Market Operations Report

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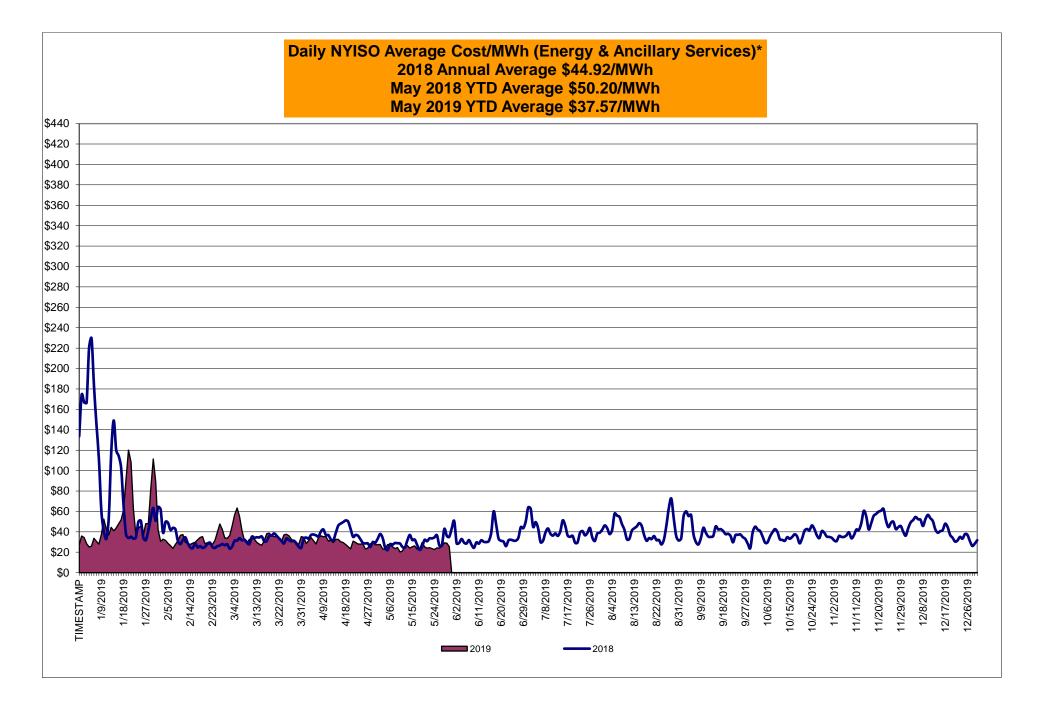
Business Issues Committee Meeting

June 20, 2019 Rensselaer, NY



Market Performance Highlights May 2019

- LBMP for May is \$23.10/MWh; lower than \$28.01/MWh in April 2019 and \$28.78/MWh in May 2018.
 - Day Ahead and Real Time Load Weighted LBMPs are lower compared to April.
- May 2019 average year-to-date monthly cost of \$37.57/MWh is a 25% decrease from \$50.20/MWh in May 2018.
- Average daily sendout is 373 GWh/day in May; higher than 371 GWh/day in April 2019 and lower than 397 GWh/day in May 2018.
- Natural gas prices were lower and distillate prices were mixed compared to the previous month.
 - Natural Gas (Transco Z6 NY) was \$2.27/MMBtu, down from \$2.37/MMBtu in April.
 - Natural gas prices are down 11.0% year-over-year.
 - Jet Kerosene Gulf Coast was \$14.64/MMBtu, up from \$14.63/MMBtu in April.
 - Ultra Low Sulfur No.2 Diesel NY Harbor was \$14.54/MMBtu, down from \$14.72/MMBtu in April.
 - Distillate prices are down 8.5% year-over-year.
- Uplift per MWh is higher compared to the previous month.
 - Uplift (not including NYISO cost of operations) is \$0.13/MWh; higher than (\$0.15)/MWh in April.
 - Local Reliability Share is \$0.23/MWh, higher than \$0.20/MWh in April.
 - Statewide Share is (\$0.11)/MWh, higher than (\$0.35)/MWh in April.
 - TSA \$ per NYC MWh is \$0.19/MWh.
 - Total uplift costs (Schedule 1 components including NYISO Cost of Operations) are higher than April.

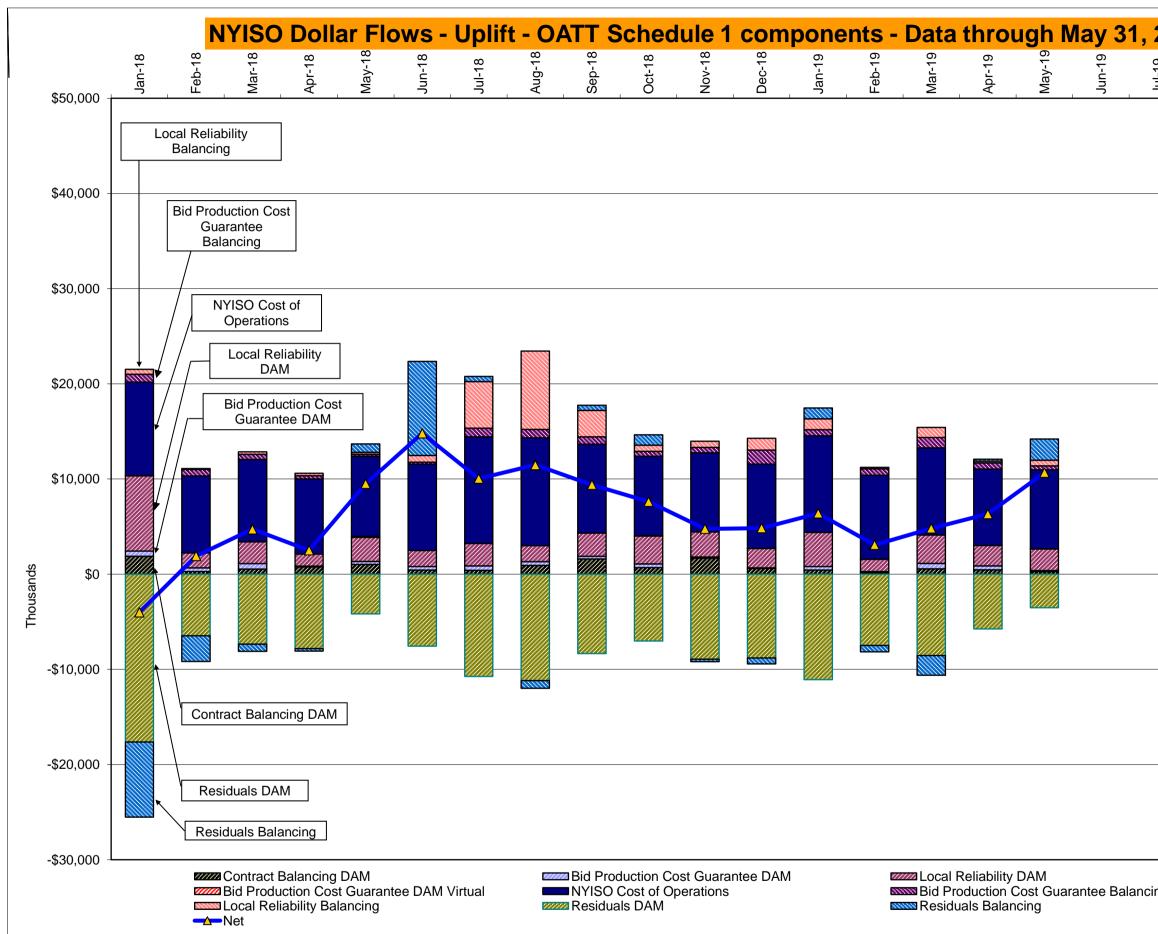


* Excludes ICAP payments.

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2019	January	February	March	<u>April</u>	<u>May</u>	<u>June</u>	luly	<u>August</u>	<u>September</u>	<u>October</u>	November	December
LBMP	50.93	<u>1 ebruary</u> 33.51	<u>34.91</u>	28.01	23.10	June	<u>July</u>	<u>Augusi</u>	<u>September</u>		November	December
NTAC	0.51	0.69	0.98	1.16	0.72							
Reserve	0.54	0.51	0.55	0.63	0.63							
Regulation	0.13	0.01	0.33	0.33	0.03							
NYISO Cost of Operations	0.68	0.68	0.69	0.69	0.68							
FERC Fee Recovery	0.08	0.09	0.09	0.00	0.10							
Uplift	(0.25)	(0.44)	(0.33)	(0.15)	0.13							
Uplift: Local Reliability Share	0.32	0.11	0.31	0.20	0.23							
Uplift: Statewide Share	(0.57)	(0.55)	(0.64)	(0.35)	(0.11)							
Voltage Support and Black Start	0.37	0.37	0.38	0.38	0.38							
Avg Monthly Cost	52.99	35.51	37.38	31.16	25.88							
	02.00	00101	01100	01110	20100							
Avg YTD Cost	52.99	44.93	42.54	40.12	37.57							
_												
TSA \$ per NYC MWh	0.00	0.00	0.01	0.01	0.19							
2018	lonuon	Fobruory	Marah	April	Mov	luno	lukz.	August	Santambar	Octobor	November	December
LBMP	<u>January</u> 99.55	February	<u>March</u> 29.91	<u>April</u> 35.00	<u>May</u> 29.79	<u>June</u> 32.53	<u>July</u> 39.58	<u>August</u> 42.56	September	October	<u>November</u> 43.15	December 40.21
NTAC	99.55 0.71	33.83 0.58	0.88	1.09	28.78 0.88	1.00	0.93	42.50	38.70 0.40	35.85 0.36	43.15	40.31 0.93
Reserve	0.92	0.58	0.64	0.81	0.68	0.57	0.93	0.72	0.40	0.80	0.66	0.93
Regulation	0.32	0.05	0.04	0.01	0.00	0.37	0.49	0.09	0.02	0.00	0.00	0.17
NYISO Cost of Operations	0.65	0.65	0.66	0.65	0.66	0.10	0.67	0.66	0.66	0.10	0.63	0.63
FERC Fee Recovery	0.08	0.00	0.00	0.00	0.09	0.09	0.06	0.06	0.08	0.00	0.09	0.08
Uplift	(0.92)	(0.50)	(0.31)	(0.45)	0.05	0.30	(0.13)	(0.02)	(0.11)	(0.30)	(0.27)	(0.29)
Uplift: Local Reliability Share	0.59	0.14	0.19	0.12	0.22	0.18	0.44	0.59	0.37	0.27	0.25	0.23
Uplift: Statewide Share	(1.52)	(0.64)	(0.51)	(0.57)	(0.17)	0.12	(0.57)	(0.61)	(0.48)	(0.56)	(0.52)	(0.52)
Voltage Support and Black Start	0.40	0.41	0.42	0.41	0.42	0.42	0.42	0.42	0.42	0.40	0.40	0.40
Avg Monthly Cost	101.54	35.87	32.45	37.74	31.70	35.73	42.12	45.01	40.76	38.00	46.01	42.78
	10110 1	00.07	02.10	0	01110	00.10		10101	10.10	00.00	.0.01	.2.10
Avg YTD Cost	101.54	72.85	60.06	54.82	50.20	47.70	46.64	46.37	45.75	45.03	45.11	44.92
TSA \$ per NYC MWh	0.00	0.00	0.04	0.00	0.08	0.39	0.21	0.14	0.33	0.75	0.00	0.00

NYISO Average Cost/MWh (Energy and Ancillary Services) *

from the LBMP Customer point of view



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.

20 61-10	19 9ng-19	Sep-19	Oct-19	Nov-19	Dec-19	
ing						

NYISO Markets Transactions

					actions		
<u>)19</u>	<u>January</u>	<u>February</u>	March	<u>April</u>	May	<u>June</u>	
Day Ahead Market MWh	15,299,458	13,391,383	13,527,834	11,811,029	12,521,583		
DAM LSE Internal LBMP Energy Sales	57%	57%	59%	59%	57%		
DAM External TC LBMP Energy Sales	6%	5%	3%	1%	3%		
DAM Bilateral - Internal Bilaterals	29%	30%	30%	31%	32%		
DAM Bilateral - Importl/Non-LBMP Market Bilaterals	5%	5%	5%	5%	6%		
DAM Bilateral - Export/Non-LBMP Market Bilaterals	1%	1%	2%	2%	2%		
DAM Bilateral - Wheel Through Bilaterals	2%	2%	2%	2%	1%		
Balancing Energy Market MWh	-322,442	-323,188	-261,217	-218,482	-392,699		
Balancing Energy LSE Internal LBMP Energy Sales	-120%	-126%	-138%	-178%	-150%		
Balancing Energy External TC LBMP Energy Sales	65%	67%	82%	113%	68%		
Balancing Energy Bilateral - Internal Bilaterals	-4%	-1%	-3%	2%	1%		
Balancing Energy Bilateral - Importl/Non-LBMP Market Bilaterals	0%	0%	0%	0%	0%		
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	3%	7%	6%	7%	2%		
Balancing Energy Bilateral - Wheel Through Bilaterals	-45%	-47%	-47%	-44%	-21%		
Transactions Summary							
LBMP	63%	62%	61%	60%	59%		
Internal Bilaterals	29%	30%	30%	31%	33%		
Import Bilaterals	5%	5%	6%	6%	6%		
Export Bilaterals	1%	2%	2%	2%	2%		
Wheels Through	1%	1%	1%	1%	0%		
Market Share of Total Load							
Day Ahead Market	102.2%	102.5%	102.0%	101.9%	103.2%		
Balancing Energy +	-2.2%	-2.5%	-2.0%	-1.9%	-3.2%		
Total MWH	14,977,016	13,068,195	13,266,617	11,592,547	12,128,884		
Average Daily Energy Sendout/Month GWh	449	436	411	371	373		
<u>)18</u>	January	<u>February</u>	March	<u>April</u>	<u>May</u>	June	
<u>)18</u> Day Ahead Market MWh	<u>January</u> 15,153,751	<u>February</u> 12,643,854	<u>March</u> 13,521,386	<u>April</u> 12,158,686	<u>May</u> 12,721,073	<u>June</u> 13,983,384	
			13,521,386 58%				
Day Ahead Market MWh	15,153,751	12,643,854	13,521,386	12,158,686	12,721,073	13,983,384	
Day Ahead Market MWh DAM LSE Internal LBMP Energy Sales DAM External TC LBMP Energy Sales DAM Bilateral - Internal Bilaterals	15,153,751 59% 4% 29%	12,643,854 57%	13,521,386 58%	12,158,686 60%	12,721,073 61%	13,983,384 61%	
Day Ahead Market MWh DAM LSE Internal LBMP Energy Sales DAM External TC LBMP Energy Sales DAM Bilateral - Internal Bilaterals DAM Bilateral - Importl/Non-LBMP Market Bilaterals	15,153,751 59% 4%	12,643,854 57% 3%	13,521,386 58% 2% 32% 5%	12,158,686 60% 2%	12,721,073 61% 2%	13,983,384 61% 1%	
Day Ahead Market MWh DAM LSE Internal LBMP Energy Sales DAM External TC LBMP Energy Sales DAM Bilateral - Internal Bilaterals DAM Bilateral - Importl/Non-LBMP Market Bilaterals DAM Bilateral - Export/Non-LBMP Market Bilaterals	15,153,751 59% 4% 29% 5% 2%	12,643,854 57% 3% 31% 5% 2%	13,521,386 58% 2% 32% 5% 2%	12,158,686 60% 2% 30% 5% 2%	12,721,073 61% 2% 29% 5% 2%	13,983,384 61% 1% 30% 5% 1%	
Day Ahead Market MWh DAM LSE Internal LBMP Energy Sales DAM External TC LBMP Energy Sales DAM Bilateral - Internal Bilaterals DAM Bilateral - Importl/Non-LBMP Market Bilaterals	15,153,751 59% 4% 29% 5%	12,643,854 57% 3% 31% 5%	13,521,386 58% 2% 32% 5%	12,158,686 60% 2% 30% 5%	12,721,073 61% 2% 29% 5%	13,983,384 61% 1% 30% 5%	
Day Ahead Market MWh DAM LSE Internal LBMP Energy Sales DAM External TC LBMP Energy Sales DAM Bilateral - Internal Bilaterals DAM Bilateral - Importl/Non-LBMP Market Bilaterals DAM Bilateral - Export/Non-LBMP Market Bilaterals	15,153,751 59% 4% 29% 5% 2%	12,643,854 57% 3% 31% 5% 2%	13,521,386 58% 2% 32% 5% 2%	12,158,686 60% 2% 30% 5% 2%	12,721,073 61% 2% 29% 5% 2%	13,983,384 61% 1% 30% 5% 1%	•
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Market Share of Total Load

Day Ahead Market	101.0%	102.4%	102.9%	100.6%	100.2%	102.6%	10
Balancing Energy +	-1.0%	-2.4%	-2.9%	-0.6%	-0.2%	-2.6%	
Total MWH	15,004,132	12,344,477	13,134,575	12,085,824	12,691,534	13,629,272	16,75
Average Daily Energy Sendout/Month GWh	463	426	413	390	397	445	

+ 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.

