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CONSUMER ALERT

Natural Gas and Electricity Markets Update

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Natural Gas Markets

Like many other energy and commodity prices, wholesale natural gas prices have recently increased to levels not seen in this country since September of 2008. In fact, on April 18, 2022, the NYMEX futures price for natural gas at the Henry Hub in Louisiana (the most widely referenced trading hub for natural gas futures) climbed to nearly \$8/MMBtu for May and June, with prices over \$8/MMBtu for the rest of this year and upcoming winter. For context, wholesale natural gas prices regularly traded in the \$2-\$3/MMBtu range for much of the last decade. The table below reflects the closing price of these futures prices for April 18, 2022:

Natural Gas Forwards & Futures (Data)	
Source: CME Group/NYMEX	
Price Type: Full Value Future/Forward	
Forward Term: Monthly	
Region: Mid-Continent South	
As Of: 04/18/2022	
As Of : 4/18/2022	
Forward As Of:	4/18/2022
Start Forward Term:	5/1/2022
End Forward Term:	12/1/2034
Date Fill:	Monthly
Source:	NYMEX
Instrument Name:	Natural Gas Futures
Location:	Henry Hub
Term	
May 2022	7.820
Jun 2022	7.958
Jul 2022	8.042
Aug 2022	8.038
Sep 2022	8.003
Oct 2022	8.013
Nov 2022	8.086
Dec 2022	8.263
Jan 2023	8.367
Feb 2023	8.091
Mar 2023	7.084



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On April 12, 2022, The Energy Information Administration (EIA) published the Short-Term Energy Outlook (STEO). Most of the data in that report was current as of April 7, 2022. In the STEO, the EIA reported that its energy price forecasts for the rest of this year was subject to heightened levels of uncertainty resulting from a variety of factors, including the continuing war between Russia and Ukraine, decisions of OPEC+, and the rate at which U.S. Oil and Natural Gas producers increase drilling in response to higher prices.

In the days after the STEO report was released, both volatility and underlying prices increased significantly in natural gas markets. As a result, many of the projections in the STEO would likely be significantly different if performed today.

EIA STEO Discussion

The STEO reported that natural gas storage withdrawals in March 2022 were slightly higher than the five year average from 2017-2021, resulting in an average spot price for natural gas of \$4.90/MMBtu at Henry Hub Louisiana, up from \$4.69/MMBtu in February. EIA also forecasts higher liquefied natural gas (LNG) exports to Europe and Asia in April, contributing to a Henry Hub average price of \$5.95/MMBtu, and \$5.23/MMBtu for all of 2022. STEO forecasts an average natural gas price of \$4.01/MMBtu for 2023, reflecting higher projected storage levels.

The STEO reported that natural gas storage levels at the end of March ended at 1.4 trillion cubic feet (Tcf), which is 17% below the five year average (2017-2021). Flat production and increasing exports of natural gas contributed to the storage report being significantly below average. April typically marks the beginning of storage injection season, with the STEO projecting net injections into storage reserves of 245 billion cubic feet (Bcf). The STEO projects storage injections to continue through the end of October, leaving storage levels 4% below the five year average entering into the upcoming winter heating season.

The STEO reported that U.S. LNG exports averaged 11.9 Bcf/day, in March an increase of .7 Bcf/day from February 2022. LNG prices in Europe remain very high amid supply uncertainties due to Russia's further invasion of Ukraine and the need to replenish Europe's natural gas inventories. Europe's storage levels were 26% full at March 31, 2022, compared to the five year average of 34%. The STEO expects U.S. LNG exports to remain elevated in 2022, averaging 12.2 Bcf/day, an increase of 25% over 2021's already record levels.

The STEO forecasts consumption of natural gas in the U.S. to average 84.1 Bcf/day, up 1% from 2021. The STEO also forecasts dry natural gas production in the U.S. to average 97.4 Bcf/day for 2022, up 3.8 Bcf/day or 4.05% over 2021 production levels. These data points make it clear that the tightness in the natural gas markets is due to increased exports of LNG to Europe and Asia, amid an ongoing energy crisis in those countries.

