

# NYISO CEO/COO Report

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**Bradley Jones**

President & Chief Executive Officer

**Rick Gonzales**

Senior Vice President & Chief Operating Officer

## Management Committee Meeting:

May 31, 2017, Rensselaer, NY



# NYISO CEO/COO Report

## CEO Report

## COO Report

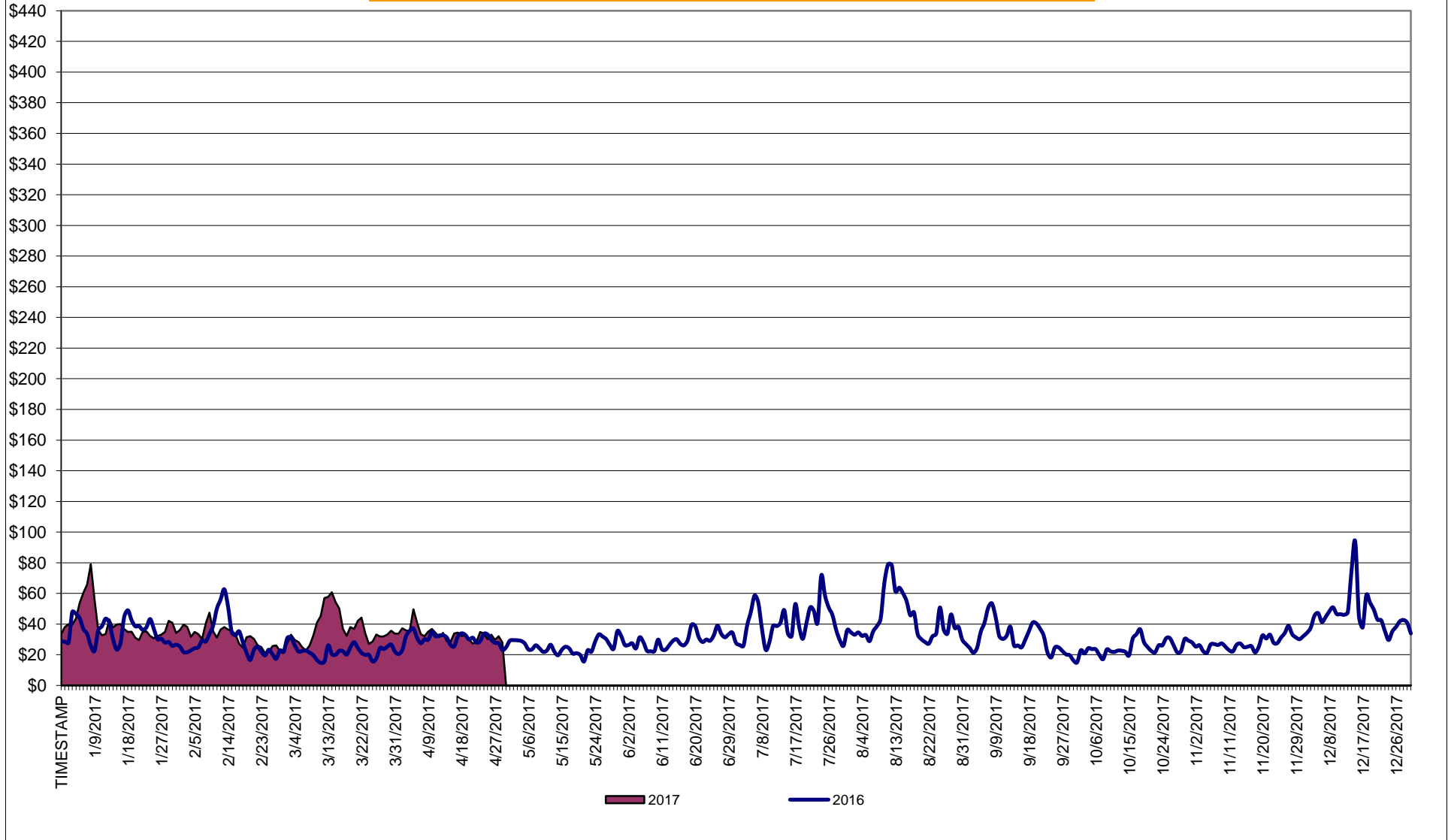
- Market Performance Highlights – For Information Only
- Operations Performance Metrics Monthly Report

# Market Performance Highlights

## April 2017

- LBMP for April is \$31.06/MWh; lower than \$34.97/MWh in March 2017 and higher than \$27.96/MWh in April 2016.
  - Day Ahead and Real Time Load Weighted LBMPs are lower compared to March.
- April 2017 average year-to-date monthly cost of \$37.05/MWh is a 21% increase from \$30.71/MWh in April 2016.
- Average daily sendout is 377 GWh/day in April; lower than 419 GWh/day in March 2017 and 385 GWh/day in April 2016.
- Natural gas prices were lower and distillate prices were higher compared to the previous month.
  - Natural Gas (Transco Z6 NY) was \$2.81/MMBtu, down from \$3.49/MMBtu in March.
  - Natural gas prices are up 73.3% year-over-year.
  - Jet Kerosene Gulf Coast was \$11.15/MMBtu, up from \$10.69/MMBtu in March.
  - Ultra Low Sulfur No.2 Diesel NY Harbor was \$11.31/MMBtu, up from \$10.90/MMBtu in March.
  - Distillate prices are up 29.5% year-over-year.
- Uplift per MWh is higher compared to the previous month.
  - Uplift (not including NYISO cost of operations) is \$0.12/MWh; higher than (\$0.46)/MWh in March.
    - Local Reliability Share is \$0.20/MWh, lower than \$0.21/MWh in March.
    - Statewide Share is (\$0.08)/MWh, higher than (\$0.67)/MWh in March.
  - TSA \$ per NYC MWh is \$0.08/MWh.
- Total uplift costs (Schedule 1 components including NYISO Cost of Operations) are higher than March.

**Daily NYISO Average Cost/MWh (Energy & Ancillary Services)\***  
**2016 Annual Average \$34.28/MWh**  
**April 2016 YTD Average \$30.71/MWh**  
**April 2017 YTD Average \$37.05/MWh**



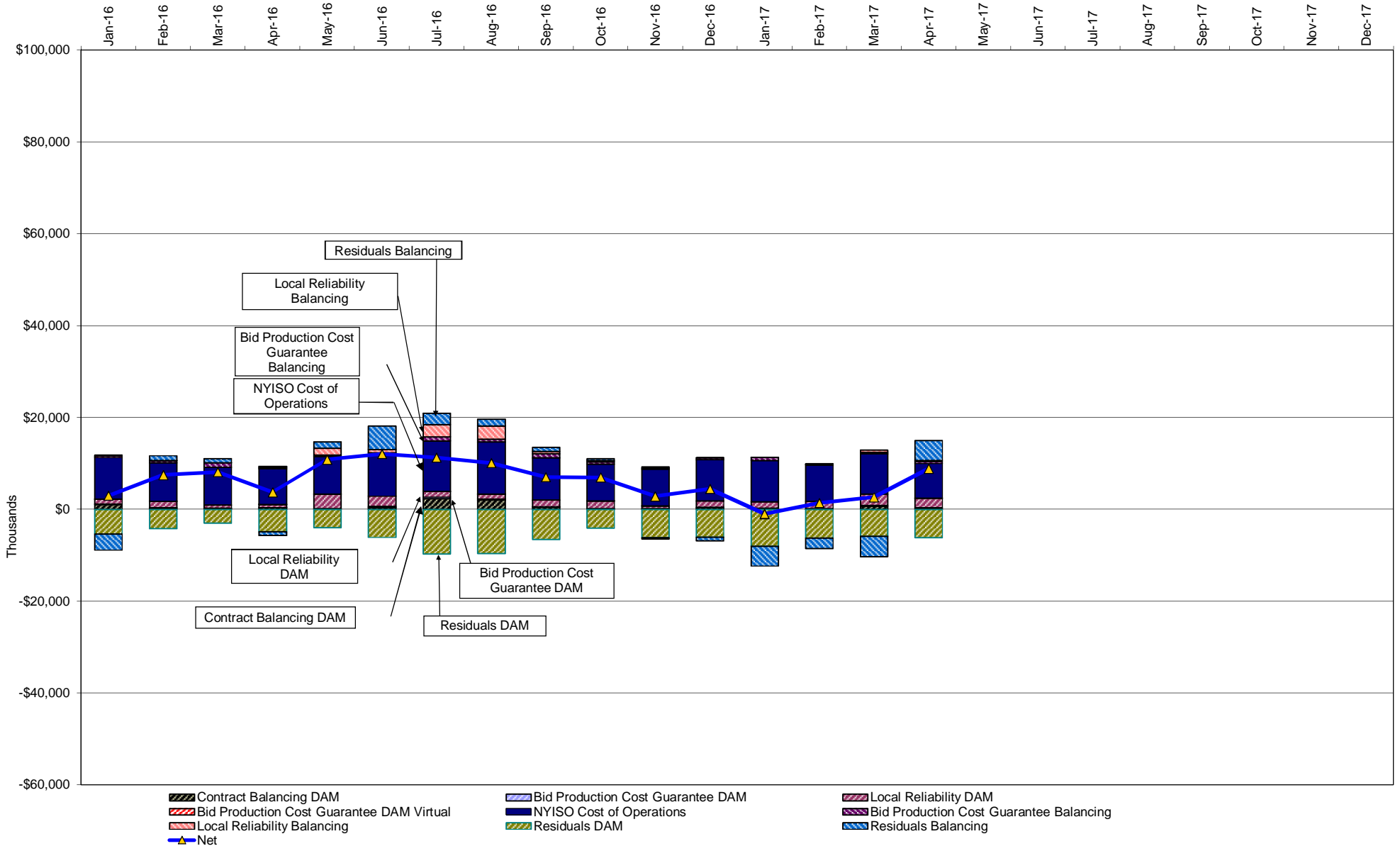
\* Excludes ICAP payments.

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

<b>2017</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	40.07	30.95	34.97	31.06								
NTAC	0.66	1.11	0.86	1.05								
Reserve	0.70	0.67	0.74	0.70								
Regulation	0.14	0.12	0.13	0.17								
NYISO Cost of Operations	0.65	0.65	0.65	0.65								
FERC Fee Recovery	0.09	0.10	0.10	0.12								
Uplift	(0.73)	(0.54)	(0.46)	0.12								
Uplift: Local Reliability Share	0.10	0.13	0.21	0.20								
Uplift: Statewide Share	(0.83)	(0.67)	(0.67)	(0.08)								
Voltage Support and Black Start	0.37	0.37	0.38	0.38								
<b>Avg Monthly Cost</b>	<b>41.96</b>	<b>33.44</b>	<b>37.38</b>	<b>34.26</b>								
Avg YTD Cost	41.96	38.02	37.81	37.05								
TSA \$ per NYC MWh	0.00	0.00	0.00	0.08								
<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	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
<b>Avg Monthly Cost</b>	<b>36.42</b>	<b>31.37</b>	<b>23.23</b>	<b>30.84</b>	<b>26.52</b>	<b>30.29</b>	<b>42.40</b>	<b>44.75</b>	<b>33.16</b>	<b>25.12</b>	<b>28.61</b>	<b>46.42</b>
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
<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	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.38
<b>Avg Monthly Cost</b>	<b>60.91</b>	<b>115.27</b>	<b>53.58</b>	<b>30.41</b>	<b>35.37</b>	<b>30.79</b>	<b>36.84</b>	<b>35.14</b>	<b>36.35</b>	<b>32.18</b>	<b>27.64</b>	<b>23.71</b>
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: 5/5/2017 10:50 AM

## NYISO Dollar Flows - Uplift - OATT Schedule 1 components - Data through April 30, 2017



## NYISO Markets Transactions

<b>2017</b>	January	February	March	April	May	June	July	August	September	October	November	December
<b>Day Ahead Market MWh</b>	14,135,019	12,565,206	13,983,865	12,061,475								
DAM LSE Internal LBMP Energy Sales	57%	57%	55%	54%								
DAM External TC LBMP Energy Sales	2%	2%	1%	1%								
DAM Bilateral - Internal Bilaterals	32%	32%	34%	35%								
DAM Bilateral - Import/Non-LBMP Market Bilaterals	5%	5%	5%	6%								
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	2%	2%	2%								
DAM Bilateral - Wheel Through Bilaterals	2%	2%	2%	2%								
<b>Balancing Energy Market MWh</b>	-256,448	-407,284	-509,053	-466,426								
Balancing Energy LSE Internal LBMP Energy Sales	-157%	-132%	-148%	-115%								
Balancing Energy External TC LBMP Energy Sales	64%	39%	44%	22%								
Balancing Energy Bilateral - Internal Bilaterals	15%	8%	12%	5%								
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	4%	0%	0%								
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	10%	7%	5%	4%								
Balancing Energy Bilateral - Wheel Through Bilaterals	-32%	-26%	-13%	-15%								
<b>Transactions Summary</b>												
LBMP	58%	57%	55%	54%								
Internal Bilaterals	33%	34%	36%	37%								
Import Bilaterals	5%	5%	5%	6%								
Export Bilaterals	2%	2%	2%	2%								
Wheels Through	2%	2%	2%	2%								
<b>Market Share of Total Load</b>												
Day Ahead Market	101.8%	103.3%	103.8%	104.0%								
Balancing Energy +	-1.8%	-3.3%	-3.8%	-4.0%								
Total MWh	13,878,571	12,157,922	13,474,812	11,595,049								
Average Daily Energy Sendout/Month GWh	431	418	419	377								

<b>2016</b>	January	February	March	April	May	June	July	August	September	October	November	December
<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	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%
<b>Balancing Energy Market MWh</b>	-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%
<b>Transactions Summary</b>												
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%
<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%	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>
<b><u>DAY AHEAD LBMP</u></b>												
Price *	\$37.22	\$28.84	\$32.04	\$27.70								
Standard Deviation	\$13.20	\$7.97	\$11.95	\$7.66								
Load Weighted Price **	\$38.42	\$29.66	\$32.96	\$28.56								
<b><u>RTC LBMP</u></b>												
Price *	\$32.87	\$24.09	\$28.86	\$26.19								
Standard Deviation	\$14.57	\$9.52	\$13.70	\$10.36								
Load Weighted Price **	\$33.96	\$24.81	\$29.67	\$26.98								
<b><u>REAL TIME LBMP</u></b>												
Price *	\$34.61	\$25.14	\$31.21	\$29.61								
Standard Deviation	\$18.20	\$14.21	\$25.02	\$39.82								
Load Weighted Price **	\$35.80	\$25.84	\$32.21	\$30.81								
Average Daily Energy Sendout/Month GWh	431	418	419	377								

### NYISO Markets 2016 Energy Statistics

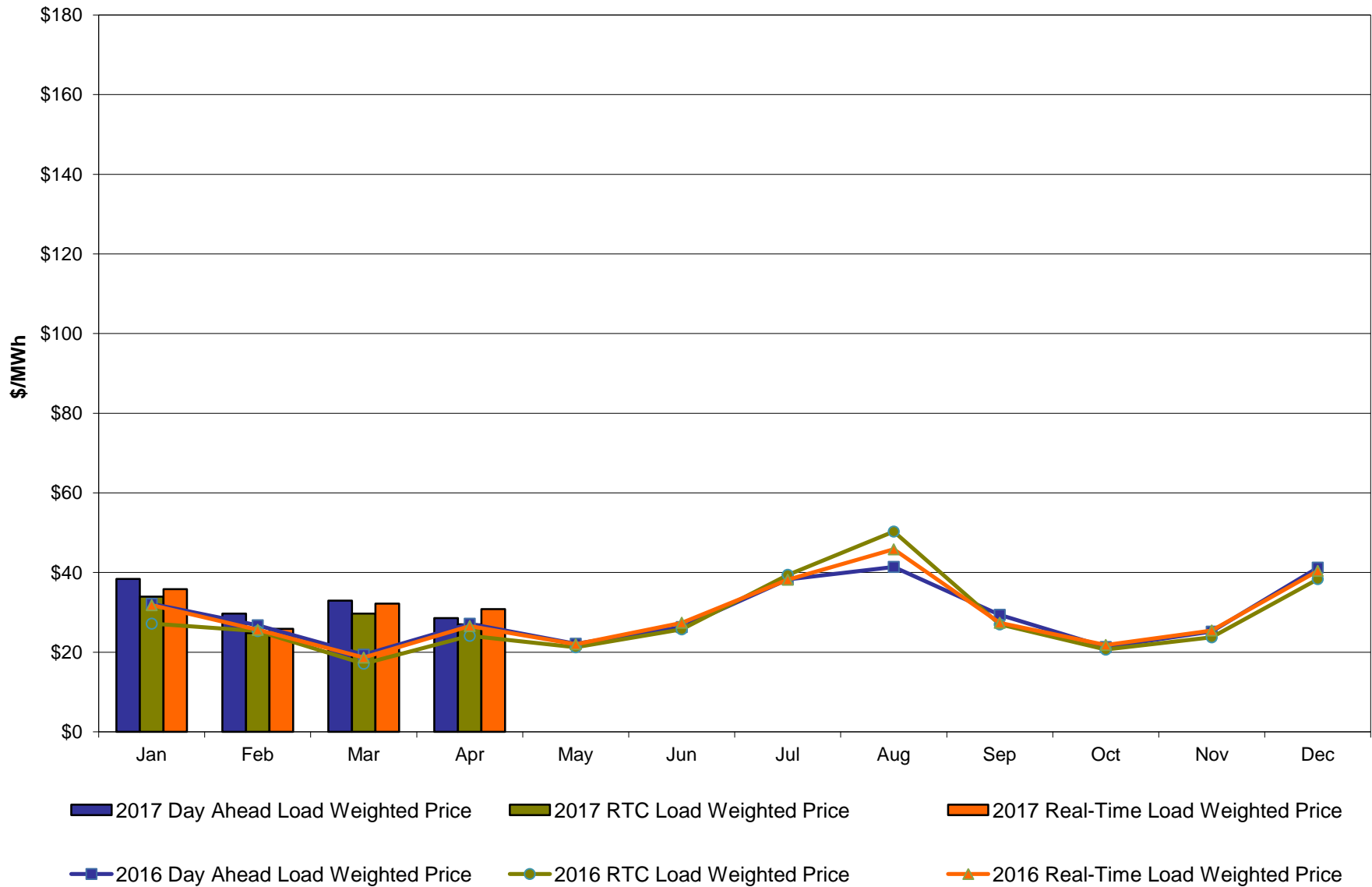
	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b><u>DAY AHEAD LBMP</u></b>												
Price *	\$31.01	\$25.76	\$18.63	\$26.39	\$21.07	\$24.83	\$35.24	\$38.25	\$27.15	\$20.37	\$24.35	\$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
<b><u>RTC LBMP</u></b>												
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
<b><u>REAL TIME LBMP</u></b>												
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

