

December 6, 2023

2023



Transparent**Energy**  
powering your decisions

# MARKET INTELLIGENCE REPORT



# TABLE OF CONTENTS

This Week in the News

Electricity & Gas Opportunity Map

Fundamental Market Drivers

Energy Procurement Considerations

NOAA Weather Forecasts

CRUDE Oil – 12 Month Strip

Henry Hub Nat Gas – 12 Month Strip

NYMEX Monthly Settlements

Natural Gas Futures Pricing

Natural Gas Storage Report

NYISO (NY) – 12M Flat Forward Pricing

PJM West Hub – 12M Flat Forward Pricing

PJM NI (Midwest) – 12M Flat Forward Pricing

MASS Hub (MA) – 12M Flat Forward Prices

ERCOT (TX) – 12M Flat Forward Prices

CAISO (CA) – 12M Flat Forward Prices

PJM Capacity Prices

PJM NITS Prices

The Energy Markets are Changing

# THIS WEEK IN THE NEWS

- [U.S starts winter with most natural gas in storage since 2020.](#)
- [ExxonMoble pushes back timeline for startup of Golden Pass LNG.](#)
- [OPEC+ agree on output cuts of 2.2 million barrels per day.](#)
- [Key takeaways from the UN climate summit.](#)
- [U.S. solar growth expected to slow after record-setting 2023.](#)
- [IEA shares five criteria to keep 1.5 °C within reach](#)
- [Canada aims to be offshore wind leader.](#)
- [LNG exports have raised natural gas prices for U.S. households.](#)
- [U.S. associated natural gas production has tripled since 2018.](#)
- [MIT scientists develop new process to convert CO2 into fuel.](#)





# MAP OF DEREGULATED ENERGY MARKETS



- Deregulated Electricity Only
- Deregulated Electricity & Natural Gas with Gas Restrictions
- Deregulated Electricity & Natural Gas with Electricity Restrictions
- Deregulated Natural Gas Only
- Deregulated Electricity & Natural Gas
- Deregulated Natural Gas with Restrictions
- No Deregulation

# FUNDAMENTAL MARKET DRIVERS

## Bull Drivers (Dynamics Driving Prices Higher)

- ❖ **Natural gas futures** remain technically oversold.
- ❖ **LNG exports** remain strong, over 14.4 Bcf/day.
- ❖ **Natural gas production** nominations are displaying indications of a pullback while demand was up 6.2% in November year-over-year.

## Bear Drivers (Dynamics Driving Prices Lower)

- ❖ **Delayed startup of Golden Pass LNG** expected to add 165 Bcf into storage inventory.
- ❖ **U.S. temperature forecasts** remain above normal through December 21<sup>st</sup>.
- ❖ **European natural gas futures prices** reached a 2-month low.





# ENERGY PROCUREMENT CONSIDERATIONS

- *Natural Gas Fundamentals remain bearish in the short term* due to high storage, moderate weather, and strong domestic production.
- Winter weather will be the primary driving factor for prices in the near-to-immediate term. Even ***short periods of extreme cold have proven to send electric and natural gas prices substantially higher.***
- While U.S. Dry Natural Gas production continues to establish new records, the ***demand for natural gas in the electric generation sector*** is also approaching all-time highs.
- The United States is a huge producer of NG and exports to Europe and Asia are growing because export prices are 5-6X what it sells for domestically. Several new LNG export terminals are under construction and ***export capacity will increase dramatically*** in the coming years.
- Calendar natural gas strips ***out to 2035 are all trading below \$4 per MMBtu.***
- Longer term agreements should be considered as part of your risk management strategy. At a minimum, ***partial hedges should be evaluated out to 2027 and beyond.***



# MARKET FUNDAMENTALS: WEATHER OUTLOOK



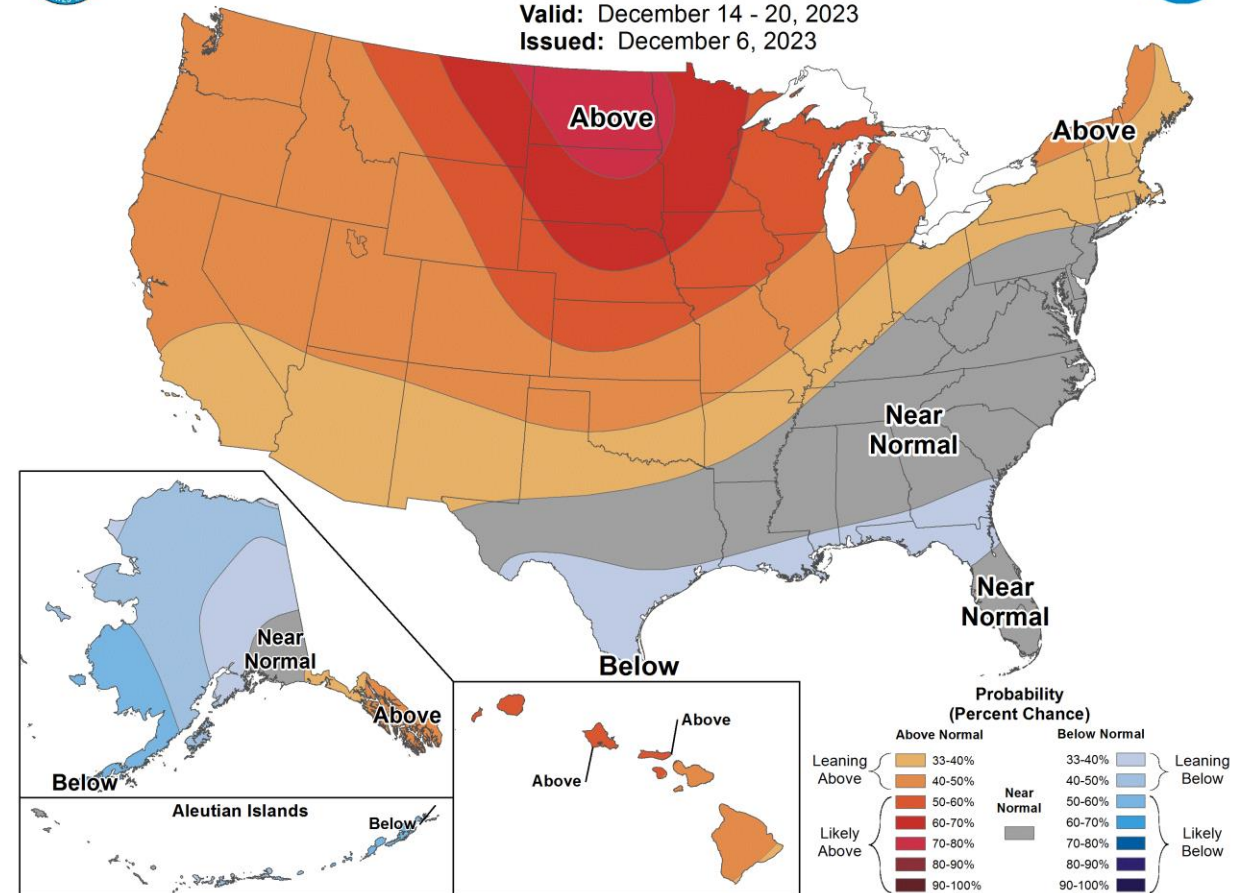
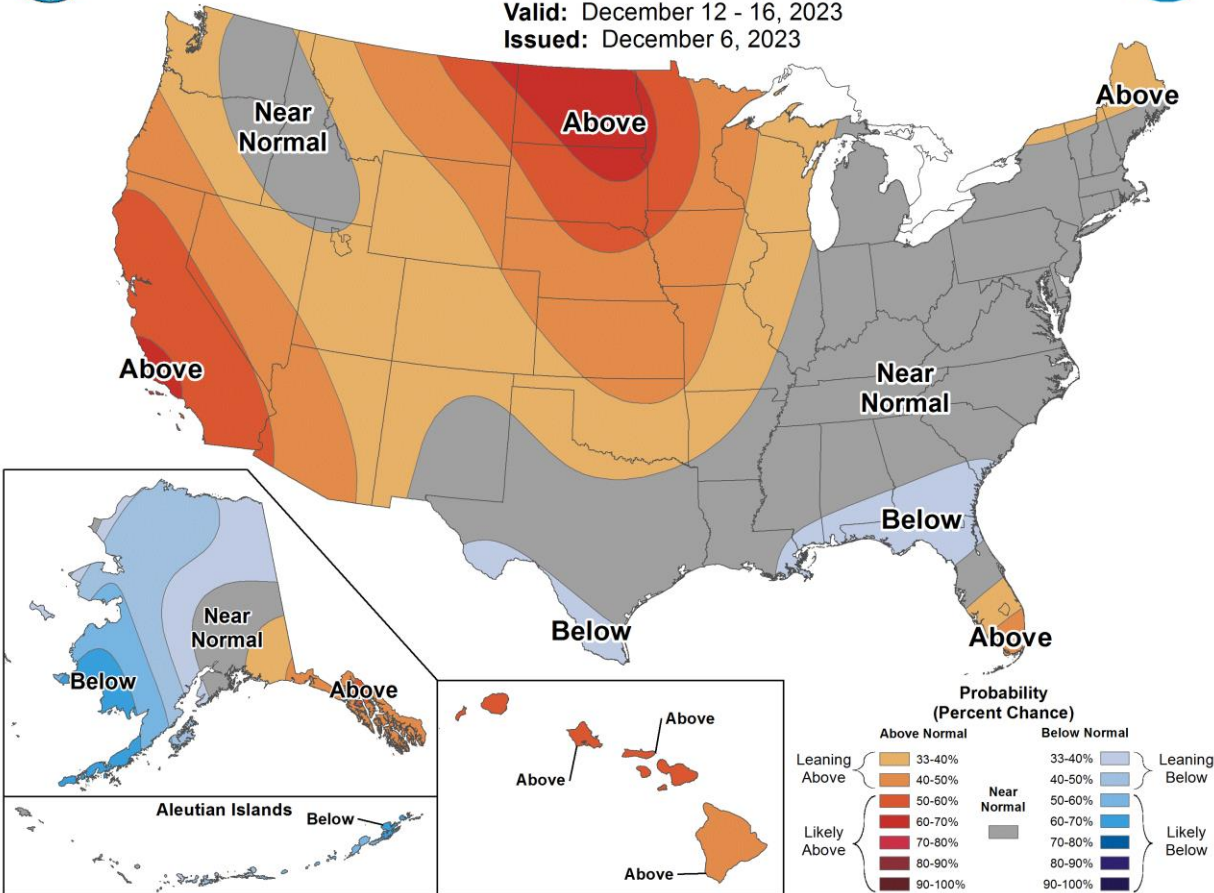
## 6-10 Day Temperature Outlook

