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Energy Advisory Services
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Energy Update March 2025

Weather

The winter of 2024-2025 in North America was characterized by significant deviations from typical patterns, influenced by climatic phenomena such as La Niña and broader climate change effects.

Temperature and Precipitation Anomalies

In Houston, Texas, the winter began with unusually warm temperatures and near-average rainfall in December. This was followed by a brief period of colder temperatures and rare snowfall in January, attributed to a late-emerging La Niña phenomenon. However, its influence was minimal due to its late arrival.

Conversely, a polar vortex event led to record-breaking cold across much of the U.S., with temperatures plummeting to levels colder than Greenland. This extreme cold was a result of the polar vortex stretching and bringing frigid air south.

Forecast vs. Actual Conditions

Meteorologists had anticipated a warmer and drier winter due to La Niña conditions. However, the late and weak manifestation of La Niña led to unexpected cold spells. This underscores the challenges in forecasting amidst the evolving impacts of climate change.

Natural Gas

The rise in NYMEX natural gas settlement prices during the winter of 2024/2025 was likely driven by several key factors:

1. **Colder Weather and Higher Demand** – Winter typically leads to increased natural gas consumption for heating. If temperatures were colder than expected, demand surged, pushing prices higher.

2. **Supply Constraints** – Any disruptions in production, such as reduced output from key shale basins or pipeline issues, could have limited supply, contributing to price increases.

3. **LNG Exports** – The U.S. exports large amounts of liquefied natural gas (LNG) to Europe and Asia. If global demand for LNG was strong, it could have tightened domestic supply and driven up prices.

4. **Storage Levels** – Lower-than-average natural gas storage levels going into winter can create supply concerns, leading to higher prices.

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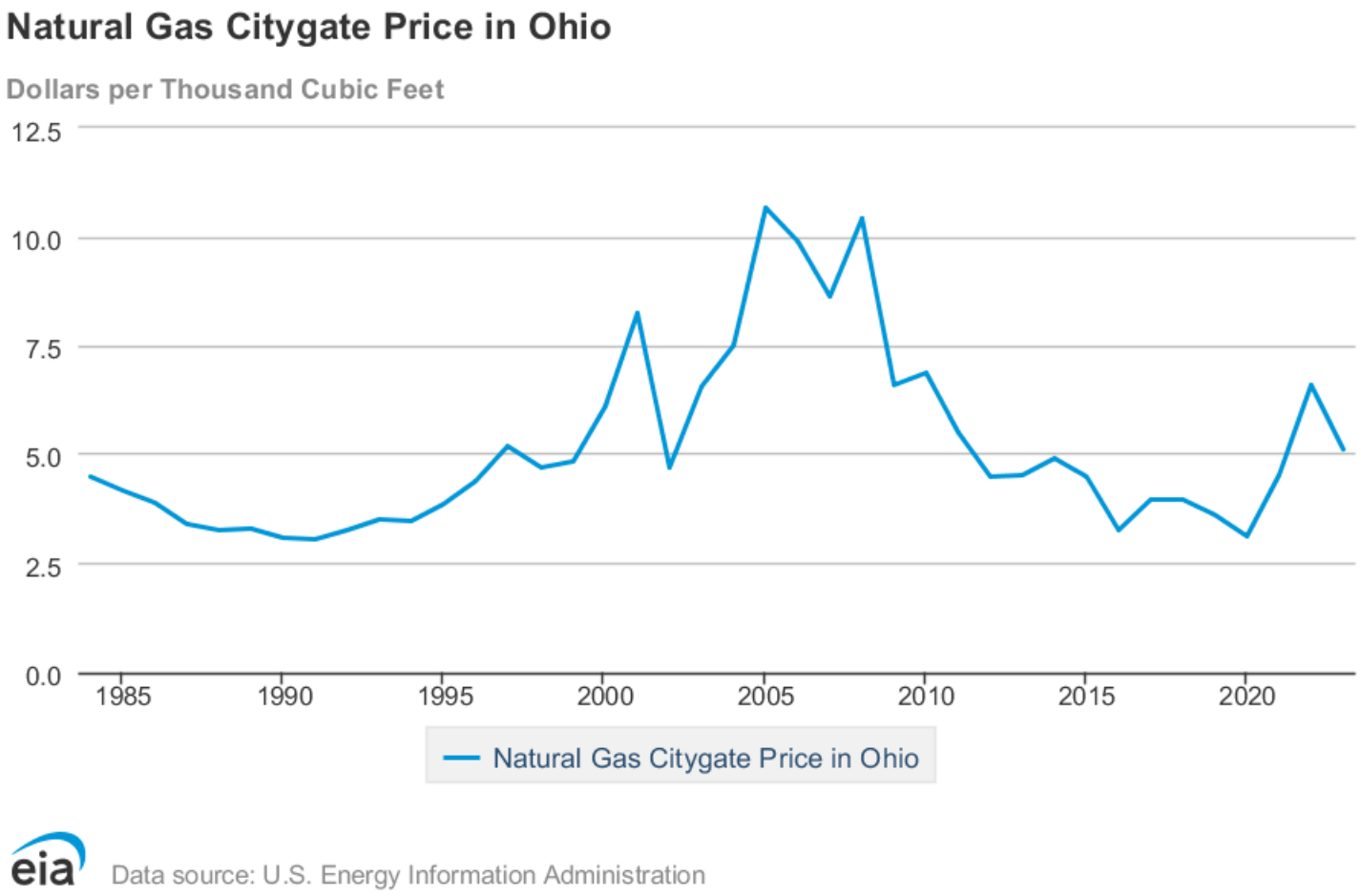
5. **Market Speculation** – Futures traders and hedgers reacting to supply-demand expectations can cause price fluctuations, especially if forecasts suggest a colder-than-usual winter.

