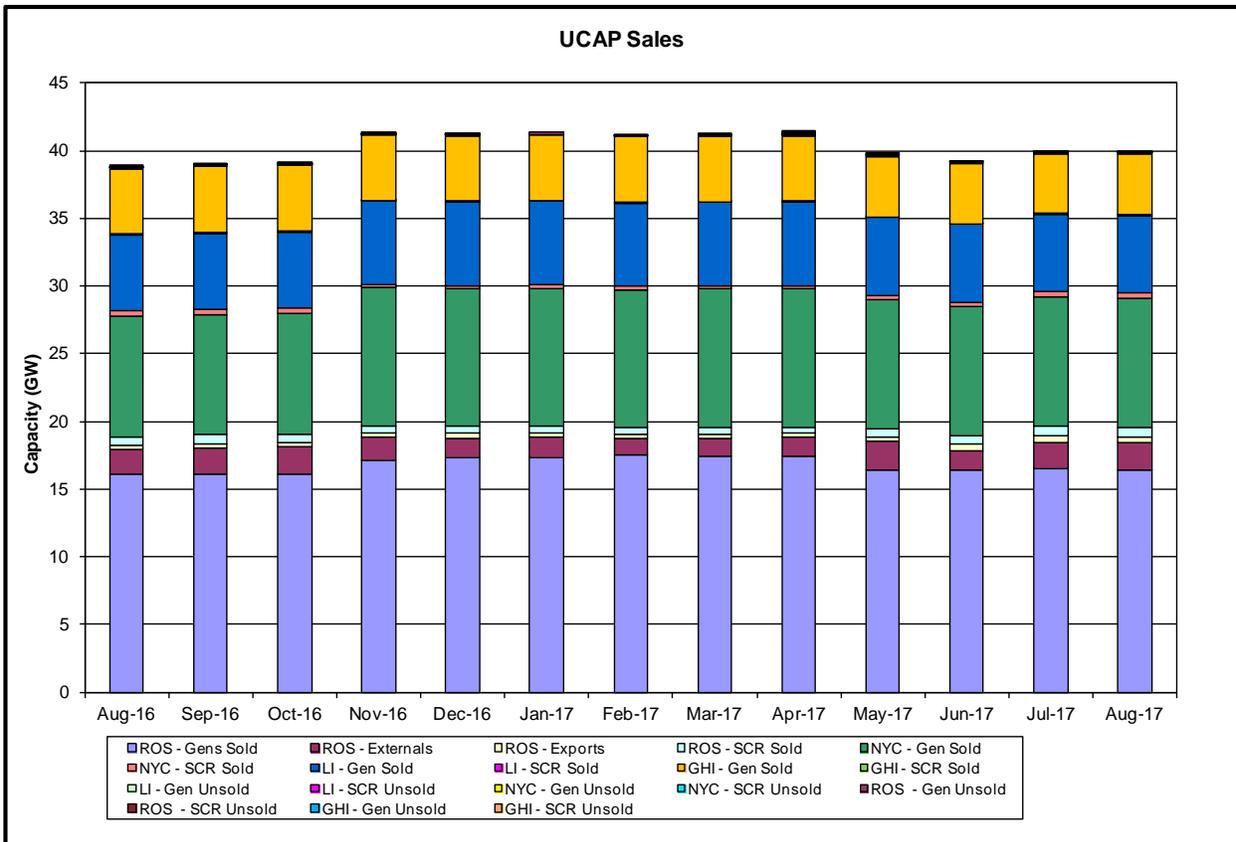
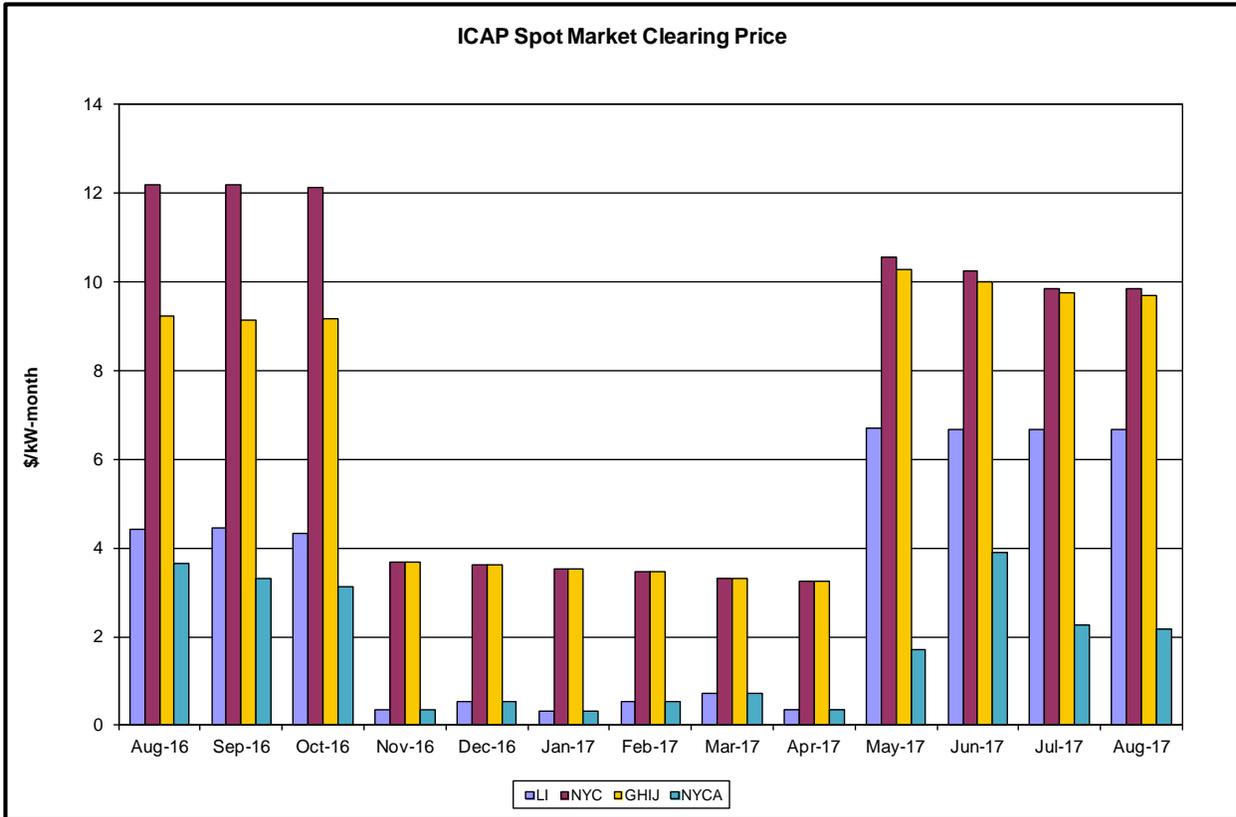




TCC & Day Ahead Market Selected External Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Spring 2017 Centralized TCC Auction Six-Month Average



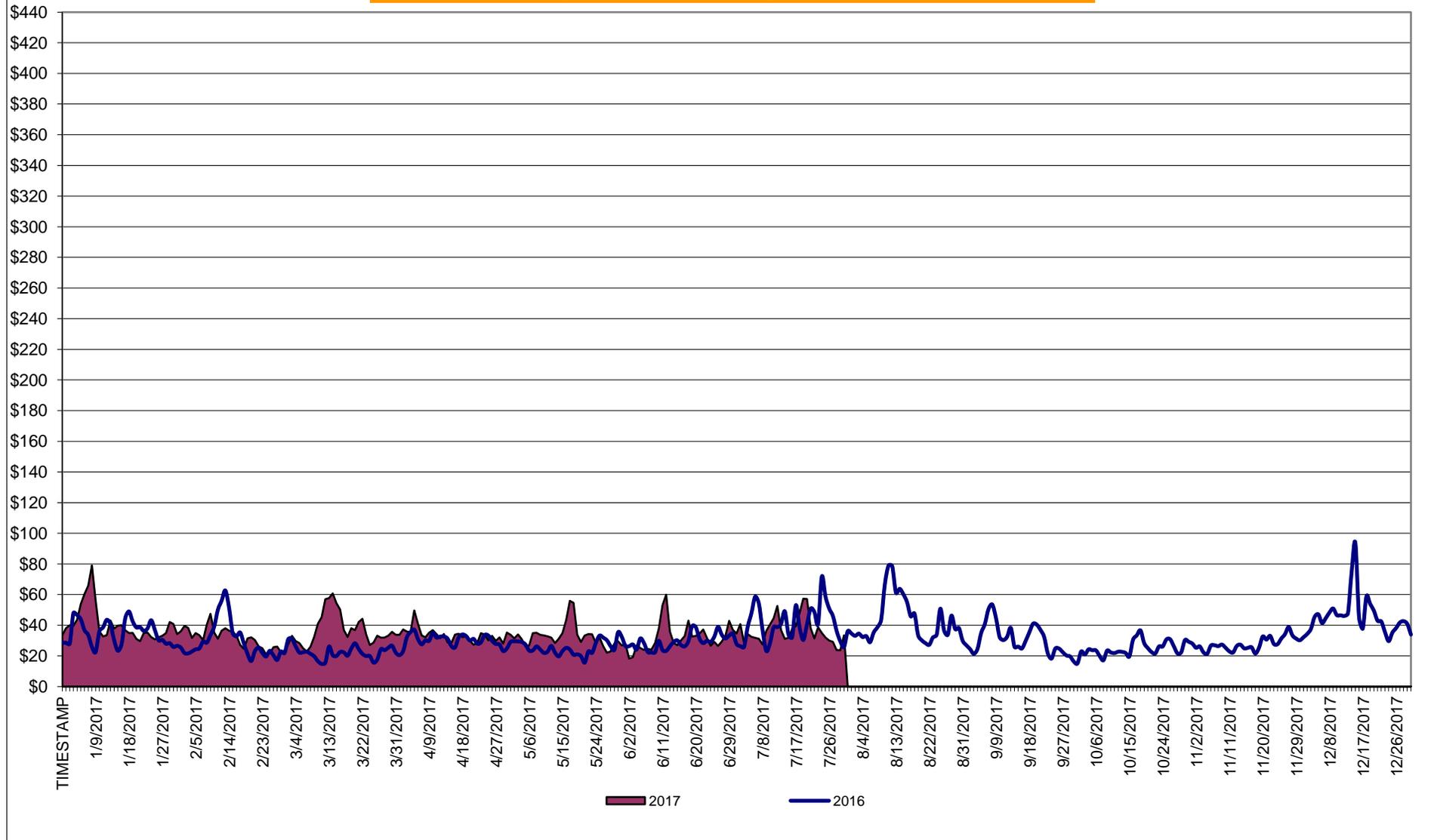


Market Performance Highlights

July 2017

- LBMP for July is \$35.84/MWh; higher than \$31.76/MWh in June 2017 and lower than \$40.01/MWh in July 2016.
 - Day Ahead Load Weighted LBMPs and Real Time Load Weighted LBMPs are higher compared to June.
- July 2017 average year-to-date monthly cost of \$36.35/MWh is a 12% increase from \$32.32/MWh in July 2016.
- Average daily sendout is 498 GWh/day in July; higher than 454 GWh/day in June 2017 and lower than 532 GWh/day in July 2016.
- Natural gas prices and distillate prices were higher compared to the previous month.
 - Natural Gas (Transco Z6 NY) was \$2.44/MMBtu, up from \$2.35/MMBtu in June.
 - Natural gas prices are up 13.1% year-over-year.
 - Jet Kerosene Gulf Coast was \$10.49/MMBtu, up from \$9.59/MMBtu in June.
 - Ultra Low Sulfur No.2 Diesel NY Harbor was \$10.85/MMBtu, up from \$10.14/MMBtu in June.
 - Distillate prices are up 11.1% year-over-year.
- Uplift per MWh is lower compared to the previous month.
 - Uplift (not including NYISO cost of operations) is (\$0.43)/MWh; lower than (\$0.37)/MWh in June.
 - Local Reliability Share is \$0.11/MWh, lower than \$0.15/MWh in June.
 - Statewide Share is (\$0.54)/MWh, lower than (\$0.52)/MWh in June.
 - TSA \$ per NYC MWh is \$0.42/MWh.
 - Total uplift costs (Schedule 1 components including NYISO Cost of Operations) are lower than June.

Daily NYISO Average Cost/MWh (Energy & Ancillary Services)*
2016 Annual Average \$34.28/MWh
July 2016 YTD Average \$32.32/MWh
July 2017 YTD Average \$36.35/MWh



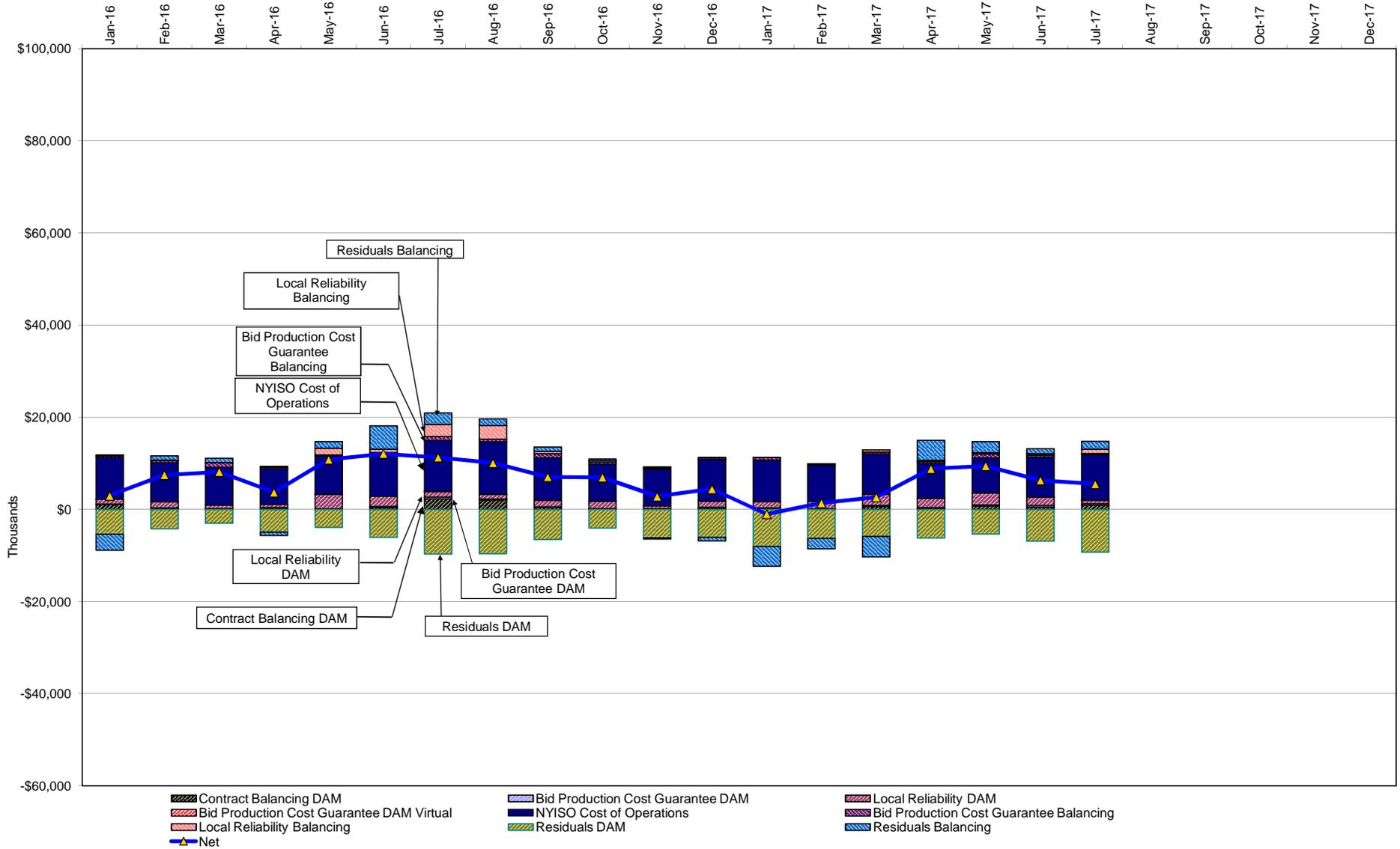
* Excludes ICAP payments.

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

2017	<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	40.07	30.95	34.97	31.06	31.74	31.76	35.84					
NTAC	0.66	1.11	0.86	1.05	0.79	0.62	0.87					
Reserve	0.70	0.67	0.74	0.70	0.61	0.55	0.48					
Regulation	0.14	0.12	0.13	0.17	0.16	0.13	0.10					
NYISO Cost of Operations	0.65	0.65	0.65	0.65	0.62	0.63	0.63					
FERC Fee Recovery	0.09	0.10	0.10	0.12	0.10	0.09	0.07					
Uplift	(0.73)	(0.54)	(0.46)	0.12	0.10	(0.37)	(0.43)					
Uplift: Local Reliability Share	0.10	0.13	0.21	0.20	0.24	0.15	0.11					
Uplift: Statewide Share	(0.83)	(0.67)	(0.67)	(0.08)	(0.13)	(0.52)	(0.54)					
Voltage Support and Black Start	0.37	0.37	0.38	0.38	0.38	0.38	0.38					
Avg Monthly Cost	41.96	33.44	37.38	34.26	34.52	33.80	37.94					
Avg YTD Cost	41.96	38.02	37.81	37.05	36.54	36.01	36.35					
TSA \$ per NYC MWh	0.00	0.00	0.00	0.08	0.12	0.56	0.42					
2016	<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	30.89	22.33	26.31	43.90
NTAC	0.59	0.78	0.62	1.14	1.10	0.93	0.78	0.54	0.55	0.86	0.79	0.97
Reserve	0.77	0.73	0.73	0.87	0.71	0.59	0.67	0.68	0.69	0.77	0.68	0.63
Regulation	0.12	0.12	0.12	0.12	0.11	0.12	0.10	0.10	0.10	0.15	0.13	0.17
NYISO Cost of Operations	0.64	0.65	0.65	0.64	0.65	0.66	0.65	0.65	0.64	0.64	0.64	0.64
FERC Fee Recovery	0.09	0.10	0.11	0.10	0.09	0.09	0.07	0.06	0.08	0.10	0.10	0.08
Uplift	(0.43)	(0.07)	(0.03)	(0.34)	0.19	0.20	(0.26)	(0.63)	(0.15)	(0.09)	(0.42)	(0.33)
Uplift: Local Reliability Share	0.09	0.11	0.06	0.07	0.35	0.21	0.23	0.22	0.14	0.15	0.07	0.10
Uplift: Statewide Share	(0.52)	(0.18)	(0.09)	(0.41)	(0.16)	(0.01)	(0.49)	(0.86)	(0.29)	(0.24)	(0.49)	(0.43)
Voltage Support and Black Start	0.35	0.36	0.36	0.35	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.35
Avg Monthly Cost	36.42	31.37	23.23	30.84	26.52	30.29	42.40	44.75	33.16	25.12	28.61	46.42
Avg YTD Cost	36.42	34.02	30.68	30.71	29.85	29.93	32.32	34.43	34.31	33.54	33.16	34.28
TSA \$ per NYC MWh	0.00	0.00	0.05	0.00	0.00	0.02	0.84	1.64	0.00	0.00	0.00	0.00
2015	<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	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.38
Avg Monthly Cost	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

* Excludes ICAP payments.
Market Mitigation and Analysis
Prepared: 8/8/2017 10:25 AM

NYISO Dollar Flows - Uplift - OATT Schedule 1 components - Data through July 31, 2017



DAM Contract Balancing amounts are for payments made to generating units to make them whole for being dispatched below their Day-Ahead schedule, as a result of out-of-merit dispatches.

DAM Bid Production Cost Guarantees for Virtual Transactions are included in the chart and are shown from the inception of Virtual Transactions. These values are small and cannot be identified on the chart.

DAM residuals consist of both energy and loss revenue collections and payments. By design, there is a net over collection of revenues due to the difference between the marginal losses paid to generation and the average losses charged to loads.

NYISO Markets Transactions

2017	<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>
Day Ahead Market MWh	14,135,019	12,565,206	13,983,865	12,061,475	12,966,981	14,406,180	16,505,801					
DAM LSE Internal LBMP Energy Sales	57%	57%	55%	54%	58%	60%	62%					
DAM External TC LBMP Energy Sales	2%	2%	1%	1%	1%	1%	1%					
DAM Bilateral - Internal Bilaterals	32%	32%	34%	35%	33%	31%	29%					
DAM Bilateral - Import/Non-LBMP Market Bilaterals	5%	5%	5%	6%	4%	5%	4%					
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	2%	2%	2%	2%	2%	1%					
DAM Bilateral - Wheel Through Bilaterals	2%	2%	2%	2%	2%	2%	3%					
Balancing Energy Market MWh	-256,448	-407,284	-509,053	-466,426	-666,048	-564,312	-747,473					
Balancing Energy LSE Internal LBMP Energy Sales	-157%	-132%	-148%	-115%	-120%	-114%	-100%					
Balancing Energy External TC LBMP Energy Sales	64%	39%	44%	22%	28%	23%	18%					
Balancing Energy Bilateral - Internal Bilaterals	15%	8%	12%	5%	1%	4%	3%					
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	4%	0%	0%	0%	0%	0%					
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	10%	7%	5%	4%	3%	3%	1%					
Balancing Energy Bilateral - Wheel Through Bilaterals	-32%	-26%	-13%	-15%	-12%	-16%	-22%					
Transactions Summary												
LBMP	58%	57%	55%	54%	58%	60%	62%					
Internal Bilaterals	33%	34%	36%	37%	34%	32%	30%					
Import Bilaterals	5%	5%	5%	6%	4%	5%	5%					
Export Bilaterals	2%	2%	2%	2%	2%	2%	2%					
Wheels Through	2%	2%	2%	2%	2%	1%	2%					
Market Share of Total Load												
Day Ahead Market	101.8%	103.3%	103.8%	104.0%	105.4%	104.1%	104.7%					
Balancing Energy +	-1.8%	-3.3%	-3.8%	-4.0%	-5.4%	-4.1%	-4.7%					
Total MWh	13,878,571	12,157,922	13,474,812	11,595,049	12,300,933	13,841,868	15,758,328					
Average Daily Energy Sendout/Month GWh	431	418	419	377	383	454	498					

2016	<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>
Day Ahead Market MWh	14,760,915	13,614,754	13,413,781	12,496,141	12,959,886	14,095,904	16,950,819	17,413,898	14,563,318	13,014,354	12,770,775	14,245,185
DAM LSE Internal LBMP Energy Sales	54%	55%	55%	57%	58%	60%	64%	63%	60%	56%	56%	58%
DAM External TC LBMP Energy Sales	4%	2%	1%	5%	2%	1%	1%	3%	3%	2%	2%	3%
DAM Bilateral - Internal Bilaterals	34%	34%	35%	28%	31%	30%	28%	27%	30%	33%	32%	31%
DAM Bilateral - Import/Non-LBMP Market Bilaterals	5%	5%	5%	6%	5%	5%	4%	4%	5%	5%	5%	5%
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	1%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
DAM Bilateral - Wheel Through Bilaterals	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%
Balancing Energy Market MWh	-522,919	-580,900	-741,701	-303,313	-180,848	-143,015	-86,025	224,316	-250,802	-477,109	-394,575	-127,836
Balancing Energy LSE Internal LBMP Energy Sales	-125%	-114%	-118%	-76%	-147%	-203%	-347%	42%	-139%	-111%	-102%	-269%
Balancing Energy External TC LBMP Energy Sales	12%	13%	19%	-13%	55%	77%	204%	56%	49%	21%	28%	138%
Balancing Energy Bilateral - Internal Bilaterals	19%	9%	4%	8%	27%	47%	62%	28%	18%	6%	9%	65%
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	6%	5%	3%	5%	7%	10%	15%	5%	5%	4%	6%	27%
Balancing Energy Bilateral - Wheel Through Bilaterals	-12%	-12%	-8%	-24%	-42%	-32%	-34%	-31%	-32%	-21%	-40%	-66%
Transactions Summary												
LBMP	56%	56%	54%	62%	59%	61%	65%	66%	62%	57%	57%	60%
Internal Bilaterals	36%	36%	37%	29%	32%	31%	28%	27%	30%	35%	34%	32%
Import Bilaterals	5%	5%	6%	6%	5%	5%	4%	4%	5%	5%	6%	5%
Export Bilaterals	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Wheels Through	1%	1%	1%	1%	2%	2%	1%	1%	2%	1%	2%	2%
Market Share of Total Load												
Day Ahead Market	103.7%	104.5%	105.9%	102.5%	101.4%	101.0%	100.5%	98.7%	101.8%	103.8%	103.2%	100.9%
Balancing Energy +	-3.7%	-4.5%	-5.9%	-2.5%	-1.4%	-1.0%	-0.5%	1.3%	-1.8%	-3.8%	-3.2%	-0.9%
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	14,312,516	12,537,245	12,376,200	14,117,349
Average Daily Energy Sendout/Month GWh	439	436	397	385	397	456	532	548	458	391	398	433

+ 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 2017 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>
<u>DAY AHEAD LBMP</u>												
Price *	\$37.22	\$28.84	\$32.04	\$27.70	\$27.66	\$27.37	\$31.64					
Standard Deviation	\$13.20	\$7.97	\$11.95	\$7.66	\$9.47	\$12.37	\$13.51					
Load Weighted Price **	\$38.42	\$29.66	\$32.96	\$28.56	\$28.95	\$29.52	\$33.78					
<u>RTC LBMP</u>												
Price *	\$32.87	\$24.09	\$28.86	\$26.19	\$26.19	\$26.40	\$30.84					
Standard Deviation	\$14.57	\$9.52	\$13.70	\$10.36	\$21.29	\$14.76	\$18.14					
Load Weighted Price **	\$33.96	\$24.81	\$29.67	\$26.98	\$28.10	\$28.39	\$33.13					
<u>REAL TIME LBMP</u>												
Price *	\$34.61	\$25.14	\$31.21	\$29.61	\$26.56	\$26.16	\$29.47					
Standard Deviation	\$18.20	\$14.21	\$25.02	\$39.82	\$26.11	\$19.00	\$20.25					
Load Weighted Price **	\$35.80	\$25.84	\$32.21	\$30.81	\$28.64	\$28.67	\$32.11					
Average Daily Energy Sendout/Month GWh	431	418	419	377	383	454	498					