Valid: December 12 - 16, 2023  
 Issued: December 6, 2023



## 8-14 Day Temperature Outlook

Valid: December 14 - 20, 2023  
 Issued: December 6, 2023



**Key Takeaway:** Temperatures for the next two weeks are expected to remain relatively mild (for December) across most of the continental U.S. Overall relatively light heating demand is expected in the near term. *Pricing Impact: Neutral-Bearish.*

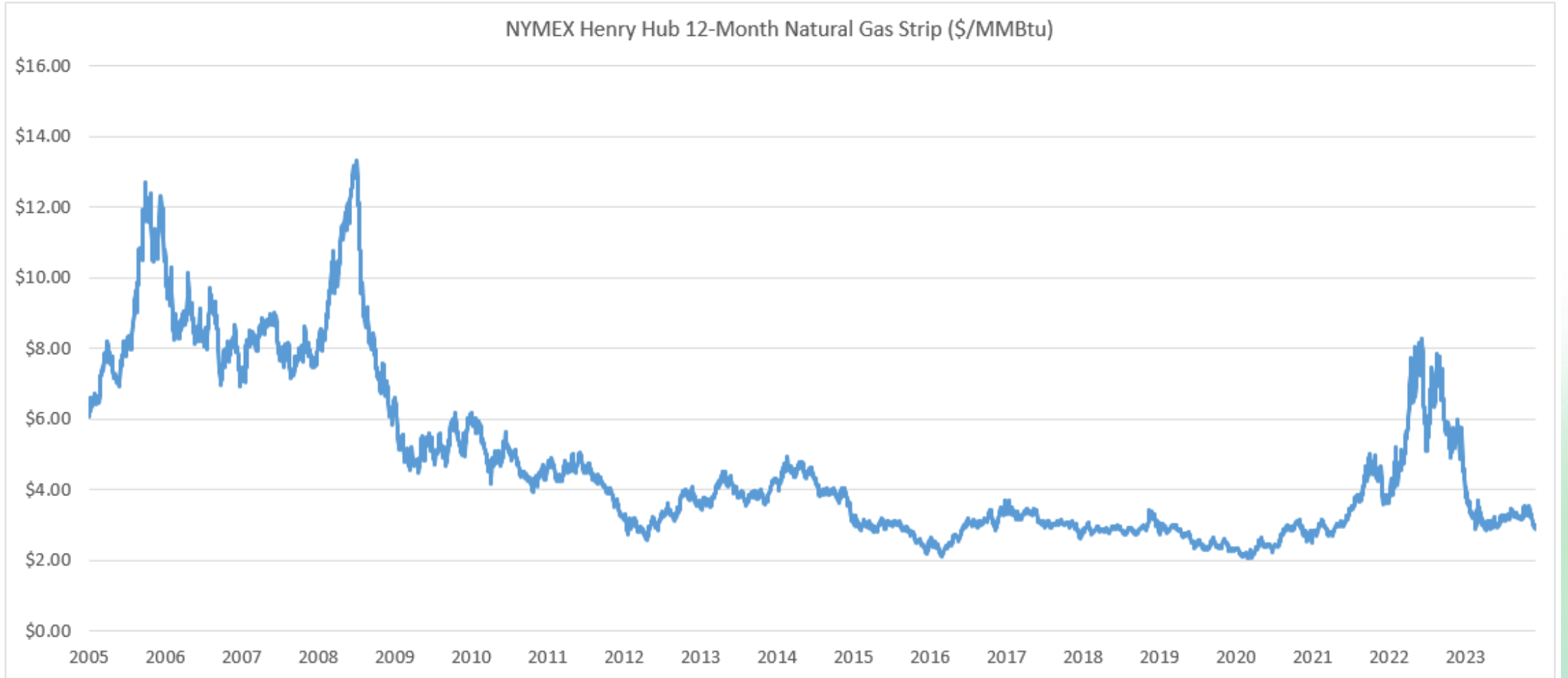
# WTI – CRUDE OIL – 12 MONTH STRIP



	Last Year	Last Month	Last Week	Today
<b>Trade Date</b>	<b>12/7/2022</b>	<b>11/3/2023</b>	<b>11/28/2023</b>	<b>12/5/2023</b>
<b>12M Strip</b>	<b>\$72.55</b>	<b>\$78.41</b>	<b>\$76.75</b>	<b>\$72.40</b>
<b>% Δ</b>	<b>0.21%</b>	<b>7.66%</b>	<b>5.67%</b>	<b>-</b>