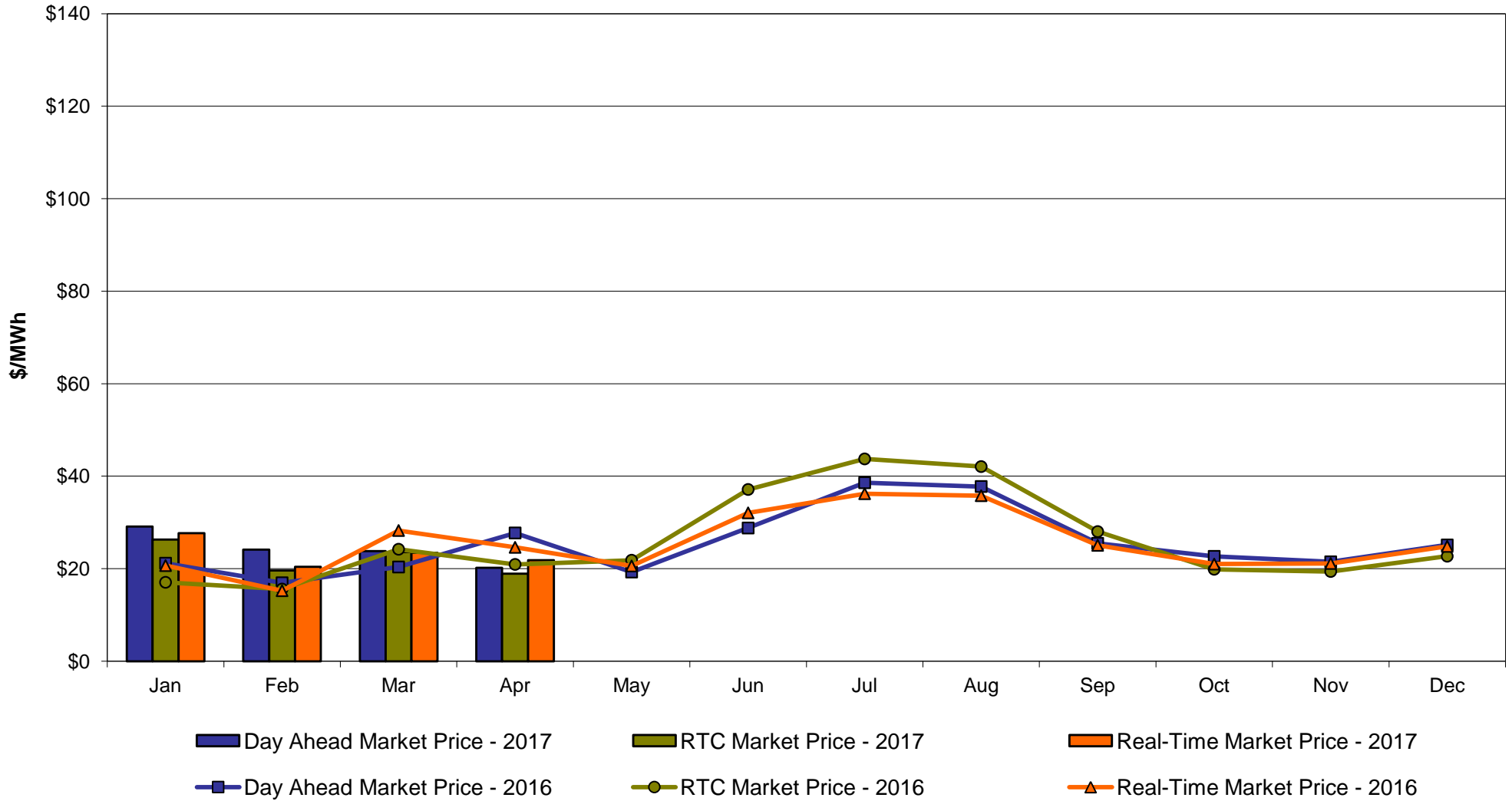


**April 2017 Zonal LBMP Statistics for NYISO (\$/MWh)**

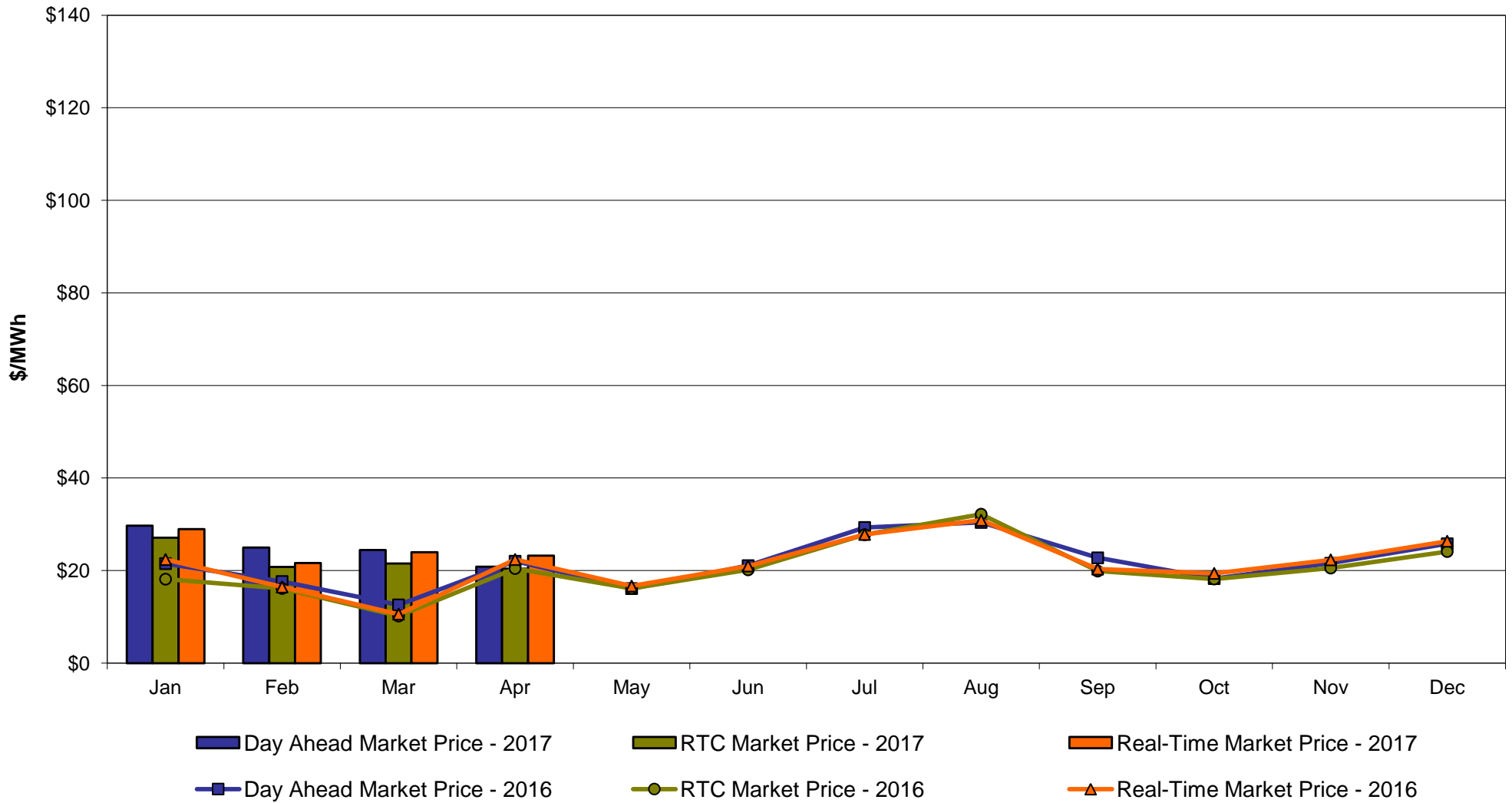
	<u>WEST Zone A</u>	<u>GENESEE Zone B</u>	<u>NORTH Zone D</u>	<u>CENTRAL Zone C</u>	<u>MOHAWK VALLEY Zone E</u>	<u>CAPITAL Zone F</u>	<u>HUDSON VALLEY Zone G</u>	<u>MILLWOOD Zone H</u>	<u>DUNWOODIE Zone I</u>	<u>NEW YORK CITY Zone J</u>	<u>LONG ISLAND Zone K</u>
<b><u>DAY AHEAD LBMP</u></b>											
Unweighted Price *	20.18	20.12	15.57	20.86	21.09	29.74	29.69	30.35	30.36	32.27	32.32
Standard Deviation	7.80	8.03	7.43	8.18	8.04	6.82	7.83	8.26	8.33	8.85	8.15
<b><u>RTC LBMP</u></b>											
Unweighted Price *	18.95	19.66	13.74	20.41	20.56	28.14	27.74	28.33	28.51	30.41	30.29
Standard Deviation	20.20	11.99	15.94	11.06	10.88	12.20	11.45	11.79	12.05	12.06	12.69
<b><u>REAL TIME LBMP</u></b>											
Unweighted Price *	21.86	22.34	14.78	23.23	23.30	31.75	31.40	32.07	32.28	34.54	34.23
Standard Deviation	38.45	37.87	19.85	38.98	36.33	42.50	43.01	43.38	43.37	42.64	43.98
	<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 *	19.51	17.38	17.38	24.75	30.38	32.00	31.33	31.44	32.28	31.36	15.14
Standard Deviation	7.42	7.16	7.16	7.60	7.40	8.05	7.77	7.94	8.84	8.62	6.91
<b><u>RTC LBMP</u></b>											
Unweighted Price *	17.42	14.79	14.77	25.07	29.95	30.18	29.96	29.70	29.87	29.54	13.23
Standard Deviation	32.77	14.93	14.92	13.75	16.28	12.57	12.56	12.32	10.82	11.92	15.38
<b><u>REAL TIME LBMP</u></b>											
Unweighted Price *	20.69	16.18	16.13	28.62	32.77	34.13	33.86	33.72	33.10	33.43	13.69
Standard Deviation	38.25	18.57	18.63	39.14	42.34	43.38	43.79	43.31	19.26	43.24	18.91

\* Straight LBMP averages

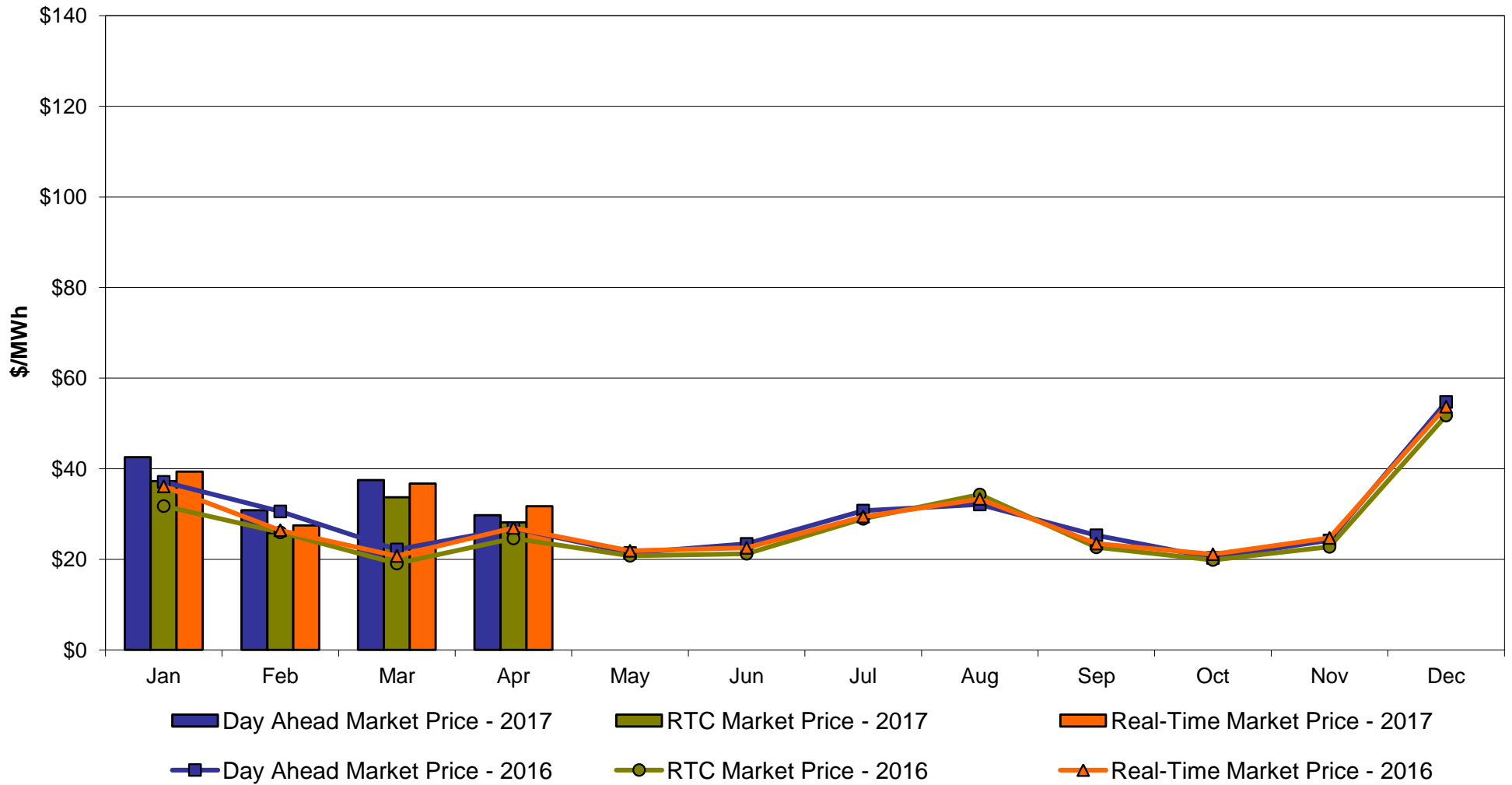
## West Zone A Monthly Average LBMP Prices 2016 - 2017



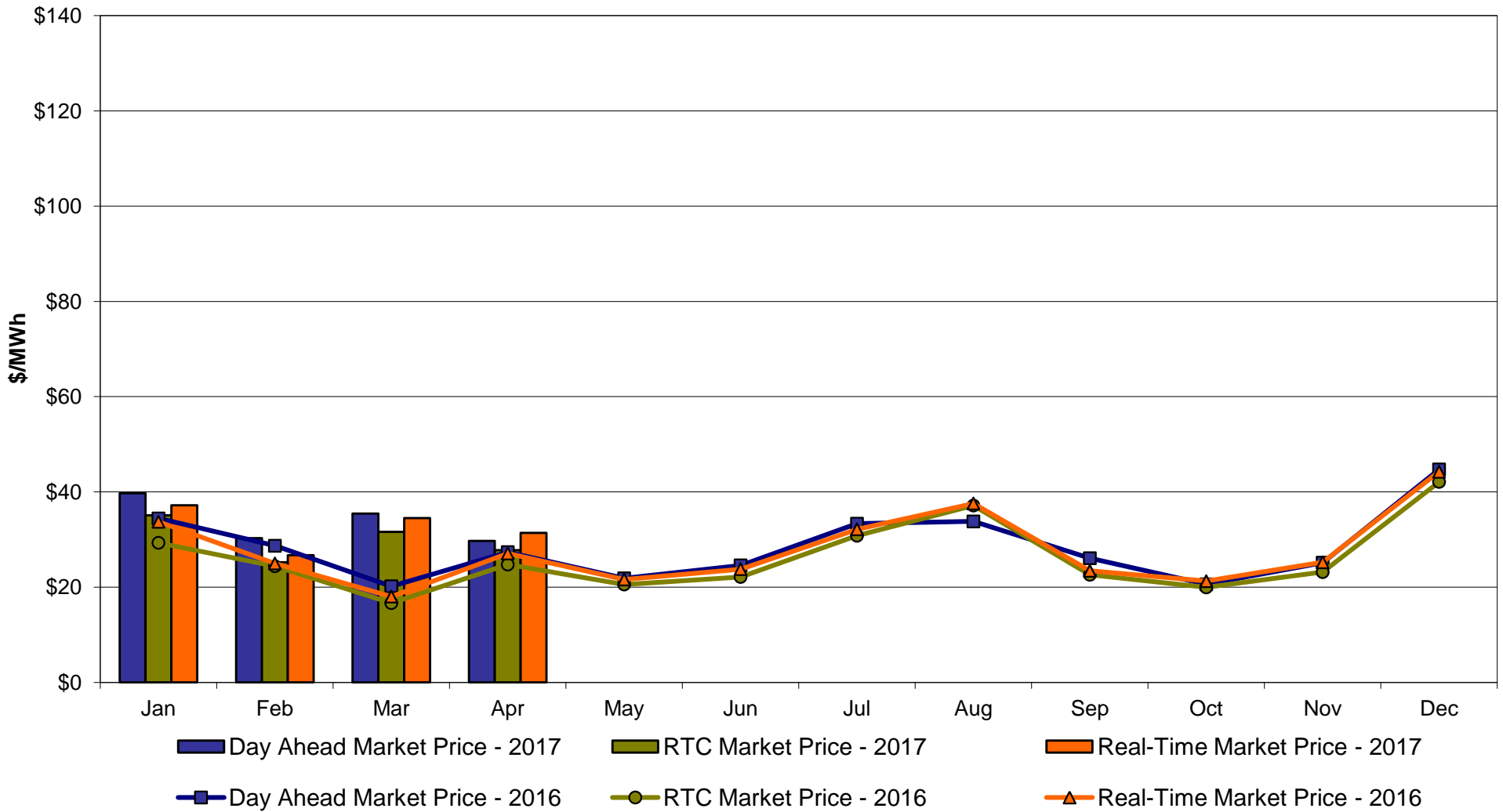
**Central Zone C  
Monthly Average LBMP Prices 2016 - 2017**



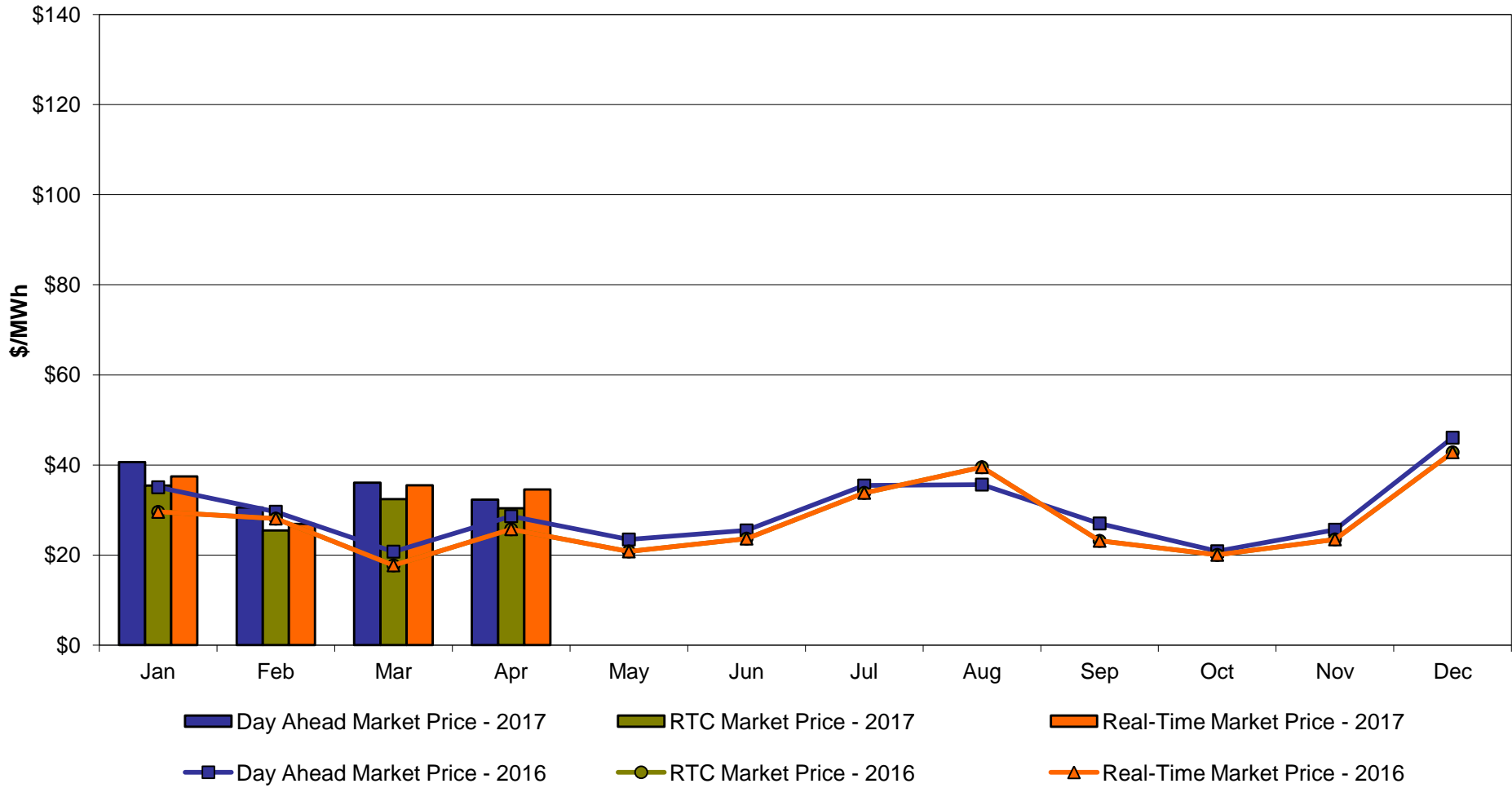
## Capital Zone F Monthly Average LBMP Prices 2016 - 2017



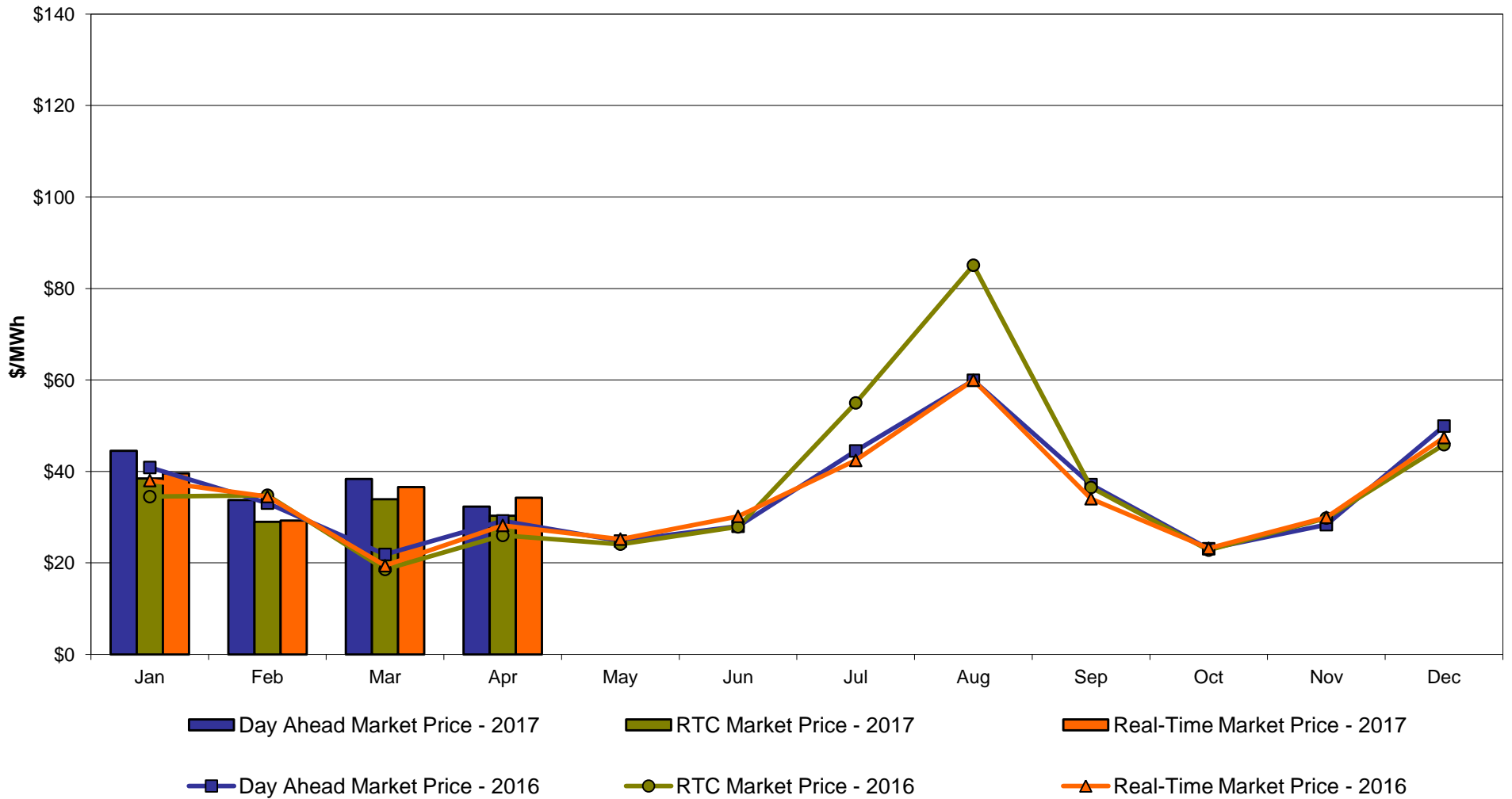
## Hudson Valley Zone G Monthly Average LBMP Prices 2016 - 2017