Market Mitigation and Analysis Prepared: 6/11/2019 2:35 PM

<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
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<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
16,839,994	17,195,447	14,432,632	13,548,828	13,506,134	14,450,460
65%	65%	61%	57%	58%	56%
1%	2%	3%	6%	6%	6%
26%	25%	28%	29%	30%	30%
4%	4%	5%	5%	2%	5%
1%	1%	1%	2%	2%	2%
2%	2%	2%	1%	1%	2%
-80,438	-44,732	-210,436	-314,885	-304,277	-428,748
-123%	-75%	-82%	-105%	-100%	-94%
129%	209%	14%	30%	18%	27%
18%	23%	7%	2%	3%	3%
0%	0%	0%	0%	10%	0%
14%	25%	3%	0%	0%	0%
-138%	-281%	-42%	-27%	-31%	-36%
66%	68%	64%	63%	64%	61%
27%	25%	28%	30%	31%	31%
4%	4%	5%	5%	3%	5%
1%	1%	1%	2%	2%	2%
1%	1%	2%	1%	1%	1%
100.5%	100.3%	101.5%	102.4%	102.3%	103.1%
-0.5%	-0.3%	-1.5%	-2.4%	-2.3%	-3.1%
16,759,556	17,150,715	14,222,196	13,233,943	13,201,857	14,021,712
529	537	458	399	411	425

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

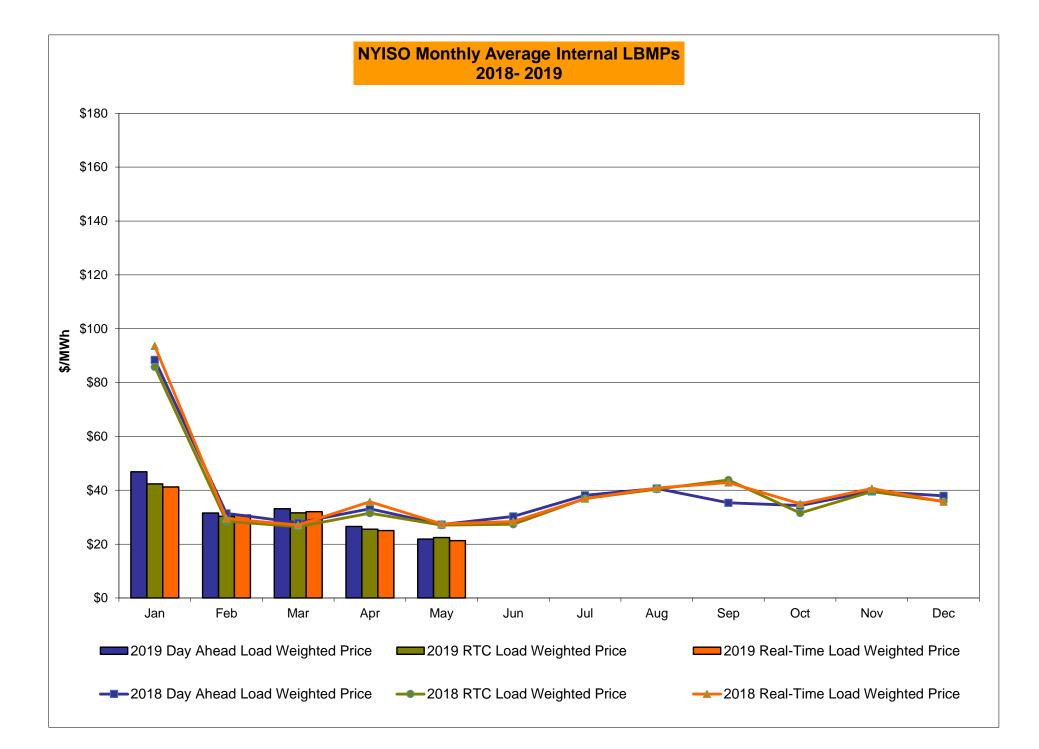
NYISO Markets 2019 Energy Statistics

	<u>January</u>	February	March	April	May	<u>June</u>	July	August September	October November December
DAY AHEAD LBMP									
Price *	\$45.01	\$30.66	\$32.34	\$25.97	\$21.16				
Standard Deviation	\$25.67	\$12.86	\$9.30	\$6.32	\$5.89				
Load Weighted Price **	\$46.88	\$31.53	\$33.14	\$26.57	\$21.89				
RTC LBMP									
	.		•••		AOAOO				
Price *	\$40.86	\$29.74	\$31.04	\$25.07	\$21.88				
Standard Deviation	\$23.02	\$10.79	\$8.48	\$7.53	\$8.01				
Load Weighted Price **	\$42.39	\$30.32	\$31.62	\$25.54	\$22.44				
REAL TIME LBMP									
Price *	\$39.54	\$30.13	\$31.46	\$24.47	\$20.56				
Standard Deviation	\$26.03	\$13.77	\$12.54	\$17.27	\$10.35				
Load Weighted Price **	\$41.24	\$30.80	\$32.06	\$25.06	\$21.28				
Average Daily Energy Sendout/Month GWh	449	436	411	371	373				

NYISO Markets 2018 Energy Statistics

	<u>January</u>	February	March	<u>April</u>	May	June	July	August S	September	<u>October</u>	November [<u>December</u>
DAY AHEAD LBMP Price *	\$83.53	\$30.37	\$27.37	\$32.40	\$25.97	\$28.41	\$35.73	\$38.00	\$33.28	\$33.27	\$38.36	\$36.88
Standard Deviation	\$63.55 \$58.94	\$30.37 \$12.38	\$6.34	\$9.06	\$25.97 \$9.22	\$20.41 \$11.42	\$35.73 \$15.25	\$38.00 \$16.51	\$33.28 \$12.01	\$9.24	\$38.30 \$11.36	\$30.88 \$11.61
Load Weighted Price **	\$88.42	\$31.44	\$27.95	\$33.14	\$27.26	\$30.27	\$38.14	\$40.64	\$35.33	\$34.33	\$39.55	\$37.96
RTC LBMP												
Price *	\$81.65	\$27.73	\$25.99	\$30.80	\$25.40	\$26.06	\$34.65	\$38.13	\$39.52	\$30.92	\$38.37	\$35.01
Standard Deviation	\$60.83	\$11.96	\$8.99	\$14.30	\$20.37	\$12.78	\$17.44	\$20.05	\$61.50	\$13.43	\$17.24	\$12.27
Load Weighted Price **	\$85.85	\$28.54	\$26.46	\$31.47	\$27.08	\$27.35	\$36.93	\$40.40	\$43.83	\$31.55	\$39.53	\$35.84
REAL TIME LBMP												
Price *	\$87.94	\$28.50	\$26.49	\$34.53	\$25.57	\$26.31	\$34.34	\$38.07	\$38.15	\$33.88	\$39.18	\$34.74
Standard Deviation	\$87.41	\$17.36	\$12.25	\$26.57	\$23.49	\$24.34	\$18.44	\$27.21	\$46.81	\$37.42	\$26.15	\$17.44
Load Weighted Price **	\$93.59	\$29.49	\$27.09	\$35.72	\$27.47	\$28.38	\$36.84	\$40.87	\$42.87	\$34.94	\$40.63	\$35.70
Average Daily Energy Sendout/Month GWh	463	426	413	390	397	445	529	537	458	399	411	425

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

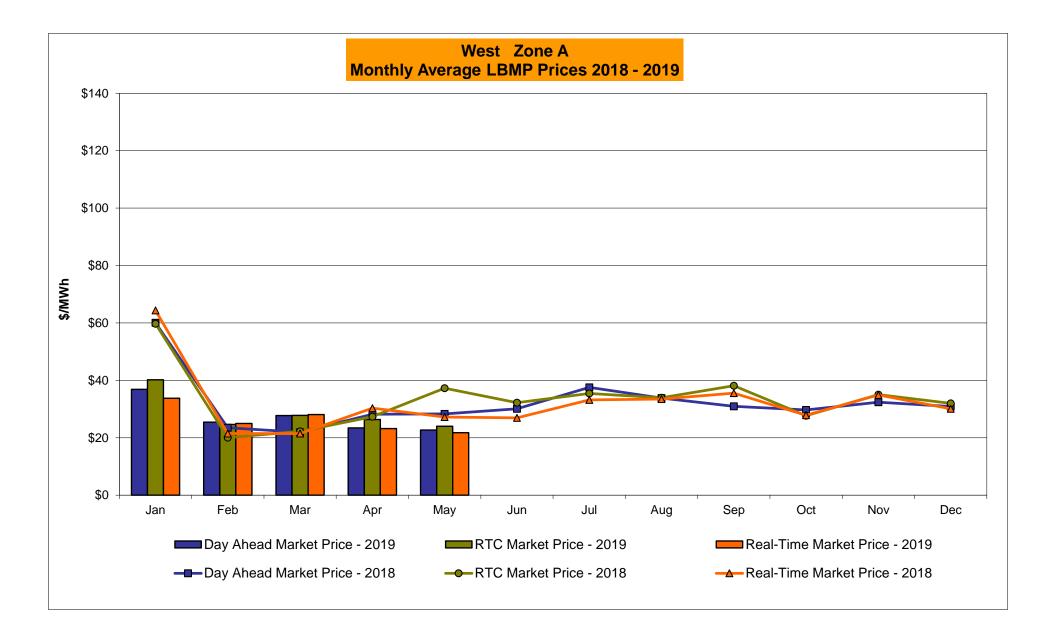


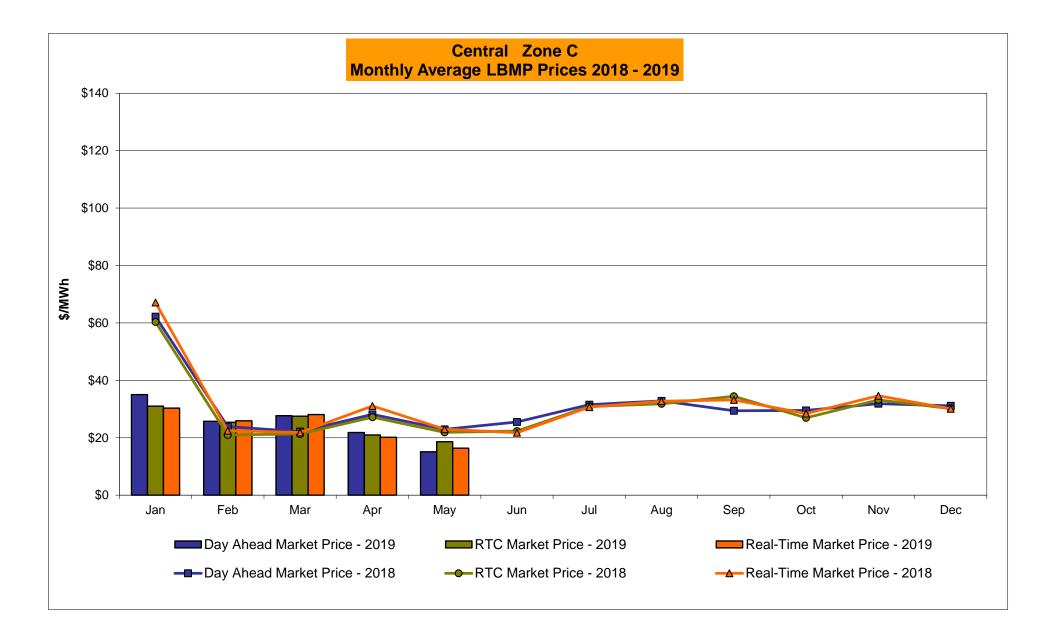
May 2019 Zonal LBMP Statistics for NYISO (\$/MWh)

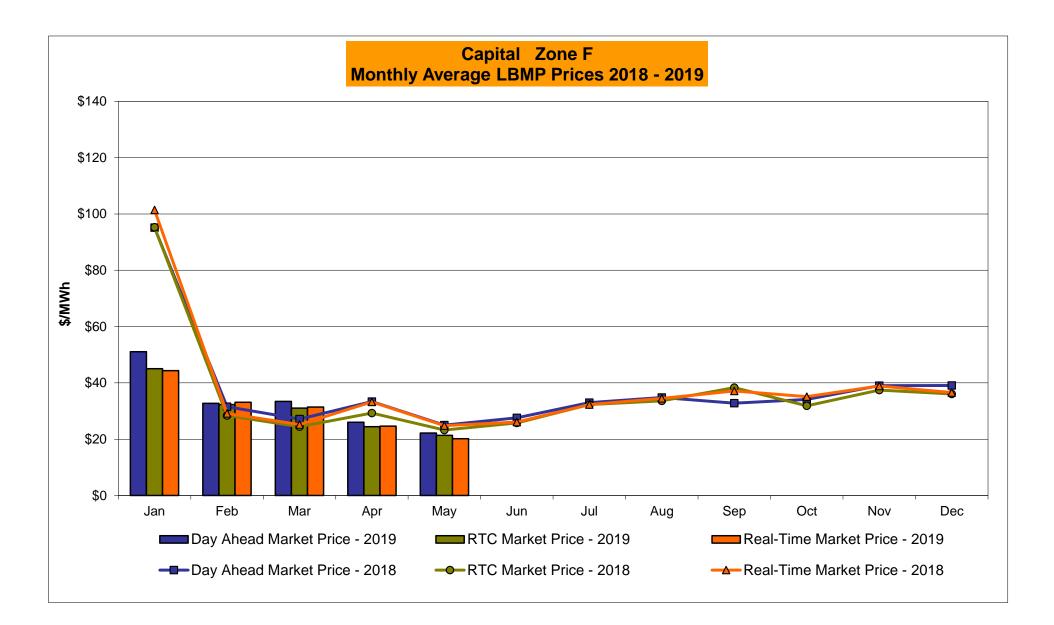
					MOHAWK		HUDSON			NEW YORK	LONG
	WEST	GENESEE	NORTH	CENTRAL	VALLEY	CAPITAL	VALLEY	MILLWOOD	DUNWOODIE	CITY	ISLAND
	Zone A	Zone B	Zone D	Zone C	Zone E	Zone F	Zone G	Zone H	<u>Zone I</u>	Zone J	Zone K
DAY AHEAD LBMP											
Unweighted Price *	22.70	13.04	12.31	15.11	14.90	22.17	20.43	20.79	20.94	23.39	26.46
Standard Deviation	13.38	5.02	6.44	5.59	5.51	4.93	4.83	4.95	5.06	6.22	7.39
RTC LBMP											
Unweighted Price *	24.00	13.79	15.61	18.60	17.82	21.36	20.89	21.15	21.44	23.41	26.07
Standard Deviation	22.52	10.17	8.89	8.86	7.65	7.35	7.29	7.36	7.45	9.35	17.22
REAL TIME LBMP											
Unweighted Price *	21.79	12.57	13.71	16.34	15.74	20.16	19.31	19.62	20.03	23.23	23.88
Standard Deviation	25.88	12.35	13.36	12.37	11.96	11.52	9.79	9.93	10.31	13.35	12.83

	ONTARIO	HYDRO QUEBEC	HYDRO QUEBEC		NEW	CROSS SOUND	NORTHPORT-				
	IESO		(Import/Export)	PJM		CABLE	NORWALK	NEPTUNE	LINDEN VFT	HUDSON	Dennison
	1230	(writeer)			LINGLAND	Controllable	Controllable	Controllable	Controllable	Controllable	Controllable
	Zone O	Zone M	Zone M	Zone P	Zone N	<u>Line</u>	<u>Line</u>	<u>Line</u>	<u>Line</u>	<u>Line</u>	<u>Line</u>
DAY AHEAD LBMP						<u></u>					
Unweighted Price *	12.43	12.95	12.95	18.75	22.25	26.07	24.84	24.70	23.05	22.58	12.16
Standard Deviation	4.36	6.14	6.13	5.77	4.36	7.08	5.78	6.37	5.93	5.63	6.33
RTC LBMP											
Unweighted Price *	13.09	16.40	16.40	20.70	23.88	25.72	25.42	24.25	23.30	23.00	15.49
Standard Deviation	8.27	8.04	8.04	8.97	7.22	16.85	16.69	13.19	7.55	6.71	8.77
REAL TIME LBMP											
Unweighted Price *	10.95	14.40	14.40	18.80	21.32	23.72	23.07	22.36	22.42	21.95	13.55
Standard Deviation	20.87	12.94	12.94	11.22	10.74	13.55	12.54	11.68	11.11	10.37	13.18