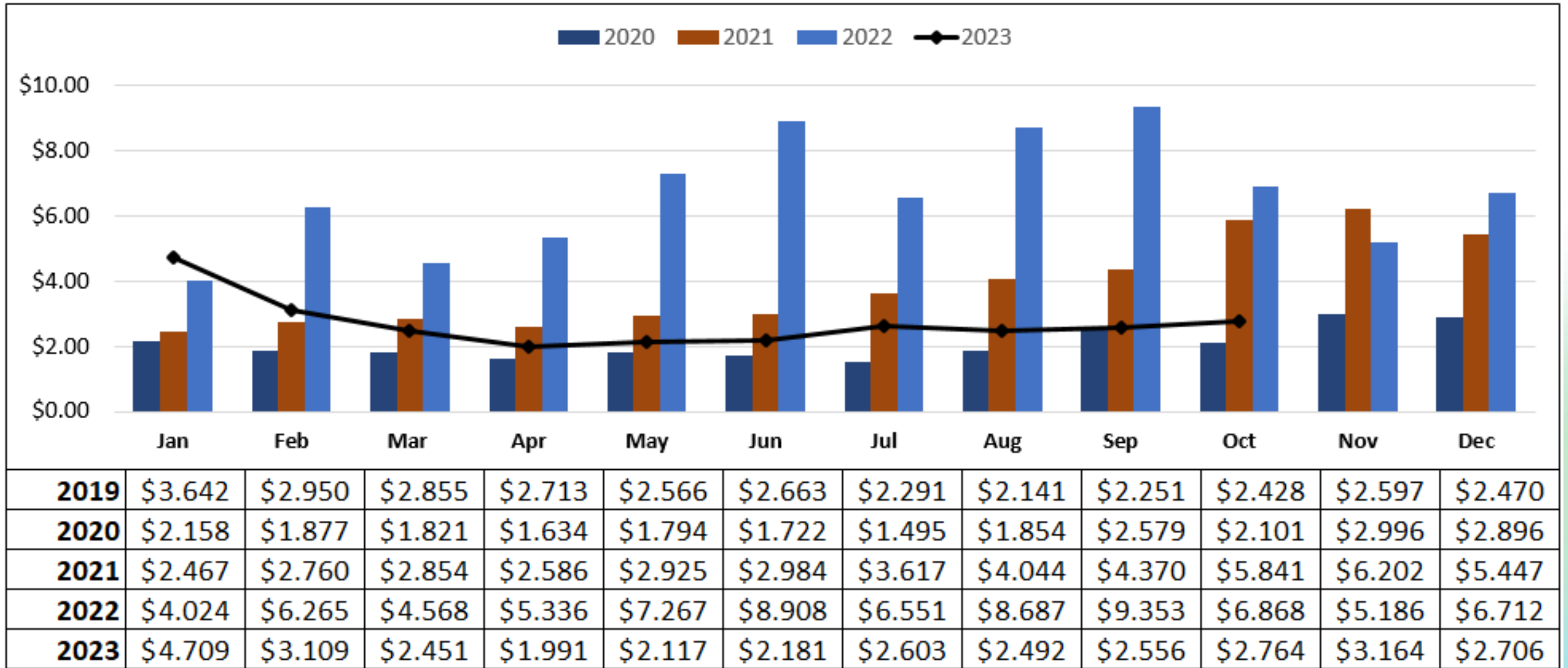


# HENRY HUB – NATURAL GAS – 12 MONTH STRIP

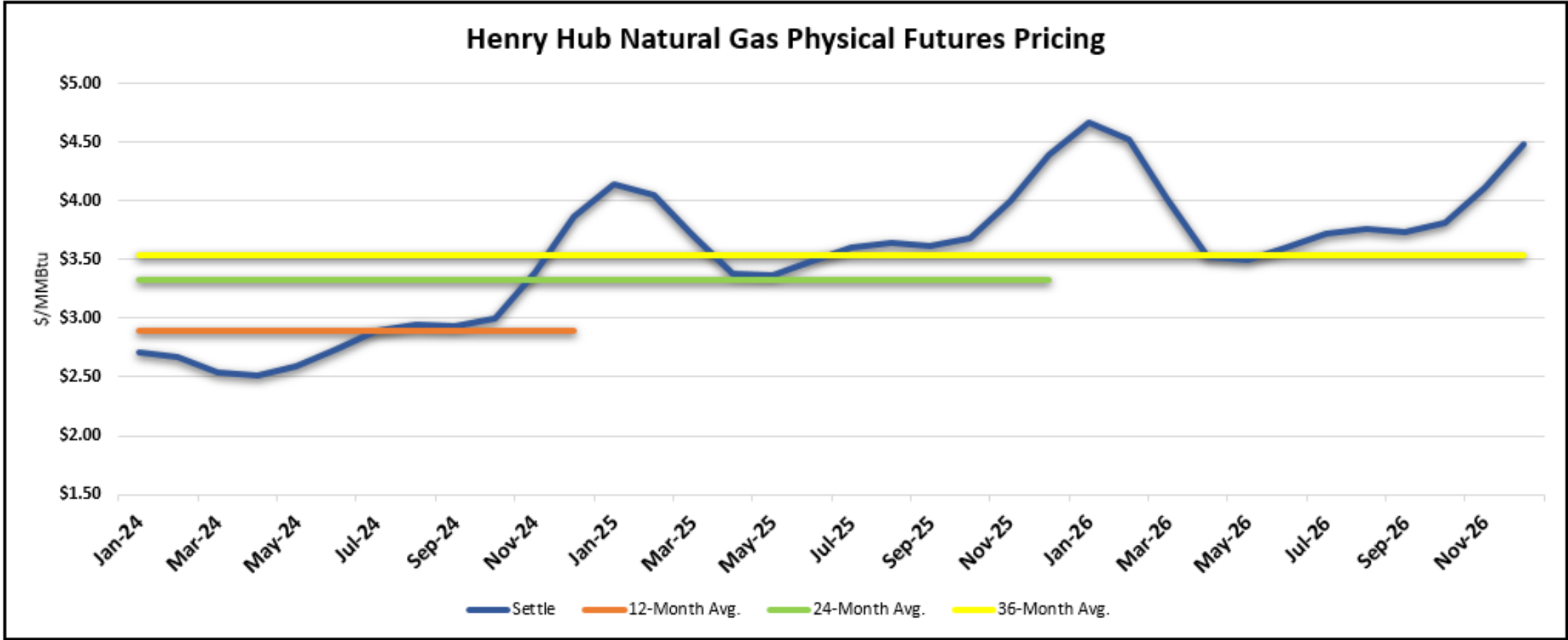


	Last Year	Last Month	Last Week	Today
<b>Trade Date</b>	<b>12/6/2022</b>	<b>11/3/2023</b>	<b>11/28/2023</b>	<b>12/5/2023</b>
<b>12M Strip</b>	<b>\$4.870</b>	<b>\$3.550</b>	<b>\$2.980</b>	<b>\$2.897</b>
<b>% Δ</b>	<b>40.51%</b>	<b>18.39%</b>	<b>2.79%</b>	<b>-</b>