## NYC Zone J Monthly Average LBMP Prices 2016 - 2017

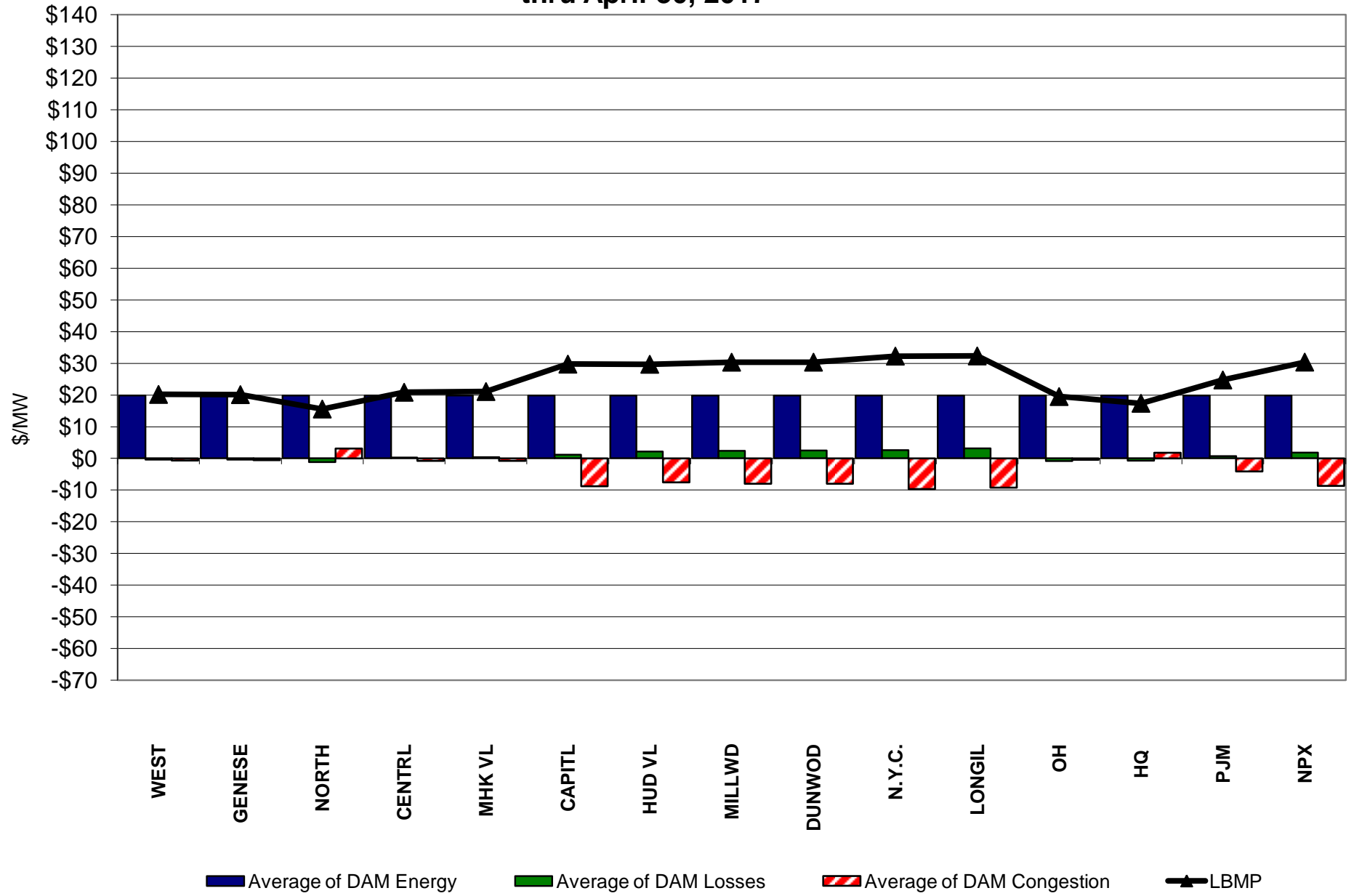


## Long Island Zone K Monthly Average LBMP Prices 2016 - 2017

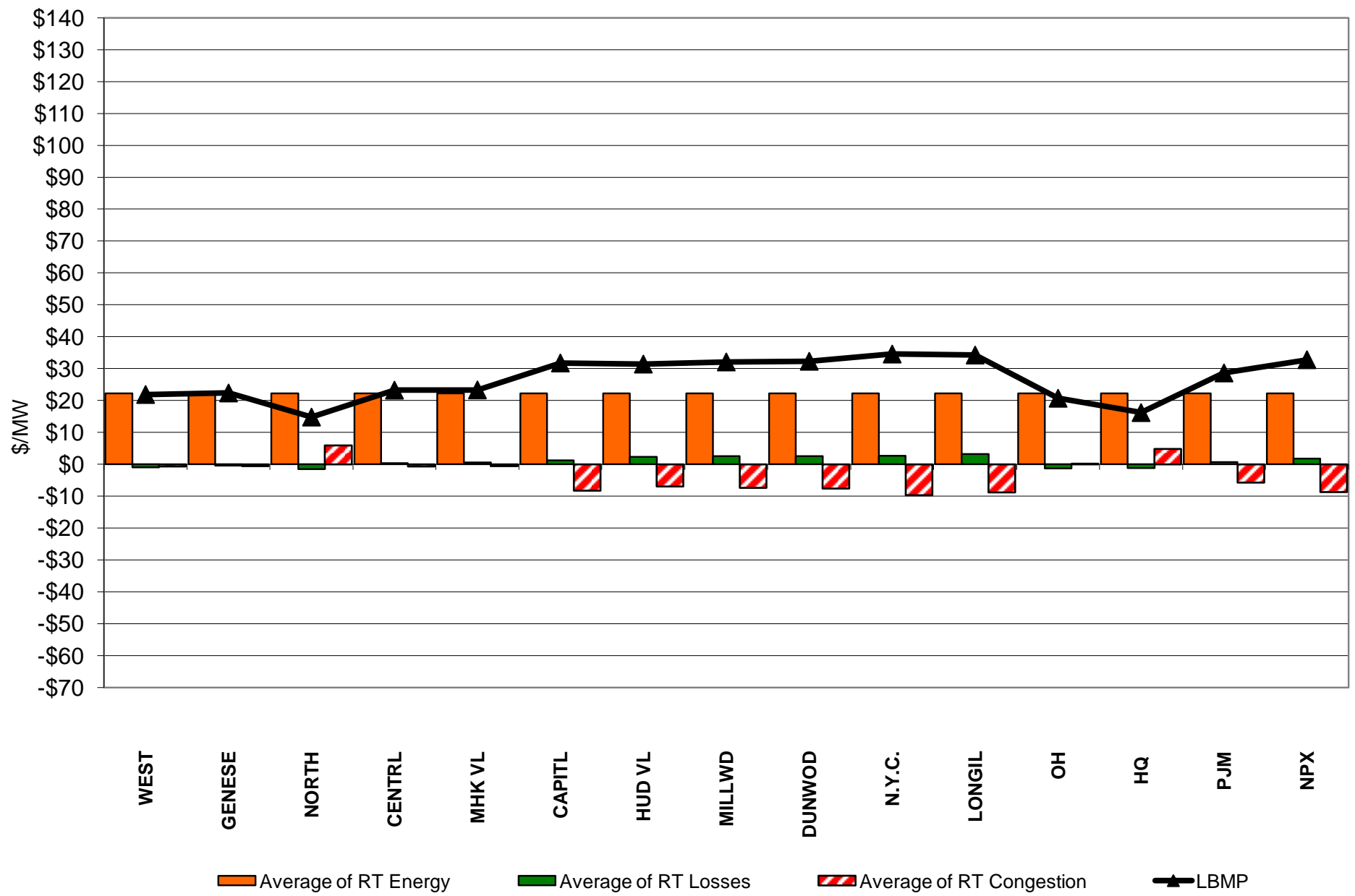




**DAM Zonal Unweighted Monthly Average LBMP Components  
thru April 30, 2017**

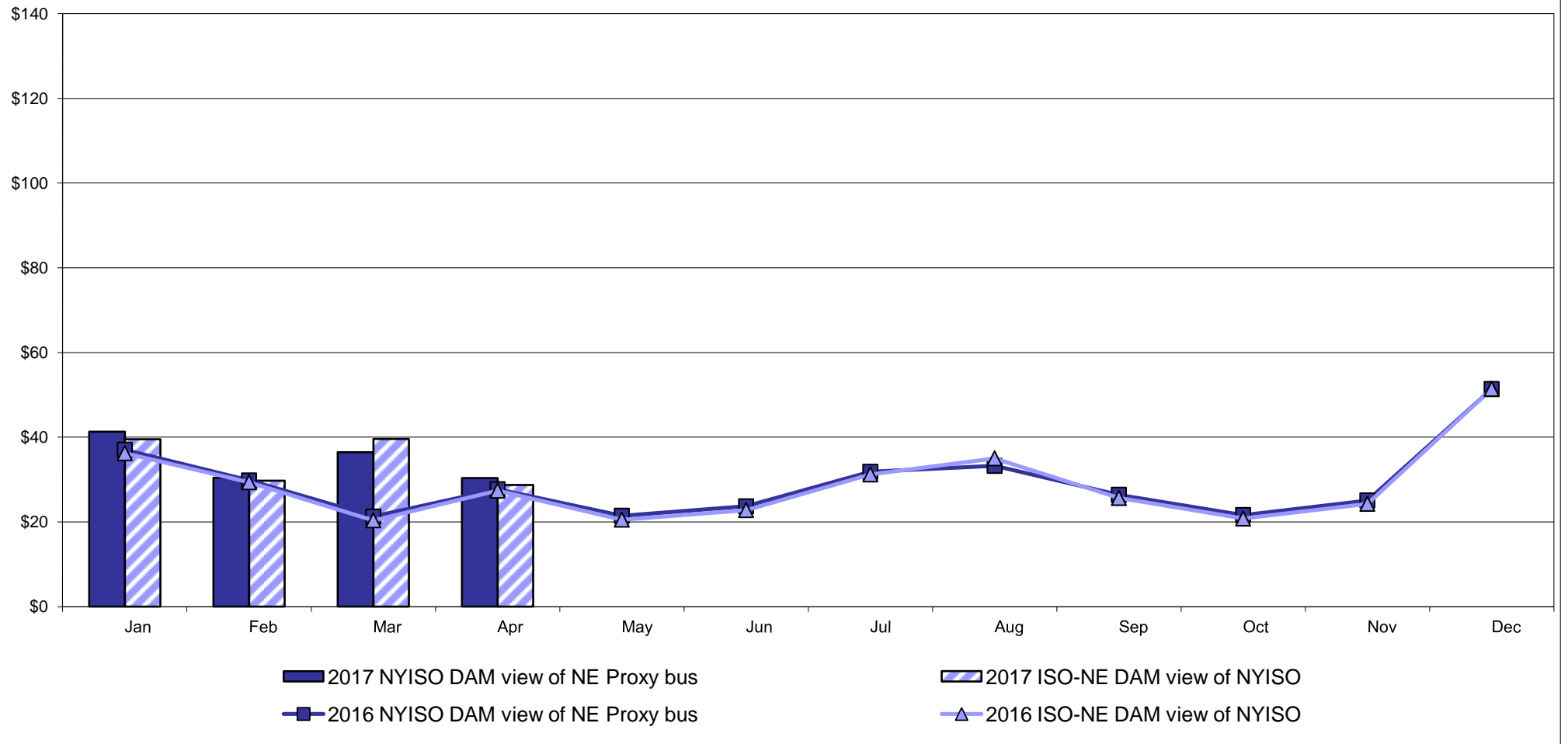


**RT Zonal Unweighted Monthly Average LBMP Components  
thru April 30, 2017**

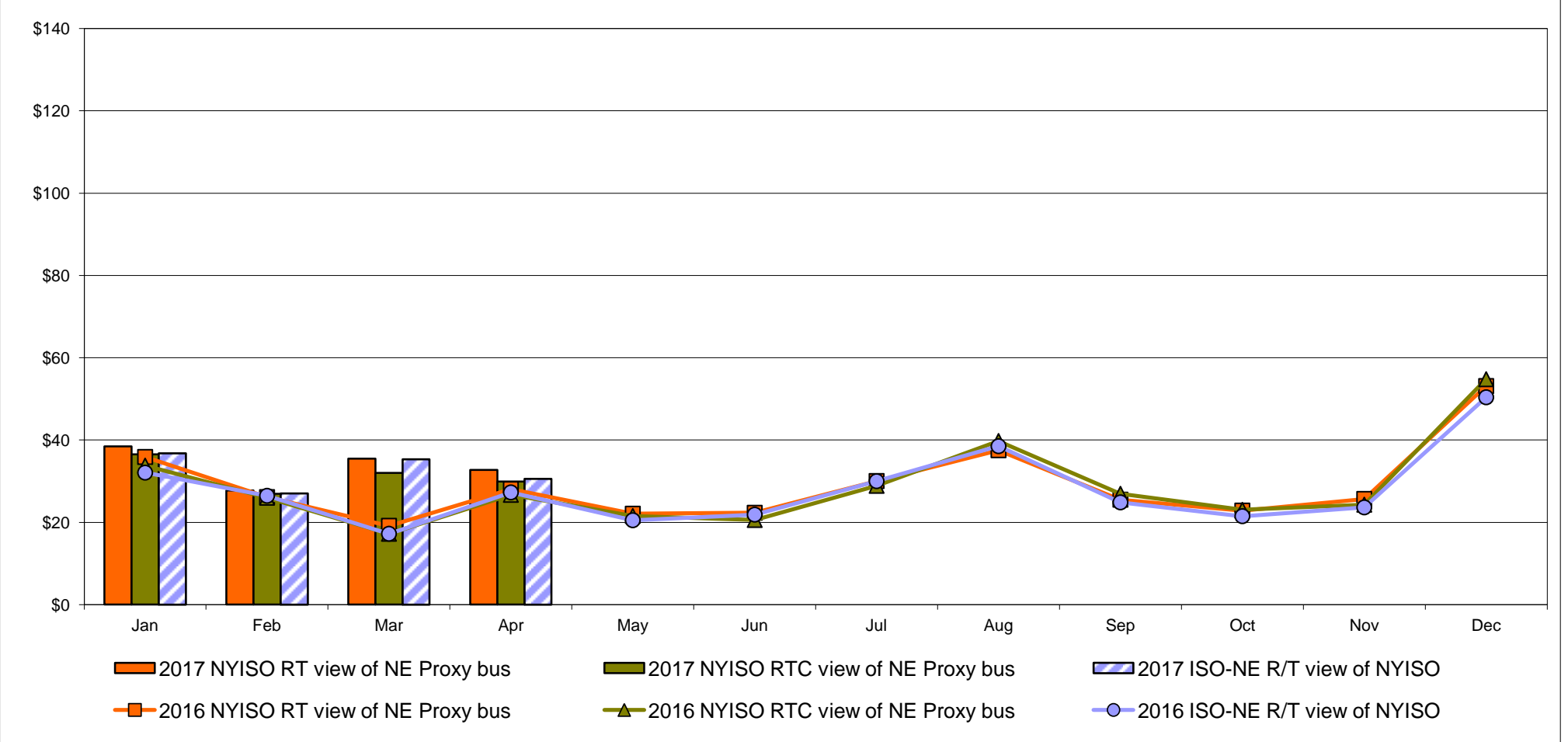


# External Comparison ISO-New England

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

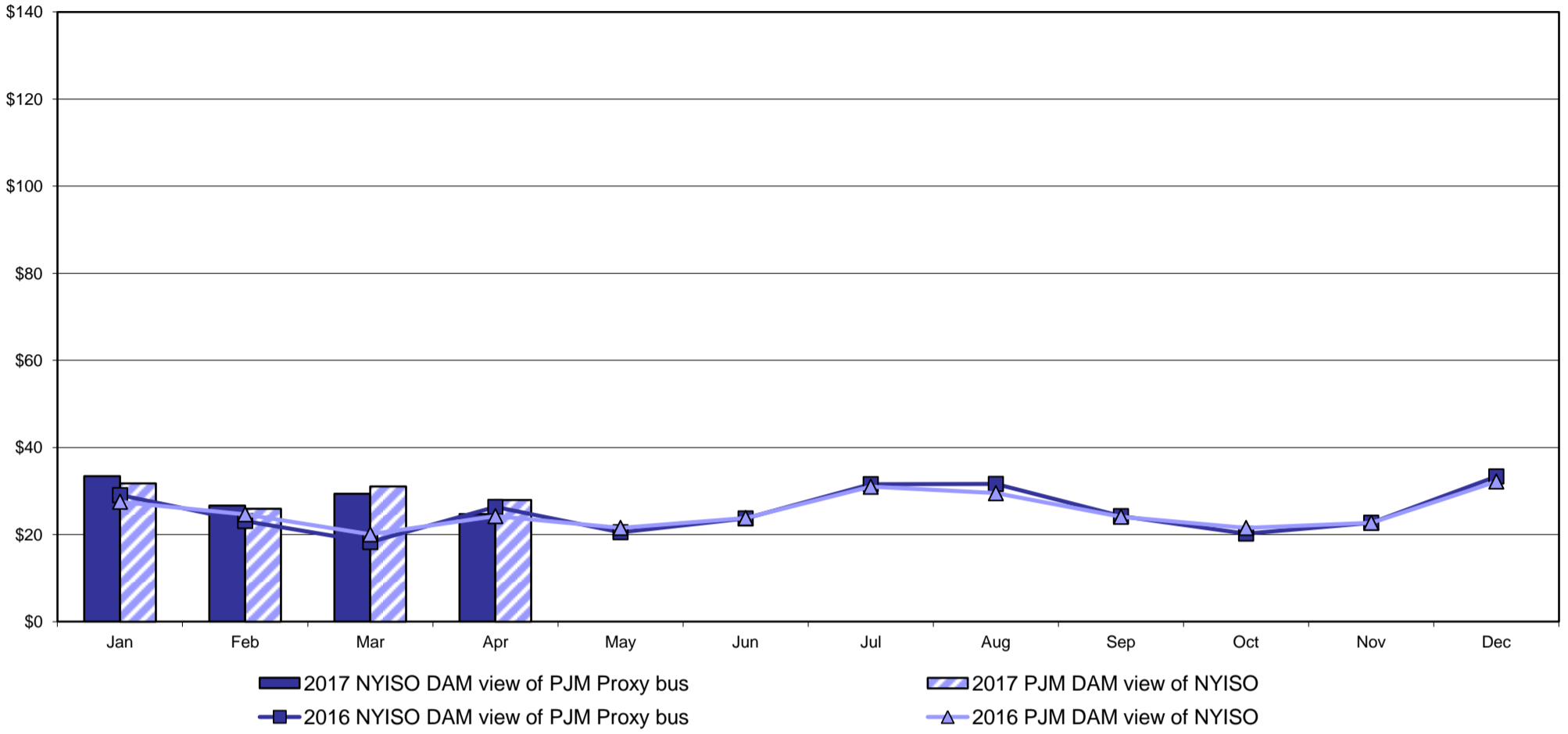


