

# Market Operations Report

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Rana Mukerji

SENIOR VICE PRESIDENT – MARKET STRUCTURES, NYISO

**Business Issues Committee Meeting**

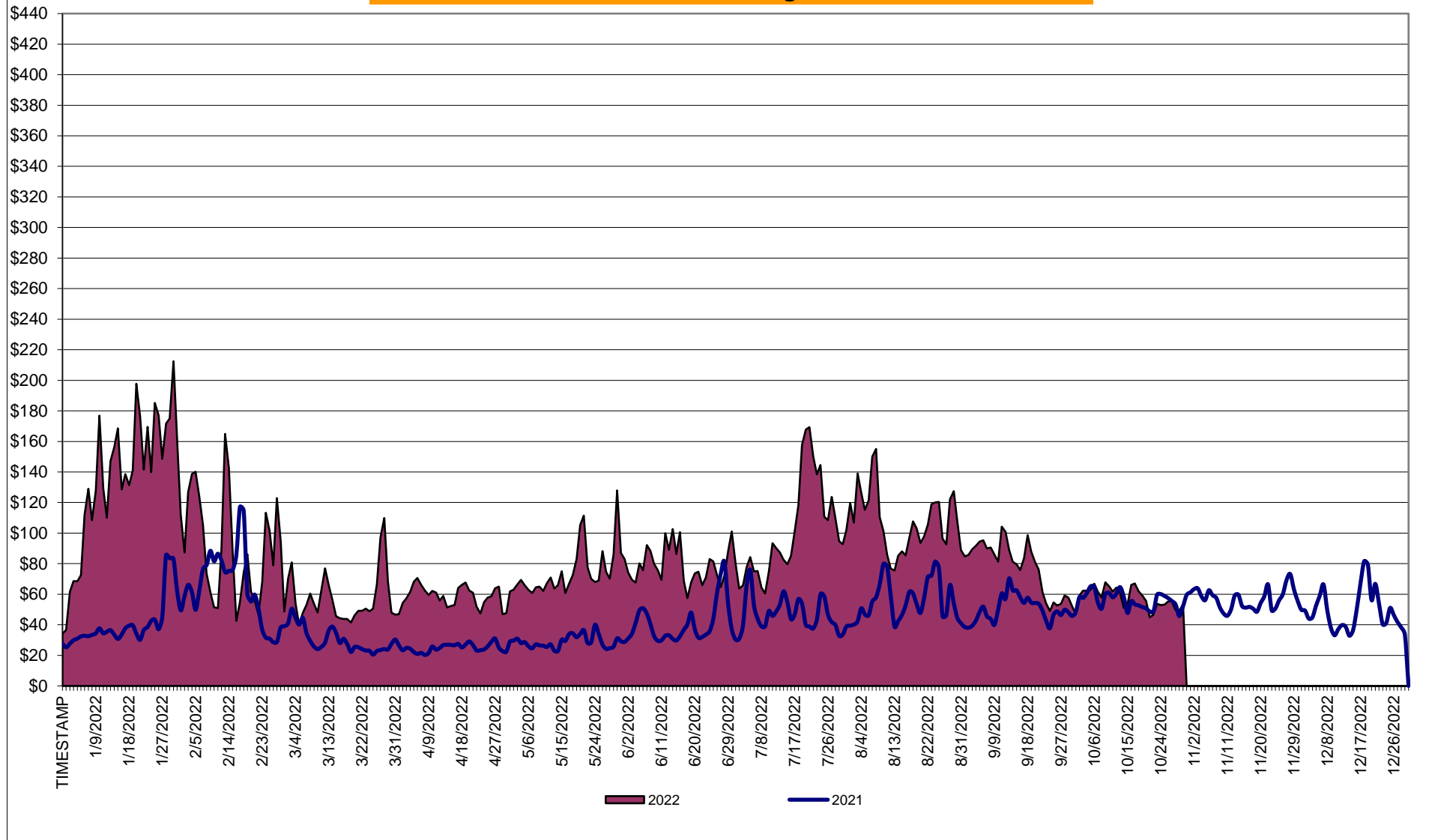
November 16, 2022 Rensselaer, NY

# Market Performance Highlights

## October 2022

- LBMP for October is \$53.11/MWh; lower than \$78.91/MWh in September 2022 and higher than \$52.97/MWh in October 2021.
  - Day Ahead Load Weighted LBMPs and Real Time Load Weighted LBMPs are lower compared to September.
- October 2022 average year-to-date monthly cost of \$89.47/MWh is a 93% increase from \$46.35/MWh in October 2021.
- Average daily sendout is 359 GWh/day in October; lower than 411 GWh/day in September 2022 and 373 GWh/day in October 2021.
- Natural gas prices are lower and distillate prices are higher compared to the previous month.
  - Natural Gas (Transco Z6 NY) was \$4.68/MMBtu, down from \$6.60/MMBtu in September.
  - Natural gas prices (Transco Z6 NY) are up 3.8% year-over-year.
  - Jet Kerosene Gulf Coast was \$27.55/MMBtu, up from \$24.01/MMBtu in September.
  - Ultra Low Sulfur No.2 Diesel NY Harbor was \$30.66/MMBtu, up from \$24.66/MMBtu in September.
  - Distillate prices are up 66.8% year-over-year.
- Uplift per MWh is higher compared to the previous month.
  - Uplift (not including NYISO cost of operations) is (\$0.45)/MWh; higher than (\$0.78)/MWh in September.
    - Local Reliability Share is \$0.27/MWh, lower than \$0.39/MWh in September.
    - Statewide Share is (\$0.72)/MWh, higher than (\$1.18)/MWh in September.
  - TSA \$ per NYC MWh is \$0.00/MWh.
  - Total uplift costs (Schedule 1 components including NYISO Cost of Operations) are higher than September.

**Daily NYISO Average Cost/MWh (Energy & Ancillary Services)\***  
**2021 Annual Average \$47.59/MWh**  
**October 2021 YTD Average \$46.35/MWh**  
**October 2022 YTD Average \$89.47/MWh**



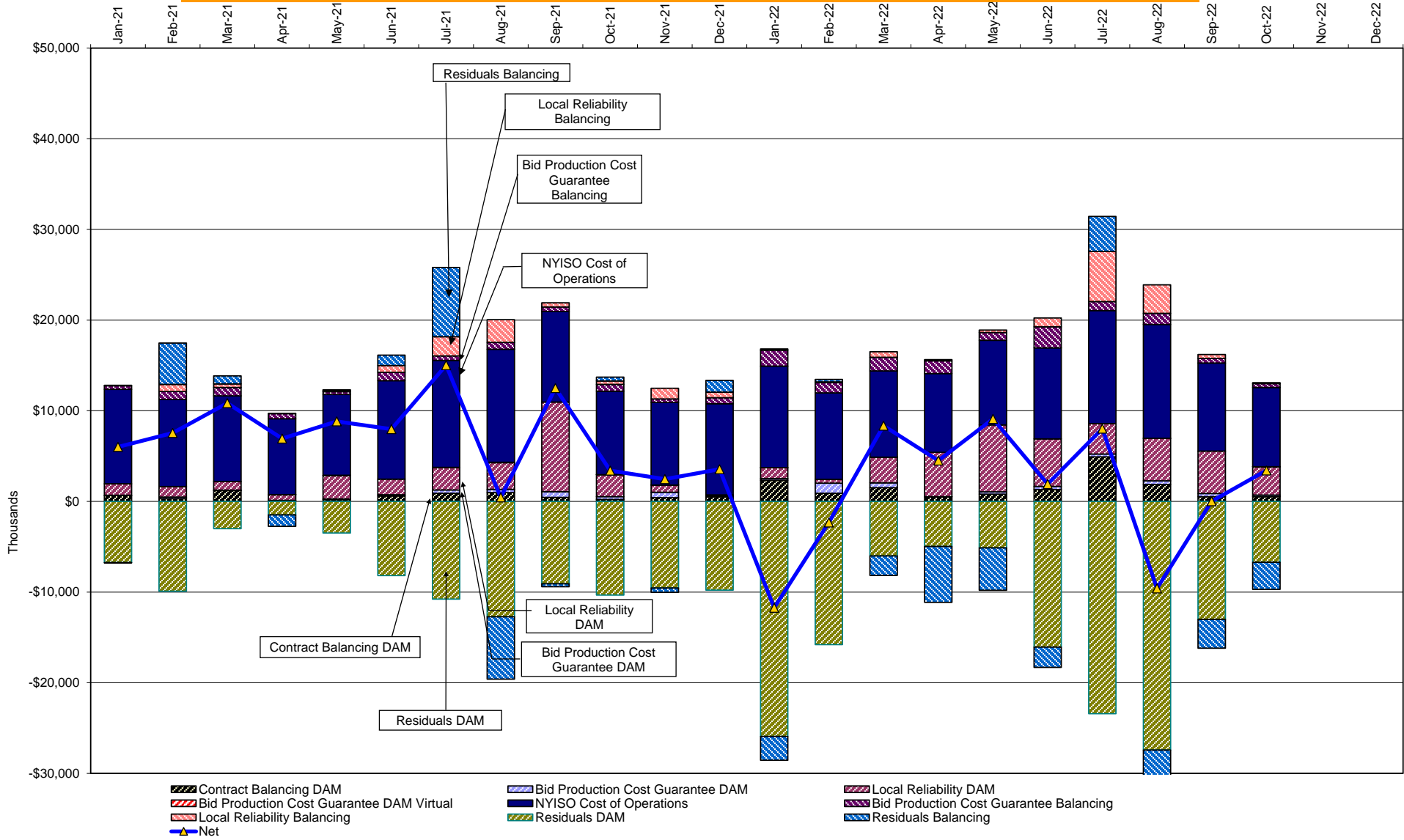
\* Excludes ICAP payments.

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

<b>2022</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	134.79	94.06	56.78	56.46	70.60	76.72	99.47	108.85	78.91	53.11		
NTAC	1.43	0.95	1.48	1.17	2.46	2.07	3.65	1.69	1.44	3.21		
Reserve	1.26	1.21	0.83	0.81	0.74	0.66	0.87	0.65	0.86	1.02		
Regulation	0.27	0.19	0.17	0.12	0.13	0.15	0.12	0.13	0.18	0.18		
NYISO Cost of Operations	0.73	0.72	0.74	0.74	0.74	0.75	0.76	0.76	0.76	0.73		
FERC Fee Recovery	0.07	0.08	0.09	0.10	0.09	0.08	0.06	0.06	0.09	0.10		
Uplift	(1.50)	(1.73)	(0.09)	(0.36)	(0.05)	(0.61)	(1.58)	(1.91)	(0.78)	(0.45)		
Uplift: Local Reliability Share	0.09	0.04	0.27	0.43	0.60	0.46	0.54	0.47	0.39	0.27		
Uplift: Statewide Share	(1.59)	(1.77)	(0.36)	(0.79)	(0.65)	(1.07)	(2.12)	(2.38)	(1.18)	(0.72)		
Voltage Support and Black Start	0.42	0.41	0.43	0.43	0.43	0.43	0.43	0.43	0.44	0.42		
<b>Avg Monthly Cost</b>	<b>137.41</b>	<b>95.82</b>	<b>60.34</b>	<b>59.38</b>	<b>75.07</b>	<b>80.17</b>	<b>103.73</b>	<b>110.61</b>	<b>81.81</b>	<b>58.26</b>		
Avg YTD Cost	137.49	118.36	100.65	91.92	88.82	87.37	90.31	93.42	92.27	89.47		
TSA \$ per NYC MWh	0.00	2.98	0.00	0.00	0.11	0.00	3.98	1.70	0.06	0.00		
<b>2021</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	37.83	63.70	28.59	22.79	25.72	39.37	45.16	55.48	47.68	52.97	53.92	47.99
NTAC	1.35	1.20	1.26	1.54	2.09	2.05	2.01	1.37	1.23	1.67	2.03	1.40
Reserve	0.49	0.81	0.57	0.56	0.54	0.45	0.44	0.44	0.50	0.75	0.70	0.57
Regulation	0.07	0.13	0.09	0.10	0.08	0.07	0.06	0.05	0.09	0.13	0.15	0.11
NYISO Cost of Operations	0.74	0.74	0.74	0.74	0.76	0.76	0.76	0.76	0.75	0.74	0.75	0.73
FERC Fee Recovery	0.08	0.09	0.09	0.11	0.10	0.08	0.07	0.06	0.08	0.09	0.09	0.08
Uplift	(0.31)	(0.15)	0.11	(0.12)	(0.19)	(0.50)	(0.09)	(0.81)	0.00	(0.59)	(0.58)	(0.48)
Uplift: Local Reliability Share	0.09	0.15	0.11	0.06	0.22	0.17	0.30	0.33	0.78	0.23	0.16	0.05
Uplift: Statewide Share	(0.40)	(0.30)	0.00	(0.18)	(0.41)	(0.68)	(0.39)	(1.14)	(0.78)	(0.81)	(0.74)	(0.53)
Voltage Support and Black Start	0.43	0.43	0.43	0.44	0.44	0.44	0.44	0.44	0.44	0.43	0.44	0.42
<b>Avg Monthly Cost</b>	<b>40.61</b>	<b>66.87</b>	<b>31.81</b>	<b>26.06</b>	<b>29.45</b>	<b>42.65</b>	<b>48.79</b>	<b>57.73</b>	<b>50.70</b>	<b>56.11</b>	<b>57.43</b>	<b>50.76</b>
Avg YTD Cost	40.69	52.99	46.57	42.41	40.10	40.59	42.05	44.63	45.34	46.35	47.29	47.59
TSA \$ per NYC MWh	0.00	0.00	0.00	0.00	0.52	0.90	0.93	0.24	0.56	0.39	0.10	0.00

\* Excludes ICAP payments.  
Market Mitigation and Analysis  
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## NYISO Dollar Flows - Uplift - OATT Schedule 1 components - Data through October 31, 2022



DAM Contract Balancing amounts are for payments made to generating units to make them whole for being dispatched below their Day-Ahead schedule, as a result of out-of-merit dispatches.  
 DAM Bid Production Cost Guarantees for Virtual Transactions are included in the chart and are shown from the inception of Virtual Transactions. These values are small and cannot be identified on the chart.  
 DAM residuals consist of both energy and loss revenue collections and payments. By design, there is a net over collection of revenues due to the difference between the marginal losses paid to generation and the average losses charged to loads.

## NYISO Markets Transactions

<u>2022</u>	<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 Market MWh</u></b>	14,327,101	12,477,485	12,137,757	10,992,578	12,176,102	12,945,740	15,905,937	15,770,210	12,467,212	11,527,745		
DAM LSE Internal LBMP Energy Sales	57%	56%	59%	56%	55%	60%	64%	63%	62%	58%		
DAM External TC LBMP Energy Sales	7%	8%	3%	5%	6%	3%	3%	3%	2%	3%		
DAM Bilateral - Internal Bilaterals	28%	28%	29%	31%	31%	29%	26%	26%	27%	30%		
DAM Bilateral - Import/Non-LBMP Market Bilaterals	4%	4%	4%	5%	4%	4%	4%	5%	6%	5%		
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	2%	2%	2%	2%	2%	1%	1%	2%	2%		
DAM Bilateral - Wheel Through Bilaterals	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%		
<b><u>Balancing Energy Market MWh</u></b>	942,823	742,449	758,386	772,666	378,503	464,231	567,602	785,464	361,883	379,932		
Balancing Energy LSE Internal LBMP Energy Sales	88%	83%	76%	60%	65%	66%	72%	86%	66%	45%		
Balancing Energy External TC LBMP Energy Sales	16%	19%	24%	33%	32%	36%	23%	14%	34%	55%		
Balancing Energy Bilateral - Internal Bilaterals	1%	2%	2%	0%	5%	2%	1%	0%	1%	0%		
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%		
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	4%	9%	8%	7%	9%	8%	6%	3%	5%	7%		
Balancing Energy Bilateral - Wheel Through Bilaterals	-9%	-13%	-10%	-1%	-12%	-14%	-4%	-3%	-5%	-7%		
<b><u>Transactions Summary</u></b>												
LBMP	67%	66%	65%	62%	63%	64%	68%	68%	65%	62%		
Internal Bilaterals	26%	27%	27%	29%	30%	28%	25%	25%	27%	29%		
Import Bilaterals	3%	4%	4%	4%	4%	4%	3%	4%	6%	5%		
Export Bilaterals	2%	2%	2%	2%	2%	2%	2%	1%	2%	2%		
Wheels Through	1%	1%	2%	2%	2%	2%	1%	1%	2%	1%		
<b><u>Market Share of Total Load</u></b>												
Day Ahead Market	93.8%	94.4%	94.1%	93.4%	97.0%	96.5%	96.6%	95.3%	97.2%	96.8%		
Balancing Energy +	6.2%	5.6%	5.9%	6.6%	3.0%	3.5%	3.4%	4.7%	2.8%	3.2%		
Total MWh	15,269,924	13,219,933	12,896,143	11,765,244	12,554,605	13,409,971	16,473,538	16,555,674	12,829,095	11,907,677		
Average Daily Energy Sendout/Month GWh	451	429	390	359	372	422	509	514	411	359		

<u>2021</u>	<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 Market MWh</u></b>	14,108,848	13,325,329	12,843,278	11,204,262	11,854,214	14,120,662	15,843,724	16,032,238	12,759,550	11,852,213	11,496,431	13,068,538
DAM LSE Internal LBMP Energy Sales	60%	59%	56%	55%	56%	61%	65%	64%	61%	59%	60%	57%
DAM External TC LBMP Energy Sales	5%	4%	3%	2%	2%	3%	2%	4%	3%	4%	3%	6%
DAM Bilateral - Internal Bilaterals	31%	30%	32%	35%	35%	29%	27%	26%	29%	30%	32%	30%
DAM Bilateral - Import/Non-LBMP Market Bilaterals	1%	4%	4%	5%	4%	4%	3%	3%	4%	4%	3%	3%
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%	2%
DAM Bilateral - Wheel Through Bilaterals	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	1%	2%
<b><u>Balancing Energy Market MWh</u></b>	29,179	-308,157	-70,279	30,603	-36,350	247,874	-367,232	454,982	543,392	511,553	639,571	675,223
Balancing Energy LSE Internal LBMP Energy Sales	-215%	-151%	-367%	-456%	-398%	53%	-135%	82%	65%	63%	74%	87%
Balancing Energy External TC LBMP Energy Sales	374%	59%	365%	578%	440%	60%	41%	34%	40%	39%	26%	18%
Balancing Energy Bilateral - Internal Bilaterals	49%	4%	27%	34%	0%	-1%	3%	3%	1%	2%	2%	2%
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	50%	5%	32%	34%	21%	5%	3%	2%	4%	5%	7%	8%
Balancing Energy Bilateral - Wheel Through Bilaterals	-158%	-17%	-158%	-90%	-163%	-17%	-11%	-21%	-9%	-10%	-8%	-15%
<b><u>Transactions Summary</u></b>												
LBMP	65%	62%	59%	57%	58%	65%	66%	69%	66%	64%	65%	65%
Internal Bilaterals	31%	31%	33%	35%	35%	29%	28%	25%	27%	28%	30%	28%
Import Bilaterals	1%	4%	4%	5%	4%	3%	3%	3%	4%	4%	3%	3%
Export Bilaterals	2%	2%	2%	2%	2%	2%	1%	1%	2%	2%	2%	2%
Wheels Through	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	0%	1%
<b><u>Market Share of Total Load</u></b>												
Day Ahead Market	99.8%	102.4%	100.6%	99.7%	100.3%	98.3%	102.4%	97.2%	95.9%	95.9%	94.7%	95.1%
Balancing Energy +	0.2%	-2.4%	-0.6%	0.3%	-0.3%	1.7%	-2.4%	2.8%	4.1%	4.1%	5.3%	4.9%
Total MWh	14,138,027	13,017,172	12,772,999	11,234,865	11,817,864	14,368,536	15,476,492	16,487,220	13,302,943	12,363,765	12,136,001	13,743,761
Average Daily Energy Sendout/Month GWh	427	434	381	354	365	458	483	504	420	373	387	408

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

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

Notes: Percent totals may not equal 100% due to rounding.

Virtual Transactions are not reflected in this chart.

**NYISO Markets 2022 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 *	\$124.39	\$85.98	\$52.41	\$55.23	\$66.11	\$72.43	\$90.42	\$100.71	\$74.23	\$51.77		
Standard Deviation	\$51.94	\$39.56	\$18.64	\$11.05	\$21.60	\$19.84	\$40.00	\$33.52	\$22.13	\$11.85		
Load Weighted Price **	\$128.16	\$88.17	\$53.69	\$55.96	\$69.05	\$75.15	\$96.74	\$105.93	\$77.41	\$52.79		
<b><u>RTC LBMP</u></b>												
Price *	\$127.16	\$85.48	\$57.58	\$57.33	\$68.27	\$78.66	\$92.25	\$104.69	\$70.59	\$48.87		
Standard Deviation	\$77.62	\$55.20	\$38.62	\$21.09	\$42.87	\$49.85	\$49.28	\$51.96	\$28.06	\$13.16		
Load Weighted Price **	\$130.45	\$88.33	\$59.03	\$58.49	\$72.67	\$82.33	\$98.61	\$111.42	\$73.81	\$49.76		
<b><u>REAL TIME LBMP</u></b>												
Price *	\$130.43	\$83.85	\$57.00	\$54.45	\$65.07	\$74.01	\$90.23	\$105.61	\$71.11	\$49.26		
Standard Deviation	\$93.35	\$57.99	\$44.52	\$20.46	\$33.01	\$41.27	\$54.20	\$69.83	\$30.72	\$17.89		
Load Weighted Price **	\$133.98	\$86.99	\$58.64	\$55.57	\$68.60	\$77.40	\$96.79	\$113.16	\$74.57	\$50.30		
Average Daily Energy Sendout/Month GWh	451	429	390	359	372	422	509	514	411	359		

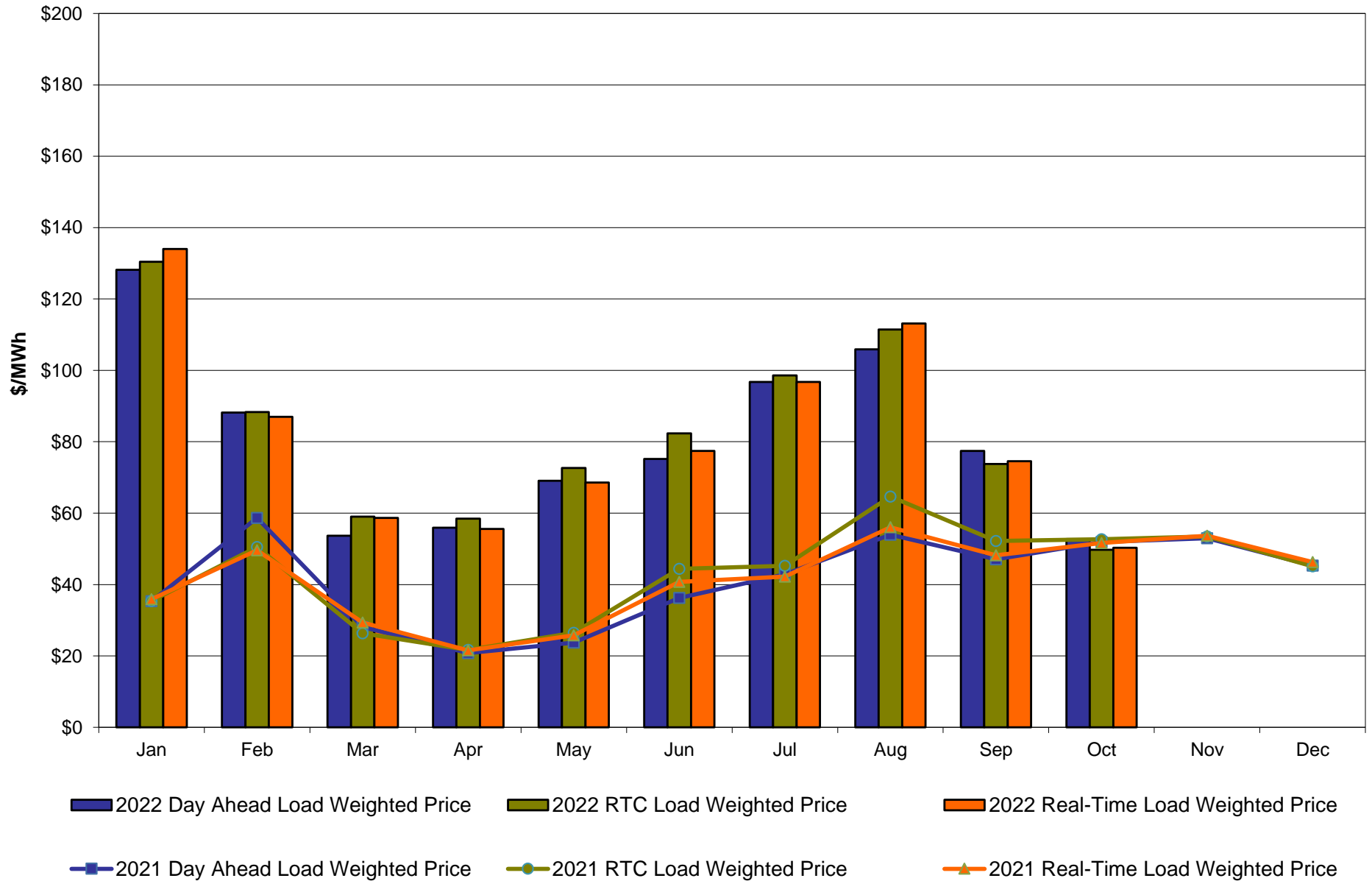
**NYISO Markets 2021 Energy Statistics**

	<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 *	\$34.37	\$57.30	\$27.47	\$20.46	\$22.95	\$33.36	\$40.38	\$50.30	\$45.48	\$50.66	\$51.90	\$44.24
Standard Deviation	\$14.58	\$24.48	\$8.23	\$4.58	\$6.28	\$15.88	\$15.56	\$22.37	\$12.42	\$11.04	\$11.83	\$13.72
Load Weighted Price **	\$35.31	\$58.67	\$28.12	\$20.81	\$23.75	\$36.28	\$42.84	\$53.93	\$47.08	\$51.92	\$52.98	\$45.33
<b><u>RTC LBMP</u></b>												
Price *	\$34.32	\$49.25	\$25.59	\$21.30	\$25.36	\$39.69	\$42.25	\$58.87	\$50.07	\$51.41	\$52.37	\$44.16
Standard Deviation	\$20.93	\$23.34	\$12.67	\$7.91	\$11.17	\$34.08	\$47.97	\$47.79	\$22.24	\$13.96	\$16.97	\$17.49
Load Weighted Price **	\$35.40	\$50.48	\$26.37	\$21.67	\$26.50	\$44.41	\$45.27	\$64.66	\$52.21	\$52.71	\$53.44	\$45.12
<b><u>REAL TIME LBMP</u></b>												
Price *	\$34.59	\$48.22	\$28.06	\$21.10	\$24.62	\$36.58	\$39.61	\$51.46	\$46.37	\$50.41	\$52.52	\$45.13
Standard Deviation	\$29.47	\$26.46	\$26.13	\$10.07	\$10.91	\$25.43	\$26.73	\$37.53	\$18.08	\$14.93	\$20.97	\$23.65
Load Weighted Price **	\$35.89	\$49.57	\$29.33	\$21.55	\$25.78	\$40.76	\$42.20	\$56.04	\$48.21	\$51.66	\$53.68	\$46.29
Average Daily Energy Sendout/Month GWh	427	434	381	354	365	458	483	504	420	373	387	408

\* Average zonal load weighted prices.