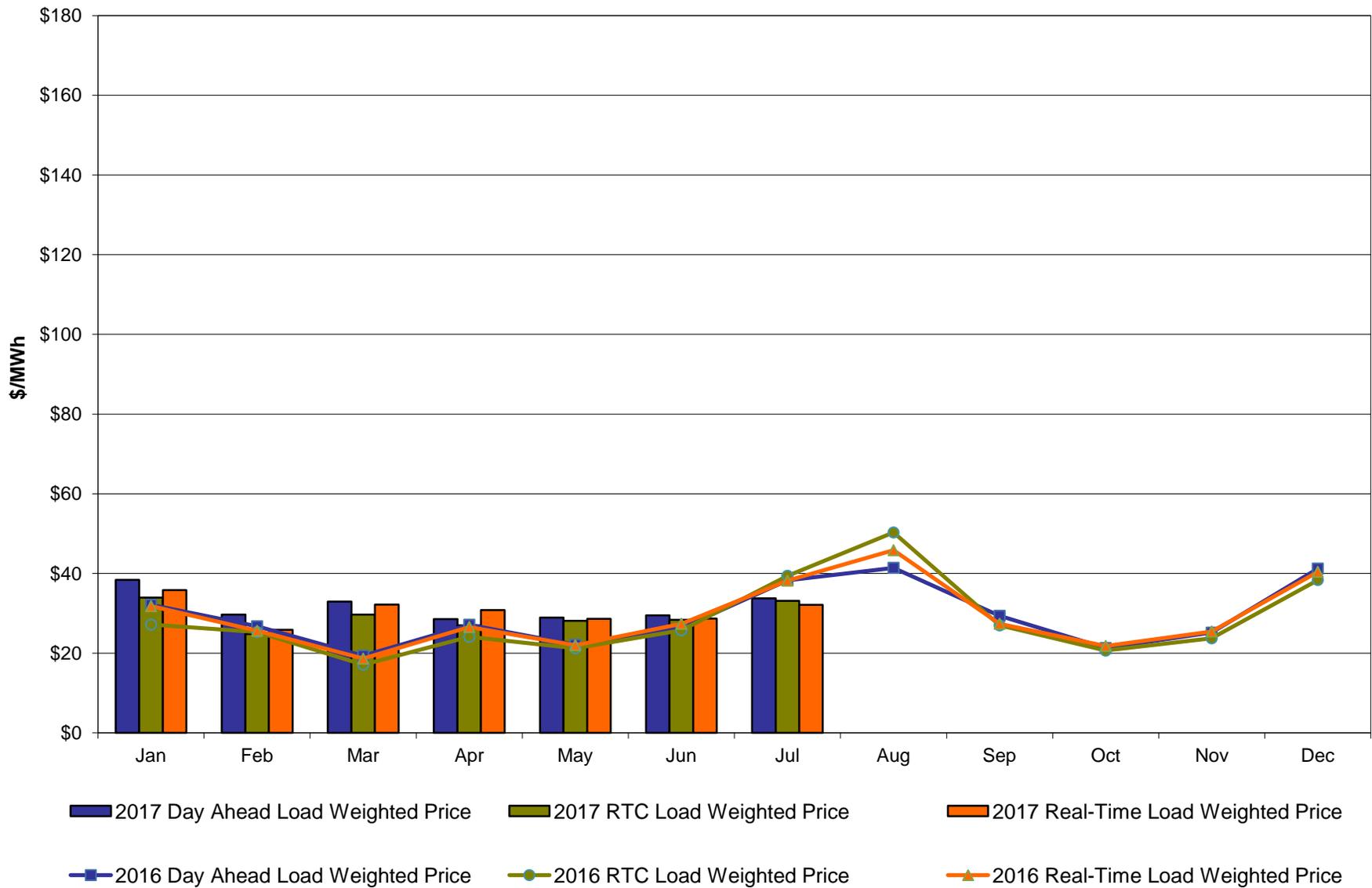
NYISO Markets 2016 Energy Statistics

	<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>
<u>DAY AHEAD LBMP</u>												
Price *	\$31.01	\$25.76	\$18.63	\$26.39	\$21.07	\$24.83	\$35.24	\$38.25	\$27.15	\$20.37	\$24.35	\$39.83
Standard Deviation	\$10.86	\$12.46	\$6.99	\$6.95	\$7.04	\$9.21	\$18.37	\$20.59	\$13.55	\$7.48	\$7.32	\$15.08
Load Weighted Price **	\$32.13	\$26.75	\$19.37	\$27.14	\$22.12	\$26.30	\$38.29	\$41.41	\$29.38	\$21.29	\$25.15	\$41.22
<u>RTC LBMP</u>												
Price *	\$26.12	\$24.10	\$16.41	\$23.41	\$19.96	\$24.29	\$36.22	\$45.03	\$24.70	\$19.76	\$23.02	\$37.08
Standard Deviation	\$16.06	\$17.89	\$11.32	\$9.09	\$11.44	\$16.58	\$38.04	\$70.57	\$17.46	\$8.96	\$9.49	\$16.72
Load Weighted Price **	\$27.16	\$25.29	\$17.11	\$24.10	\$21.23	\$25.73	\$39.42	\$50.28	\$26.97	\$20.64	\$23.73	\$38.35
<u>REAL TIME LBMP</u>												
Price *	\$30.15	\$24.28	\$17.84	\$25.71	\$20.67	\$25.87	\$34.40	\$40.87	\$24.90	\$20.91	\$24.72	\$39.00
Standard Deviation	\$60.09	\$18.19	\$15.06	\$16.59	\$12.84	\$19.27	\$38.56	\$52.85	\$20.70	\$12.15	\$12.71	\$20.92
Load Weighted Price **	\$31.80	\$25.61	\$18.64	\$26.57	\$21.99	\$27.39	\$38.20	\$45.82	\$27.38	\$21.81	\$25.45	\$40.42
Average Daily Energy Sendout/Month GWh	439	436	397	385	397	456	532	548	458	391	398	433

* Average zonal load weighted prices.

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

NYISO Monthly Average Internal LBMPs 2016- 2017

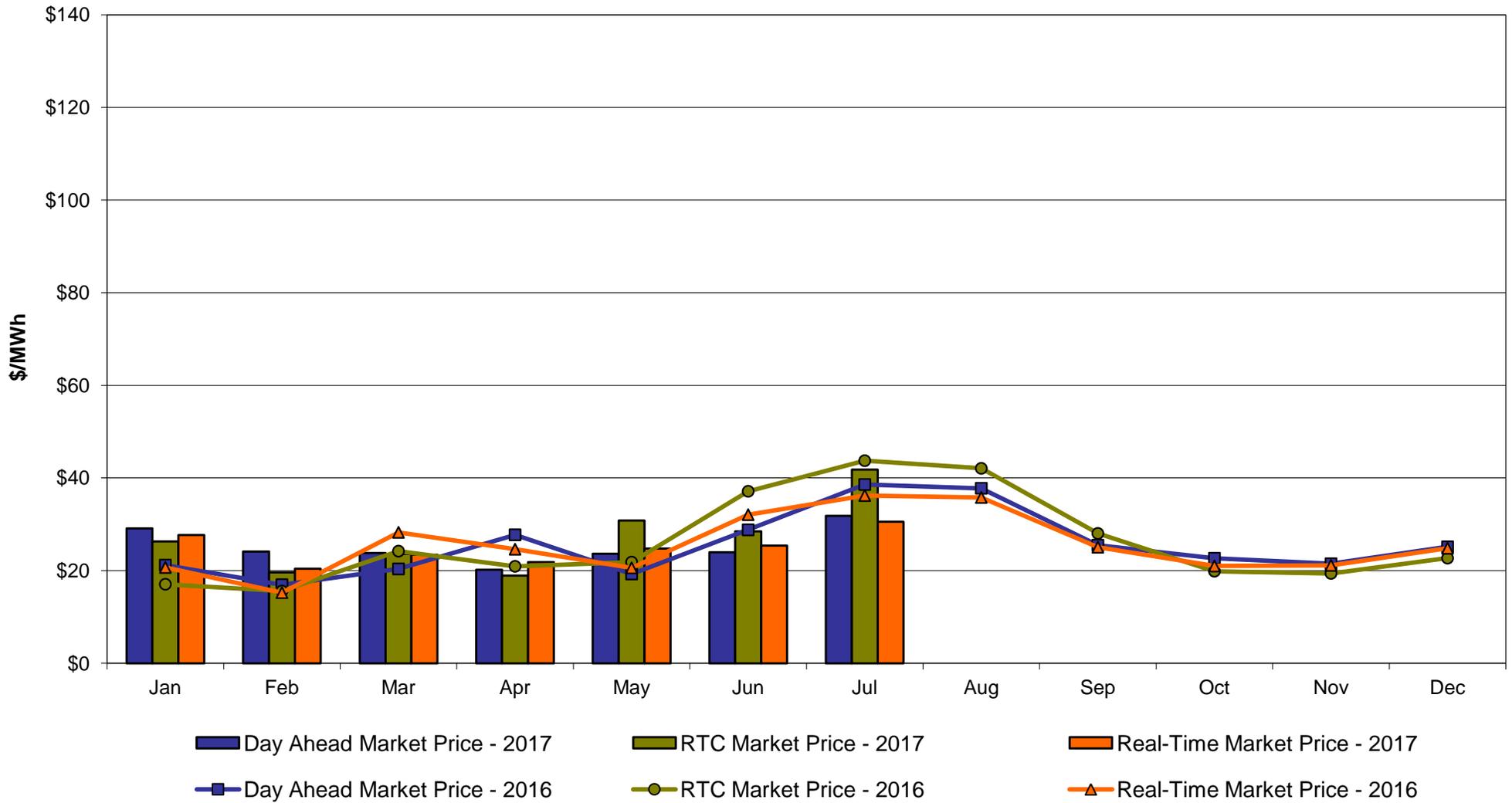


July 2017 Zonal LBMP Statistics for NYISO (\$/MWh)

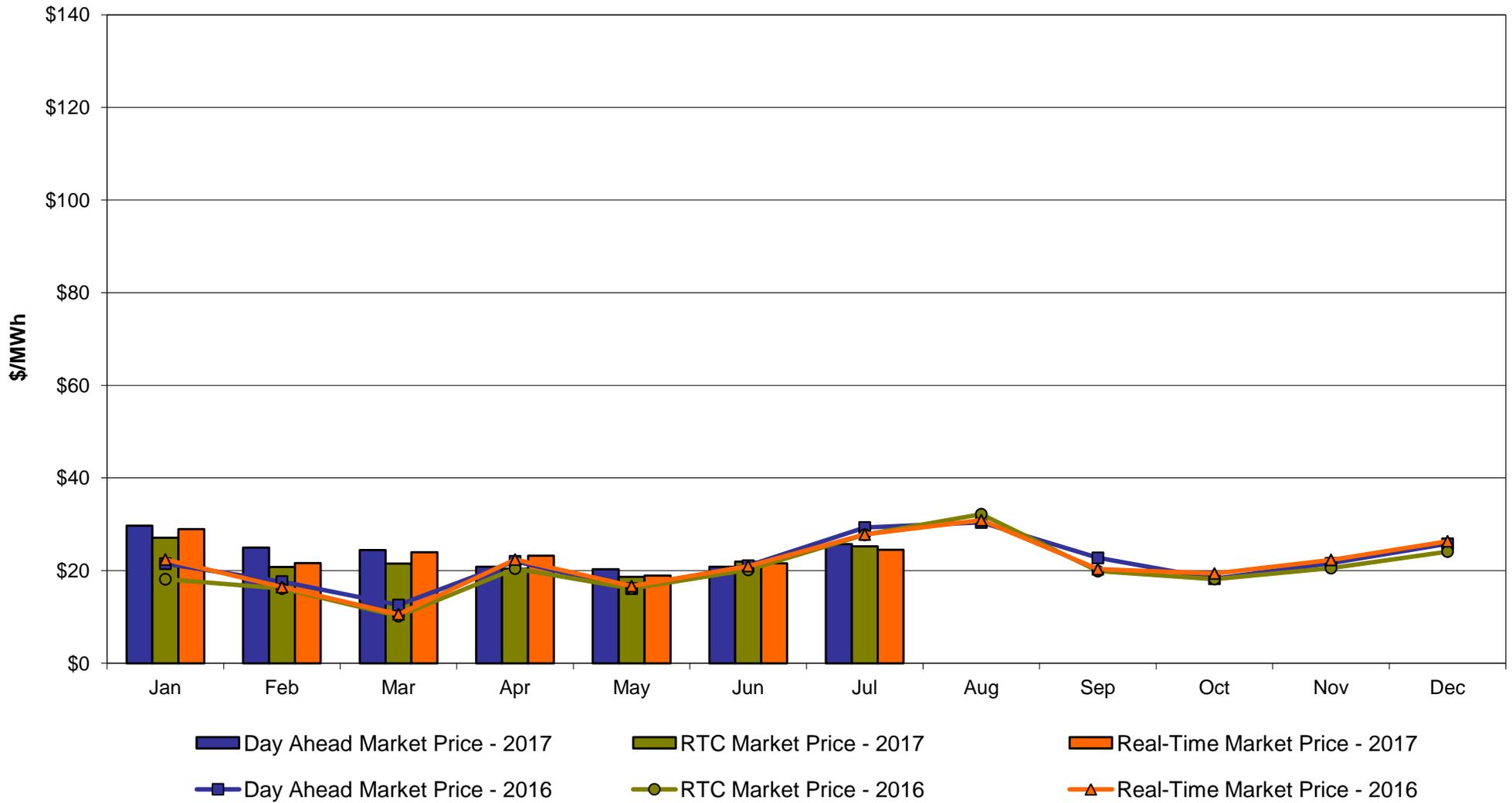
	<u>WEST Zone A</u>	<u>GENESEE Zone B</u>	<u>NORTH Zone D</u>	<u>CENTRAL Zone C</u>	<u>MOHAWK VALLEY Zone E</u>	<u>CAPITAL Zone F</u>	<u>HUDSON VALLEY Zone G</u>	<u>MILLWOOD Zone H</u>	<u>DUNWOODIE Zone I</u>	<u>NEW YORK CITY Zone J</u>	<u>LONG ISLAND Zone K</u>
<u>DAY AHEAD LBMP</u>											
Unweighted Price *	31.83	24.77	22.48	25.74	25.46	27.65	29.35	30.00	30.04	33.57	38.55
Standard Deviation	18.76	9.15	8.88	9.93	9.42	9.14	11.04	12.23	12.25	13.39	21.82
<u>RTC LBMP</u>											
Unweighted Price *	41.81	23.44	19.79	25.26	23.82	25.83	27.01	27.26	27.49	29.79	40.57
Standard Deviation	70.47	11.76	24.09	13.55	12.46	11.21	12.39	12.75	13.49	15.58	43.71
<u>REAL TIME LBMP</u>											
Unweighted Price *	30.53	23.45	20.62	24.52	23.96	25.77	27.24	27.57	27.77	30.79	36.22
Standard Deviation	39.97	15.08	18.16	15.84	16.13	15.20	17.38	18.05	18.47	22.06	35.79
	<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>
<u>DAY AHEAD LBMP</u>											
Unweighted Price *	22.24	20.45	20.45	27.80	28.45	36.26	31.40	35.61	32.11	32.37	19.44
Standard Deviation	6.82	8.88	8.88	10.78	10.05	19.90	11.54	20.06	11.56	12.47	8.11
<u>RTC LBMP</u>											
Unweighted Price *	17.38	17.46	17.46	26.64	26.30	37.36	35.01	34.77	27.52	27.88	15.05
Standard Deviation	19.70	14.67	14.67	13.87	12.19	40.34	36.50	35.98	12.29	13.33	44.91
<u>REAL TIME LBMP</u>											
Unweighted Price *	20.66	19.22	19.22	25.31	26.31	34.95	29.22	32.39	27.67	28.14	13.14
Standard Deviation	16.05	14.23	14.23	16.08	16.29	35.53	27.74	29.96	17.57	18.38	53.65

* Straight LBMP averages

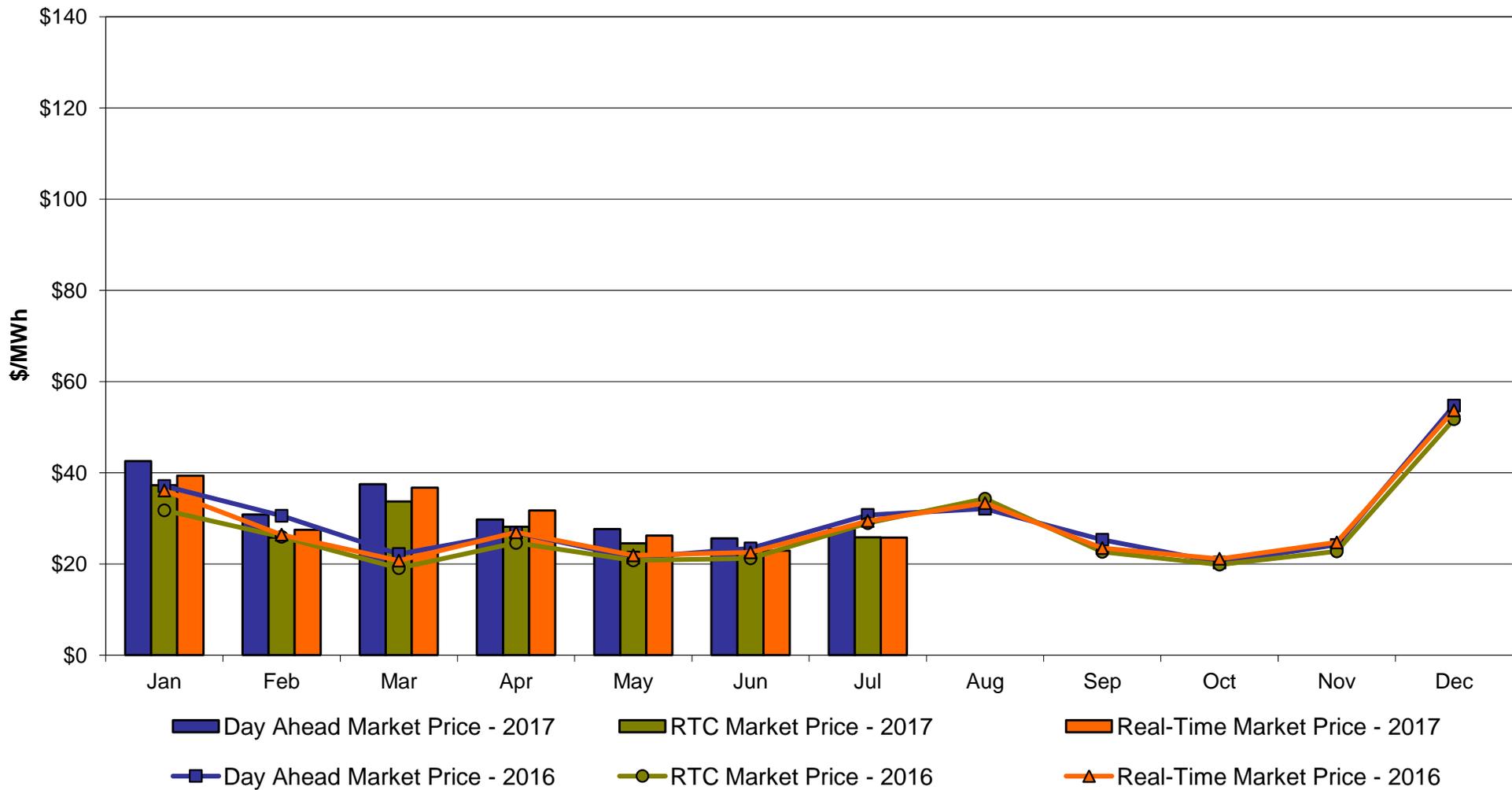
**West Zone A
Monthly Average LBMP Prices 2016 - 2017**



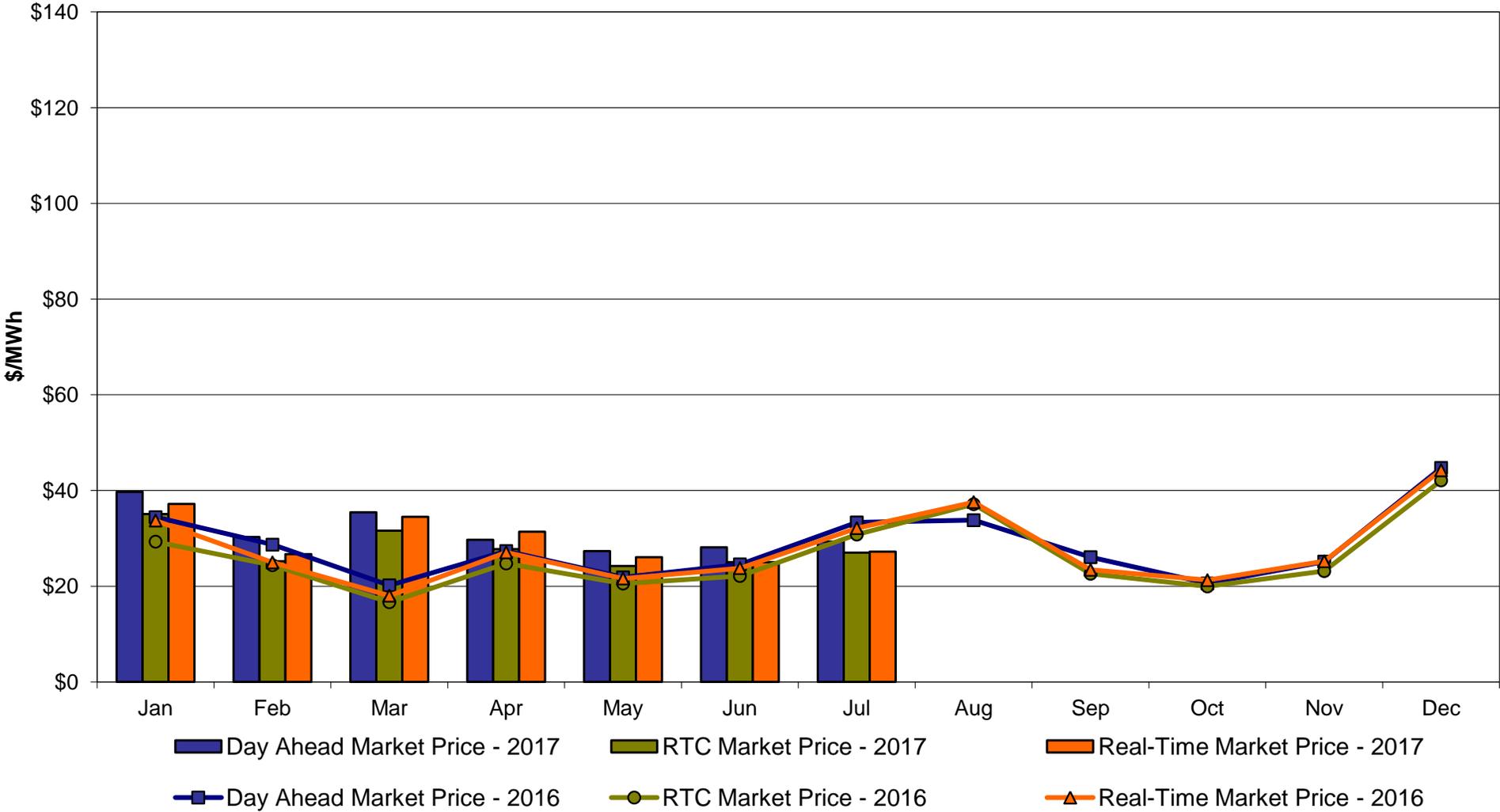
**Central Zone C
Monthly Average LBMP Prices 2016 - 2017**



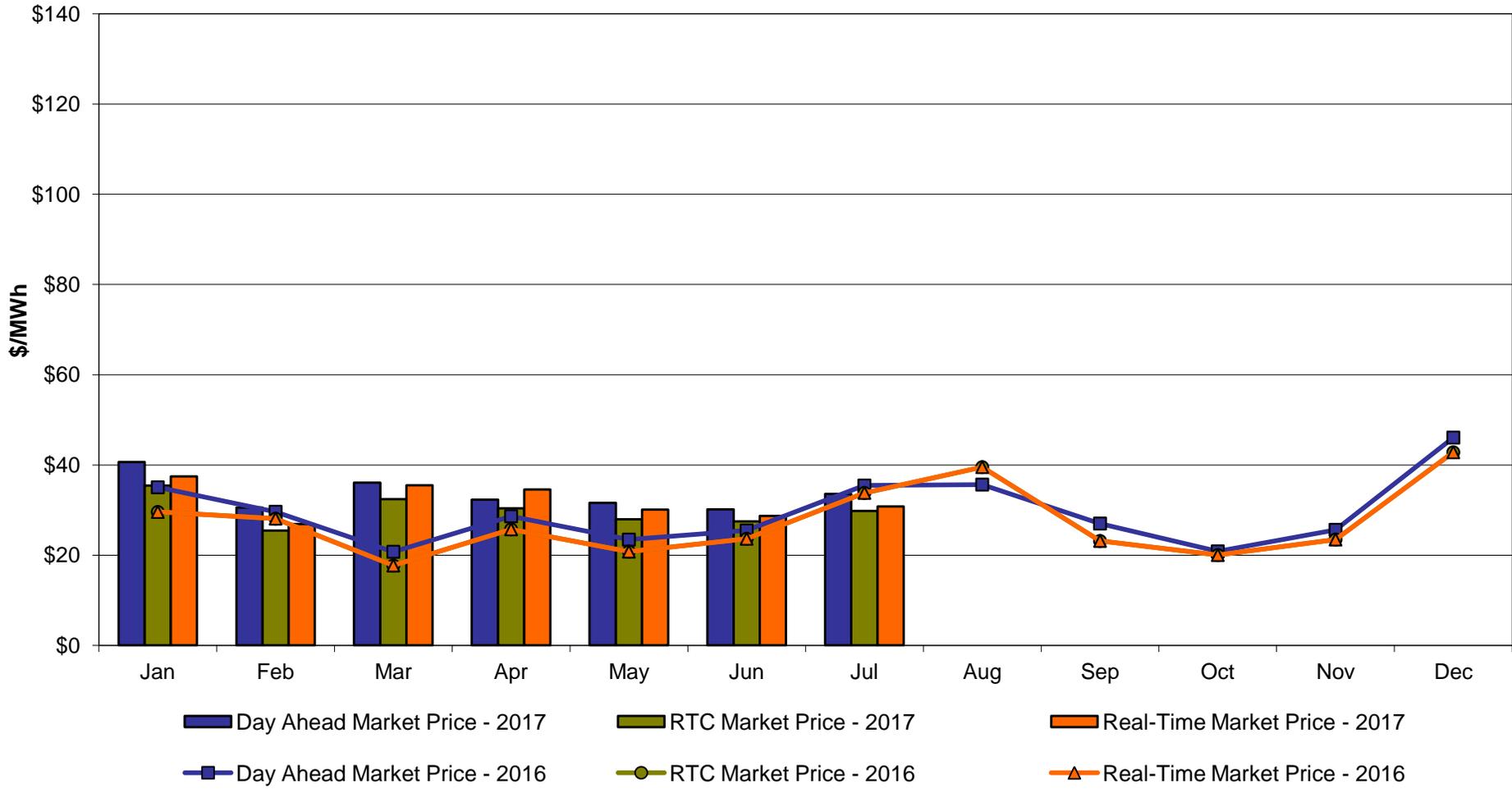
Capital Zone F Monthly Average LBMP Prices 2016 - 2017