## Real Time Market External Zone Comparison: ISO-NE (\$/MWh)

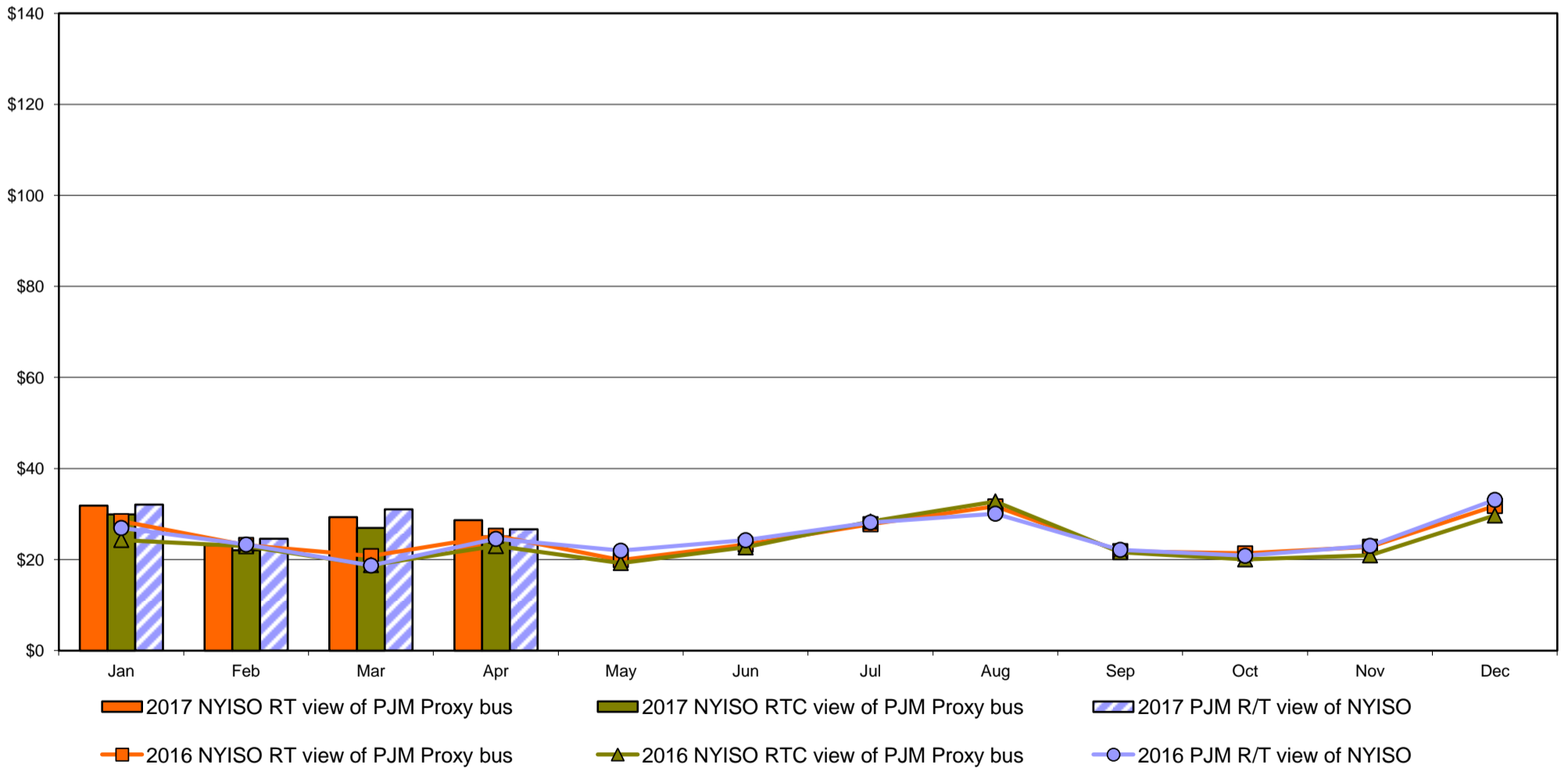


# External Comparison PJM

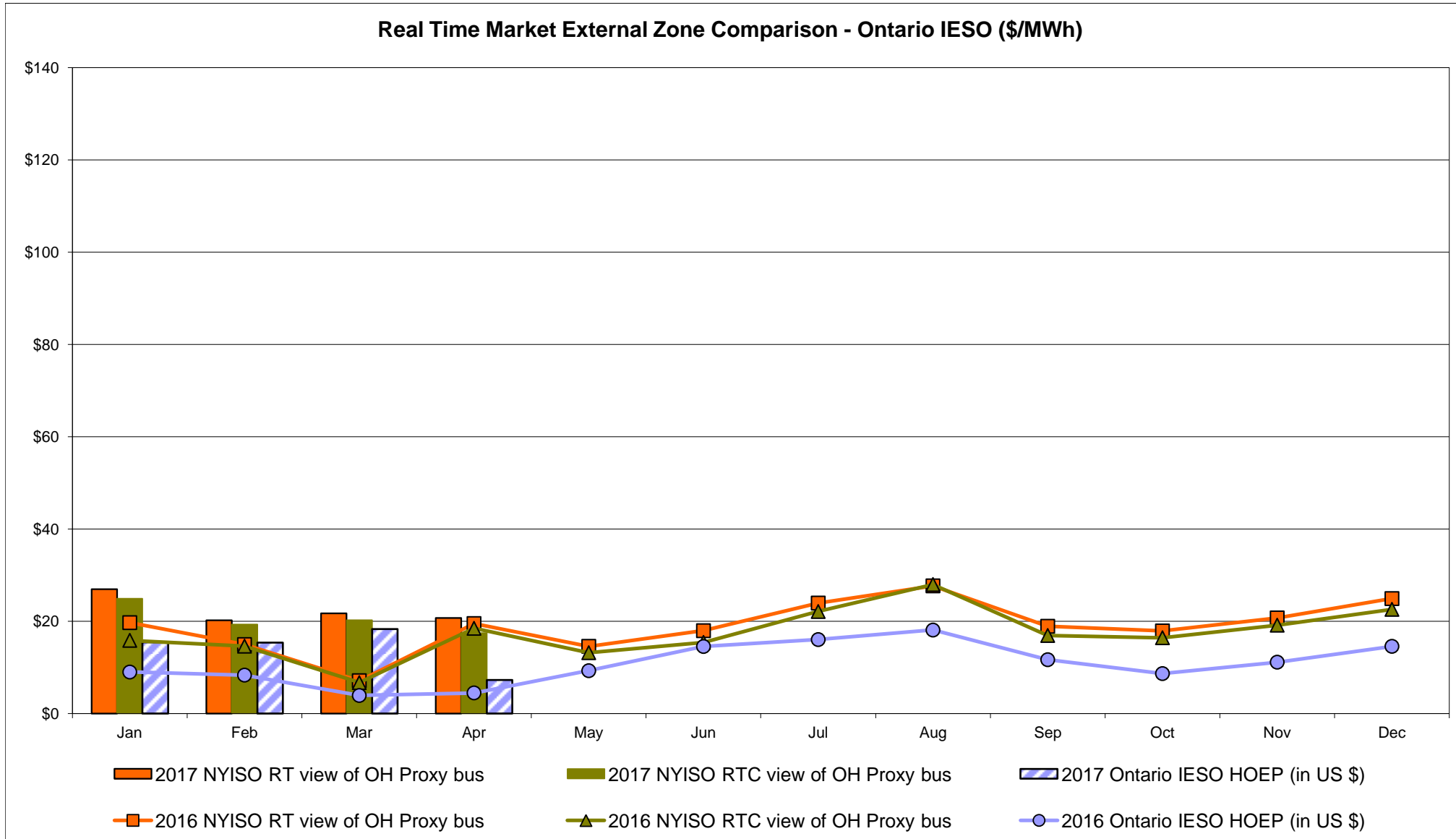
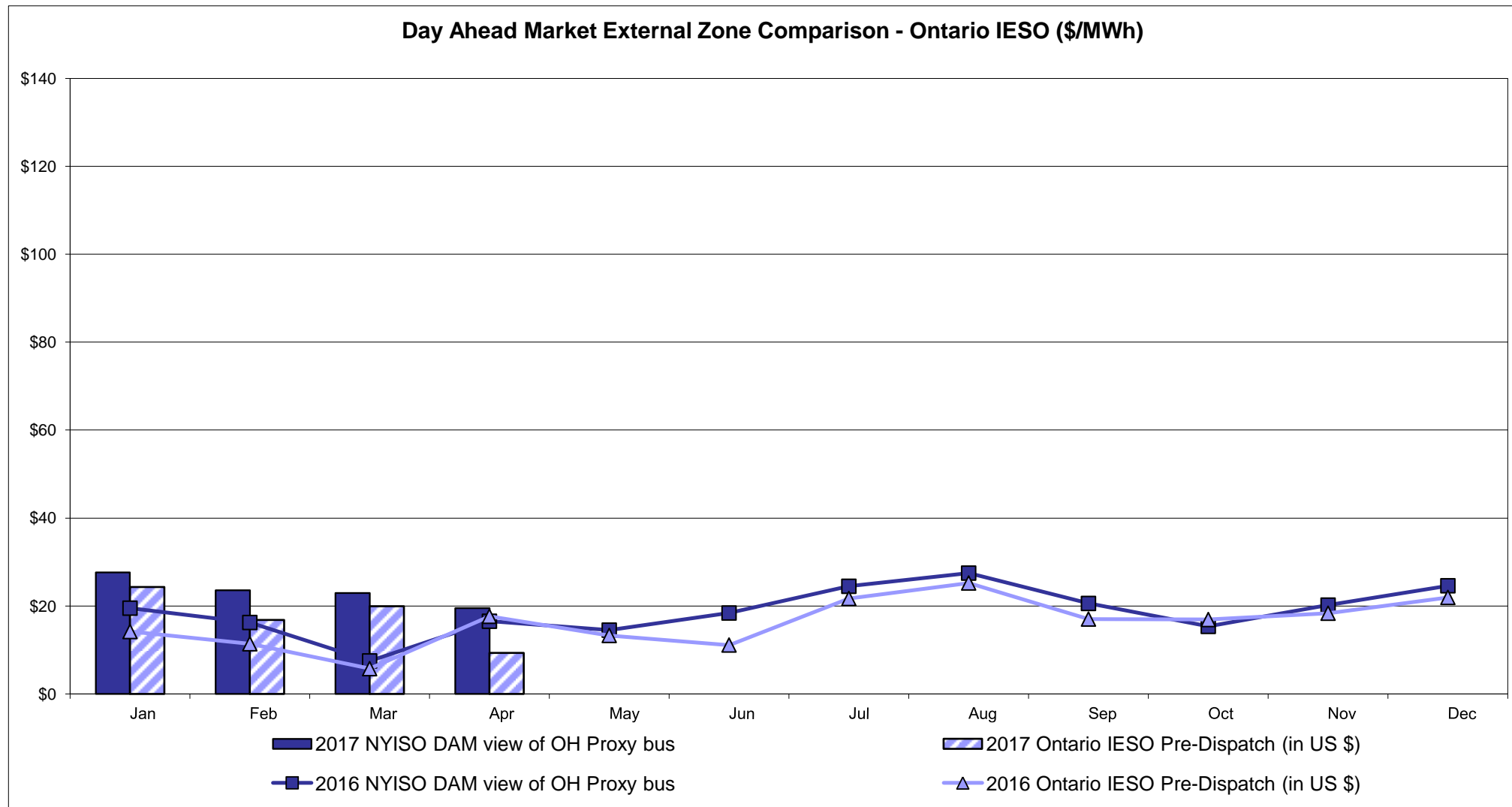
## Day Ahead Market External Zone Comparison - PJM (\$/MWh)



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

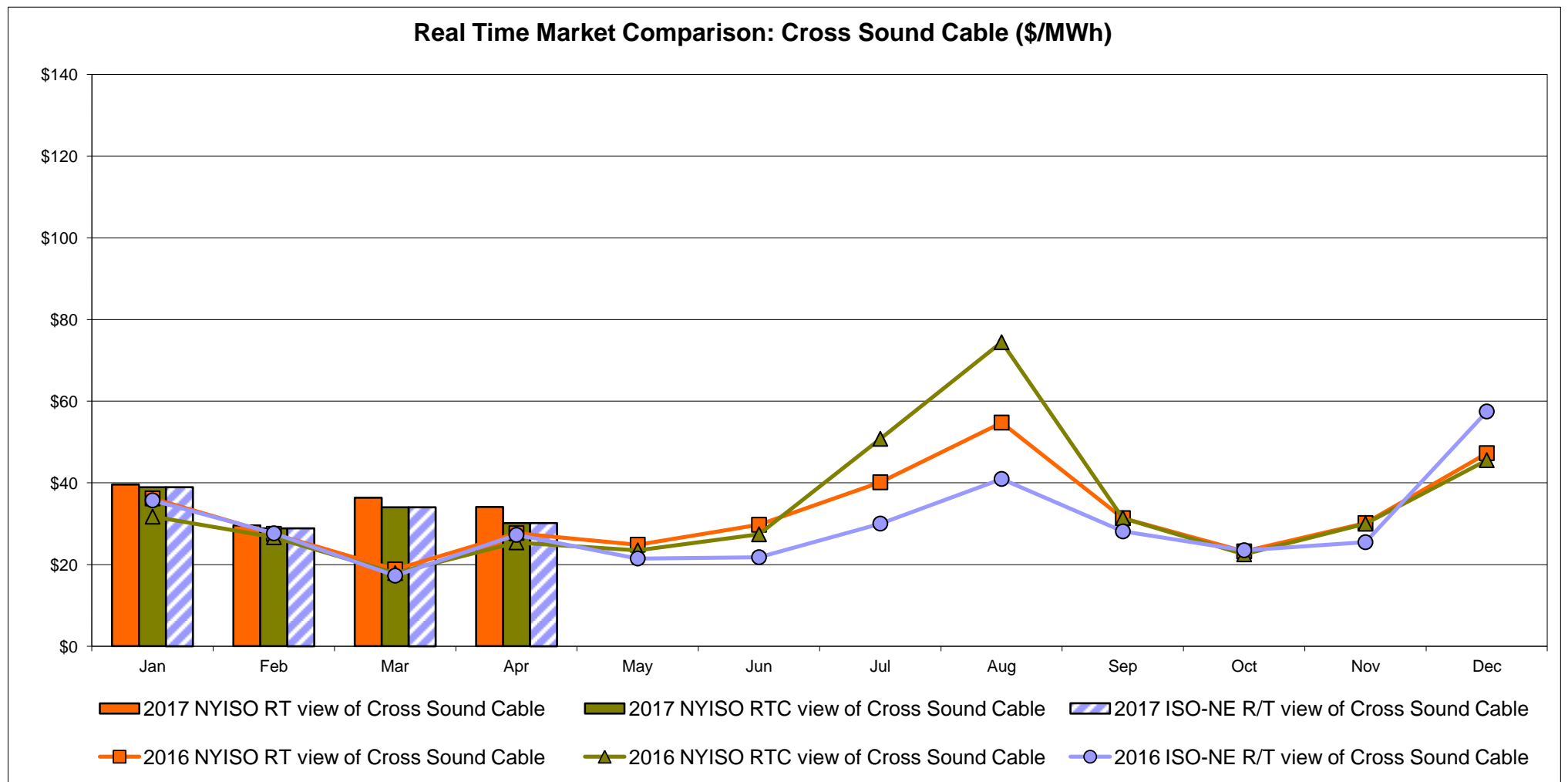
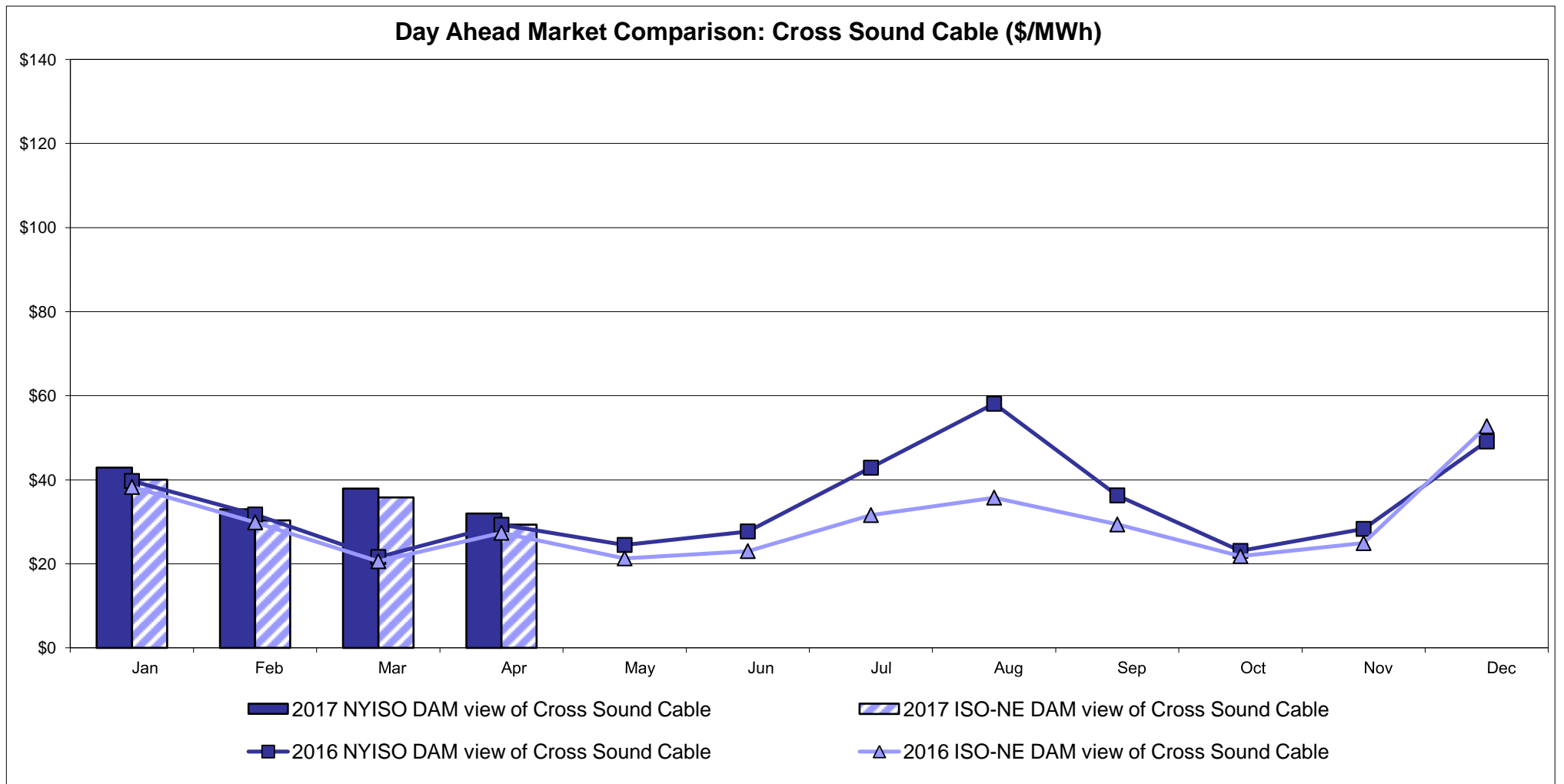


# External Comparison Ontario IESO



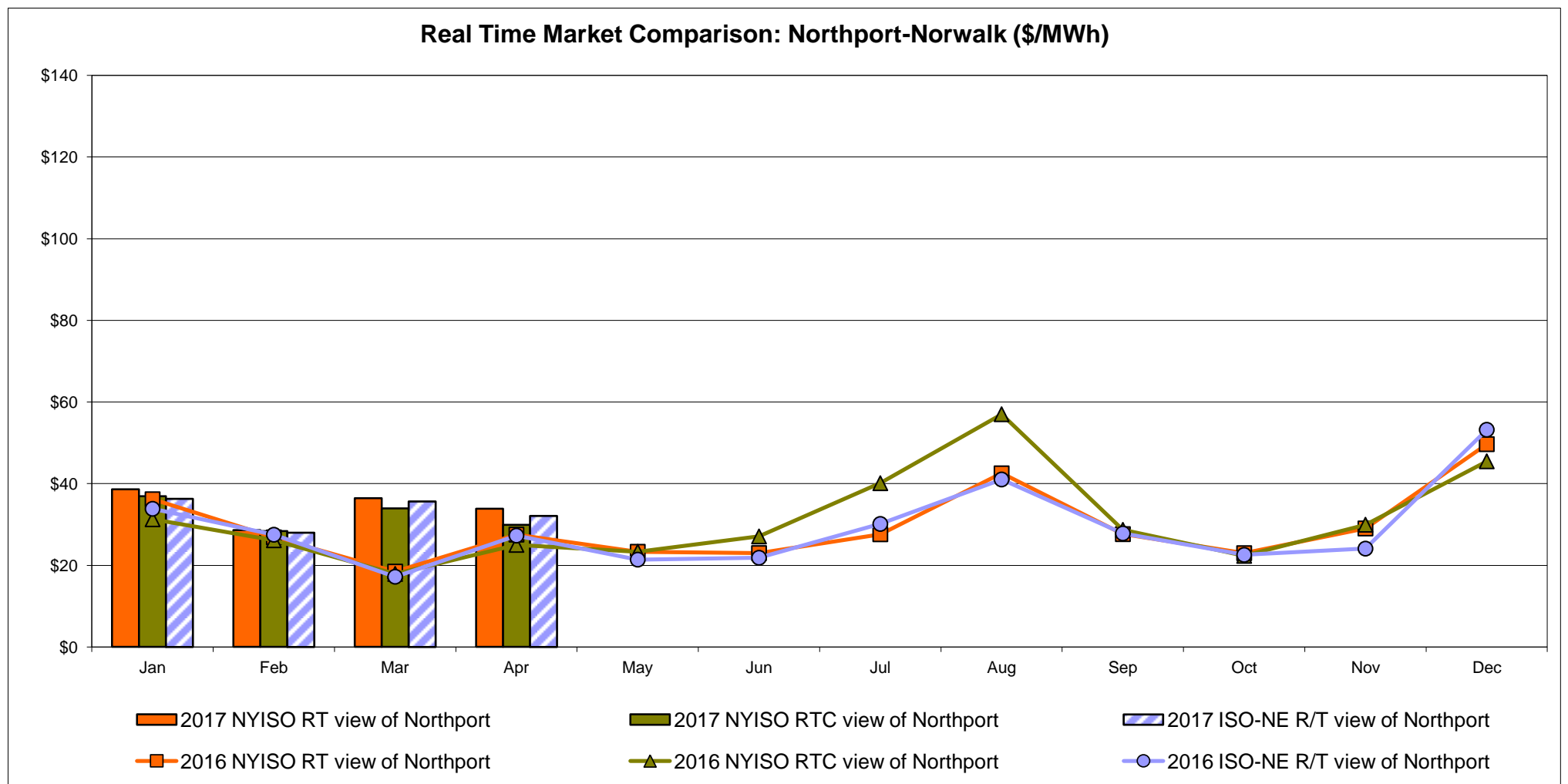
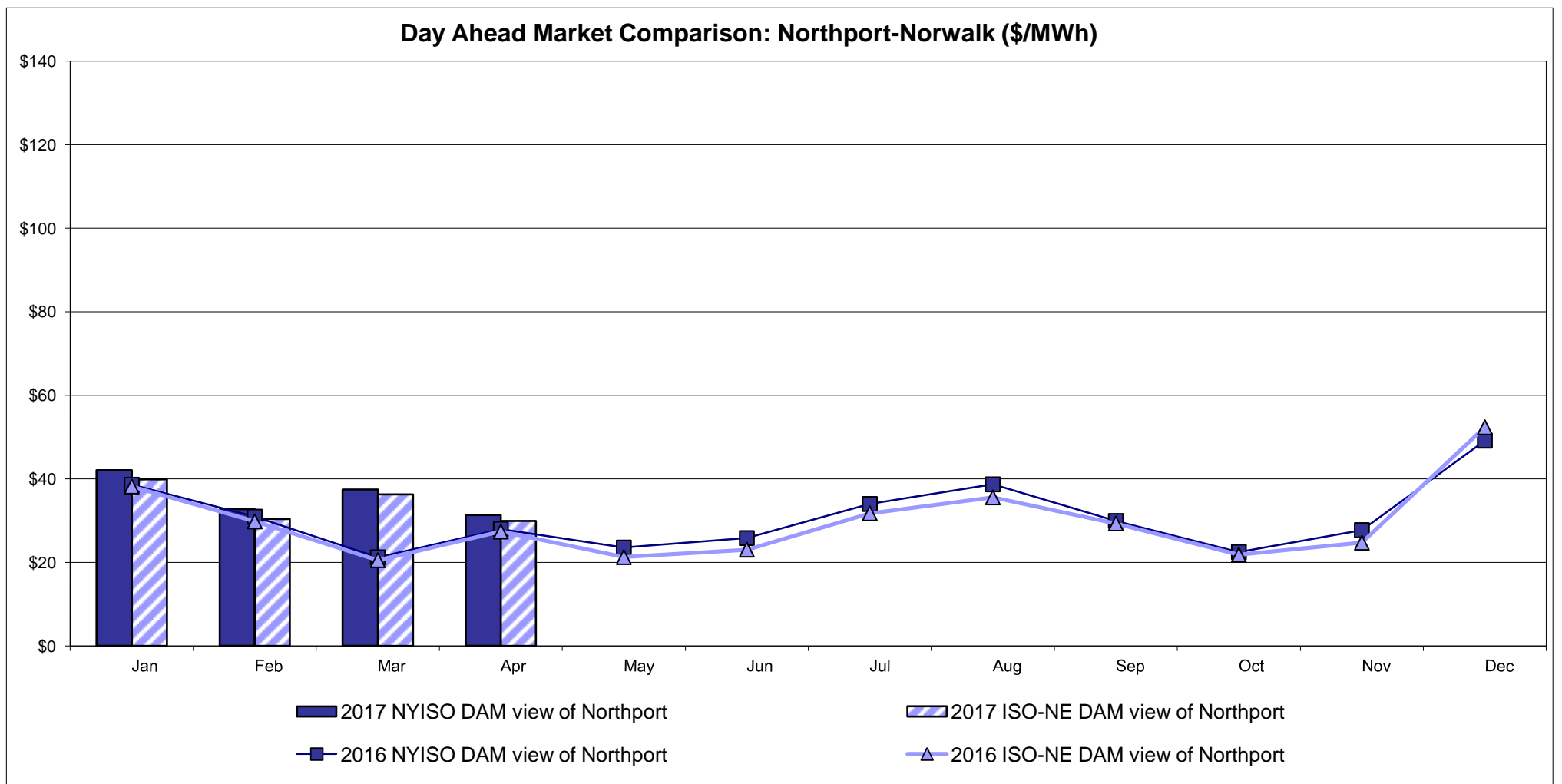
Notes: Exchange factor used for April 2017 was 0.747440018 to US  
 HOEP: Hourly Ontario Energy Price  
 Pre-Dispatch: Projected Energy Price

