

Monthly Report

A Report by the
New York Independent System Operator

April 2023

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April 2023 Report

Operations & Reliability Department New York Independent System Operator

Prepared by NYISO Operations Analysis and Services, based on settlements initial invoice data collected on or before May 8, 2023.

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April 2023 Operations Performance Highlights

Monthly Peak Load	Monthly Minimum Load	Winter 2022-2023 Peak	All-time Winter Peak
04/14/2023 HB 17 18,915 MW	04/09/2023 HB 14 11,742 MW	02/03/2023 HB 18 23,369 MW	01/07/2014 HB 18 25,738 MW

- 24.7 hours of Thunderstorm Alerts were declared
- 17.3 hours of NERC TLR level 3 curtailment
- NYISO began securing Reynolds Rd-Alps 345kV (#1), East Stolle Rd-Stolle Rd 345kV (#28) and Linden-Goethals 230kV (#A2253) facilities in the Real-Time Market on 04/19/2023 and in the Day-Ahead Market execution occurring on 04/20/2023 for the 04/21/2023 market day.
- The Knickerbocker 345kV and Princetown 345kV substations associated with AC Transmission Public Policy Segment A were placed in-service on 04/20/2023 and 04/28/2023 respectively.

Installed Wind, Solar and Energy Storage Resource Nameplate Values:

Land-Based Wind	Behind-the-Meter Solar	Front-of-the-Meter Solar	Energy Storage Resource (ESR)
2,528 MW	4,528 MW	154 MW	20 MW

Estimated production cost savings associated with the Broader Regional Market initiatives:

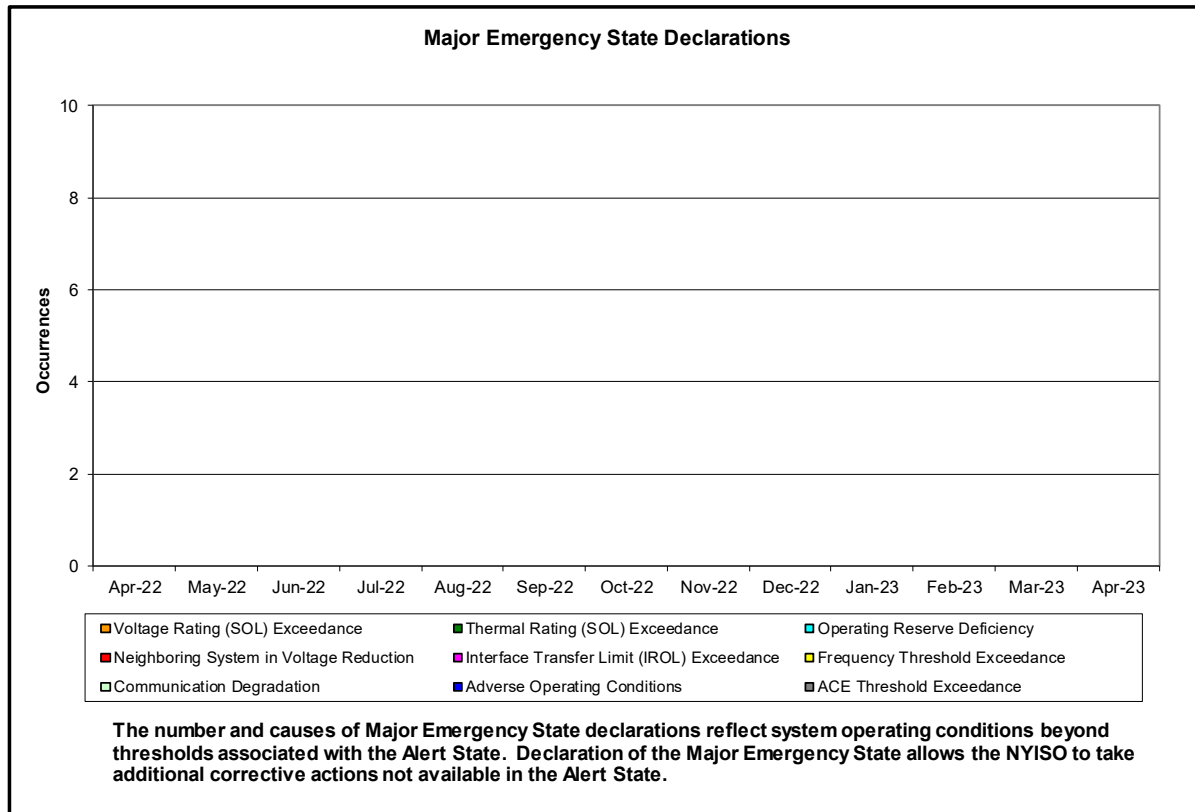
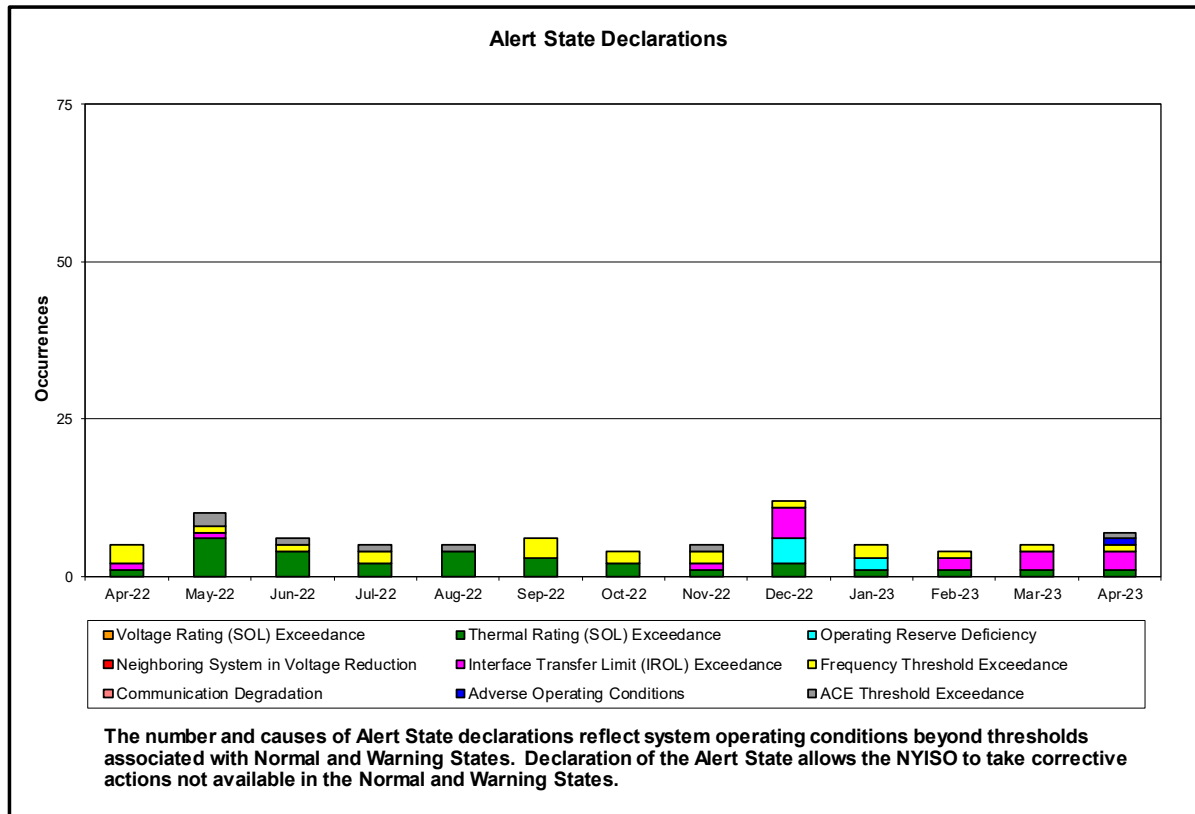
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$3.89	\$12.77
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.06)	(\$0.46)
NY Savings from NE-NY Coordinated Transaction Scheduling	\$0.32	(\$0.82)
Total NY Savings	\$4.15	\$11.49
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.28	\$1.08
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.10	\$0.38
Total Regional Savings	\$0.38	\$1.46

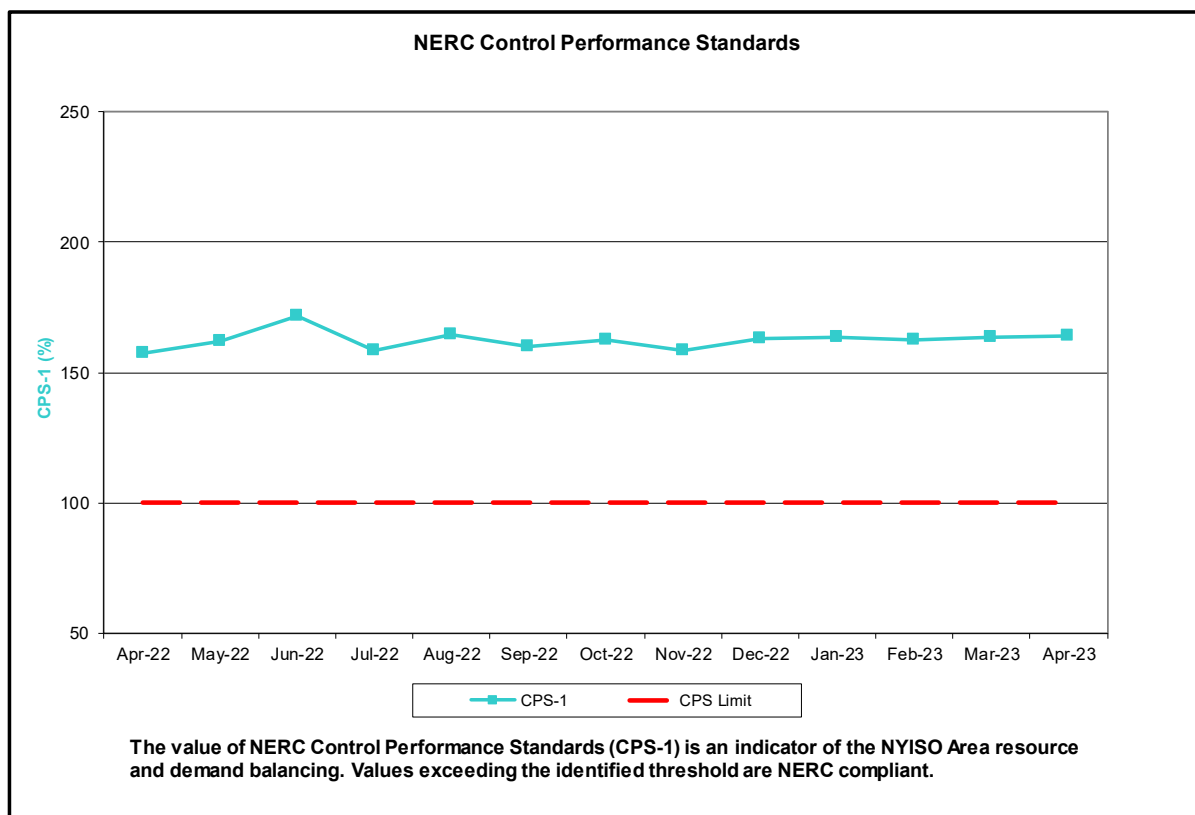
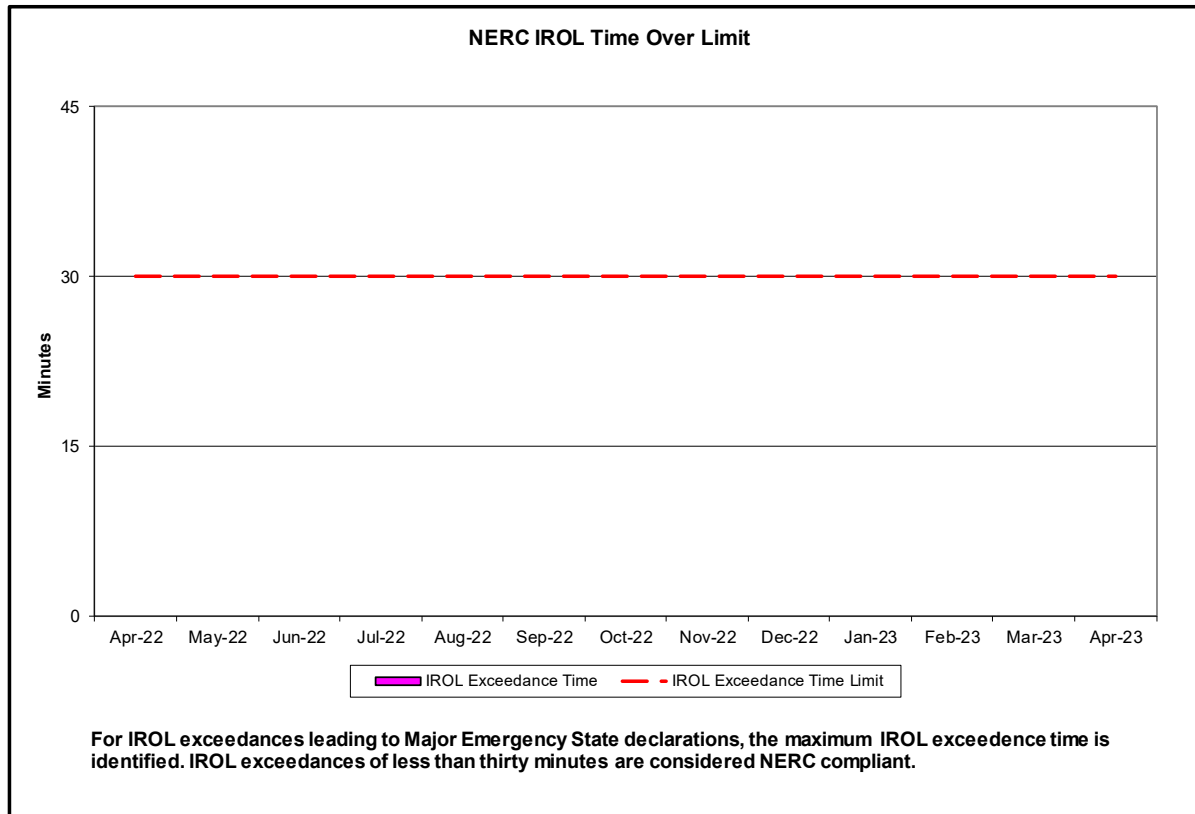
- Statewide uplift cost monthly average was (\$0.38)/MWh.
- The following table identifies the Monthly ICAP spot market prices and the price delta.

Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
May 2023 Spot Price	\$5.70	\$5.70	\$18.58	\$5.70
October 2022 Spot Price	\$2.92	\$3.18	\$3.27	\$6.48
Delta	\$2.78	\$2.52	\$15.31	(\$0.78)

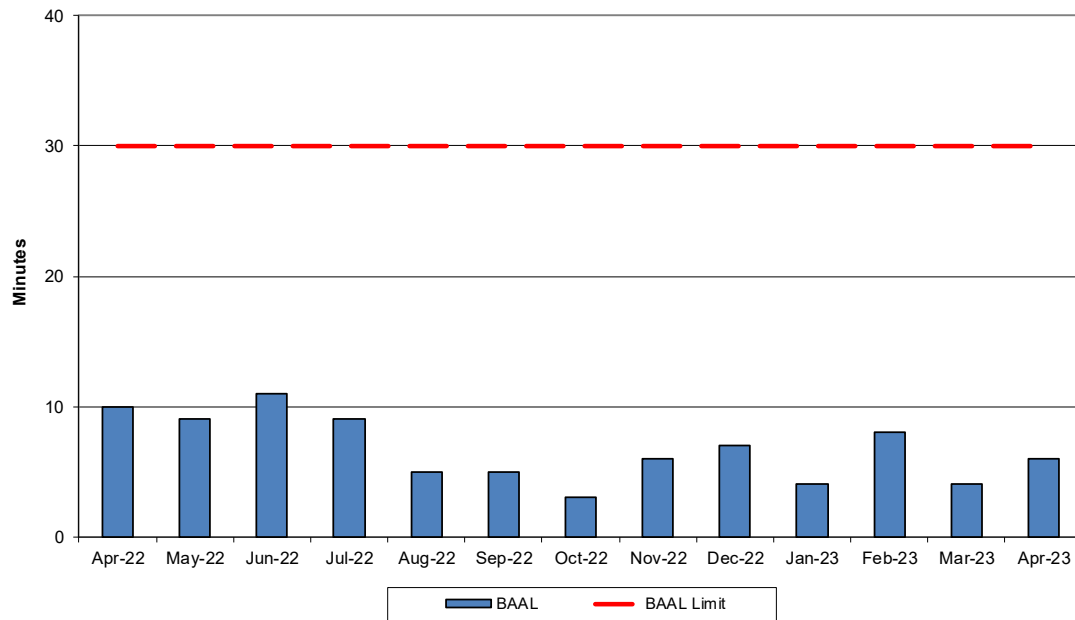
- The price in LI decreased due an increase in generation UCAP. The price in NYC and G-J increased due to a decrease in generation UCAP. The price in NYCA increased due to a decrease in imports and generation UCAP.

Reliability Performance Metrics



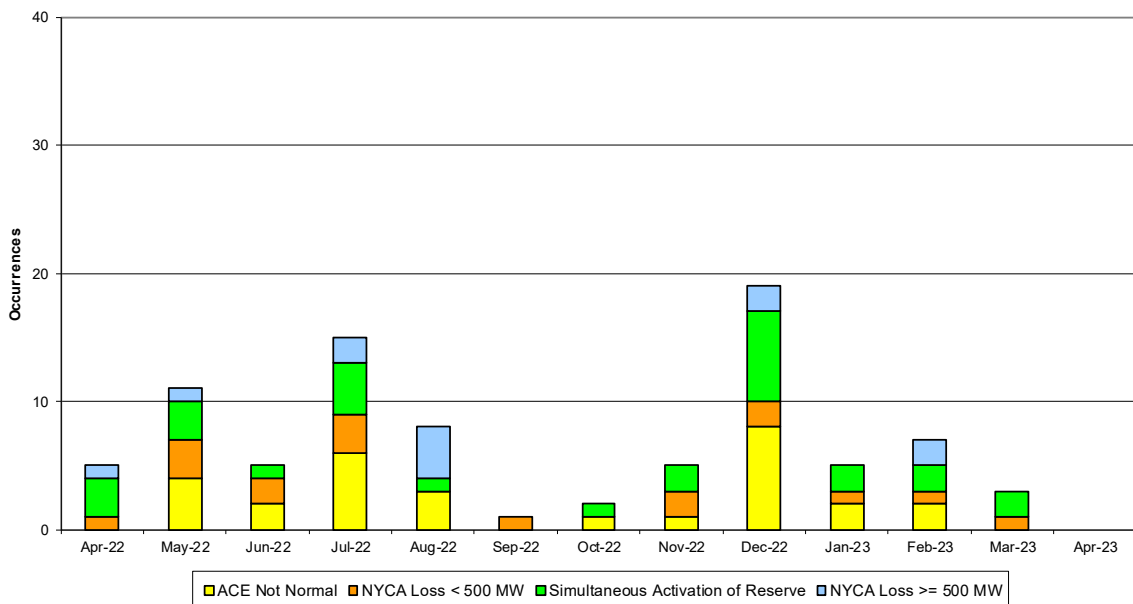


NERC Balancing Authority ACE Limit Standard



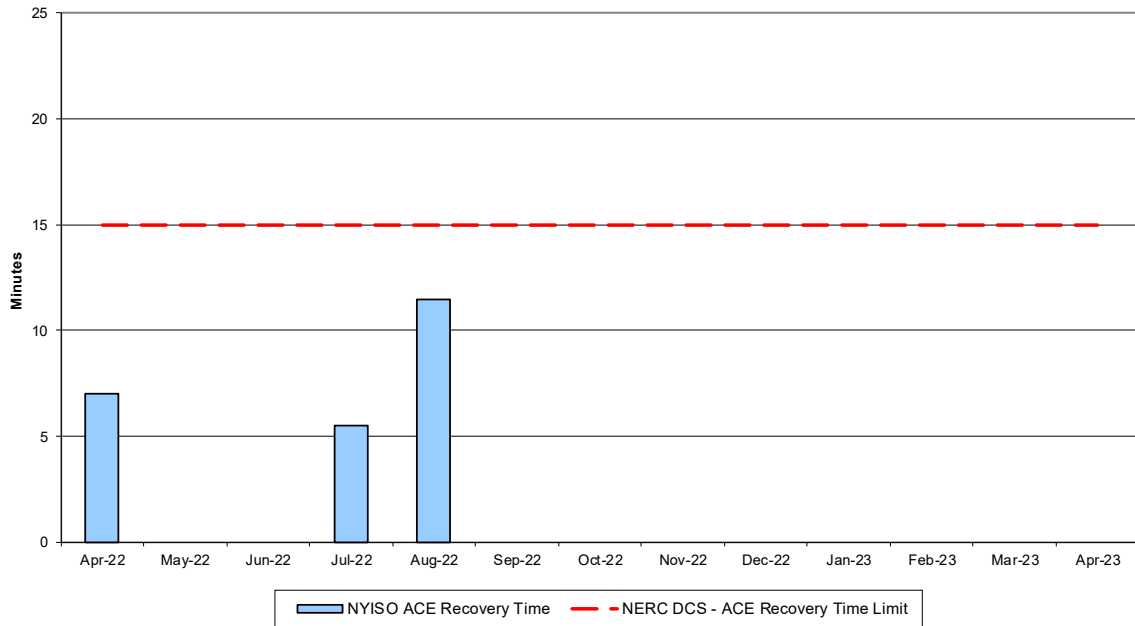
The amount of time the clock-minute average ACE exceeds the clock-minute Balancing Authority ACE Limit (BAAL) is an indicator of the NYISO Area resource and demand balancing. The maximum BAAL exceedance time is identified. BAAL exceedances of less than 30 consecutive clock-minutes are NERC compliant.

Reserve Activations



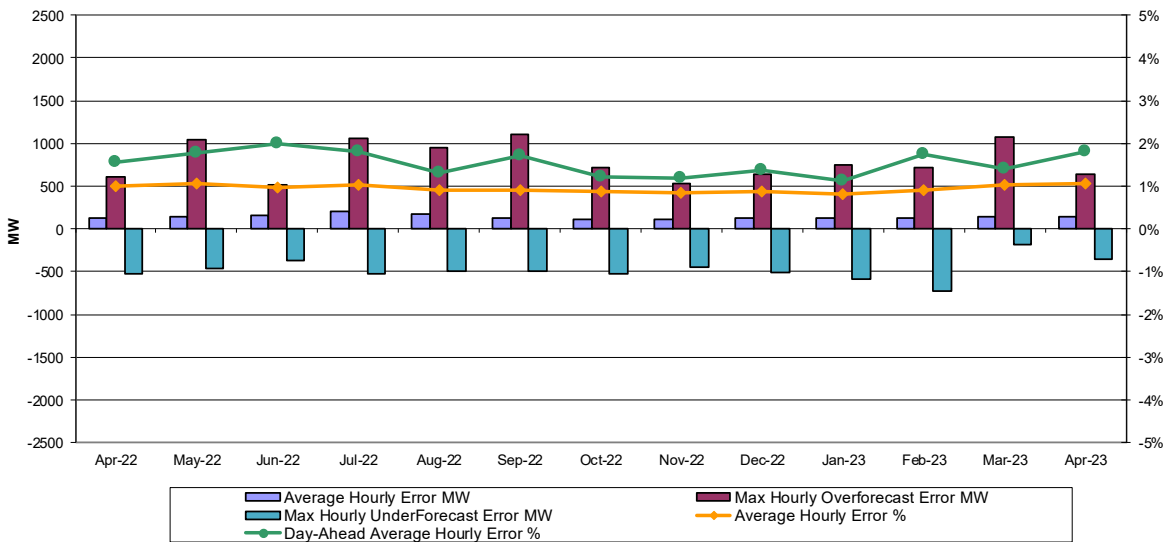
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.

DCS Event Time to ACE Recovery



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

Load Forecast Performance

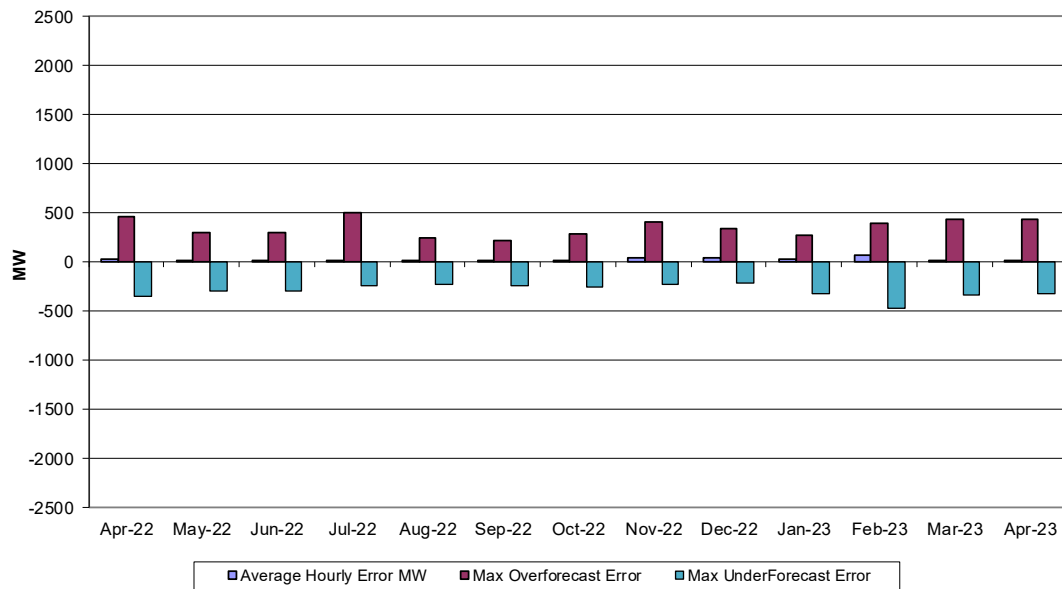


Hourly Error MW - Value of the difference between the hourly average actual load demand and the average hour ahead forecast load demand.

Average Hourly Error % - Average value of the ratio of hourly average error magnitude to hourly average actual load demand.

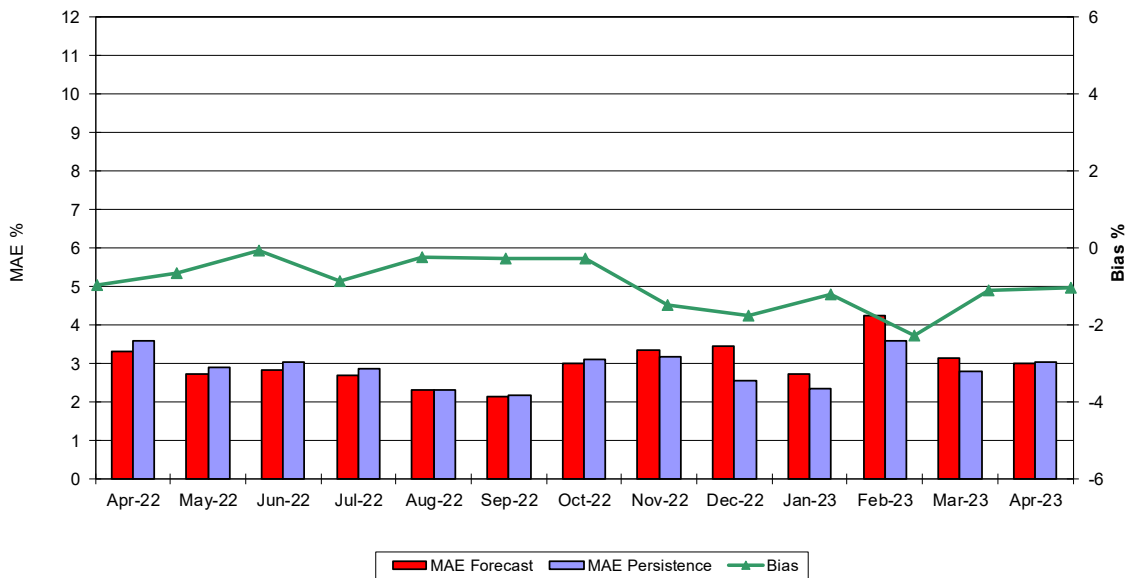
Day-Ahead Average Hourly Error % - Average across all hours of the month of the absolute value of the difference between actual load demand and the Day-Ahead forecast load demand, divided by the actual load demand.

Wind Forecast Performance Hour Ahead MW Error



Hourly Error MW - Value of the difference between the hourly average actual wind generation and the average hour ahead forecast wind generation.

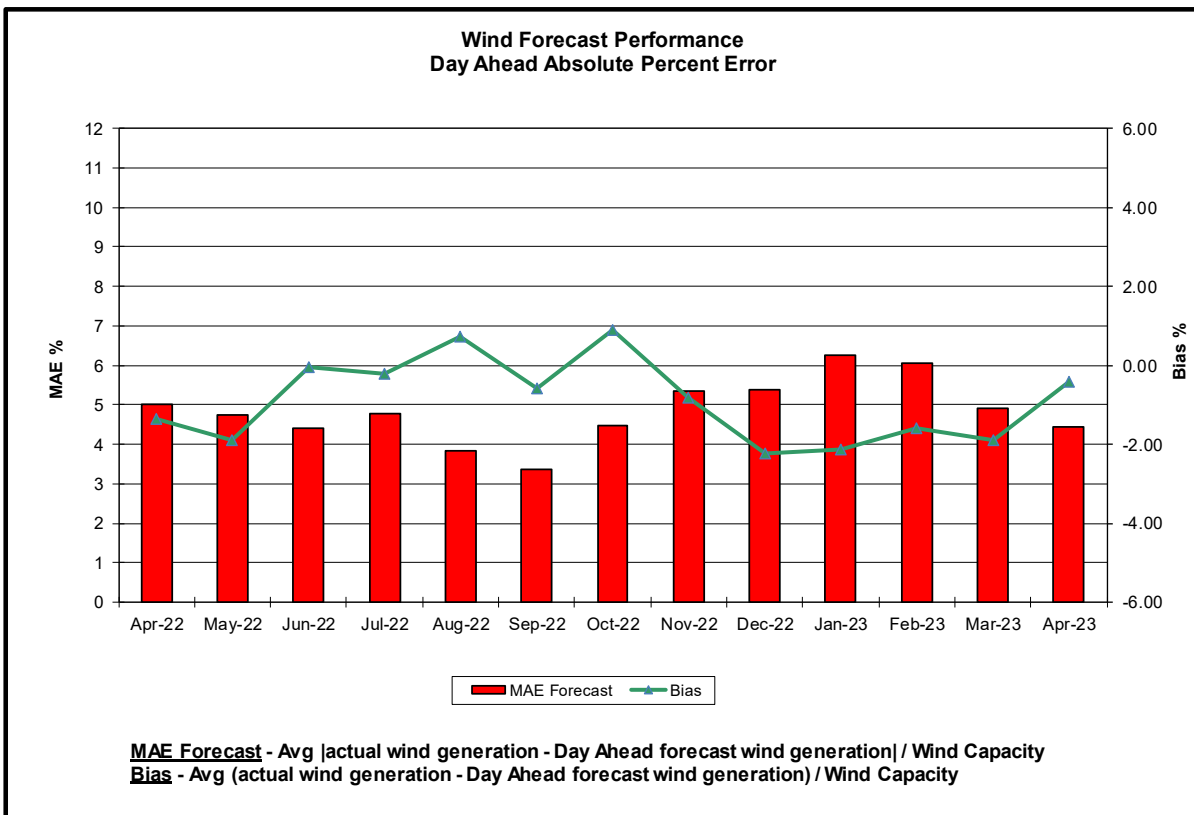
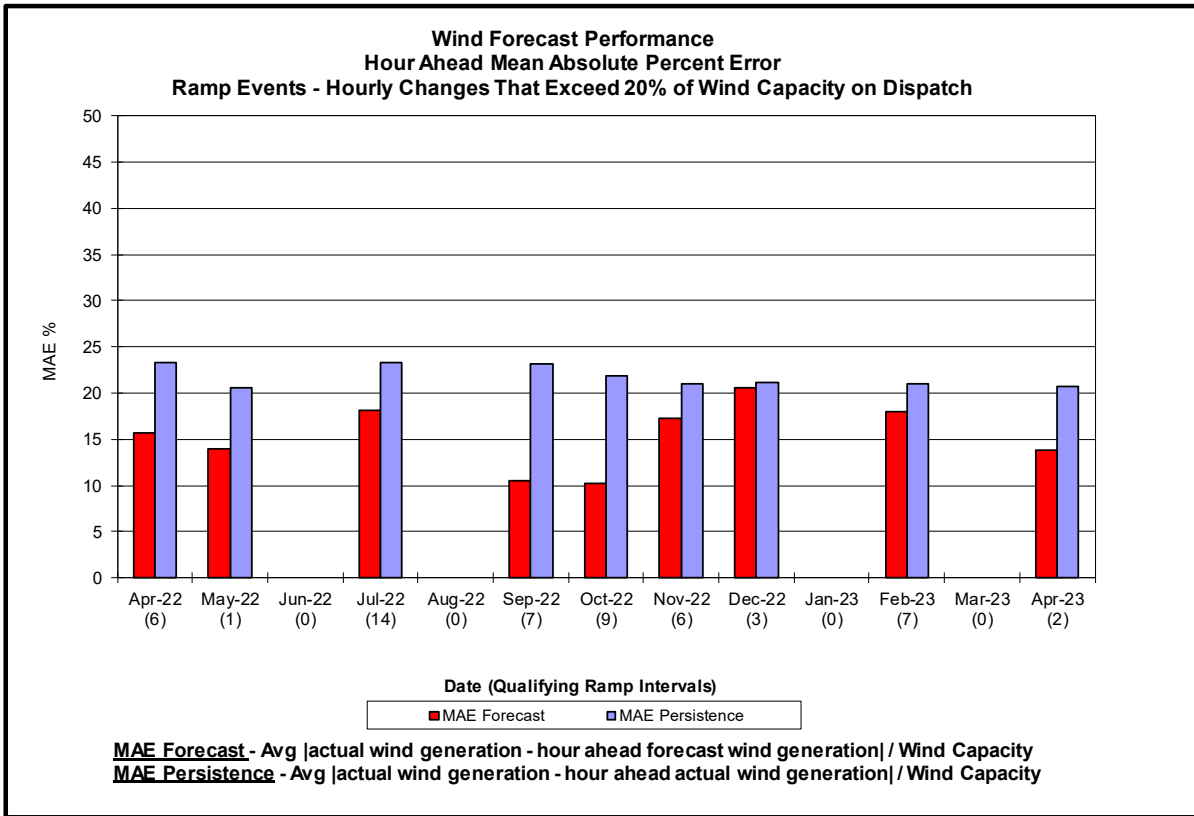
Wind Forecast Performance Hour Ahead Percent Error

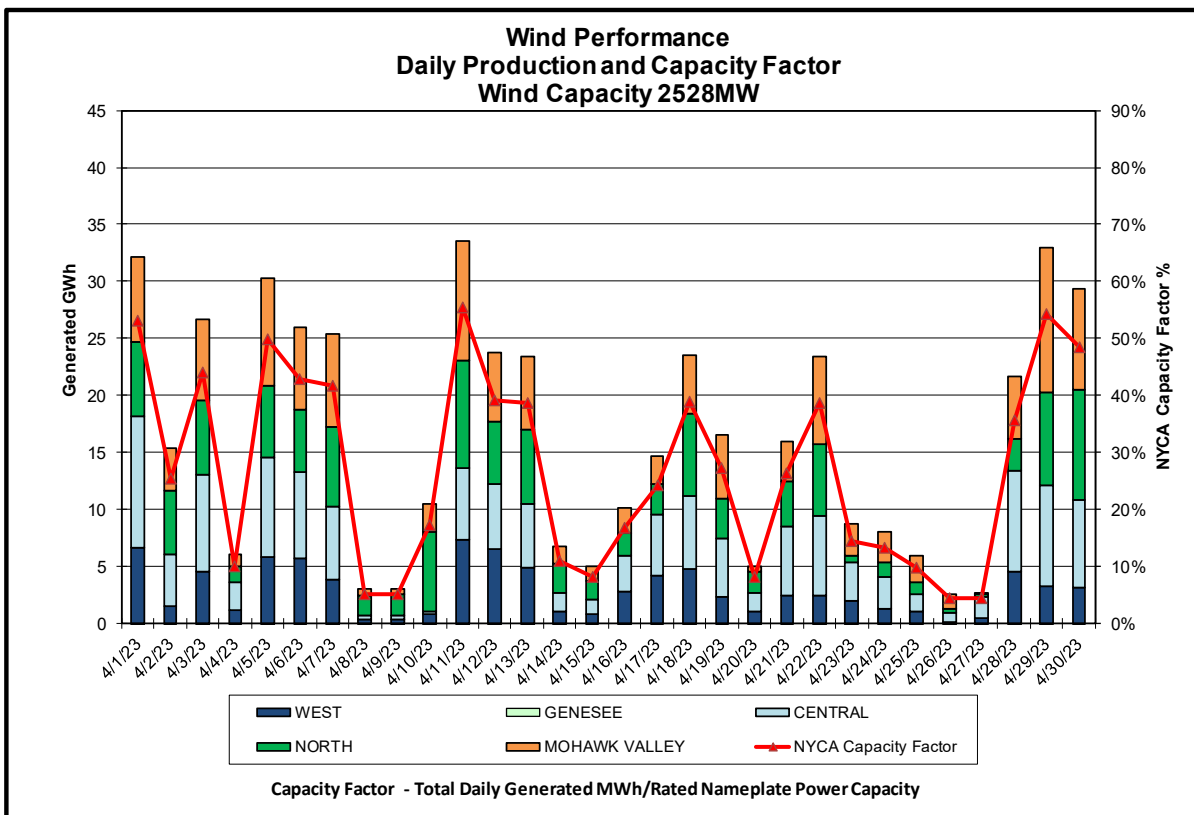
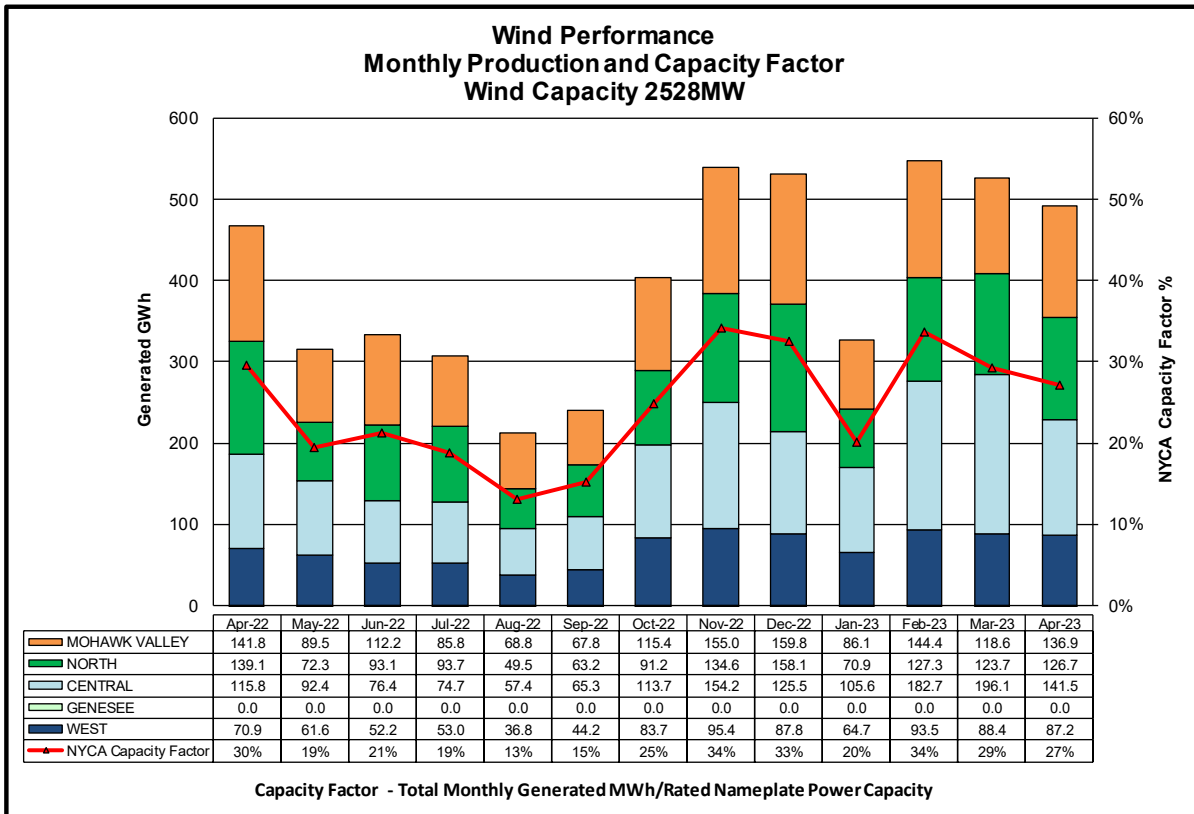


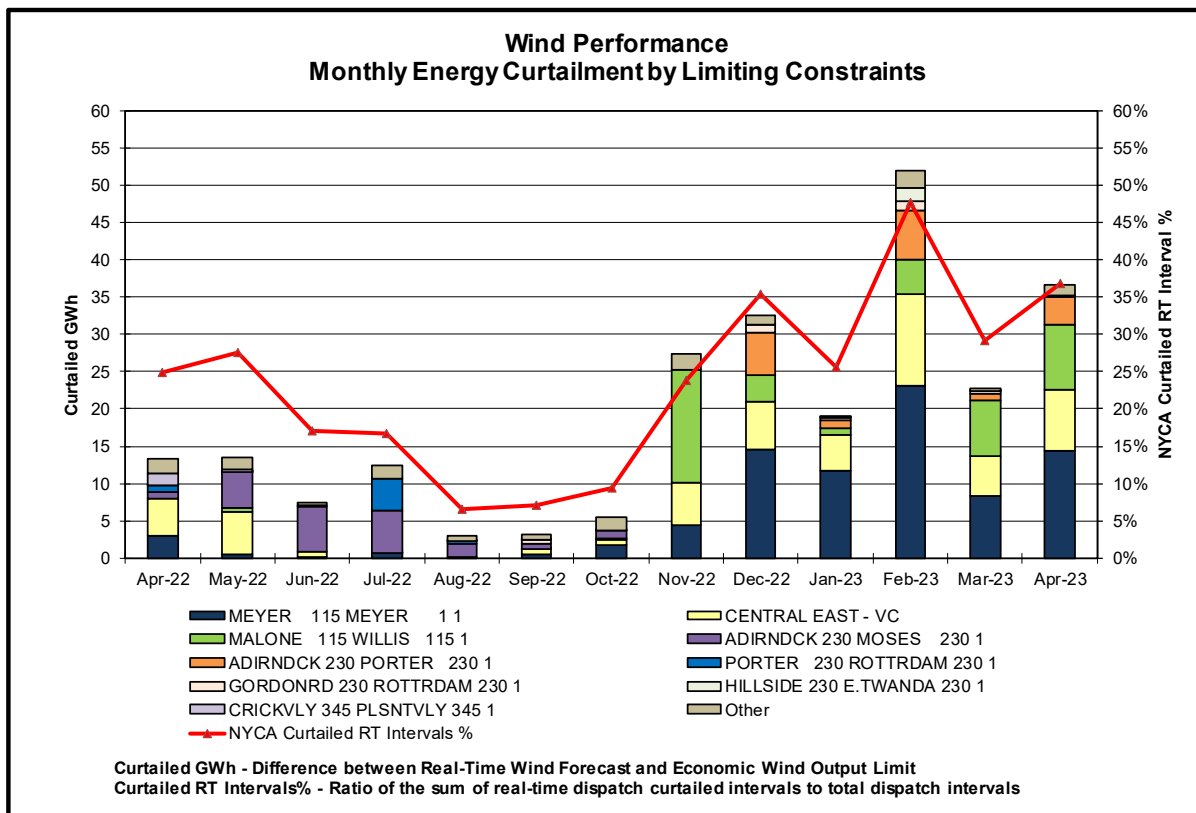
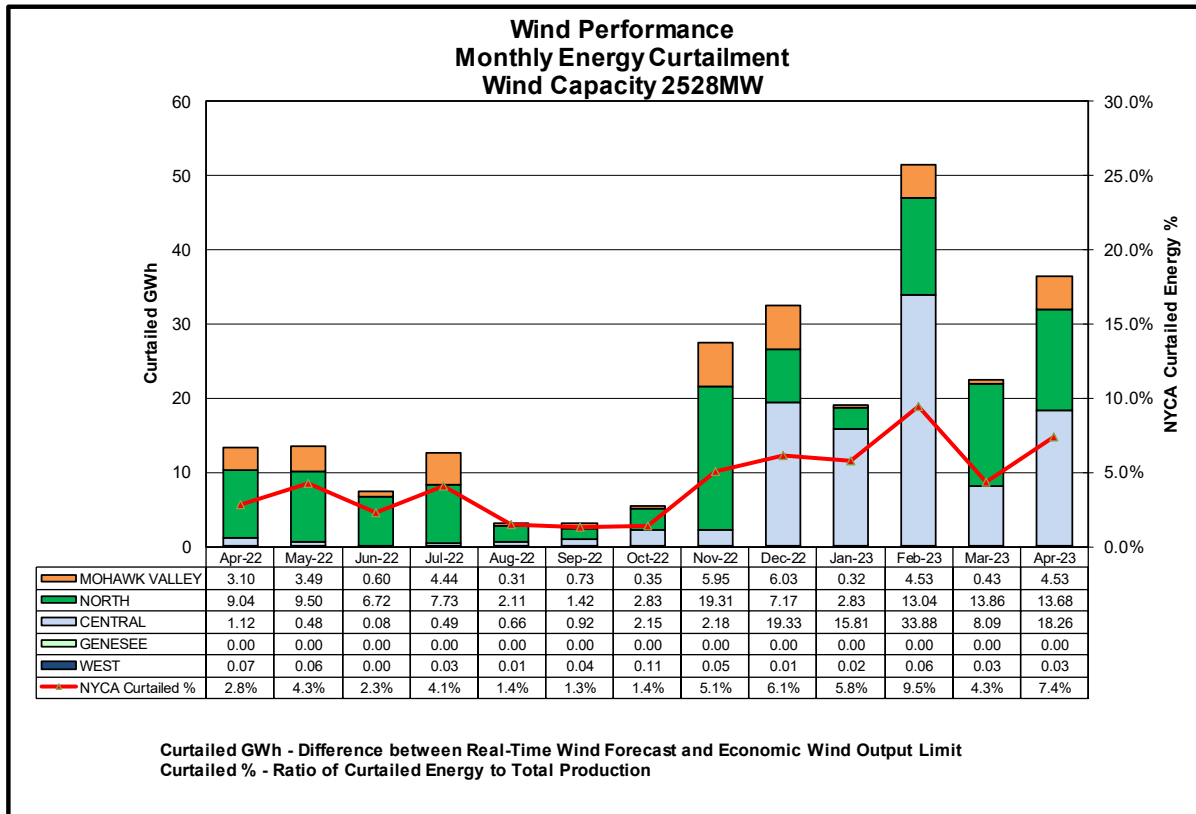
MAE Forecast - Avg |actual wind generation - hour ahead forecast wind generation| / Wind Capacity

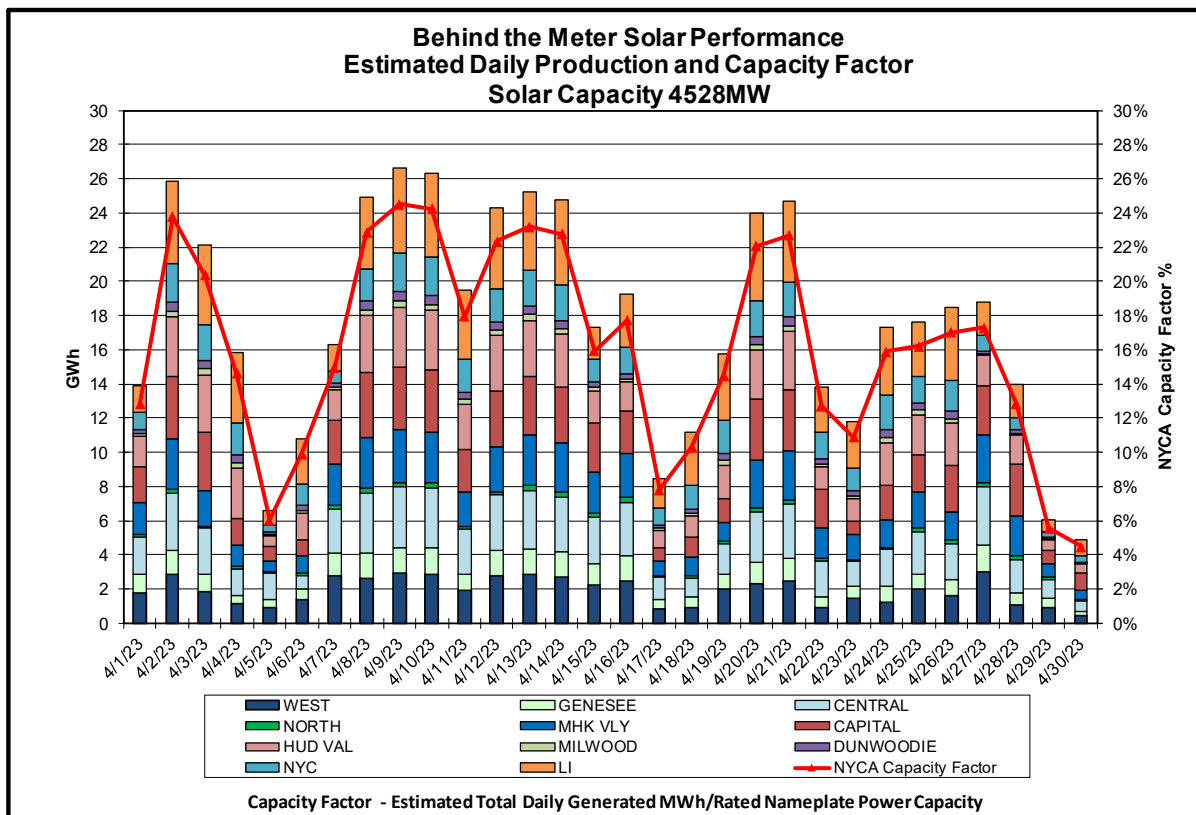
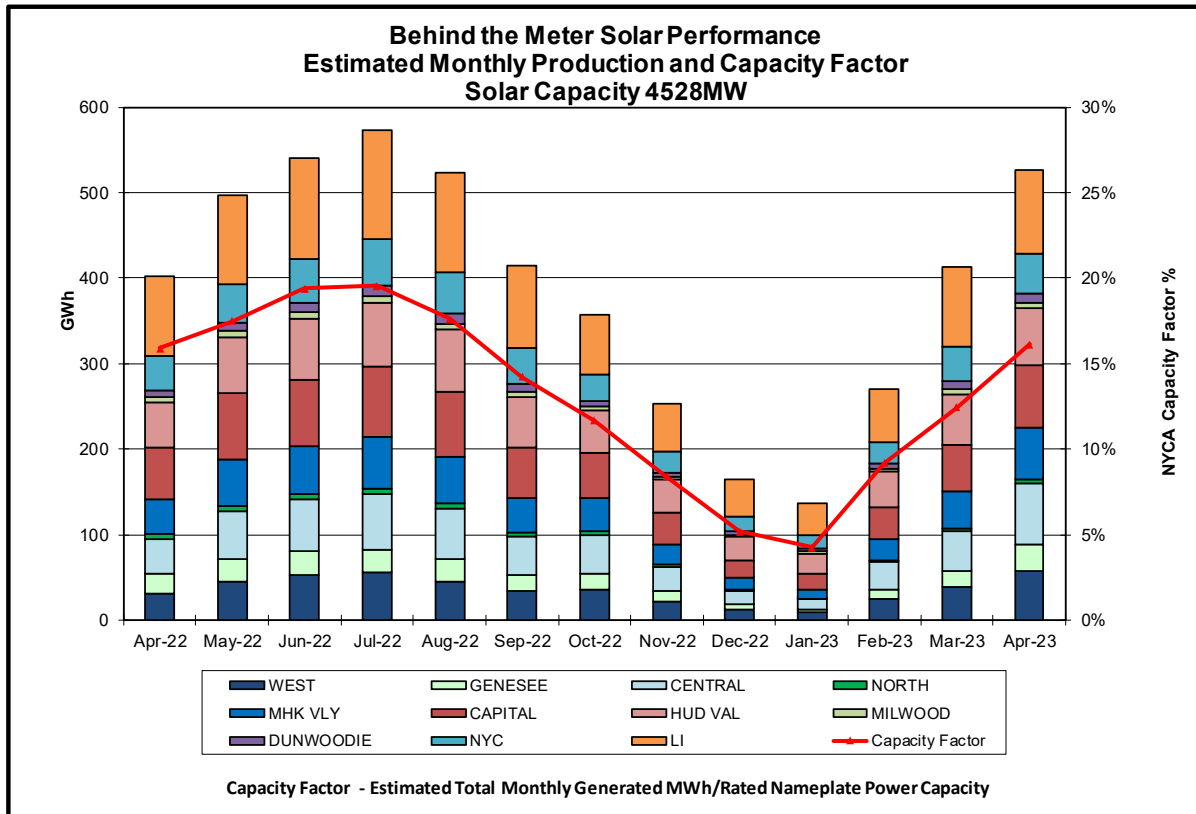
MAE Persistence - Avg |actual wind generation - hour ahead actual wind generation| / Wind Capacity