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

## NYISO Monthly Average Internal LBMPs 2021 - 2022



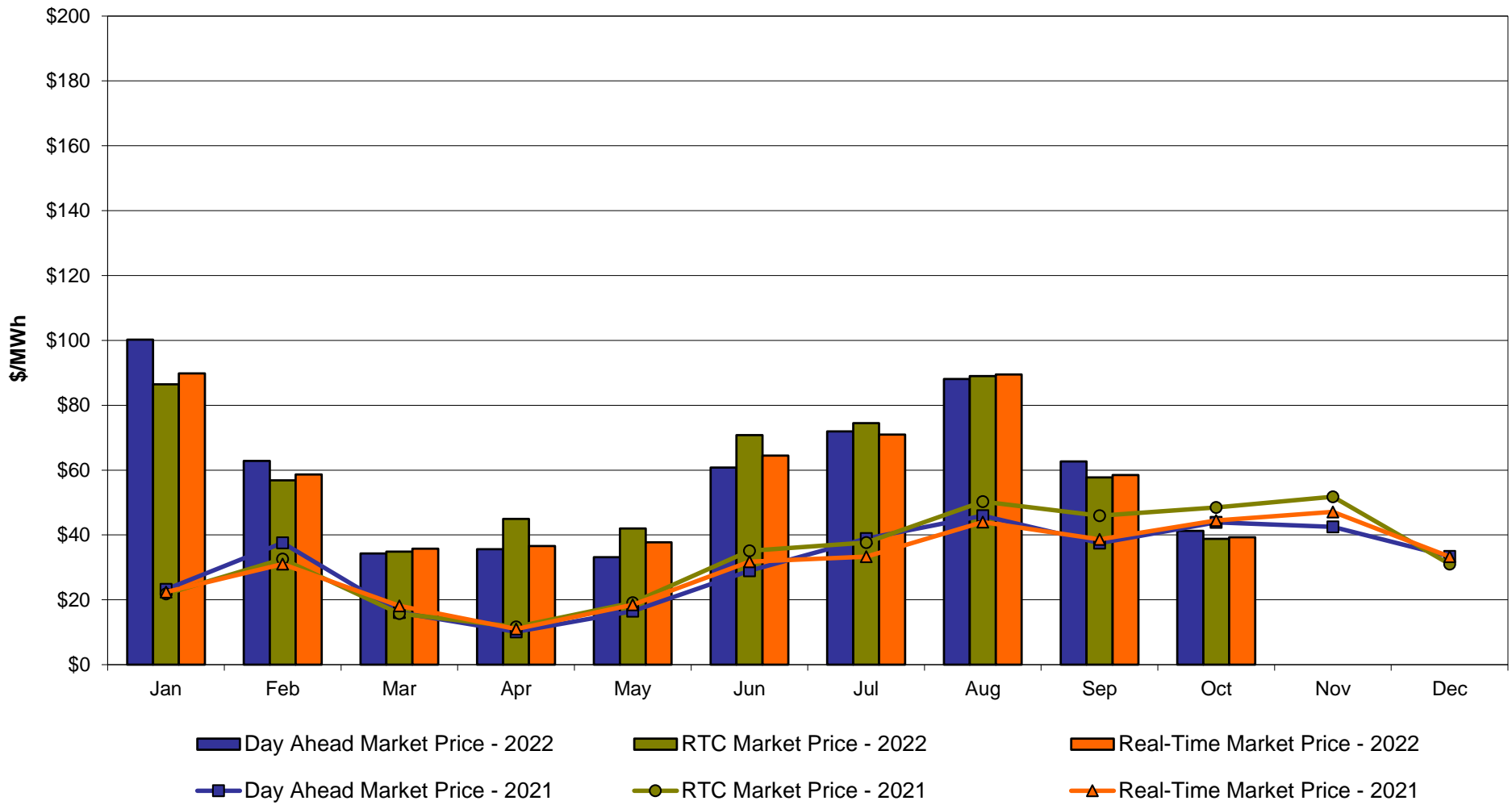


**October 2022 Zonal LBMP Statistics for NYISO (\$/MWh)**

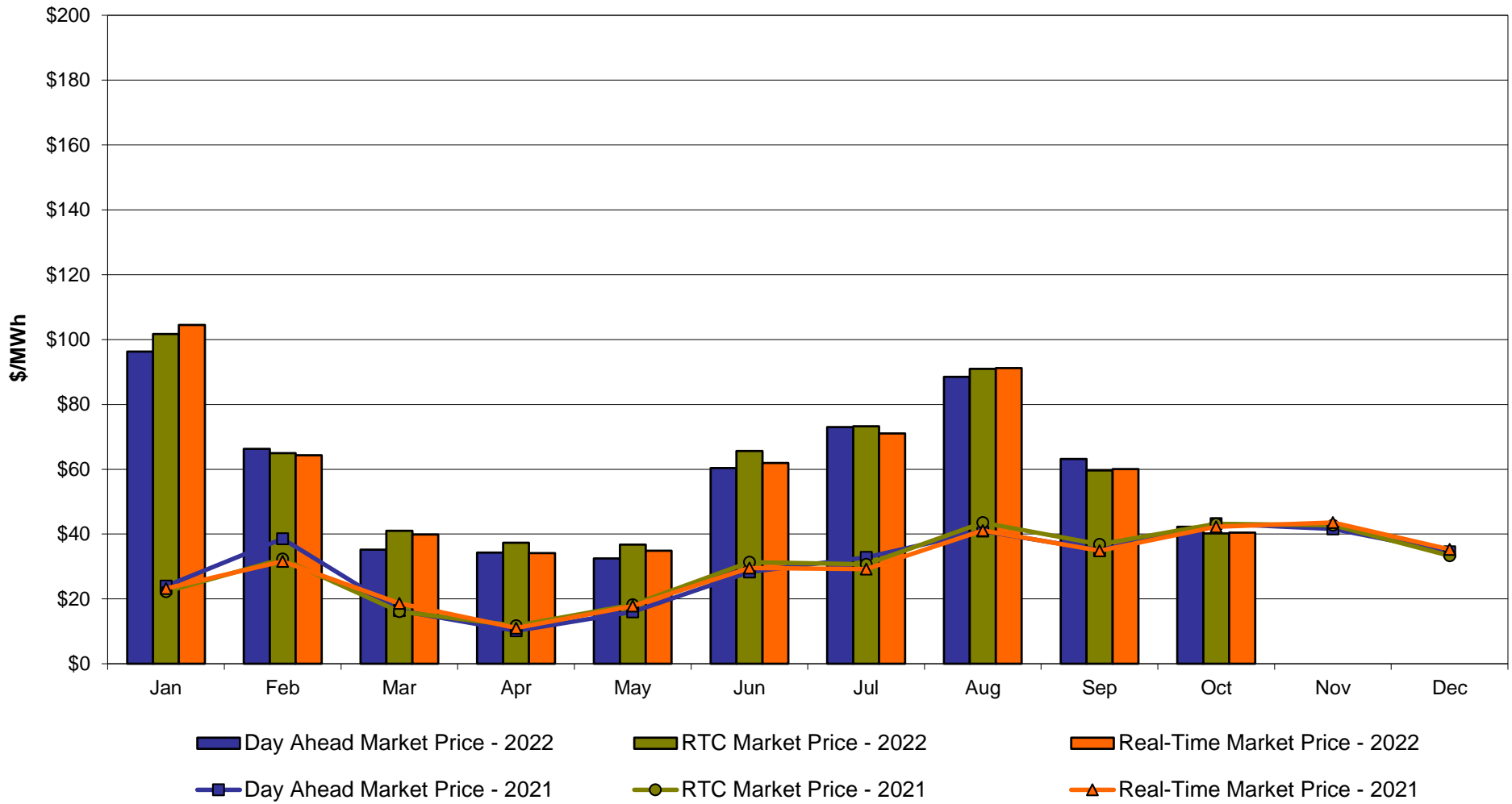
	<u>WEST Zone A</u>	<u>GENESEE Zone B</u>	<u>NORTH Zone D</u>	<u>CENTRAL Zone C</u>	<u>MOHAWK VALLEY Zone E</u>	<u>CAPITAL Zone F</u>	<u>HUDSON VALLEY Zone G</u>	<u>MILLWOOD Zone H</u>	<u>DUNWOODIE Zone I</u>	<u>NEW YORK CITY Zone J</u>	<u>LONG ISLAND Zone K</u>
<b>DAY AHEAD LBMP</b>											
Unweighted Price *	41.29	41.22	37.51	42.23	42.91	56.47	54.02	54.42	54.56	56.76	62.39
Standard Deviation	11.76	12.19	13.99	12.40	12.46	13.14	12.26	12.33	12.34	12.75	15.79
<b>RTC LBMP</b>											
Unweighted Price *	38.76	38.39	35.29	40.17	40.11	54.18	50.97	51.30	51.36	52.90	60.82
Standard Deviation	17.39	15.85	18.27	17.11	16.29	16.25	12.49	12.48	12.48	13.00	32.62
<b>REAL TIME LBMP</b>											
Unweighted Price *	39.30	39.30	35.90	40.45	40.75	54.62	51.55	51.87	51.93	53.68	59.68
Standard Deviation	20.13	19.66	21.61	19.93	19.91	22.93	19.07	19.19	19.19	19.68	27.72
	<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>DAY AHEAD LBMP</b>											
Unweighted Price *	40.34	38.49	38.49	48.11	53.34	62.94	57.12	58.58	56.64	55.46	36.37
Standard Deviation	11.41	12.95	12.95	11.26	11.73	17.77	12.50	13.57	12.74	12.36	14.14
<b>RTC LBMP</b>											
Unweighted Price *	36.96	35.74	35.74	45.25	51.17	61.37	57.93	56.38	52.43	51.86	35.10
Standard Deviation	14.64	17.63	17.63	12.15	13.61	40.48	29.95	21.94	12.73	12.66	18.45
<b>REAL TIME LBMP</b>											
Unweighted Price *	39.34	36.49	36.49	45.68	52.11	60.53	52.57	56.01	53.20	52.49	35.23
Standard Deviation	20.08	21.07	21.07	16.75	20.39	36.33	25.90	22.65	19.39	19.35	21.52

\* Straight LBMP averages

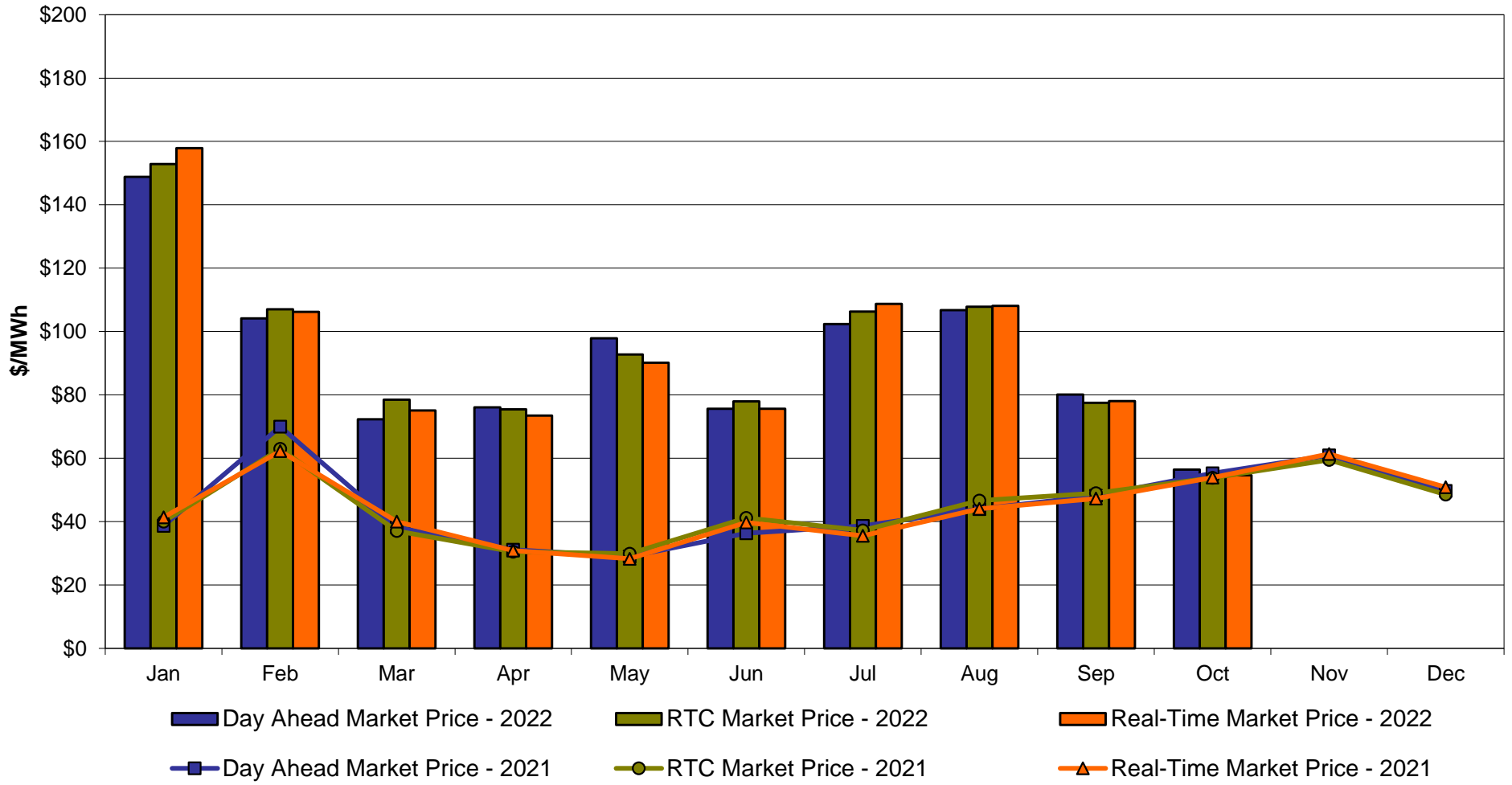
**West Zone A  
Monthly Average LBMP Prices 2021 - 2022**



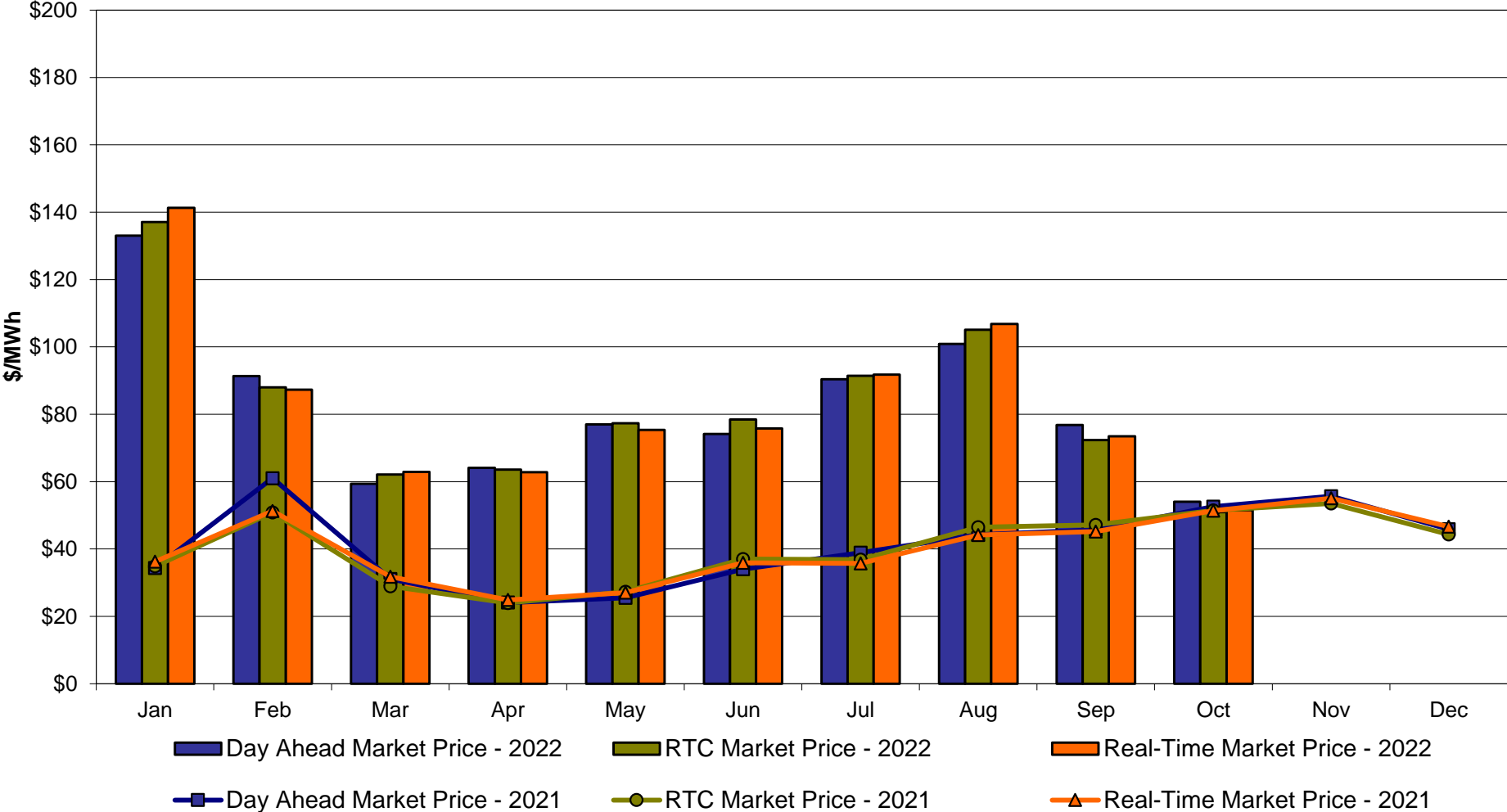
**Central Zone C  
Monthly Average LBMP Prices 2020 - 2021**



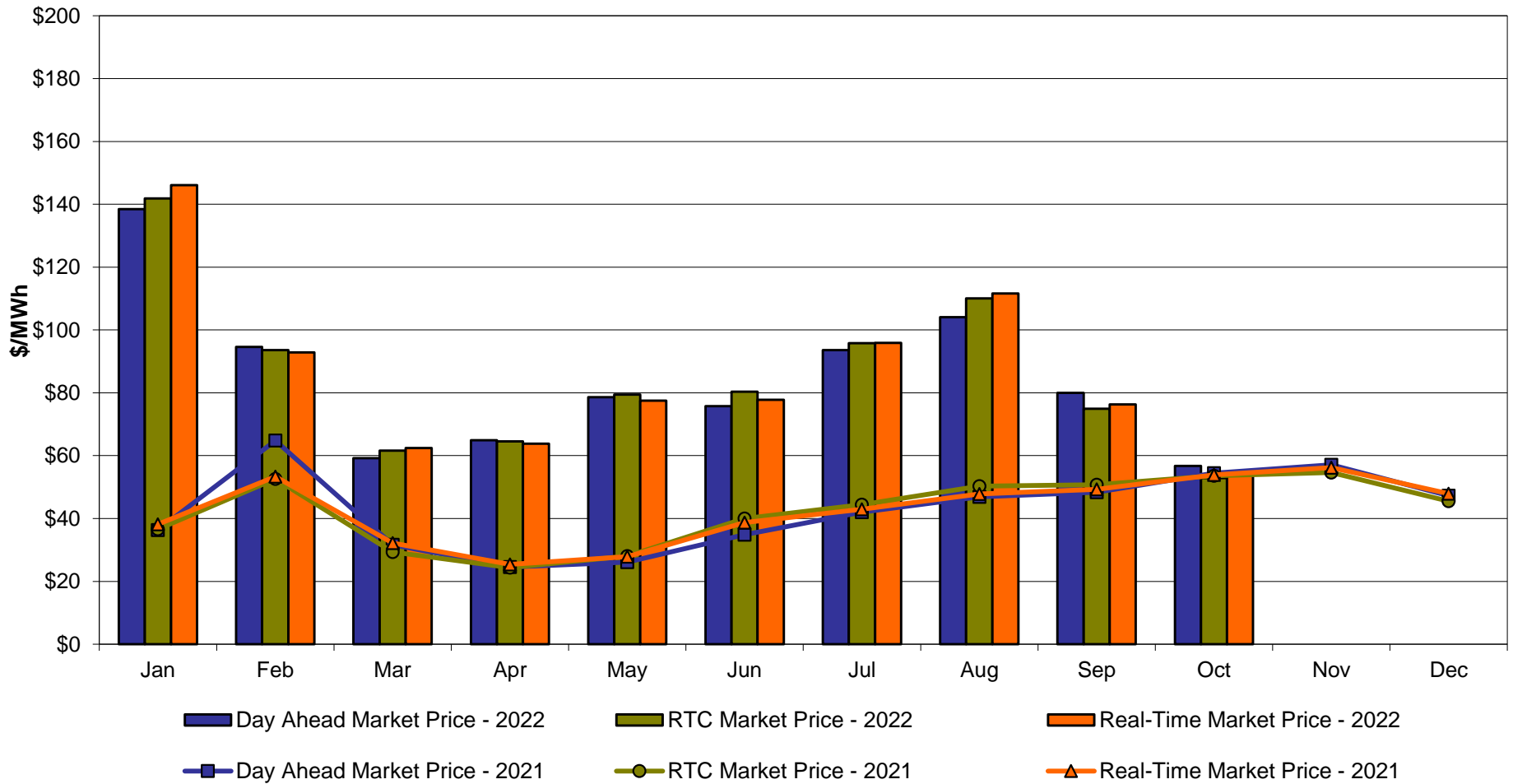
## Capital Zone F Monthly Average LBMP Prices 2021 - 2022



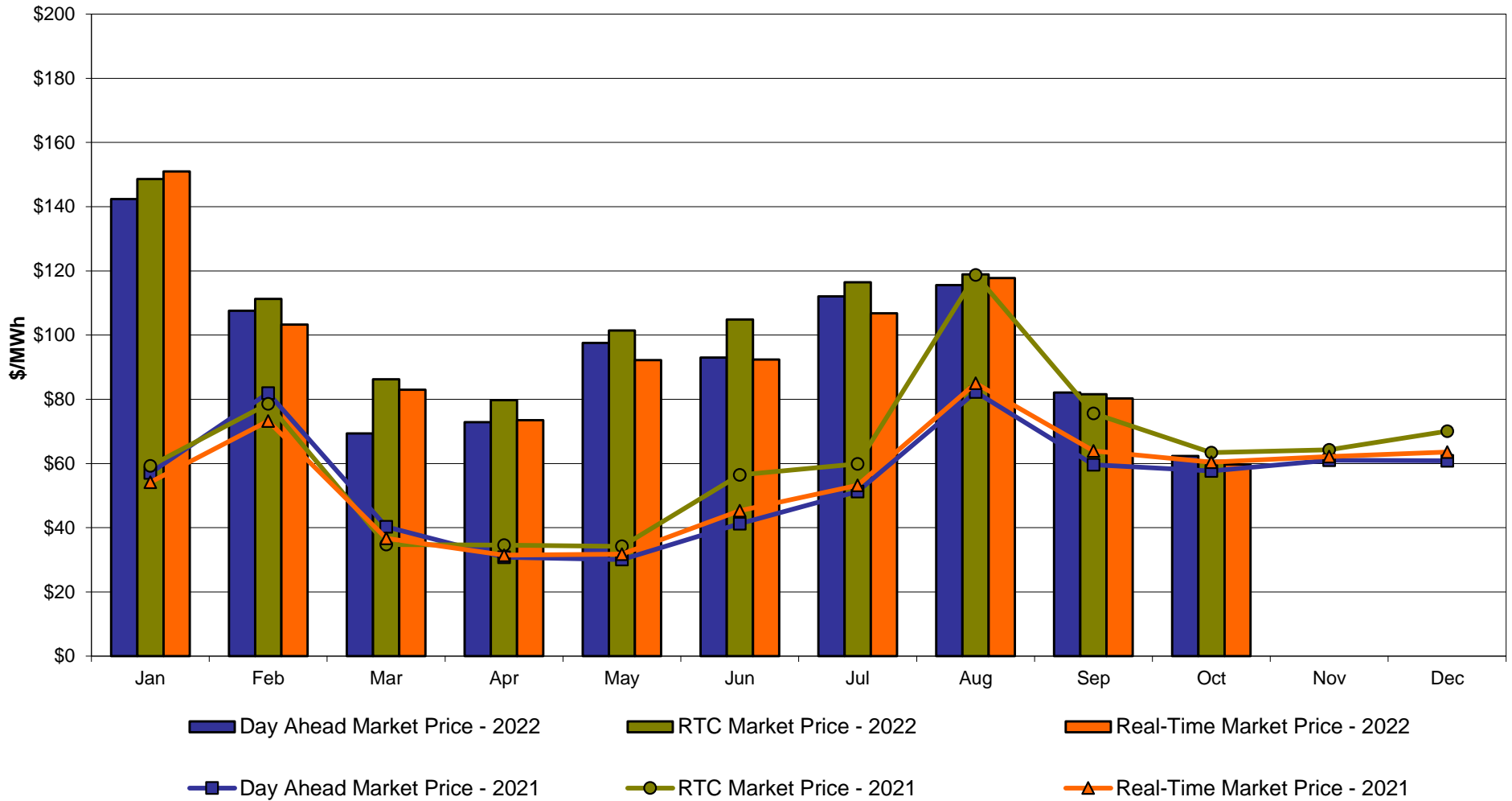
### Hudson Valley Zone G Monthly Average LBMP Prices 2020 - 2021



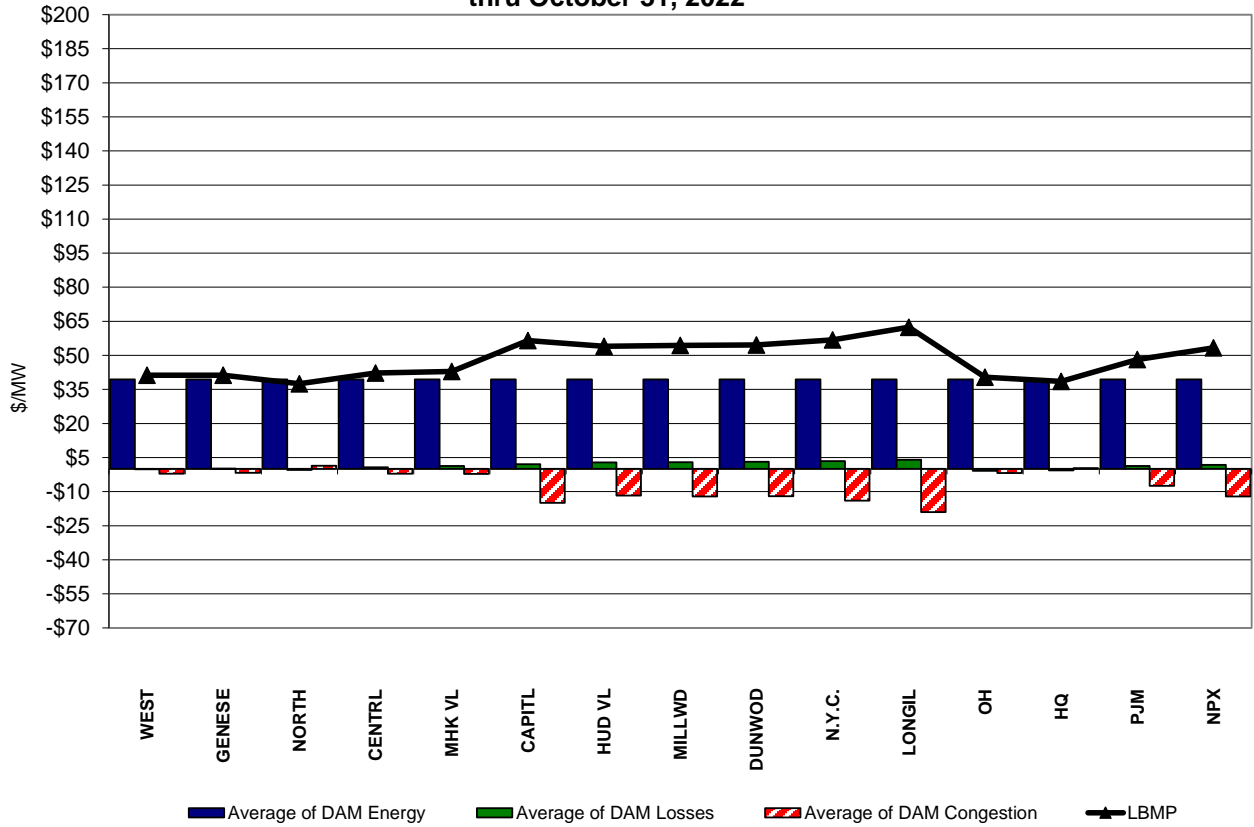
## NYC Zone J Monthly Average LBMP Prices 2021 - 2022



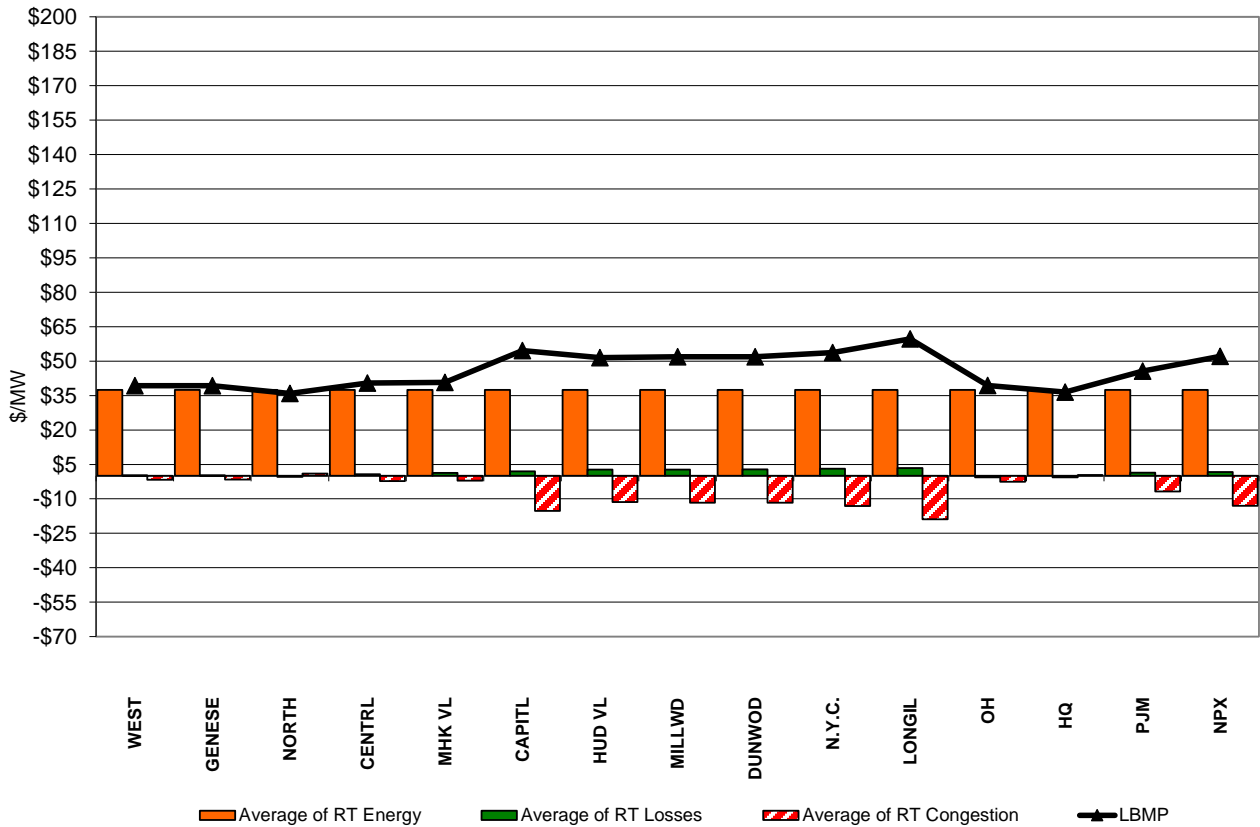
## Long Island Zone K Monthly Average LBMP Prices 2020 - 2021