# NYMEX MONTHLY NATURAL GAS SETTLEMENTS



# NATURAL GAS FUTURES PRICING



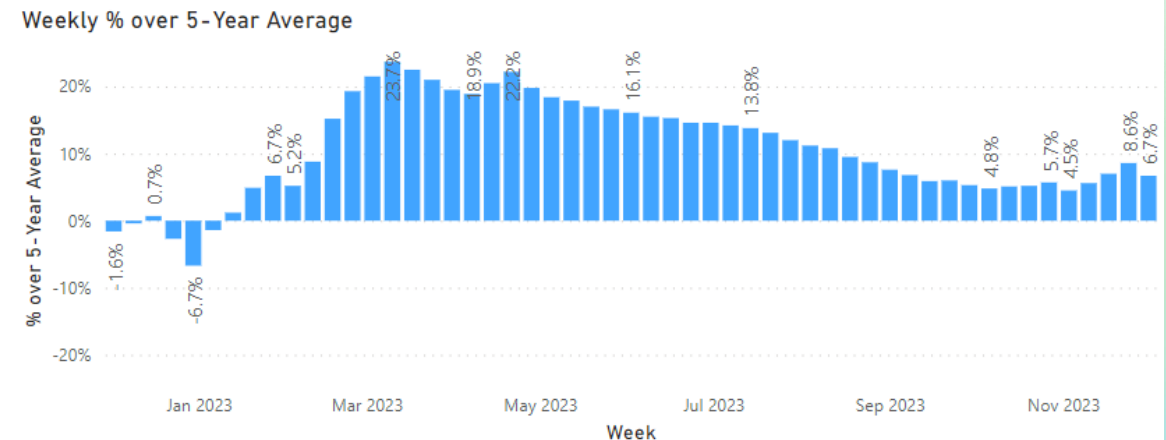
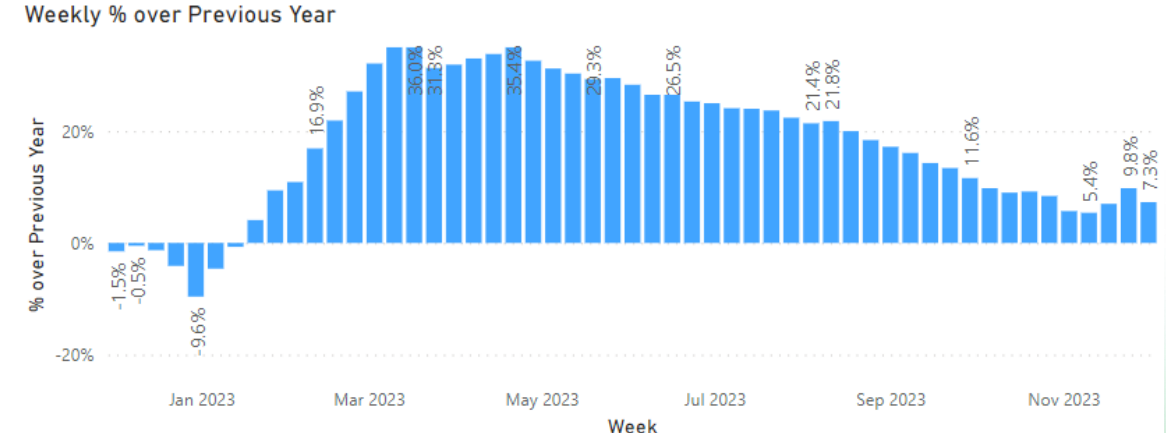
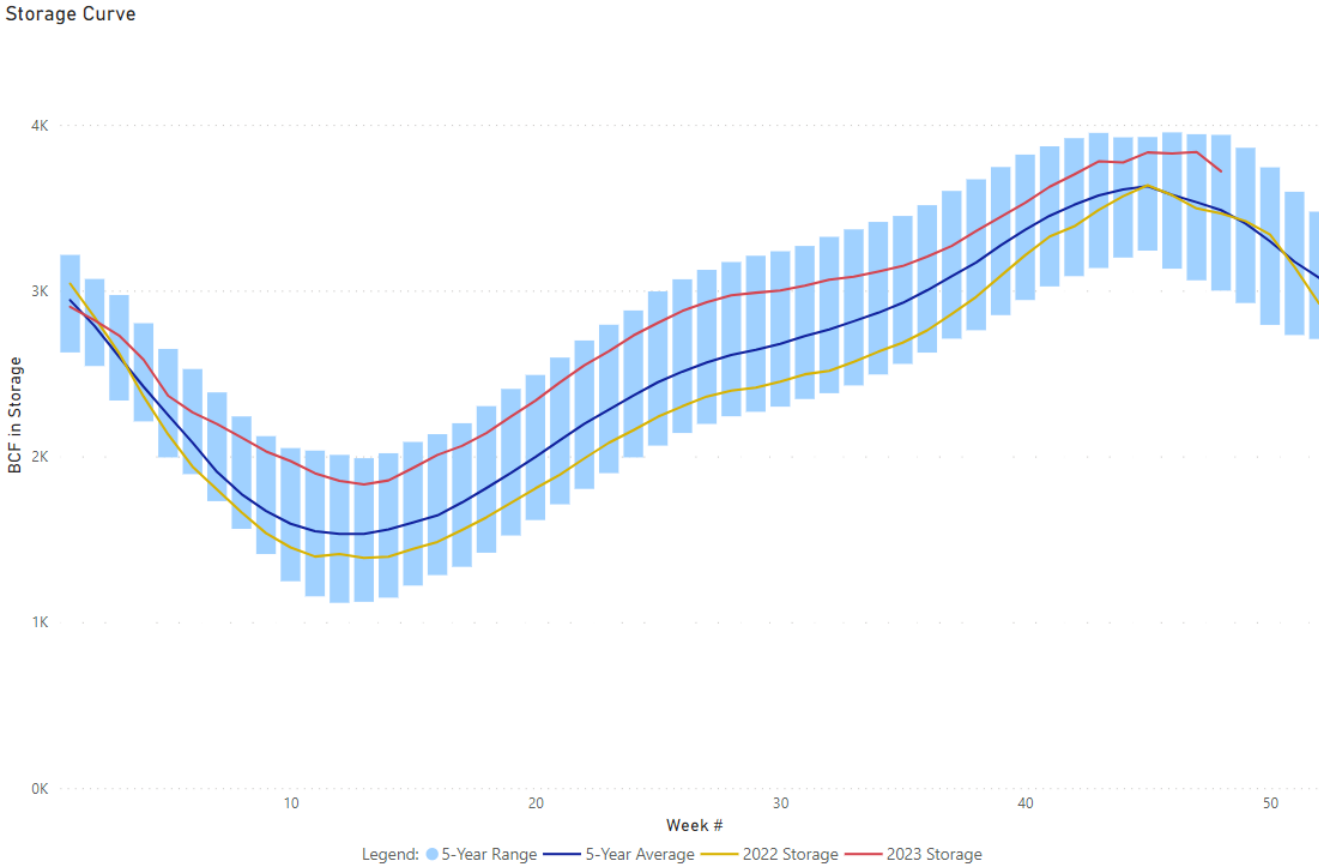
Jan-24	\$ 2.710	Jul-24	\$ 2.893	Jan-25	\$ 4.146	Jul-25	\$ 3.605	Jan-26	\$ 4.663	Jul-26	\$ 3.724
Feb-24	\$ 2.667	Aug-24	\$ 2.945	Feb-25	\$ 4.046	Aug-25	\$ 3.638	Feb-26	\$ 4.521	Aug-26	\$ 3.759
Mar-24	\$ 2.533	Sep-24	\$ 2.927	Mar-25	\$ 3.703	Sep-25	\$ 3.613	Mar-26	\$ 4.011	Sep-26	\$ 3.733
Apr-24	\$ 2.508	Oct-24	\$ 2.999	Apr-25	\$ 3.378	Oct-25	\$ 3.680	Apr-26	\$ 3.521	Oct-26	\$ 3.808
May-24	\$ 2.587	Nov-24	\$ 3.387	May-25	\$ 3.365	Nov-25	\$ 3.997	May-26	\$ 3.494	Nov-26	\$ 4.111
Jun-24	\$ 2.739	Dec-24	\$ 3.865	Jun-25	\$ 3.483	Dec-25	\$ 4.396	Jun-26	\$ 3.603	Dec-26	\$ 4.489