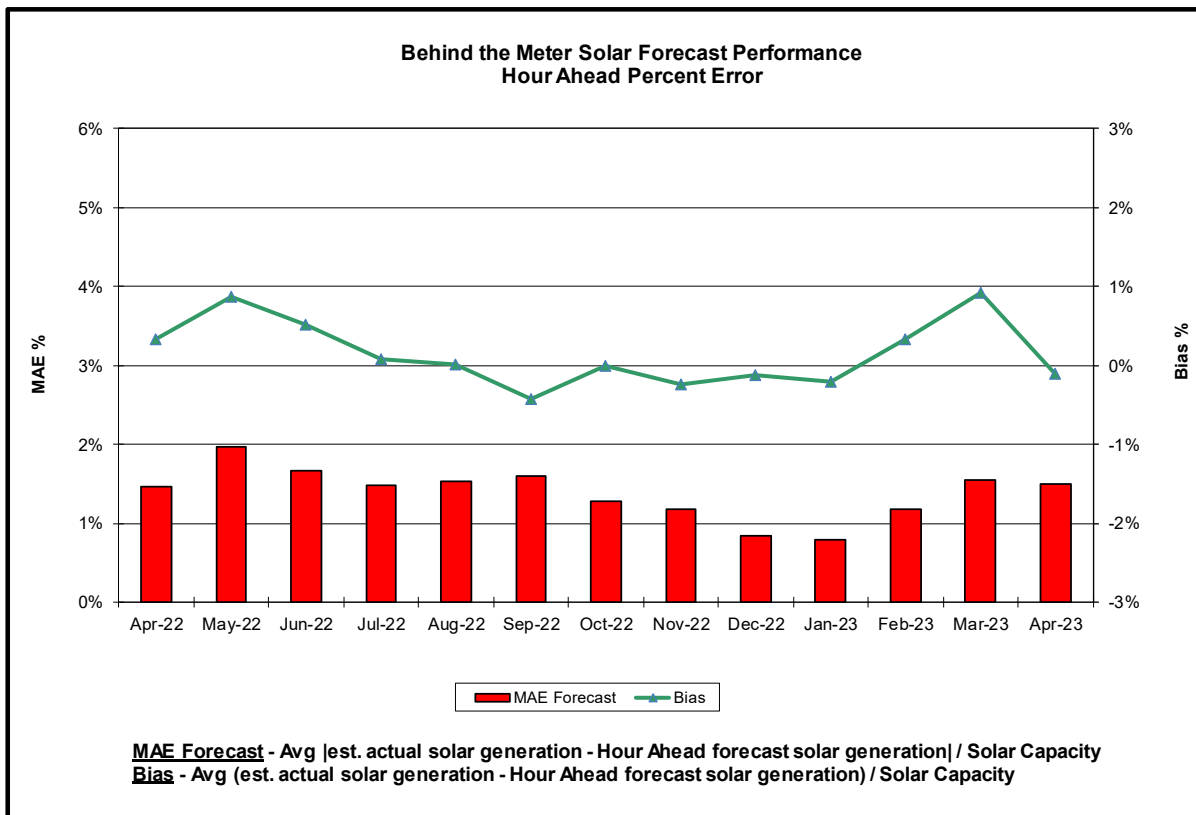
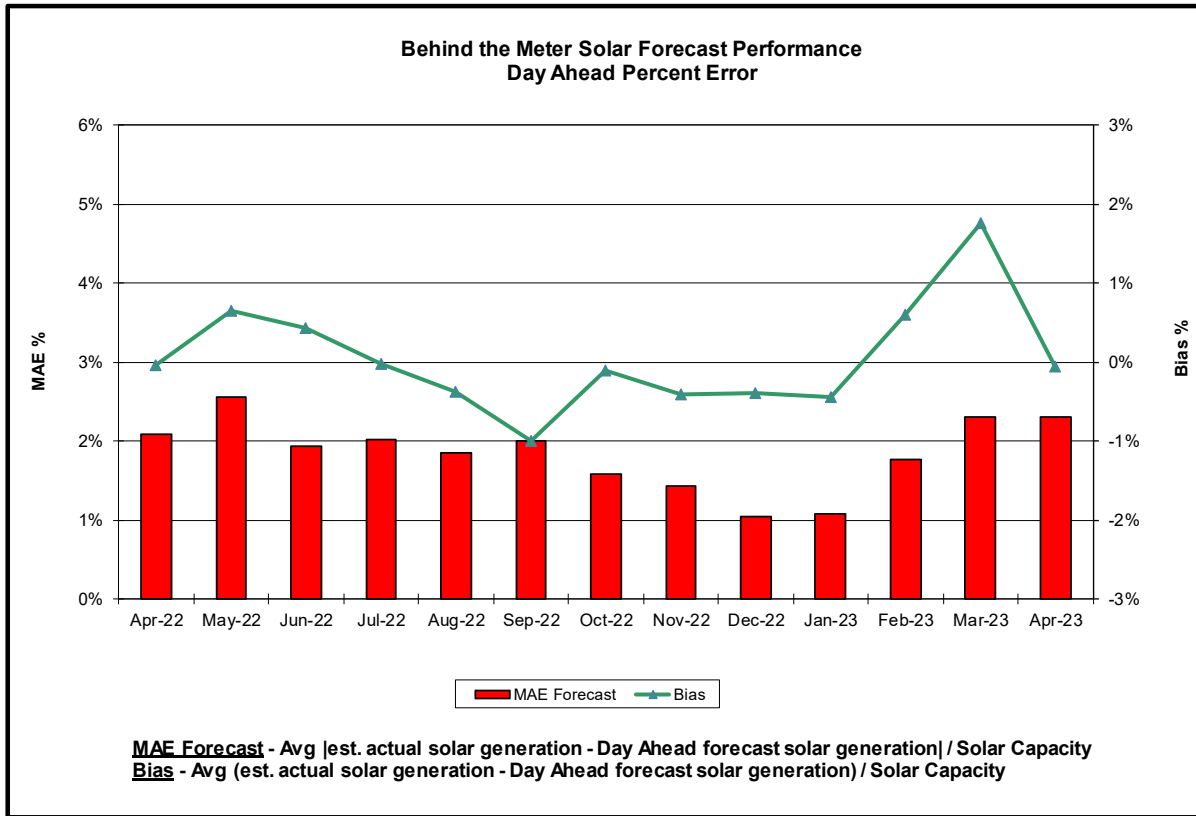
Bias - Avg (actual wind generation - hour ahead forecast wind generation) / Wind Capacity

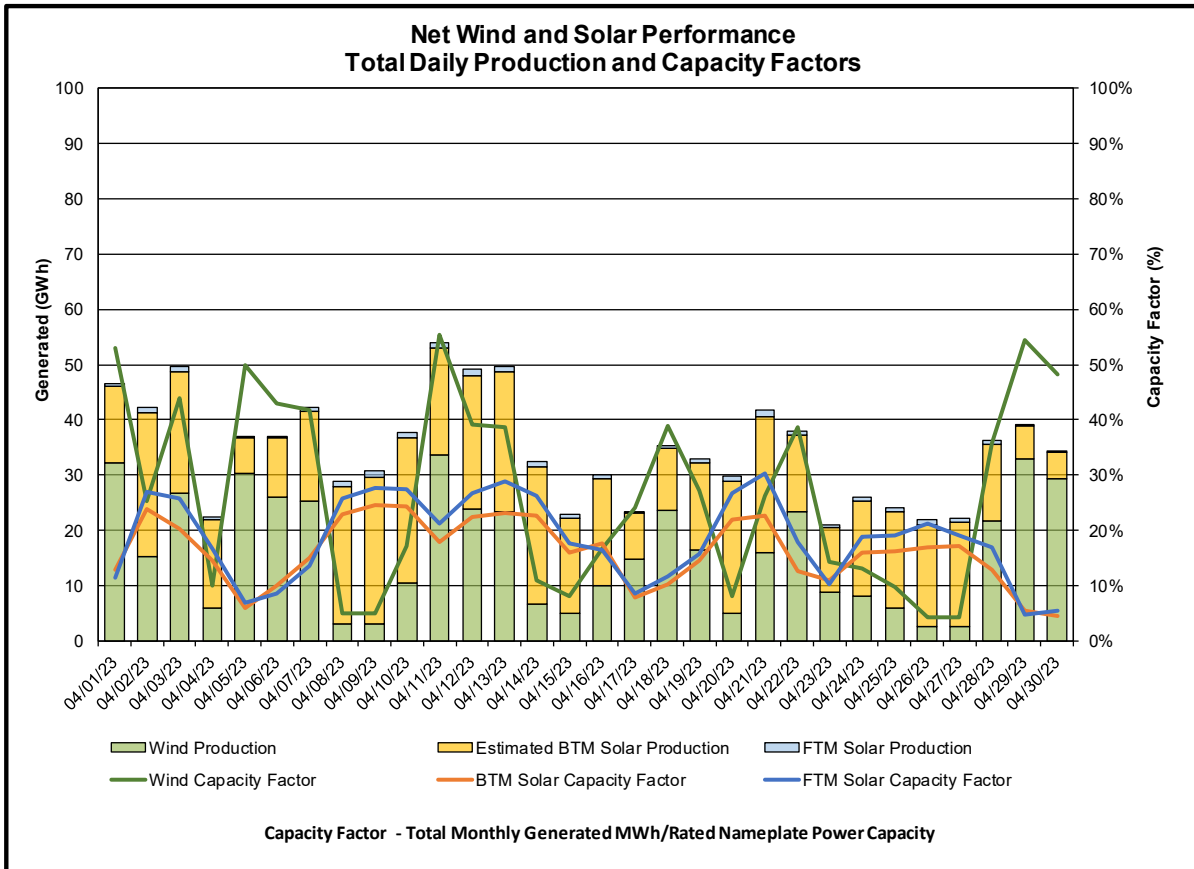
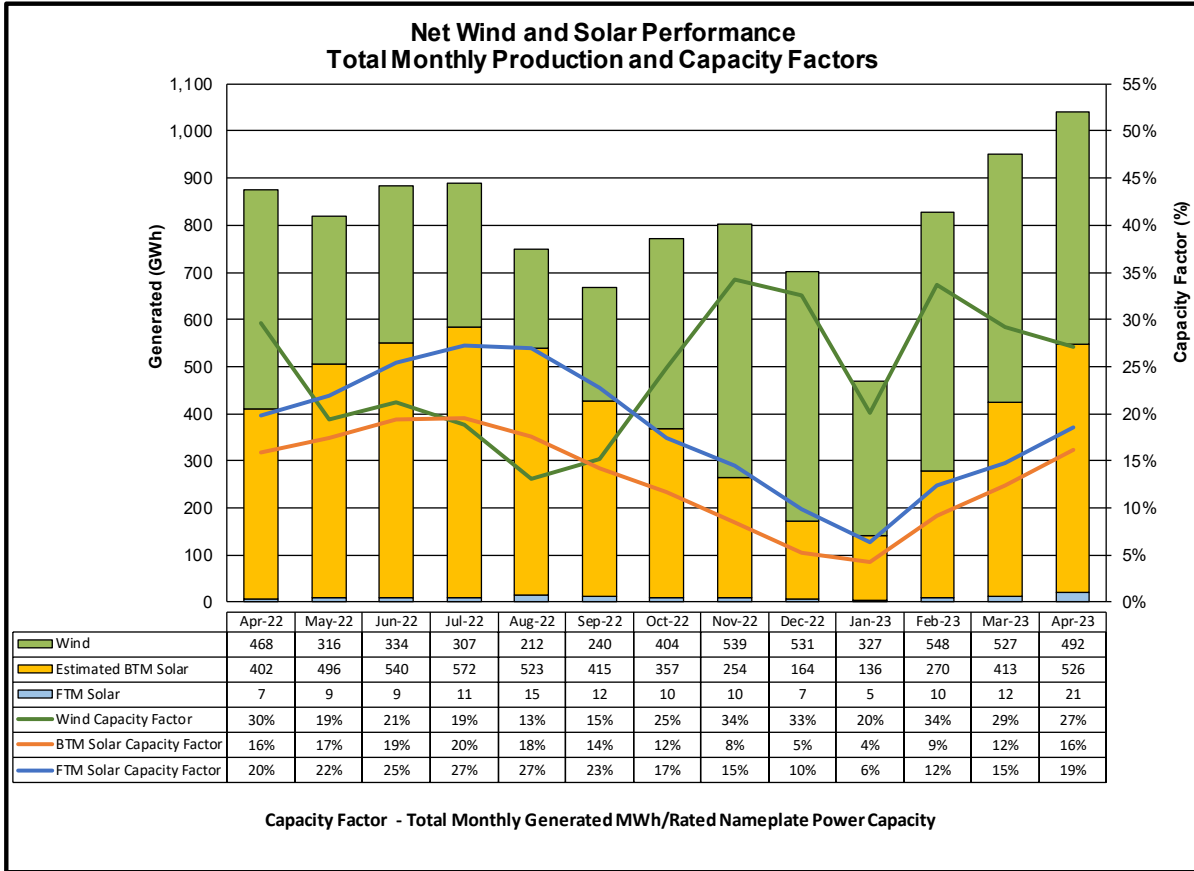


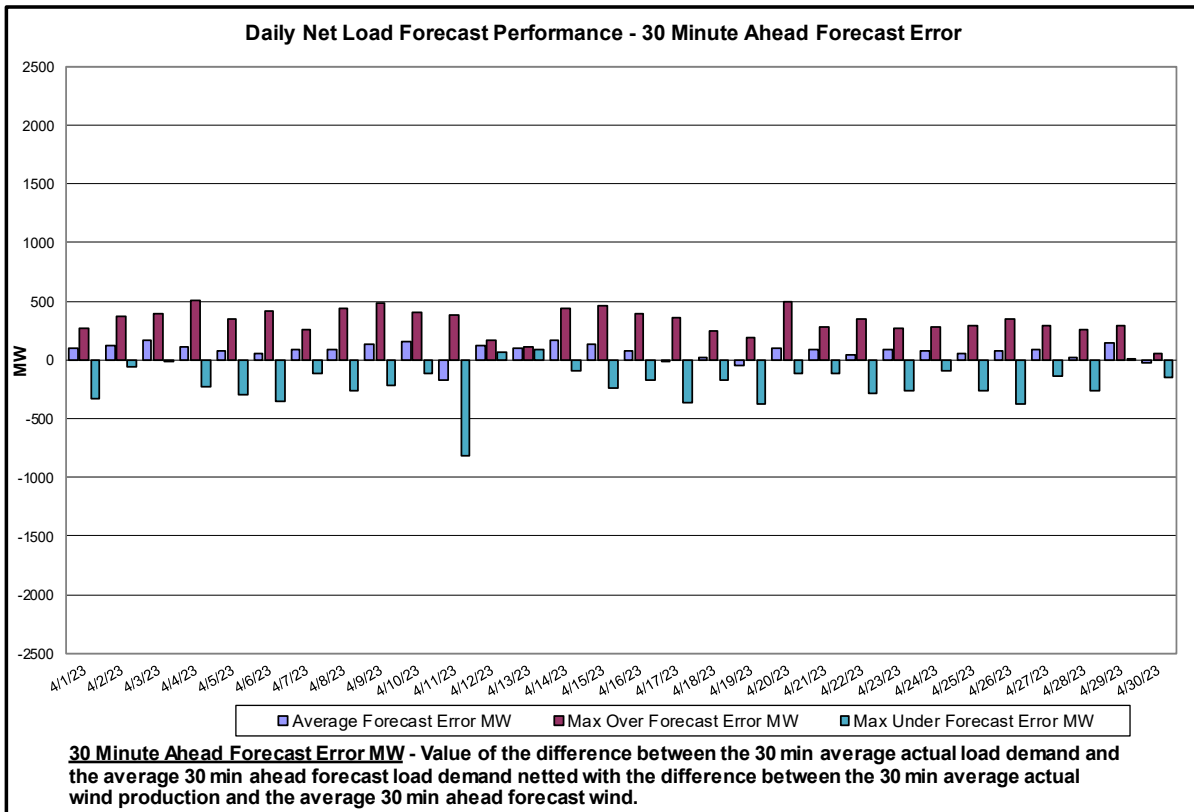
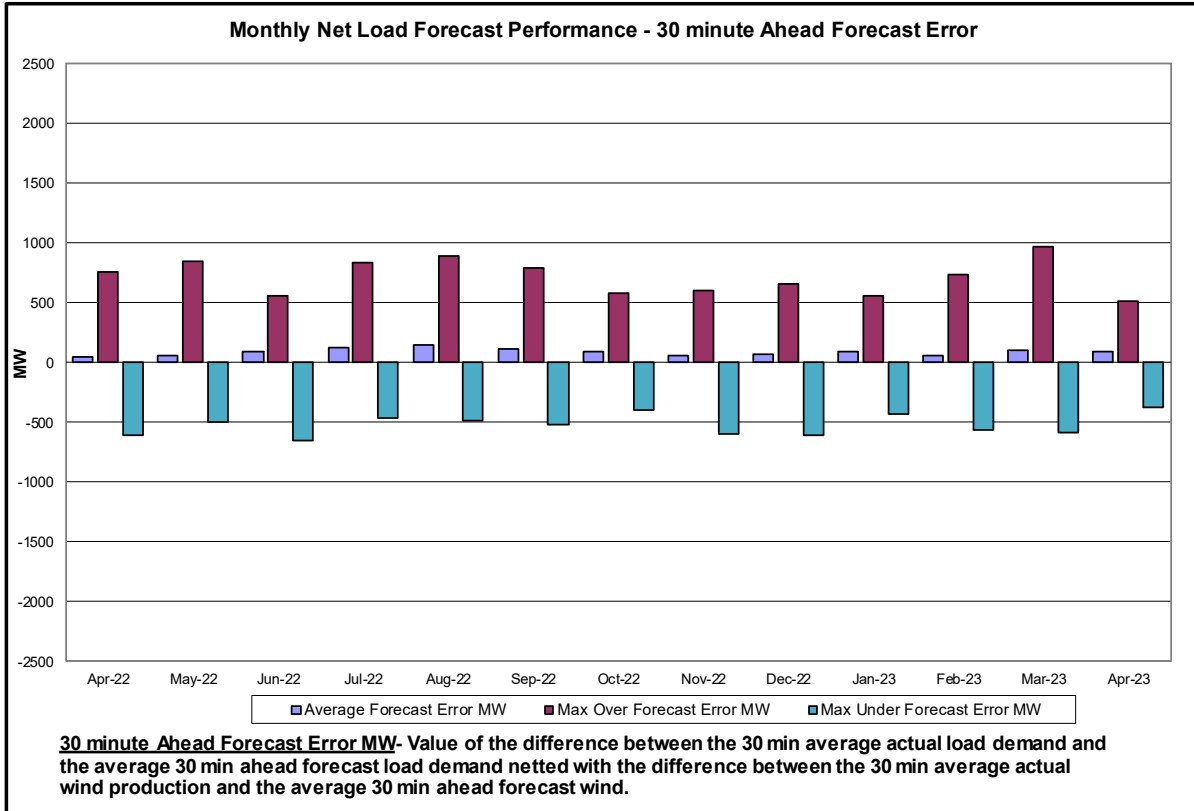


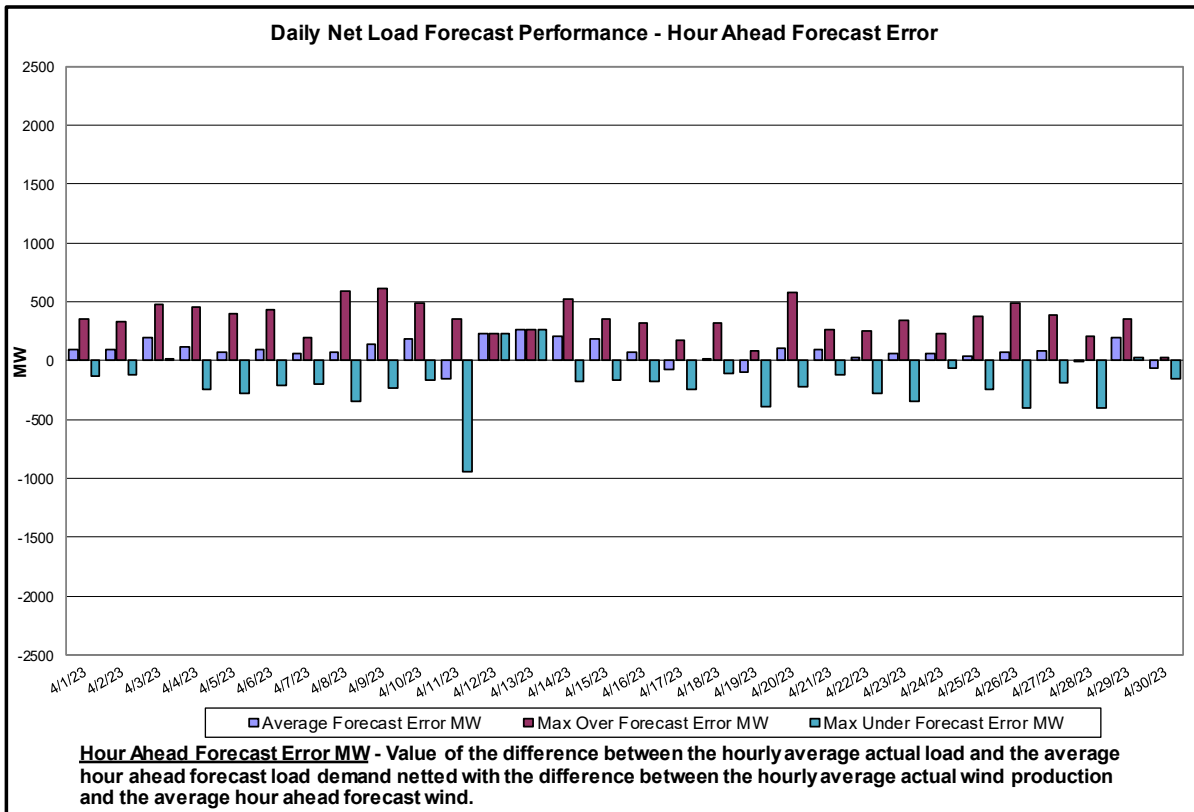
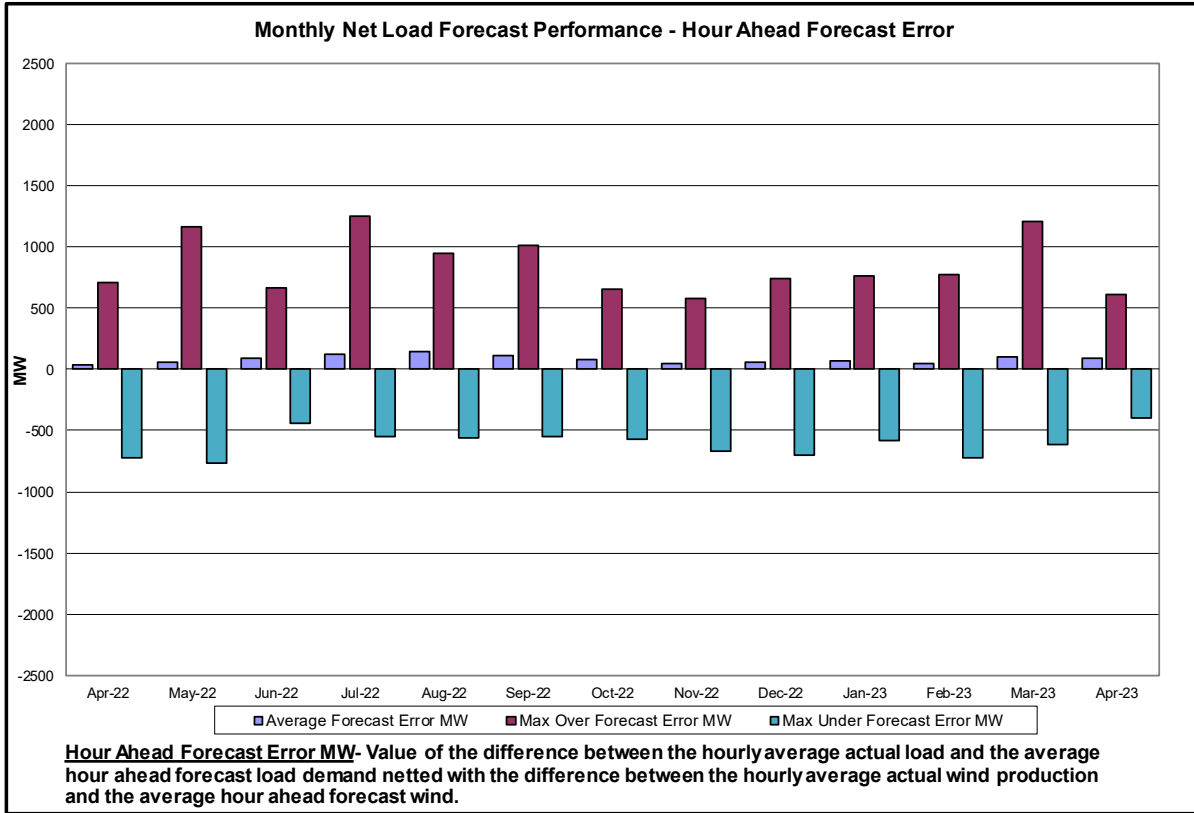


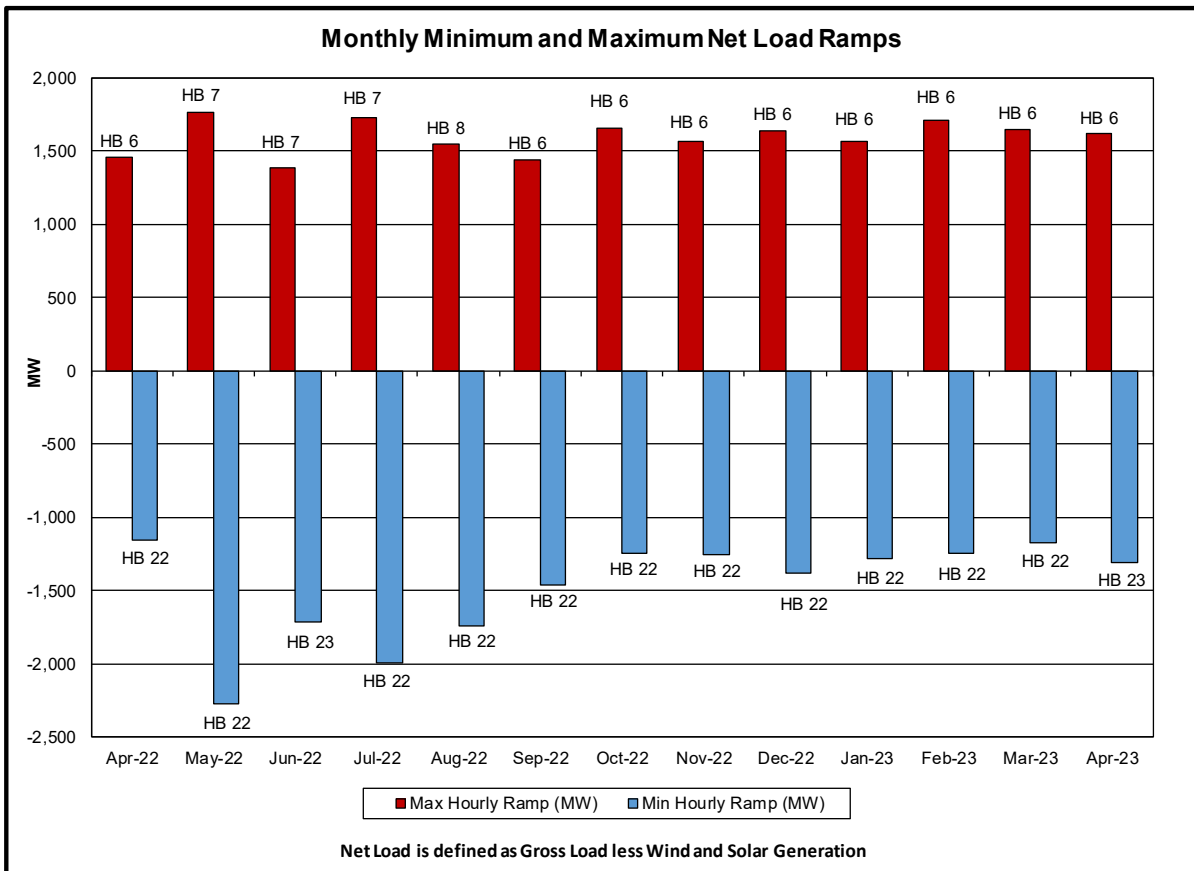
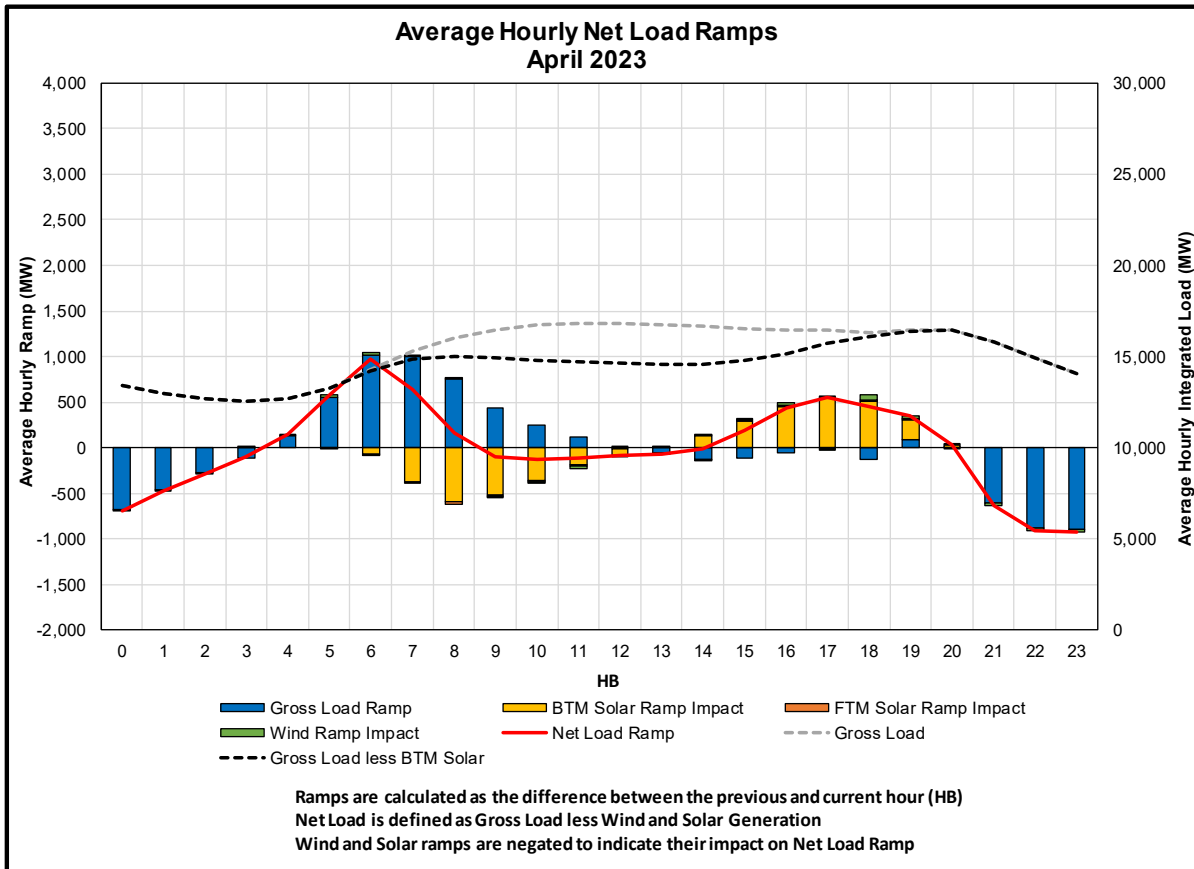




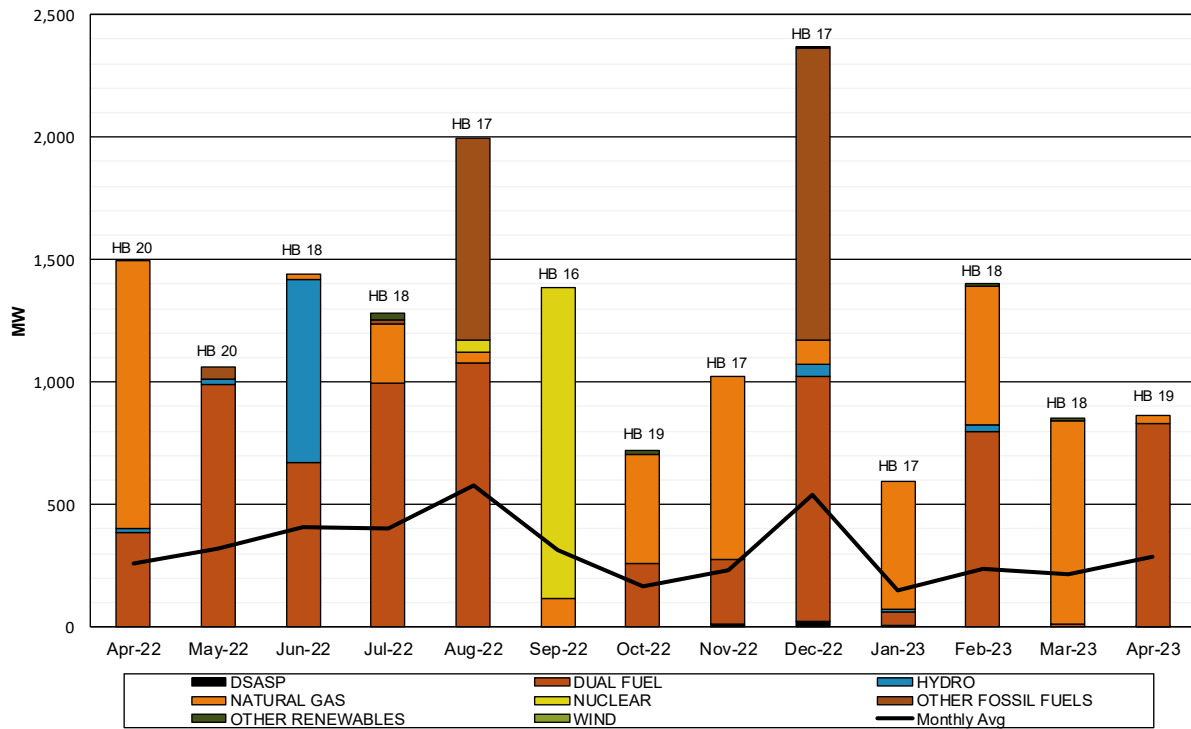








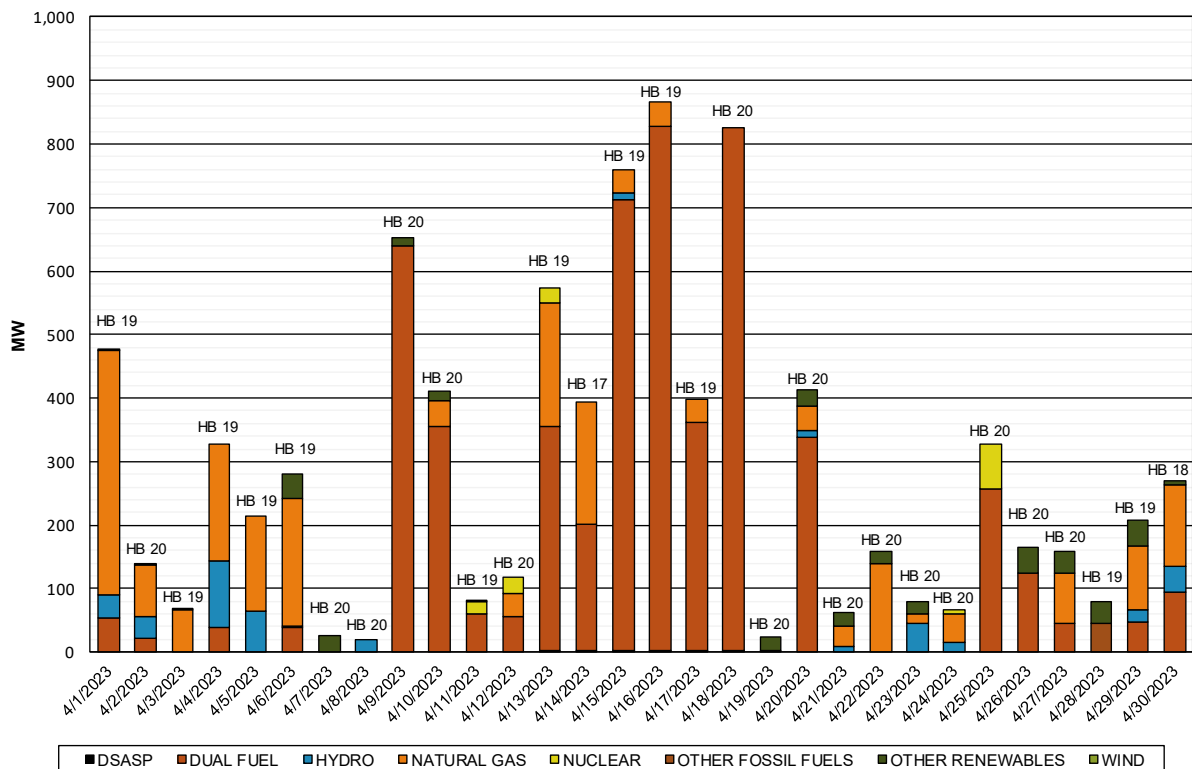
Monthly Maximum Day-Ahead Market Capacity Unavailable In Real Time



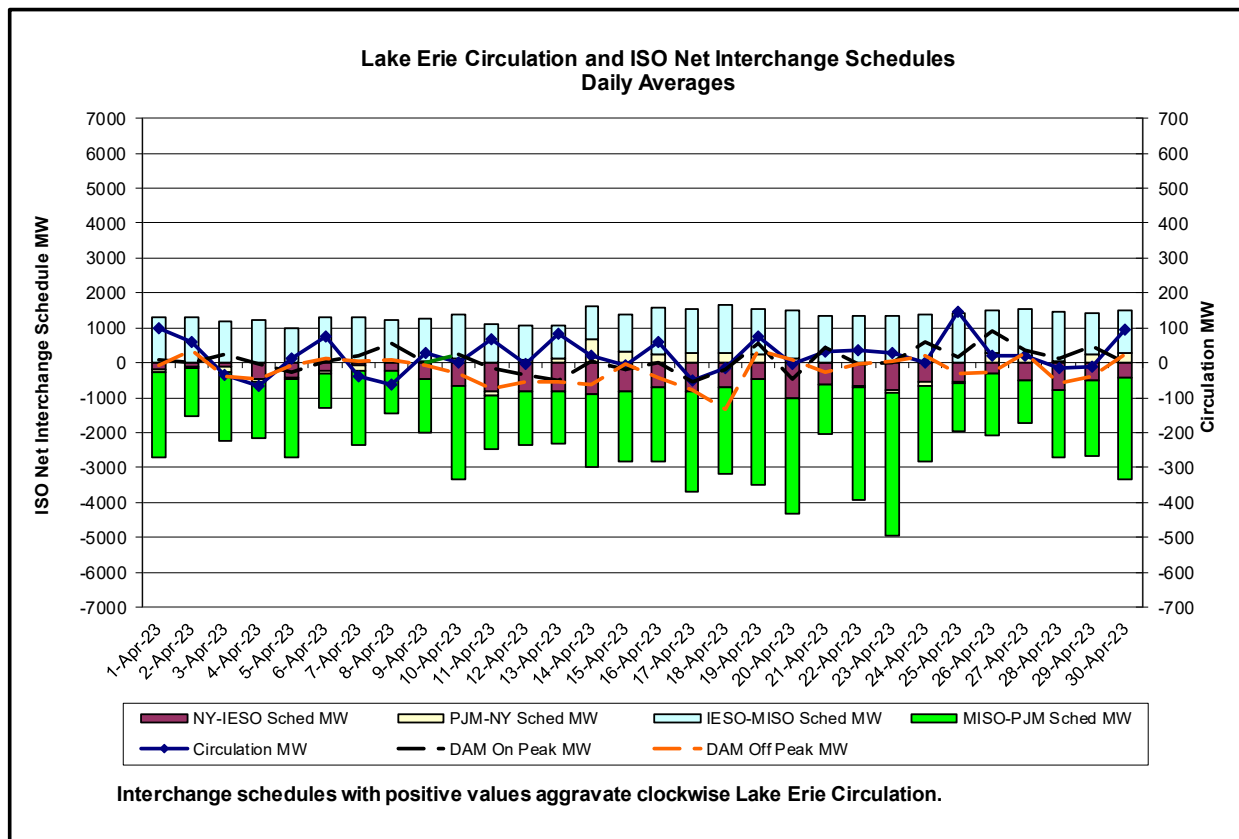
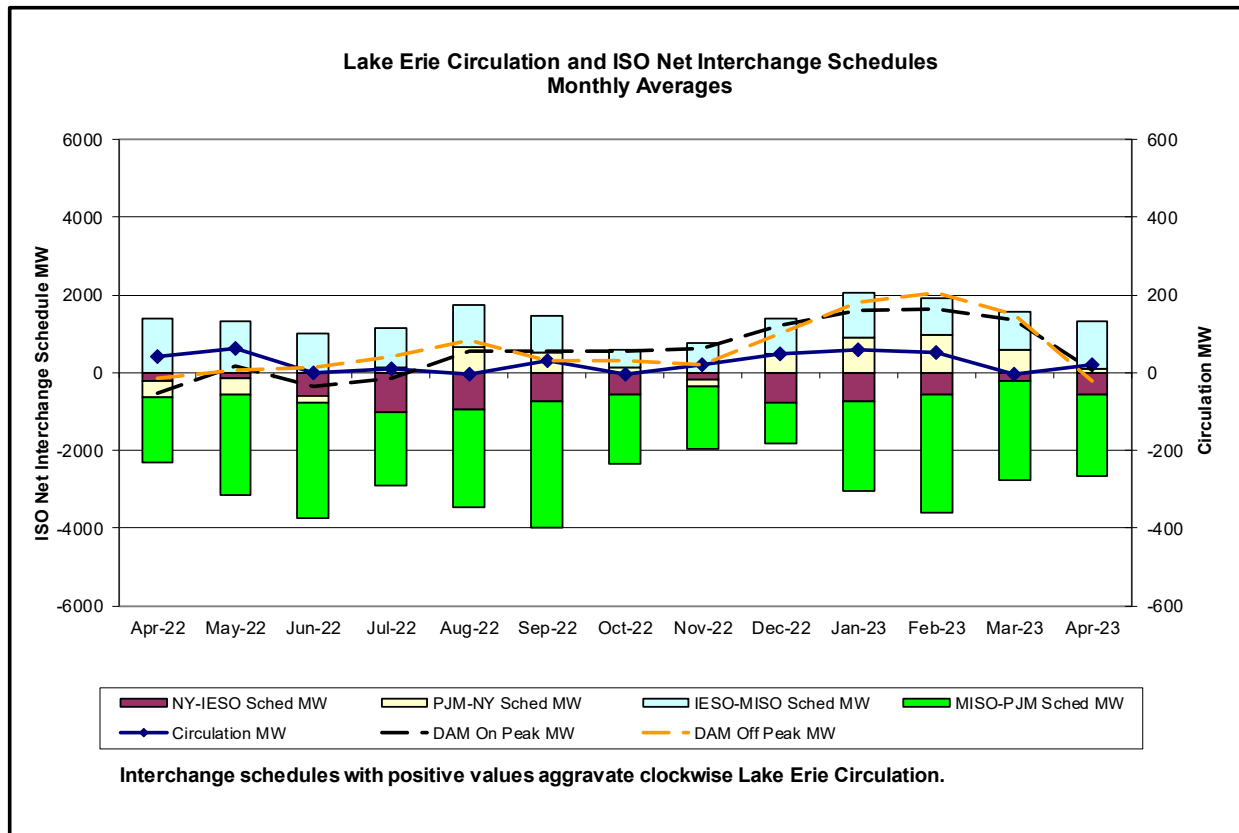
Unavailable Capacity is calculated as the difference of Day-Ahead Market (DAM) capacity relative to Real-Time (RT) capacity during RT peak load hour.

The Monthly Maximum is the day with the largest observed deficit during RT peak load hour.

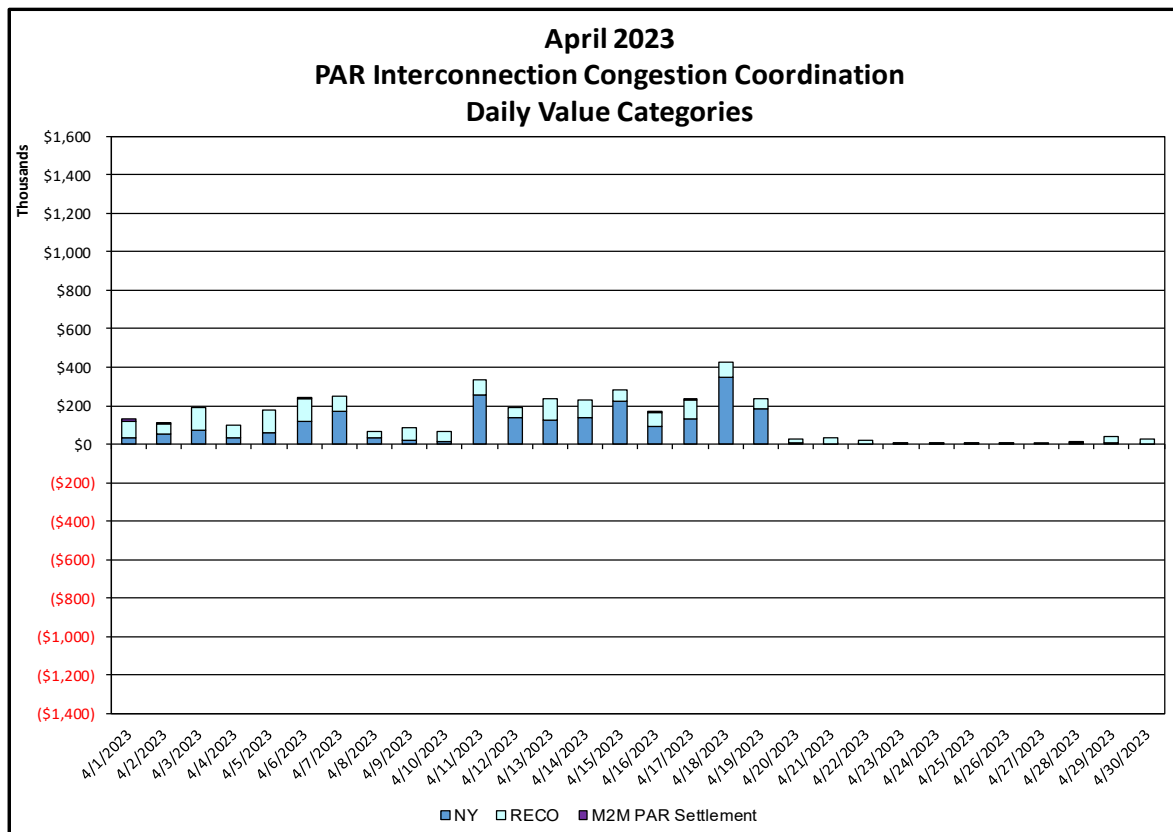
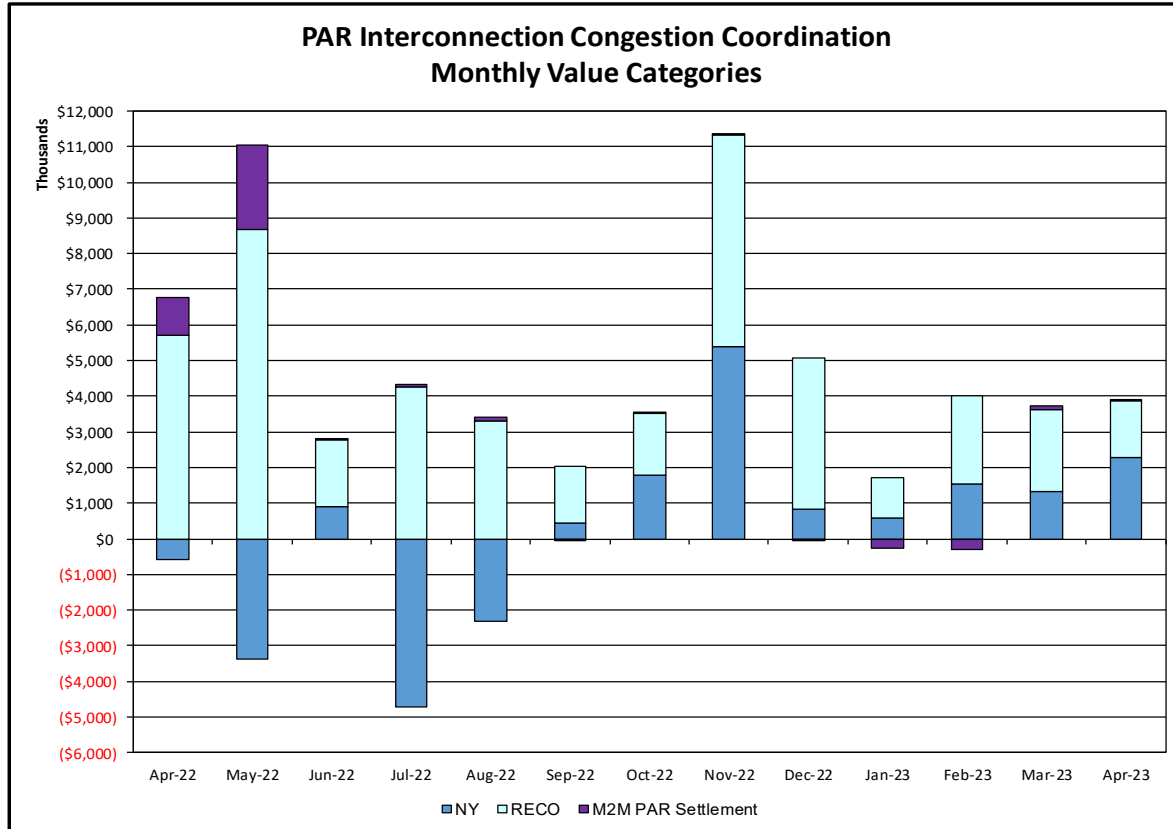
Daily Day-Ahead Market Capacity Unavailable In Real Time



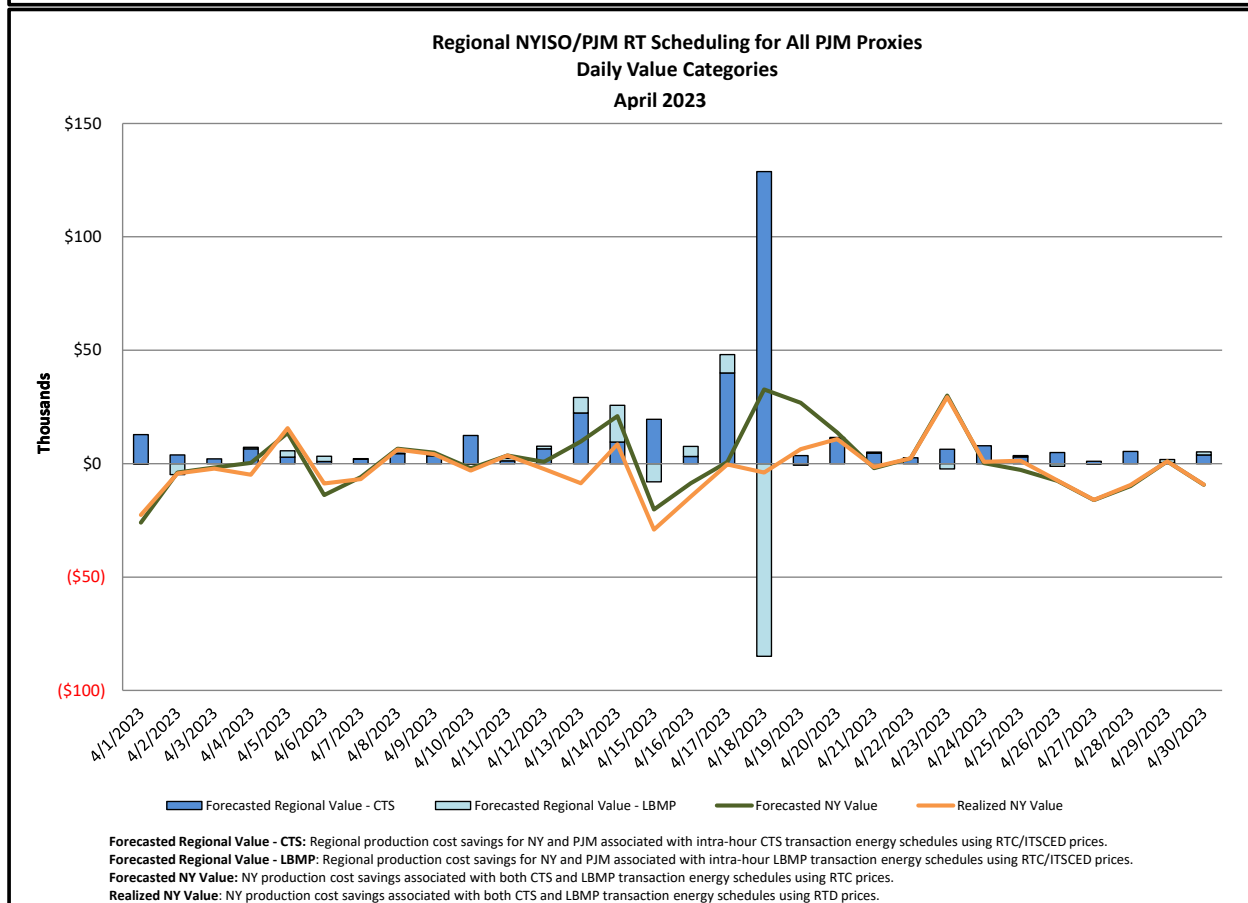
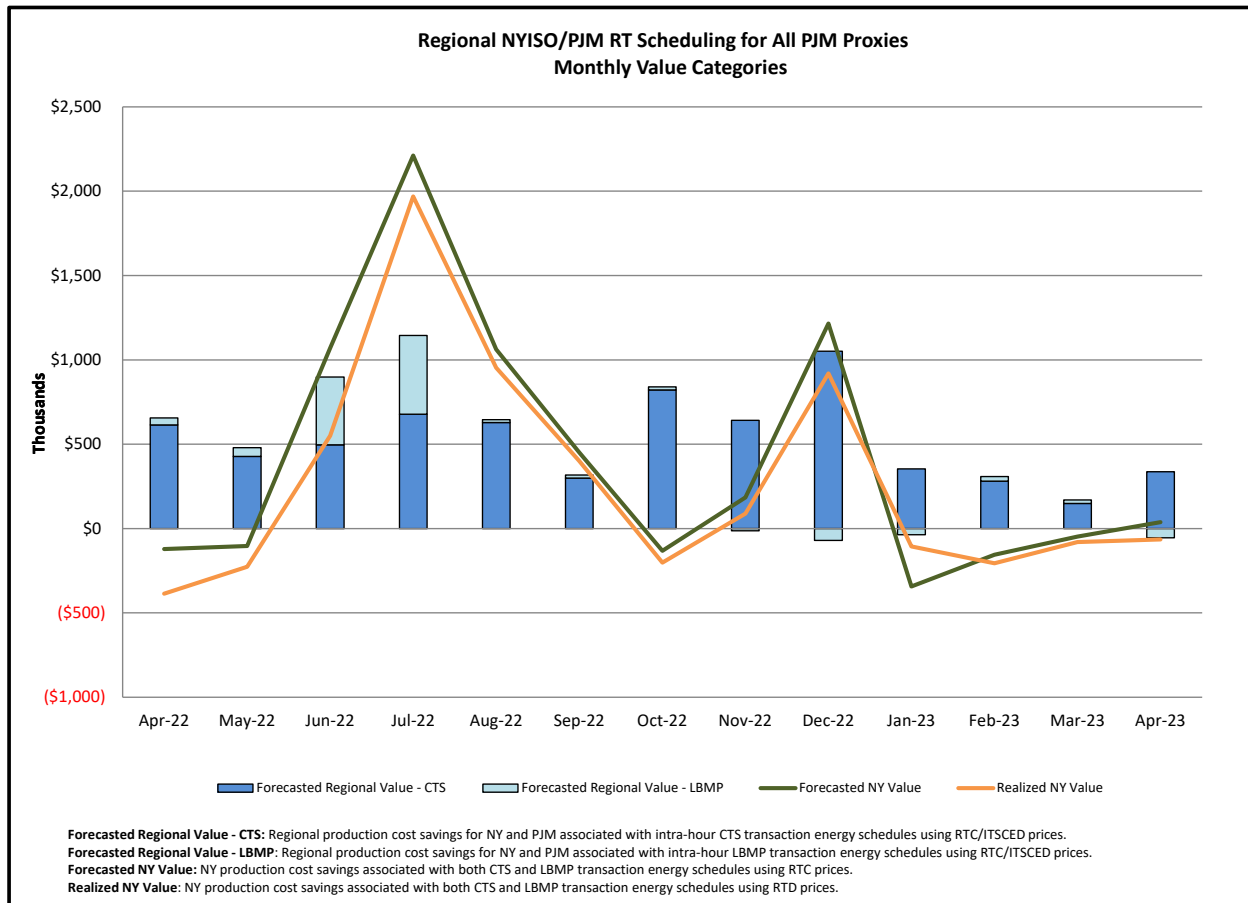
Unavailable Capacity is calculated as the difference of Day-Ahead Market (DAM) capacity relative to Real-Time (RT) capacity during RT peak load hour.