Natural Gas Weekly Update for week ending April 13, 2022

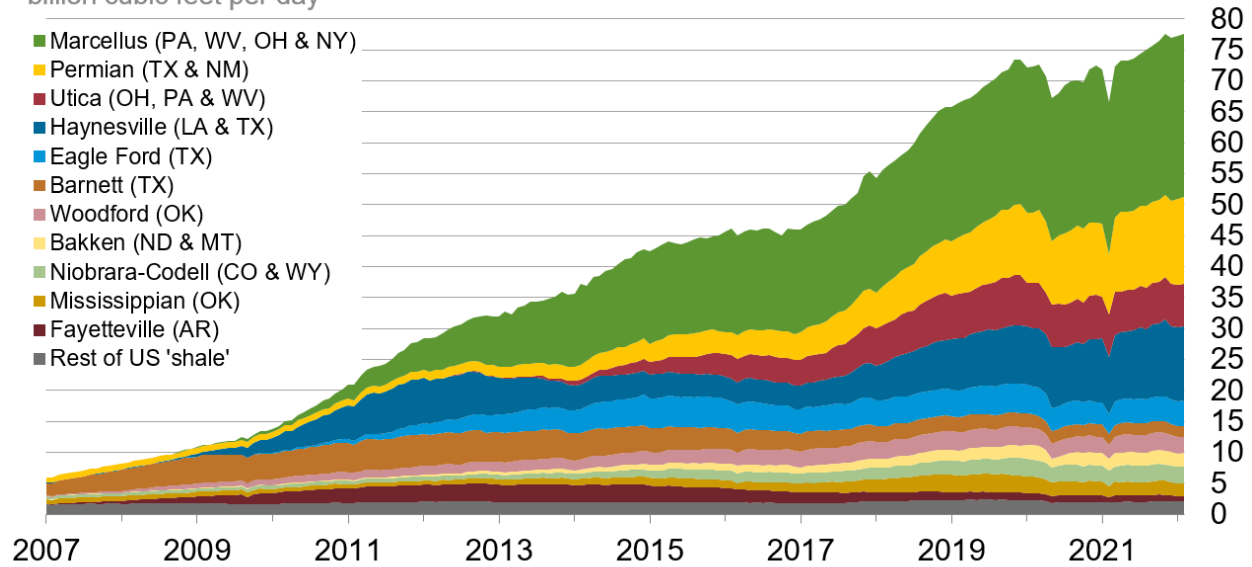
The EIA provides a weekly update for all things natural gas, including market prices, storage reports, production reports, and much more. The following are some of the key observations from last week's report:

- Natural gas storage levels were 16.8% lower than the previous five year average (2017-2021) at the end of the heating season (through March 31, 2022).
- Net withdrawals from working natural gas storage during the 2020-2021 heating season exceeded the five year average by 9.7%.
- During the 2021-2022 heating season, natural gas consumption was 5.6% higher (3.4 BcF/day) than the previous year (2020-2021 heating season) and LNG deliveries were 18.4% higher (1.8 BcF/day) than the previous year. This total increase in natural gas use of 5.2 BcF/day exceeded the 4.5 BcF/day increase in natural gas production in the 21-22 heating season versus the prior year.
- January 2022 brought much colder conditions for the lower 48 states, 9% colder in terms of population weighted Heating Degree Days (HDDs). The storage withdrawal from January 2022 was the largest single month of storage withdrawal since 2012.
- Natural gas prices for LNG in Europe and Asia remain extremely high, averaging \$32-\$33/MMBtu during the week ending Wednesday April 13, 2022. For comparison, these same LNG prices averaged just \$7/MMBtu this time last year.
- The average futures price for Henry Hub natural gas for a 12-month strip (May 2022 through April 2023) rose \$.929 per MMBtu in just one week, up to \$6.95/MMBtu.
- The working natural gas storage levels for the week ended April 8, 2022 was 24% lower than the year ago levels, and 18% lower than the five year average level from 2017-2021.
- The rig count for both oil and natural gas rigs appears to be responding to higher prices, with the natural gas rig count sitting at the highest level since October 11, 2019. Total rig count (oil and gas) now stands at 257 rigs higher than last year, the highest level since March 27, 2020.
- Total Natural Gas Production in this country stands at the highest levels ever recorded. (See Graph on next page).

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Monthly dry shale gas production

billion cubic feet per day



Source: Graph by the U.S. Energy Information Administration (EIA) based on state administrative data collected by Enverus. Data are through February 2022 and represent EIA's official tight gas estimates, but are not survey data. State abbreviations indicate primary state(s).



Note: Improvements to play identification methods have altered production volumes of between various plays.

Wholesale Electricity Markets

Wholesale electricity prices in recent months have increased as well, reflecting the increase in natural gas prices discussed above. Because natural gas-fired generators are able to be dispatched up or down quickly with changing market conditions, these generators often set the marginal price of electricity in organized electricity markets like the Southwest Power Pool's (SPP) Integrated Market (IM). This can affect the price that Kansas customers pay for electricity when utility-owned generators are down for maintenance, or performing at less than ideal levels. Higher wholesale market prices can also benefit Kansas utility customers if utility-owned generators are operating at higher capacity levels because the output from those generators can be sold into the SPP IM for a higher price. If these economy energy sales occur, all of the profit flows to Kansas customers via the Energy Cost Adjustment. While higher natural gas prices tend to lead to higher wholesale energy prices, increasing levels of wind energy in SPP are mitigating this relationship. In times of high wind penetration on the system, wholesale market prices remain low, and can even be negative during many hours of the day. These volatile wholesale market prices make it difficult to predict how the wholesale markets will affect customer energy prices going forward.