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



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

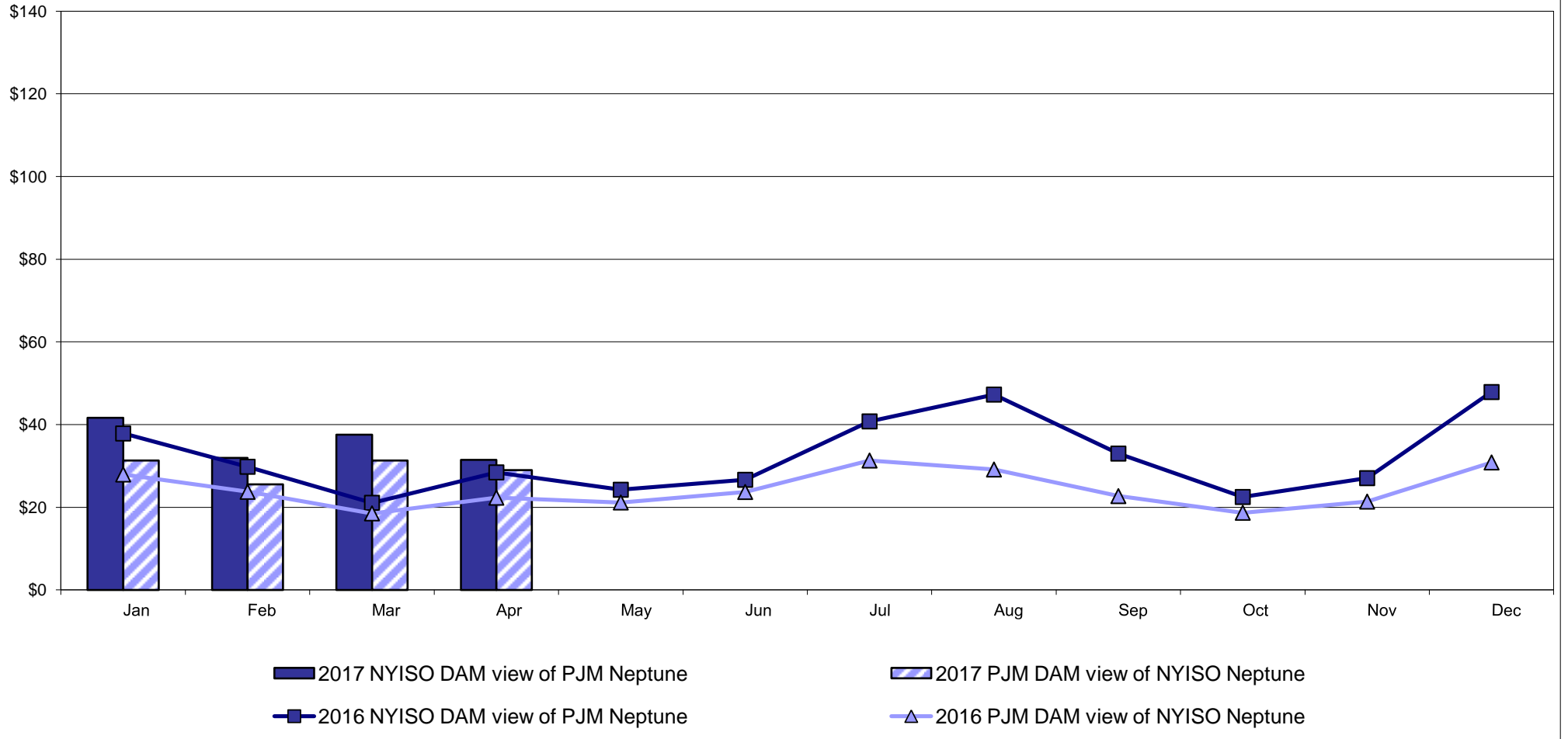
# External Controllable Line: Northport - Norwalk (New England)



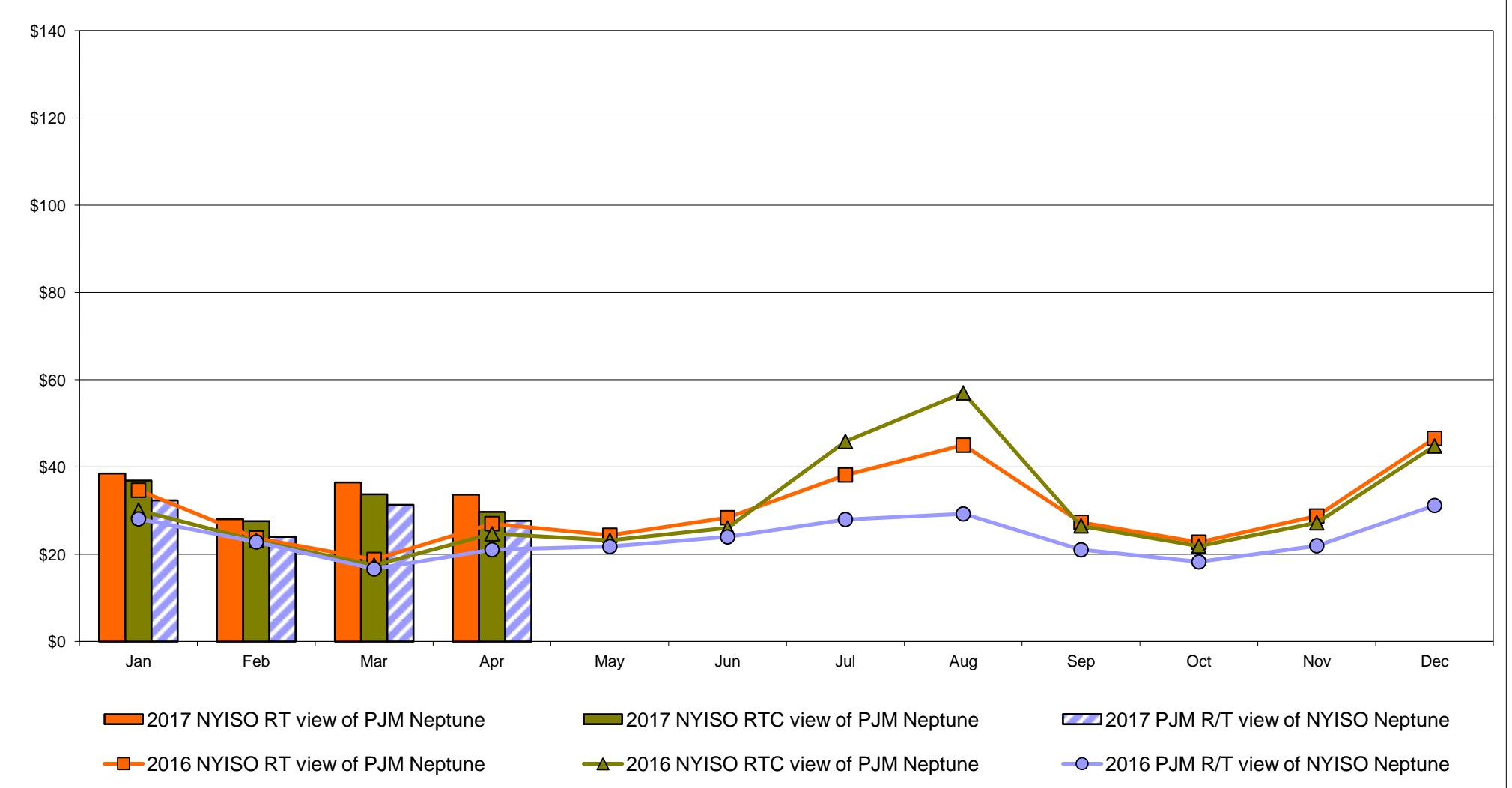
Note:  
 ISO-NE Forecast is an advisory posting @ 18:00 day before.  
 The DAM and R/T prices at the Northport 138 interface are used for ISO-NE.  
 The DAM and R/T prices at the 1385 interface are used for NYISO.

# External Controllable Line: Neptune (PJM)

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

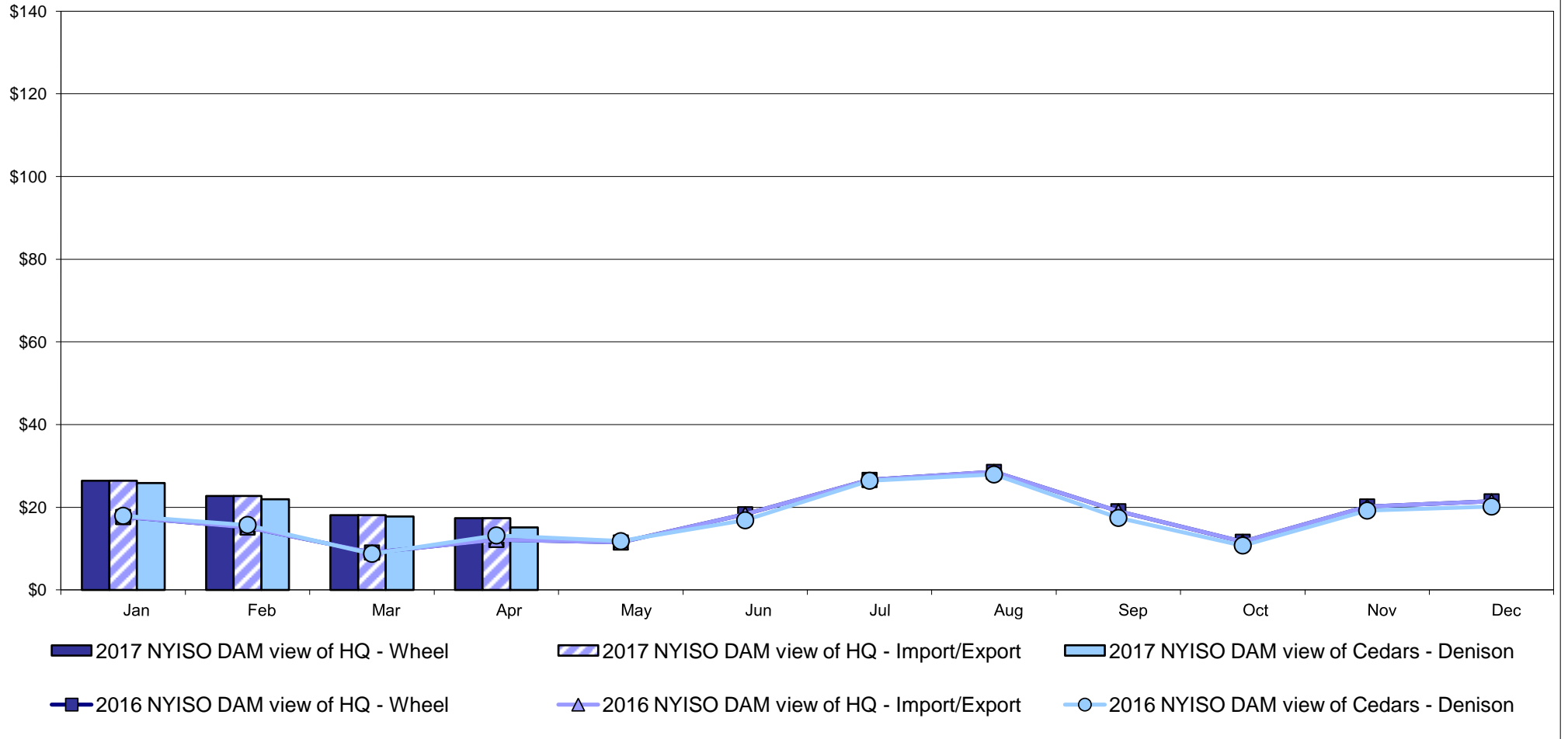


### Real Time Market Comparison: Neptune (\$/MWh)

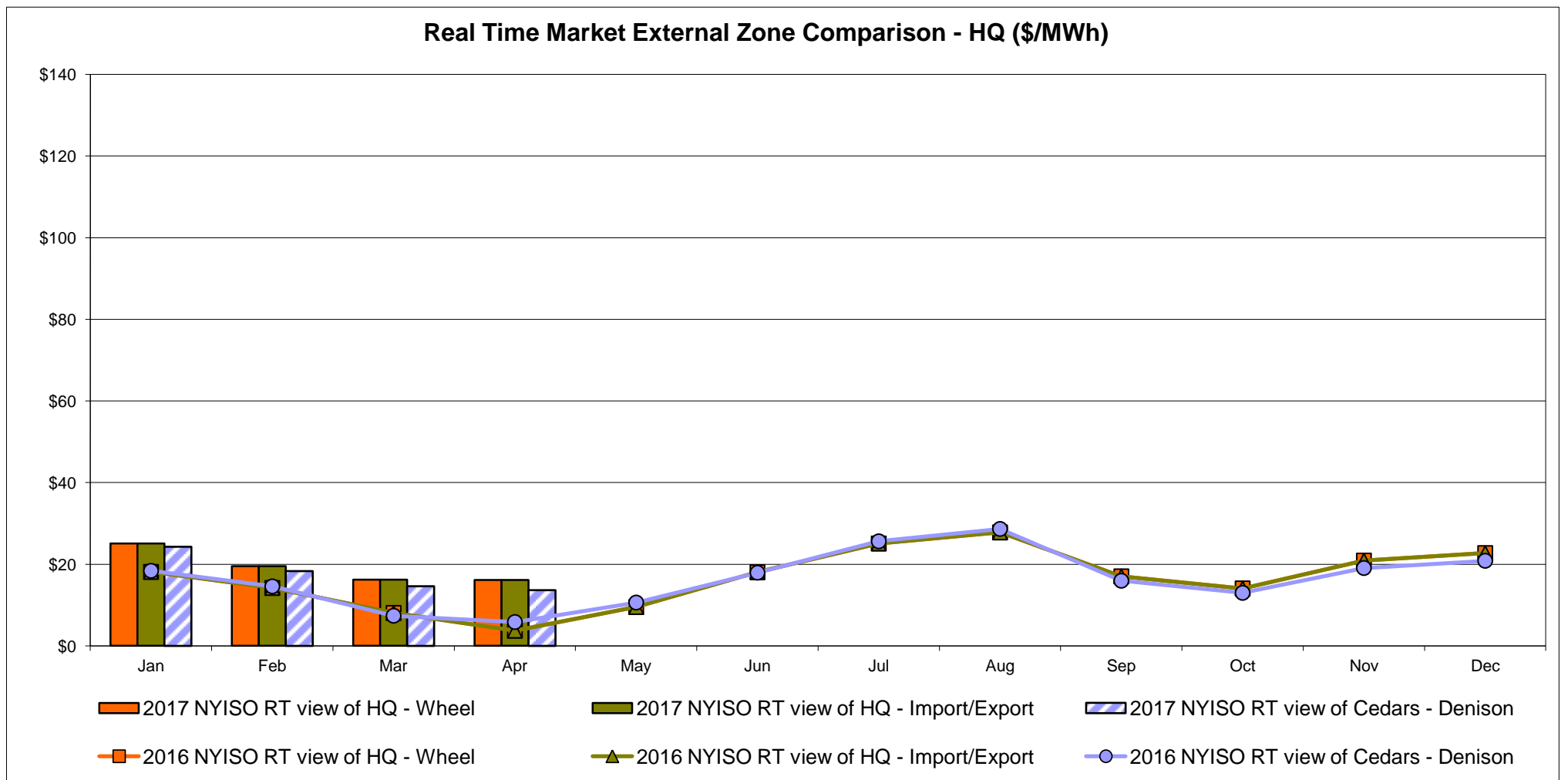


# External Comparison Hydro-Quebec

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



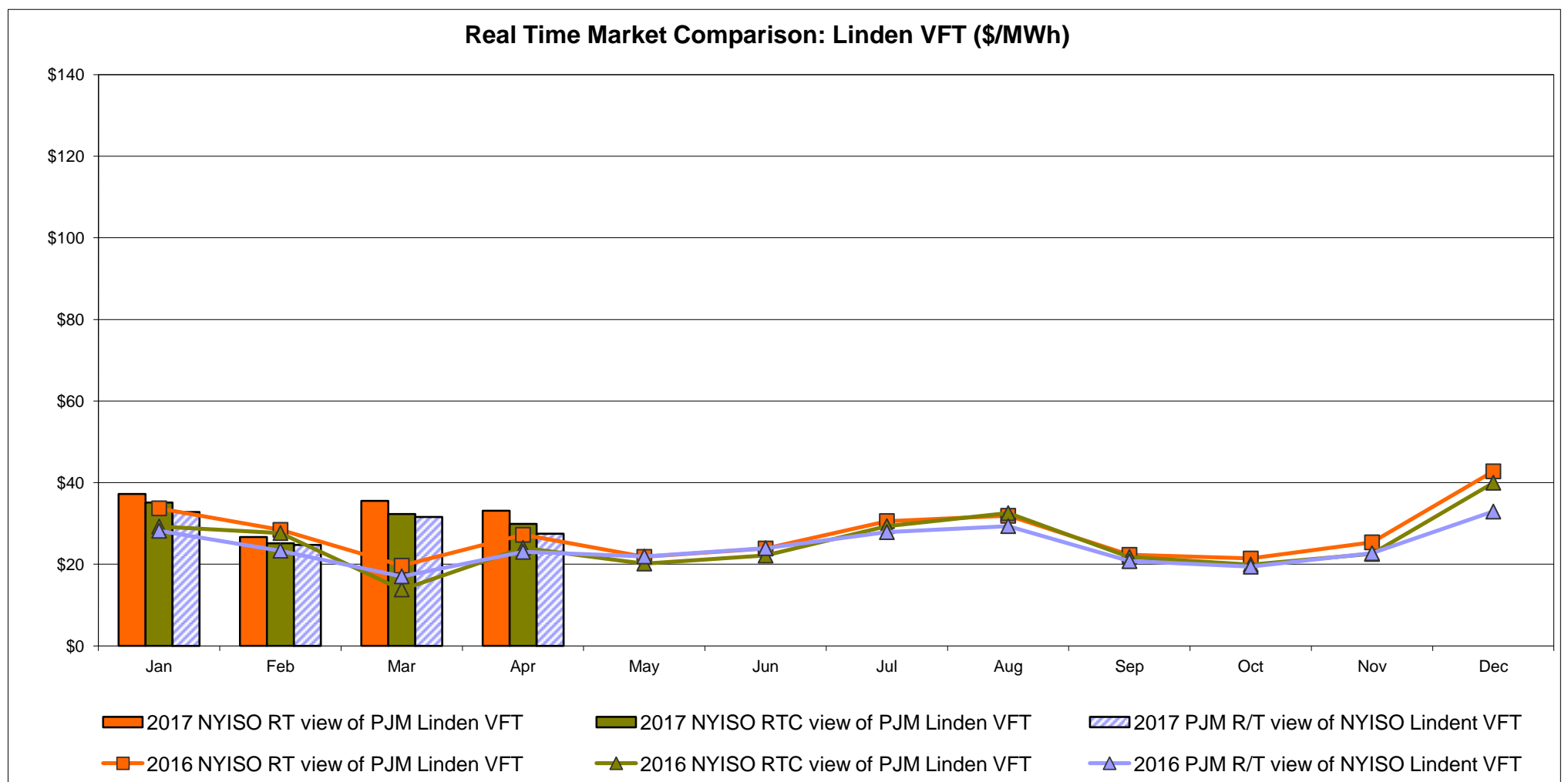
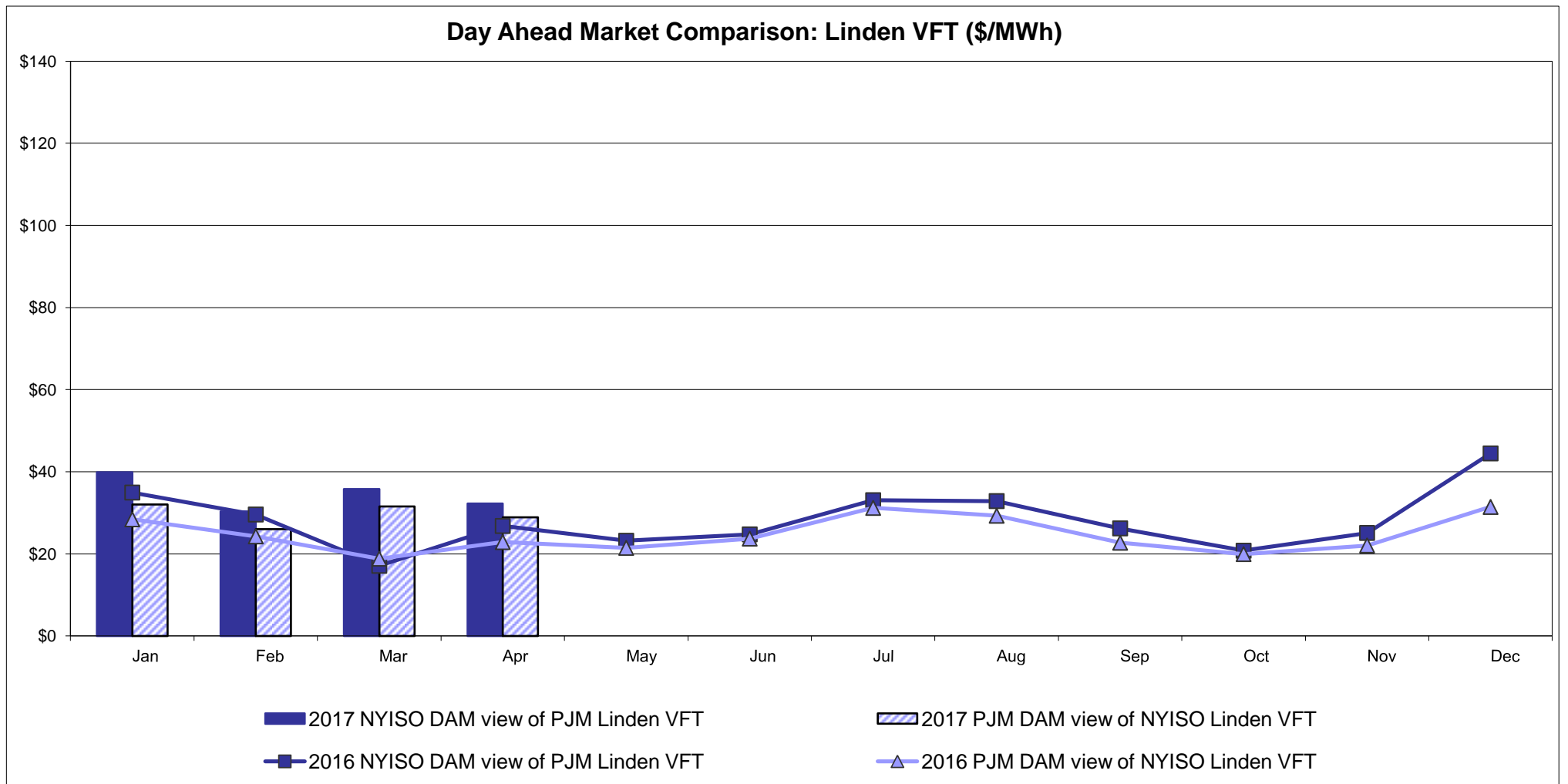
## Real Time Market External Zone Comparison - HQ (\$/MWh)