**DAM Zonal Unweighted Monthly Average LBMP Components  
thru October 31, 2022**



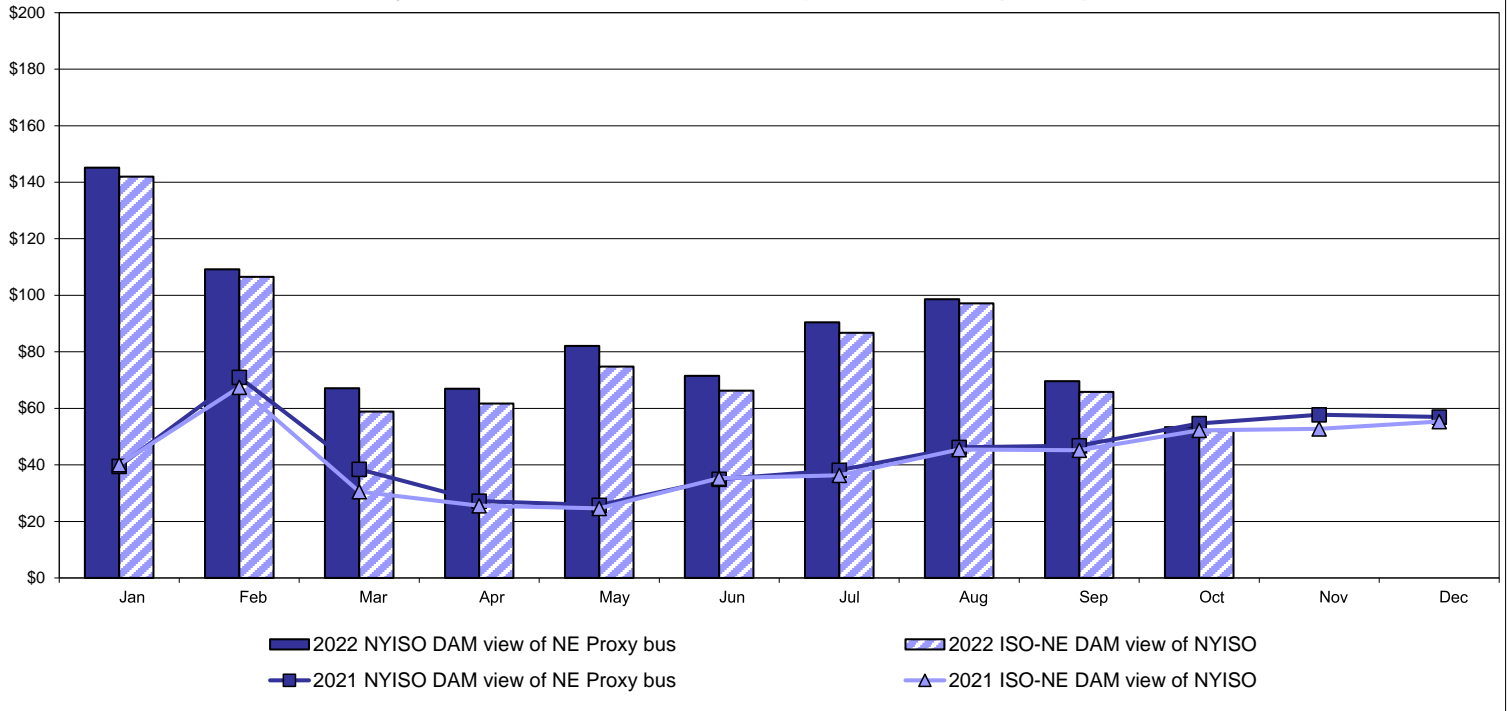
**RT Zonal Unweighted Monthly Average LBMP Components  
thru October 31, 2022**



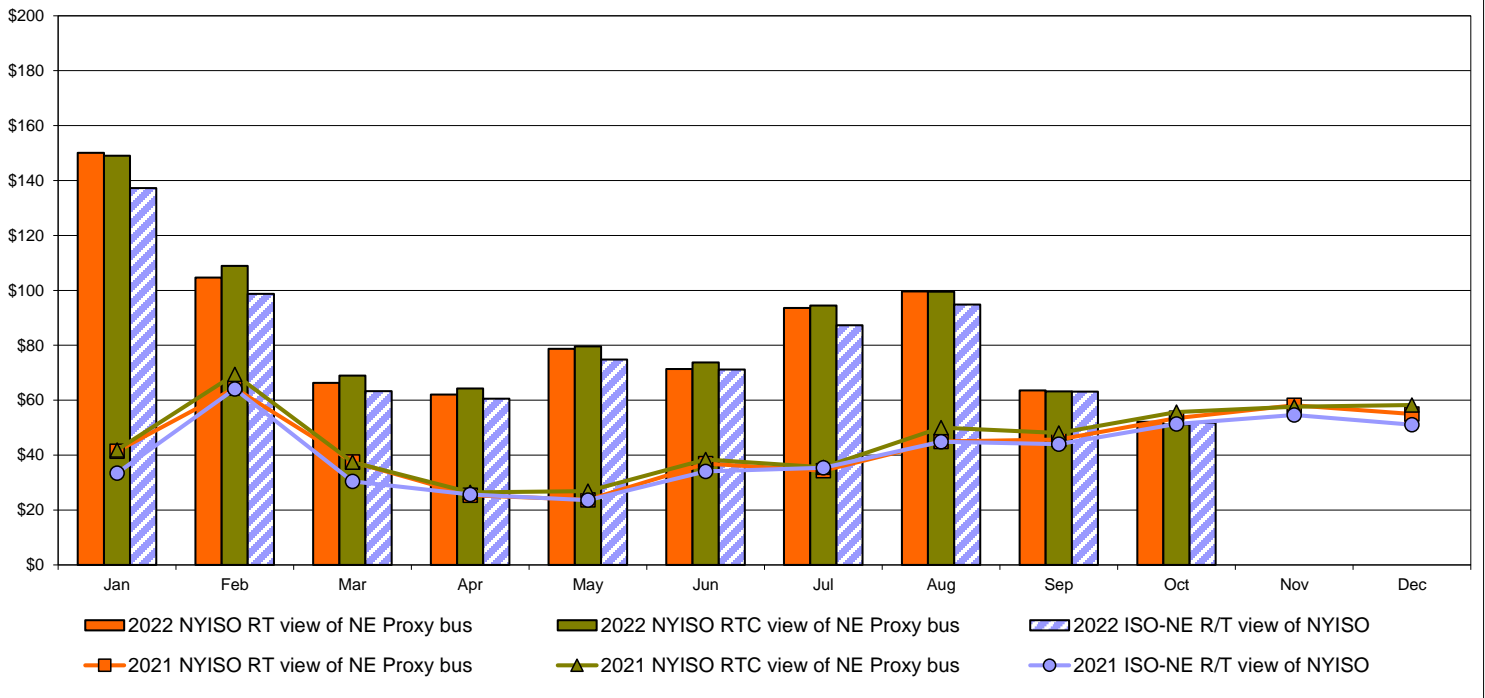


# External Comparison ISO-New England

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

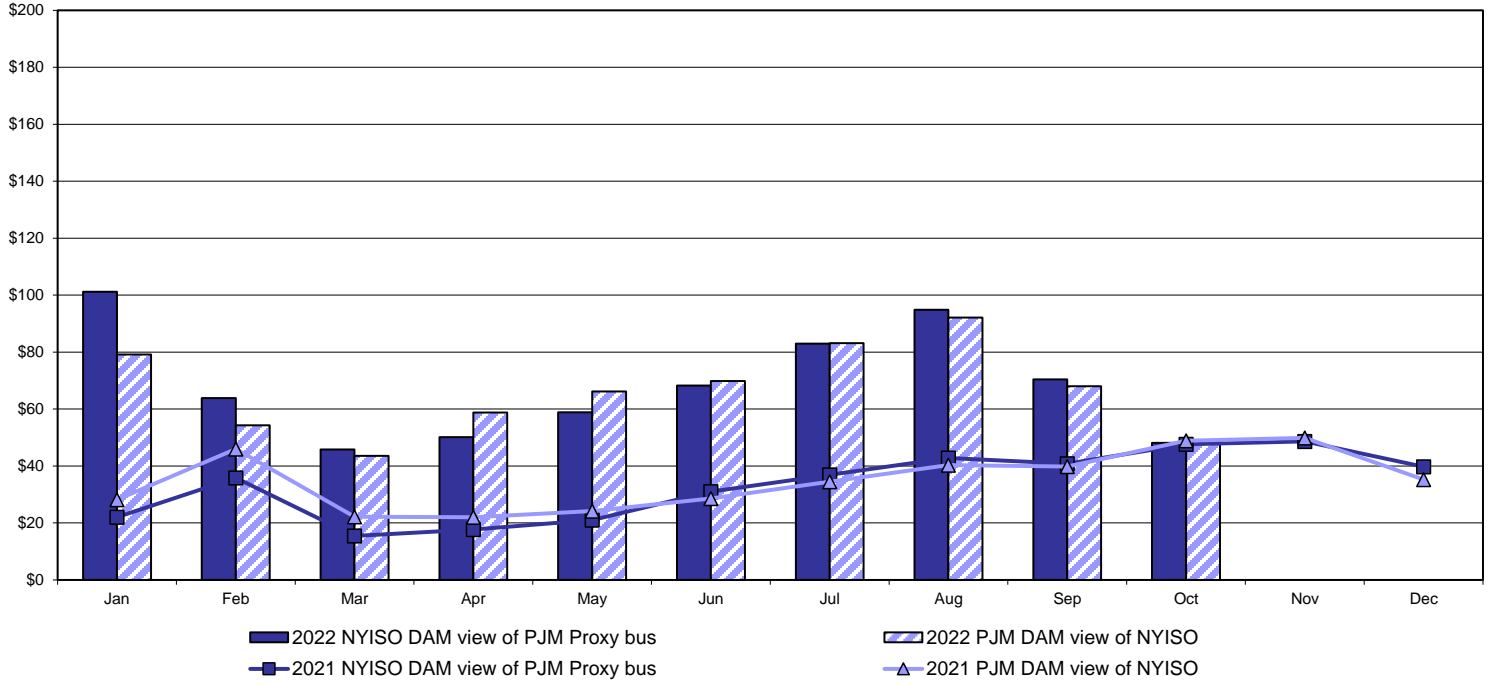


## Real Time Market External Zone Comparison: ISO-NE (\$/MWh)

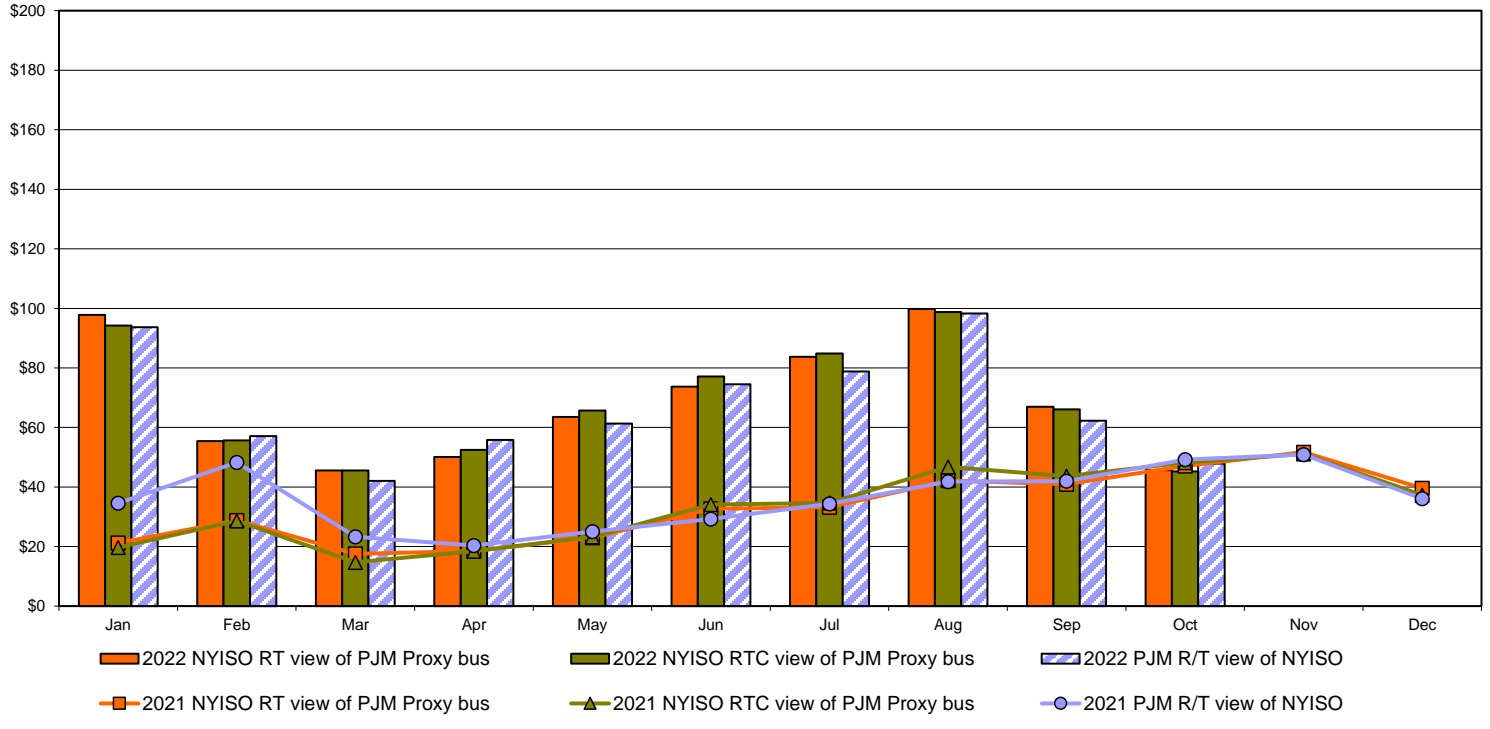


# External Comparison PJM

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

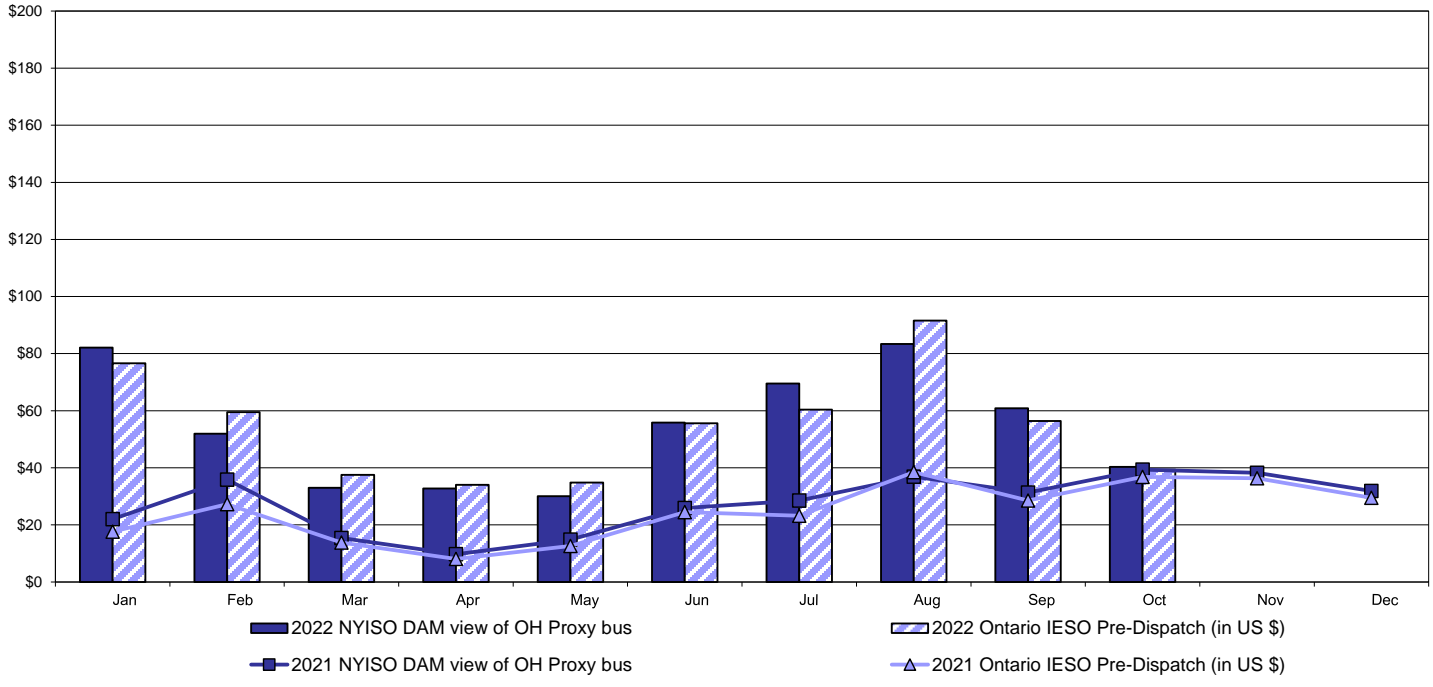


## Real Time Market External Zone Comparison - PJM (\$/MWh)

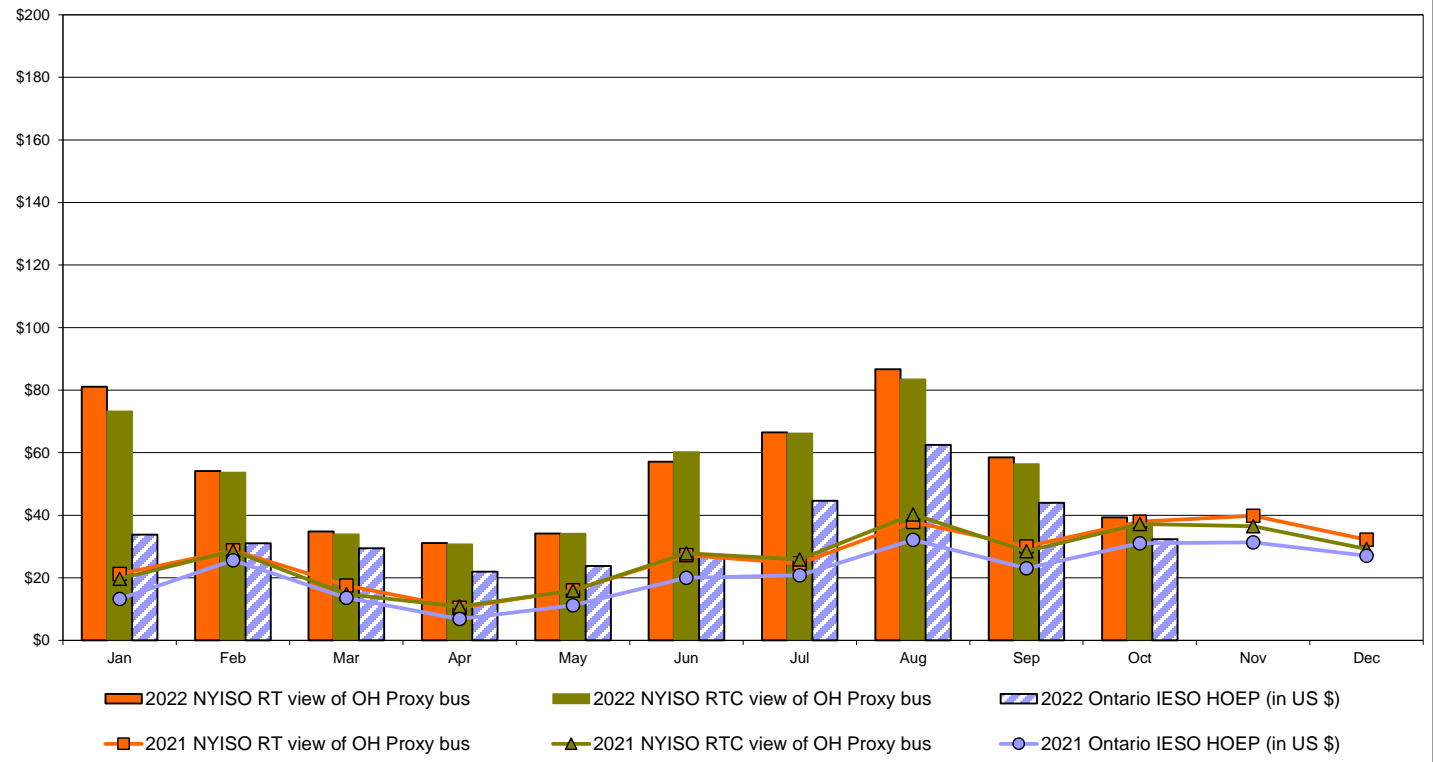


## External Comparison Ontario IESO

**Day Ahead Market External Zone Comparison - Ontario IESO (\$/MWh)**

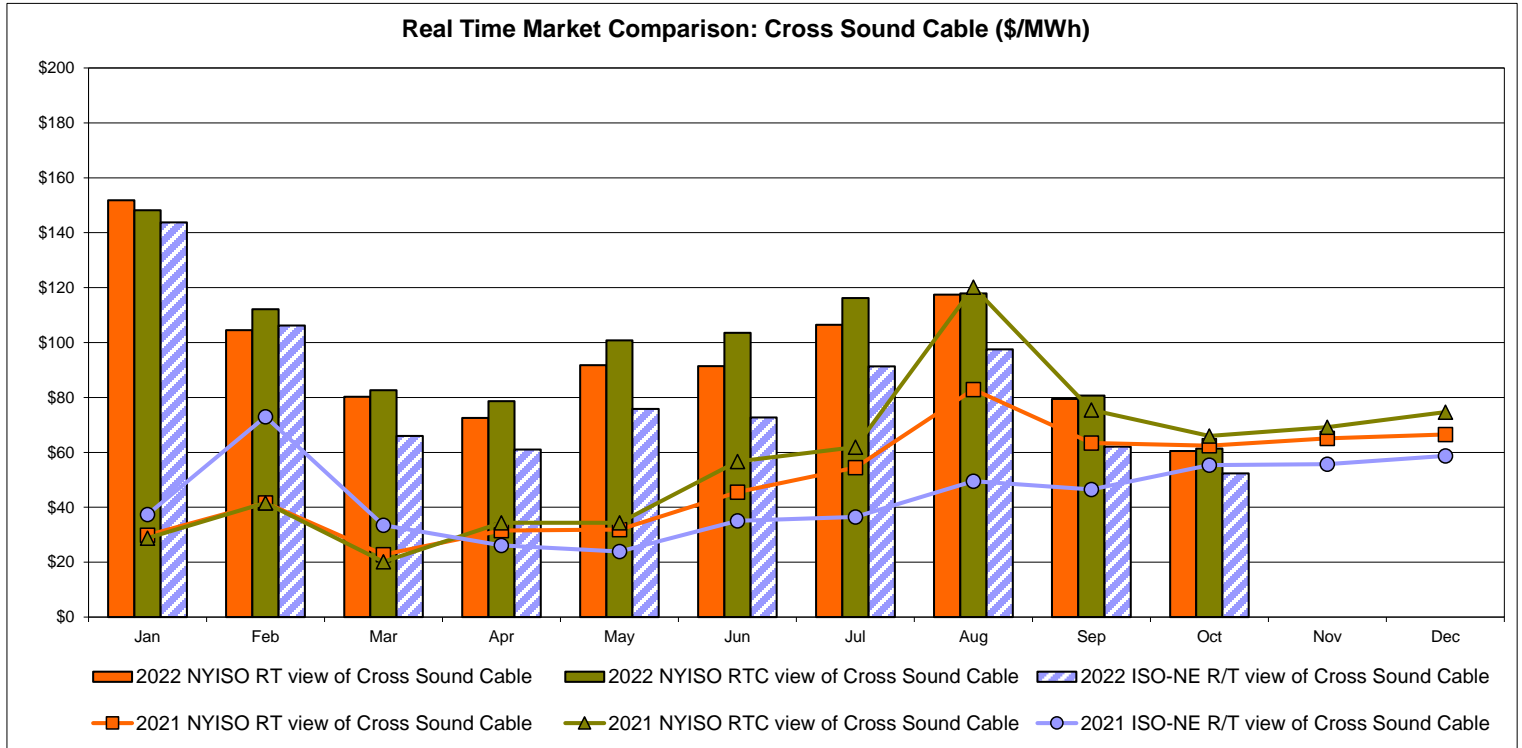
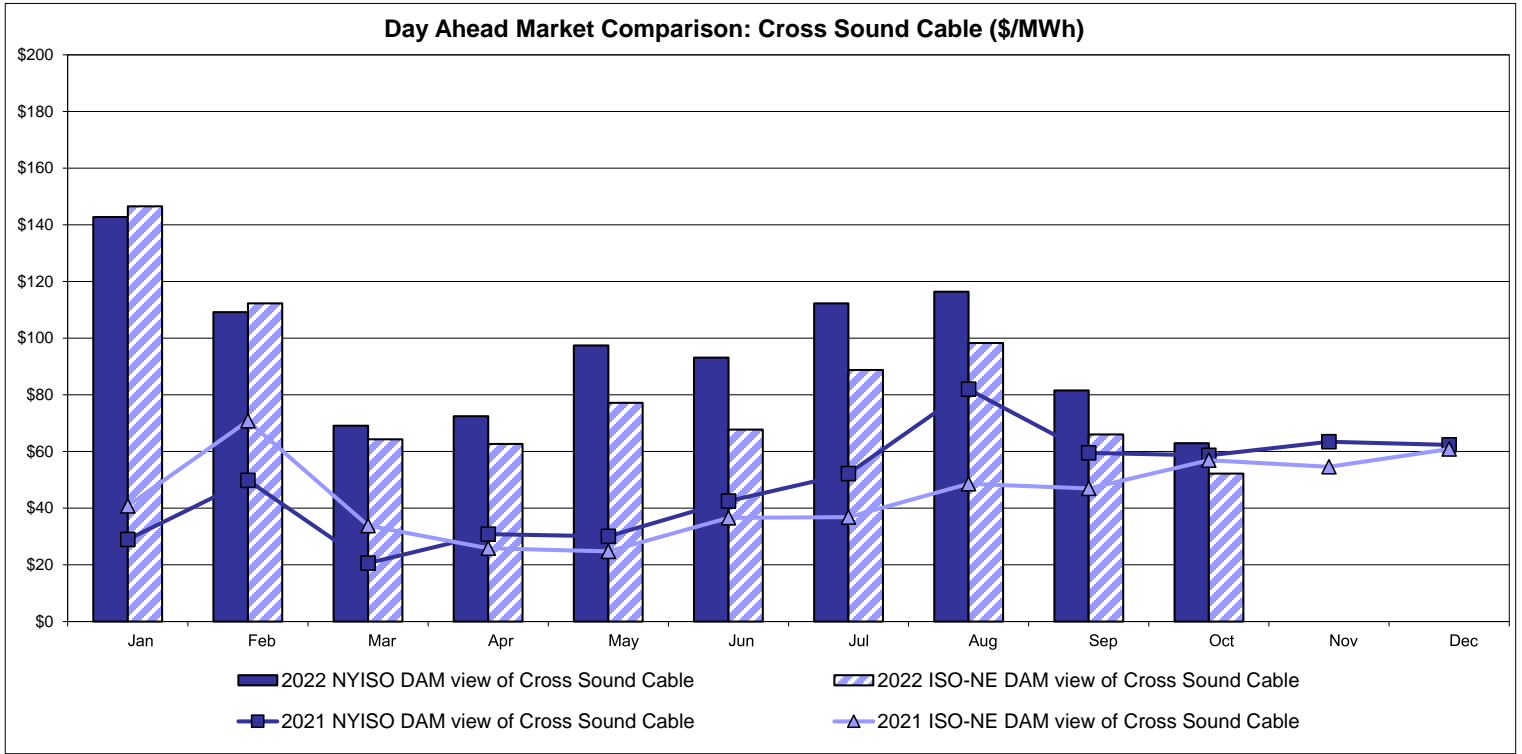