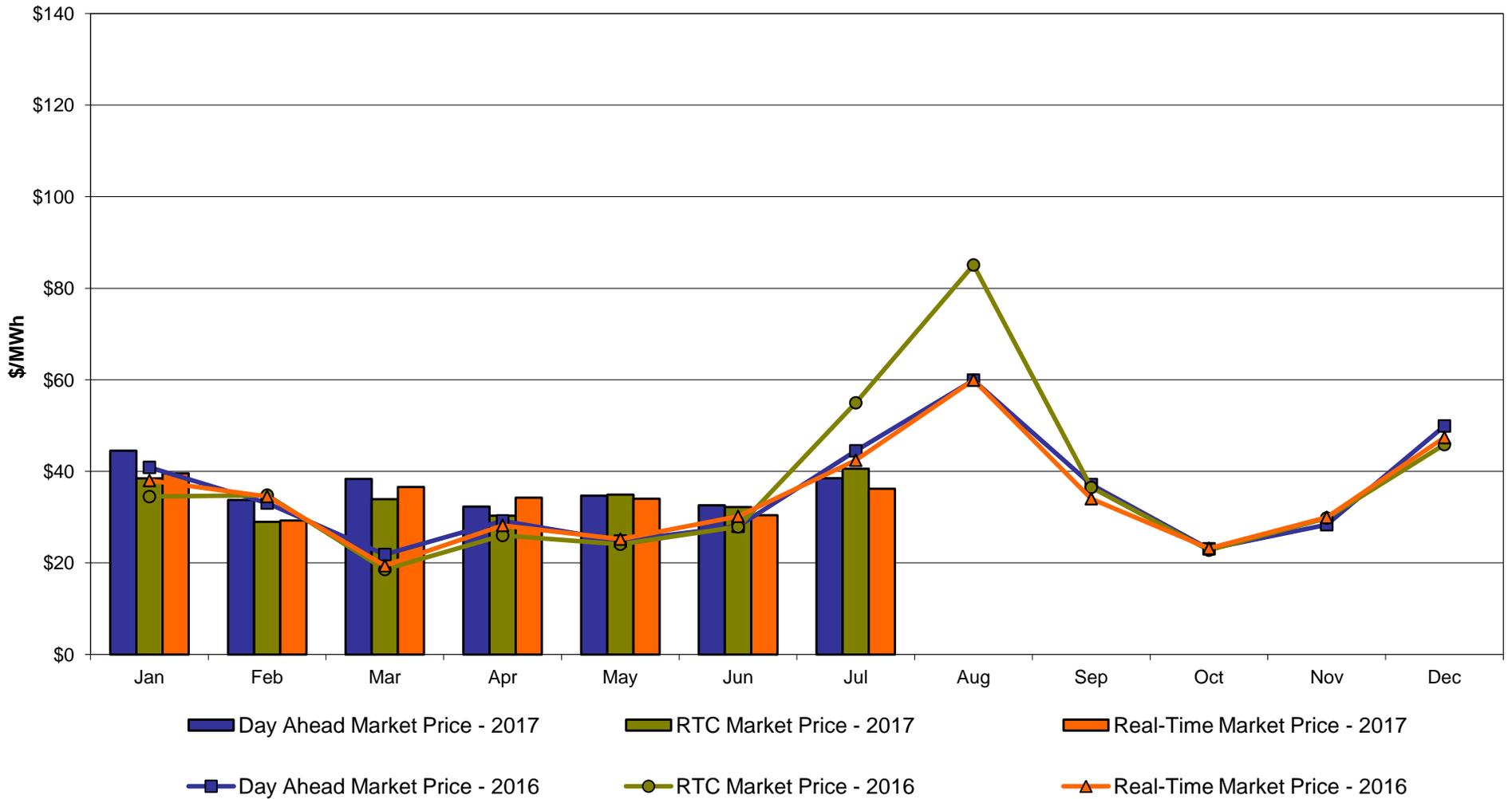
Hudson Valley Zone G Monthly Average LBMP Prices 2016 - 2017



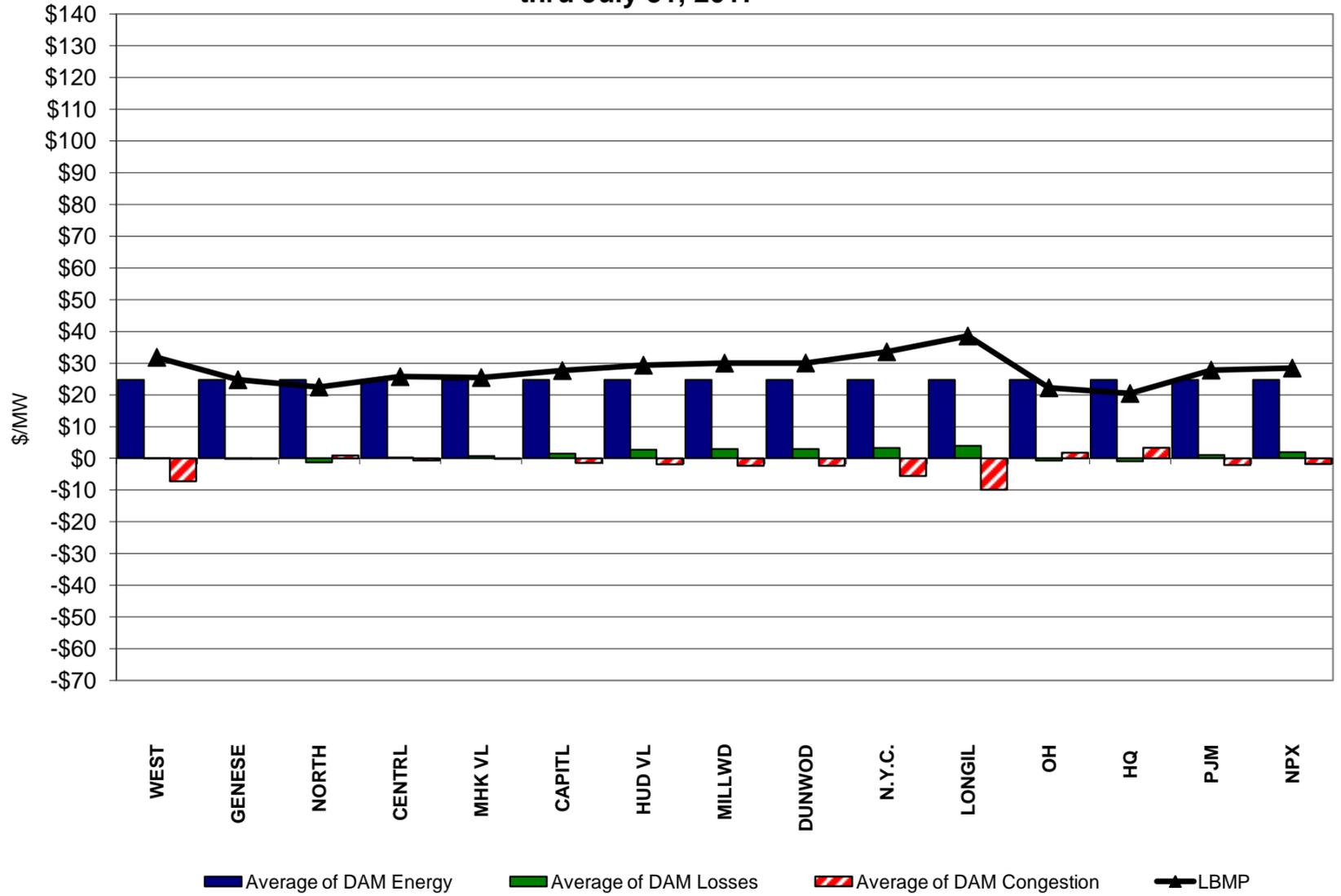
NYC Zone J Monthly Average LBMP Prices 2016 - 2017



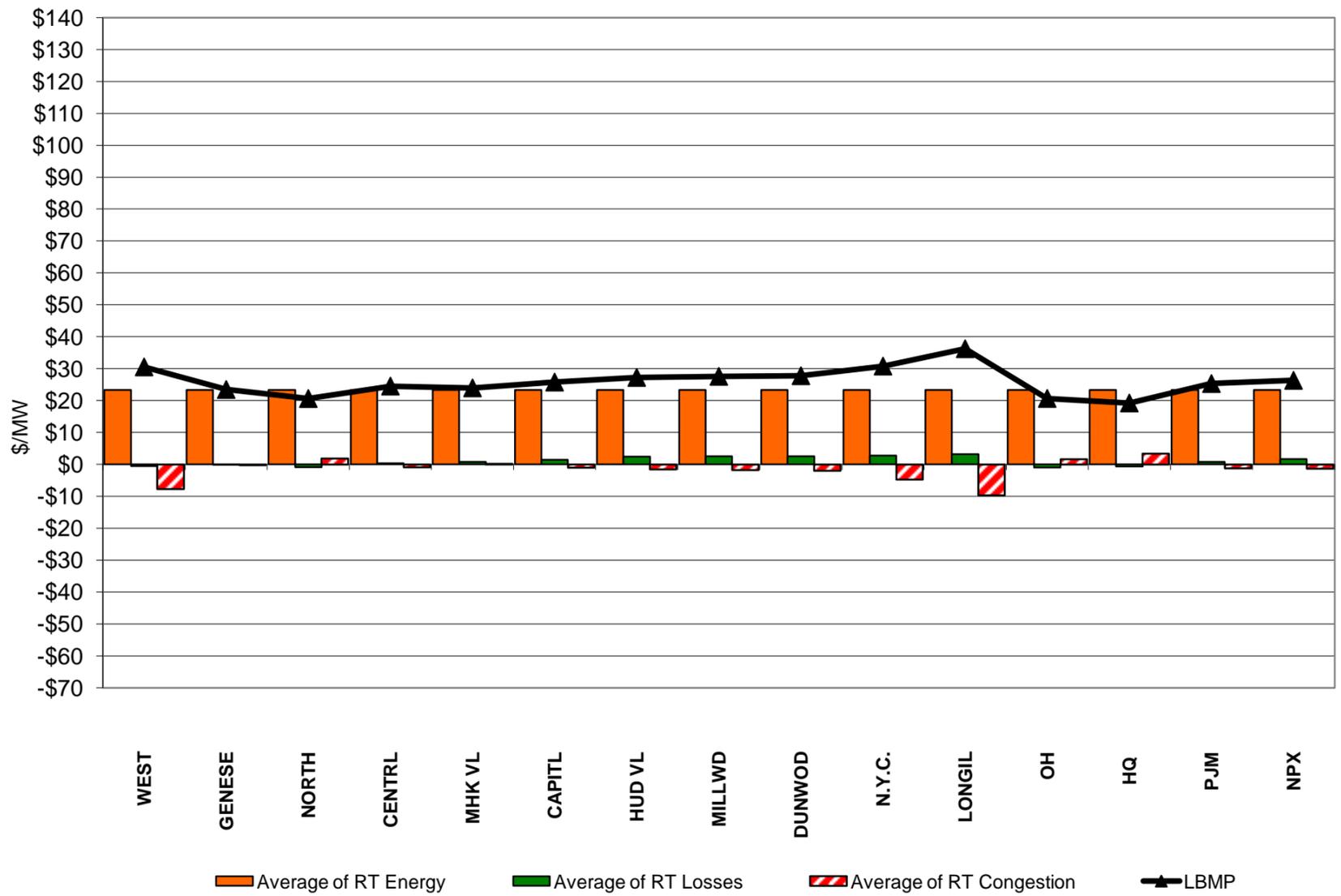
Long Island Zone K Monthly Average LBMP Prices 2016 - 2017



**DAM Zonal Unweighted Monthly Average LBMP Components
thru July 31, 2017**

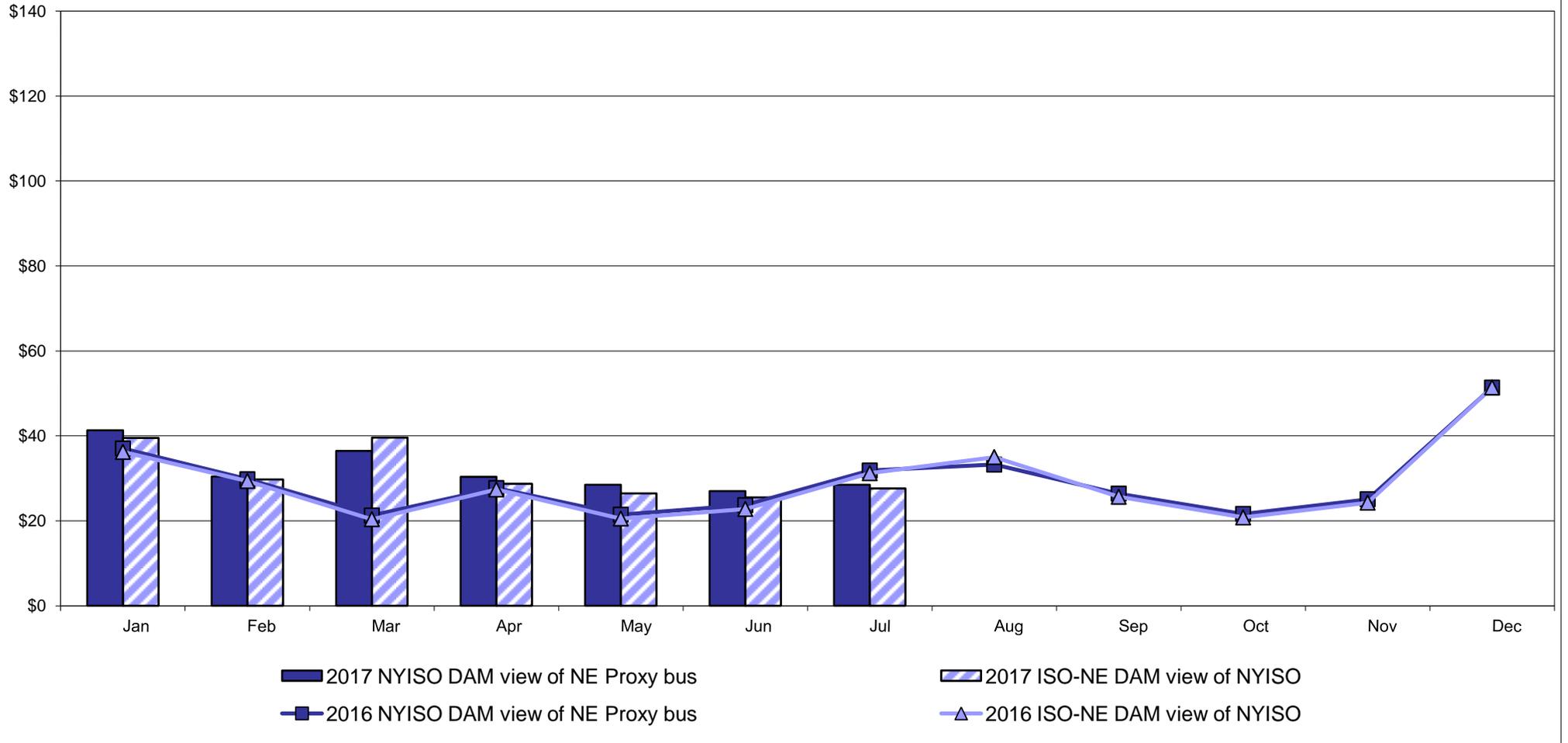


**RT Zonal Unweighted Monthly Average LBMP Components
thru July 31, 2017**

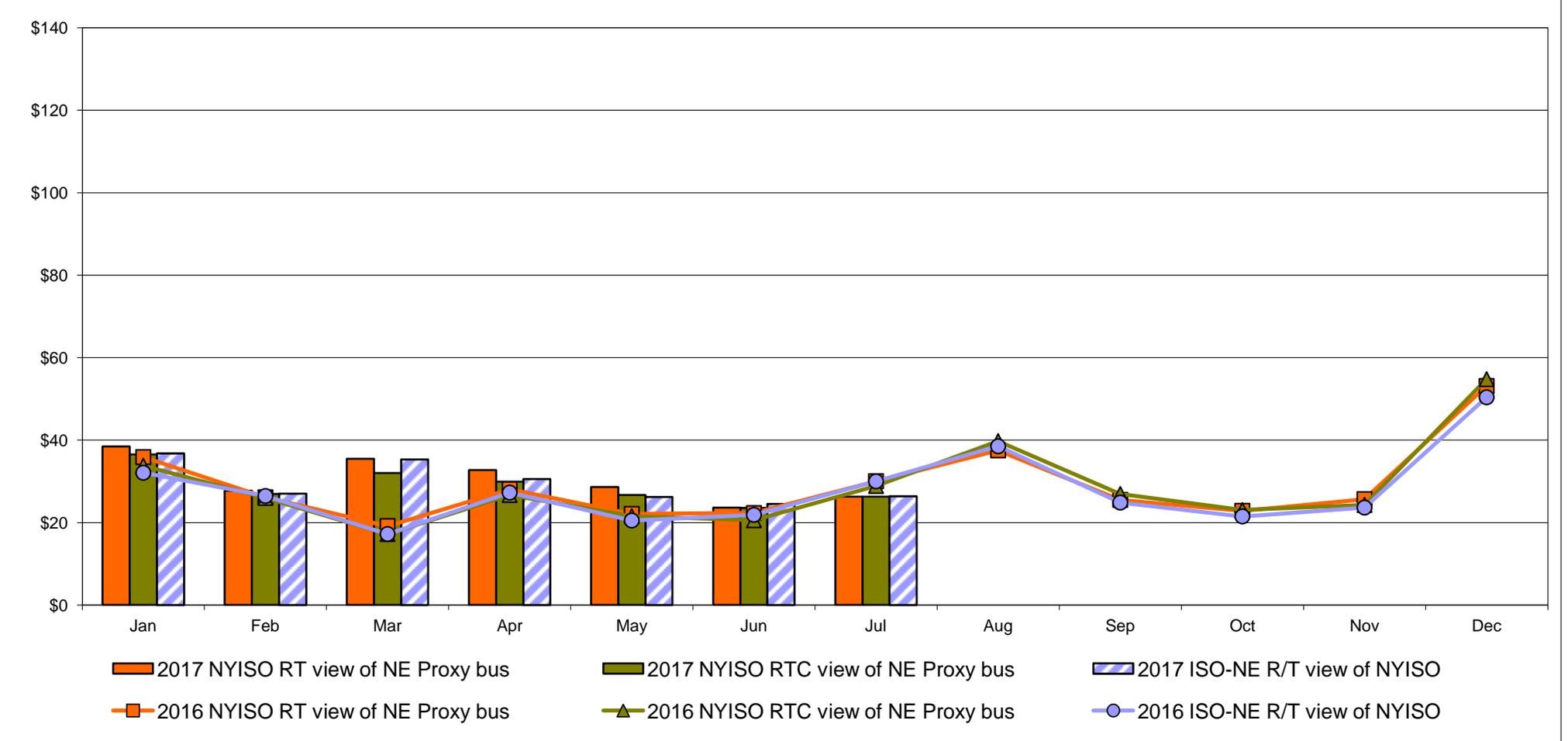


External Comparison ISO-New England

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

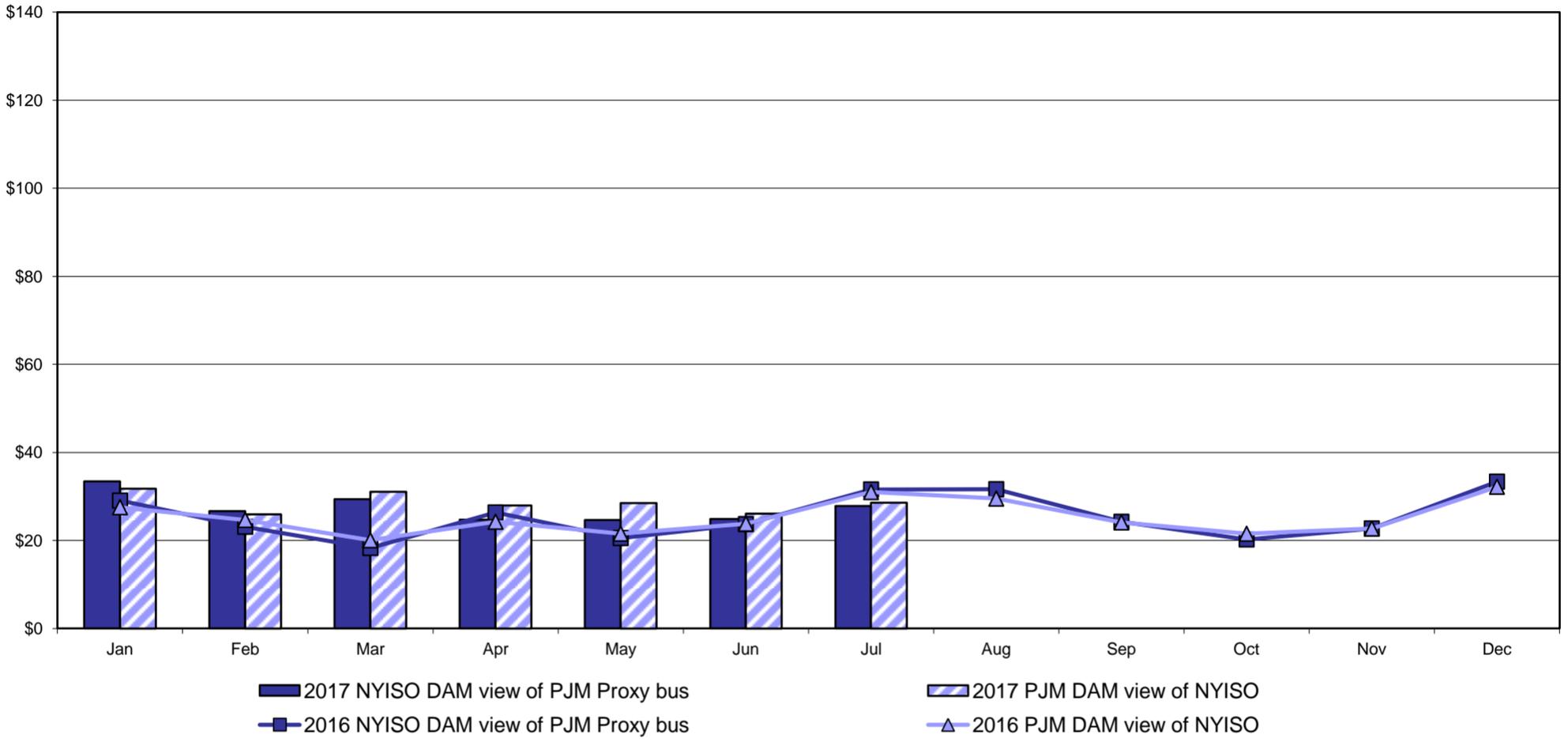


Real Time Market External Zone Comparison: ISO-NE (\$/MWh)