During the winter of 2024/2025, NYMEX natural gas futures settlement prices experienced notable fluctuations, influenced by factors such as weather patterns and market dynamics. Here's a summary of the settlement prices for that period:

January 2025: $3.514 per MMBtu

February 2025: $3.535 per MMBtu

March 2025: $3.906 per MMBtu



Electric Power

The winter of 2024–2025 in North America was marked by colder-than-expected temperatures, leading to increased energy consumption and higher electricity prices across various regions.

United States:

- **Residential Energy Expenditures:** The U.S. Energy Information Administration (EIA) reported that residential energy expenditures for homes heating with natural gas and propane rose by 10% compared to the previous winter. This increase was attributed to both colder weather and higher energy prices.

- **Electricity Demand:** The EIA also projected a 2% increase in electricity sales for the winter months (November through March) relative to the previous winter, driven by a 6% rise in winter heating degree days, indicating colder temperatures.

- **Regional Price Variations:** In New York, natural gas prices were projected to rise by 11% during the winter, while electricity prices were anticipated to decrease by about 2%. Residents using 700 therms of natural gas could expect to pay around $202 monthly, whereas those consuming 600 kilowatt-hours of electricity per month would pay approximately $58 monthly.

- **Grid Reliability Concerns:** The Federal Energy Regulatory Commission (FERC) highlighted that prolonged cold weather events could impact both the prices and availability of natural gas and electricity. Drought and wildfire conditions were also forecasted to continue into the winter season in multiple regions, potentially affecting energy infrastructure and supply.

- **Impact of Extreme Weather Events:** Severe winter storms, such as the November West Coast bomb cyclone, resulted in significant power outages. This particular storm left over 953,000 customers without electricity and caused substantial infrastructure damage, underscoring the vulnerability of the power grid to extreme weather conditions.

Midwest and Northeast:

The U.S. Energy Information Administration (EIA) noted that households in the Midwest and Northeast experienced higher electricity expenditures due to the colder weather. Specifically, the Midwest saw a 6% increase in electricity expenditures compared to the previous winter. This rise was attributed to increased electricity consumption for heating purposes during the prolonged cold period.

PJM Interconnection Region:

The PJM Interconnection, which serves nearly 65 million people across parts of 13 states from Illinois to New Jersey, reported a preliminary record winter power demand of 145,000 megawatts (MW) during the extreme cold. This surpassed the previous record of 143,700 MW set in February 2015. The heightened demand led to spot power prices reaching a record high of $275 per megawatt-hour at the PJM West Hub in Pennsylvania.

Ohio Average Industrial Delivered Price of Power 2010 - 2024