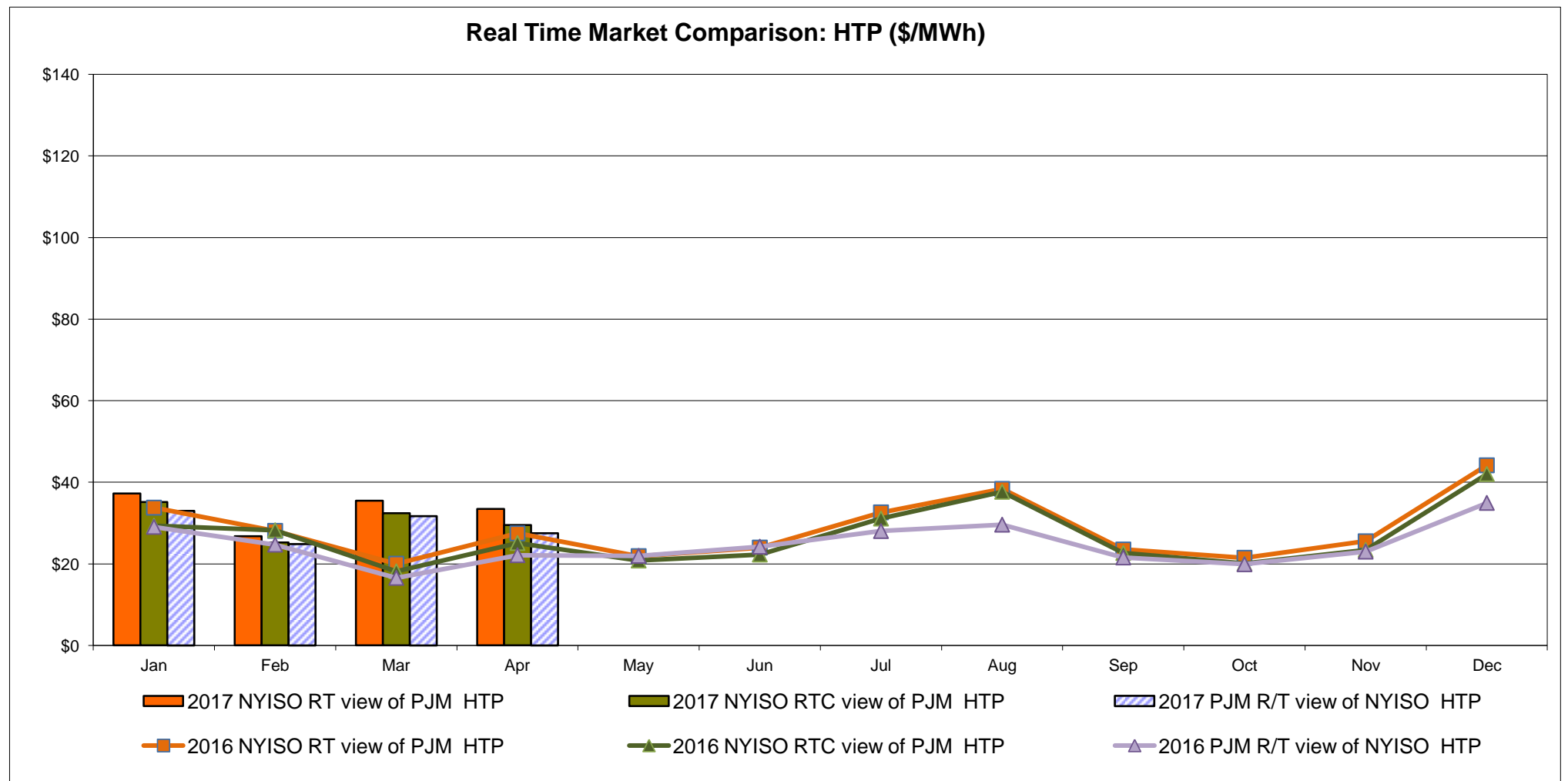
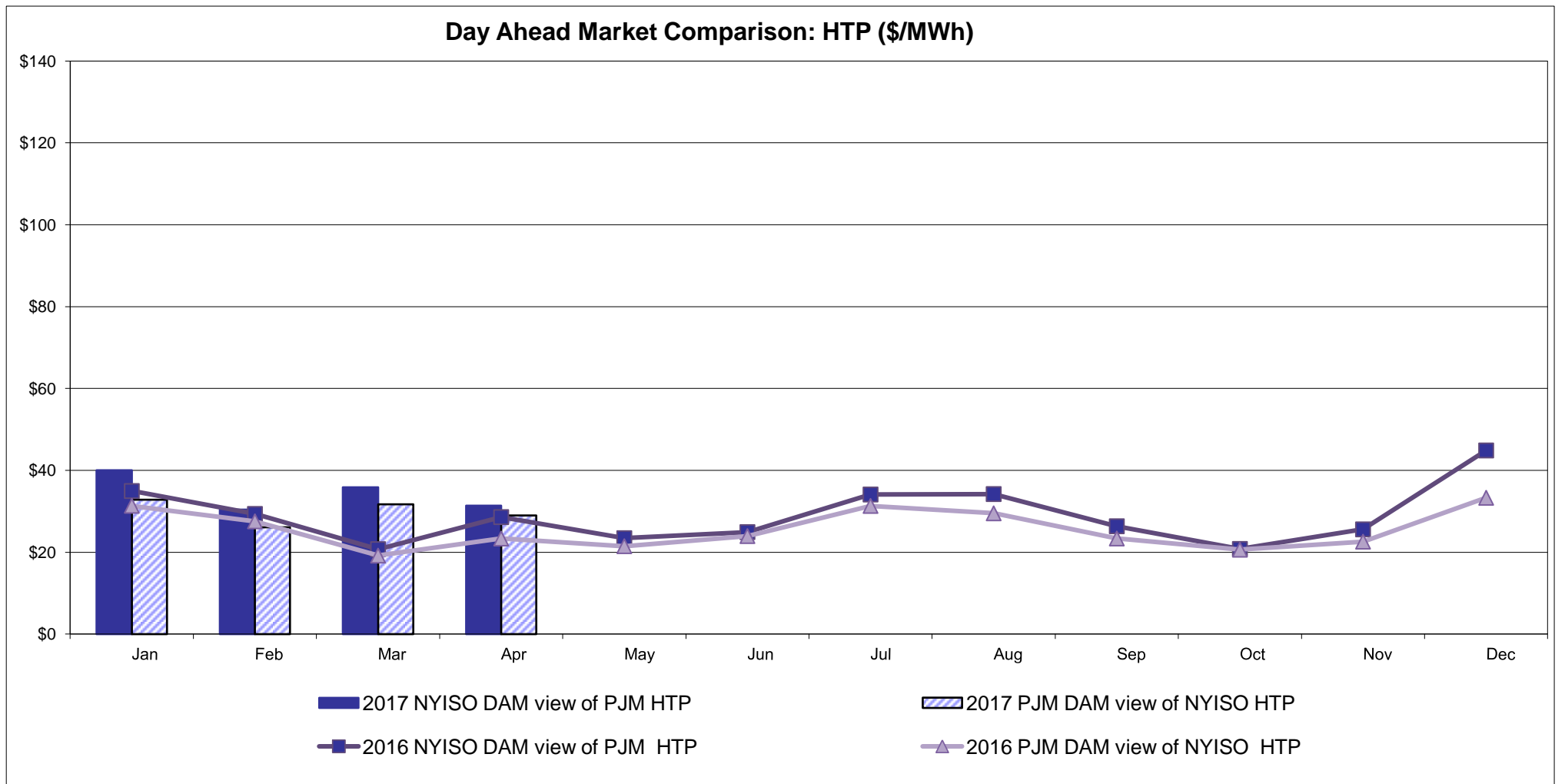
Note:  
Hydro-Quebec Prices are unavailable.



# External Controllable Line: Linden VFT (PJM)



## External Controllable Line: Hudson (PJM)

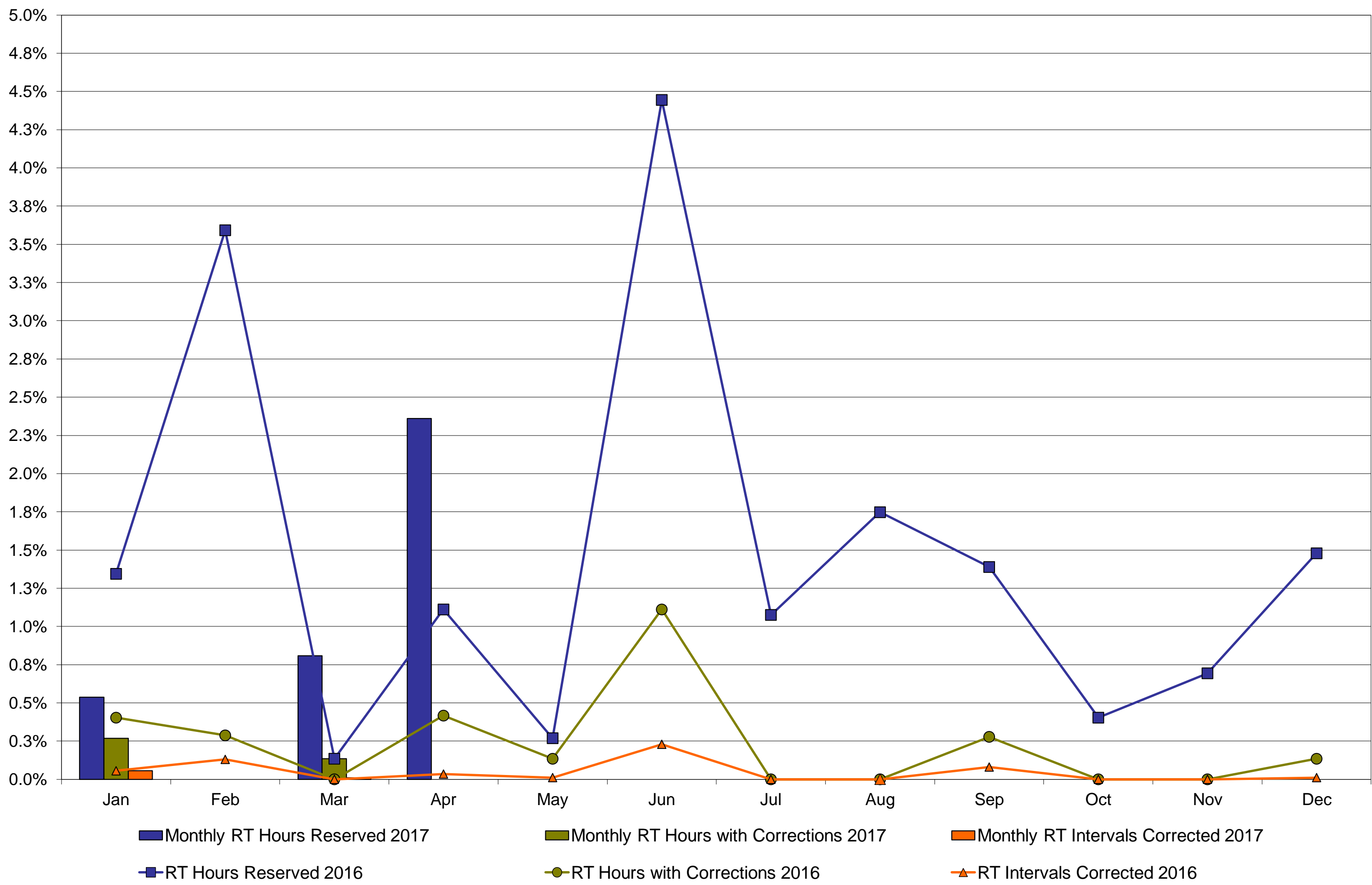


### NYISO Real Time Price Correction Statistics

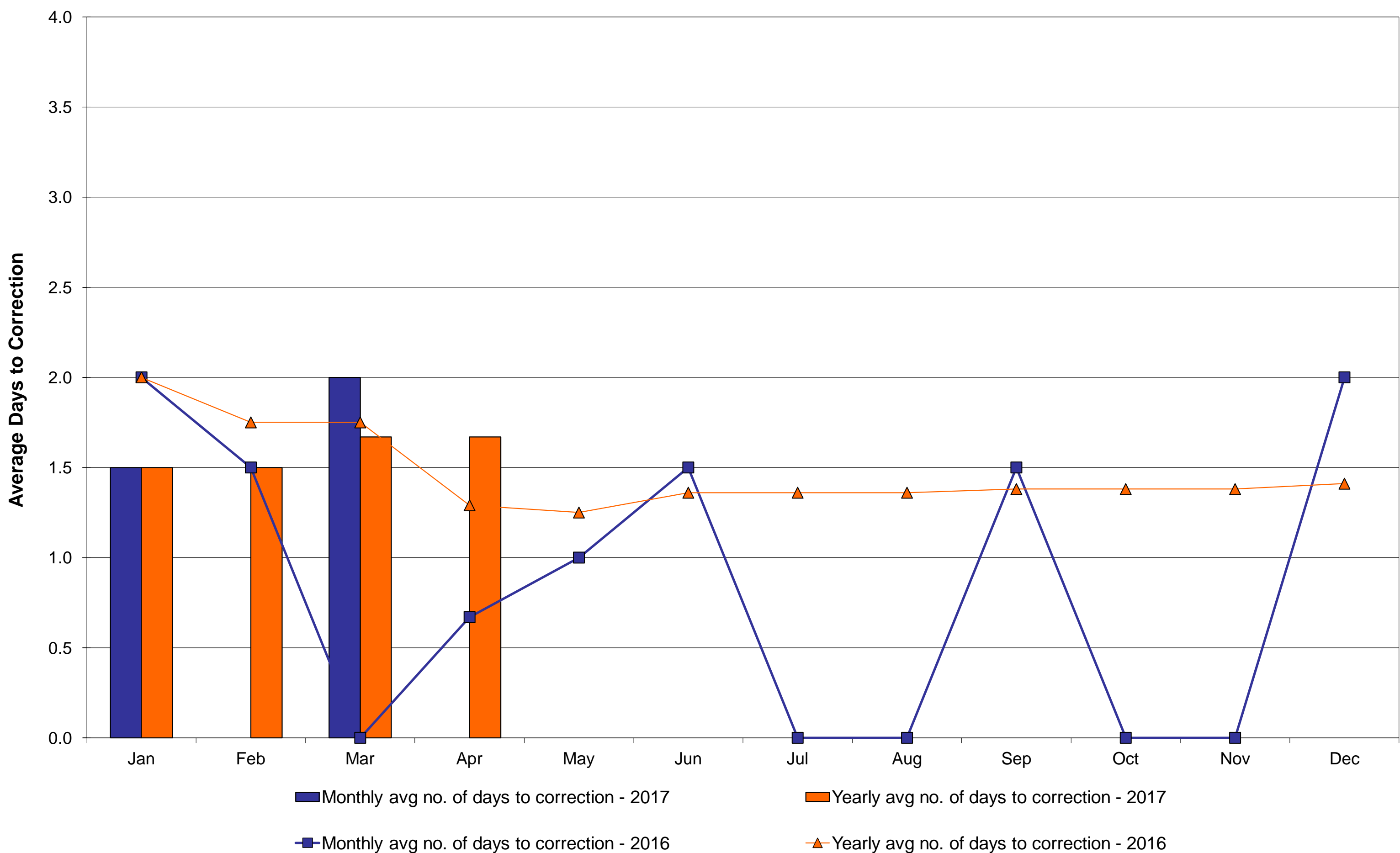
<b>2017</b>		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Hour Corrections</b>													
Number of hours with corrections	in the month	2	0	1	0								
Number of hours	in the month	744	672	743	720								
% of hours with corrections	in the month	0.27%	0.00%	0.13%	0.00%								
% of hours with corrections	year-to-date	0.27%	0.14%	0.14%	0.10%								
<b>Interval Corrections</b>													
Number of intervals corrected	in the month	5	0	1	0								
Number of intervals	in the month	8,983	8,101	9,026	8,745								
% of intervals corrected	in the month	0.06%	0.00%	0.01%	0.00%								
% of intervals corrected	year-to-date	0.06%	0.03%	0.02%	0.02%								
<b>Hours Reserved</b>													
Number of hours reserved	in the month	4	0	6	17								
Number of hours	in the month	744	672	743	720								
% of hours reserved	in the month	0.54%	0.00%	0.81%	2.36%								
% of hours reserved	year-to-date	0.54%	0.28%	0.46%	0.94%								
<b>Days to Correction *</b>													
Avg. number of days to correction	in the month	1.50	0.00	2.00	0.00								
Avg. number of days to correction	year-to-date	1.50	1.50	1.67	1.67								
<b>Days Without Corrections</b>													
Days without corrections	in the month	29	28	30	30								
Days without corrections	year-to-date	29	57	87	117								
<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>Hour Corrections</b>													
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%
<b>Interval Corrections</b>													
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%
<b>Hours Reserved</b>													
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%
<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	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
<b>Days Without Corrections</b>													
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

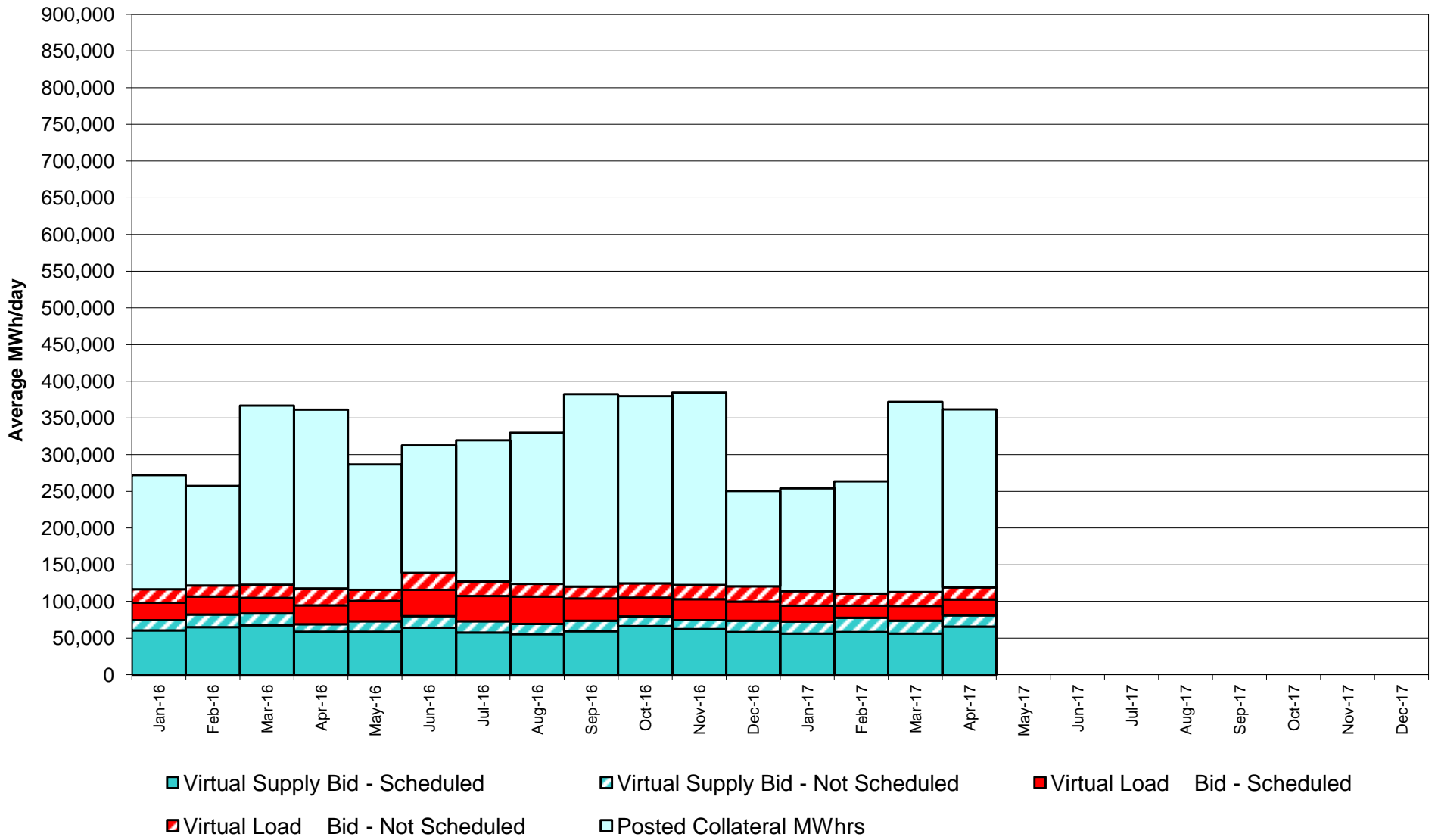


### Annual average time period for making Price Corrections (from reservation date) \*

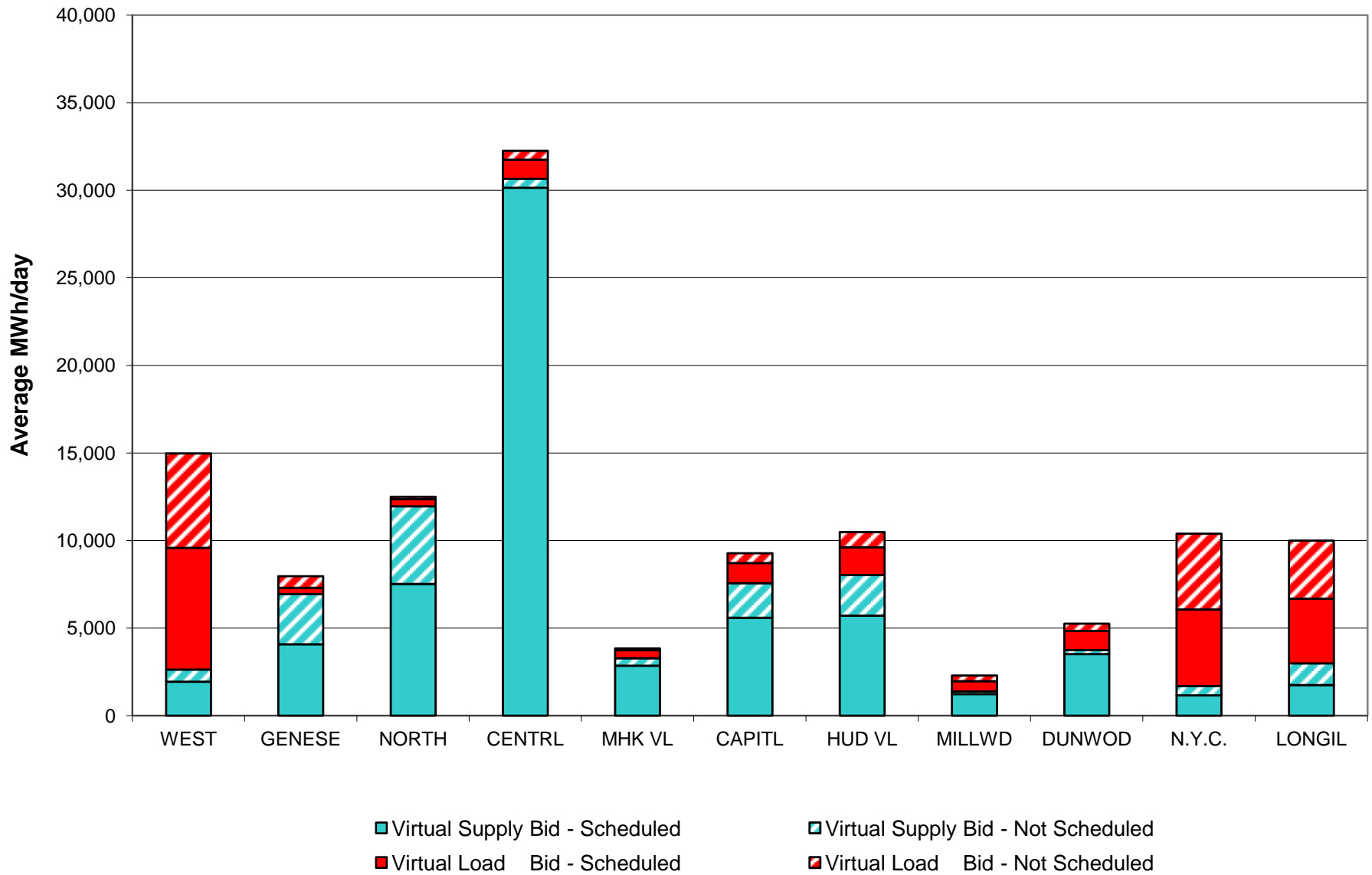


\* Calendar days from reservation date.