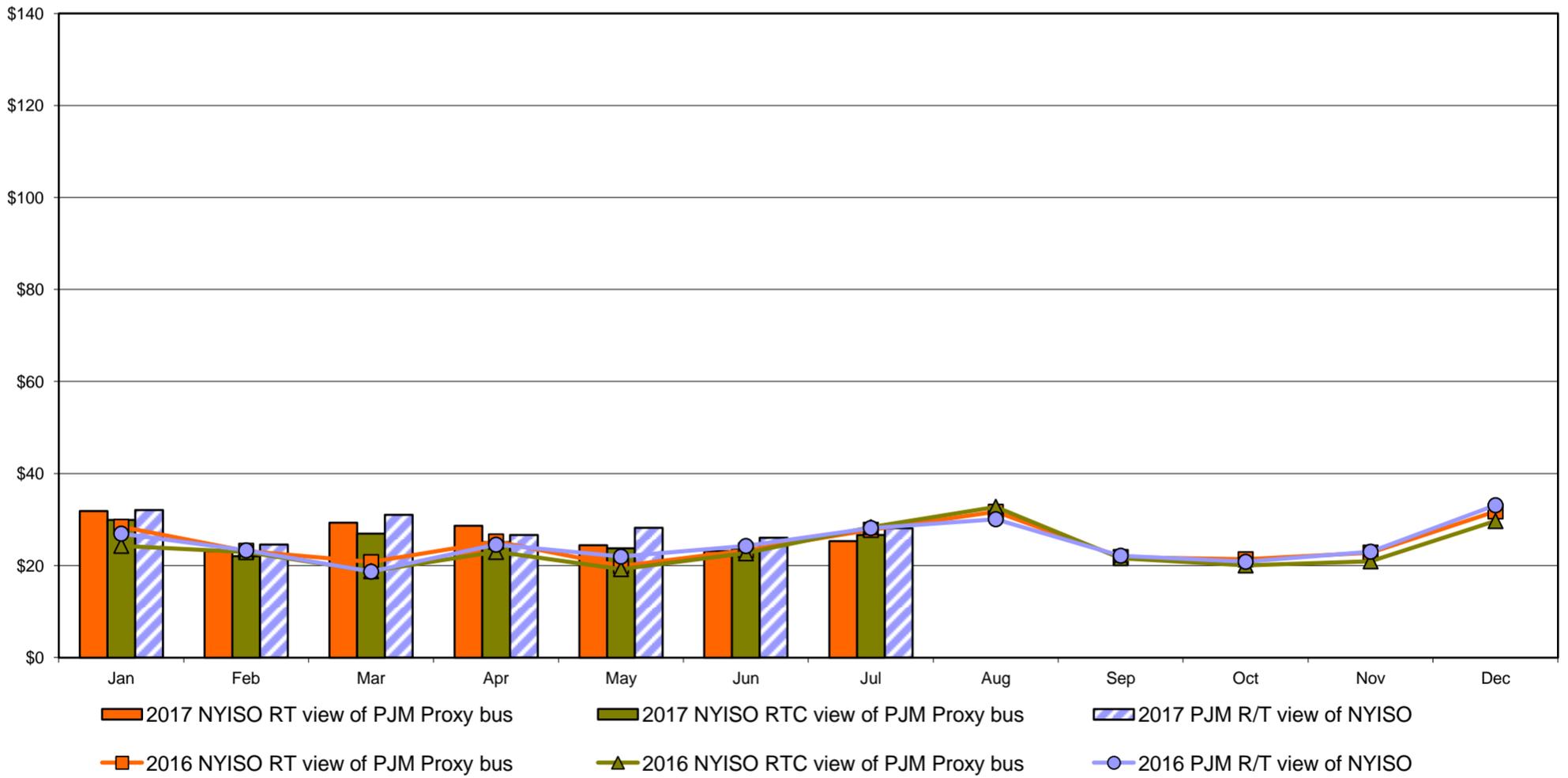


External Comparison PJM

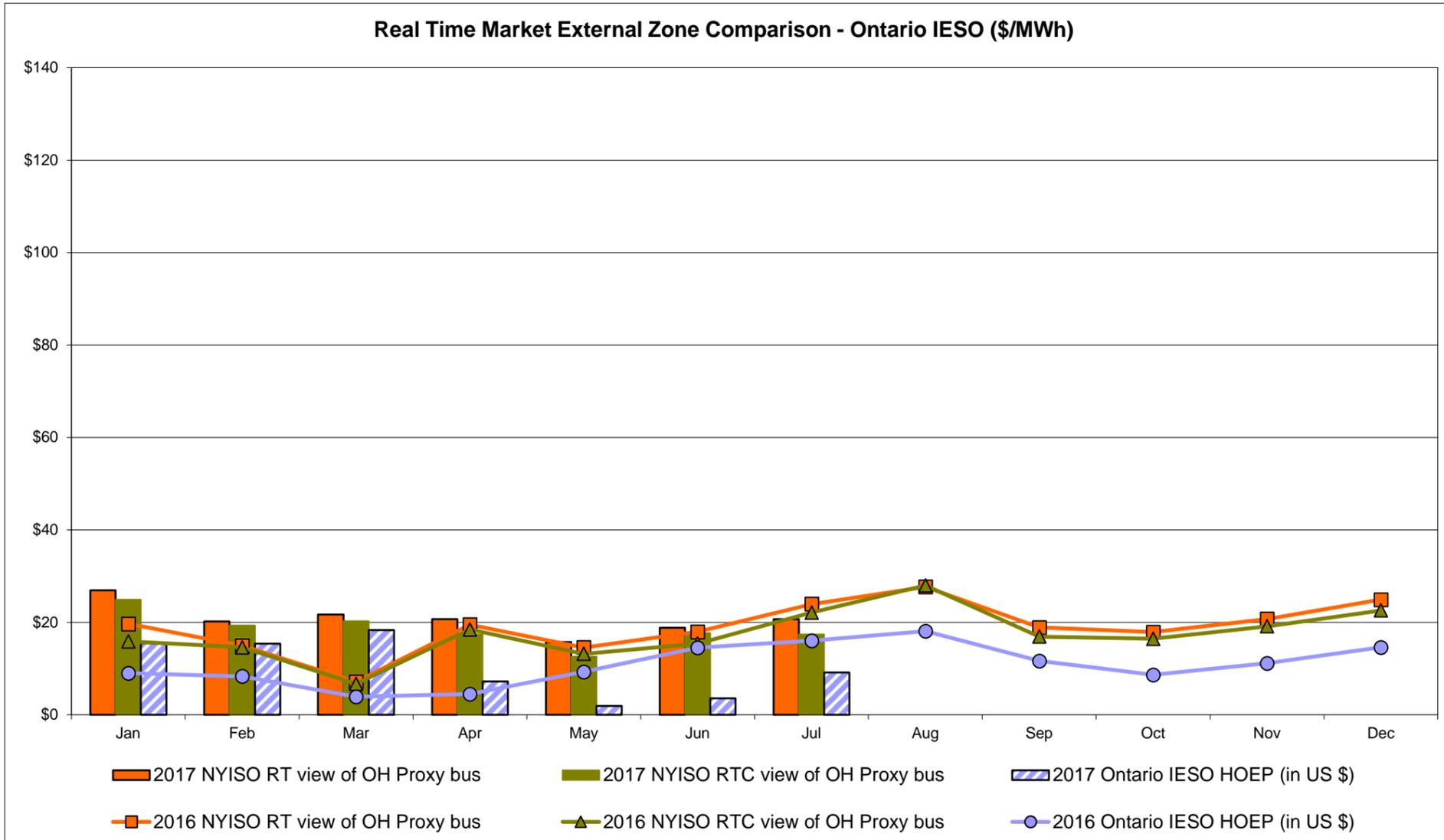
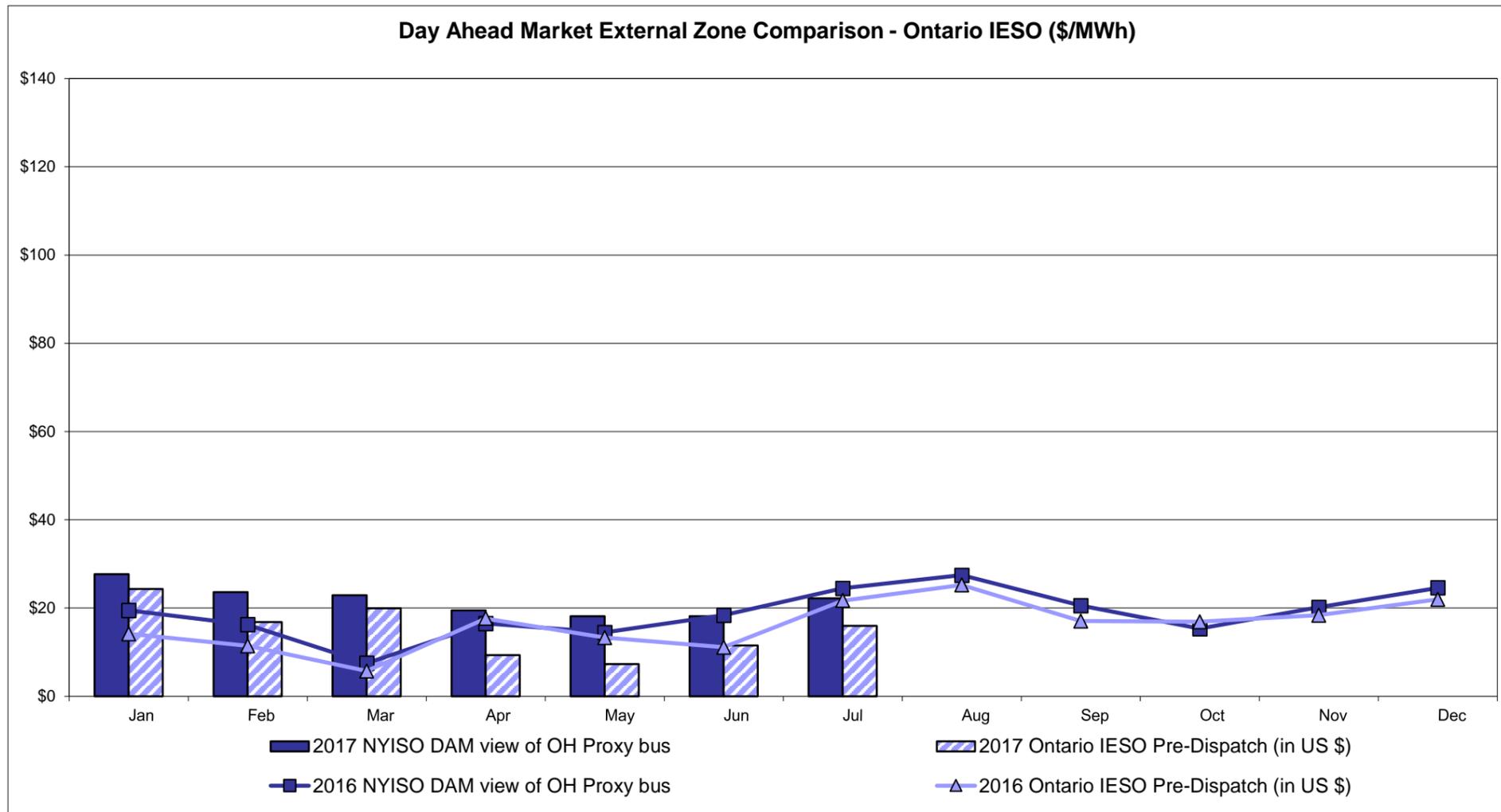
Day Ahead Market External Zone Comparison - PJM (\$/MWh)



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

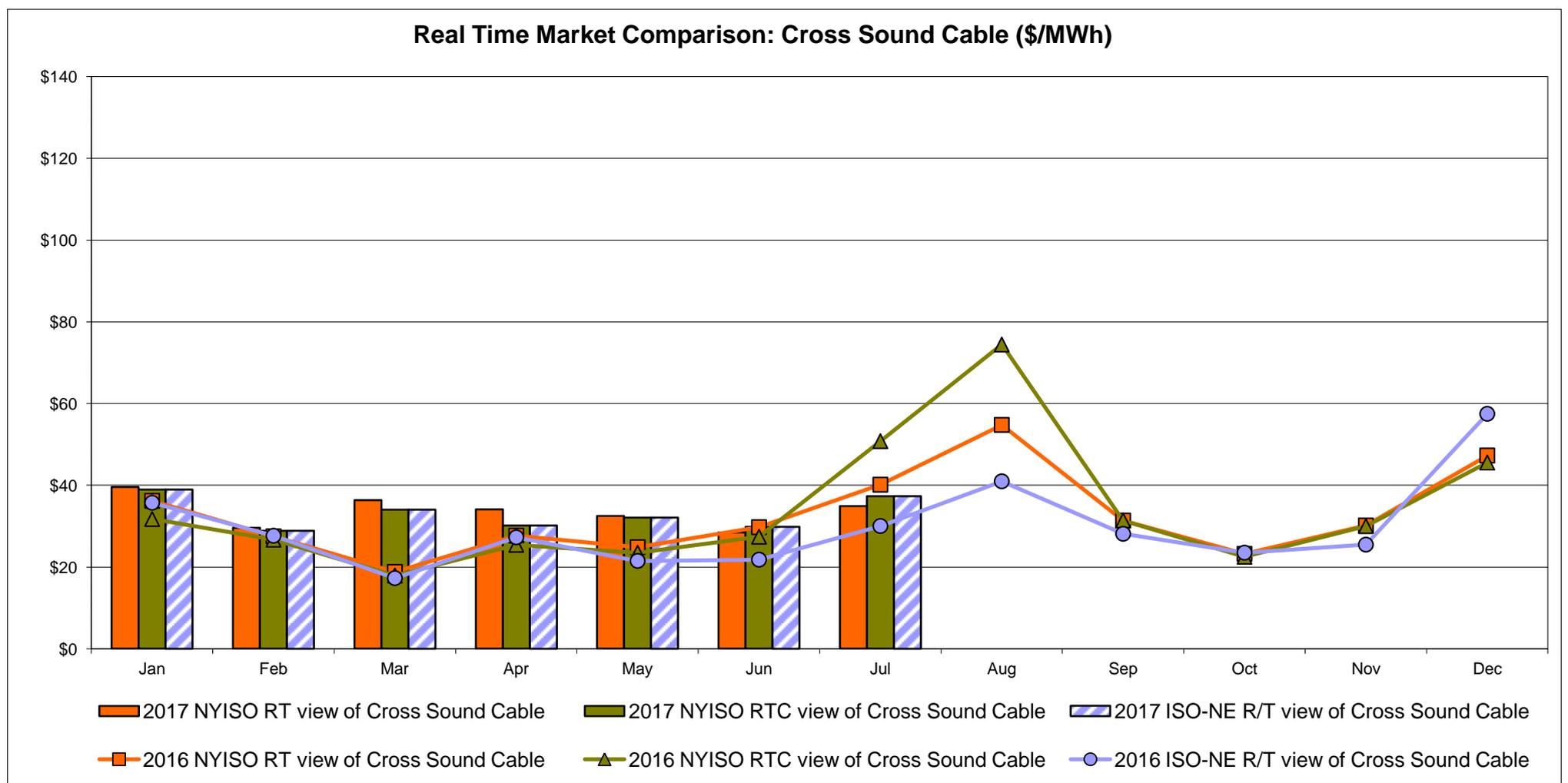
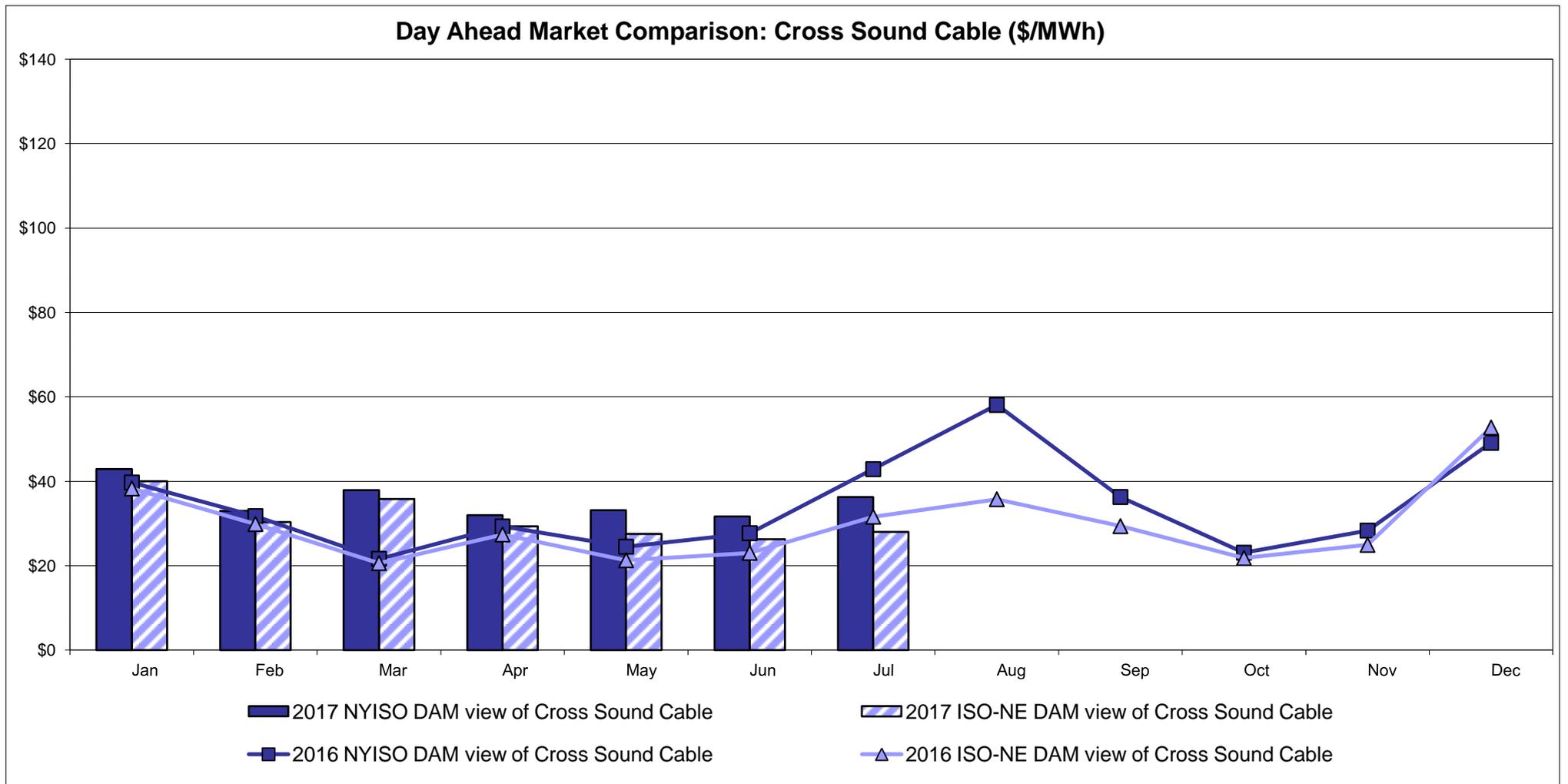


External Comparison Ontario IESO



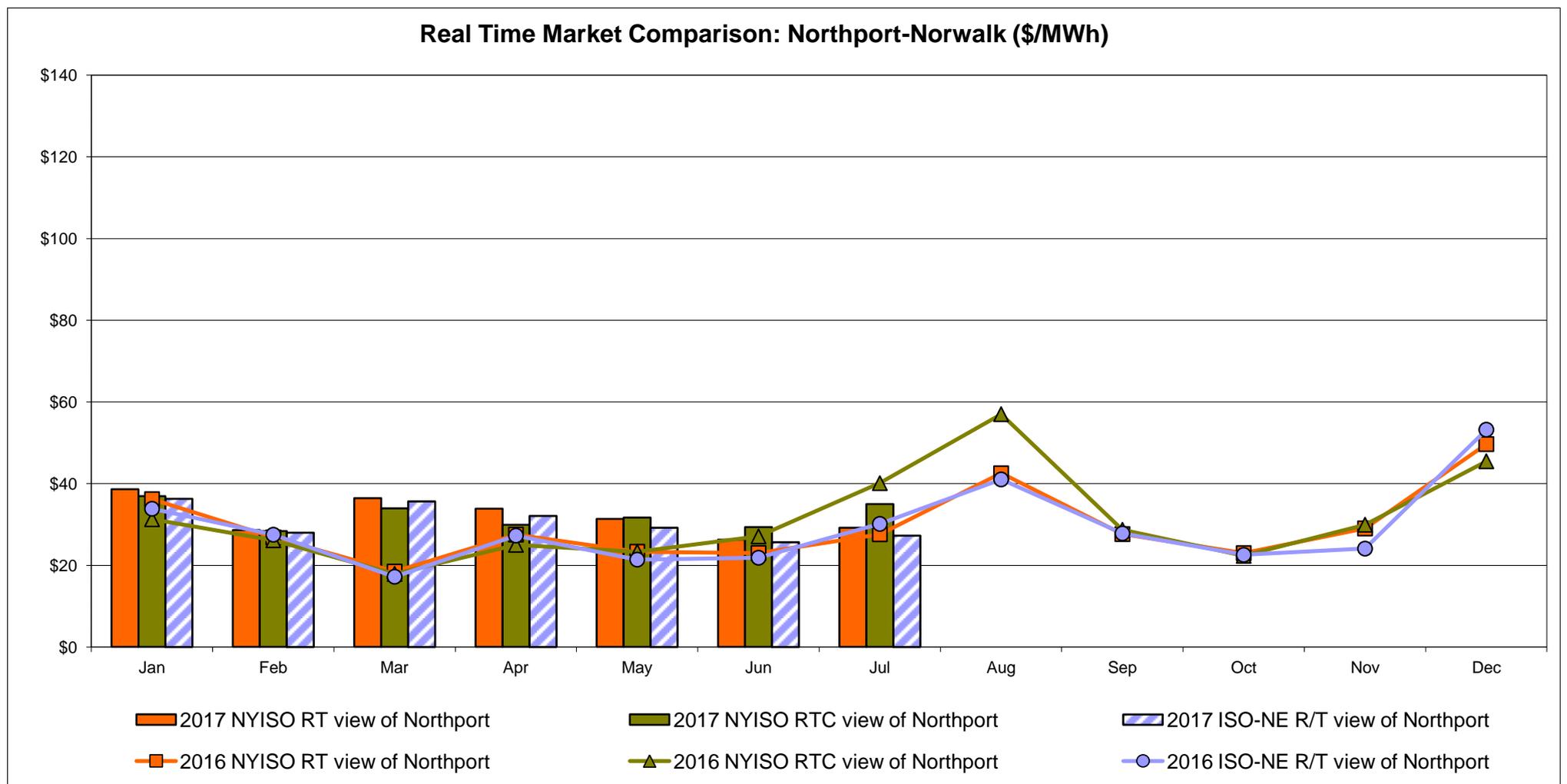
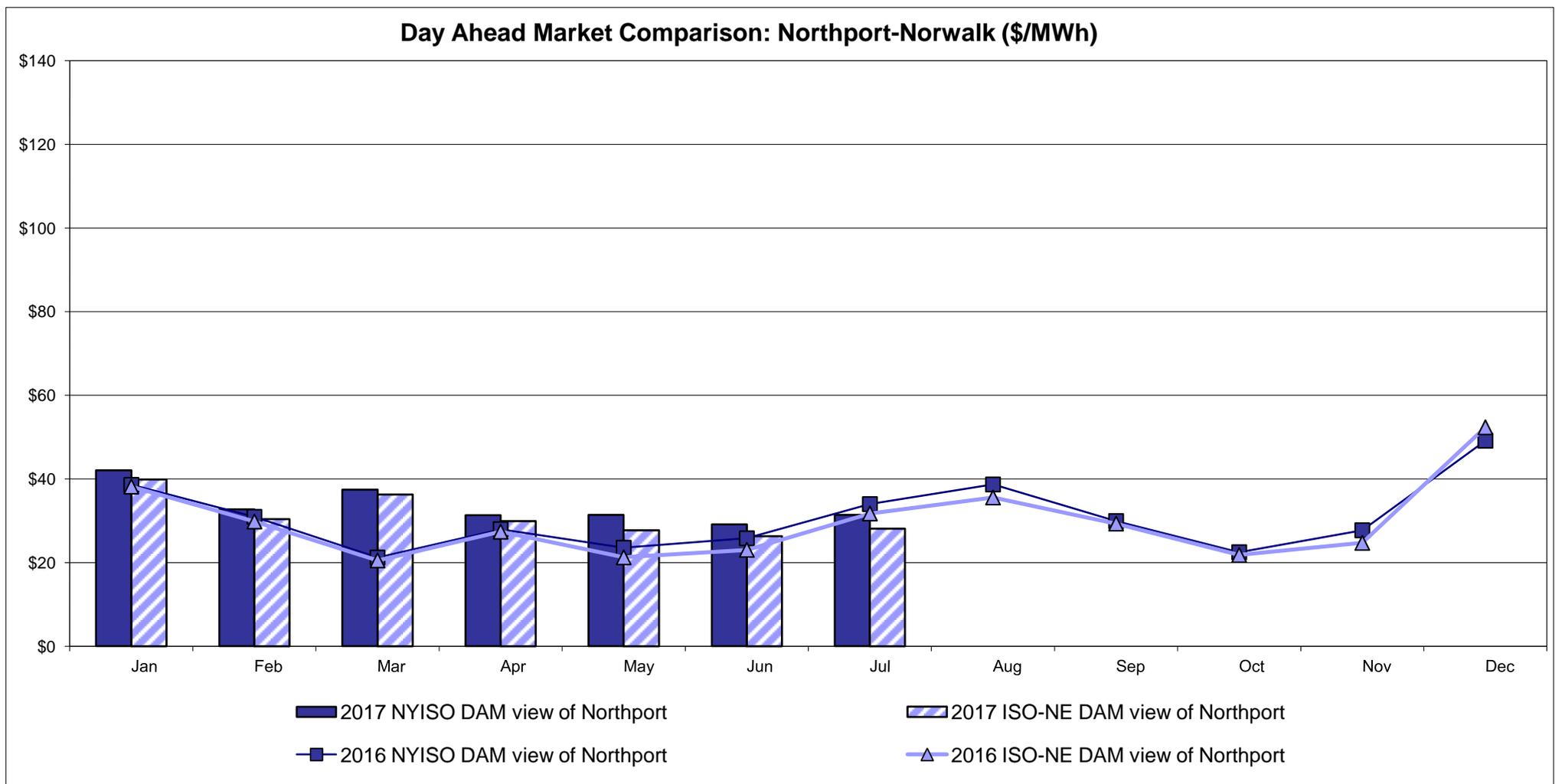
Notes: Exchange factor used for July 2017 was 0.787339580 to US
 HOEP: Hourly Ontario Energy Price
 Pre-Dispatch: Projected Energy Price

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.

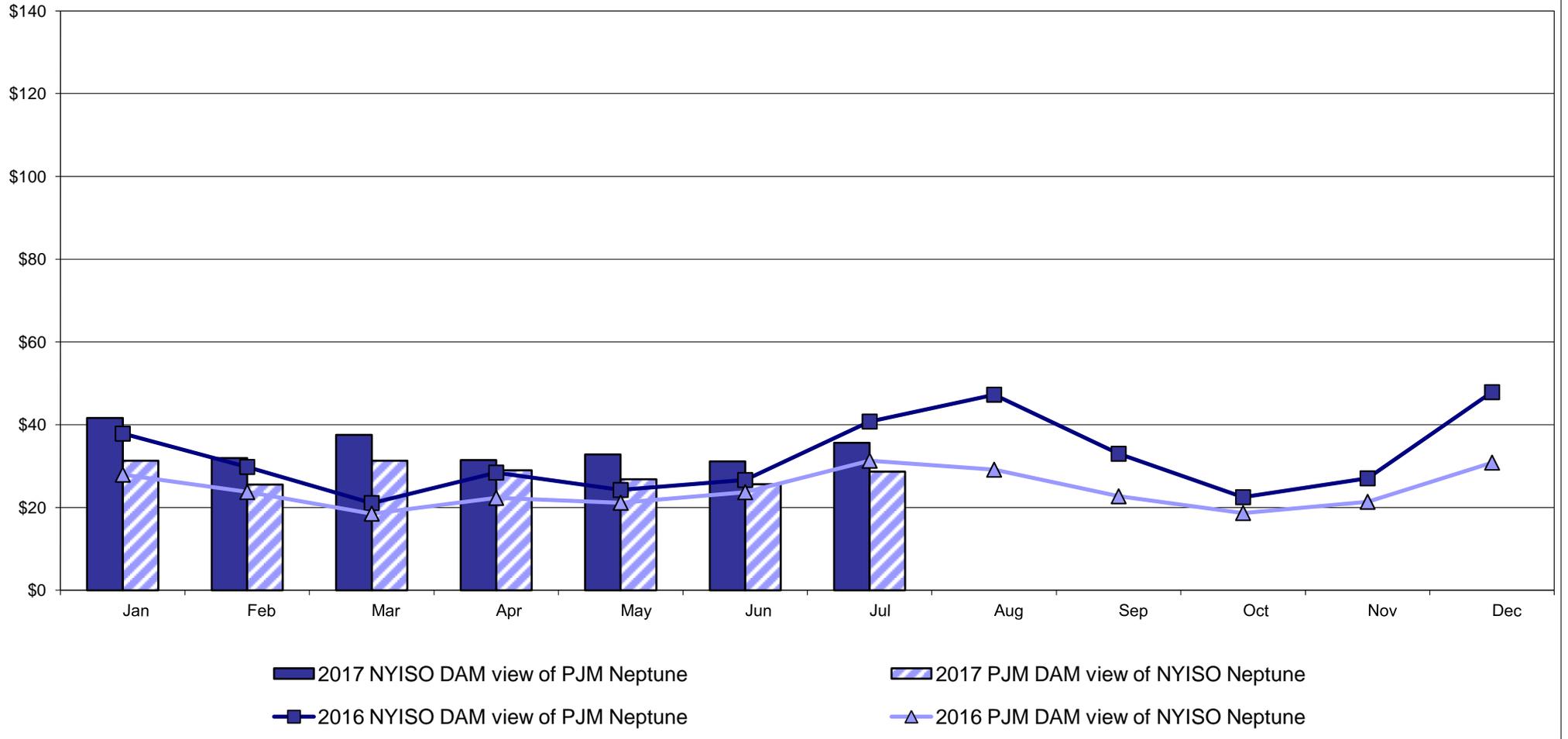
External Controllable Line: Northport - Norwalk (New England)



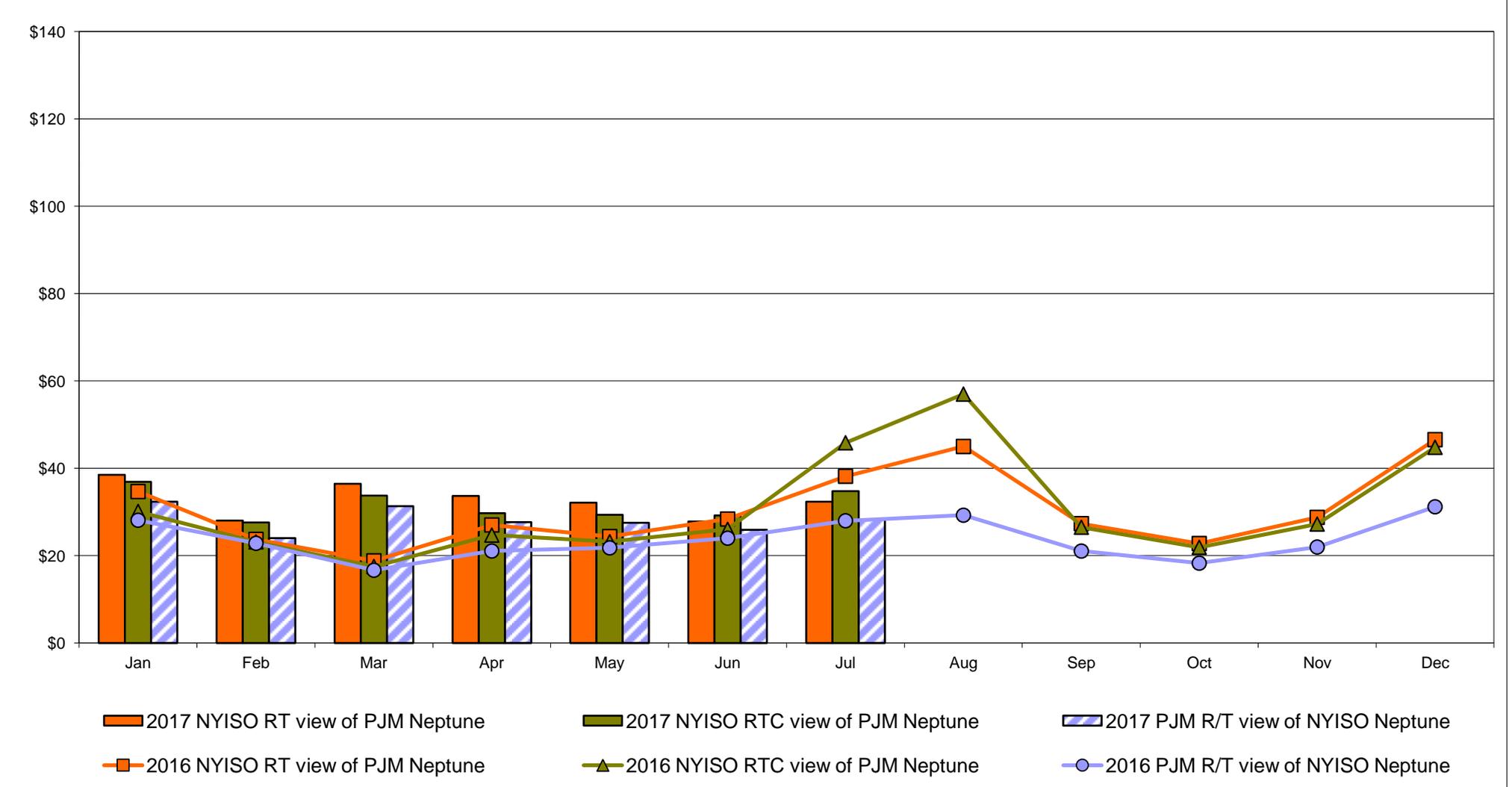
Note:
 ISO-NE Forecast is an advisory posting @ 18:00 day before.
 The DAM and R/T prices at the Northport 138 interface are used for ISO-NE.
 The DAM and R/T prices at the 1385 interface are used for NYISO.