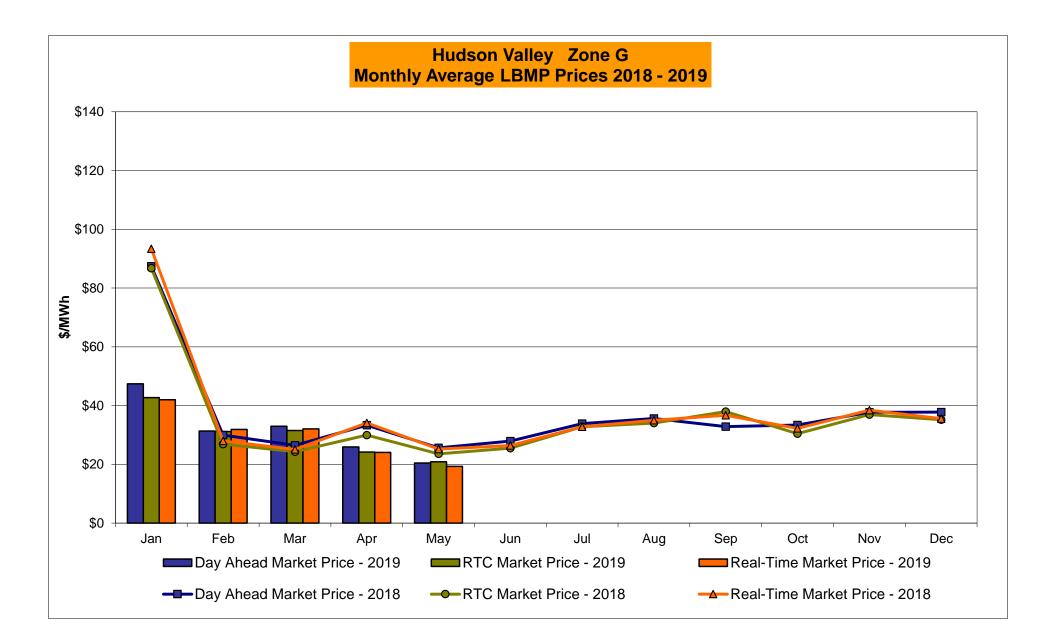
* Straight LBMP averages

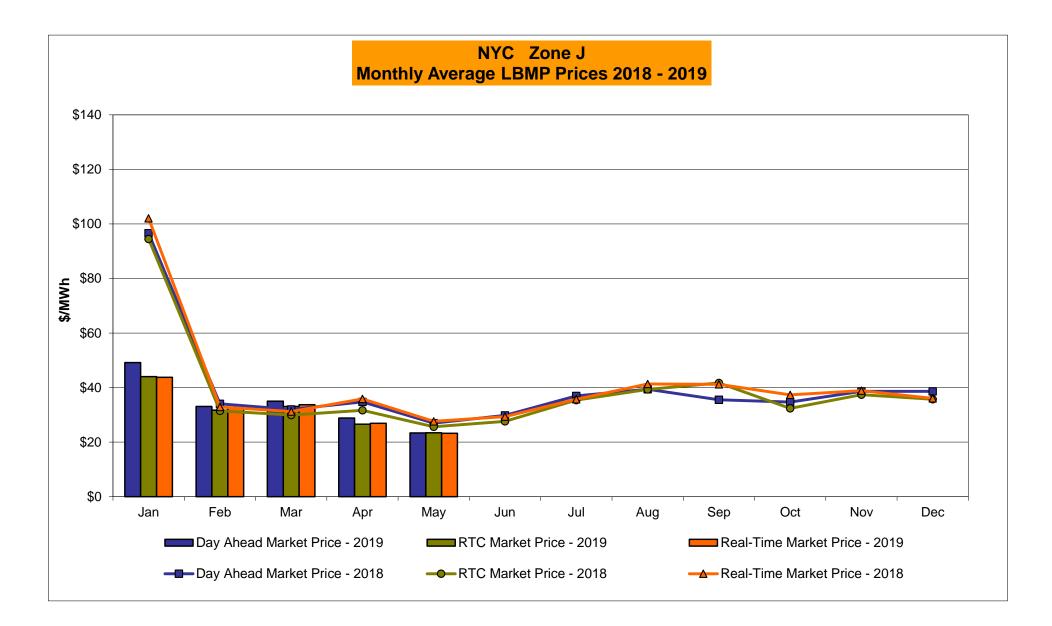


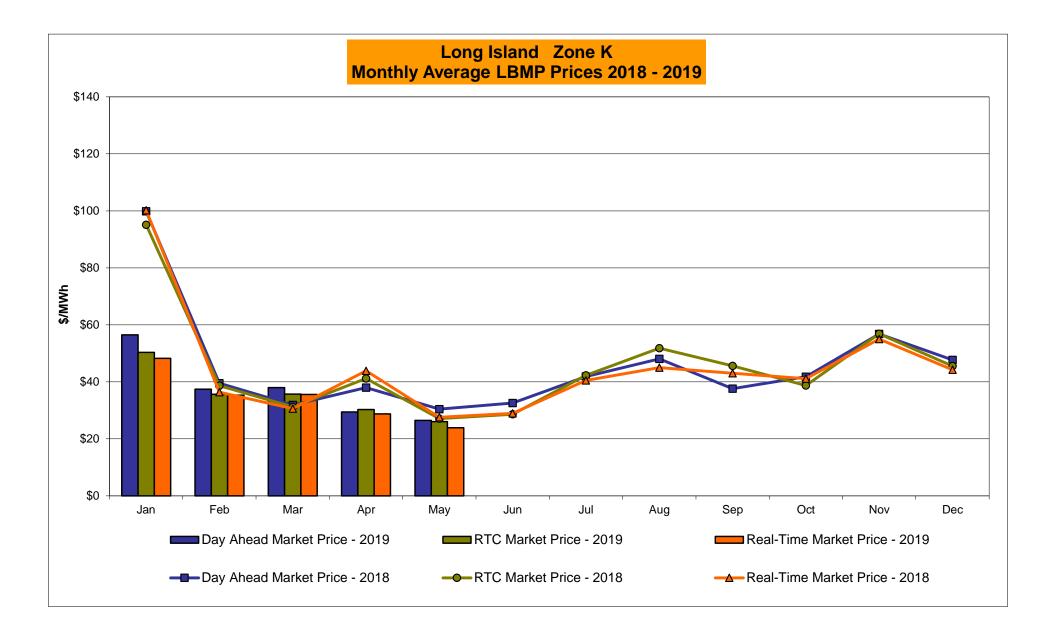


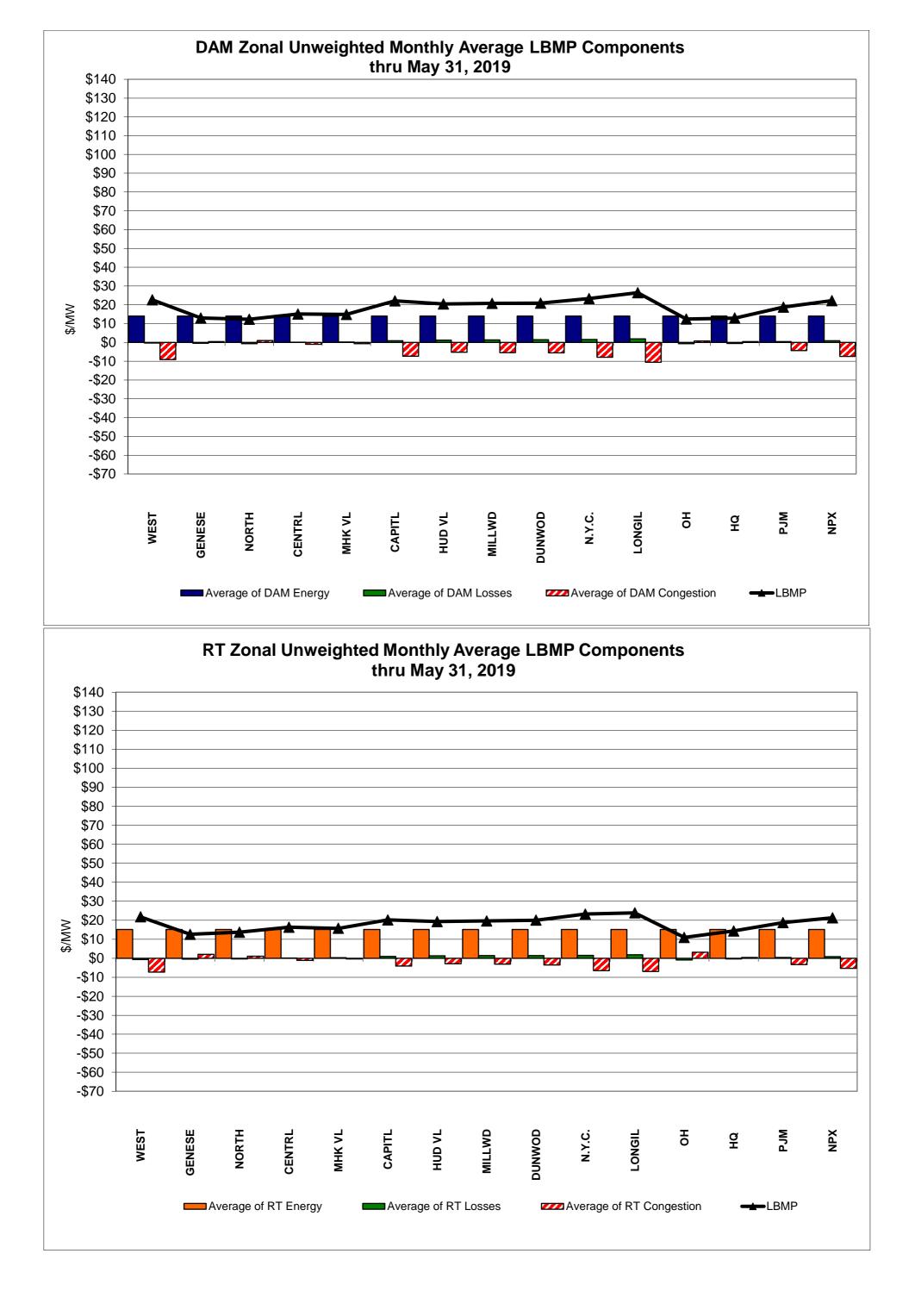


Market Mitigation and Analysis Prepared:6/11/2019 2:34 PM

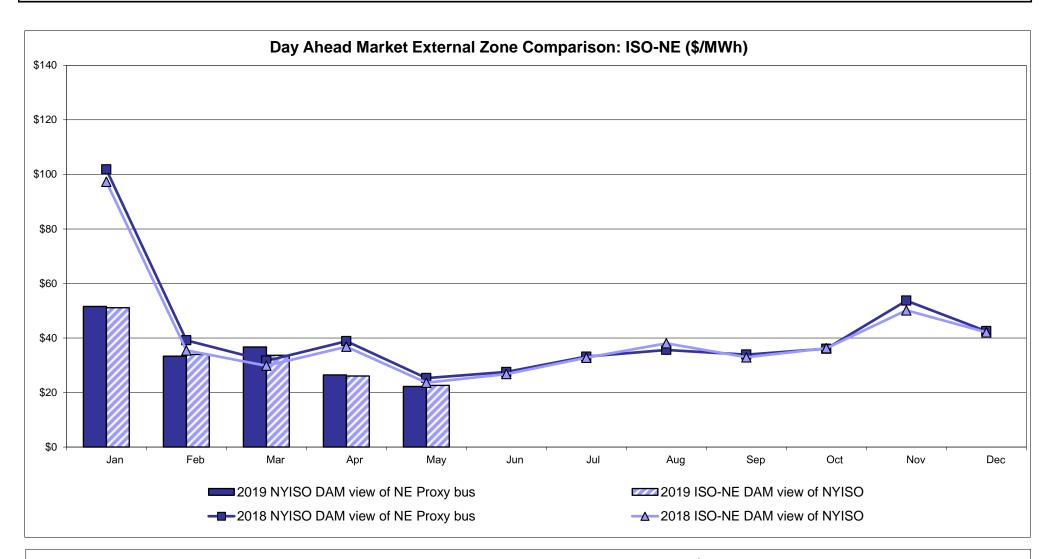


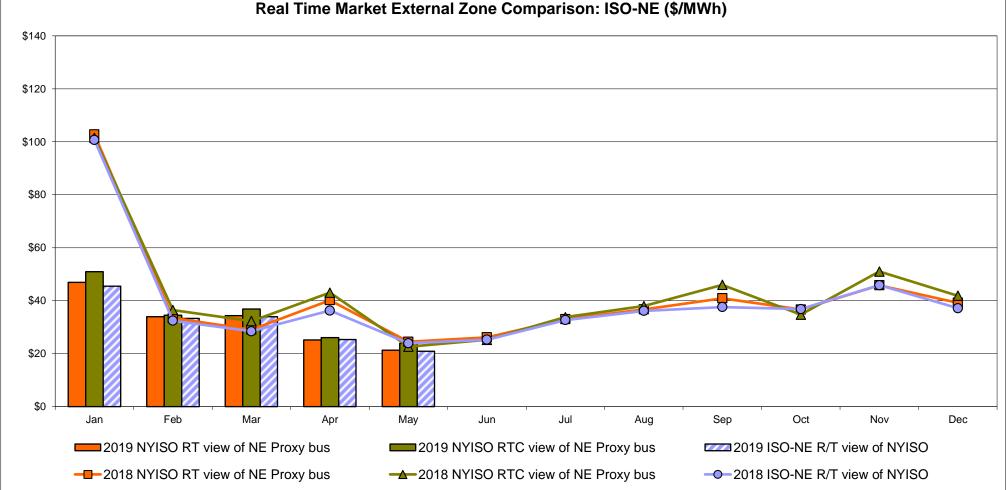




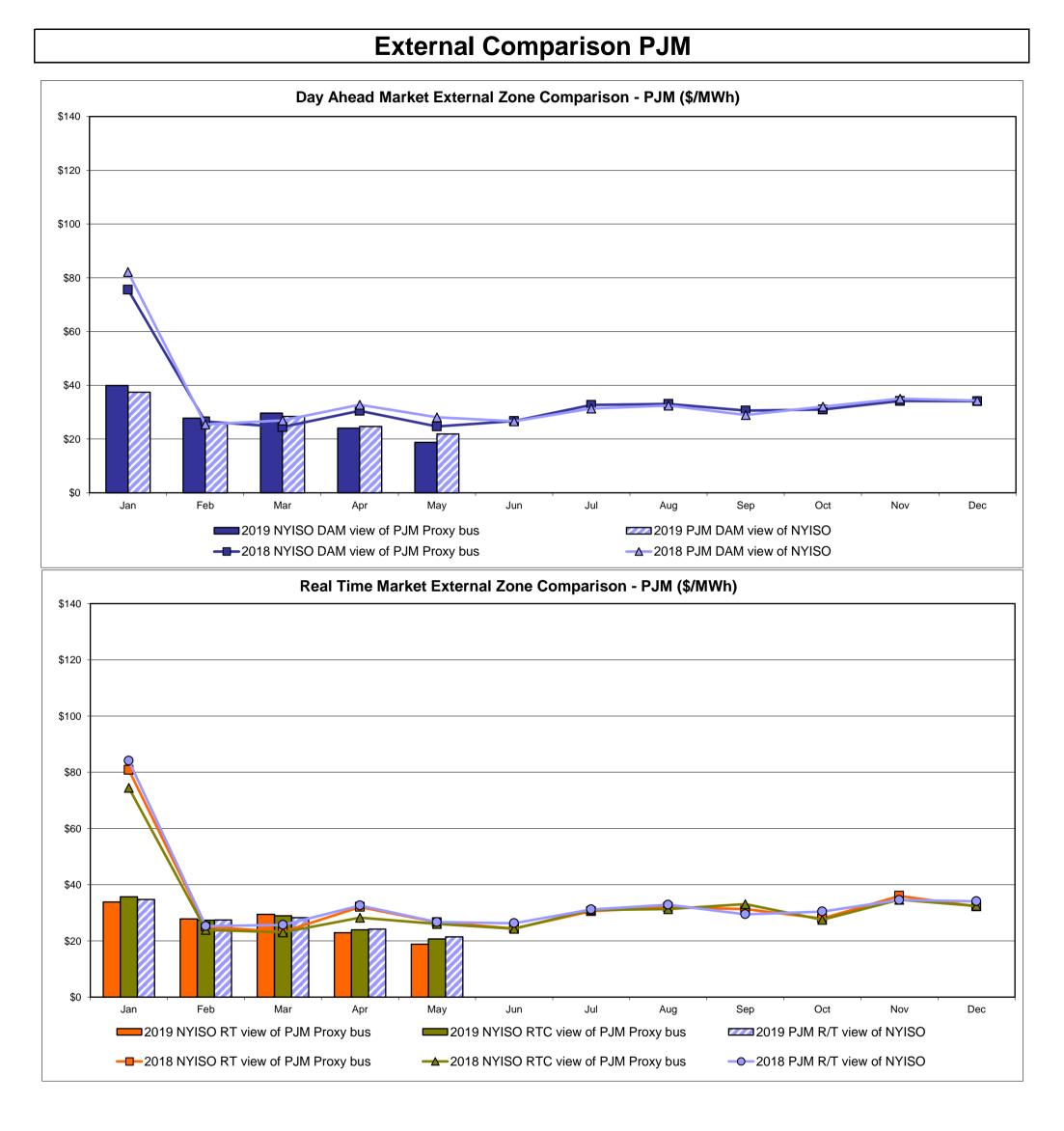


External Comparison ISO-New England

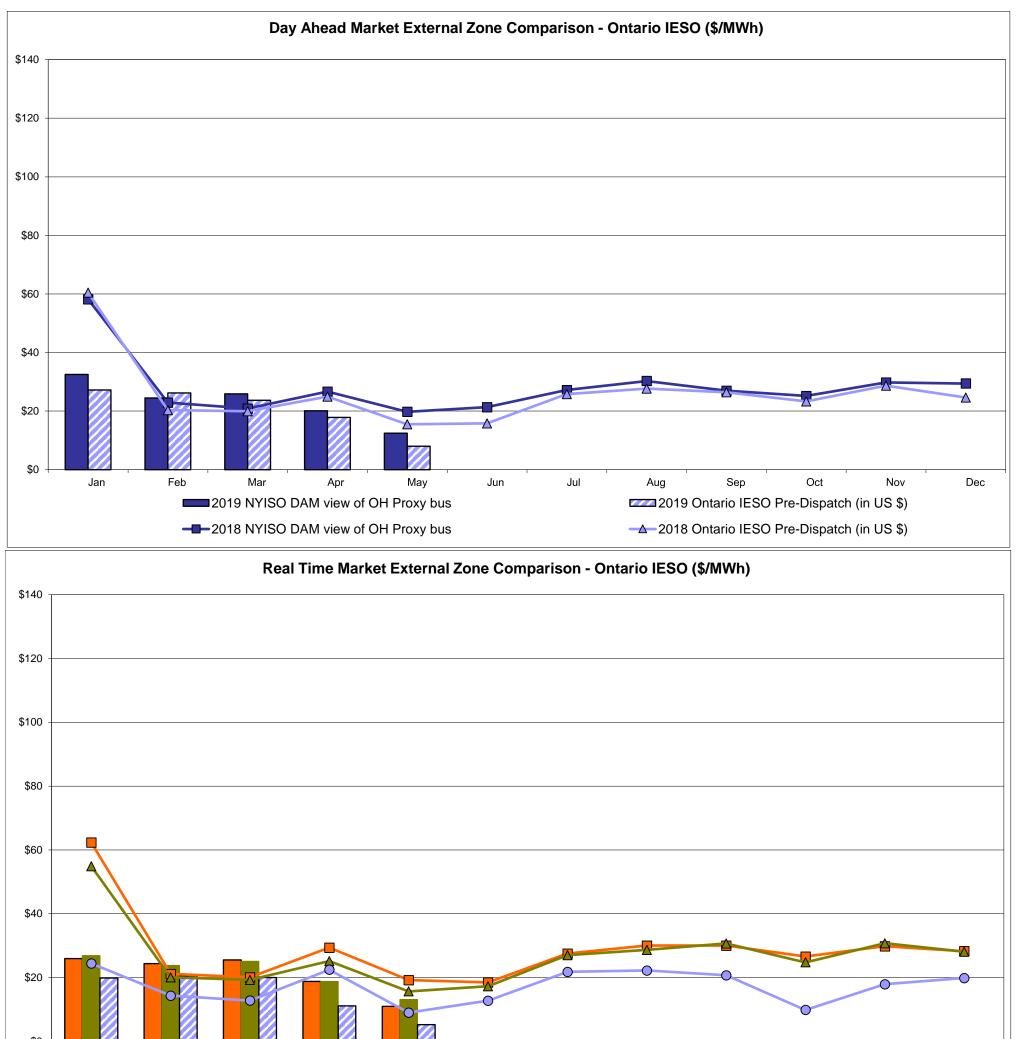




Market Mitigation and Analysis Prepared: 6/11/2019 2:34 PM



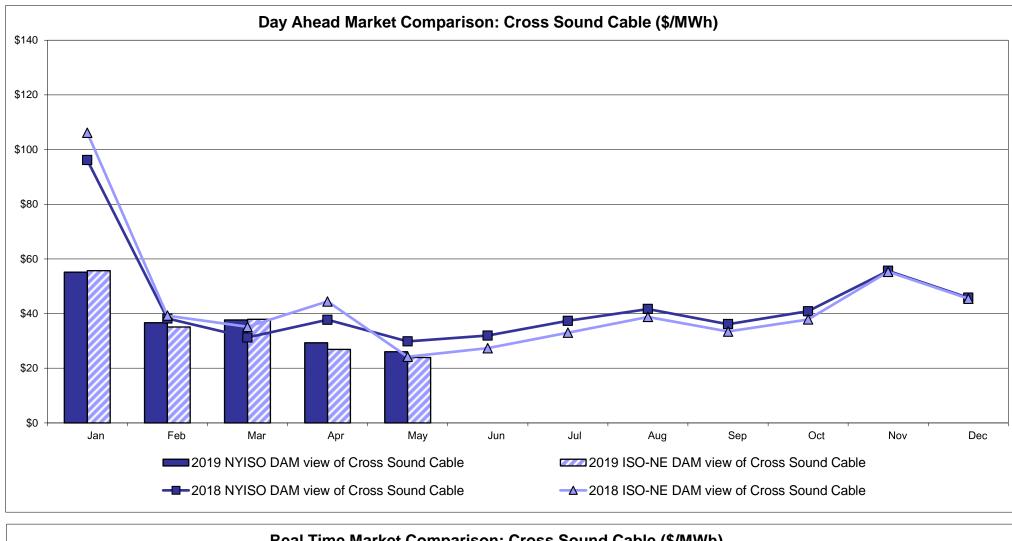
External Comparison Ontario IESO



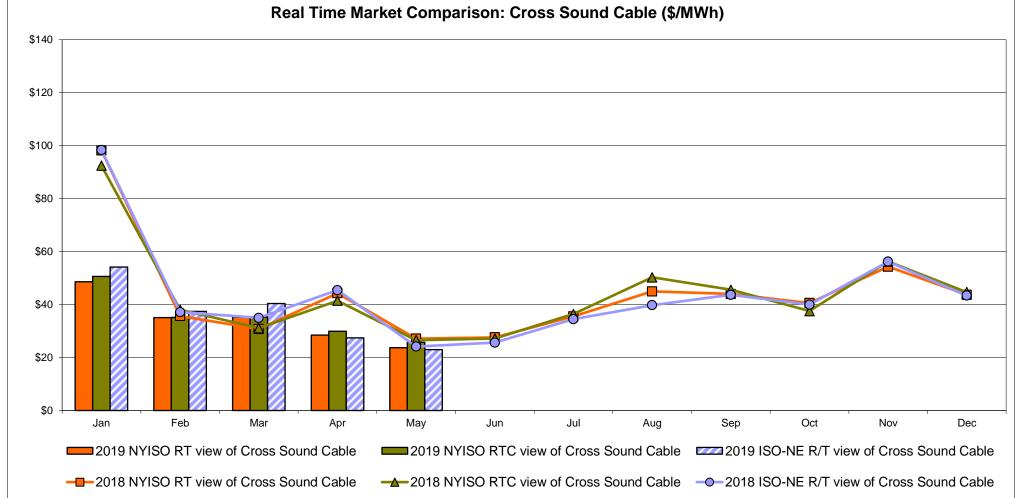
\$0 +	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	201	9 NYISO RT v	iew of OH Pro	oxy bus	2019	NYISO RTC	view of OH P	roxy bus	2019	Ontario IESO	HOEP (in US	\$ \$)
	 201	8 NYISO RT v	iew of OH Pro	oxy bus	 2018	NYISO RTC	view of OH P	roxy bus	-0-2018	Ontario IESO	HOEP (in US	S \$)