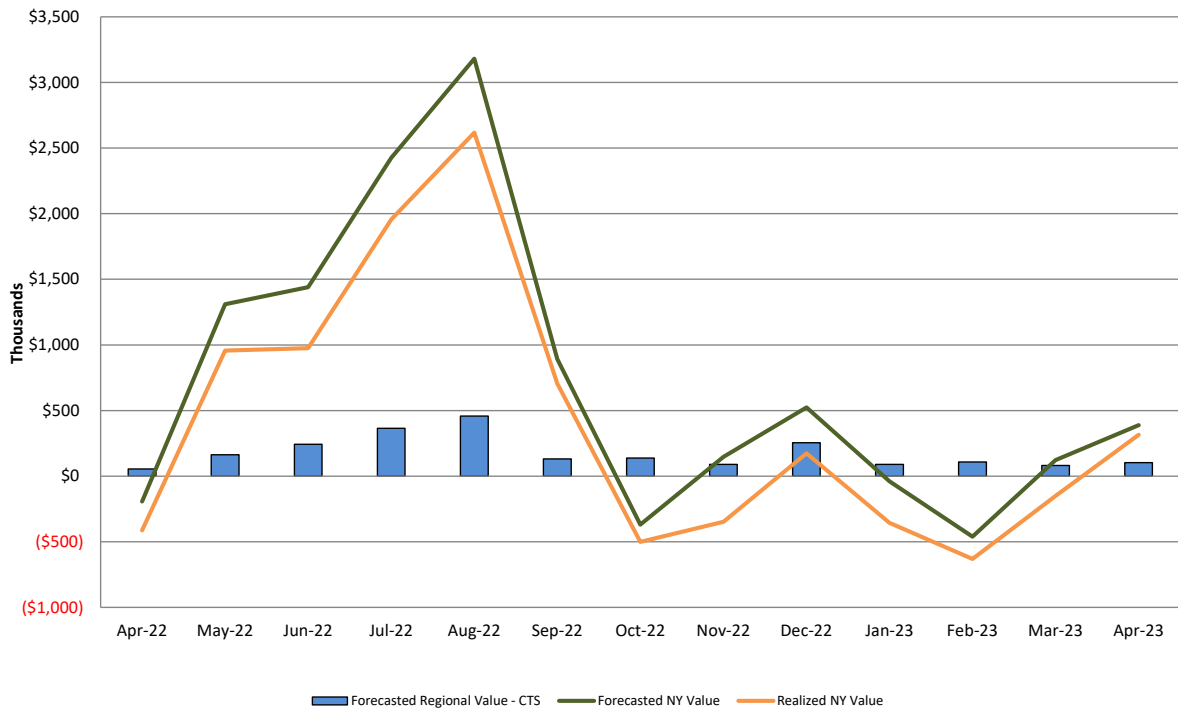
Broader Regional Market Performance Metrics



<u>PAR Interconnection Congestion Coordination</u>	
<u>Category</u>	<u>Description</u>
NY	Represents the value NY realizes from Market-to-Market PAR Coordination when experiencing congestion. This is the estimated savings to NY for additional deliveries into NY
RECO	Represents the value of PJM's obligation to deliver 80% of service to RECO load over Ramapo 5018. This is the estimated reduction in NYCA congestion due to the PJM delivery of RECO over Ramapo 5018.
M2M PAR Settlement	Market-to-Market PAR Coordination settlement on coordinated flowgates. Through April 2017 this value was included in the NY and RECO categories. The positive sign convention indicates settlement to NY while the negative indicates settlement to PJM.

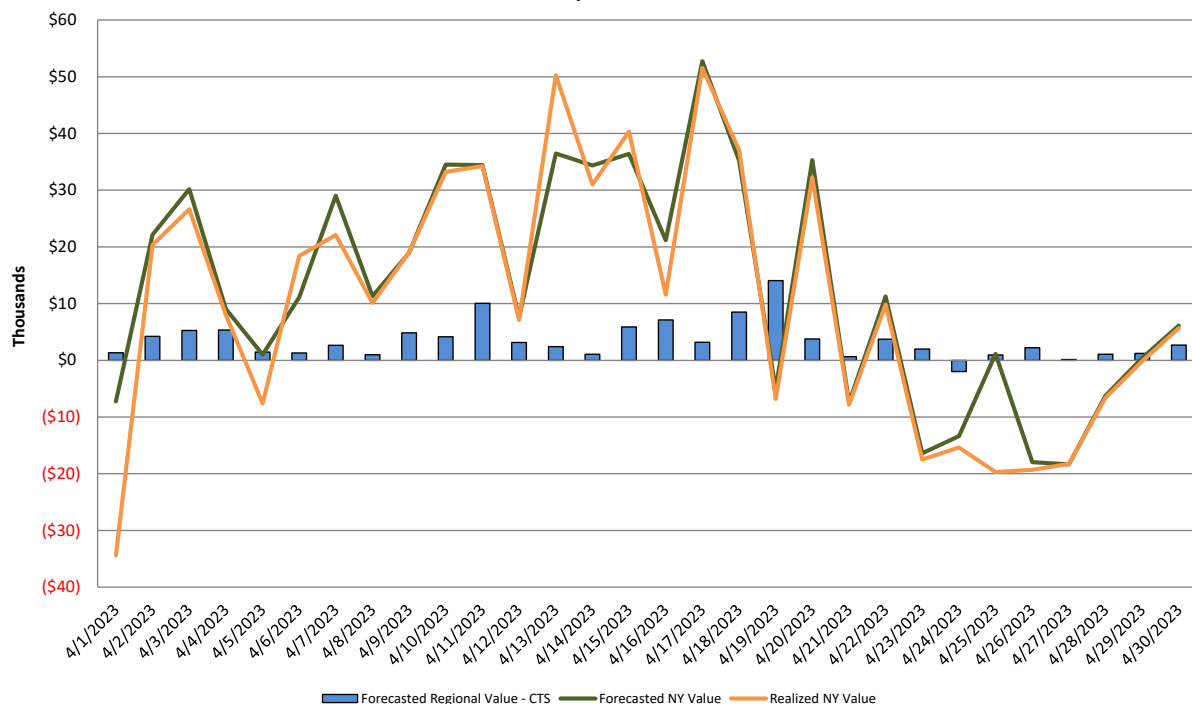


Regional NYISO/NE RT Scheduling for ISO-NE AC Monthly Value Categories



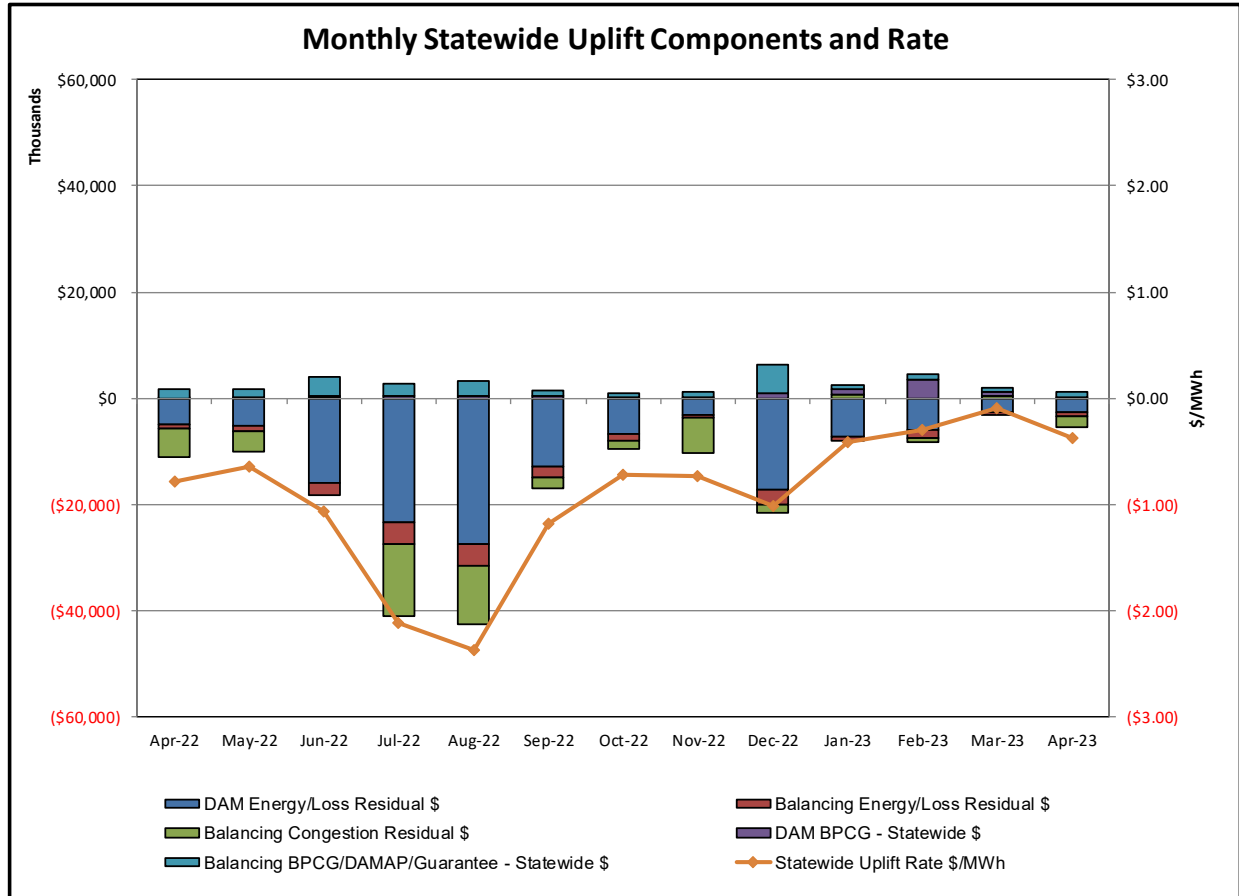
Forecasted Regional Value - CTS: Regional production cost savings for NY and NE associated with intra-hour CTS transaction energy schedules using RTC prices and NE forecasted prices.
Forecasted NY Value: NY production cost savings associated with CTS transaction energy schedules using RTC prices.
Realized NY Value: NY production cost savings associated with CTS transaction energy schedules using RTD prices.

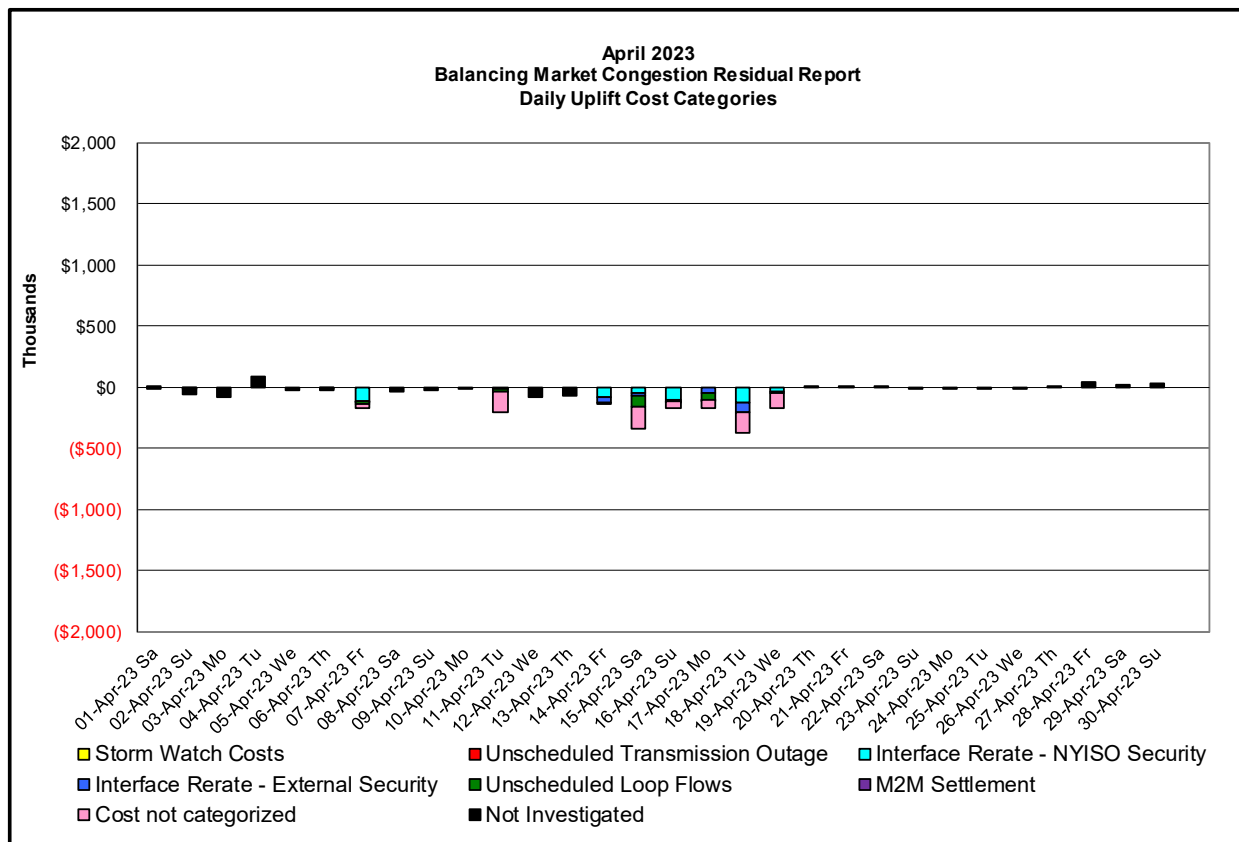
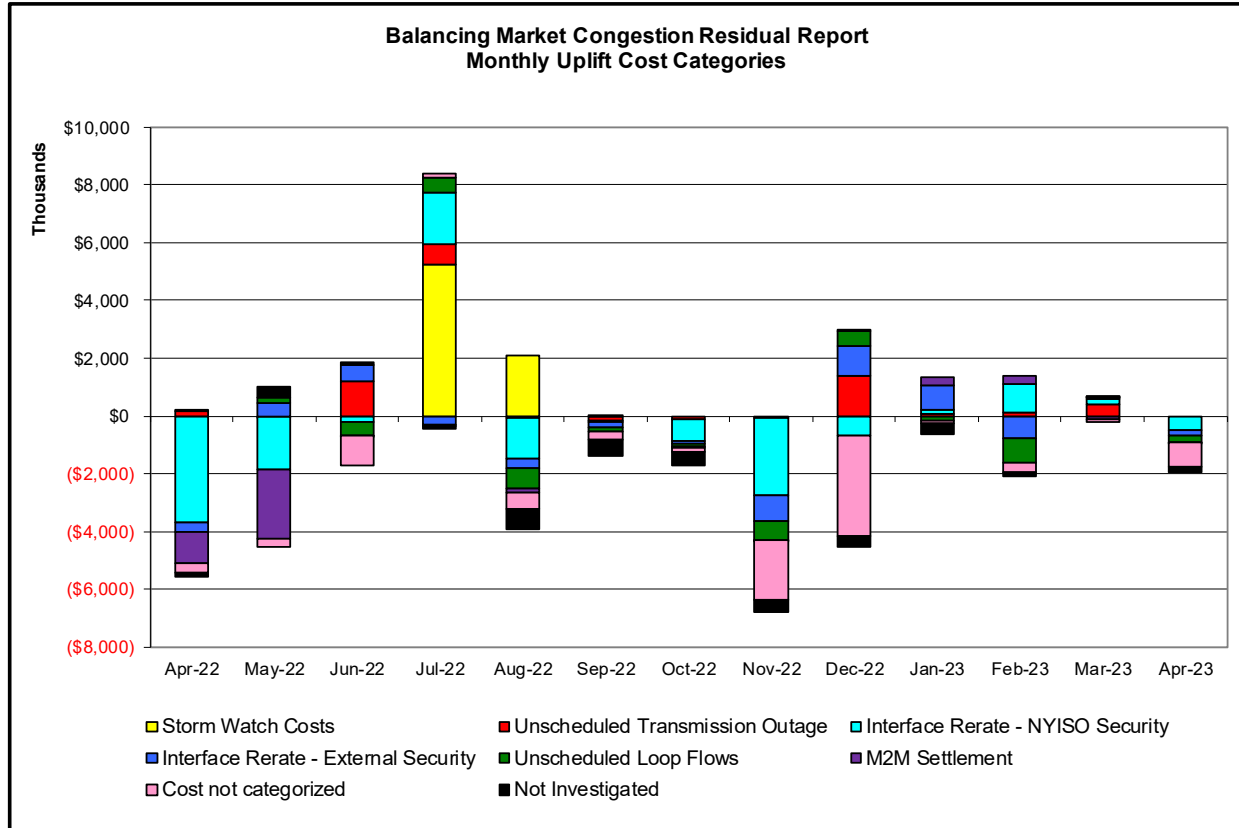
Regional NYISO/NE RT Scheduling for ISO-NE AC Daily Value Categories April 2023



Forecasted Regional Value - CTS: Regional production cost savings for NY and NE associated with intra-hour CTS transaction energy schedules using RTC prices and NE forecasted prices.
Forecasted NY Value: NY production cost savings associated with CTS transaction energy schedules using RTC prices.
Realized NY Value: NY production cost savings associated with CTS transaction energy schedules using RTD prices.

Market Performance Metrics

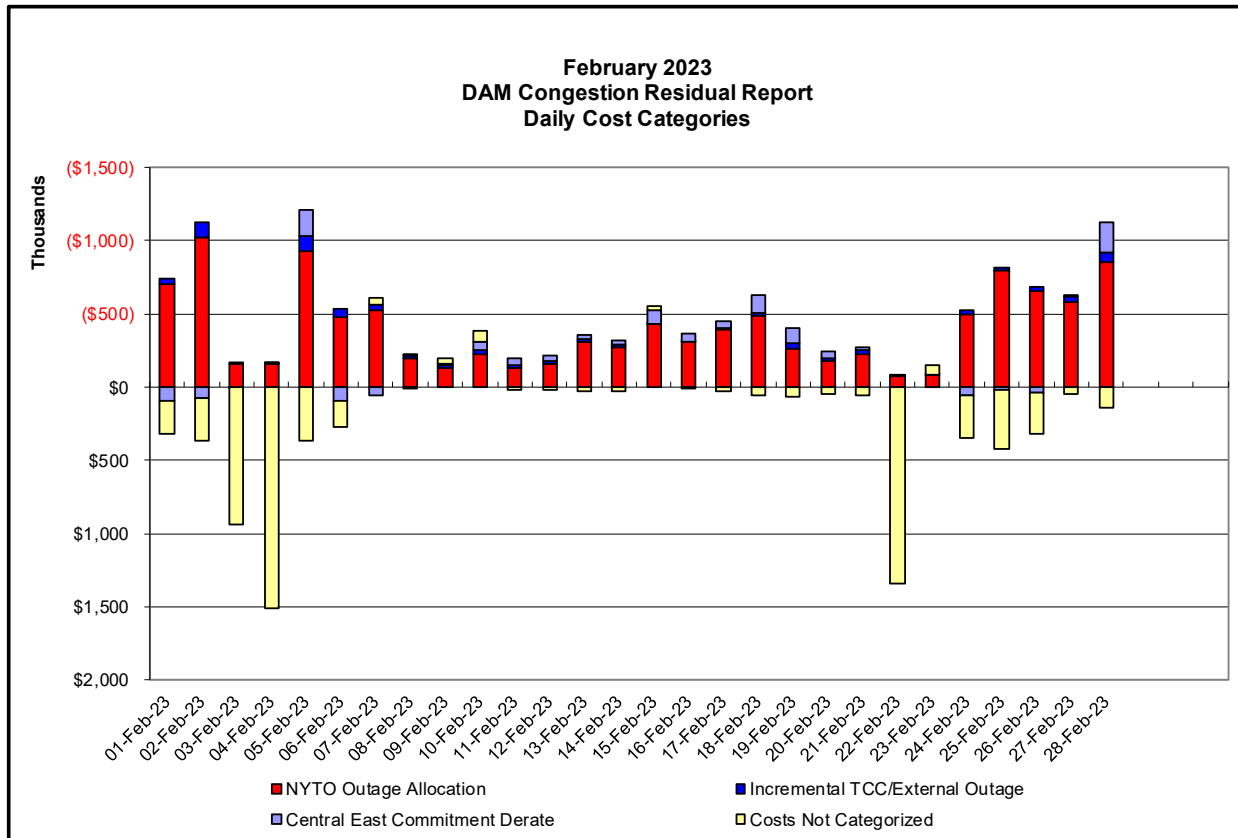
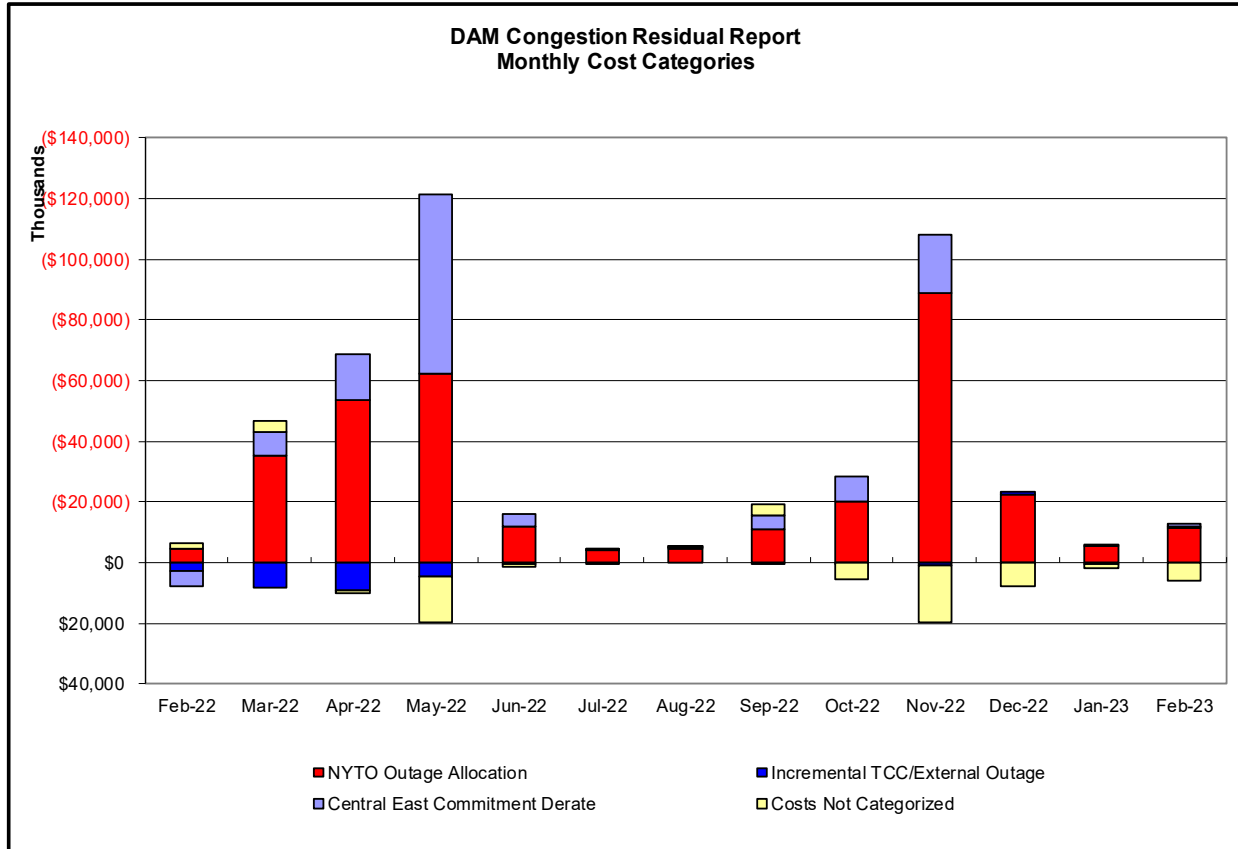




Day's investigated in April: 7, 11, 14, 15, 16, 17, 18, 19		
Event	Description	April Dates
	Derate Adirondack-Porter 230kV (#12) I/o SIN:MSU1&7040& HQ GN&LD PROXY	11
	Derate Carl Place-East Garden City 138kV (#361) I/o EGRDNCTY-ROSLYN 138 362	18, 19
	Derate Central East	11, 15
	Derate East Garden City-New Bridge 138kV #462	14
	Derate Foxhills-Greenwood 138kV (#29232) I/o SCB:GOWANUS(2):41&42231&R4	18
	Derate Malone-Willis 115kV (#1-910) I/o TWR:MOSES MW2 & MAL4	11
	NYCA DNI Ramp Limit	7, 15, 18
	Uprate Central East	7, 11, 14-16, 18, 19
	HQ_CHAT - NY Scheduling Limit	14
	IESO AC ACTIVE DNI Ramp Limit	15
	NE AC ACTIVE DNI Ramp Limit	17
	NE AC-NY Scheduling Limit	15
	NE NNC1385 - NY Scheduling Limit	14, 17, 18
	PJM AC-NY DNI Ramp Limit	7
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East	7, 11, 15-17, 19
	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West	11, 17, 19

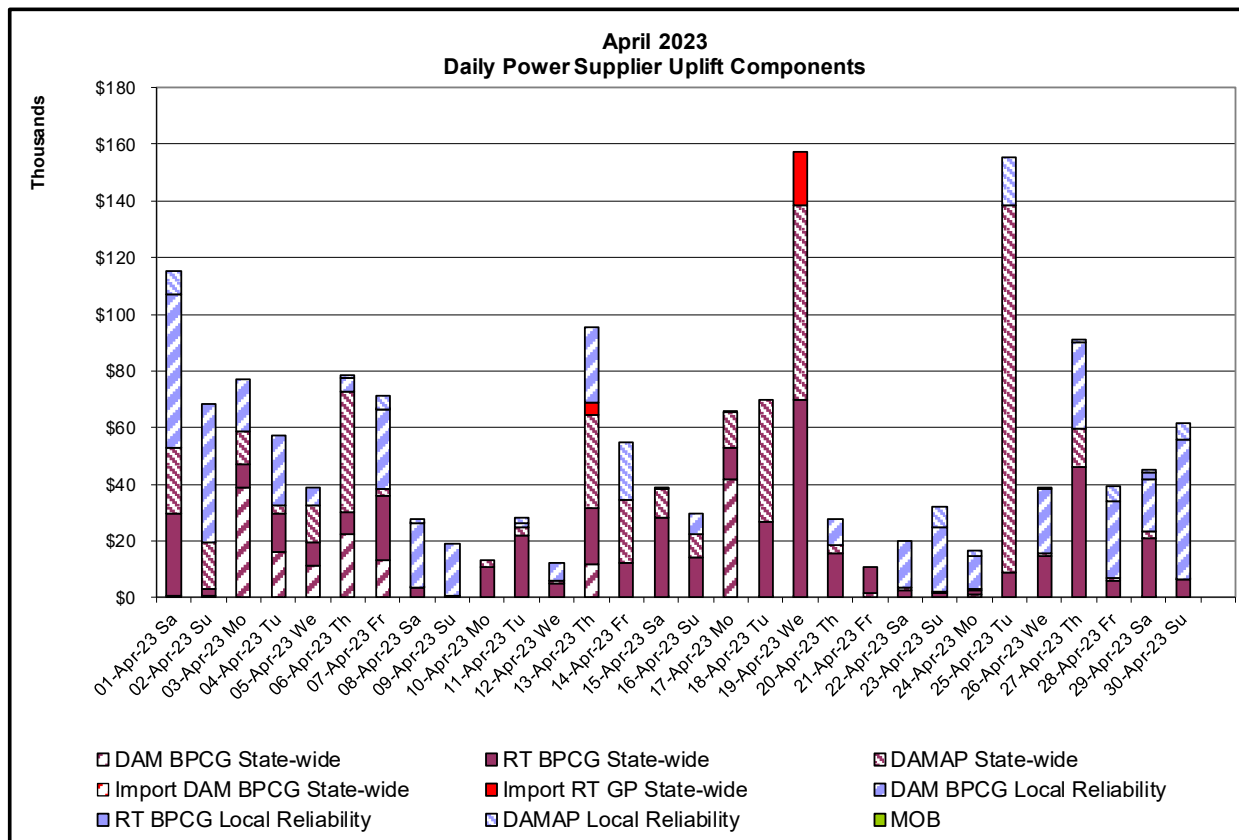
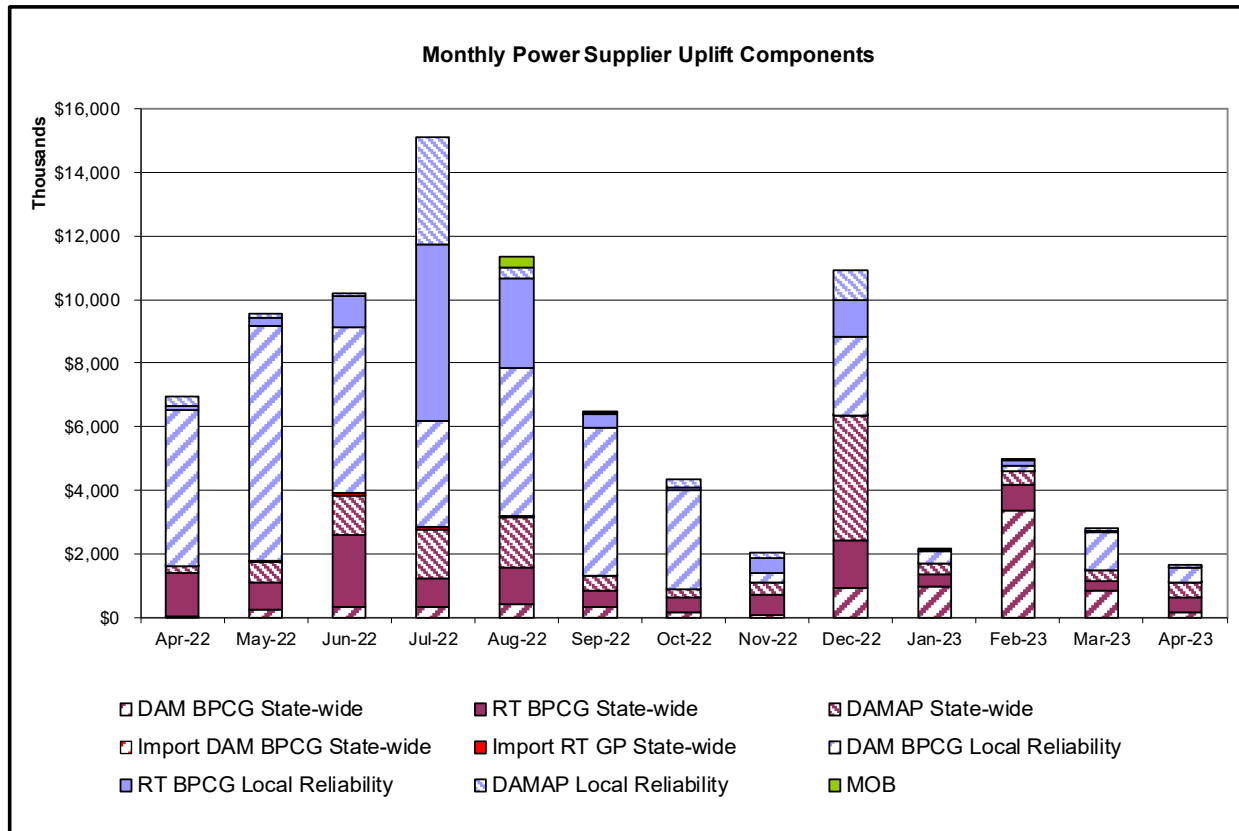
Real-Time Balancing Market Congestion Residual (Uplift Cost) Categories

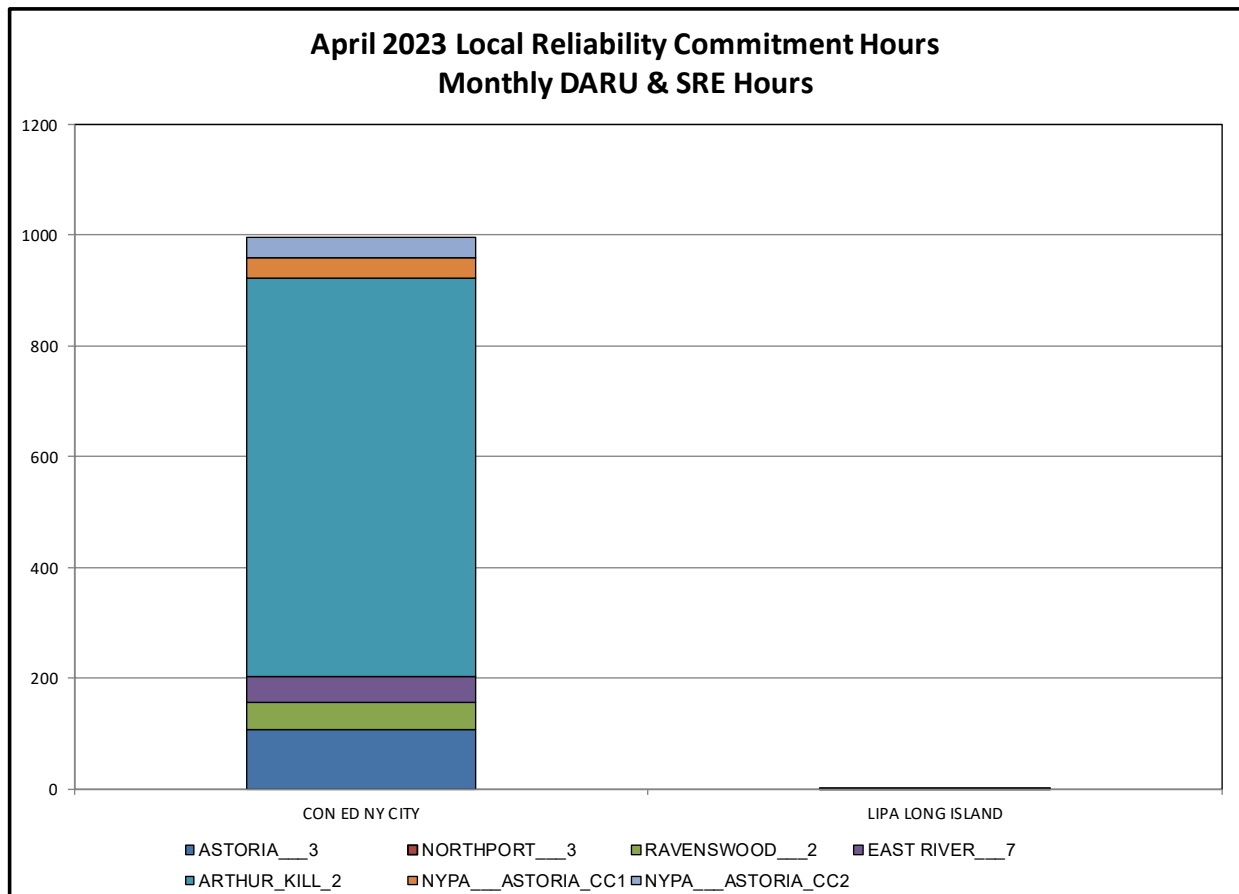
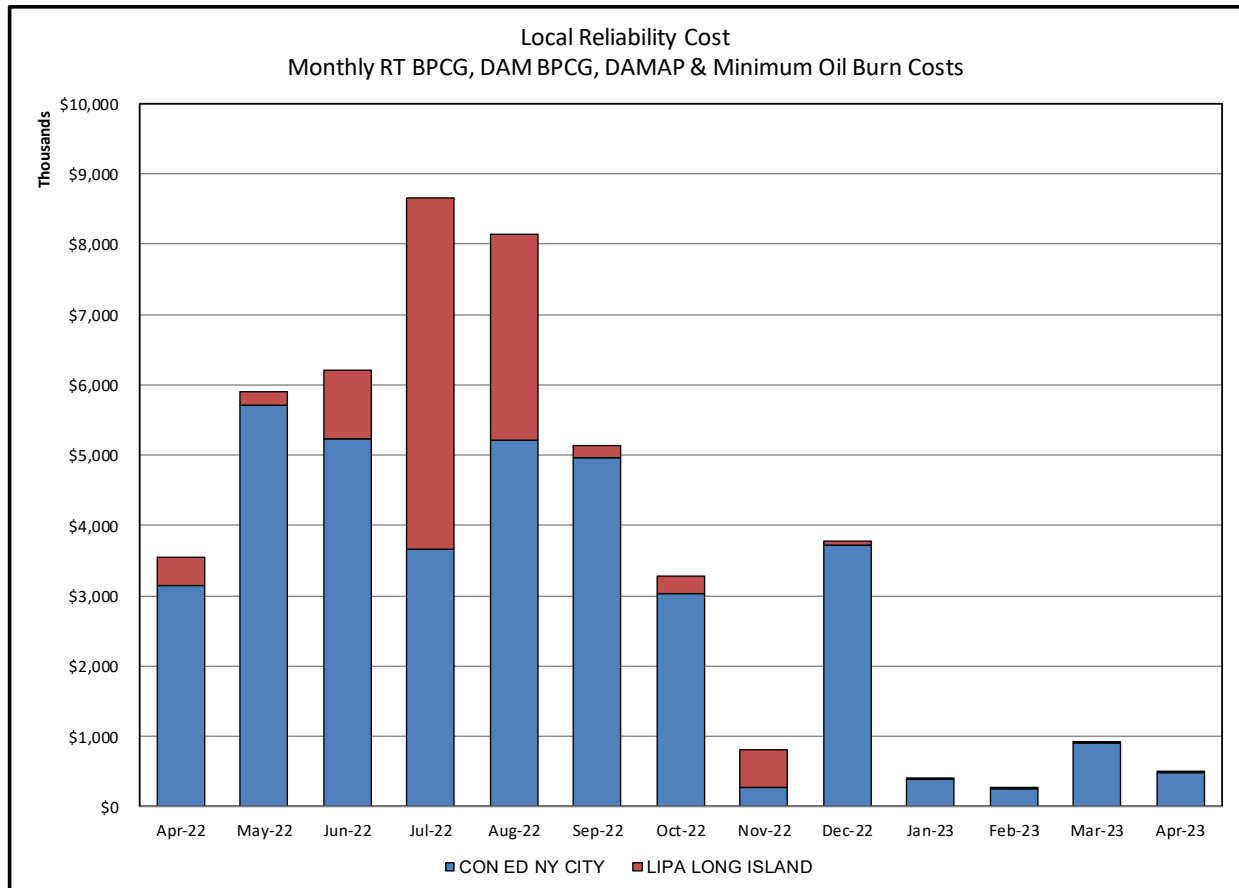
<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
Storm Watch	Zone J	Thunderstorm Alert (TSA)	TSA Activations
Transmission Outage Mismatch	Market-wide	Changes in DAM to RTM transfers related to transmission outage mismatch	Forced Line Outage, Unit AVR Outages, Early Line Return from Outage
Interface/Facility Rerate - NYISO Security	Market-wide	Changes in DAM to RTM transfers not related to transmission outage	Interface/Facility Rerates due to RTM voltages
Interface Rerate - External Security	Market-wide	Changes in DAM to RTM transfers related to External Control Area Security Events	TLR Events, External Transaction Curtailments
Unscheduled Loop Flows	Market-wide	Changes in DAM to RTM unscheduled loop flows impacting NYISO Interface transmission constraints	DAM to RTM Lake Erie Loop Flows exceeding +/- 125 MW
M2M Settlement	Market-wide	Settlement result inclusive of coordinated redispatch and Ramapo flowgates	
<u>Monthly Balancing Market Congestion Report Assumptions/Notes</u>			
1) Storm Watch Costs are identified as daily total uplift costs			
2) Days with a value of BMCR less M2M Settlement of \$100K/HR, shortfall of \$200K/Day or more, or surplus of \$100K/Day or more are investigated.			
3) Uplift costs associated with multiple event types are apportioned equally by hour			

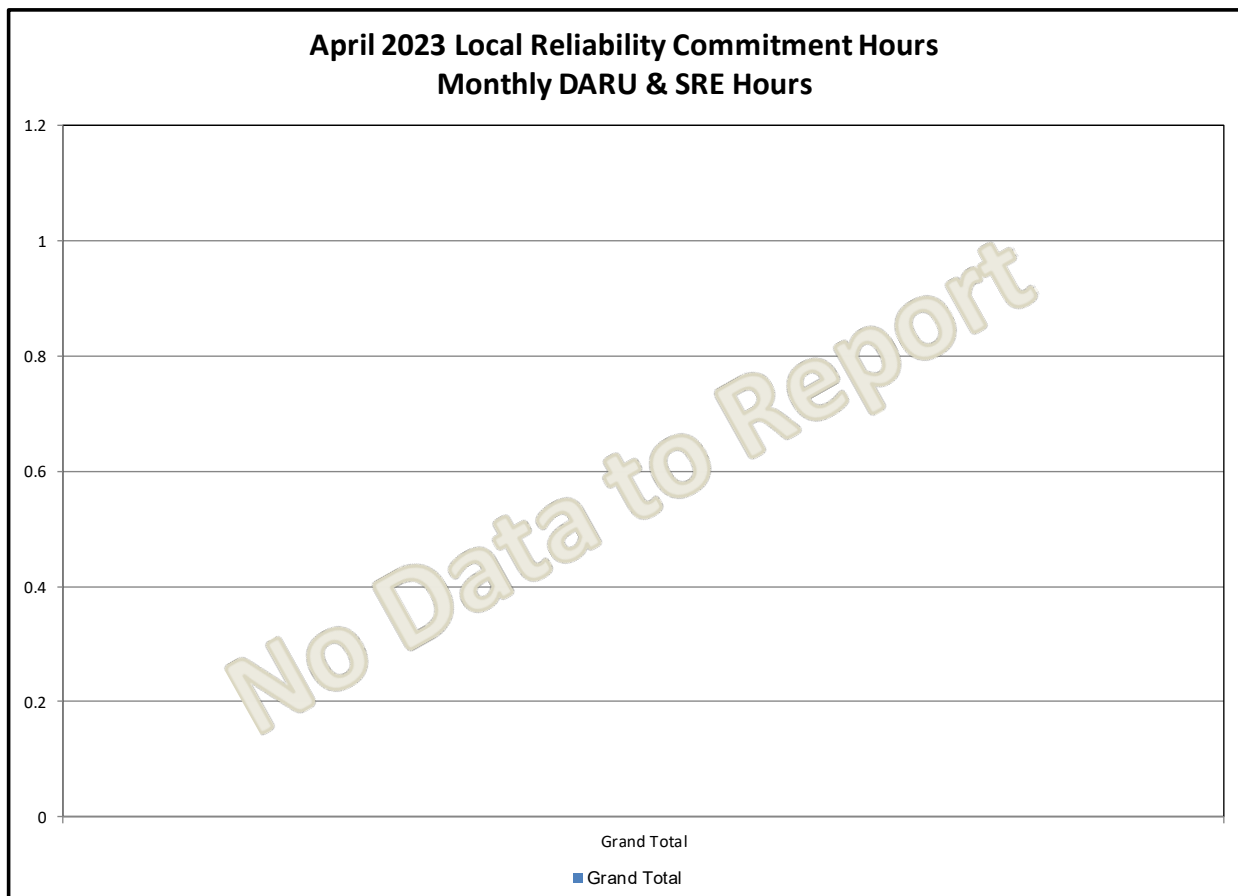
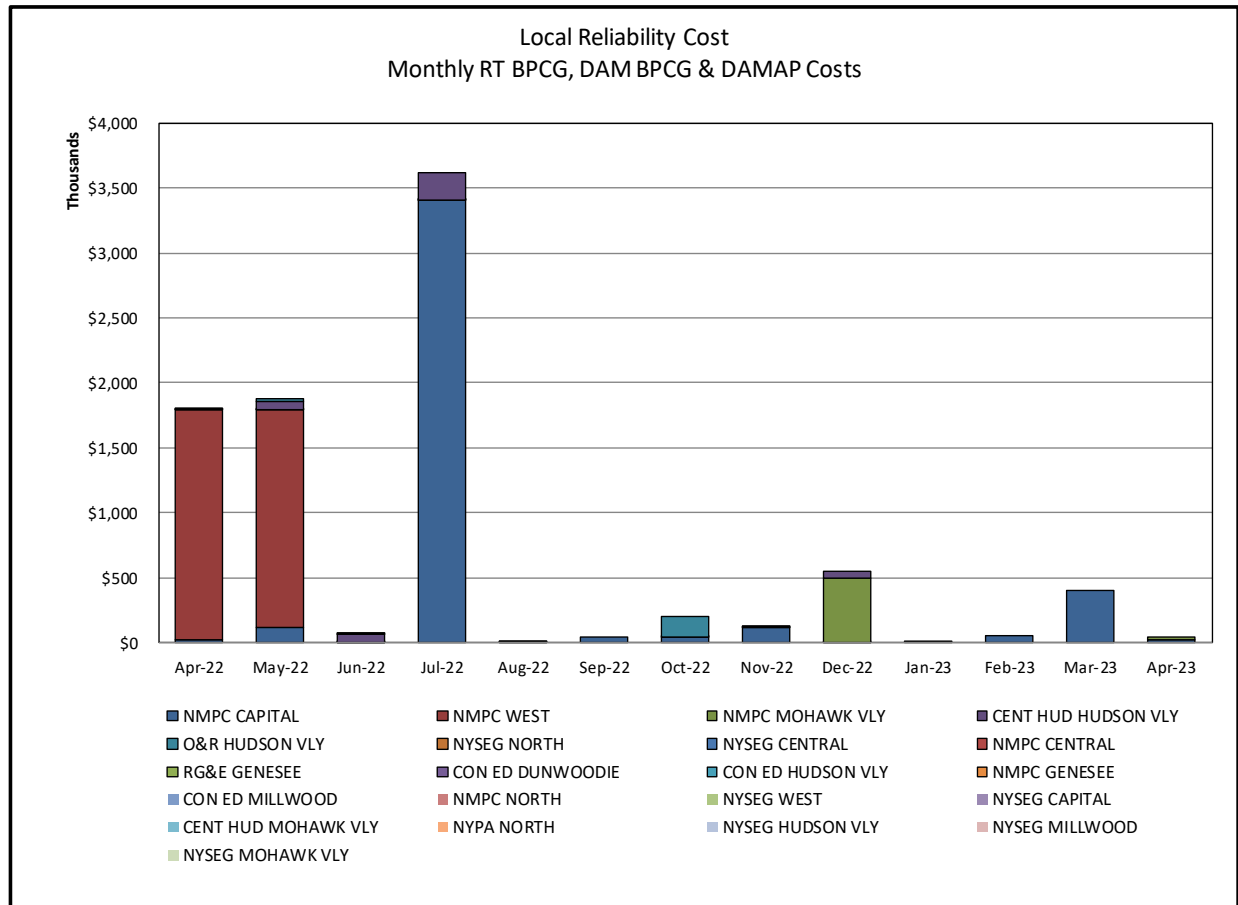