External Controllable Line: Neptune (PJM)

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

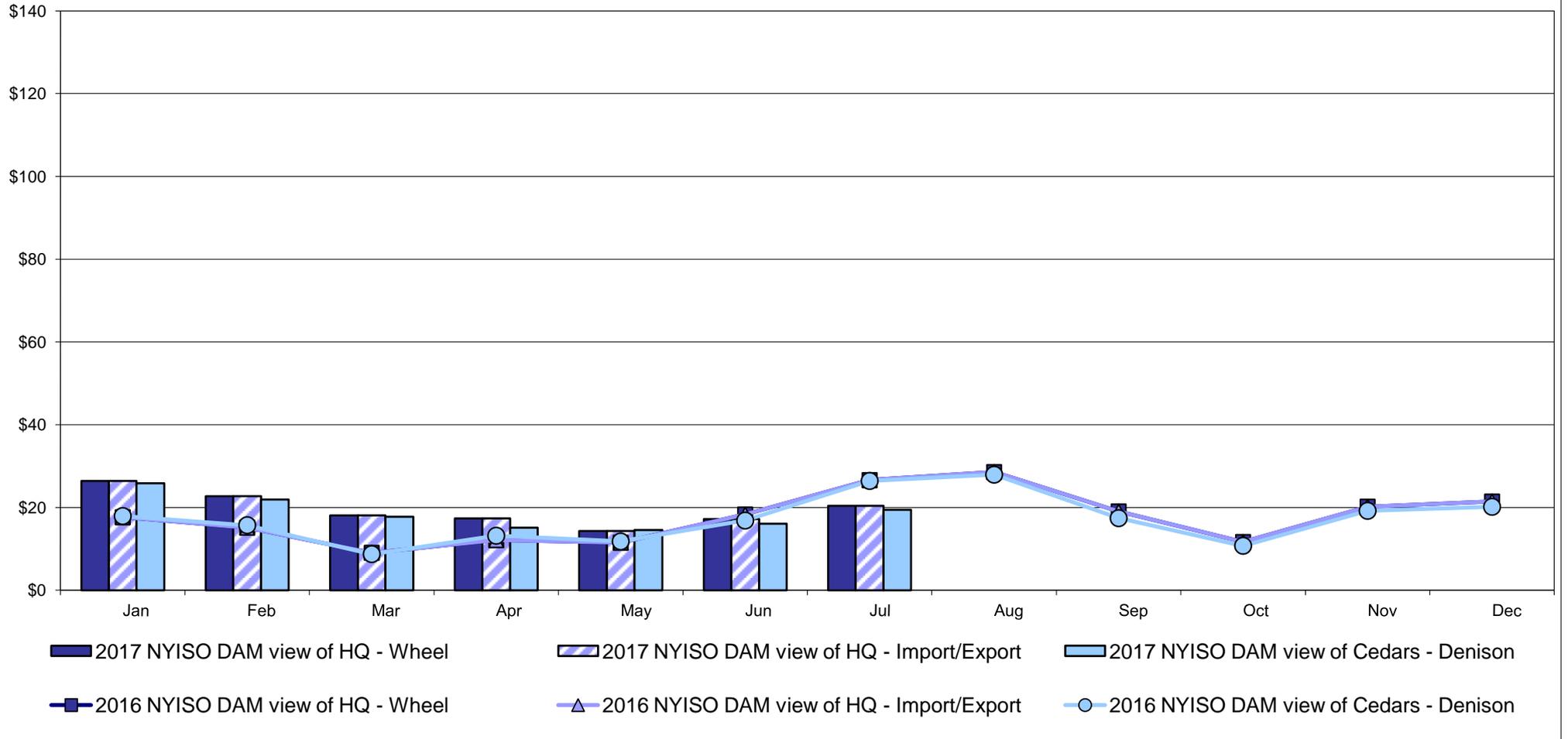


Real Time Market Comparison: Neptune (\$/MWh)

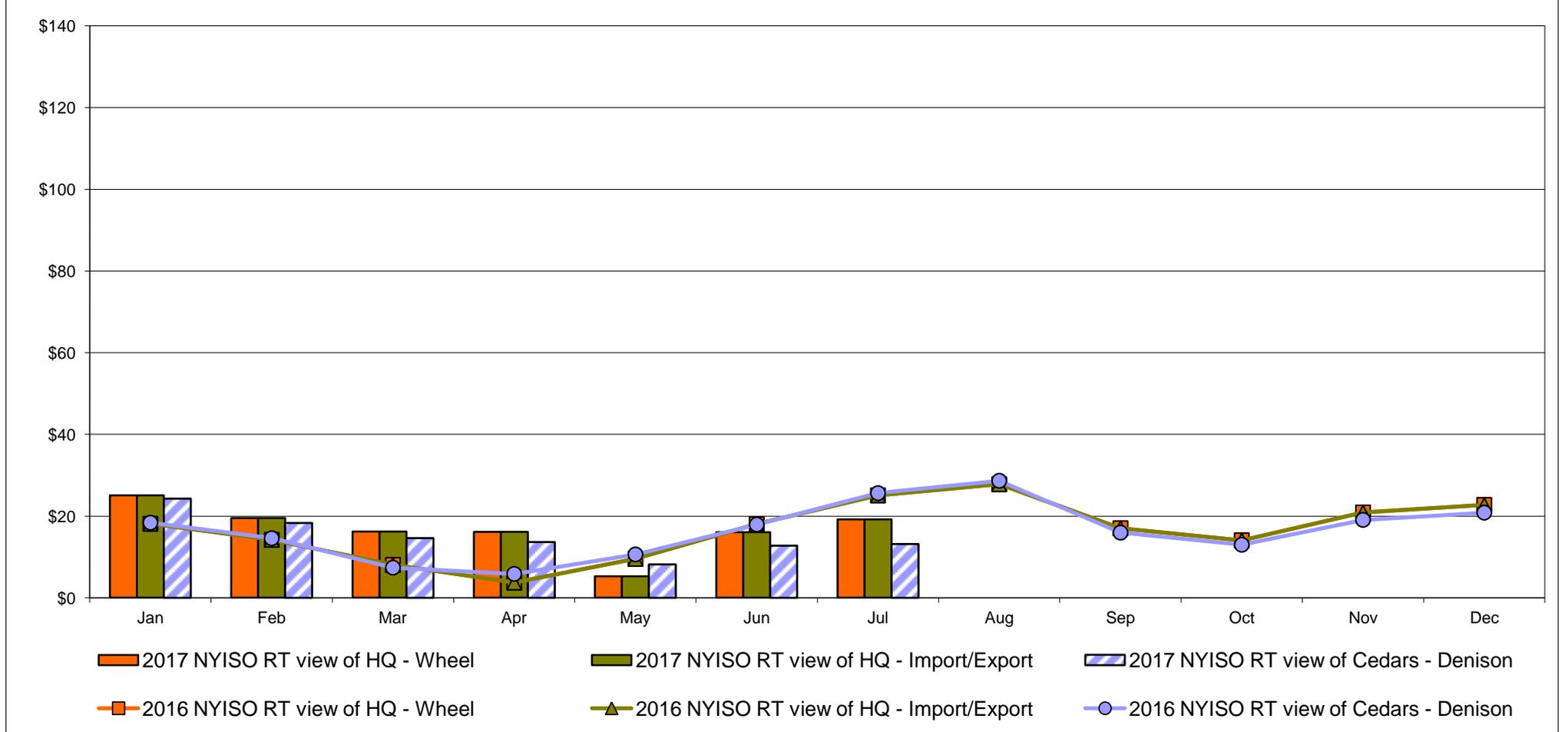


External Comparison Hydro-Quebec

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

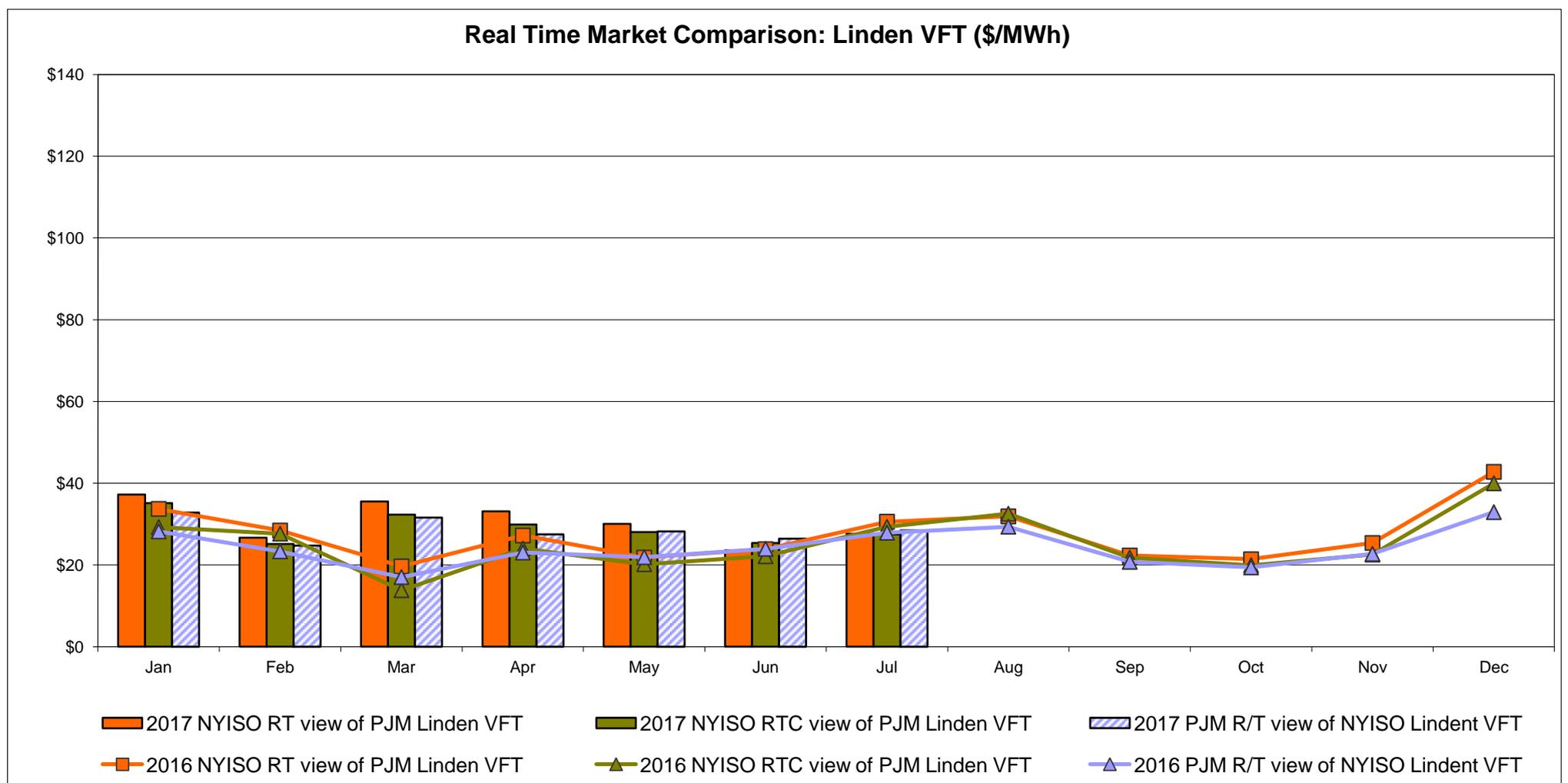
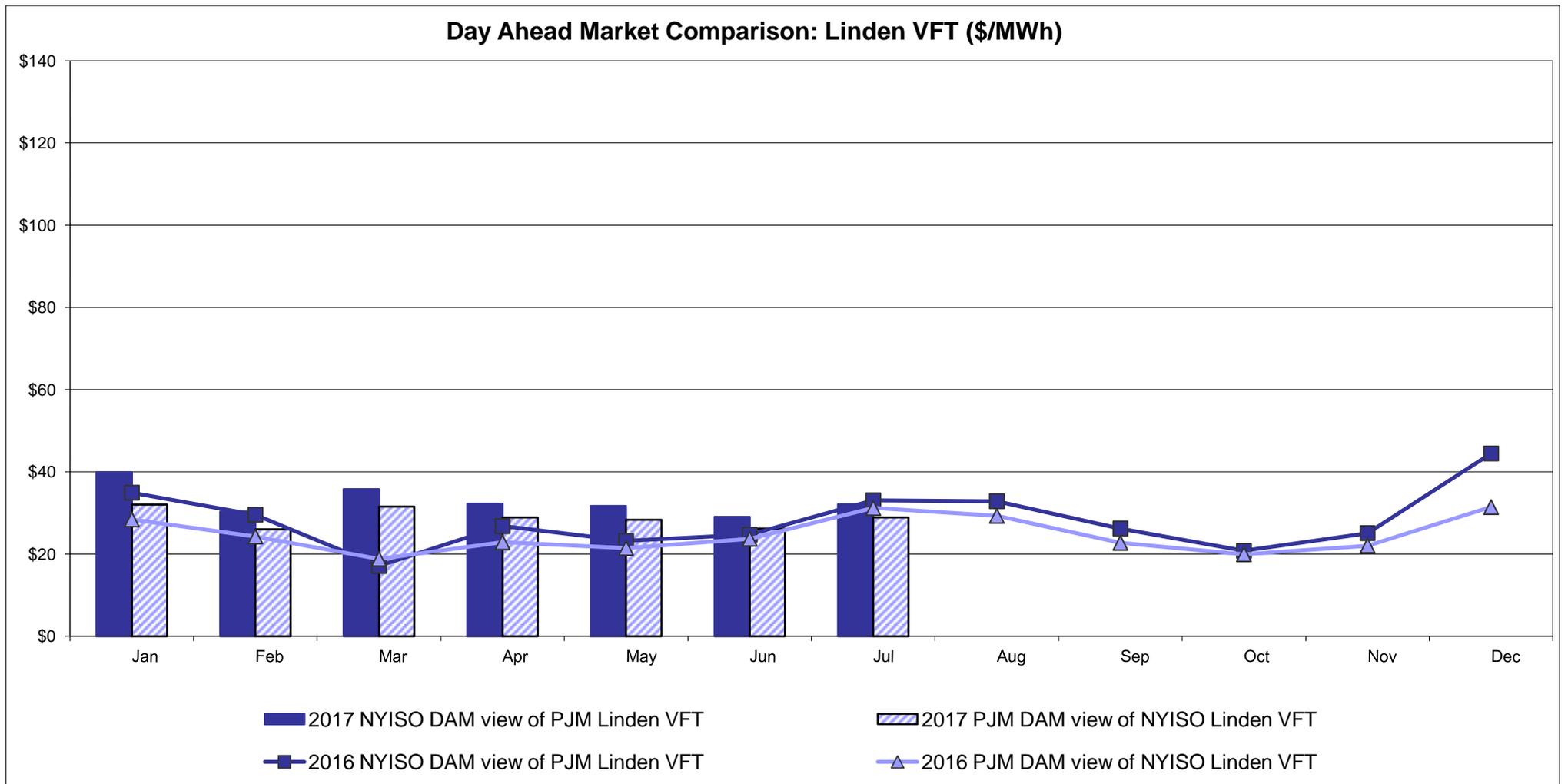


Real Time Market External Zone Comparison - HQ (\$/MWh)

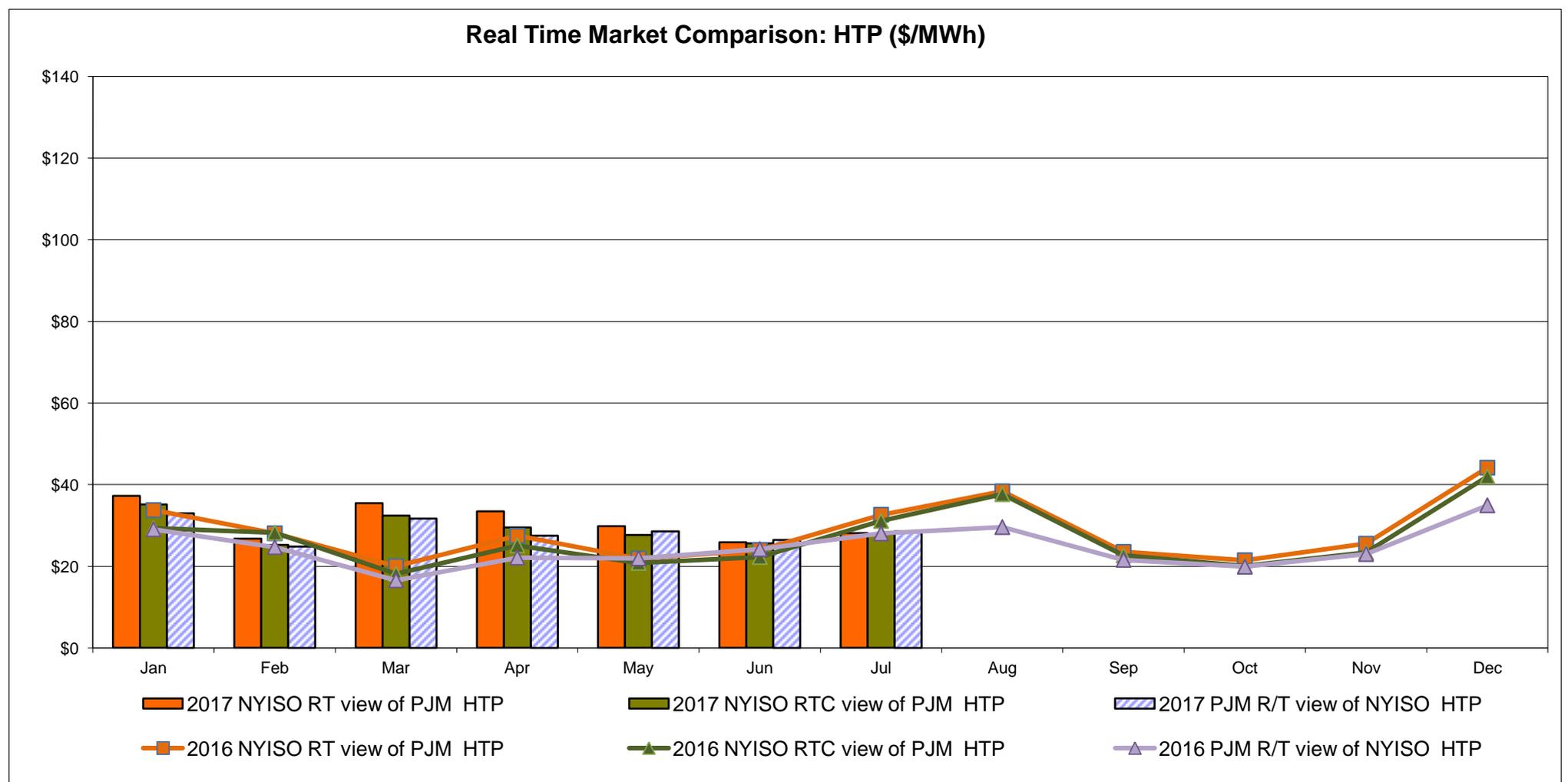
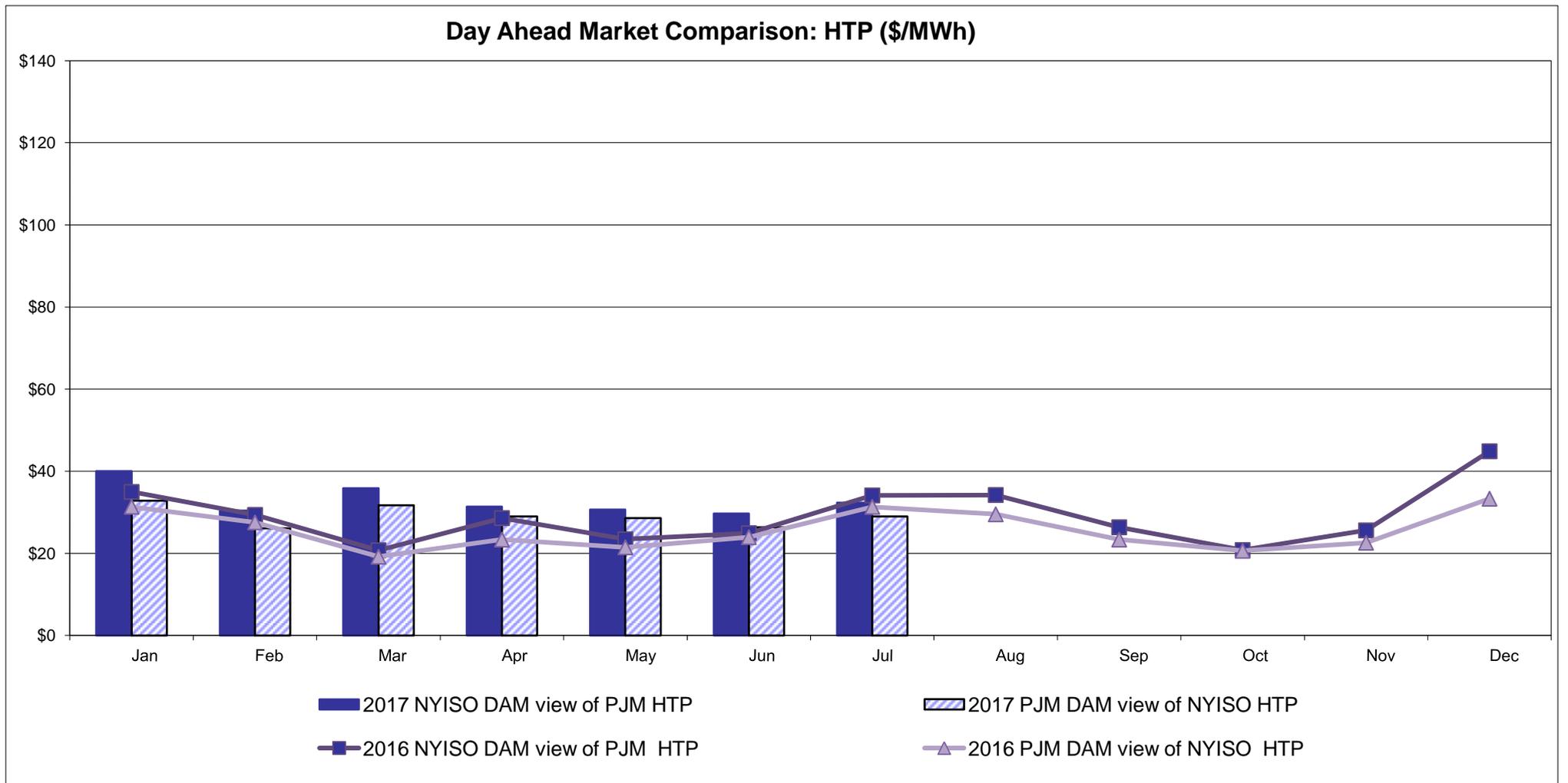


Note:
Hydro-Quebec Prices are unavailable.