### NYISO Virtual Trading Average MWh per day



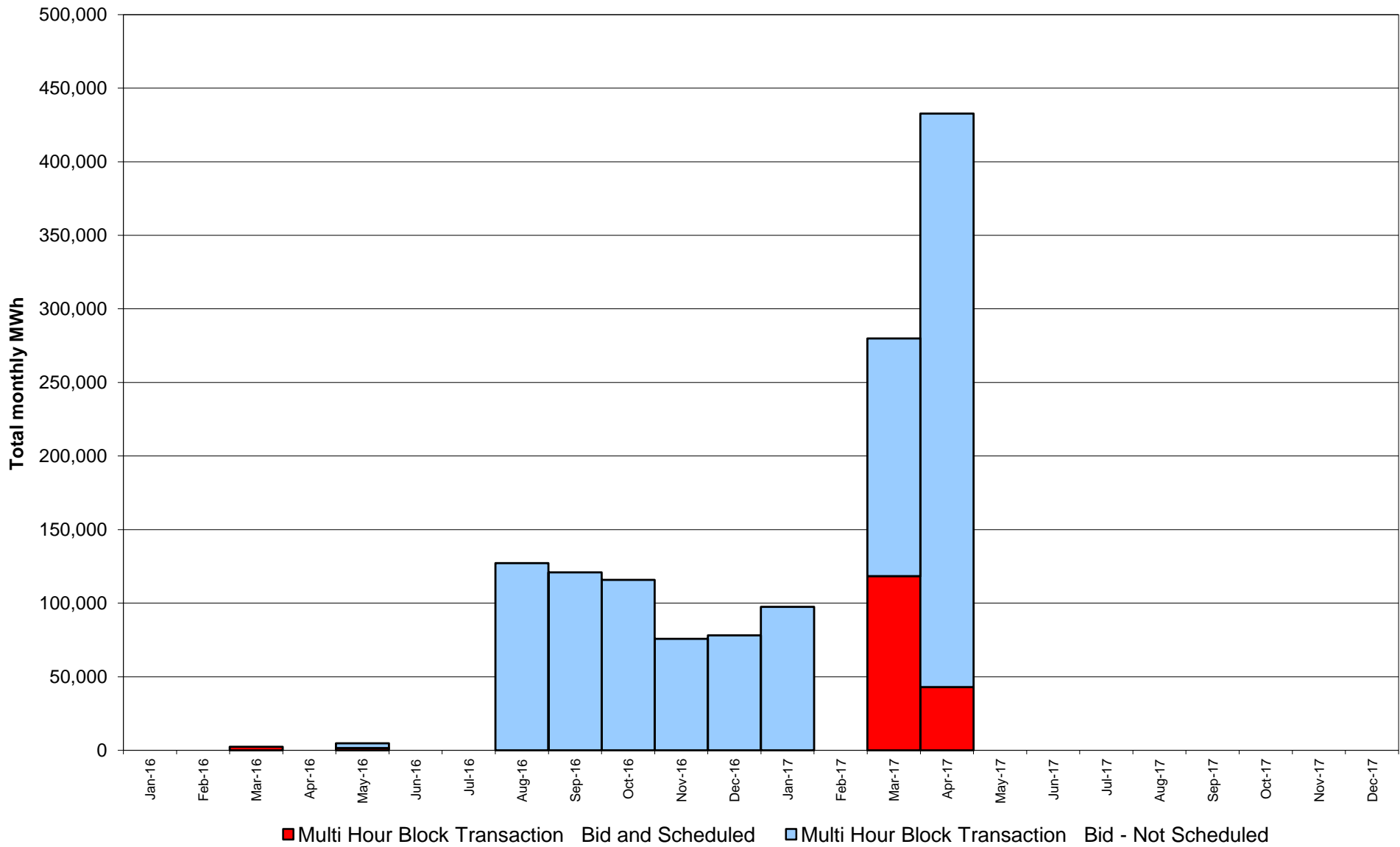
**Virtual Load and Supply Zonal Statistics  
through April 30, 2017**



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

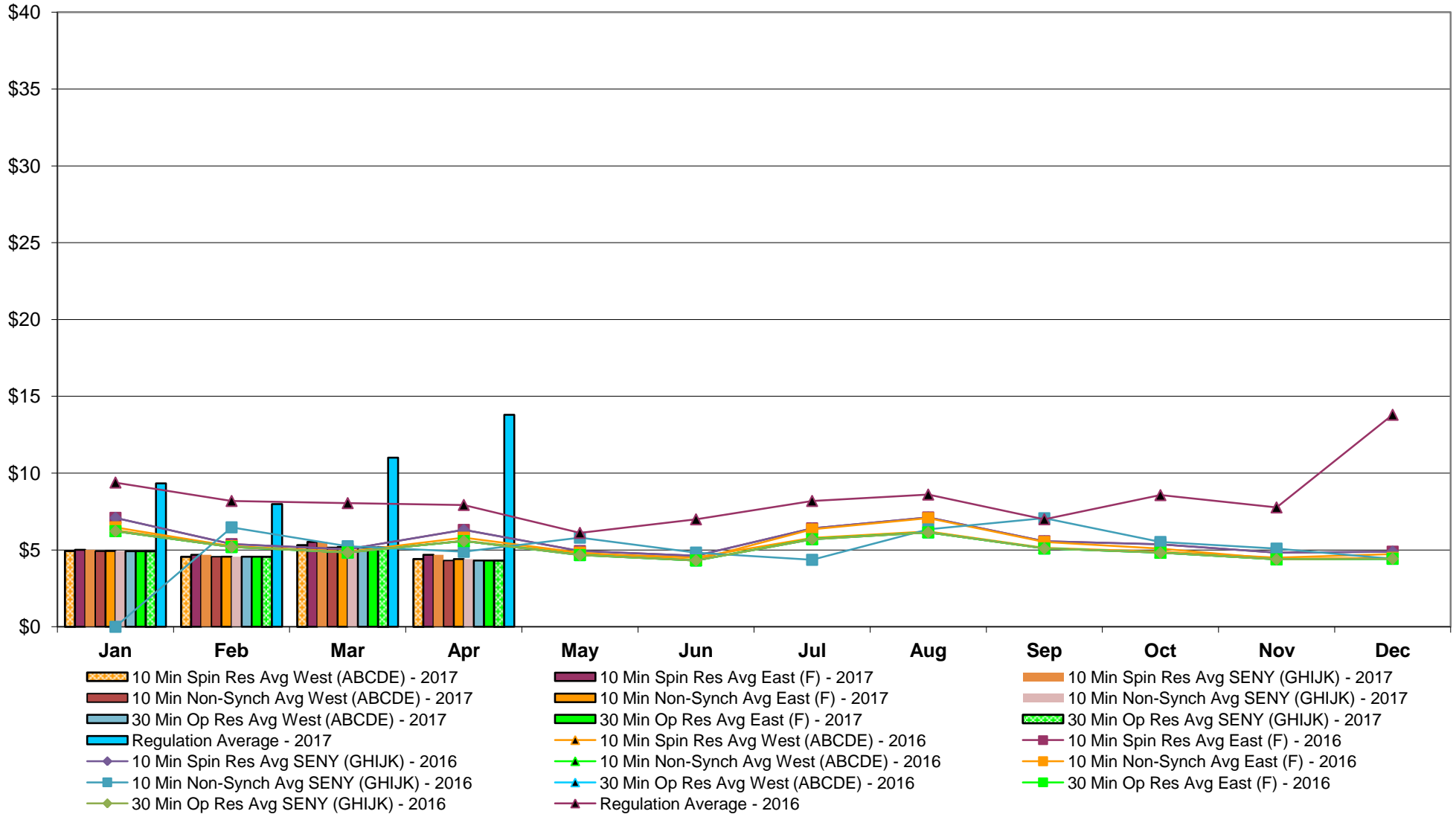
		Virtual Load Bid		Virtual Supply Bid				Virtual Load Bid		Virtual Supply Bid				Virtual Load Bid		Virtual Supply Bid	
Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled	Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled	Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled
<b>WEST</b>	Jan-17	6,094	5,795	2,019	337	<b>MHK VL</b>	Jan-17	566	202	2,022	131	<b>DUNWOD</b>	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						May-17						May-17				
	Jun-17						Jun-17						Jun-17				
	Jul-17						Jul-17						Jul-17				
	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				
<b>GENESE</b>	Jan-17	654	1,282	3,652	2,482	<b>CAPITL</b>	Jan-17	1,291	666	3,990	3,861	<b>N.Y.C.</b>	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						May-17						May-17				
	Jun-17						Jun-17						Jun-17				
	Jul-17						Jul-17						Jul-17				
	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				
<b>NORTH</b>	Jan-17	655	316	6,415	3,473	<b>HUD VL</b>	Jan-17	911	817	5,317	3,064	<b>LONGIL</b>	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						May-17						May-17				
	Jun-17						Jun-17						Jun-17				
	Jul-17						Jul-17						Jul-17				
	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				
<b>CENTRL</b>	Jan-17	1,482	455	22,561	196	<b>MILLWD</b>	Jan-17	435	91	1,422	128	<b>NYISO</b>	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						May-17						May-17				
	Jun-17						Jun-17						Jun-17				
	Jul-17						Jul-17						Jul-17				
	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

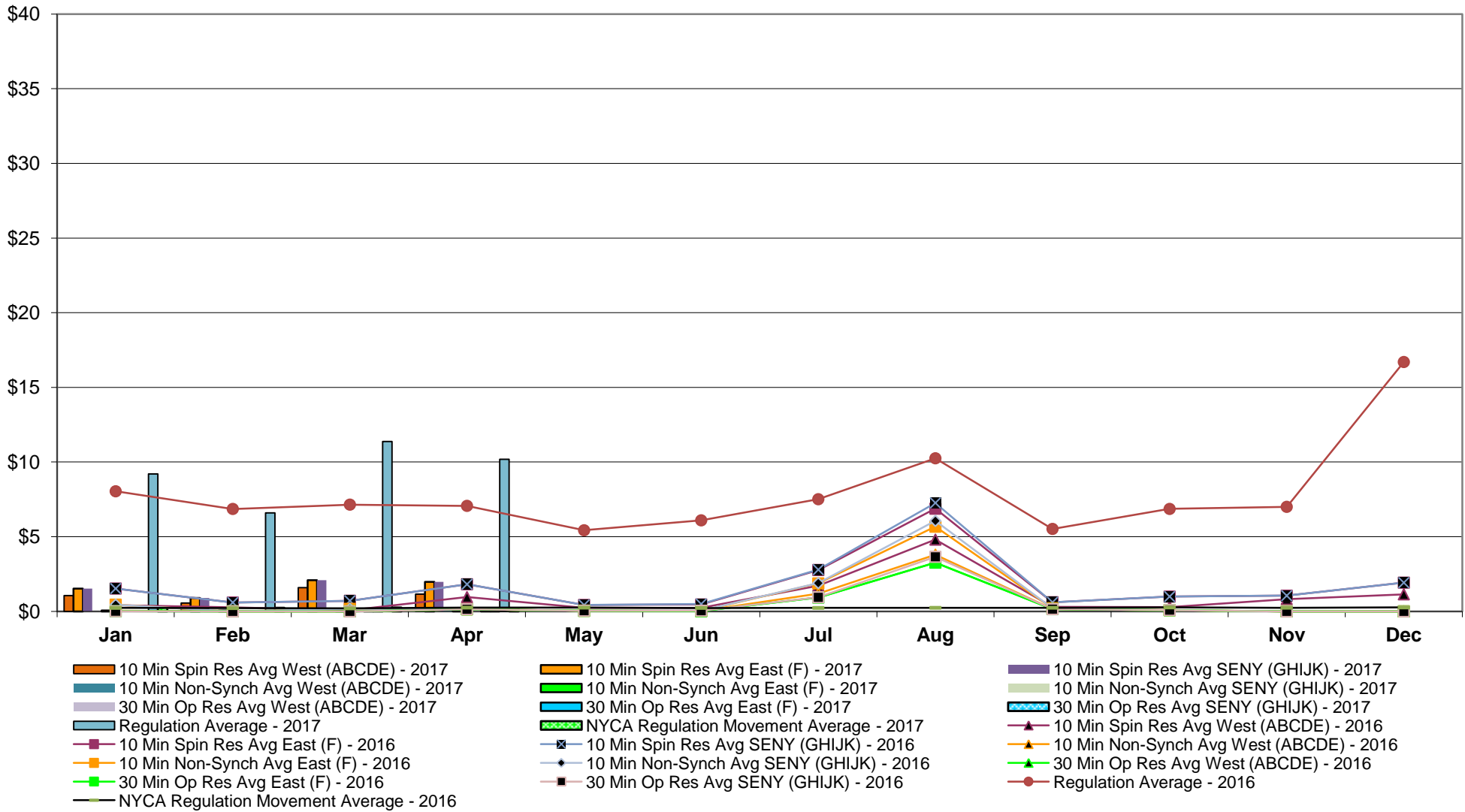




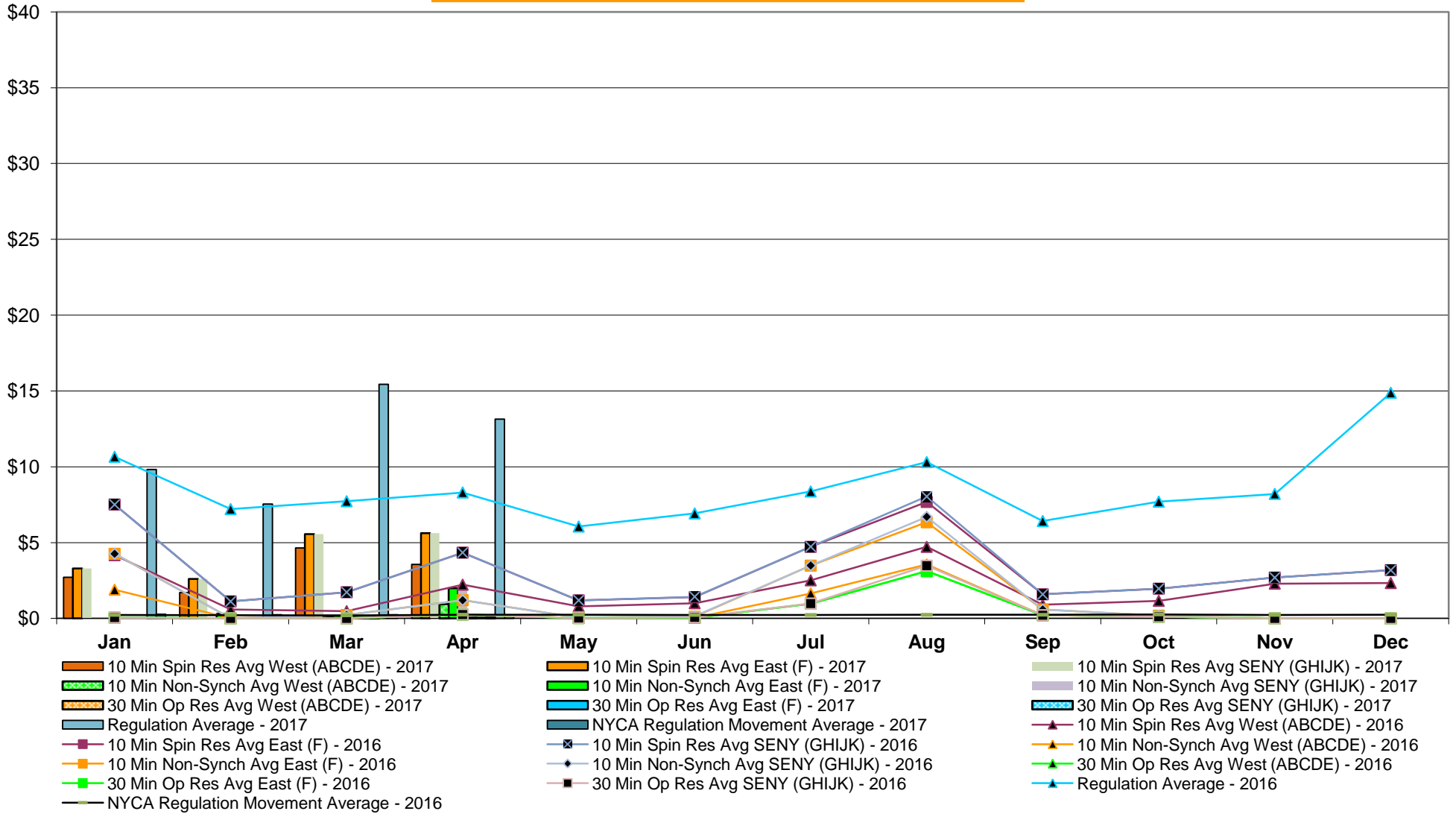
## NYISO Monthly Average Ancillary Service Prices Day Ahead Market 2016 - 2017



## NYISO Monthly Average Ancillary Service Prices RTC Market 2016 - 2017



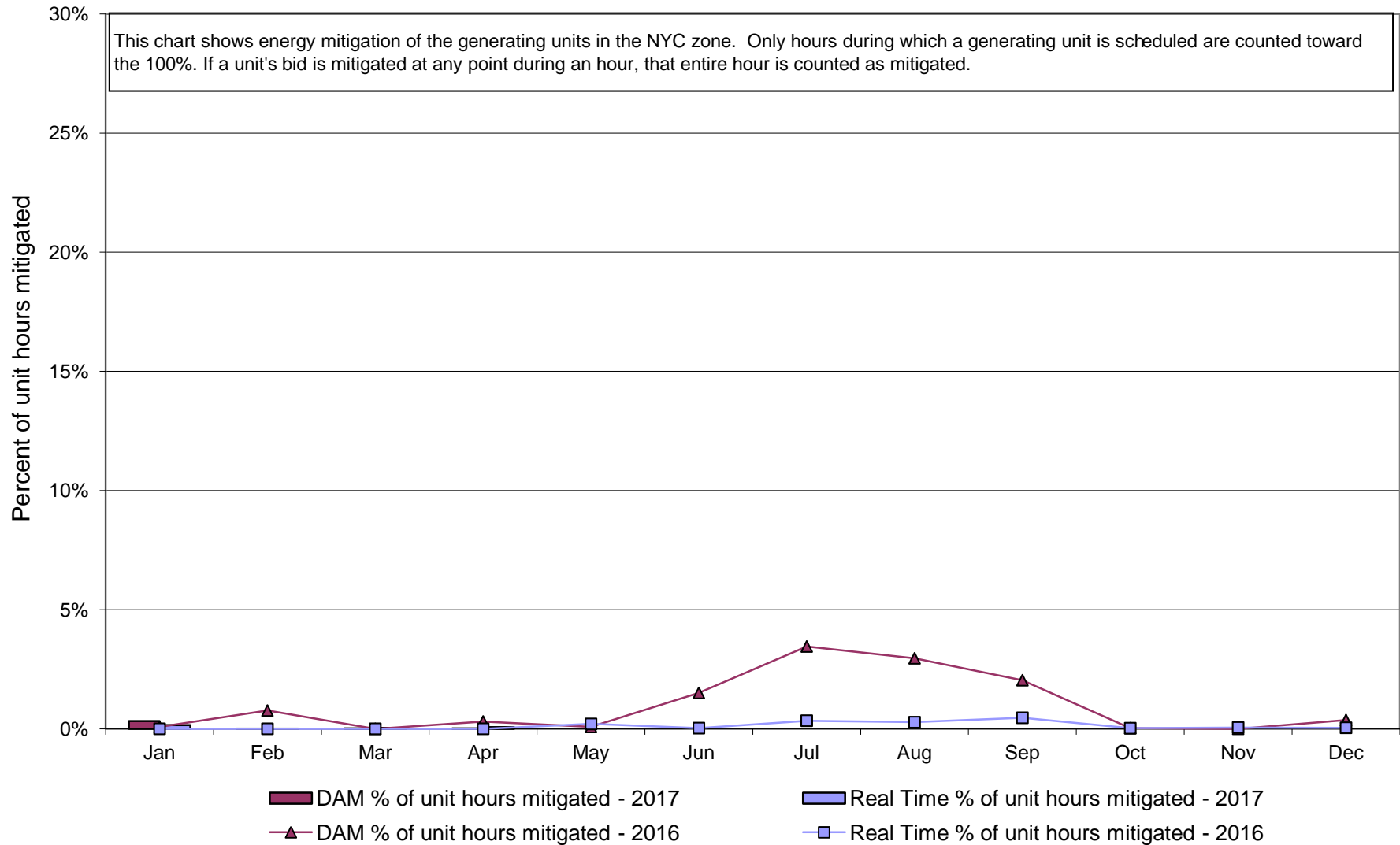
## NYISO Monthly Average Ancillary Service Prices Real Time Market 2016 - 2017