Notes: Exchange factor used for May 2019 was 0.742942050520059 to US HOEP: Hourly Ontario Energy Price Pre-Dispatch: Projected Energy Price

> Market Mitigation and Analysis Prepared: 6/11/2019 2:34 PM



External Controllable Line: Cross Sound Cable (New England)

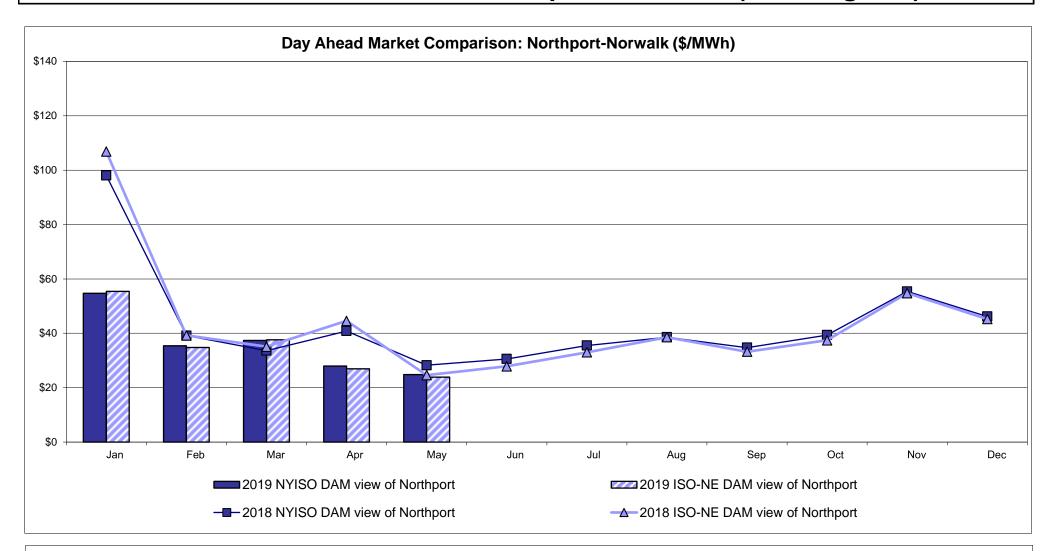


Note:

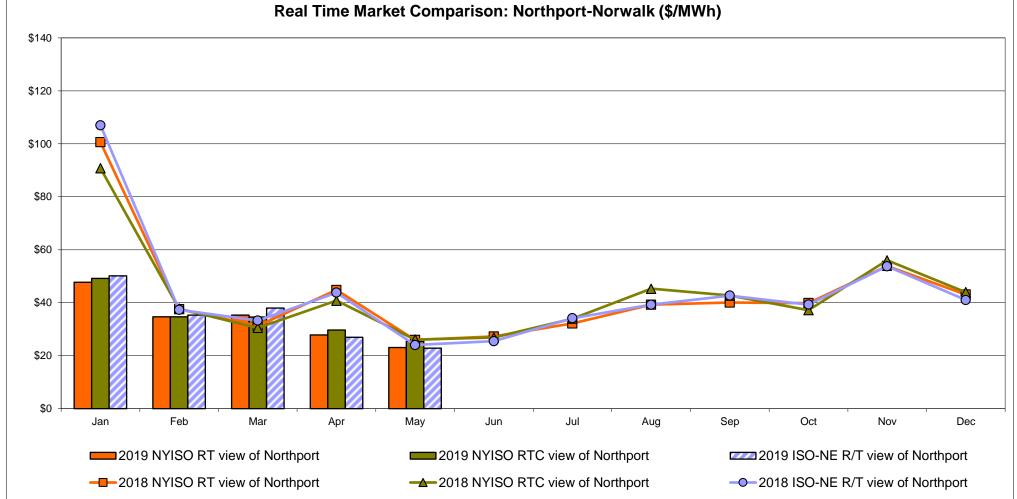
ISO-NE Forecast is an advisory posting @ 18:00 day before.

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)

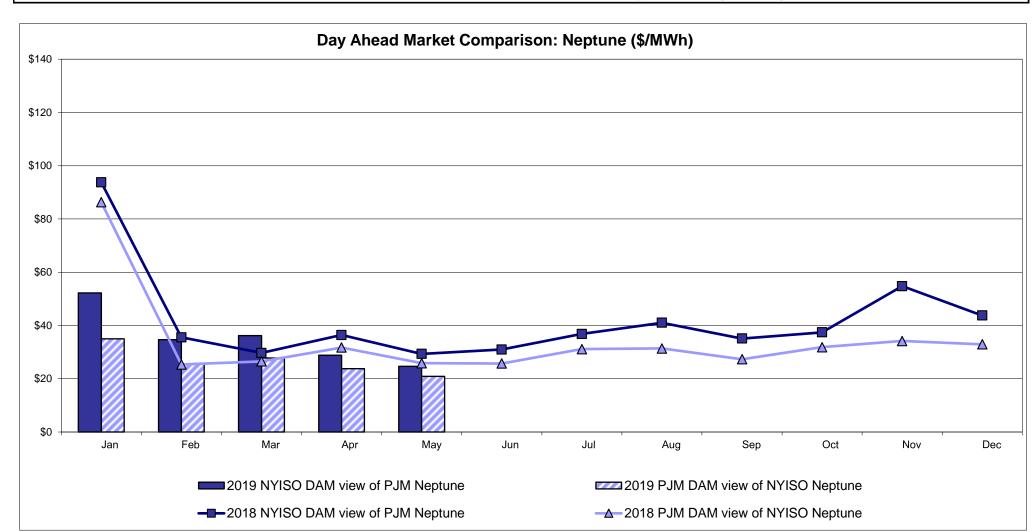


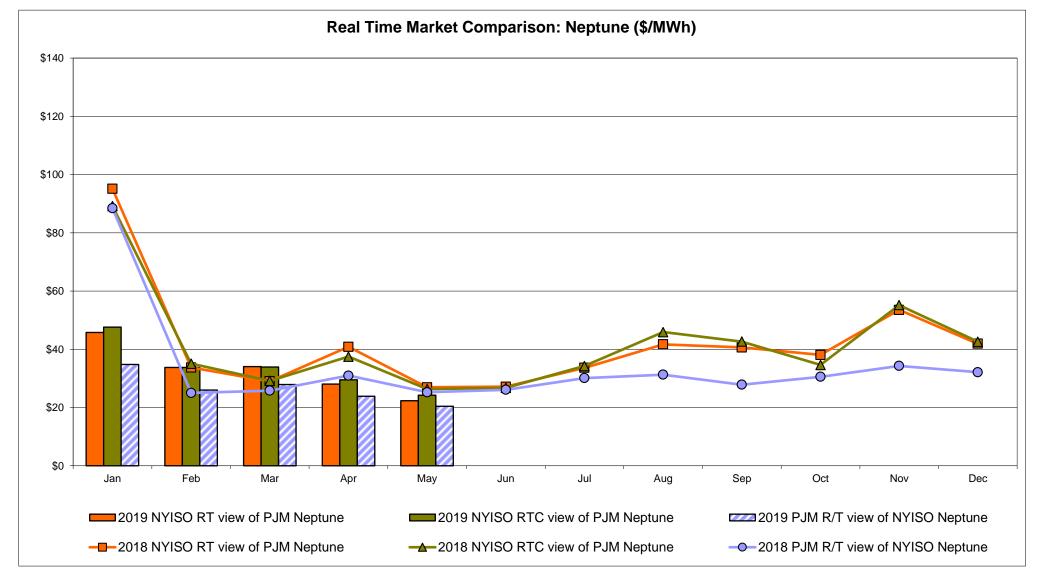
Note:

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.

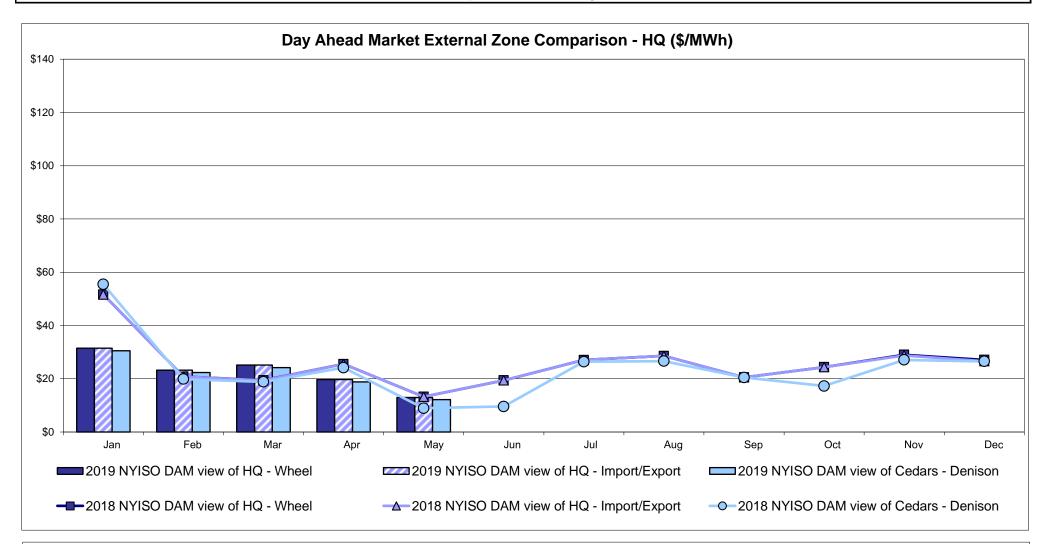
The DAM and R/T prices at the 1385 interface are used for NYISO.

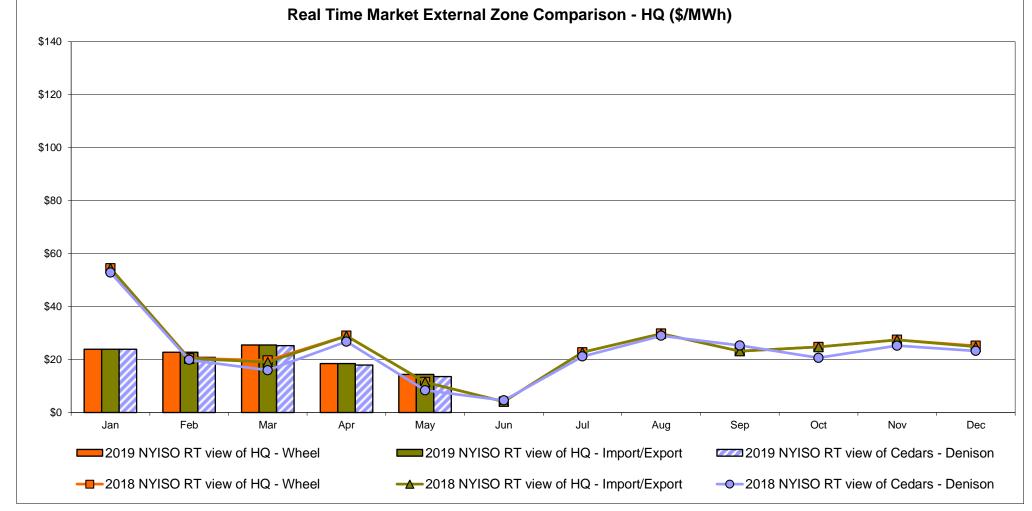




External Controllable Line: Neptune (PJM)

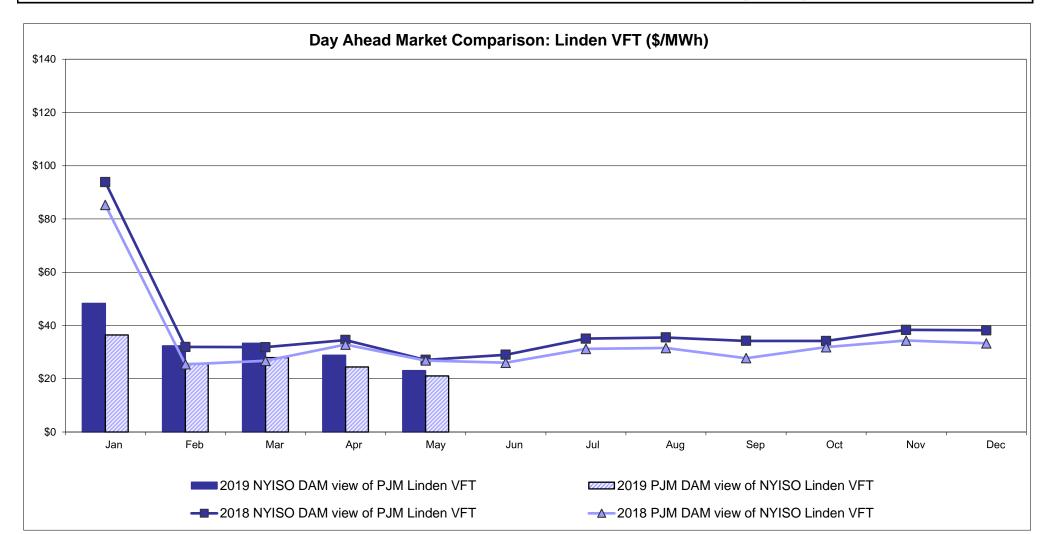
External Comparison Hydro-Quebec



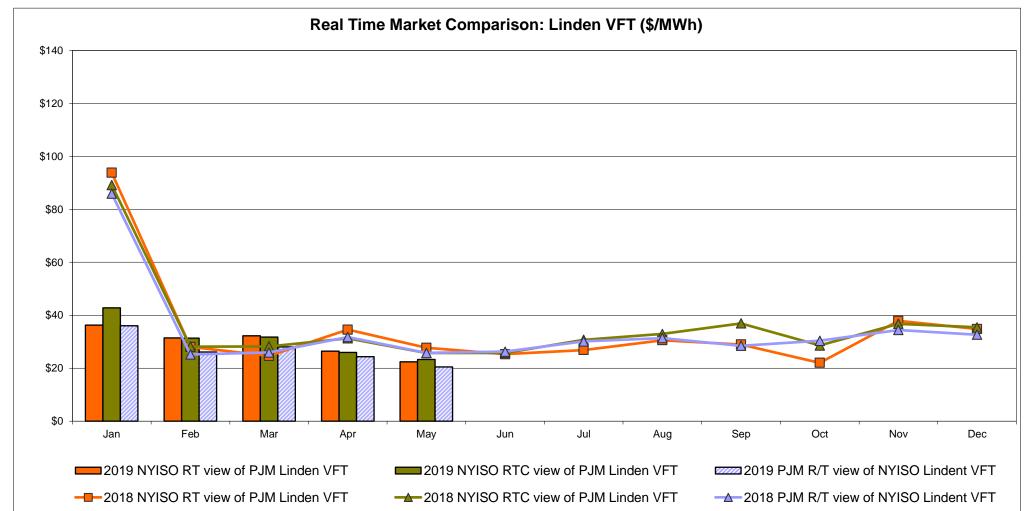


Note:

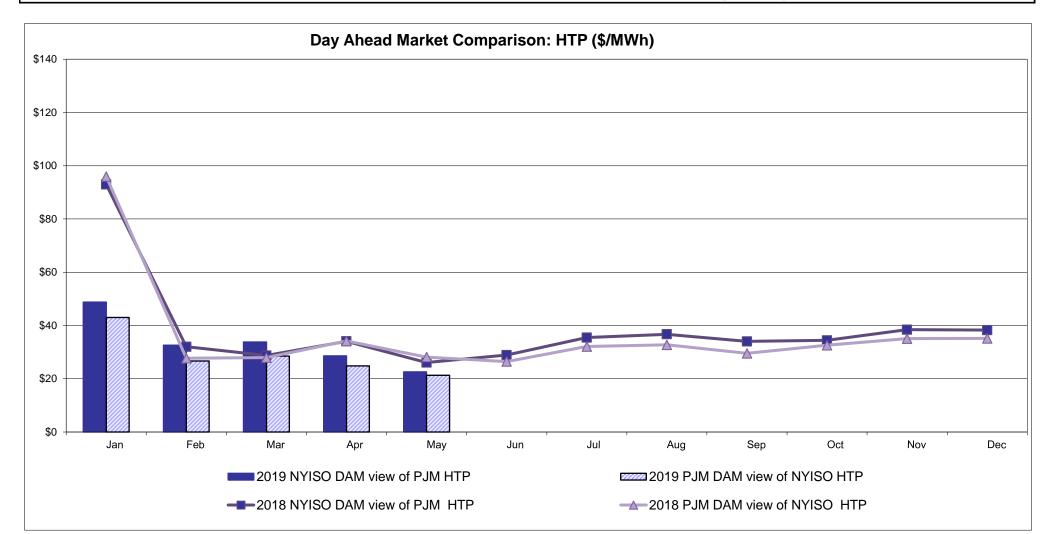
Hydro-Quebec Prices are unavailable.