External Controllable Line: Linden VFT (PJM)



External Controllable Line: Hudson (PJM)

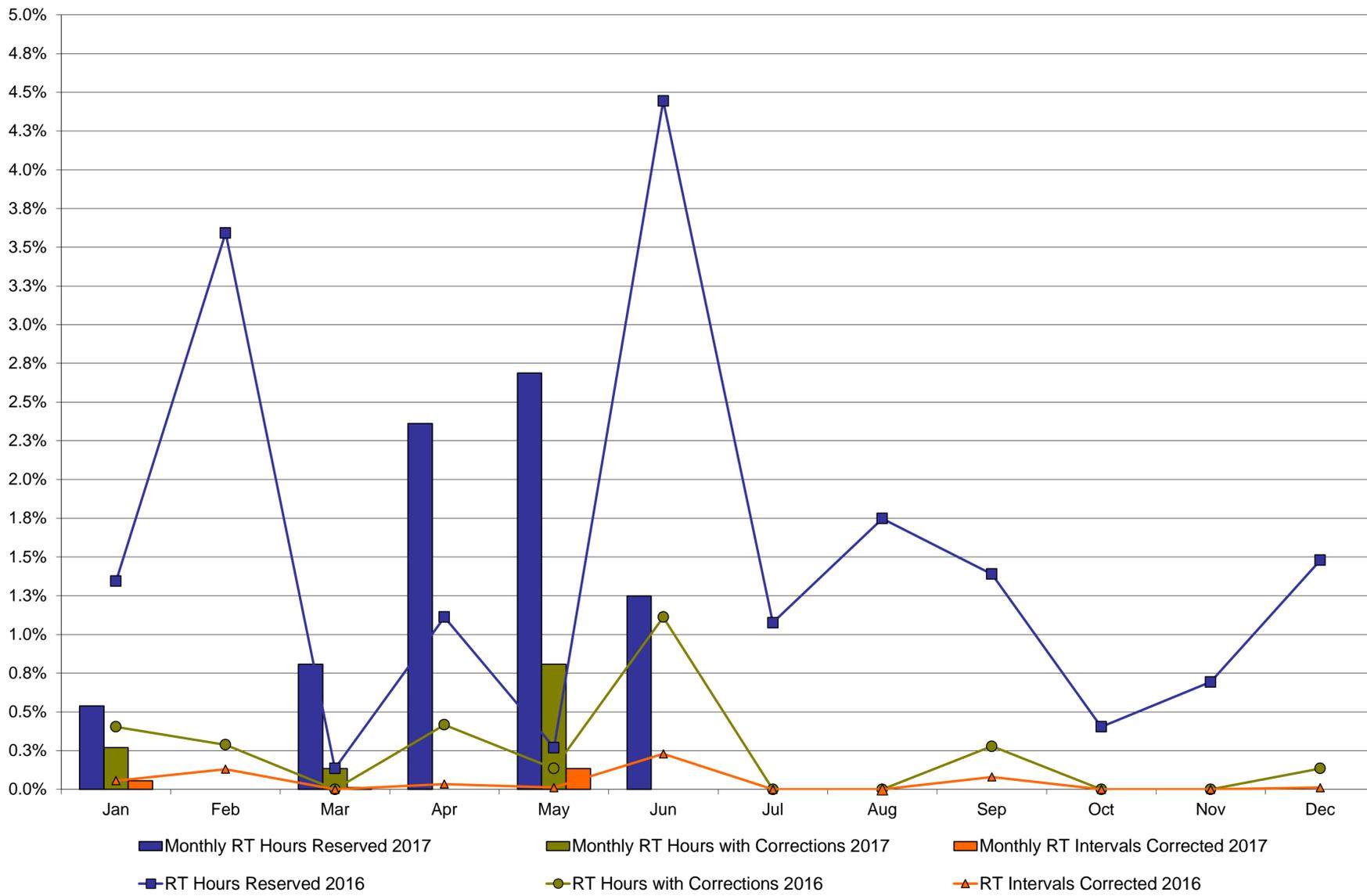


NYISO Real Time Price Correction Statistics

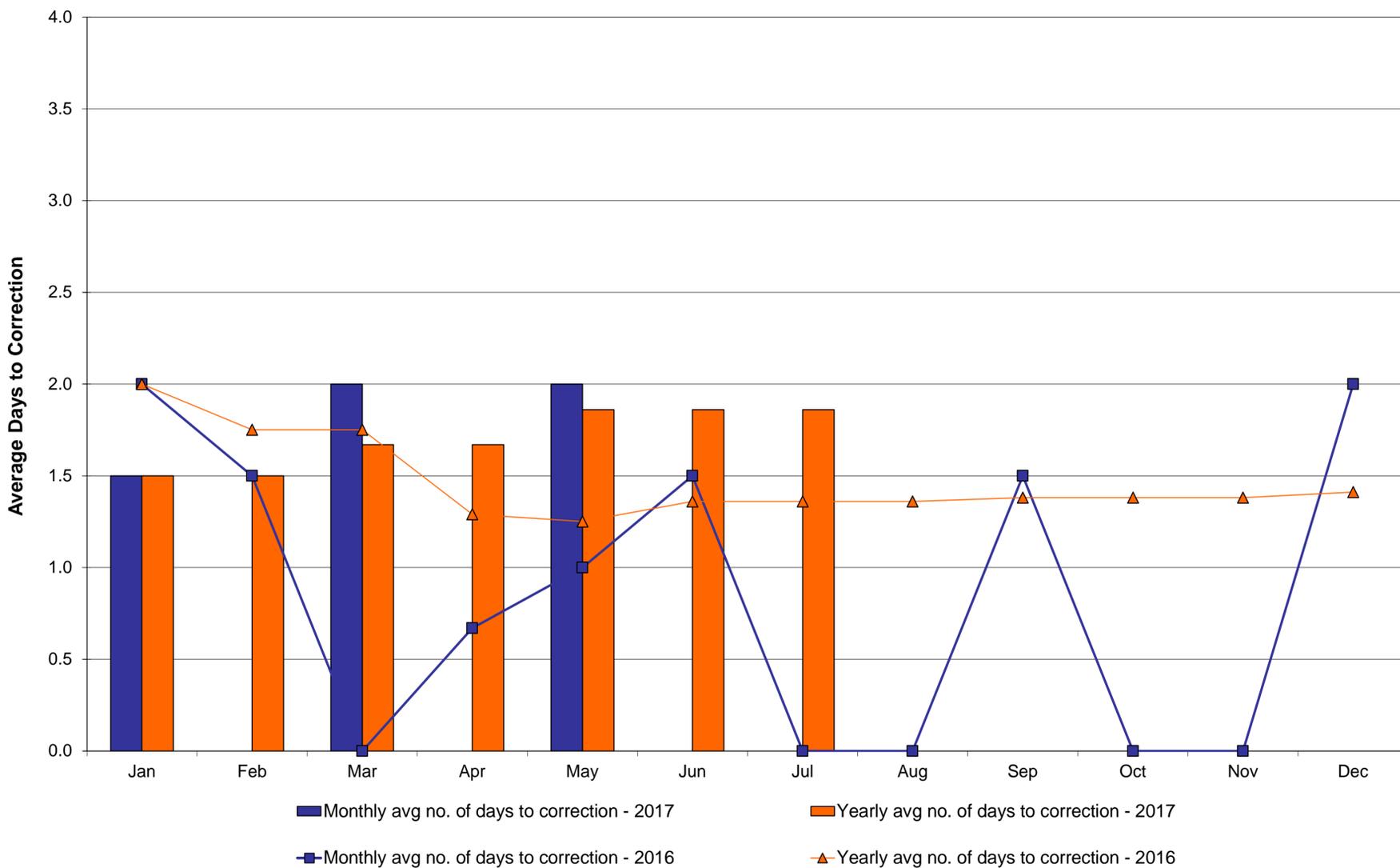
2017		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
Hour Corrections													
Number of hours with corrections	in the month	2	0	1	0	6	0	0					
Number of hours	in the month	744	672	743	720	744	720	744					
% of hours with corrections	in the month	0.27%	0.00%	0.13%	0.00%	0.81%	0.00%	0.00%					
% of hours with corrections	year-to-date	0.27%	0.14%	0.14%	0.10%	0.25%	0.21%	0.18%					
Interval Corrections													
Number of intervals corrected	in the month	5	0	1	0	12	0	0					
Number of intervals	in the month	8,983	8,101	9,026	8,745	9,004	8,712	8,968					
% of intervals corrected	in the month	0.06%	0.00%	0.01%	0.00%	0.13%	0.00%	0.00%					
% of intervals corrected	year-to-date	0.06%	0.03%	0.02%	0.02%	0.04%	0.03%	0.03%					
Hours Reserved													
Number of hours reserved	in the month	4	0	6	17	20	9	0					
Number of hours	in the month	744	672	743	720	744	720	744					
% of hours reserved	in the month	0.54%	0.00%	0.81%	2.36%	2.69%	1.25%	0.00%					
% of hours reserved	year-to-date	0.54%	0.28%	0.46%	0.94%	1.30%	1.29%	1.10%					
Days to Correction *													
Avg. number of days to correction	in the month	1.50	0.00	2.00	0.00	2.00	0.00	0.00					
Avg. number of days to correction	year-to-date	1.50	1.50	1.67	1.67	1.86	1.86	1.86					
Days Without Corrections													
Days without corrections	in the month	29	28	30	30	27	30	31					
Days without corrections	year-to-date	29	57	87	117	144	174	205					
2016		<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>
Hour Corrections													
Number of hours with corrections	in the month	3	2	0	3	1	8	0	0	2	0	0	1
Number of hours	in the month	744	696	743	720	744	720	744	744	720	744	721	744
% of hours with corrections	in the month	0.40%	0.29%	0.00%	0.42%	0.13%	1.11%	0.00%	0.00%	0.28%	0.00%	0.00%	0.13%
% of hours with corrections	year-to-date	0.40%	0.35%	0.23%	0.28%	0.25%	0.39%	0.33%	0.29%	0.29%	0.26%	0.24%	0.23%
Interval Corrections													
Number of intervals corrected	in the month	5	11	0	3	1	20	0	0	7	0	0	1
Number of intervals	in the month	9,000	8,440	8,995	8,724	8,987	8,725	9,038	9,048	8,713	8,960	8,724	9,034
% of intervals corrected	in the month	0.06%	0.13%	0.00%	0.03%	0.01%	0.23%	0.00%	0.00%	0.08%	0.00%	0.00%	0.01%
% of intervals corrected	year-to-date	0.06%	0.09%	0.06%	0.05%	0.05%	0.08%	0.06%	0.06%	0.06%	0.05%	0.05%	0.05%
Hours Reserved													
Number of hours reserved	in the month	10	25	1	8	2	32	8	13	10	3	5	11
Number of hours	in the month	744	696	743	720	744	720	744	744	720	744	721	744
% of hours reserved	in the month	1.34%	3.59%	0.13%	1.11%	0.27%	4.44%	1.08%	1.75%	1.39%	0.40%	0.69%	1.48%
% of hours reserved	year-to-date	1.34%	2.43%	1.65%	1.52%	1.26%	1.79%	1.68%	1.69%	1.66%	1.53%	1.46%	1.46%
Days to Correction *													
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	1.50	0.00	0.00	2.00
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	1.38	1.38	1.38	1.41
Days Without Corrections													
Days without corrections	in the month	29	27	31	27	30	24	31	31	28	31	30	30
Days without corrections	year-to-date	29	56	87	114	144	168	199	230	258	289	319	349

* Calendar days from reservation date.

Percentage of Real-Time Corrections

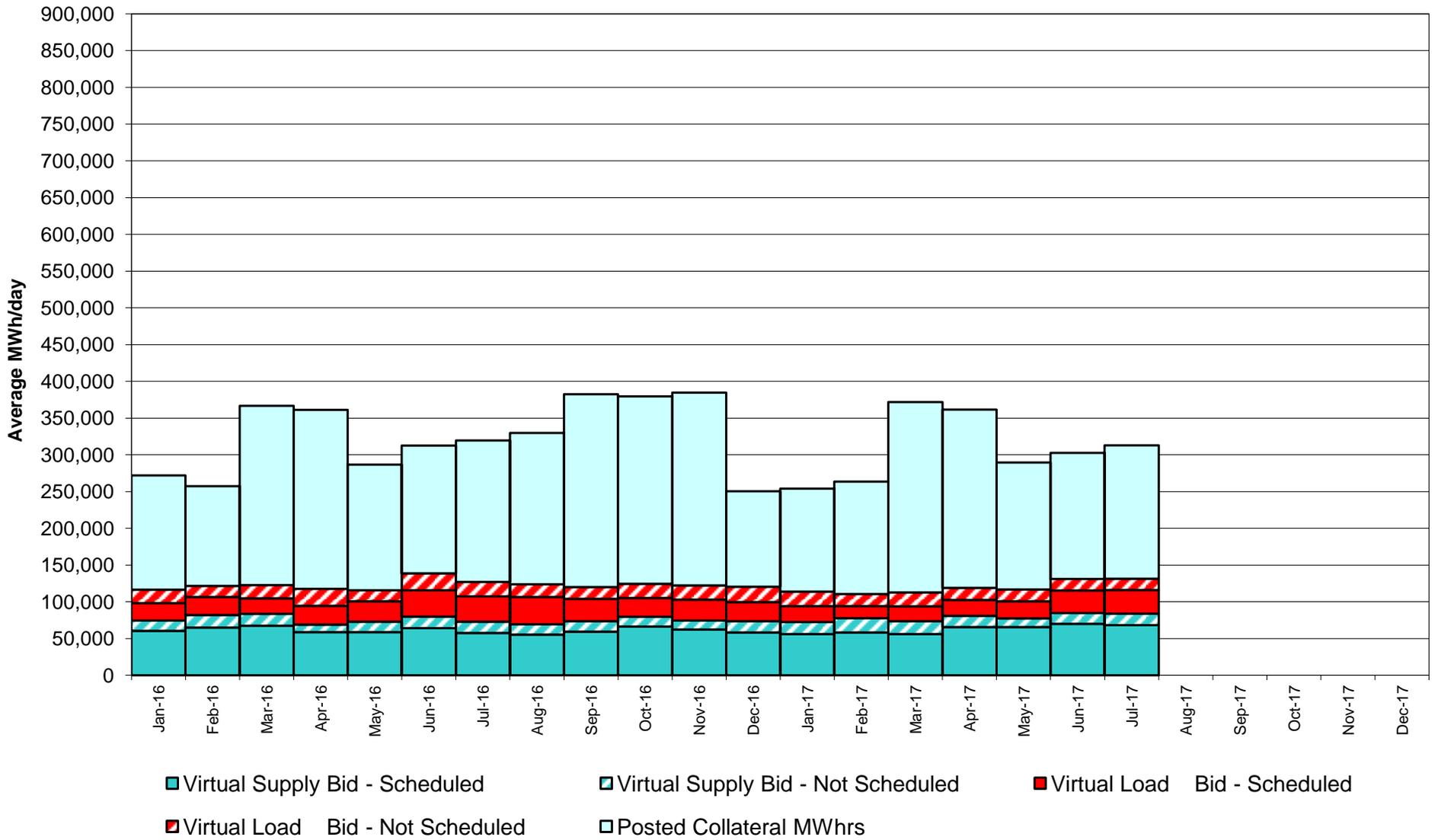


Annual average time period for making Price Corrections (from reservation date) *

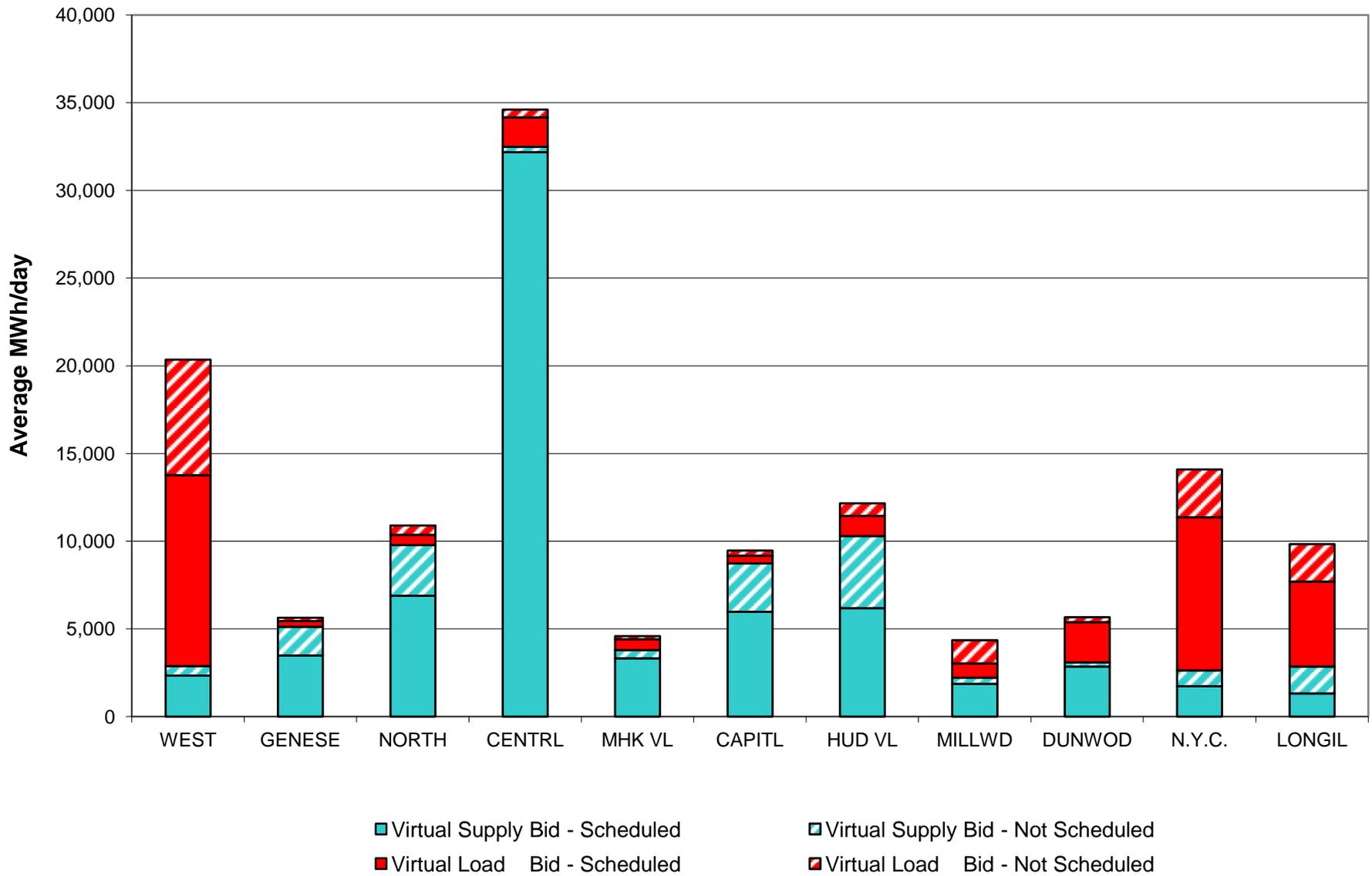


* Calendar days from reservation date.

NYISO Virtual Trading Average MWh per day



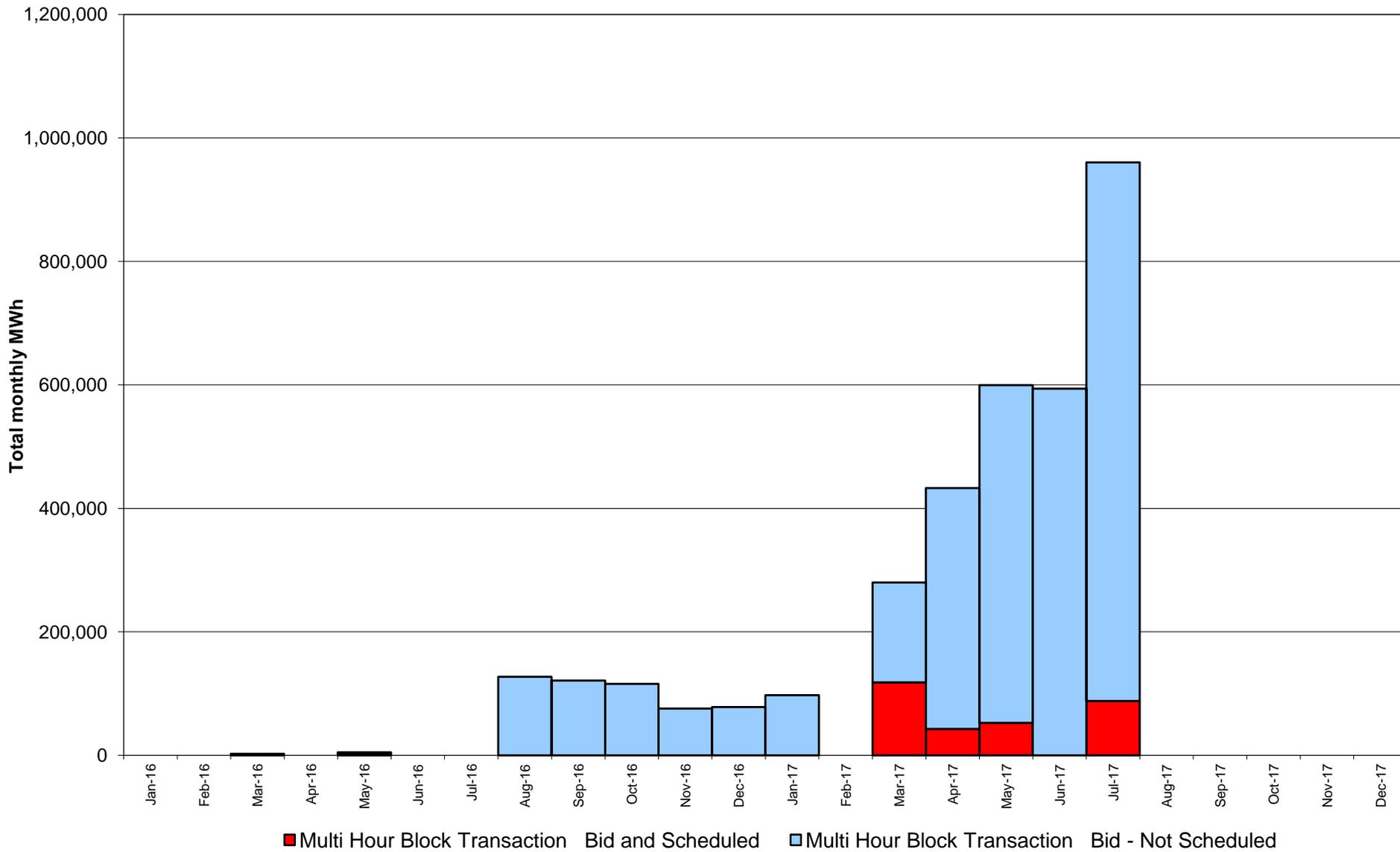
Virtual Load and Supply Zonal Statistics through July 31, 2017



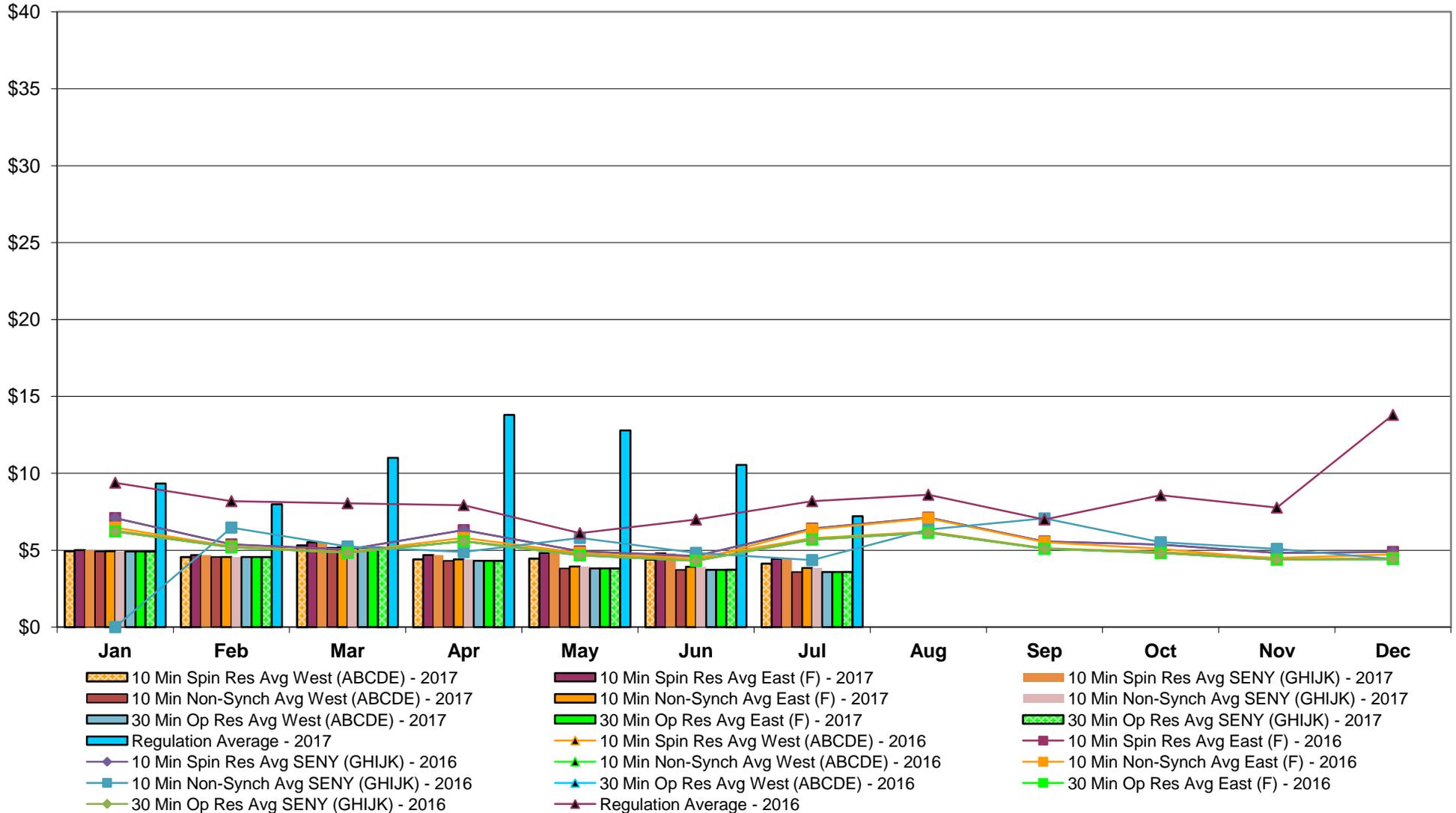
Virtual Load and Supply Zonal Statistics (Average MWh/day) - 2017