# MARKET FUNDAMENTALS: NATURAL GAS STORAGE

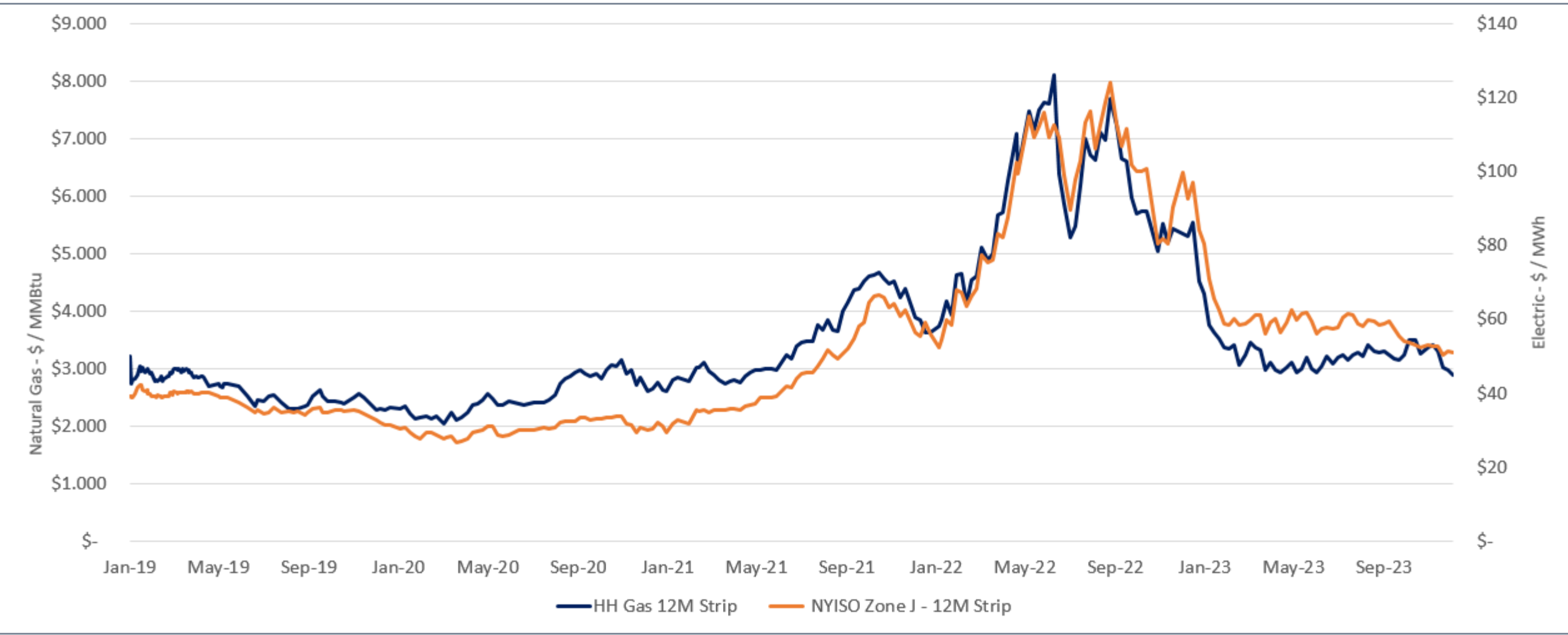
Weekly change	Current Storage	Total year ago	5-year average	Percent Full
-117	3,719	3,465	3,485	86.5%



**Key Takeaway:** The natural gas storage report posted a -117 Bcf withdrawal as of December 1<sup>st</sup>. While this was within the expected range, the result was well above the same week last year (-30 Bcf) and the 5-year average (-48 Bcf). Total inventories remain 6.7% above the 5-year average. **Pricing Impact: Neutral.**



# NYISO ZJ (NYC) vs. HH – 12 MONTH FLAT FORWARDS



**Key Takeaway:** Real-time prices averaged \$29.36 per MWh in November as compared to \$59.33 in November 2022. So far in December real-time prices are averaging \$41.13 per MWh. *Pricing Impact: Neutral.*