**Real Time Market External Zone Comparison - Ontario IESO (\$/MWh)**



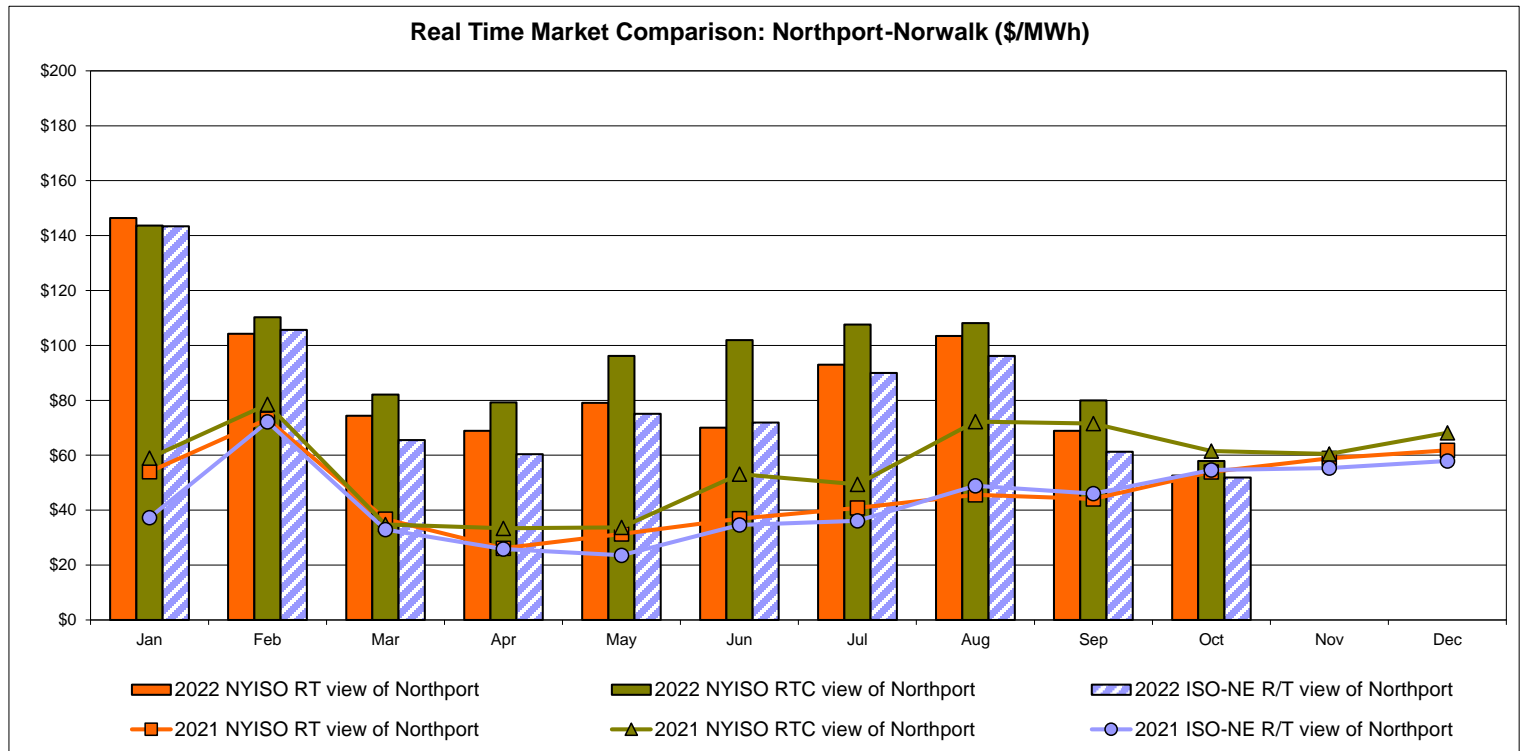
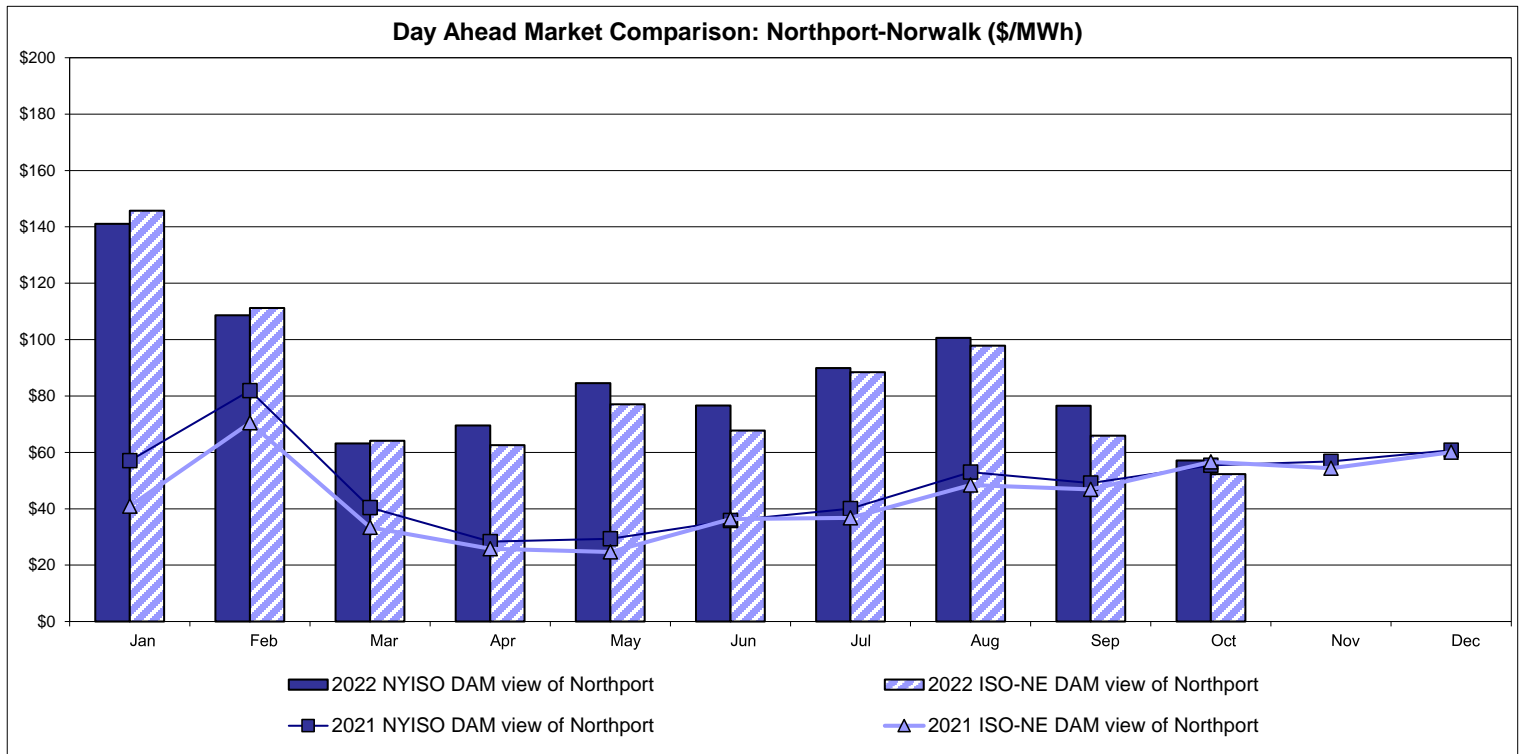
Notes: Exchange factor used for October 2022 was 0.730513551026371 to US  
 HOEP: Hourly Ontario Energy Price  
 Pre-Dispatch: Projected Energy Price

# 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.

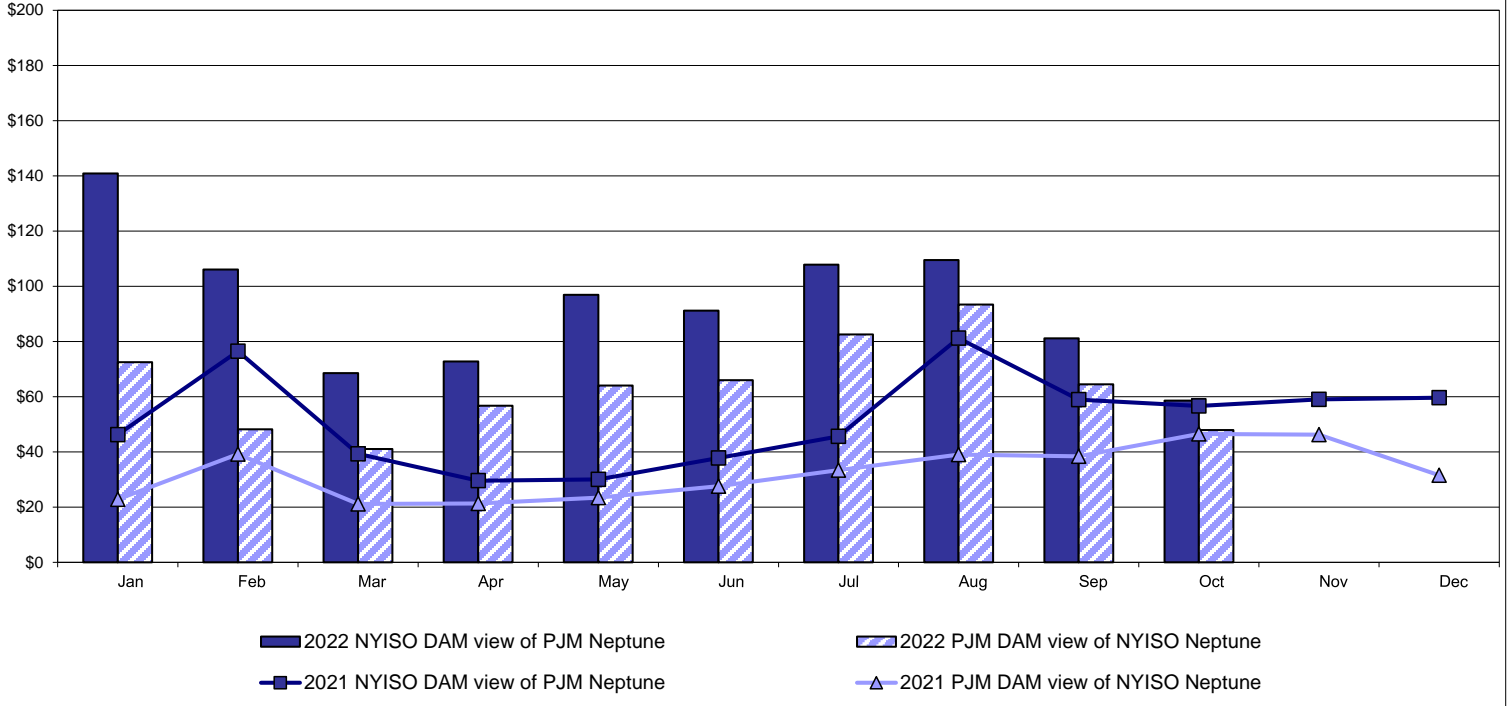
# External Controllable Line: Northport - Norwalk (New England)



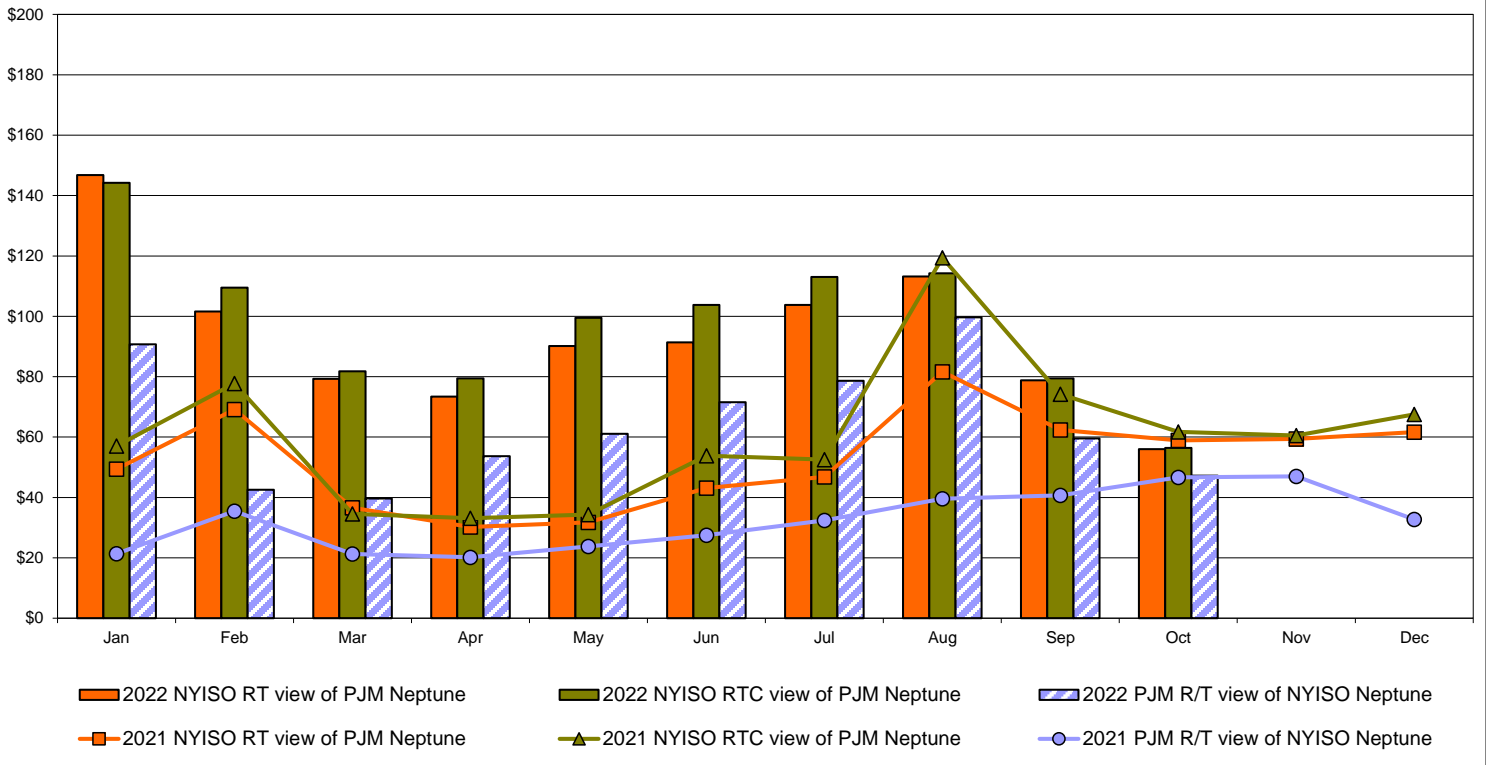
Note:  
 ISO-NE Forecast is an advisory posting @ 18:00 day before.  
 The DAM and R/T prices at the Northport 138 interface are used for ISO-NE.  
 The DAM and R/T prices at the 1385 interface are used for NYISO.

# External Controllable Line: Neptune (PJM)

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

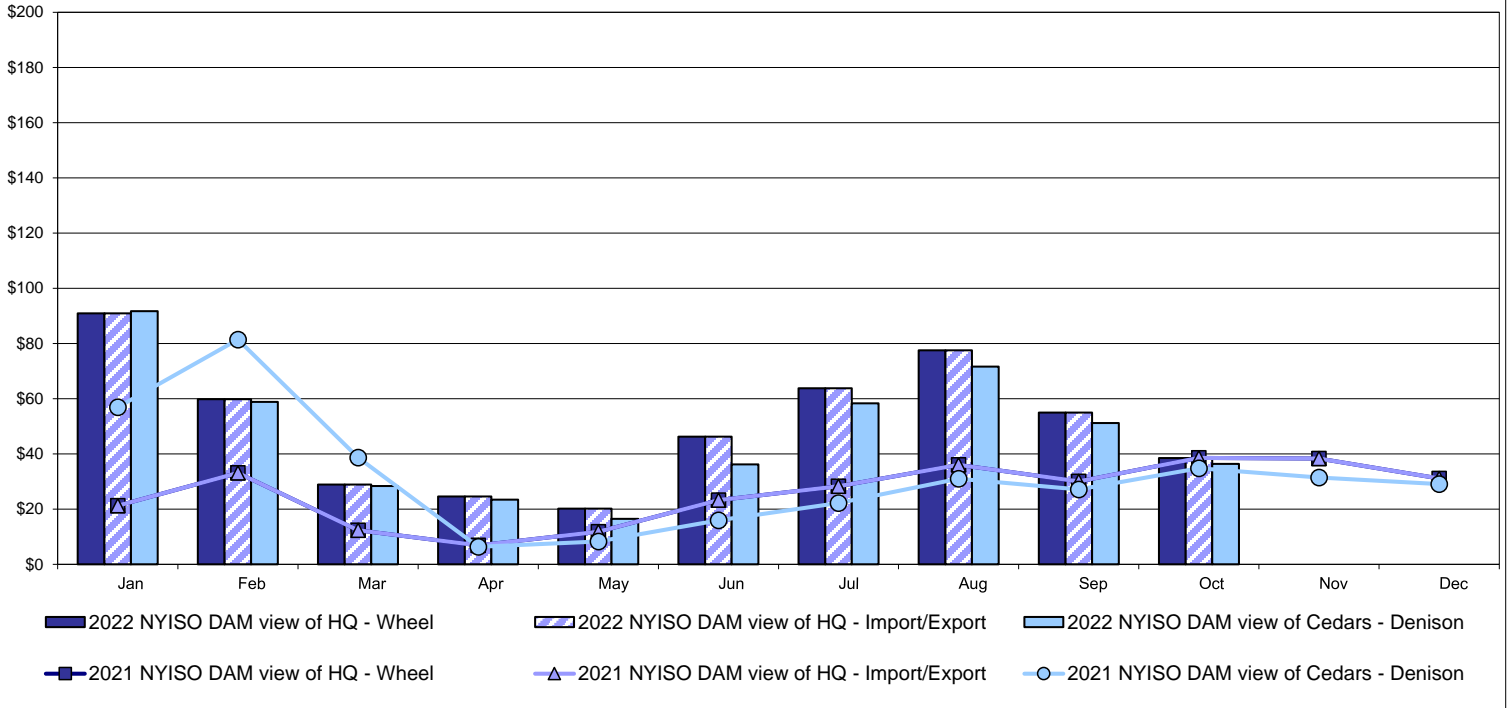


## Real Time Market Comparison: Neptune (\$/MWh)

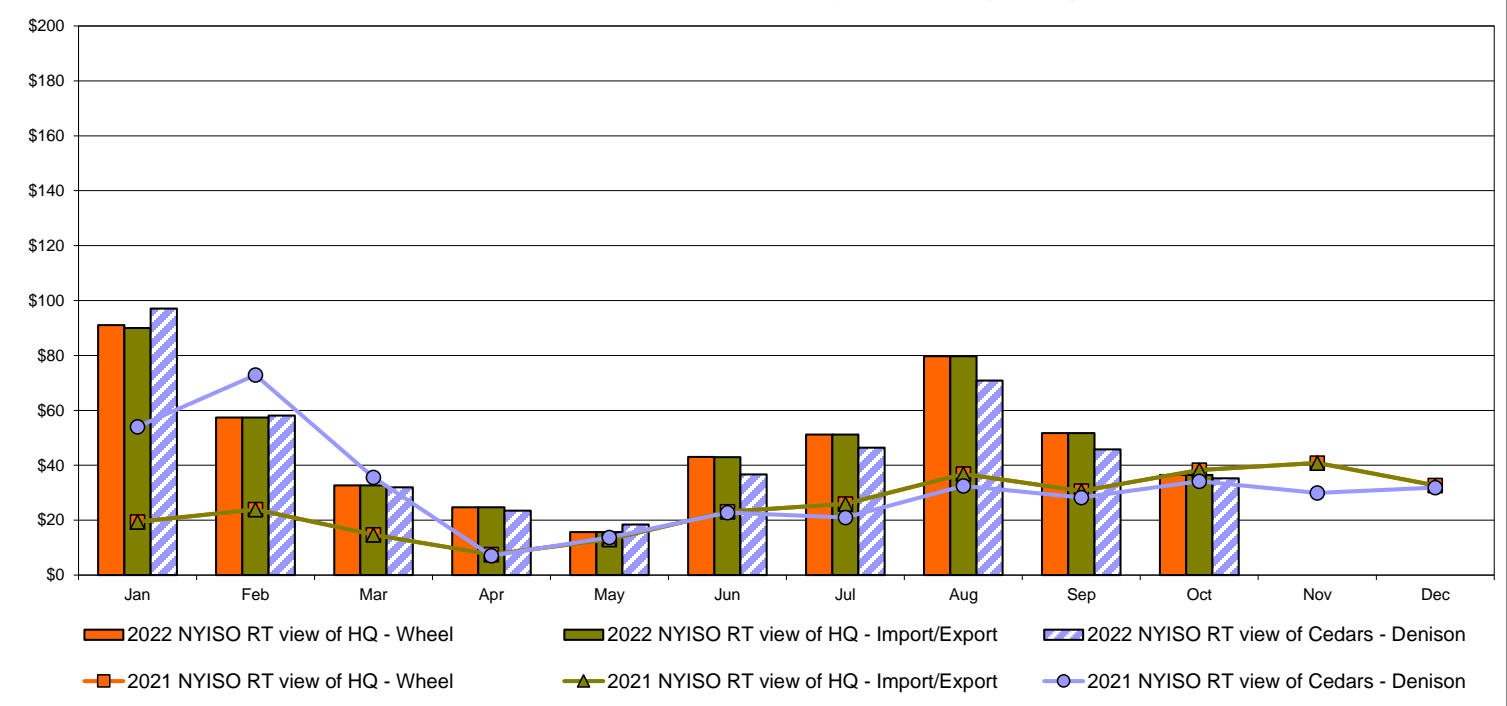


# External Comparison Hydro-Quebec

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

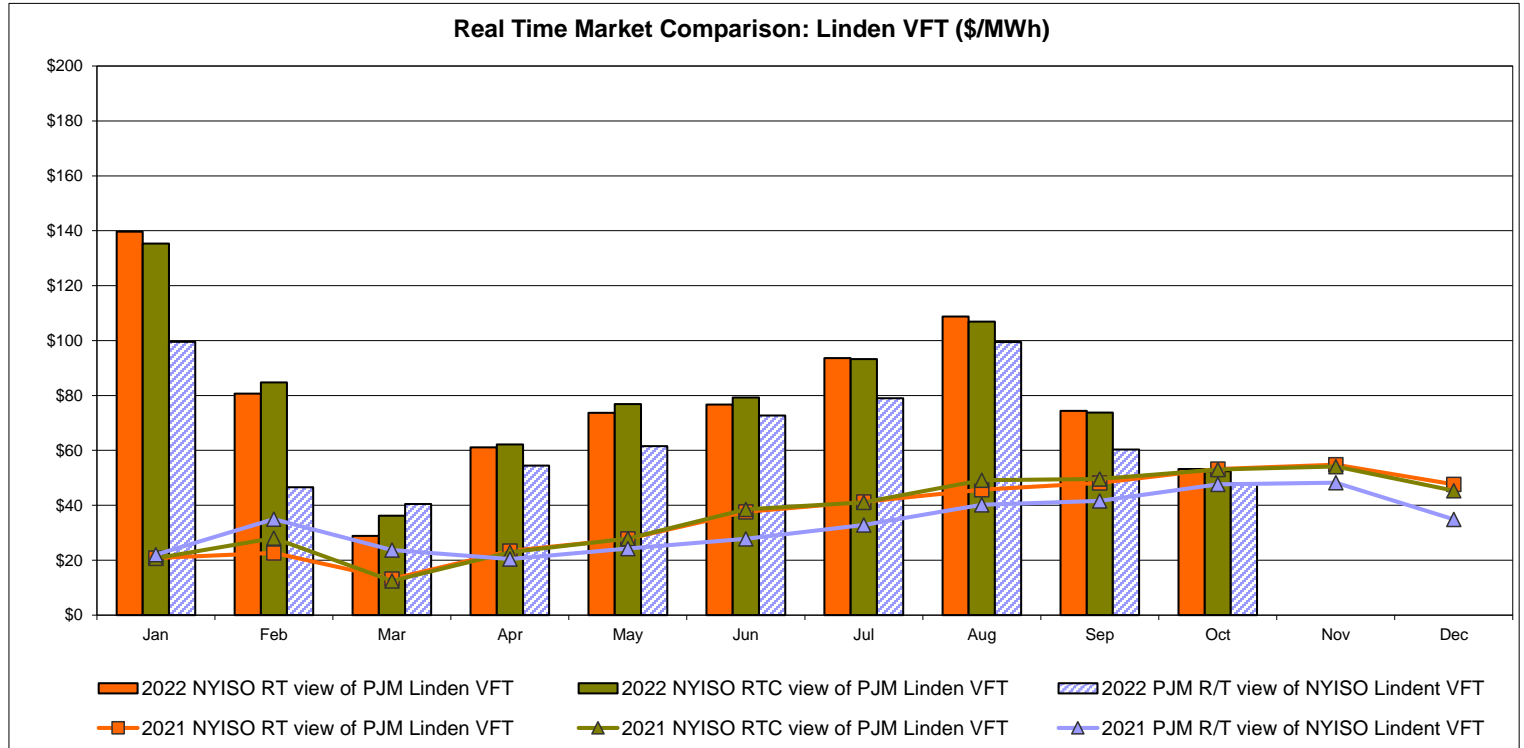
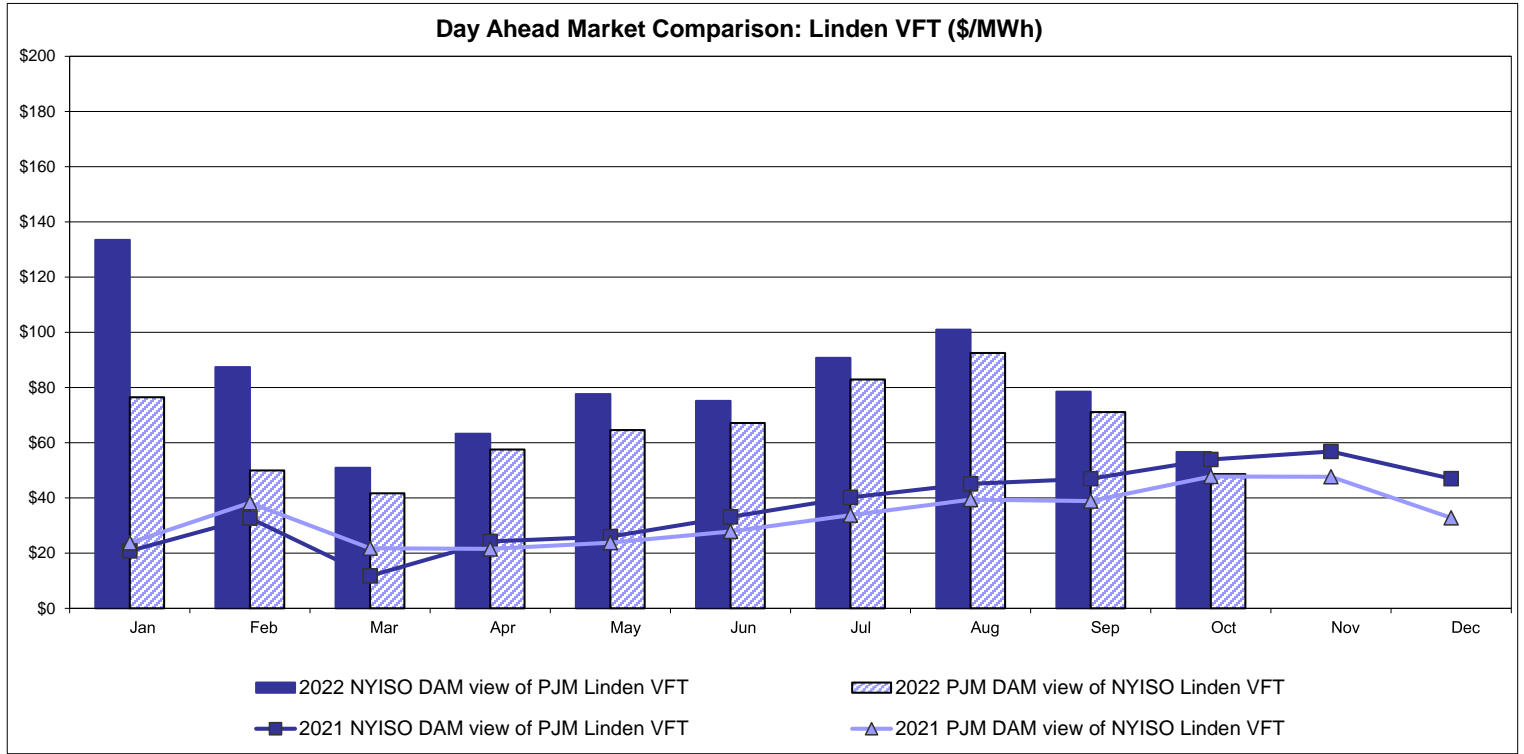


## Real Time Market External Zone Comparison - HQ (\$/MWh)



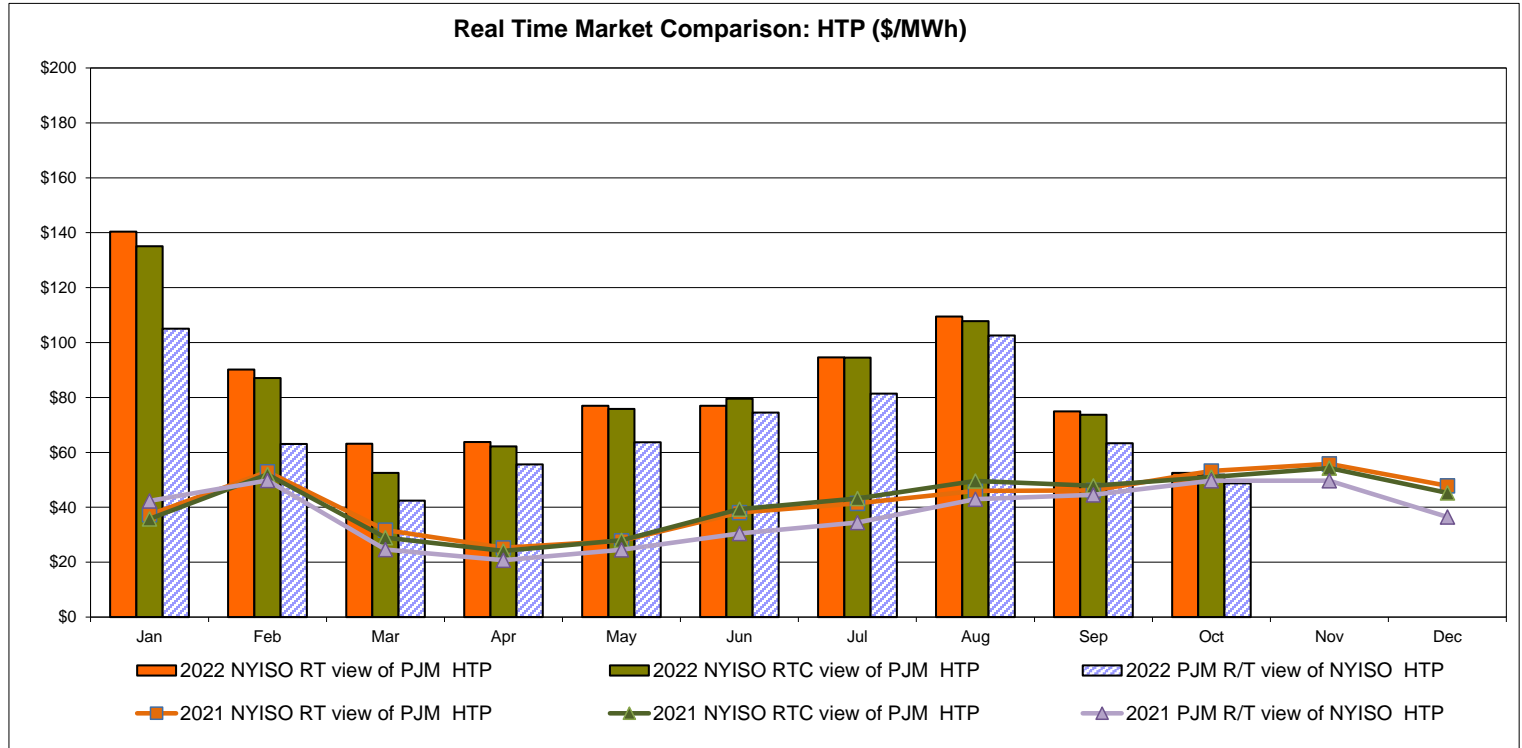
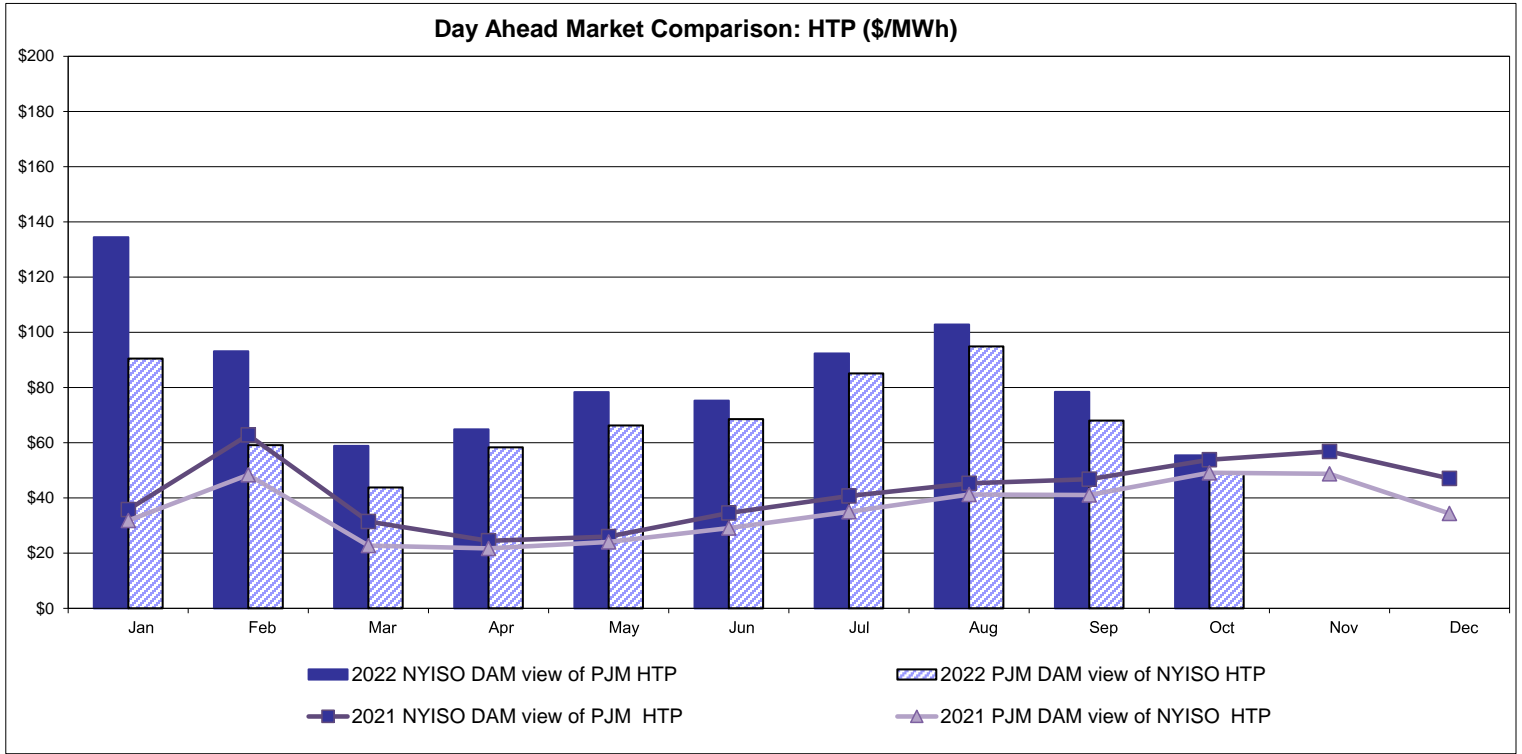
Note:  
Hydro-Quebec Prices are unavailable.