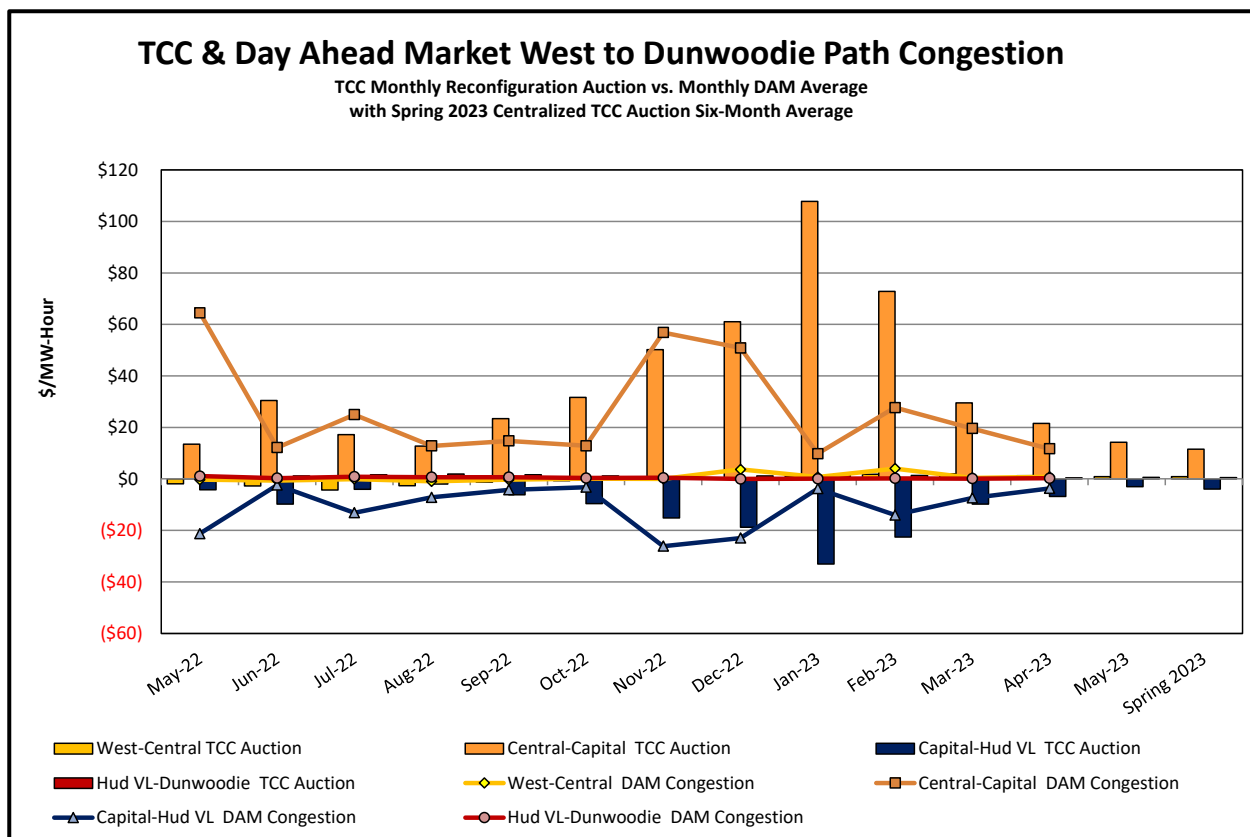
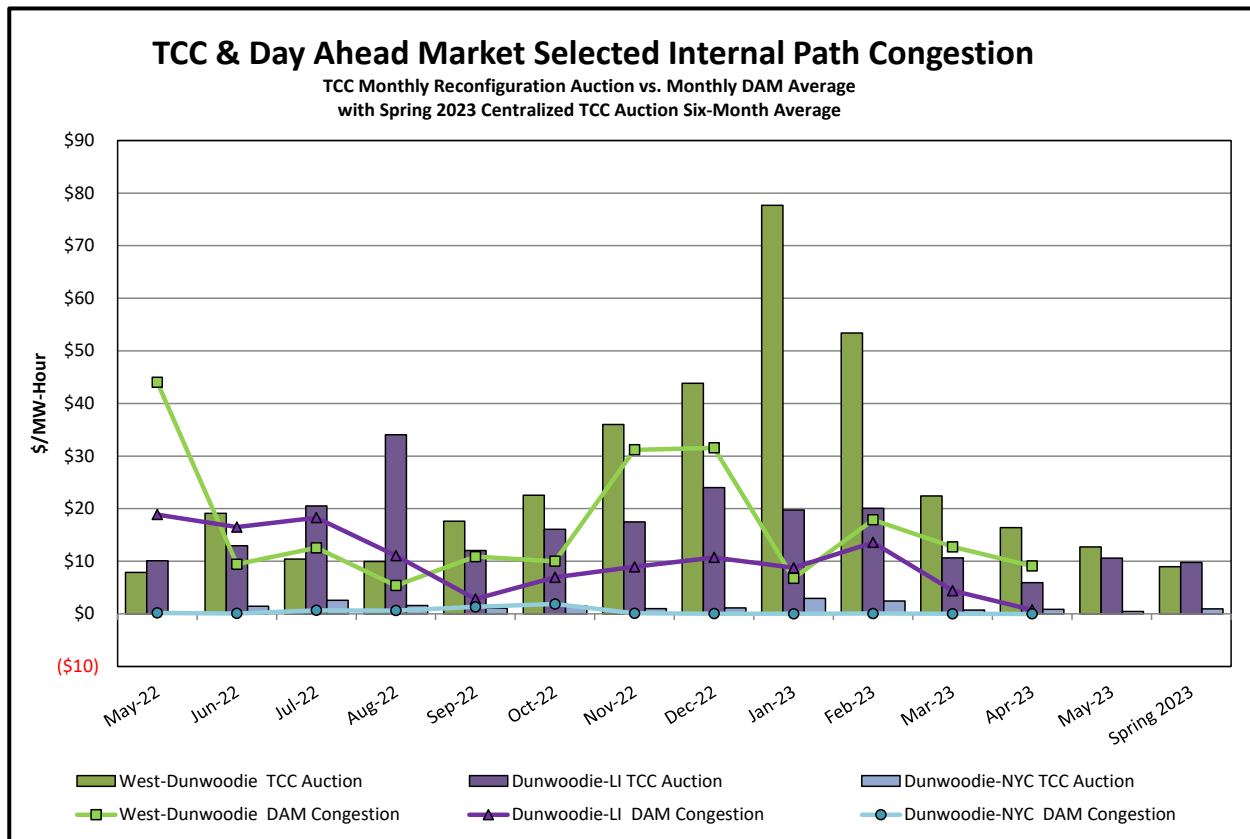
Day-Ahead Market Congestion Residual Categories

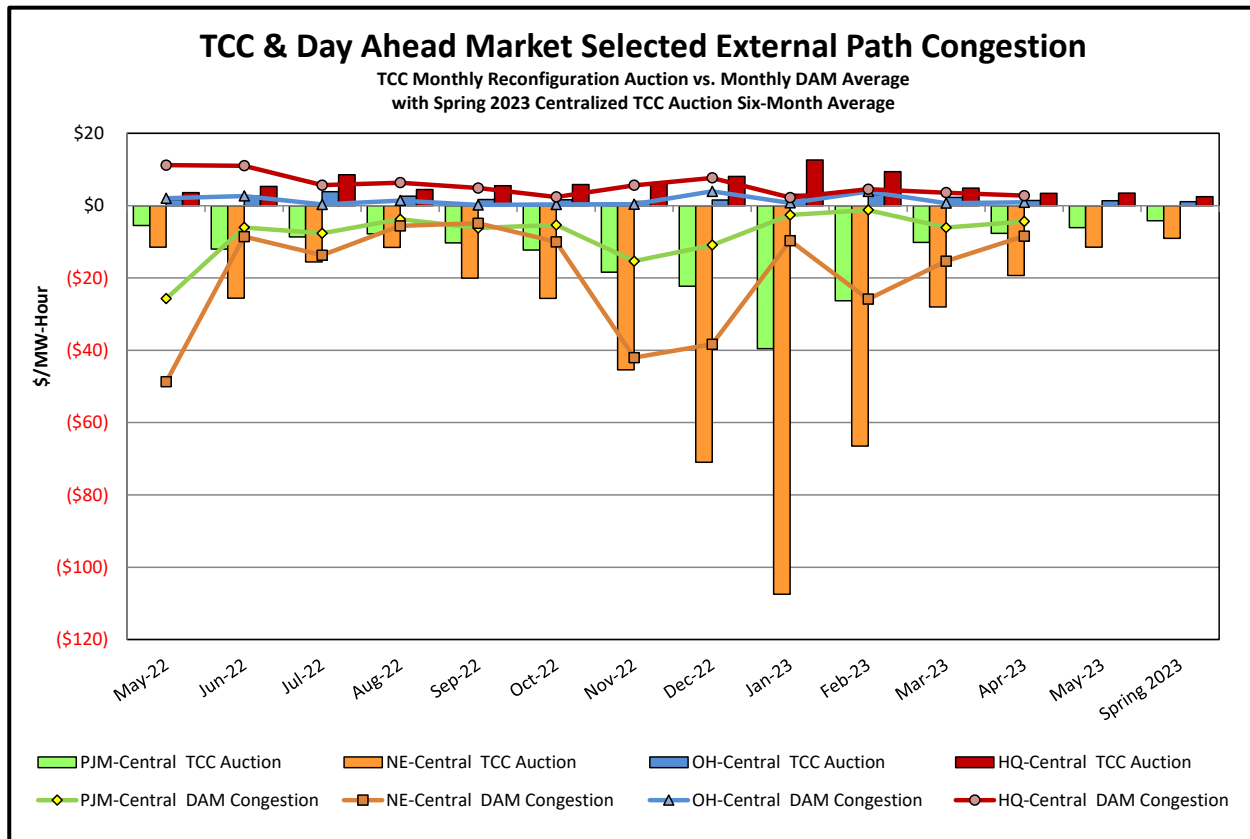
<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
NYTO Outage Allocation	Responsible TO	Direct allocation to NYTO's responsible for transmission equipment status change.	DAM scheduled outage for equipment modeled in-service for the TCC Auction.
Incremental TCC/External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



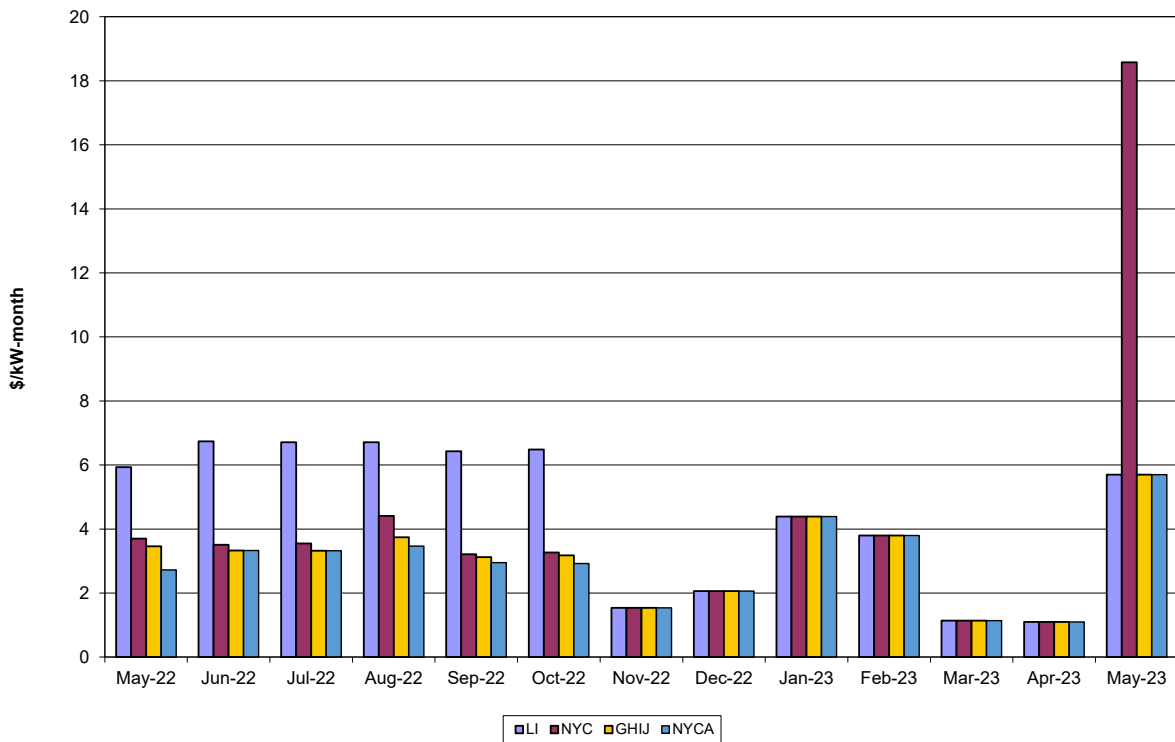




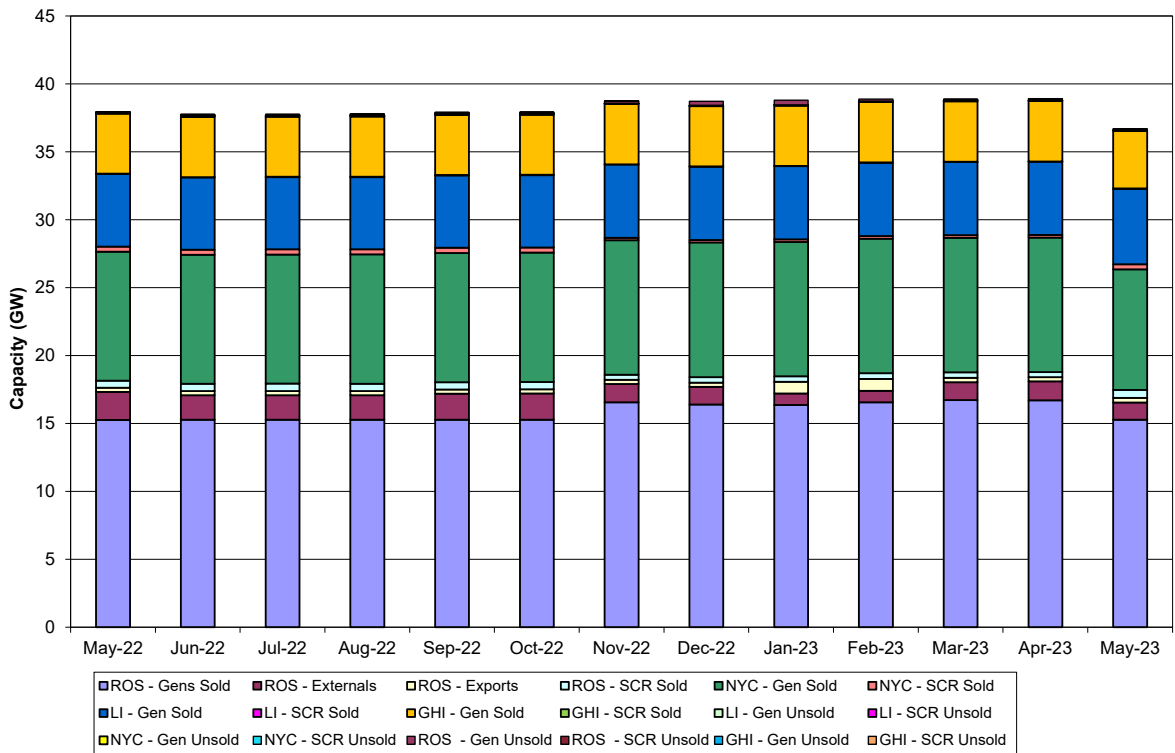




ICAP Spot Market Clearing Price



UCAP Sales

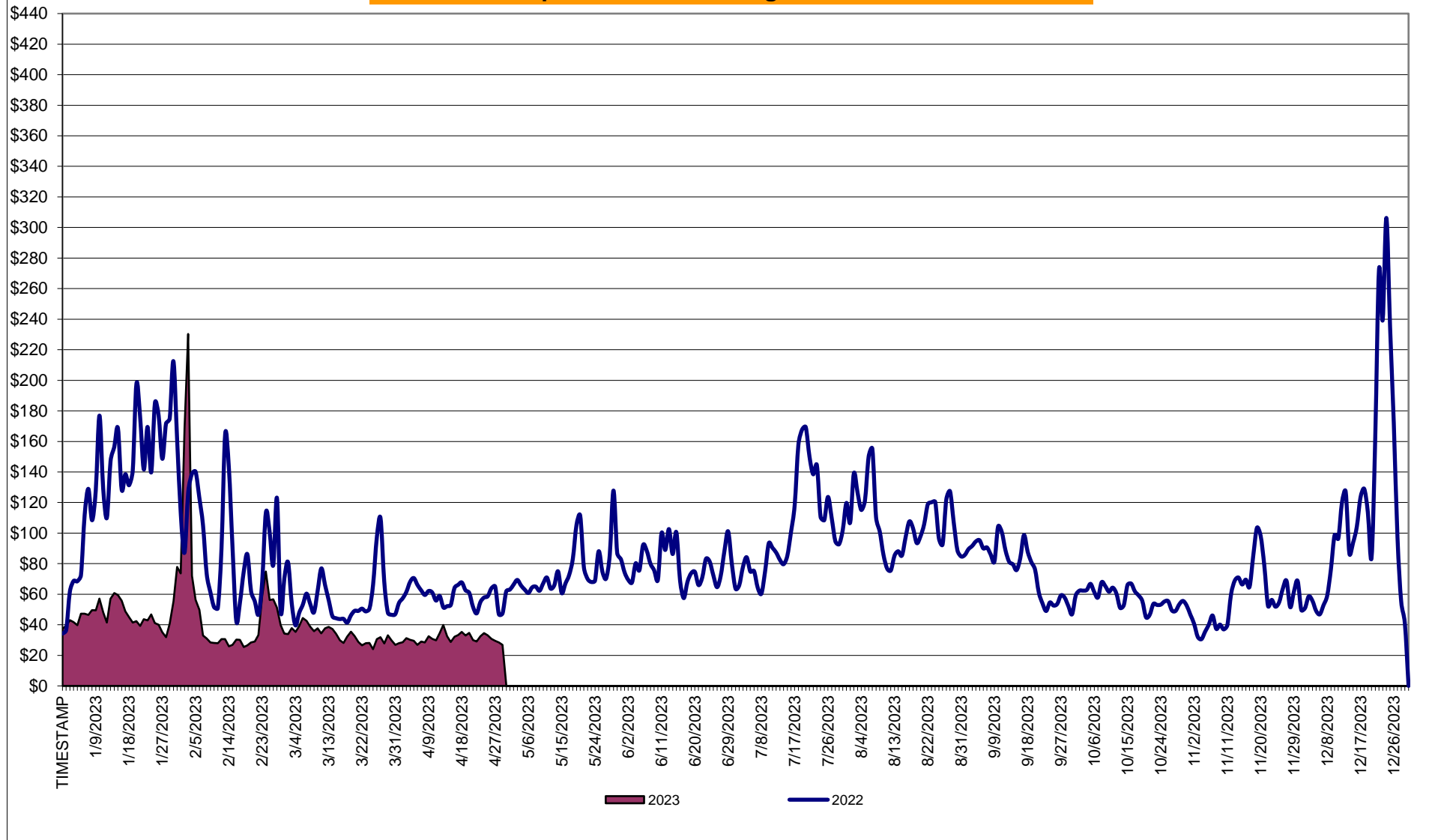


Market Performance Highlights

April 2023

- LBMP for April is \$28.07/MWh; lower than \$31.11/MWh in March 2023 and \$56.46/MWh in April 2022.
 - Day Ahead Load Weighted LBMPs and Real Time Load Weighted LBMPs are lower compared to March.
- April 2023 average year-to-date monthly cost of \$43.45/MWh is a 53% decrease from \$91.92/MWh in April 2022.
- Average daily sendout is 349 GWh/day in April; lower than 387 GWh/day in March 2023 and 359 GWh/day in April 2022.
- Natural gas prices and distillate prices are lower compared to the previous month.
 - Natural Gas (Transco Z6 NY) was \$1.73/MMBtu, down from \$2.26/MMBtu in March.
 - Natural gas prices (Transco Z6 NY) are down 254% year-over-year.
 - Jet Kerosene Gulf Coast was \$17.72/MMBtu, down from \$19.98/MMBtu in March.
 - Ultra Low Sulfur No.2 Diesel NY Harbor was \$18.54/MMBtu, down from \$19.72/MMBtu in March.
 - Distillate prices are down 52.4% year-over-year.
- Uplift per MWh is lower compared to the previous month.
 - Uplift (not including NYISO cost of operations) is (\$0.34)/MWh; lower than (\$0.00)/MWh in March.
 - Local Reliability Share is \$0.04/MWh, lower than \$0.09/MWh in March.
 - Statewide Share is (\$0.38)/MWh, lower than (\$0.10)/MWh in March.
 - TSA \$ per NYC MWh is \$0.00/MWh.
 - Total uplift costs (Schedule 1 components including NYISO Cost of Operations) are lower than March.

Daily NYISO Average Cost/MWh (Energy & Ancillary Services)*
2022 Annual Average \$89.23/MWh
April 2022 YTD Average \$91.92/MWh
April 2023 YTD Average \$43.45/MWh

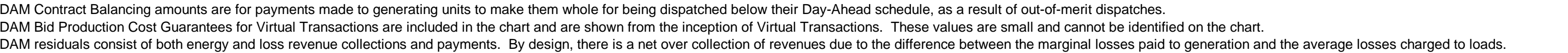


* Excludes ICAP payments.

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

2023	<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	42.10	55.47	31.11	28.07								
NTAC	2.82	1.15	1.39	1.72								
Reserve	0.72	0.90	0.73	0.85								
Regulation	0.09	0.13	0.13	0.15								
NYISO Cost of Operations	0.77	0.77	0.77	0.78								
FERC Fee Recovery	0.08	0.09	0.09	0.10								
Uplift	(0.38)	(0.27)	(0.00)	(0.34)								
Uplift: Local Reliability Share	0.03	0.03	0.09	0.04								
Uplift: Statewide Share	(0.41)	(0.30)	(0.10)	(0.38)								
Voltage Support and Black Start	0.42	0.42	0.43	0.43								
Avg Monthly Cost	46.56	58.58	34.58	31.67								
 Avg YTD Cost	46.64	52.36	46.65	43.45								
 TSA \$ per NYC MWh	0.00	0.00	0.00	0.00								
 2022	<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	52.47	110.17
NTAC	1.43	0.95	1.48	1.17	2.46	2.07	3.65	1.69	1.44	3.21	3.91	2.23
Reserve	1.26	1.21	0.83	0.81	0.74	0.66	0.87	0.65	0.86	1.02	0.89	0.49
Regulation	0.27	0.19	0.17	0.12	0.13	0.15	0.12	0.13	0.18	0.18	0.15	0.12
NYISO Cost of Operations	0.73	0.72	0.74	0.74	0.74	0.75	0.76	0.76	0.76	0.73	0.74	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	0.09	0.08
Uplift	(1.50)	(1.73)	(0.09)	(0.36)	(0.05)	(0.61)	(1.58)	(1.91)	(0.78)	(0.45)	(0.68)	(0.77)
Uplift: Local Reliability Share	0.09	0.04	0.27	0.43	0.60	0.46	0.54	0.47	0.39	0.27	0.06	0.25
Uplift: Statewide Share	(1.59)	(1.77)	(0.36)	(0.79)	(0.65)	(1.07)	(2.12)	(2.38)	(1.18)	(0.72)	(0.74)	(1.02)
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	0.42	0.42
Avg Monthly Cost	137.41	95.82	60.34	59.38	75.07	80.17	103.73	110.61	81.81	58.26	57.91	113.40
 Avg YTD Cost	137.49	118.36	100.65	91.92	88.82	87.37	90.31	93.42	92.27	89.47	86.97	89.23
 TSA \$ per NYC MWh	0.00	2.98	0.00	0.00	0.11	0.00	3.98	1.70	0.06	0.00	0.00	0.01

* Excludes ICAP payments.
Market Mitigation and Analysis
Prepared: 5/11/2023 2:40 PM



NYISO Markets Transactions

<u>2023</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>
<u>Day Ahead Market MWh</u>	13,662,137	12,355,489	12,651,083	11,058,870								
DAM LSE Internal LBMP Energy Sales	55%	55%	56%	55%								
DAM External TC LBMP Energy Sales	7%	7%	4%	4%								
DAM Bilateral - Internal Bilaterals	28%	29%	30%	30%								
DAM Bilateral - Import/Non-LBMP Market Bilaterals	5%	5%	6%	6%								
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	2%	2%	2%								
DAM Bilateral - Wheel Through Bilaterals	3%	2%	2%	2%								
<u>Balancing Energy Market MWh</u>	328,840	397,488	420,170	303,381								
Balancing Energy LSE Internal LBMP Energy Sales	65%	38%	53%	43%								
Balancing Energy External TC LBMP Energy Sales	68%	68%	58%	69%								
Balancing Energy Bilateral - Internal Bilaterals	2%	1%	2%	-1%								
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%								
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	7%	6%	6%	5%								
Balancing Energy Bilateral - Wheel Through Bilaterals	-43%	-13%	-18%	-16%								
<u>Transactions Summary</u>												
LBMP	63%	63%	62%	61%								
Internal Bilaterals	28%	28%	29%	29%								
Import Bilaterals	5%	5%	6%	6%								
Export Bilaterals	2%	2%	2%	3%								
Wheels Through	2%	1%	1%	2%								
<u>Market Share of Total Load</u>												
Day Ahead Market	97.6%	96.9%	96.8%	97.3%								
Balancing Energy +	2.4%	3.1%	3.2%	2.7%								
Total MWH	13,990,977	12,752,977	13,071,253	11,362,252								
Average Daily Energy Sendout/Month GWh	410	408	387	349								

<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>
<u>Day Ahead Market MWh</u>	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	11,952,855	13,768,799
DAM LSE Internal LBMP Energy Sales	57%	56%	59%	56%	55%	60%	64%	63%	62%	58%	56%	56%
DAM External TC LBMP Energy Sales	7%	8%	3%	5%	6%	3%	3%	3%	2%	3%	4%	6%
DAM Bilateral - Internal Bilaterals	28%	28%	29%	31%	31%	29%	26%	26%	27%	30%	31%	29%
DAM Bilateral - Import/Non-LBMP Market Bilaterals	4%	4%	4%	5%	4%	4%	4%	5%	6%	5%	5%	5%
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%	2%	2%	2%	2%	2%	1%	1%	2%	2%	2%	2%
DAM Bilateral - Wheel Through Bilaterals	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
<u>Balancing Energy Market MWh</u>	942,823	742,449	758,386	772,666	378,503	464,231	567,602	785,464	361,883	379,932	519,117	528,939
Balancing Energy LSE Internal LBMP Energy Sales	88%	83%	76%	60%	65%	66%	72%	86%	66%	45%	38%	45%
Balancing Energy External TC LBMP Energy Sales	16%	19%	24%	33%	32%	36%	23%	14%	34%	55%	58%	56%
Balancing Energy Bilateral - Internal Bilaterals	1%	2%	2%	0%	5%	2%	1%	0%	1%	0%	2%	2%
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	2%	2%	2%	0%	0%	0%	0%	0%
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	4%	9%	8%	7%	9%	8%	6%	3%	5%	7%	7%	5%
Balancing Energy Bilateral - Wheel Through Bilaterals	-9%	-13%	-10%	-1%	-12%	-14%	-4%	-3%	-5%	-7%	-5%	-8%
<u>Transactions Summary</u>												
LBMP	67%	66%	65%	62%	63%	64%	68%	68%	65%	62%	62%	64%
Internal Bilaterals	26%	27%	27%	29%	30%	28%	25%	25%	27%	29%	29%	28%
Import Bilaterals	3%	4%	4%	4%	4%	4%	3%	4%	6%	5%	5%	5%
Export Bilaterals	2%	2%	2%	2%	2%	2%	2%	1%	2%	2%	2%	2%
Wheels Through	1%	1%	2%	2%	2%	2%	1%	1%	2%	1%	2%	2%
<u>Market Share of Total Load</u>												
Day Ahead Market	93.8%	94.4%	94.1%	93.4%	97.0%	96.5%	96.6%	95.3%	97.2%	96.8%	95.8%	96.3%
Balancing Energy +	6.2%	5.6%	5.9%	6.6%	3.0%	3.5%	3.4%	4.7%	2.8%	3.2%	4.2%	3.7%
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	12,471,972	14,297,738
Average Daily Energy Sendout/Month GWh	451	429	390	359	372	422	509	514	411	359	382	421

+ 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>
<u>DAY AHEAD LBMP</u>												
Price *	\$40.60	\$47.82	\$29.84	\$26.91								
Standard Deviation	\$10.32	\$47.20	\$7.42	\$6.50								
Load Weighted Price **	\$41.37	\$50.55	\$30.37	\$27.38								
<u>RTC LBMP</u>												
Price *	\$38.28	\$42.67	\$28.02	\$26.93								
Standard Deviation	\$31.37	\$39.75	\$11.53	\$9.23								
Load Weighted Price **	\$39.04	\$44.80	\$28.49	\$27.39								
<u>REAL TIME LBMP</u>												
Price *	\$38.76	\$43.99	\$28.15	\$27.41								
Standard Deviation	\$45.06	\$43.54	\$15.02	\$13.08								
Load Weighted Price **	\$39.68	\$46.75	\$28.72	\$27.97								
Average Daily Energy Sendout/Month GWh	410	408	387	349								

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>
<u>DAY AHEAD LBMP</u>												
Price *	\$124.39	\$85.98	\$52.41	\$55.23	\$66.11	\$72.43	\$90.42	\$100.71	\$74.23	\$51.77	\$49.08	\$98.20
Standard Deviation	\$51.94	\$39.56	\$18.64	\$11.05	\$21.60	\$19.84	\$40.00	\$33.52	\$22.13	\$11.85	\$20.31	\$64.21
Load Weighted Price **	\$128.16	\$88.17	\$53.69	\$55.96	\$69.05	\$75.15	\$96.74	\$105.93	\$77.41	\$52.79	\$50.77	\$101.90
<u>RTC LBMP</u>												
Price *	\$127.16	\$85.48	\$57.58	\$57.33	\$68.27	\$78.66	\$92.25	\$104.69	\$70.59	\$48.87	\$45.91	\$109.15
Standard Deviation	\$77.62	\$55.20	\$38.62	\$21.09	\$42.87	\$49.85	\$49.28	\$51.96	\$28.06	\$13.16	\$24.06	\$190.04
Load Weighted Price **	\$130.45	\$88.33	\$59.03	\$58.49	\$72.67	\$82.33	\$98.61	\$111.42	\$73.81	\$49.76	\$47.58	\$115.16
<u>REAL TIME LBMP</u>												
Price *	\$130.43	\$83.85	\$57.00	\$54.45	\$65.07	\$74.01	\$90.23	\$105.61	\$71.11	\$49.26	\$48.62	\$114.54
Standard Deviation	\$93.35	\$57.99	\$44.52	\$20.46	\$33.01	\$41.27	\$54.20	\$69.83	\$30.72	\$17.89	\$37.20	\$216.43
Load Weighted Price **	\$133.98	\$86.99	\$58.64	\$55.57	\$68.60	\$77.40	\$96.79	\$113.16	\$74.57	\$50.30	\$50.78	\$122.49
Average Daily Energy Sendout/Month GWh	451	429	390	359	372	422	509	514	411	359	382	421

* Average zonal load weighted prices.

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

NYISO Monthly Average Internal LBMPs 2022 - 2023

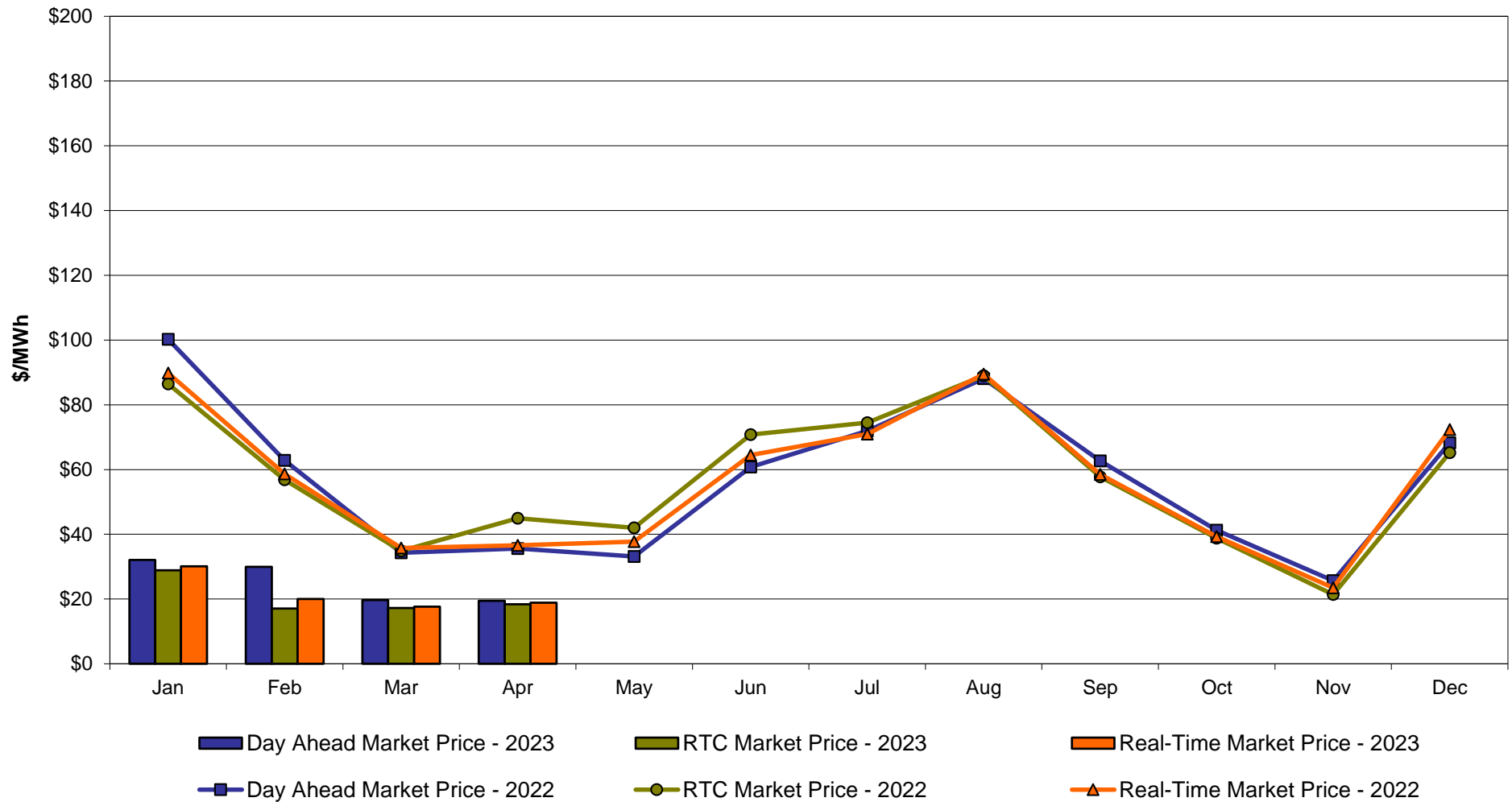


April 2023 Zonal LBMP Statistics for NYISO (\$/MWh)

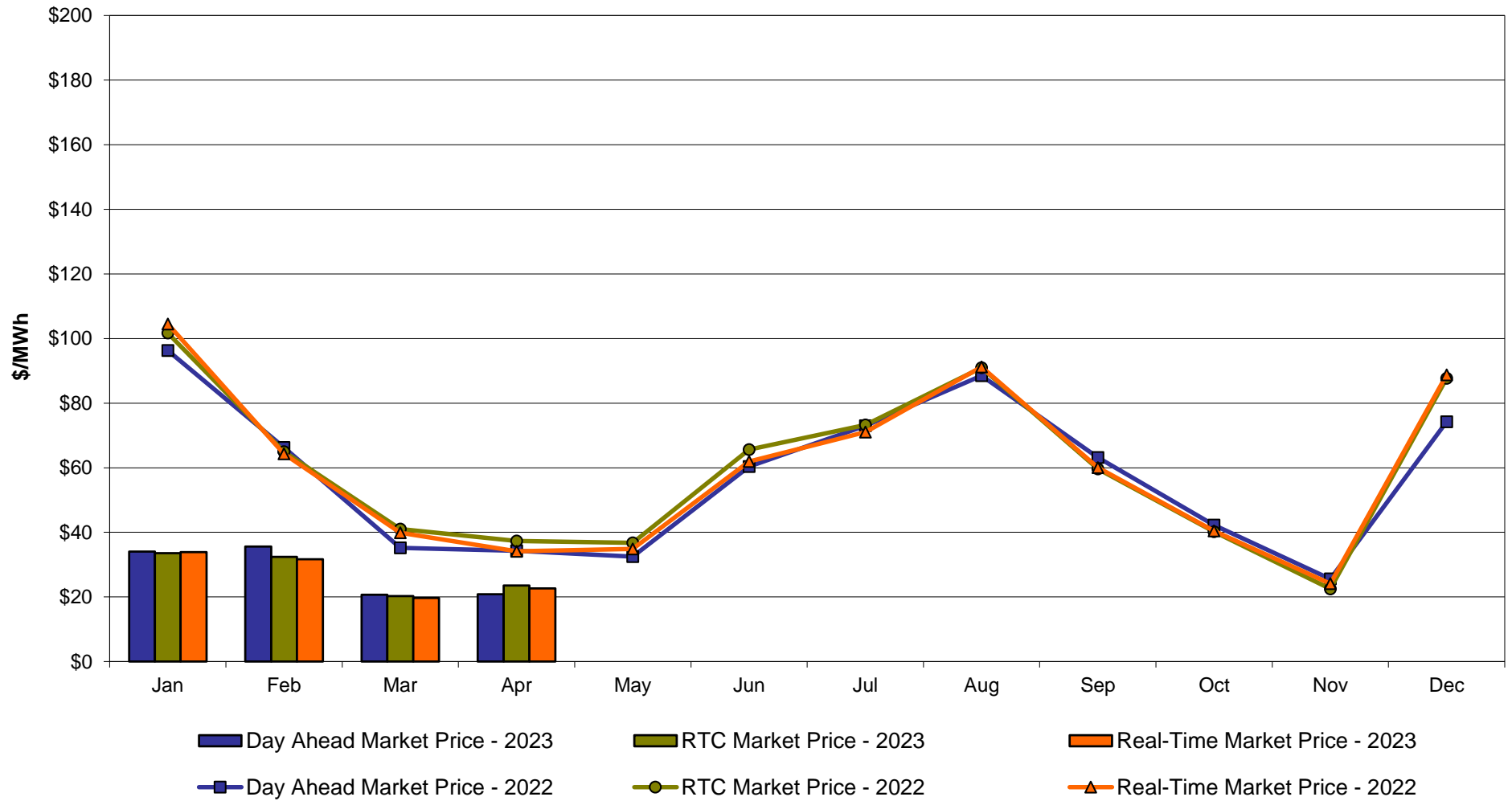
	<u>WEST</u> <u>Zone A</u>	<u>GENESEE</u> <u>Zone B</u>	<u>NORTH</u> <u>Zone D</u>	<u>CENTRAL</u> <u>Zone C</u>	<u>MOHAWK</u> <u>VALLEY</u> <u>Zone E</u>	<u>CAPITAL</u> <u>Zone F</u>	<u>HUDSON</u> <u>VALLEY</u> <u>Zone G</u>	<u>MILLWOOD</u> <u>Zone H</u>	<u>DUNWOODIE</u> <u>Zone I</u>	<u>NEW YORK</u> <u>CITY</u> <u>Zone J</u>	<u>LONG</u> <u>ISLAND</u> <u>Zone K</u>
<u>DAY AHEAD LBMP</u>											
Unweighted Price *	19.41	20.06	16.94	20.82	20.95	33.04	29.79	30.16	30.23	30.30	31.20
Standard Deviation	6.16	6.65	7.38	6.60	6.60	10.15	7.47	7.61	7.61	7.59	7.96
<u>RTC LBMP</u>											
Unweighted Price *	18.37	21.65	17.25	23.55	22.42	32.23	29.52	29.67	29.69	29.78	30.77
Standard Deviation	8.86	9.72	13.29	10.54	9.57	15.48	11.25	11.26	11.22	11.18	22.18
<u>REAL TIME LBMP</u>											
Unweighted Price *	18.87	21.14	16.51	22.62	21.93	34.03	30.49	30.65	30.66	30.75	30.63
Standard Deviation	10.74	11.36	14.67	11.68	11.33	25.11	16.83	16.89	16.83	16.80	17.96
	<u>ONTARIO</u> <u>IESO</u>	<u>HYDRO</u> <u>QUEBEC</u> <u>(Wheel)</u>	<u>HYDRO</u> <u>QUEBEC</u> <u>(Import/Export)</u>	<u>PJM</u>	<u>NEW</u> <u>ENGLAND</u>	<u>CROSS</u> <u>SOUND</u> <u>CABLE</u> <u>Controllable</u> <u>Line</u>	<u>NORTHPORT-</u> <u>NORWALK</u> <u>Controllable</u> <u>Line</u>	<u>NEPTUNE</u> <u>Controllable</u> <u>Line</u>	<u>LINDEN VFT</u> <u>Controllable</u> <u>Line</u>	<u>HUDSON</u> <u>Controllable</u> <u>Line</u>	<u>Dennison</u> <u>Controllable</u> <u>Line</u>
	<u>Zone O</u>	<u>Zone M</u>	<u>Zone M</u>	<u>Zone P</u>	<u>Zone N</u>						
<u>DAY AHEAD LBMP</u>											
Unweighted Price *	19.06	17.37	17.37	25.47	29.86	30.92	30.15	30.57	30.16	30.22	16.95
Standard Deviation	6.03	6.89	6.89	6.05	7.34	7.93	7.16	7.59	7.57	7.58	7.15
<u>RTC LBMP</u>											
Unweighted Price *	18.22	18.03	18.03	25.54	28.26	30.03	29.91	29.08	29.46	29.50	14.59
Standard Deviation	8.42	11.63	11.63	8.59	11.24	22.13	22.10	13.98	10.98	11.09	60.62
<u>REAL TIME LBMP</u>											
Unweighted Price *	19.24	17.24	17.24	25.96	30.37	29.84	28.64	29.04	30.48	30.62	15.57
Standard Deviation	11.29	14.06	14.06	11.92	20.16	17.86	21.38	15.02	16.71	16.78	25.99

* Straight LBMP averages

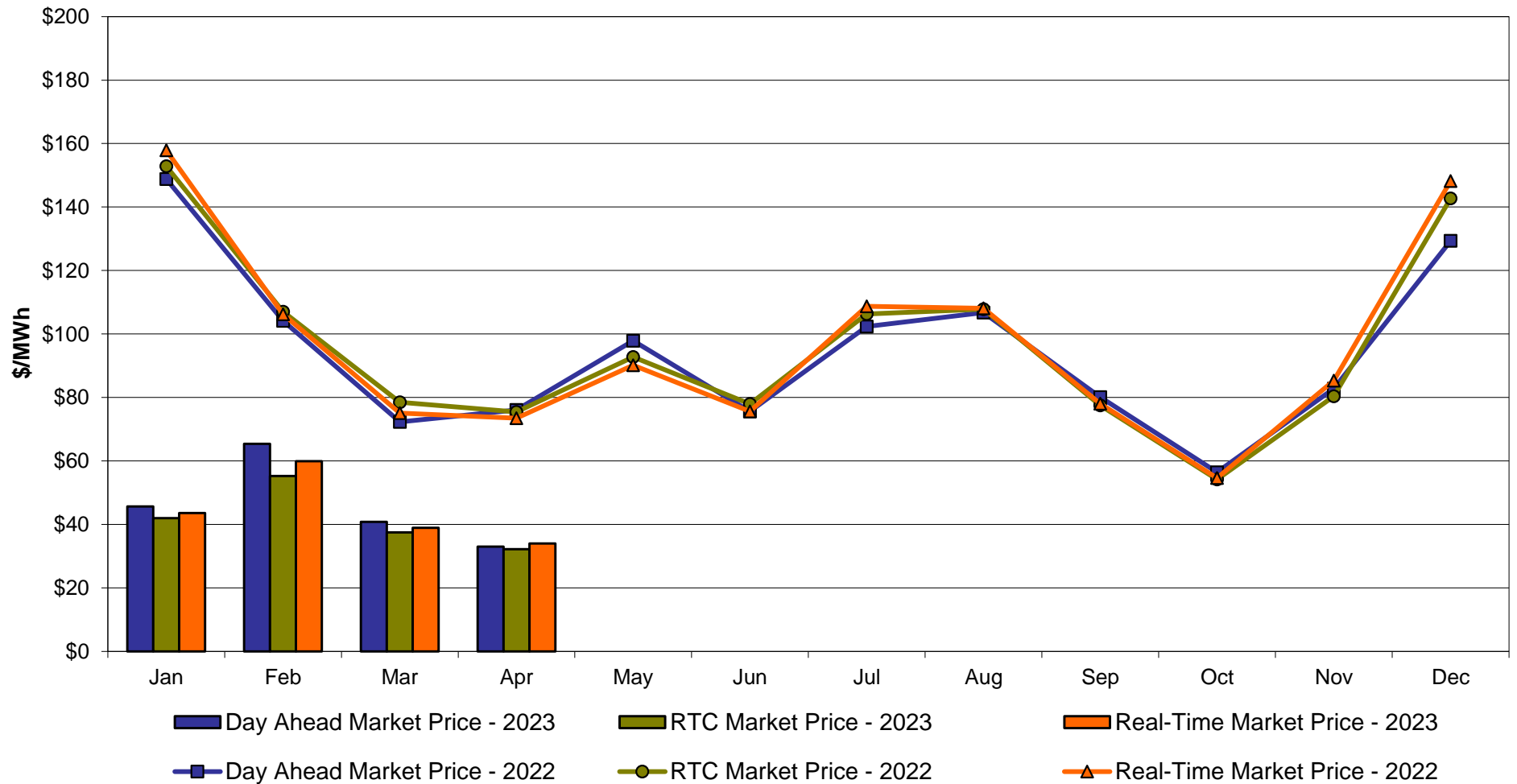
West Zone A **Monthly Average LBMP Prices 2022 - 2023**



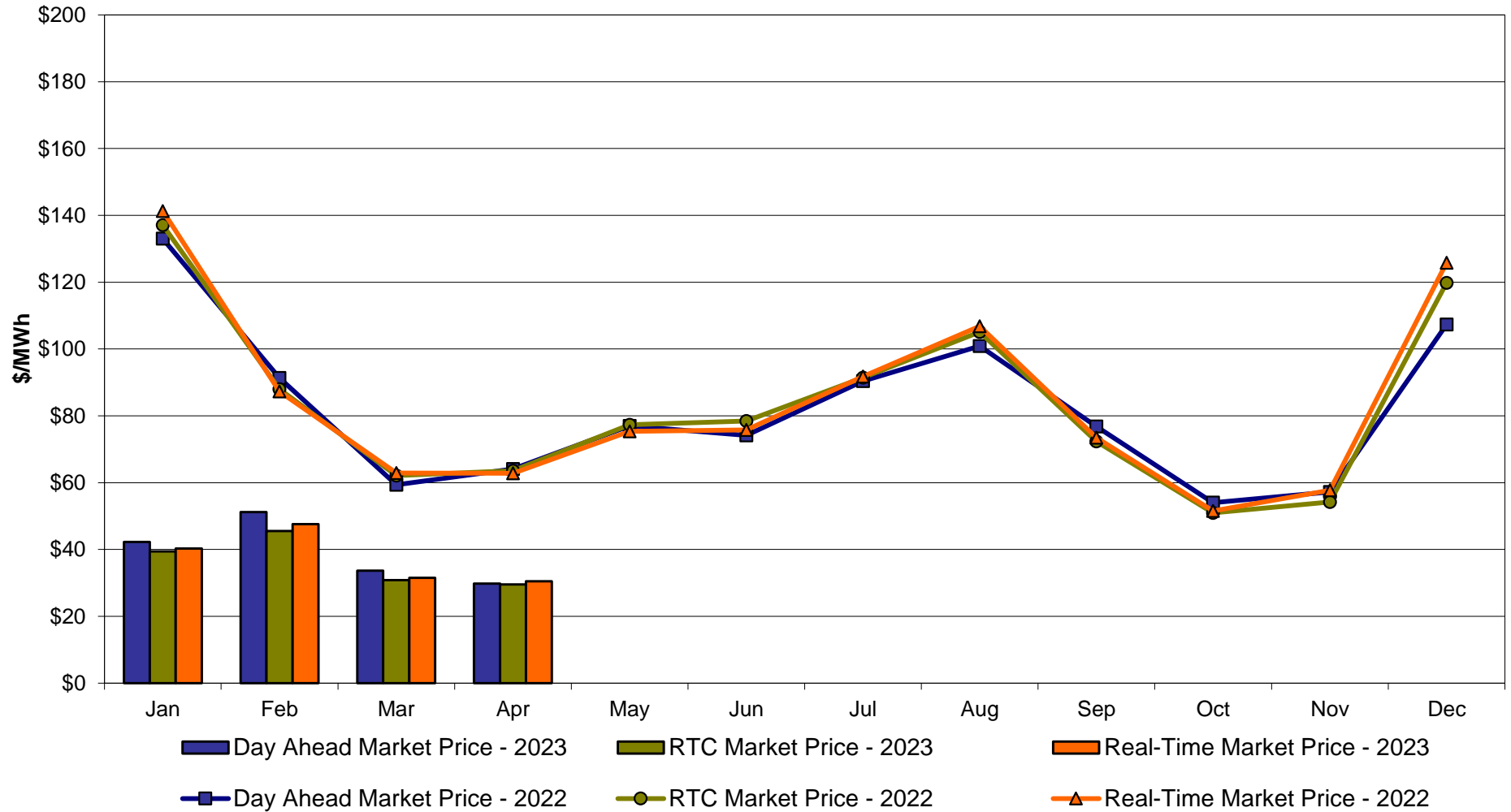
Central Zone C Monthly Average LBMP Prices 2022 - 2023