# PJM WEST HUB vs. HH – 12 MONTH FLAT FORWARDS

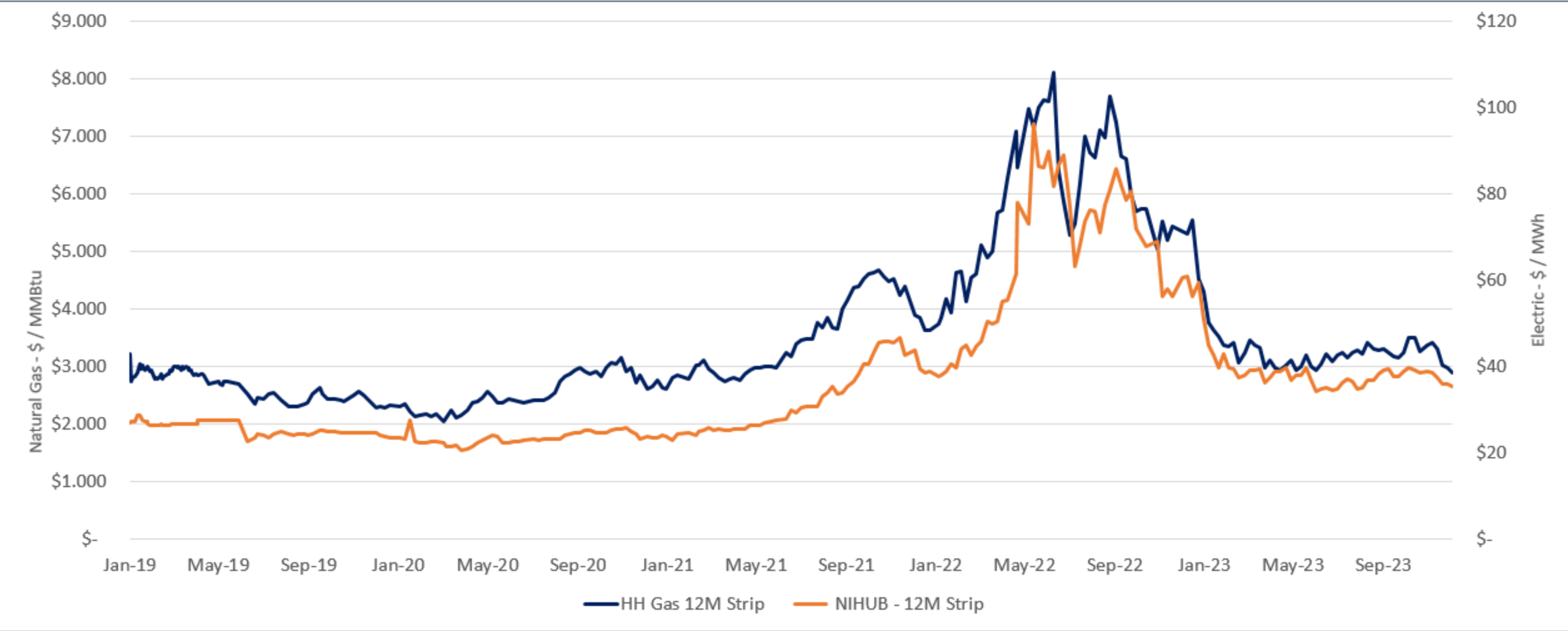


**Key Takeaway:** Forward electricity prices for 2024 are 30% lower on average year over year across the Mid-Atlantic region. Calendar years 2025-2028 are 19% lower when compared to this time last year. Day-ahead prices in PJM averaged \$39.96 in November, which represents a 36% decrease from November 2022. Pricing Impact: **Neutral-Bearish**.



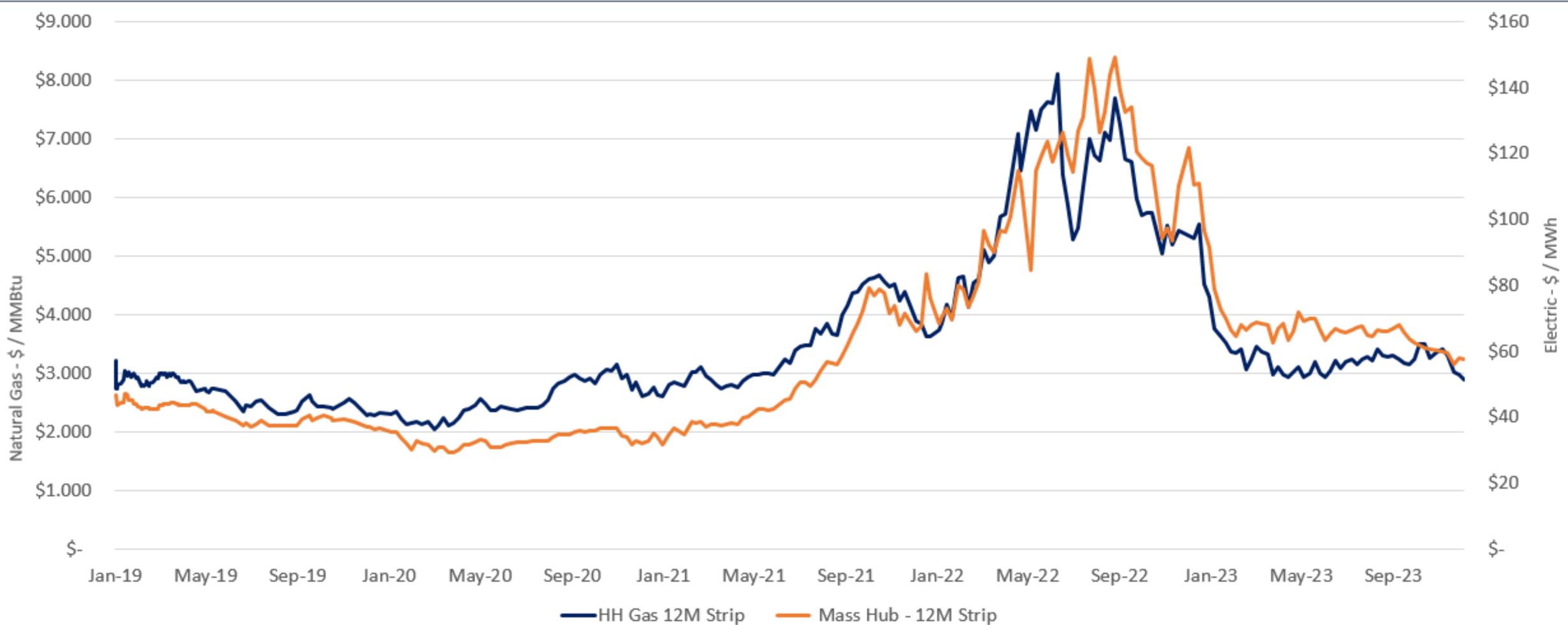


# PJM NI HUB vs. HH – 12 MONTH FLAT FORWARDS



**Key Takeaway:** Forward electricity prices for 2024 are 30% lower on average year over year across the Great Lakes region. Calendar years 2025-2028 are 22% lower when compared to this time last year. Day-ahead prices in the Comed zone averaged \$24.60 in November, which represents a 45% decrease from November 2022. . Pricing Impact: **Bullish**.

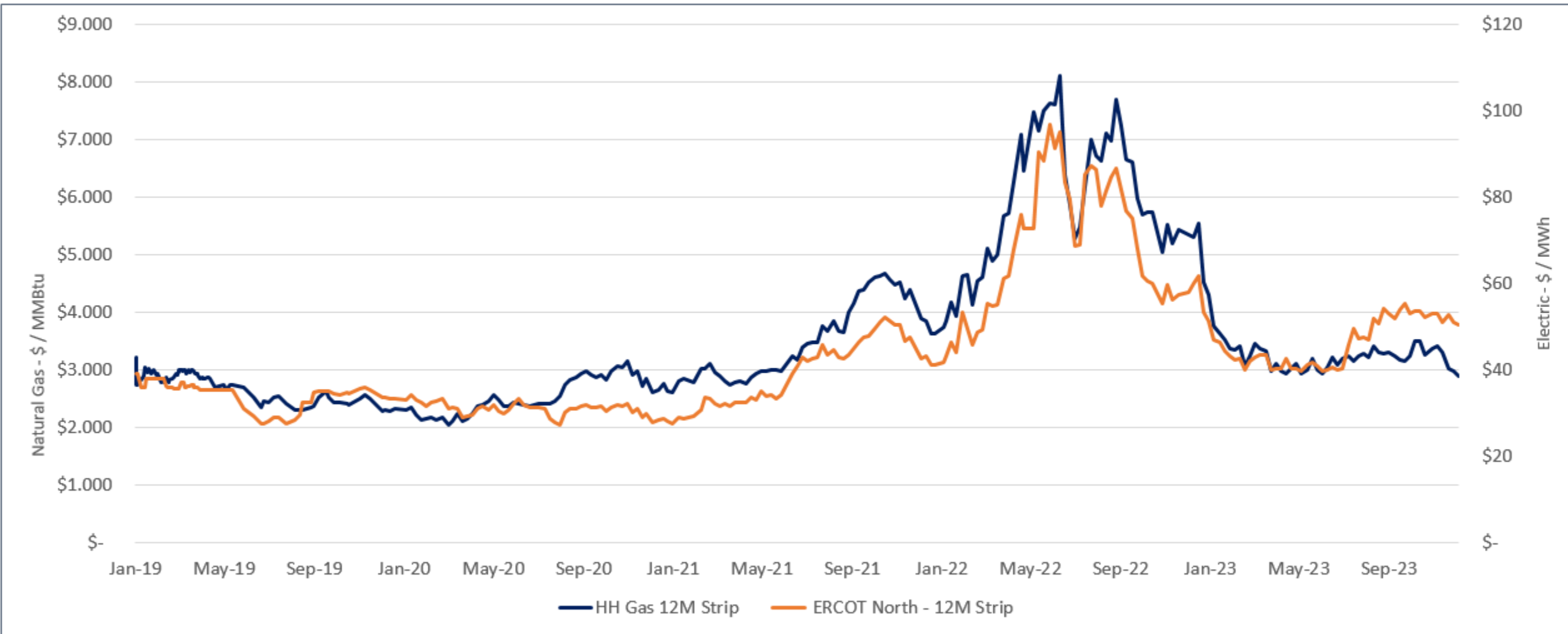
# MASS HUB vs. HH – 12 MONTH FLAT FORWARDS