		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
WEST	Jan-17	6,094	5,795	2,019	337	MHK VL	Jan-17	566	202	2,022	131	DUNWOD	Jan-17	304	832	5,708	389
	Feb-17	3,771	4,772	3,346	567		Feb-17	422	100	2,459	293		Feb-17	193	585	5,966	424
	Mar-17	6,522	4,960	2,386	616		Mar-17	407	186	3,594	378		Mar-17	436	763	4,871	439
	Apr-17	6,956	5,390	1,934	699		Apr-17	457	102	2,856	430		Apr-17	1,097	406	3,517	232
	May-17	8,468	5,775	1,261	546		May-17	532	105	2,786	401		May-17	1,215	155	1,863	276
	Jun-17	10,776	5,128	1,497	512		Jun-17	516	149	2,492	586		Jun-17	1,117	287	3,281	383
	Jul-17	10,883	6,588	2,341	538		Jul-17	625	174	3,324	468		Jul-17	2,287	281	2,848	246
	Aug-17						Aug-17						Aug-17				
	Sep-17						Sep-17						Sep-17				
	Oct-17						Oct-17						Oct-17				
	Nov-17						Nov-17						Nov-17				
	Dec-17						Dec-17						Dec-17				
GENESE	Jan-17	654	1,282	3,652	2,482	CAPITL	Jan-17	1,291	666	3,990	3,861	N.Y.C.	Jan-17	5,761	5,474	1,543	1,008
	Feb-17	276	600	3,782	3,206		Feb-17	1,115	409	3,432	3,798		Feb-17	4,622	5,309	1,712	1,219
	Mar-17	480	838	3,806	3,419		Mar-17	1,409	528	5,186	2,484		Mar-17	4,052	5,826	1,561	1,058
	Apr-17	353	656	4,074	2,880		Apr-17	1,160	549	5,589	1,973		Apr-17	4,374	4,331	1,161	529
	May-17	393	128	4,096	2,027		May-17	1,232	454	5,697	1,635		May-17	3,357	4,679	1,434	569
	Jun-17	516	169	2,920	2,119		Jun-17	779	372	6,479	1,916		Jun-17	8,293	4,163	1,050	608
	Jul-17	335	190	3,494	1,622		Jul-17	450	290	5,972	2,754		Jul-17	8,732	2,726	1,728	902
	Aug-17						Aug-17						Aug-17				
	Sep-17						Sep-17						Sep-17				
	Oct-17						Oct-17						Oct-17				
	Nov-17						Nov-17						Nov-17				
	Dec-17						Dec-17						Dec-17				
NORTH	Jan-17	655	316	6,415	3,473	HUD VL	Jan-17	911	817	5,317	3,064	LONGIL	Jan-17	3,559	3,788	1,354	1,367
	Feb-17	465	338	7,504	4,006		Feb-17	1,292	915	6,266	3,873		Feb-17	3,341	3,127	1,653	1,667
	Mar-17	426	311	7,227	4,576		Mar-17	659	1,048	5,427	2,652		Mar-17	4,133	3,779	1,958	1,463
	Apr-17	414	138	7,520	4,435		Apr-17	1,575	871	5,708	2,333		Apr-17	3,706	3,309	1,748	1,232
	May-17	555	280	7,848	2,436		May-17	1,202	1,006	6,608	2,378		May-17	4,232	2,893	1,740	998
	Jun-17	552	468	6,955	2,920		Jun-17	836	823	6,861	3,317		Jun-17	4,848	2,532	1,402	1,398
	Jul-17	586	533	6,883	2,889		Jul-17	1,140	726	6,184	4,114		Jul-17	4,846	2,137	1,320	1,535
	Aug-17						Aug-17						Aug-17				
	Sep-17						Sep-17						Sep-17				
	Oct-17						Oct-17						Oct-17				
	Nov-17						Nov-17						Nov-17				
	Dec-17						Dec-17						Dec-17				
CENTRL	Jan-17	1,482	455	22,561	196	MILLWD	Jan-17	435	91	1,422	128	NYISO	Jan-17	21,713	19,719	56,001	16,436
	Feb-17	707	177	20,639	320		Feb-17	202	74	1,555	164		Feb-17	16,405	16,406	58,312	19,537
	Mar-17	979	605	18,610	518		Mar-17	454	157	1,452	158		Mar-17	19,956	19,002	56,078	17,759
	Apr-17	1,079	505	30,148	519		Apr-17	595	328	1,228	149		Apr-17	21,767	16,586	65,484	15,411
	May-17	1,472	492	30,724	312		May-17	662	255	1,474	195		May-17	23,320	16,222	65,531	11,774
	Jun-17	1,839	672	35,205	380		Jun-17	663	1,057	2,019	340		Jun-17	30,736	15,820	70,160	14,480
	Jul-17	1,687	435	32,177	303		Jul-17	809	1,316	1,865	361		Jul-17	32,377	15,396	68,136	15,732
	Aug-17						Aug-17						Aug-17				
	Sep-17						Sep-17						Sep-17				
	Oct-17						Oct-17						Oct-17				
	Nov-17						Nov-17						Nov-17				
	Dec-17						Dec-17						Dec-17				

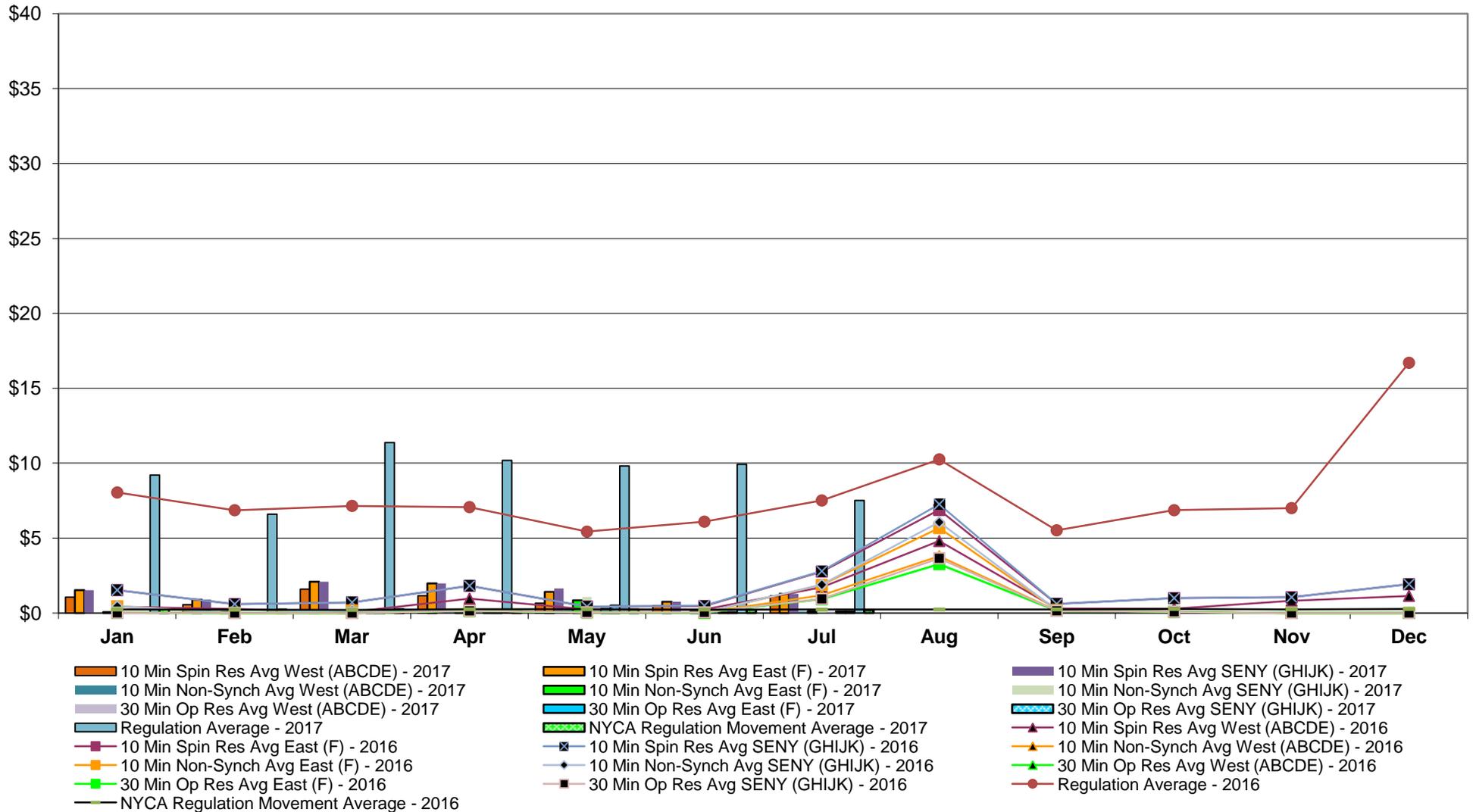
NYISO Multi Hour Block Transactions Monthly Total MWh



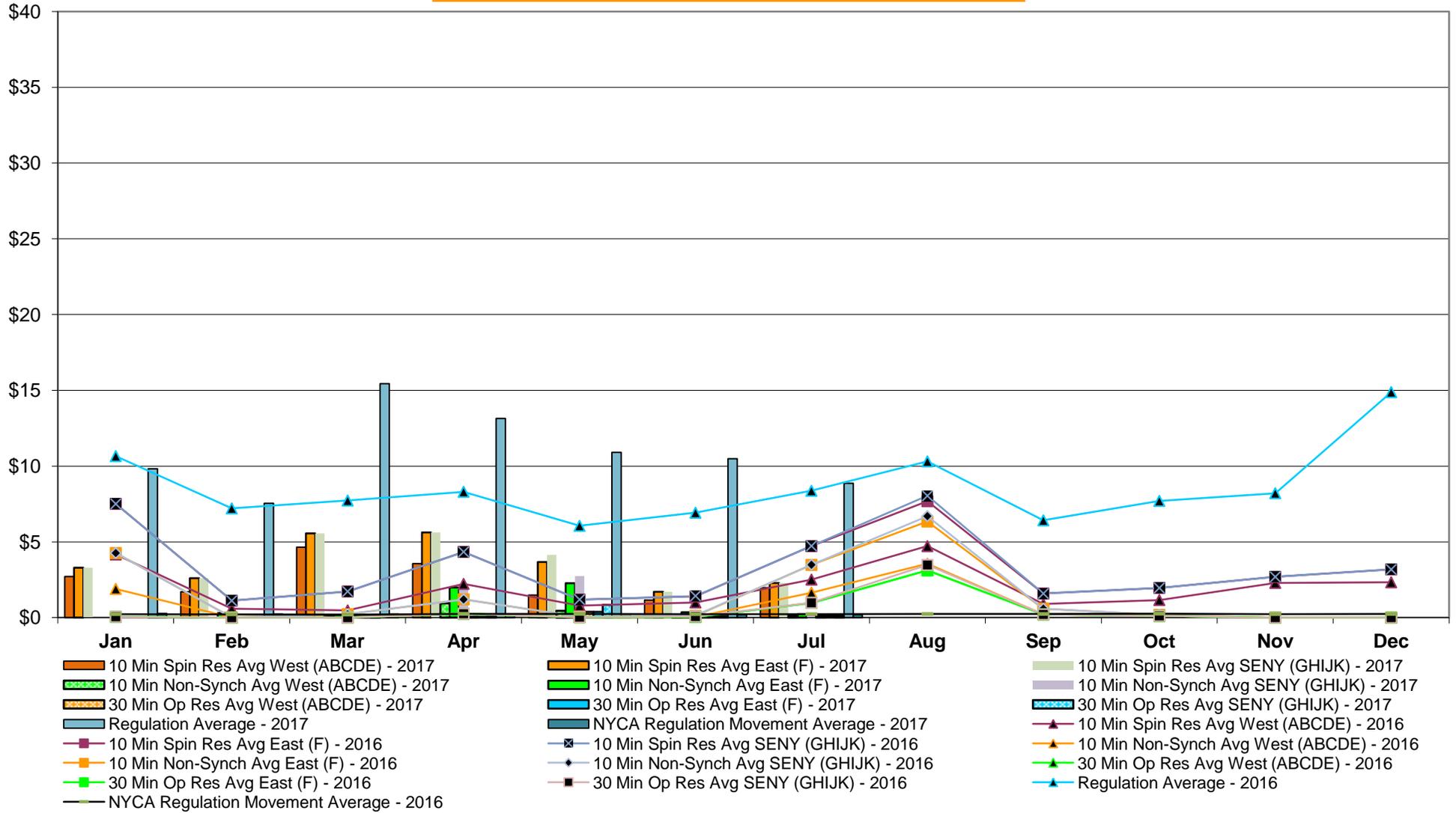
NYISO Monthly Average Ancillary Service Prices Day Ahead Market 2016 - 2017



NYISO Monthly Average Ancillary Service Prices RTC Market 2016 - 2017



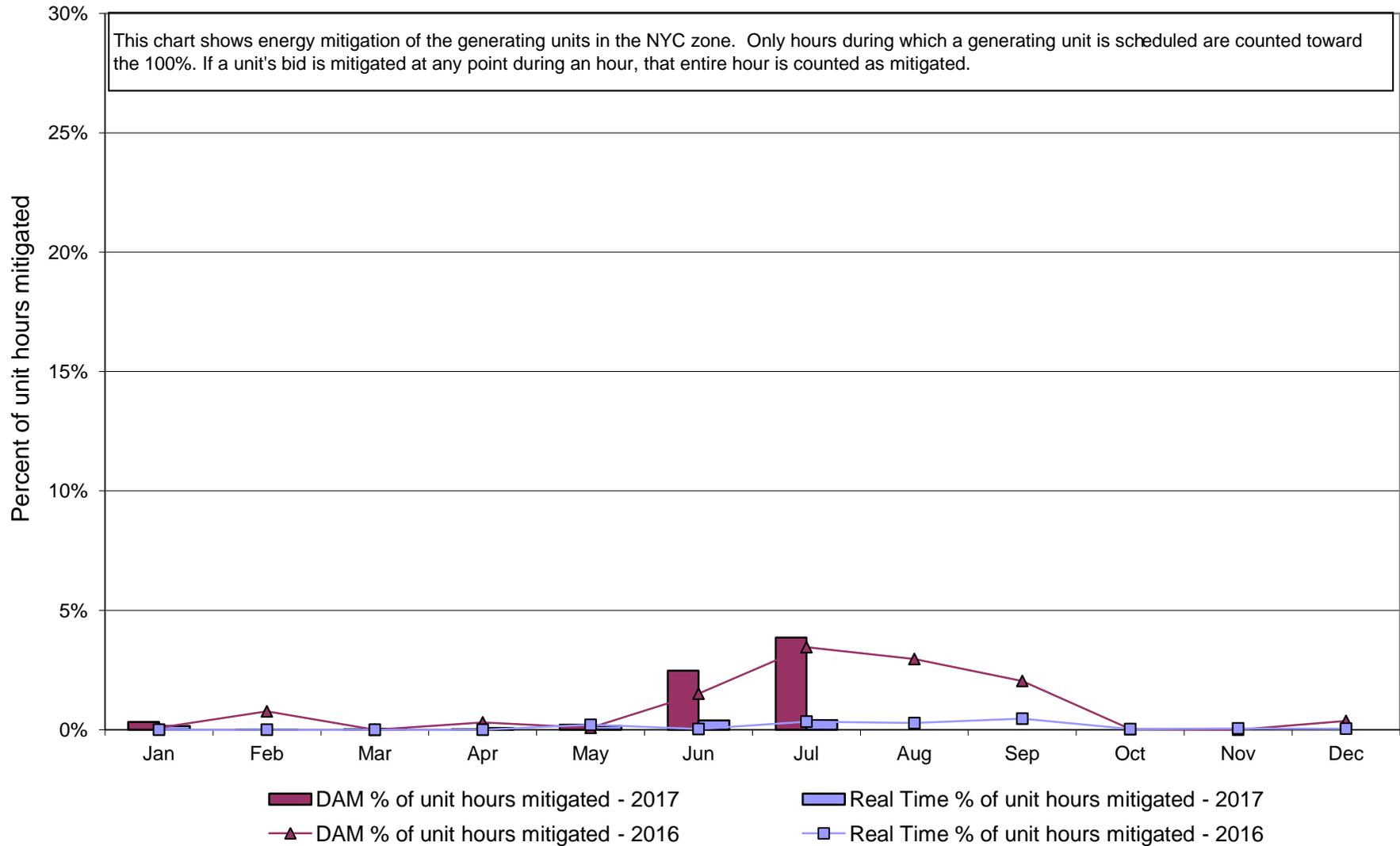
NYISO Monthly Average Ancillary Service Prices Real Time Market 2016 - 2017



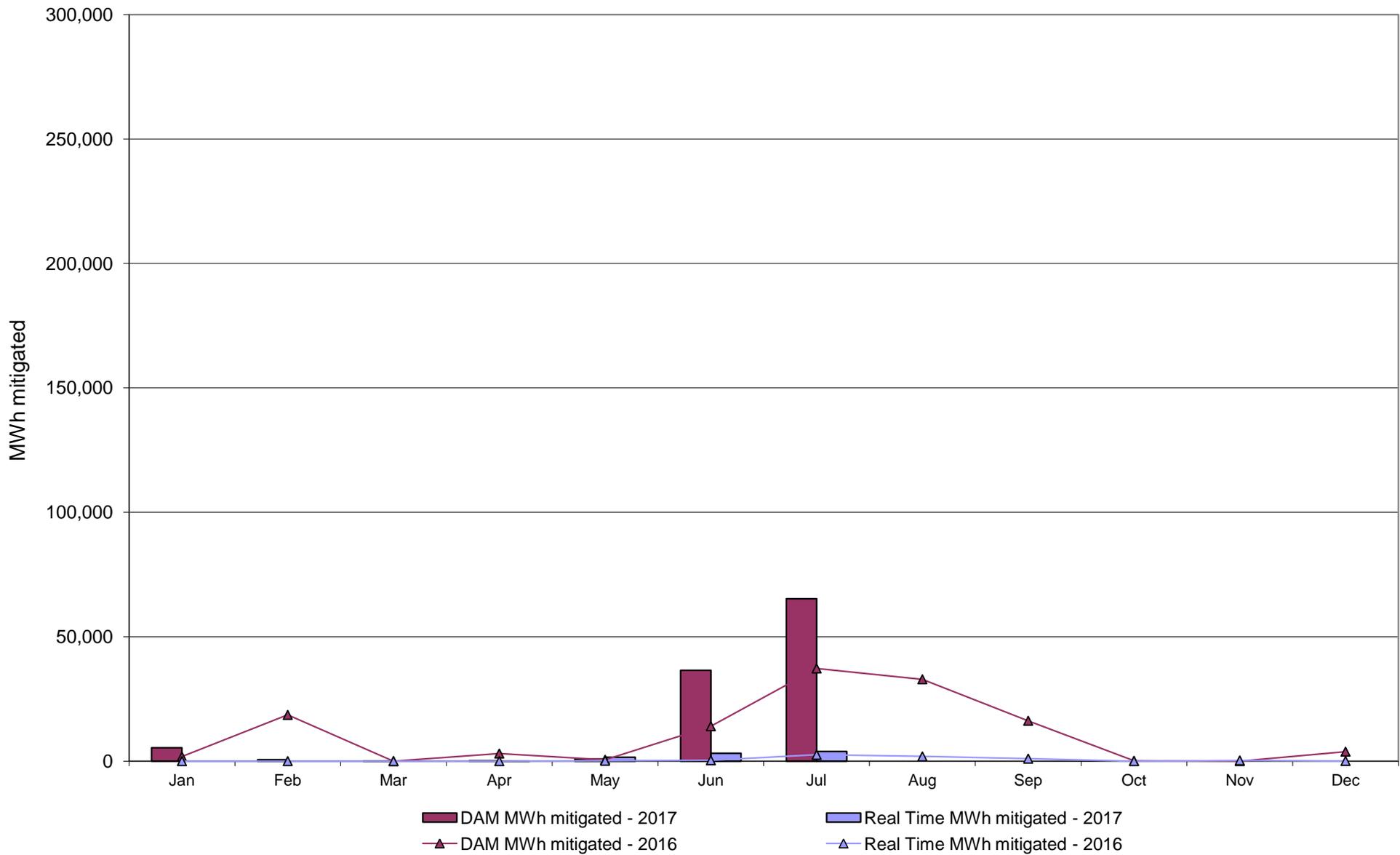
NYISO Markets Ancillary Services Statistics - Unweighted Price (\$/MWH)

2017	January	February	March	April	May	June	July	August	September	October	November	December
Day Ahead Market												
10 Min Spin SENY (GHIJK)	5.01	4.68	5.53	4.68	4.82	4.79	4.44					
10 Min Spin East (F)	5.01	4.68	5.53	4.68	4.82	4.79	4.44					
10 Min Spin West (ABCDE)	4.94	4.56	5.31	4.41	4.45	4.39	4.13					
10 Min Non Synch SENY (GHIJK)	4.94	4.57	5.20	4.41	3.95	3.92	3.85					
10 Min Non Synch East (F)	4.94	4.57	5.20	4.41	3.95	3.92	3.85					
10 Min Non Synch West (ABCDE)	4.92	4.56	5.17	4.31	3.82	3.73	3.59					
30 Min SENY (GHIJK)	4.92	4.56	5.17	4.31	3.82	3.73	3.59					
30 Min East (F)	4.92	4.56	5.17	4.31	3.82	3.73	3.59					
30 Min West (ABCDE)	4.92	4.56	5.17	4.31	3.82	3.73	3.59					
Regulation	9.34	7.99	11.01	13.80	12.79	10.55	7.22					
RTC Market												
10 Min Spin SENY (GHIJK)	1.53	0.89	2.08	1.97	1.64	0.75	1.28					
10 Min Spin East (F)	1.53	0.89	2.08	1.97	1.41	0.75	1.28					
10 Min Spin West (ABCDE)	1.06	0.55	1.58	1.16	0.65	0.47	1.13					
10 Min Non Synch SENY (GHIJK)	0.06	0.06	0.10	0.14	1.08	0.13	0.13					
10 Min Non Synch East (F)	0.06	0.06	0.10	0.14	0.85	0.13	0.13					
10 Min Non Synch West (ABCDE)	0.00	0.00	0.10	0.07	0.31	0.05	0.11					
30 Min SENY (GHIJK)	0.00	0.00	0.10	0.03	0.50	0.05	0.11					
30 Min East (F)	0.00	0.00	0.10	0.03	0.27	0.05	0.11					
30 Min West (ABCDE)	0.00	0.00	0.10	0.03	0.27	0.05	0.11					
Regulation	9.21	6.59	11.37	10.18	9.82	9.92	7.51					
NYCA Regulation Movement	0.27	0.24	0.25	0.22	0.24	0.21	0.19					
Real Time Market												
10 Min Spin SENY (GHIJK)	3.29	2.61	5.56	5.62	4.14	1.71	2.29					
10 Min Spin East (F)	3.29	2.61	5.56	5.62	3.67	1.71	2.29					
10 Min Spin West (ABCDE)	2.71	1.71	4.65	3.56	1.48	1.15	1.98					
10 Min Non Synch SENY (GHIJK)	0.00	0.31	0.17	1.99	2.75	0.36	0.23					
10 Min Non Synch East (F)	0.00	0.31	0.17	1.99	2.28	0.36	0.23					
10 Min Non Synch West (ABCDE)	0.00	0.00	0.13	0.95	0.44	0.10	0.13					
30 Min SENY (GHIJK)	0.00	0.00	0.12	0.06	0.85	0.10	0.13					
30 Min East (F)	0.00	0.00	0.12	0.06	0.38	0.10	0.13					
30 Min West (ABCDE)	0.00	0.00	0.12	0.06	0.38	0.10	0.13					
Regulation	9.83	7.54	15.44	13.15	10.91	10.48	8.87					
NYCA Regulation Movement	0.27	0.24	0.25	0.20	0.22	0.19	0.19					
2016												
Day Ahead Market												
10 Min Spin SENY (GHIJK)	7.09	5.38	5.04	6.31	4.93	4.62	6.41	7.12	5.57	5.37	4.83	4.89
10 Min Spin East (F)	7.09	5.38	5.04	6.31	4.93	4.62	6.41	7.12	5.57	5.37	4.83	4.89
10 Min Spin West (ABCDE)	6.28	5.25	4.84	5.60	4.77	4.52	5.78	6.20	5.14	4.89	4.50	4.73
10 Min Non Synch SENY (GHIJK)	6.47	5.25	4.88	5.80	4.83	4.36	6.34	7.07	5.52	5.09	4.43	4.49
10 Min Non Synch East (F)	6.47	5.25	4.88	5.80	4.83	4.36	6.34	7.07	5.52	5.09	4.43	4.49
10 Min Non Synch West (ABCDE)	6.23	5.20	4.84	5.58	4.68	4.32	5.72	6.15	5.10	4.82	4.39	4.43
30 Min SENY (GHIJK)	6.23	5.20	4.84	5.58	4.67	4.32	5.70	6.15	5.10	4.82	4.39	4.43
30 Min East (F)	6.23	5.20	4.84	5.58	4.67	4.32	5.70	6.15	5.10	4.82	4.39	4.43
30 Min West (ABCDE)	6.23	5.20	4.84	5.58	4.67	4.32	5.70	6.15	5.10	4.82	4.39	4.43
Regulation	9.39	8.19	8.05	7.93	6.11	7.00	8.19	8.61	7.00	8.57	7.77	13.80
RTC Market												
10 Min Spin SENY (GHIJK)	1.53	0.59	0.71	1.81	0.43	0.49	2.79	7.26	0.61	0.99	1.05	1.92
10 Min Spin East (F)	1.53	0.59	0.71	1.81	0.43	0.46	2.77	6.88	0.61	0.99	1.05	1.92
10 Min Spin West (ABCDE)	0.42	0.26	0.08	0.95	0.23	0.24	1.72	4.80	0.30	0.29	0.82	1.14
10 Min Non Synch SENY (GHIJK)	0.45	0.00	0.17	0.14	0.05	0.05	1.89	6.06	0.21	0.09	0.00	0.00
10 Min Non Synch East (F)	0.45	0.00	0.17	0.14	0.05	0.02	1.87	5.67	0.21	0.09	0.00	0.00
10 Min Non Synch West (ABCDE)	0.04	0.00	0.00	0.14	0.04	0.02	1.18	3.80	0.16	0.08	0.00	0.00
30 Min SENY (GHIJK)	0.01	0.00	0.00	0.14	0.04	0.04	0.94	3.65	0.15	0.08	0.00	0.00
30 Min East (F)	0.01	0.00	0.00	0.14	0.04	0.02	0.93	3.27	0.15	0.08	0.00	0.00
30 Min West (ABCDE)	0.01	0.00	0.00	0.14	0.04	0.02	0.93	3.27	0.15	0.08	0.00	0.00
Regulation	8.04	6.86	7.15	7.07	5.43	6.09	7.51	10.25	5.52	6.86	7.00	16.70
NYCA Regulation Movement	0.23	0.21	0.20	0.25	0.25	0.23	0.23	0.24	0.24	0.26	0.24	0.26
Real Time Market												
10 Min Spin SENY (GHIJK)	7.51	1.12	1.73	4.34	1.19	1.43	4.73	8.04	1.59	1.96	2.69	3.18
10 Min Spin East (F)	7.51	1.12	1.73	4.34	1.19	1.40	4.72	7.68	1.59	1.96	2.69	3.18
10 Min Spin West (ABCDE)	4.17	0.58	0.48	2.23	0.79	1.00	2.51	4.72	0.90	1.16	2.29	2.33
10 Min Non Synch SENY (GHIJK)	4.26	0.00	0.22	1.20	0.06	0.15	3.49	6.70	0.59	0.18	0.00	0.00
10 Min Non Synch East (F)	4.26	0.00	0.22	1.20	0.06	0.11	3.48	6.34	0.59	0.18	0.00	0.00
10 Min Non Synch West (ABCDE)	1.89	0.00	0.00	0.26	0.03	0.04	1.65	3.56	0.21	0.11	0.00	0.00
30 Min SENY (GHIJK)	0.06	0.00	0.00	0.25	0.03	0.07	0.98	3.48	0.21	0.11	0.00	0.00
30 Min East (F)	0.06	0.00	0.00	0.25	0.03	0.04	0.97	3.12	0.21	0.11	0.00	0.00
30 Min West (ABCDE)	0.06	0.00	0.00	0.25	0.03	0.04	0.97	3.12	0.21	0.11	0.00	0.00
Regulation	10.66	7.21	7.73	8.30	6.06	6.92	8.37	10.31	6.42	7.70	8.21	14.88
NYCA Regulation Movement	0.23	0.22	0.20	0.25	0.25	0.23	0.23	0.24	0.24	0.26	0.23	0.24