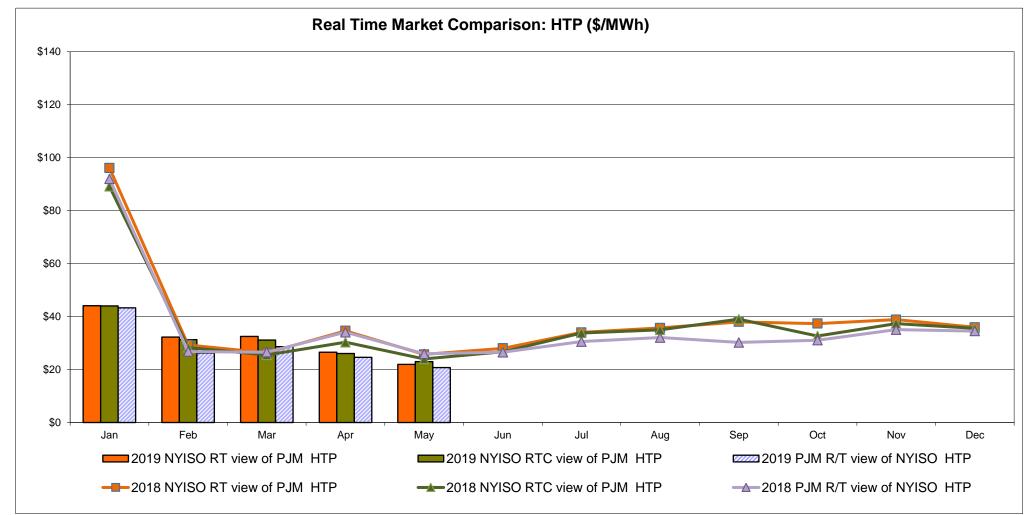


External Controllable Line: Linden VFT (PJM)



External Controllable Line: Hudson (PJM)

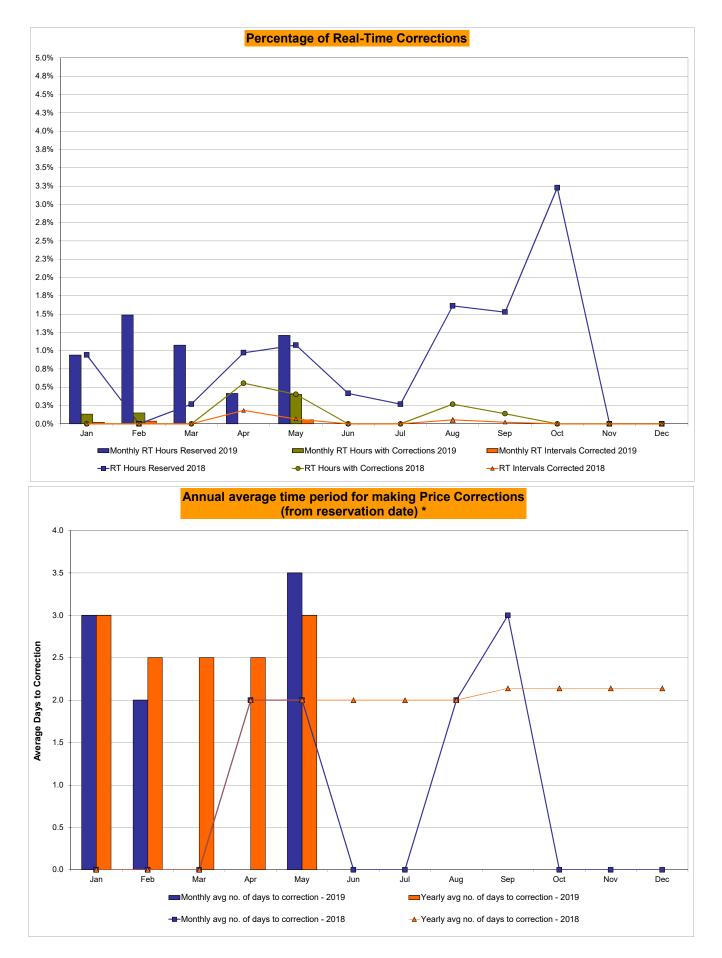




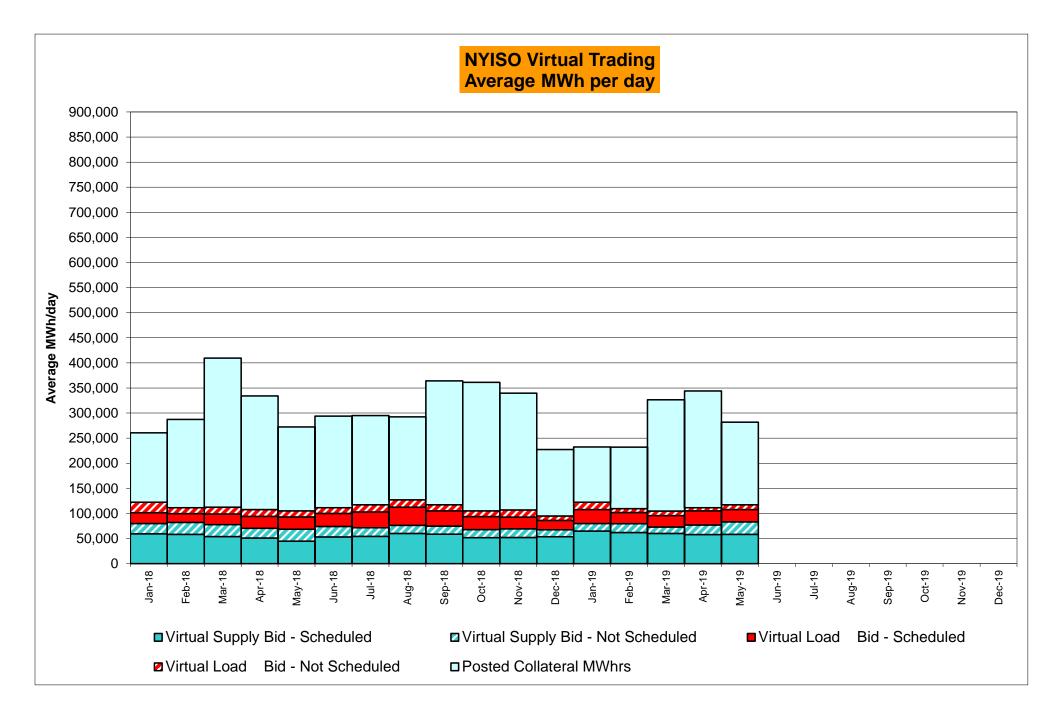
NYISO Real Time Price Correction Statistics

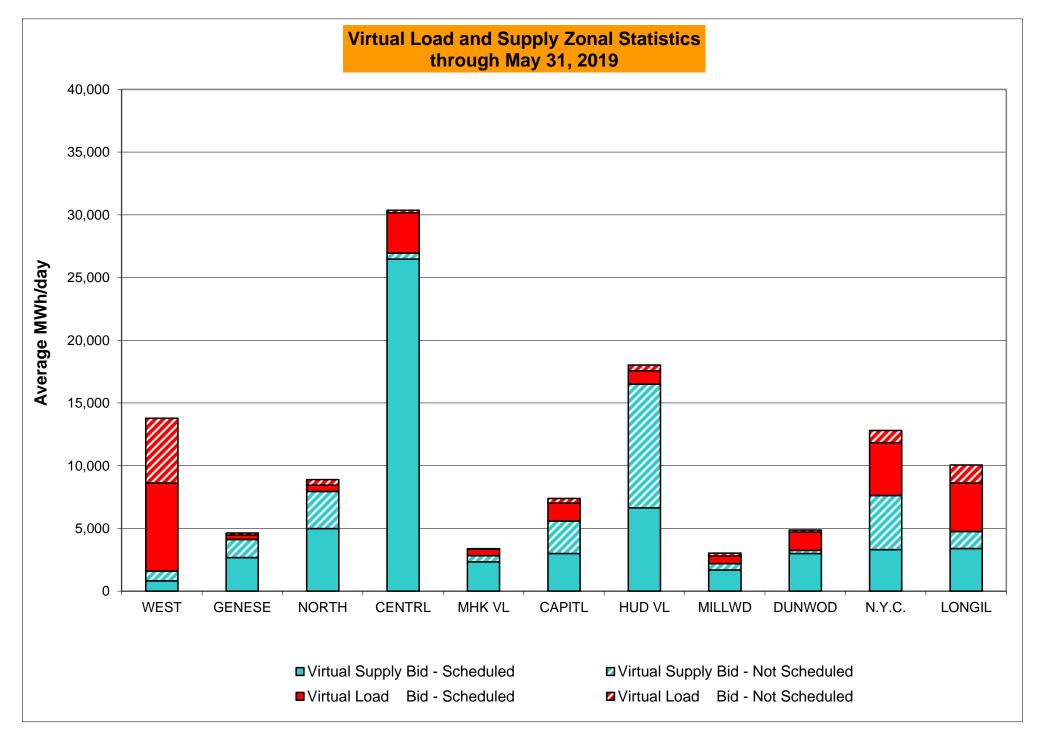
<u>2019</u>		January	February	March	<u>April</u>	<u>May</u>	June	July	<u>August</u>	<u>September</u>	<u>October</u>	November	<u>December</u>
Hour Corrections	· · · · · · · · · · · · · · · · · · ·	4	1	0	0	2							
Number of hours with corrections Number of hours	in the month in the month	1 744	1 672	0 743	0 720	3 744							
% of hours with corrections	in the month	744 0.13%	072 0.15%	743 0.00%	720 0.00%	744 0.40%							
% of hours with corrections	in the month	0.13%	0.15%	0.00%	0.00%	0.40%							
% of hours with corrections	year-to-date	0.13%	0.14%	0.09%	0.07%	0.14%							
Interval Corrections													
Number of intervals corrected	in the month	2	3	0	0	5							
Number of intervals	in the month	9,071	8,131	9,008	8,750	9,033							
% of intervals corrected	in the month	0.02%	0.04%	0.00%	0.00%	0.06%							
% of intervals corrected	year-to-date	0.02%	0.03%	0.02%	0.01%	0.02%							
Hours Reserved													
Number of hours reserved	in the month	7	10	8	3	9							
Number of hours	in the month	744	672	743	720	744							
% of hours reserved	in the month	0.94%	1.49%	1.08%	0.42%	1.21%							
% of hours reserved	year-to-date	0.94%	1.20%	1.16%	0.97%	1.02%							
Days to Correction *													
Avg. number of days to correction	in the month	3.00	2.00	0.00	0.00	3.50							
Avg. number of days to correction	year-to-date	3.00	2.50	2.50	2.50	3.00							
Days Without Corrections													
Days without corrections	in the month	30	27	31	30	29							
Days without corrections	year-to-date	30	57	88	118	147							
2018		January	February	March	April	May	June	July	August	September	October	November	December
2018 Hour Corrections		<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>	November	<u>December</u>
	in the month	<u>January</u> 0	<u>February</u> 0	<u>March</u> 0	<u>April</u> 4	<u>May</u> 3	<u>June</u> 0	<u>July</u> 0	<u>August</u> 2	<u>September</u> 1	<u>October</u> 0	<u>November</u> 0	<u>December</u> 0
Hour Corrections	in the month in the month		<u>,</u>										
Hour Corrections Number of hours with corrections		0	0	0	4	3	0	0	2	1	0	0	0
Hour Corrections Number of hours with corrections Number of hours % of hours with corrections	in the month in the month	0 744	0 672 0.00%	0 743 0.00%	4 720 0.56%	3 744 0.40%	0 720 0.00%	0 744 0.00%	2 744 0.27%	1 720 0.14%	0 744 0.00%	0 721 0.00%	0 744 0.00%
Hour Corrections Number of hours with corrections Number of hours	in the month	0 744 0.00%	0 672	0 743	4 720	3 744	0 720	0 744	2 744	1 720	0 744	0 721	0 744
Hour Corrections Number of hours with corrections Number of hours % of hours with corrections % of hours with corrections	in the month in the month	0 744 0.00%	0 672 0.00%	0 743 0.00%	4 720 0.56%	3 744 0.40%	0 720 0.00%	0 744 0.00%	2 744 0.27%	1 720 0.14%	0 744 0.00%	0 721 0.00%	0 744 0.00%
Hour Corrections Number of hours with corrections Number of hours % of hours with corrections % of hours with corrections Interval Corrections	in the month in the month year-to-date	0 744 0.00% 0.00%	0 672 0.00% 0.00%	0 743 0.00% 0.00%	4 720 0.56% 0.14%	3 744 0.40% 0.19%	0 720 0.00% 0.16%	0 744 0.00% 0.14%	2 744 0.27% 0.15%	1 720 0.14% 0.15%	0 744 0.00% 0.14%	0 721 0.00% 0.12%	0 744 0.00% 0.11%
Hour Corrections Number of hours with corrections Number of hours % of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected	in the month in the month year-to-date in the month	0 744 0.00% 0.00%	0 672 0.00% 0.00%	0 743 0.00% 0.00%	4 720 0.56% 0.14%	3 744 0.40% <u>0.19%</u> 6	0 720 0.00% 0.16% 0	0 744 0.00% 0.14% 0	2 744 0.27% <u>0.15%</u> 5	1 720 0.14% 0.15% 2	0 744 0.00% 0.14% 0	0 721 0.00% 0.12% 0	0 744 0.00% 0.11% 0
Hour Corrections Number of hours with corrections Number of hours % of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected Number of intervals % of intervals corrected	in the month in the month year-to-date in the month in the month in the month	0 744 0.00% 0.00% 0 9,021	0 672 0.00% 0.00% 0 8,112 0.00%	0 743 0.00% 0.00% 9,002 0.00%	4 720 0.56% 0.14% 16 8,717 0.18%	3 744 0.40% 0.19% 6 9,033	0 720 0.00% 0.16% 0 8,723	0 744 0.00% 0.14% 9,021 0.00%	2 744 0.27% 0.15% 5 9,071 0.06%	1 720 0.14% 0.15% 2 8,723	0 744 0.00% 0.14% 0 8,990	0 721 0.00% 0.12% 0 8,763 0.00%	0 744 0.00% 0.11% 0 8,993 0.00%
Hour Corrections Number of hours with corrections Number of hours % of hours with corrections % of hours with corrections <u>Interval Corrections</u> Number of intervals corrected Number of intervals	in the month in the month year-to-date in the month in the month	0 744 0.00% 0.00% 9,021 0.00%	0 672 0.00% 0.00% 0 8,112	0 743 0.00% 0.00% 0 9,002	4 720 0.56% 0.14% 16 8,717	3 744 0.40% 0.19% 6 9,033 0.07%	0 720 0.00% 0.16% 0 8,723 0.00%	0 744 0.00% 0.14% 0 9,021	2 744 0.27% 0.15% 5 9,071	1 720 0.14% 0.15% 2 8,723 0.02%	0 744 0.00% 0.14% 0 8,990 0.00%	0 721 0.00% 0.12% 0 8,763	0 744 0.00% 0.11% 0 8,993
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected Number of intervals % of intervals corrected % of intervals corrected	in the month in the month year-to-date in the month in the month in the month	0 744 0.00% 0.00% 9,021 0.00%	0 672 0.00% 0.00% 0 8,112 0.00%	0 743 0.00% 0.00% 9,002 0.00%	4 720 0.56% 0.14% 16 8,717 0.18%	3 744 0.40% 0.19% 6 9,033 0.07%	0 720 0.00% 0.16% 0 8,723 0.00%	0 744 0.00% 0.14% 9,021 0.00%	2 744 0.27% 0.15% 5 9,071 0.06%	1 720 0.14% 0.15% 2 8,723 0.02%	0 744 0.00% 0.14% 0 8,990 0.00%	0 721 0.00% 0.12% 0 8,763 0.00%	0 744 0.00% 0.11% 0 8,993 0.00%
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected Number of intervals % of intervals corrected	in the month in the month year-to-date in the month in the month year-to-date	0 744 0.00% 0.00% 9,021 0.00% 0.00%	0 672 0.00% 0.00% 0 8,112 0.00% 0.00%	0 743 0.00% 0.00% 9,002 0.00% 0.00%	4 720 0.56% 0.14% 16 8,717 0.18% 0.05%	3 744 0.40% 0.19% 6 9,033 0.07% 0.05%	0 720 0.00% 0.16% 0 8,723 0.00% 0.04%	0 744 0.00% 0.14% 9,021 0.00% 0.04%	2 744 0.27% 0.15% 5 9,071 0.06% 0.04%	1 720 0.14% 0.15% 2 8,723 0.02% 0.04%	0 744 0.00% 0.14% 0 8,990 0.00% 0.03%	0 721 0.00% 0.12% 0 8,763 0.00% 0.03%	0 744 0.00% 0.11% 0 8,993 0.00% 0.03%
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected Number of intervals % of intervals corrected Mumber of hours reserved	in the month in the month year-to-date in the month in the month year-to-date in the month	0 744 0.00% 0.00% 9,021 0.00% 0.00% 7	0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0	0 743 0.00% 0.00% 9,002 0.00% 0.00% 2	4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7	3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8	0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3	0 744 0.00% 0.14% 9,021 0.00% 0.04% 2	2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12	1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11	0 744 0.00% 0.14% 8,990 0.00% 0.03% 24	0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0	0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Mumber of intervals corrected Number of intervals corrected % of intervals corrected Mumber of hours reserved Number of hours % of hours reserved	in the month in the month year-to-date in the month in the month year-to-date in the month in the month in the month in the month	0 744 0.00% 0.00% 0 9,021 0.00% 0.00% 7 744 0.94%	0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672 0.00%	0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743 0.27%	4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720 0.97%	3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744 1.08%	0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720 0.42%	0 744 0.00% 0.14% 9,021 0.00% 0.04% 2 744 0.27%	2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744 1.61%	1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720 1.53%	0 744 0.00% 0.14% 0 8,990 0.00% 0.03% 24 744 3.23%	0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721 0.00%	0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744 0.00%
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Mumber of intervals corrected Number of intervals corrected % of intervals corrected Mumber of hours reserved Number of hours reserved % of hours reserved % of hours reserved	in the month in the month year-to-date in the month in the month year-to-date in the month in the month	0 744 0.00% 0.00% 9,021 0.00% 0.00% 7 744	0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672	0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743	4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720	3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744	0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720	0 744 0.00% 0.14% 0 9,021 0.00% 0.04% 2 744	2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744	1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720	0 744 0.00% 0.14% 8,990 0.00% 0.03% 24 744	0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721	0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744
Hour Corrections Number of hours with corrections % of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected Number of intervals corrected % of intervals corrected Number of hours reserved Number of hours reserved % of hours reserved	in the month in the month year-to-date in the month in the month year-to-date in the month in the month in the month year-to-date	0 744 0.00% 0.00% 9,021 0.00% 0.00% 7 744 0.94% 0.94%	0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672 0.00% 0.49%	0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743 0.27% 0.42%	4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720 0.97% 0.56%	3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744 1.08% 0.66%	0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720 0.42% 0.62%	0 744 0.00% 0.14% 9,021 0.00% 0.04% 2 744 0.27% 0.57%	2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744 1.61% 0.70%	1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720 1.53% 0.79%	0 744 0.00% 0.14% 0 8,990 0.00% 0.03% 24 744 3.23% 1.04%	0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721 0.00% 0.95%	0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744 0.00% 0.87%
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Mumber of intervals corrected Number of intervals corrected % of intervals corrected Number of hours reserved Number of hours reserved % of hours reserved	in the month in the month year-to-date in the month in the month year-to-date in the month in the month in the month year-to-date in the month	0 744 0.00% 0.00% 9,021 0.00% 0.00% 7 744 0.94% 0.94% 0.94%	0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672 0.00% 0.49% 0.00	0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743 0.27% 0.42% 0.00	4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720 0.97% 0.56% 2.00	3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744 1.08% 0.66% 2.00	0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720 0.42% 0.62% 0.00	0 744 0.00% 0.14% 9,021 0.00% 0.04% 2 744 0.27% 0.57% 0.00	2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744 1.61% 0.70% 2.00	1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720 1.53% 0.79% 3.00	0 744 0.00% 0.14% 0 8,990 0.00% 0.03% 24 744 3.23% 1.04% 0.00	0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721 0.00% 0.95% 0.00	0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744 0.00% 0.87% 0.00
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected Number of intervals corrected % of intervals corrected % of intervals corrected % of intervals corrected % of intervals corrected Number of hours reserved Number of hours % of hours reserved % of houre reserved <t< td=""><td>in the month in the month year-to-date in the month in the month year-to-date in the month in the month in the month year-to-date</td><td>0 744 0.00% 0.00% 9,021 0.00% 0.00% 7 744 0.94% 0.94%</td><td>0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672 0.00% 0.49%</td><td>0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743 0.27% 0.42%</td><td>4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720 0.97% 0.56%</td><td>3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744 1.08% 0.66%</td><td>0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720 0.42% 0.62%</td><td>0 744 0.00% 0.14% 9,021 0.00% 0.04% 2 744 0.27% 0.57%</td><td>2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744 1.61% 0.70%</td><td>1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720 1.53% 0.79%</td><td>0 744 0.00% 0.14% 0 8,990 0.00% 0.03% 24 744 3.23% 1.04%</td><td>0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721 0.00% 0.95%</td><td>0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744 0.00% 0.87%</td></t<>	in the month in the month year-to-date in the month in the month year-to-date in the month in the month in the month year-to-date	0 744 0.00% 0.00% 9,021 0.00% 0.00% 7 744 0.94% 0.94%	0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672 0.00% 0.49%	0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743 0.27% 0.42%	4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720 0.97% 0.56%	3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744 1.08% 0.66%	0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720 0.42% 0.62%	0 744 0.00% 0.14% 9,021 0.00% 0.04% 2 744 0.27% 0.57%	2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744 1.61% 0.70%	1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720 1.53% 0.79%	0 744 0.00% 0.14% 0 8,990 0.00% 0.03% 24 744 3.23% 1.04%	0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721 0.00% 0.95%	0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744 0.00% 0.87%
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected Number of intervals corrected % of intervals corrected Number of hours reserved Number of hours reserved % of hours reserved % of hours reserved % of hours reserved Avg. number of days to correction Avg. number of days to correction Avg. Number of days to correction	in the month in the month year-to-date in the month in the month year-to-date in the month in the month in the month year-to-date in the month	0 744 0.00% 0.00% 9,021 0.00% 0.00% 7 744 0.94% 0.94% 0.94%	0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672 0.00% 0.49% 0.00 0.00	0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743 0.27% 0.42% 0.00	4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720 0.97% 0.56% 2.00	3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744 1.08% 0.66% 2.00	0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720 0.42% 0.62% 0.00	0 744 0.00% 0.14% 9,021 0.00% 0.04% 2 744 0.27% 0.57% 0.00	2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744 1.61% 0.70% 2.00	1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720 1.53% 0.79% 3.00	0 744 0.00% 0.14% 0 8,990 0.00% 0.03% 24 744 3.23% 1.04% 0.00	0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721 0.00% 0.95% 0.00	0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744 0.00% 0.87% 0.00
Hour Corrections Number of hours with corrections Number of hours with corrections % of hours with corrections Interval Corrections Number of intervals corrected Number of intervals corrected % of intervals corrected % of intervals corrected % of intervals corrected % of intervals corrected Mumber of hours reserved Number of hours % of hours reserved % of hours reserved <t< td=""><td>in the month in the month year-to-date in the month in the month year-to-date in the month in the month in the month year-to-date in the month year-to-date</td><td>0 744 0.00% 0.00% 9,021 0.00% 0.00% 7 744 0.94% 0.94% 0.94% 0.00 0.00</td><td>0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672 0.00% 0.49% 0.00</td><td>0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743 0.27% 0.42% 0.00 0.00</td><td>4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720 0.97% 0.56% 2.00 2.00</td><td>3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744 1.08% 0.66% 2.00 2.00</td><td>0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720 0.42% 0.62% 0.00 2.00</td><td>0 744 0.00% 0.14% 9,021 0.00% 0.04% 2 744 0.27% 0.57% 0.00 2.00</td><td>2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744 1.61% 0.70% 2.00 2.00</td><td>1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720 1.53% 0.79% 3.00 2.14</td><td>0 744 0.00% 0.14% 8,990 0.00% 0.03% 24 744 3.23% 1.04% 0.00 2.14</td><td>0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721 0.00% 0.95% 0.00 2.14</td><td>0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744 0.00% 0.87% 0.00 2.14</td></t<>	in the month in the month year-to-date in the month in the month year-to-date in the month in the month in the month year-to-date in the month year-to-date	0 744 0.00% 0.00% 9,021 0.00% 0.00% 7 744 0.94% 0.94% 0.94% 0.00 0.00	0 672 0.00% 0.00% 0 8,112 0.00% 0.00% 0 672 0.00% 0.49% 0.00	0 743 0.00% 0.00% 9,002 0.00% 0.00% 2 743 0.27% 0.42% 0.00 0.00	4 720 0.56% 0.14% 16 8,717 0.18% 0.05% 7 720 0.97% 0.56% 2.00 2.00	3 744 0.40% 0.19% 6 9,033 0.07% 0.05% 8 744 1.08% 0.66% 2.00 2.00	0 720 0.00% 0.16% 0 8,723 0.00% 0.04% 3 720 0.42% 0.62% 0.00 2.00	0 744 0.00% 0.14% 9,021 0.00% 0.04% 2 744 0.27% 0.57% 0.00 2.00	2 744 0.27% 0.15% 5 9,071 0.06% 0.04% 12 744 1.61% 0.70% 2.00 2.00	1 720 0.14% 0.15% 2 8,723 0.02% 0.04% 11 720 1.53% 0.79% 3.00 2.14	0 744 0.00% 0.14% 8,990 0.00% 0.03% 24 744 3.23% 1.04% 0.00 2.14	0 721 0.00% 0.12% 0 8,763 0.00% 0.03% 0 721 0.00% 0.95% 0.00 2.14	0 744 0.00% 0.11% 0 8,993 0.00% 0.03% 0 744 0.00% 0.87% 0.00 2.14