# External Controllable Line: Linden VFT (PJM)





# External Controllable Line: Hudson (PJM)

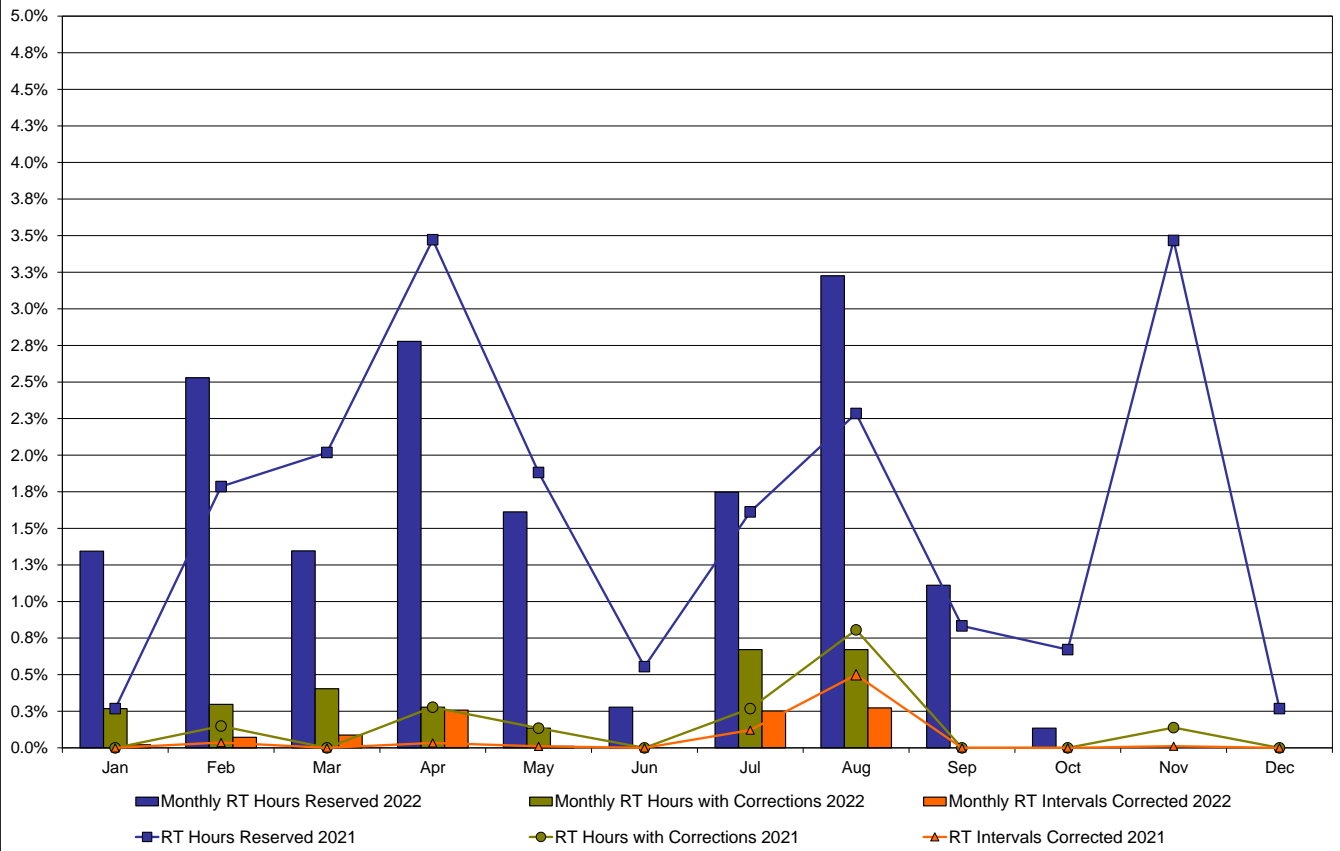


### NYISO Real Time Price Correction Statistics

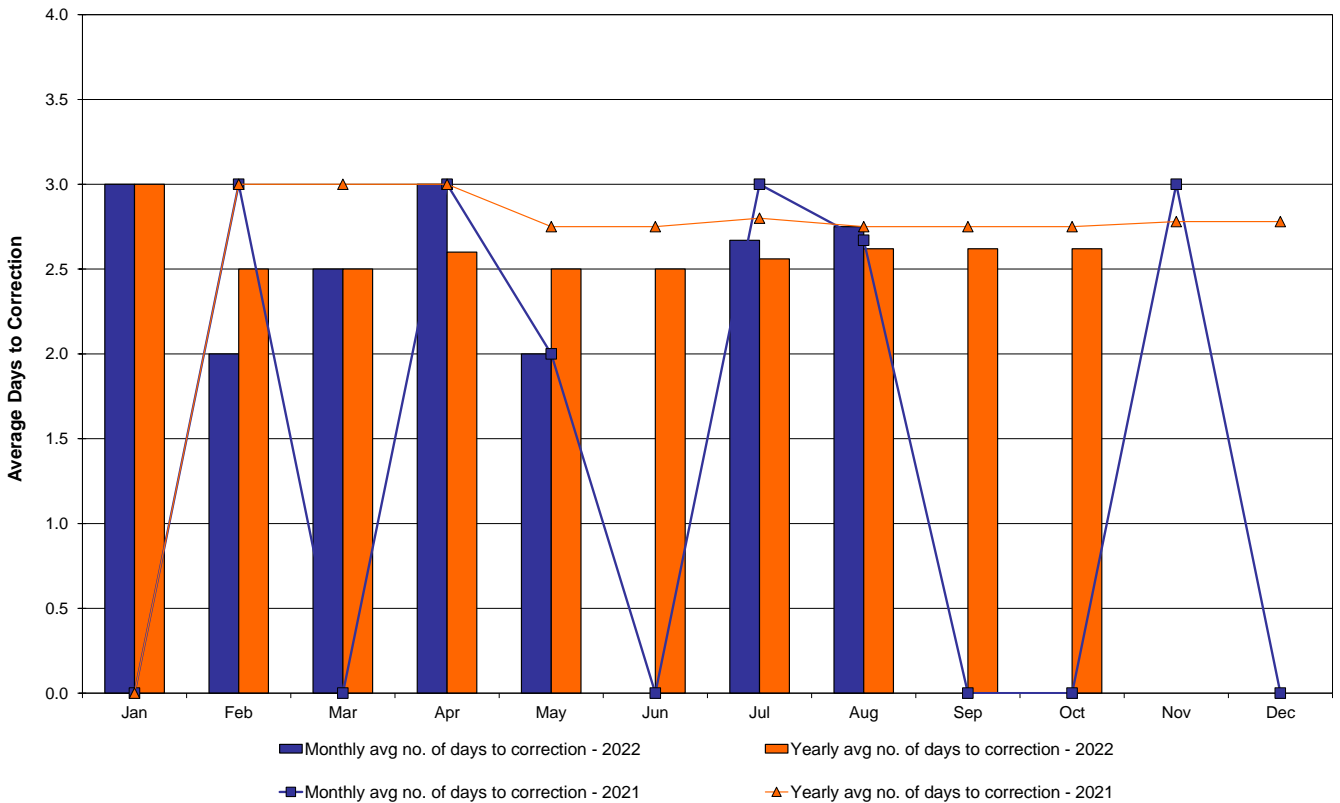
<b>2022</b>		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Hour Corrections</b>													
Number of hours with corrections	in the month	2	2	3	2	1	0	5	5	0	0		
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744		
% of hours with corrections	in the month	0.27%	0.30%	0.40%	0.28%	0.13%	0.00%	0.67%	0.67%	0.00%	0.00%		
% of hours with corrections	year-to-date	0.27%	0.28%	0.32%	0.31%	0.28%	0.23%	0.29%	0.34%	0.31%	0.27%		
<b>Interval Corrections</b>													
Number of intervals corrected	in the month	2	6	8	23	1	0	23	25	0	0		
Number of intervals	in the month	9,258	8,338	9,118	8,908	9,181	8,864	9,140	9,145	8,825	9,097		
% of intervals corrected	in the month	0.02%	0.07%	0.09%	0.26%	0.01%	0.00%	0.25%	0.27%	0.00%	0.00%		
% of intervals corrected	year-to-date	0.02%	0.05%	0.06%	0.11%	0.09%	0.07%	0.10%	0.12%	0.11%	0.10%		
<b>Hours Reserved</b>													
Number of hours reserved	in the month	10	17	10	20	12	2	13	24	8	1		
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744		
% of hours reserved	in the month	1.34%	2.53%	1.35%	2.78%	1.61%	0.28%	1.75%	3.23%	1.11%	0.13%		
% of hours reserved	year-to-date	1.34%	1.91%	1.71%	1.98%	1.90%	1.63%	1.65%	1.85%	1.77%	1.60%		
<b>Days to Correction *</b>													
Avg. number of days to correction	in the month	3.00	2.00	2.50	3.00	2.00	0.00	2.67	2.75	0.00	0.00		
Avg. number of days to correction	year-to-date	3.00	2.50	2.50	2.60	2.50	2.50	2.56	2.62	2.62	2.62		
<b>Days Without Corrections</b>													
Days without corrections	in the month	30	27	29	29	30	30	28	27	30	31		
Days without corrections	year-to-date	30	57	86	115	145	175	203	230	260	291		
<b>2021</b>		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Hour Corrections</b>													
Number of hours with corrections	in the month	0	1	0	2	1	0	2	6	0	0	1	0
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744	721	744
% of hours with corrections	in the month	0.00%	0.15%	0.00%	0.28%	0.13%	0.00%	0.27%	0.81%	0.00%	0.00%	0.14%	0.00%
% of hours with corrections	year-to-date	0.00%	0.07%	0.05%	0.10%	0.11%	0.09%	0.12%	0.21%	0.18%	0.16%	0.16%	0.15%
<b>Interval Corrections</b>													
Number of intervals corrected	in the month	0	3	0	3	1	0	11	45	0	0	1	0
Number of intervals	in the month	9,095	8,236	9,100	8,827	9,157	8,813	9,084	9,024	8,783	9,133	8,802	9,063
% of intervals corrected	in the month	0.00%	0.04%	0.00%	0.03%	0.01%	0.00%	0.12%	0.50%	0.00%	0.00%	0.01%	0.00%
% of intervals corrected	year-to-date	0.00%	0.02%	0.01%	0.02%	0.02%	0.01%	0.03%	0.09%	0.08%	0.07%	0.07%	0.06%
<b>Hours Reserved</b>													
Number of hours reserved	in the month	2	12	15	25	14	4	12	17	6	5	25	2
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744	721	744
% of hours reserved	in the month	0.27%	1.79%	2.02%	3.47%	1.88%	0.56%	1.61%	2.28%	0.83%	0.67%	3.47%	0.27%
% of hours reserved	year-to-date	0.27%	0.99%	1.34%	1.88%	1.88%	1.66%	1.65%	1.73%	1.63%	1.54%	1.71%	1.59%
<b>Days to Correction *</b>													
Avg. number of days to correction	in the month	0.00	3.00	0.00	3.00	2.00	0.00	3.00	2.67	0.00	0.00	3.00	0.00
Avg. number of days to correction	year-to-date	0.00	3.00	3.00	3.00	2.75	2.75	2.80	2.75	2.75	2.75	2.78	2.78
<b>Days Without Corrections</b>													
Days without corrections	in the month	31	27	31	28	30	30	30	28	30	31	29	31
Days without corrections	year-to-date	31	58	89	117	147	177	207	235	265	296	325	356

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

### Percentage of Real-Time Corrections

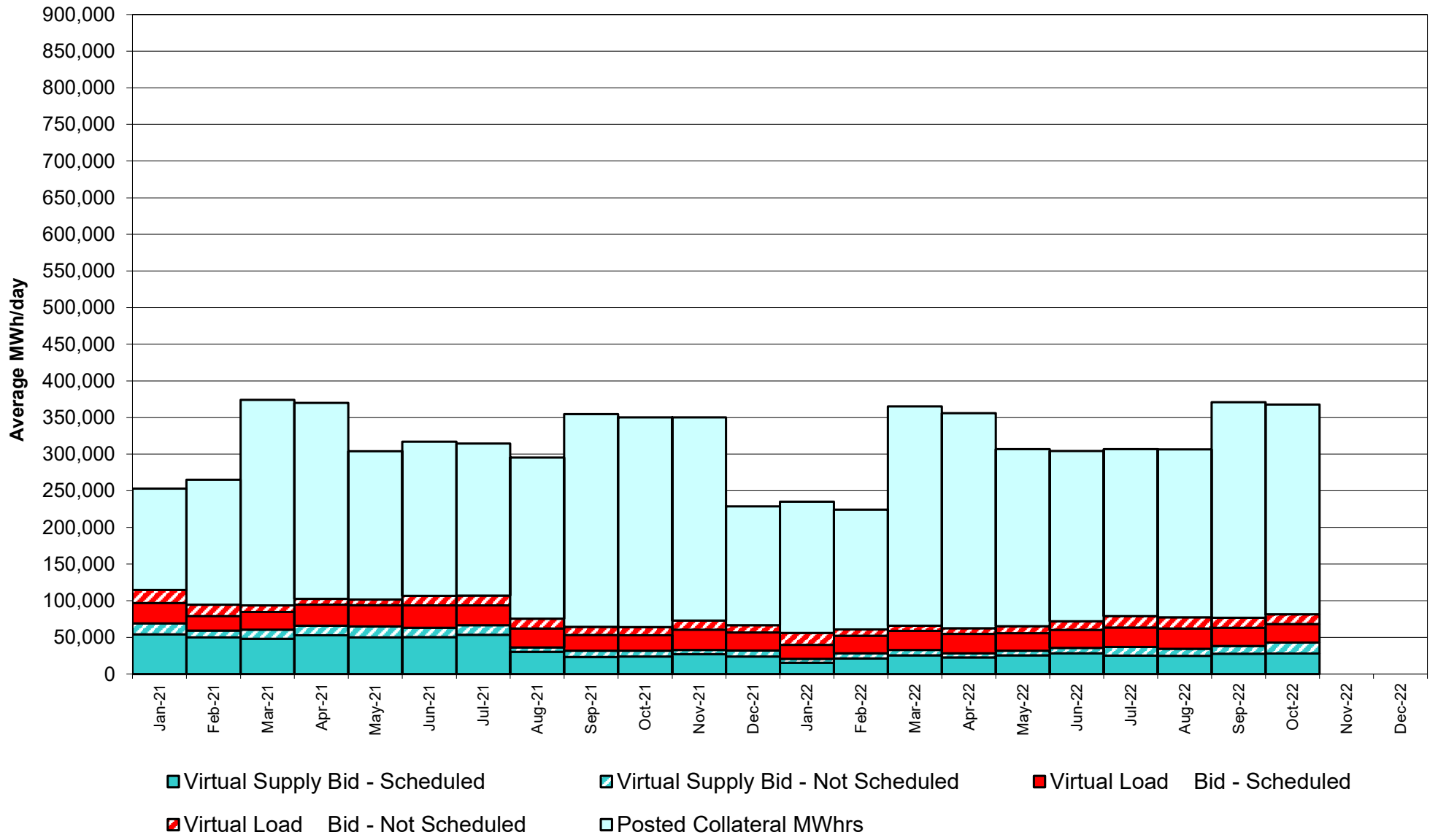


### Annual average time period for making Price Corrections (from reservation date) \*

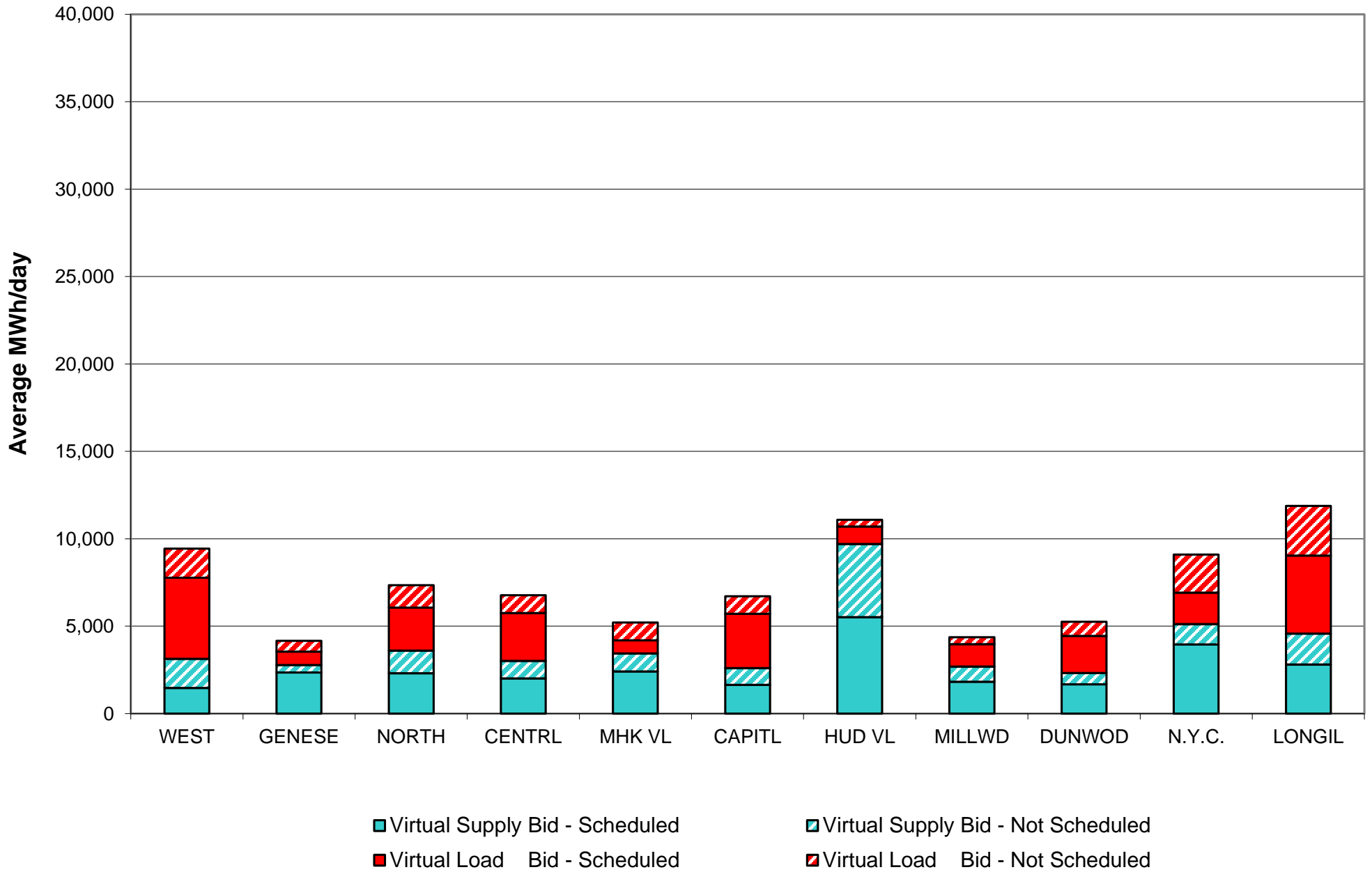


\*Calendar days from reservation date; for June 2018 forward, business days from market date

## NYISO Virtual Trading Average MWh per day



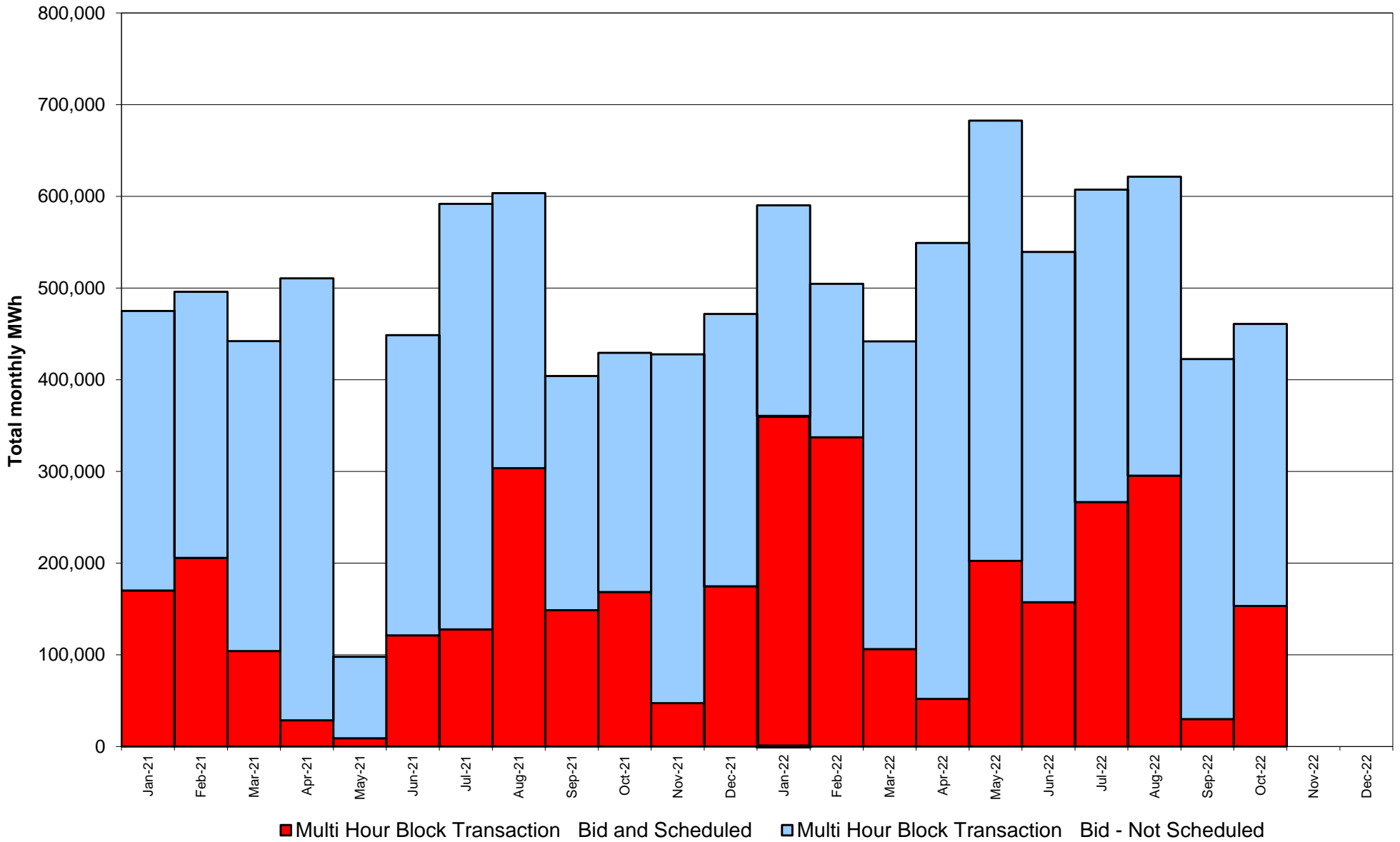
## Virtual Load and Supply Zonal Statistics through October 31, 2022



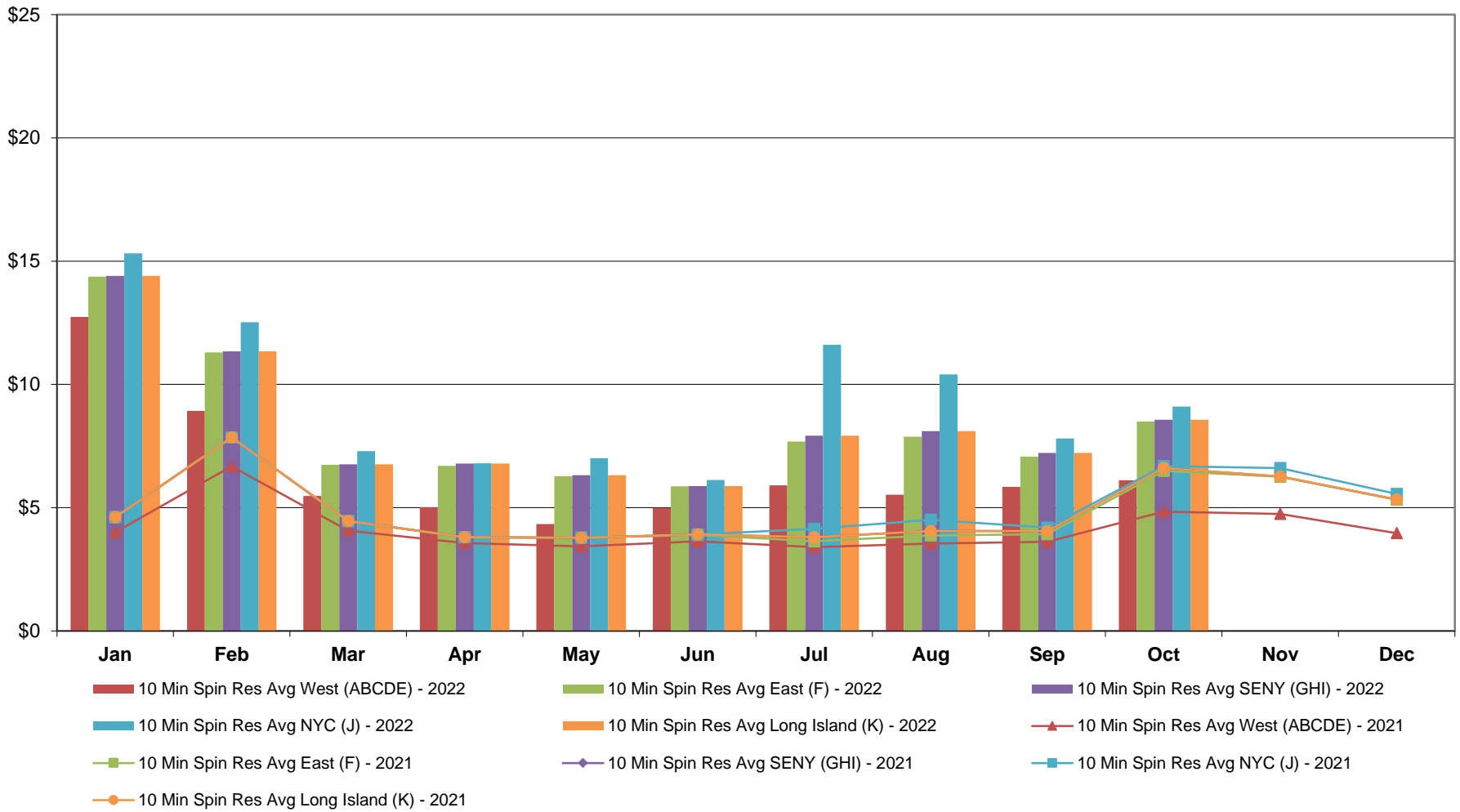
**Virtual Load and Supply Zonal Statistics (Average MWh/day) - 2022**