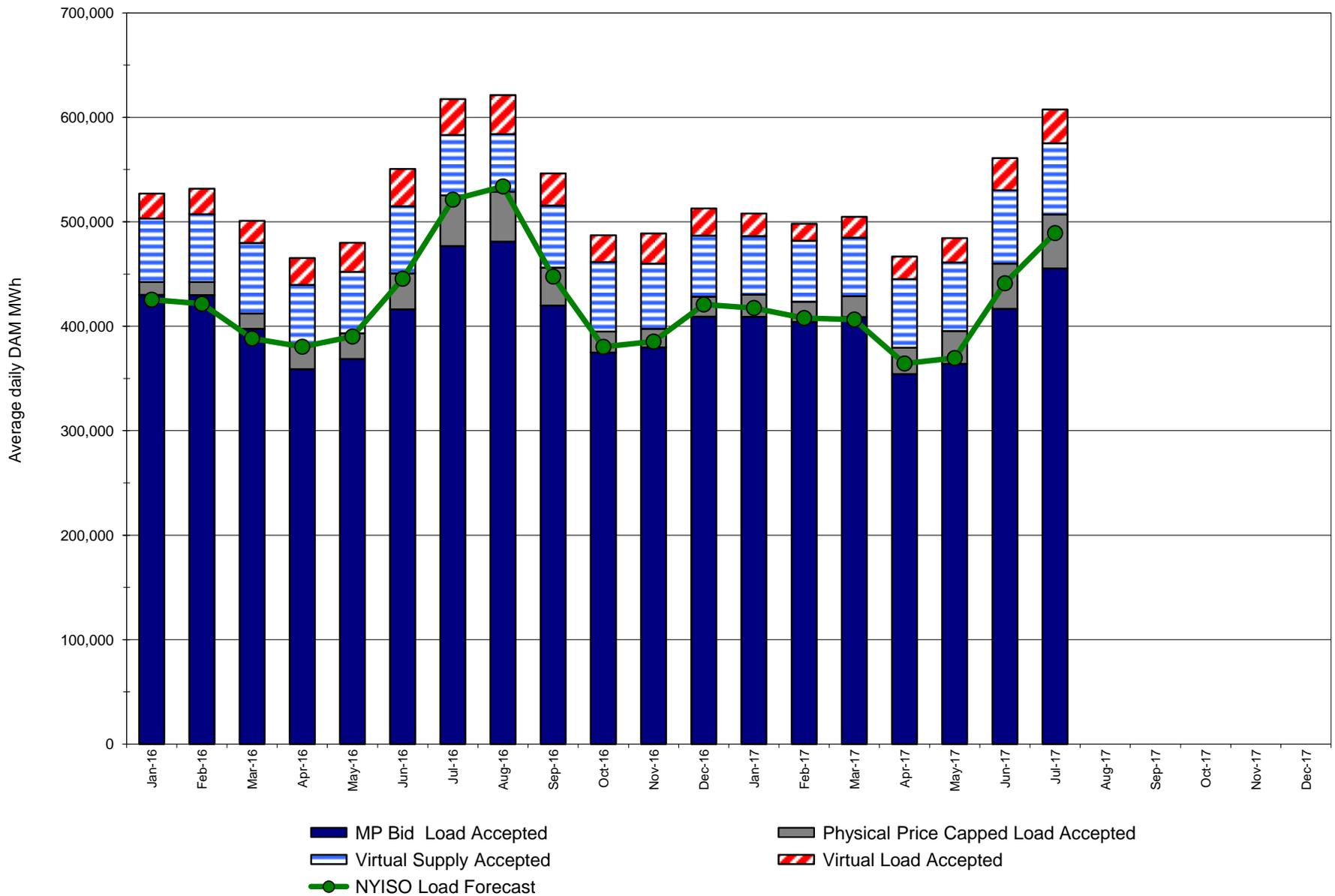
NYISO In City Energy Mitigation - AMP (NYC Zone) 2016 - 2017 Percentage of committed unit-hours mitigated



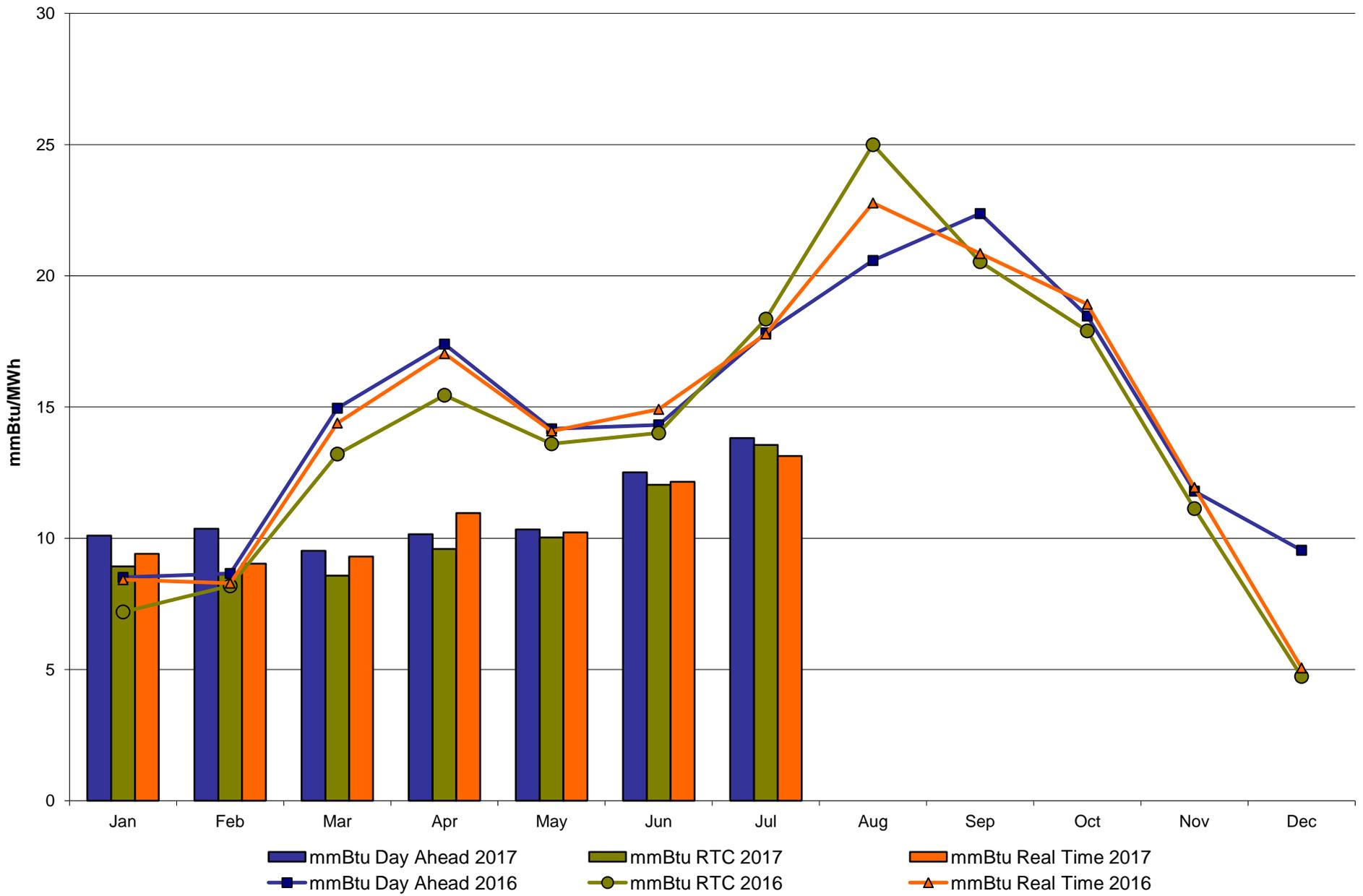
NYISO In City Energy Mitigation (NYC Zone) 2016 - 2017
Monthly megawatt hours mitigated



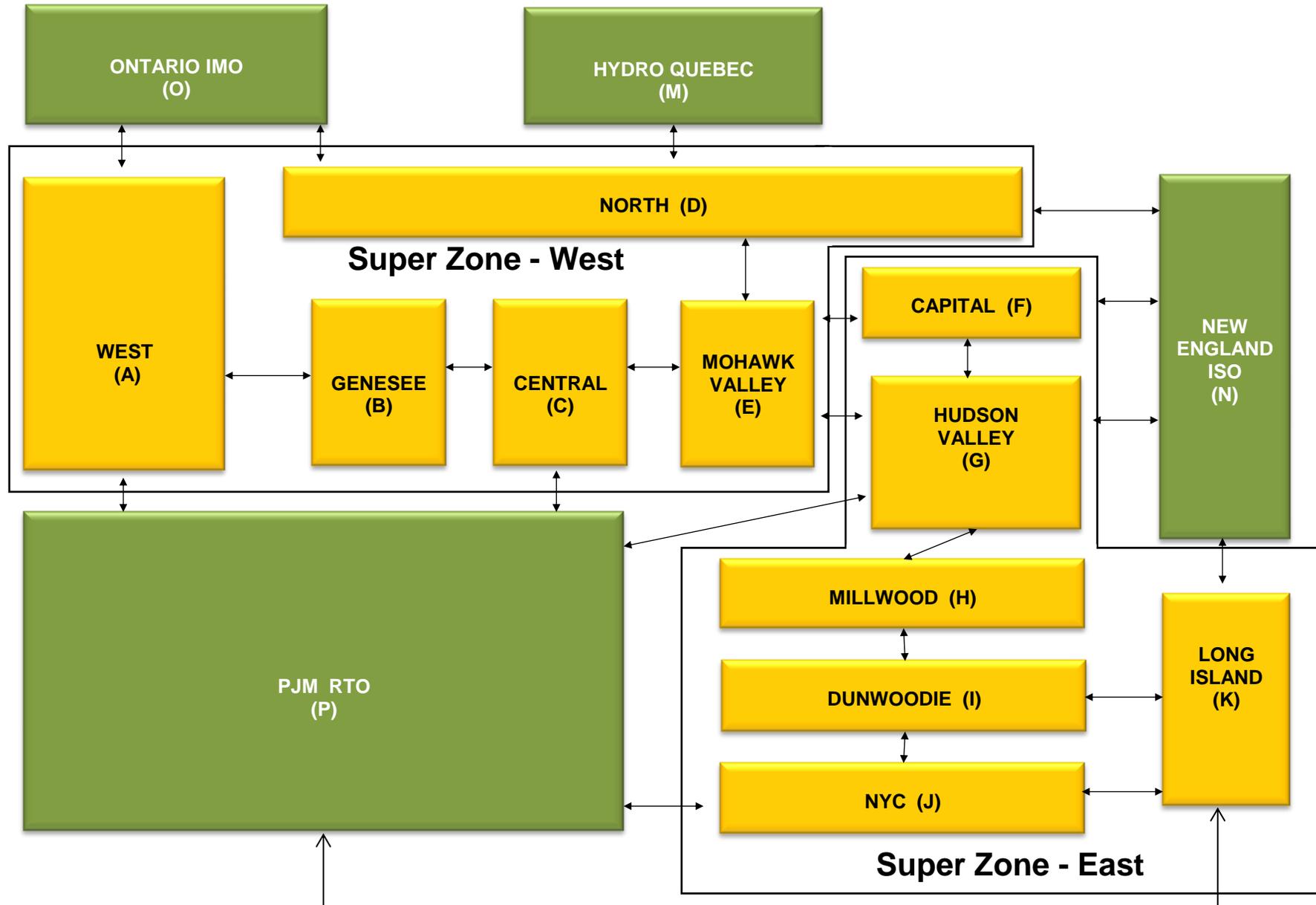
NYISO Average Daily DAM Load Bid Summary



Monthly Implied Heat Rate 2016-2017



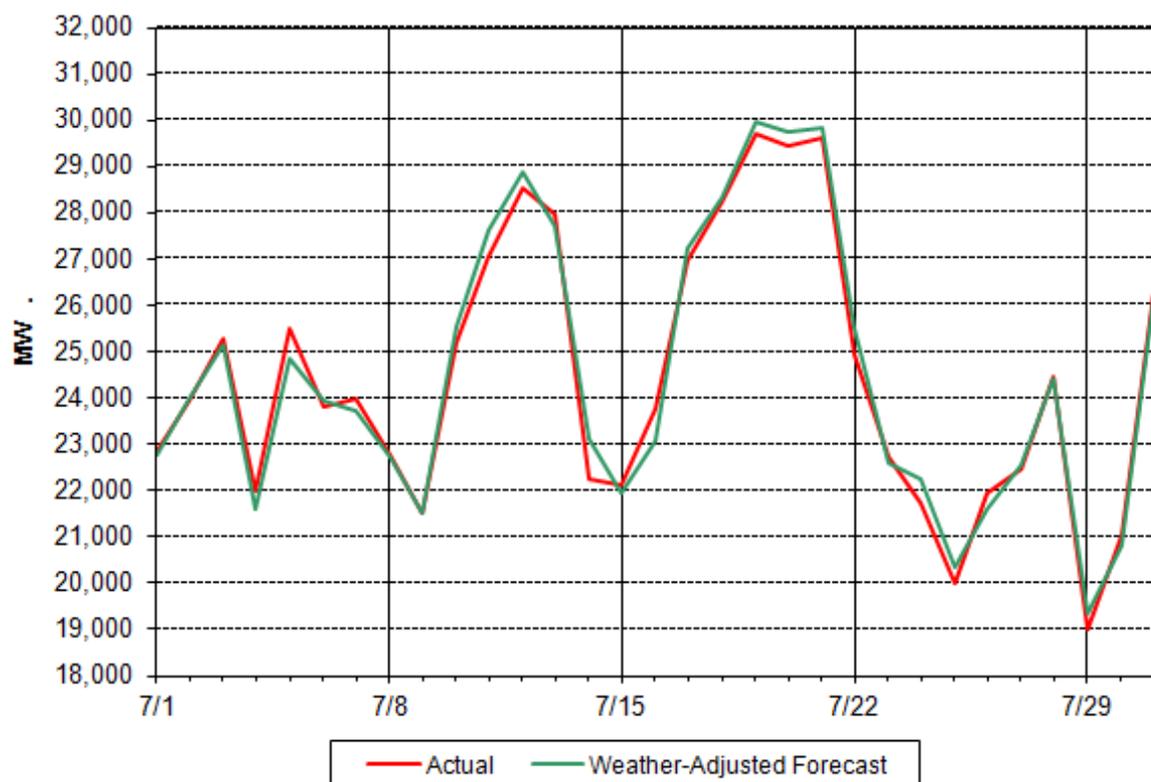
NYISO LBMP ZONES



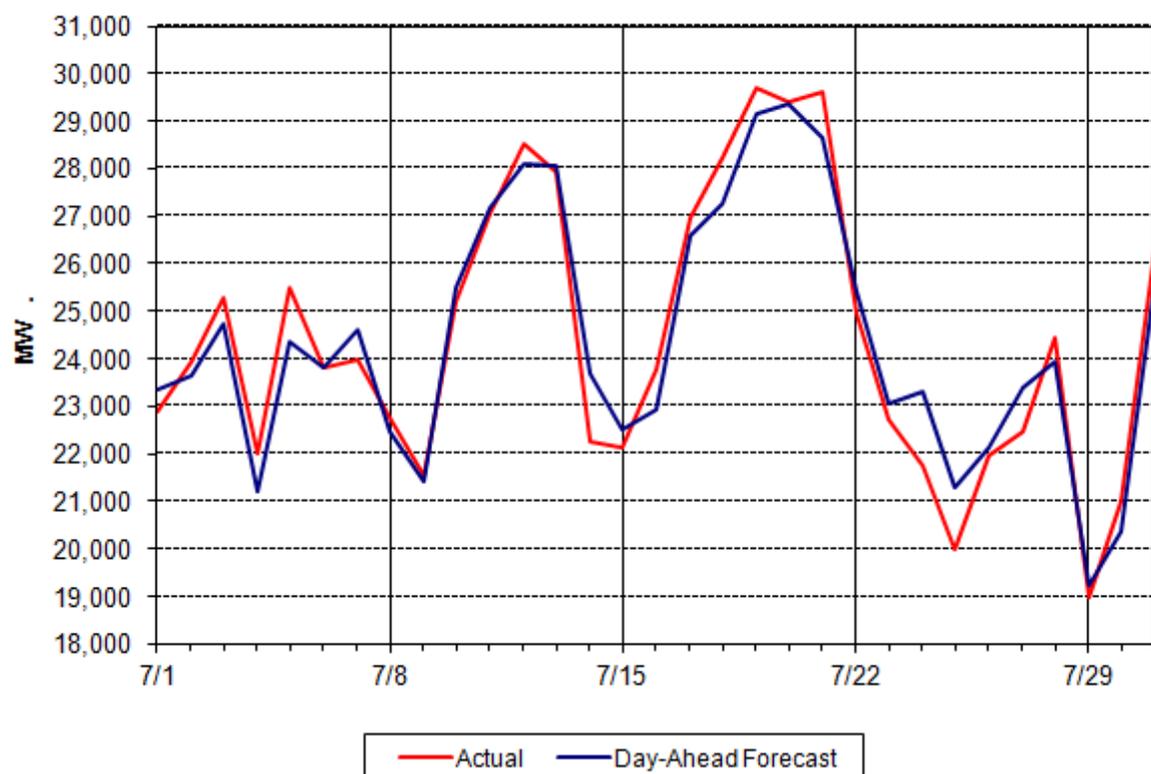
Billing Codes for Chart C

Chart - C Category Name	Billing Code	Billing Category Name
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

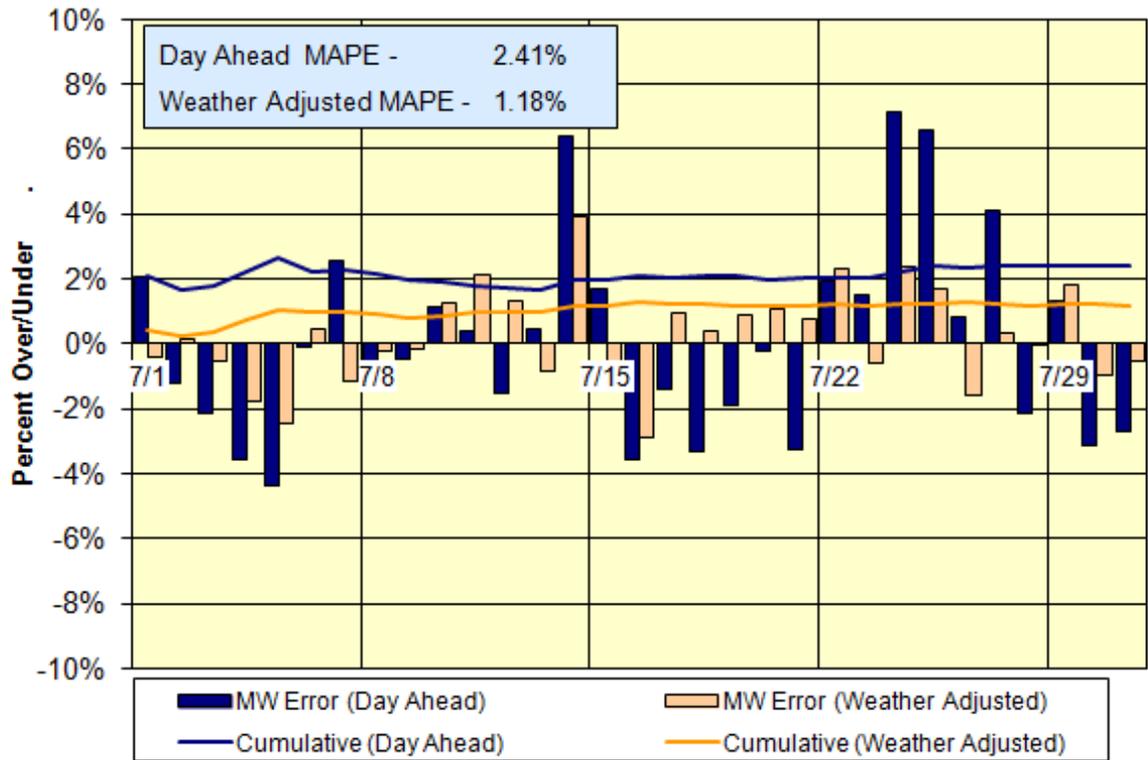
**NYISO Daily Peak Load - July 2017
Actual vs. Weather-Adjusted Forecast**



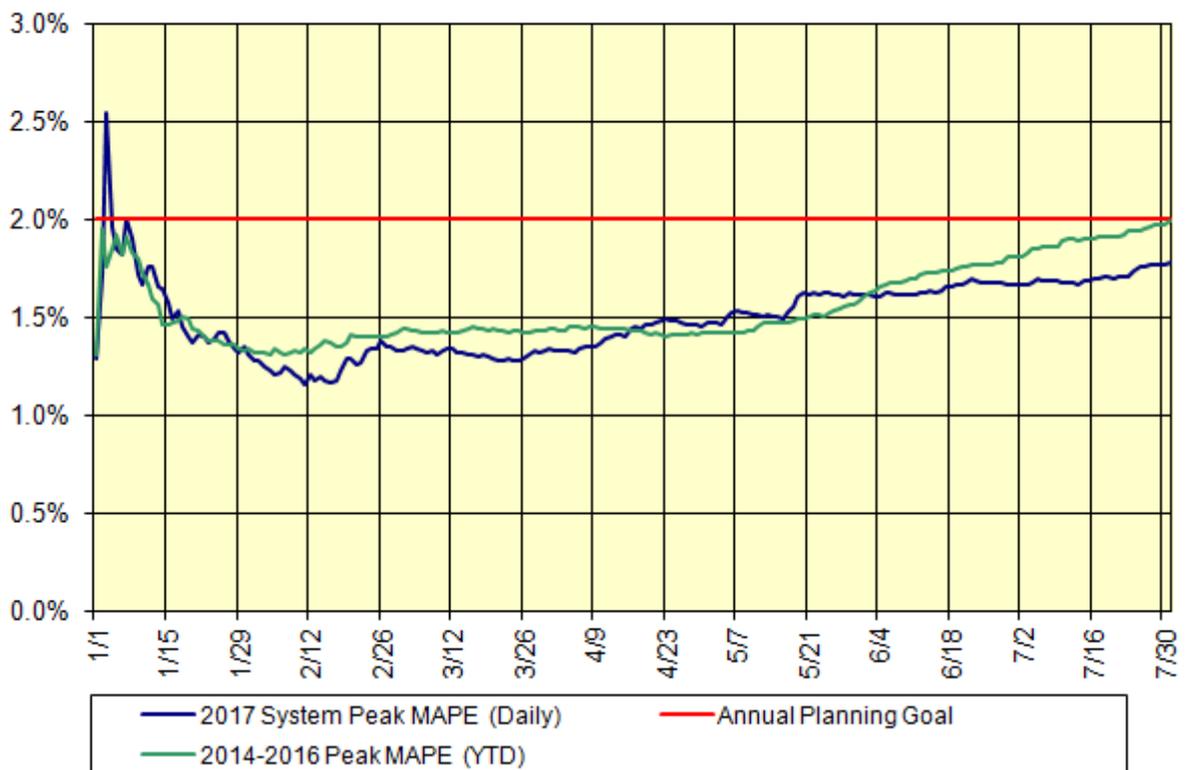
**NYISO Daily Peak Load - July 2017
Actual vs. Forecast**



Day Ahead Peak Forecast - July 2017 Percent Error - Actual & Weather Adjusted



Day-Ahead Forecast Accuracy - Cumulative Performance 2017 Year-to-Date



Summary Description of Regulatory Filings, Investigations, Rulemakings and Related Orders in NYISO Matters – July 2017

Filing Date	Filing Summary	Docket	Order Date	Order Summary
05/19/2017	NYISO filing on behalf of Niagara Mohawk Power Corporation of a proposed new OATT Section 6.17 - Schedule 17 – Rate Mechanism for the Recovery of the Western New York Facilities Charge for Non-Bulk Transmission Facilities (“WNY-FC”)	ER17-1629-000	07/20/2017 07/22/2017	07/20/17 FERC order accepted new rate schedule effective 07/18/2017, as requested 07/22/2017 Errata to 07/20/2017 Order
05/22/2017	NYISO amendment filing re: to properly locate the proposed new OATT Section 6.17 - Schedule 17 – Rate Mechanism for the Recovery of the Western New York Facilities Charge for Non-Bulk Transmission Facilities (“WNY-FC”) in the NYISO OATT	ER17-1629-001	07/20/2017 07/22/2017	07/20/2017 FERC order accepted new rate schedule effective 07/18/2017, as requested 07/22/2017 Errata to 07/20/2017 Order
05/30/2017	NYISO and Niagara Mohawk Power Corporation (“NMPC”) joint filing re: large generator interconnection agreement (SA 2334) among the NYISO, NMPC and Copenhagen Wind Farm, LLC	ER17-1703-000	07/24/2017	FERC order accepted the agreement, effective 05/15/2017, as requested
07/05/2017	NYISO filing re: answer to the Green Power request for rehearing of FERC’s order accepting a Notice of Cancellation of Green Power’s SGIA	ER17-1624-001	07/10/2017	FERC notice denied the Green Power request for rehearing and rejected NYISO’s answer to the extent it responded to the request for rehearing
07/10/2017	NYISO filing re: response to 05/24/17 deficiency letter requesting additional information regarding the NYISO’s 03/27/17 filing of a regional cost allocation methodology pursuant to OATT Section 31.5.5.4.1	ER17-1310-001		
07/14/2017	NYISO filing re: motion to intervene and comment concerning the Cricket Valley Energy Center petition for limited tariff waiver concerning its request for a competitive entry exemption under the NYISO’s BSM Rules	ER17-1893-000		
07/14/2017	NYISO 205 filing re: revisions to the Buyer Side Mitigation (“BSM”) rules governing the forecasts determined & used by the NYISO in the course of making determinations under the BSM Rules	ER17-2096-000		
07/17/2017	NYISO confidential filing to the NYPSC re: three-month Reliability Commitment Data Report for the period ending 06/30/2017	PSC Matter No. 10-02007		
07/18/2017	NYISO compliance filing re: notice of effective date re: tariff revisions to implement balance-of-period TCC auctions	ER17-1167-002		

07/19/2017	NYISO 205 filing re: eliminate bond funds from cash collateral investment options and clarify language regarding treatment of defaulting customer funds	ER17-2108-000		
07/19/2017	NYISO filing re: second quarter 2017 EQR report	ER02-2001-000		
07/24/2017	NYISO filing re: motion to intervene and comment concerning the NRG request for waiver of a procedural deadline, which would allow NYISO to act on NRG's request for a Competitive Entry Exemption under the buyer side market mitigation rules	ER17-2049-000		
07/26/2017	NYISO 205 filing re: an executed large generator interconnection agreement (SA 2344) among the NYISO, LIPA and Shoreham Solar Commons LLC	ER17-2151-000		
07/31/2017	NYISO filing re: comments on the operational, reliability, resource adequacy, and regional markets ramifications of maintaining in service Hudson Transmission Partner's merchant transmission facility	ER17-2073-000		