**Key Takeaway:** Massachusetts recently installed a new government position – Climate Chief. Inaugural Chief Melissa Hoffer released a report highlighting 39 recommendations to reduce emissions by 50% by 2030 and achieve net-zero by 2050. *Pricing Impact: Neutral.*



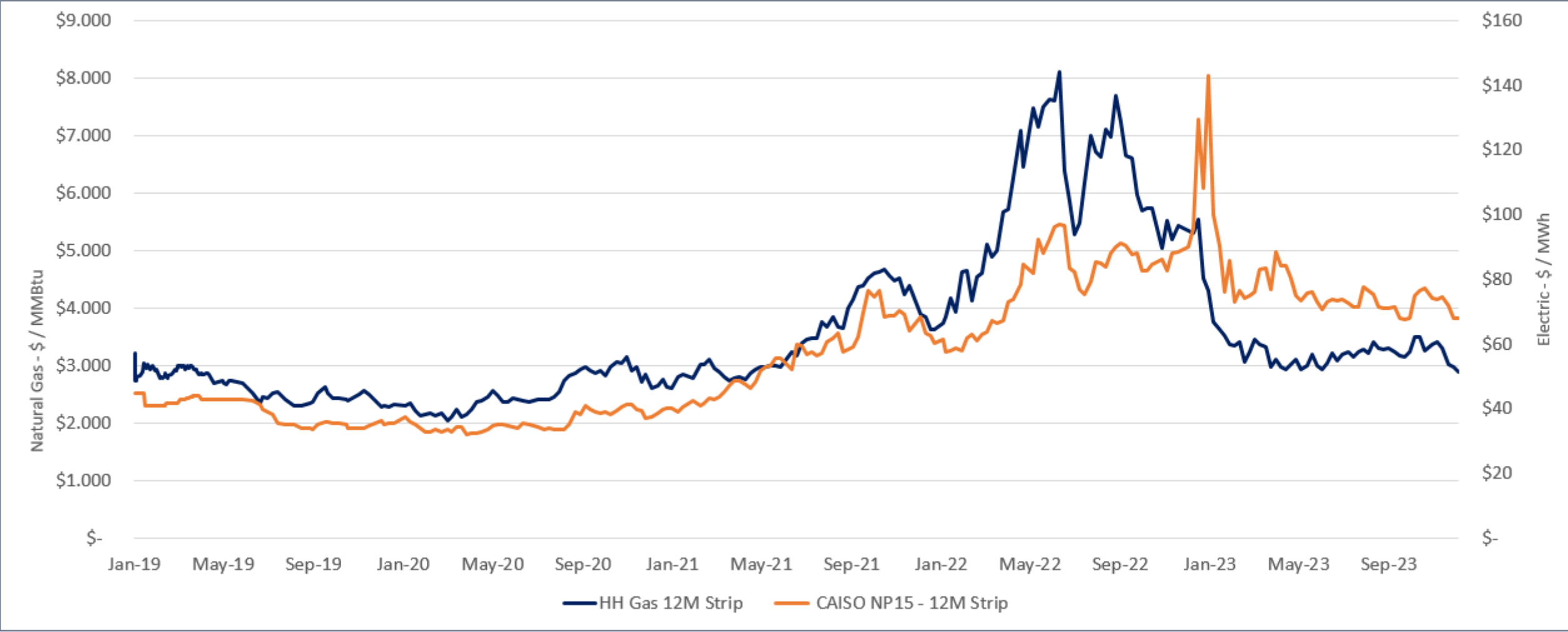
# ERCOT (TX) vs. HH – 12 MONTH FLAT FORWARDS



**Key Takeaway:** ERCOT released its latest Monthly Outlook for Resource Adequacy focused on the upcoming winter. The report suggests the probability of an Emergency Energy Alert is 3.2% during normal weather conditions. The chance of an EEA increases to 18.3% should conditions mirror those of Winter Storm Elliot. *Pricing Impact: Neutral.*



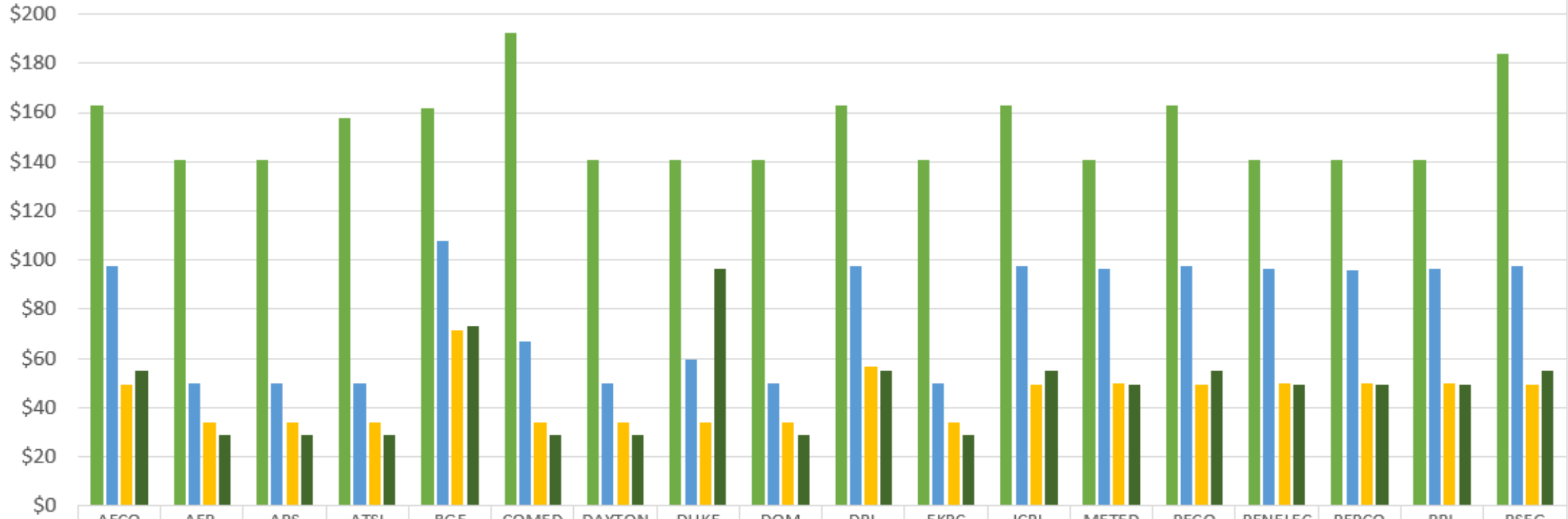
# CAISO (CA) vs. HH – 12 MONTH FLAT FORWARDS