		Virtual Load Bid		Virtual Supply Bid				Virtual Load Bid		Virtual Supply Bid				Virtual Load Bid		Virtual Supply Bid	
Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled	Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled	Zone	Date	Scheduled	Not Scheduled	Scheduled	Not Scheduled
WEST	Jan-22	2,754	1,900	2,076	1,276	MHK VL	Jan-22	722	621	1,245	204	DUNWOD	Jan-22	1,376	1,851	652	54
	Feb-22	2,773	1,170	3,027	908		Feb-22	1,830	386	1,518	349		Feb-22	1,696	1,004	1,218	86
	Mar-22	3,702	830	2,480	526		Mar-22	2,263	131	1,506	371		Mar-22	1,427	954	1,944	68
	Apr-22	3,967	1,016	2,214	402		Apr-22	1,848	208	1,483	379		Apr-22	2,229	1,069	1,219	46
	May-22	5,740	1,247	1,473	670		May-22	1,108	254	2,338	538		May-22	1,752	1,335	1,505	58
	Jun-22	6,049	2,343	1,239	1,048		Jun-22	1,021	423	2,636	425		Jun-22	1,859	1,430	1,940	77
	Jul-22	4,521	2,537	1,837	945		Jul-22	316	824	2,895	547		Jul-22	2,607	2,043	1,316	491
	Aug-22	3,954	2,685	1,252	848		Aug-22	831	937	2,676	637		Aug-22	3,445	1,762	1,218	499
	Sep-22	3,586	2,483	1,848	907		Sep-22	770	1,023	2,924	408		Sep-22	2,309	1,182	1,694	413
	Oct-22	4,649	1,660	1,469	1,659		Oct-22	756	1,007	2,419	1,023		Oct-22	2,129	806	1,673	646
	Nov-22						Nov-22						Nov-22				
	Dec-22						Dec-22						Dec-22				
	GENESE	Jan-22	722	464	1,058		319	CAPITL	Jan-22	2,536	2,157		749	695	N.Y.C.	Jan-22	2,341
Feb-22		853	293	1,560	395	Feb-22	3,700		1,211	1,075	785	Feb-22	2,889	1,668		1,938	607
Mar-22		1,615	190	1,176	265	Mar-22	2,660		1,045	1,450	879	Mar-22	1,769	1,526		2,728	629
Apr-22		1,226	244	1,415	354	Apr-22	1,761		610	2,274	843	Apr-22	1,341	1,172		2,530	492
May-22		994	302	2,104	636	May-22	2,118		868	2,609	669	May-22	2,215	1,517		2,425	405
Jun-22		728	542	2,426	453	Jun-22	1,856		697	2,784	832	Jun-22	3,113	1,786		2,501	613
Jul-22		670	463	2,060	346	Jul-22	1,621		1,170	2,543	731	Jul-22	6,842	2,441		1,795	1,265
Aug-22		1,195	526	2,080	281	Aug-22	2,663		1,016	1,795	503	Aug-22	5,333	2,800		1,856	1,023
Sep-22		1,207	531	1,224	356	Sep-22	2,104		739	1,874	893	Sep-22	3,294	1,702		3,151	1,077
Oct-22		765	616	2,348	429	Oct-22	3,104		1,000	1,653	950	Oct-22	1,803	2,168		3,957	1,164
Nov-22						Nov-22						Nov-22					
Dec-22						Dec-22						Dec-22					
NORTH		Jan-22	938	469	1,778	643	HUD VL		Jan-22	1,062	1,130	3,738	1,083	LONGIL		Jan-22	4,217
	Feb-22	1,019	231	1,899	887	Feb-22		1,288	390	5,143	1,806	Feb-22	4,110		1,658	1,021	355
	Mar-22	1,192	148	2,020	699	Mar-22		960	308	7,017	2,760	Mar-22	5,091		1,935	1,581	408
	Apr-22	1,046	165	2,180	885	Apr-22		1,400	172	5,721	1,227	Apr-22	4,736		2,343	918	469
	May-22	1,501	233	1,889	1,039	May-22		1,035	300	5,637	889	May-22	3,361		2,766	2,045	554
	Jun-22	1,641	492	2,160	710	Jun-22		697	518	6,290	1,725	Jun-22	4,316		2,375	1,773	941
	Jul-22	1,483	489	1,987	477	Jul-22		1,107	1,052	5,336	4,490	Jul-22	4,125		2,505	1,735	1,385
	Aug-22	797	609	3,024	964	Aug-22		1,350	680	5,271	2,379	Aug-22	4,724		2,386	2,090	1,218
	Sep-22	1,585	613	2,564	1,027	Sep-22		1,250	596	6,145	2,671	Sep-22	5,125		2,515	1,787	1,257
	Oct-22	2,458	1,274	2,311	1,297	Oct-22		1,006	376	5,523	4,181	Oct-22	4,471		2,842	2,810	1,761
	Nov-22					Nov-22						Nov-22					
	Dec-22					Dec-22						Dec-22					
	CENTRL	Jan-22	1,317	1,284	1,104	364		MILLWD	Jan-22	1,104	654	867	262		NYISO	Jan-22	19,089
Feb-22		1,665	499	1,780	409	Feb-22	1,805		462	1,367	312	Feb-22	23,629	8,972		21,545	6,898
Mar-22		3,731	251	1,490	338	Mar-22	1,413		234	2,038	338	Mar-22	25,823	7,554		25,430	7,281
Apr-22		4,837	390	1,415	307	Apr-22	2,136		172	1,257	309	Apr-22	26,526	7,560		22,626	5,713
May-22		2,265	267	1,845	543	May-22	2,011		277	1,628	269	May-22	24,099	9,366		25,500	6,269
Jun-22		1,597	718	2,303	368	Jun-22	1,725		393	2,111	320	Jun-22	24,602	11,717		28,164	7,511
Jul-22		1,108	1,071	2,051	464	Jul-22	2,248		909	1,315	688	Jul-22	26,648	15,506		24,870	11,830
Aug-22		1,172	1,149	2,338	628	Aug-22	2,387		686	1,134	615	Aug-22	27,852	15,237		24,733	9,596
Sep-22		1,809	1,280	2,915	663	Sep-22	1,966		661	1,527	800	Sep-22	25,005	13,325		27,652	10,472
Oct-22		2,743	1,023	2,011	999	Oct-22	1,285		387	1,829	863	Oct-22	25,170	13,158		28,004	14,971
Nov-22						Nov-22						Nov-22					
Dec-22						Dec-22						Dec-22					

## NYISO Multi Hour Block Transactions Monthly Total MWh

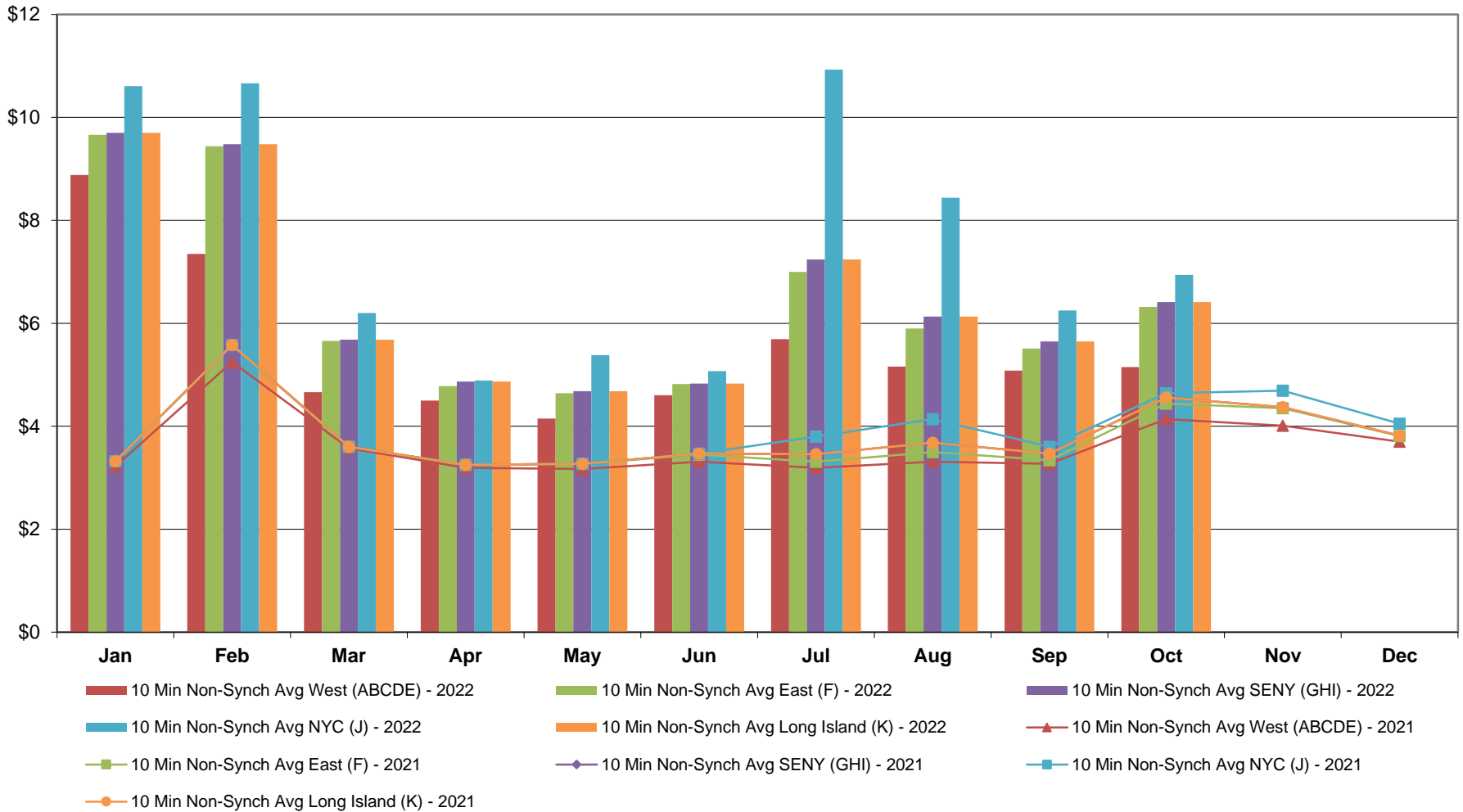


**NYISO Monthly Average Ancillary Service Prices  
Day Ahead Market - 10 Min Spin 2021 - 2022**

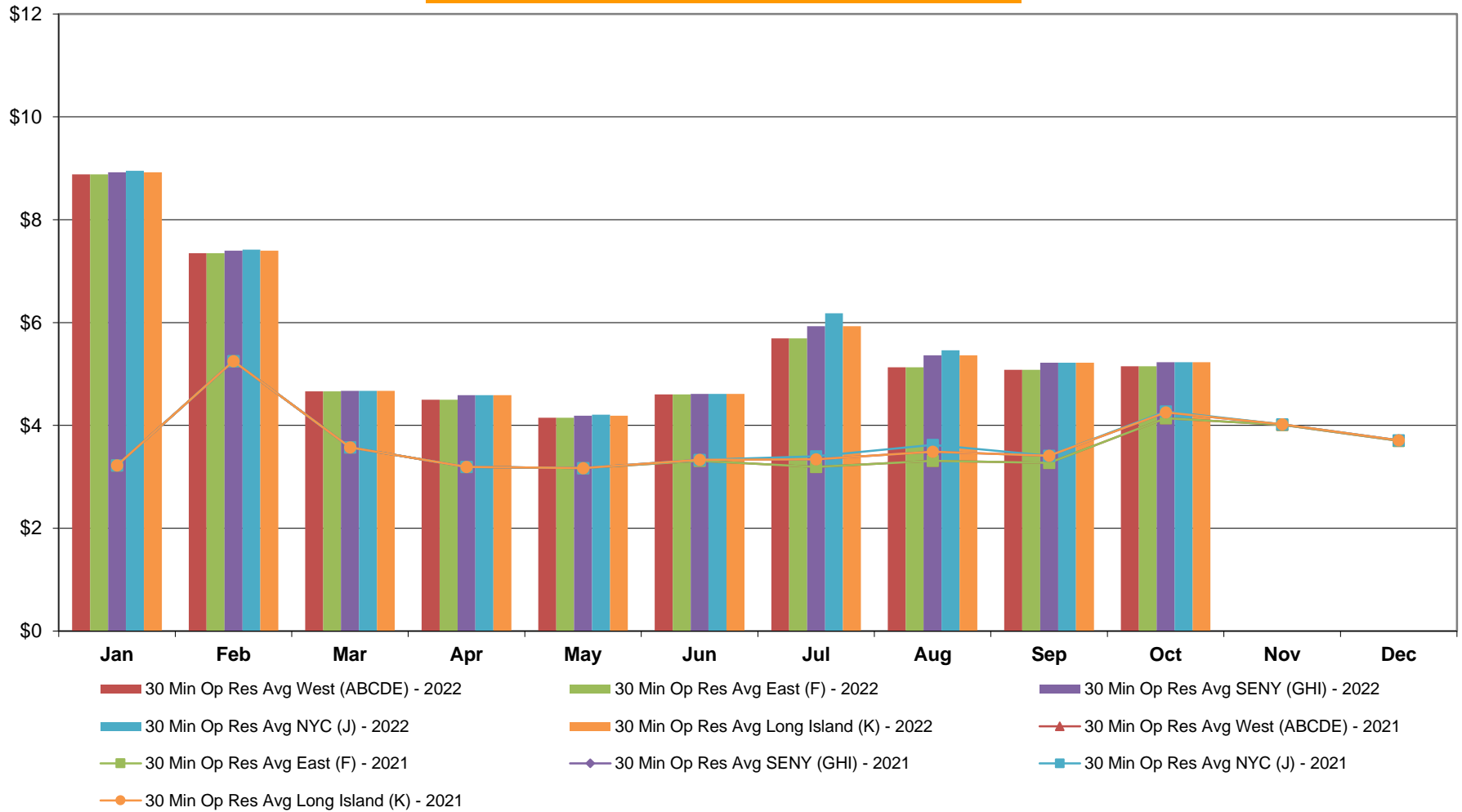




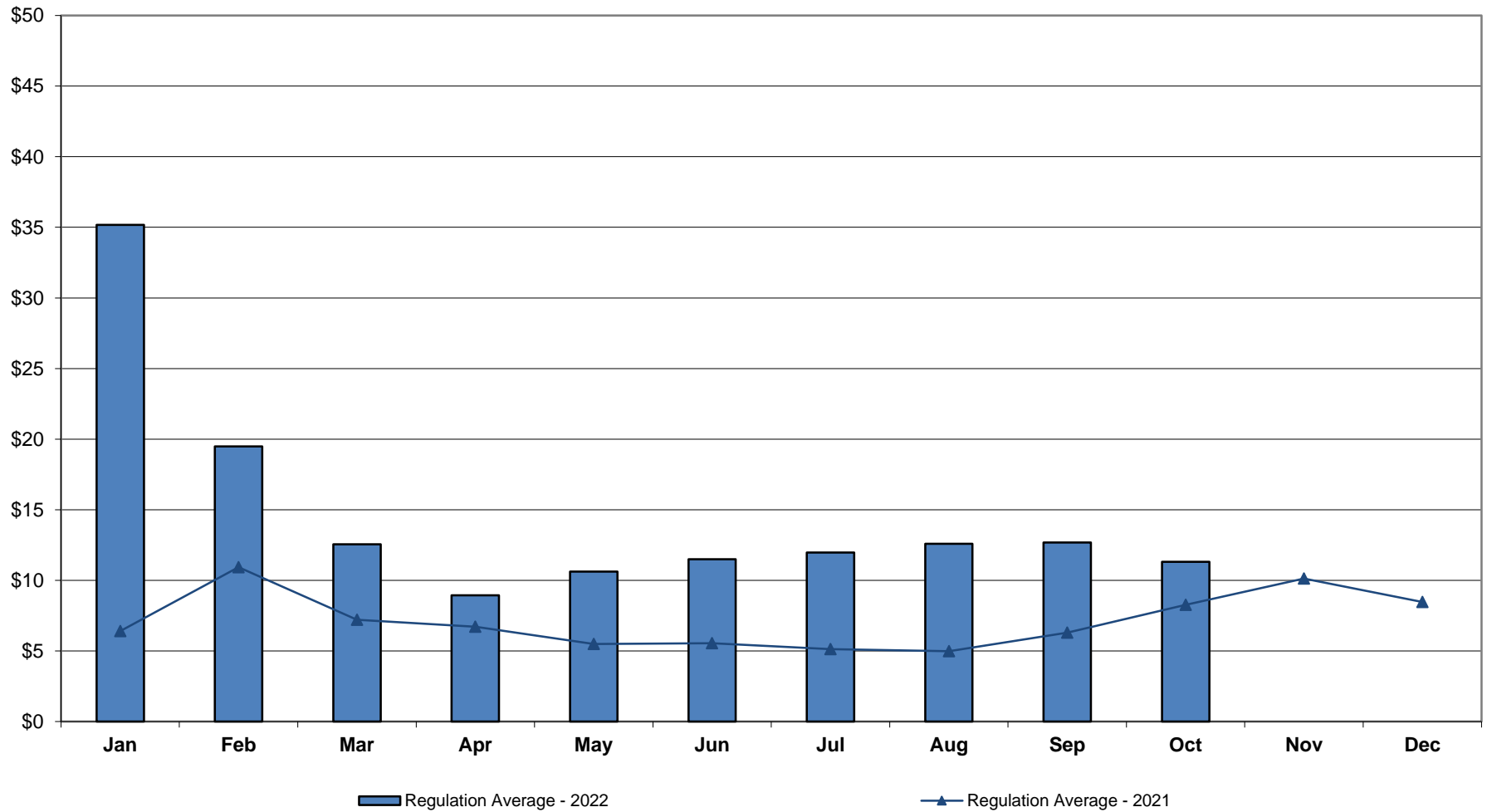
**NYISO Monthly Average Ancillary Service Prices  
Day Ahead Market - 10 Min Non-Synch 2021 - 2022**



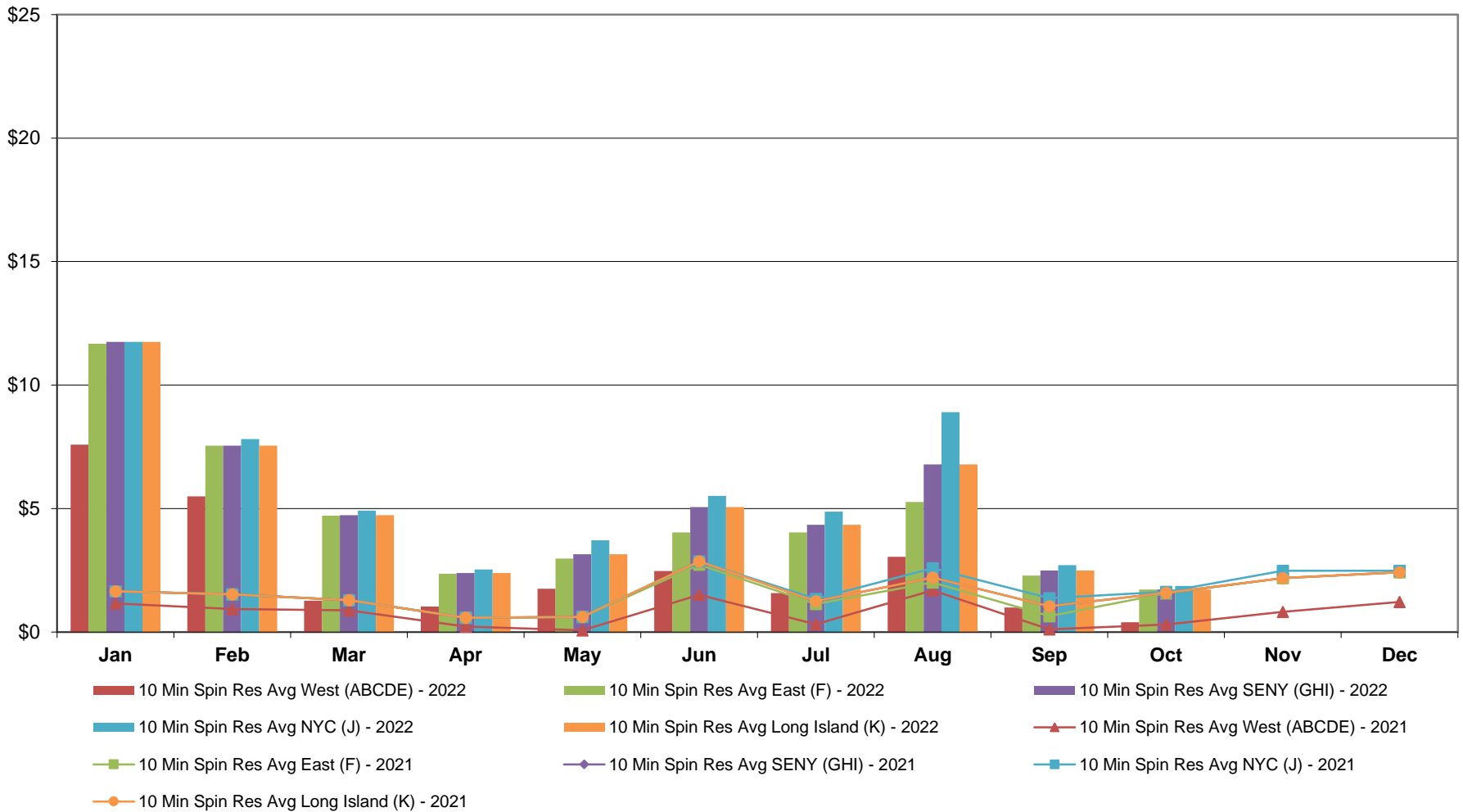
**NYISO Monthly Average Ancillary Service Prices  
Day Ahead Market - 30 Min Op Res 2021 - 2022**



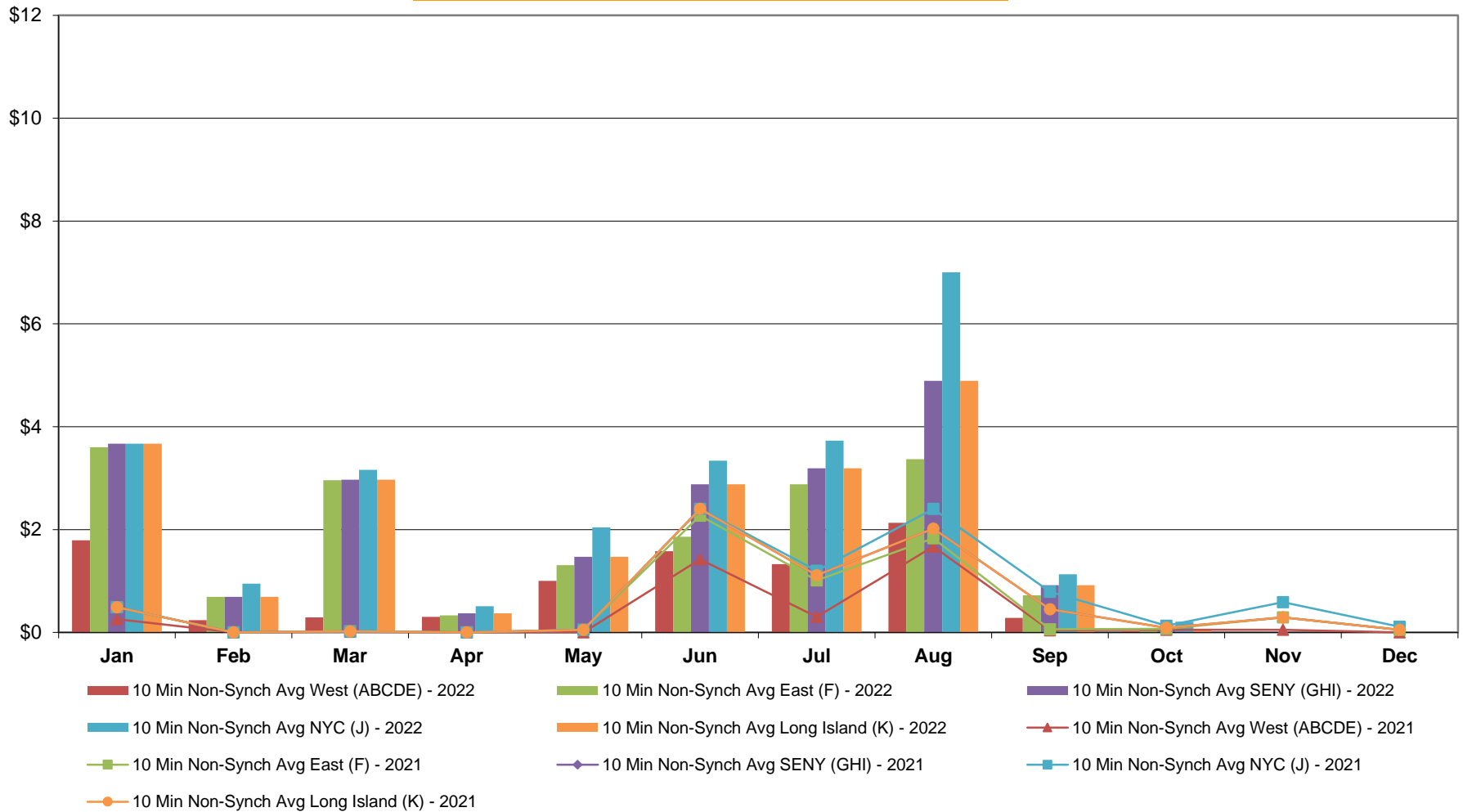
**NYISO Monthly Average Ancillary Service Prices  
Day Ahead Market - Regulation 2021 - 2022**



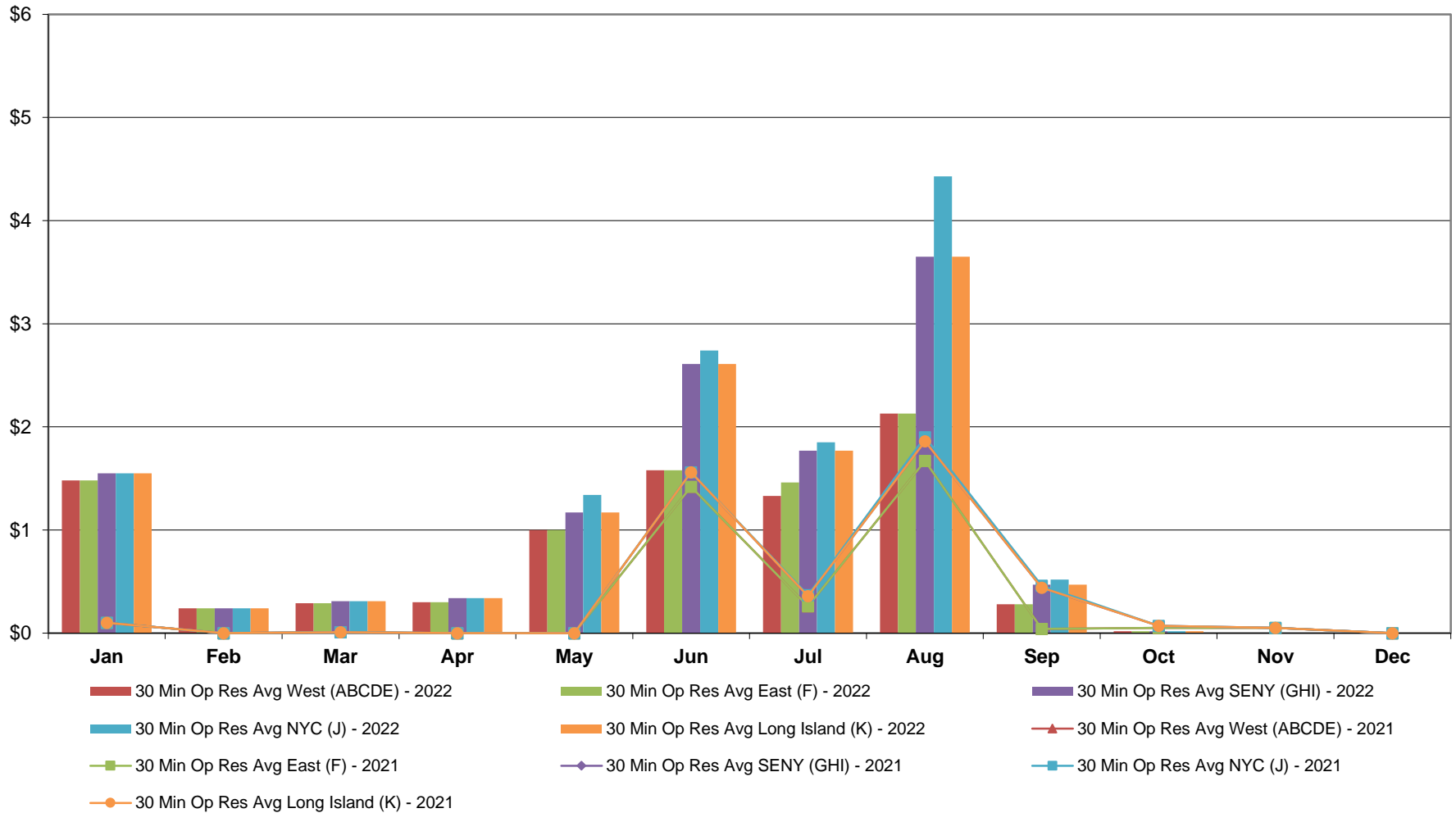
**NYISO Monthly Average Ancillary Service Prices  
RTC Market - 10 Min Spin 2021 - 2022**