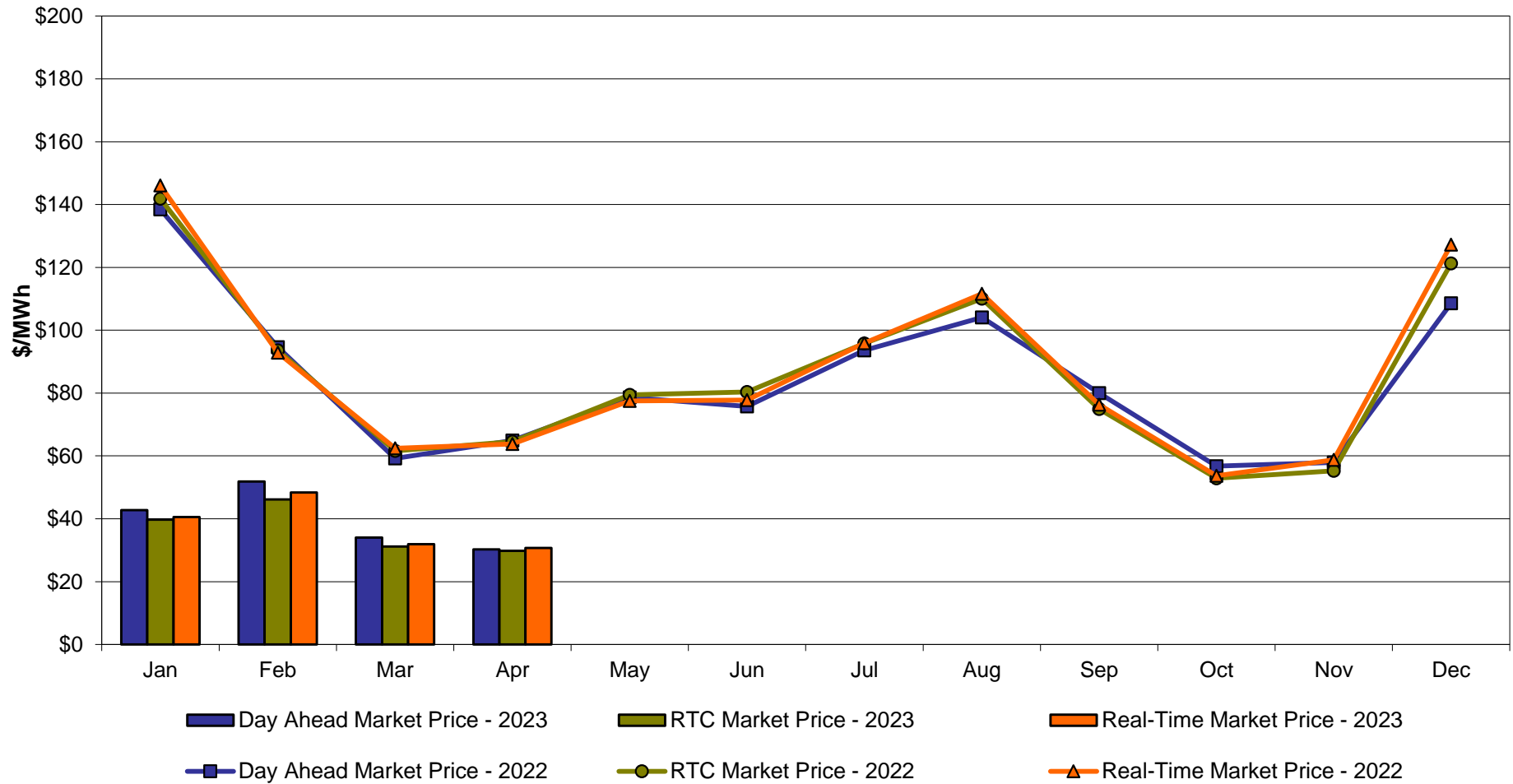
Capital Zone F **Monthly Average LBMP Prices 2022 - 2023**



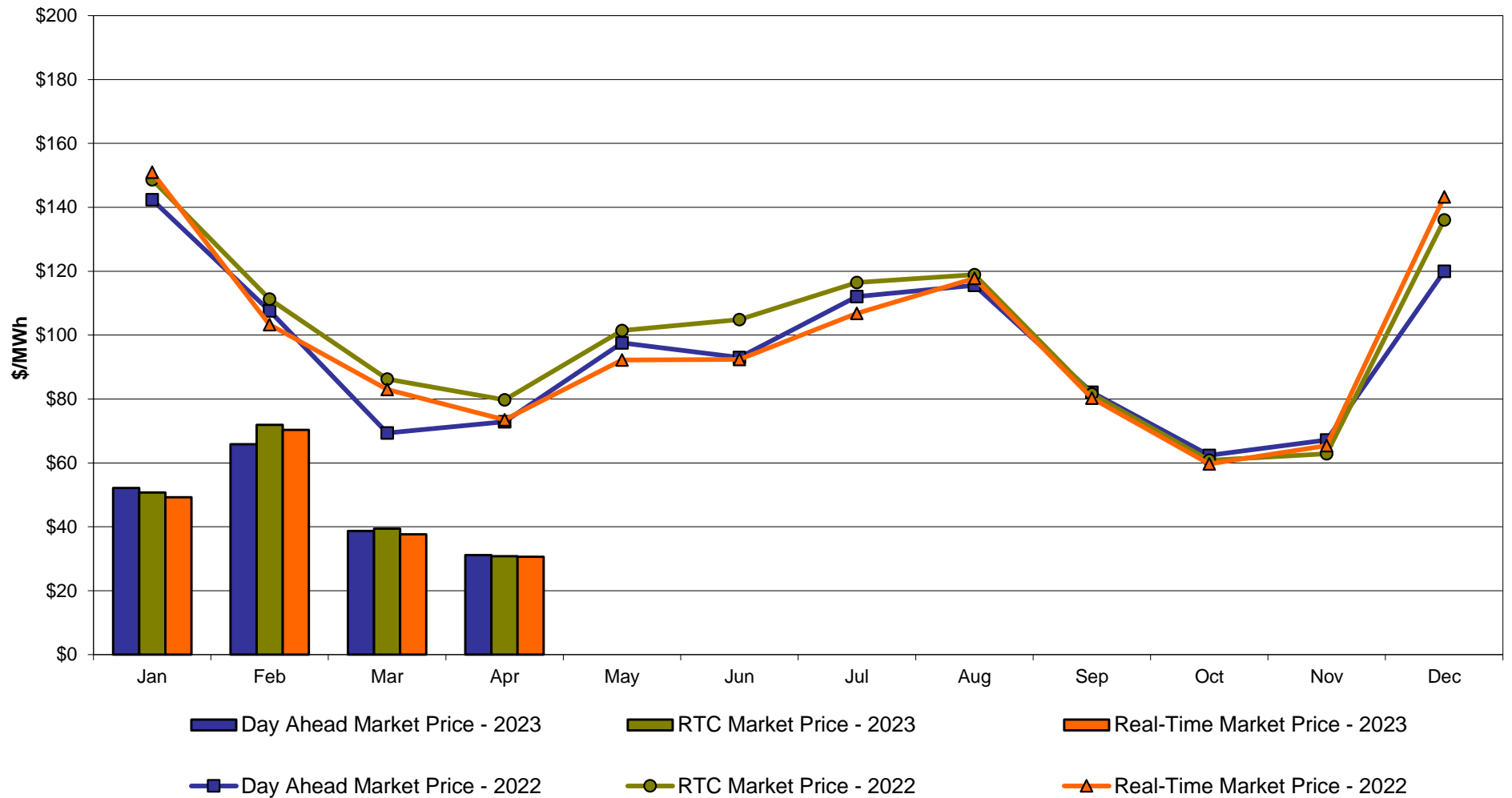
Hudson Valley Zone G Monthly Average LBMP Prices 2022 - 2023

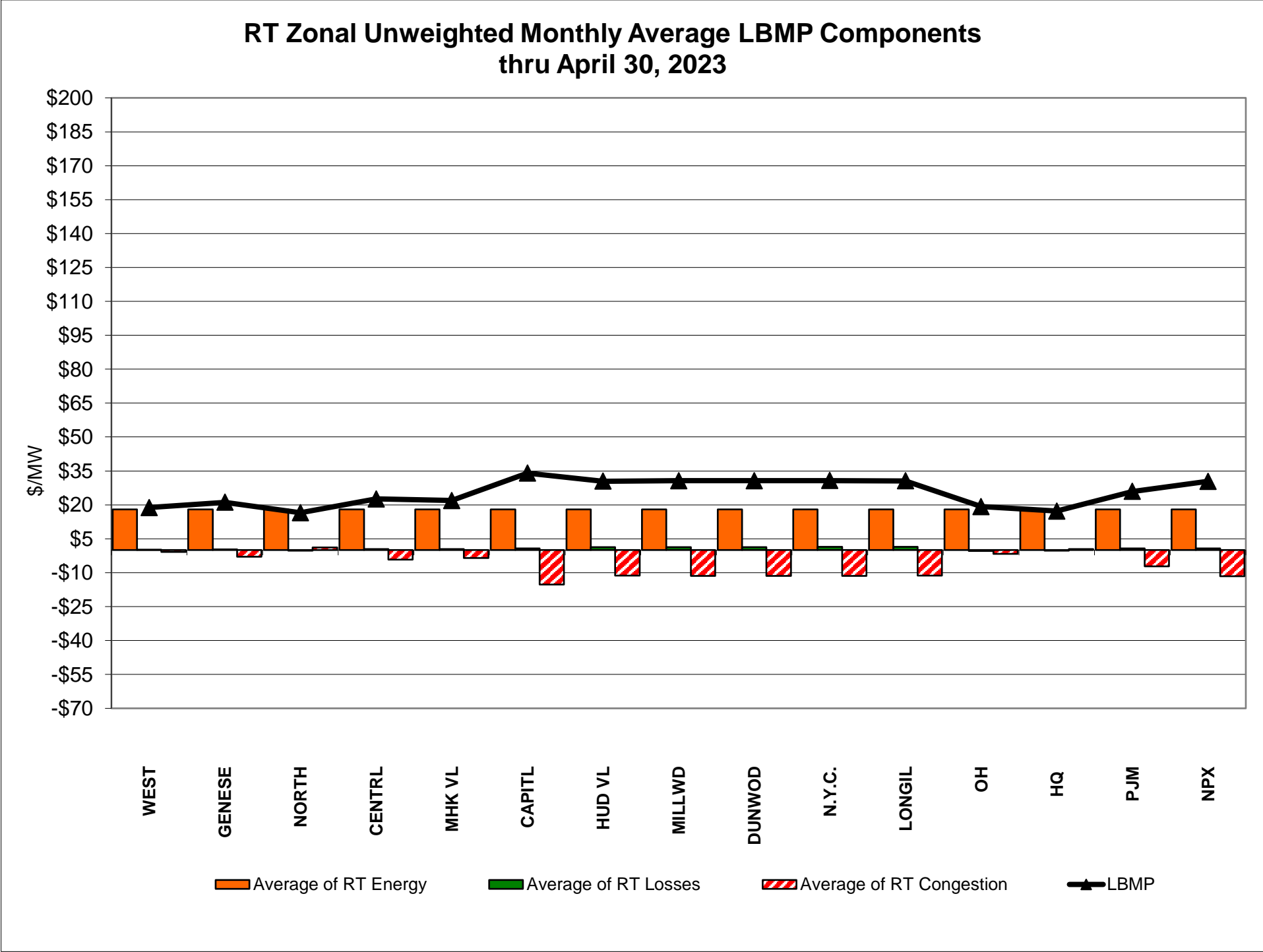
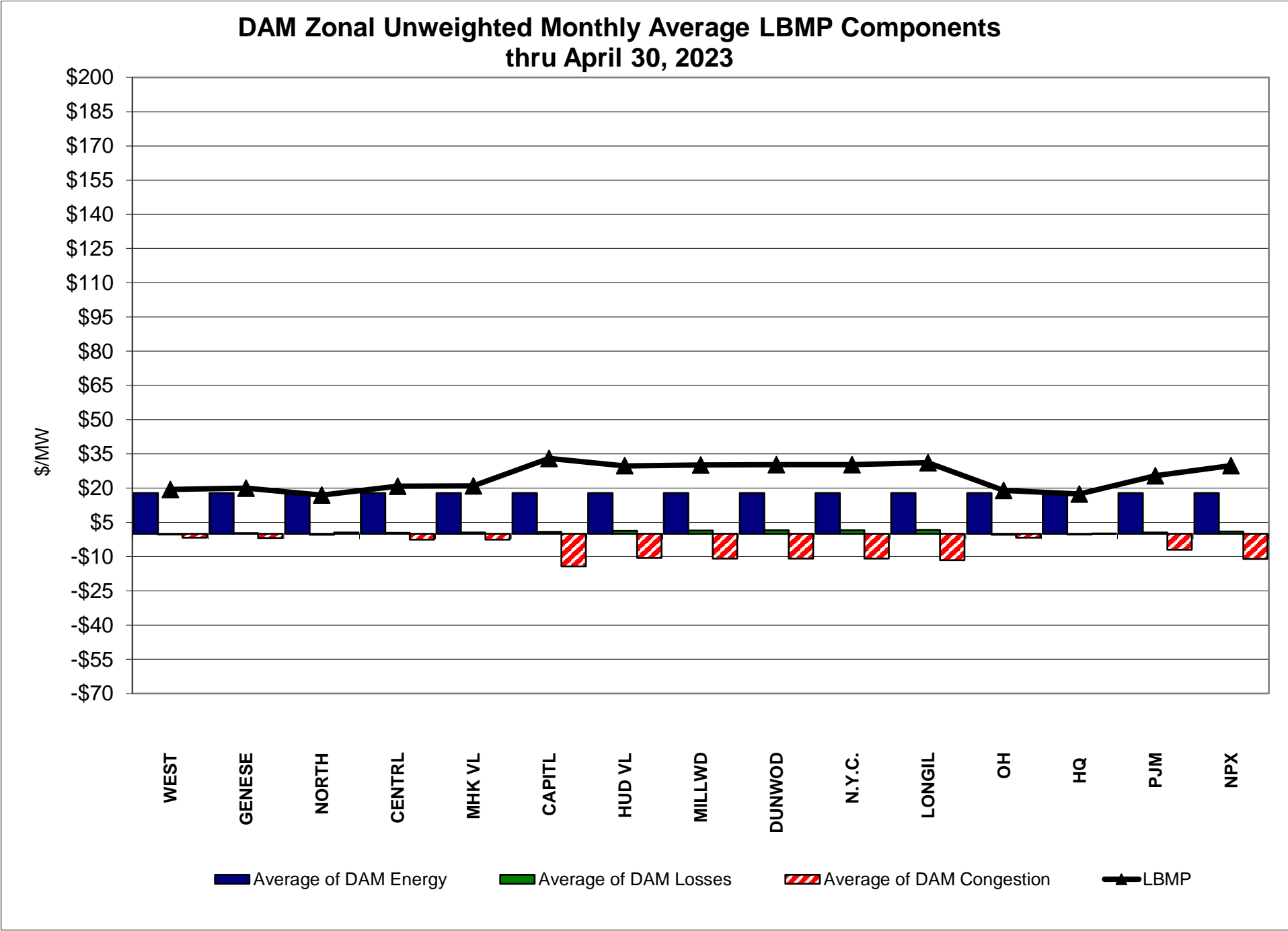


NYC Zone J Monthly Average LBMP Prices 2022 - 2023

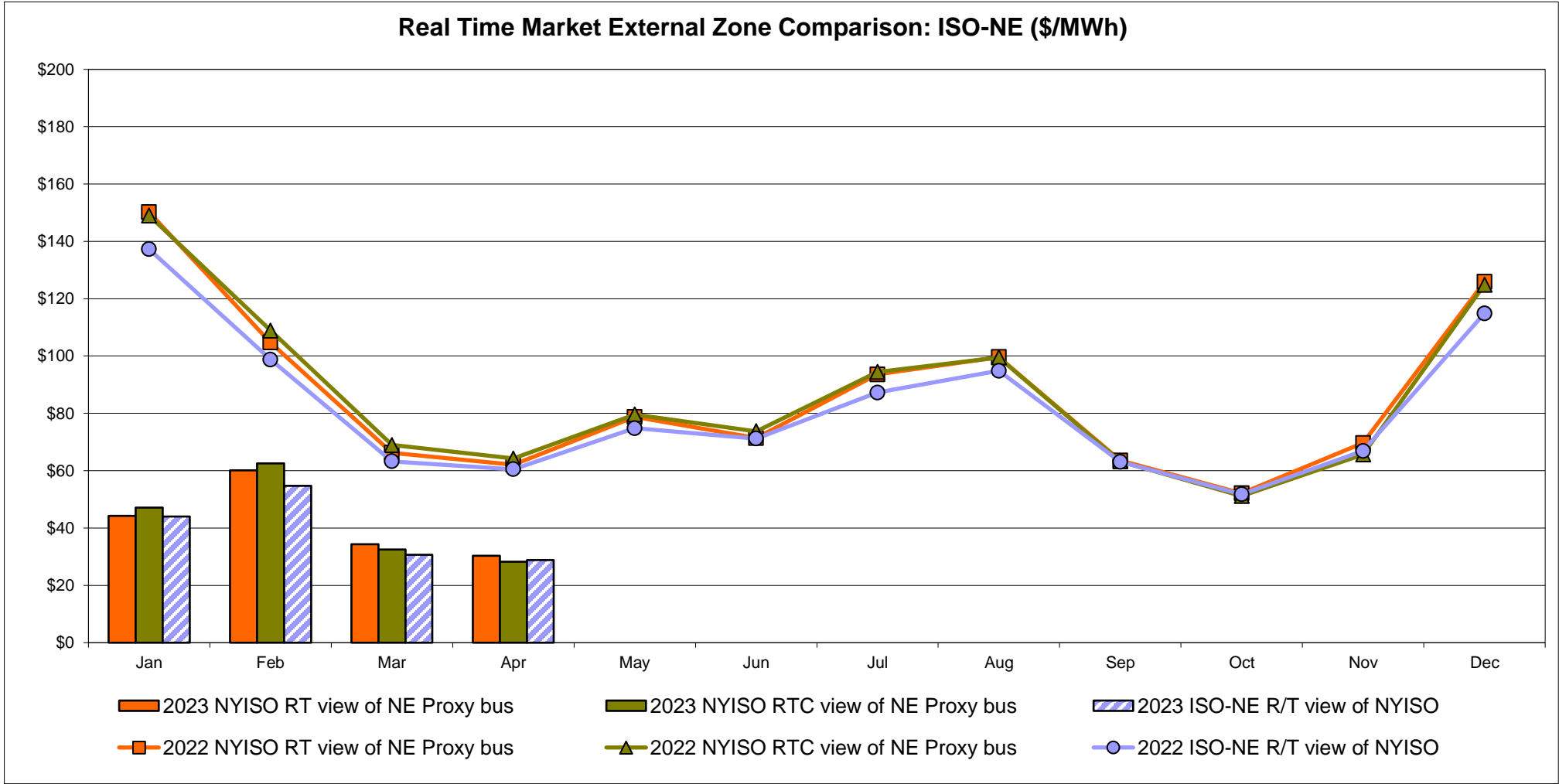
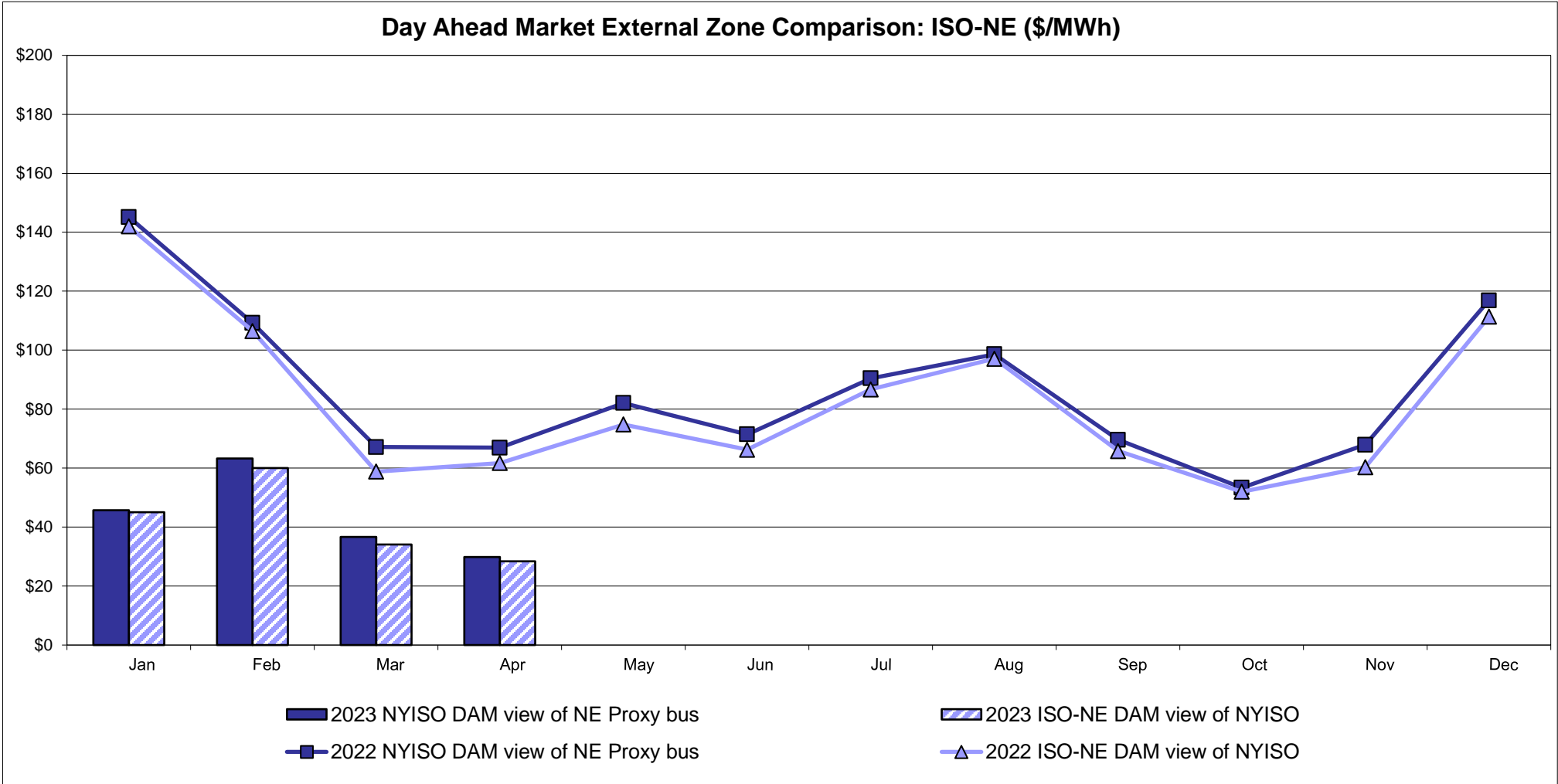


Long Island Zone K Monthly Average LBMP Prices 2022 - 2023



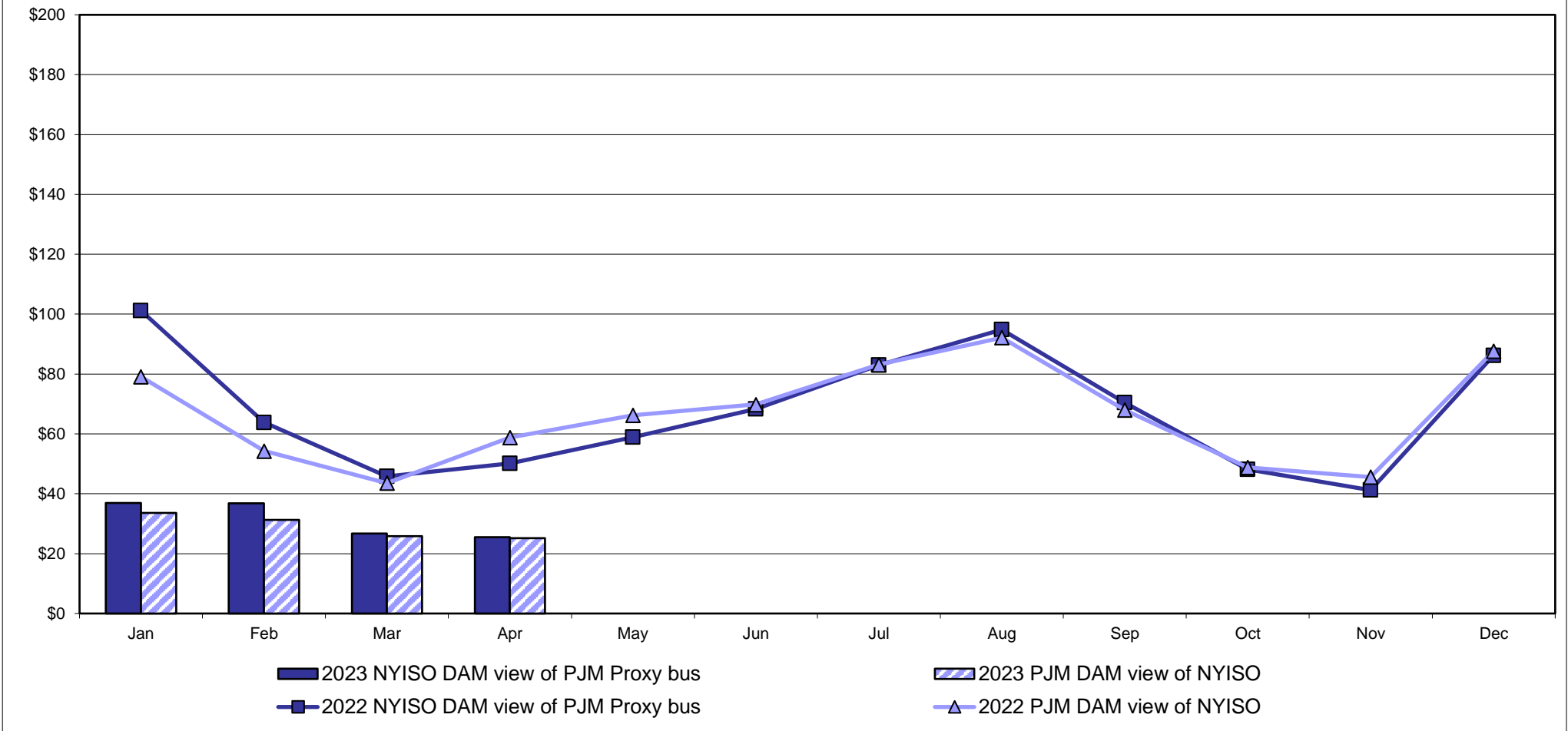


External Comparison ISO-New England

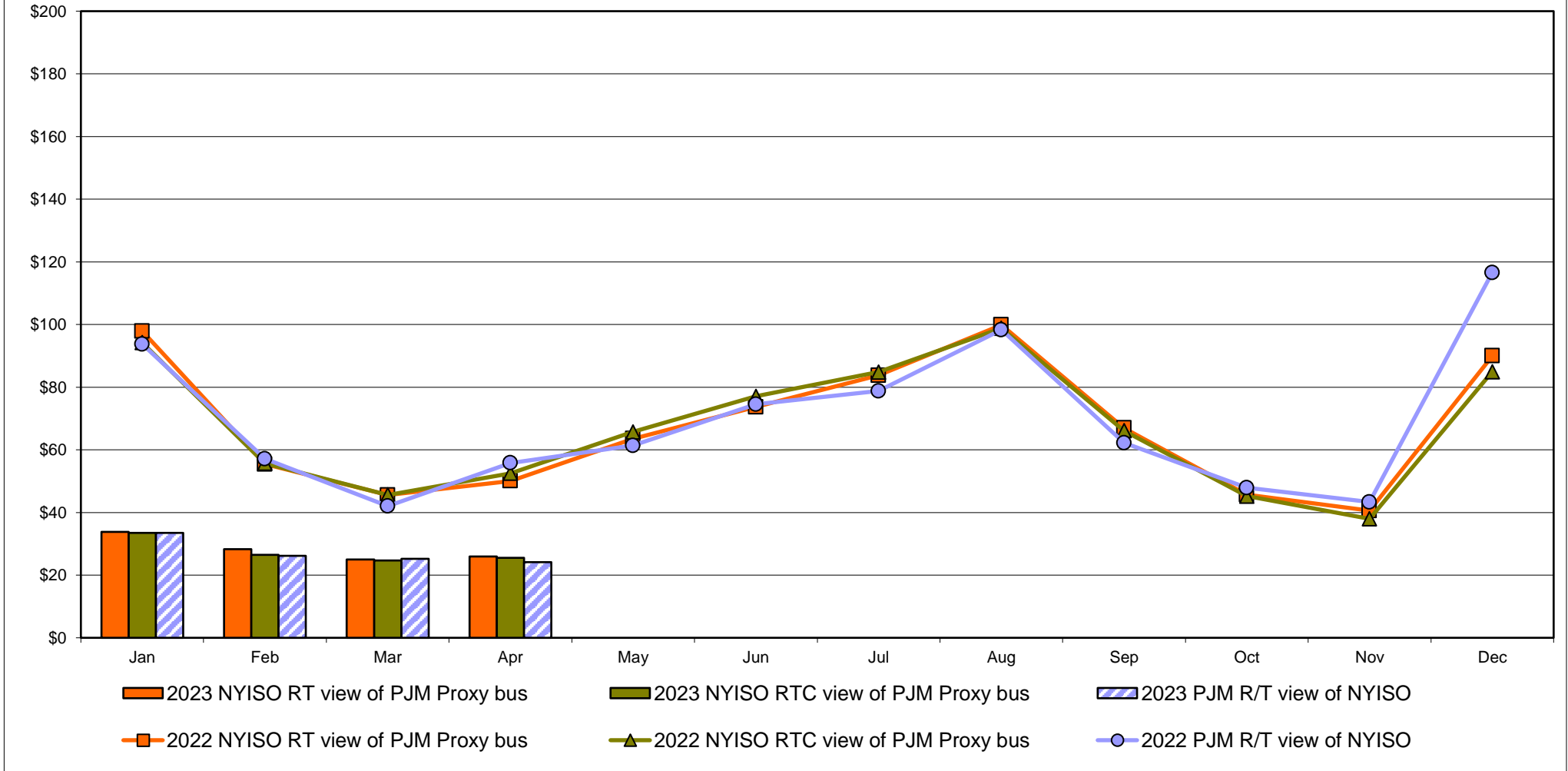


External Comparison PJM

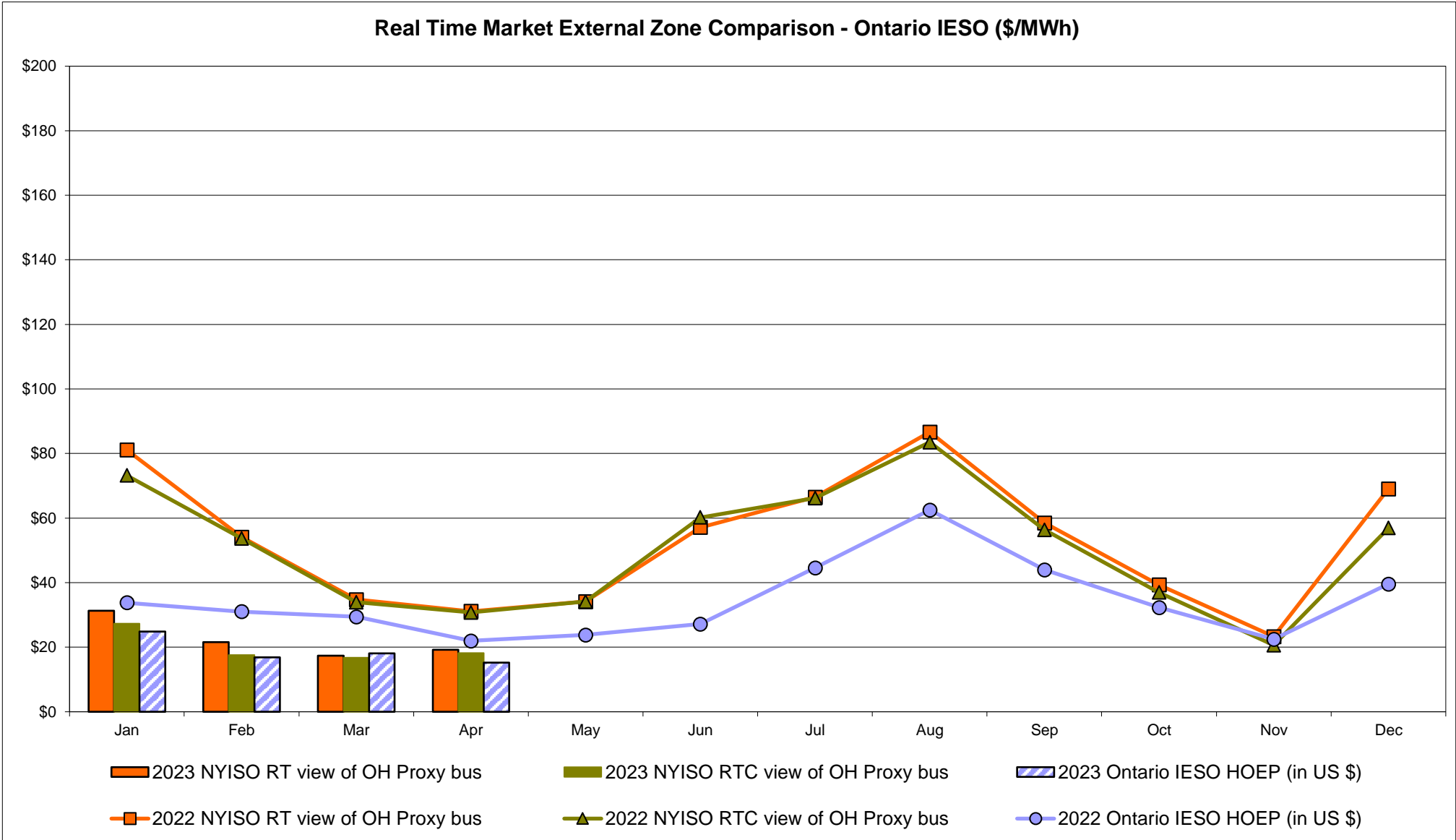
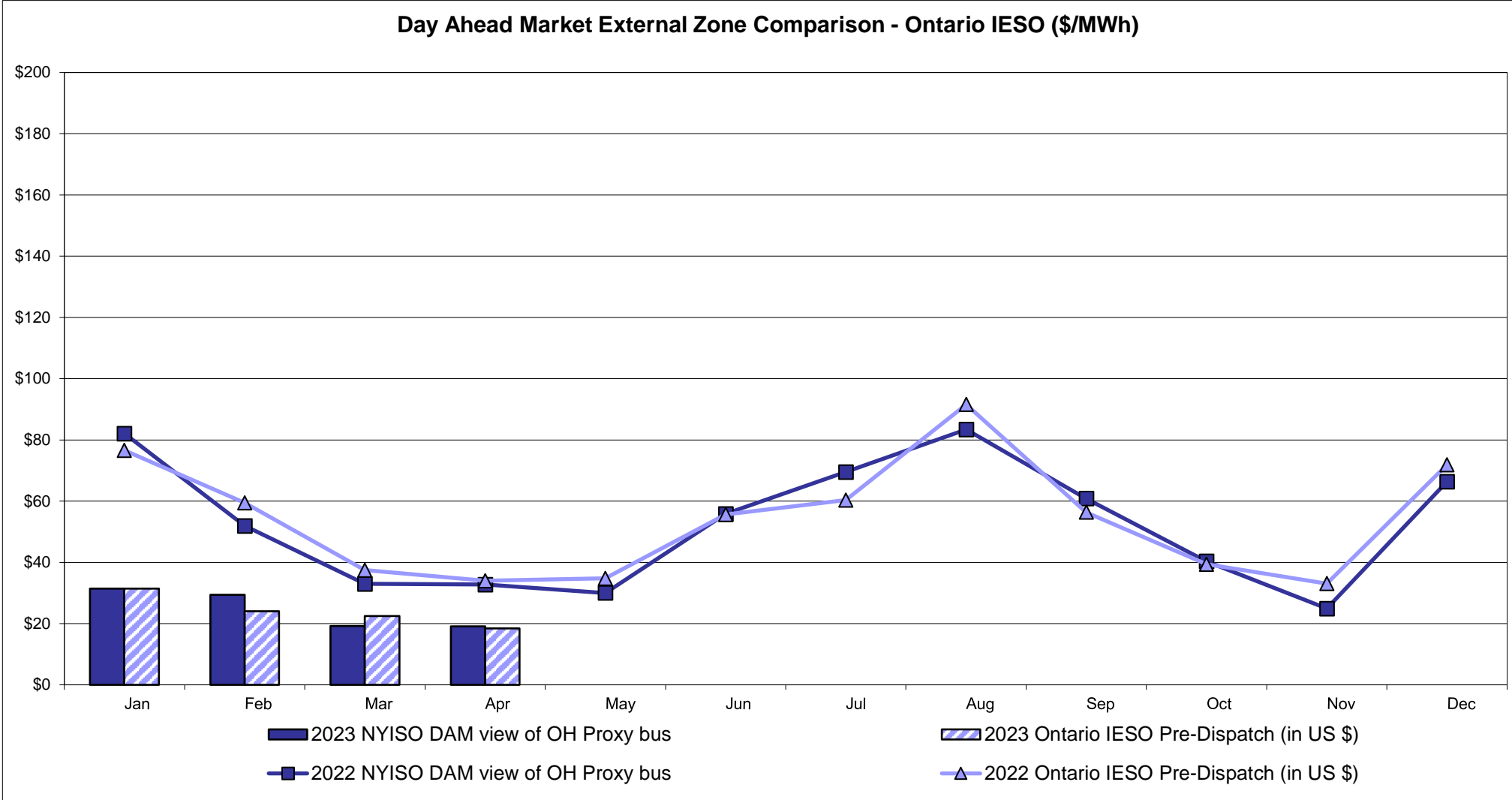
Day Ahead Market External Zone Comparison - PJM (\$/MWh)



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

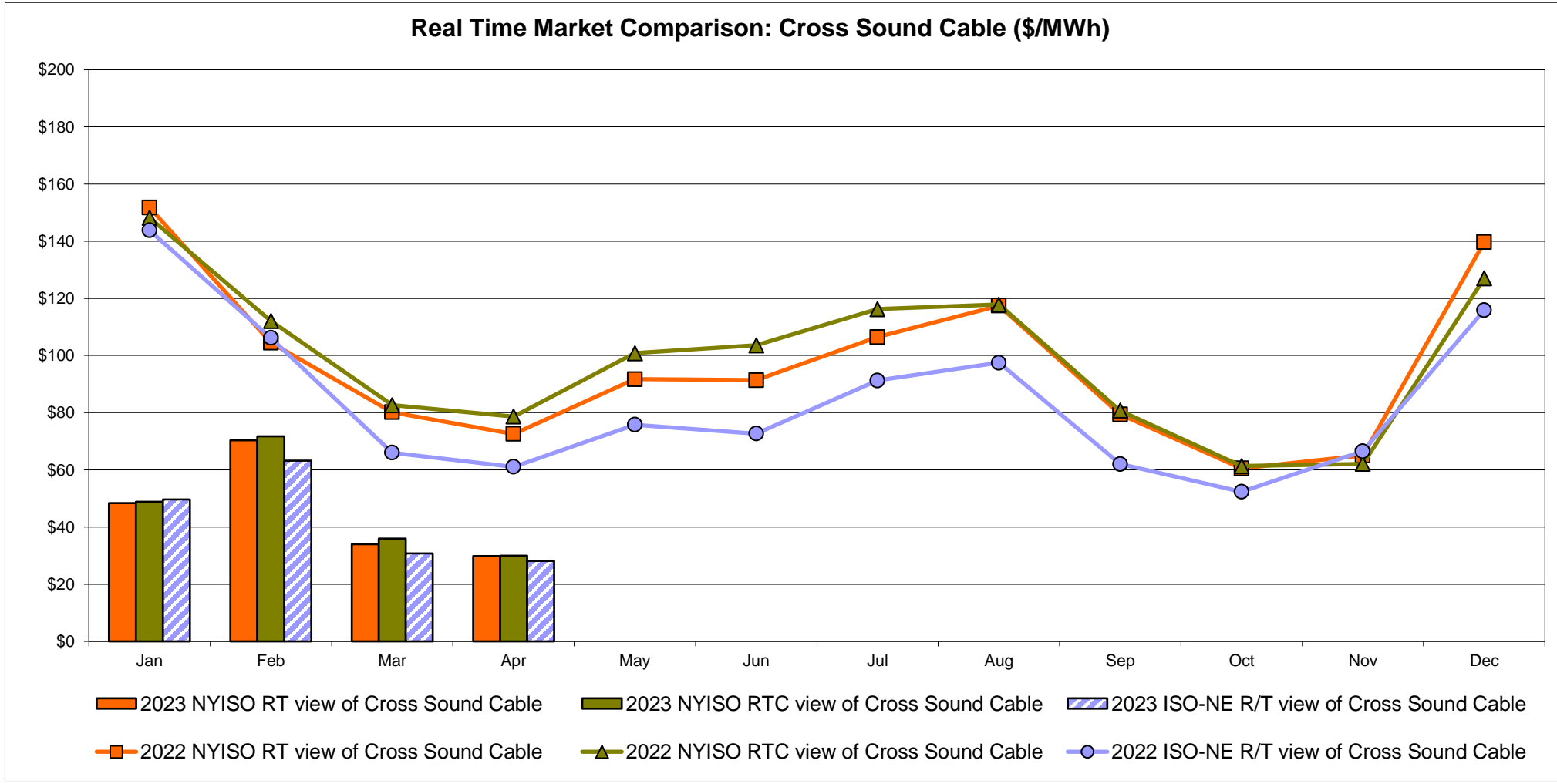
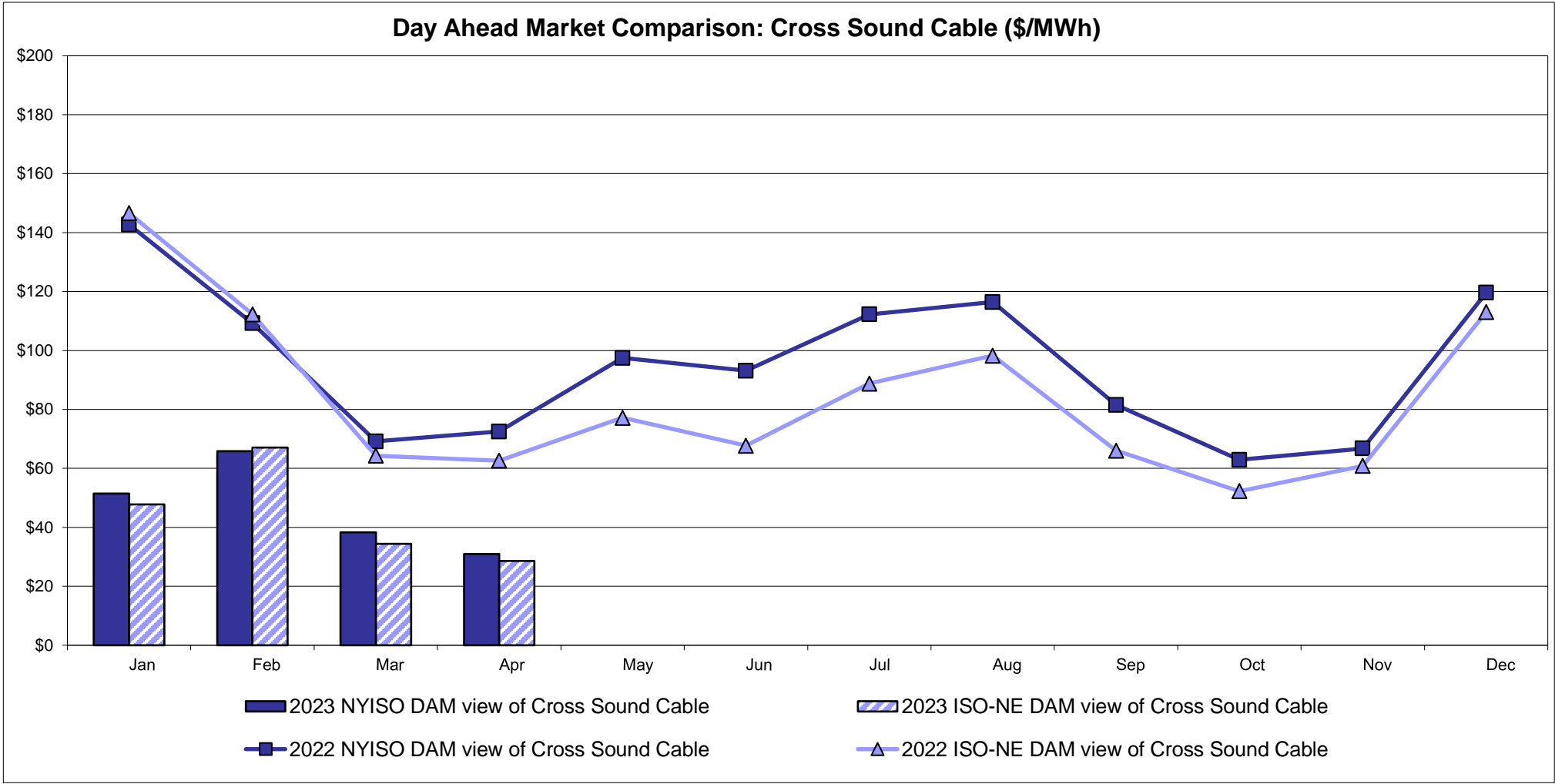


External Comparison Ontario IESO



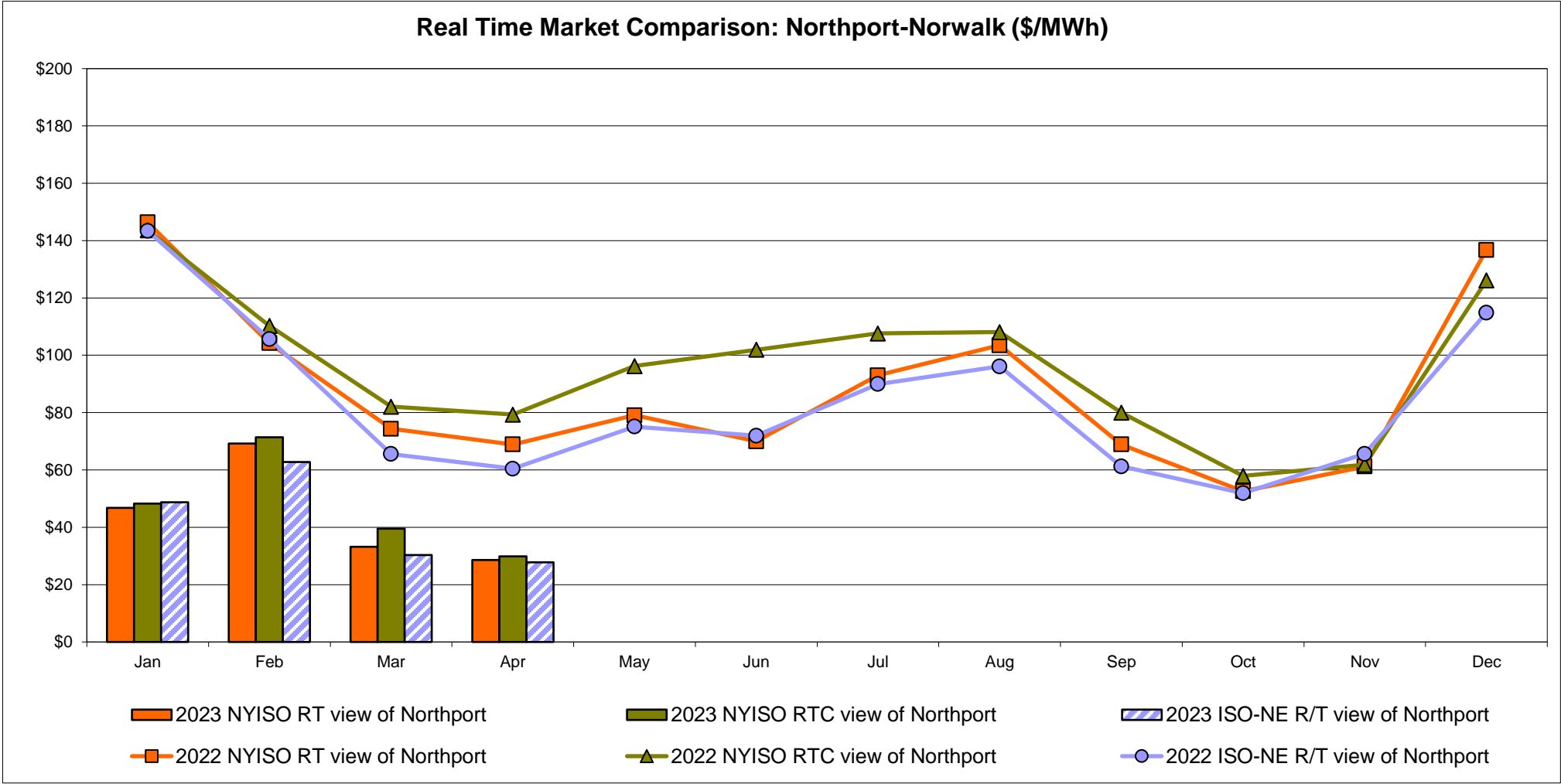
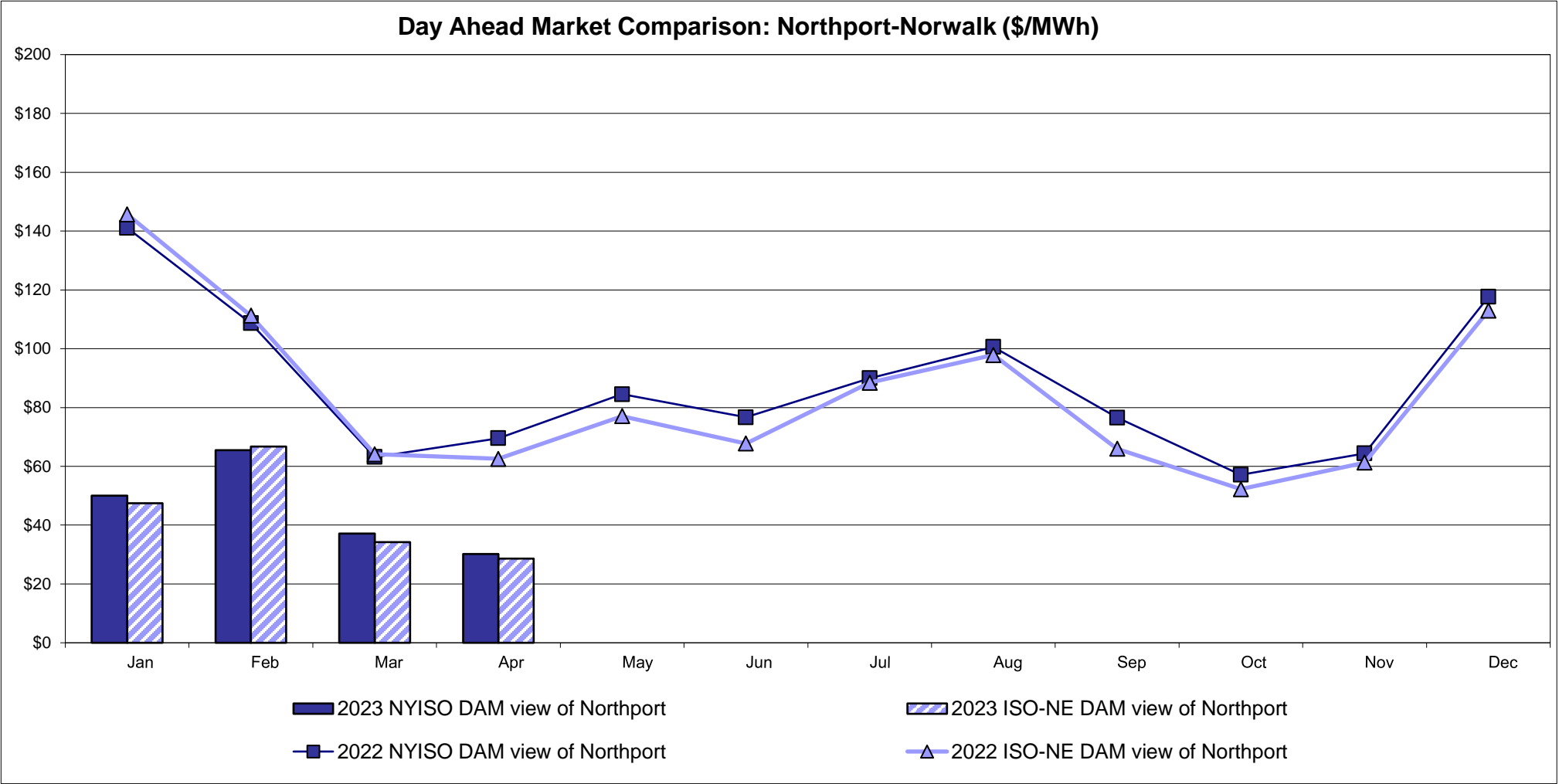
Notes: Exchange factor used for April 2023 was 0.741619697419163 to US
HOEP: Hourly Ontario Energy Price
Pre-Dispatch: Projected Energy Price

External Controllable Line: Cross Sound Cable (New England)



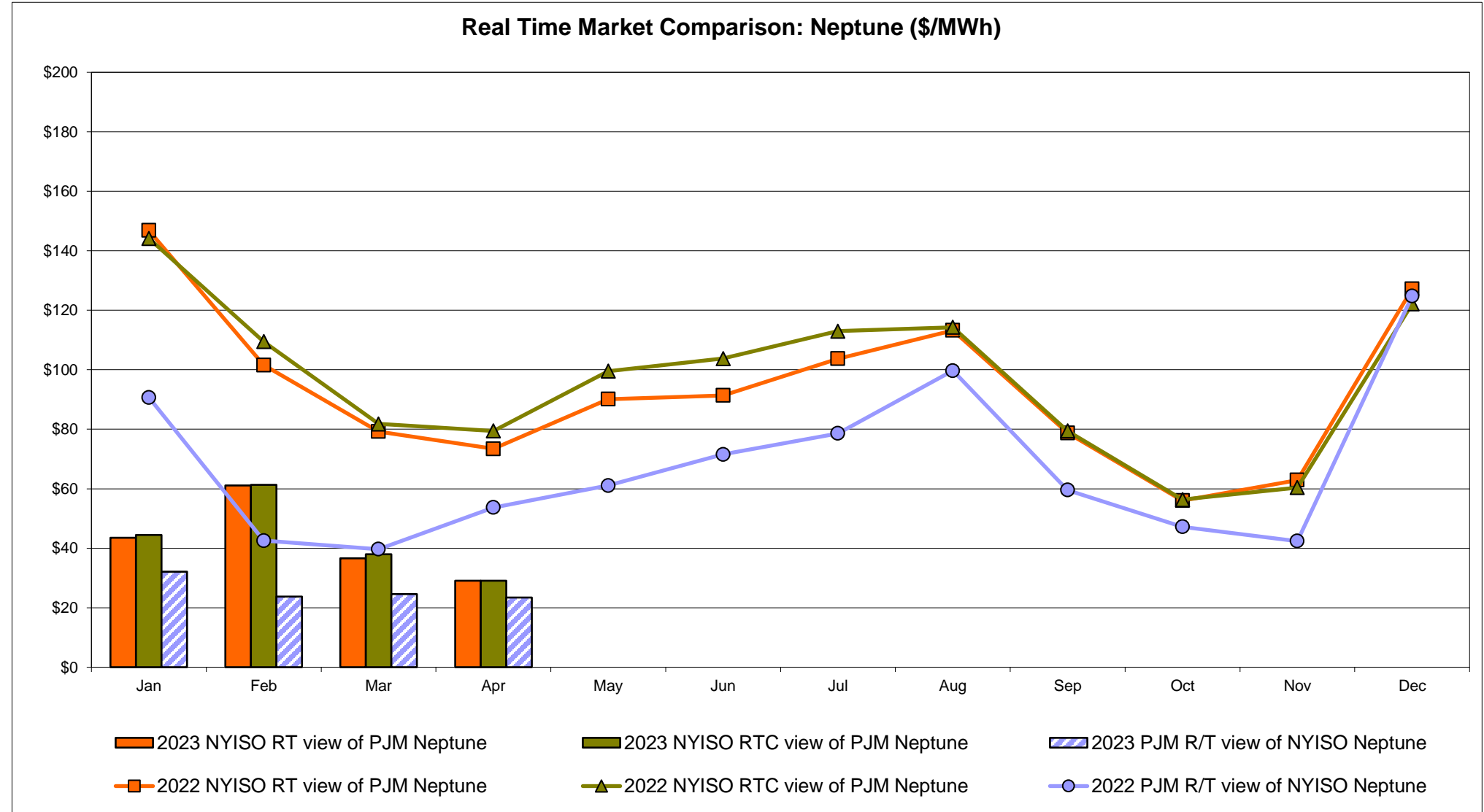
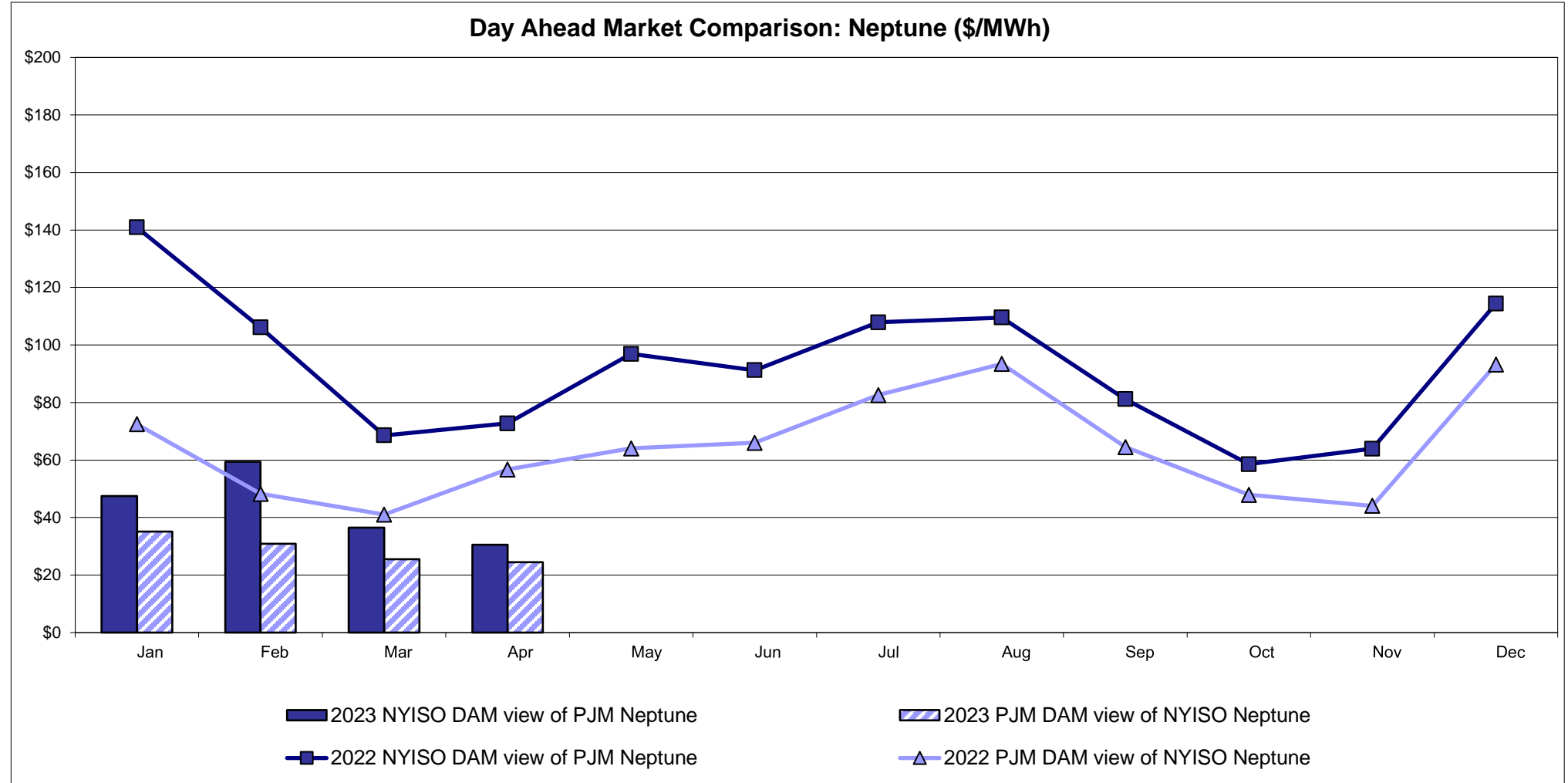
Note:
ISO-NE Forecast is an advisory posting @ 18:00 day before.
The DAM and R/T prices at the Shorham 13899 interface are used for ISO-NE.
The DAM and R/T prices at the CSC interface are used for NYISO.