**Key Takeaway:** California appears to be in good shape from an energy perspective heading into winter. Current conditions include strong hydro supplies, more renewables, a 6,000 MW increase in battery capacity, increased transport capacity, and additional storage at Aliso Canyon. *Pricing Impact: Bearish.*

# PJM FORWARD CAPACITY AUCTION PRICES (\$/MW-DAY)

PJM Base Residual Capacity Auction Results



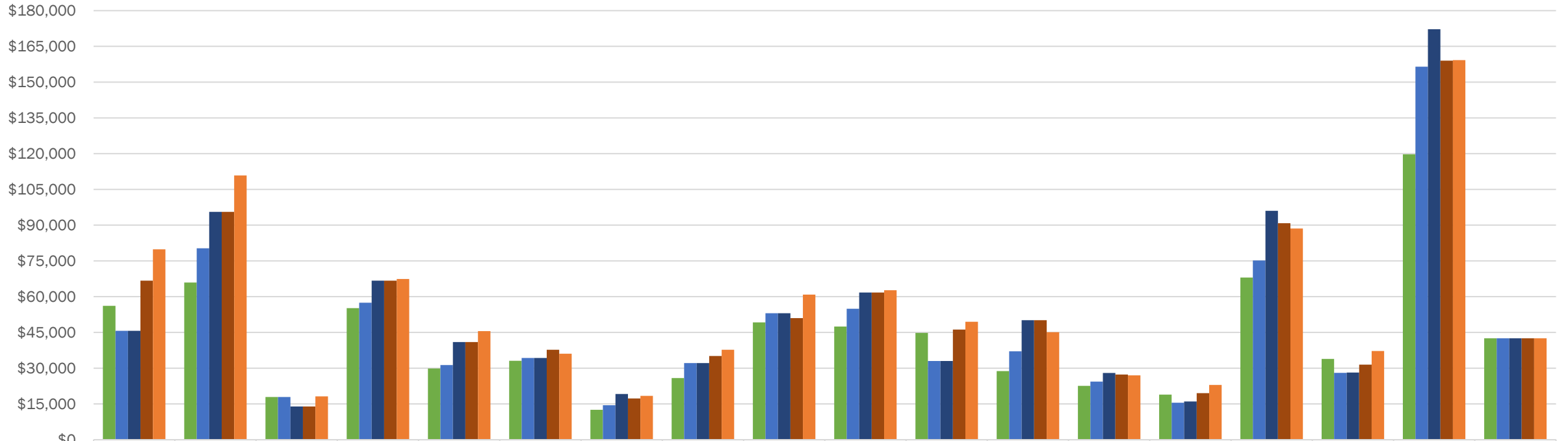
	AECCO	AEP	APS	ATSI	BGE	COMED	DAYTON	DUKE	DOM	DPL	EKPC	JCPL	METED	PECO	PENELEC	PEPCO	PPL	PSEG
2021/2022	\$163.08	\$140.53	\$140.53	\$157.99	\$161.62	\$192.69	\$140.53	\$140.53	\$140.53	\$163.08	\$140.53	\$163.08	\$140.53	\$163.08	\$140.53	\$140.53	\$140.53	\$184.03
2022/2023	\$97.75	\$50.09	\$50.09	\$50.09	\$107.92	\$67.17	\$50.09	\$59.38	\$50.09	\$97.75	\$50.09	\$97.75	\$96.42	\$97.75	\$96.42	\$95.97	\$96.42	\$97.75
2023/2024	\$49.59	\$34.20	\$34.20	\$34.20	\$71.62	\$34.20	\$34.20	\$34.20	\$34.20	\$56.57	\$34.20	\$49.59	\$49.70	\$49.59	\$49.70	\$49.70	\$49.70	\$49.59
2024/2025	\$54.95	\$28.92	\$28.92	\$28.92	\$73.00	\$28.92	\$28.92	\$96.24	\$28.92	\$54.95	\$28.92	\$54.95	\$49.49	\$54.95	\$49.49	\$49.49	\$49.49	\$54.95

2021/2022 2022/2023 2023/2024 2024/2025



# PJM NETWORK INTEGRATED TRANSMISSION (NITS)

Network Integrated Transmission Service Rate (\$/MW-Year)



	AECO	AEP	APS	ATSI	BGE	ComEd	Dayton	Duke	Duquesne	Dominion	DPL	METED / PENELEC	JCPL	PECO	PPL/ UGI	PEPCO	PSEG	Rockland
2019	\$56,171.	\$65,923.	\$17,895.	\$55,185.	\$29,860.	\$33,116.	\$12,561.	\$25,840.	\$49,200.	\$47,471.	\$44,803.	\$28,796.	\$22,588.	\$18,922.	\$68,031.	\$33,873.	\$119,735	\$42,548.
2020	\$45,693.	\$80,306.	\$17,895.	\$57,482.	\$31,311.	\$34,280.	\$14,456.	\$32,143.	\$53,072.	\$54,914.	\$33,000.	\$37,083.	\$24,354.	\$15,513.	\$75,204.	\$28,022.	\$156,503	\$42,548.
2021	\$45,693.	\$95,597.	\$13,930.	\$66,744.	\$40,962.	\$34,280.	\$19,175.	\$32,143.	\$53,072.	\$61,729.	\$33,000.	\$50,128.	\$28,012.	\$16,022.	\$95,997.	\$28,165.	\$172,189	\$42,548.
2022	\$66,741.	\$95,597.	\$13,930.	\$66,744.	\$40,962.	\$37,749.	\$17,320.	\$35,136.	\$51,000.	\$61,729.	\$46,184.	\$50,128.	\$27,327.	\$19,517.	\$90,836.	\$31,496.	\$159,013	\$42,548.
2023	\$79,876.	\$110,857	\$18,162.	\$67,420.	\$45,531.	\$36,069.	\$18,410.	\$37,718.	\$60,850.	\$62,688.	\$49,476.	\$45,112.	\$27,008.	\$22,998.	\$88,606.	\$37,201.	\$159,248	\$42,548.



# THE ENERGY MARKET DYNAMICS

- Despite sound fundamentals (healthy storage, strong production), Natural Gas prices remain highly sensitive to changes in temperature and weather – particularly during the winter.
- Demand for U.S. LNG is on the rise at the same time when natural gas demand in the power generation sector is setting new records.
- All traded forward calendar years are now below \$4 per MMBtu, which historically has been a signal to hedge at least a portion of energy risk exposure in the future.
- The combination of fossil-fuel power plant retirements and delayed/cancelled renewable projects means that Natural Gas demand will continue to regularly establish new records in the foreseeable future.