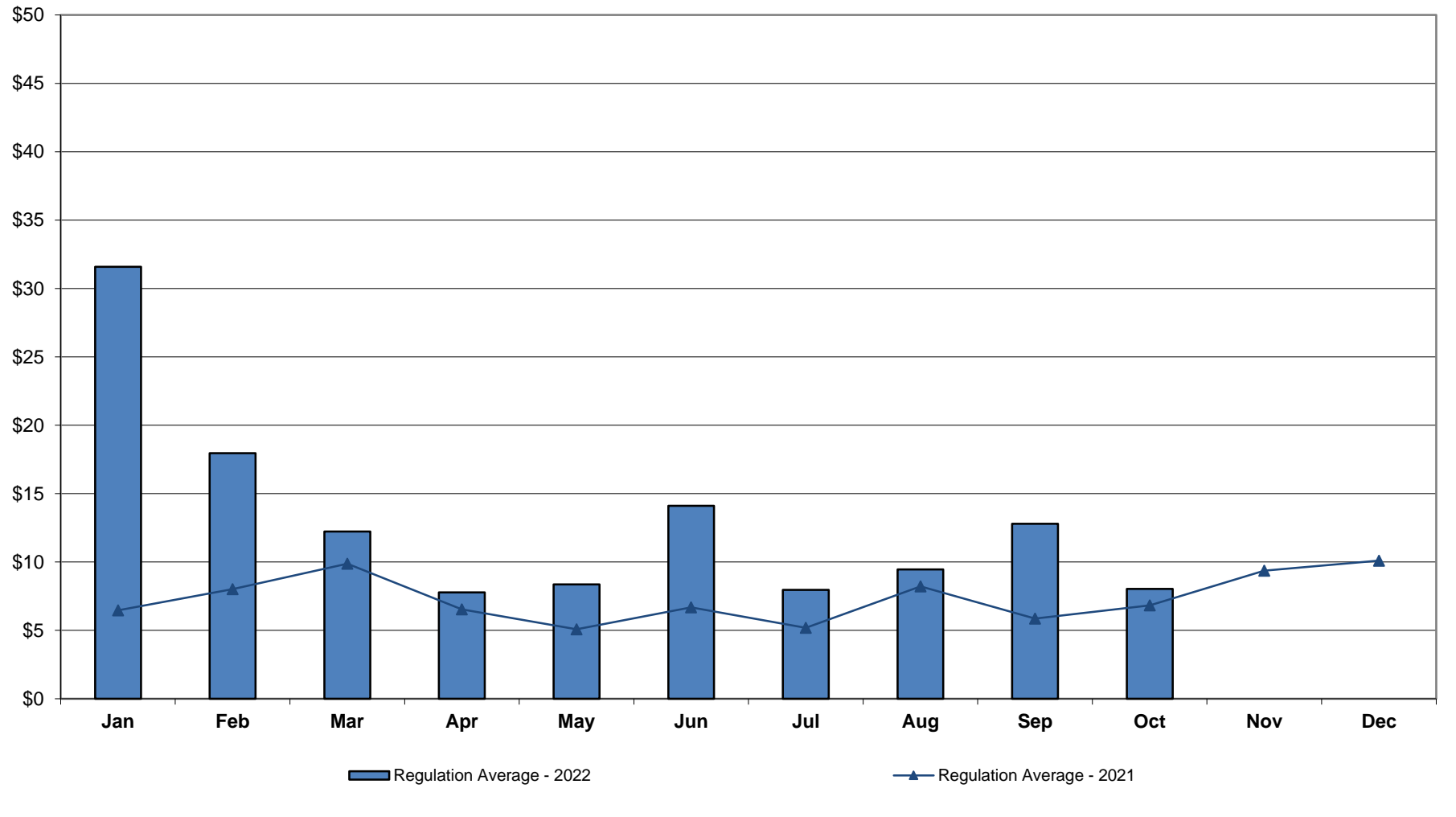
**NYISO Monthly Average Ancillary Service Prices  
RTC Market - 10 Min Non-Synch 2021 - 2022**



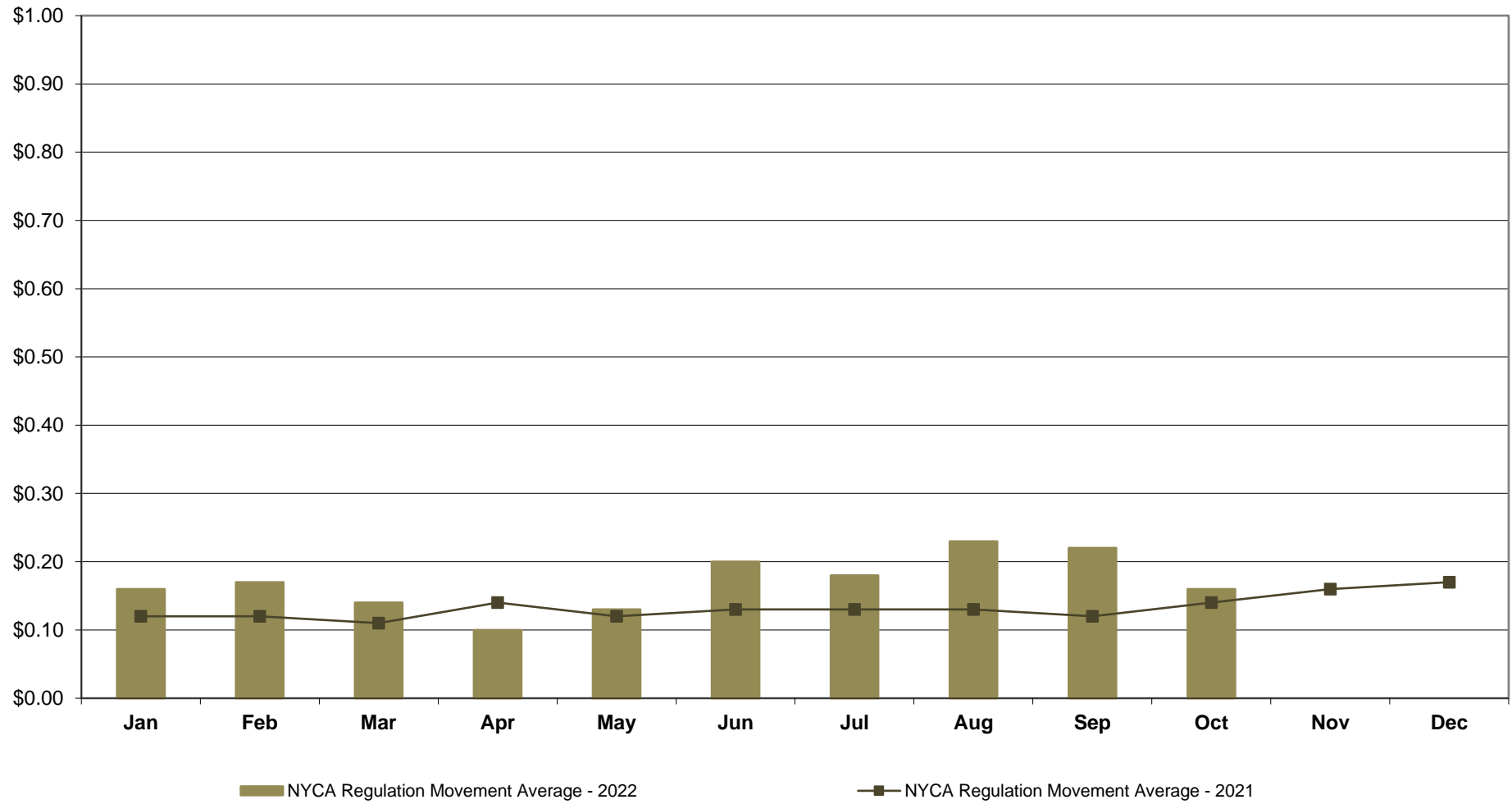
**NYISO Monthly Average Ancillary Service Prices  
RTC Market - 30 Min Op Res 2021 - 2022**



**NYISO Monthly Average Ancillary Service Prices  
RTC Market - Regulation 2021 - 2022**

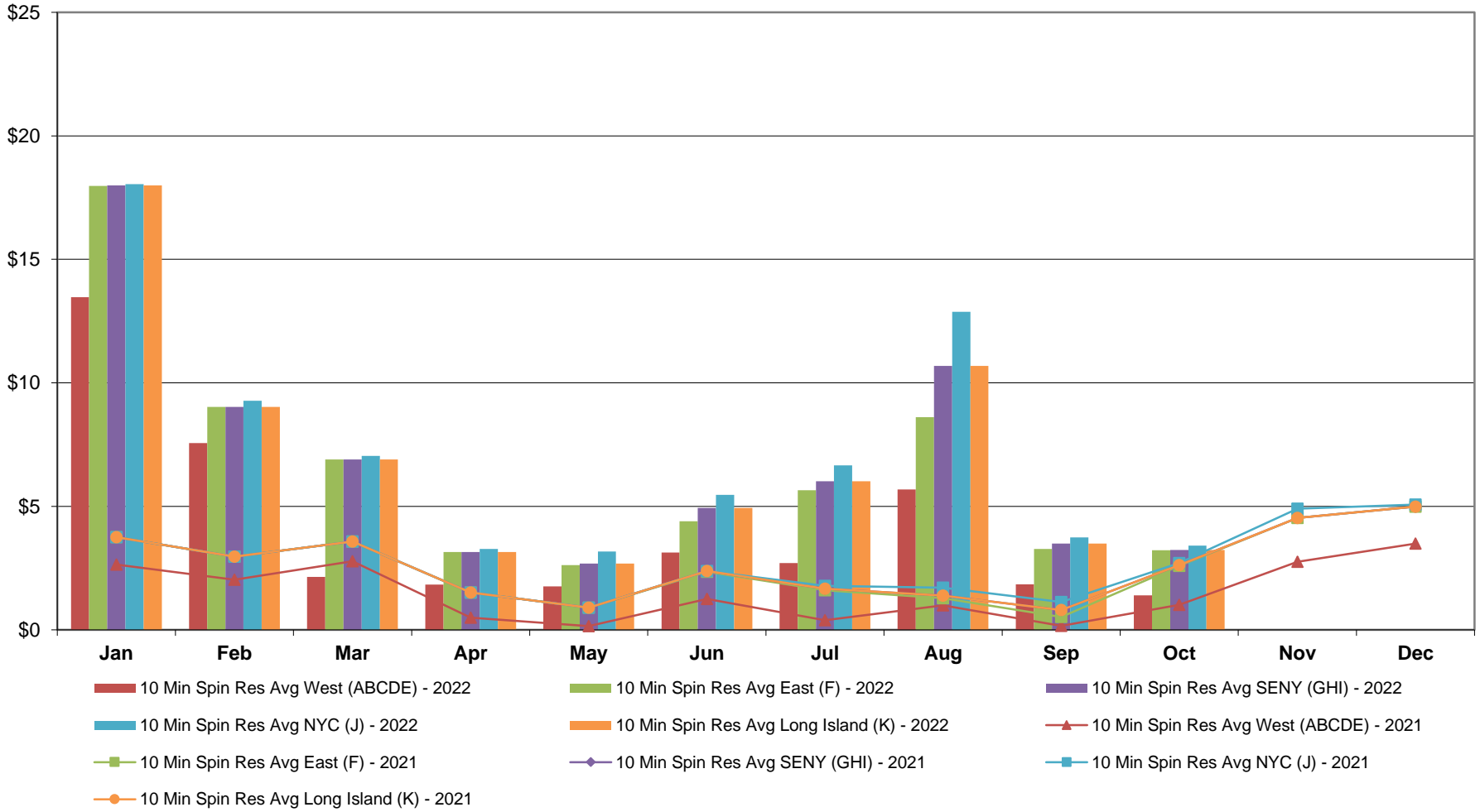


**NYISO Monthly Average Ancillary Service Prices  
RTC Market - Regulation Movement 2021 - 2022**

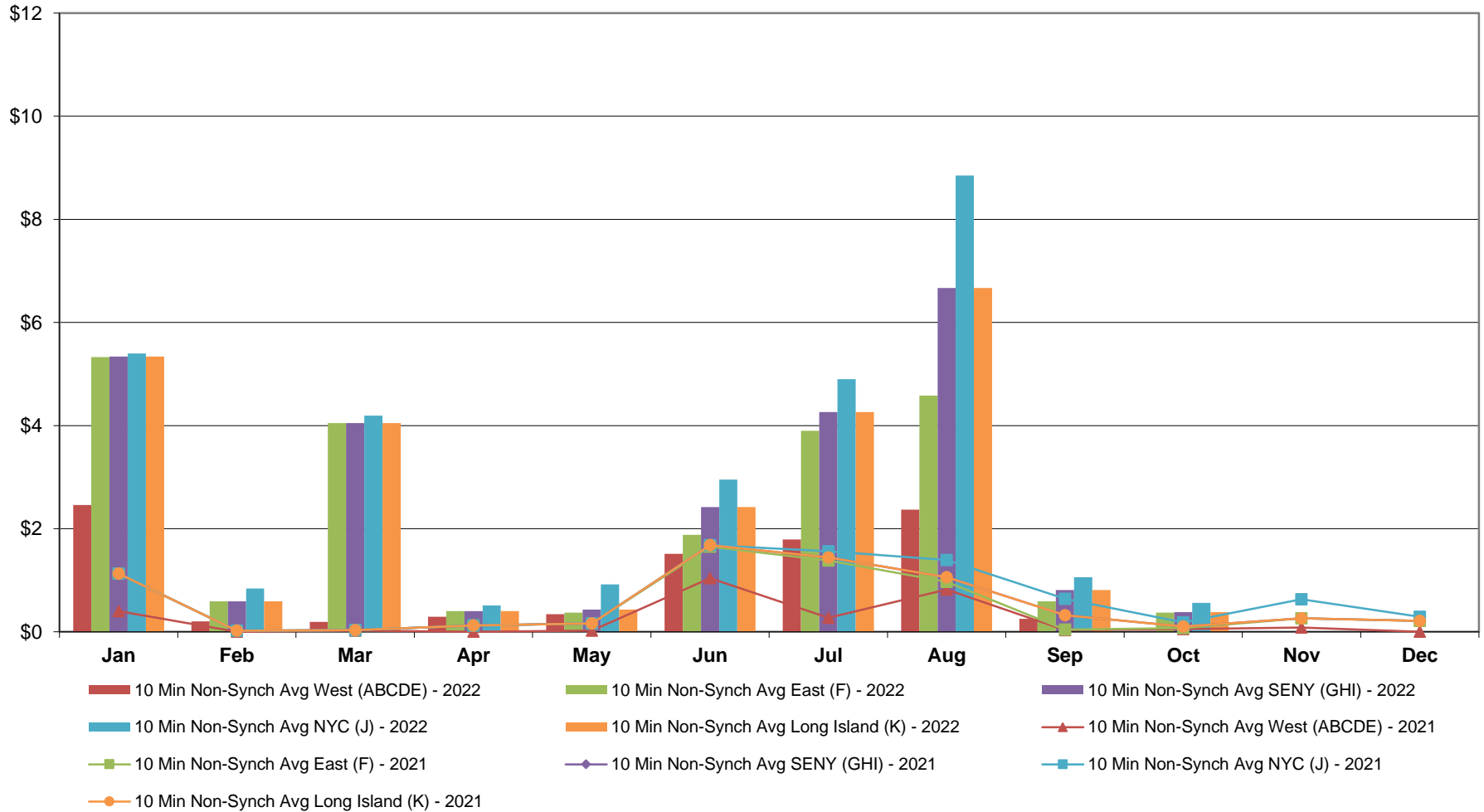




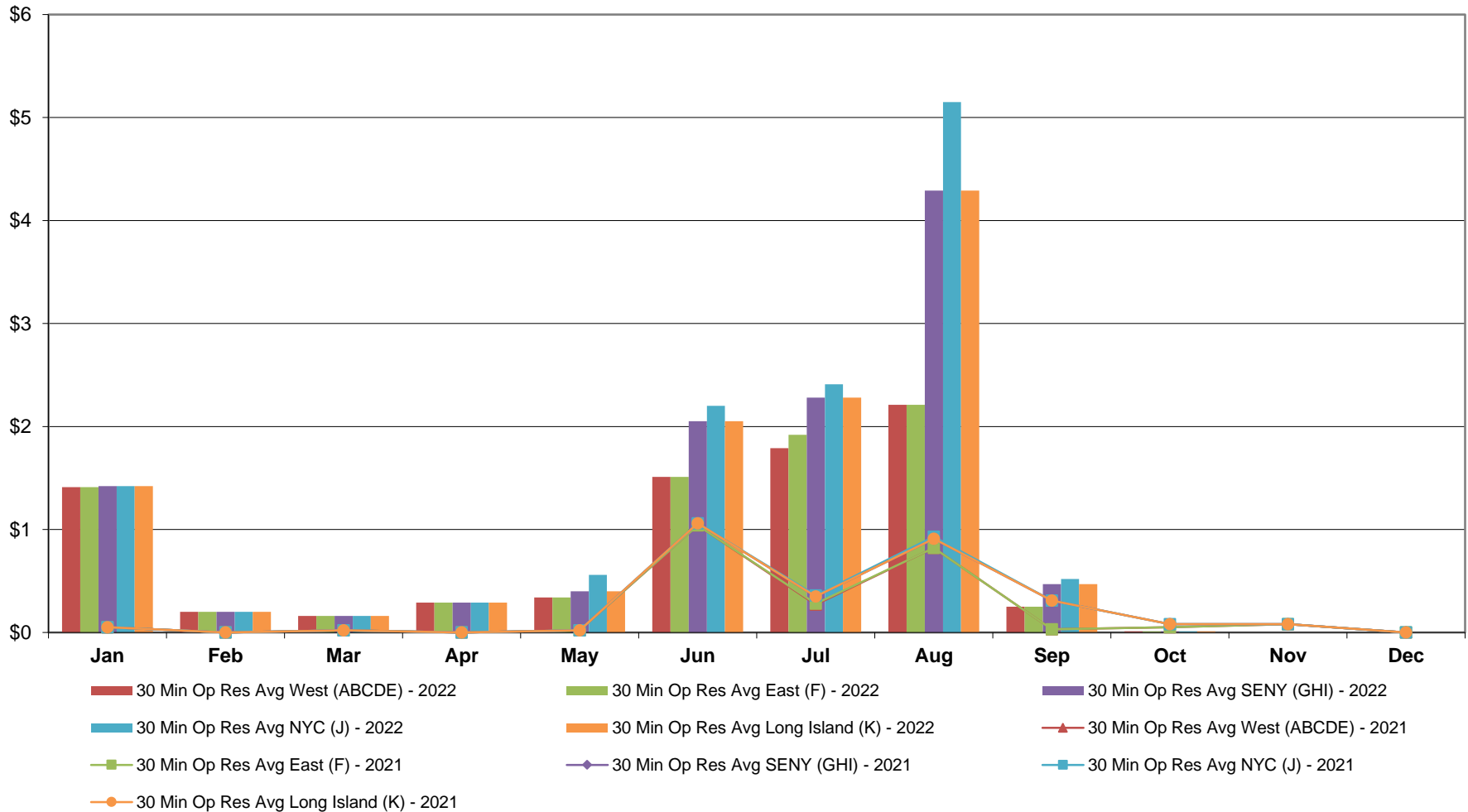
**NYISO Monthly Average Ancillary Service Prices  
Real Time Market - 10 Min Spin 2021 - 2022**



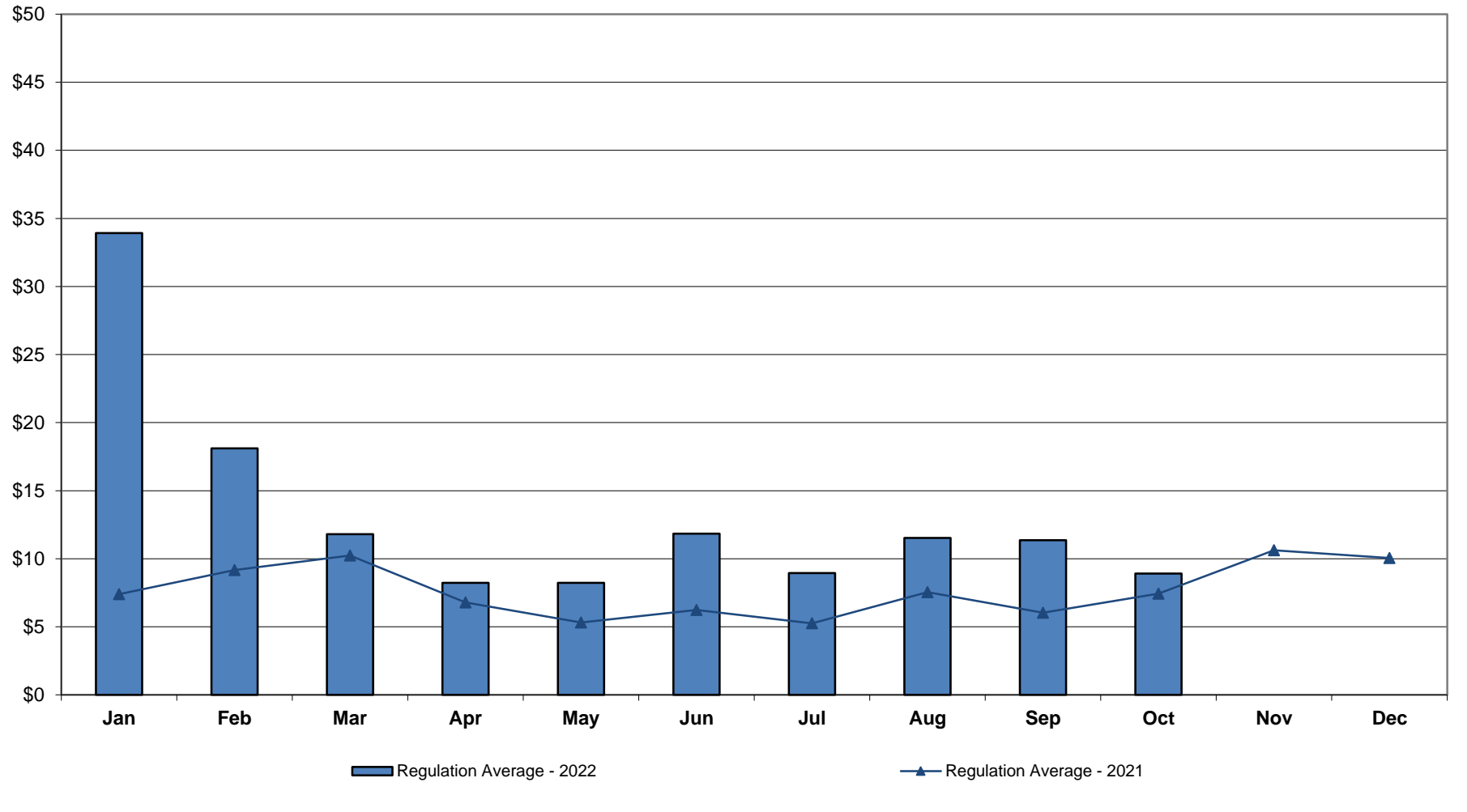
**NYISO Monthly Average Ancillary Service Prices  
Real Time Market - 10 Min Non-Synch 2021 - 2022**



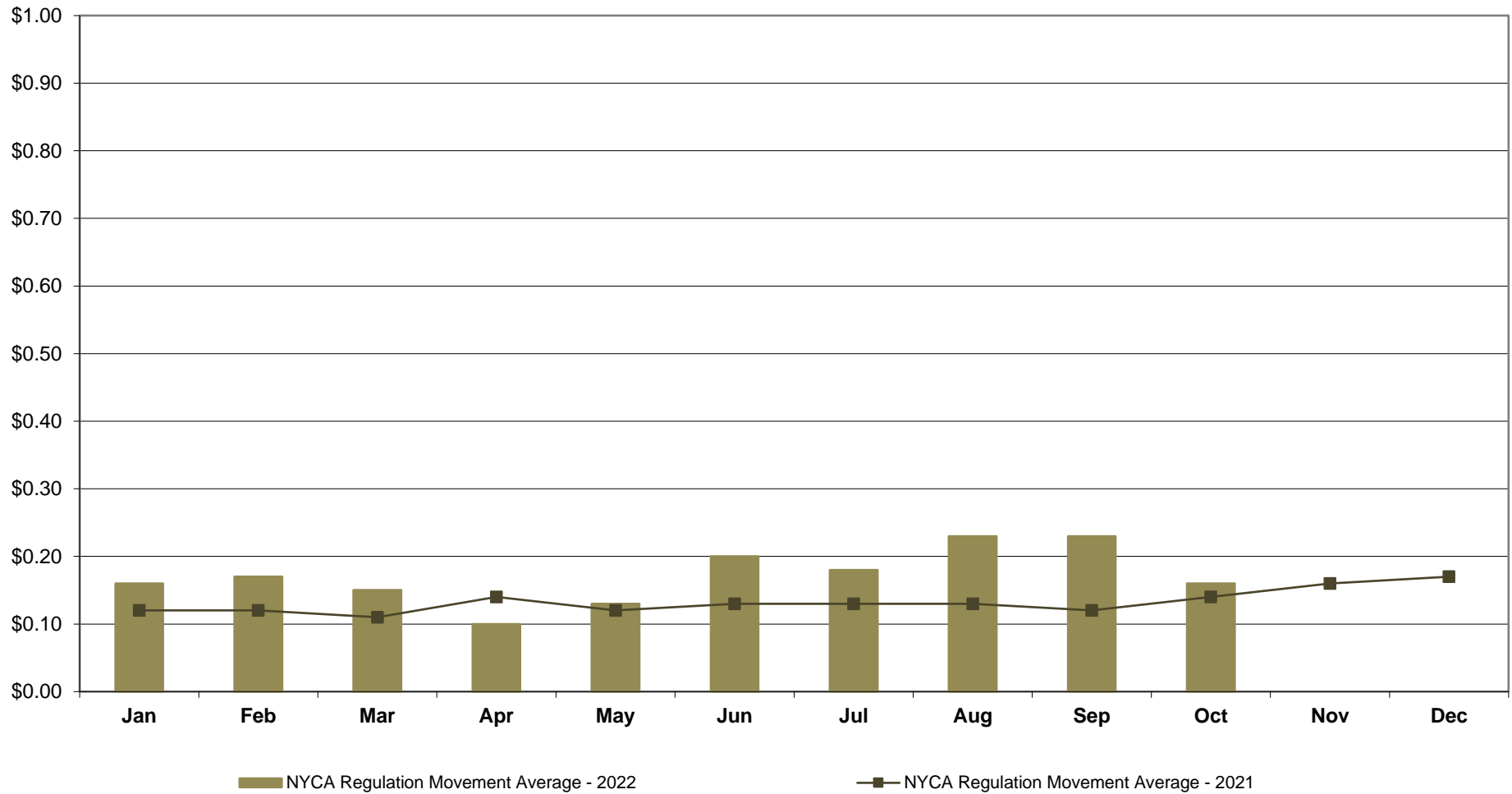
**NYISO Monthly Average Ancillary Service Prices  
Real Time Market - 30 Min Op Res 2021 - 2022**



**NYISO Monthly Average Ancillary Service Prices  
Real Time Market - Regulation 2021 - 2022**



**NYISO Monthly Average Ancillary Service Prices  
Real Time Market - Regulation Movement 2021 - 2022**



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

<u>2022</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Day Ahead Market</b>												
10 Min Spin Long Island (K)	14.40	11.34	6.76	6.79	6.32	5.88	7.92	8.10	7.22	8.57		
10 Min Spin NYC (J)	15.32	12.52	7.29	6.80	7.01	6.12	11.61	10.41	7.81	9.10		
10 Min Spin SENEY (GHI)	14.40	11.34	6.76	6.79	6.32	5.88	7.92	8.10	7.22	8.57		
10 Min Spin East (F)	14.37	11.30	6.74	6.70	6.28	5.87	7.68	7.88	7.07	8.49		
10 Min Spin West (ABCDE)	12.74	8.93	5.48	5.01	4.34	4.99	5.91	5.53	5.84	6.11		
10 Min Non Synch Long Island (K)	9.70	9.48	5.68	4.87	4.68	4.83	7.24	6.13	5.65	6.41		
10 Min Non Synch NYC (J)	10.61	10.66	6.20	4.89	5.38	5.07	10.93	8.44	6.25	6.94		
10 Min Non Synch SENEY (GHI)	9.70	9.48	5.68	4.87	4.68	4.83	7.24	6.13	5.65	6.41		
10 Min Non Synch East (F)	9.66	9.44	5.66	4.78	4.64	4.82	7.00	5.90	5.51	6.32		
10 Min Non Synch West (ABCDE)	8.88	7.35	4.66	4.50	4.15	4.60	5.69	5.16	5.08	5.15		
30 Min Long Island (K)	8.92	7.40	4.67	4.59	4.19	4.61	5.93	5.36	5.22	5.23		
30 Min NYC (J)	8.95	7.42	4.67	4.59	4.21	4.61	6.18	5.46	5.22	5.23		
30 Min SENEY (GHI)	8.92	7.40	4.67	4.59	4.19	4.61	5.93	5.36	5.22	5.23		
30 Min East (F)	8.88	7.35	4.66	4.50	4.15	4.60	5.69	5.13	5.08	5.15		
30 Min West (ABCDE)	8.88	7.35	4.66	4.50	4.15	4.60	5.69	5.13	5.08	5.15		
Regulation	35.17	19.48	12.56	8.94	10.61	11.49	11.96	12.58	12.68	11.31		
<b>2021</b>	<b>January</b>	<b>February</b>	<b>March</b>	<b>April</b>	<b>May</b>	<b>June</b>	<b>July</b>	<b>August</b>	<b>September</b>	<b>October</b>	<b>November</b>	<b>December</b>
<b>Day Ahead Market</b>												
10 Min Spin Long Island (K)	4.61	7.85	4.46	3.80	3.78	3.91	3.80	4.06	4.05	6.61	6.27	5.33
10 Min Spin NYC (J)	4.68	8.01	4.46	3.81	3.80	4.38	4.14	4.51	4.19	6.69	6.60	5.56
10 Min Spin SENEY (GHI)	4.61	7.85	4.46	3.80	3.78	3.91	3.80	4.06	4.05	6.61	6.27	5.33
10 Min Spin East (F)	4.61	7.85	4.46	3.80	3.78	3.89	3.64	3.87	3.92	6.49	6.26	5.32
10 Min Spin West (ABCDE)	4.01	6.68	4.07	3.56	3.43	3.64	3.40	3.54	3.62	4.84	4.75	3.97
10 Min Non Synch Long Island (K)	3.32	5.58	3.60	3.25	3.27	3.47	3.46	3.68	3.47	4.56	4.37	3.82
10 Min Non Synch NYC (J)	3.40	5.74	3.60	3.26	3.30	3.93	3.80	4.14	3.60	4.64	4.69	4.05
10 Min Non Synch SENEY (GHI)	3.32	5.58	3.60	3.25	3.27	3.47	3.46	3.68	3.47	4.56	4.37	3.82
10 Min Non Synch East (F)	3.32	5.58	3.60	3.25	3.27	3.45	3.31	3.50	3.34	4.44	4.35	3.81
10 Min Non Synch West (ABCDE)	3.22	5.25	3.57	3.19	3.17	3.31	3.19	3.31	3.27	4.14	4.01	3.70
30 Min Long Island (K)	3.22	5.25	3.57	3.19	3.17	3.33	3.34	3.49	3.41	4.25	4.02	3.71
30 Min NYC (J)	3.23	5.25	3.57	3.19	3.18	3.53	3.40	3.62	3.41	4.27	4.02	3.71
30 Min SENEY (GHI)	3.22	5.25	3.57	3.19	3.17	3.33	3.34	3.49	3.41	4.25	4.02	3.71
30 Min East (F)	3.22	5.25	3.57	3.19	3.17	3.31	3.19	3.31	3.27	4.14	4.01	3.70
30 Min West (ABCDE)	3.22	5.25	3.57	3.19	3.17	3.31	3.19	3.31	3.27	4.14	4.01	3.70
Regulation	6.40	10.93	7.21	6.72	5.50	5.55	5.13	4.98	6.29	8.27	10.13	8.47