External Controllable Line: Northport - Norwalk (New England)

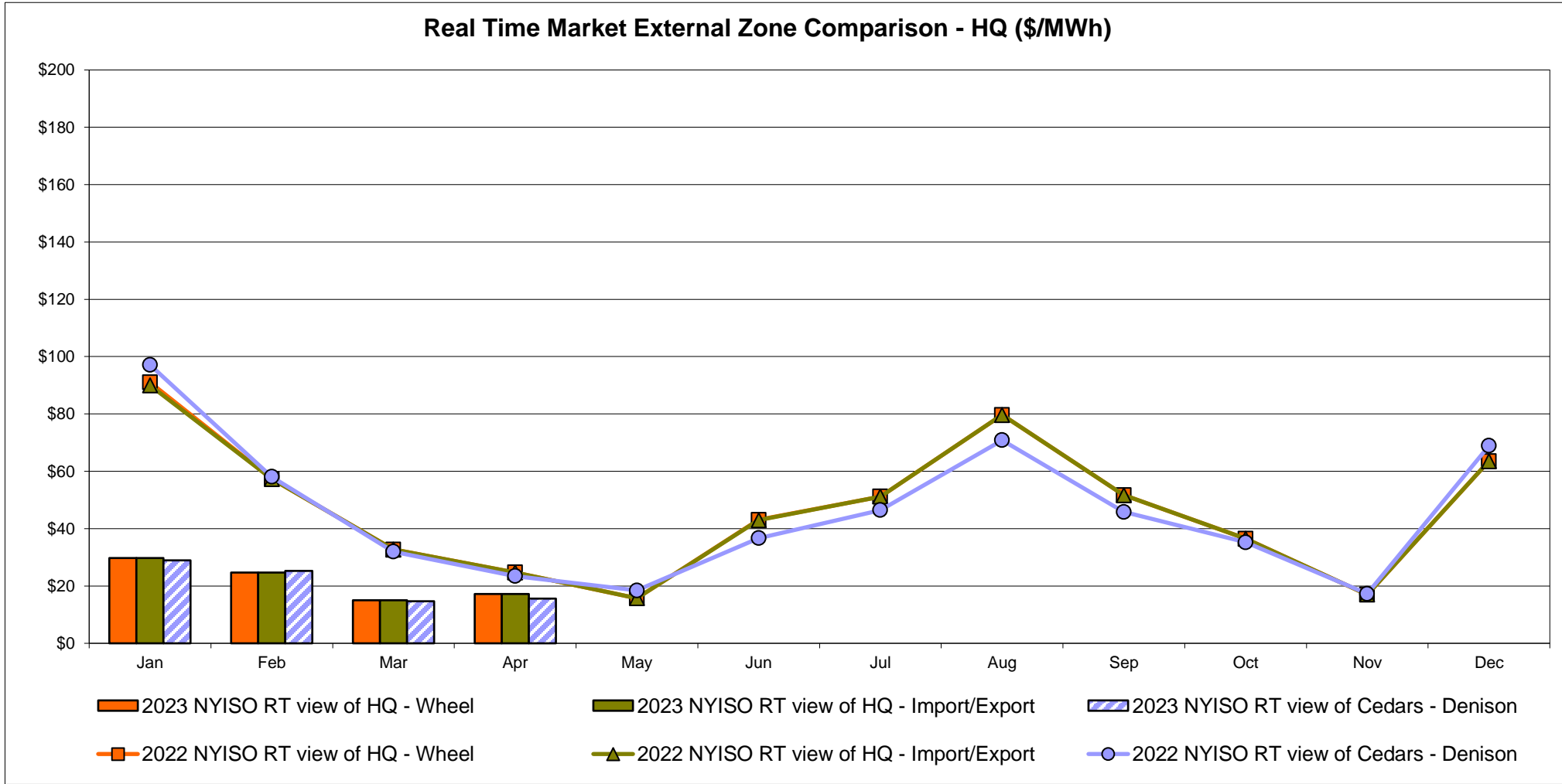
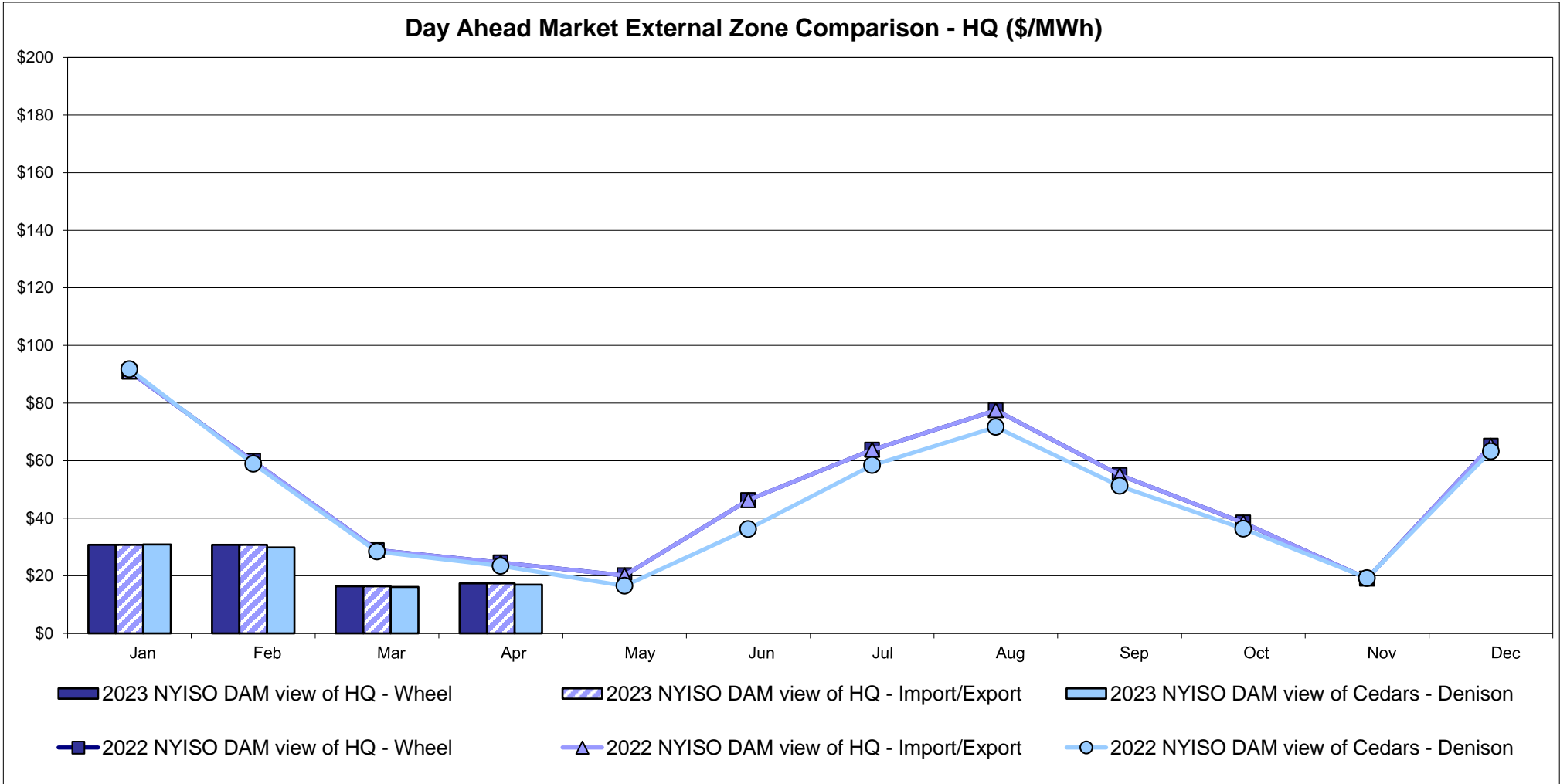


Note:
ISO-NE Forecast is an advisory posting @ 18:00 day before.
The DAM and R/T prices at the Northport 138 interface are used for ISO-NE.
The DAM and R/T prices at the 1385 interface are used for NYISO.

External Controllable Line: Neptune (PJM)

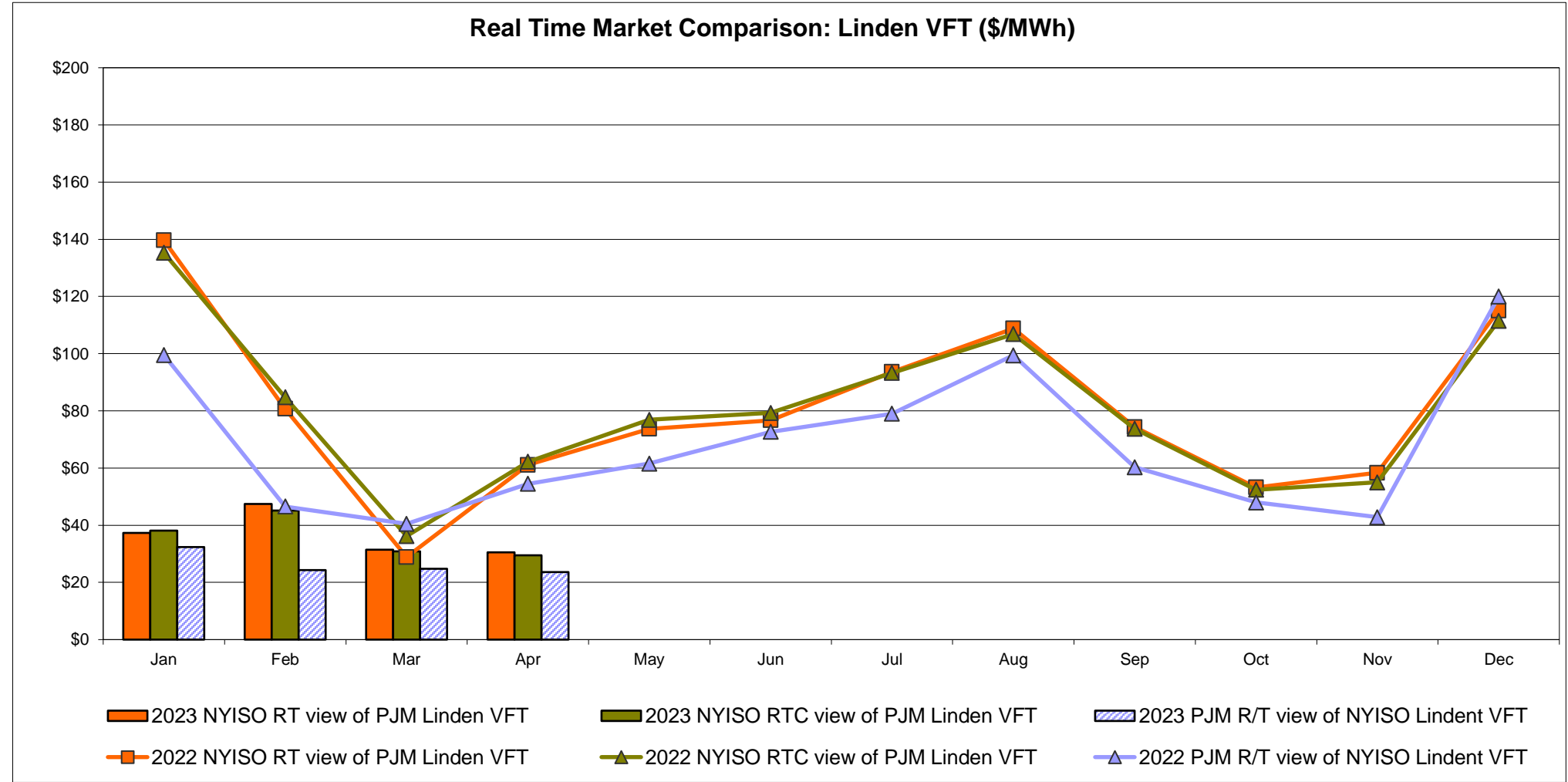
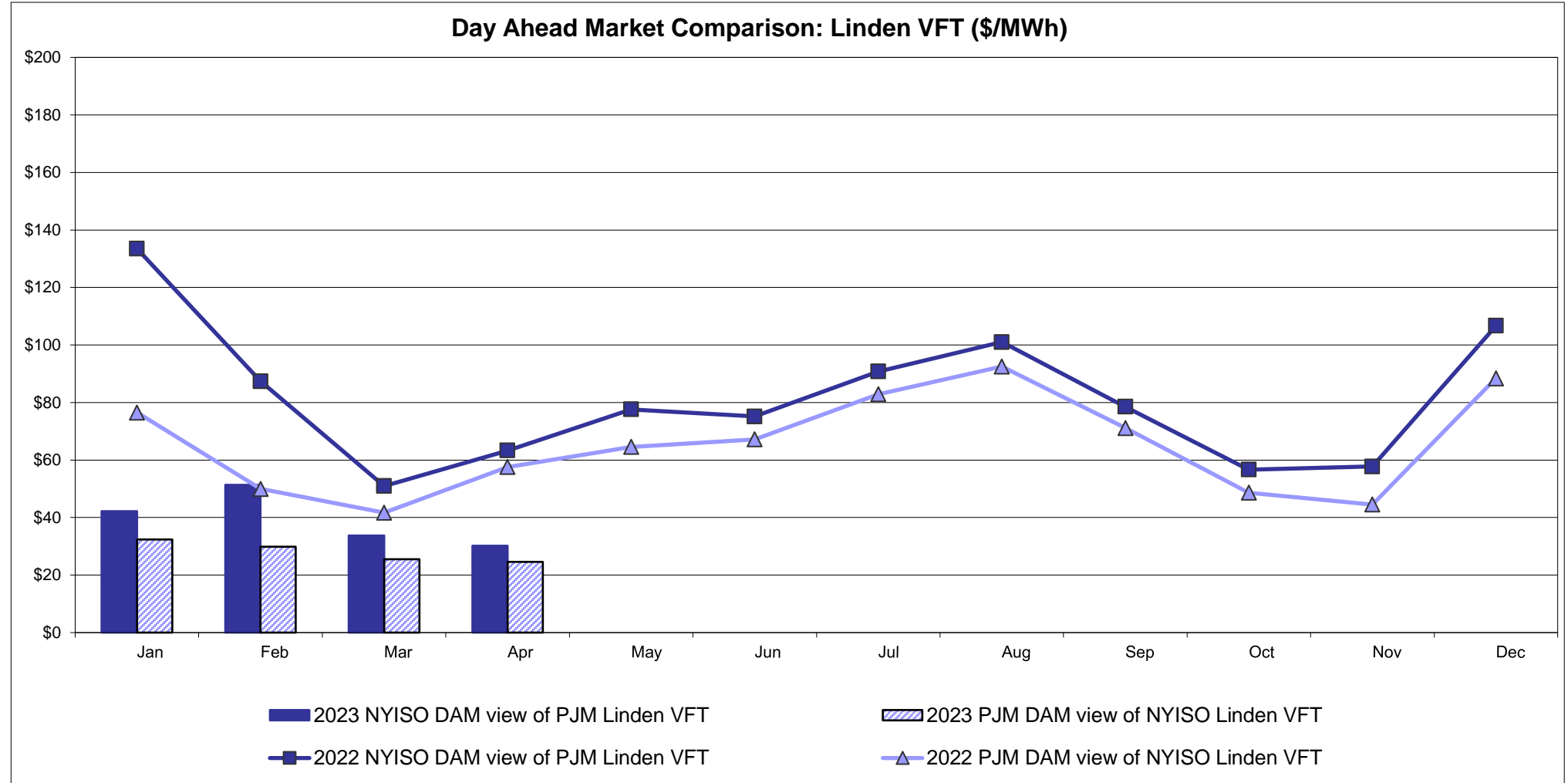


External Comparison Hydro-Quebec

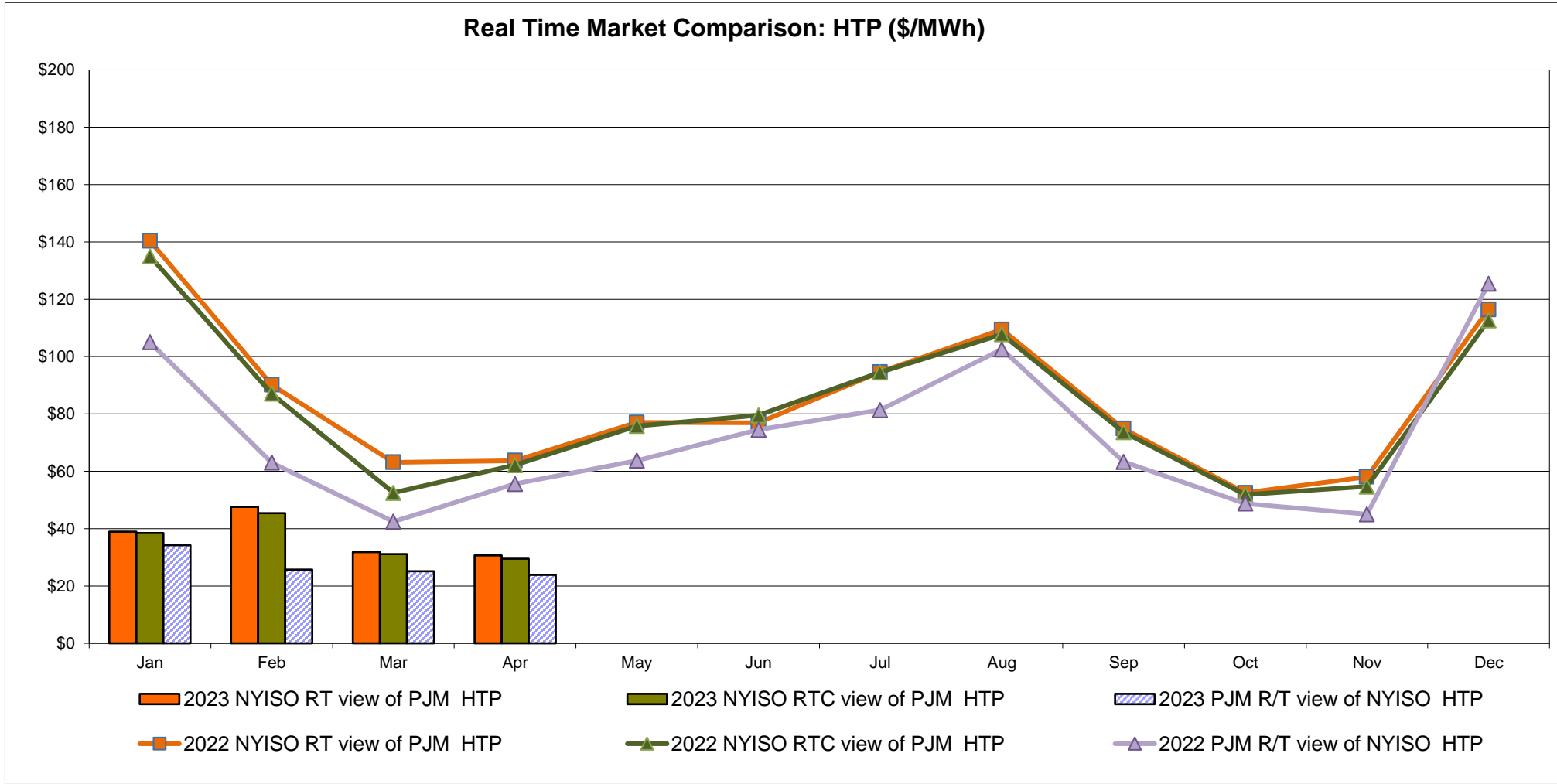
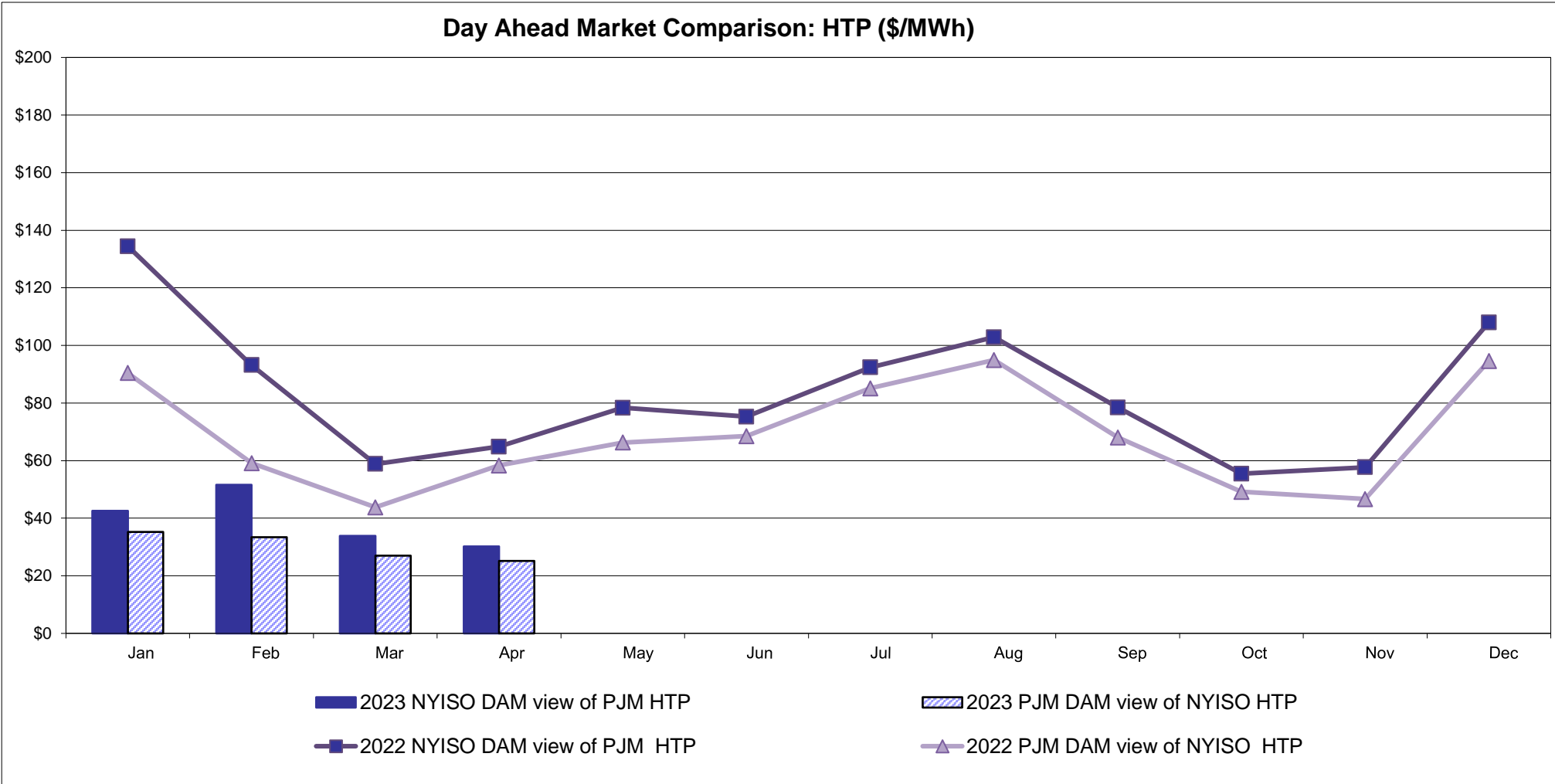


Note:
Hydro-Quebec Prices are unavailable.

External Controllable Line: Linden VFT (PJM)



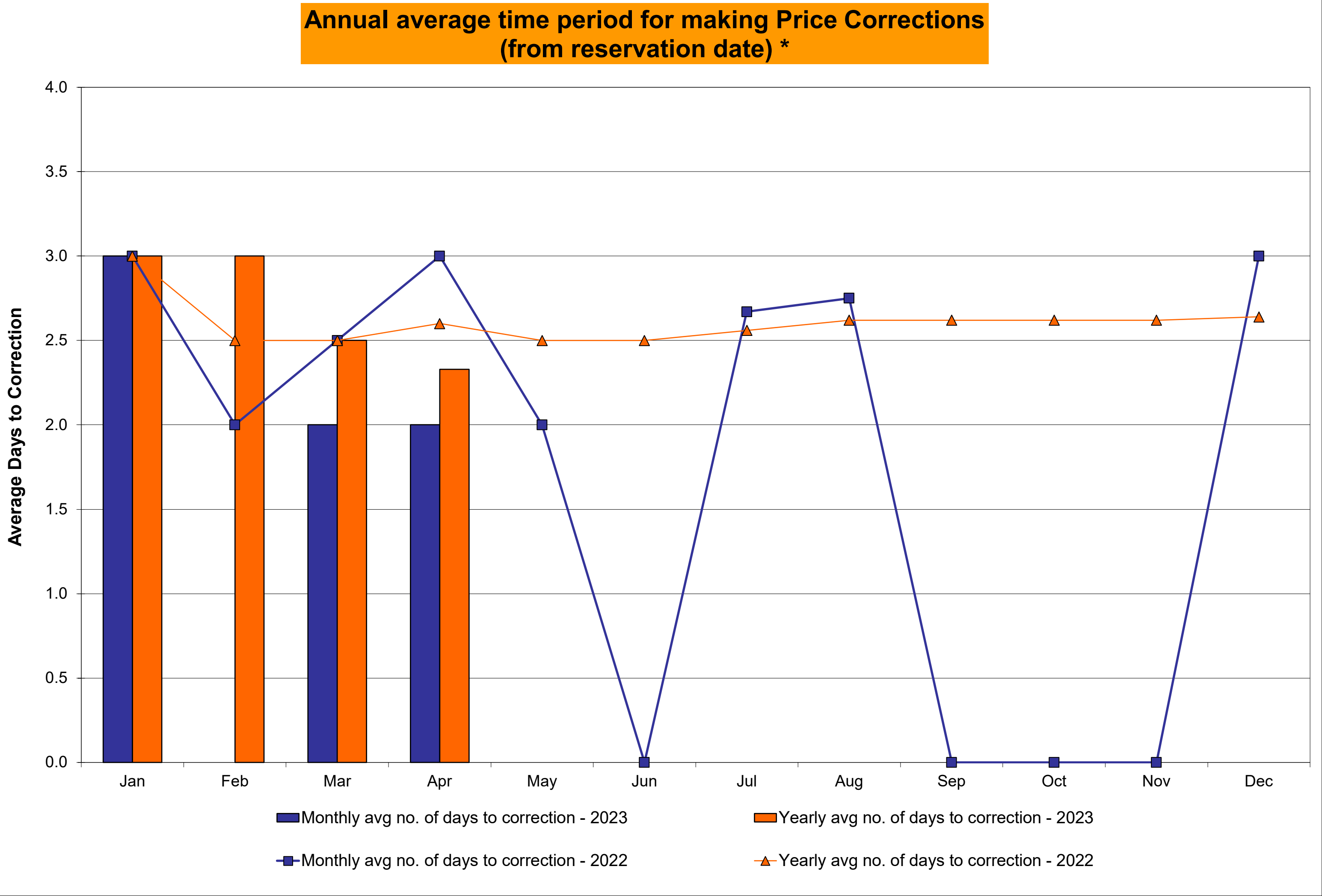
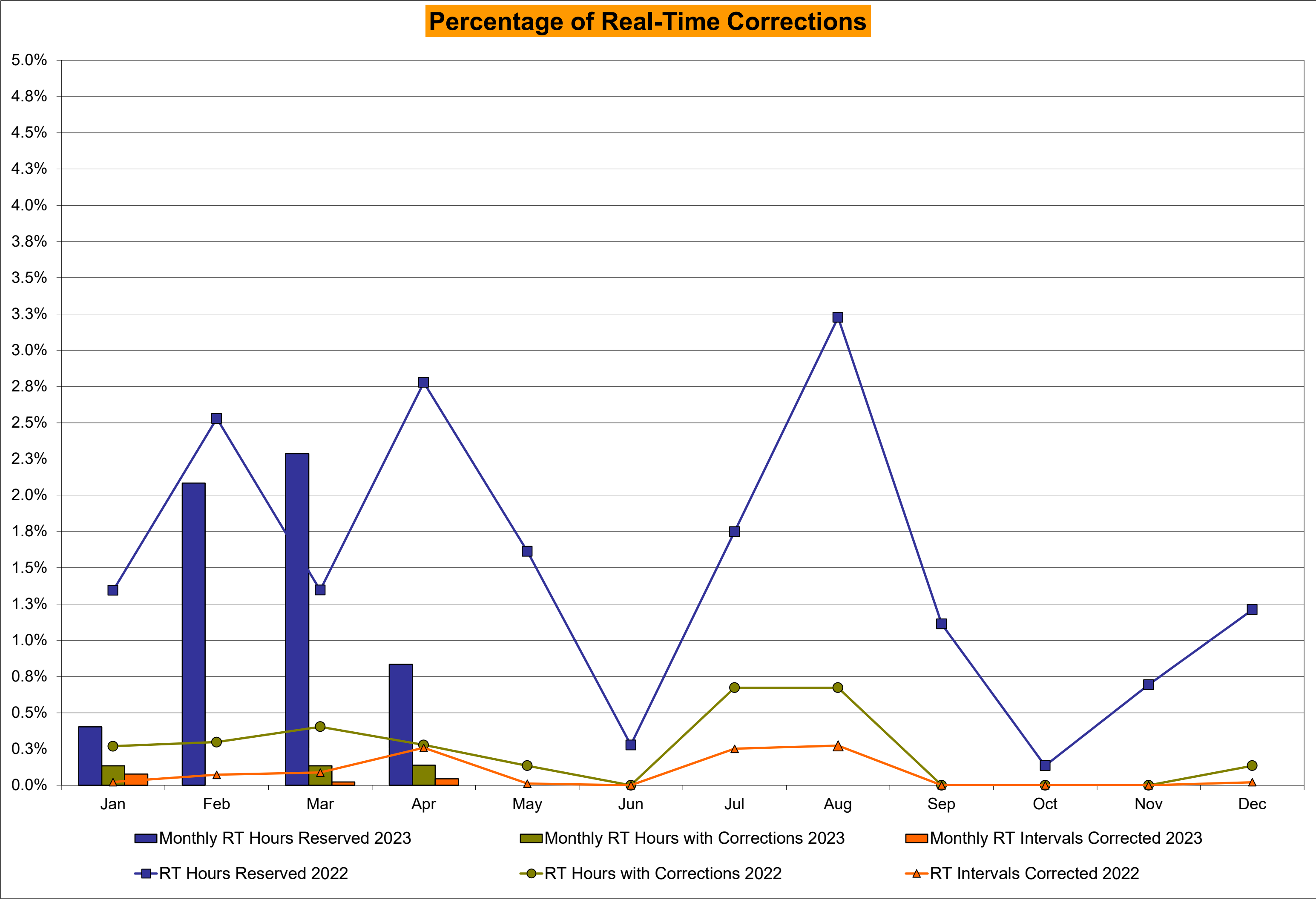
External Controllable Line: Hudson (PJM)



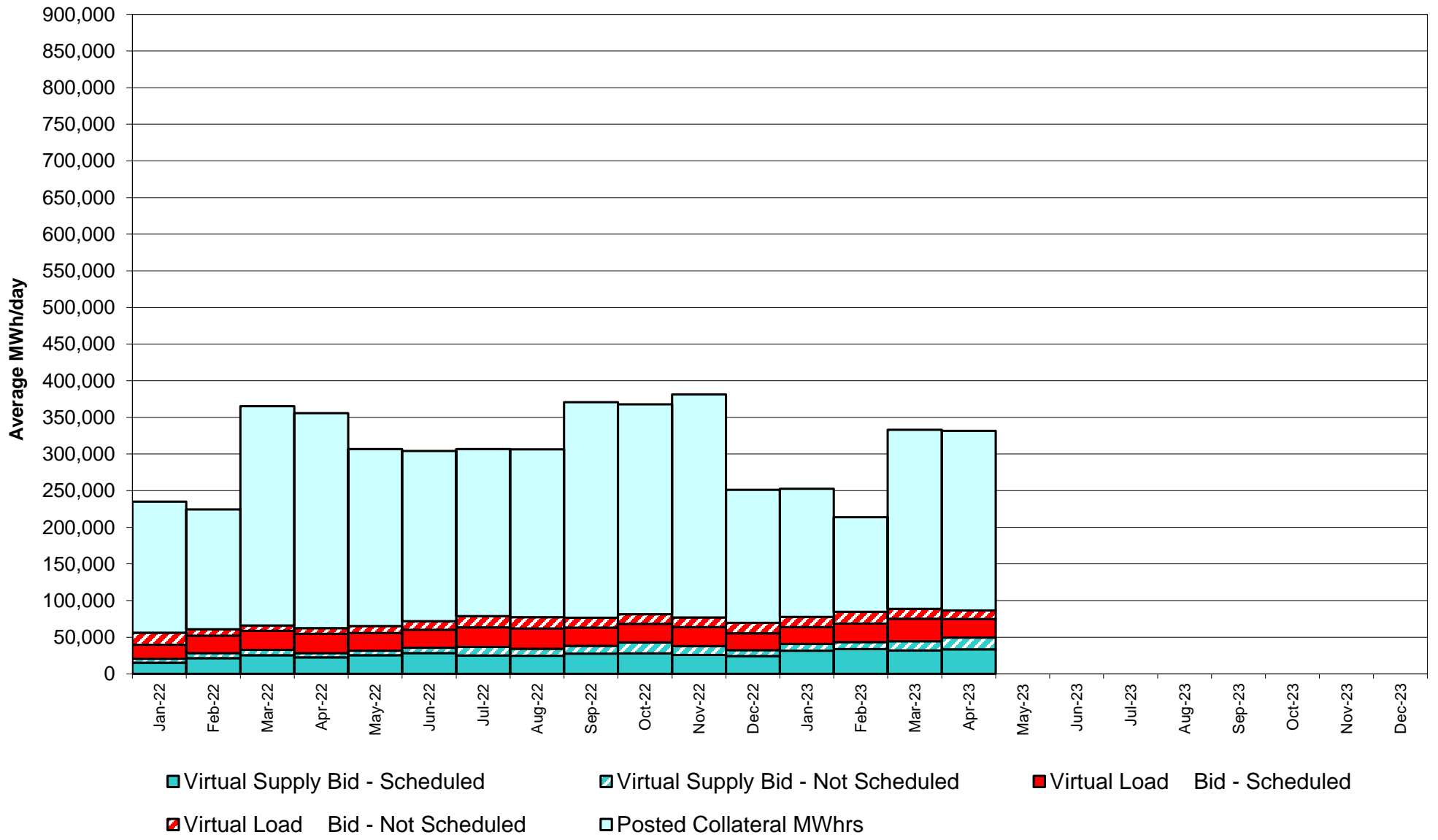
NYISO Real Time Price Correction Statistics

2023		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<u>Hour Corrections</u>													
Number of hours with corrections	in the month	1	0	1	0								
Number of hours	in the month	744	672	743	720								
% of hours with corrections	in the month	0.13%	0.00%	0.13%	0.00%								
% of hours with corrections	year-to-date	0.13%	0.07%	0.09%	0.07%								
<u>Interval Corrections</u>													
Number of intervals corrected	in the month	7	0	2	0								
Number of intervals	in the month	9,082	8,373	9,171	0								
% of intervals corrected	in the month	0.08%	0.00%	0.02%	#DIV/0!								
% of intervals corrected	year-to-date	0.08%	0.04%	0.03%	0.03%								
<u>Hours Reserved</u>													
Number of hours reserved	in the month	3	14	17	0								
Number of hours	in the month	744	672	743	720								
% of hours reserved	in the month	0.40%	2.08%	2.29%	0.00%								
% of hours reserved	year-to-date	0.40%	1.20%	1.57%	1.18%								
<u>Days to Correction</u> *													
Avg. number of days to correction	in the month	3.00	0.00	2.00	2.00								
Avg. number of days to correction	year-to-date	3.00	3.00	2.50	2.33								
<u>Days Without Corrections</u>													
Days without corrections	in the month	30	28	30	0								
Days without corrections	year-to-date	30	58	88	88								
2022		<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<u>Hour Corrections</u>													
Number of hours with corrections	in the month	2	2	3	2	1	0	5	5	0	0	0	1
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744	721	744
% of hours with corrections	in the month	0.27%	0.30%	0.40%	0.28%	0.13%	0.00%	0.67%	0.67%	0.00%	0.00%	0.00%	0.13%
% 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%	0.25%	0.24%
<u>Interval Corrections</u>													
Number of intervals corrected	in the month	2	6	8	23	1	0	23	25	0	0	0	2
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	8,857	9,317
% 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%	0.00%	0.02%
% 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%	0.09%	0.08%
<u>Hours Reserved</u>													
Number of hours reserved	in the month	10	17	10	20	12	2	13	24	8	1	5	9
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744	721	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%	0.69%	1.21%
% 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%	1.52%	1.50%
<u>Days to Correction</u> *													
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	0.00	3.00
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	2.62	2.64
<u>Days Without Corrections</u>													
Days without corrections	in the month	30	27	29	29	30	30	28	27	30	31	30	30
Days without corrections	year-to-date	30	57	86	115	145	175	203	230	260	291	321	351

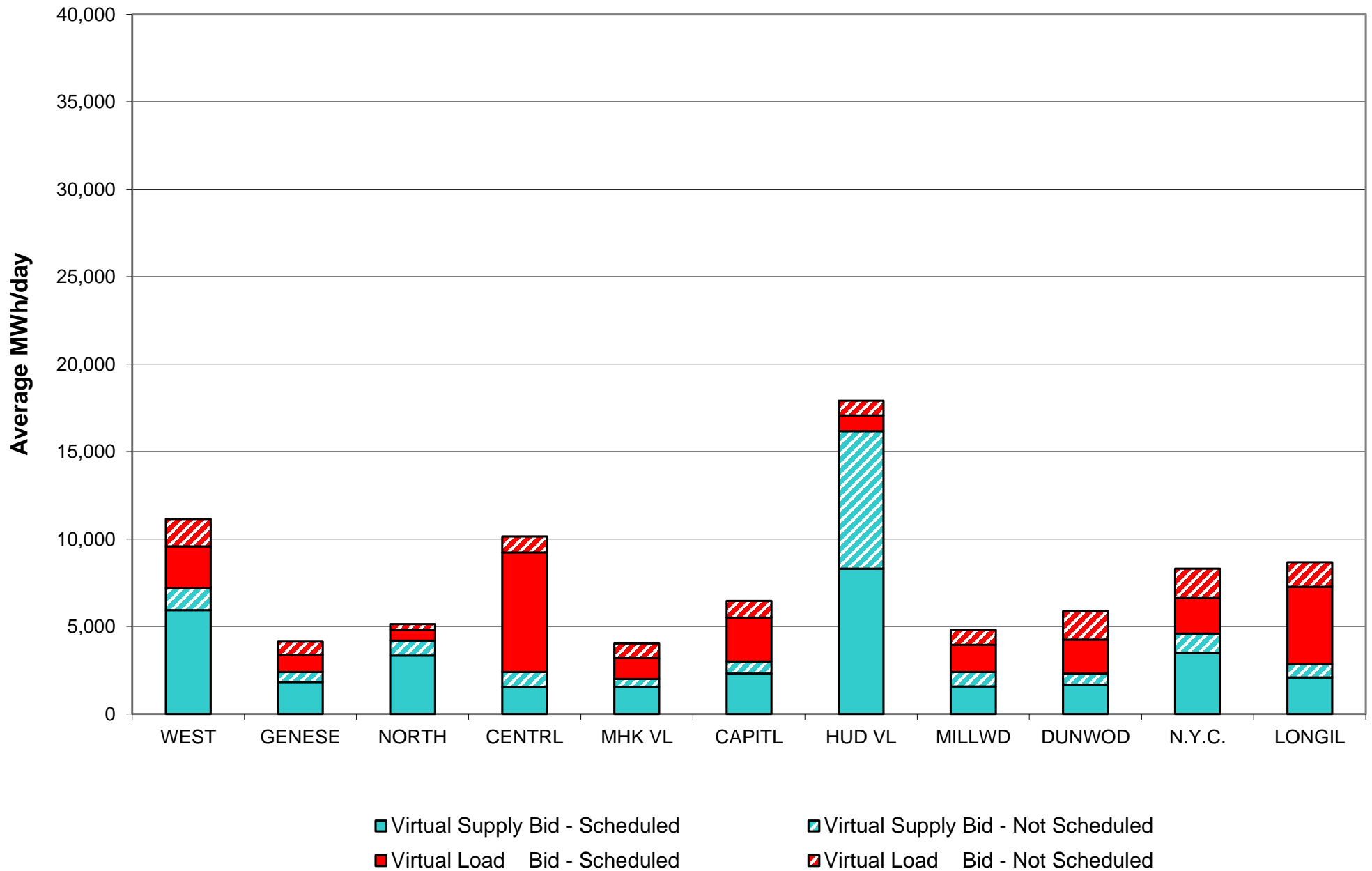
*Calendar days from reservation date; for June 2018 forward, business days from market date



NYISO Virtual Trading Average MWh per day



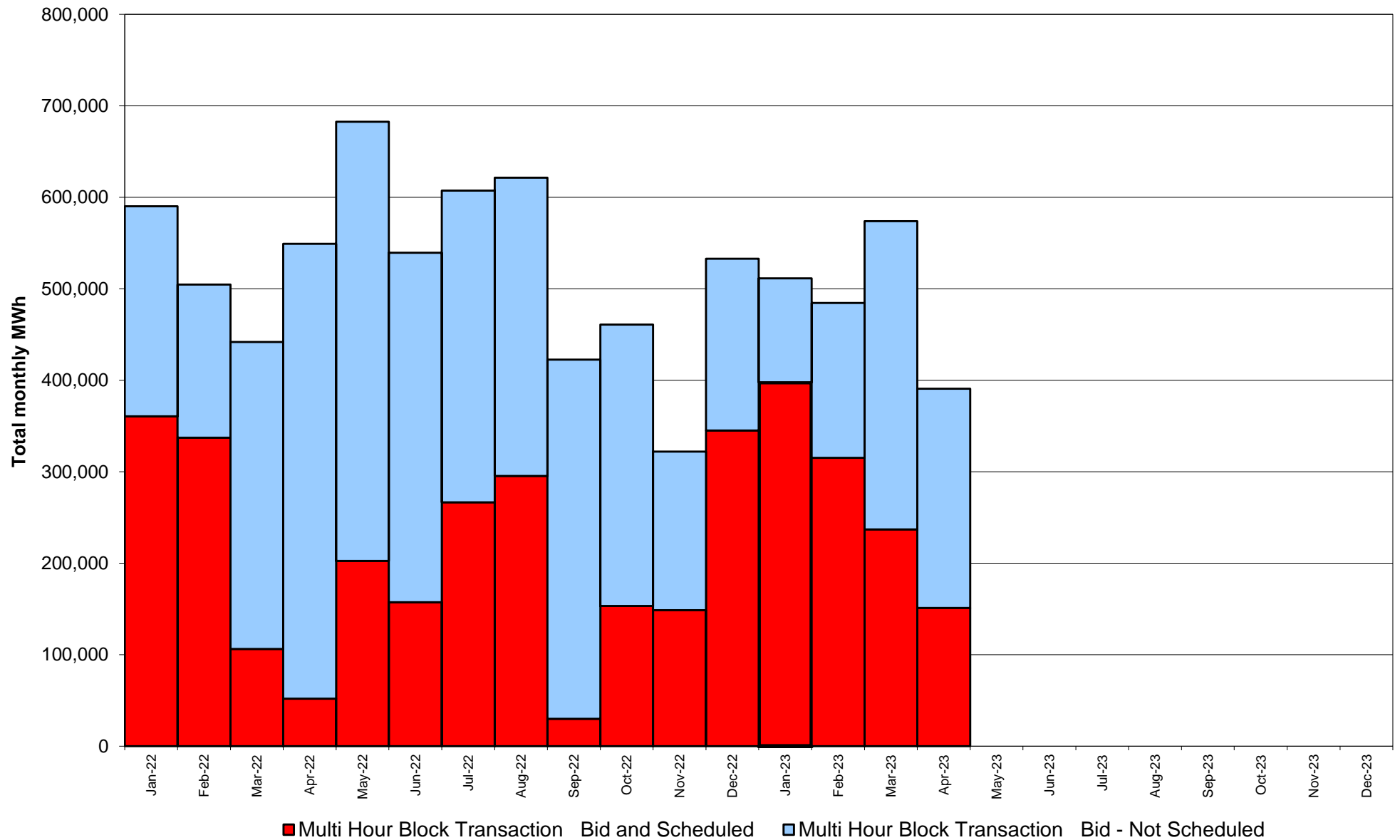
Virtual Load and Supply Zonal Statistics through April 30, 2023



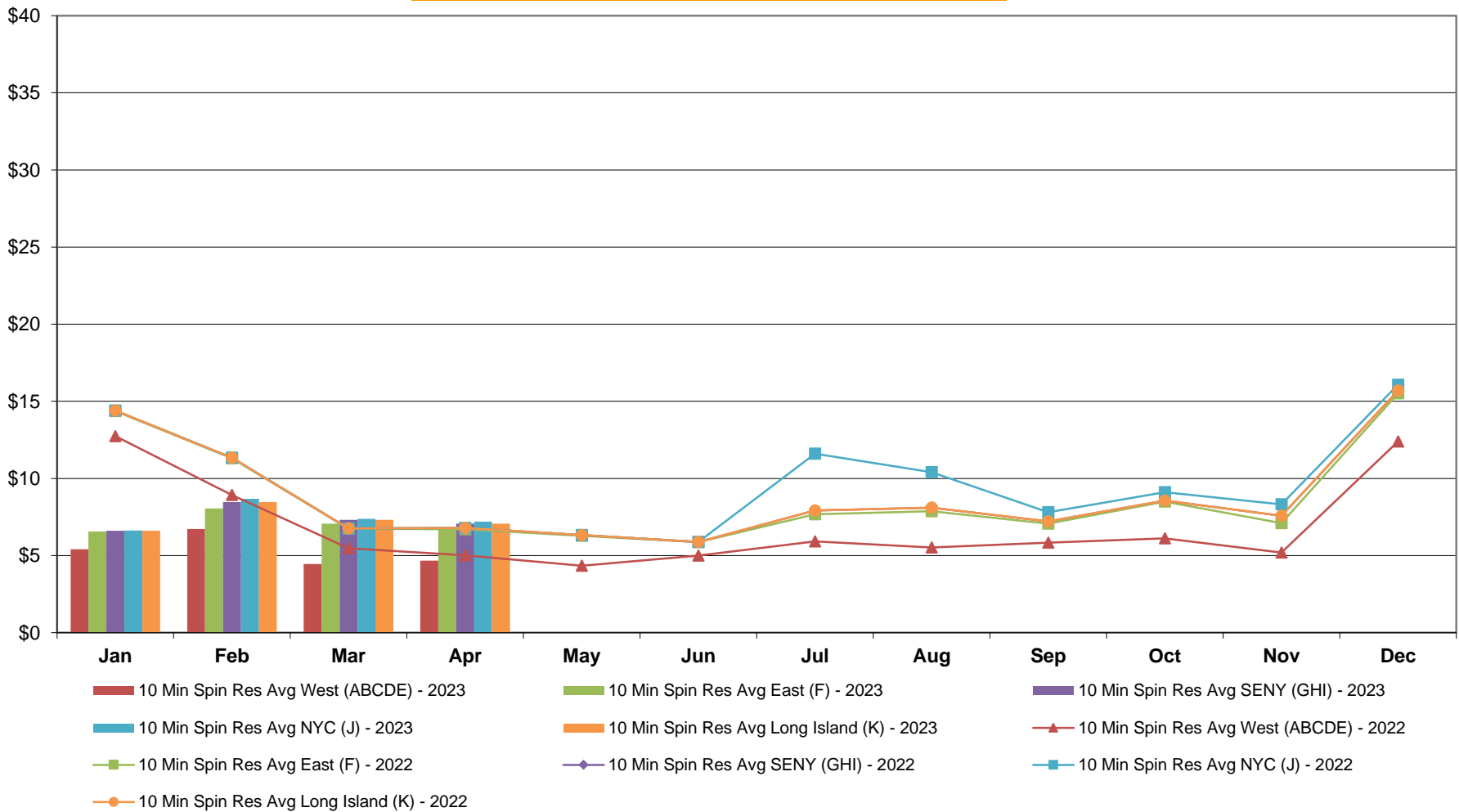
Virtual Load and Supply Zonal Statistics (Average MWh/day) - 2023

		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
WEST	Jan-23	3,364	1,605	5,555	1,026		MHK VL	Jan-23	1,312	1,038	1,590	558		DUNWOD	Jan-23	862	1,623
	Feb-23	2,266	1,863	6,652	1,270			Feb-23	1,146	1,395	2,484	436			Feb-23	1,366	1,793
	Mar-23	3,318	1,373	5,353	2,062			Mar-23	1,815	829	1,488	1,135			Mar-23	2,505	1,556
	Apr-23	2,407	1,561	5,939	1,245			Apr-23	1,182	841	1,556	450			Apr-23	1,941	1,615
	May-23							May-23							May-23		
	Jun-23							Jun-23							Jun-23		
	Jul-23							Jul-23							Jul-23		
	Aug-23							Aug-23							Aug-23		
	Sep-23							Sep-23							Sep-23		
	Oct-23							Oct-23							Oct-23		
	Nov-23							Nov-23							Nov-23		
	Dec-23							Dec-23							Dec-23		
GENESE	Jan-23	1,005	469	1,438	255		CAPITL	Jan-23	1,762	834	1,824	917		N.Y.C.	Jan-23	2,674	2,287
	Feb-23	1,136	523	1,480	586			Feb-23	1,902	1,166	2,655	729			Feb-23	2,663	2,398
	Mar-23	835	495	1,562	905			Mar-23	3,256	1,595	2,454	594			Mar-23	2,230	2,393
	Apr-23	982	746	1,817	584			Apr-23	2,509	960	2,303	695			Apr-23	2,032	1,683
	May-23							May-23							May-23		
	Jun-23							Jun-23							Jun-23		
	Jul-23							Jul-23							Jul-23		
	Aug-23							Aug-23							Aug-23		
	Sep-23							Sep-23							Sep-23		
	Oct-23							Oct-23							Oct-23		
	Nov-23							Nov-23							Nov-23		
	Dec-23							Dec-23							Dec-23		
NORTH	Jan-23	1,246	284	2,910	1,072		HUD VL	Jan-23	835	1,168	5,672	1,513		LONGIL	Jan-23	4,119	2,358
	Feb-23	1,111	302	2,854	1,432			Feb-23	1,335	1,484	5,382	1,297			Feb-23	4,408	2,440
	Mar-23	789	383	3,605	1,395			Mar-23	2,224	1,049	5,815	1,357			Mar-23	5,725	1,753
	Apr-23	615	332	3,338	854			Apr-23	896	846	8,301	7,864			Apr-23	4,436	1,401
	May-23							May-23							May-23		
	Jun-23							Jun-23							Jun-23		
	Jul-23							Jul-23							Jul-23		
	Aug-23							Aug-23							Aug-23		
	Sep-23							Sep-23							Sep-23		
	Oct-23							Oct-23							Oct-23		
	Nov-23							Nov-23							Nov-23		
	Dec-23							Dec-23							Dec-23		
CENTRL	Jan-23	5,294	1,193	1,715	563		MILLWD	Jan-23	649	1,103	2,019	278		NYISO	Jan-23	23,122	13,963
	Feb-23	6,851	1,526	2,219	703			Feb-23	888	1,228	2,021	434			Feb-23	25,071	16,118
	Mar-23	6,340	843	1,355	1,520			Mar-23	1,616	992	1,938	736			Mar-23	30,654	13,262
	Apr-23	6,824	914	1,546	855			Apr-23	1,564	853	1,566	831			Apr-23	25,387	11,752
	May-23							May-23							May-23		
	Jun-23							Jun-23							Jun-23		
	Jul-23							Jul-23							Jul-23		
	Aug-23							Aug-23							Aug-23		
	Sep-23							Sep-23							Sep-23		
	Oct-23							Oct-23							Oct-23		
	Nov-23							Nov-23							Nov-23		
	Dec-23							Dec-23							Dec-23		

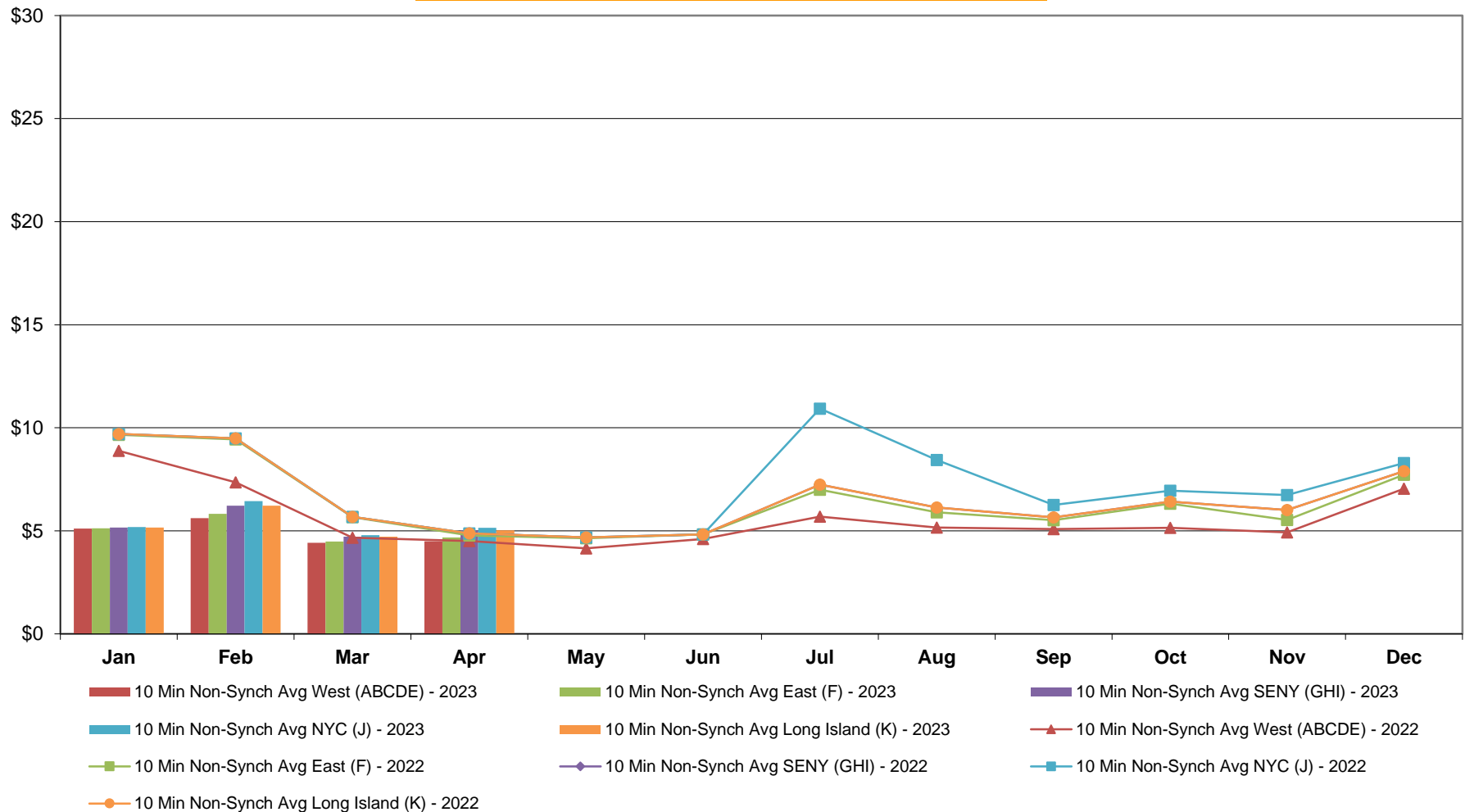
NYISO Multi Hour Block Transactions Monthly Total MWh



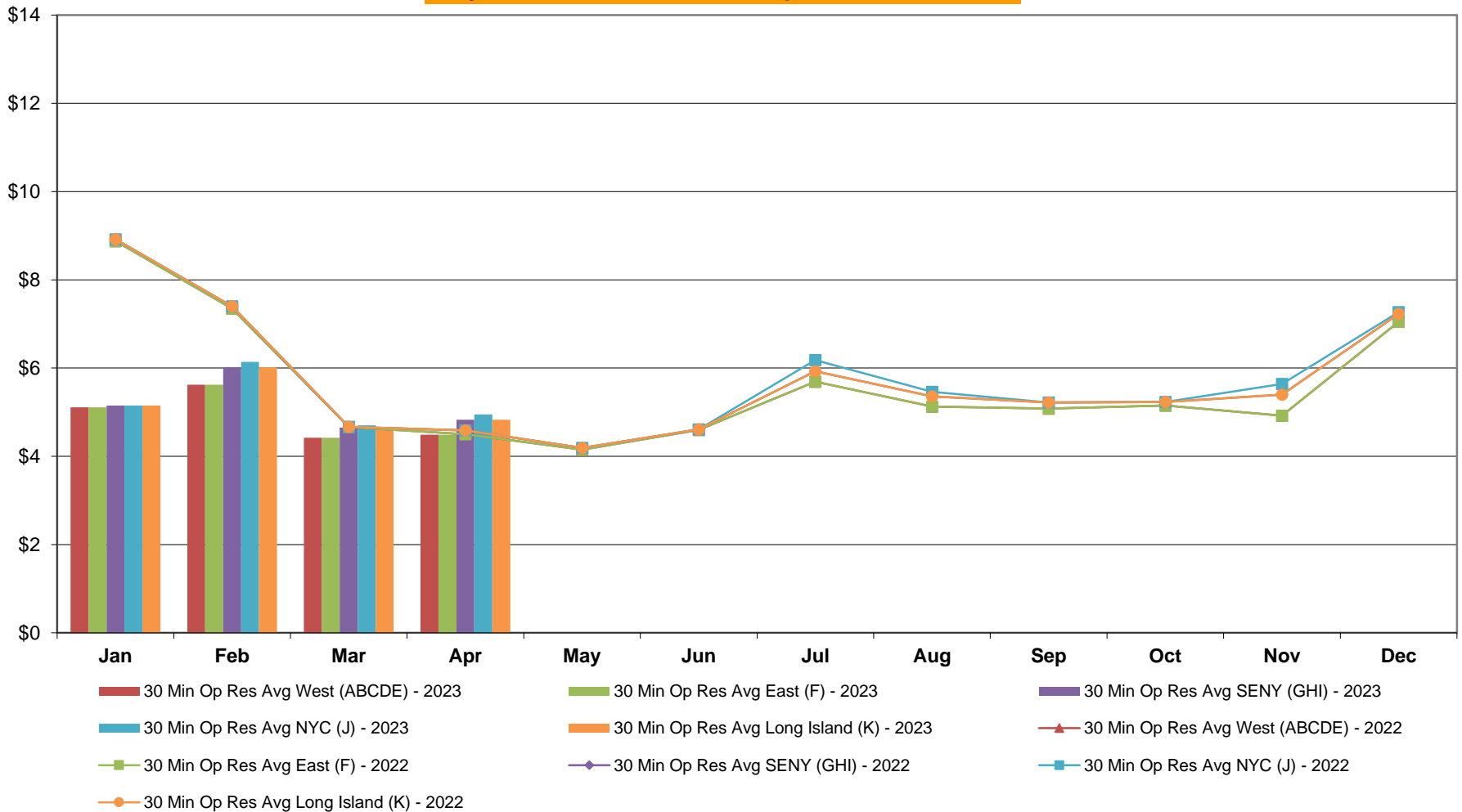
**NYISO Monthly Average Ancillary Service Prices
Day Ahead Market - 10 Min Spin 2022 - 2023**



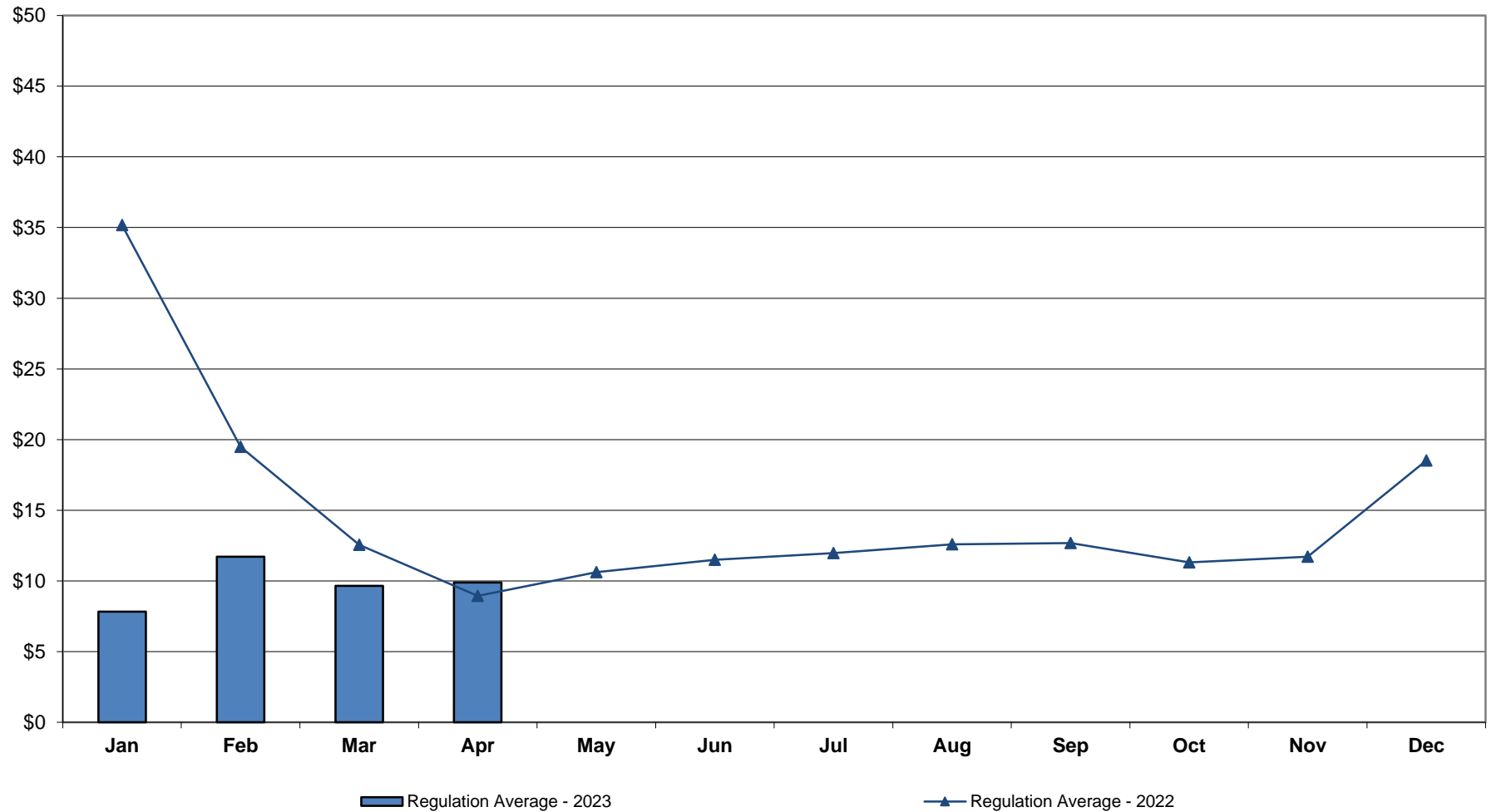
**NYISO Monthly Average Ancillary Service Prices
Day Ahead Market - 10 Min Non-Synch 2022 - 2023**



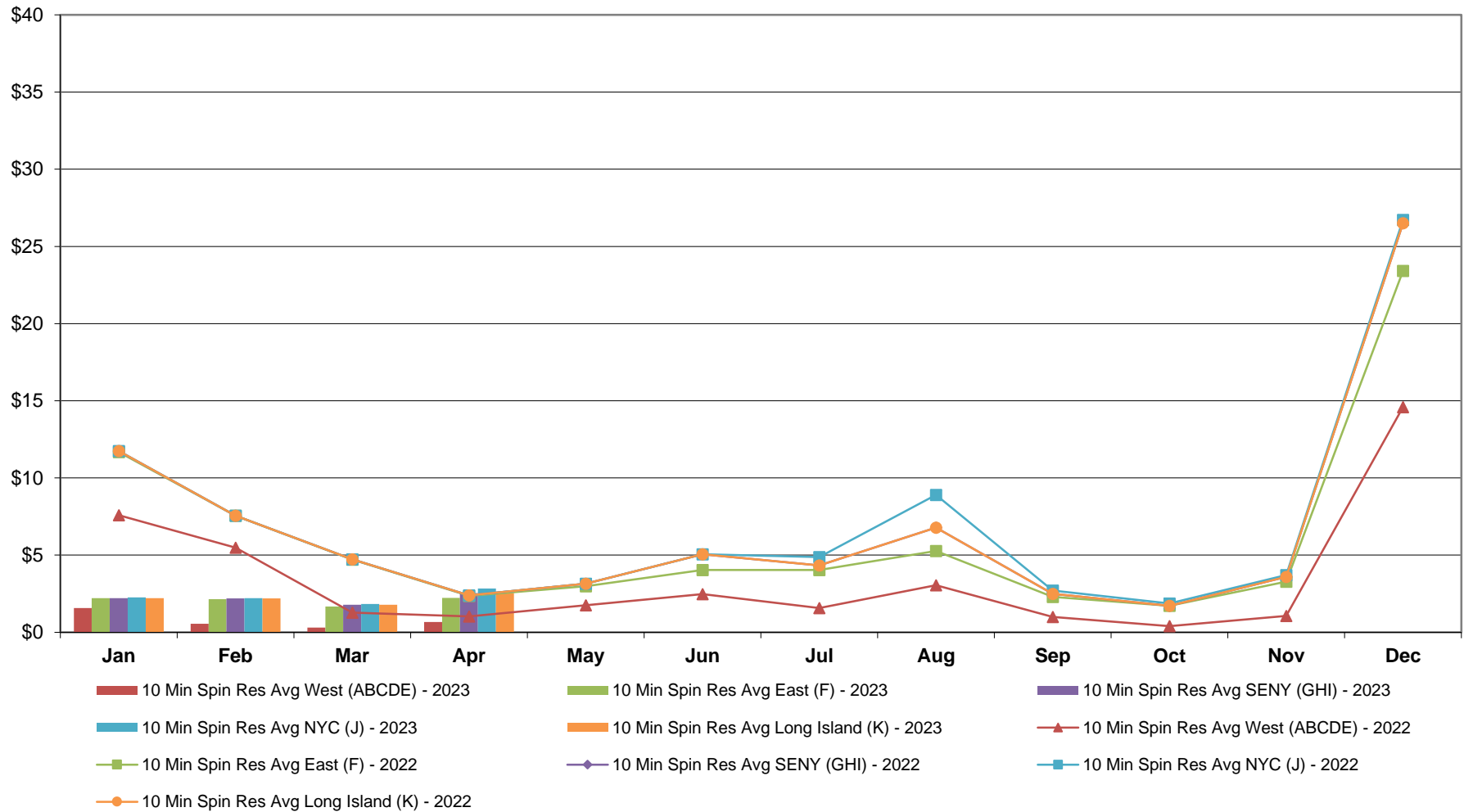
**NYISO Monthly Average Ancillary Service Prices
Day Ahead Market - 30 Min Op Res 2022 - 2023**



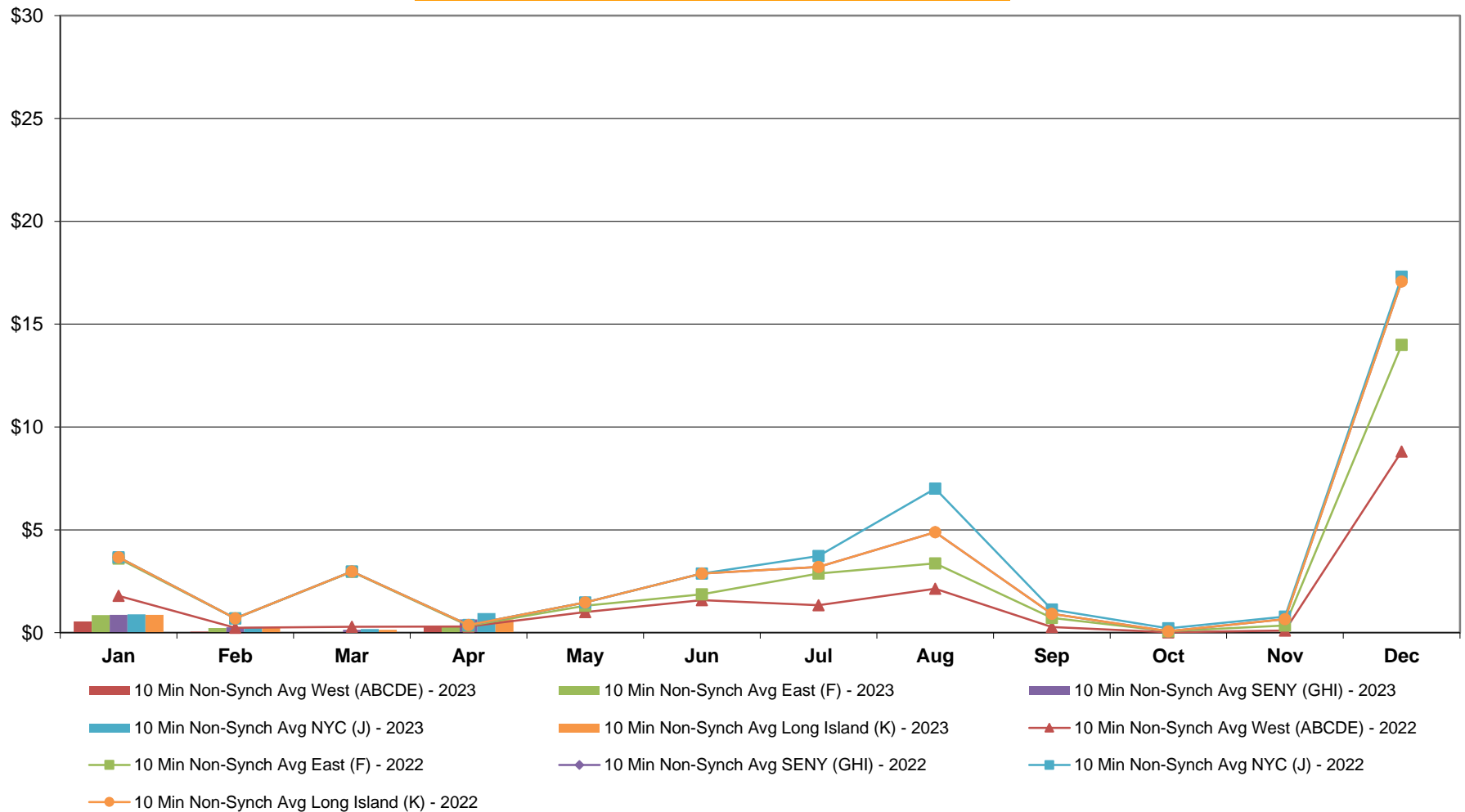
**NYISO Monthly Average Ancillary Service Prices
Day Ahead Market - Regulation 2022 - 2023**



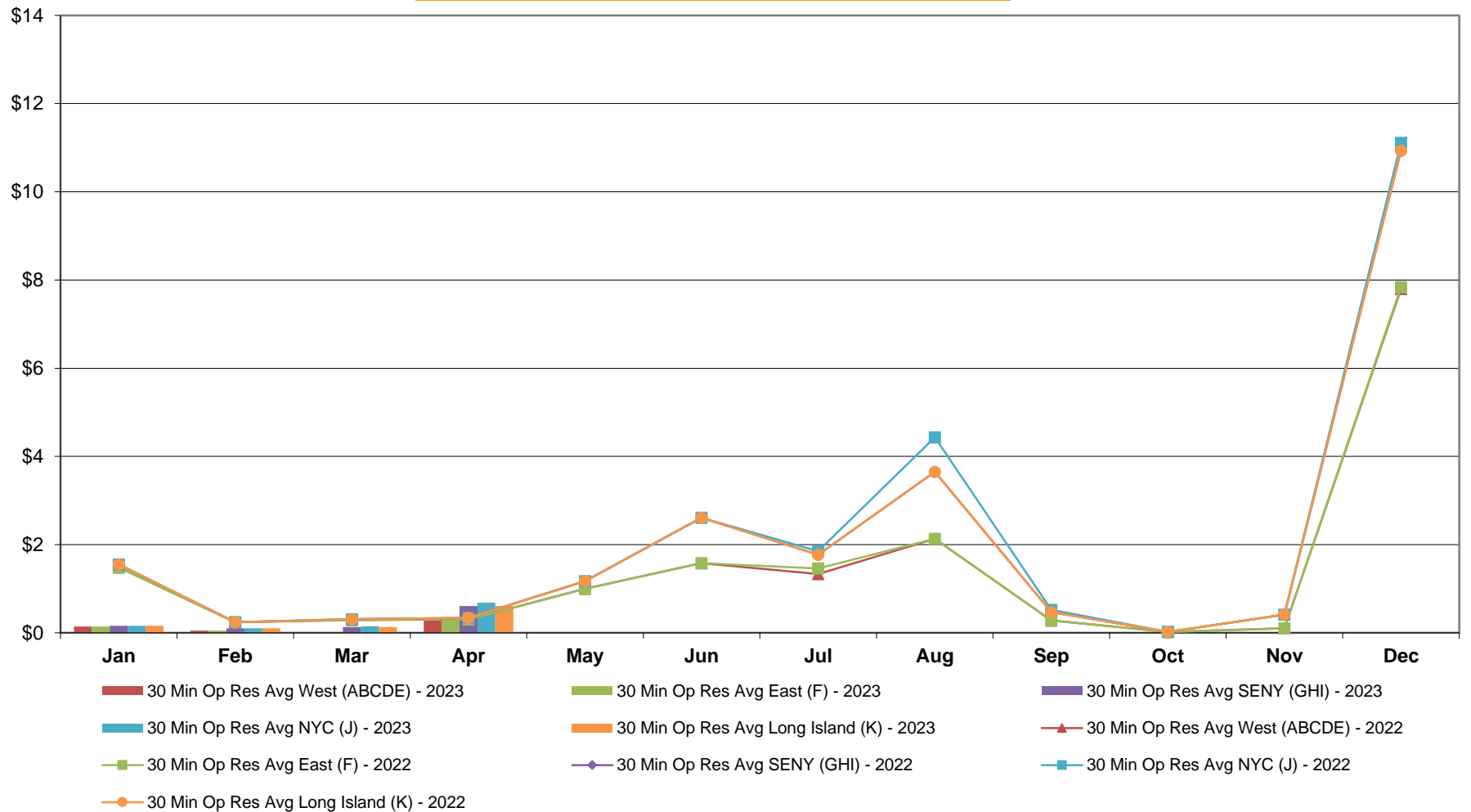
NYISO Monthly Average Ancillary Service Prices RTC Market - 10 Min Spin 2022 - 2023



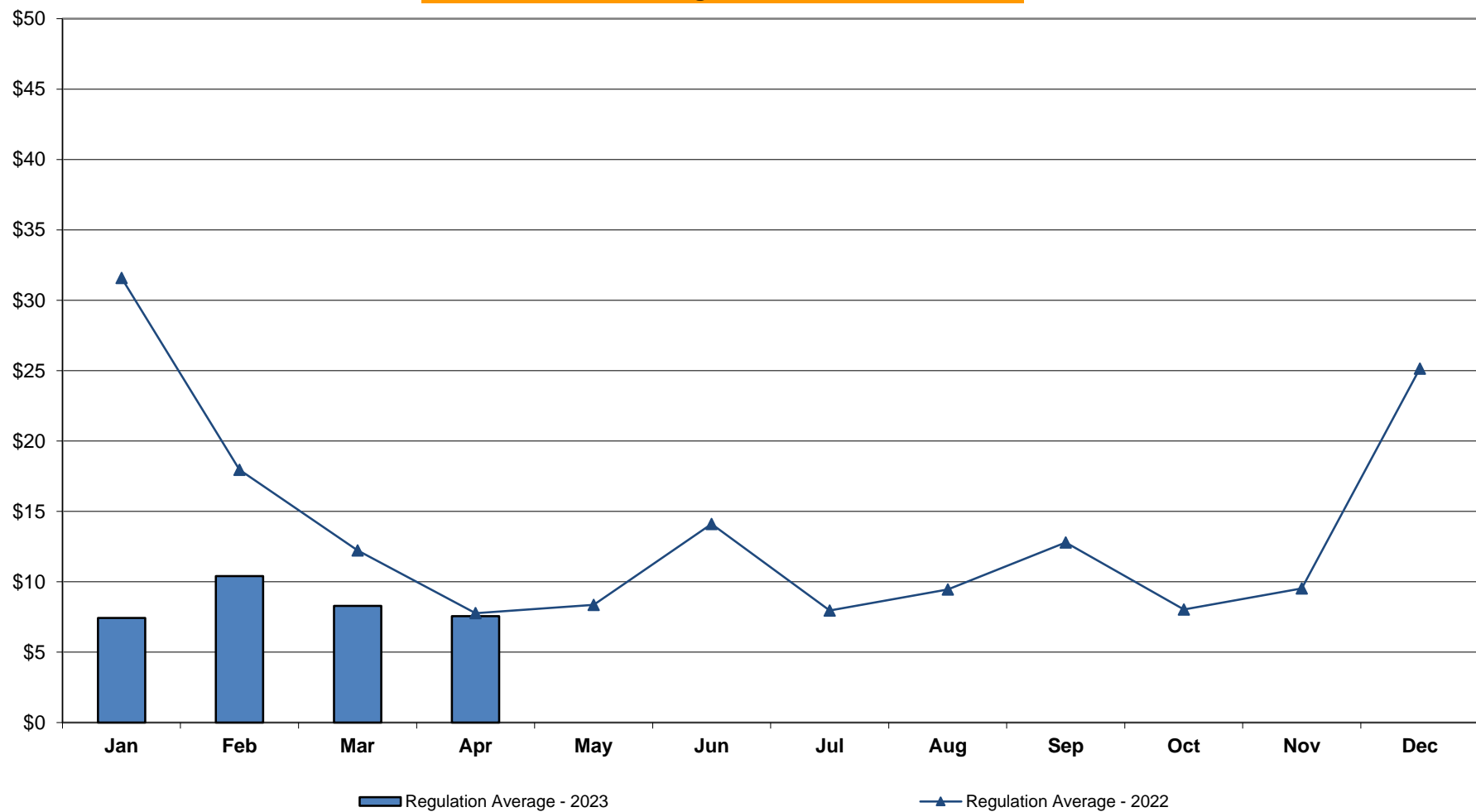
**NYISO Monthly Average Ancillary Service Prices
RTC Market - 10 Min Non-Synch 2022 - 2023**



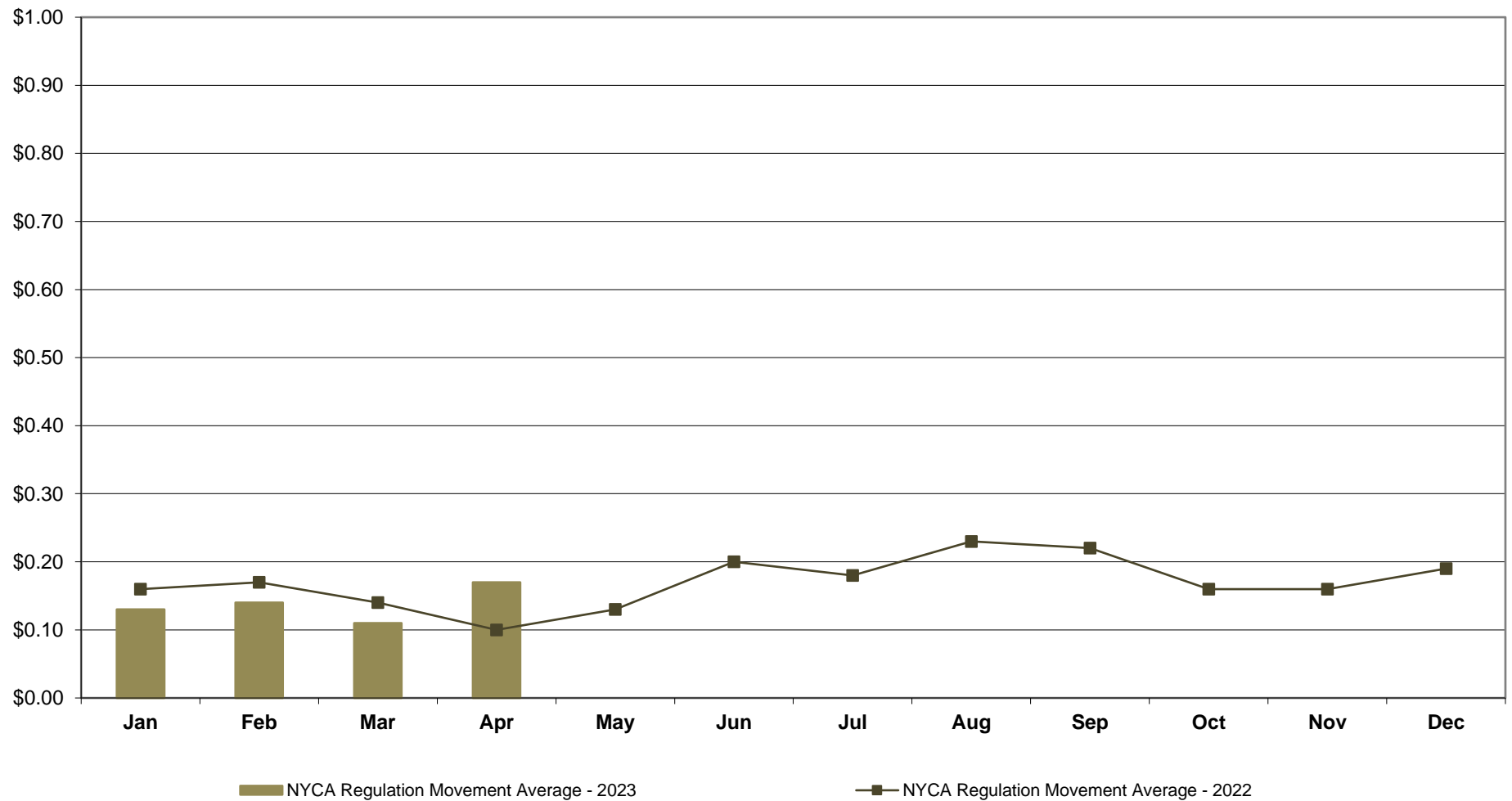
NYISO Monthly Average Ancillary Service Prices RTC Market - 30 Min Op Res 2022 - 2023



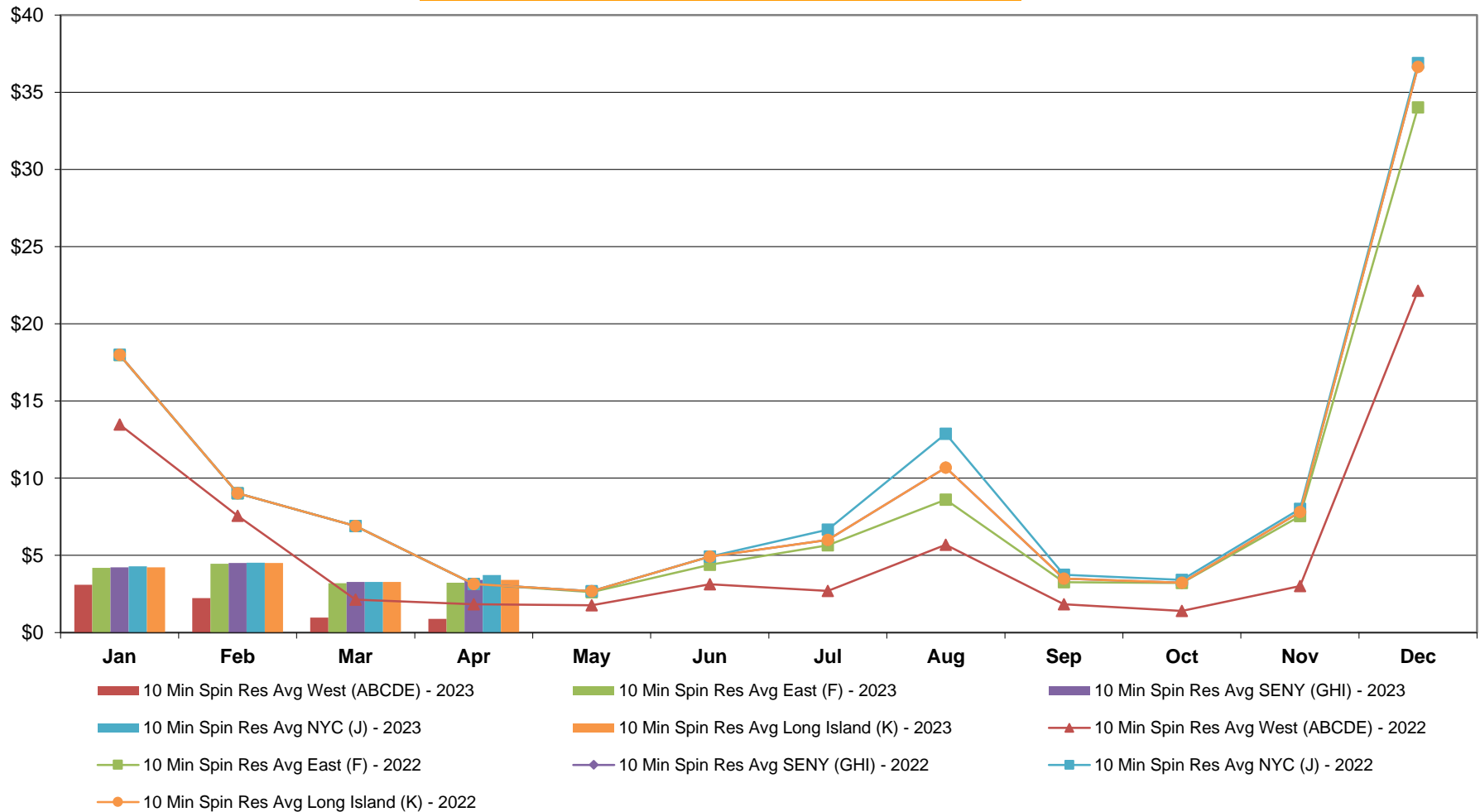
**NYISO Monthly Average Ancillary Service Prices
RTC Market - Regulation 2022 - 2023**



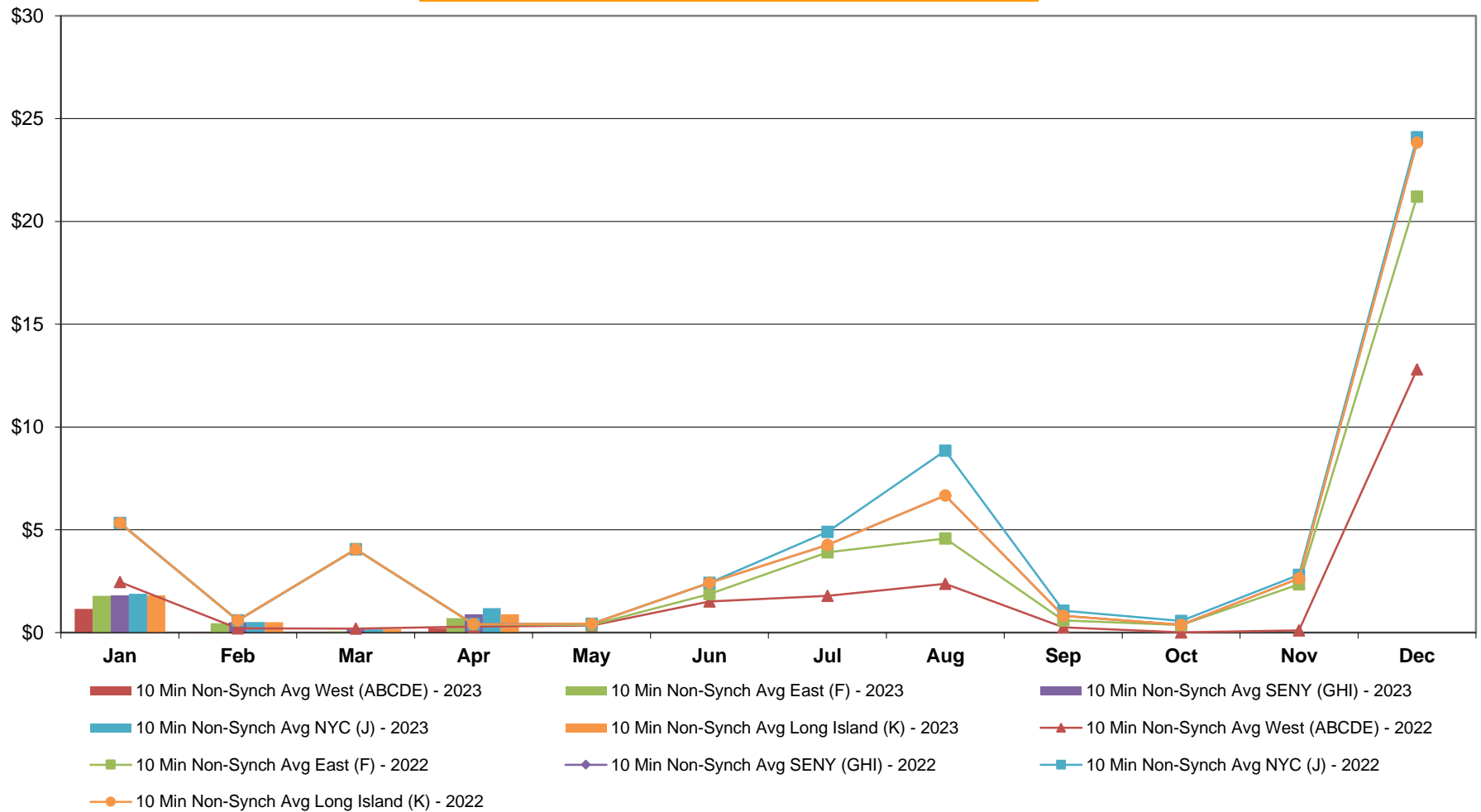
NYISO Monthly Average Ancillary Service Prices RTC Market - Regulation Movement 2022 - 2023



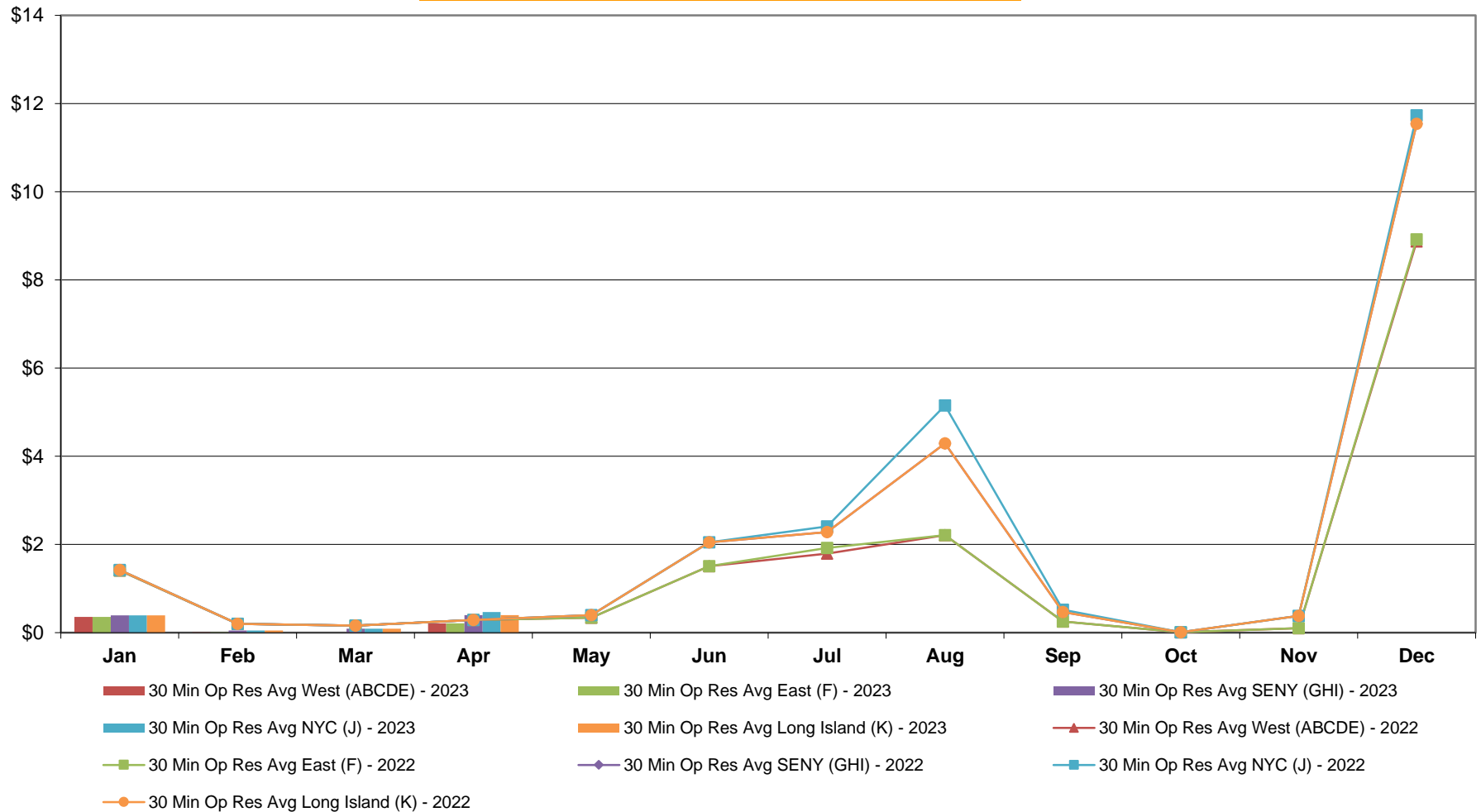
**NYISO Monthly Average Ancillary Service Prices
Real Time Market - 10 Min Spin 2022 - 2023**



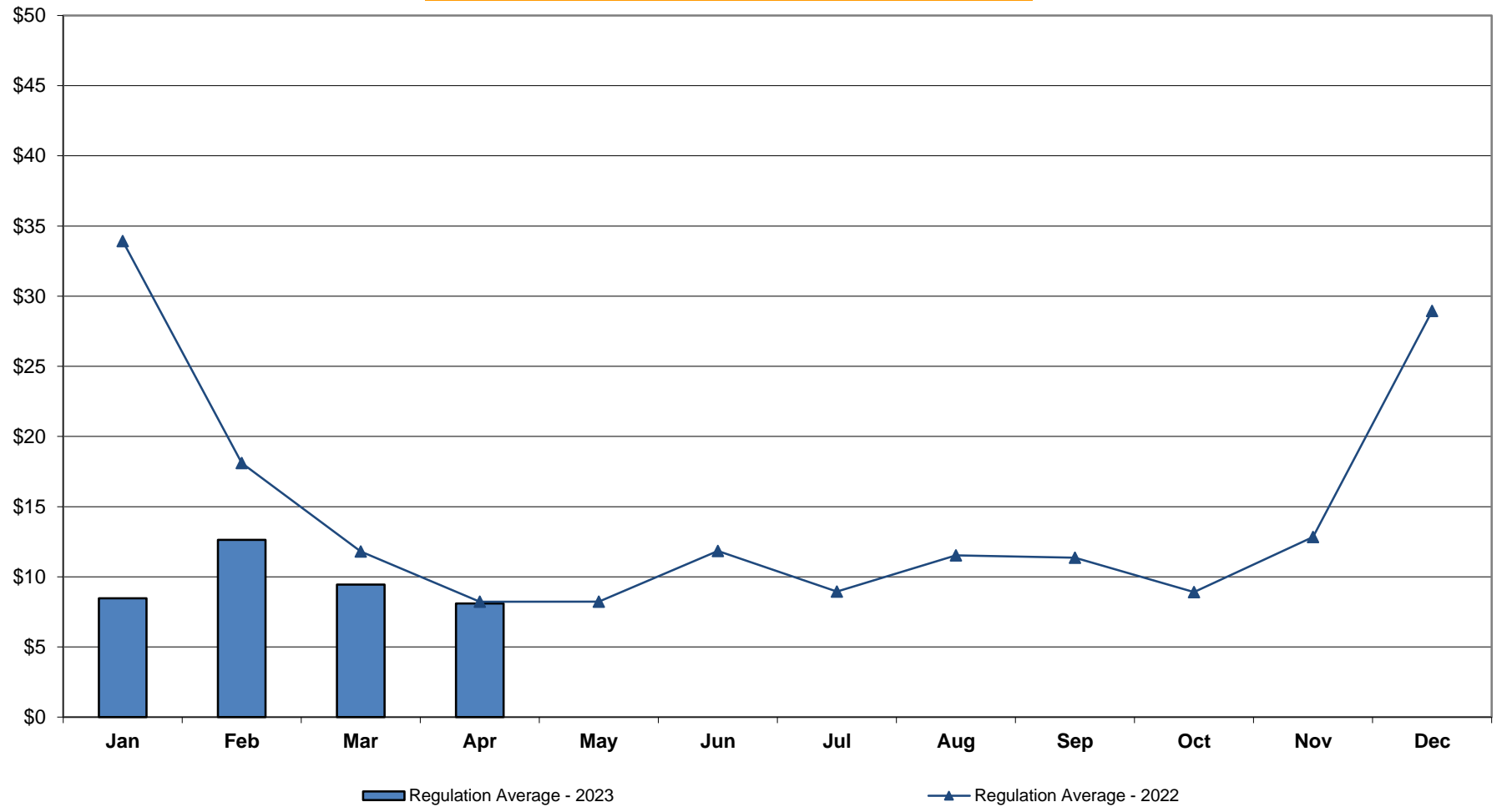
**NYISO Monthly Average Ancillary Service Prices
Real Time Market - 10 Min Non-Synch 2022 - 2023**



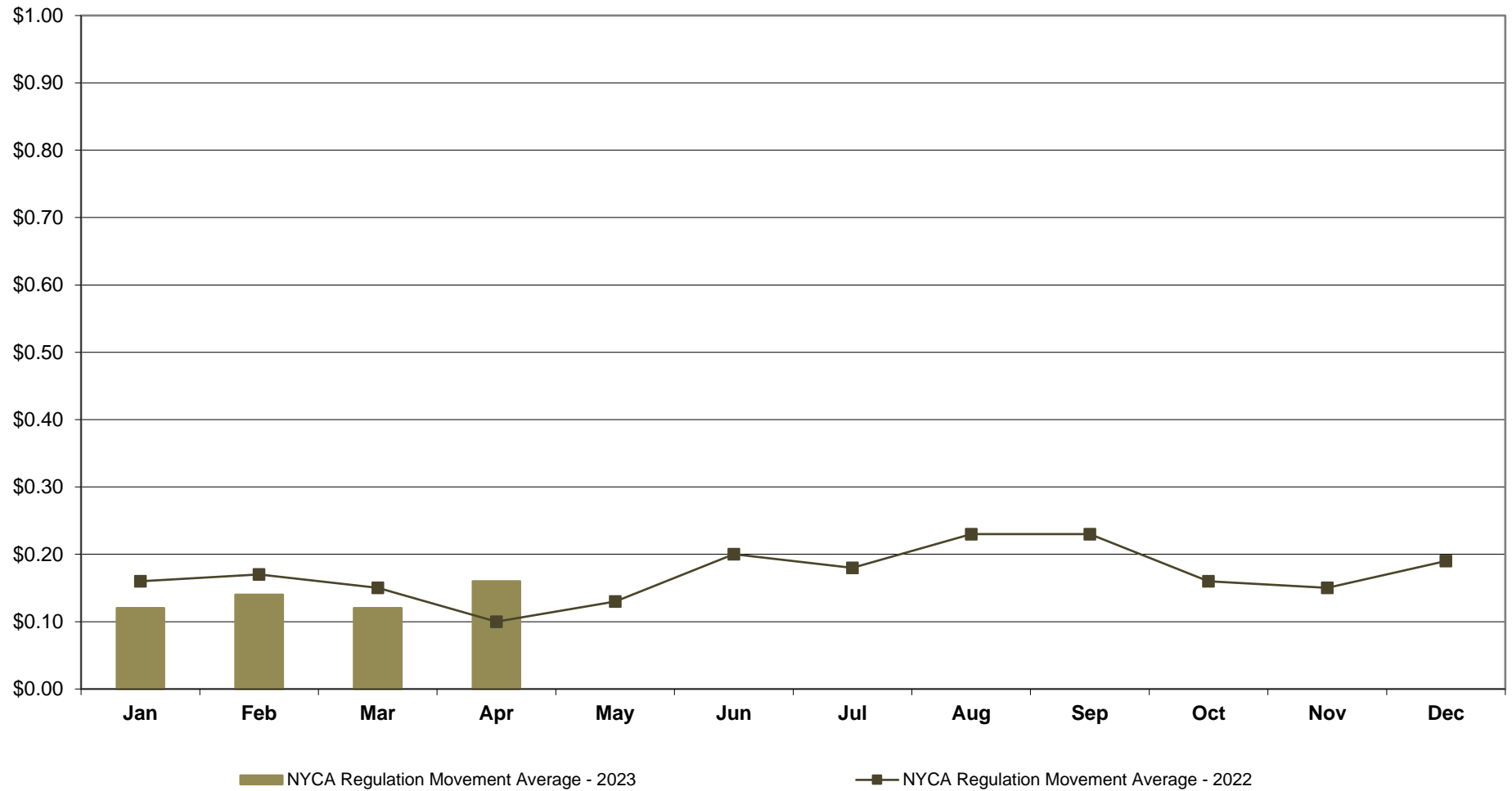
**NYISO Monthly Average Ancillary Service Prices
Real Time Market - 30 Min Op Res 2022 - 2023**



**NYISO Monthly Average Ancillary Service Prices
Real Time Market - Regulation 2022 - 2023**



NYISO Monthly Average Ancillary Service Prices Real Time Market - Regulation Movement 2022 - 2023



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

<u>2023</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>
<u>Day Ahead Market</u>												
10 Min Spin Long Island (K)	6.60	8.46	7.31	7.07								
10 Min Spin NYC (J)	6.63	8.68	7.38	7.20								
10 Min Spin SENY (GHI)	6.60	8.46	7.31	7.07								
10 Min Spin East (F)	6.56	8.06	7.07	6.73								
10 Min Spin West (ABCDE)	5.41	6.73	4.45	4.67								
10 Min Non Synch Long Island (K)	5.16	6.22	4.72	5.02								
10 Min Non Synch NYC (J)	5.18	6.44	4.79	5.15								
10 Min Non Synch SENY (GHI)	5.16	6.22	4.72	5.02								
10 Min Non Synch East (F)	5.12	5.82	4.48	4.68								
10 Min Non Synch West (ABCDE)	5.11	5.62	4.42	4.49								
30 Min Long Island (K)	5.15	6.02	4.65	4.83								
30 Min NYC (J)	5.15	6.14	4.70	4.95								
30 Min SENY (GHI)	5.15	6.02	4.65	4.83								
30 Min East (F)	5.11	5.62	4.42	4.49								
30 Min West (ABCDE)	5.11	5.62	4.42	4.49								
Regulation	7.82	11.71	9.65	9.88								
<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>
<u>Day Ahead Market</u>												
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	7.57	15.69
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	8.31	16.08
10 Min Spin SENY (GHI)	14.40	11.34	6.76	6.79	6.32	5.88	7.92	8.10	7.22	8.57	7.57	15.69
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	7.10	15.51
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	5.20	12.39
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	6.01	7.90
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	6.74	8.29
10 Min Non Synch SENY (GHI)	9.70	9.48	5.68	4.87	4.68	4.83	7.24	6.13	5.65	6.41	6.01	7.90
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	5.53	7.72
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	4.92	7.05
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	5.40	7.23
30 Min NYC (J)	8.95	7.42	4.67	4.59	4.21	4.61	6.18	5.46	5.22	5.23	5.64	7.27
30 Min SENY (GHI)	8.92	7.40	4.67	4.59	4.19	4.61	5.93	5.36	5.22	5.23	5.40	7.23
30 Min East (F)	8.88	7.35	4.66	4.50	4.15	4.60	5.69	5.13	5.08	5.15	4.92	7.05
30 Min West (ABCDE)	8.88	7.35	4.66	4.50	4.15	4.60	5.69	5.13	5.08	5.15	4.92	7.05
Regulation	35.17	19.48	12.56	8.94	10.61	11.49	11.96	12.58	12.68	11.31	11.72	18.51

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

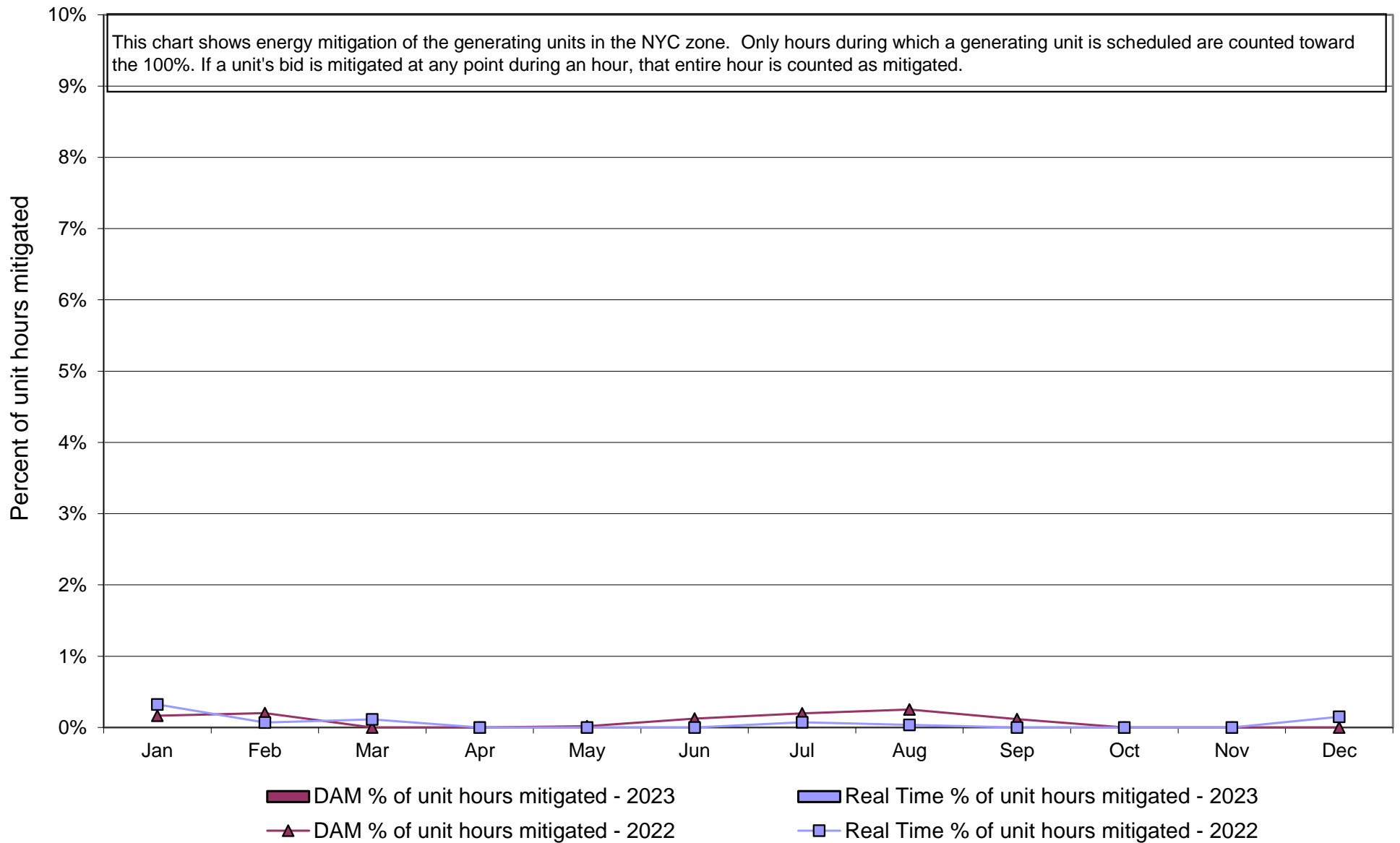
<u>2023</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<u>RTC Market</u>												
10 Min Spin Long Island (K)	2.22	2.19	1.79	2.55								
10 Min Spin NYC (J)	2.26	2.21	1.83	2.84								
10 Min Spin SENY (GHI)	2.22	2.19	1.79	2.55								
10 Min Spin East (F)	2.21	2.15	1.67	2.23								
10 Min Spin West (ABCDE)	1.57	0.56	0.30	0.67								
10 Min Non Synch Long Island (K)	0.86	0.26	0.14	0.65								
10 Min Non Synch NYC (J)	0.89	0.27	0.18	0.95								
10 Min Non Synch SENY (GHI)	0.86	0.26	0.14	0.65								
10 Min Non Synch East (F)	0.85	0.22	0.02	0.34								
10 Min Non Synch West (ABCDE)	0.54	0.05	0.00	0.29								
30 Min Long Island (K)	0.16	0.10	0.13	0.61								
30 Min NYC (J)	0.16	0.10	0.15	0.68								
30 Min SENY (GHI)	0.16	0.10	0.13	0.61								
30 Min East (F)	0.14	0.05	0.00	0.29								
30 Min West (ABCDE)	0.14	0.05	0.00	0.29								
Regulation	7.44	10.40	8.29	7.55								
NYCA Regulation Movement	0.13	0.14	0.11	0.17								
<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>
<u>RTC Market</u>												
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	3.59	26.50
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	3.71	26.72
10 Min Spin SENY (GHI)	11.75	7.55	4.73	2.39	3.15	5.06	4.34	6.79	2.49	1.72	3.59	26.50
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	3.28	23.41
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	1.06	14.59
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	0.66	17.08
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	0.78	17.31
10 Min Non Synch SENY (GHI)	3.67	0.69	2.97	0.37	1.47	2.88	3.19	4.89	0.92	0.07	0.66	17.08
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	0.35	13.99
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	0.10	8.81
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	0.41	10.93
30 Min NYC (J)	1.55	0.24	0.31	0.34	1.34	2.74	1.85	4.43	0.52	0.02	0.41	11.11
30 Min SENY (GHI)	1.55	0.24	0.31	0.34	1.17	2.61	1.77	3.65	0.47	0.02	0.41	10.93
30 Min East (F)	1.48	0.24	0.29	0.30	1.00	1.58	1.46	2.13	0.28	0.02	0.10	7.84
30 Min West (ABCDE)	1.48	0.24	0.29	0.30	1.00	1.58	1.33	2.13	0.28	0.02	0.10	7.80
Regulation	31.59	17.95	12.23	7.77	8.36	14.11	7.96	9.46	12.79	8.03	9.52	25.14
NYCA Regulation Movement	0.16	0.17	0.14	0.10	0.13	0.20	0.18	0.23	0.22	0.16	0.16	0.19

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

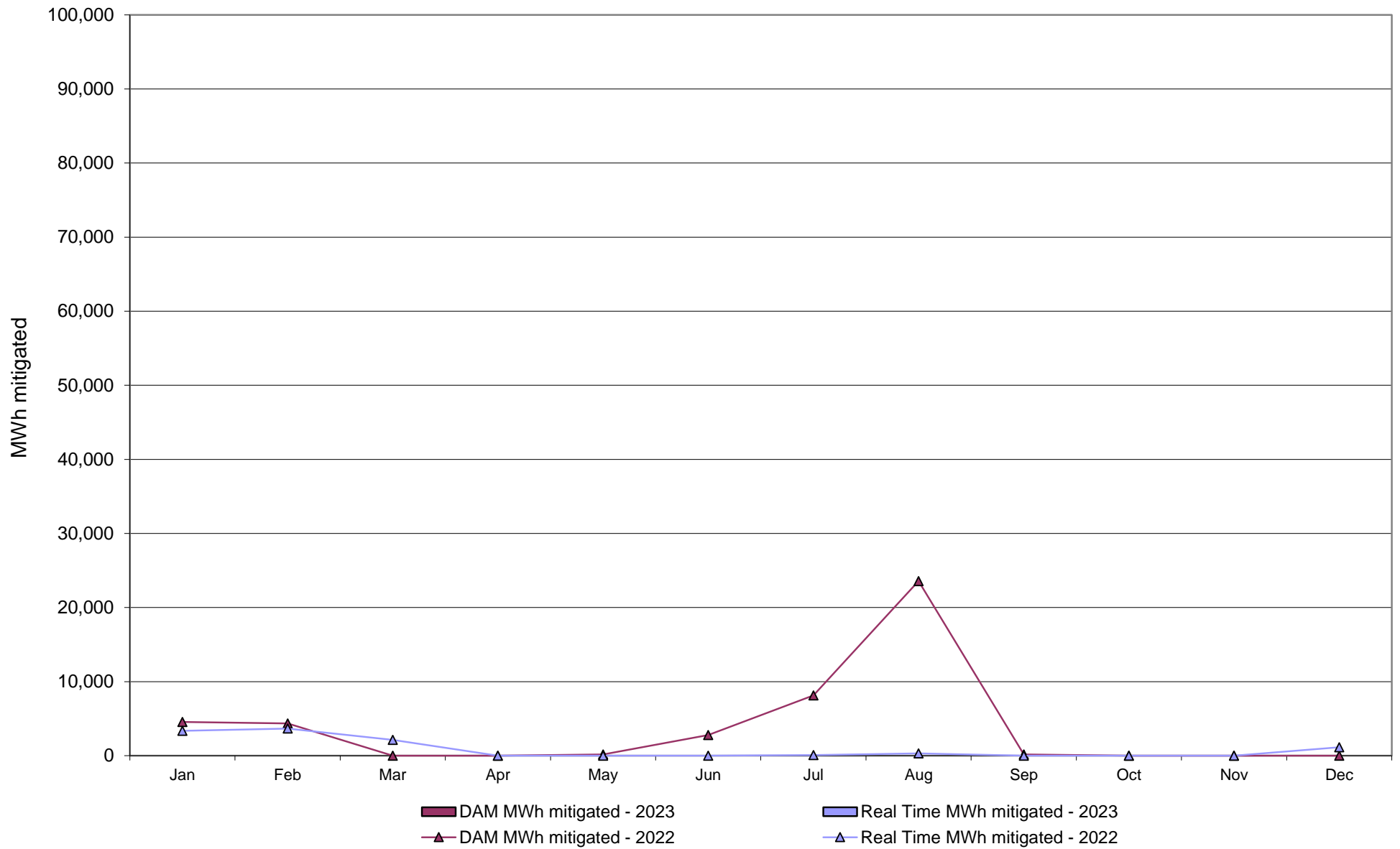
<u>2023</u>	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
<u>Real Time Market</u>												
10 Min Spin Long Island (K)	4.22	4.51	3.28	3.42								
10 Min Spin NYC (J)	4.30	4.53	3.28	3.72								
10 Min Spin SENY (GHI)	4.22	4.51	3.28	3.42								
10 Min Spin East (F)	4.20	4.46	3.19	3.23								
10 Min Spin West (ABCDE)	3.10	2.24	0.97	0.89								
10 Min Non Synch Long Island (K)	1.81	0.50	0.15	0.89								
10 Min Non Synch NYC (J)	1.89	0.52	0.15	1.19								
10 Min Non Synch SENY (GHI)	1.81	0.50	0.15	0.89								
10 Min Non Synch East (F)	1.79	0.45	0.05	0.70								
10 Min Non Synch West (ABCDE)	1.15	0.01	0.00	0.21								
30 Min Long Island (K)	0.39	0.05	0.09	0.40								
30 Min NYC (J)	0.39	0.05	0.09	0.47								
30 Min SENY (GHI)	0.39	0.05	0.09	0.40								
30 Min East (F)	0.36	0.01	0.00	0.21								
30 Min West (ABCDE)	0.36	0.01	0.00	0.21								
Regulation	8.46	12.64	9.44	8.10								
NYCA Regulation Movement	0.12	0.14	0.12	0.16								
<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>
<u>Real Time Market</u>												
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	7.82	36.64
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	8.01	36.89
10 Min Spin SENY (GHI)	17.99	9.02	6.90	3.15	2.68	4.93	6.01	10.69	3.49	3.23	7.82	36.64
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	7.54	34.02
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	3.02	22.15
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	2.63	23.83
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	2.81	24.09
10 Min Non Synch SENY (GHI)	5.34	0.59	4.05	0.40	0.43	2.42	4.26	6.67	0.81	0.38	2.63	23.83
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	2.35	21.21
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	0.10	12.80
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	0.38	11.54
30 Min NYC (J)	1.42	0.20	0.16	0.29	0.56	2.20	2.41	5.15	0.52	0.01	0.38	11.73
30 Min SENY (GHI)	1.42	0.20	0.16	0.29	0.40	2.05	2.28	4.29	0.47	0.01	0.38	11.54
30 Min East (F)	1.41	0.20	0.16	0.29	0.34	1.51	1.92	2.21	0.25	0.01	0.10	8.92
30 Min West (ABCDE)	1.41	0.20	0.16	0.29	0.34	1.51	1.79	2.21	0.25	0.01	0.10	8.87
Regulation	33.92	18.10	11.81	8.22	8.23	11.84	8.95	11.52	11.36	8.91	12.84	28.95
NYCA Regulation Movement	0.16	0.17	0.15	0.10	0.13	0.20	0.18	0.23	0.23	0.16	0.15	0.19

NYISO In City Energy Mitigation - AMP (NYC Zone) 2022 - 2023

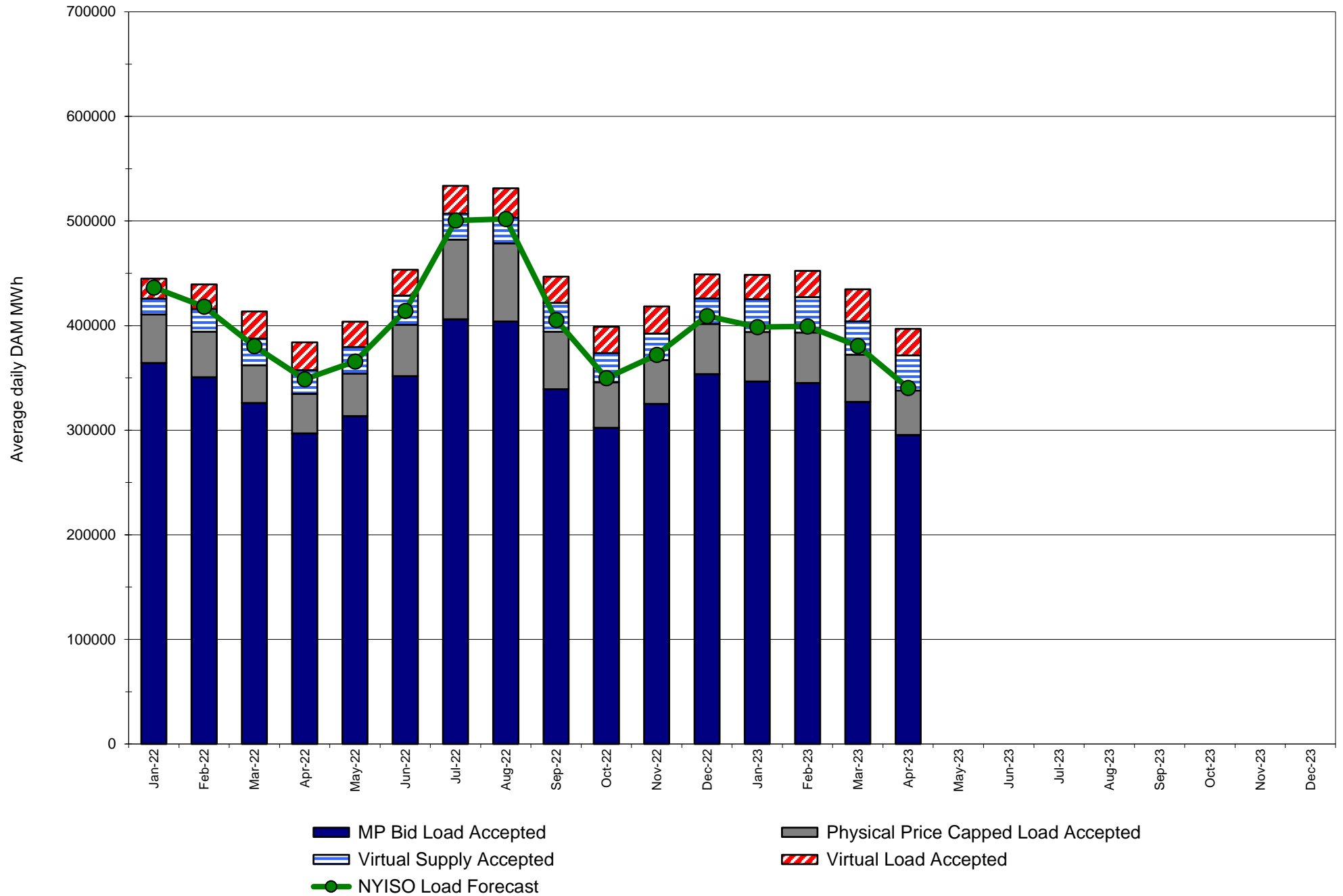
Percentage of committed unit-hours mitigated



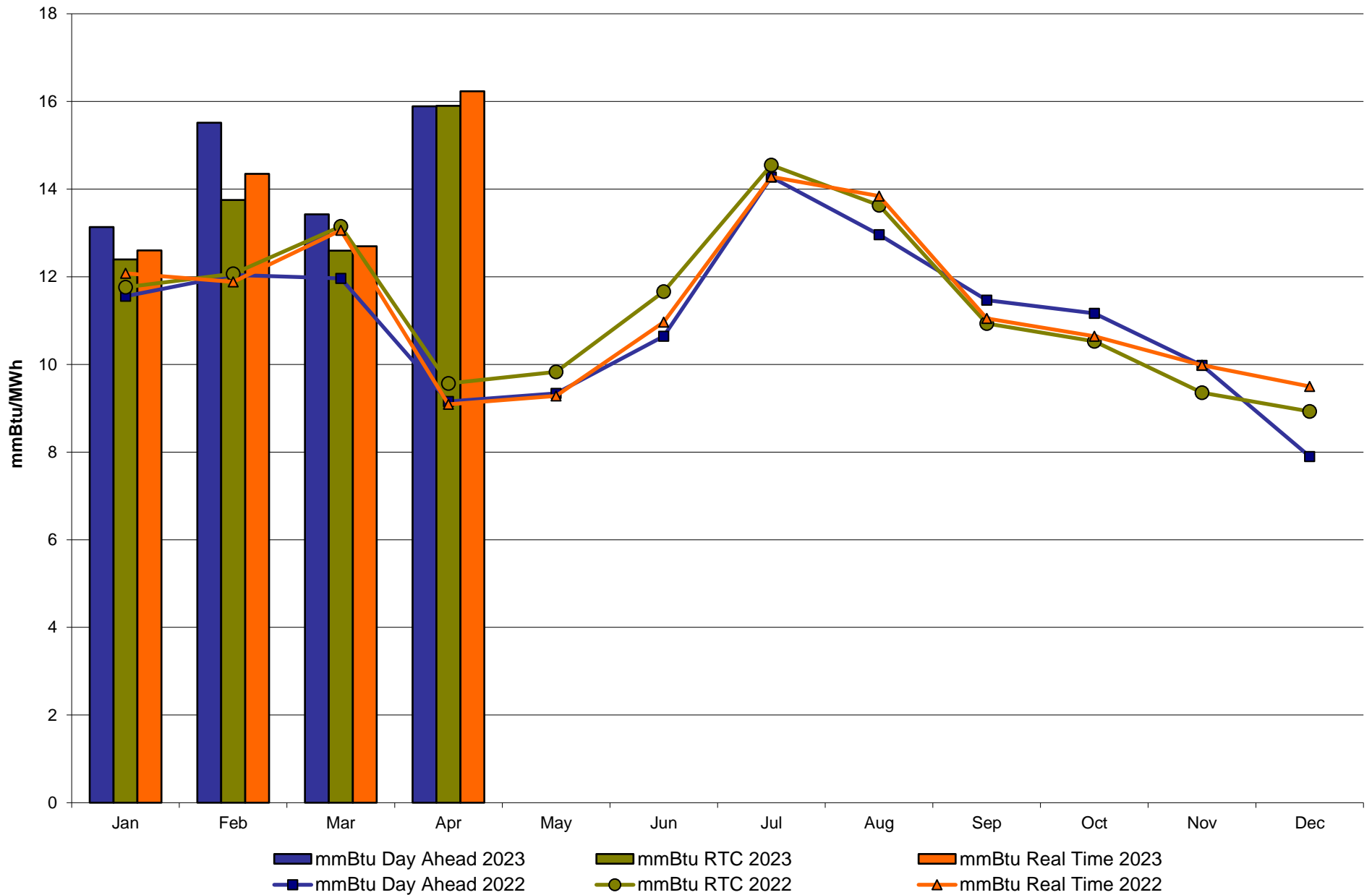
NYISO In City Energy Mitigation (NYC Zone) 2022 - 2023
Monthly megawatt hours mitigated



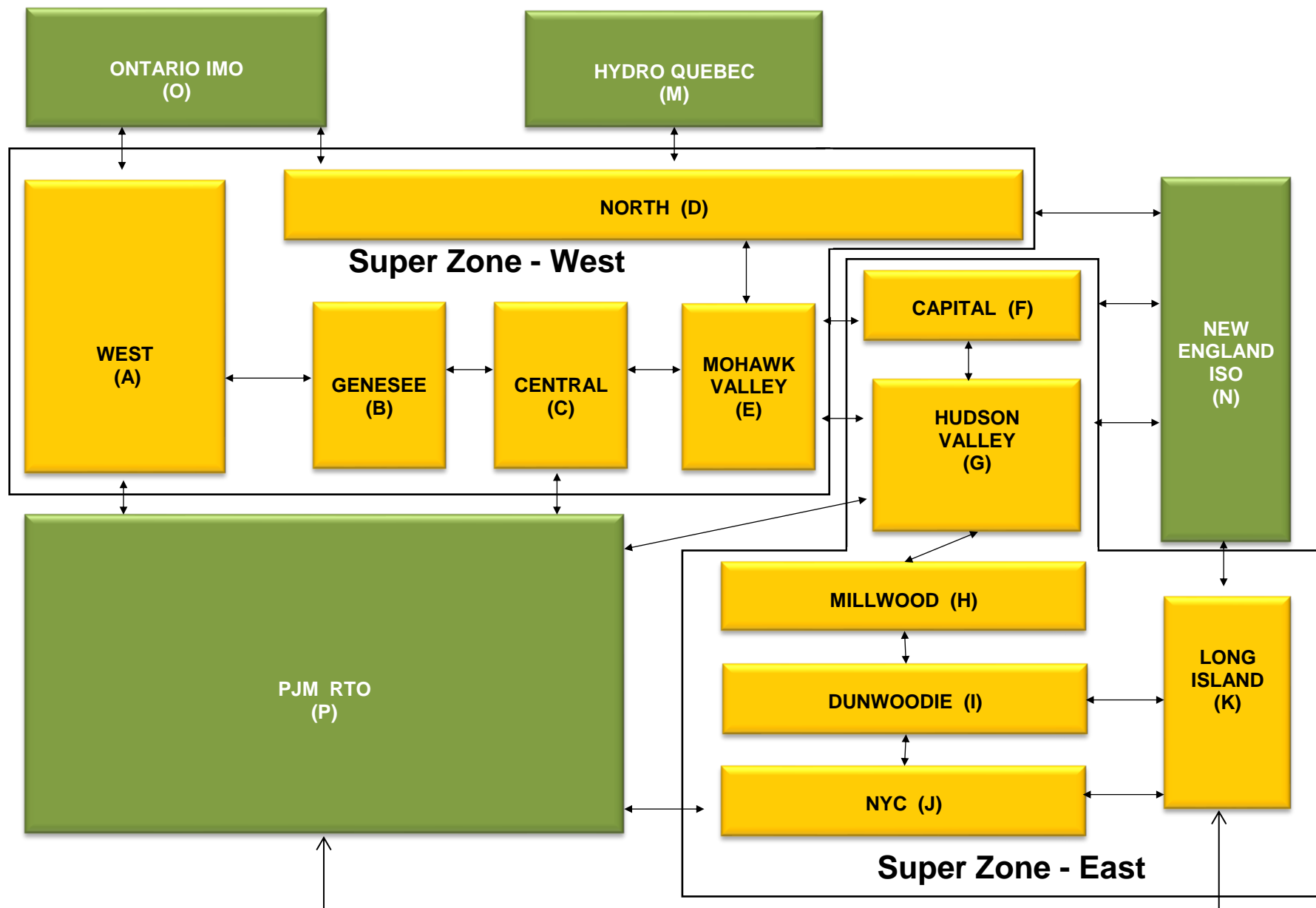
NYISO Average Daily DAM Load Bid Summary



Monthly Implied Heat Rate 2022-2023



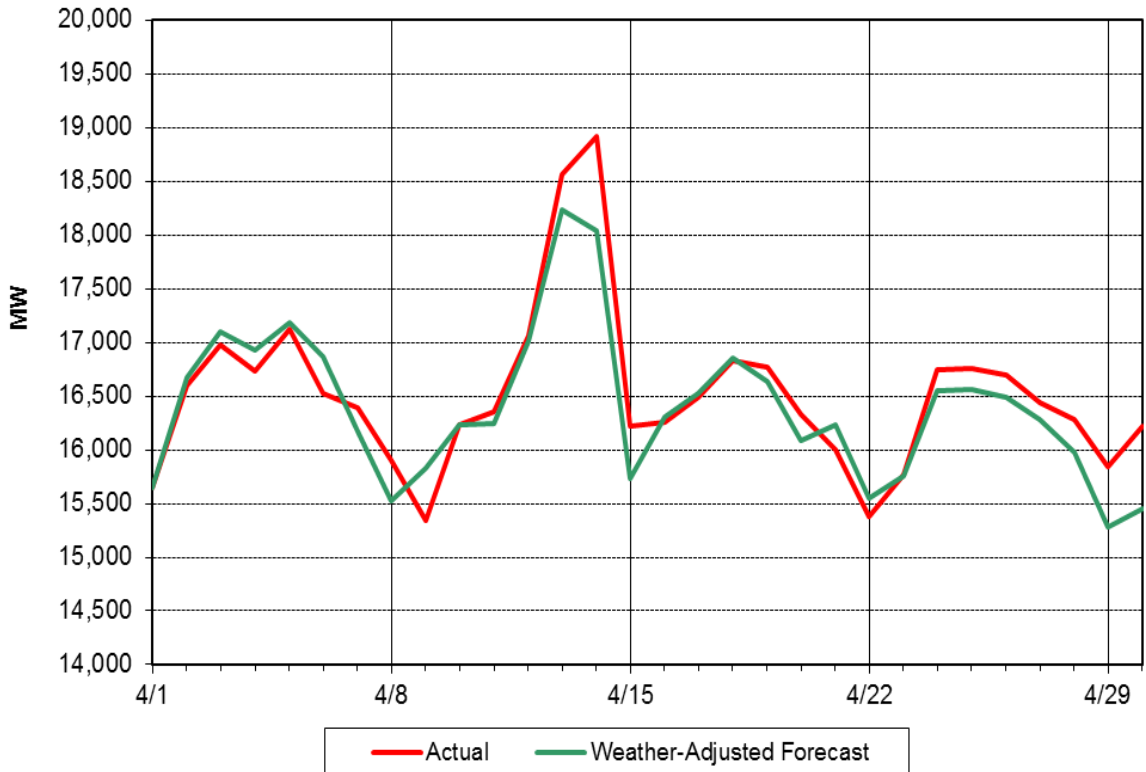
NYISO LBMP ZONES



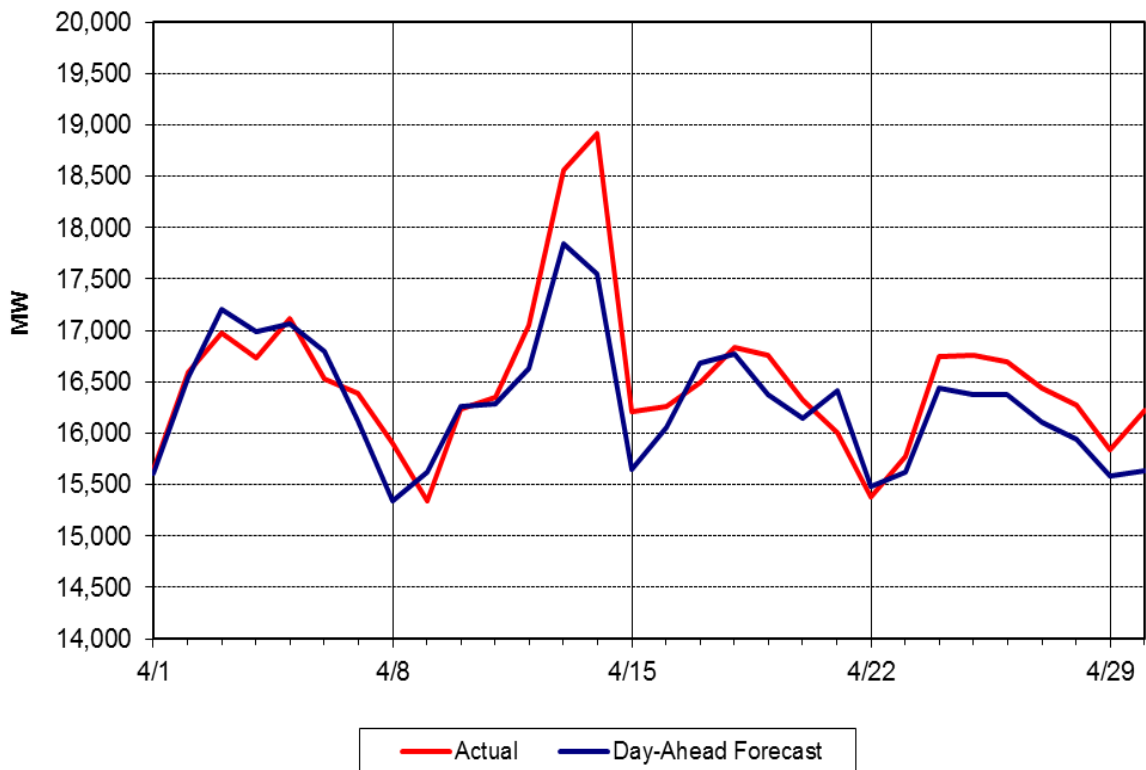
Billing Codes for Chart C

<u>Chart - C Category Name</u>	<u>Billing Code</u>	<u>Billing Category Name</u>
Bid Production Cost Guarantee Balancing	81203	Balancing NYISO Bid Production Cost Guarantee - Internal Units
Bid Production Cost Guarantee Balancing	81204	Balancing NYISO Bid Production Cost Guarantee - External Units
Bid Production Cost Guarantee Balancing	81205	Balancing NYISO Bid Production Cost Guarantee Expenditure due to Curtailed Imports
Bid Production Cost Guarantee Balancing	81208	Balancing NYISO Bid Production Cost Guarantee - Internal Units
Bid Production Cost Guarantee Balancing	81209	Balancing NYISO Bid Production Cost Guarantee - External Units
Bid Production Cost Guarantee Balancing	81213	Balancing NYISO Bid Production Cost Guarantee Expenditure due to Curtailed Imports
Bid Production Cost Guarantee DAM	81201	DAM NYISO Bid Production Cost Guarantee - Internal Units
Bid Production Cost Guarantee DAM	84001	EDRP/SCR Demand Response - Local
Bid Production Cost Guarantee DAM	84101	EDRP/SCR Demand Response - NYISO Wide
Bid Production Cost Guarantee DAM	81401	DAM Price Responsive Load Program
Bid Production Cost Guarantee DAM	81202	DAM NYISO Bid Production Cost Guarantee - External Units
Bid Production Cost Guarantee DAM	81206	DAM NYISO Bid Production Cost Guarantee - Internal Units
Bid Production Cost Guarantee DAM	81207	DAM NYISO Bid Production Cost Guarantee - External Units
Bid Production Cost Guarantee DAM Virtual	81501	DAM Virtual Bid Production Cost Guarantee
DAM Contract Balancing	81315	DAM Contract Balancing
DAM Contract Balancing	81317	DAM Contract Balancing
Local Reliability Balancing	81002	Balancing Local Reliability Bid Production Cost Guarantee
Local Reliability Balancing	83901	Margin Restoration (MOB) Revenue
Local Reliability DAM	81001	DAM Local Reliability Bid Production Cost Guarantee
NYISO Cost of Operations	80901	NYISO Cost Of Operations
NYISO Cost of Operations	80902	NYISO Cost Of Operations
NYISO Cost of Operations	83501	NYISO Cost Of Operations
NYISO Cost of Operations	83502	NYISO Cost Of Operations
Residuals Balancing	81302	Balancing Market Energy Residual
Residuals Balancing	81304	Balancing Market Loss Residual
Residuals Balancing	81305	Balancing Market Congestion Balancing
Residuals Balancing	81306	Emergency Energy Purchases
Residuals Balancing	81307	Emergency Energy Sales
Residuals Balancing	81309	Balancing Market Energy Residual
Residuals Balancing	81311	Balancing Market Loss Residual
Residuals Balancing	81312	Balancing Market Congestion Balancing
Residuals Balancing	81313	Emergency Energy Purchases
Residuals Balancing	81314	Emergency Energy Sales
Residuals DAM	81301	Day Ahead Market Energy Residual
Residuals DAM	81303	Day Ahead Market Loss Residual
Residuals DAM	81308	Day Ahead Market Energy Residual
Residuals DAM	81310	Day Ahead Market Loss Residual

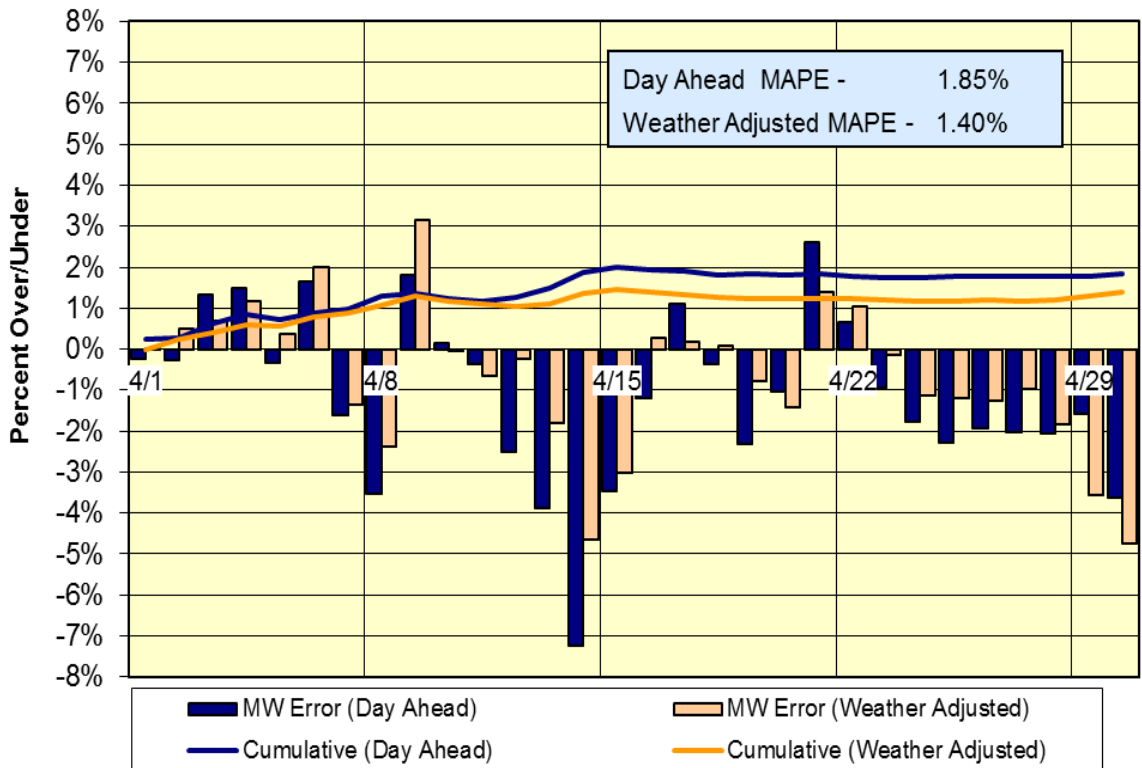
NYISO Daily Peak Load - April 2023
Actual vs. Weather-Adjusted Forecast



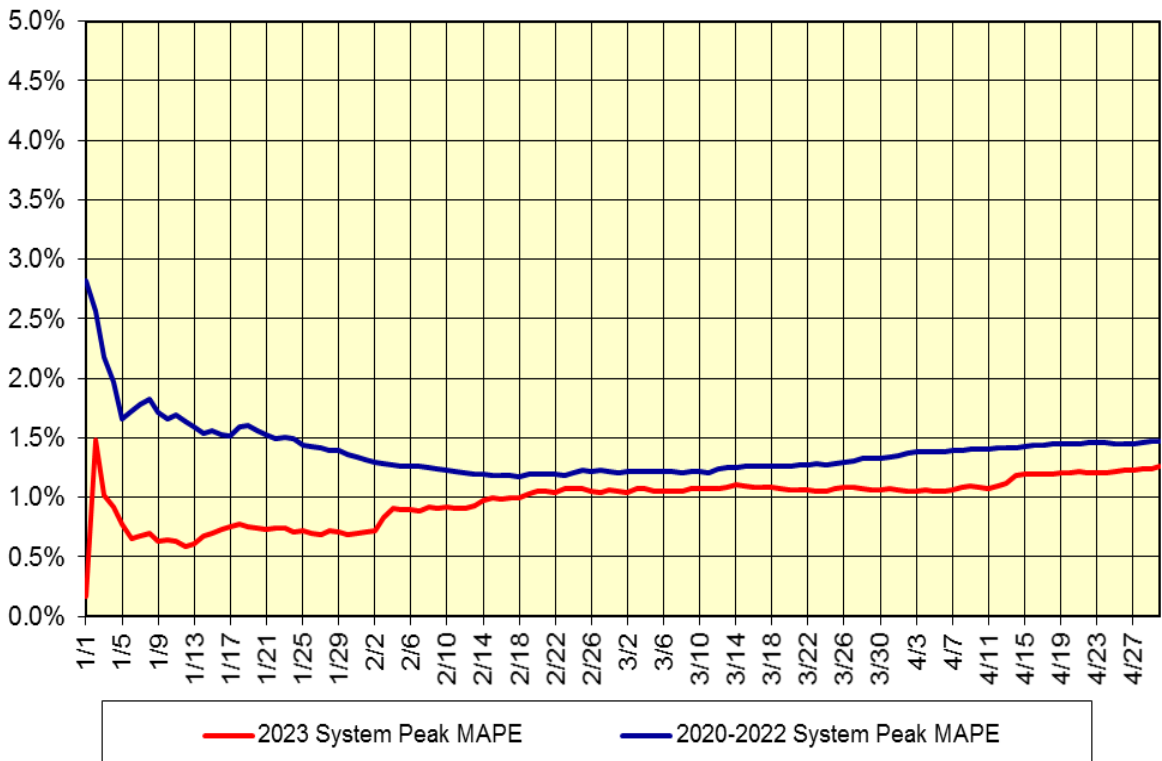
NYISO Daily Peak Load - April 2023
Actual vs. Forecast



Day Ahead Peak Forecast - April 2023 Percent Error - Actual & Weather-Adjusted



Day-Ahead Forecast Accuracy - Cumulative Performance 2023 Year-to-Date



Summary Description of Regulatory Filings, Investigations, Rulemakings and Related Orders in NYISO Matters – April 2023

Filing Date	Filing Summary	Docket	Order Summary	Order Date
07/12/2022	NYISO filing of tariff revisions in compliance with the Commission's Order No. 881 and Order No. 881A regarding the accuracy and transparency of electric transmission line ratings	ER22-2350-000	FERC order accepted in part and rejected in part the NYISO's compliance filing, subject to an effective date notice filing, a compliance filing within 60 days, and a further compliance filing by November 12, 2024.	04/20/2023
11/14/2022	NYISO compliance filing to fulfill the directives of FERC's June 17, 2022 order on the NYISO's Order No. 2222 compliance filing.	ER21-2460-003	FERC order accepted the NYISO's compliance filing to address FERC's June 17, 2022 order directives, subject to a compliance filing within 30 days, an informational compliance filing within 60 days, and a compliance filing no later than December 31, 2024.	04/20/2023
02/10/2023	NYISO Section 205 filing of proposed revisions to the NYISO OATT establishing rules by which Internal Controllable Lines (ICLs) will be evaluated for deliverability in the NYISO's interconnection process.	ER23-1098-000	FERC Order accepted the proposed revisions regarding deliverability rules for ICLs, effective February 13, 2023, as requested.	04/11/2023
02/15/2023	NYISO-National Grid joint Section 205 filing of an executed Amended & Restated Small Generator Interconnection Agreement (SA No. 2647) among NYISO, National Grid, and SunEast Fairway Solar for the Fairway Solar project.	ER23-1115-000	FERC order accepted the amended SGIA, effective February 3, 2023, as requested.	04/14/2023
02/21/2023	NYISO Section 205 filing of proposed tariff revisions to align the development, funding, and cost recovery provisions of certain Network Upgrade Facilities (NUFs) identified through the NYISO's Transmission Interconnection Procedures with the associated Public Policy Transmission Project selected in the NYISO's Public Policy Transmission Planning Process.	ER23-1151-000	FERC issued a delegated letter order accepting the NYISO's proposed tariff revisions, effective April 23, 2023.	04/05/2023
02/23/2023	NYISO Section 205 filing of an executed Amended and Restated Development Agreement with New York Transco for the New York Energy Solution project (SA 2510).	ER23-1168-000	FERC letter order accepted the Amended and Restated Development Agreement, effective January 19, 2023, as requested.	04/12/2023
03/13/2023	NYISO motion to intervene and comments on Hecate Grid Clermont 1 LLC's March 3, 2023 request for waiver of Sections 30.8.1 and 30.3.6 of Attachment X to the NYISO OATT.	ER23-1255-000	FERC order denied Hecate Grid Clermont 1's request for waiver of Sections 30.8.1 and 30.3.6 of Attachment X of the NYISO OATT.	04/07/2023

Filing Date	Filing Summary	Docket	Order Summary	Order Date
03/24/2023	NYISO compliance filing as directed in FERC's February 23, 2023 order, of proposed revisions to the OATT and Services Tariff to incorporate by reference NAESB WEQ standards required by FERC's Order 676-J.	ER22-1262-001	FERC letter order accepted the NYISO's filing to comply with FERC's February 23, 2023 directives regarding the cybersecurity and parallel flow visualization related requirements of Order No. 676-J, effective February 23, 2023, as requested.	04/26/2023
04/04/2023	NYISO submitted a copy of FERC Form No. 715 Annual Transmission Planning and Evaluation Report to the PSC RAO following submittal to FERC.	Copy of FERC form 715		
04/05/2023	NYISO filed, on behalf of Niagara Mohawk, a Section 205 Engineering & Procurement agreement (SA 2771) between Niagara Mohawk and Horseshoe Solar Energy for the Horseshoe Solar Project.	ER23-1572-000		
04/05/2023	NYISO and NYSEG jointly filed an unexecuted Engineering, Procurement, and Construction Agreement among NYISO, NYSEG, ELP Ticonderoga Solar, and National Grid (SA No. 2764) in connection with the Ticonderoga Solar project (NYISO Queue No. 734).	ER23-1573-000		
04/14/2023	NYISO submitted FERC Form 1 RE: annual FERC financial compliance reporting requirement.	FERC Form 1		
04/14/2023	Filing of loan amendment and verified report of closing costs related to transition of the interest rate index from LIBOR to SOFR	PSC Case No. 05-E-0270		
04/14/2023	Filing of loan amendment and verified report of closing costs related to transition of the interest rate index from LIBOR to SOFR	PSC Case No. 12-E-0168		
04/21/2023	NYISO annual report of total MW-hours of transmission service in interstate commerce for 2022 in compliance with FERC Reporting Requirement No. 582	FERC reporting requirement no. 582		
04/21/2023	Submission of the NYISO's Q1 2023 Electronic Quarterly Report.	ER02-2001-000		
04/24/2023	NYISO filing of its Common Performance Metrics Report for ISOs/RTOs for the New York Control Area for 2023 in Docket No. AD19-16-000.	AD19-16-000		

Filing Date	Filing Summary	Docket	Order Summary	Order Date
04/27/2023	NYISO submitted comments to the NYSRC regarding Proposed Reliability Rule #151, Large Inverter Based Resources.	NYSRC PRR #151		
04/28/2023	NYISO-National Grid joint Section 205 filing of an executed Amended & Restated Small Generator Interconnection Agreement (SA No. 2638) among NYISO, National Grid, and SunEast Hilltop Solar for the Hilltop Solar project.	ER23-1758-000		