*Calendar days from reservation date; for June 2018 forward, business days from market date



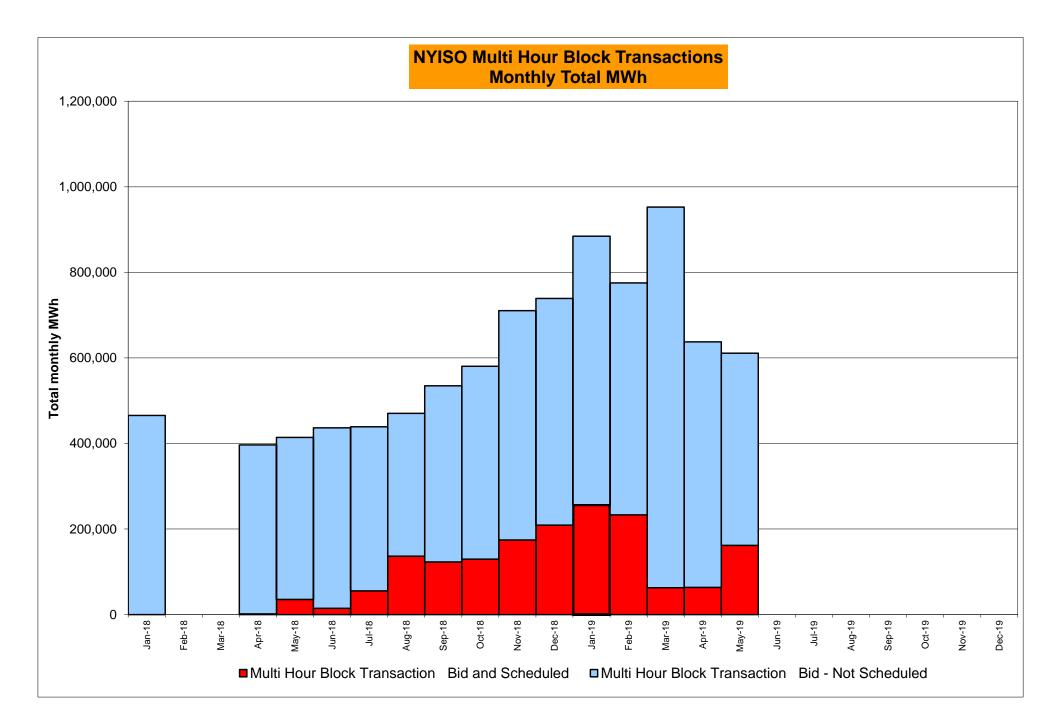
*Calendar days from reservation date; for June 2018 forward, business days from market date

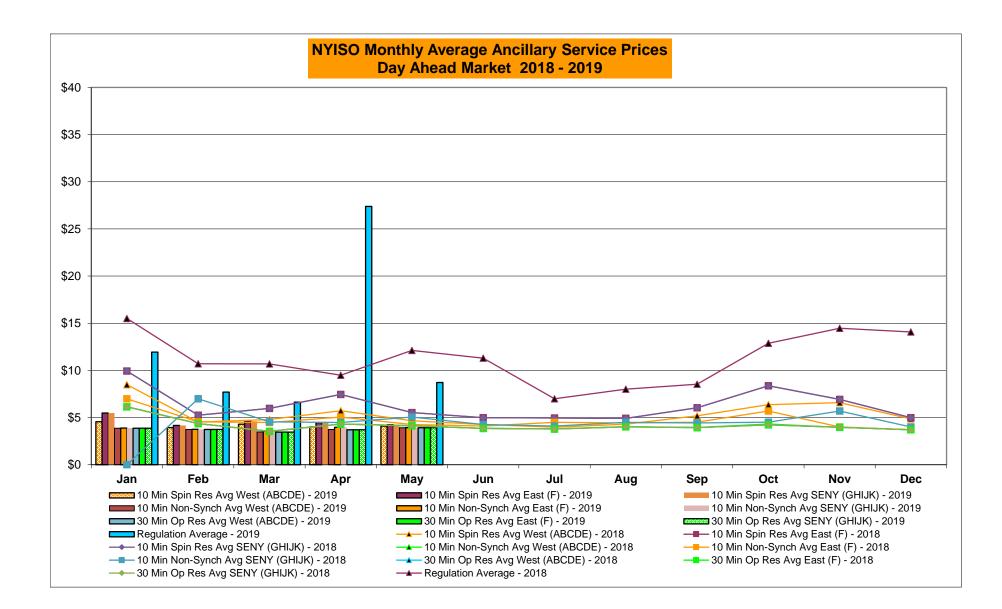


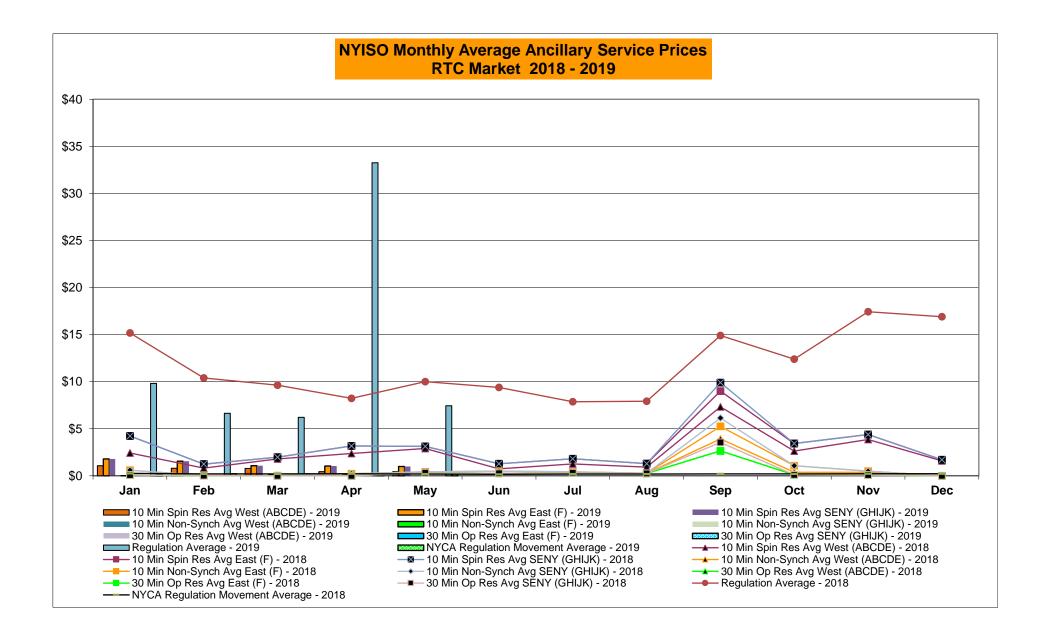


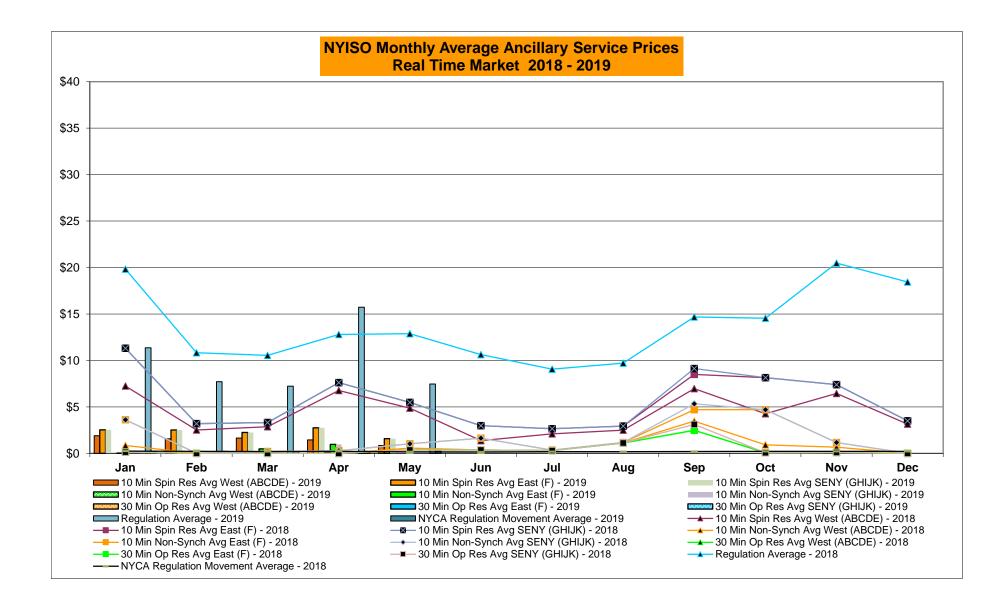
Virtual Load and Supply Zonal Statistics (Average MWh/day) - 2019