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

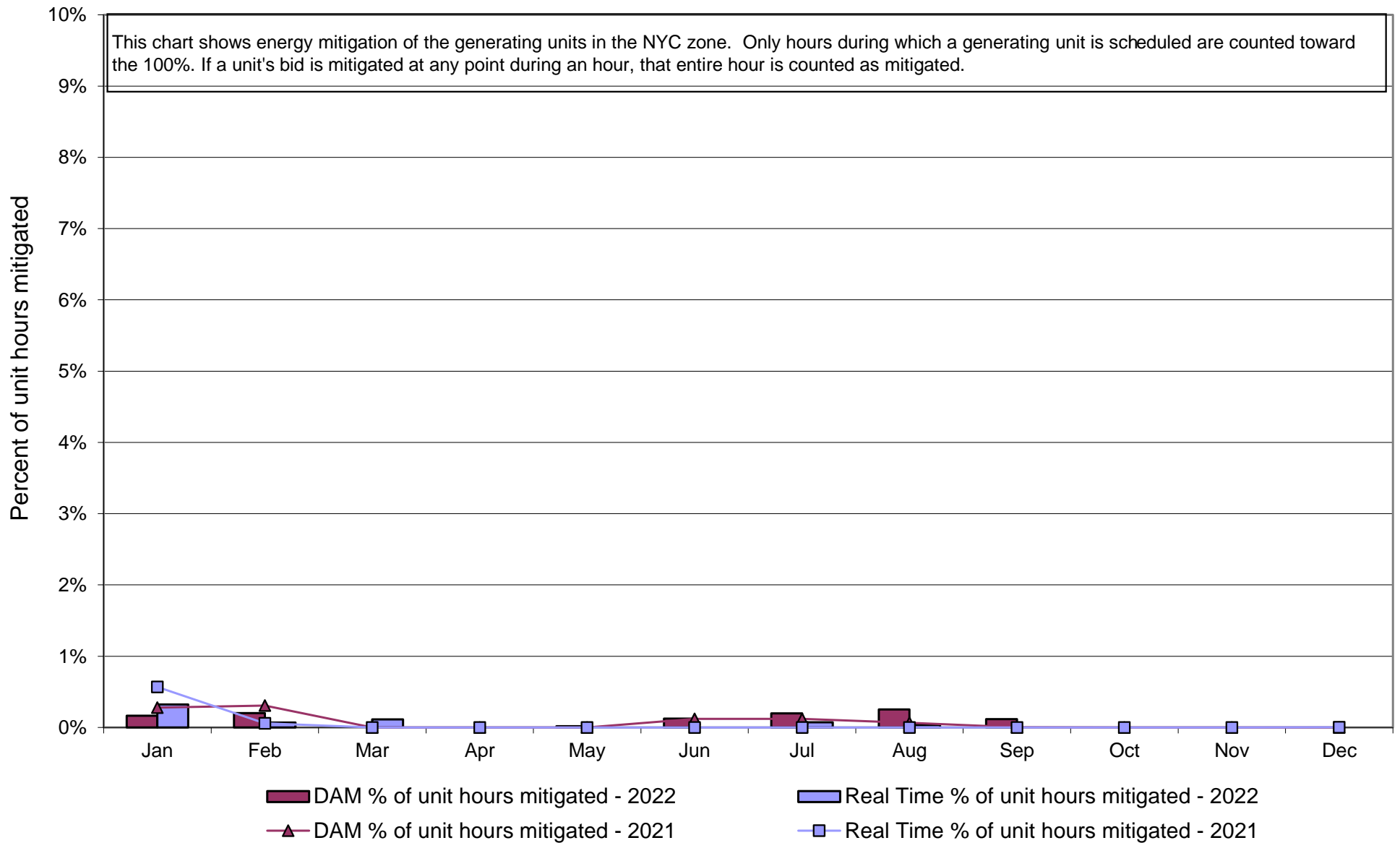
<u>2022</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>RTC Market</b>												
10 Min Spin Long Island (K)	11.75	7.55	4.73	2.39	3.15	5.06	4.34	6.79	2.49	1.72		
10 Min Spin NYC (J)	11.75	7.81	4.92	2.53	3.72	5.51	4.88	8.90	2.71	1.87		
10 Min Spin SENEY (GHI)	11.75	7.55	4.73	2.39	3.15	5.06	4.34	6.79	2.49	1.72		
10 Min Spin East (F)	11.68	7.55	4.71	2.36	2.98	4.03	4.03	5.27	2.29	1.72		
10 Min Spin West (ABCDE)	7.59	5.49	1.27	1.03	1.75	2.47	1.58	3.05	0.99	0.40		
10 Min Non Synch Long Island (K)	3.67	0.69	2.97	0.37	1.47	2.88	3.19	4.89	0.92	0.07		
10 Min Non Synch NYC (J)	3.67	0.95	3.16	0.51	2.04	3.34	3.73	7.00	1.13	0.21		
10 Min Non Synch SENEY (GHI)	3.67	0.69	2.97	0.37	1.47	2.88	3.19	4.89	0.92	0.07		
10 Min Non Synch East (F)	3.60	0.69	2.96	0.33	1.31	1.86	2.88	3.37	0.72	0.07		
10 Min Non Synch West (ABCDE)	1.79	0.24	0.29	0.30	1.00	1.58	1.33	2.13	0.28	0.02		
30 Min Long Island (K)	1.55	0.24	0.31	0.34	1.17	2.61	1.77	3.65	0.47	0.02		
30 Min NYC (J)	1.55	0.24	0.31	0.34	1.34	2.74	1.85	4.43	0.52	0.02		
30 Min SENEY (GHI)	1.55	0.24	0.31	0.34	1.17	2.61	1.77	3.65	0.47	0.02		
30 Min East (F)	1.48	0.24	0.29	0.30	1.00	1.58	1.46	2.13	0.28	0.02		
30 Min West (ABCDE)	1.48	0.24	0.29	0.30	1.00	1.58	1.33	2.13	0.28	0.02		
Regulation	31.59	17.95	12.23	7.77	8.36	14.11	7.96	9.46	12.79	8.03		
NYCA Regulation Movement	0.16	0.17	0.14	0.10	0.13	0.20	0.18	0.23	0.22	0.16		
<u>2021</u>	<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>RTC Market</b>												
10 Min Spin Long Island (K)	1.65	1.53	1.29	0.58	0.61	2.86	1.25	2.21	1.04	1.59	2.18	2.42
10 Min Spin NYC (J)	1.65	1.53	1.29	0.58	0.91	4.26	1.34	2.59	1.37	1.63	2.48	2.48
10 Min Spin SENEY (GHI)	1.65	1.53	1.29	0.58	0.61	2.86	1.25	2.21	1.04	1.59	2.18	2.42
10 Min Spin East (F)	1.65	1.53	1.29	0.58	0.61	2.73	1.14	2.01	0.64	1.57	2.18	2.42
10 Min Spin West (ABCDE)	1.16	0.93	0.88	0.22	0.07	1.51	0.32	1.69	0.11	0.30	0.82	1.22
10 Min Non Synch Long Island (K)	0.49	0.00	0.02	0.00	0.05	2.40	1.11	2.02	0.45	0.09	0.29	0.05
10 Min Non Synch NYC (J)	0.49	0.00	0.02	0.00	0.35	3.80	1.20	2.40	0.79	0.13	0.59	0.11
10 Min Non Synch SENEY (GHI)	0.49	0.00	0.02	0.00	0.05	2.40	1.11	2.02	0.45	0.09	0.29	0.05
10 Min Non Synch East (F)	0.49	0.00	0.02	0.00	0.05	2.27	1.01	1.83	0.06	0.07	0.29	0.05
10 Min Non Synch West (ABCDE)	0.26	0.00	0.01	0.00	0.00	1.42	0.30	1.67	0.04	0.05	0.05	0.00
30 Min Long Island (K)	0.10	0.00	0.01	0.00	0.00	1.56	0.36	1.86	0.44	0.07	0.05	0.00
30 Min NYC (J)	0.10	0.00	0.01	0.00	0.12	2.34	0.37	1.90	0.46	0.07	0.05	0.00
30 Min SENEY (GHI)	0.10	0.00	0.01	0.00	0.00	1.56	0.36	1.86	0.44	0.07	0.05	0.00
30 Min East (F)	0.10	0.00	0.01	0.00	0.00	1.42	0.26	1.67	0.04	0.05	0.05	0.00
30 Min West (ABCDE)	0.10	0.00	0.01	0.00	0.00	1.42	0.26	1.67	0.04	0.05	0.05	0.00
Regulation	6.46	8.02	9.88	6.54	5.08	6.69	5.18	8.22	5.86	6.83	9.37	10.10
NYCA Regulation Movement	0.12	0.12	0.11	0.14	0.12	0.13	0.13	0.13	0.12	0.14	0.16	0.17

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

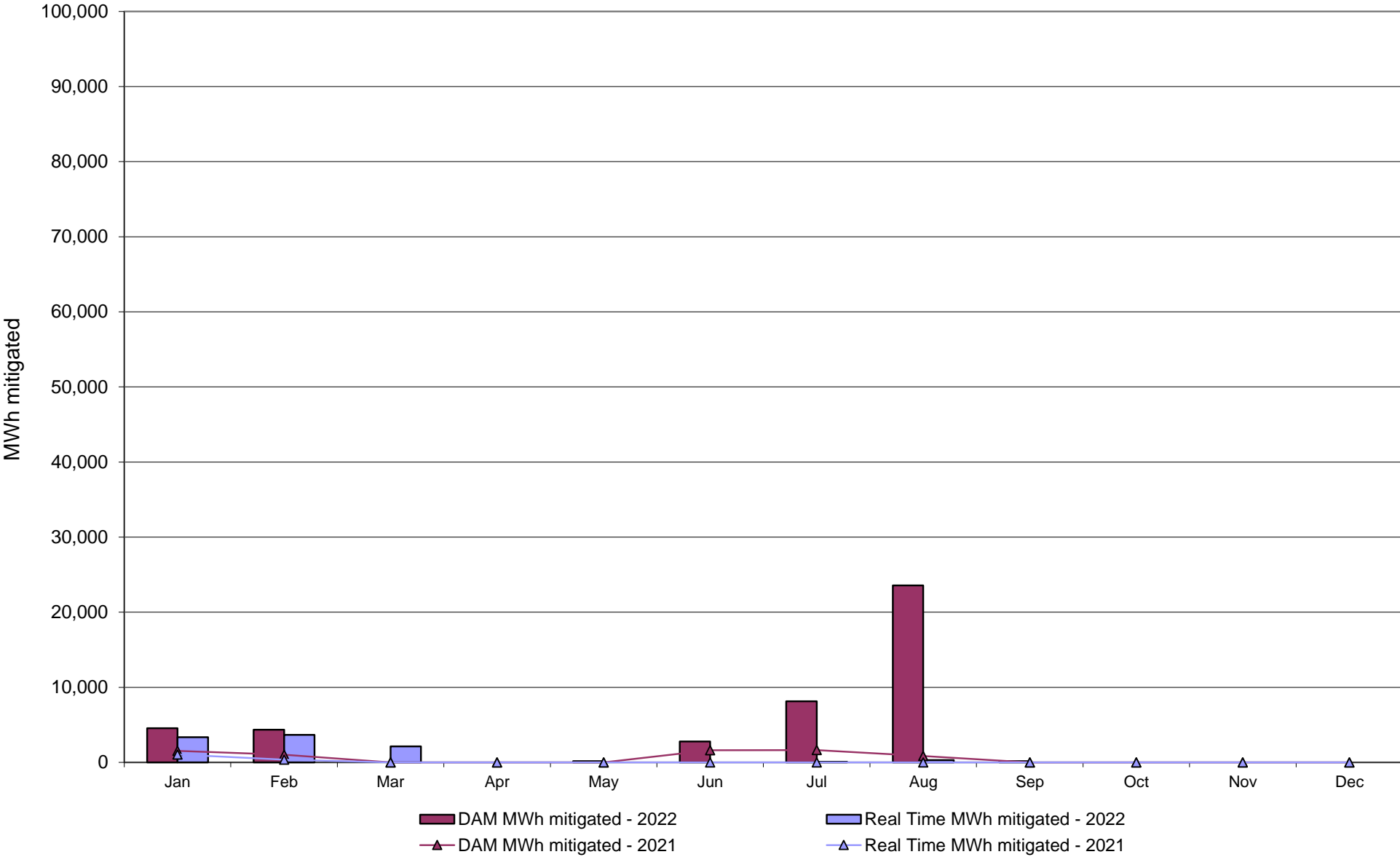
<u>2022</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<b>Real Time Market</b>												
10 Min Spin Long Island (K)	17.99	9.02	6.90	3.15	2.68	4.93	6.01	10.69	3.49	3.23		
10 Min Spin NYC (J)	18.04	9.27	7.04	3.27	3.17	5.46	6.66	12.88	3.74	3.41		
10 Min Spin SENEY (GHI)	17.99	9.02	6.90	3.15	2.68	4.93	6.01	10.69	3.49	3.23		
10 Min Spin East (F)	17.97	9.02	6.90	3.15	2.62	4.39	5.65	8.61	3.27	3.22		
10 Min Spin West (ABCDE)	13.47	7.56	2.14	1.83	1.76	3.13	2.70	5.68	1.84	1.40		
10 Min Non Synch Long Island (K)	5.34	0.59	4.05	0.40	0.43	2.42	4.26	6.67	0.81	0.38		
10 Min Non Synch NYC (J)	5.40	0.84	4.19	0.51	0.92	2.95	4.90	8.85	1.06	0.56		
10 Min Non Synch SENEY (GHI)	5.34	0.59	4.05	0.40	0.43	2.42	4.26	6.67	0.81	0.38		
10 Min Non Synch East (F)	5.33	0.59	4.05	0.40	0.37	1.88	3.90	4.58	0.59	0.37		
10 Min Non Synch West (ABCDE)	2.46	0.20	0.19	0.29	0.34	1.51	1.79	2.37	0.25	0.01		
30 Min Long Island (K)	1.42	0.20	0.16	0.29	0.40	2.05	2.28	4.29	0.47	0.01		
30 Min NYC (J)	1.42	0.20	0.16	0.29	0.56	2.20	2.41	5.15	0.52	0.01		
30 Min SENEY (GHI)	1.42	0.20	0.16	0.29	0.40	2.05	2.28	4.29	0.47	0.01		
30 Min East (F)	1.41	0.20	0.16	0.29	0.34	1.51	1.92	2.21	0.25	0.01		
30 Min West (ABCDE)	1.41	0.20	0.16	0.29	0.34	1.51	1.79	2.21	0.25	0.01		
Regulation	33.92	18.10	11.81	8.22	8.23	11.84	8.95	11.52	11.36	8.91		
NYCA Regulation Movement	0.16	0.17	0.15	0.10	0.13	0.20	0.18	0.23	0.23	0.16		
<b>2021</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>Real Time Market</b>												
10 Min Spin Long Island (K)	3.75	2.96	3.57	1.51	0.90	2.38	1.67	1.38	0.80	2.62	4.53	4.99
10 Min Spin NYC (J)	3.75	2.96	3.57	1.51	1.16	3.77	1.78	1.71	1.13	2.70	4.90	5.07
10 Min Spin SENEY (GHI)	3.75	2.96	3.57	1.51	0.90	2.38	1.67	1.38	0.80	2.62	4.53	4.99
10 Min Spin East (F)	3.75	2.96	3.57	1.51	0.90	2.35	1.60	1.28	0.52	2.59	4.53	4.99
10 Min Spin West (ABCDE)	2.64	2.03	2.78	0.49	0.15	1.25	0.39	0.99	0.16	1.01	2.75	3.49
10 Min Non Synch Long Island (K)	1.13	0.02	0.03	0.12	0.16	1.68	1.44	1.06	0.32	0.10	0.26	0.21
10 Min Non Synch NYC (J)	1.13	0.02	0.03	0.12	0.42	3.07	1.56	1.39	0.64	0.18	0.63	0.29
10 Min Non Synch SENEY (GHI)	1.13	0.02	0.03	0.12	0.16	1.68	1.44	1.06	0.32	0.10	0.26	0.21
10 Min Non Synch East (F)	1.13	0.02	0.03	0.12	0.16	1.65	1.38	0.97	0.04	0.07	0.26	0.21
10 Min Non Synch West (ABCDE)	0.40	0.00	0.02	0.00	0.02	1.04	0.27	0.82	0.03	0.05	0.08	0.00
30 Min Long Island (K)	0.05	0.00	0.02	0.00	0.02	1.06	0.35	0.91	0.31	0.08	0.08	0.00
30 Min NYC (J)	0.05	0.00	0.02	0.00	0.12	1.84	0.36	0.93	0.31	0.08	0.08	0.00
30 Min SENEY (GHI)	0.05	0.00	0.02	0.00	0.02	1.06	0.35	0.91	0.31	0.08	0.08	0.00
30 Min East (F)	0.05	0.00	0.02	0.00	0.02	1.04	0.28	0.82	0.03	0.05	0.08	0.00
30 Min West (ABCDE)	0.05	0.00	0.02	0.00	0.02	1.04	0.27	0.82	0.03	0.05	0.08	0.00
Regulation	7.39	9.17	10.23	6.78	5.31	6.24	5.25	7.54	6.03	7.43	10.62	10.05
NYCA Regulation Movement	0.12	0.12	0.11	0.14	0.12	0.13	0.13	0.13	0.12	0.14	0.16	0.17



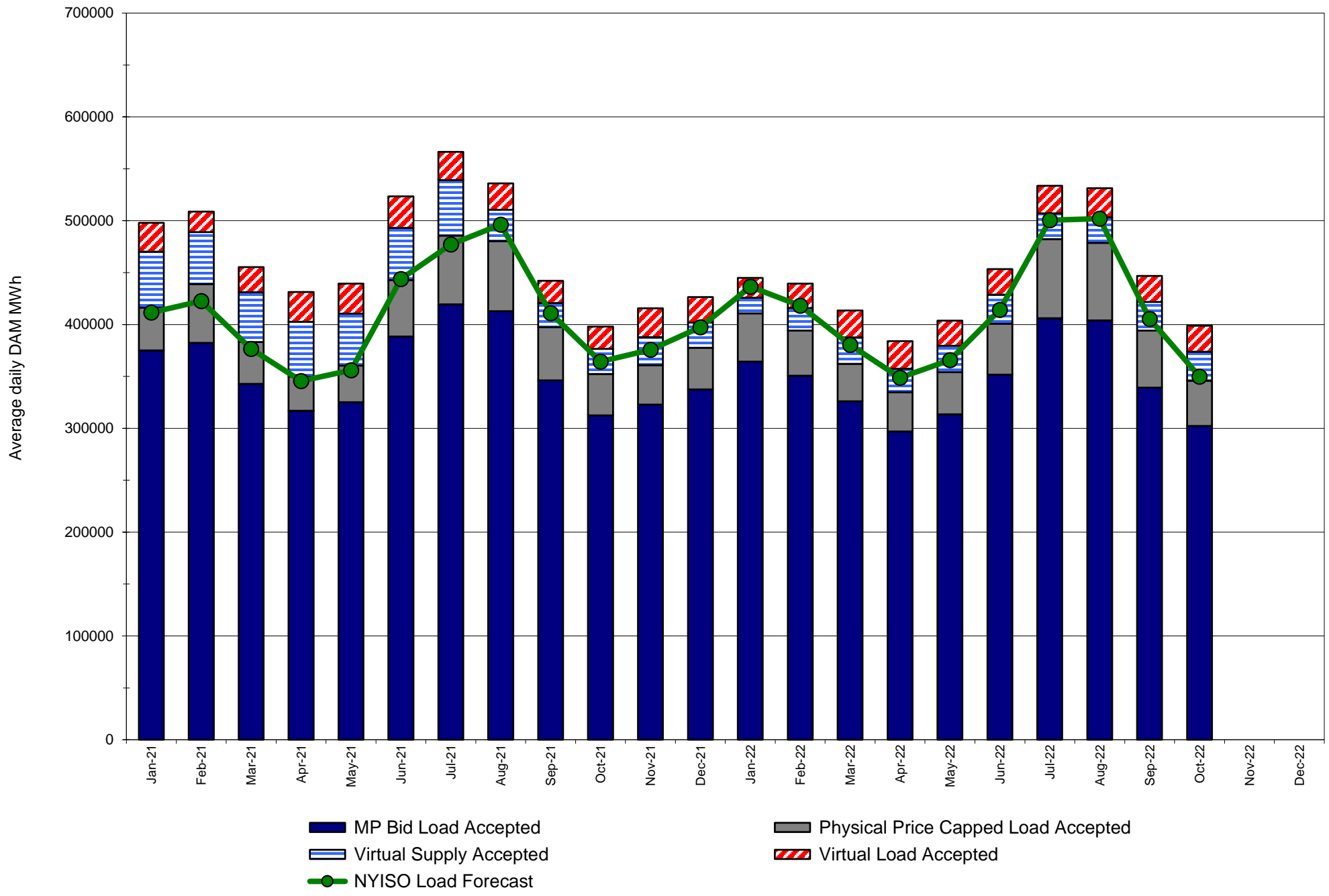
## NYISO In City Energy Mitigation - AMP (NYC Zone) 2021 - 2022 Percentage of committed unit-hours mitigated



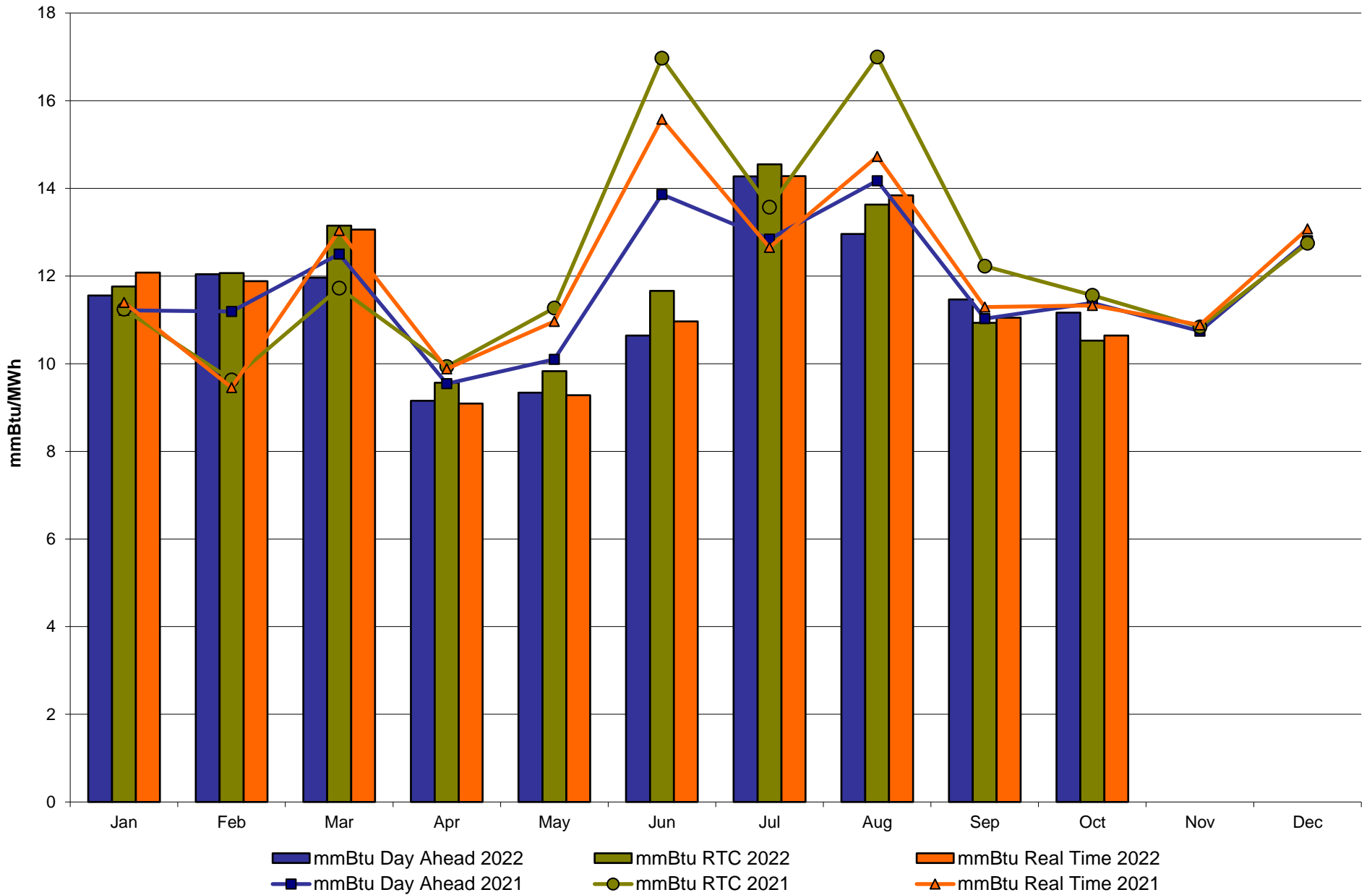
**NYISO In City Energy Mitigation (NYC Zone) 2021 - 2022**  
**Monthly megawatt hours mitigated**



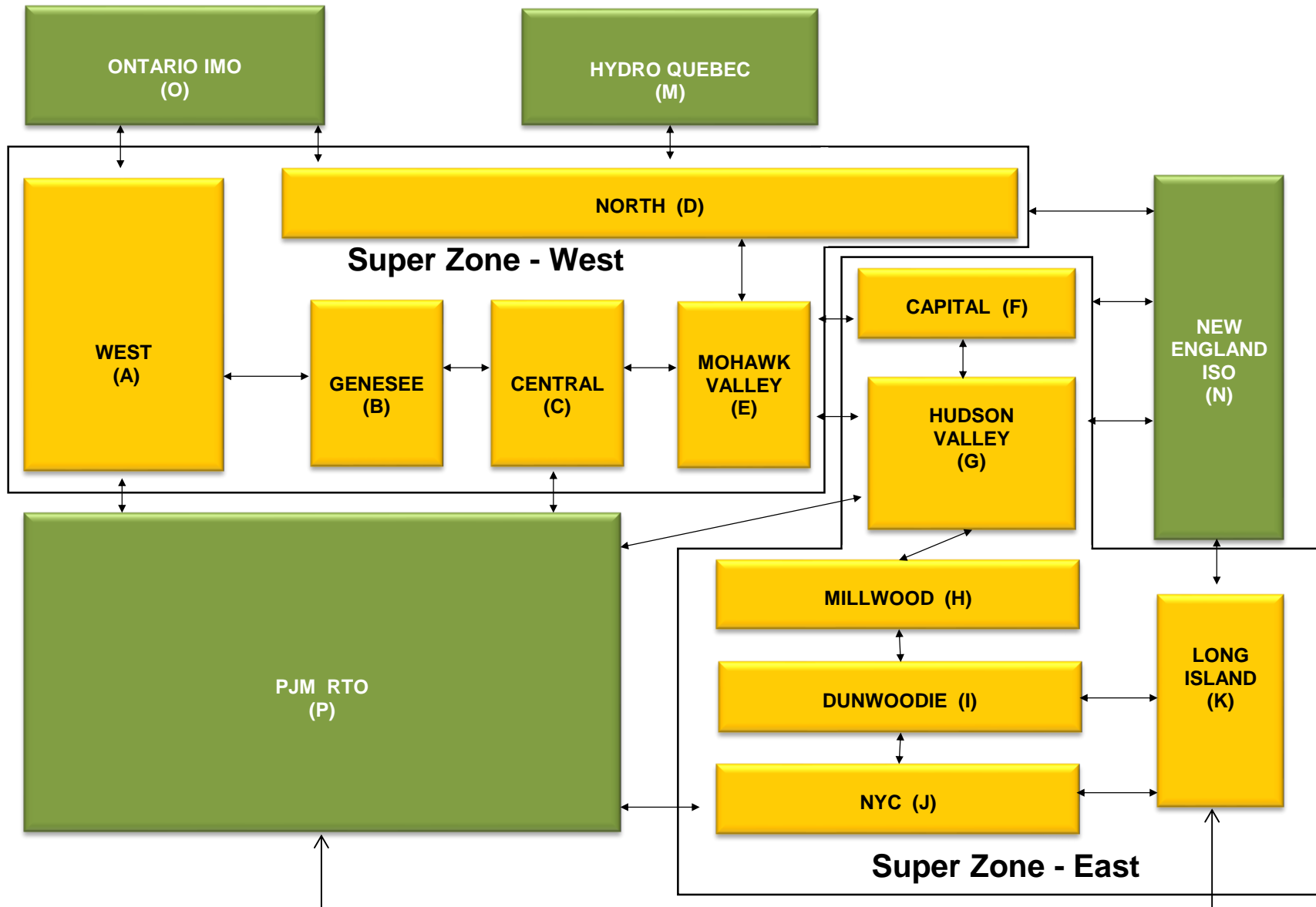
# NYISO Average Daily DAM Load Bid Summary



## Monthly Implied Heat Rate 2021-2022



# NYISO LBMP ZONES



**Billing Codes for Chart C**

<b><u>Chart - C Category Name</u></b>	<b><u>Billing Code</u></b>	<b><u>Billing Category Name</u></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

# Our Mission & Vision



## Mission

Ensure power system reliability and competitive markets for New York in a clean energy future



## Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation