

Monthly Report

A Report by the
New York Independent System Operator

January 2020

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January 2020 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 February 10, 2020.

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January 2020 Operations Performance Highlights

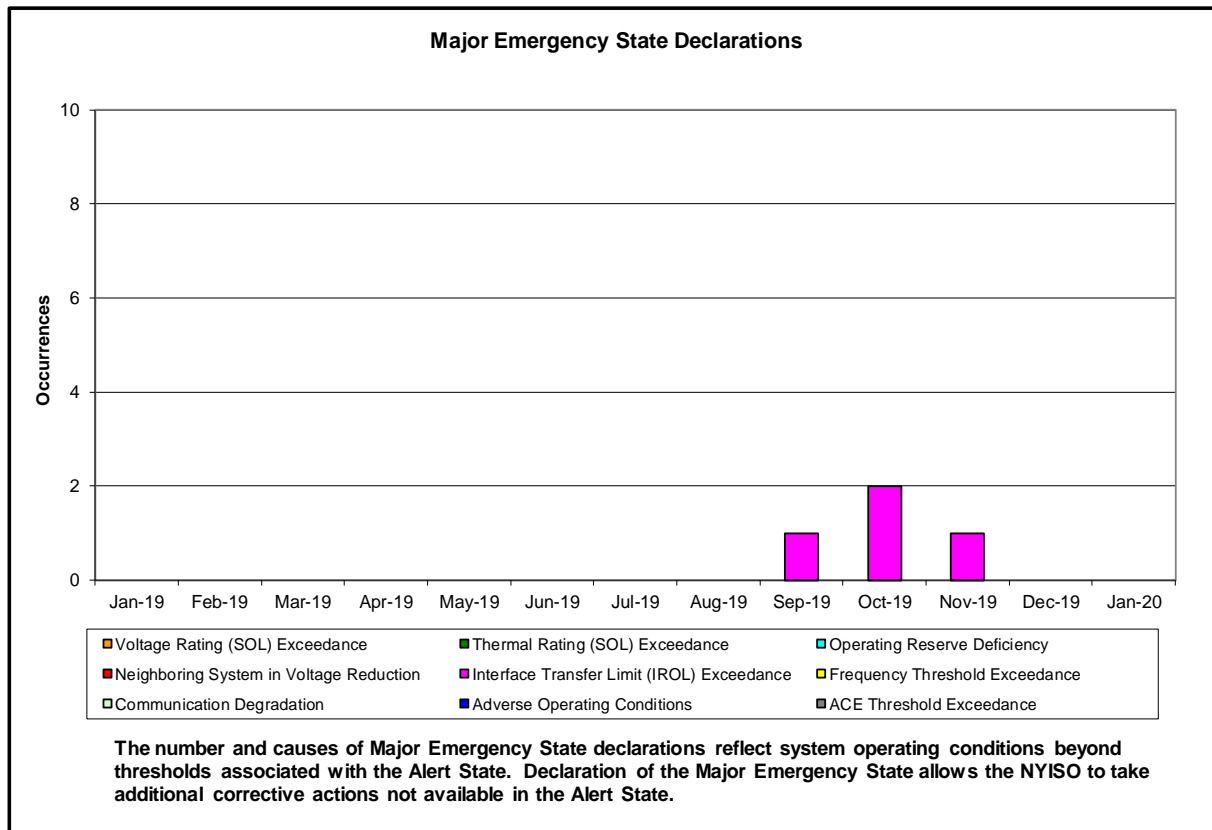
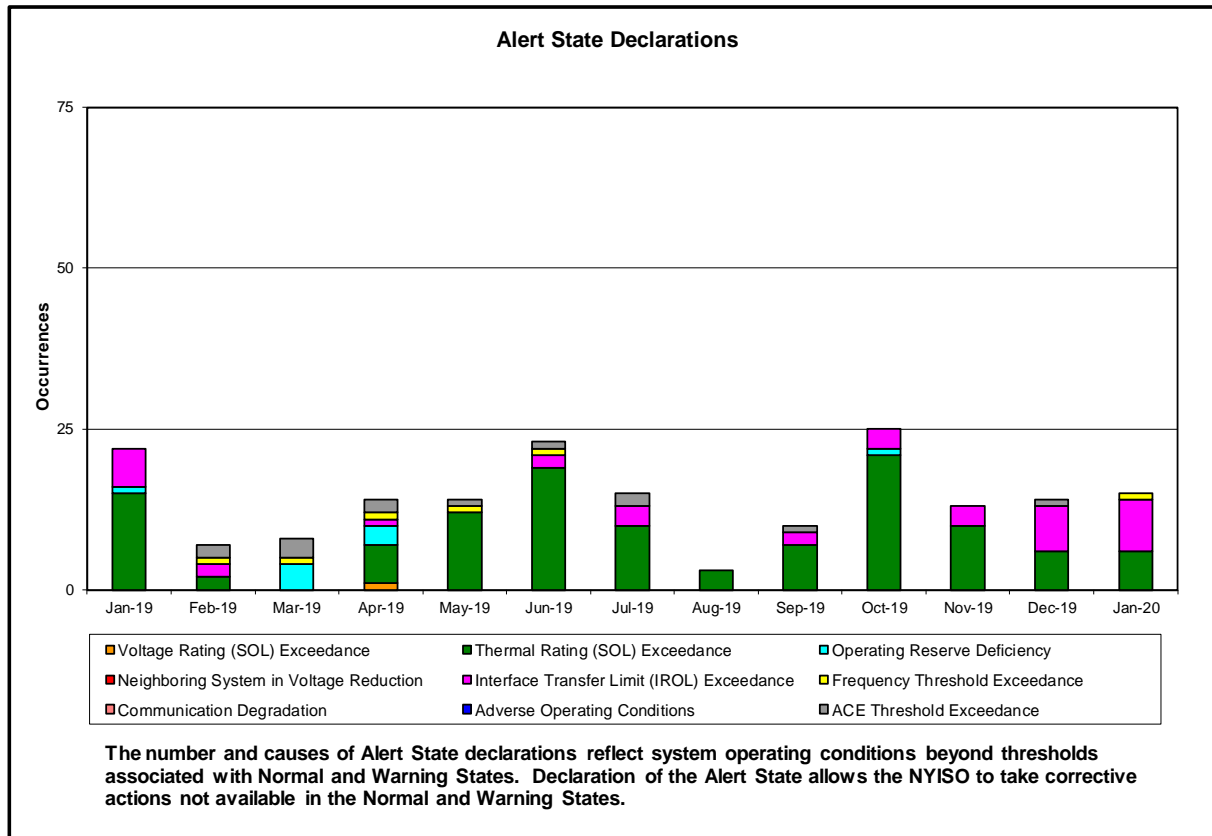
- Peak load of 21,895 MW occurred on 01/20/2020 HB 18
- All-time winter capability period peak load of 25,738 MW occurred on 1/7/2014 HB 18
- 0 hours of Thunder Storm Alerts were declared
- 6 hours of NERC TLR level 3 curtailment
- NYISO achieved a wind energy record of 1,748MW on 01/11/2020 HB09 providing 11% of the state's electrical demand in that hour.
- The following table identifies the estimated production cost savings associated with the Broader Regional Market initiatives.

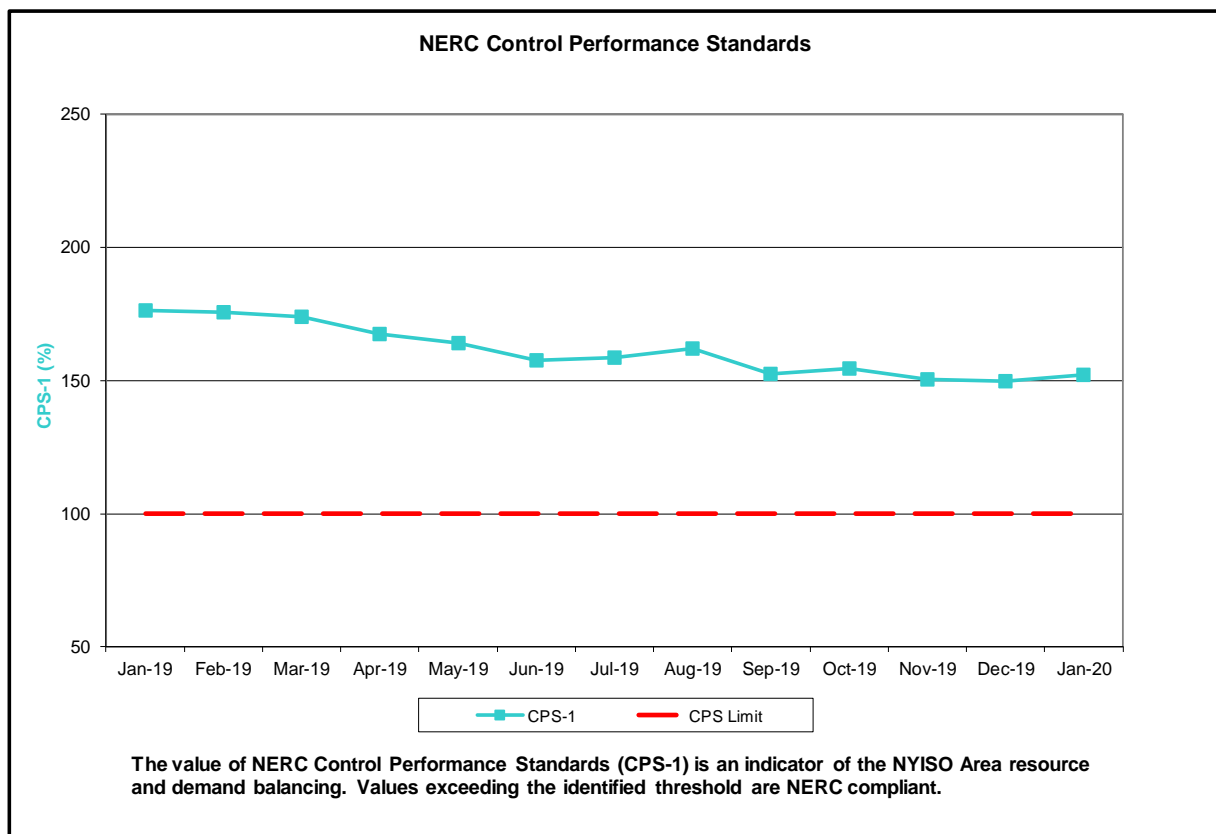
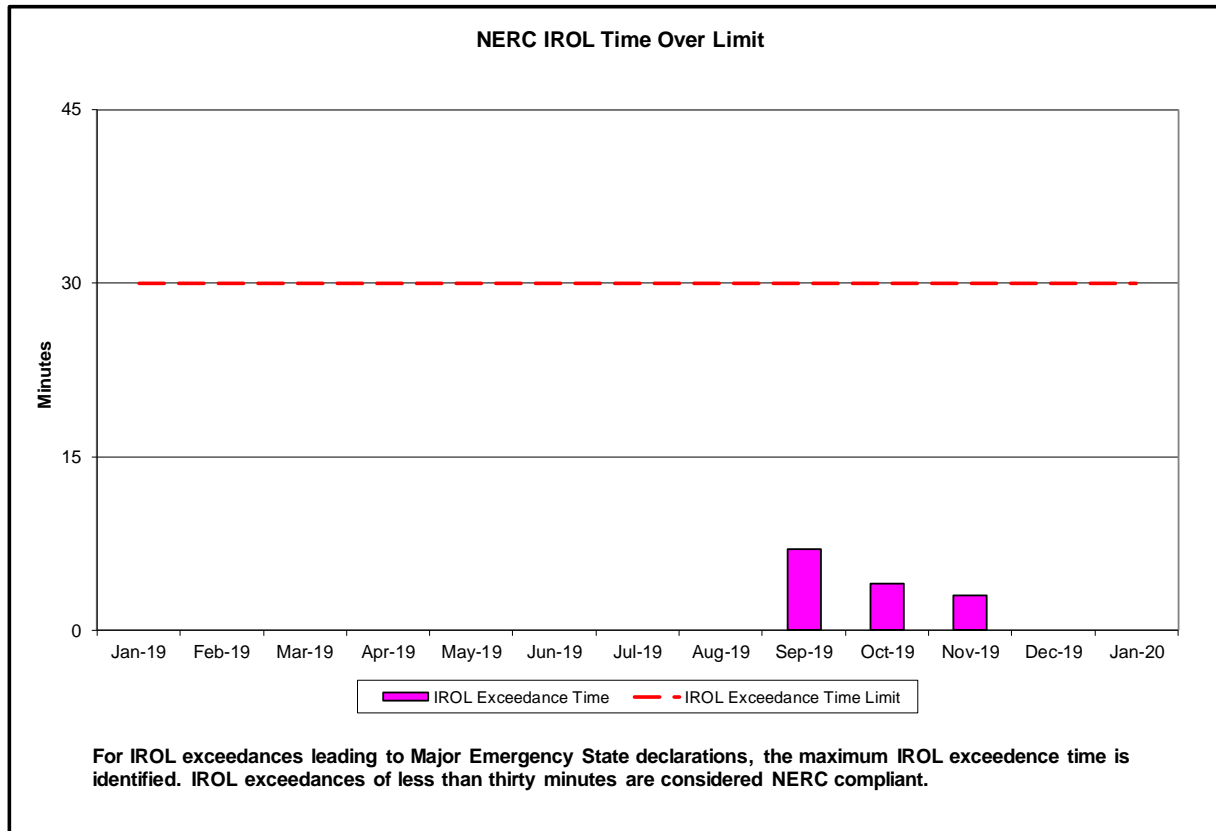
	Current Month Value (\$M)	Year-to-Date Value (\$M)
NY Savings from PJM-NY Congestion Coordination	\$2.49	\$2.49
NY Savings from PJM-NY Coordinated Transaction Scheduling	(\$0.03)	(\$0.03)
NY Savings from NE-NY Coordinated Transaction Scheduling	(\$0.12)	(\$0.12)
Total NY Savings	\$2.34	\$2.34
Regional Savings from PJM-NY Coordinated Transaction Scheduling	\$0.20	\$0.20
Regional Savings from NE-NY Coordinated Transaction Scheduling	\$0.02	\$0.02
Total Regional Savings	\$0.22	\$0.22

- Statewide uplift cost monthly average was (\$0.22)/MWh
- The following table identifies the Monthly ICAP spot market prices and the price delta.

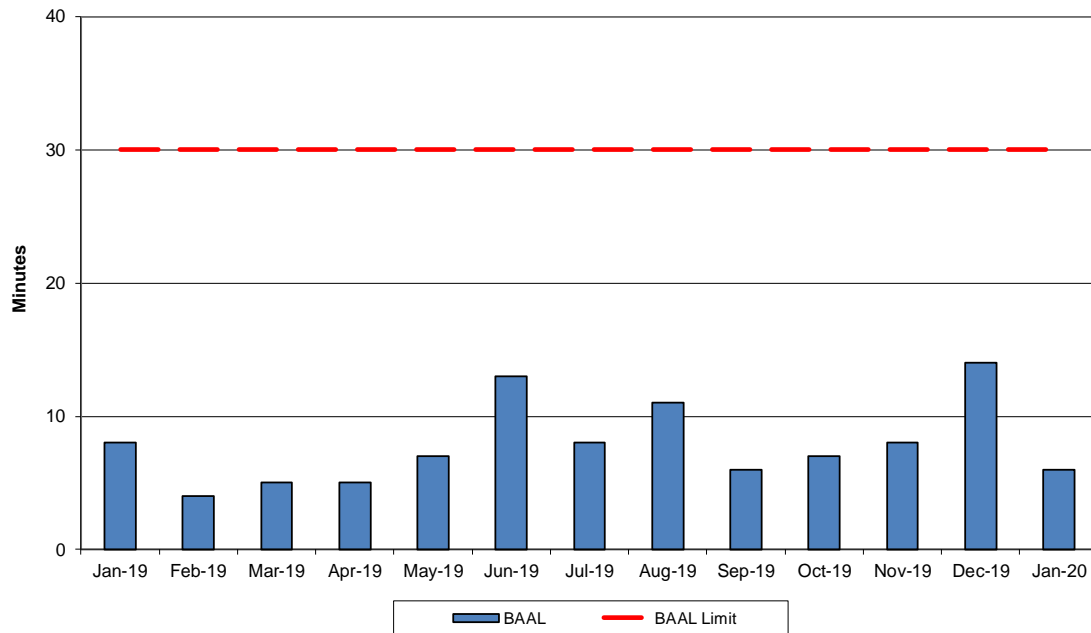
Spot Auction Price Results	NYCA	Lower Hudson Valley Zones	New York City Zone	Long Island Zone
February 2020 Spot Price	\$0.01	\$0.01	\$3.71	\$0.01
January 2020 Spot Price	\$0.09	\$0.09	\$3.71	\$0.09
Delta	(\$0.08)	(\$0.08)	\$0.00	(\$0.08)

Reliability Performance Metrics



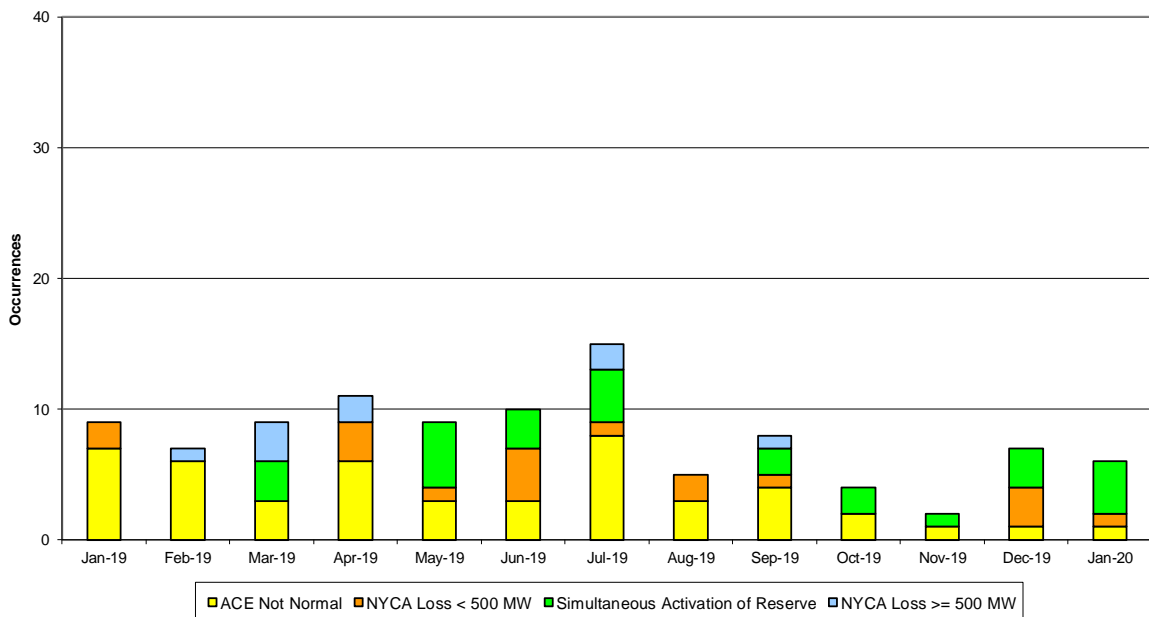


NERC Balancing Authority ACE Limit Standard



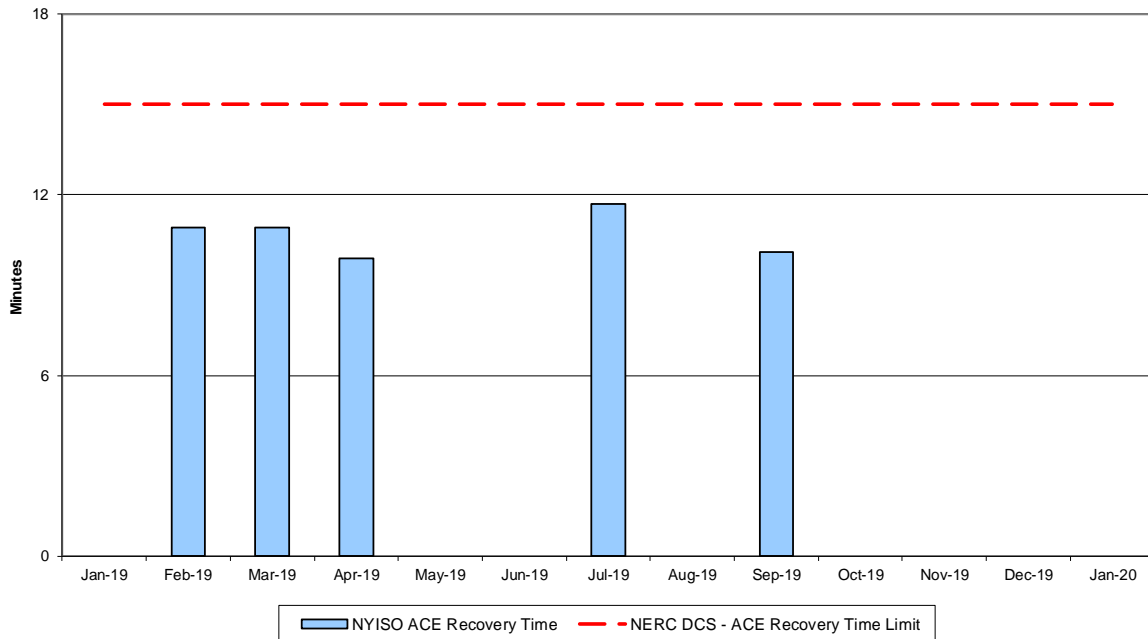
The amount of time the clock-minute average ACE exceeds the clock-minute Balancing Authority ACE Limit (BAAL) is an indicator of the NYISO Area resource and demand balancing. The maximum BAAL exceedance time is identified. BAAL exceedances of less than 30 consecutive clock-minutes are NERC compliant.

Reserve Activations



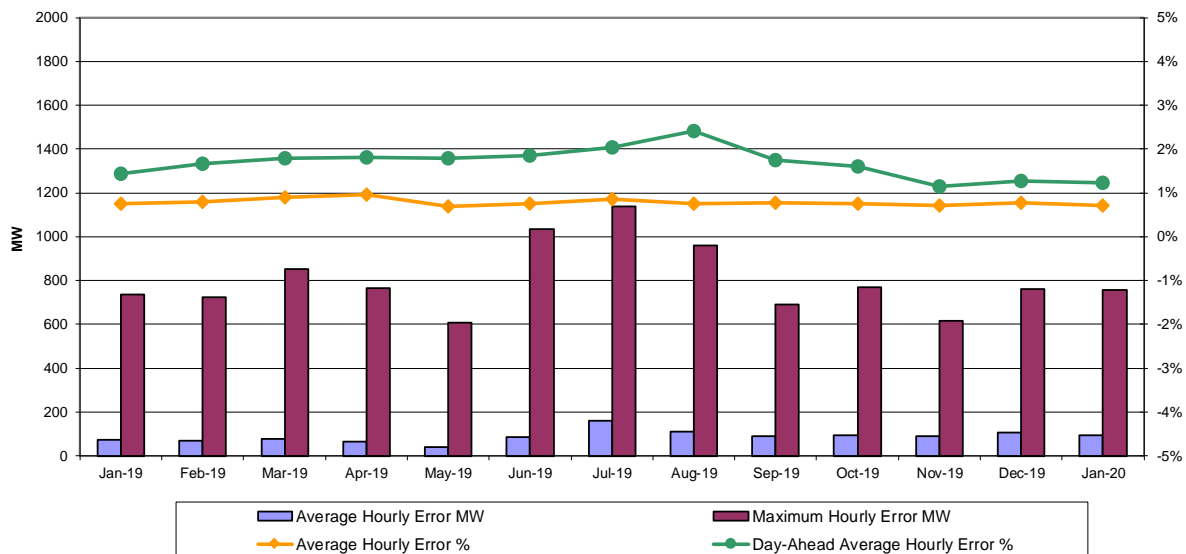
NYISO Reserve Activations are indicators of the need to respond to unexpected operational conditions within the NYISO Area or to assist a neighboring Area (Simultaneous Activation of Reserves) by activating an immediate resource and demand balancing operation.

DCS Event Time to ACE Recovery



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

Load Forecast Performance

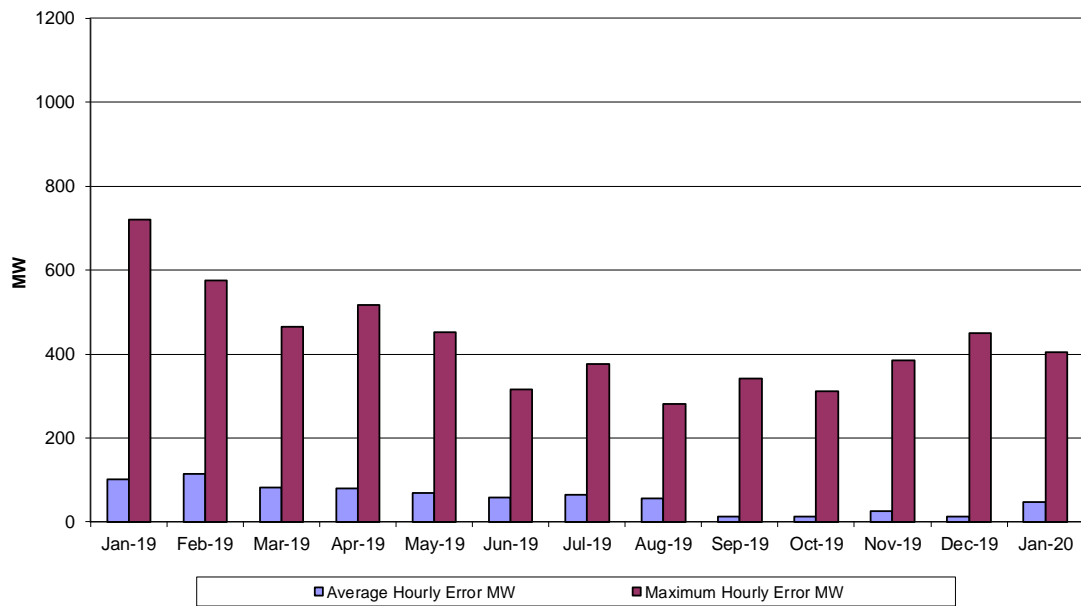


Hourly Error MW - Absolute value of the difference between the hourly average actual load demand and the average hour ahead forecast load demand.

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

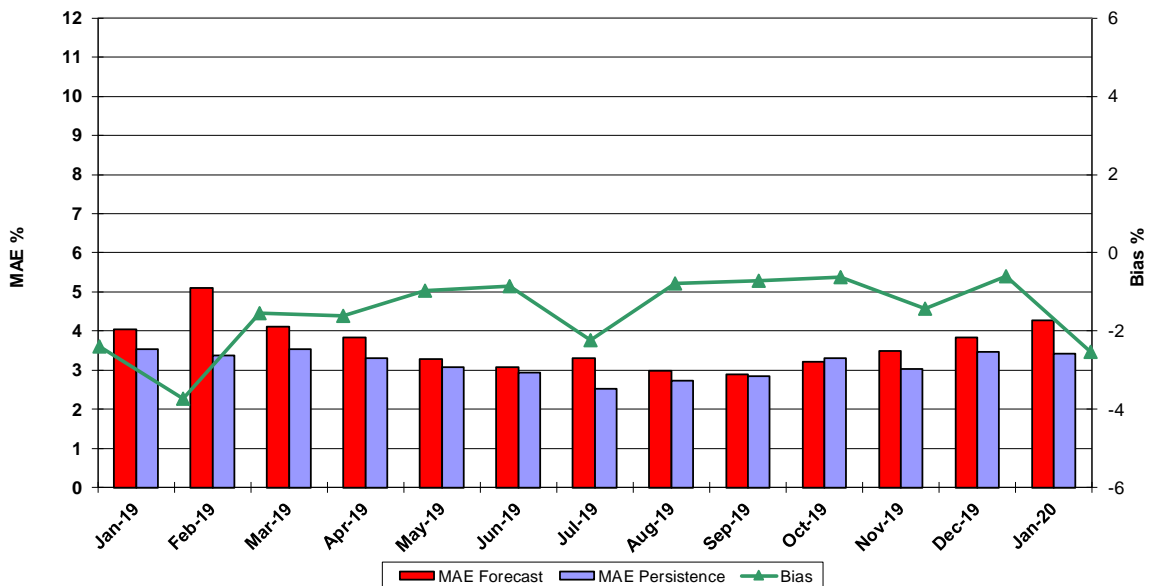
Day-Ahead Average Hourly Error % - Average across all hours of the month of the absolute value of the difference between actual load demand and the Day-Ahead forecast load demand, divided by the actual load demand.

Wind Forecast Performance Hour Ahead MW Error

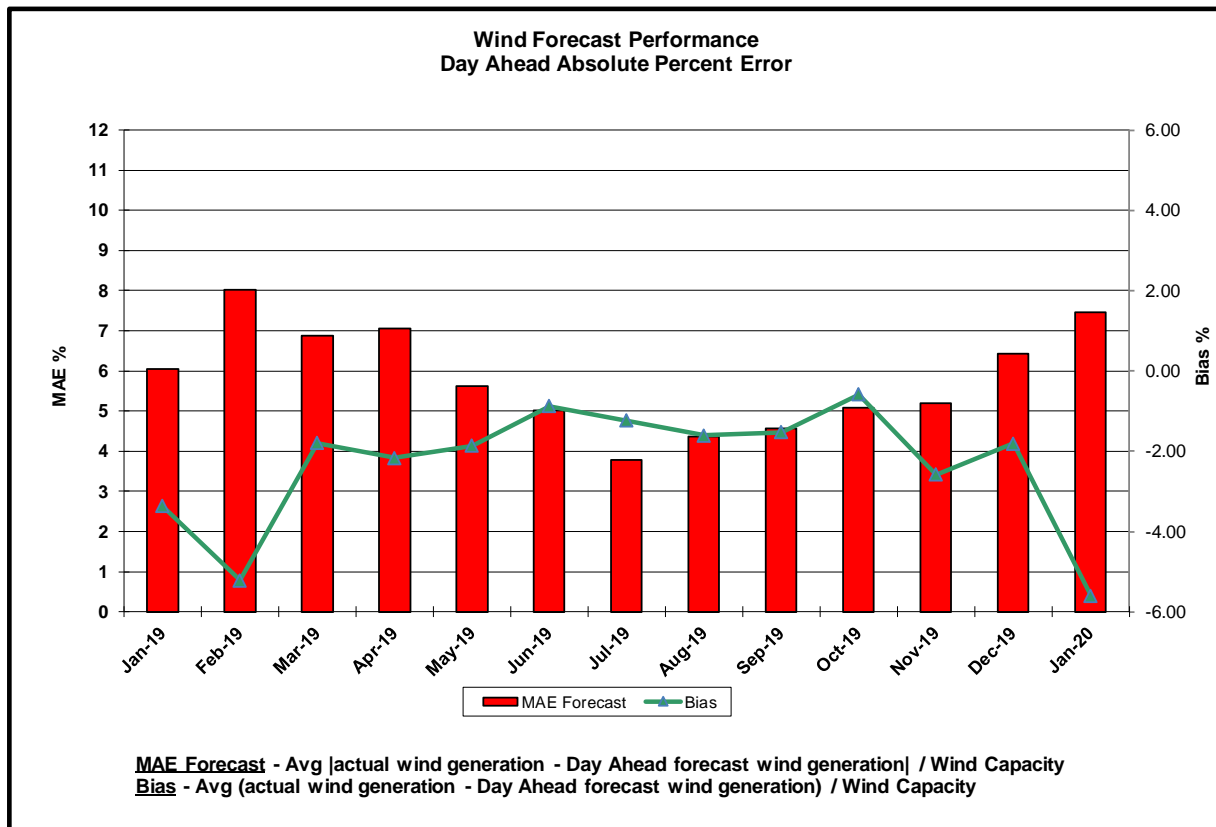
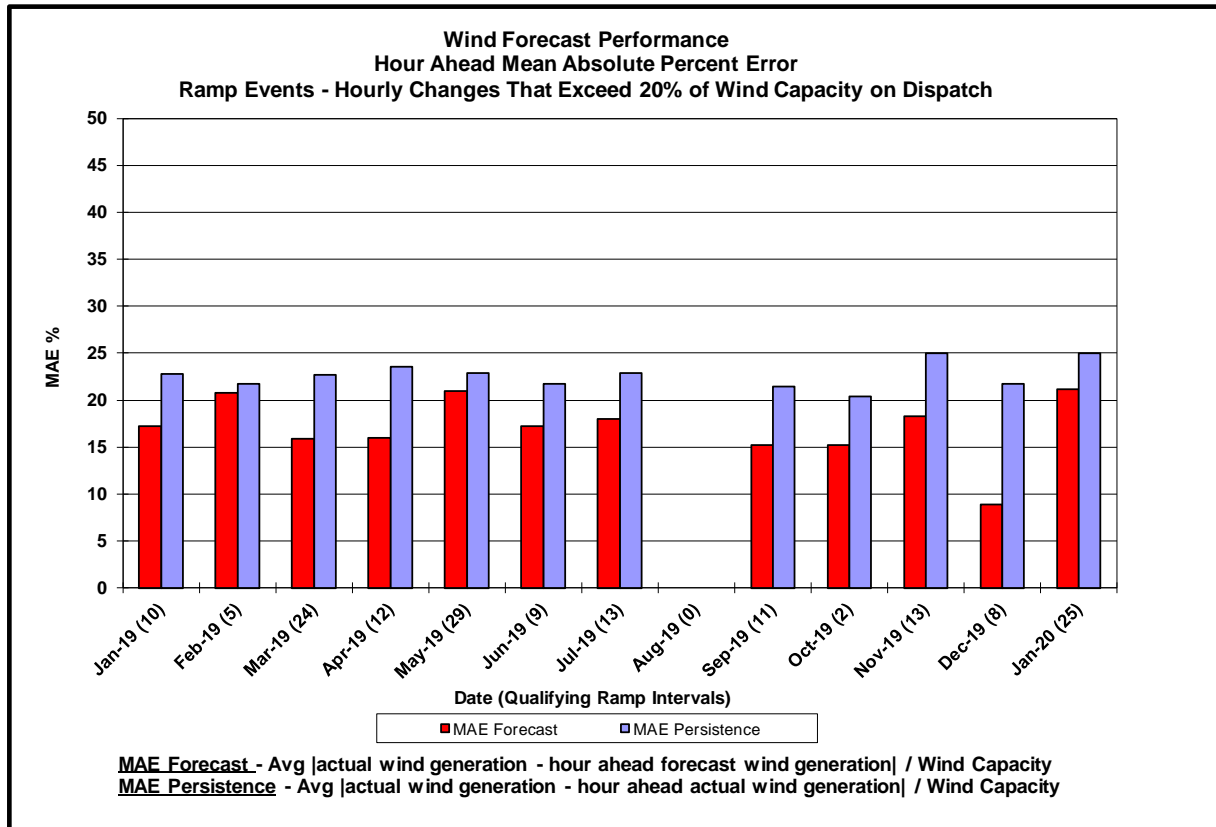


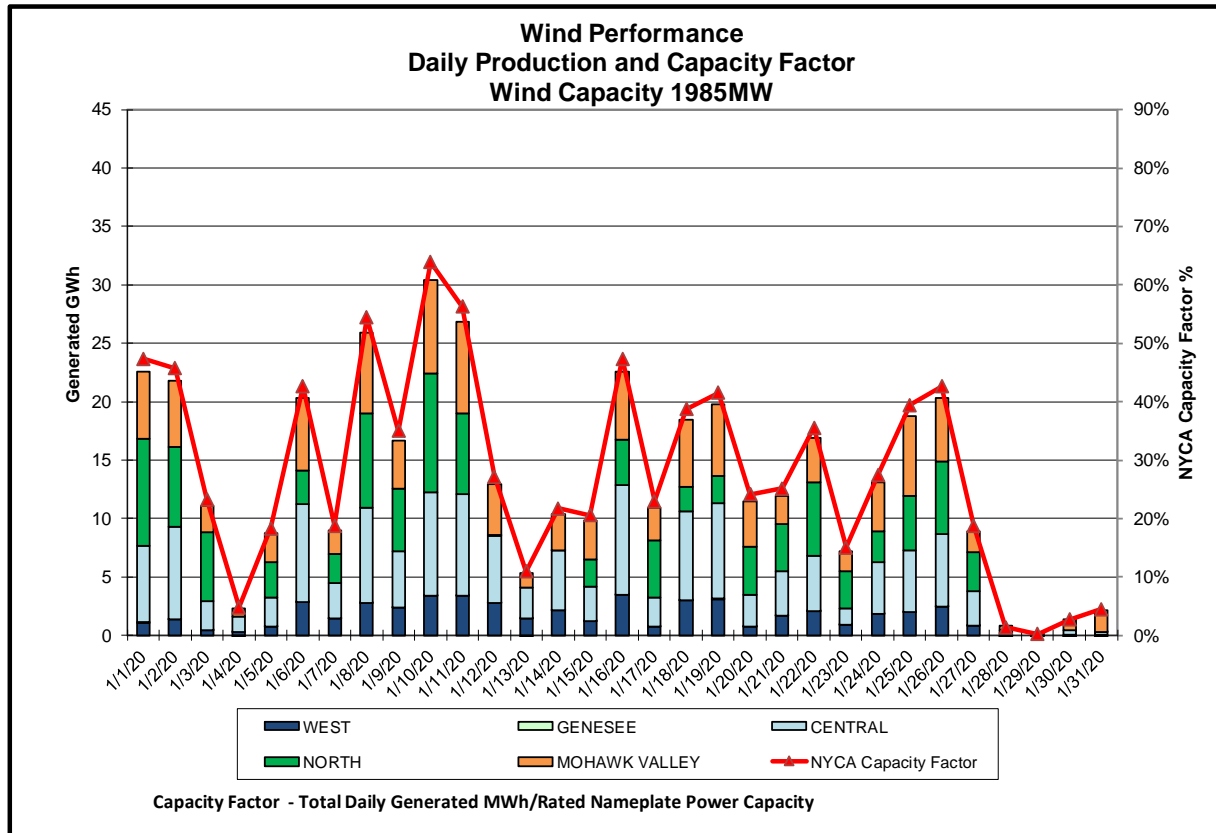
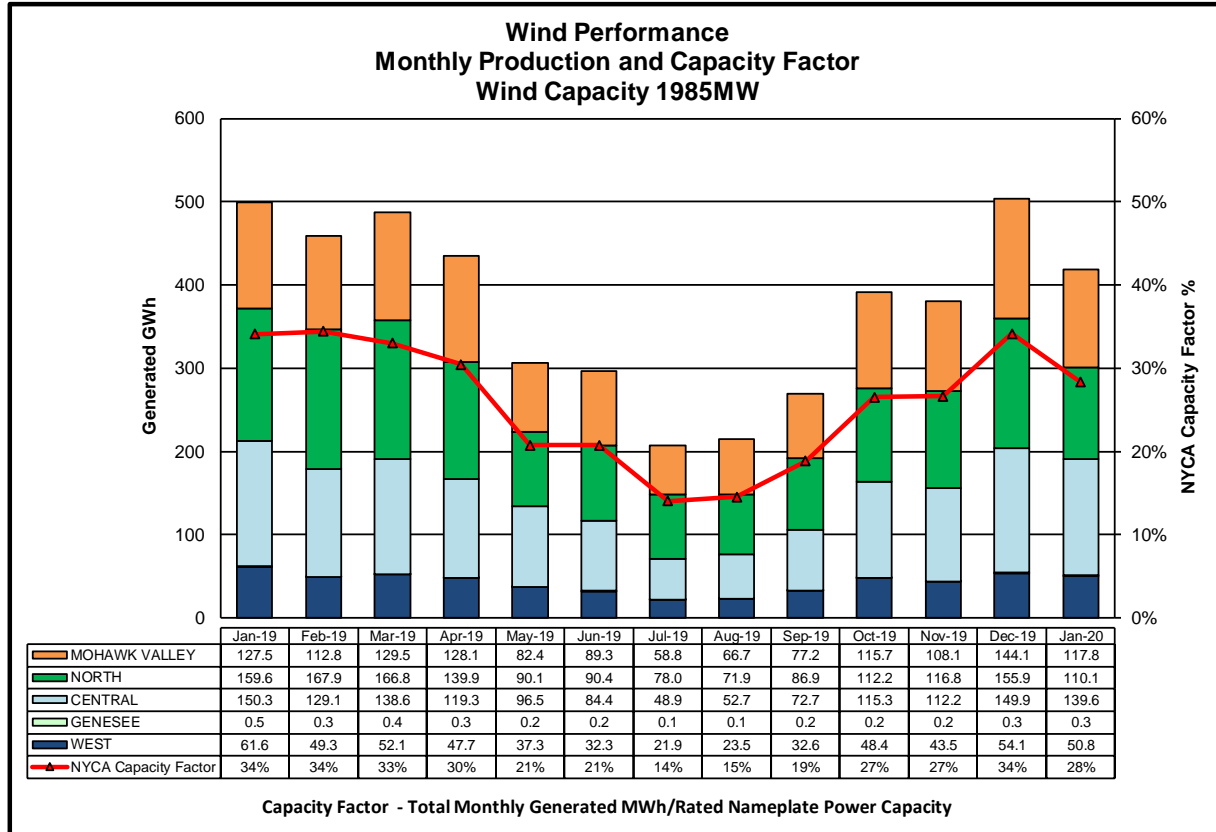
Hourly Error MW - Absolute value of the difference between the hourly average actual wind generation and the average hour ahead forecast wind generation.

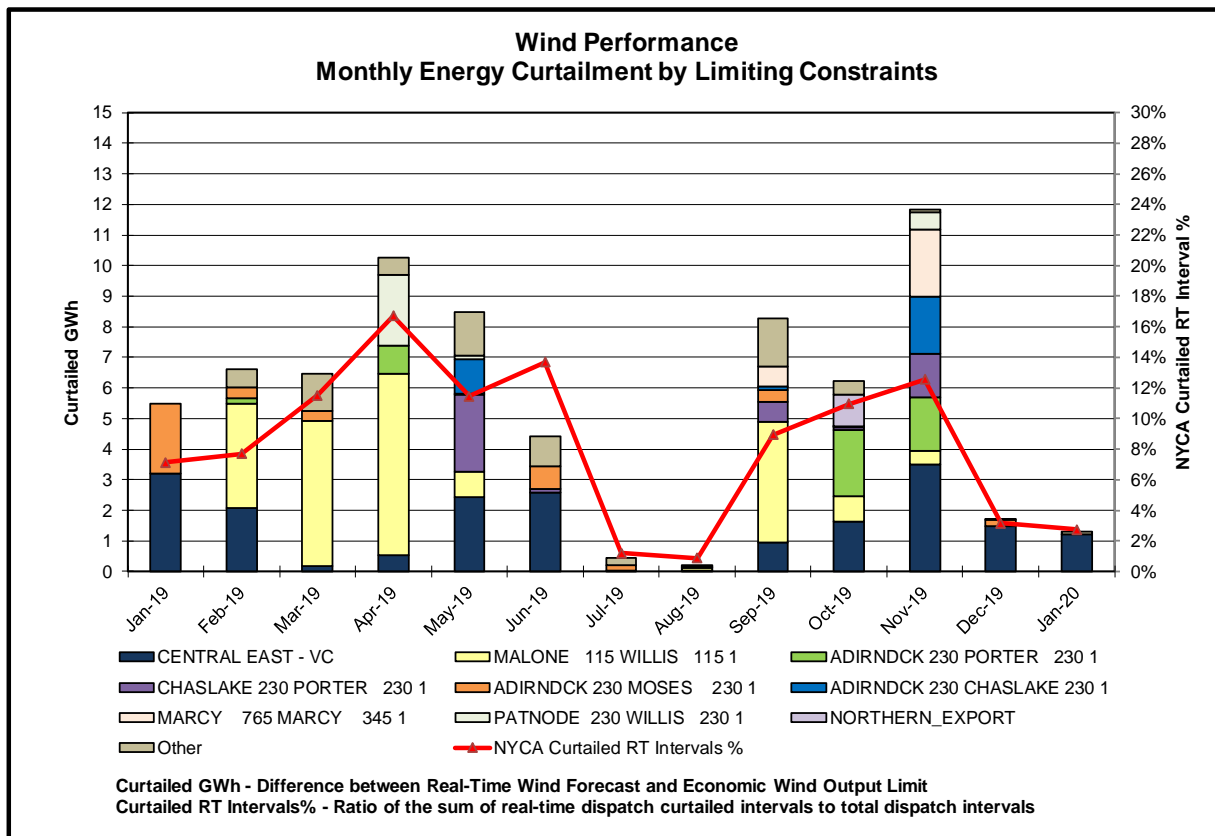
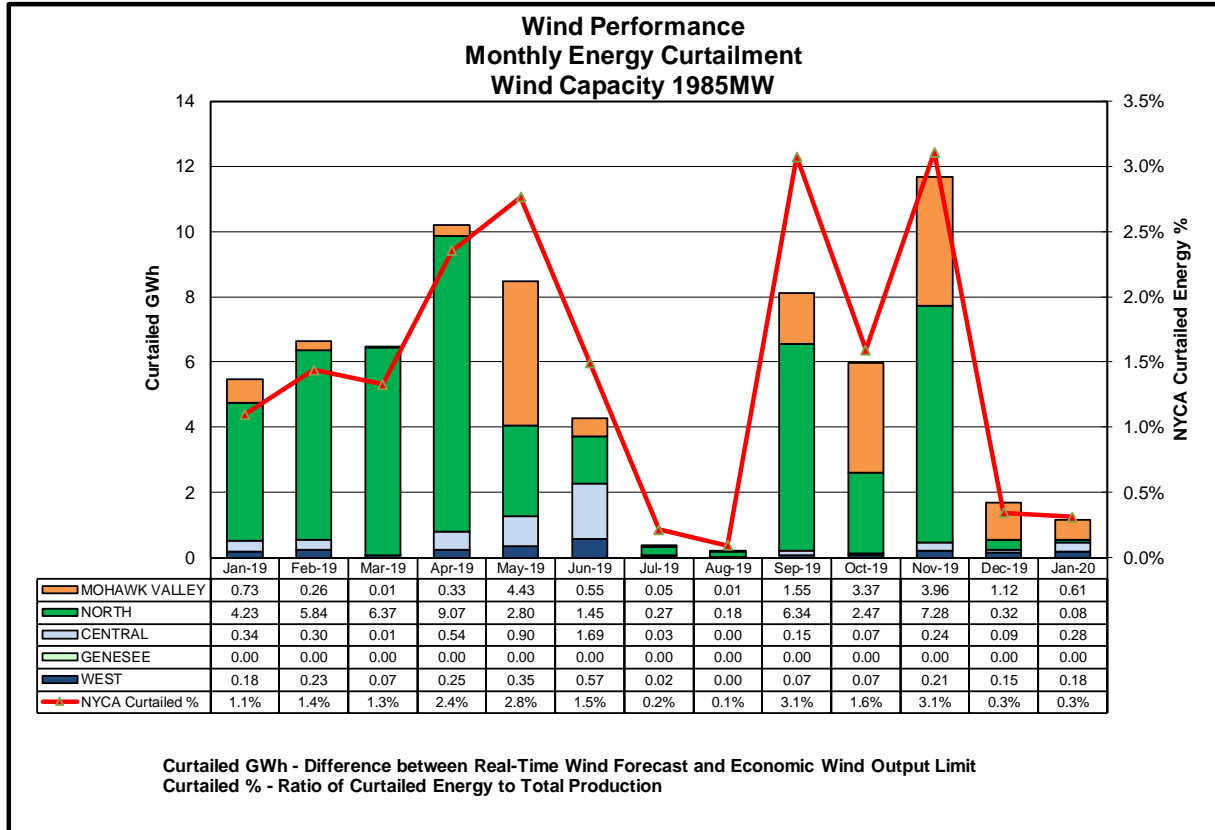
Wind Forecast Performance Hour Ahead Percent Error

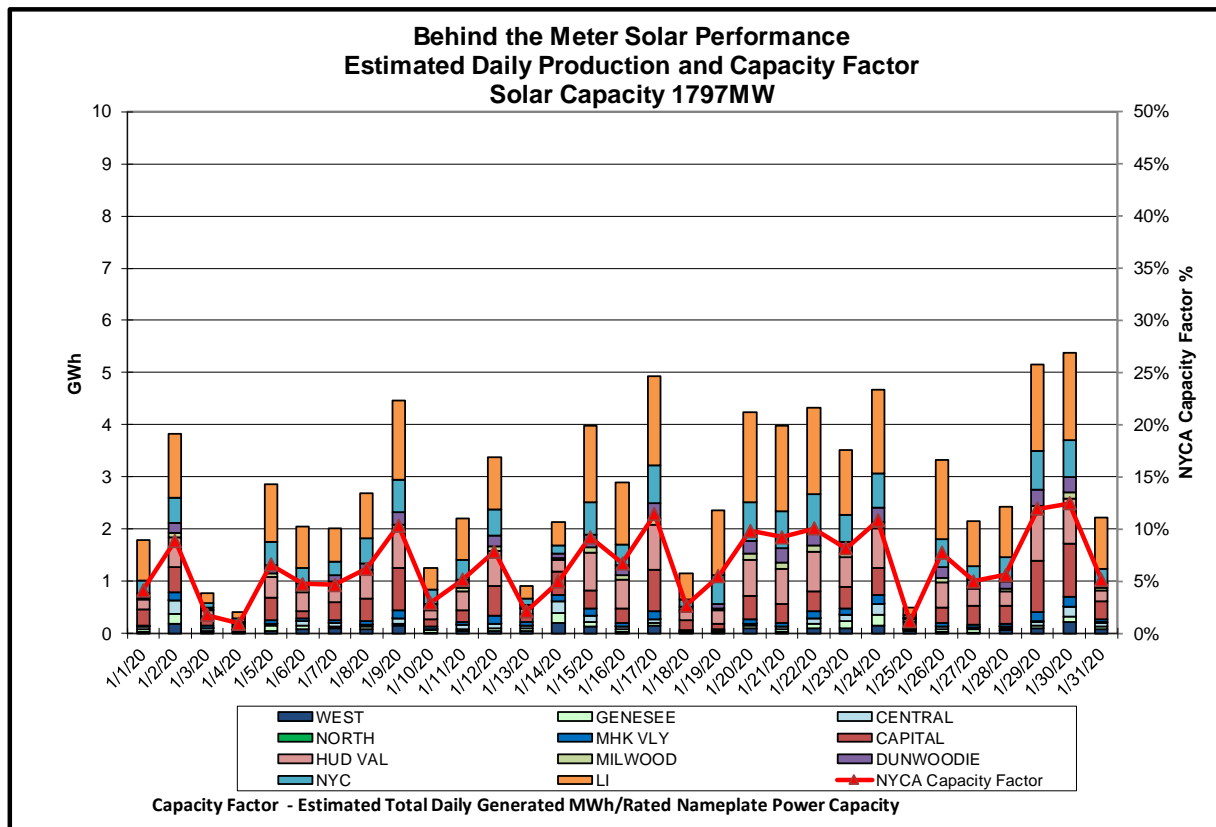
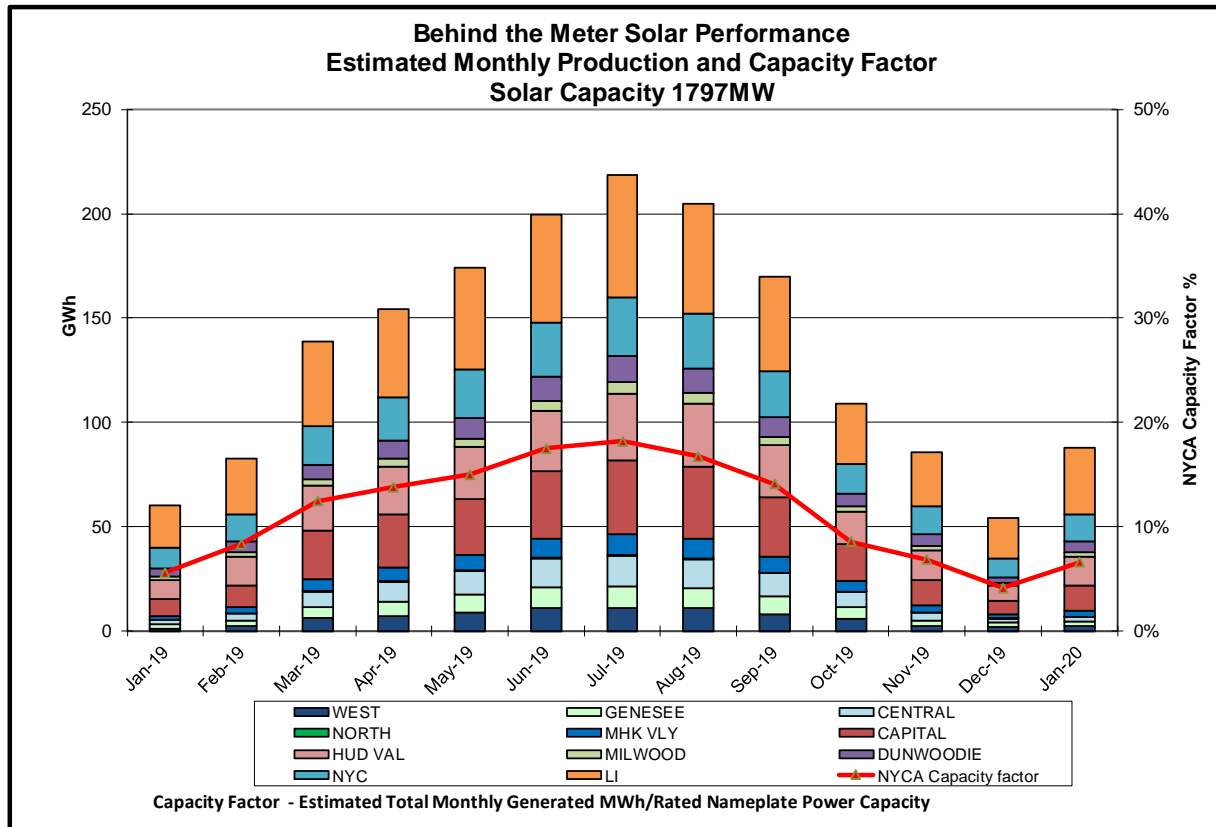


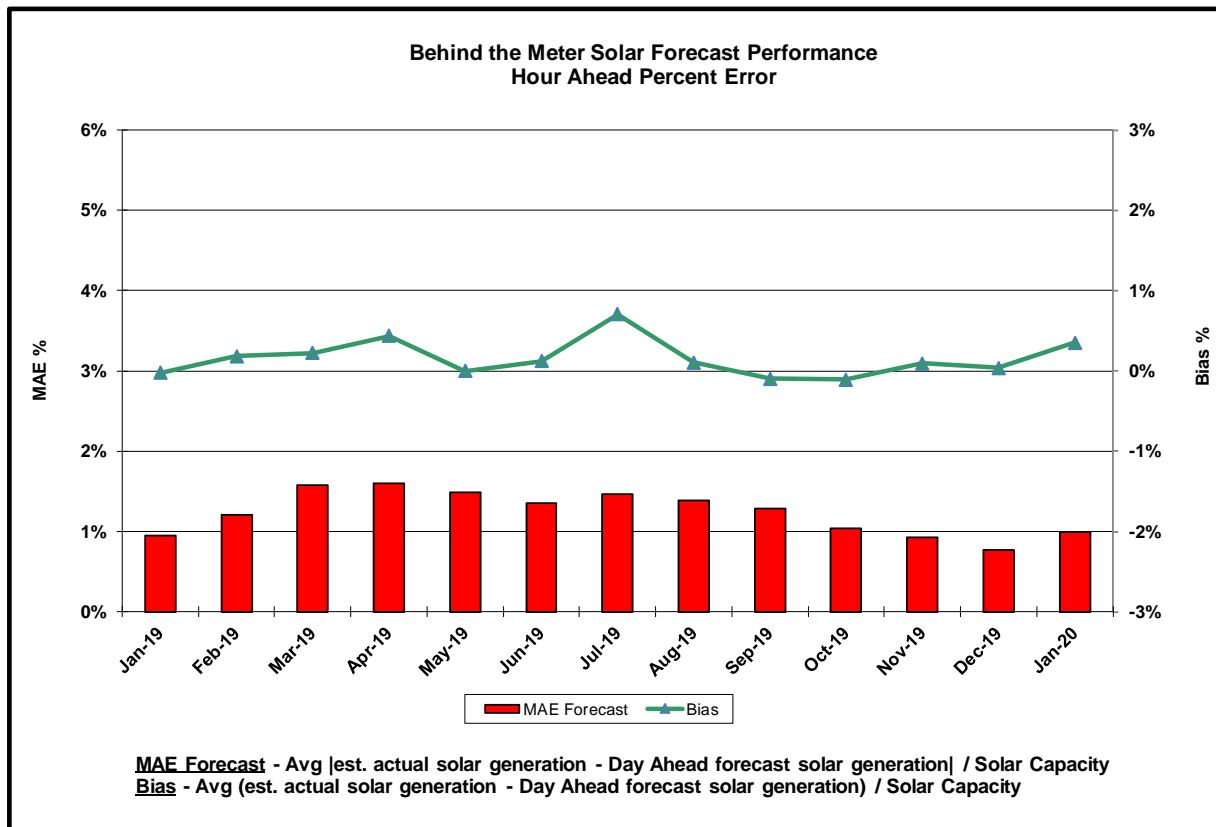
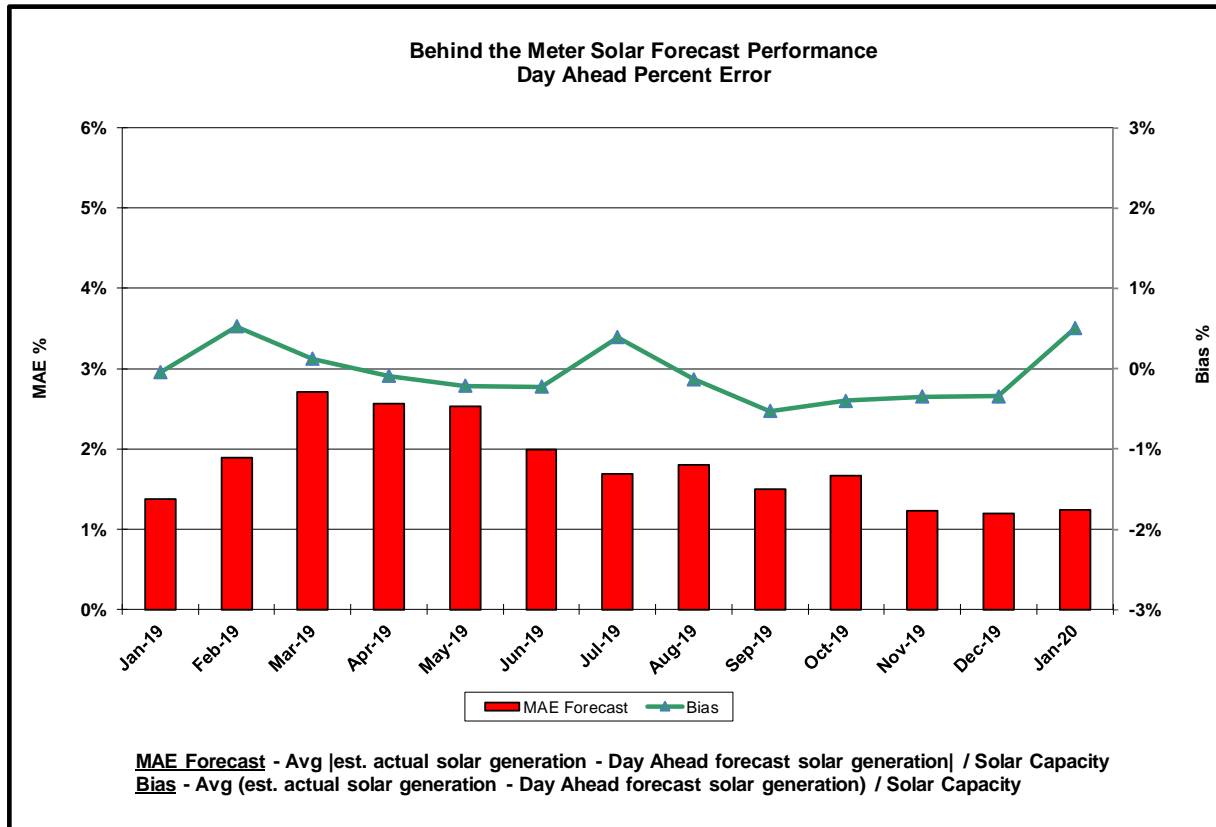
MAE Forecast - Avg |actual wind generation - hour ahead forecast wind generation| / Wind Capacity
MAE Persistence - Avg |actual wind generation - hour ahead actual wind generation| / Wind Capacity
Bias - Avg (actual wind generation - hour ahead forecast wind generation) / Wind Capacity

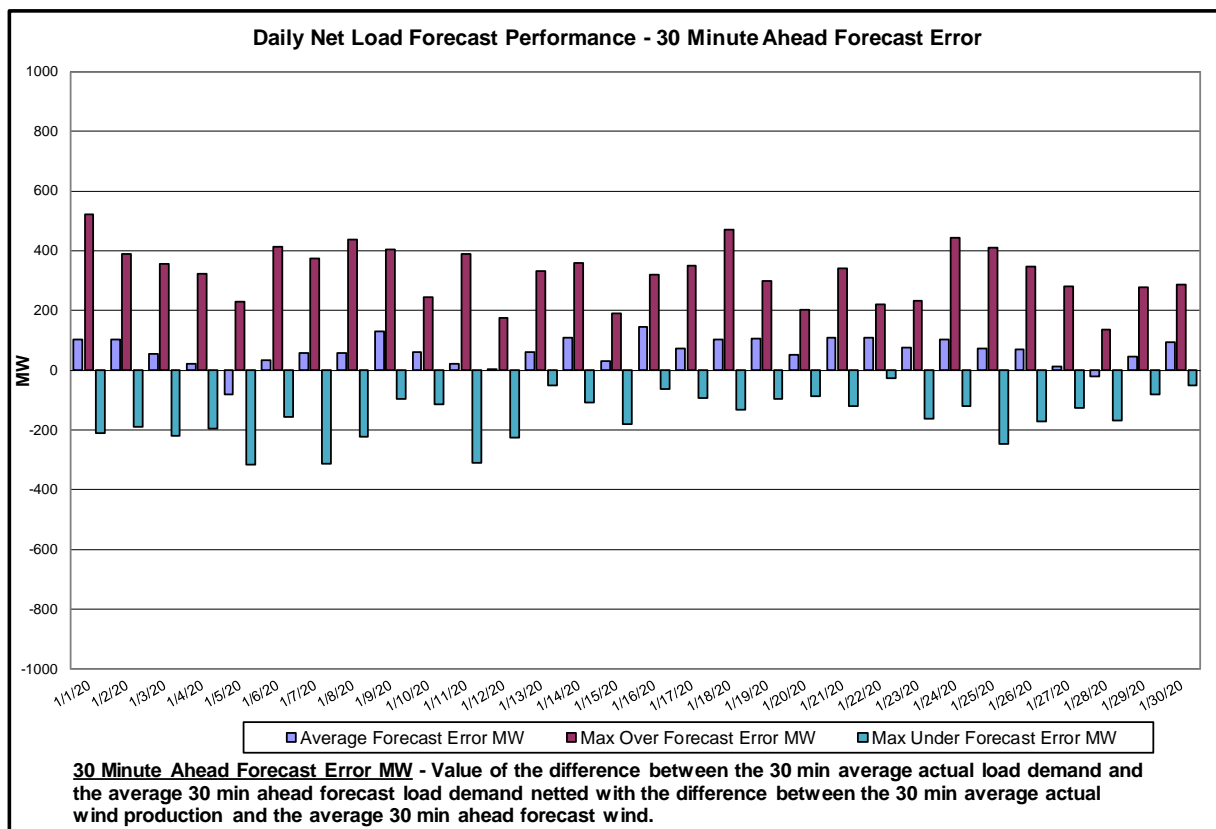
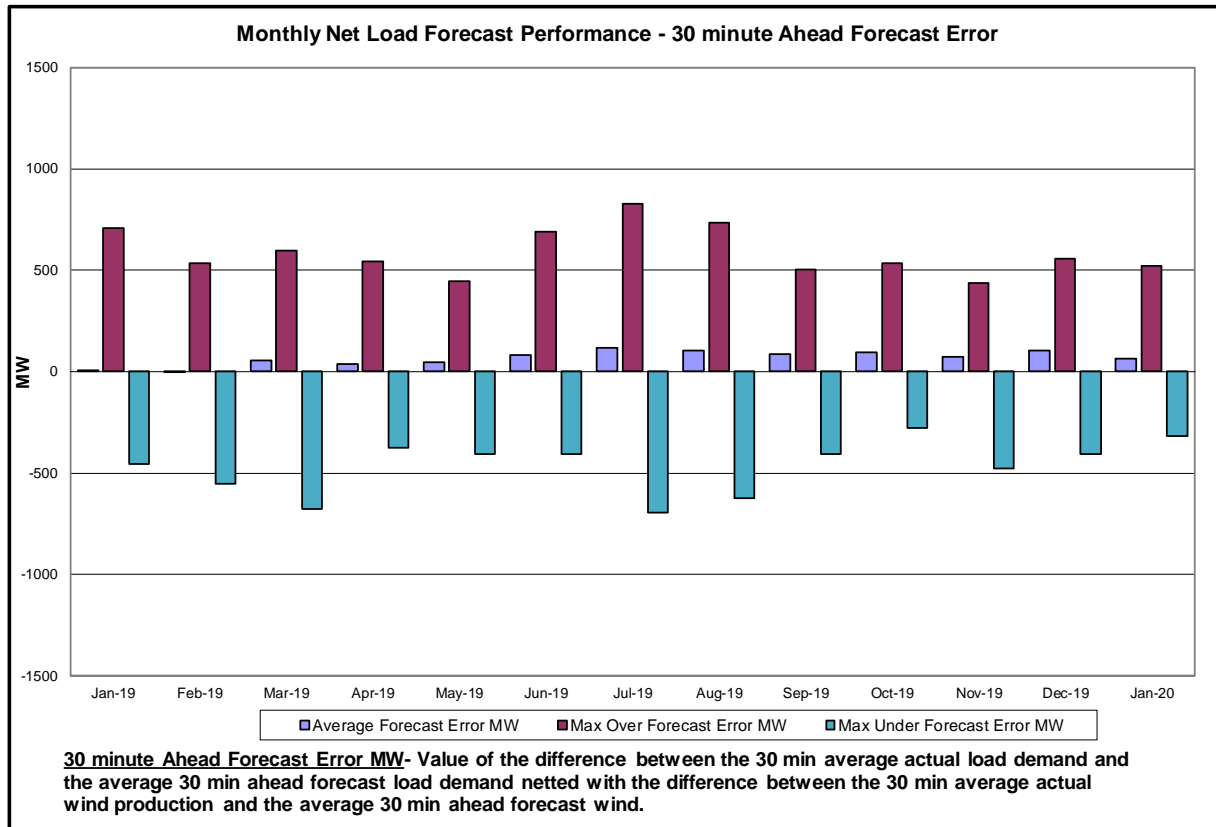


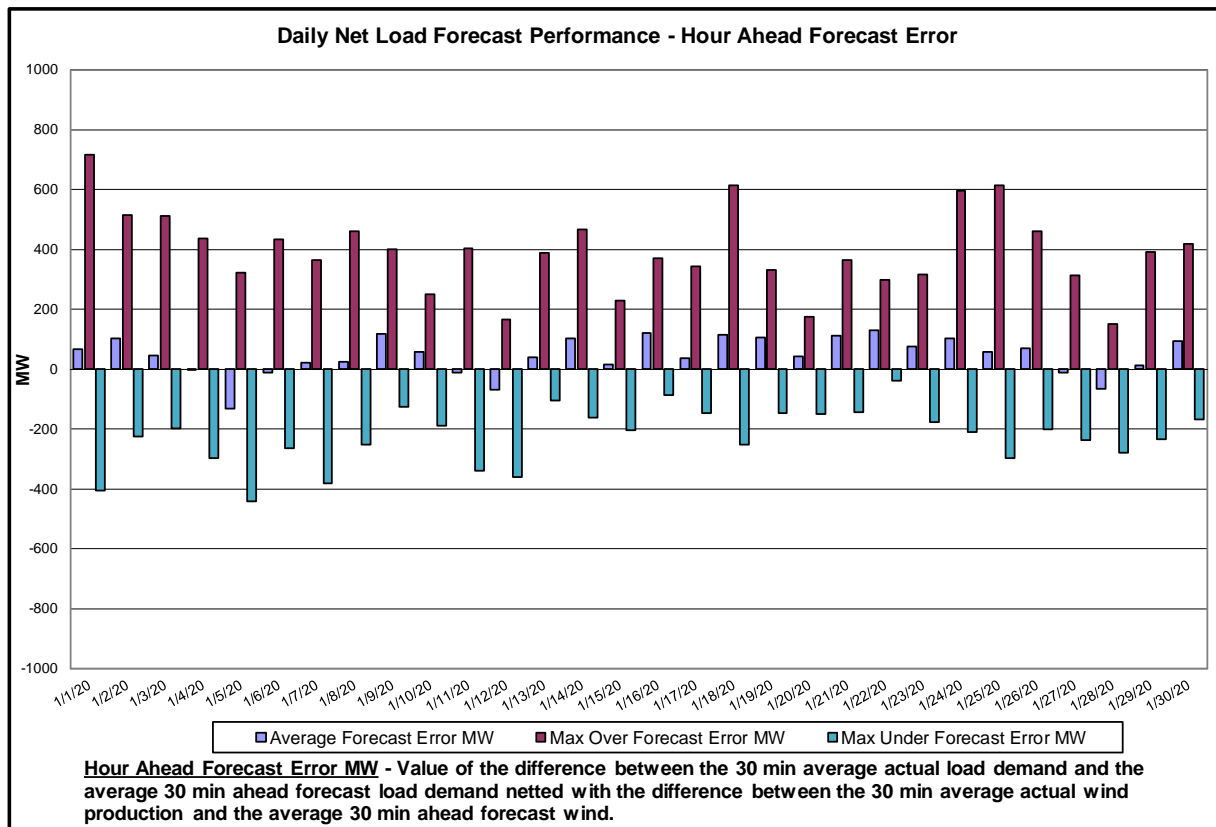
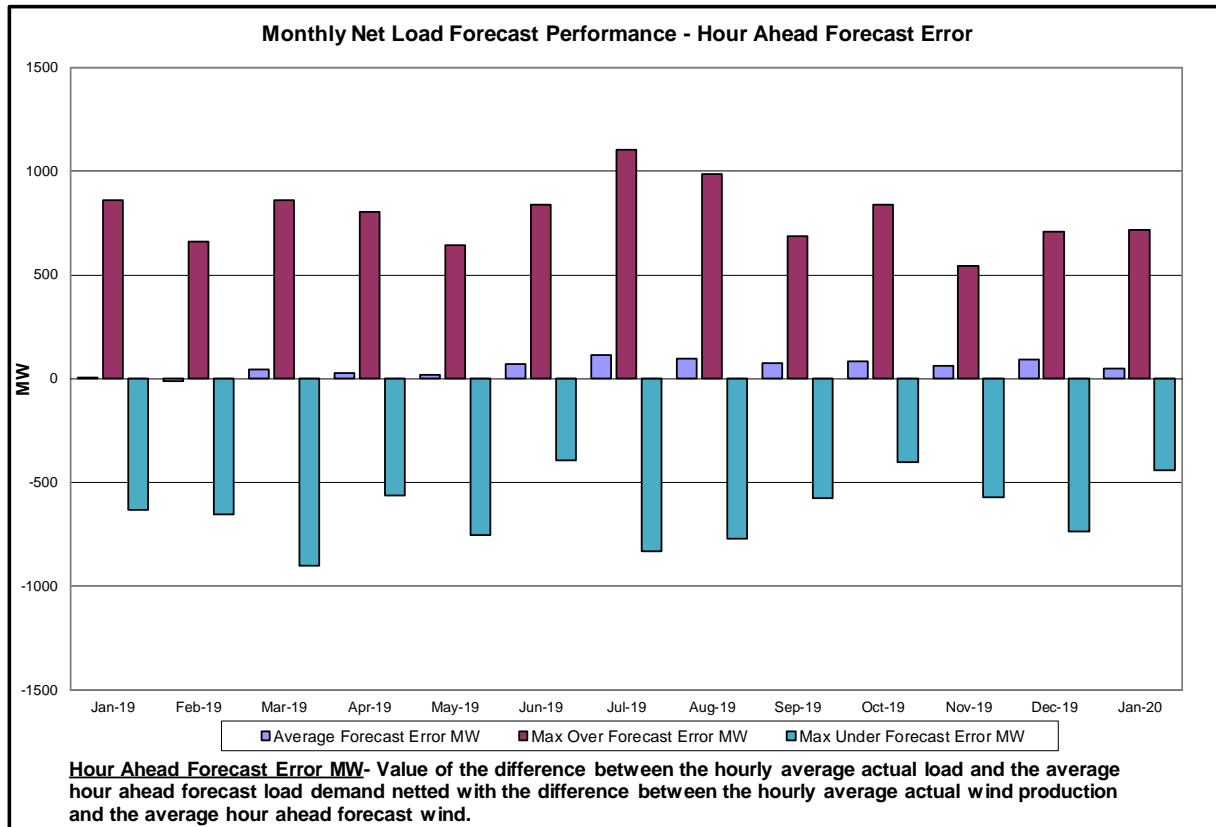


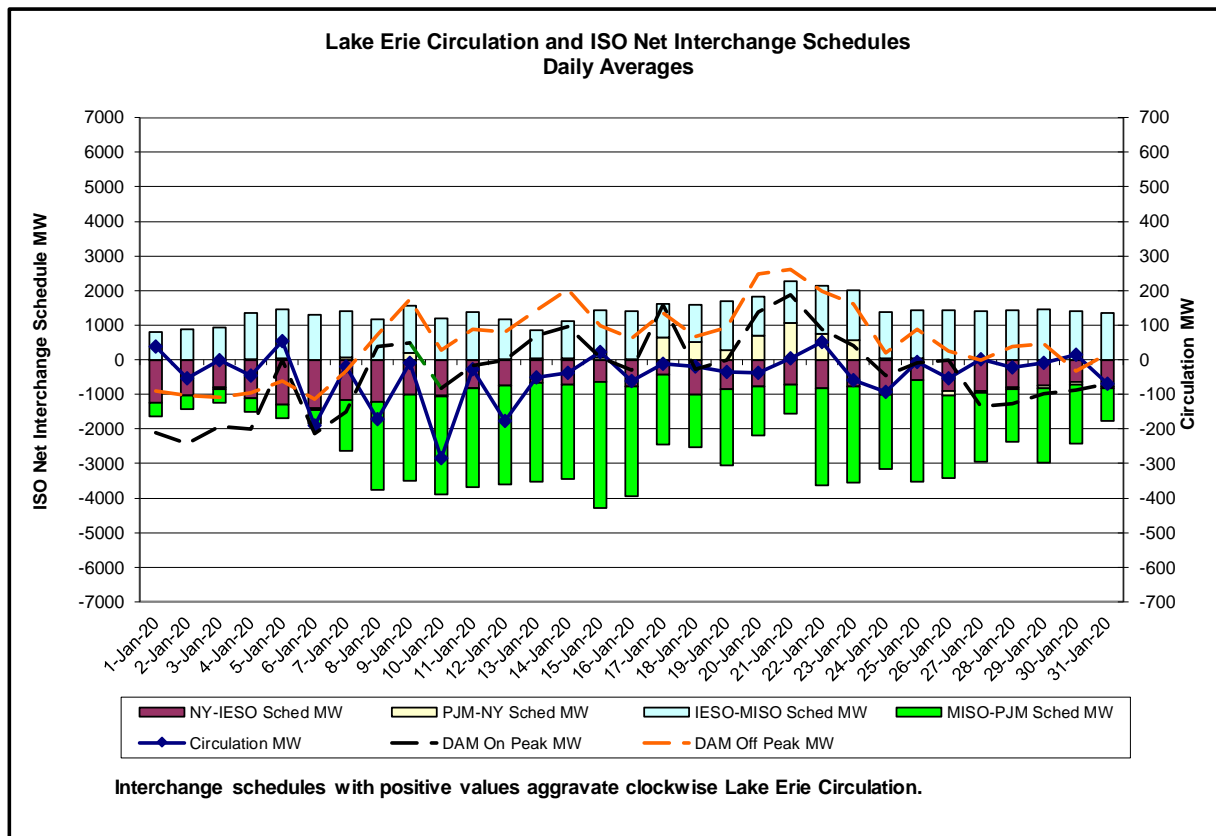
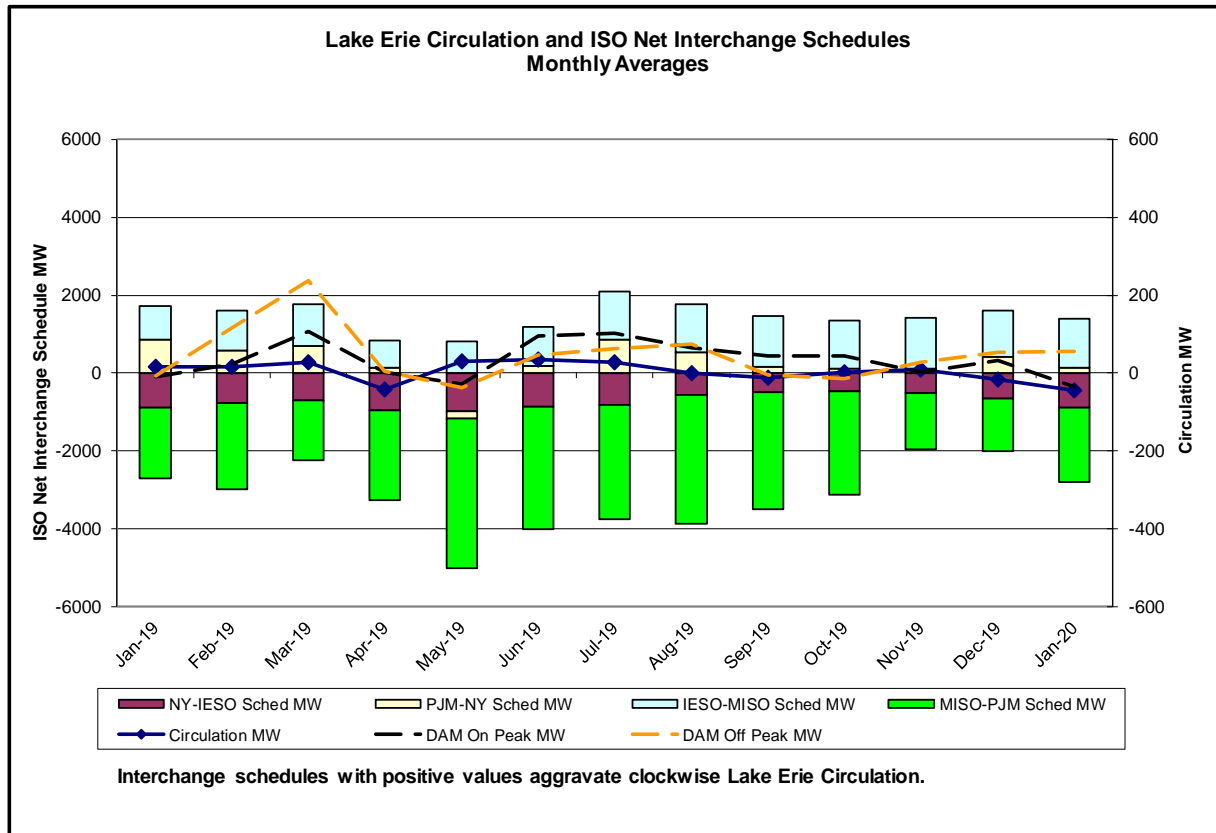




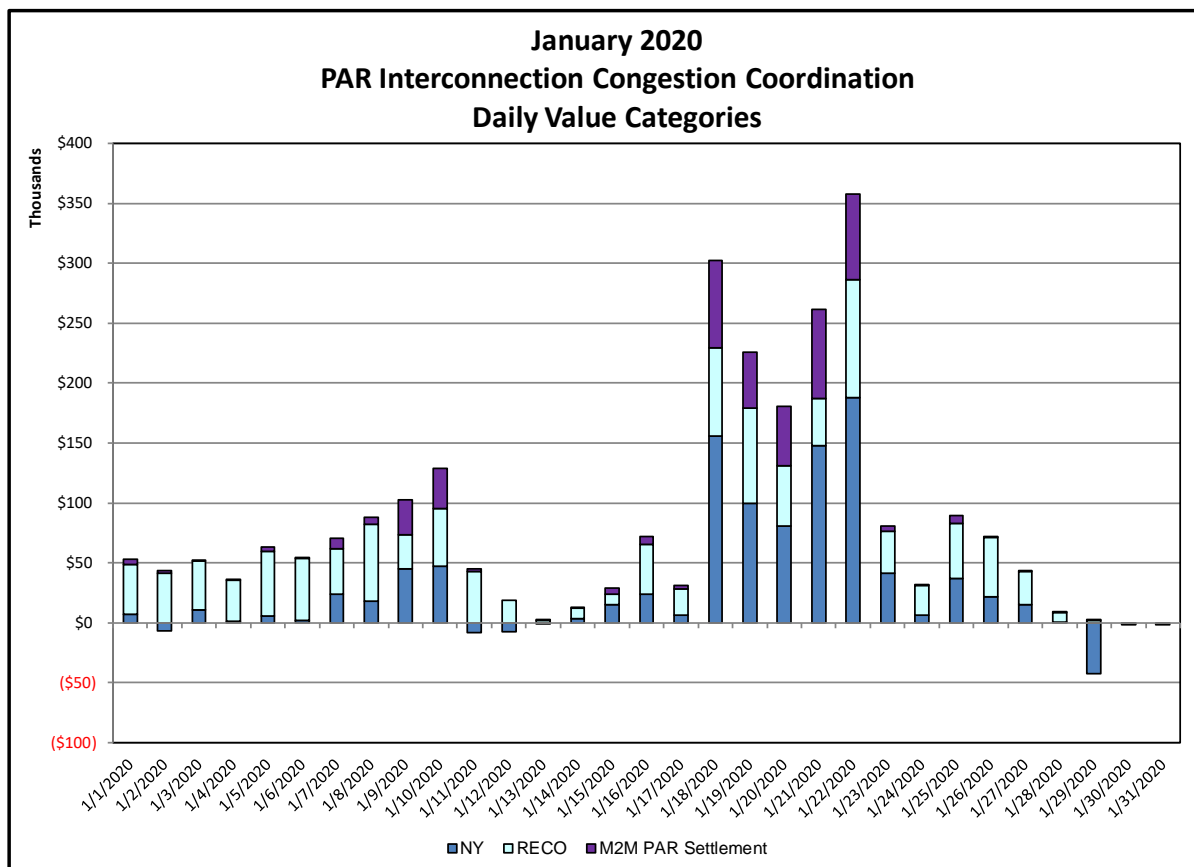
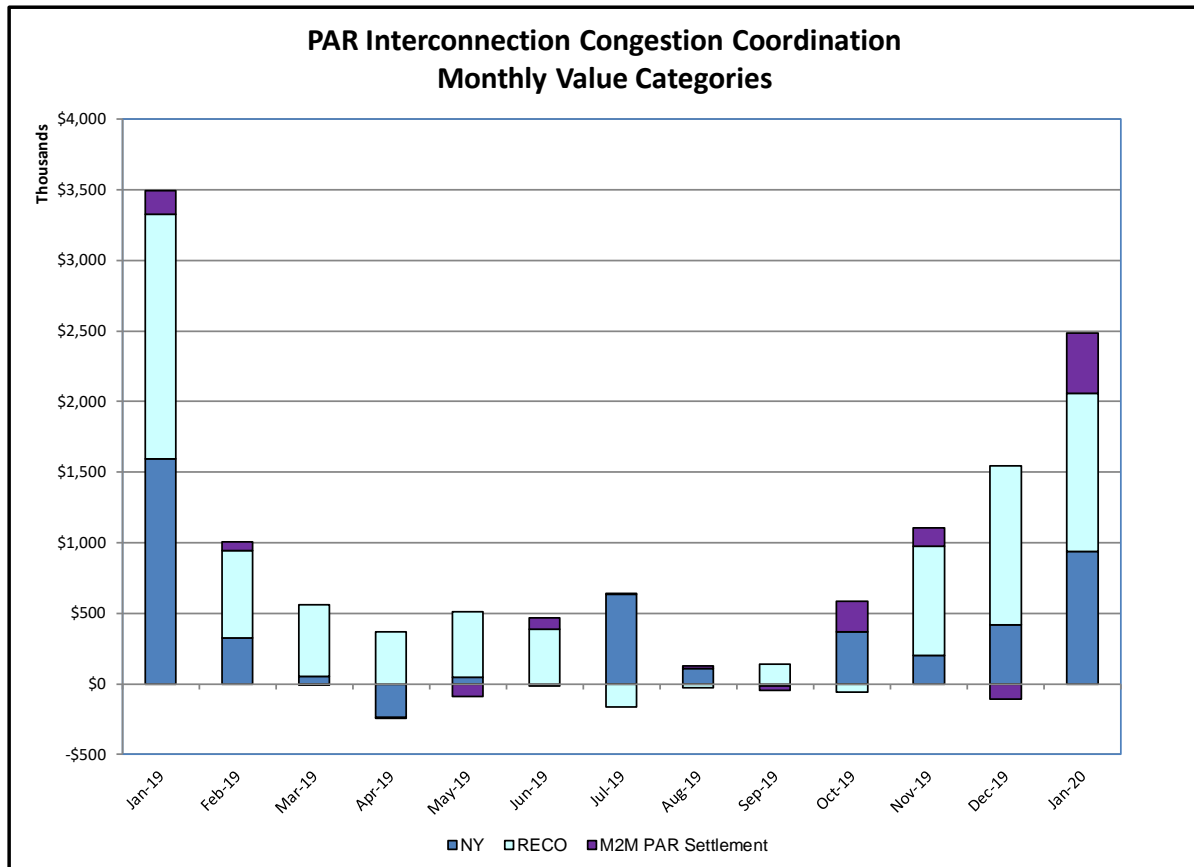






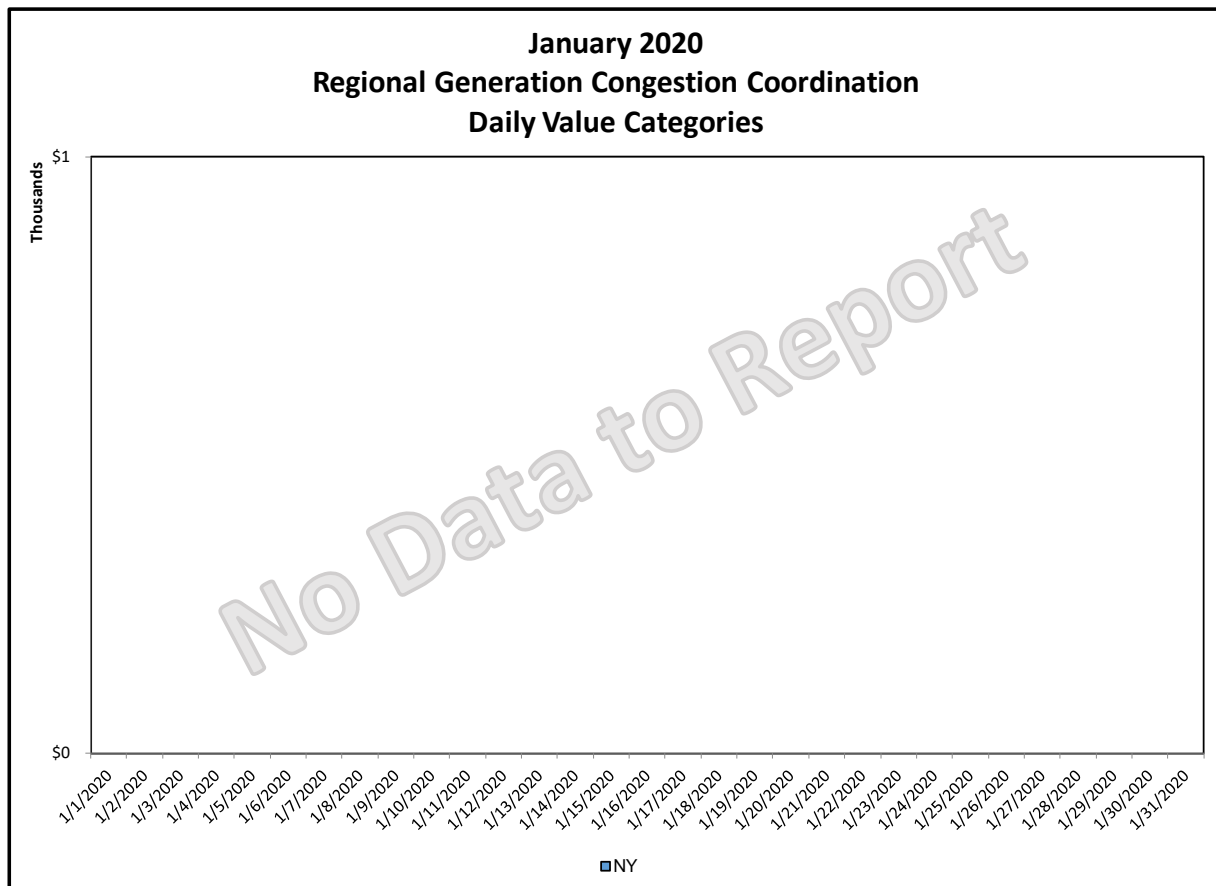
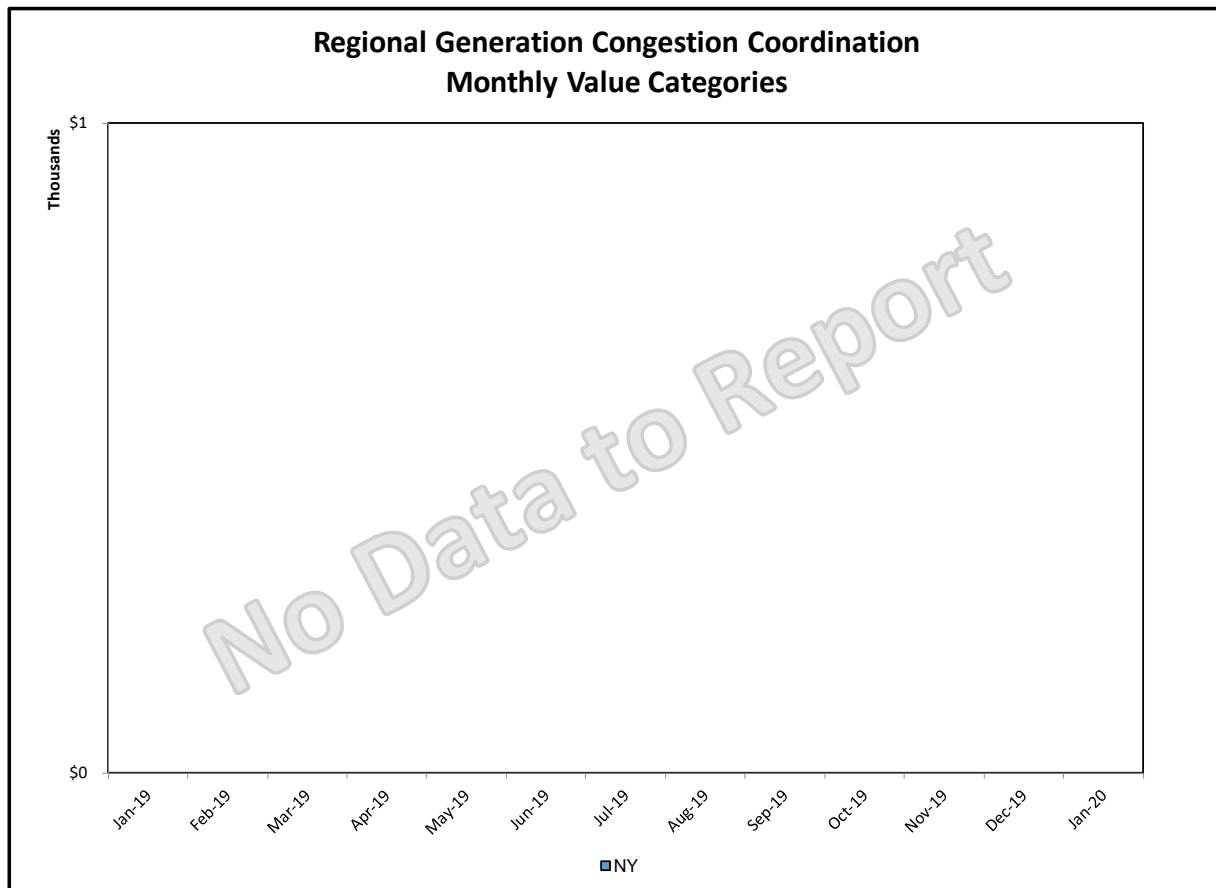


Broader Regional Market Performance Metrics



PAR Interconnection Congestion Coordination

<u>Category</u>	<u>Description</u>
NY	Represents the value NY realizes from Market-to-Market PAR Coordination when experiencing congestion. This 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.

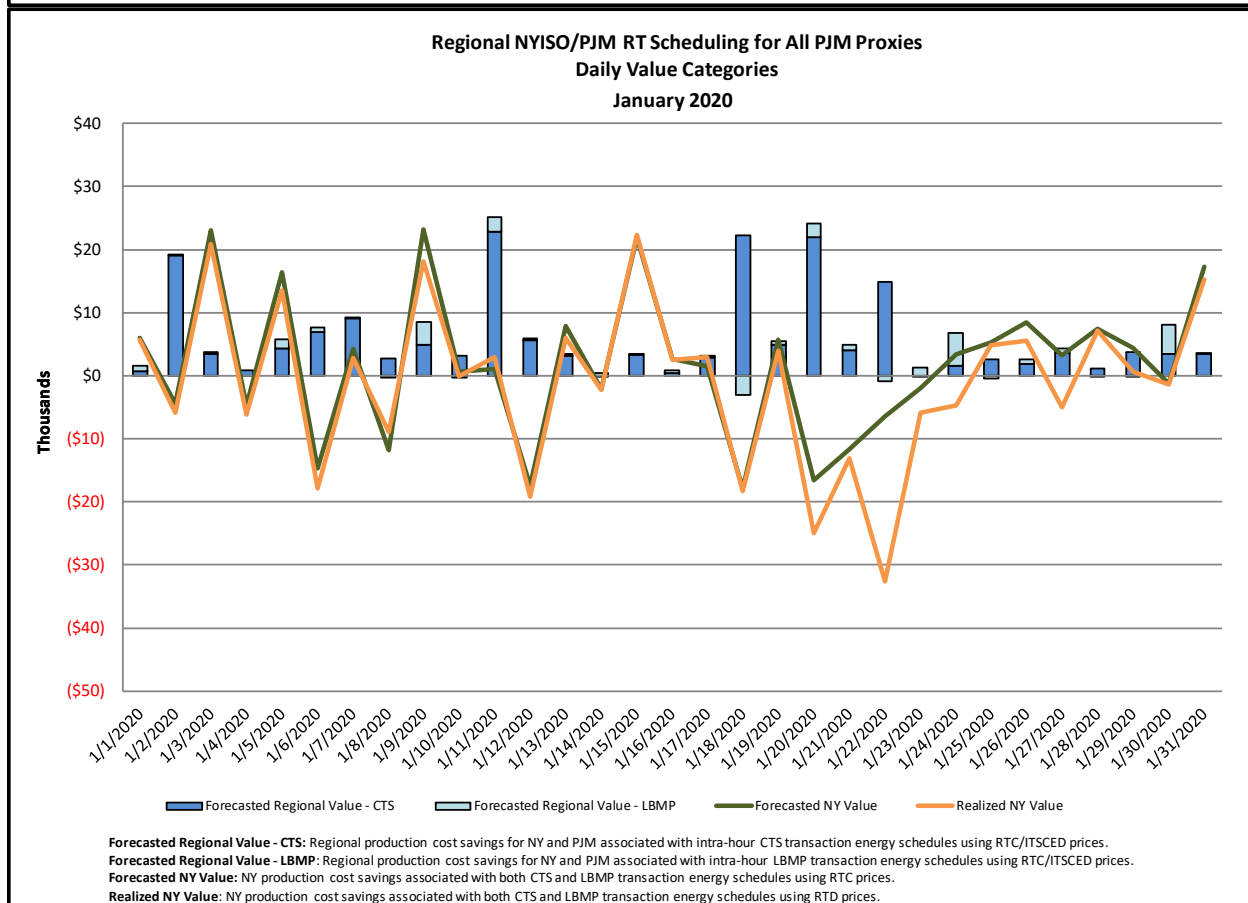
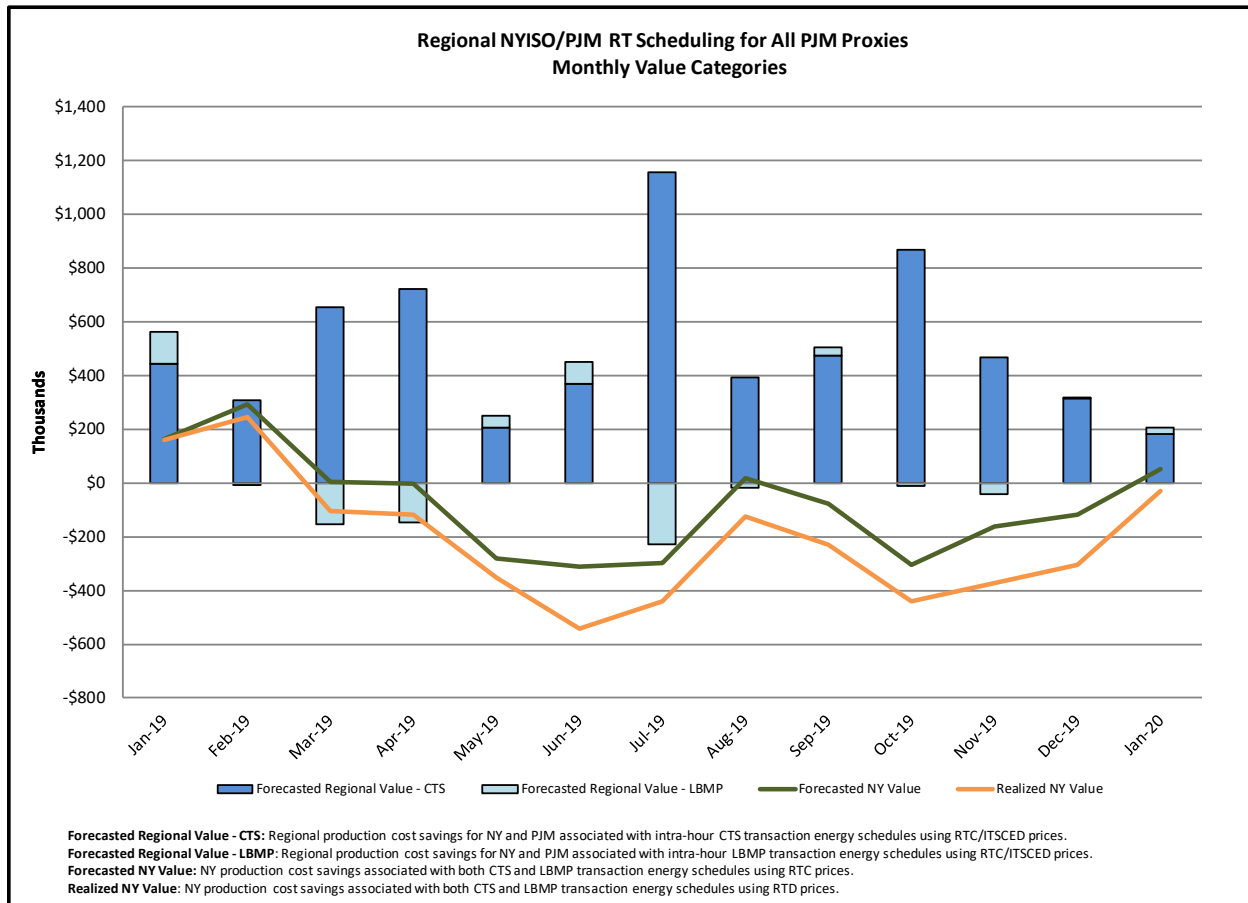


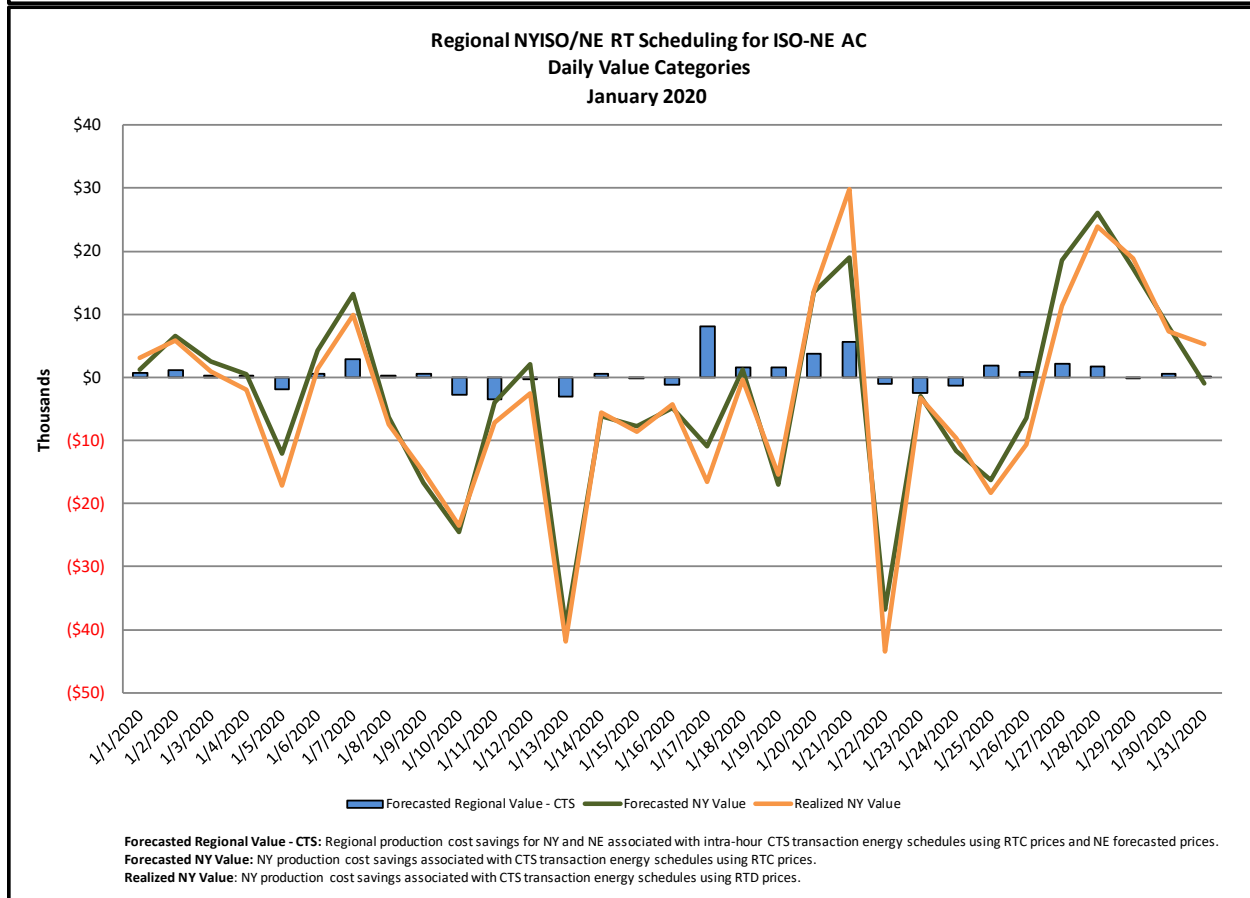
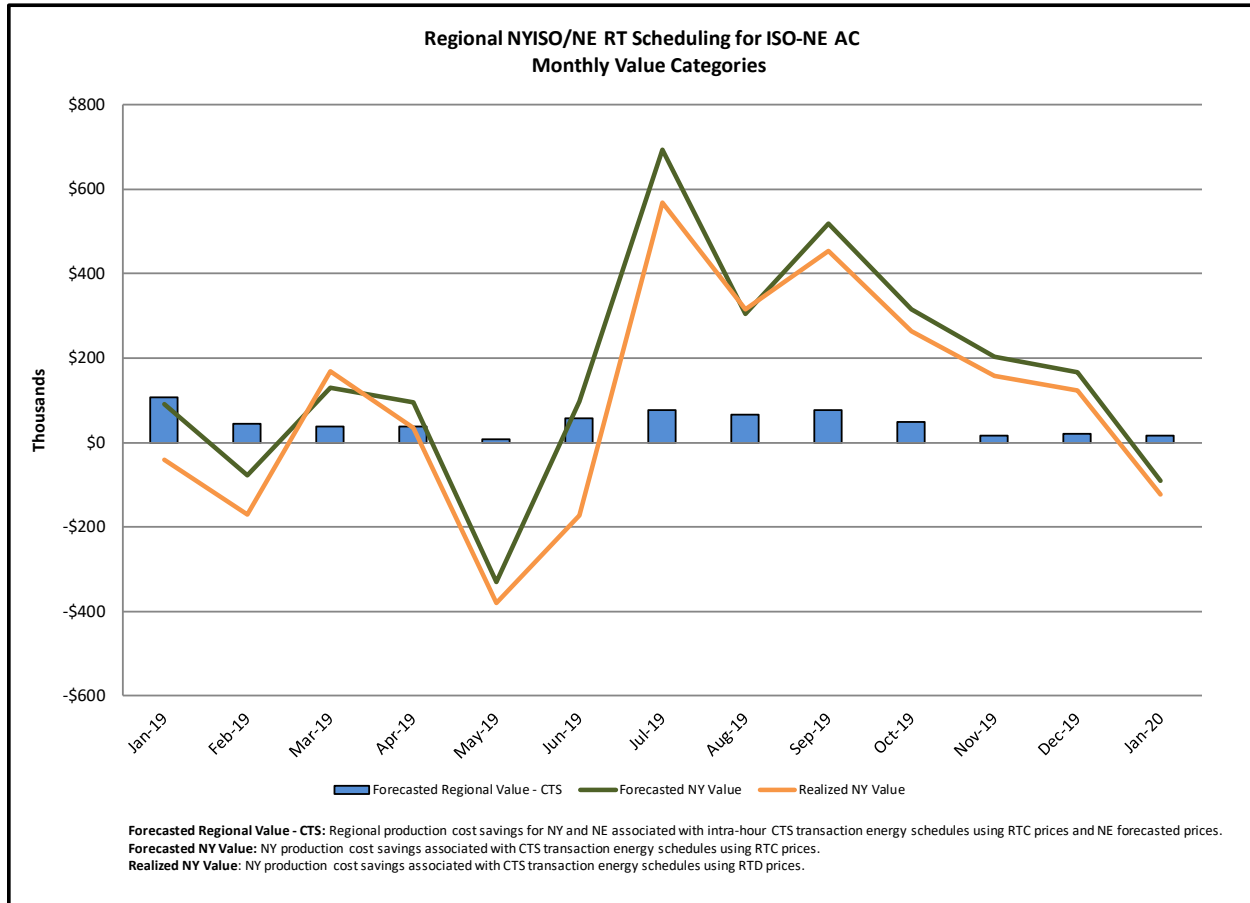
Regional Generation Congestion Coordination**Category**

NY

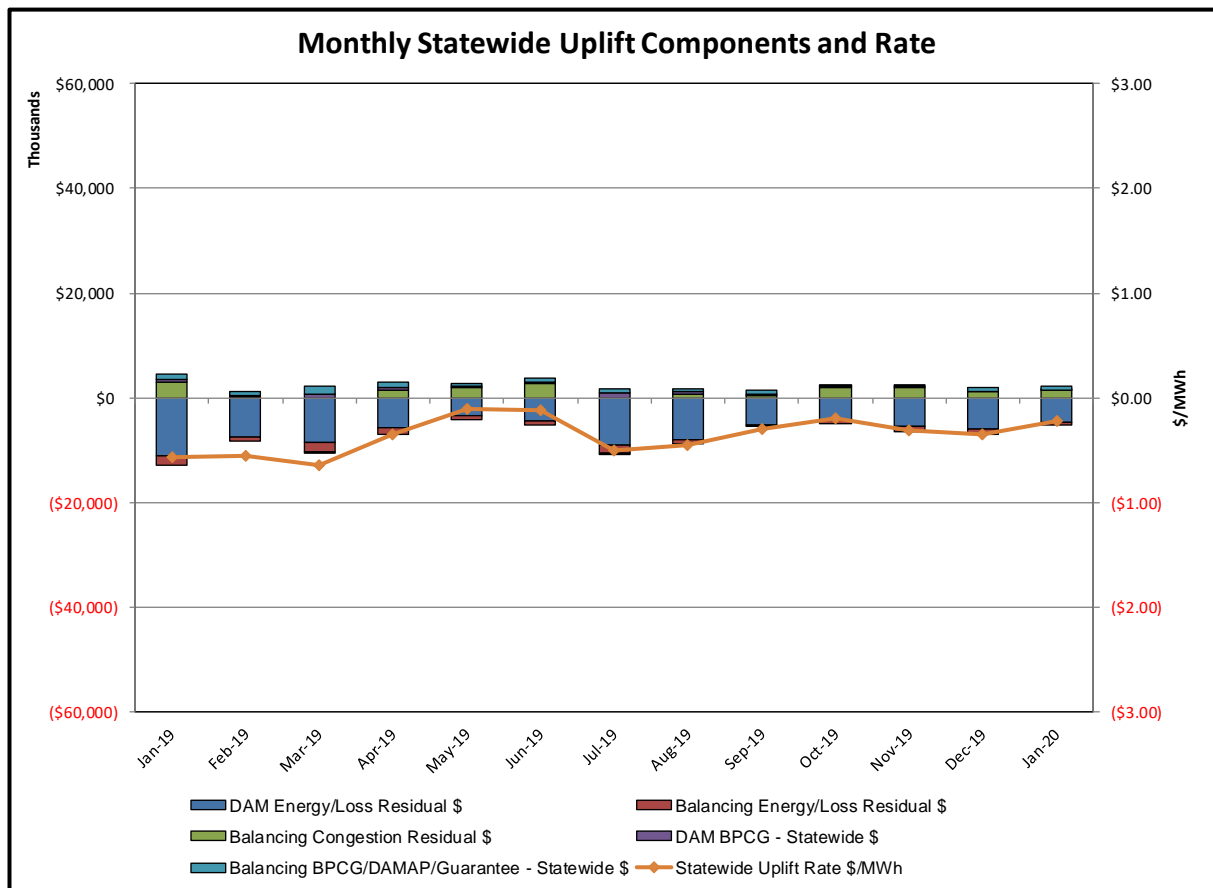
Description

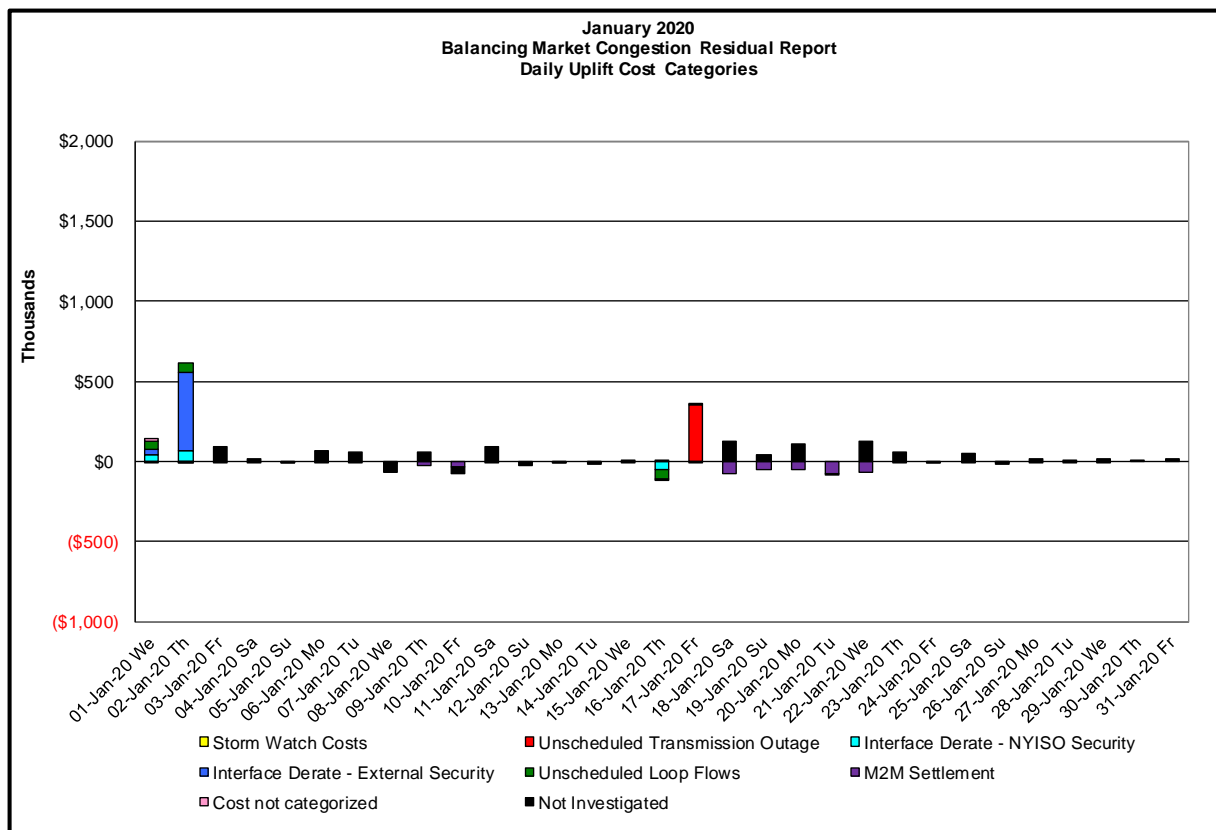
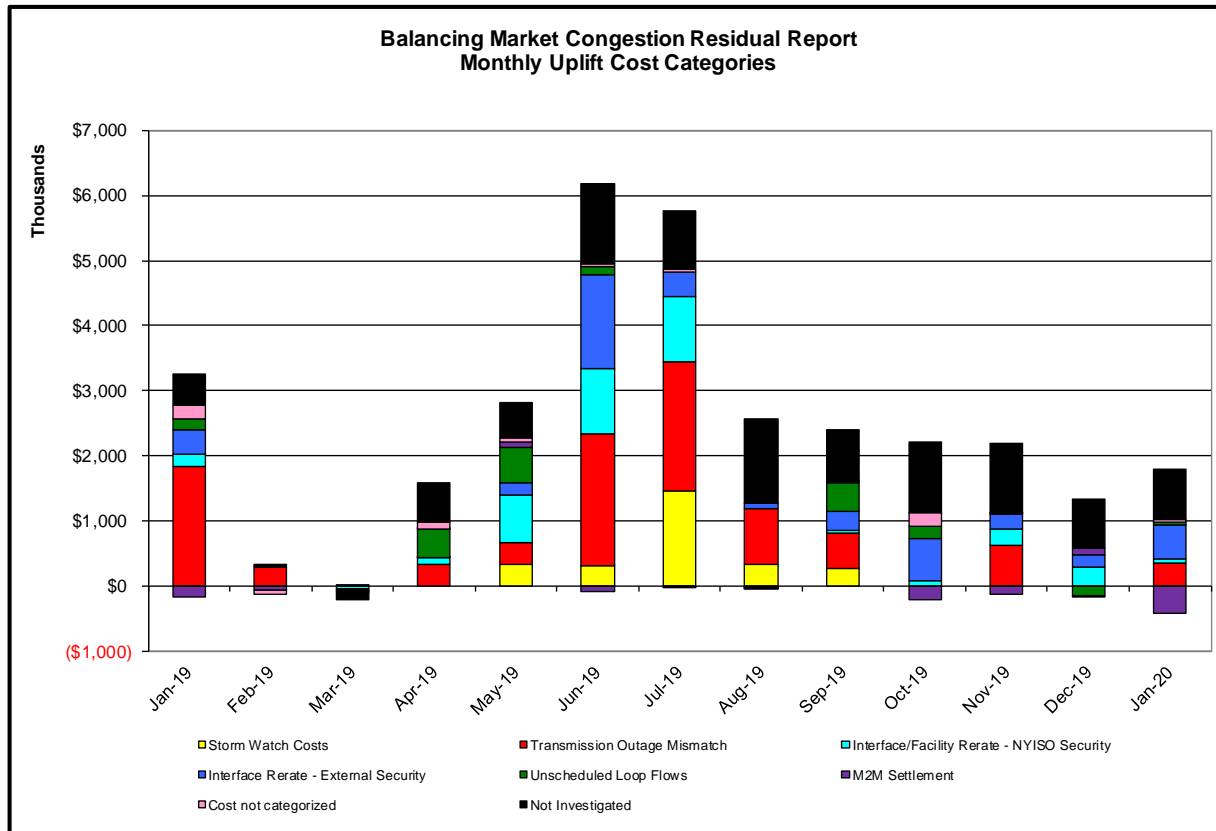
NYISO savings that result from PJM payments to NYISO when PJM's transmission use (PJM's market flow) is greater than PJM's entitlement of the NY transmission system and NYISO is incurring Western or Central NY congestion. Additionally, NYISO savings may result from the more efficient regional utilization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





Market Performance Metrics

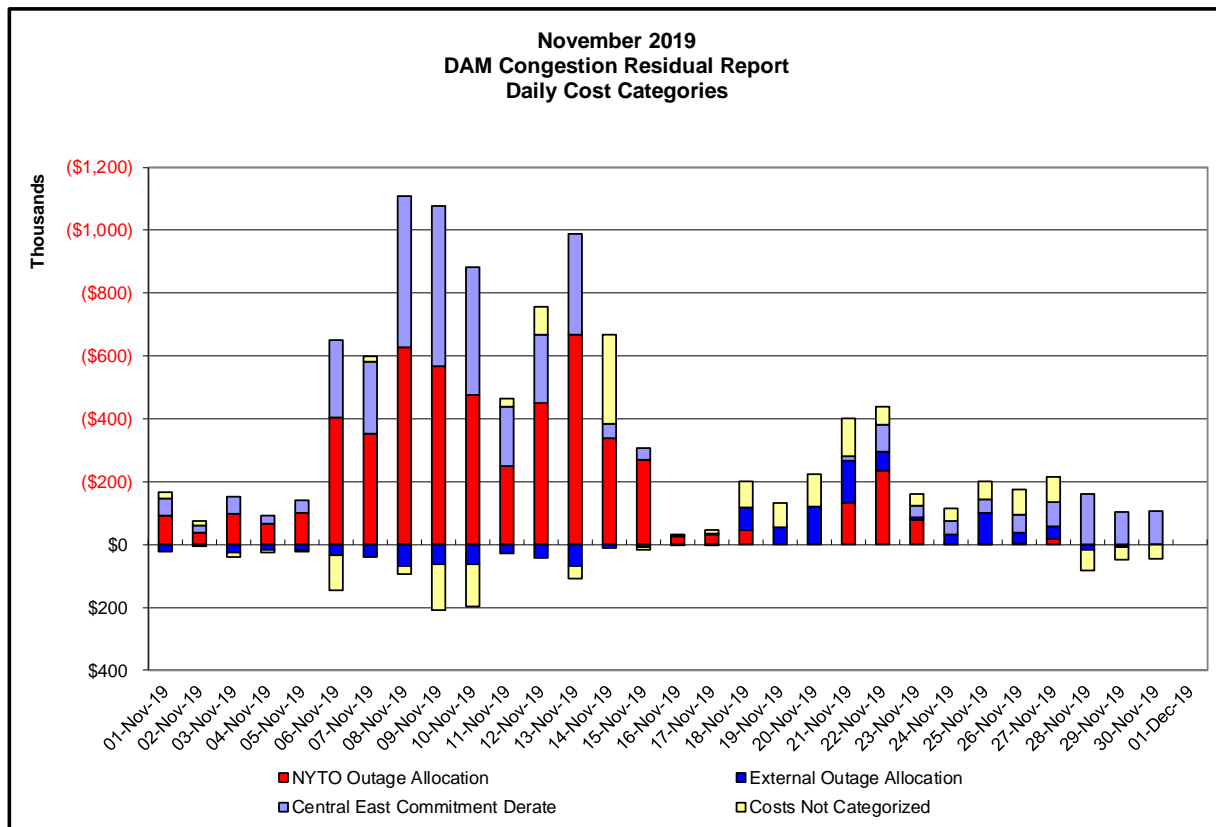
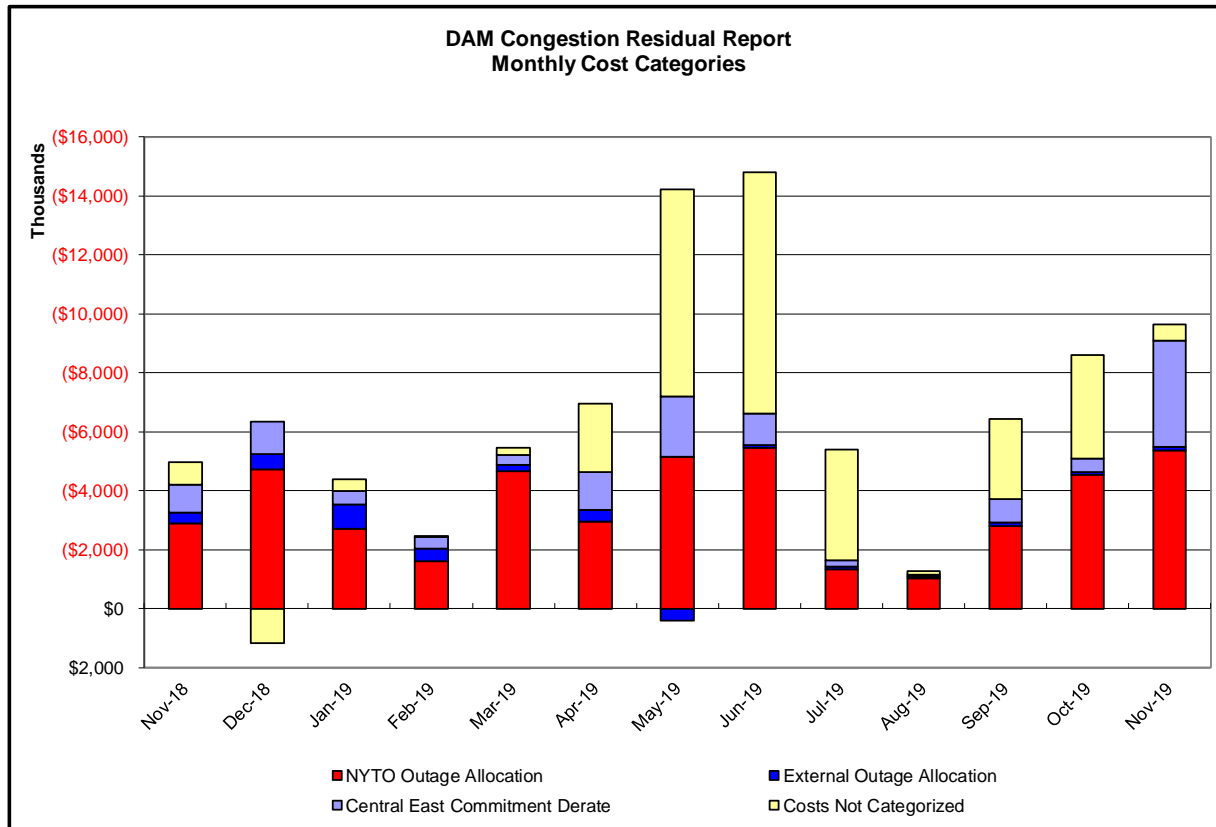




Day's investigated in January: 1, 2, 16, 17			
Event	Date (yyyymmdd)	Hours	Description
	1/1/2020	9, 17-19	Derate Central East
	1/1/2020	9	IESO_AC-NY Scheduling Limit
	1/1/2020	9, 17-19	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	1/2/2020	22	Derate Central East
	1/2/2020	14-17	Derate Niagra Packard 115kV (#181-922) for I/o TWR:PACKARD 77 & 78
	1/2/2020	9	Uprate Central East
	1/2/2020	9	NE_AC-NY Scheduling Limit
	1/2/2020	9, 12-20, 22	IESO_AC-NY Scheduling Limit
	1/2/2020	17	HQ_Chat-NY Scheduling Limit
	1/2/2020	15, 16	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	1/2/2020	14-17	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; West 115kV
	1/16/2020	11	Uprate Central East
	1/16/2020	11	Lake Erie Circulation, DAM-RTM exceeds +/-125MW; Central East
	1/17/2020	13-23	Forced Outage Gowanus-Greenwood 138kV (#42231)

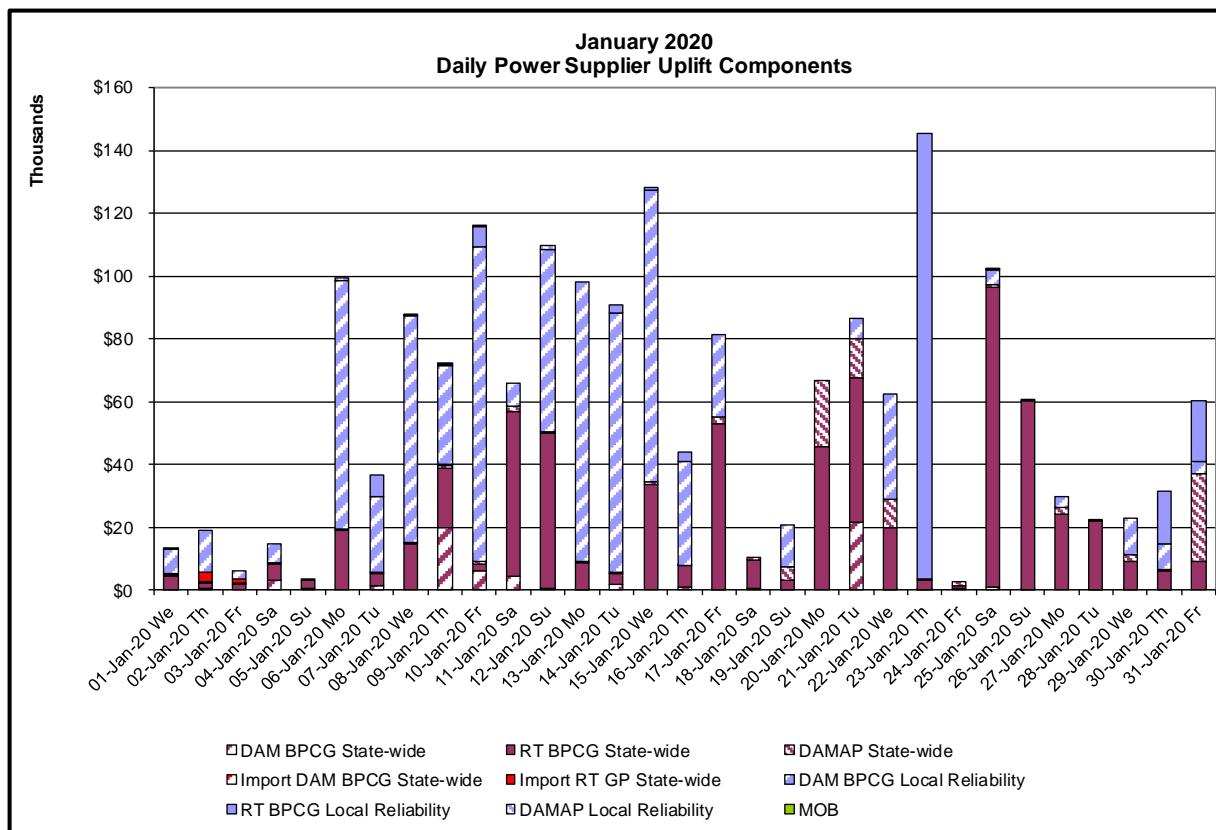
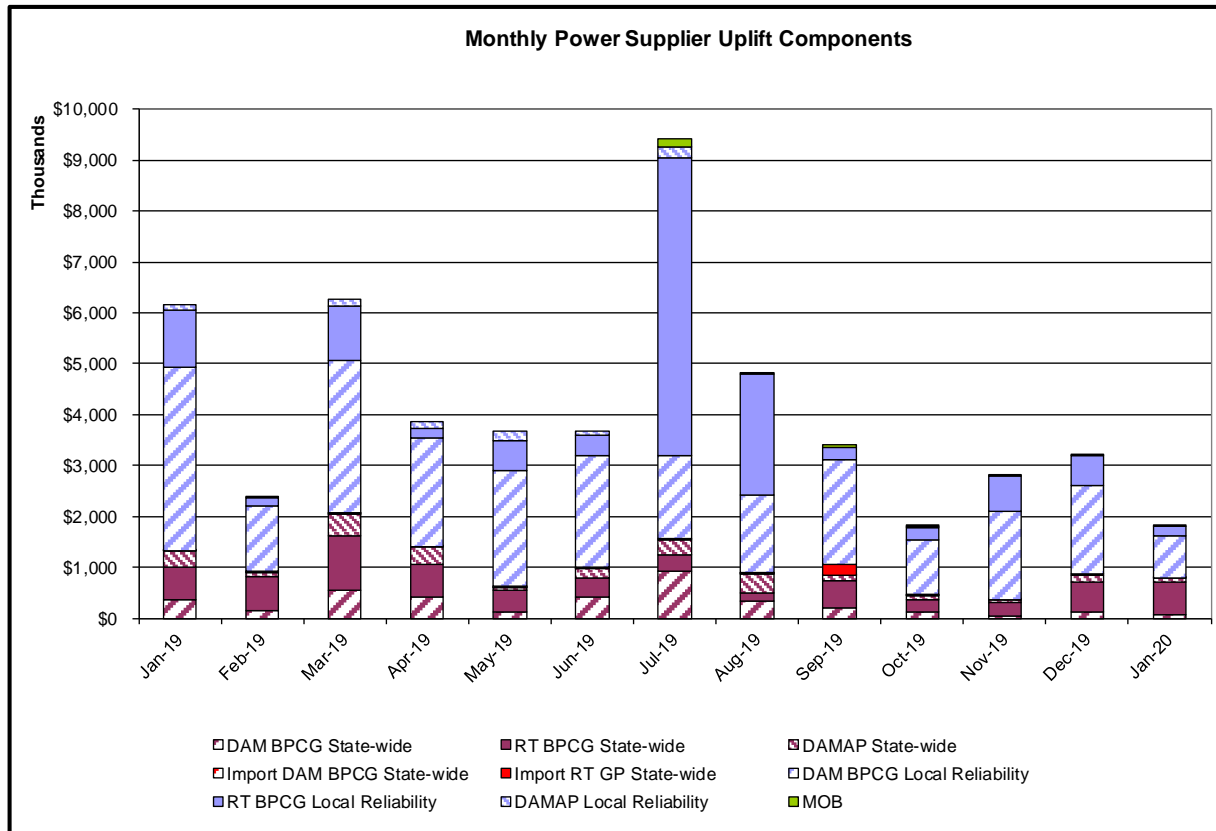
Real-Time Balancing Market Congestion Residual (Uplift Cost) Categories

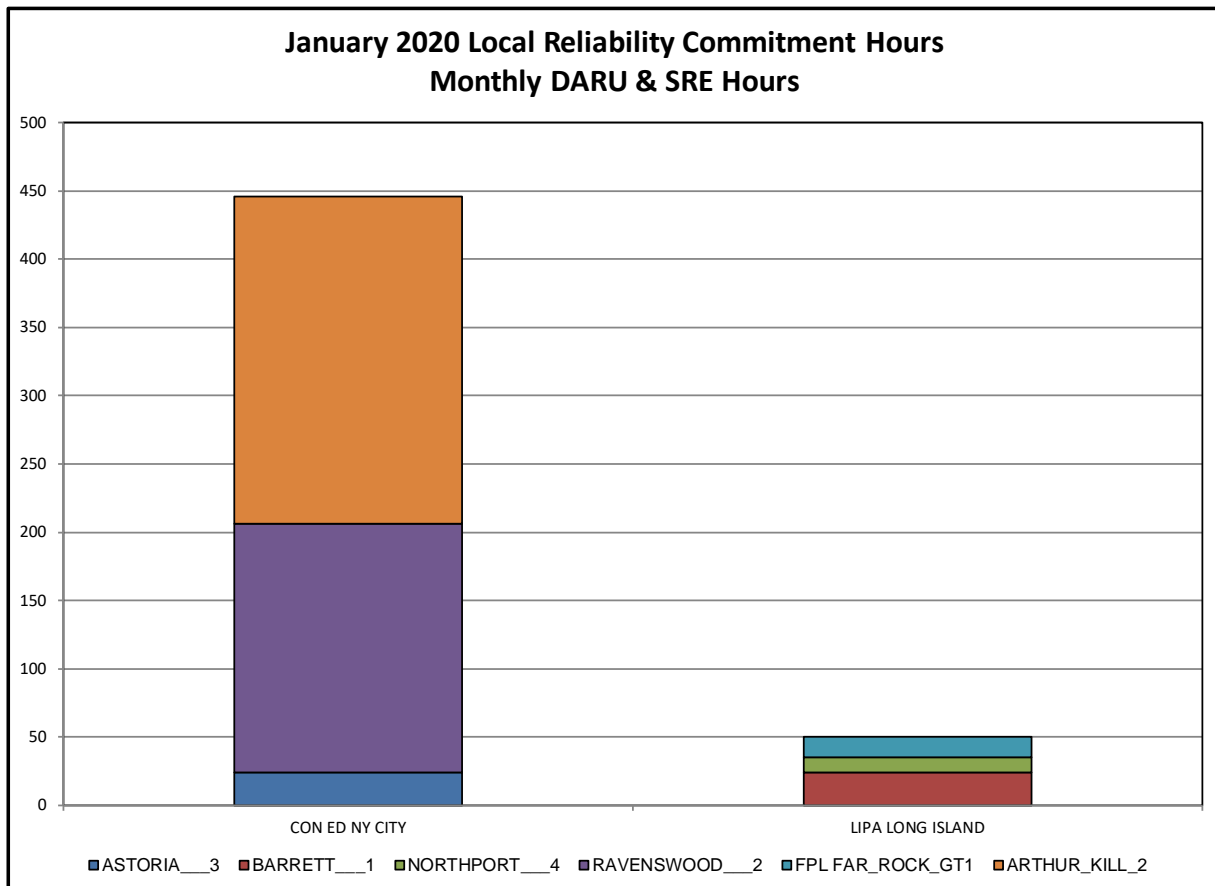
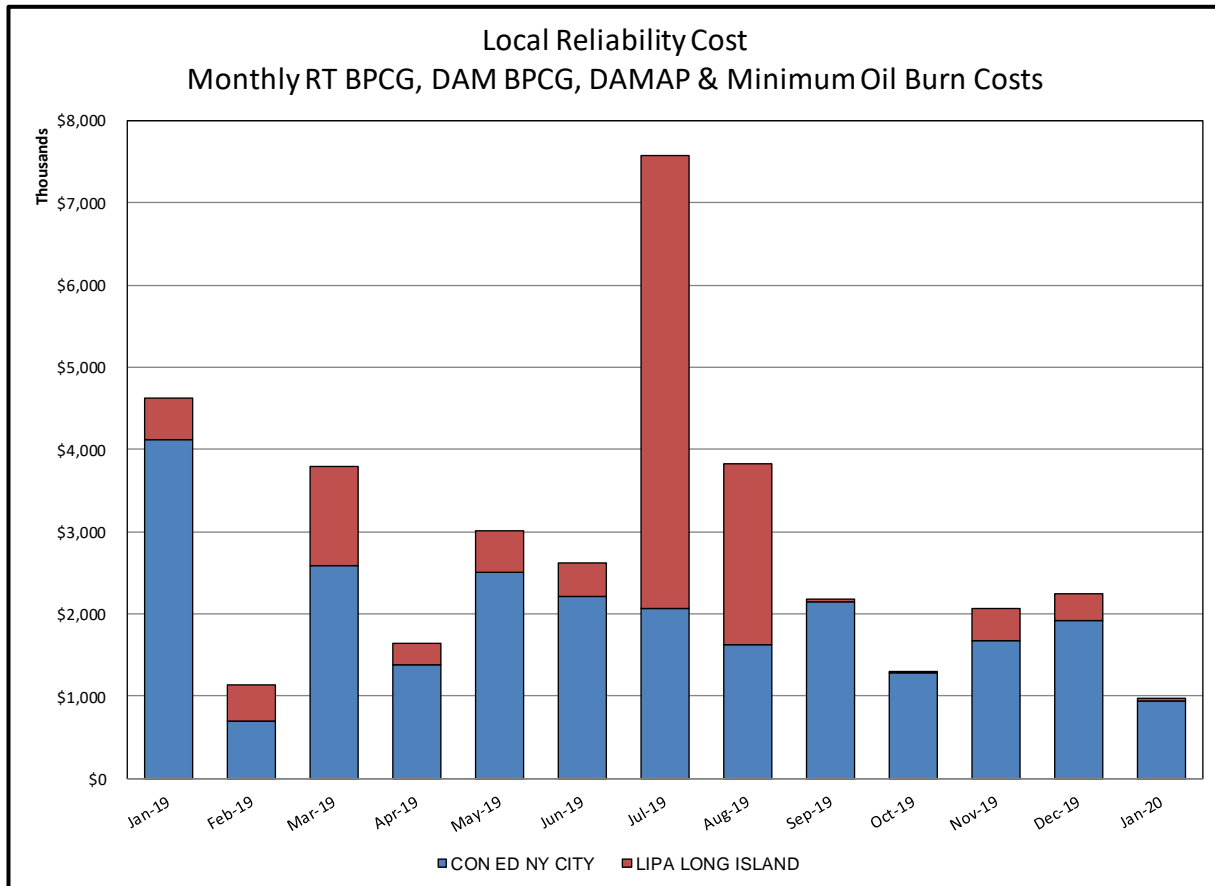
<u>Category</u>	<u>Cost Assignment</u>	<u>Events Types</u>	<u>Event Examples</u>
Storm Watch	Zone J	Thunderstorm Alert (TSA)	TSA Activations
Transmission Outage Mismatch	Market-wide	Changes in DAM to RTM transfers related to transmission outage mismatch	Forced Line Outage, Unit AVR Outages Early Line 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			

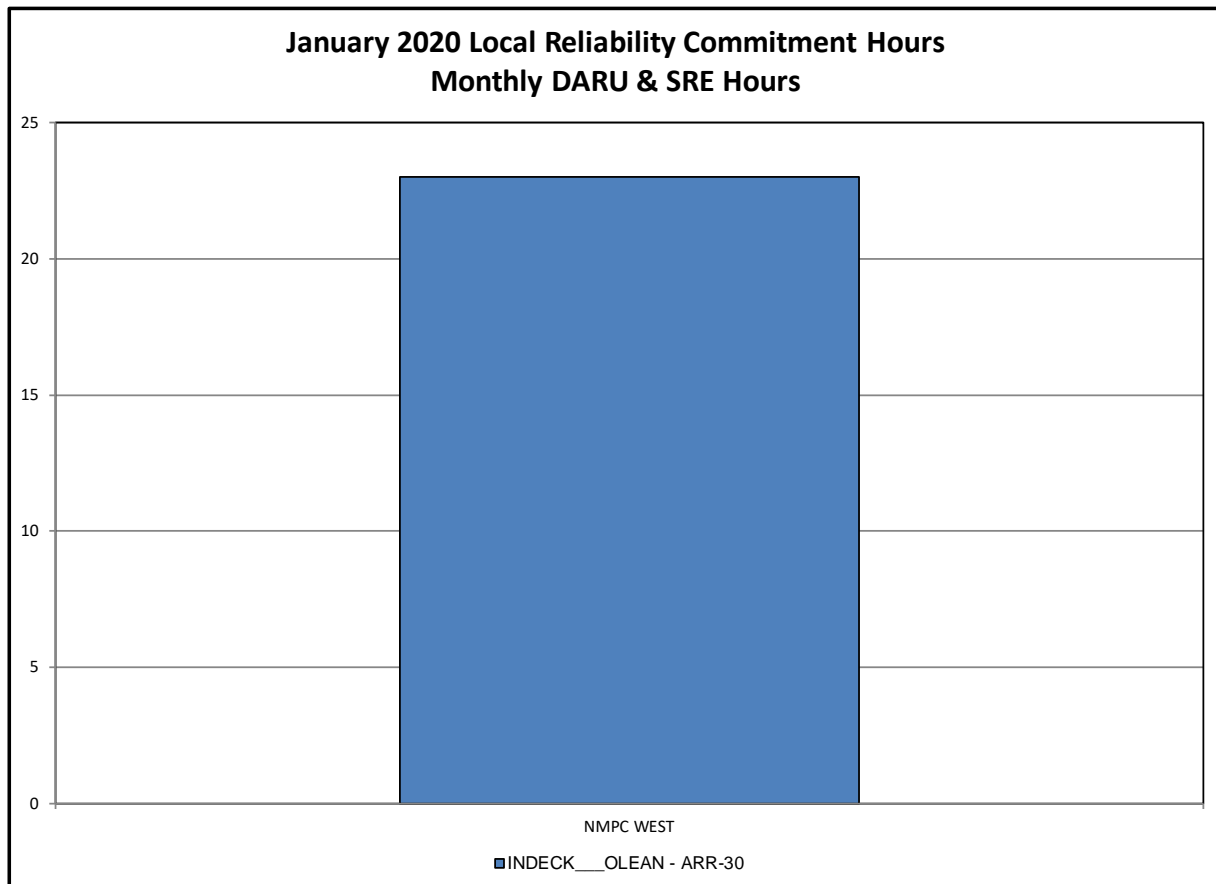
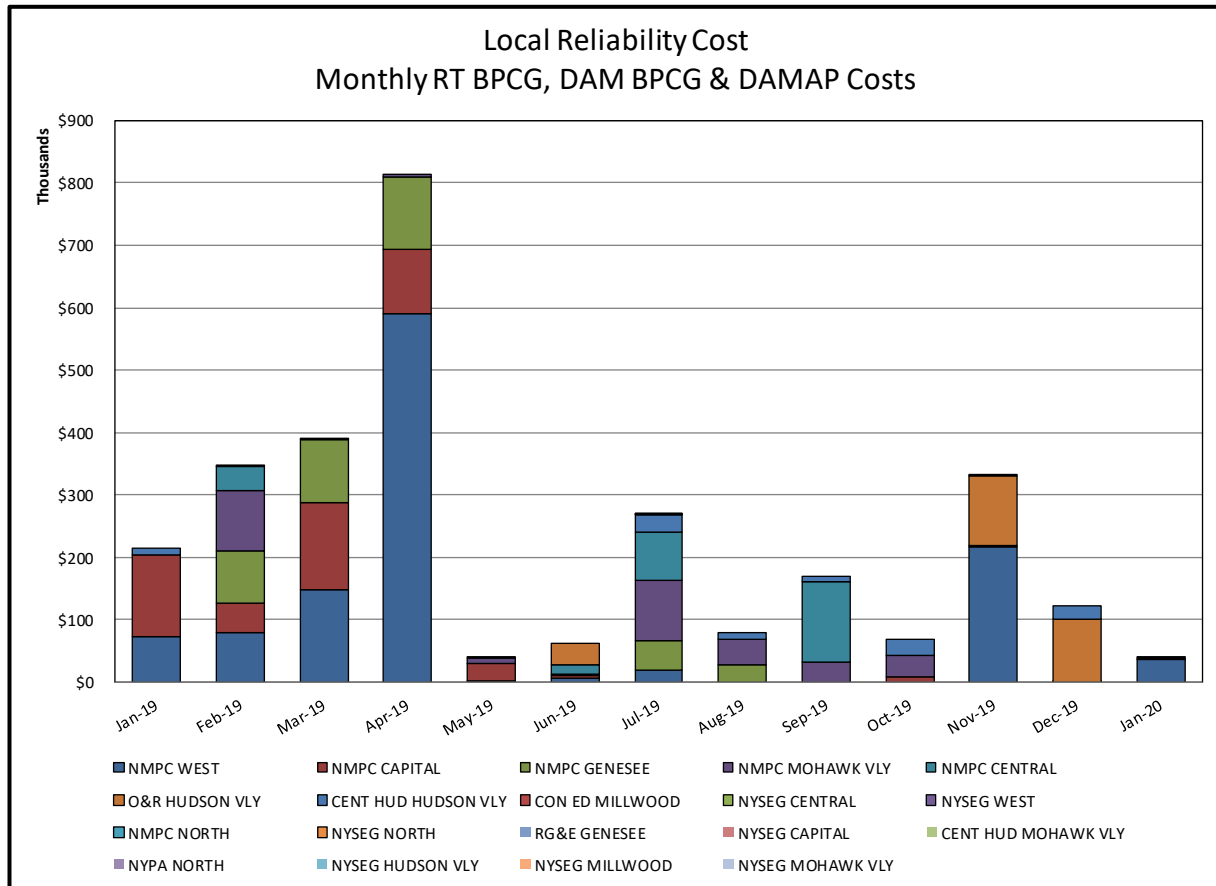


Day-Ahead Market Congestion Residual Categories

<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.
External Outage Allocation	All TO by Monthly Allocation Factor	Direct allocation to transmission equipment status change caused by change in status of external equipment.	Tie line required out-of-service by TO of neighboring control area.
Central East Commitment Derate	All TO by Monthly Allocation Factor	Reductions in the DAM Central East_VC limit as compared to the TCC Auction limit, which are not associated with transmission line outages.	

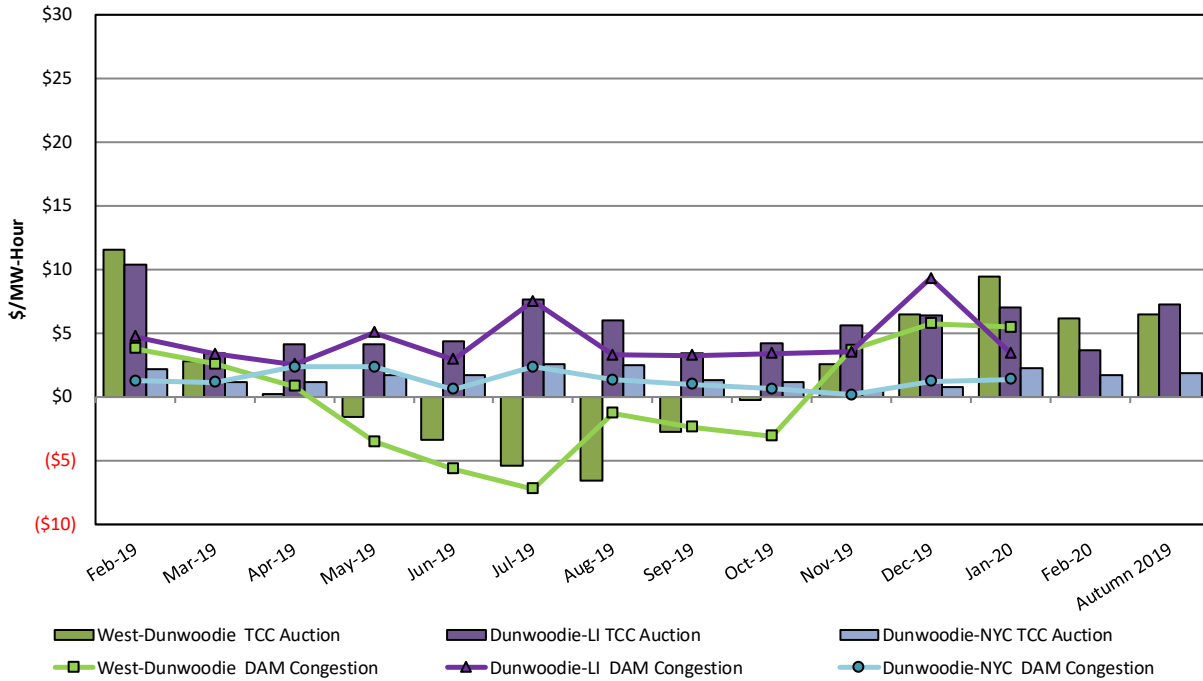






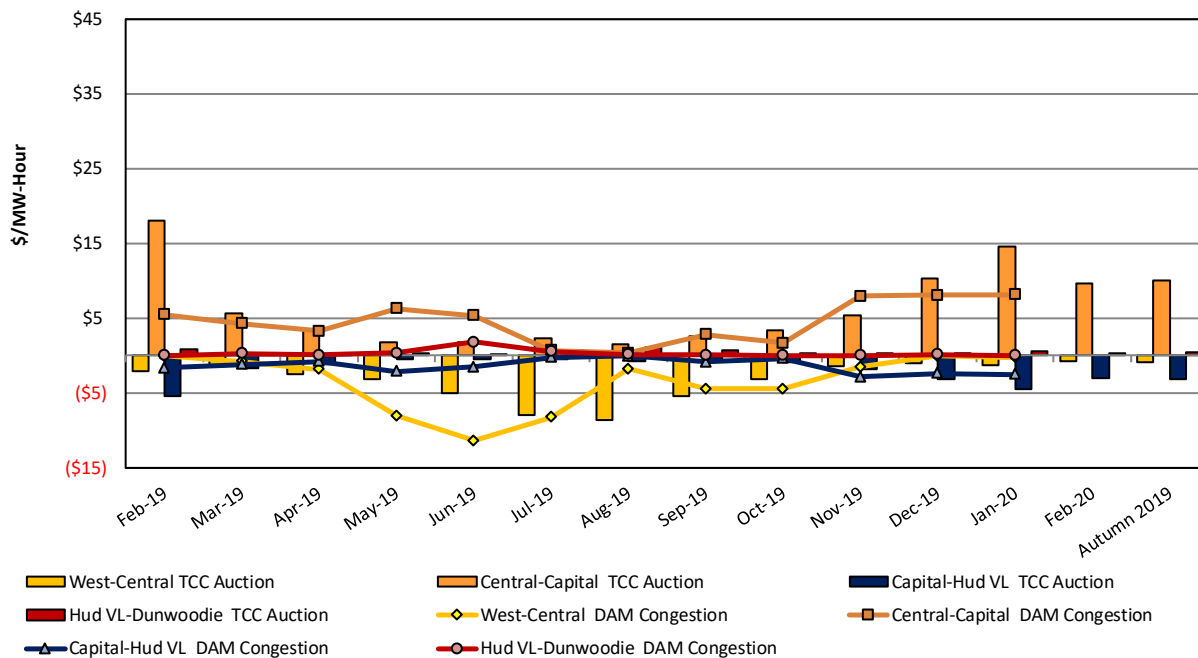
TCC & Day Ahead Market Selected Internal Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Autumn 2019 Centralized TCC Auction Six-Month Average



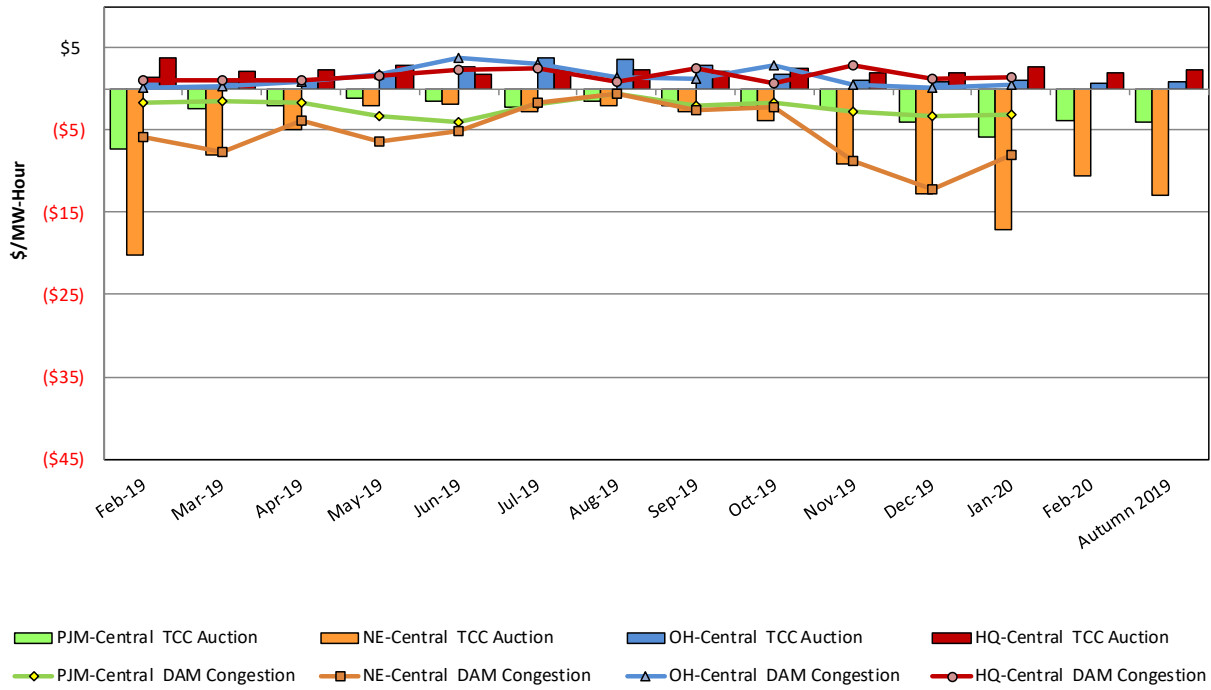
TCC & Day Ahead Market West to Dunwoodie Path Congestion

TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Autumn 2019 Centralized TCC Auction Six-Month Average

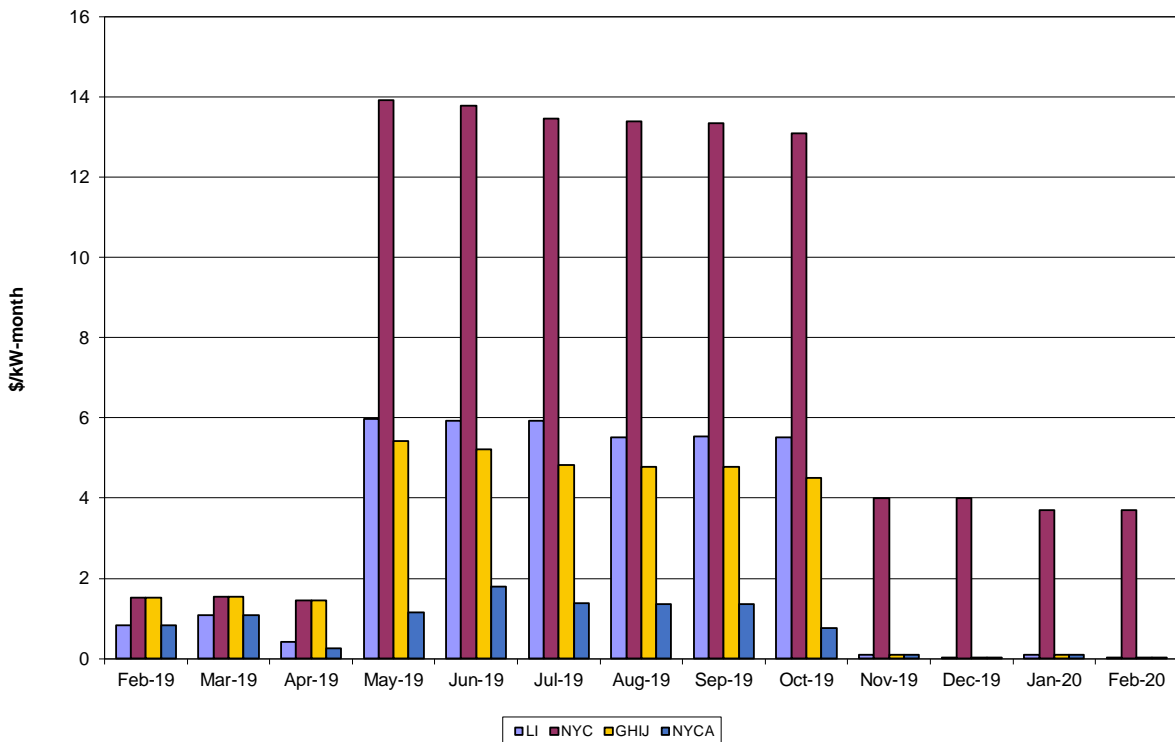


TCC & Day Ahead Market Selected External Path Congestion

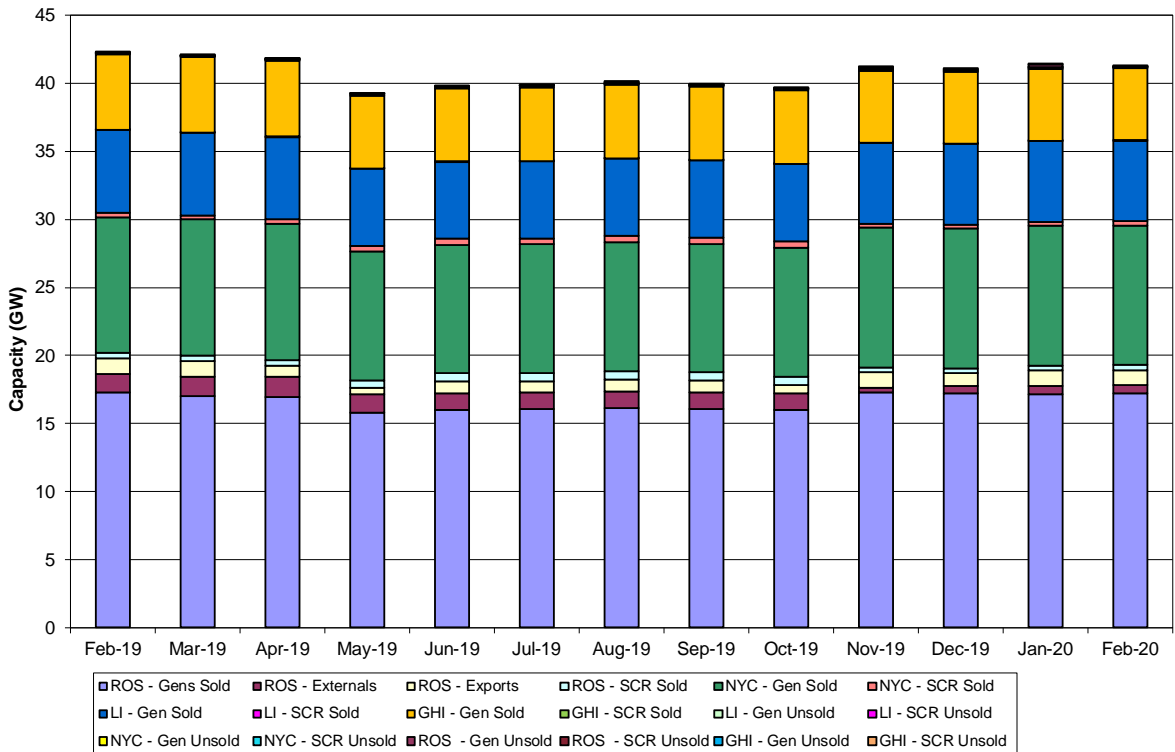
TCC Monthly Reconfiguration Auction vs. Monthly DAM Average
with Autumn 2019 Centralized TCC Auction Six-Month Average



ICAP Spot Market Clearing Price



UCAP Sales

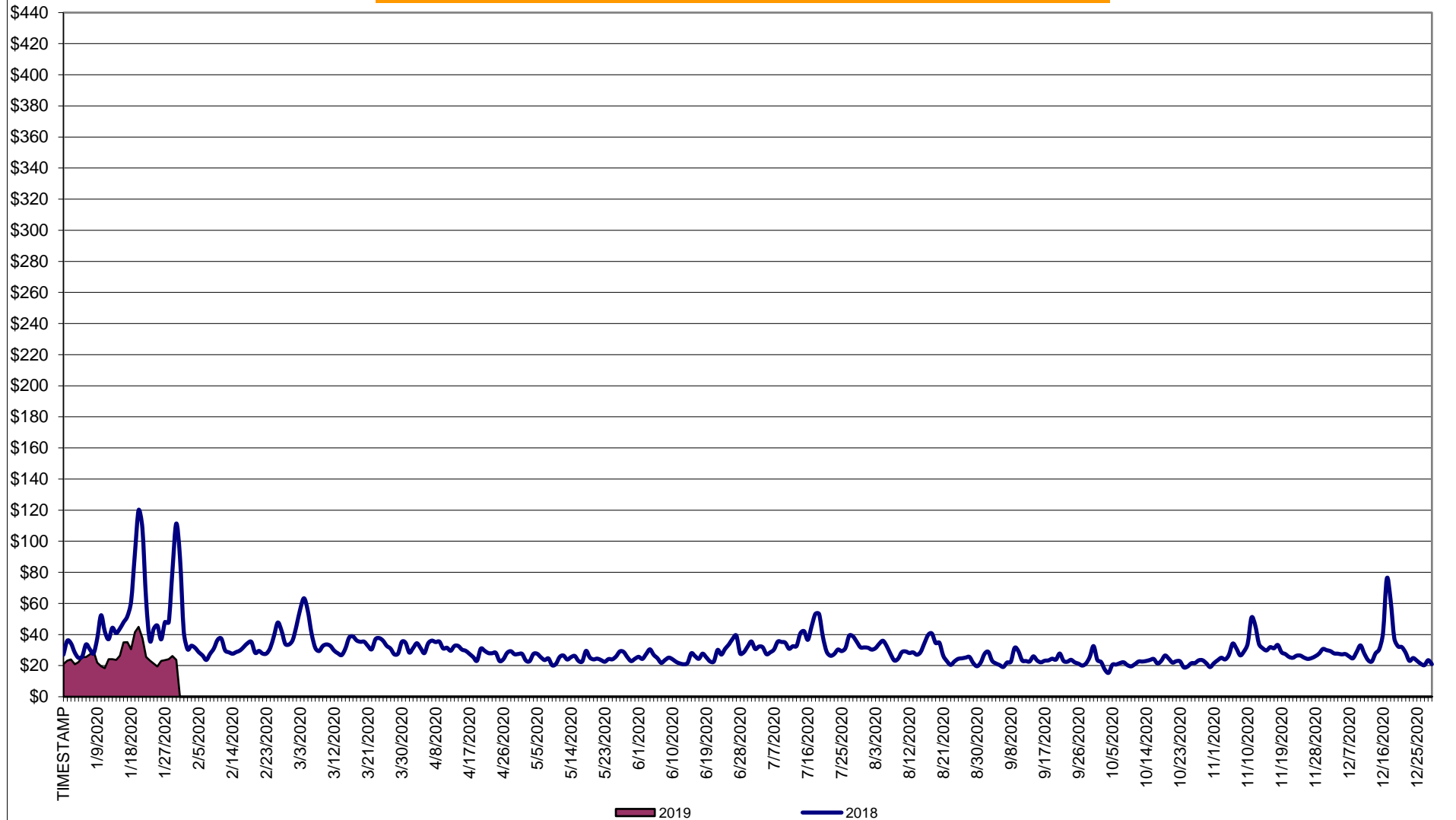


Market Performance Highlights

January 2020

- LBMP for January is \$24.77/MWh; lower than \$29.52/MWh in December 2019 and \$50.93/MWh in January 2019.
 - Day Ahead and Real Time Load Weighted LBMPs are lower compared to December.
- January 2020 average year-to-date monthly cost of \$27.29/MWh is a 49% decrease from \$52.99/MWh in January 2019.
- Average daily sendout is 423 GWh/day in January; lower than 427 GWh/day in December 2019 and 449 GWh/day in January 2019.
- Natural gas and distillate prices are lower compared to the previous month.
 - Natural Gas (Transco Z6 NY) was \$2.20/MMBtu, down from \$2.55/MMBtu in December.
 - Natural gas prices are down 64.1% year-over-year.
 - Jet Kerosene Gulf Coast was \$13.24/MMBtu, down from \$14.03/MMBtu in December.
 - Ultra Low Sulfur No.2 Diesel NY Harbor was \$13.33/MMBtu, down from \$14.21/MMBtu in December.
 - Distillate prices are up 0.4% year-over-year.
- Uplift per MWh is higher compared to the previous month.
 - Uplift (not including NYISO cost of operations) is (\$0.15)/MWh; higher than (\$0.19)/MWh in December.
 - Local Reliability Share is \$0.07/MWh, lower than \$0.17/MWh in December.
 - Statewide Share is (\$0.22)/MWh, higher than (\$0.35)/MWh in December.
 - TSA \$ per NYC MWh is \$0.00/MWh.
 - Total uplift costs (Schedule 1 components including NYISO Cost of Operations) are higher than December.

Daily NYISO Average Cost/MWh (Energy & Ancillary Services)*
2019 Annual Average \$32.59/MWh
January 2019 YTD Average \$52.99/MWh
January 2020 YTD Average \$27.29/MWh



* Excludes ICAP payments.

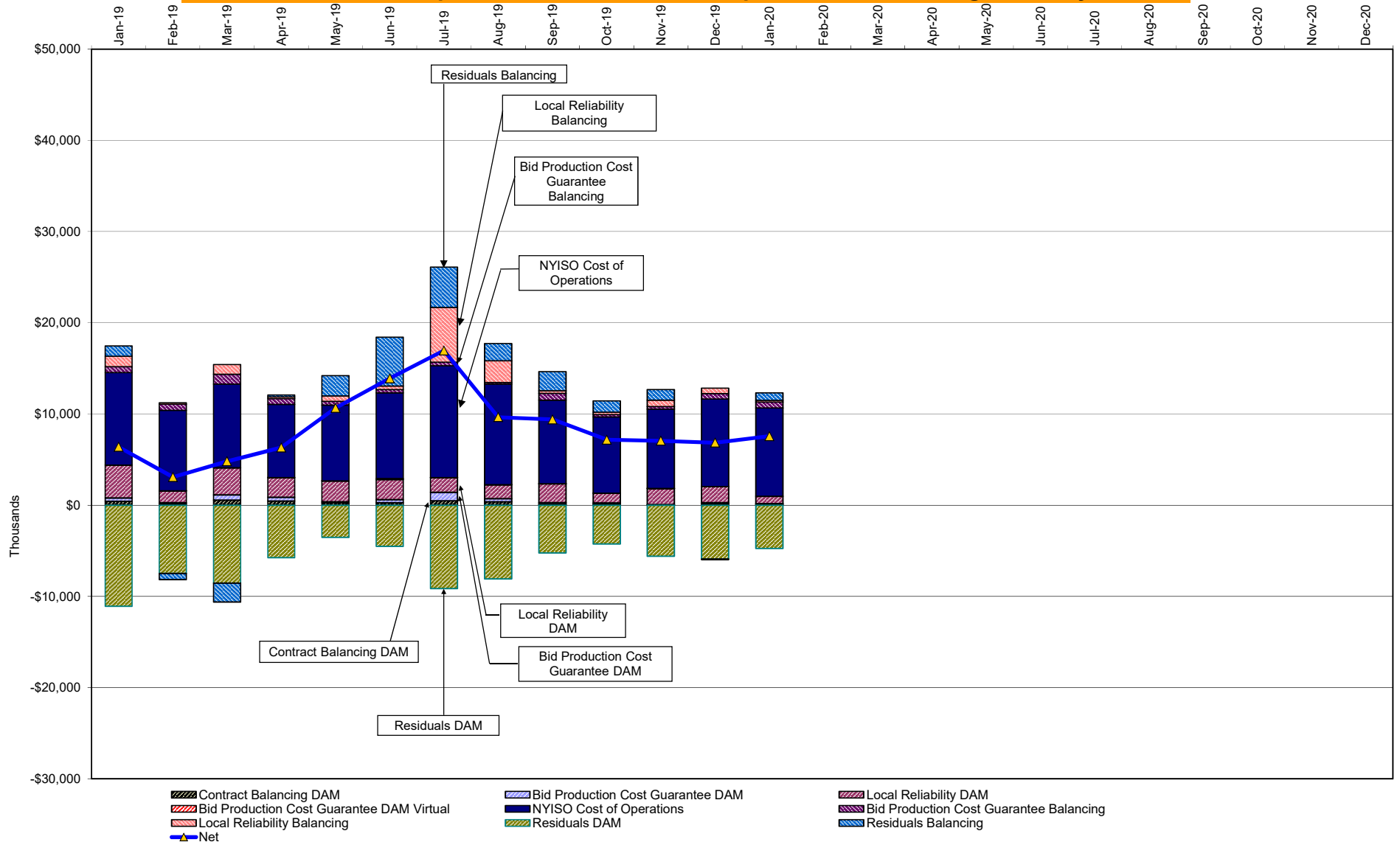
NYISO Average Cost/MWh (Energy and Ancillary Services) *
from the LBMP Customer point of view

2020	<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	24.77											
NTAC	0.91											
Reserve	0.46											
Regulation	0.09											
NYISO Cost of Operations	0.68											
FERC Fee Recovery	0.08											
Uplift	(0.15)											
Uplift: Local Reliability Share	0.07											
Uplift: Statewide Share	(0.22)											
Voltage Support and Black Start	0.44											
Avg Monthly Cost	27.29											
 Avg YTD Cost	27.29											
 TSA \$ per NYC MWh	0.00											
 2019	<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	50.93	33.51	34.91	28.01	23.10	24.43	33.18	27.83	22.22	20.84	27.39	29.52
NTAC	0.51	0.69	0.98	1.16	0.72	1.08	1.01	0.98	0.48	0.57	0.88	0.77
Reserve	0.54	0.51	0.55	0.63	0.63	0.50	0.44	0.49	0.50	0.62	0.50	0.44
Regulation	0.13	0.11	0.10	0.33	0.13	0.09	0.07	0.09	0.09	0.13	0.11	0.10
NYISO Cost of Operations	0.68	0.68	0.69	0.69	0.68	0.69	0.70	0.70	0.69	0.67	0.67	0.67
FERC Fee Recovery	0.08	0.09	0.09	0.10	0.10	0.08	0.06	0.07	0.09	0.09	0.09	0.08
Uplift	(0.25)	(0.44)	(0.33)	(0.15)	0.13	0.07	(0.06)	(0.20)	(0.13)	(0.09)	(0.13)	(0.19)
Uplift: Local Reliability Share	0.32	0.11	0.31	0.20	0.23	0.19	0.44	0.25	0.17	0.11	0.19	0.17
Uplift: Statewide Share	(0.57)	(0.55)	(0.64)	(0.35)	(0.11)	(0.12)	(0.50)	(0.45)	(0.30)	(0.20)	(0.31)	(0.35)
Voltage Support and Black Start	0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.37	0.37	0.36
Avg Monthly Cost	52.99	35.51	37.38	31.16	25.88	27.32	35.78	30.33	24.32	23.21	29.89	31.76
 Avg YTD Cost	52.99	44.93	42.54	40.12	37.57	35.76	35.75	34.96	33.88	32.94	32.69	32.59
 TSA \$ per NYC MWh	0.00	0.00	0.01	0.01	0.19	0.77	1.00	0.33	0.43	0.00	0.00	0.00

* Excludes ICAP payments.
Market Mitigation and Analysis
Prepared: 2/7/2020 11:52 AM

As of Jan. 2016, the annual FERC fee is recovered separately from Cost of Ops.

NYISO Dollar Flows - Uplift - OATT Schedule 1 components - Data through January 31, 2020



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>2020</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>	14,194,609											
DAM LSE Internal LBMP Energy Sales	56%											
DAM External TC LBMP Energy Sales	6%											
DAM Bilateral - Internal Bilaterals	30%											
DAM Bilateral - Import/Non-LBMP Market Bilaterals	5%											
DAM Bilateral - Export/Non-LBMP Market Bilaterals	2%											
DAM Bilateral - Wheel Through Bilaterals	1%											
<u>Balancing Energy Market MWh</u>	-26,753											
Balancing Energy LSE Internal LBMP Energy Sales	-1080%											
Balancing Energy External TC LBMP Energy Sales	1156%											
Balancing Energy Bilateral - Internal Bilaterals	62%											
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%											
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	127%											
Balancing Energy Bilateral - Wheel Through Bilaterals	-365%											
<u>Transactions Summary</u>												
LBMP	62%											
Internal Bilaterals	31%											
Import Bilaterals	5%											
Export Bilaterals	2%											
Wheels Through	0%											
<u>Market Share of Total Load</u>												
Day Ahead Market	100.2%											
Balancing Energy +	-0.2%											
Total MWH	14,167,856											
Average Daily Energy Sendout/Month GWh	423											

<u>2019</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>	15,299,458	13,391,383	13,527,834	11,811,029	12,521,583	13,723,372	17,416,589	16,379,968	13,588,715	12,567,821	13,036,152	14,345,711
DAM LSE Internal LBMP Energy Sales	57%	57%	59%	59%	57%	58%	64%	63%	58%	57%	54%	56%
DAM External TC LBMP Energy Sales	6%	5%	3%	1%	3%	3%	3%	3%	3%	4%	6%	6%
DAM Bilateral - Internal Bilaterals	29%	30%	30%	31%	32%	29%	26%	26%	30%	32%	32%	30%
DAM Bilateral - Import/Non-LBMP Market Bilaterals	5%	5%	5%	5%	6%	5%	4%	4%	5%	5%	5%	5%
DAM Bilateral - Export/Non-LBMP Market Bilaterals	1%	1%	2%	2%	2%	2%	1%	1%	2%	2%	2%	2%
DAM Bilateral - Wheel Through Bilaterals	2%	2%	2%	2%	1%	2%	2%	2%	2%	1%	1%	1%
<u>Balancing Energy Market MWh</u>	-322,442	-323,188	-261,217	-218,482	-392,699	-102,044	103,628	-514,102	-247,267	-112,057	-17,421	46,828
Balancing Energy LSE Internal LBMP Energy Sales	-120%	-126%	-138%	-178%	-150%	-264%	-2%	-119%	-163%	-346%	-1332%	-480%
Balancing Energy External TC LBMP Energy Sales	65%	67%	82%	113%	68%	233%	199%	41%	93%	266%	1435%	699%
Balancing Energy Bilateral - Internal Bilaterals	-4%	-1%	-3%	2%	1%	0%	5%	0%	-4%	6%	103%	39%
Balancing Energy Bilateral - Import/Non-LBMP Market Bilaterals	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%
Balancing Energy Bilateral - Export/Non-LBMP Market Bilaterals	3%	7%	6%	7%	2%	8%	8%	1%	6%	25%	170%	70%
Balancing Energy Bilateral - Wheel Through Bilaterals	-45%	-47%	-47%	-44%	-21%	-77%	-125%	-23%	-31%	-52%	-476%	-229%
<u>Transactions Summary</u>												
LBMP	63%	62%	61%	60%	59%	62%	68%	65%	61%	61%	60%	63%
Internal Bilaterals	29%	30%	30%	31%	33%	30%	25%	27%	30%	32%	32%	30%
Import Bilaterals	5%	5%	6%	6%	6%	5%	4%	5%	5%	5%	5%	5%
Export Bilaterals	1%	2%	2%	2%	2%	2%	1%	1%	2%	2%	2%	2%
Wheels Through	1%	1%	1%	1%	0%	1%	1%	1%	2%	0%	0%	0%
<u>Market Share of Total Load</u>												
Day Ahead Market	102.2%	102.5%	102.0%	101.9%	103.2%	100.7%	99.4%	103.2%	101.9%	100.9%	100.1%	99.7%
Balancing Energy +	-2.2%	-2.5%	-2.0%	-1.9%	-3.2%	-0.7%	0.6%	-3.2%	-1.9%	-0.9%	-0.1%	0.3%
Total MWH	14,977,016	13,068,195	13,266,617	11,592,547	12,128,884	13,621,328	17,520,217	15,865,866	13,341,448	12,455,764	13,018,731	14,392,539
Average Daily Energy Sendout/Month GWh	449	436	411	371	373	429	539	487	419	377	401	427

+ 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 2020 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 *	\$22.11											
Standard Deviation	\$7.43											
Load Weighted Price **	\$22.77											
<u>RTC LBMP</u>												
Price *	\$22.86											
Standard Deviation	\$9.33											
Load Weighted Price **	\$23.50											
<u>REAL TIME LBMP</u>												
Price *	\$22.53											
Standard Deviation	\$11.90											
Load Weighted Price **	\$23.20											
Average Daily Energy Sendout/Month GWh	423											

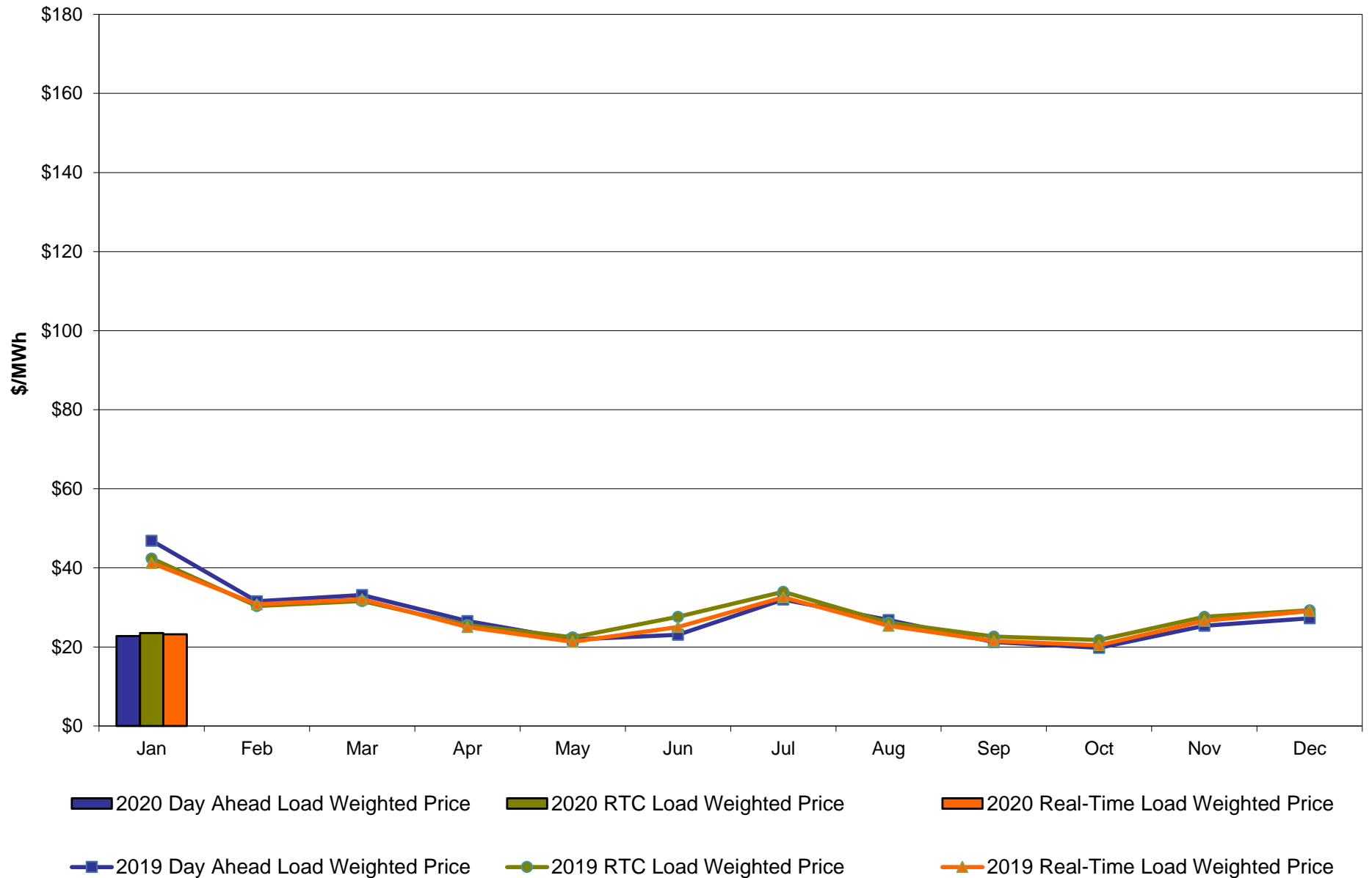
NYISO Markets 2019 Energy Statistics

	<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 *	\$45.01	\$30.66	\$32.34	\$25.97	\$21.16	\$21.79	\$30.16	\$25.35	\$20.45	\$19.18	\$24.65	\$26.29
Standard Deviation	\$25.67	\$12.86	\$9.30	\$6.32	\$5.89	\$7.28	\$12.06	\$8.73	\$5.57	\$5.09	\$7.73	\$11.81
Load Weighted Price **	\$46.88	\$31.53	\$33.14	\$26.57	\$21.89	\$23.04	\$31.98	\$26.83	\$21.23	\$19.77	\$25.36	\$27.22
<u>RTC LBMP</u>												
Price *	\$40.86	\$29.74	\$31.04	\$25.07	\$21.88	\$25.67	\$32.23	\$24.92	\$21.70	\$20.92	\$26.82	\$28.17
Standard Deviation	\$23.02	\$10.79	\$8.48	\$7.53	\$8.01	\$23.45	\$21.96	\$14.96	\$9.22	\$13.95	\$10.37	\$16.26
Load Weighted Price **	\$42.39	\$30.32	\$31.62	\$25.54	\$22.44	\$27.64	\$33.92	\$26.14	\$22.60	\$21.76	\$27.64	\$29.24
<u>REAL TIME LBMP</u>												
Price *	\$39.54	\$30.13	\$31.46	\$24.47	\$20.56	\$23.30	\$30.77	\$24.01	\$20.49	\$19.53	\$25.82	\$27.81
Standard Deviation	\$26.03	\$13.77	\$12.54	\$17.27	\$10.35	\$17.49	\$20.63	\$12.36	\$9.62	\$12.02	\$11.60	\$19.64
Load Weighted Price **	\$41.24	\$30.80	\$32.06	\$25.06	\$21.28	\$25.05	\$32.53	\$25.34	\$21.50	\$20.43	\$26.64	\$29.05
Average Daily Energy Sendout/Month GWh	449	436	411	371	373	429	539	487	419	377	401	427

* Average zonal load weighted prices.

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

NYISO Monthly Average Internal LBMPs 2019- 2020

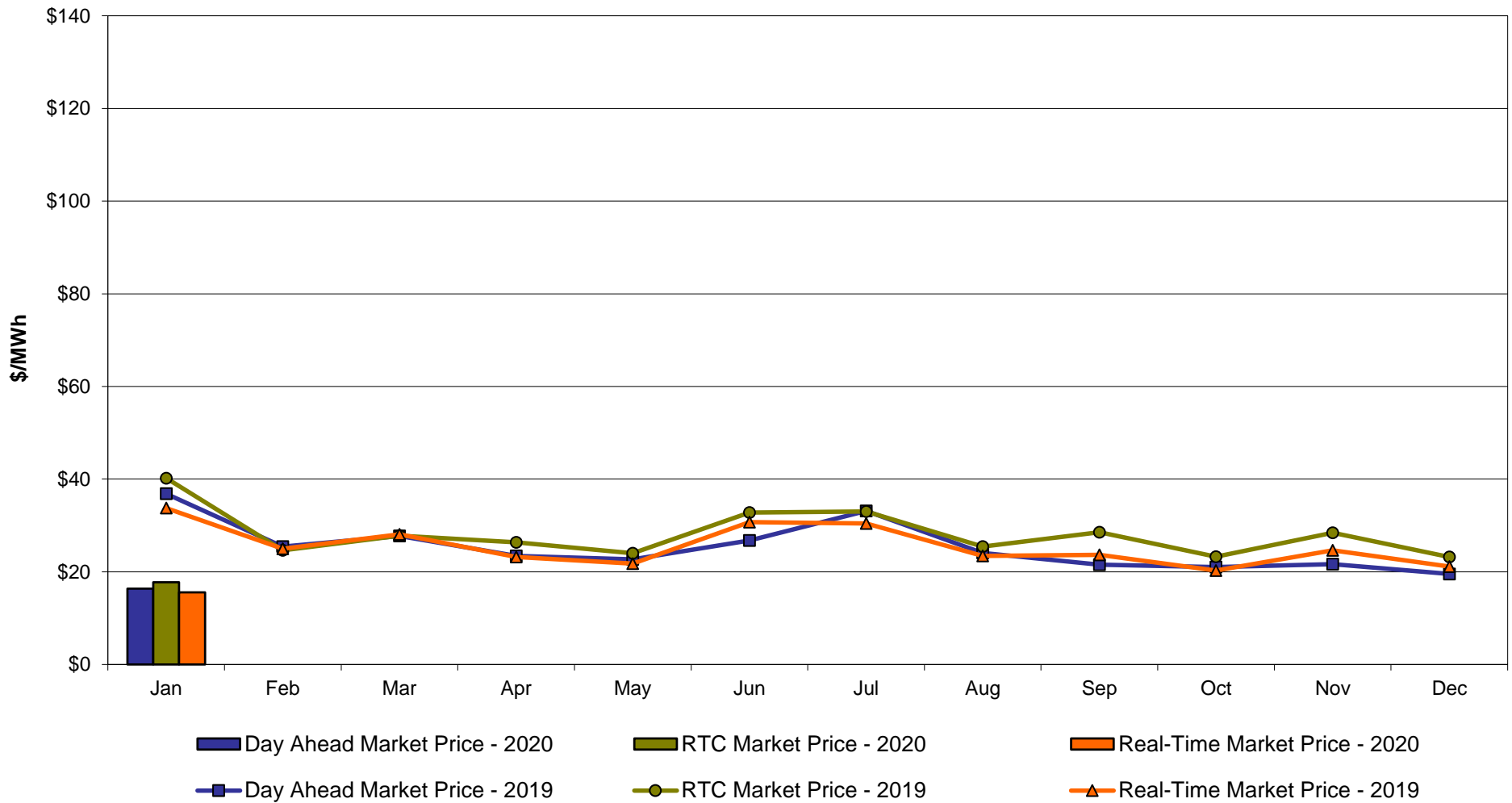


January 2020 Zonal LBMP Statistics for NYISO (\$/MWh)

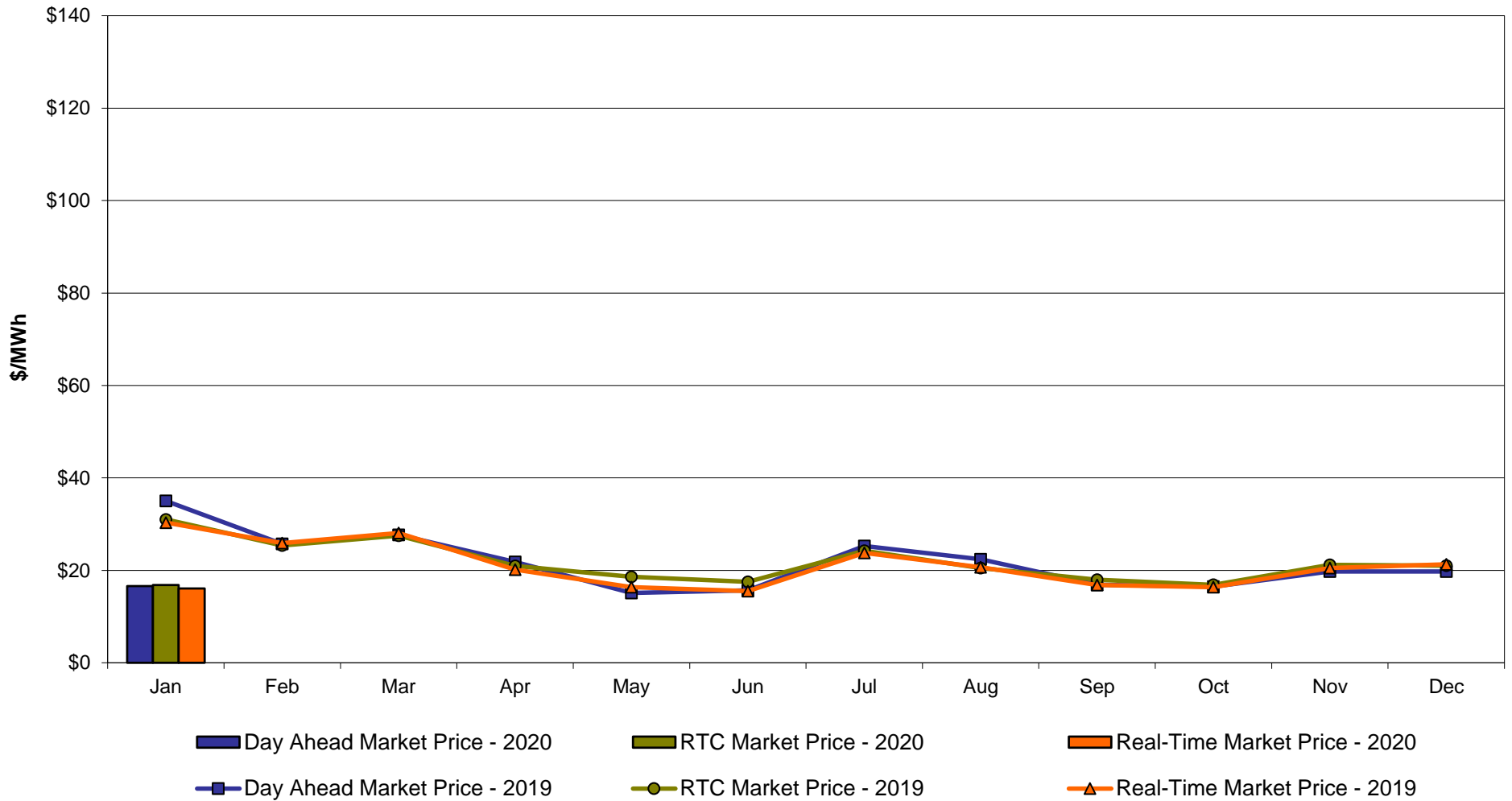
	<u>WEST</u> <u>Zone A</u>	<u>GENESEE</u> <u>Zone B</u>	<u>NORTH</u> <u>Zone D</u>	<u>CENTRAL</u> <u>Zone C</u>	<u>MOHAWK</u> <u>VALLEY</u> <u>Zone E</u>	<u>CAPITAL</u> <u>Zone F</u>	<u>HUDSON</u> <u>VALLEY</u> <u>Zone G</u>	<u>MILLWOOD</u> <u>Zone H</u>	<u>DUNWOODIE</u> <u>Zone I</u>	<u>NEW YORK</u> <u>CITY</u> <u>Zone J</u>	<u>LONG</u> <u>ISLAND</u> <u>Zone K</u>
<u>DAY AHEAD LBMP</u>											
Unweighted Price *	16.37	15.82	14.59	16.57	16.82	25.53	23.36	23.59	23.60	25.12	27.57
Standard Deviation	6.82	6.69	7.08	6.82	7.06	7.56	6.96	7.03	7.04	8.48	10.50
<u>RTC LBMP</u>											
Unweighted Price *	17.74	15.46	15.11	16.81	17.06	25.06	23.00	23.18	23.15	27.13	27.81
Standard Deviation	12.88	8.00	8.99	8.26	8.37	8.95	7.39	7.46	7.41	15.95	22.34
<u>REAL TIME LBMP</u>											
Unweighted Price *	15.54	15.26	14.41	16.07	16.44	25.26	22.94	23.13	23.08	28.19	25.97
Standard Deviation	10.36	9.91	10.75	9.93	10.23	14.13	11.31	11.45	11.36	21.59	13.65
	<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 *	15.24	14.49	14.41	19.95	25.60	26.68	26.35	25.66	23.99	23.91	14.28
Standard Deviation	5.53	7.00	6.97	6.20	8.55	9.91	9.67	9.32	7.23	7.18	6.96
<u>RTC LBMP</u>											
Unweighted Price *	13.65	14.84	14.84	19.92	26.47	28.57	26.77	26.30	23.15	23.25	14.74
Standard Deviation	6.78	8.84	8.84	6.76	12.40	29.47	20.78	20.69	7.39	7.44	8.79
<u>REAL TIME LBMP</u>											
Unweighted Price *	12.86	14.19	14.19	19.35	25.28	26.46	25.37	24.92	22.93	23.21	14.06
Standard Deviation	18.43	10.64	10.64	9.09	13.54	17.68	13.26	12.81	12.77	11.38	10.50

* Straight LBMP averages

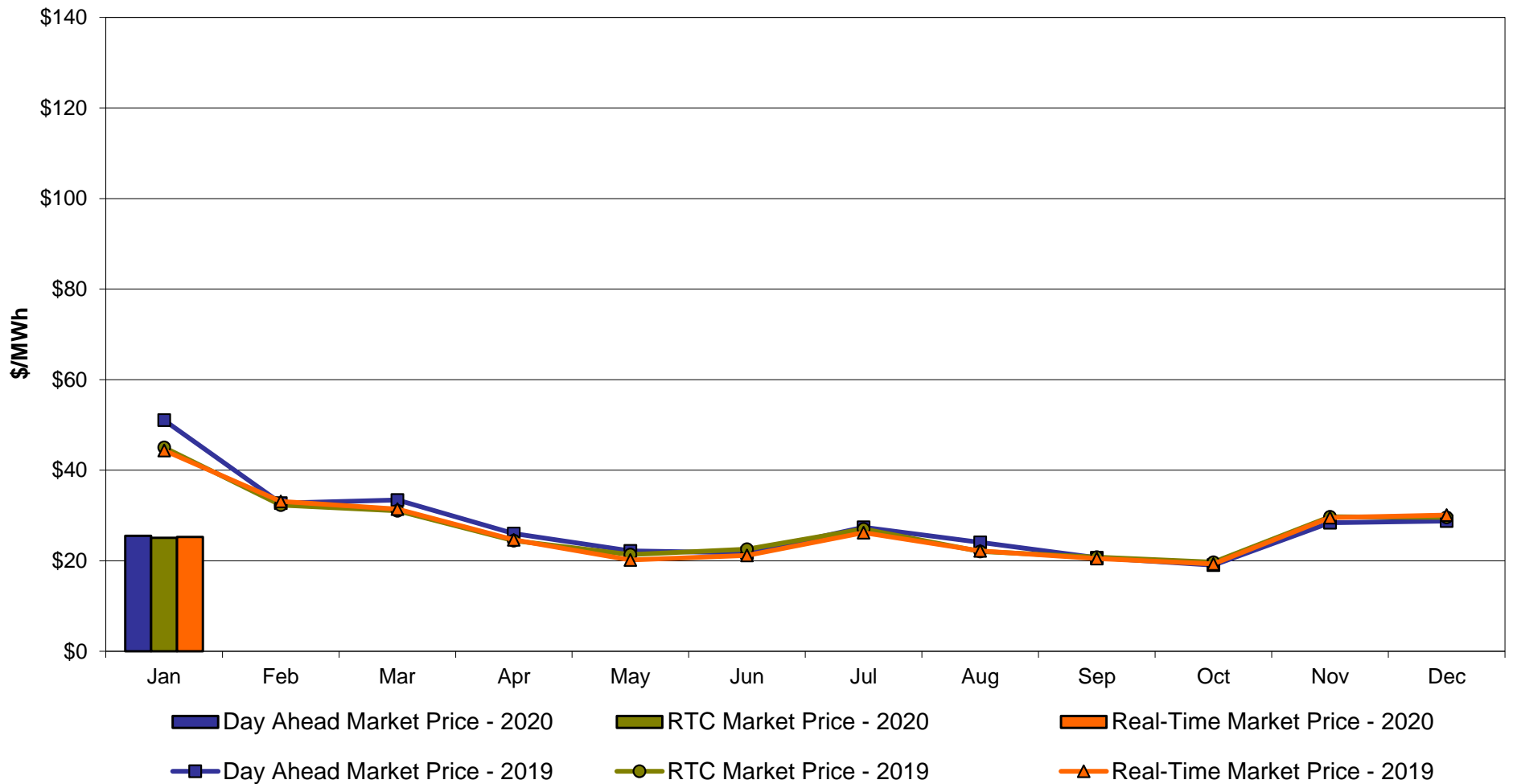
West Zone A **Monthly Average LBMP Prices 2019 - 2020**



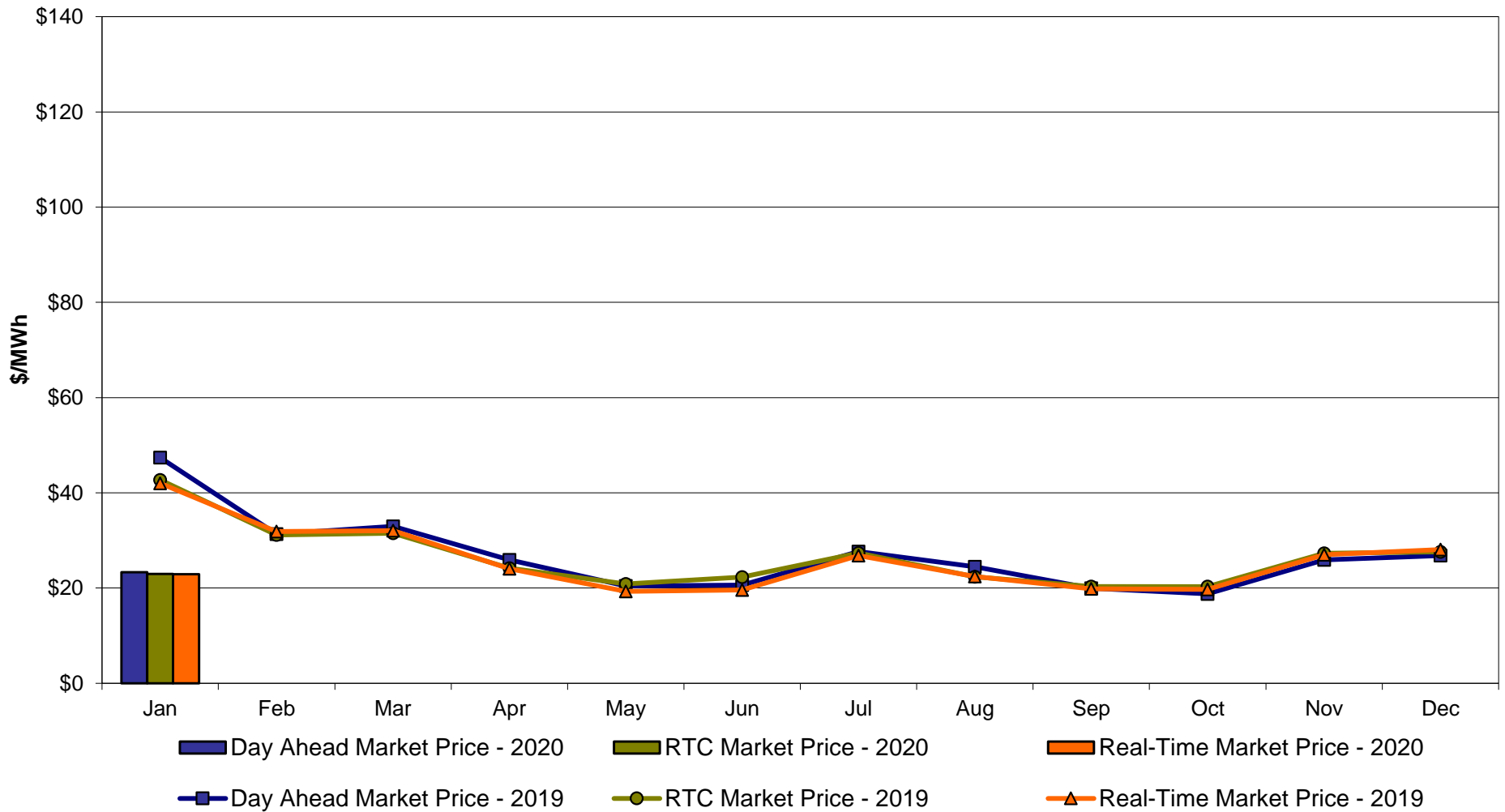
Central Zone C
Monthly Average LBMP Prices 2019 - 2020



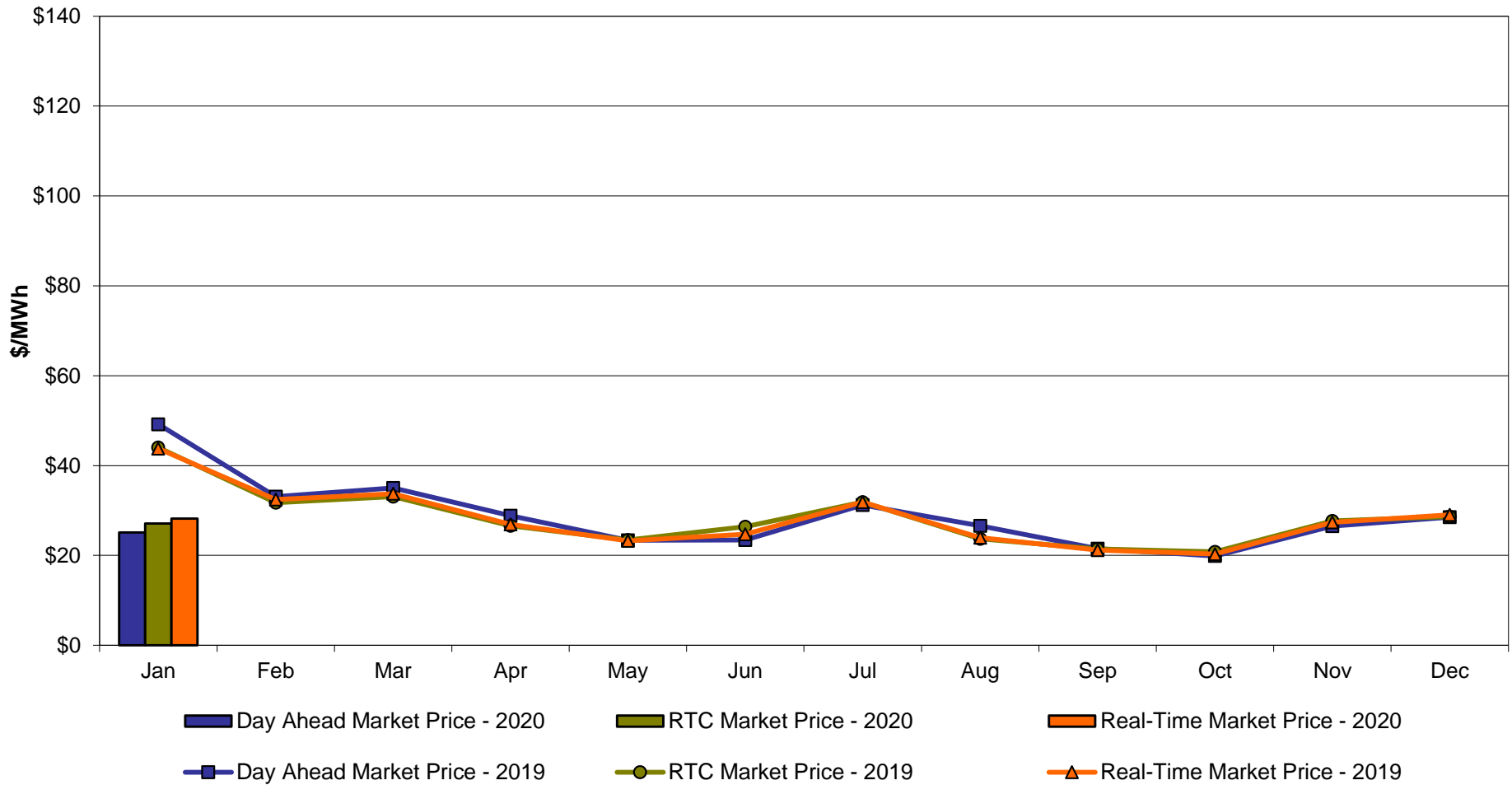
Capital Zone F **Monthly Average LBMP Prices 2019 - 2020**



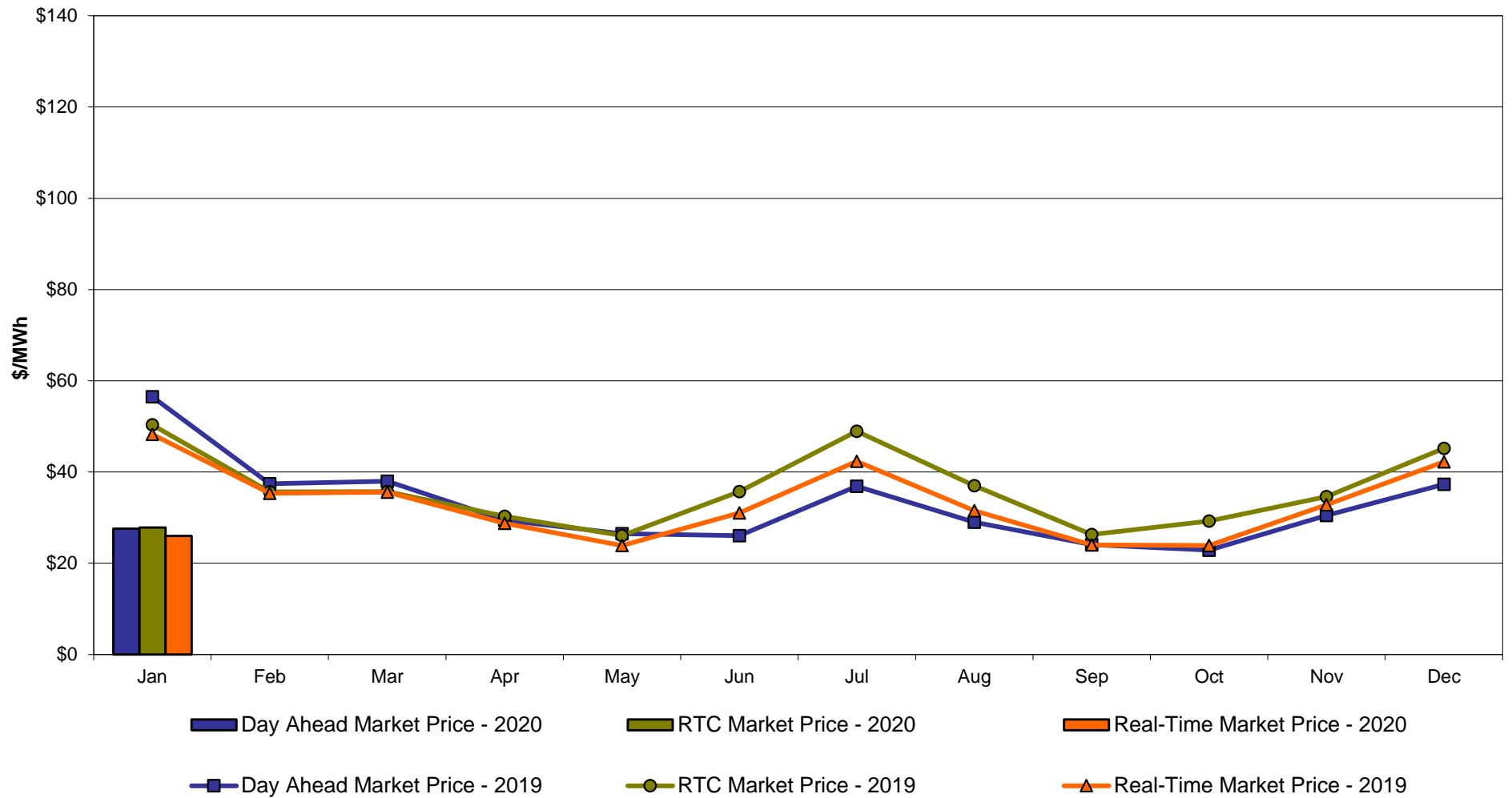
Hudson Valley Zone G Monthly Average LBMP Prices 2019 - 2020



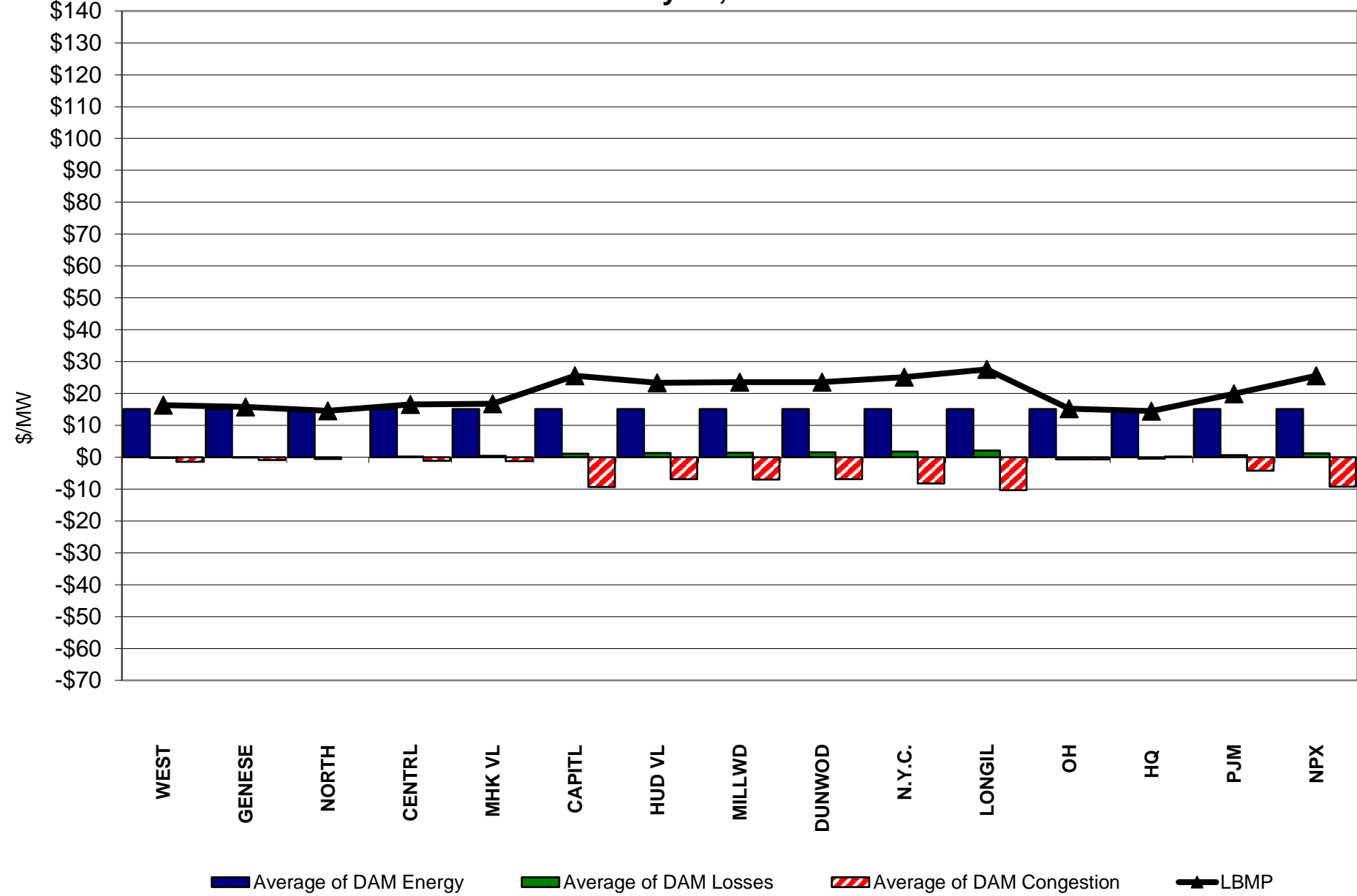
NYC Zone J **Monthly Average LBMP Prices 2019 - 2020**



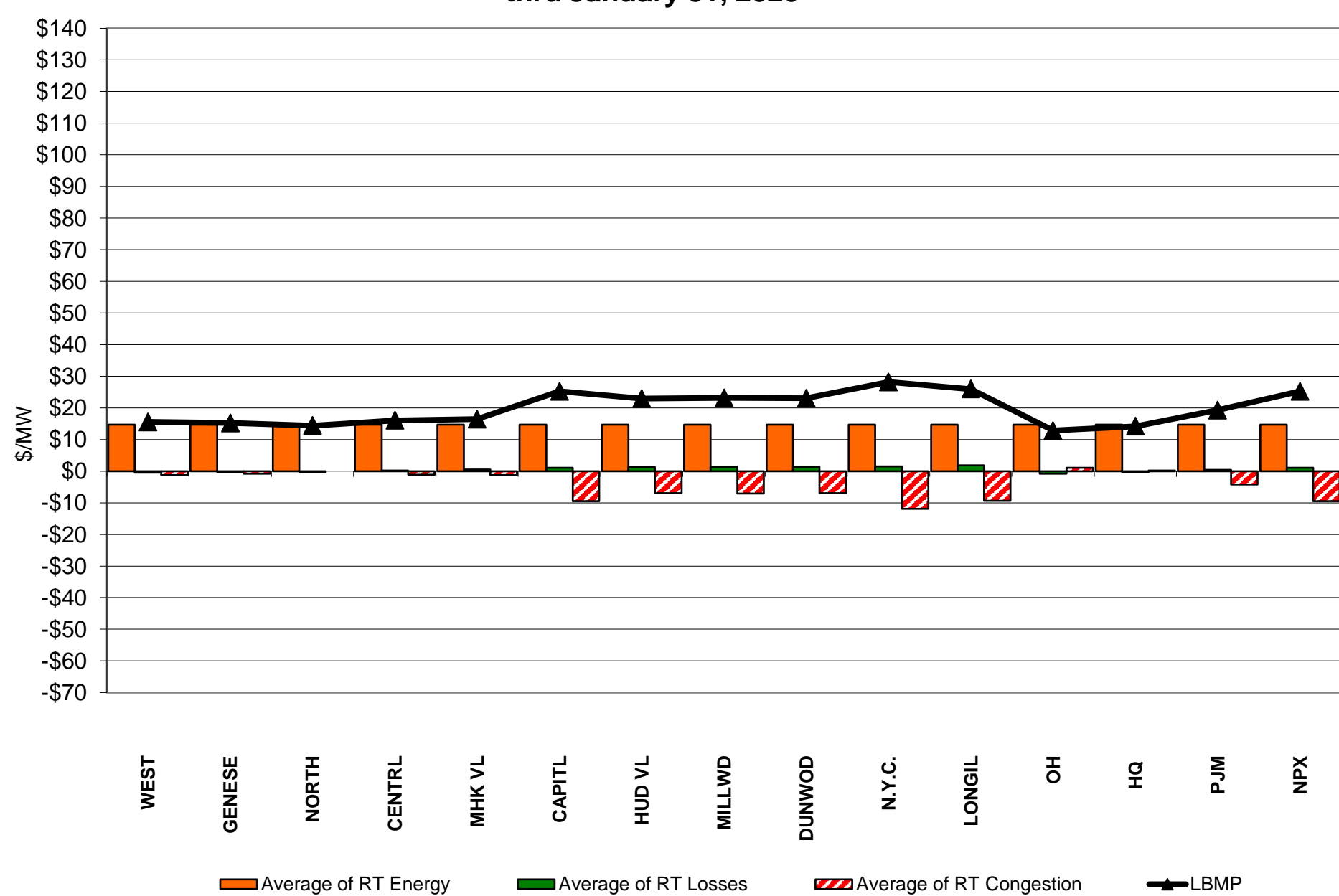
Long Island Zone K Monthly Average LBMP Prices 2019 - 2020



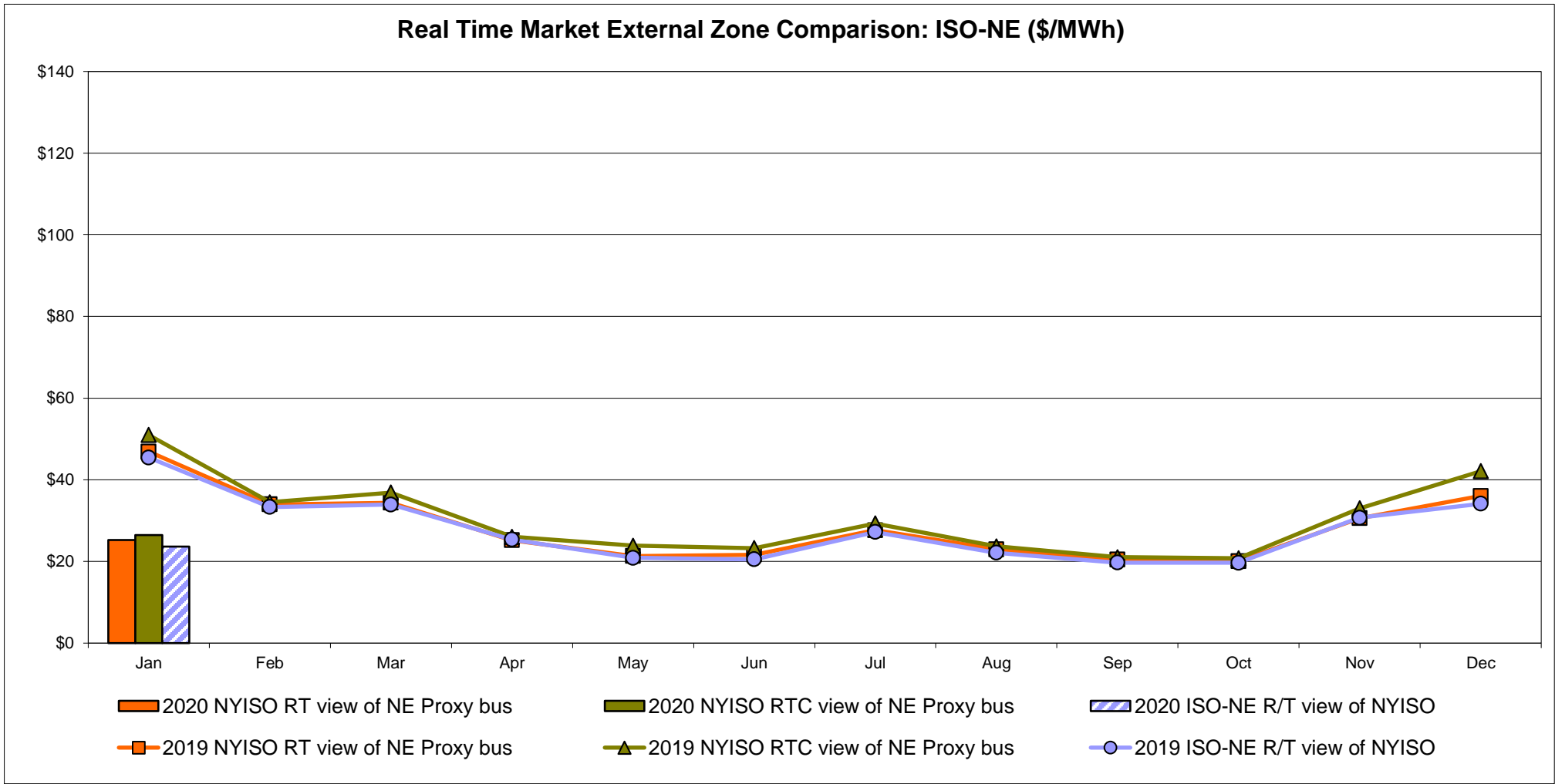
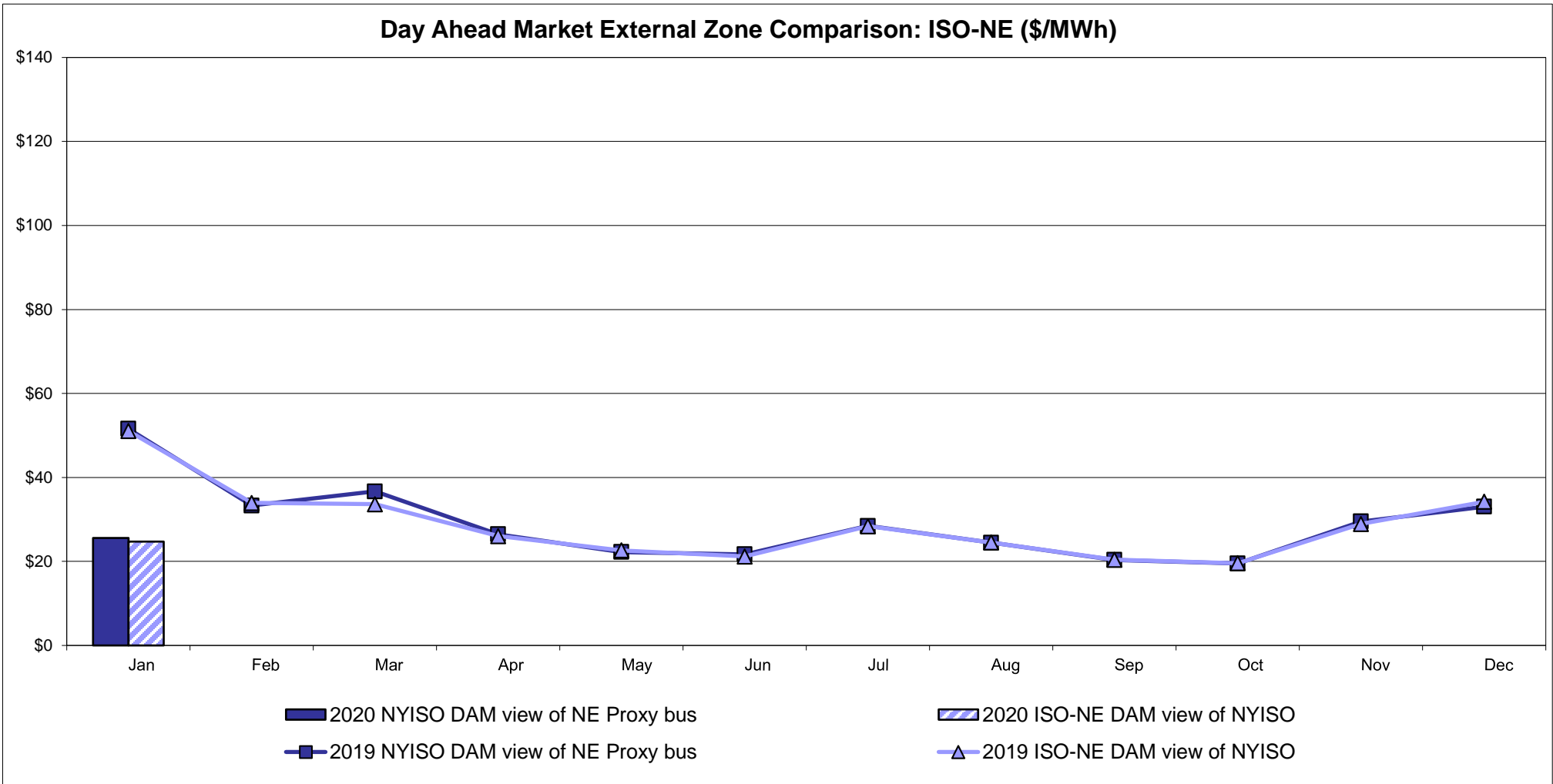
DAM Zonal Unweighted Monthly Average LBMP Components
thru January 31, 2020



RT Zonal Unweighted Monthly Average LBMP Components
thru January 31, 2020

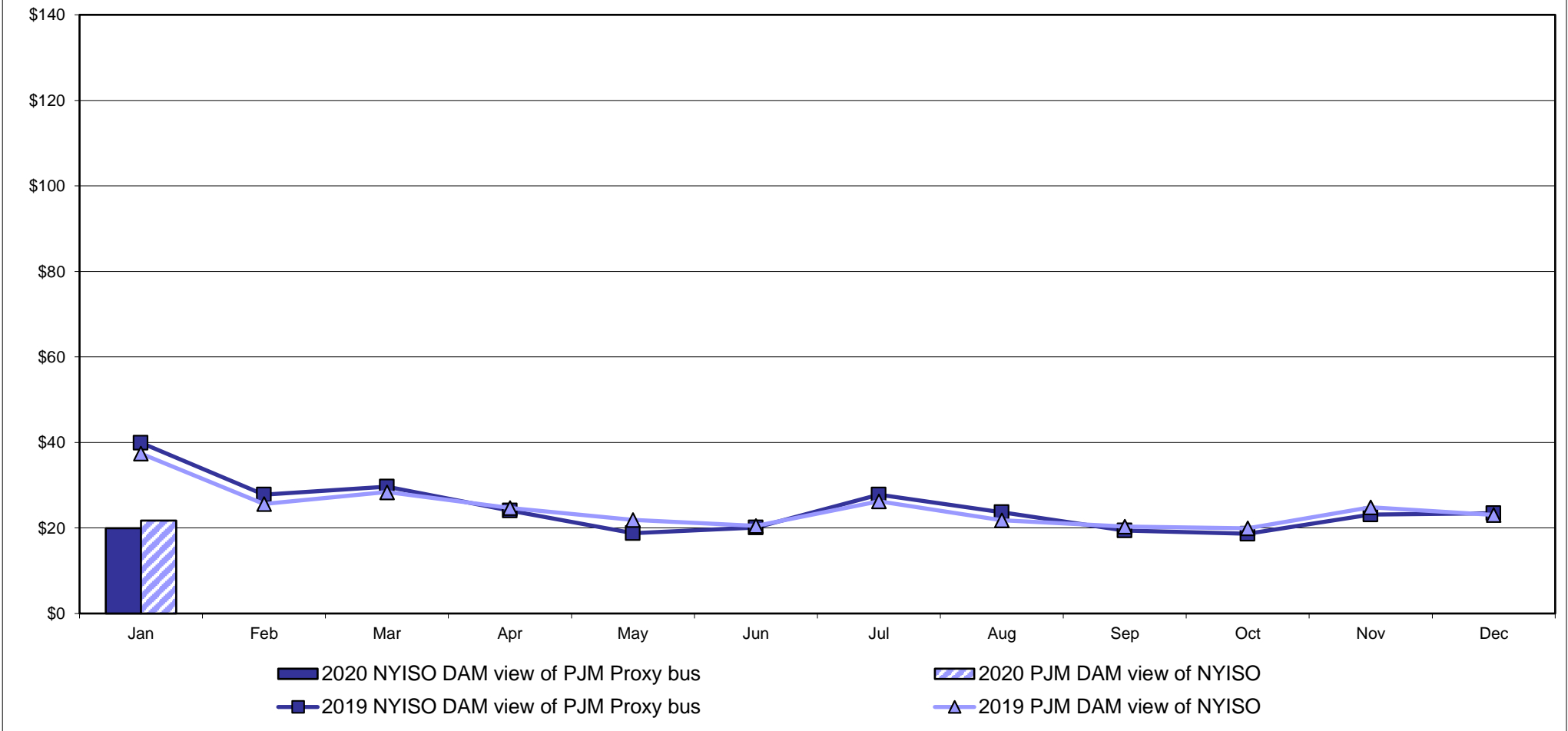


External Comparison ISO-New England

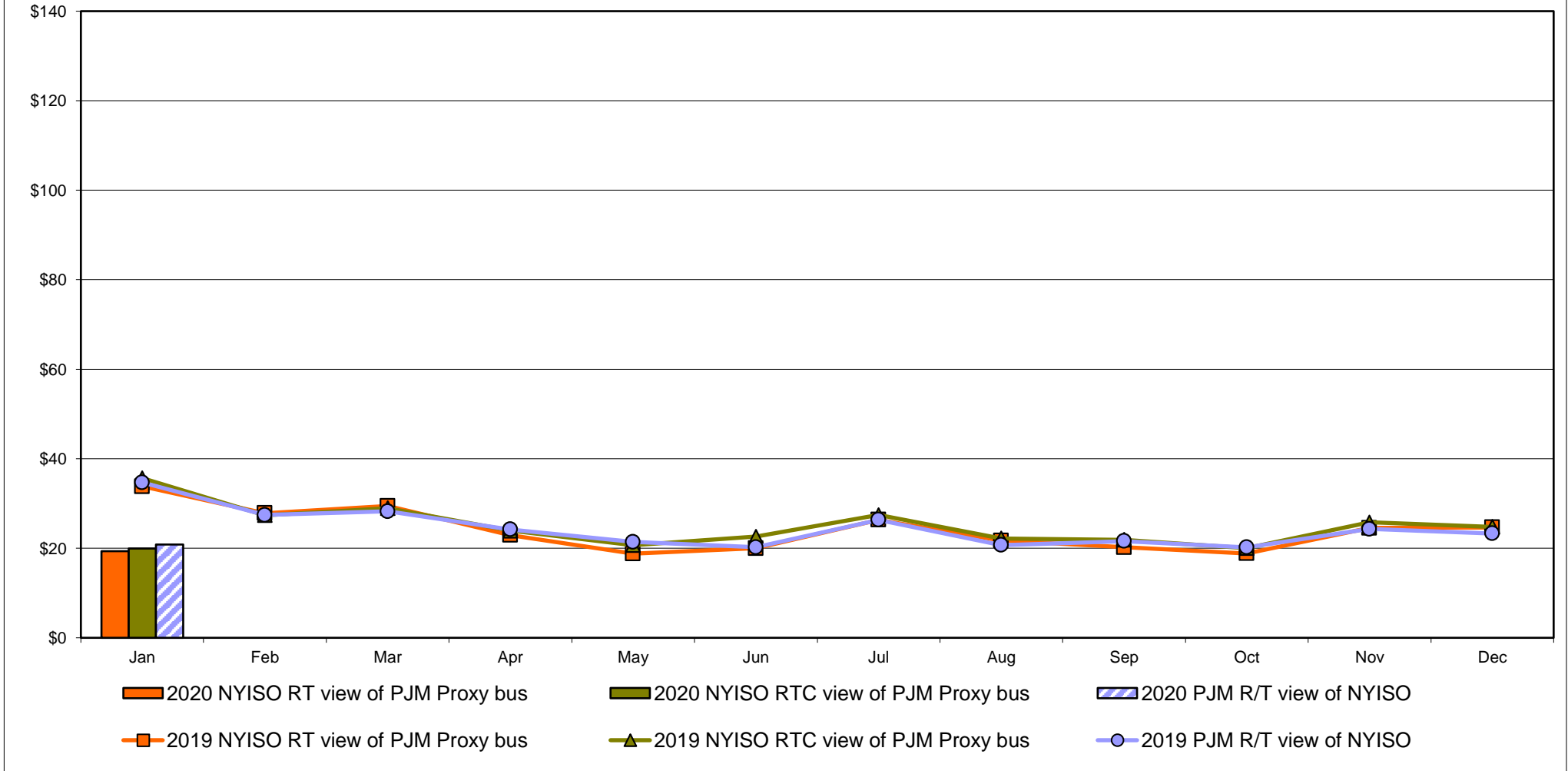


External Comparison PJM

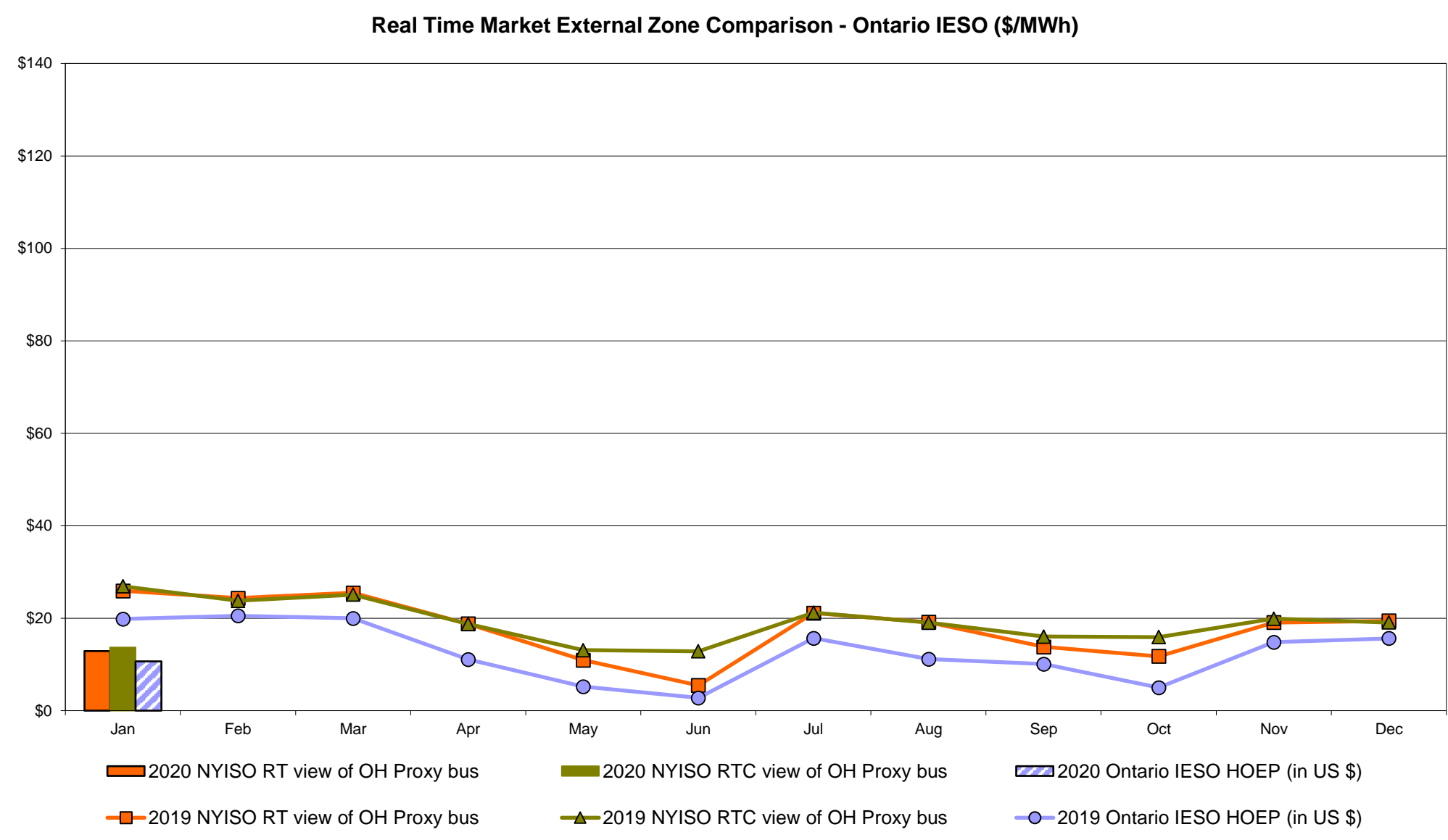
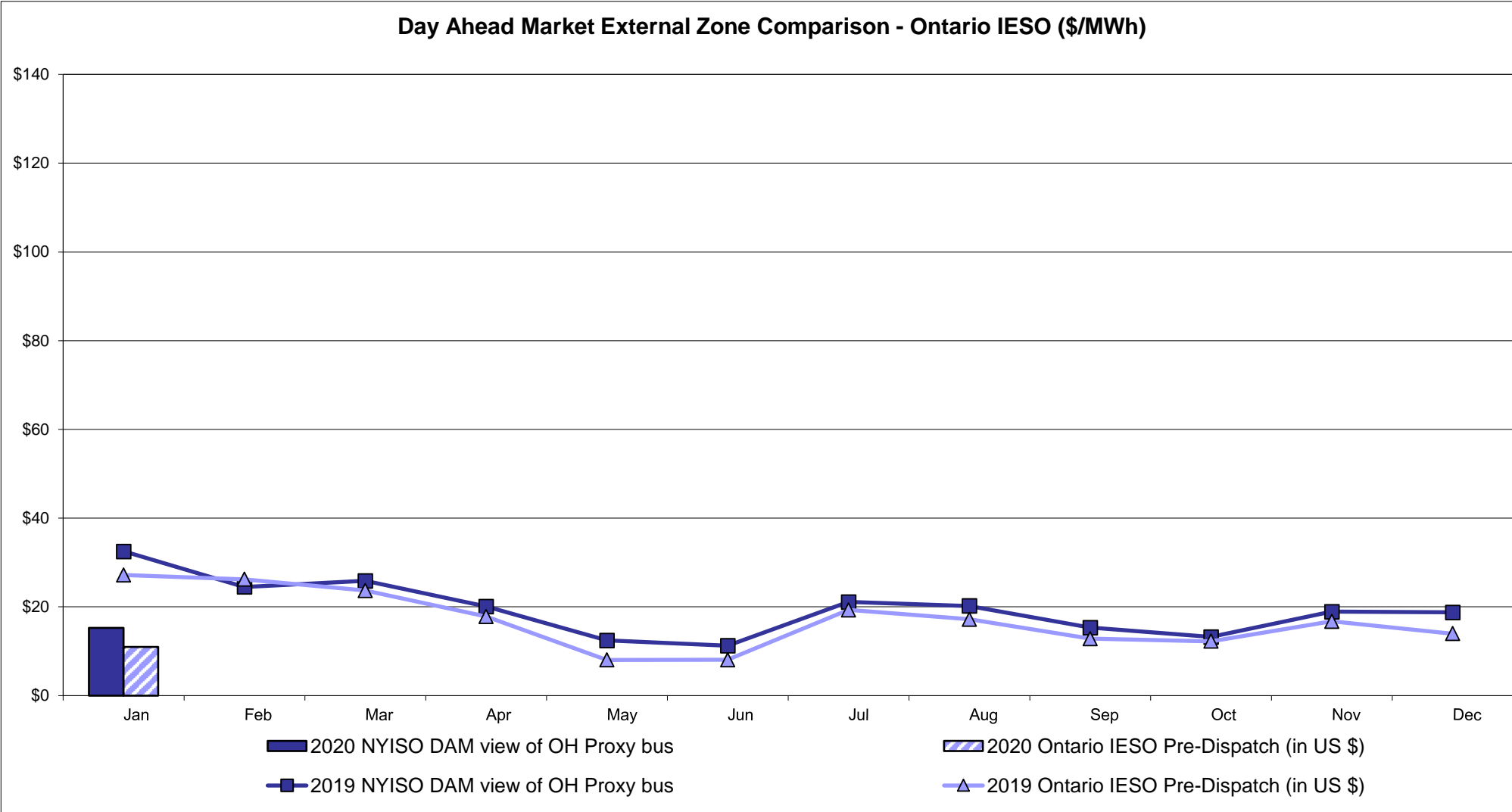
Day Ahead Market External Zone Comparison - PJM (\$/MWh)



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

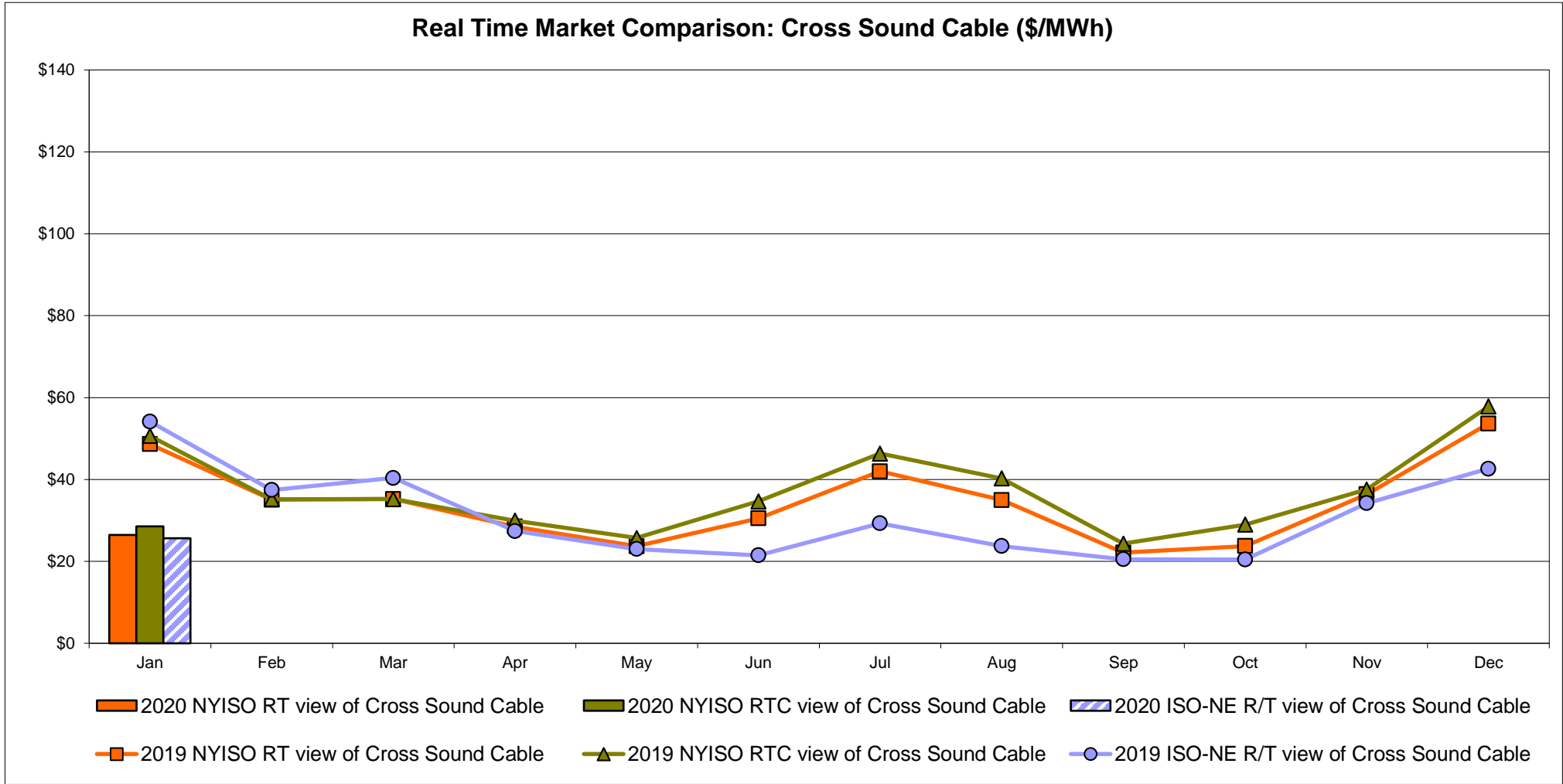
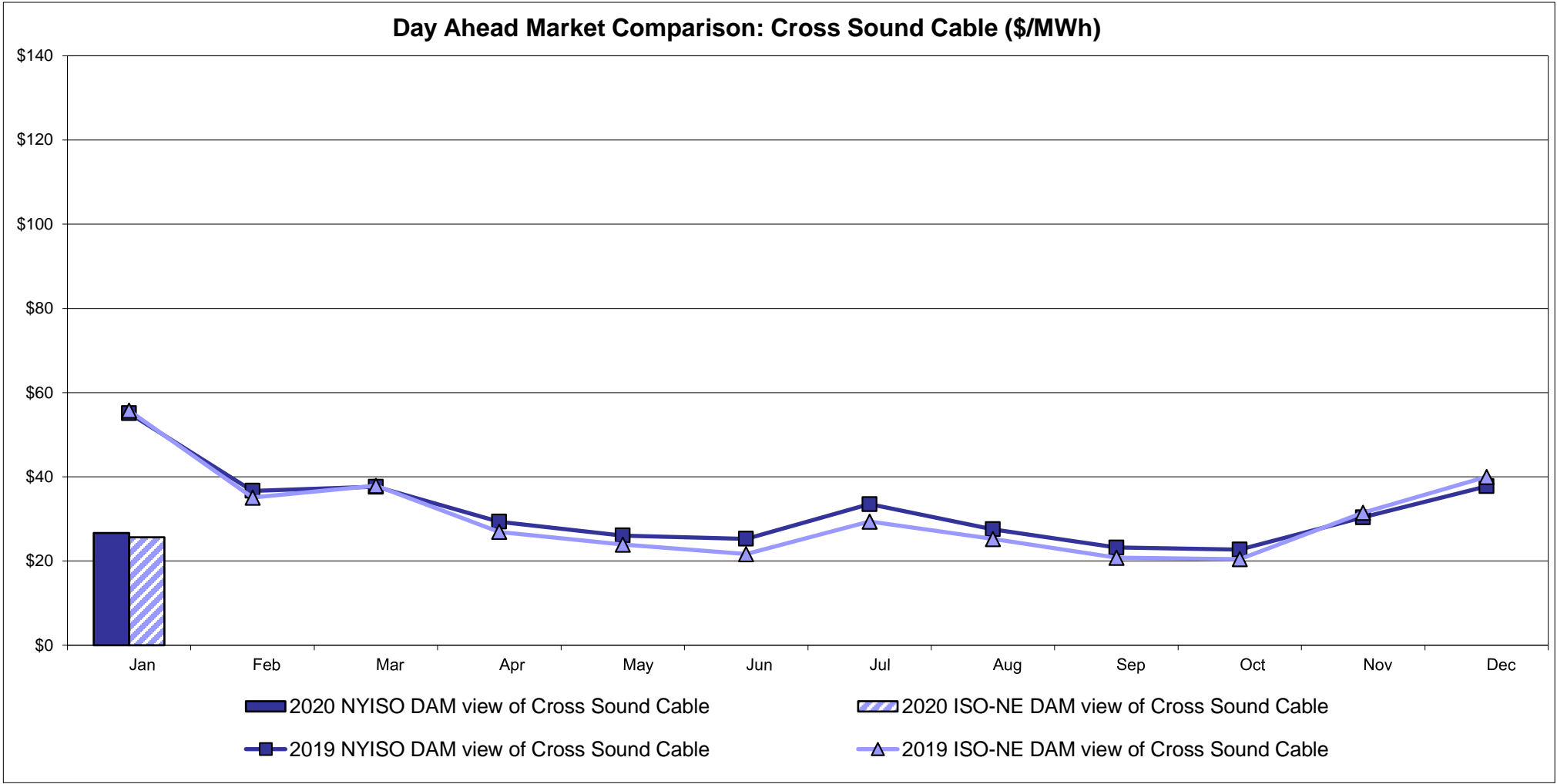


External Comparison Ontario IESO



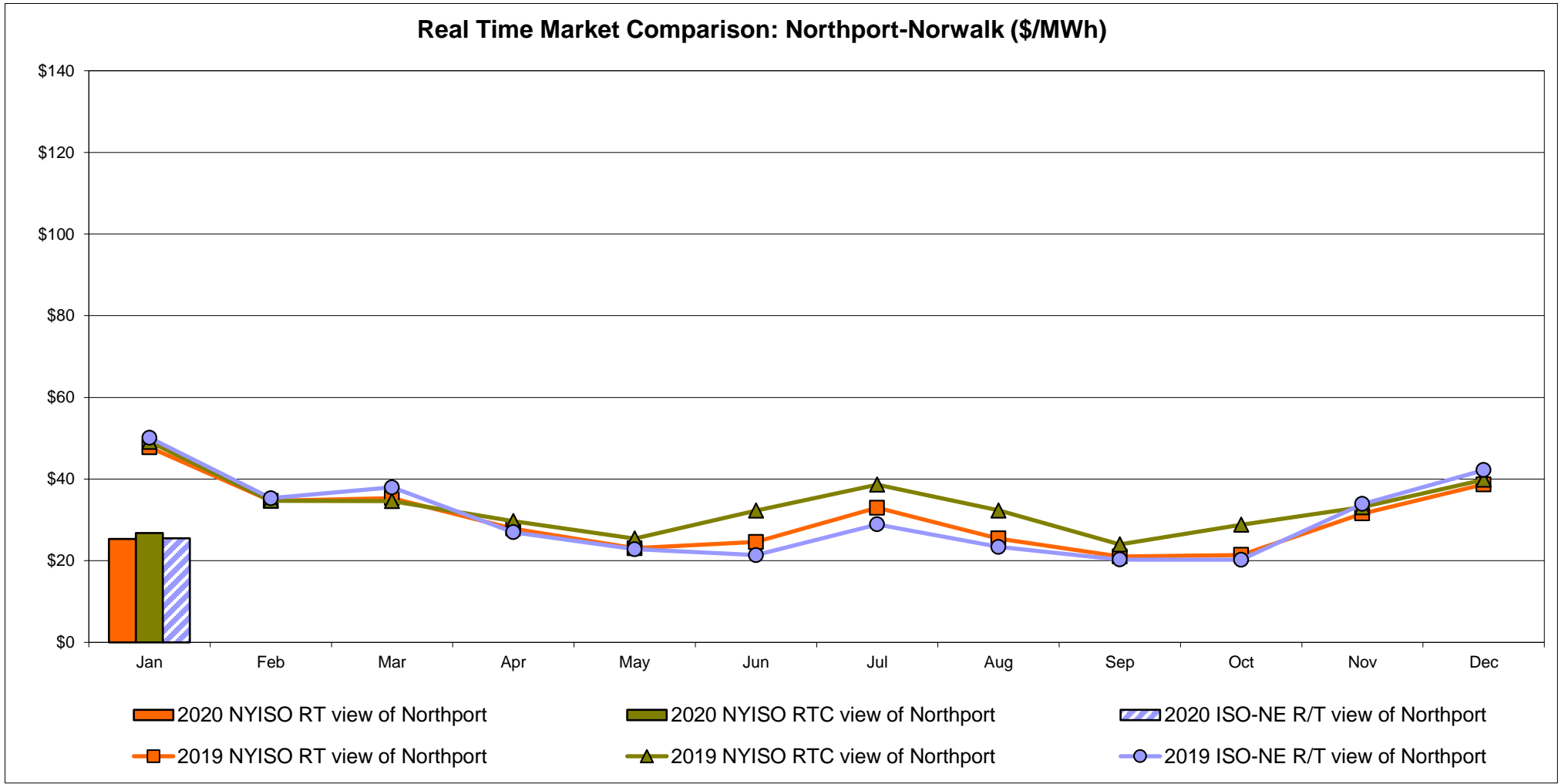
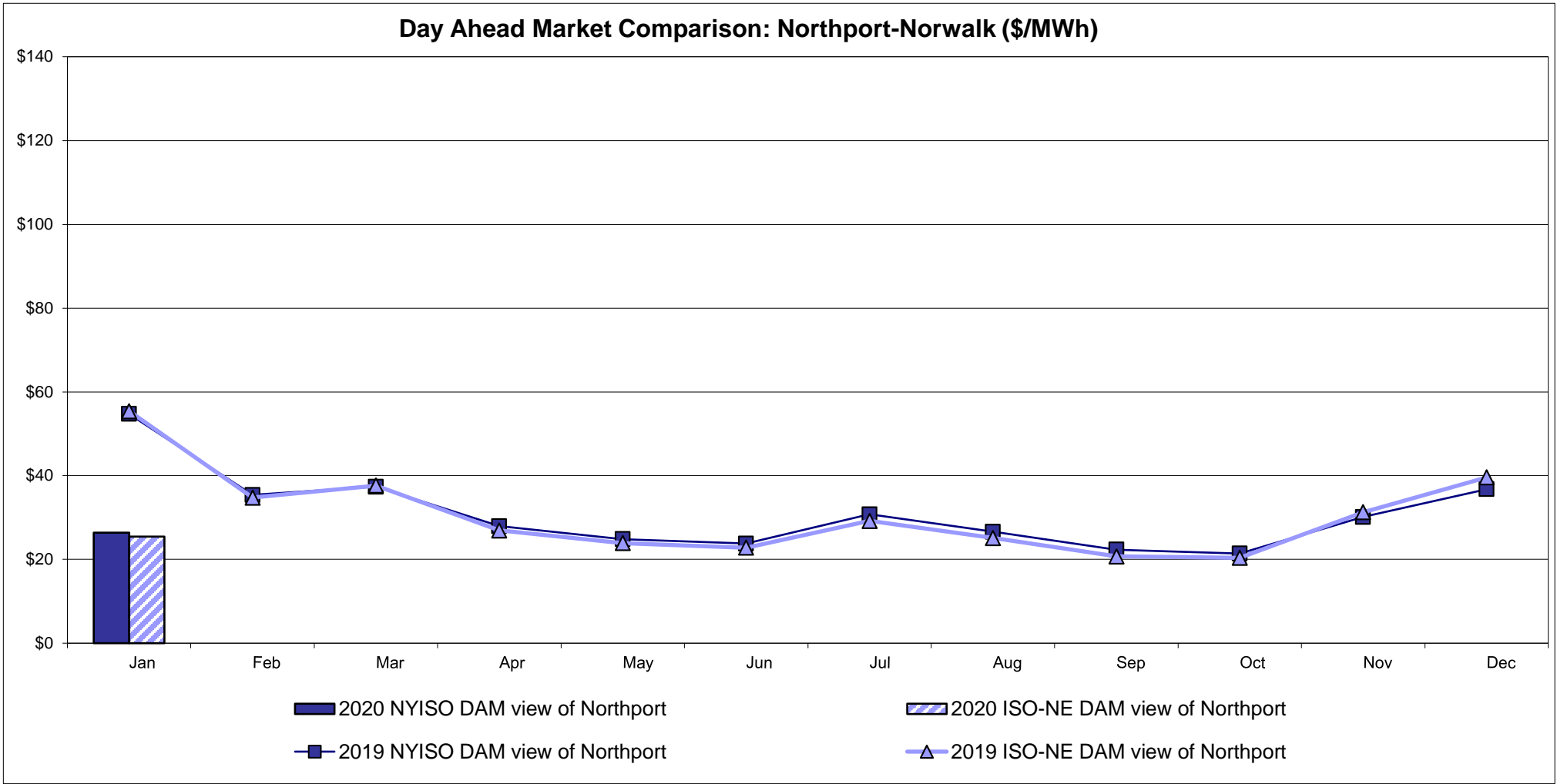
Notes: Exchange factor used for January 2020 was 0.764000305600122 to US
HOEP: Hourly Ontario Energy Price
Pre-Dispatch: Projected Energy Price

External Controllable Line: Cross Sound Cable (New England)



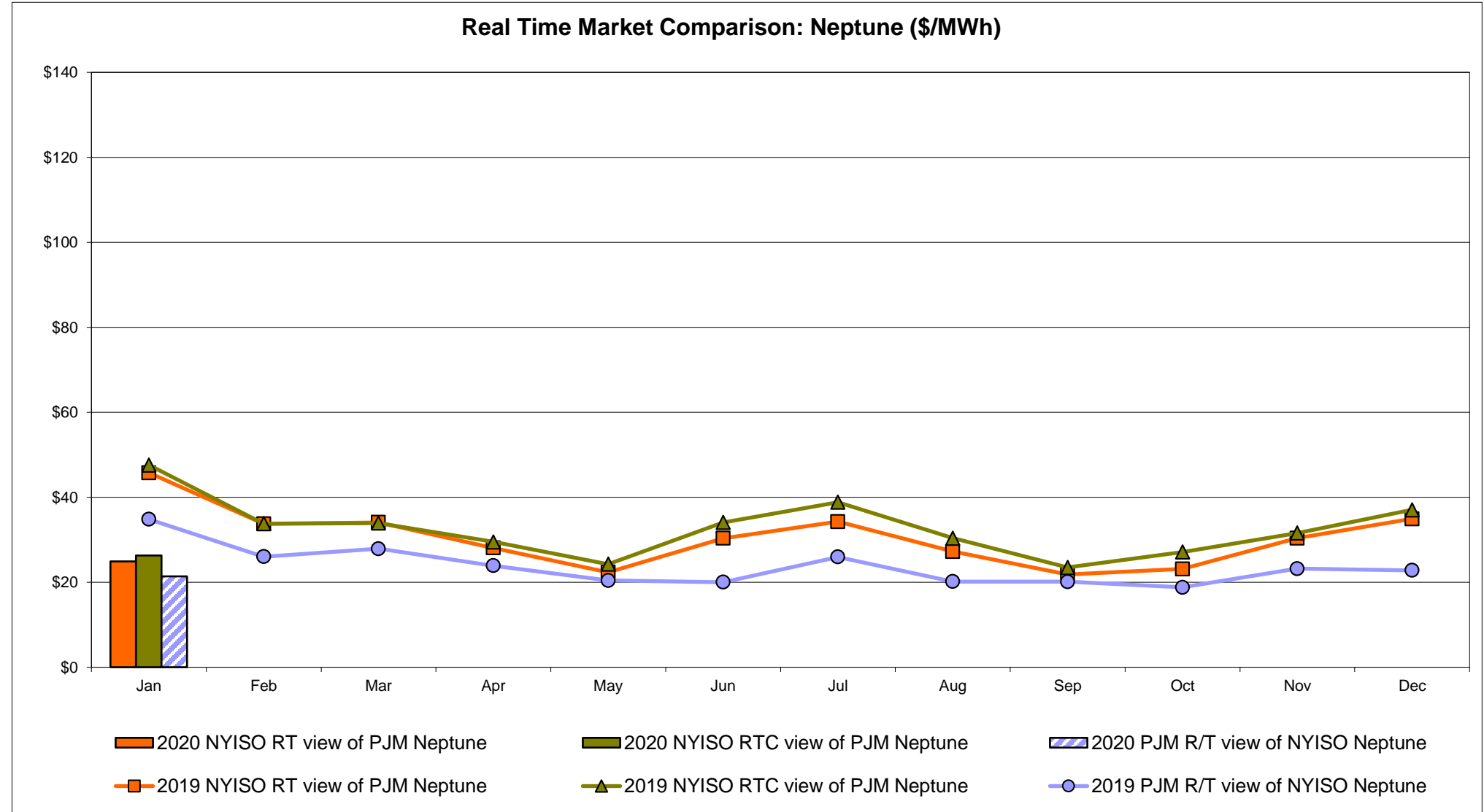
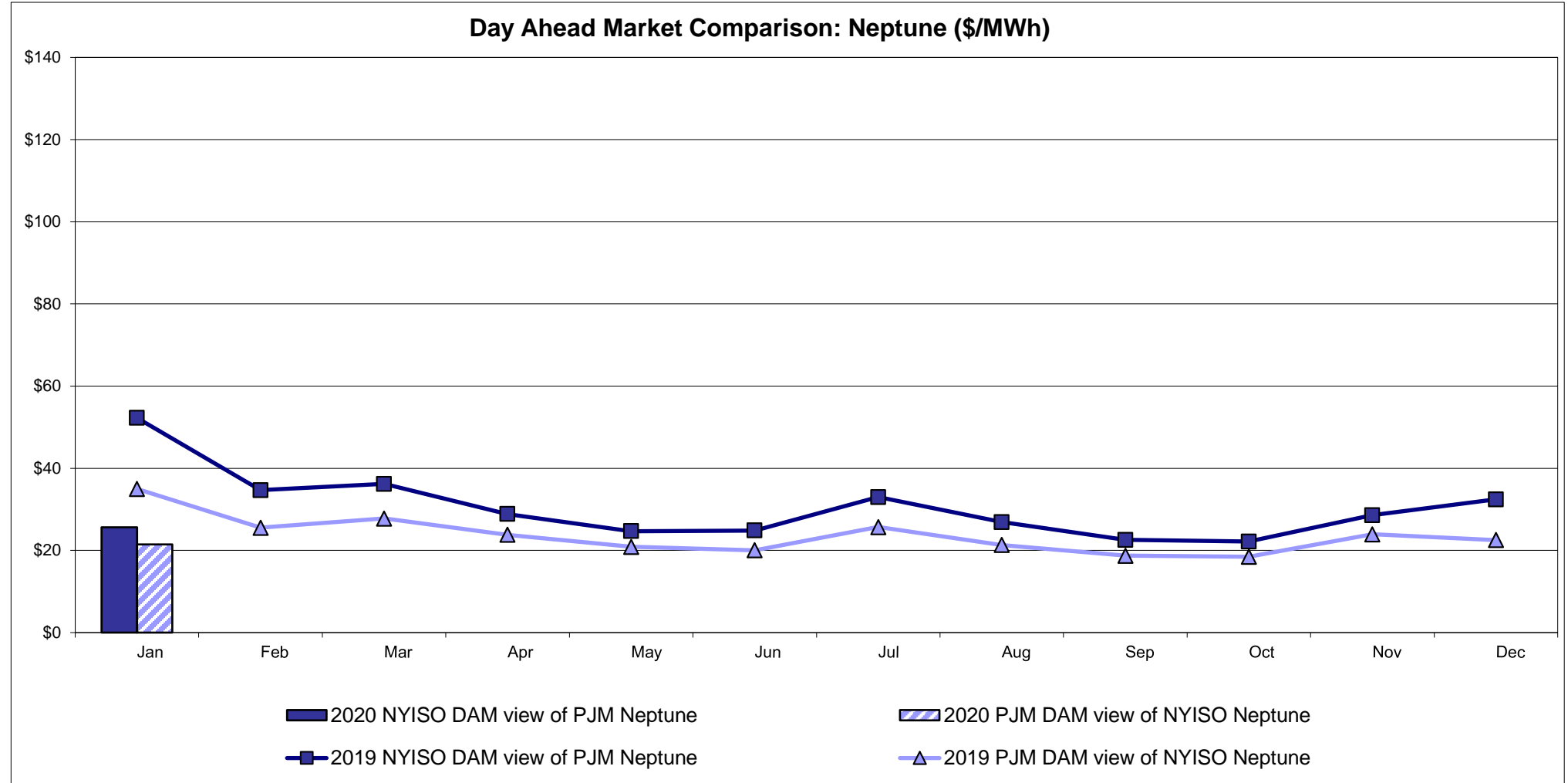
Note:
ISO-NE Forecast is an advisory posting @ 18:00 day before.
The DAM and R/T prices at the Shorham 13899 interface are used for ISO-NE.
The DAM and R/T prices at the CSC interface are used for NYISO.

External Controllable Line: Northport - Norwalk (New England)

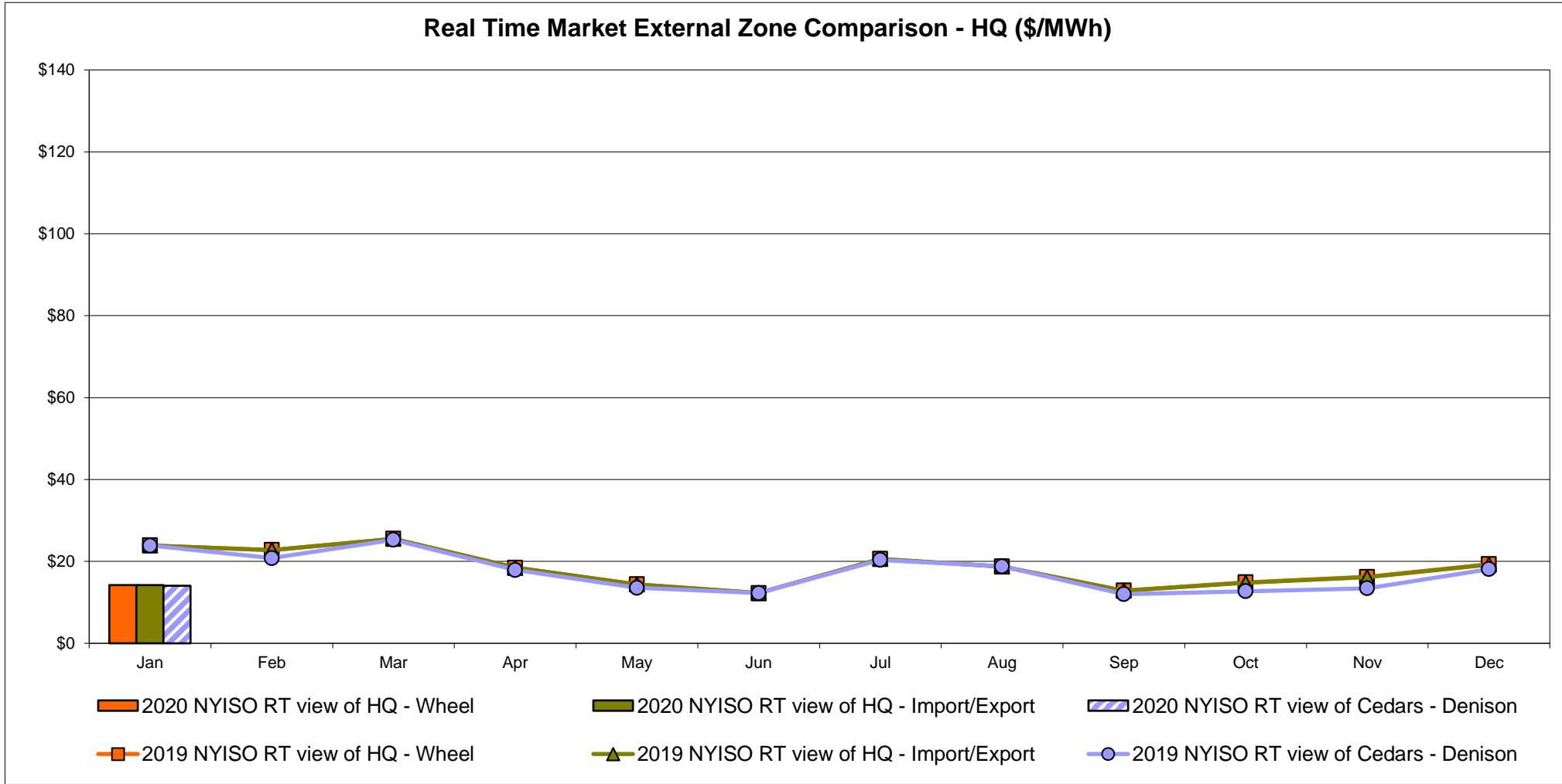
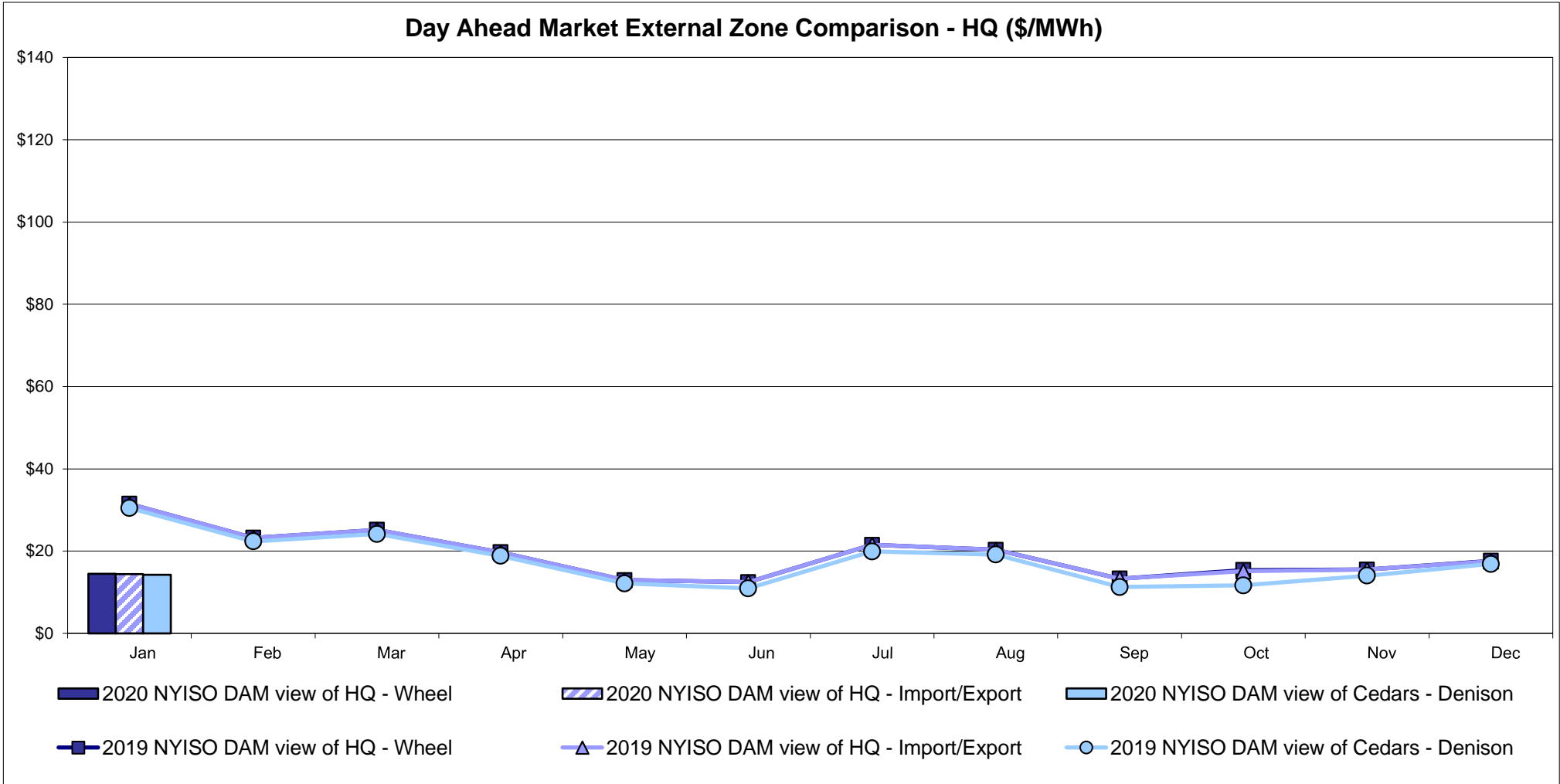


Note:
ISO-NE Forecast is an advisory posting @ 18:00 day before.
The DAM and R/T prices at the Northport 138 interface are used for ISO-NE.
The DAM and R/T prices at the 1385 interface are used for NYISO.

External Controllable Line: Neptune (PJM)

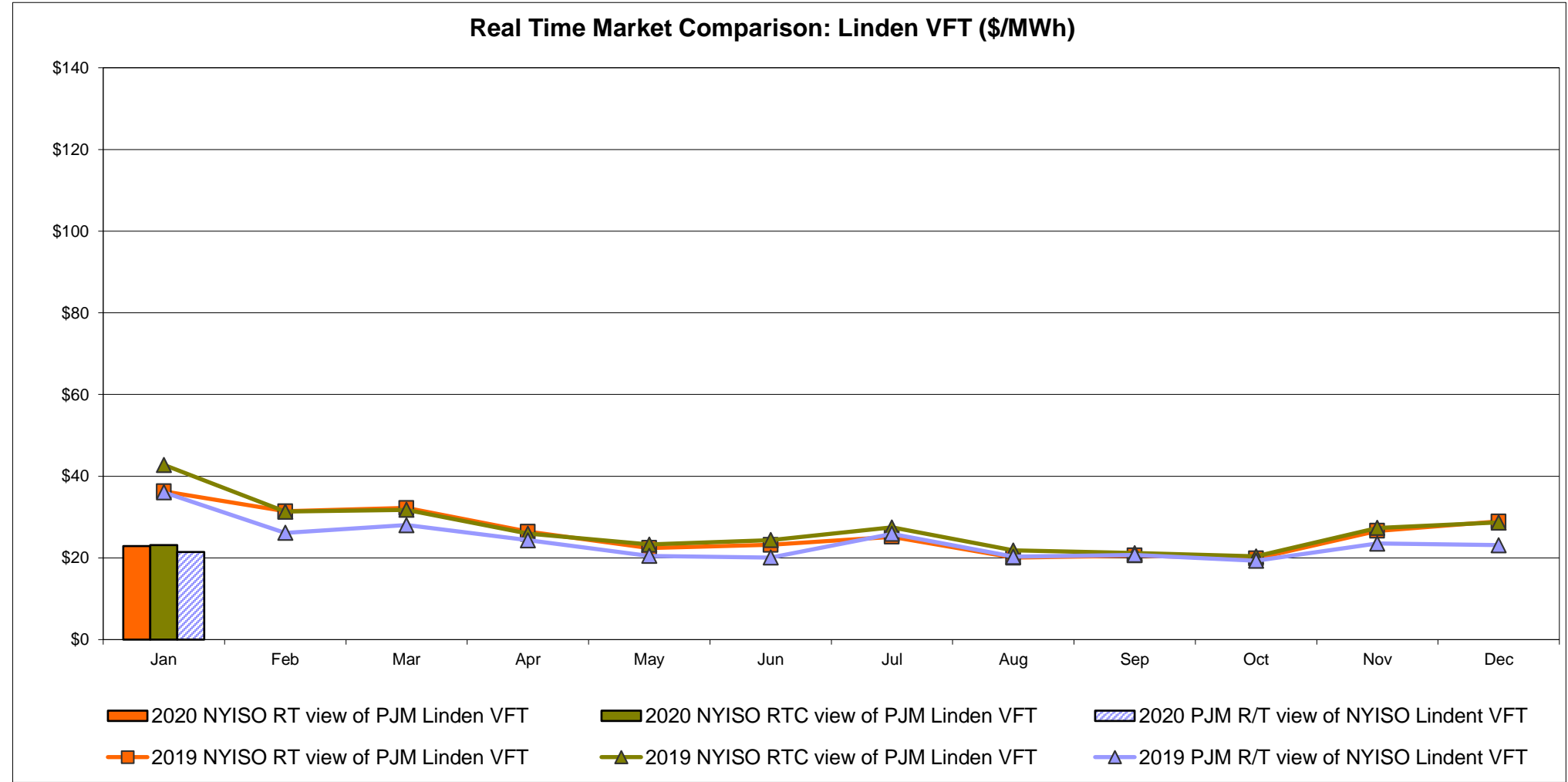
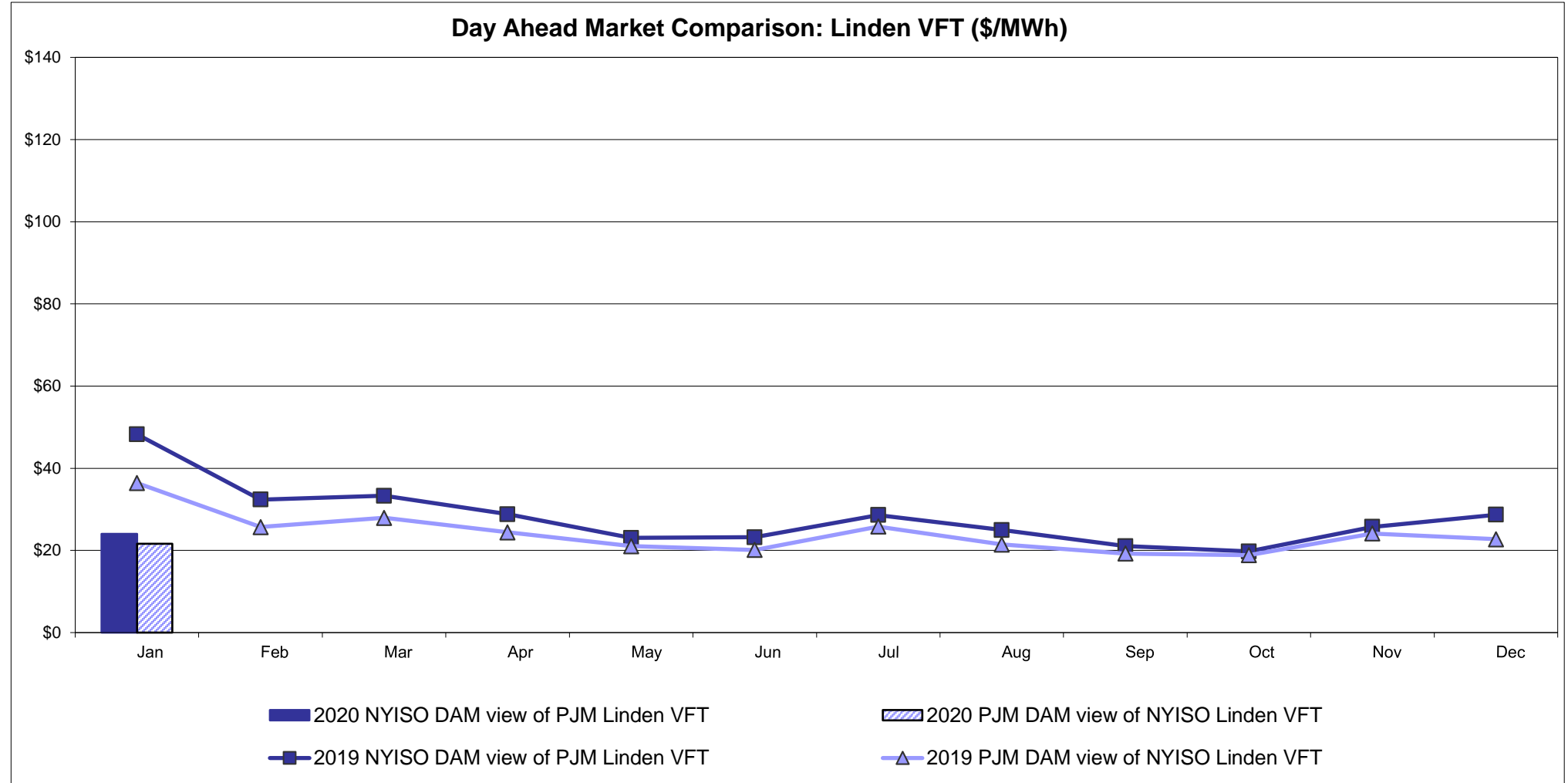


External Comparison Hydro-Quebec

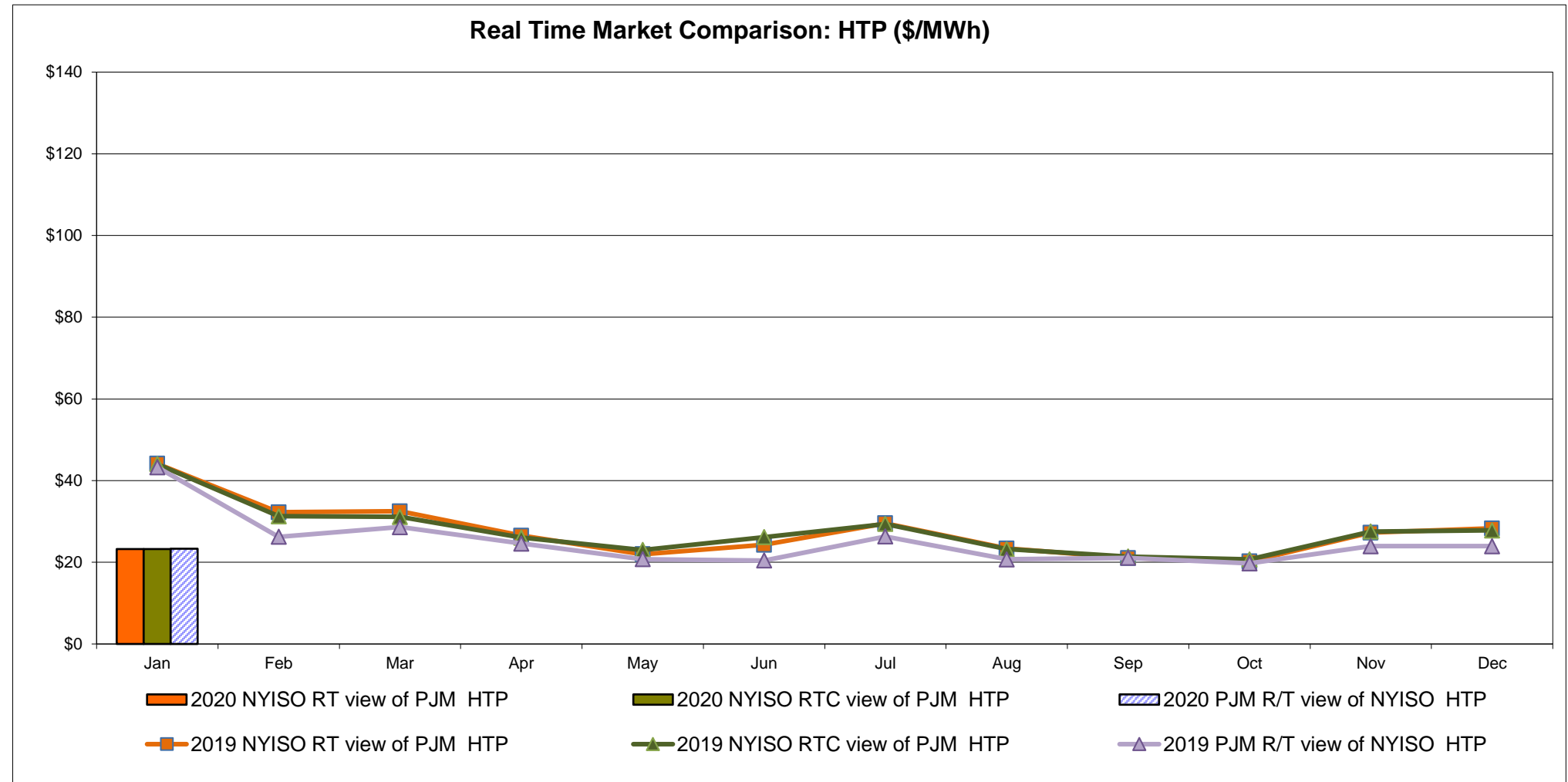
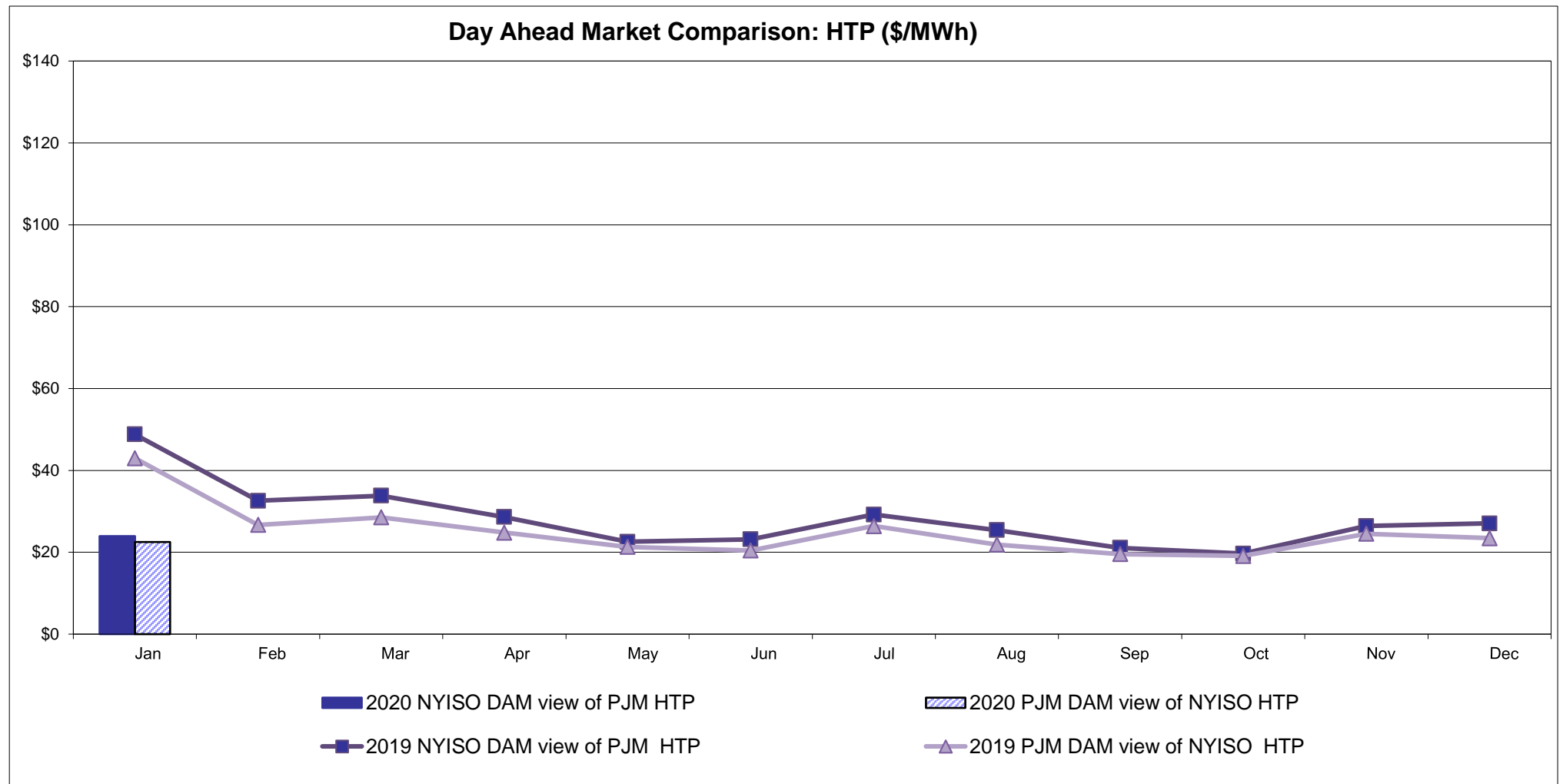


Note:
Hydro-Quebec Prices are unavailable.

External Controllable Line: Linden VFT (PJM)



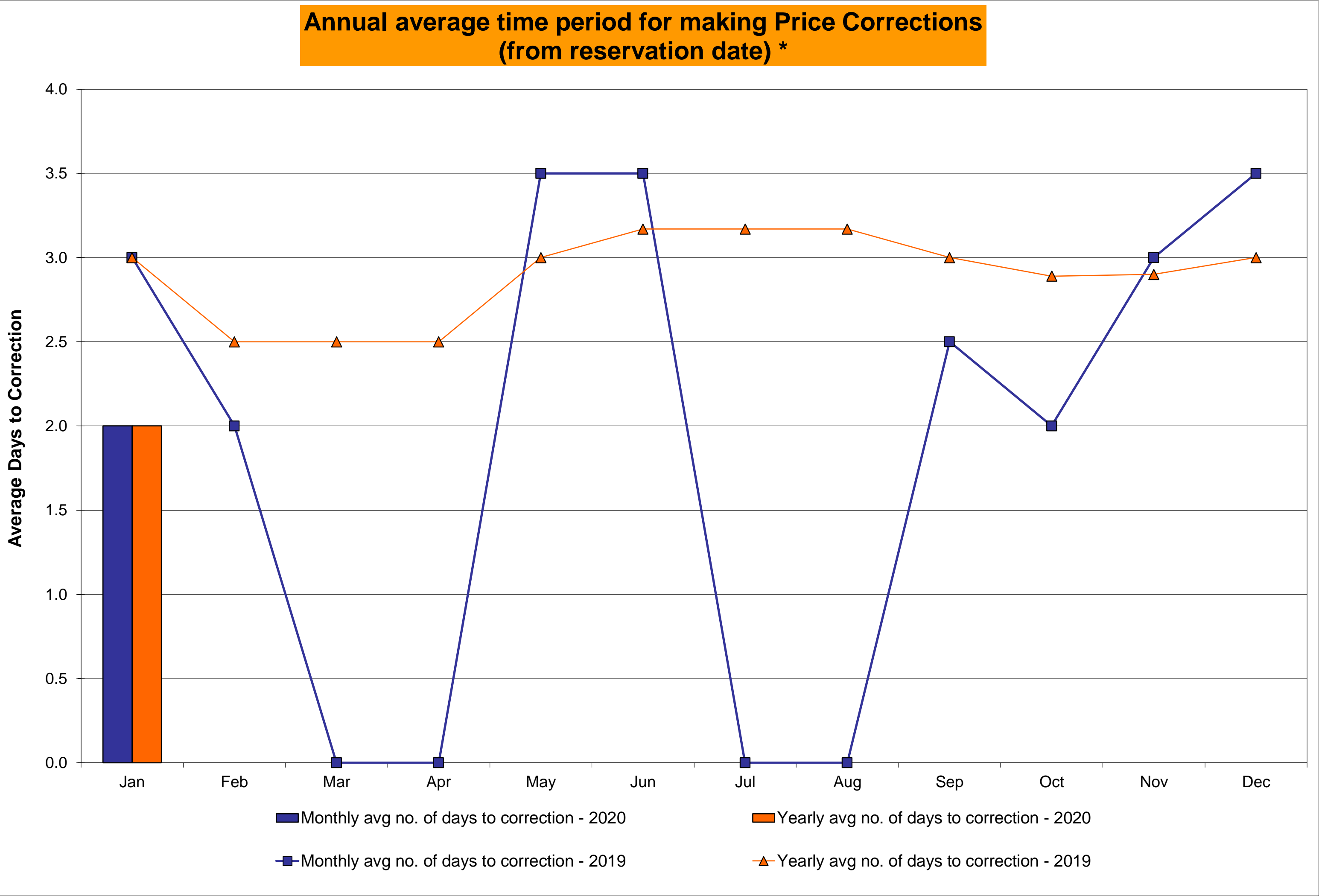
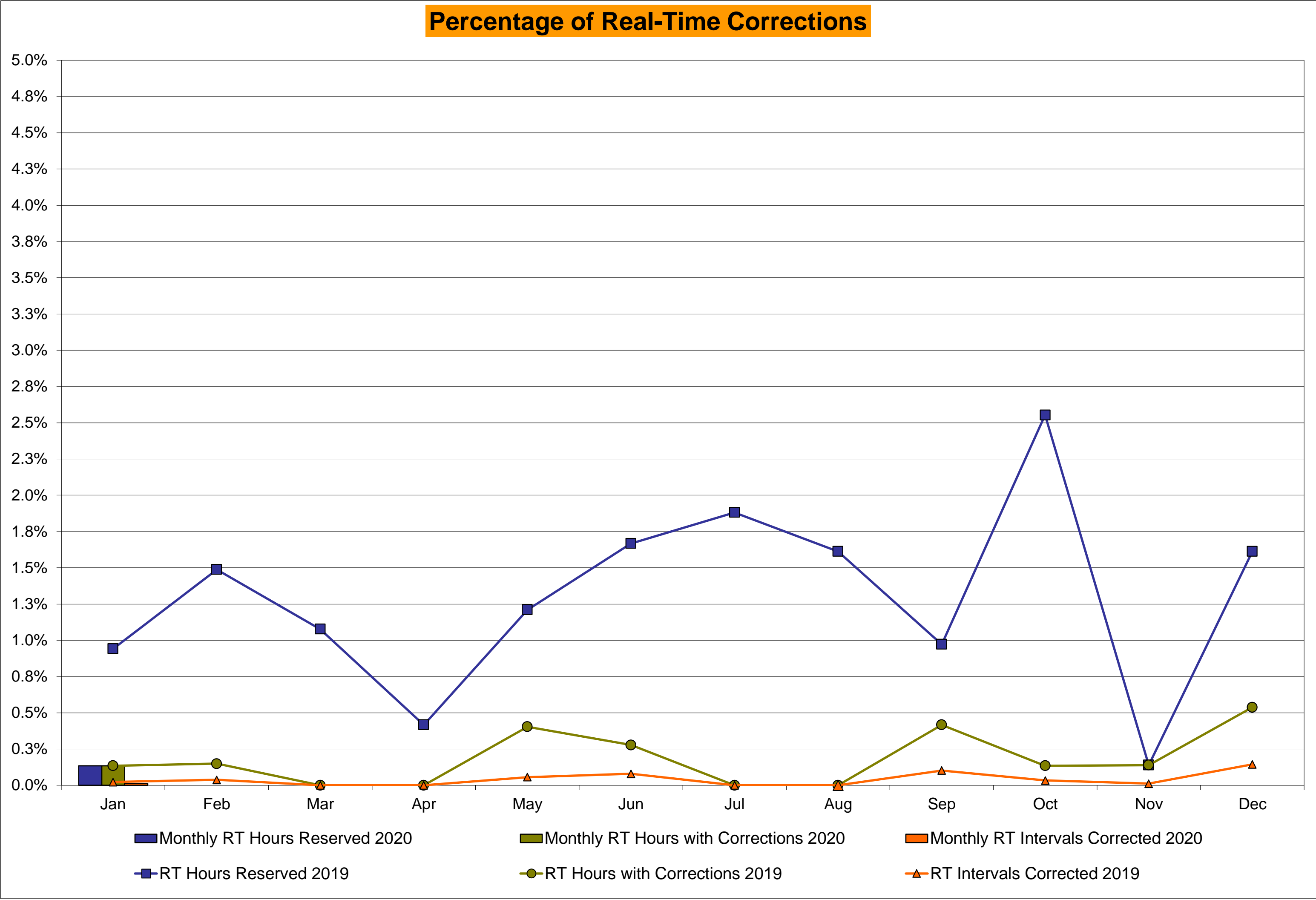
External Controllable Line: Hudson (PJM)



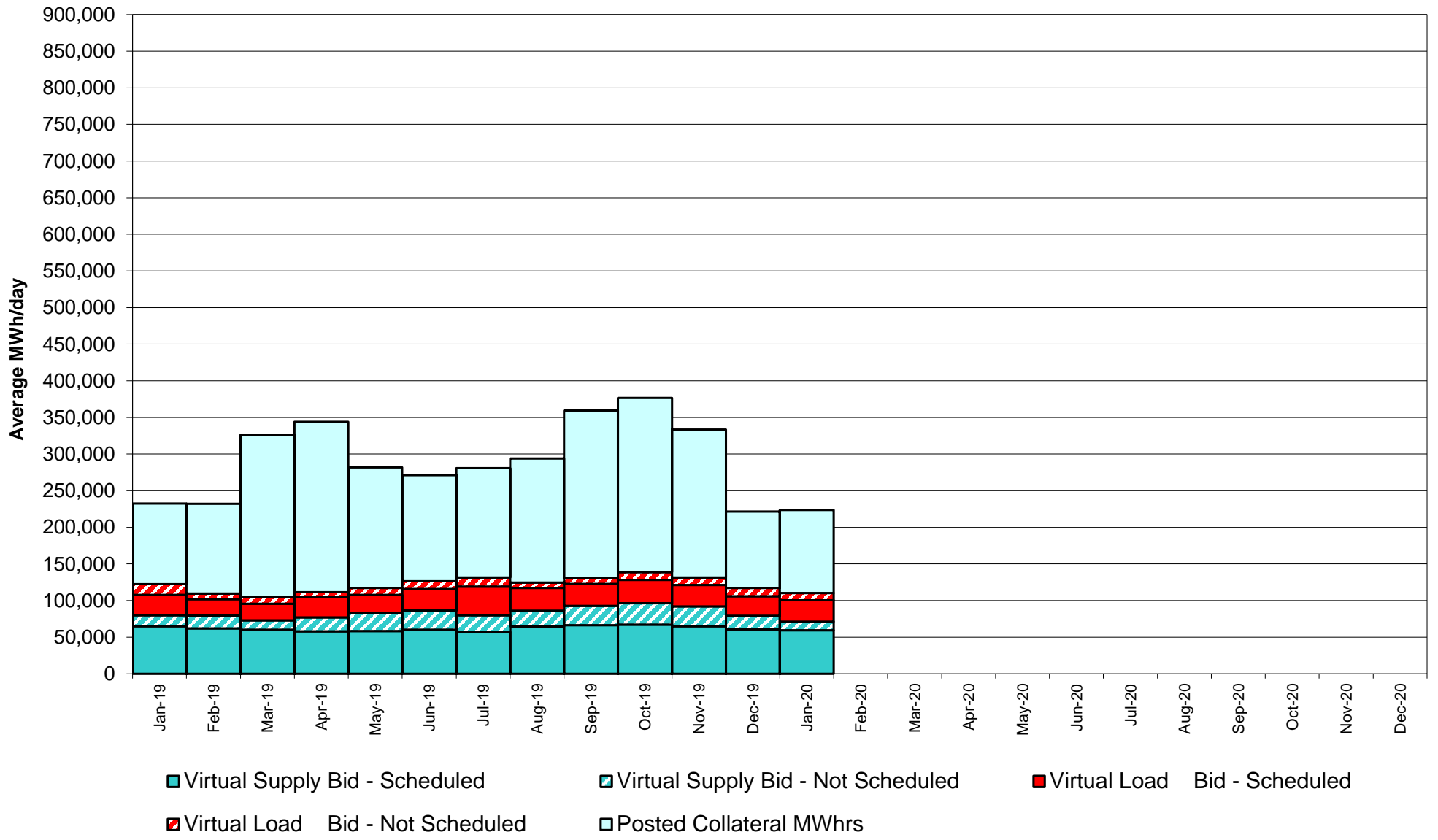
NYISO Real Time Price Correction Statistics

2020		<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											
Number of hours	in the month	744											
% of hours with corrections	in the month	0.13%											
% of hours with corrections	year-to-date	0.13%											
<u>Interval Corrections</u>													
Number of intervals corrected	in the month	1											
Number of intervals	in the month	9,088											
% of intervals corrected	in the month	0.01%											
% of intervals corrected	year-to-date	0.01%											
<u>Hours Reserved</u>													
Number of hours reserved	in the month	1											
Number of hours	in the month	744											
% of hours reserved	in the month	0.13%											
% of hours reserved	year-to-date	0.13%											
<u>Days to Correction</u> *													
Avg. number of days to correction	in the month	2.00											
Avg. number of days to correction	year-to-date	2.00											
<u>Days Without Corrections</u>													
Days without corrections	in the month	30											
Days without corrections	year-to-date	30											
2019		<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	1	0	0	3	2	0	0	3	1	1	4
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	0.13%	0.15%	0.00%	0.00%	0.40%	0.28%	0.00%	0.00%	0.42%	0.13%	0.14%	0.54%
% of hours with corrections	year-to-date	0.13%	0.14%	0.09%	0.07%	0.14%	0.16%	0.14%	0.12%	0.15%	0.15%	0.15%	0.18%
<u>Interval Corrections</u>													
Number of intervals corrected	in the month	2	3	0	0	5	7	0	0	9	3	1	13
Number of intervals	in the month	9,071	8,131	9,008	8,750	9,033	8,863	9,243	9,048	8,820	9,087	8,788	9,021
% of intervals corrected	in the month	0.02%	0.04%	0.00%	0.00%	0.06%	0.08%	0.00%	0.00%	0.10%	0.03%	0.01%	0.14%
% of intervals corrected	year-to-date	0.02%	0.03%	0.02%	0.01%	0.02%	0.03%	0.03%	0.02%	0.03%	0.03%	0.03%	0.04%
<u>Hours Reserved</u>													
Number of hours reserved	in the month	7	10	8	3	9	12	14	12	7	19	1	12
Number of hours	in the month	744	672	743	720	744	720	744	744	720	744	721	744
% of hours reserved	in the month	0.94%	1.49%	1.08%	0.42%	1.21%	1.67%	1.88%	1.61%	0.97%	2.55%	0.14%	1.61%
% of hours reserved	year-to-date	0.94%	1.20%	1.16%	0.97%	1.02%	1.13%	1.24%	1.29%	1.25%	1.38%	1.27%	1.30%
<u>Days to Correction</u> *													
Avg. number of days to correction	in the month	3.00	2.00	0.00	0.00	3.50	3.50	0.00	0.00	2.50	2.00	3.00	3.50
Avg. number of days to correction	year-to-date	3.00	2.50	2.50	2.50	3.00	3.17	3.17	3.17	3.00	2.89	2.90	3.00
<u>Days Without Corrections</u>													
Days without corrections	in the month	30	27	31	30	29	28	31	31	28	30	29	29
Days without corrections	year-to-date	30	57	88	118	147	175	206	237	265	295	324	353

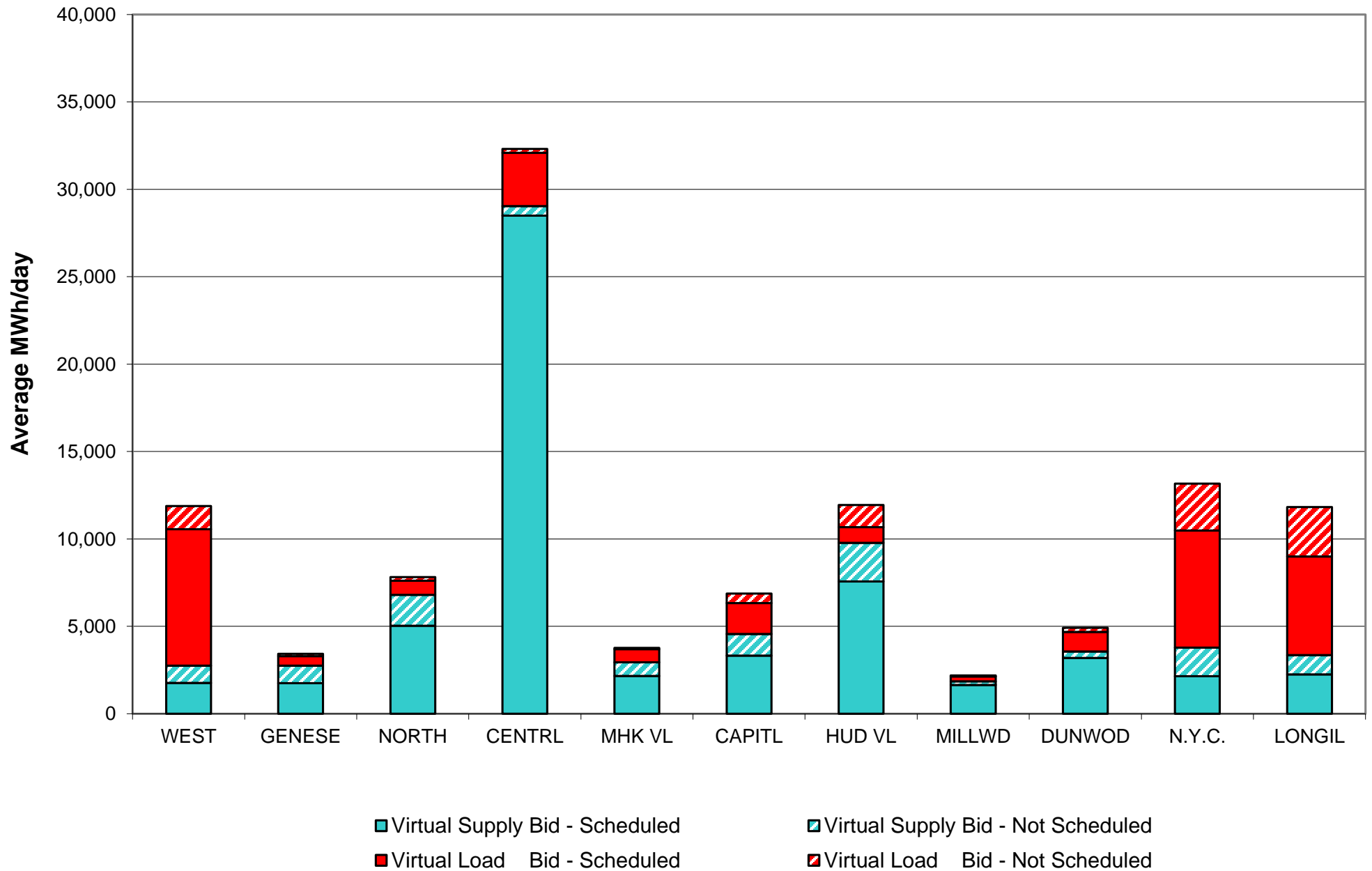
*Calendar days from reservation date; for June 2018 forward, business days from market date



NYISO Virtual Trading Average MWh per day



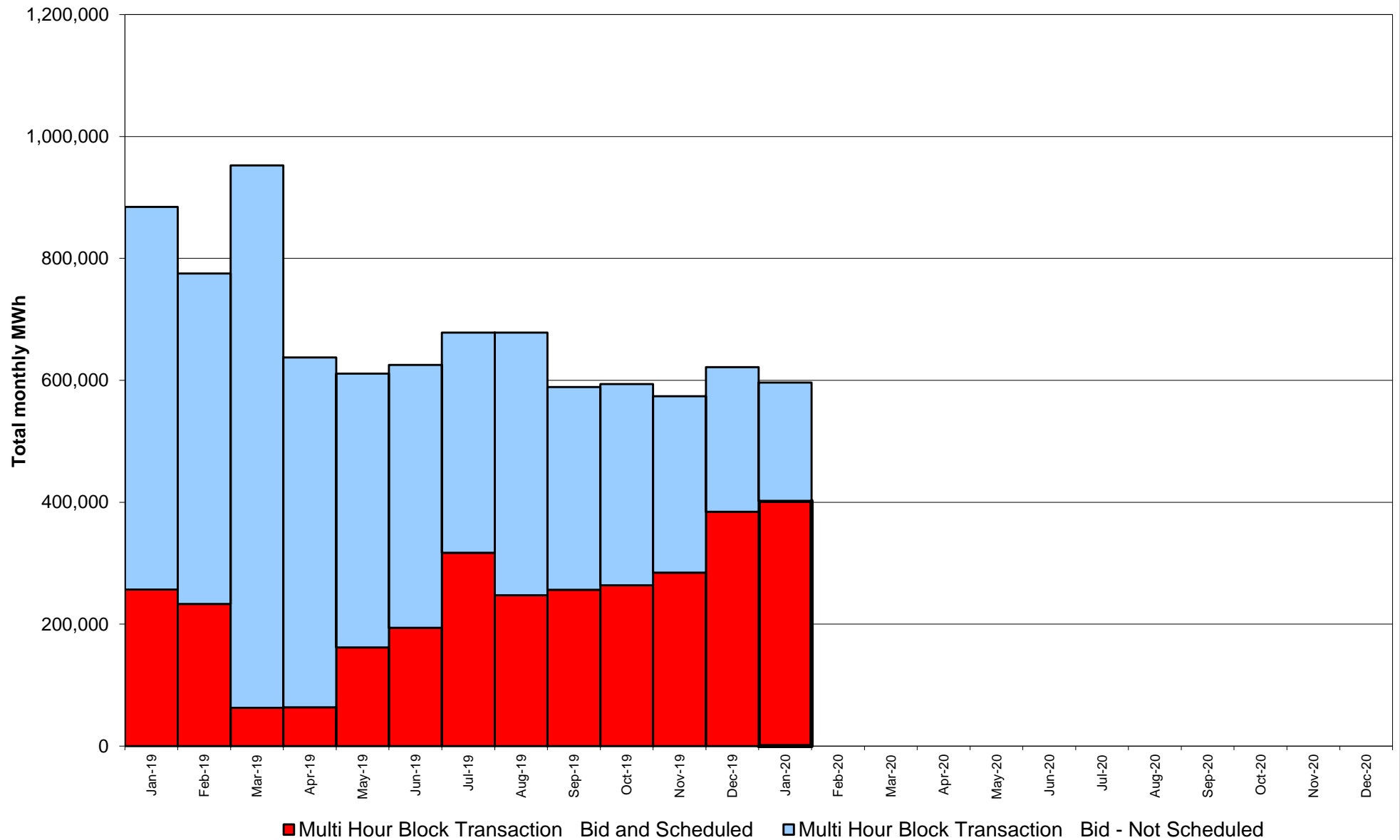
Virtual Load and Supply Zonal Statistics through January 31, 2020



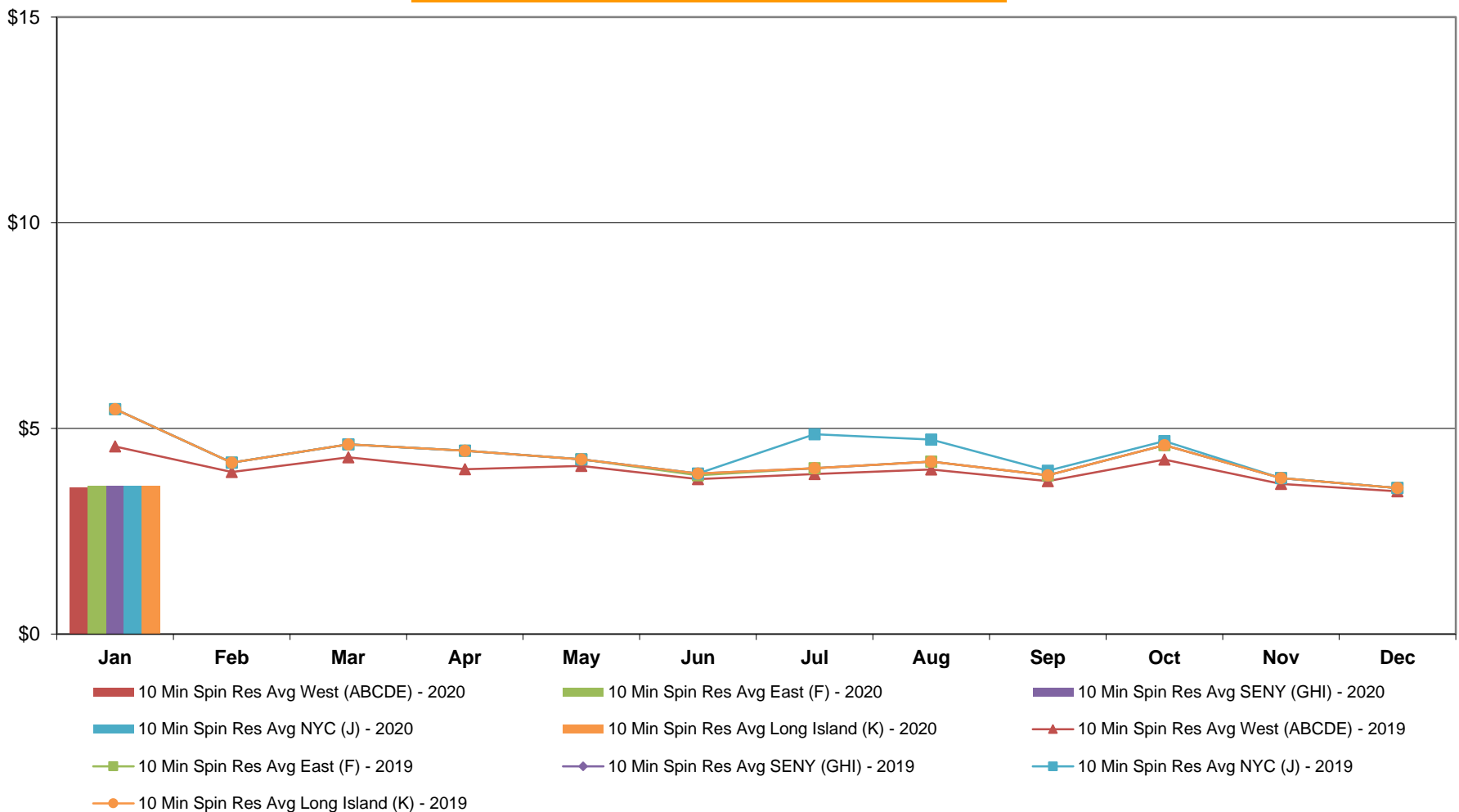
Virtual Load and Supply Zonal Statistics (Average MWh/day) - 2020

		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-20	7,809	1,328	1,765	984		MHK VL	Jan-20	747	77	2,155	793		DUNWOD	Jan-20	1,120	241
	Feb-20							Feb-20							Feb-20		
	Mar-20							Mar-20							Mar-20		
	Apr-20							Apr-20							Apr-20		
	May-20							May-20							May-20		
	Jun-20							Jun-20							Jun-20		
	Jul-20							Jul-20							Jul-20		
	Aug-20							Aug-20							Aug-20		
	Sep-20							Sep-20							Sep-20		
	Oct-20							Oct-20							Oct-20		
	Nov-20							Nov-20							Nov-20		
	Dec-20							Dec-20							Dec-20		
GENESE	Jan-20	553	131	1,749	995		CAPITL	Jan-20	1,772	539	3,324	1,235		N.Y.C.	Jan-20	6,699	2,678
	Feb-20							Feb-20							Feb-20		
	Mar-20							Mar-20							Mar-20		
	Apr-20							Apr-20							Apr-20		
	May-20							May-20							May-20		
	Jun-20							Jun-20							Jun-20		
	Jul-20							Jul-20							Jul-20		
	Aug-20							Aug-20							Aug-20		
	Sep-20							Sep-20							Sep-20		
	Oct-20							Oct-20							Oct-20		
	Nov-20							Nov-20							Nov-20		
	Dec-20							Dec-20							Dec-20		
NORTH	Jan-20	811	206	5,038	1,765		HUD VL	Jan-20	891	1,274	7,573	2,206		LONGIL	Jan-20	5,640	2,824
	Feb-20							Feb-20							Feb-20		
	Mar-20							Mar-20							Mar-20		
	Apr-20							Apr-20							Apr-20		
	May-20							May-20							May-20		
	Jun-20							Jun-20							Jun-20		
	Jul-20							Jul-20							Jul-20		
	Aug-20							Aug-20							Aug-20		
	Sep-20							Sep-20							Sep-20		
	Oct-20							Oct-20							Oct-20		
	Nov-20							Nov-20							Nov-20		
	Dec-20							Dec-20							Dec-20		
CENTRL	Jan-20	3,050	214	28,503	541		MILLWD	Jan-20	270	68	1,646	213		NYISO	Jan-20	29,361	9,580
	Feb-20							Feb-20							Feb-20		
	Mar-20							Mar-20							Mar-20		
	Apr-20							Apr-20							Apr-20		
	May-20							May-20							May-20		
	Jun-20							Jun-20							Jun-20		
	Jul-20							Jul-20							Jul-20		
	Aug-20							Aug-20							Aug-20		
	Sep-20							Sep-20							Sep-20		
	Oct-20							Oct-20							Oct-20		
	Nov-20							Nov-20							Nov-20		
	Dec-20							Dec-20							Dec-20		

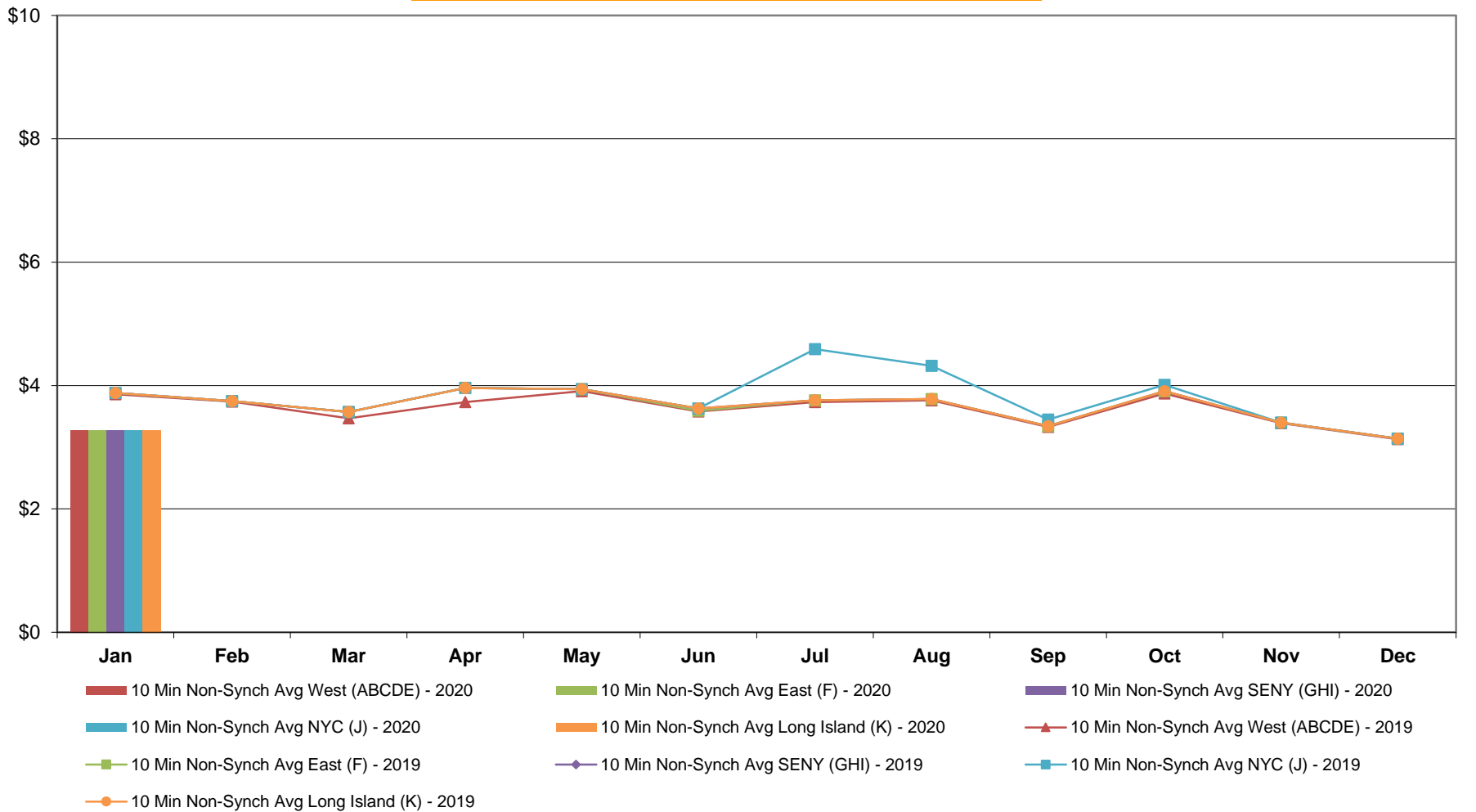
NYISO Multi Hour Block Transactions Monthly Total MWh



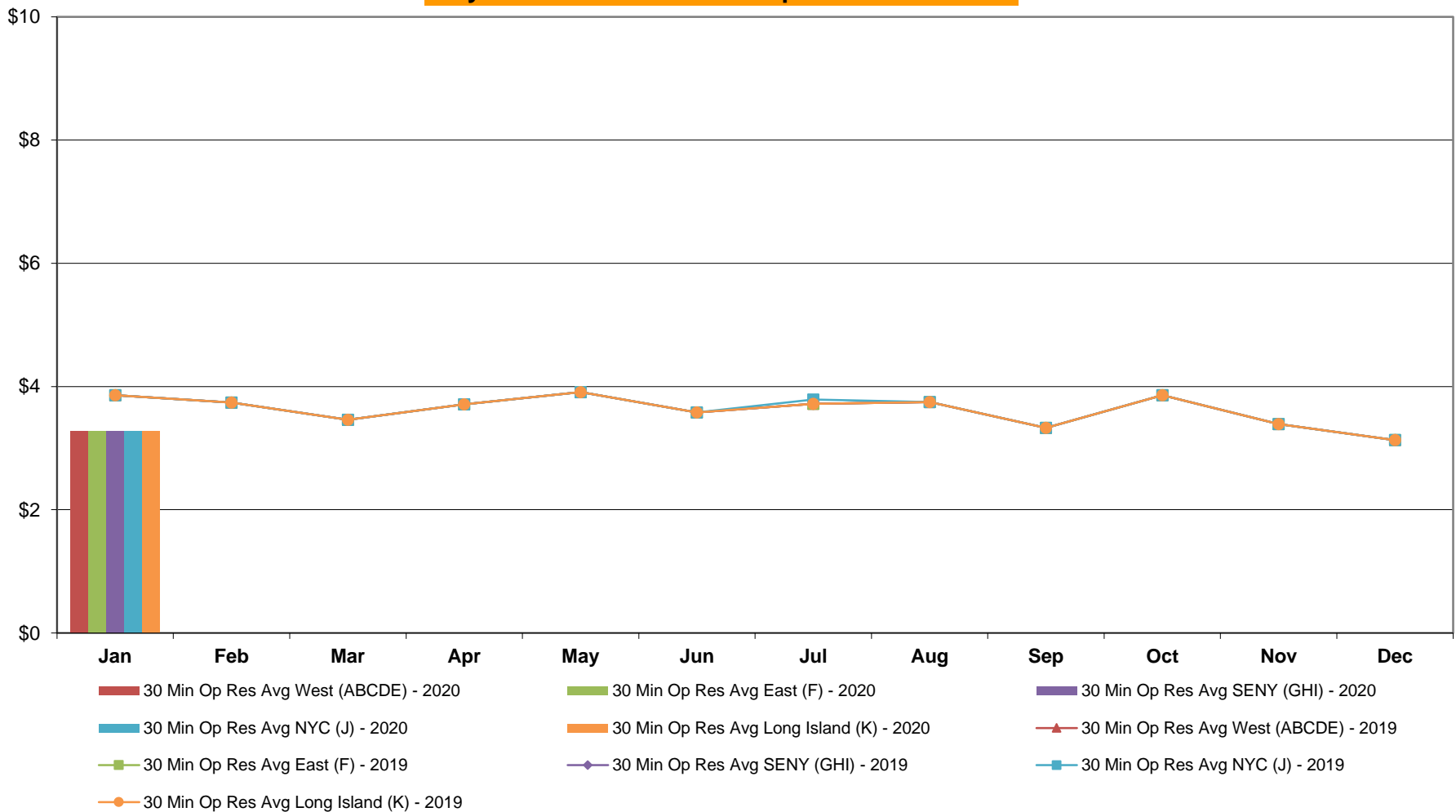
**NYISO Monthly Average Ancillary Service Prices
Day Ahead Market - 10 Min Spin 2019 - 2020**

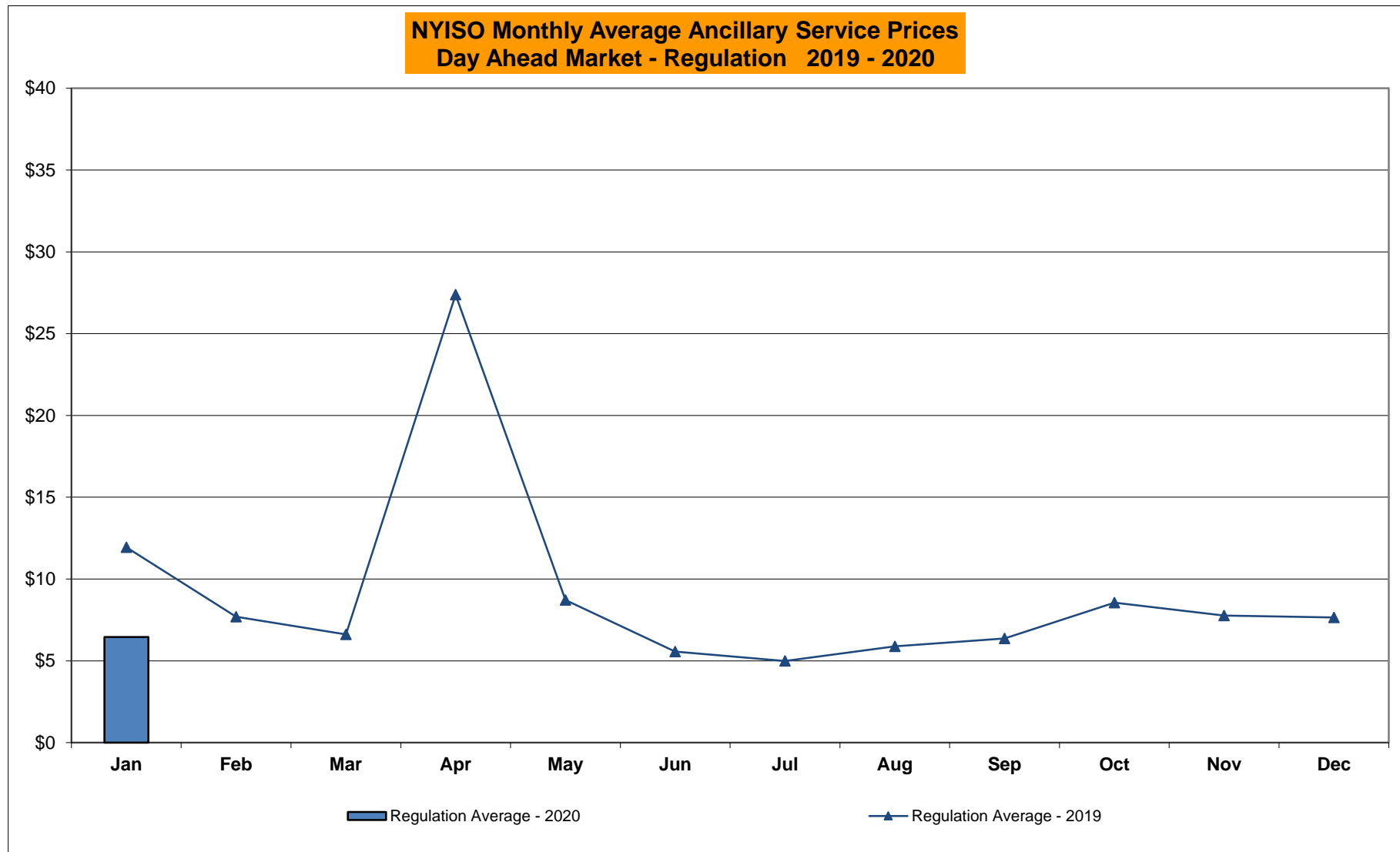


**NYISO Monthly Average Ancillary Service Prices
Day Ahead Market - 10 Min Non-Synch 2019 - 2020**

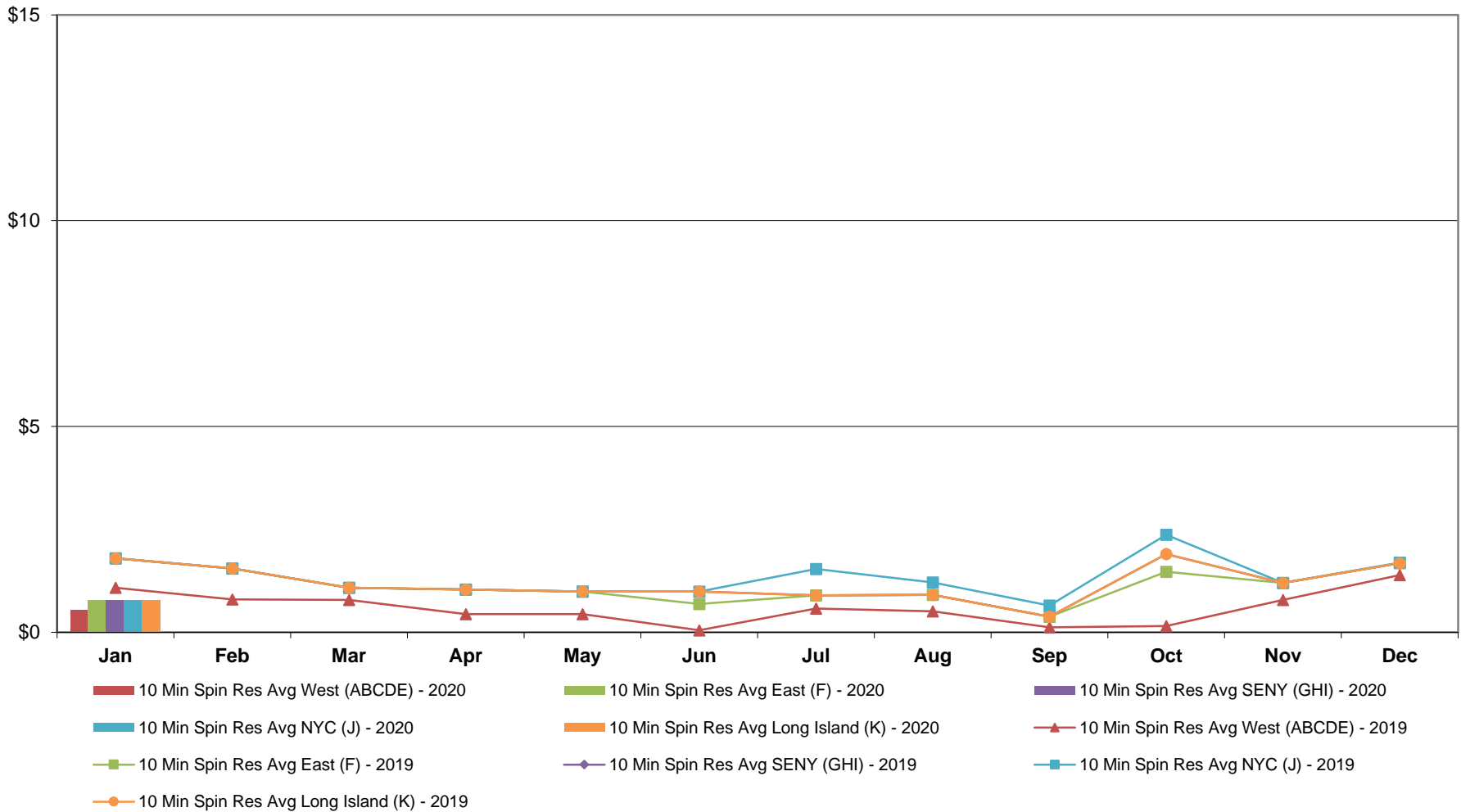


**NYISO Monthly Average Ancillary Service Prices
Day Ahead Market - 30 Min Op Res 2019 - 2020**

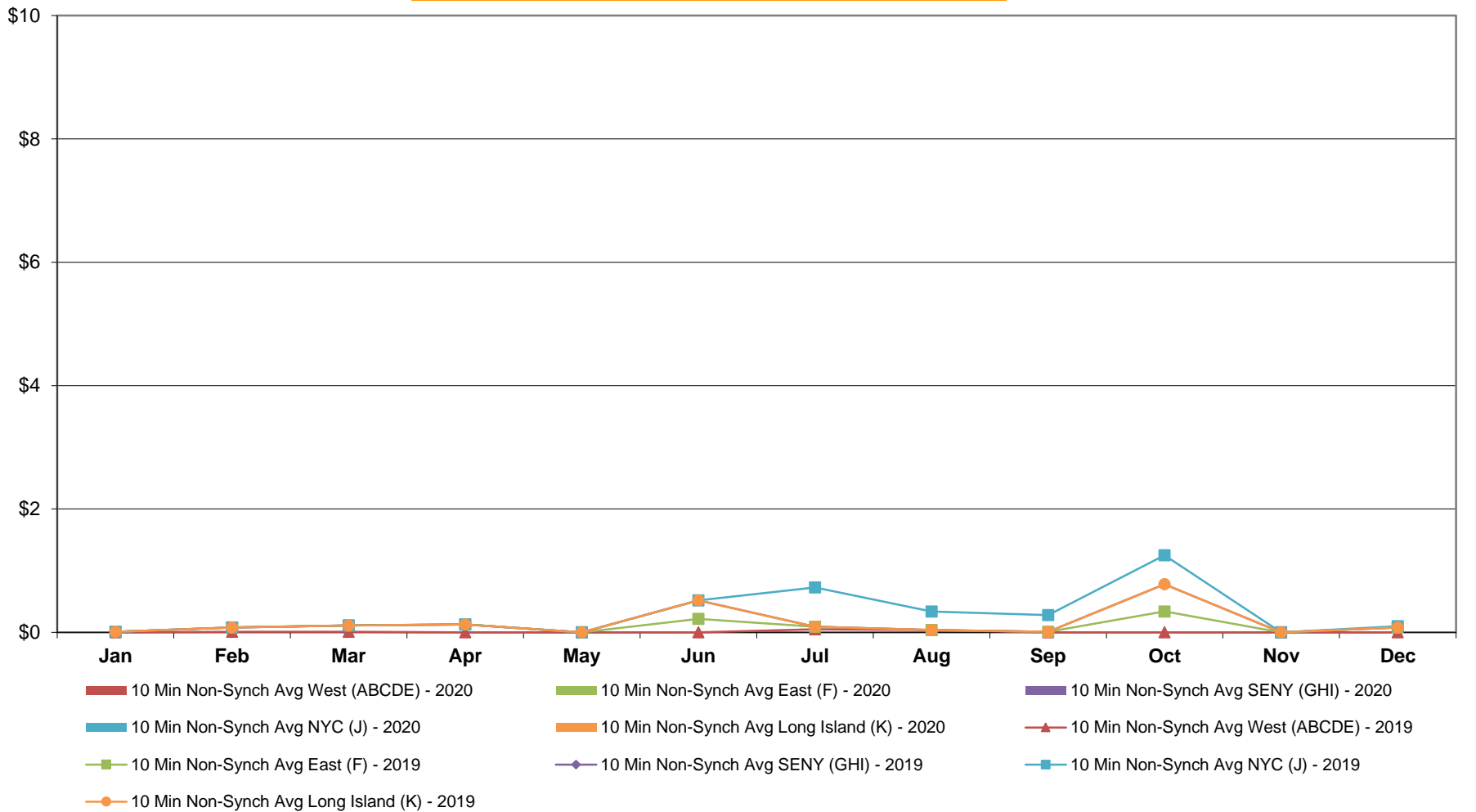




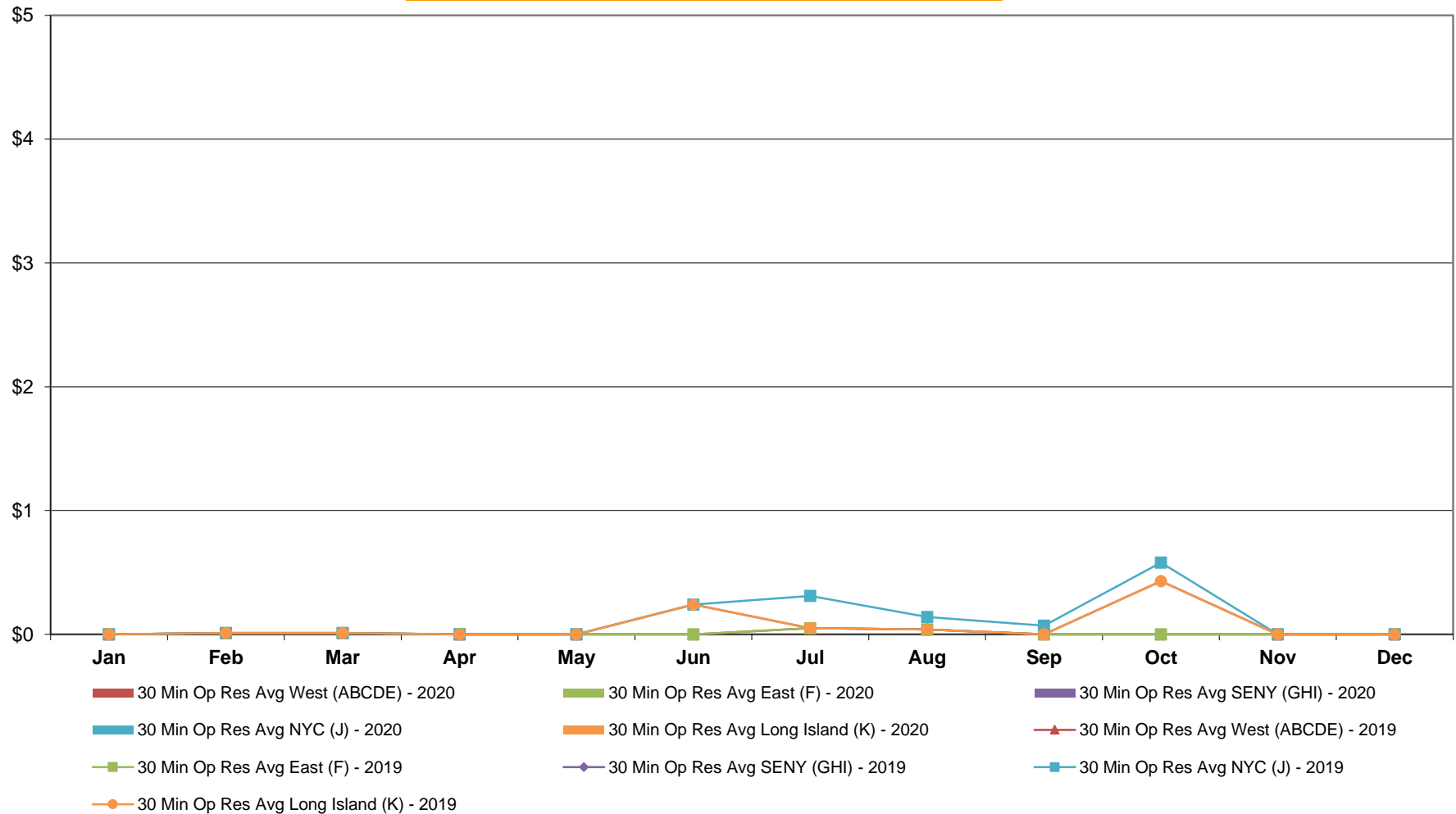
NYISO Monthly Average Ancillary Service Prices RTC Market - 10 Min Spin 2019 - 2020

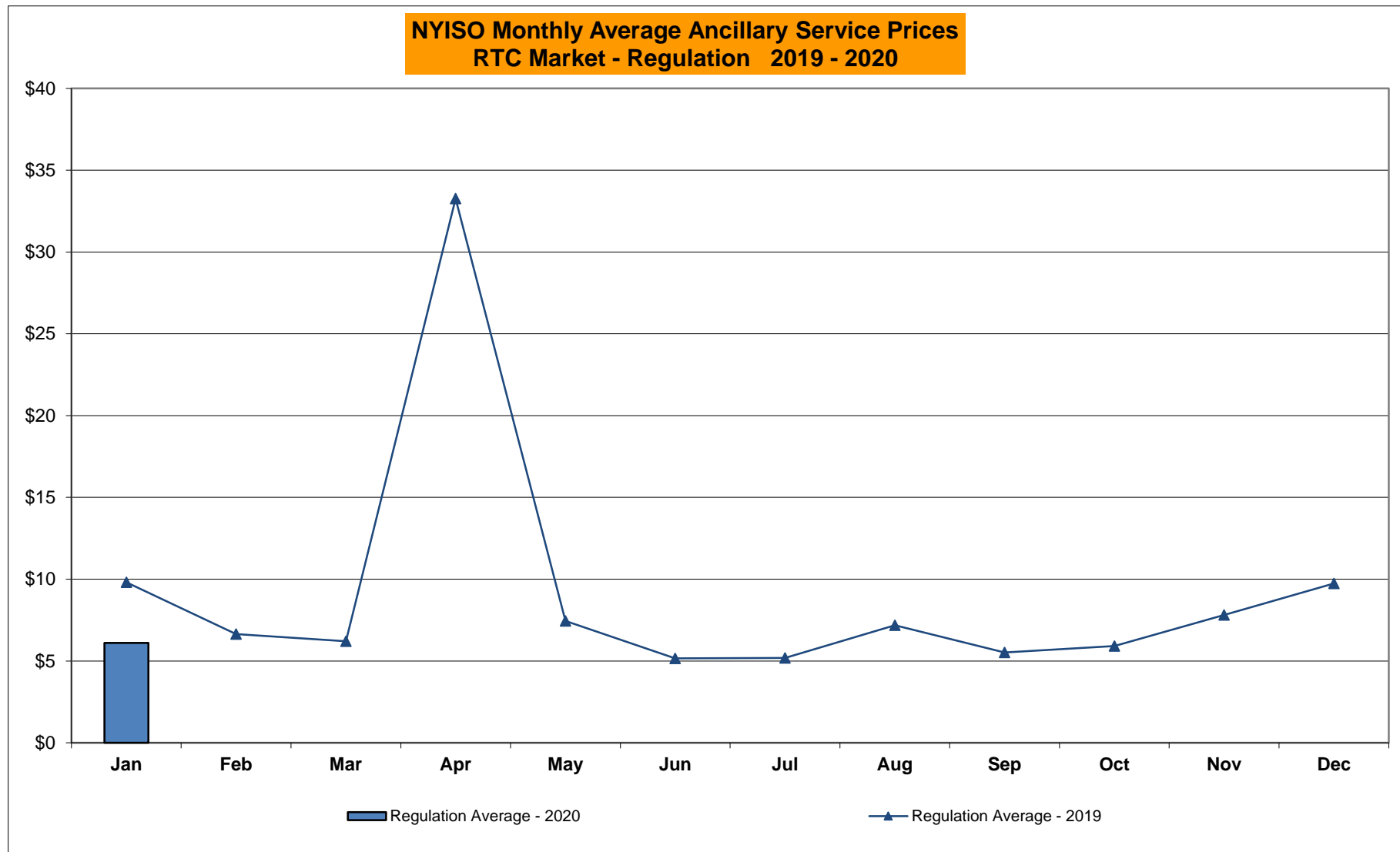


**NYISO Monthly Average Ancillary Service Prices
RTC Market - 10 Min Non-Synch 2019 - 2020**

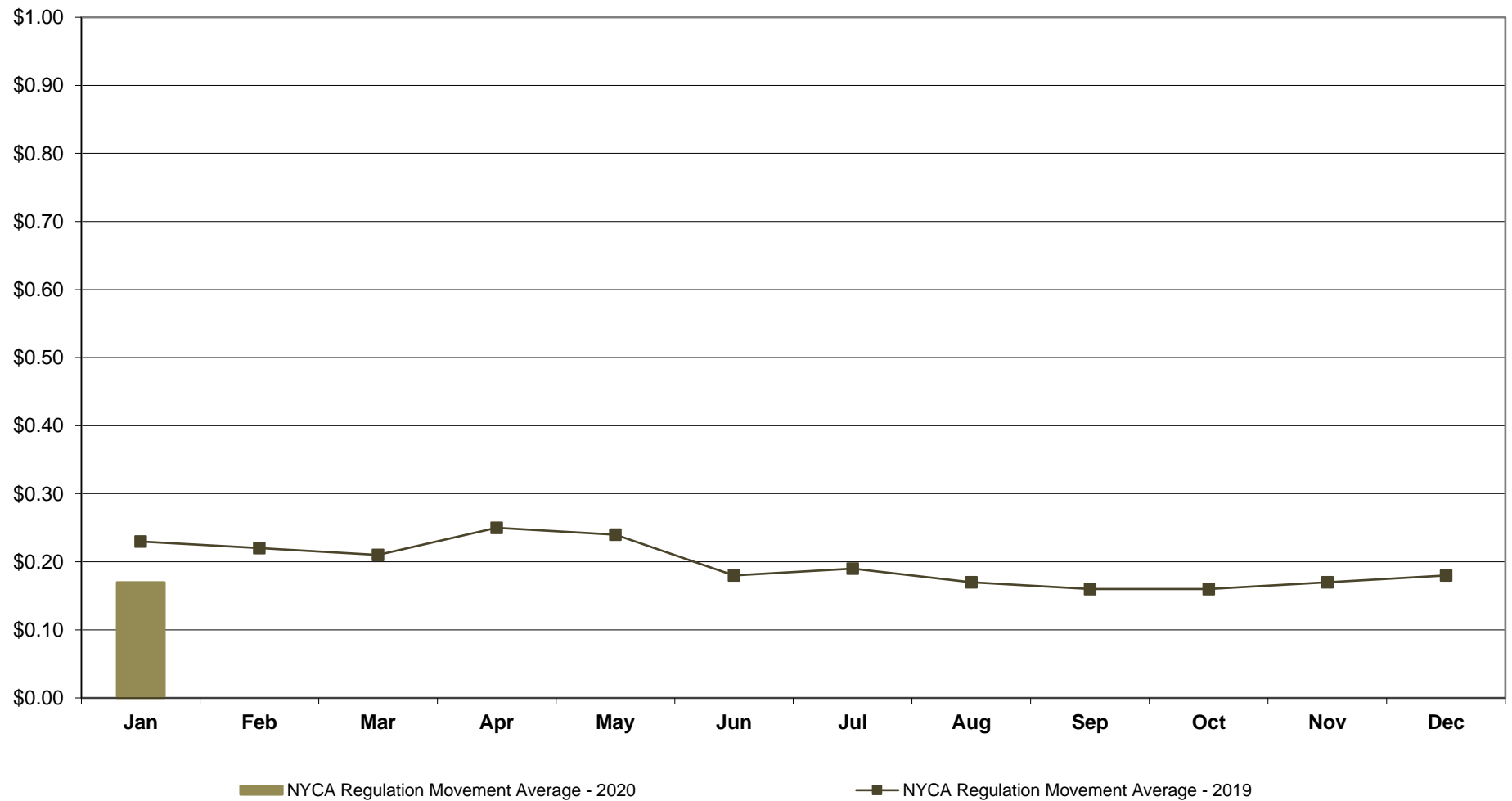


NYISO Monthly Average Ancillary Service Prices RTC Market - 30 Min Op Res 2019 - 2020

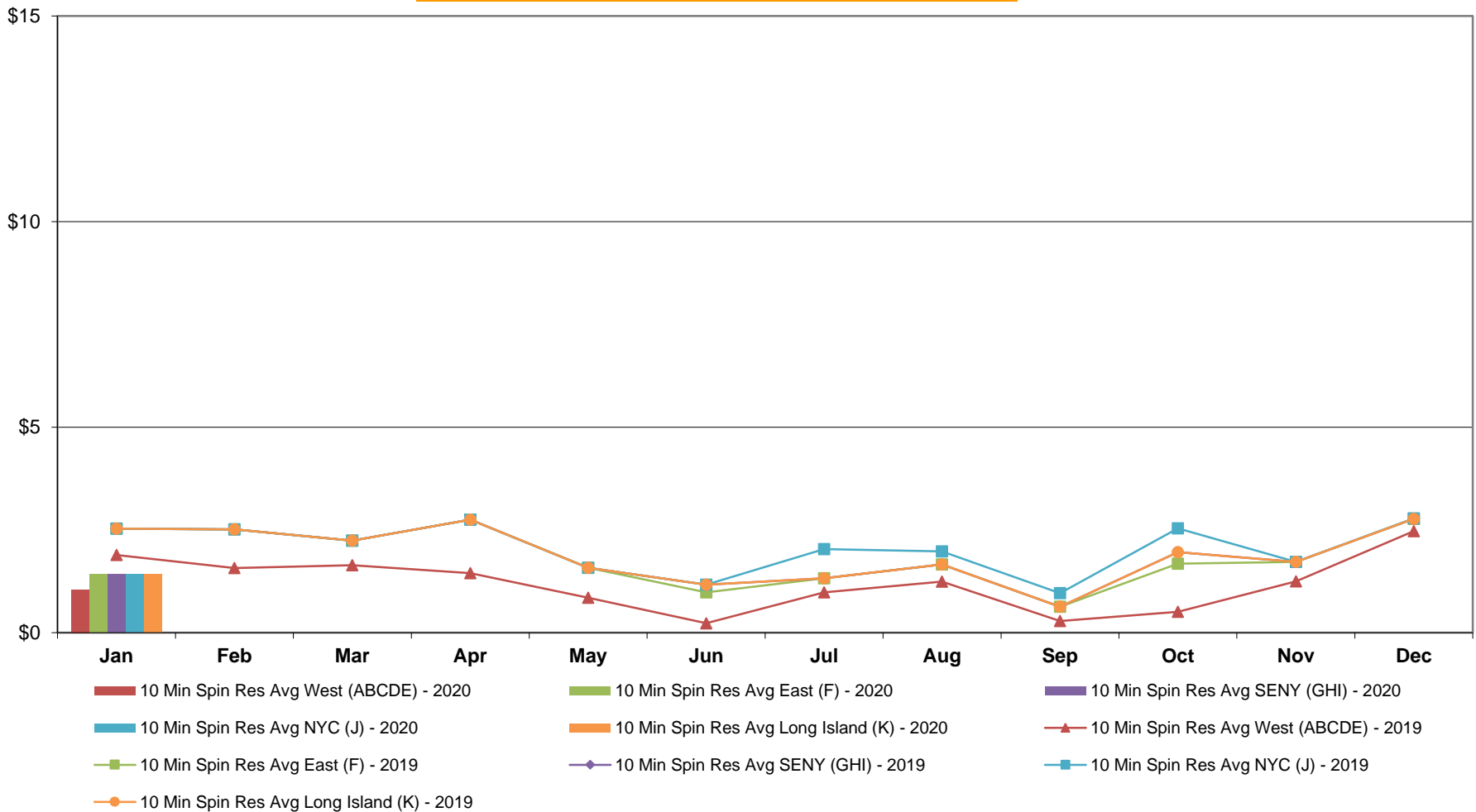




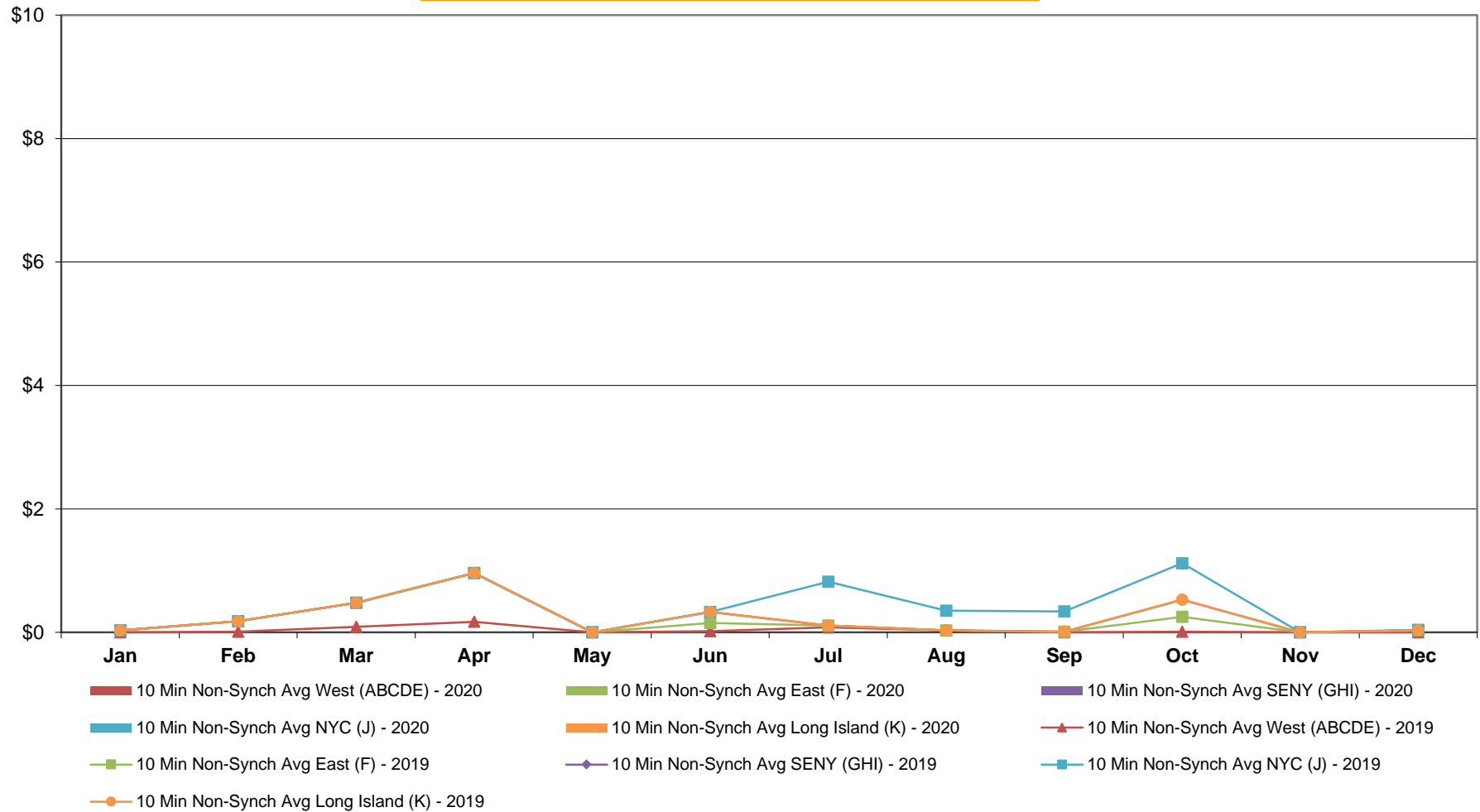
NYISO Monthly Average Ancillary Service Prices RTC Market - Regulation Movement 2019 - 2020



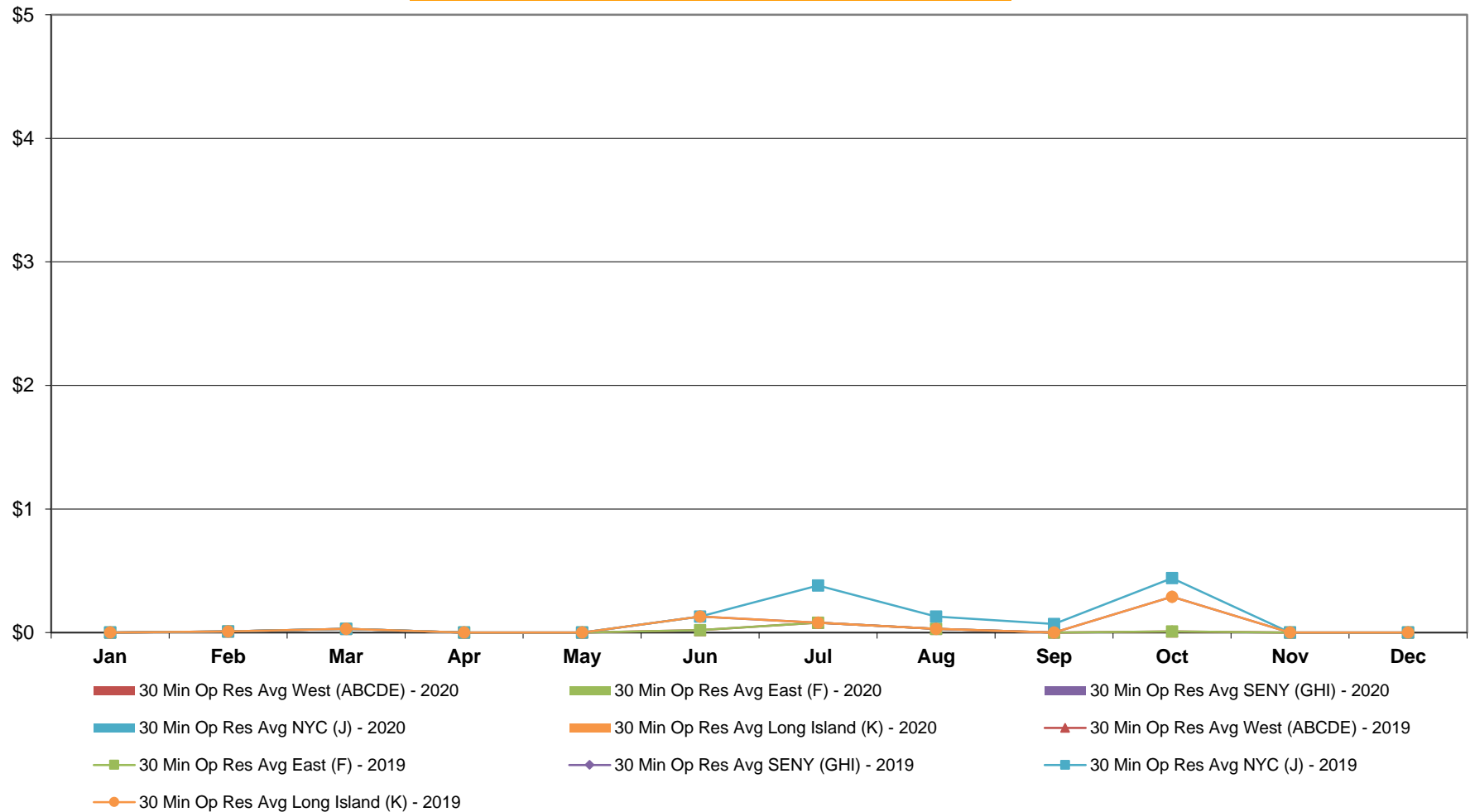
**NYISO Monthly Average Ancillary Service Prices
Real Time Market - 10 Min Spin 2019 - 2020**

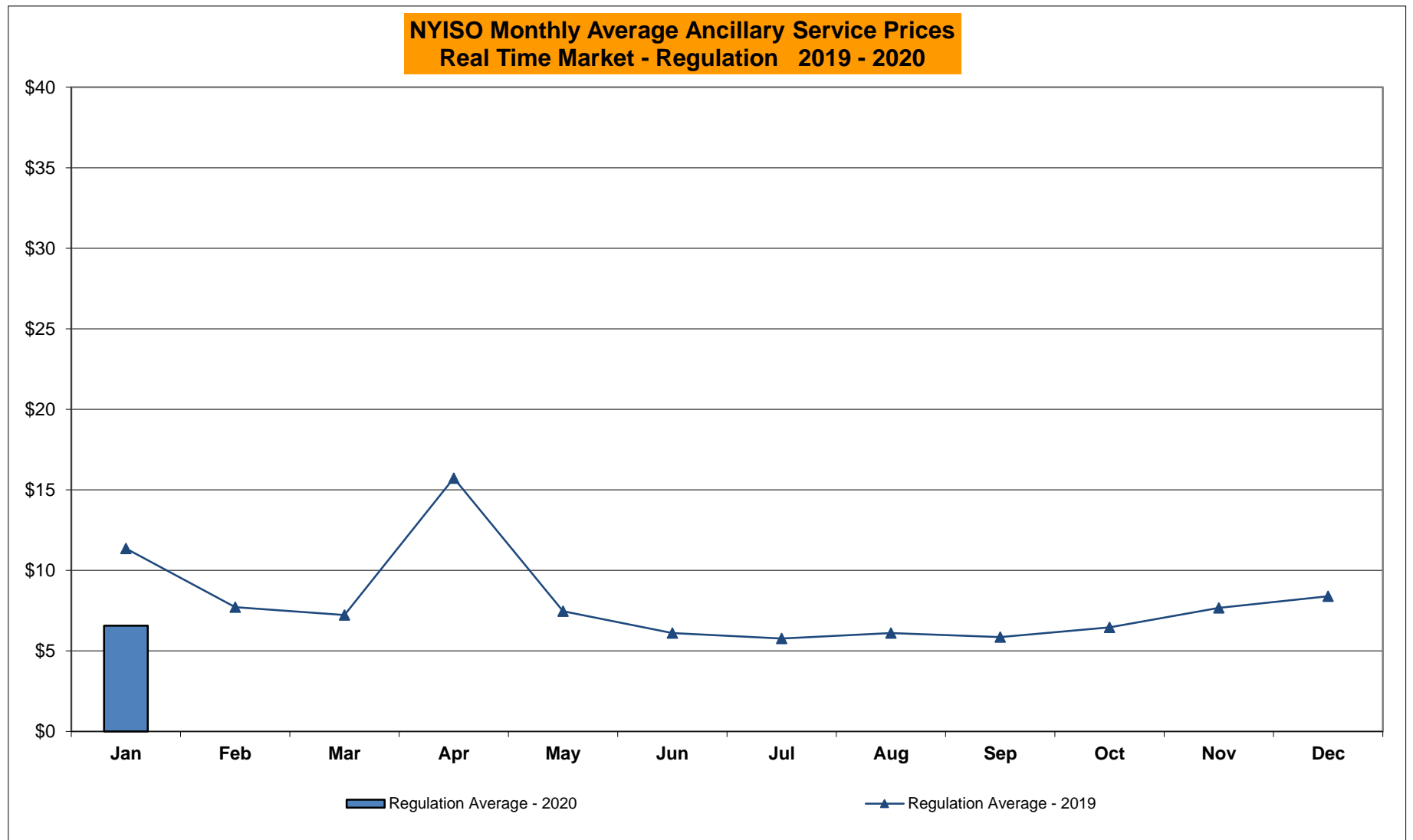


NYISO Monthly Average Ancillary Service Prices Real Time Market - 10 Min Non-Synch 2019 - 2020

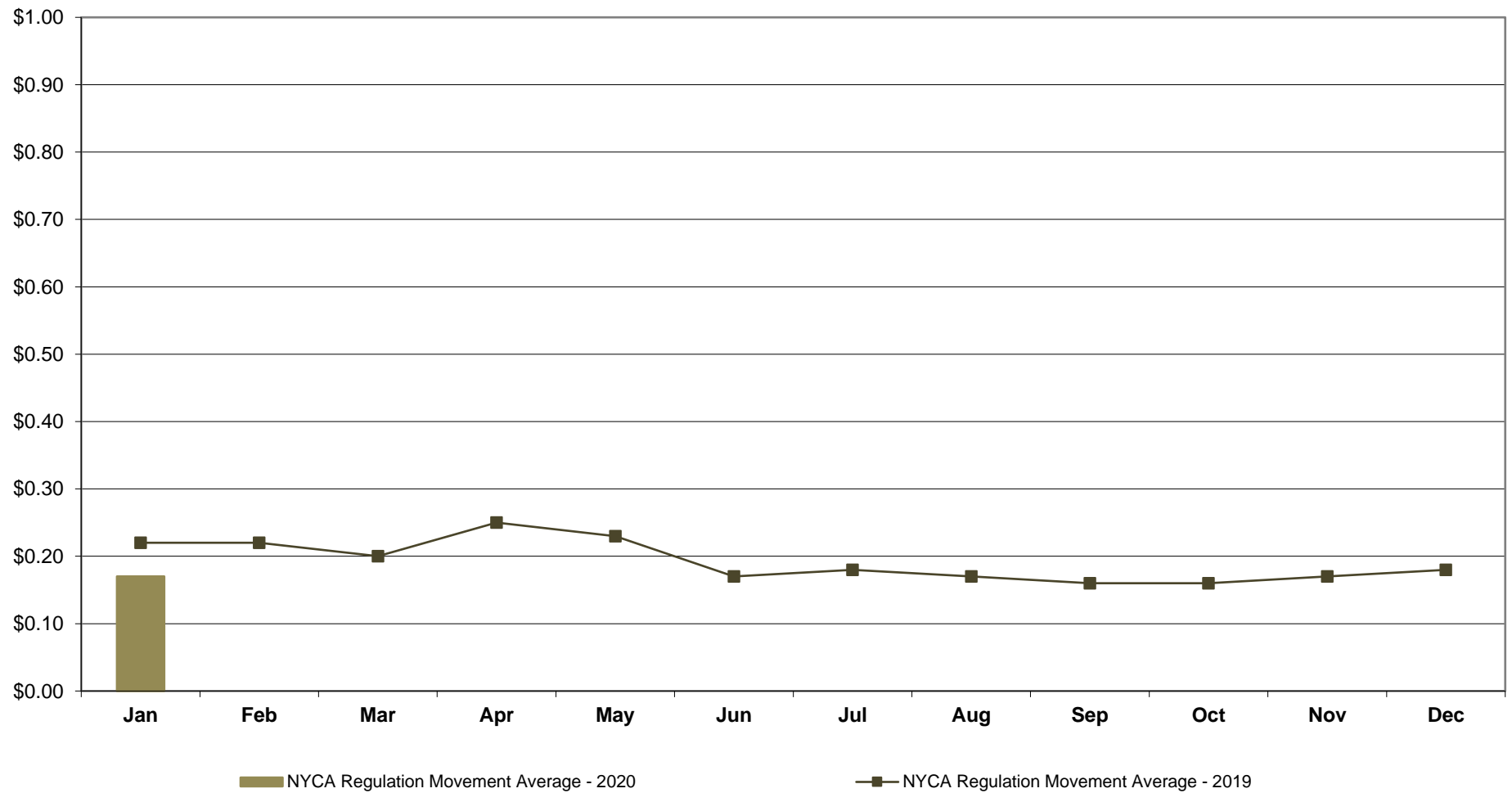


NYISO Monthly Average Ancillary Service Prices Real Time Market - 30 Min Op Res 2019 - 2020





NYISO Monthly Average Ancillary Service Prices Real Time Market - Regulation Movement 2019 - 2020



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

<u>2020</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)	3.60											
10 Min Spin NYC (J)	3.60											
10 Min Spin SENY (GHI)	3.60											
10 Min Spin East (F)	3.60											
10 Min Spin West (ABCDE)	3.57											
10 Min Non Synch Long Island (K)	3.28											
10 Min Non Synch NYC (J)	3.28											
10 Min Non Synch SENY (GHI)	3.28											
10 Min Non Synch East (F)	3.28											
10 Min Non Synch West (ABCDE)	3.28											
30 Min Long Island (K)	3.28											
30 Min NYC (J)	3.28											
30 Min SENY (GHI)	3.28											
30 Min East (F)	3.28											
30 Min West (ABCDE)	3.28											
Regulation	6.46											
<u>2019</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)	5.47	4.17	4.61	4.46	4.25	3.90	4.03	4.19	3.86	4.59	3.79	3.55
10 Min Spin NYC (J)	5.47	4.17	4.61	4.46	4.25	3.90	4.86	4.73	3.97	4.69	3.79	3.55
10 Min Spin SENY (GHI)	5.47	4.17	4.61	4.46	4.25	3.90	4.03	4.19	3.86	4.59	3.79	3.55
10 Min Spin East (F)	5.47	4.17	4.61	4.46	4.25	3.86	4.03	4.19	3.86	4.59	3.79	3.55
10 Min Spin West (ABCDE)	4.56	3.94	4.30	4.01	4.09	3.77	3.89	4.00	3.72	4.24	3.65	3.47
10 Min Non Synch Long Island (K)	3.88	3.75	3.57	3.96	3.94	3.63	3.76	3.78	3.34	3.91	3.40	3.14
10 Min Non Synch NYC (J)	3.88	3.75	3.57	3.96	3.94	3.63	4.59	4.32	3.45	4.01	3.40	3.14
10 Min Non Synch SENY (GHI)	3.88	3.75	3.57	3.96	3.94	3.63	3.76	3.78	3.34	3.91	3.40	3.14
10 Min Non Synch East (F)	3.88	3.75	3.57	3.96	3.94	3.59	3.76	3.78	3.34	3.91	3.40	3.14
10 Min Non Synch West (ABCDE)	3.86	3.74	3.47	3.73	3.91	3.58	3.73	3.76	3.33	3.87	3.39	3.13
30 Min Long Island (K)	3.86	3.74	3.46	3.71	3.91	3.58	3.72	3.75	3.33	3.86	3.39	3.13
30 Min NYC (J)	3.86	3.74	3.46	3.71	3.91	3.58	3.79	3.75	3.33	3.86	3.39	3.13
30 Min SENY (GHI)	3.86	3.74	3.46	3.71	3.91	3.58	3.72	3.75	3.33	3.86	3.39	3.13
30 Min East (F)	3.86	3.74	3.46	3.71	3.91	3.58	3.72	3.75	3.33	3.86	3.39	3.13
30 Min West (ABCDE)	3.86	3.74	3.46	3.71	3.91	3.58	3.72	3.75	3.33	3.86	3.39	3.13
Regulation	11.94	7.69	6.62	27.38	8.71	5.57	4.99	5.89	6.36	8.55	7.77	7.65

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

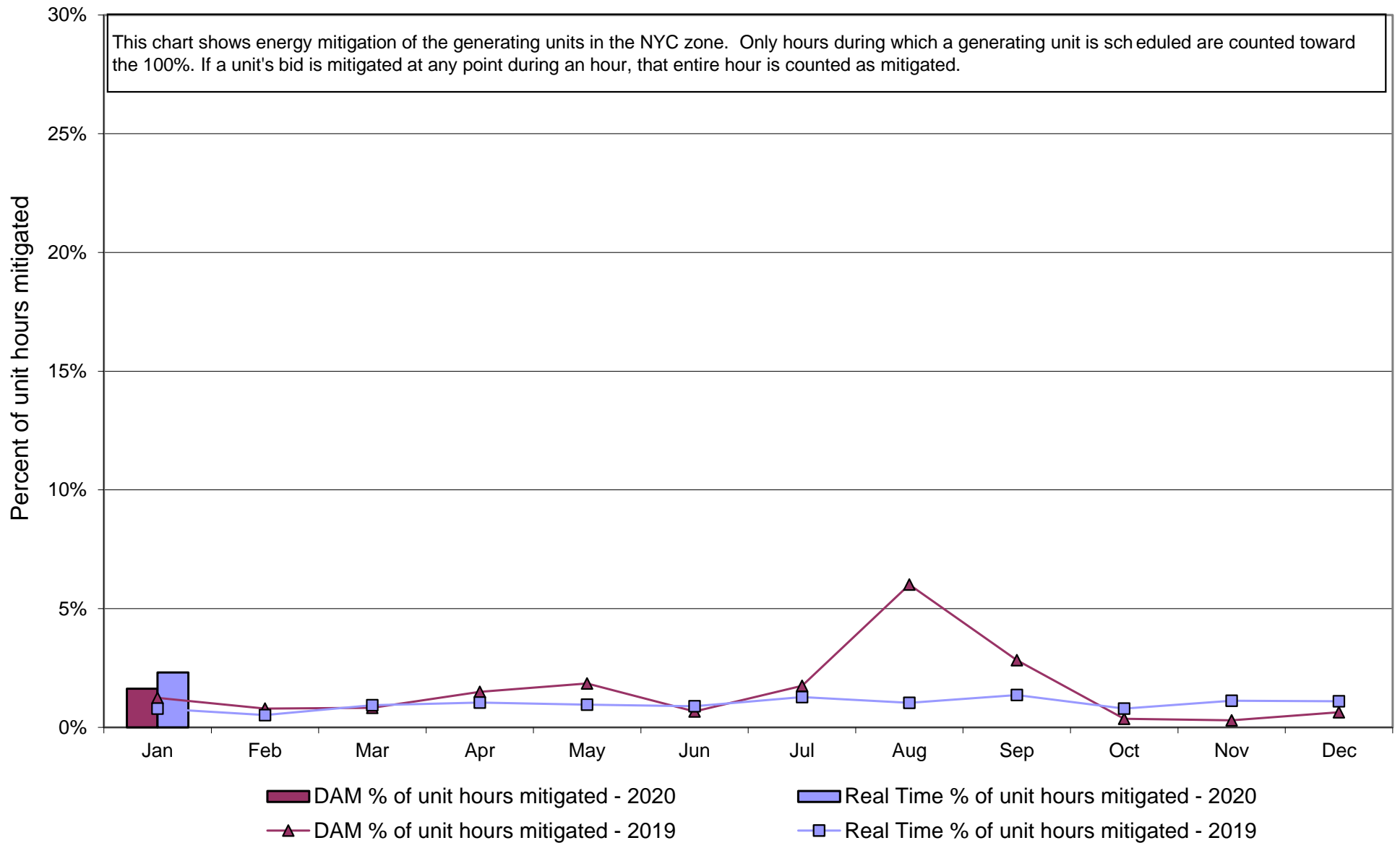
2020	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
RTC Market												
10 Min Spin Long Island (K)	0.78											
10 Min Spin NYC (J)	0.78											
10 Min Spin SENY (GHI)	0.78											
10 Min Spin East (F)	0.78											
10 Min Spin West (ABCDE)	0.54											
10 Min Non Synch Long Island (K)	0.00											
10 Min Non Synch NYC (J)	0.00											
10 Min Non Synch SENY (GHI)	0.00											
10 Min Non Synch East (F)	0.00											
10 Min Non Synch West (ABCDE)	0.00											
30 Min Long Island (K)	0.00											
30 Min NYC (J)	0.00											
30 Min SENY (GHI)	0.00											
30 Min East (F)	0.00											
30 Min West (ABCDE)	0.00											
Regulation	6.11											
NYCA Regulation Movement	0.17											
2019	<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>
RTC Market												
10 Min Spin Long Island (K)	1.80	1.55	1.08	1.04	0.99	0.99	0.90	0.91	0.38	1.90	1.20	1.68
10 Min Spin NYC (J)	1.80	1.55	1.08	1.04	0.99	0.99	1.54	1.21	0.65	2.37	1.20	1.69
10 Min Spin SENY (GHI)	1.80	1.55	1.08	1.04	0.99	0.99	0.90	0.91	0.38	1.90	1.20	1.68
10 Min Spin East (F)	1.80	1.55	1.08	1.04	0.99	0.69	0.90	0.91	0.38	1.47	1.20	1.68
10 Min Spin West (ABCDE)	1.08	0.80	0.79	0.44	0.44	0.05	0.58	0.51	0.12	0.15	0.79	1.39
10 Min Non Synch Long Island (K)	0.01	0.08	0.11	0.13	0.00	0.52	0.09	0.04	0.01	0.78	0.00	0.08
10 Min Non Synch NYC (J)	0.01	0.08	0.11	0.13	0.00	0.52	0.73	0.34	0.28	1.25	0.00	0.10
10 Min Non Synch SENY (GHI)	0.01	0.08	0.11	0.13	0.00	0.52	0.09	0.04	0.01	0.78	0.00	0.08
10 Min Non Synch East (F)	0.01	0.08	0.11	0.13	0.00	0.22	0.09	0.04	0.01	0.34	0.00	0.08
10 Min Non Synch West (ABCDE)	0.00	0.01	0.01	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.00	0.00
30 Min Long Island (K)	0.00	0.01	0.01	0.00	0.00	0.24	0.05	0.04	0.00	0.43	0.00	0.00
30 Min NYC (J)	0.00	0.01	0.01	0.00	0.00	0.24	0.31	0.14	0.07	0.58	0.00	0.00
30 Min SENY (GHI)	0.00	0.01	0.01	0.00	0.00	0.24	0.05	0.04	0.00	0.43	0.00	0.00
30 Min East (F)	0.00	0.01	0.01	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.00	0.00
30 Min West (ABCDE)	0.00	0.01	0.01	0.00	0.00	0.00	0.05	0.04	0.00	0.00	0.00	0.00
Regulation	9.81	6.64	6.21	33.26	7.45	5.16	5.19	7.19	5.52	5.91	7.81	9.74
NYCA Regulation Movement	0.23	0.22	0.21	0.25	0.24	0.18	0.19	0.17	0.16	0.16	0.17	0.18

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

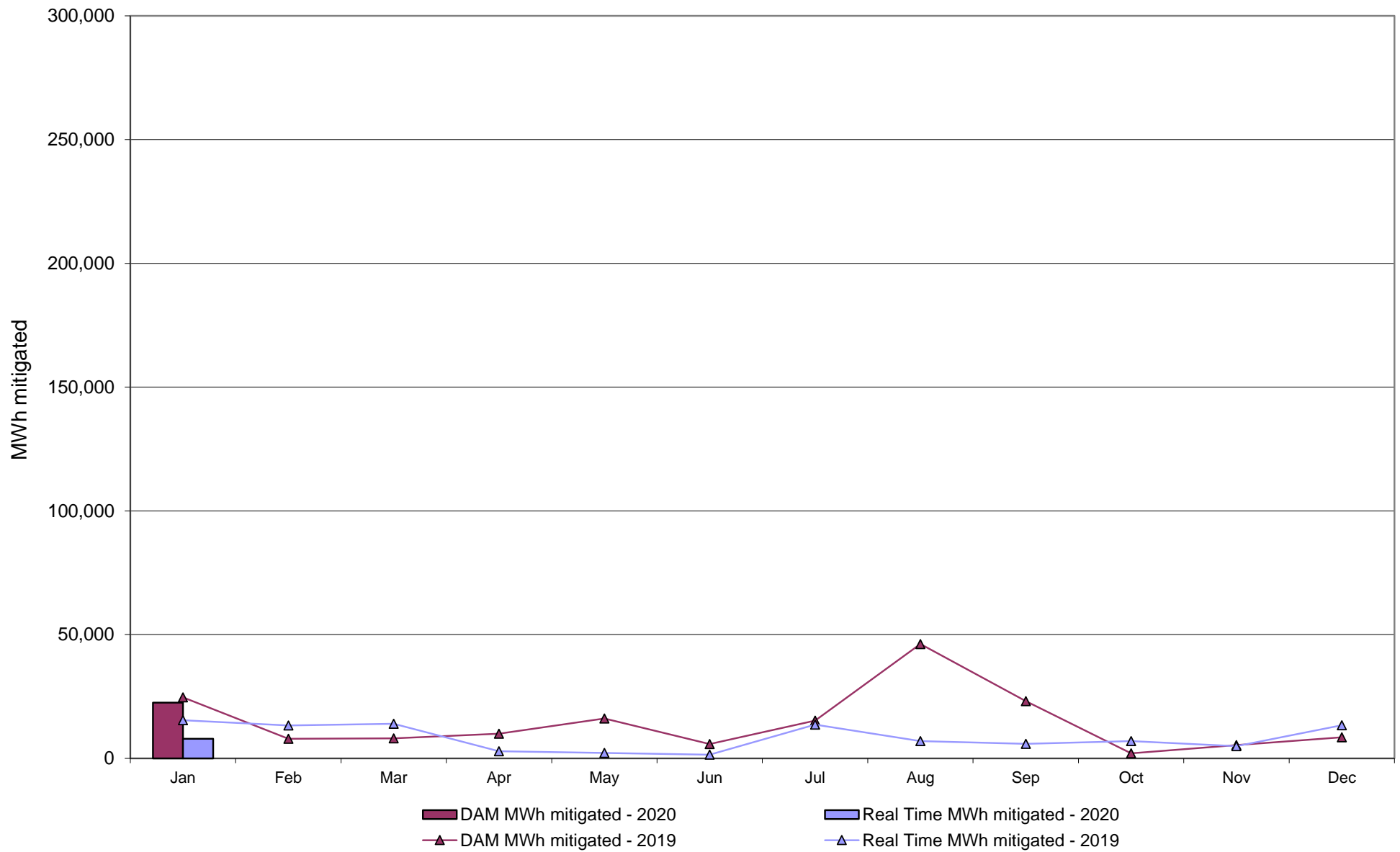
2020	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
Real Time Market												
10 Min Spin Long Island (K)	1.42											
10 Min Spin NYC (J)	1.42											
10 Min Spin SENY (GHI)	1.42											
10 Min Spin East (F)	1.42											
10 Min Spin West (ABCDE)	1.05											
10 Min Non Synch Long Island (K)	0.00											
10 Min Non Synch NYC (J)	0.00											
10 Min Non Synch SENY (GHI)	0.00											
10 Min Non Synch East (F)	0.00											
10 Min Non Synch West (ABCDE)	0.00											
30 Min Long Island (K)	0.00											
30 Min NYC (J)	0.00											
30 Min SENY (GHI)	0.00											
30 Min East (F)	0.00											
30 Min West (ABCDE)	0.00											
Regulation	6.57											
NYCA Regulation Movement	0.17											
2019	<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>
Real Time Market												
10 Min Spin Long Island (K)	2.53	2.51	2.24	2.75	1.58	1.17	1.32	1.66	0.63	1.96	1.72	2.77
10 Min Spin NYC (J)	2.53	2.51	2.24	2.75	1.58	1.17	2.03	1.98	0.96	2.54	1.72	2.78
10 Min Spin SENY (GHI)	2.53	2.51	2.24	2.75	1.58	1.17	1.32	1.66	0.63	1.96	1.72	2.77
10 Min Spin East (F)	2.53	2.51	2.24	2.75	1.58	0.98	1.32	1.66	0.63	1.68	1.72	2.77
10 Min Spin West (ABCDE)	1.89	1.57	1.64	1.45	0.85	0.23	0.98	1.24	0.28	0.51	1.25	2.47
10 Min Non Synch Long Island (K)	0.03	0.18	0.48	0.96	0.00	0.33	0.11	0.03	0.01	0.53	0.00	0.03
10 Min Non Synch NYC (J)	0.03	0.18	0.48	0.96	0.00	0.33	0.82	0.35	0.34	1.12	0.00	0.04
10 Min Non Synch SENY (GHI)	0.03	0.18	0.48	0.96	0.00	0.33	0.11	0.03	0.01	0.53	0.00	0.03
10 Min Non Synch East (F)	0.03	0.18	0.48	0.96	0.00	0.15	0.11	0.03	0.01	0.25	0.00	0.03
10 Min Non Synch West (ABCDE)	0.00	0.01	0.09	0.17	0.00	0.02	0.08	0.03	0.00	0.01	0.00	0.00
30 Min Long Island (K)	0.00	0.01	0.03	0.00	0.00	0.13	0.08	0.03	0.00	0.29	0.00	0.00
30 Min NYC (J)	0.00	0.01	0.03	0.00	0.00	0.13	0.38	0.13	0.07	0.44	0.00	0.00
30 Min SENY (GHI)	0.00	0.01	0.03	0.00	0.00	0.13	0.08	0.03	0.00	0.29	0.00	0.00
30 Min East (F)	0.00	0.01	0.03	0.00	0.00	0.02	0.08	0.03	0.00	0.01	0.00	0.00
30 Min West (ABCDE)	0.00	0.01	0.03	0.00	0.00	0.02	0.08	0.03	0.00	0.01	0.00	0.00
Regulation	11.36	7.72	7.23	15.73	7.47	6.11	5.77	6.11	5.86	6.47	7.67	8.40
NYCA Regulation Movement	0.22	0.22	0.20	0.25	0.23	0.17	0.18	0.17	0.16	0.16	0.17	0.18

NYISO In City Energy Mitigation - AMP (NYC Zone) 2019 - 2020

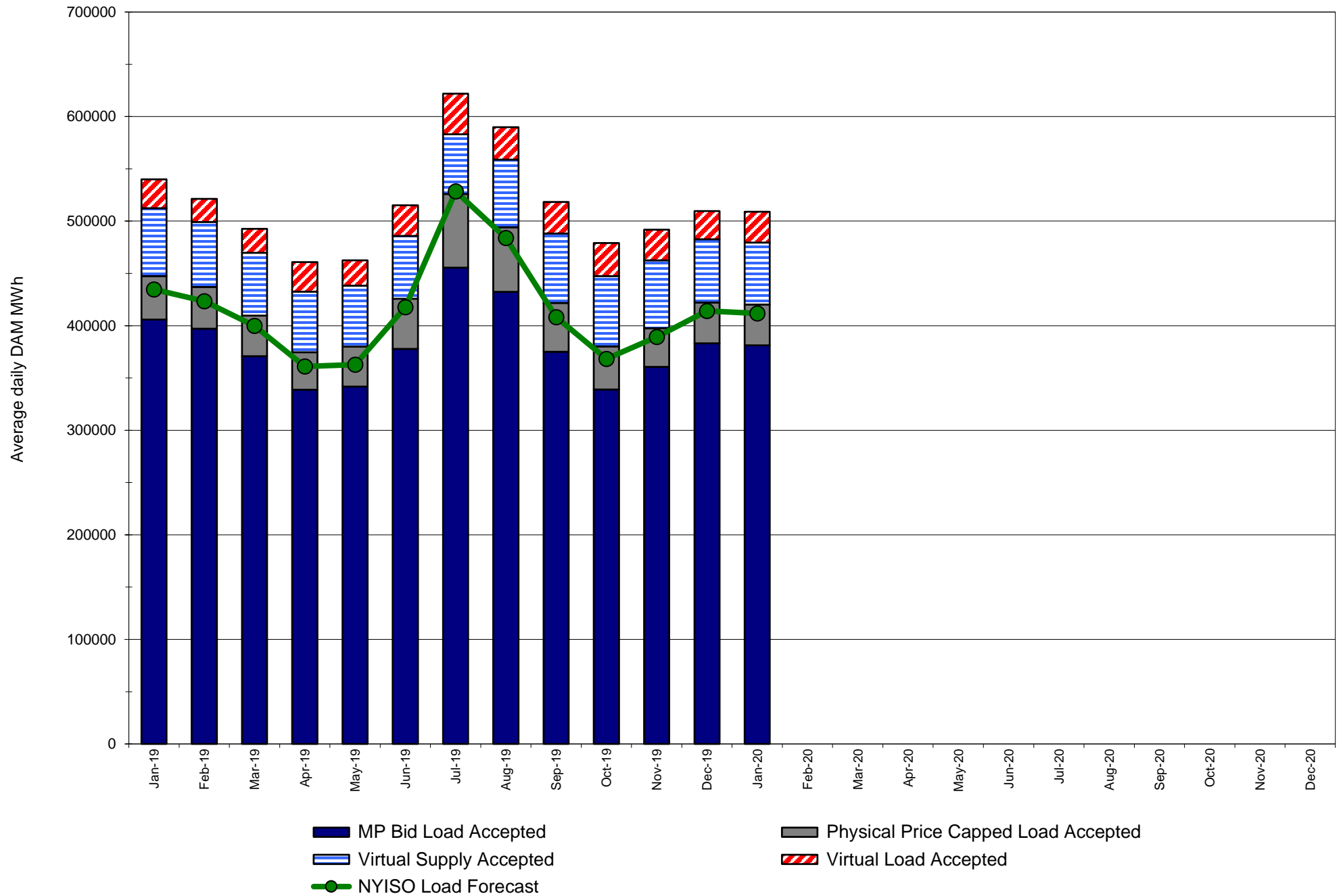
Percentage of committed unit-hours mitigated



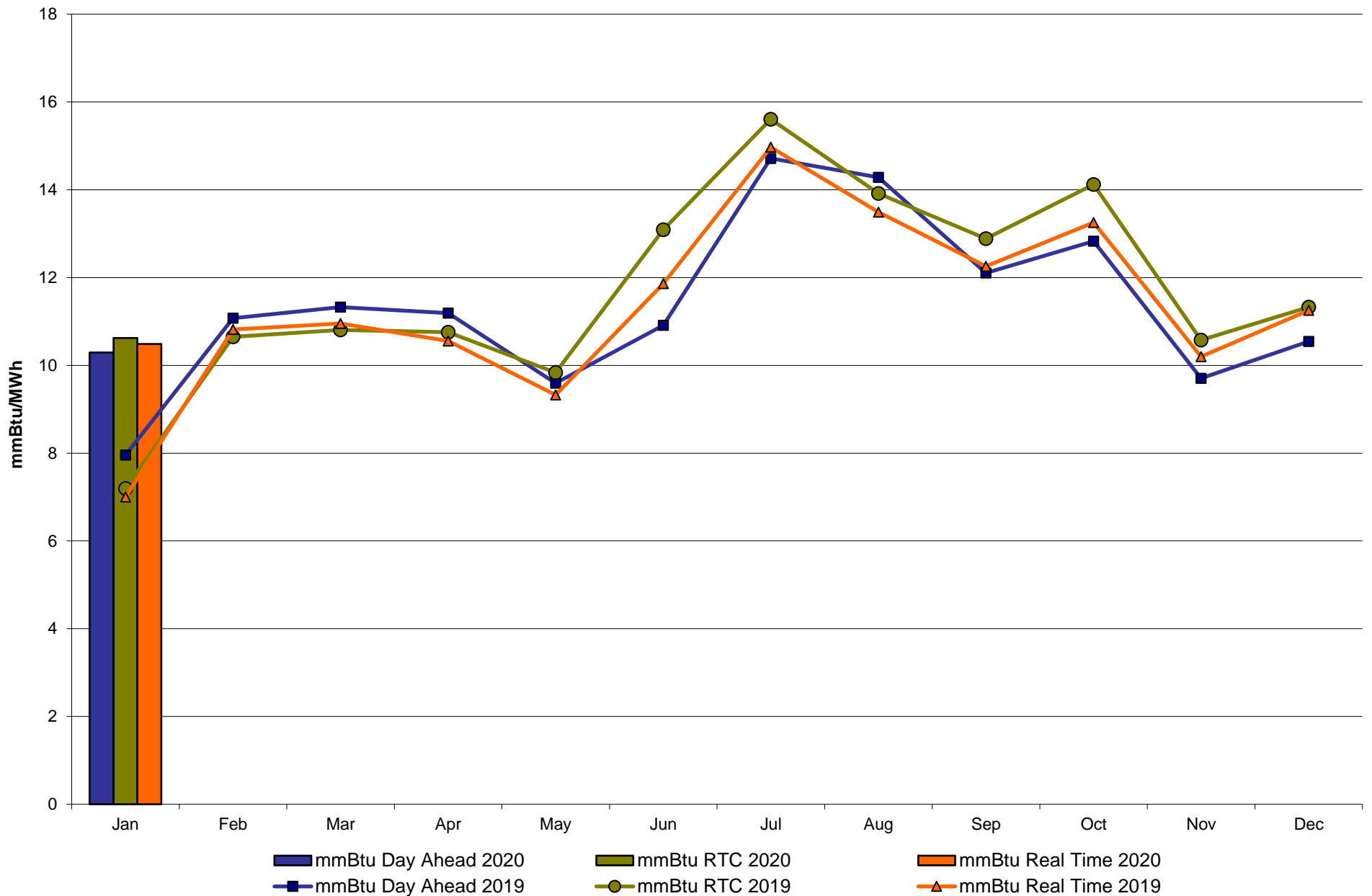
NYISO In City Energy Mitigation (NYC Zone) 2019 - 2020 **Monthly megawatt hours mitigated**



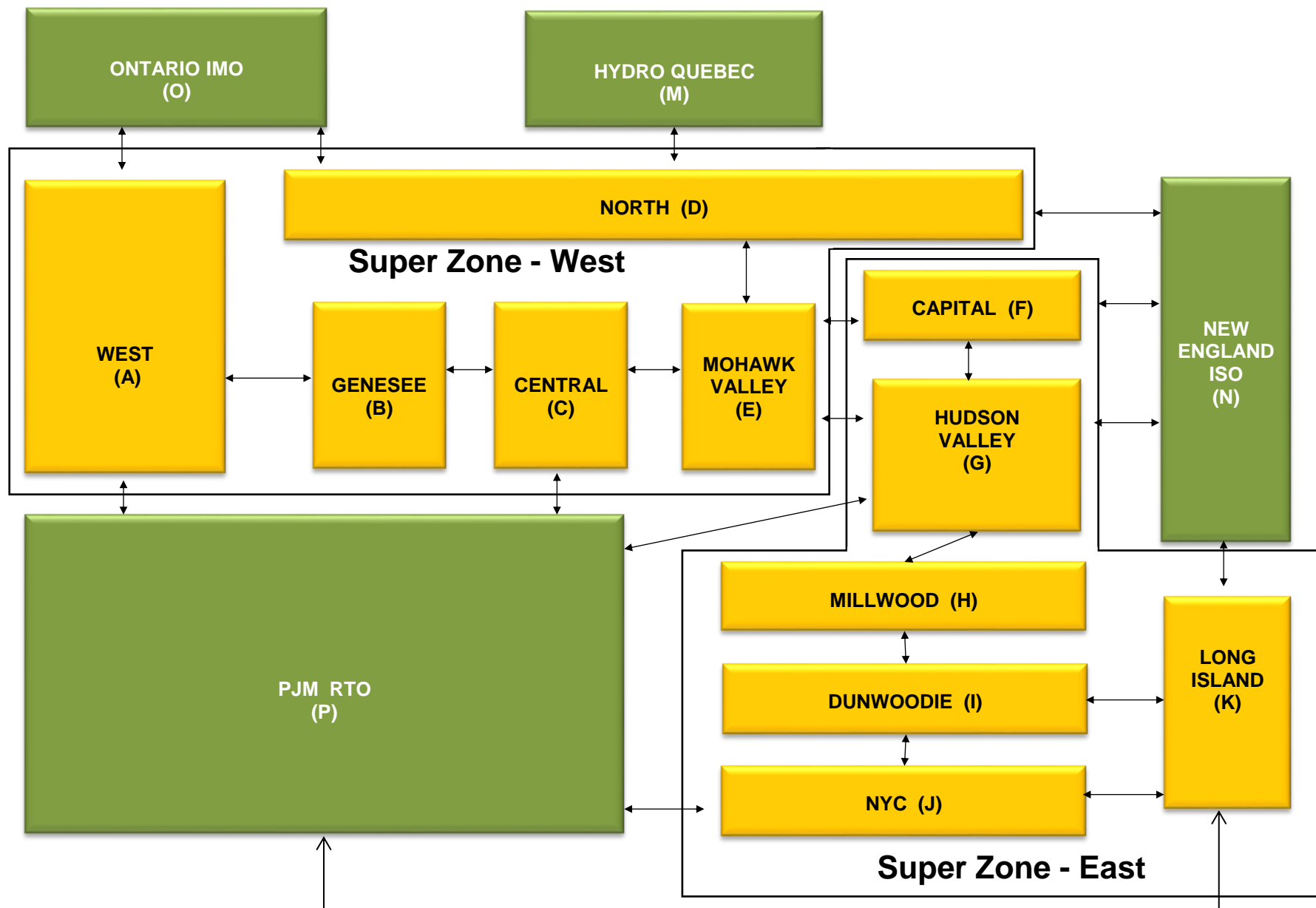
NYISO Average Daily DAM Load Bid Summary



Monthly Implied Heat Rate 2019-2020



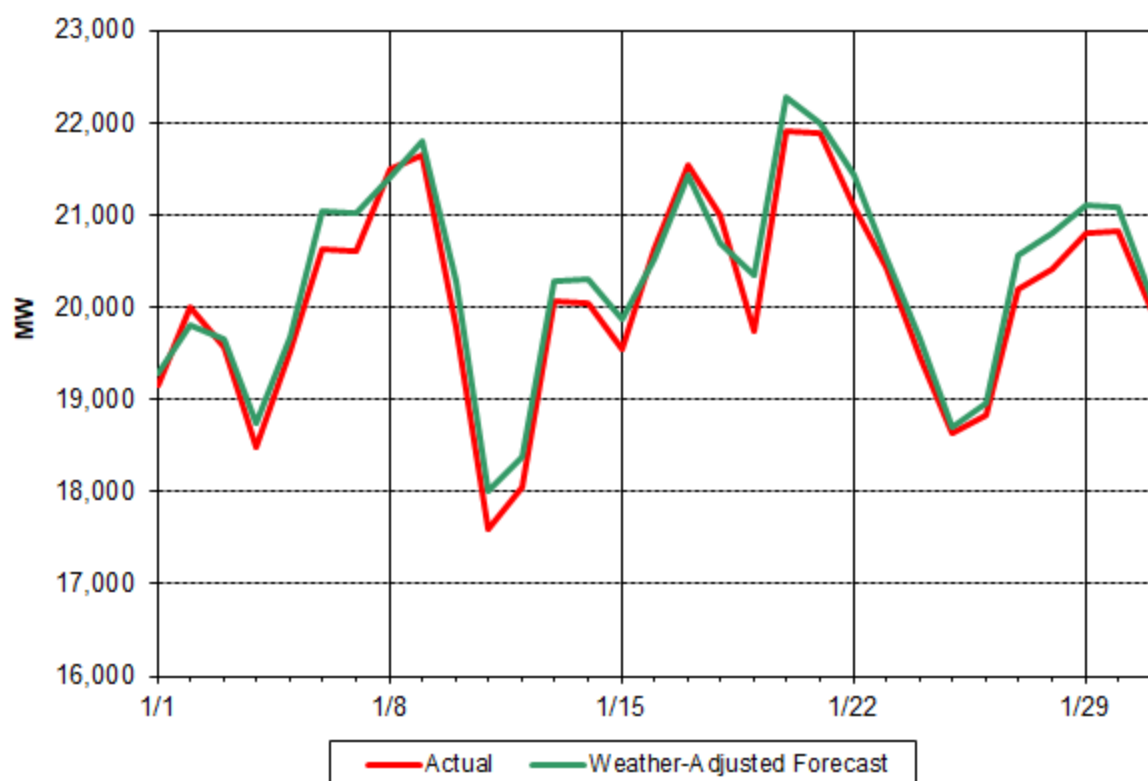
NYISO LBMP ZONES



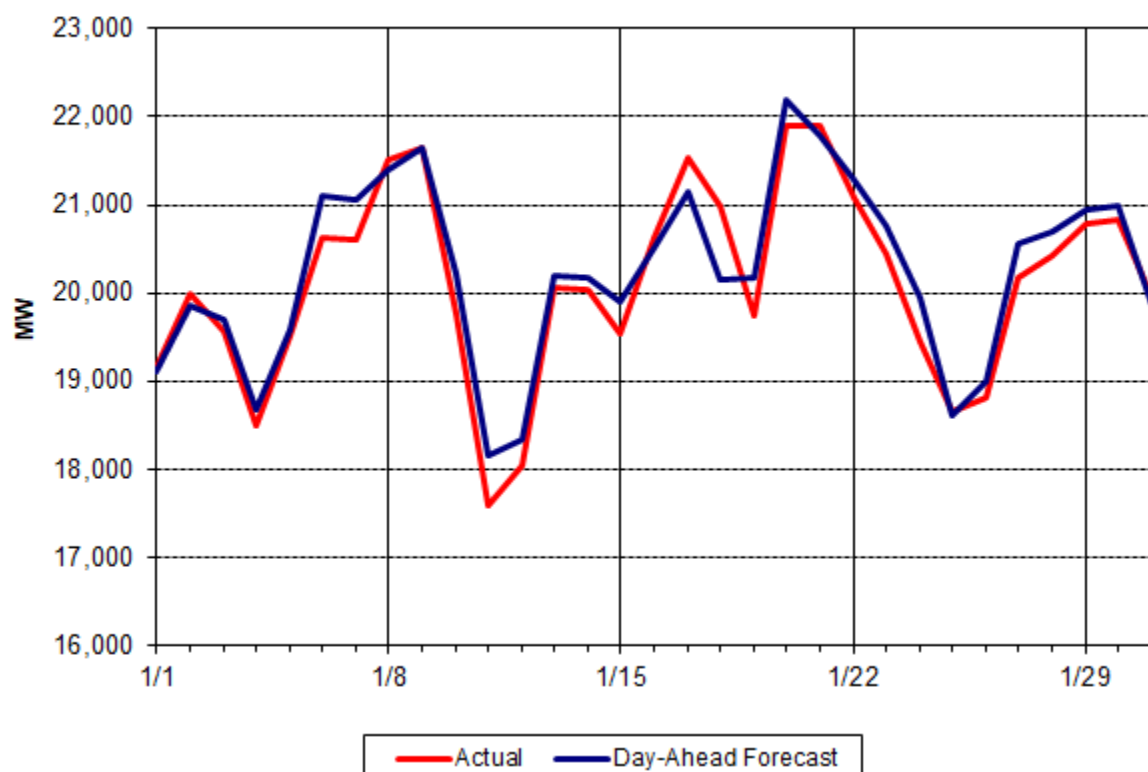
Billing Codes for Chart C

<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

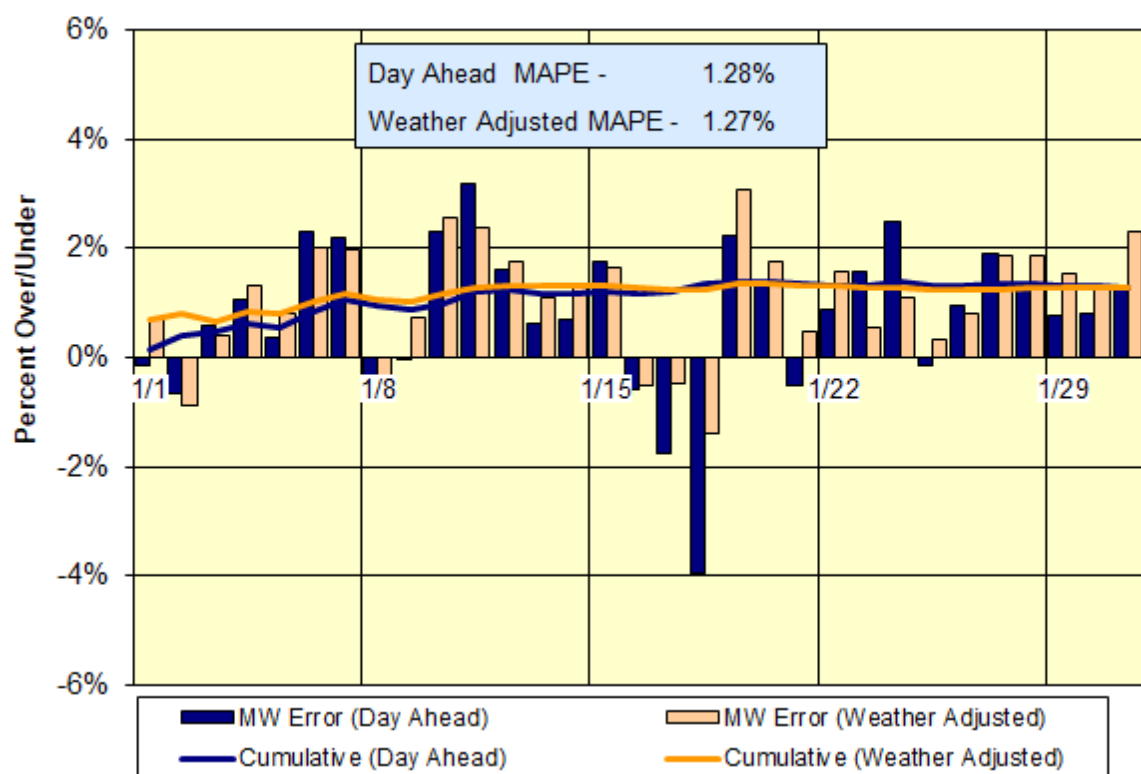
NYISO Daily Peak Load - January 2020
Actual vs. Weather-Adjusted Forecast



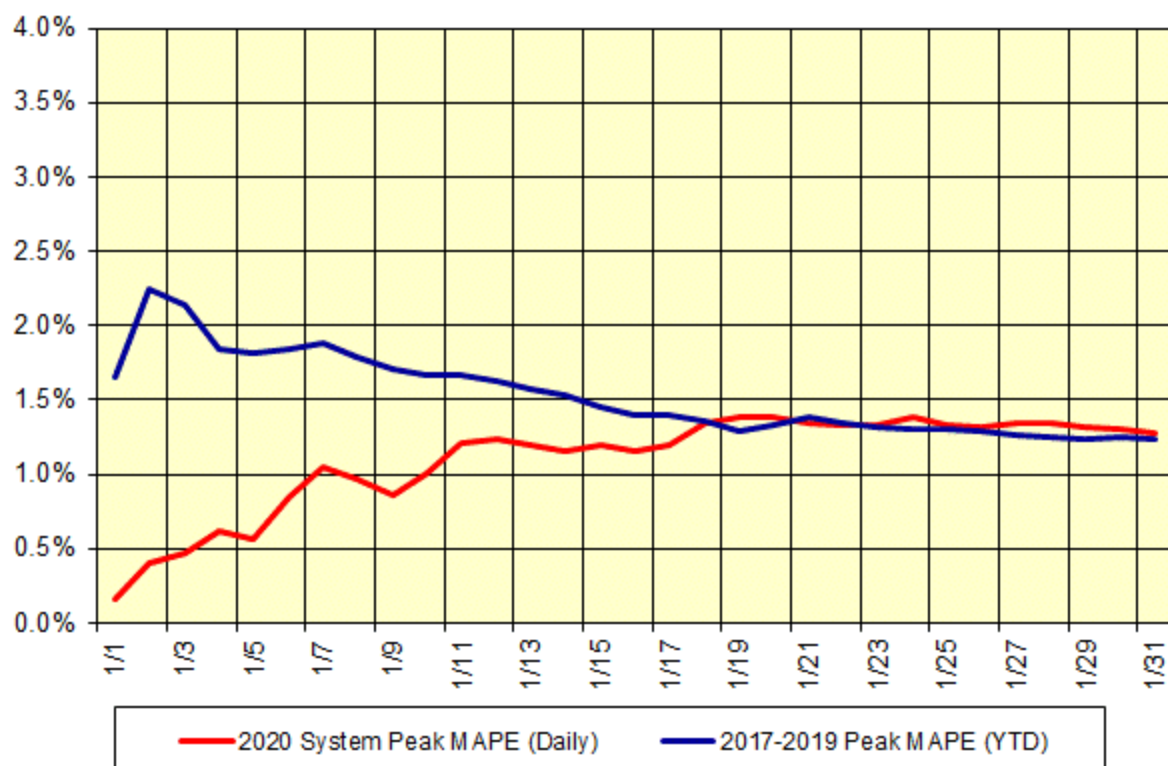
NYISO Daily Peak Load - January 2020
Actual vs. Forecast



Day Ahead Peak Forecast - January 2020 Percent Error - Actual & Weather-Adjusted



Day-Ahead Forecast Accuracy - Cumulative Performance 2020 Year-to-Date



**Summary Description of Regulatory Filings, Investigations,
Rulemakings and Related Orders in NYISO Matters – January 2020**

Filing Date	Filing Summary	Docket	Order Date	Order Summary
11/14/2019	NYISO filing on behalf of New York State Electric & Gas Corporation ("NYSEG") re: an Engineering Fees Reimbursement Agreement (SA 2492) between NYSEG and Greenidge Generation LLC	ER20-376-000	01/10/2020	Order accepted agreement effective 10/18/2019, as requested
11/26/2019	NYISO 205 filing re: enhancements to the credit worthiness reporting requirements	ER20-483-000	01/24/2020	Order accepted revisions effective 01/27/2020, as requested
12/06/2019	NYISO filing on behalf of New York State Electric & Gas Corporation ("NYSEG") re: a Utility Services Agreement (SA 2497) between NYSEG and NextEra Energy Transmission of New York, Inc.	ER20-532-000	01/16/2020	Order accepted agreement effective 11/11/2019, as requested
12/19/2019	NYISO 205 tariff filing re: interconnection process improvement (class year redesign)	ER20-638-000	01/31/2020	Order accepted revisions effective February 18, 2020, as requested
01/02/2020	NYISO answer re: Energy Trading Institute protest of NYISO's 11/26/2019 filing of tariff revisions to enhance its credit reporting requirements and remedies	ER20-483-000		
01/03/2020	NYISO letter re: notification of erroneous Attachment I to the 12/31/2019 LS Power Grid New York Corporation I filing of a transmission formula rate	ER20-716-000		
01/07/2020	NYISO 205 filing on behalf of New York State Electric & Gas Corporation ("NYSEG") re: Engineering & Procurement Agreement (SA 2501) between NYSEG and Canisteo Wind Energy LLC	ER20-742-000		
01/07/2020	NYISO filing to the New York State Joint Commission on Public Ethics re: November/December 2019 Bimonthly Report on lobbying activities and expenses	No Docket No.		
01/08/2020	NYISO motion to intervene and comment re: NYC Energy LLC petition for tariff waiver concerning reinstatement to the interconnection queue	ER20-629-000		
01/08/2020	NYISO motion to intervene and comment re: the New York State Reliability Council filing of the Installed Capacity Requirement for the 2020-2021 Capability Year	ER20-655-000		
01/08/2020	NYISO filing to the New York State Joint Commission on Public Ethics re: July-December 2019 Client Semi Annual Report	No Docket No.		

01/14/2020	NYISO filing re: 4th quarter 2019 Electric Quarterly Report	ER02-2001-000		
01/16/2020	Joint NYISO and PJM filing re: request for 90 day extension of compliance filing deadline for implementing revisions to the Market-to-Market Entitlement rules in their Joint Operating Agreement	ER19-2282-000	01/23/2020	FERC notice granted extension of compliance filing deadline to 04/16/2020
01/17/2020	NYISO 205 filing on behalf of Niagara Mohawk Power Corporation ("NMPC") re: a Small Generator Interconnection Agreement (SA 2511) between NMPC and LaChute Hydro Company, LLC	ER20-823-000		
01/23/2020	NYISO 205 re: PPTPP Development Agreement (SA 2510) between NYISO, Niagara Mohawk Power Corporation and New York Transco, LLC	ER20-865-000		
01/24/2020	NYISO filing to the NYPSC re: verified report concerning funds received from the credit facilities authorized in the 11/16/2018 Order	PSC Case No. 18-E-0439		
01/24/2020	ISO-RTO Council filing re: answer to the 12/16/2019 Energy Trading Institute request for technical conference to update the credit and risk management rules and procedures in organized markets	AD20-6-000		
01/27/2020	NYISO comments re: NYPSC notice concerning the NYSRC filing of an 18.9 percent IRM for the NYCA in the upcoming 2020-2021 Capability Year	PSC Case No. 07-E-0088		
01/28/2020	NYISO 205 filing on behalf of Niagara Mohawk Power Corporation ("NMPC") re: an amended Small Generator Interconnection Agreement (SA 2498) between NMPC and GR Catalyst Two LLC	ER20-533-001		
01/30/2020	NYISO filing of a request for tariff waiver re: credit restrictions in the definition of "Public Power Entity"	ER20-922-000		
01/31/2020	NYISO reply comments to the NYPSC re: initial comments filed on 11/08/2019 in response to the NYPSC resource adequacy matter	PSC Case No. 19-E-0530		