		Virtual L	oad Bid	Virtual S	upply Bid			Virtual L	oad Bid	Virtual Su	upply Bid			Virtual L	oad Bid	Virtual Su	upply Bid
			Not		Not				Not		Not				Not		Not
Zone	Date	Scheduled	Scheduled	Scheduled	Scheduled	Zone	Date	Scheduled	Scheduled	Scheduled	Scheduled	Zone	Date	Scheduled	Scheduled	Scheduled	Scheduled
WEST	Jan-19			1,609	797	MHK VL	Jan-19			1,965		DUNWOD	Jan-19			2,651	203
	Feb-19	,			921		Feb-19			1,709			Feb-19	,	494	3,273	
	Mar-19	,			569		Mar-19						Mar-19	,	471	3,571	199
	Apr-19				461		Apr-19			1,904	331		Apr-19			3,278	
	May-19		5,165	818	783		May-19 Jun-19		32	2,337	489		May-19 Jun-19		153	2,999	255
	Jun-19 Jul-19						Jul-19						Jul-19				
	Aug-19						Aug-19						Aug-19				
	Sep-19						Sep-19						Sep-19				
	Oct-19						Oct-19						Oct-19				
	Nov-19						Nov-19						Nov-19				
	Dec-19						Dec-19						Dec-19				
GENESE	Jan-19	527	153	3,560	529	CAPITL	Jan-19	3,042	962	1,550	1,424	N.Y.C.	Jan-19	3,665	3,061	2,599	1,366
GLNLGL	Feb-19				529	CAFIL	Feb-19		485	1,851	1,424	N. 1. O.	Feb-19		2,025	2,399	
	Mar-19			3,224	432		Mar-19			2,004	1,666		Mar-19	,	1,774	2,240	
	Apr-19				475		Apr-19			2,102	1,111		Apr-19	,	656	2,869	
	May-19			2,680	1,446		May-19			3,006	2,580		May-19		977	3,304	
	Jun-19						Jun-19						Jun-19				
	Jul-19						Jul-19						Jul-19				
	Aug-19						Aug-19						Aug-19				
	Sep-19						Sep-19						Sep-19				
	Oct-19						Oct-19						Oct-19				
	Nov-19						Nov-19						Nov-19				
	Dec-19						Dec-19						Dec-19				
NORTH	Jan-19				1,553	HUD VL	Jan-19			9,176		LONGIL	Jan-19		2,135	3,091	1,056
	Feb-19				1,743		Feb-19			7,408	7,858		Feb-19		1,297	3,446	
	Mar-19			,	1,845		Mar-19	,	,	8,787	4,948		Mar-19			3,372	
	Apr-19				1,823		Apr-19						Apr-19		1,386		
	May-19 Jun-19		446	4,995	2,954		May-19 Jun-19		457	6,634	9,871		May-19 Jun-19		1,430	3,396	1,359
	Jul-19						Jul-19						Jul-19				
	Aug-19						Aug-19						Aug-19				
	Sep-19						Sep-19						Sep-19				
	Oct-19						Oct-19						Oct-19				
	Nov-19						Nov-19						Nov-19				
	Dec-19						Dec-19						Dec-19				
CENTRL	Jan-19	3,795	374	30,145	507	MILLWD	Jan-19	405	386	2,051	169	NYISO	Jan-19	27,683	14,720	64,802	15,203
	Feb-19				609		Feb-19				247		Feb-19		7,905	62,089	
	Mar-19				542		Mar-19				155		Mar-19			60,159	
	Apr-19	3,475	150	22,748	453		Apr-19	686	215	1,636	371		Apr-19	28,247	6,153	58,038	18,807
	May-19		195	26,474	474		May-19		226	1,687	505		May-19		9,615	58,331	25,035
	Jun-19						Jun-19						Jun-19				
	Jul-19						Jul-19						Jul-19				
	Aug-19						Aug-19						Aug-19				
	Sep-19						Sep-19						Sep-19				
	Oct-19					_	Oct-19						Oct-19				
	Nov-19 Dec-19						Nov-19 Dec-19						Nov-19 Dec-19				









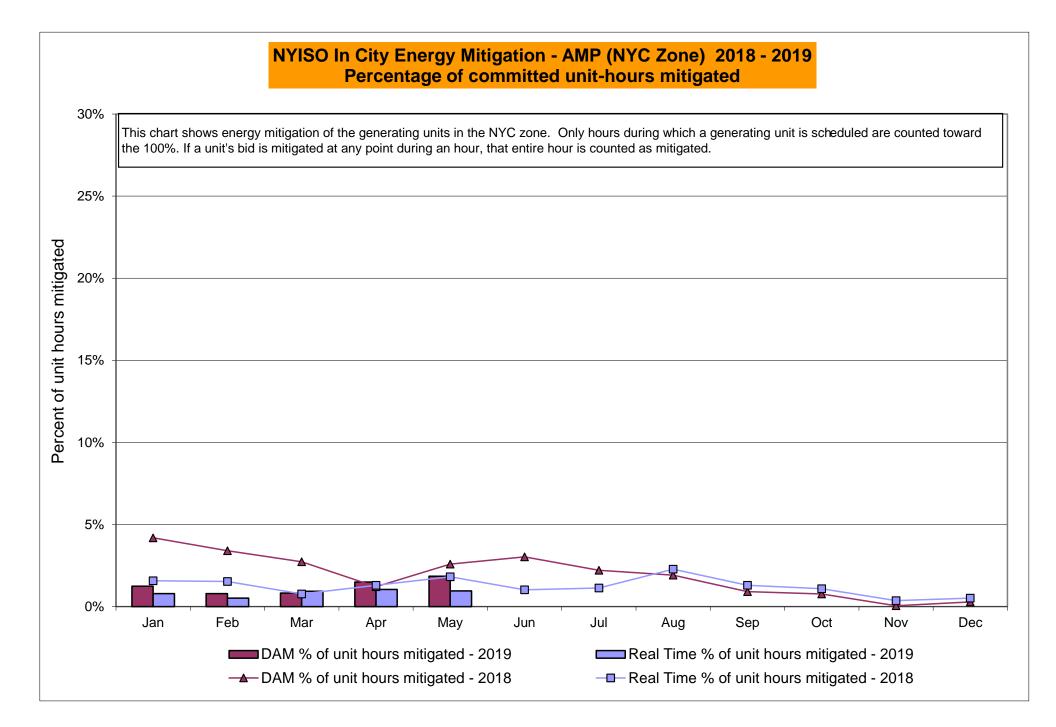
NYISO Markets Ancillary Services Statistics - Unweighted Price (\$/MWH)

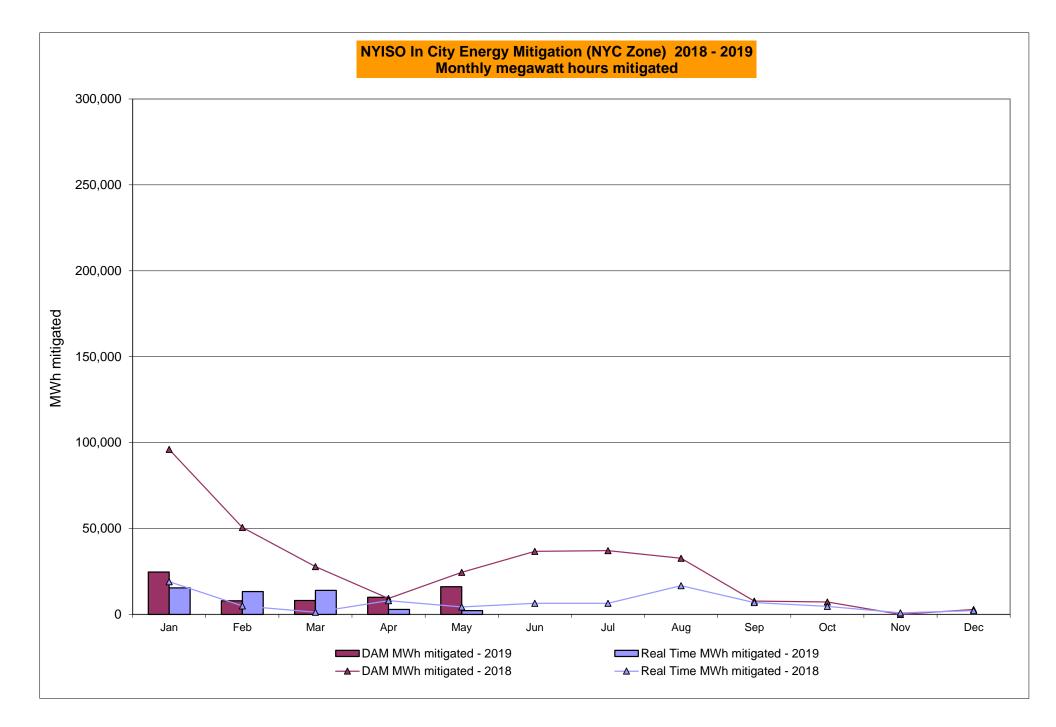
		arkers A	ncillary	Jei vices	Statistics	- Unwe	ignieu
<u>2019</u>	January	<u>February</u>	March	<u>April</u>	May	<u>June</u>	<u>July</u>
Day Ahead Market	<u>oundary</u>	robraary	Maron	<u>April</u>	<u>iviay</u>		<u>o'ary</u>
10 Min Spin SENY (GHIJK)	5.47	4.17	4.61	4.46	4.25		
10 Min Spin East (F)	5.47	4.17	4.61	4.46	4.25		
10 Min Spin West (ABCDE)	4.56	3.94	4.30	4.01	4.09		
10 Min Non Synch SENY (GHIJK)	3.88	3.75	3.57	3.96	3.94		
10 Min Non Synch East (F)	3.88	3.75	3.57	3.96	3.94		
10 Min Non Synch West (ABCDE)	3.86	3.74	3.47	3.73	3.91		
30 Min SENY (GHIJK)	3.86	3.74	3.46	3.73	3.91		
30 Min East (F)	3.86	3.74	3.40	3.71	3.91		
30 Min West (ABCDE)	3.86	3.74	3.46	3.71	3.91		
Regulation	11.94	7.69	5.40 6.62	27.38	8.71		
Regulation	11.94	7.09	0.02	27.30	0.71		
RTC Market							
10 Min Spin SENY (GHIJK)	1.80	1.55	1.08	1.04	0.99		
10 Min Spin East (F)	1.80	1.55	1.08	1.04	0.99		
10 Min Spin West (ABCDE)	1.08	0.80	0.79	0.44	0.44		
10 Min Non Synch SENY (GHIJK)	0.01	0.08	0.11	0.13	0.00		
10 Min Non Synch East (F)	0.01	0.08	0.11	0.13	0.00		
10 Min Non Synch West (ABCDE)	0.00	0.01	0.01	0.00	0.00		
30 Min SENY (GHIJK)	0.00	0.01	0.01	0.00	0.00		
30 Min East (F)	0.00	0.01	0.01	0.00	0.00		
30 Min West (ABCDE)	0.00	0.01	0.01	0.00	0.00		
Regulation	9.81	6.64	6.21	33.26	7.45		
NYCA Regulation Movement	0.23	0.22	0.21	0.25	0.24		
NTCA Regulation movement	0.23	0.22	0.21	0.25	0.24		
<u>Real Time Market</u>							
10 Min Spin SENY (GHIJK)	2.53	2.51	2.24	2.75	1.58		
10 Min Spin East (F)	2.53	2.51	2.24	2.75	1.58		
10 Min Spin West (ABCDE)	1.89	1.57	1.64	1.45	0.85		
10 Min Non Synch SENY (GHIJK)	0.03	0.18	0.48	0.96	0.00		
10 Min Non Synch East (F)	0.03	0.18	0.48	0.96	0.00		
10 Min Non Synch West (ABCDE)	0.00	0.01	0.09	0.17	0.00		
30 Min SENY (GHIJK)	0.00	0.01	0.03	0.00	0.00		
30 Min East (F)	0.00	0.01	0.03	0.00	0.00		
30 Min West (ABCDE)	0.00	0.01	0.03	0.00	0.00		
Regulation	11.36	7.72	7.23	15.73	7.47		
•							
NYCA Regulation Movement	0.22	0.22	0.20	0.25	0.23		
<u>2018</u>	January	February	March	April	May	lune	huby
Day Ahead Market	January	rebluary	March	April	iviay	<u>June</u>	<u>July</u>
	0.02	E 04	F 07	7 45	5 50	4 09	4.05
10 Min Spin SENY (GHIJK)	9.93	5.24	5.97	7.45	5.52	4.98	4.95
10 Min Spin East (F)	9.93	5.24	5.97	7.45	5.52	4.98	4.95
10 Min Spin West (ABCDE)	8.49	4.53	4.78	5.73	4.65	4.26	3.98
10 Min Non Synch SENY (GHIJK)	6.99	4.54	4.48	5.05	4.26	4.09	4.49
10 Min Non Synch East (F)	6.99	4.54	4.48	5.05	4.26	4.09	4.49
10 Min Non Synch West (ABCDE)	6.15	4.36	3.54	4.31	4.13	3.85	3.80
30 Min SENY (GHIJK)	6.14	4.36	3.54	4.31	4.13	3.85	3.79
30 Min East (F)	6.14	4.36	3.54	4.31	4.13	3.85	3.79
30 Min West (ABCDE)	6.14	4.36	3.54	4 0 4			
Regulation			5.54	4.31	4.13	3.85	3.79
	15.51	10.70	10.68	4.31 9.49	4.13 12.11		3.79 6.99
RTC Market	15.51					3.85	
RTC Market 10 Min Spin SENY (GHUK)		10.70	10.68	9.49	12.11	3.85 11.30	6.99
10 Min Spin SENY (GHIJK)	4.23	10.70 1.24	10.68 1.98	9.49 3.17	12.11 3.13	3.85 11.30 1.28	6.99 1.81
10 Min Spin SENY (GHIJK) 10 Min Spin East (F)	4.23 4.23	10.70 1.24 1.24	10.68 1.98 1.98	9.49 3.17 3.17	12.11 3.13 3.13	3.85 11.30 1.28 1.28	6.99 1.81 1.81
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE)	4.23 4.23 2.43	10.70 1.24 1.24 0.82	10.68 1.98 1.98 1.79	9.49 3.17 3.17 2.38	12.11 3.13 3.13 2.91	3.85 11.30 1.28 1.28 0.74	6.99 1.81 1.81 1.27
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK)	4.23 4.23 2.43 0.59	10.70 1.24 1.24 0.82 0.03	10.68 1.98 1.98 1.79 0.01	9.49 3.17 3.17 2.38 0.22	12.11 3.13 3.13 2.91 0.42	3.85 11.30 1.28 1.28 0.74 0.49	6.99 1.81 1.81 1.27 0.42
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F)	4.23 4.23 2.43 0.59 0.59	10.70 1.24 1.24 0.82 0.03 0.03	10.68 1.98 1.98 1.79 0.01 0.01	9.49 3.17 3.17 2.38 0.22 0.22	12.11 3.13 3.13 2.91 0.42 0.42	3.85 11.30 1.28 1.28 0.74 0.49 0.49	6.99 1.81 1.81 1.27 0.42 0.42
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE)	4.23 4.23 2.43 0.59 0.59 0.08	10.70 1.24 1.24 0.82 0.03 0.03 0.03 0.02	10.68 1.98 1.79 0.01 0.01 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27	6.99 1.81 1.81 1.27 0.42 0.42 0.33
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK)	4.23 4.23 2.43 0.59 0.59 0.08 0.08	10.70 1.24 1.24 0.82 0.03 0.03 0.02 0.02	10.68 1.98 1.79 0.01 0.01 0.00 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27	6.99 1.81 1.81 1.27 0.42 0.42 0.33 0.33
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F)	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08	10.70 1.24 1.24 0.82 0.03 0.03 0.02 0.02 0.02 0.02	10.68 1.98 1.79 0.01 0.00 0.00 0.00 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27	6.99 1.81 1.81 1.27 0.42 0.42 0.33 0.33 0.33
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE)	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 0.08	10.70 1.24 1.24 0.82 0.03 0.03 0.02 0.02 0.02 0.02 0.02	10.68 1.98 1.79 0.01 0.01 0.00 0.00 0.00 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27 0.27	6.99 1.81 1.81 1.27 0.42 0.42 0.42 0.33 0.33 0.33 0.33
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 0.08 15.17	10.70 1.24 1.24 0.82 0.03 0.03 0.02 0.02 0.02 0.02 10.40	10.68 1.98 1.79 0.01 0.01 0.00 0.00 0.00 0.00 9.63	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27 0.27 9.39	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE)	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 0.08	10.70 1.24 1.24 0.82 0.03 0.03 0.02 0.02 0.02 0.02 0.02	10.68 1.98 1.79 0.01 0.01 0.00 0.00 0.00 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27 0.27	6.99 1.81 1.81 1.27 0.42 0.42 0.42 0.33 0.33 0.33 0.33
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 0.08 15.17	10.70 1.24 1.24 0.82 0.03 0.03 0.02 0.02 0.02 0.02 10.40	10.68 1.98 1.79 0.01 0.01 0.00 0.00 0.00 0.00 9.63	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27 0.27 9.39	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 0.08 15.17	10.70 1.24 1.24 0.82 0.03 0.03 0.02 0.02 0.02 0.02 10.40	10.68 1.98 1.79 0.01 0.01 0.00 0.00 0.00 0.00 9.63	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27 0.27 9.39	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement <u>Real Time Market</u> 10 Min Spin SENY (GHIJK)	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 15.17 0.26 11.31	10.70 1.24 1.24 0.82 0.03 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19	10.68 1.98 1.79 0.01 0.01 0.00 0.00 0.00 0.00 9.63 0.20 3.31	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22 0.22 7.62	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 10.01 0.19 5.48	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27 0.27 9.39 0.16 2.98	6.99 1.81 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87 0.19 2.65
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement Real Time Market 10 Min Spin SENY (GHIJK) 10 Min Spin East (F)	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 15.17 0.26 11.31 11.31	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19	$\begin{array}{c} 10.68\\ 1.98\\ 1.98\\ 1.79\\ 0.01\\ 0.01\\ 0.00\\ 0.00\\ 0.00\\ 0.00\\ 9.63\\ 0.20\\ \end{array}$	9.49 3.17 3.17 2.38 0.22 0.22 0.22 0.00 0.00 0.00 0.00 0.0	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27 0.27 9.39 0.16 2.98 2.98	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement <u>Real Time Market</u> 10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE)	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 15.17 0.26 11.31 11.31 11.31 7.24	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 2.52	10.68 1.98 1.79 0.01 0.00 0.00 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 6.77	$\begin{array}{c} 12.11\\ 3.13\\ 3.13\\ 2.91\\ 0.42\\ 0.42\\ 0.33\\ 0.32\\ 0.32\\ 0.32\\ 10.01\\ 0.19\\ \hline 5.48\\ 5.48\\ 4.86\end{array}$	3.85 11.30 1.28 1.28 0.74 0.49 0.49 0.27 0.27 0.27 0.27 0.27 9.39 0.16 2.98 2.98 2.98 1.37	6.99 1.81 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.65 2.10
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement Real Time Market 10 Min Spin SENY (GHIJK) 10 Min Spin West (ABCDE) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK)	4.23 4.23 2.43 0.59 0.59 0.08 0.08 0.08 0.08 15.17 0.26 11.31 11.31 11.31 7.24 3.61	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 3.19 2.52 0.01	10.68 1.98 1.79 0.01 0.00 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86 0.19	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 7.62 6.77 0.28	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48 4.86 1.03	$\begin{array}{c} 3.85\\ 11.30\\ \\ 1.28\\ 1.28\\ 0.74\\ 0.49\\ 0.49\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.27\\ 0.39\\ 0.16\\ \end{array}$	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.65 2.10 0.35
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement Real Time Market 10 Min Spin SENY (GHIJK) 10 Min Spin West (ABCDE) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F)	$\begin{array}{c} 4.23\\ 4.23\\ 2.43\\ 0.59\\ 0.59\\ 0.08\\ 0.08\\ 0.08\\ 15.17\\ 0.26\\ \end{array}$ $\begin{array}{c} 11.31\\ 11.31\\ 11.31\\ 7.24\\ 3.61\\ 3.61\\ 3.61\\ \end{array}$	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 2.52 0.01 0.01	10.68 1.98 1.79 0.01 0.00 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86 0.19 0.19	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 7.62 6.77 0.28 0.28	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48 4.86 1.03 1.03	3.85 11.30 1.28 1.28 0.74 0.49 0.27 0.26 0.26 0.16	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.10 0.35 0.35
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement Real Time Market 10 Min Spin SENY (GHIJK) 10 Min Spin West (ABCDE) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE)	$\begin{array}{c} 4.23\\ 4.23\\ 2.43\\ 0.59\\ 0.59\\ 0.08\\ 0.08\\ 0.08\\ 15.17\\ 0.26\\ \end{array}$ $\begin{array}{c} 11.31\\ 11.31\\ 11.31\\ 7.24\\ 3.61\\ 3.61\\ 0.85\\ \end{array}$	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 3.19 2.52 0.01 0.01 0.01 0.00	10.68 1.98 1.98 1.79 0.01 0.00 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86 0.19 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 7.62 6.77 0.28 0.28 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48 4.86 1.03 1.03 0.57	3.85 11.30 1.28 1.28 0.74 0.49 0.27 0.39 0.16	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.65 2.10 0.35 0.35 0.29
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement <u>Real Time Market</u> 10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK)	$\begin{array}{c} 4.23\\ 4.23\\ 2.43\\ 0.59\\ 0.59\\ 0.08\\ 0.08\\ 0.08\\ 15.17\\ 0.26\\ \end{array}$ $\begin{array}{c} 11.31\\ 11.31\\ 11.31\\ 7.24\\ 3.61\\ 3.61\\ 3.61\\ 0.85\\ 0.13\\ \end{array}$	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 3.19 2.52 0.01 0.01 0.00 0.00	10.68 1.98 1.79 0.01 0.00 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86 0.19 0.19 0.00 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 7.62 6.77 0.28 0.28 0.00 0.00 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48 4.86 1.03 1.03 1.03 0.57 0.37	3.85 11.30 1.28 0.74 0.49 0.27 0.39 0.16 1.63 1.63 0.37 0.37	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.65 2.10 0.35 0.29 0.29 0.29
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement Real Time Market 10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F)	$\begin{array}{c} 4.23\\ 4.23\\ 2.43\\ 0.59\\ 0.59\\ 0.08\\ 0.08\\ 0.08\\ 15.17\\ 0.26\\ \end{array}$ $\begin{array}{c} 11.31\\ 11.31\\ 11.31\\ 7.24\\ 3.61\\ 3.61\\ 3.61\\ 0.85\\ 0.13\\ 0.13\\ 0.13\\ \end{array}$	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 2.52 0.01 0.01 0.00 0.00 0.00	10.68 1.98 1.79 0.01 0.00 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86 0.19 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 7.62 6.77 0.28 0.28 0.28 0.00 0.00 0.00 0.00 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48 4.86 1.03 1.03 0.57 0.37 0.37	3.85 11.30 1.28 1.28 0.74 0.49 0.27 0.37 0.37 0.37	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.65 2.65 2.65 2.10 0.35 0.29 0.29 0.29 0.29
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement Real Time Market 10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min East (F) 30 Min East (F) 30 Min West (ABCDE)	$\begin{array}{c} 4.23\\ 4.23\\ 2.43\\ 0.59\\ 0.59\\ 0.08\\ 0.08\\ 0.08\\ 15.17\\ 0.26\\ \end{array}$ $\begin{array}{c} 11.31\\ 11.31\\ 11.31\\ 7.24\\ 3.61\\ 3.61\\ 0.85\\ 0.13\\ 0.13\\ 0.13\\ 0.13\\ 0.13\\ \end{array}$	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 2.52 0.01 0.01 0.00 0.00 0.00 0.00	10.68 1.98 1.79 0.01 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86 0.19 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 7.62 7.62 7.62 6.77 0.28 0.28 0.00 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.28 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48 4.86 1.03 1.03 0.57 0.37 0.37 0.37 0.37	3.85 11.30 1.28 1.28 0.74 0.49 0.27 0.37 0.37 0.37	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.10 0.35 0.29 0.29 0.29 0.29 0.29
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement Real Time Market 10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min SENY (ABCDE) Regulation	$\begin{array}{c} 4.23 \\ 4.23 \\ 2.43 \\ 0.59 \\ 0.59 \\ 0.08 \\ 0.08 \\ 0.08 \\ 15.17 \\ 0.26 \\ \end{array}$ $\begin{array}{c} 11.31 \\ 11.31 \\ 11.31 \\ 7.24 \\ 3.61 \\ 3.61 \\ 3.61 \\ 0.85 \\ 0.13 \\ 0.13 \\ 0.13 \\ 0.13 \\ 19.82 \\ \end{array}$	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 2.52 0.01 0.01 0.01 0.00 0.00 0.00 0.00 10.82	10.68 1.98 1.79 0.01 0.00 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86 0.19 0.19 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 7.62 7.62 7.62 6.77 0.28 0.28 0.00 0.00 0.00 0.00 0.00 0.00 0.22 0.22 0.00 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.28 0.00 0.00 0.00 0.00 0.00 0.28 0.00 0.00 0.00 0.00 0.28 0.00 0.00 0.00 0.00 0.28 0.00 0.00 0.00 0.00 0.28 0.00 0.00 0.00 0.00 0.28 0.00 0.00 0.00 0.00 0.28 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48 4.86 1.03 1.03 1.03 0.57 0.37 0.37 0.37 0.37 12.88	3.85 11.30 1.28 1.28 0.74 0.49 0.27 0.37 0.37 0.37 1.62	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.10 0.35 0.29 0.29 0.29 0.29 9.06
10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min West (ABCDE) Regulation NYCA Regulation Movement Real Time Market 10 Min Spin SENY (GHIJK) 10 Min Spin East (F) 10 Min Spin West (ABCDE) 10 Min Non Synch SENY (GHIJK) 10 Min Non Synch East (F) 10 Min Non Synch West (ABCDE) 30 Min SENY (GHIJK) 30 Min SENY (GHIJK) 30 Min East (F) 30 Min East (F) 30 Min East (F) 30 Min West (ABCDE)	$\begin{array}{c} 4.23\\ 4.23\\ 2.43\\ 0.59\\ 0.59\\ 0.08\\ 0.08\\ 0.08\\ 15.17\\ 0.26\\ \end{array}$ $\begin{array}{c} 11.31\\ 11.31\\ 11.31\\ 7.24\\ 3.61\\ 3.61\\ 0.85\\ 0.13\\ 0.13\\ 0.13\\ 0.13\\ 0.13\\ \end{array}$	10.70 1.24 1.24 0.82 0.03 0.02 0.02 0.02 0.02 10.40 0.21 3.19 3.19 2.52 0.01 0.01 0.00 0.00 0.00 0.00	10.68 1.98 1.79 0.01 0.00 0.00 0.00 9.63 0.20 3.31 3.31 2.86 0.19 0.00	9.49 3.17 3.17 2.38 0.22 0.22 0.00 0.00 0.00 0.00 8.22 0.22 7.62 7.62 7.62 7.62 7.62 6.77 0.28 0.28 0.00 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.22 0.28 0.00	12.11 3.13 3.13 2.91 0.42 0.42 0.33 0.32 0.32 0.32 10.01 0.19 5.48 5.48 4.86 1.03 1.03 0.57 0.37 0.37 0.37 0.37	3.85 11.30 1.28 1.28 0.74 0.49 0.27 0.37 0.37 0.37	6.99 1.81 1.27 0.42 0.42 0.33 0.33 0.33 0.33 0.33 7.87 0.19 2.65 2.65 2.10 0.35 0.29 0.29 0.29 0.29 0.29