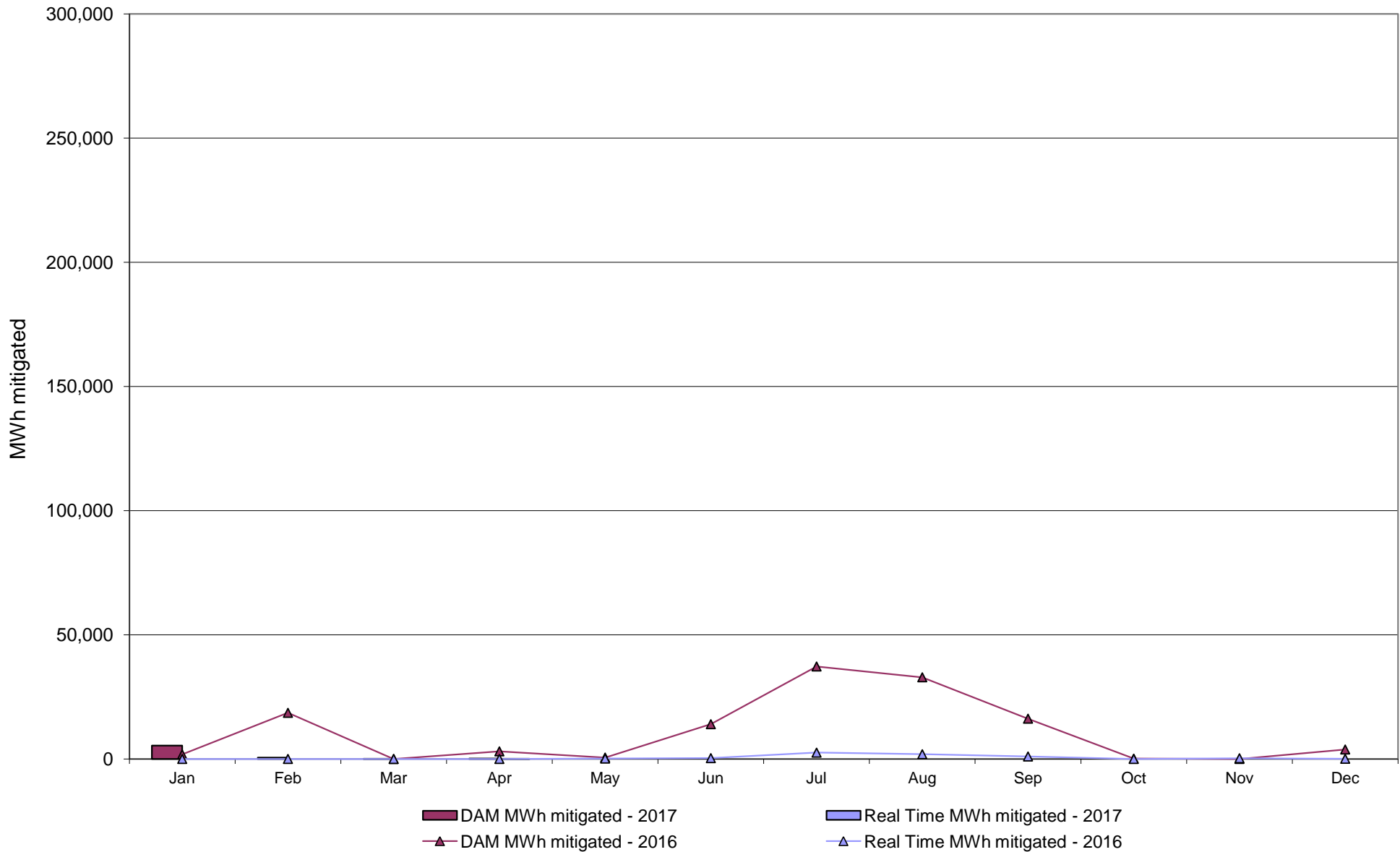
## NYISO Markets Ancillary Services Statistics - Unweighted Price (\$/MWH)

2017	January	February	March	April	May	June	July	August	September	October	November	December
<b>Day Ahead Market</b>												
10 Min Spin SENY (GHIJK)	5.01	4.68	5.53	4.68								
10 Min Spin East (F)	5.01	4.68	5.53	4.68								
10 Min Spin West (ABCDE)	4.94	4.56	5.31	4.41								
10 Min Non Synch SENY (GHIJK)	4.94	4.57	5.20	4.41								
10 Min Non Synch East (F)	4.94	4.57	5.20	4.41								
10 Min Non Synch West (ABCDE)	4.92	4.56	5.17	4.31								
30 Min SENY (GHIJK)	4.92	4.56	5.17	4.31								
30 Min East (F)	4.92	4.56	5.17	4.31								
30 Min West (ABCDE)	4.92	4.56	5.17	4.31								
Regulation	9.34	7.99	11.01	13.80								
<b>RTC Market</b>												
10 Min Spin SENY (GHIJK)	1.53	0.89	2.08	1.97								
10 Min Spin East (F)	1.53	0.89	2.08	1.97								
10 Min Spin West (ABCDE)	1.06	0.55	1.58	1.16								
10 Min Non Synch SENY (GHIJK)	0.06	0.06	0.10	0.14								
10 Min Non Synch East (F)	0.06	0.06	0.10	0.14								
10 Min Non Synch West (ABCDE)	0.00	0.00	0.10	0.07								
30 Min SENY (GHIJK)	0.00	0.00	0.10	0.03								
30 Min East (F)	0.00	0.00	0.10	0.03								
30 Min West (ABCDE)	0.00	0.00	0.10	0.03								
Regulation	9.21	6.59	11.37	10.18								
NYCA Regulation Movement	0.27	0.24	0.25	0.22								
<b>Real Time Market</b>												
10 Min Spin SENY (GHIJK)	3.29	2.61	5.56	5.62								
10 Min Spin East (F)	3.29	2.61	5.56	5.62								
10 Min Spin West (ABCDE)	2.71	1.71	4.65	3.56								
10 Min Non Synch SENY (GHIJK)	0.00	0.31	0.17	1.99								
10 Min Non Synch East (F)	0.00	0.31	0.17	1.99								
10 Min Non Synch West (ABCDE)	0.00	0.00	0.13	0.95								
30 Min SENY (GHIJK)	0.00	0.00	0.12	0.06								
30 Min East (F)	0.00	0.00	0.12	0.06								
30 Min West (ABCDE)	0.00	0.00	0.12	0.06								
Regulation	9.83	7.54	15.44	13.15								
NYCA Regulation Movement	0.27	0.24	0.25	0.20								
<b>2016</b>												
<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	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
<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	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
<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	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

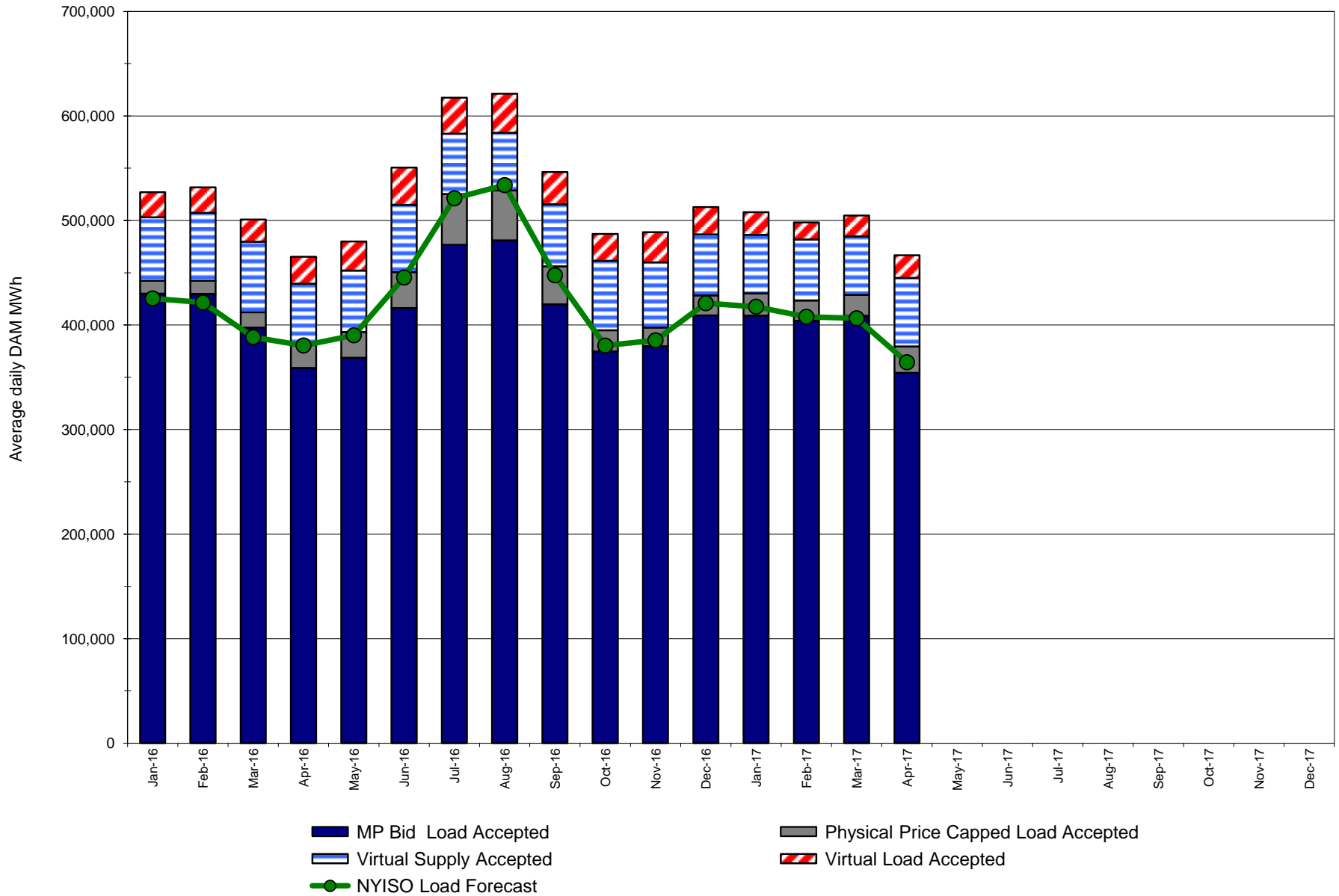
## NYISO In City Energy Mitigation - AMP (NYC Zone) 2016 - 2017 Percentage of committed unit-hours mitigated



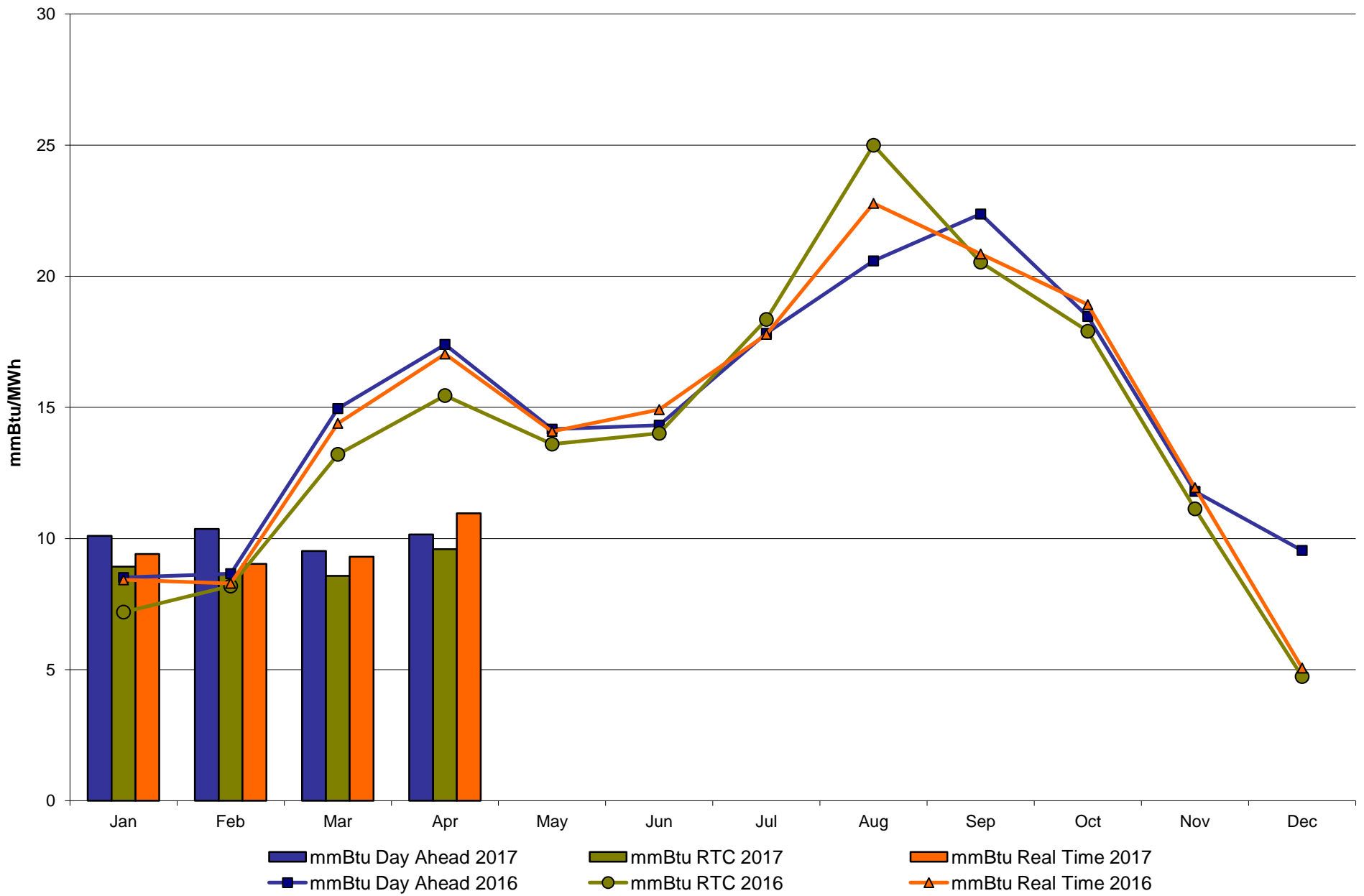
**NYISO In City Energy Mitigation (NYC Zone) 2016 - 2017**  
**Monthly megawatt hours mitigated**



### NYISO Average Daily DAM Load Bid Summary

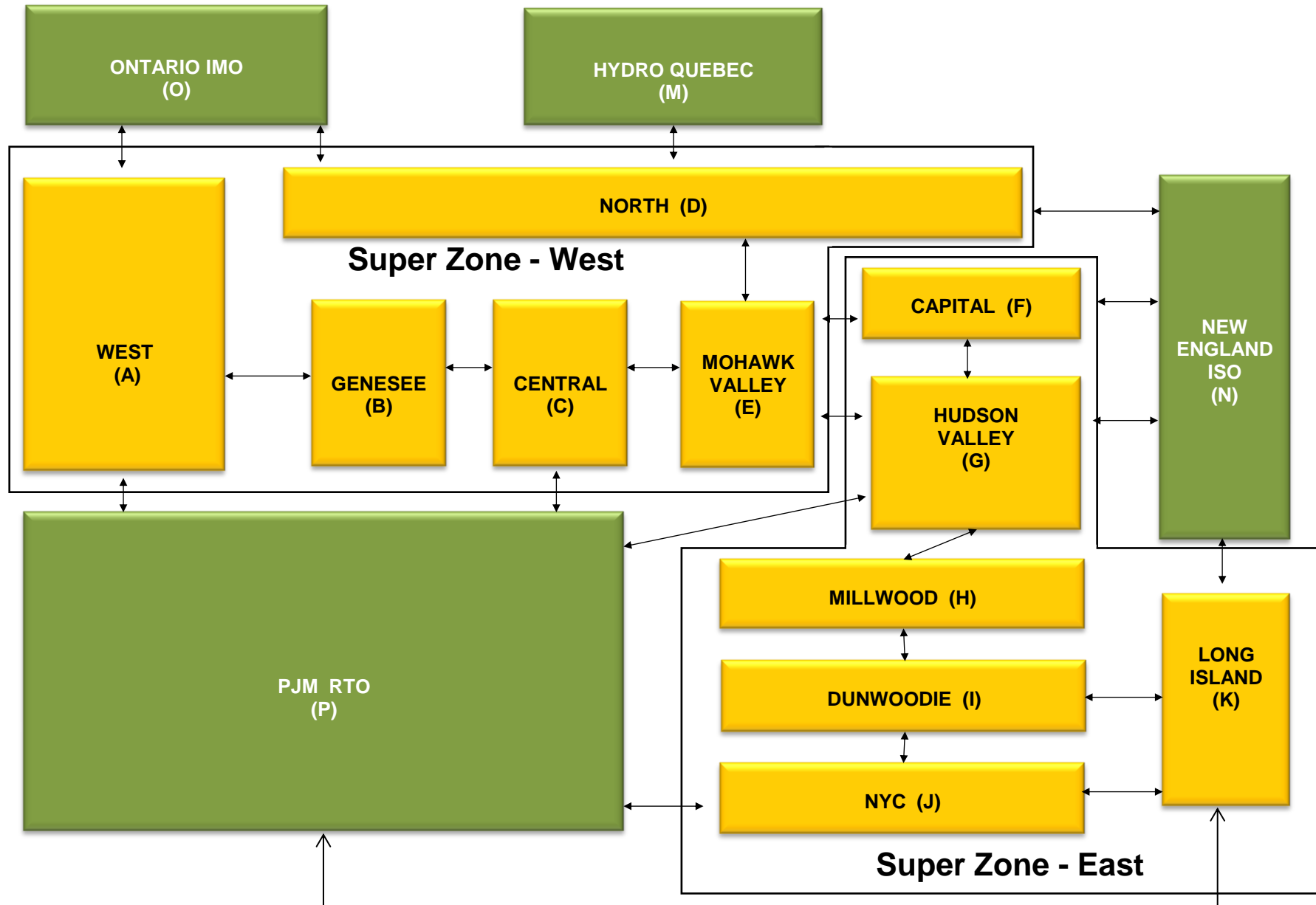


## Monthly Implied Heat Rate 2016-2017





# NYISO LBMP ZONES



**Billing Codes for Chart C**

<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

# The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system



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## Summary Description of Upcoming Regulatory Compliance Filings, Recently Submitted Filings and Issued Orders on NYISO Matters

### Upcoming Compliance Filings

Filing Due Date	Upcoming Compliance Filings (Description)	Docket Number

### Recently Issued Orders

Filing Date	Filing Summary (Order Issued)	Docket Number	Order Date	Order Summary
02/15/2017	NYISO compliance filing re: to remove inclusion of SCR emissions controls in the peaking plant design for the NYCA ICAP Demand Curve	ER17-386-001	05/19/2017	Order accepted installed capacity demand curve compliance filing effective 01/17/17, as requested
03/21/2017	NYISO 205 filing re: enhancements to the Day-Ahead Margin Assurance Payment program rules	ER17-1279-000	05/12/2017	Order accepted filing effective 07/01/2017, as requested
03/31/2017	NYISO compliance filing re: demand response compensation provisions in response to FERC's 01/30/2017 Order No. 745	ER11-4338-003	05/12/2017	Order accepted filing subject to NYISO filing two weeks prior to the proposed effective date a notice of the actual effective date

### Recently Submitted Filings

Filing Date	Filing Summary	Docket Number
04/12/2017	NYISO filing re: FERC Form No. 1: annual report of major electric utilities, licensees and others and supplemental Form 3-Q: quarterly financial report	No Docket No.
04/21/2017	NYISO 205 filing re: OATT and Services Tariff revisions to clarify and enhance the operation of its transmission constraint pricing logic	ER17-1453-000
04/24/2017	NYISO filing re: first quarter 2017 EQR report	ER02-2001-020
04/28/2017	NYISO 205 filing re: revisions to MST Sections 4.4 and 25 concerning submission of start-up bids in the real-time market	ER17-1501-000
04/28/2017	NYISO filing re: FERC reporting requirement No. 582 for calendar year 2016 – total megawatt-hours of transmission service in interstate commerce	No Docket No.

FINAL

05/02/2017	NYISO filing re: out of time motion to intervene and answer to the NYTO and Transco protests concerning the procedural aspects of the filing of a public policy transmission need cost allocation methodology	ER17-1310-000
05/03/2017	NYISO filing re: comments on DPS Staff's Initial Findings Report regarding natural gas service to electric generators	PSC Case No. 17-G-0011
05/08/2017	NYISO motion to intervene and comment re: Potomac Economics v PJM complaint alleging a pseudo tie requirement in certain tariff provisions	EL17-62-000
05/08/2017	NYISO compliance filing re: tariff revisions to comply with Order No. 831 - Offer Caps in Markets Operated by Regional Transmission Operators and Independent System Operators	RM16-5-000 ER17-1561-000
05/09/2017	NYISO 205 filing re: implementation agreement (SA 2336) with TC Ravenswood concerning NYSRC Reliability Rule G.2	ER17-1579-000
05/18/2017	NYISO 205 filing re: amendments to coordination agreement between ISONE and NYISO concerning the rules for pricing emergency energy	ER17-1621-000
05/18/2017	NYISO 205 filing re: notice of cancellation of SGIA (SA 1483) among the NYISO, Niagara Mohawk Power Corporation and Green Power Energy LLC	ER17-1624-000