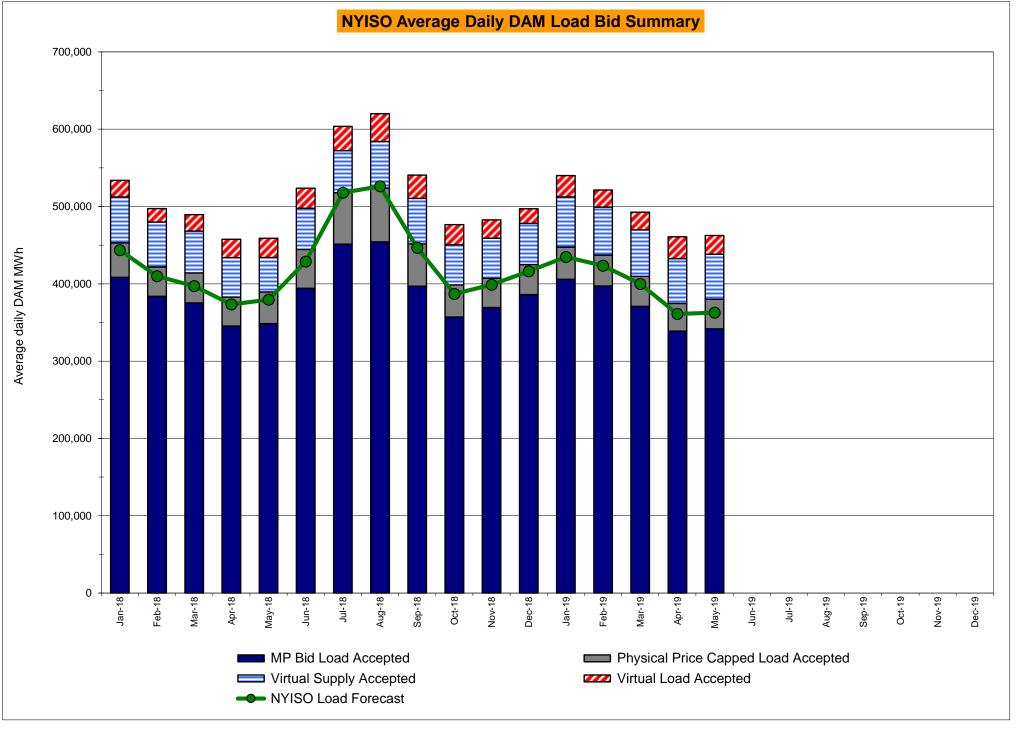
August September

October November December

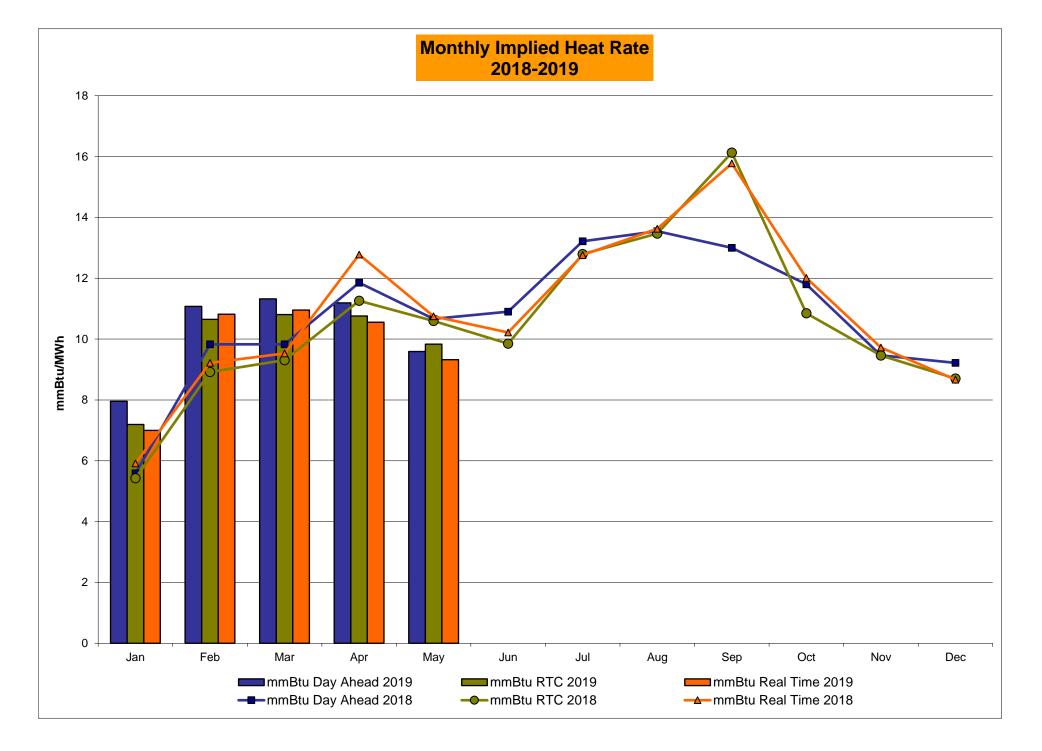
<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	December
4.91	6.04	8.37	6.93	4.99
4.91	6.04	8.37 8.37	6.93	4.99
4.91	5.18	6.36	6.57	4.99
4.30	4.51	5.69	4.00	3.71
4.43	4.51	5.69	4.00	3.71
4.43	3.95	4.31	3.97	3.70
4.02	3.94	4.22	3.97	3.70
4.02	3.94	4.22	3.97	3.70
4.02	3.94	4.22	3.97	3.70
8.00	8.54	12.88	14.47	14.07
0.00	0.01	12.00		1
1.29	9.90	3.43	4.39	1.71
1.29	9.00	3.43	4.39	1.71
0.93	7.33	2.63	3.85	1.58
0.27	6.14	1.07	0.50	0.00
0.27	5.25	1.07	0.50	0.00
0.25	3.92	0.38	0.38	0.00
0.25	3.55	0.11	0.09	0.00
0.25	2.65	0.11	0.09	0.00
0.25	2.65	0.11	0.09	0.00
7.92	14.90	12.40	17.43	16.90
0.19	0.20	0.21	0.22	0.22
2.93	9.13	8.14	7.39	3.49
2.93	8.50	8.14	7.39	3.49
2.50	6.96	4.26	6.45	3.15
1.16	5.33	4.70	1.16	0.00
1.16	4.70	4.70	1.16	0.00
1.12	3.47	0.92	0.67	0.00
1.12	3.11	0.06	0.10	0.00
1.12	2.48	0.06	0.10	0.00
1.12	2.48	0.06	0.10	0.00
9.71	14.67	14.54	20.48	18.44
0.18	0.20	0.21	0.22	0.21



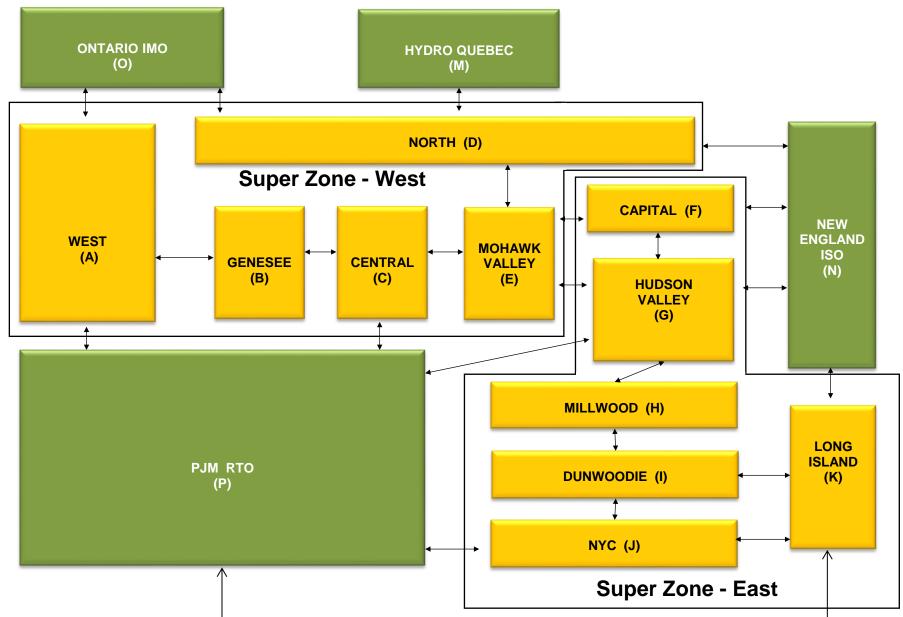




Market Mitigation and Analysis Prepared: 6/11/2019 2:34 PM



NYISO LBMP ZONES



Market Mitigation and Analysis Prepared: 6/11/2019 2:34 PM

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

The Mission of the New York Independent System Operator is to:

- Serve the public interest and
- Provide benefit to stakeholders 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





