

Market Summary

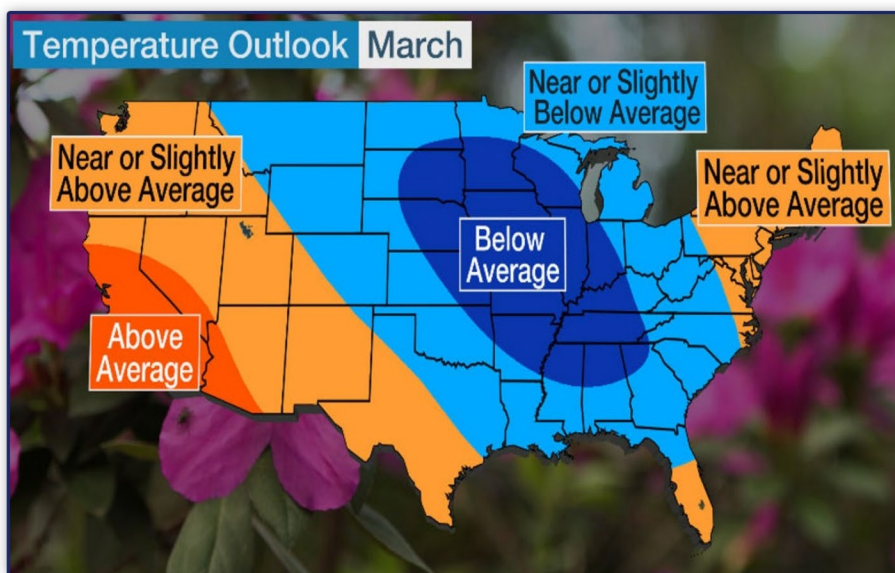
Biggest Factors: Weather

Winter 2019-2020 experienced the perfect storm of warmer than average temperatures, reduced consumption and demand due to weather and global events, and increased supply - resulting in historically low February prices.

Procurement Takeaway

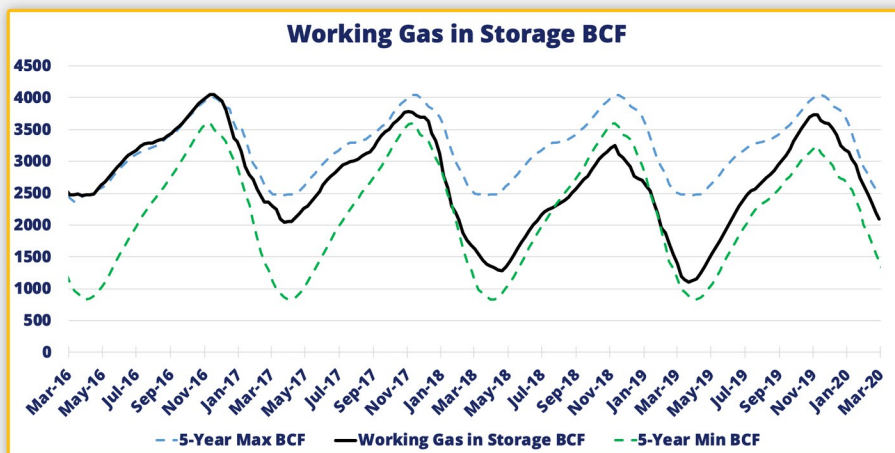
In the short term, consider a +30% hedge. Long term, production may take a hit and warrant a more aggressive strategy.

Weather



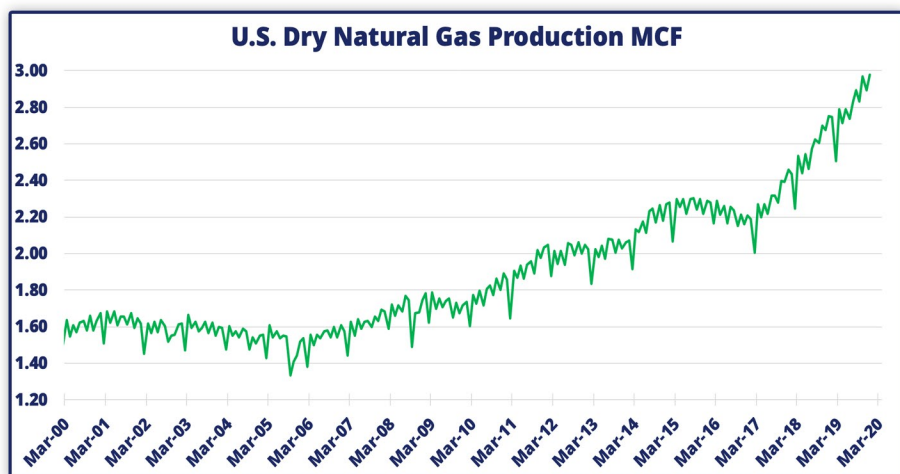
- **TAKEAWAY:** March weather pattern forecasted as marginally warmer, allowing for slight price increases away from continued lows.
- Last year saw the second warmest November and December on record (12%-15% warmer than normal). This warm winter led to a strong drop in heating demand for natural gas, creating oversupply and historically low prices during typically volatile winter months.
- The record-breaking positive Arctic Oscillation and the strong polar vortex are important factors in the spring outlook.

Storage



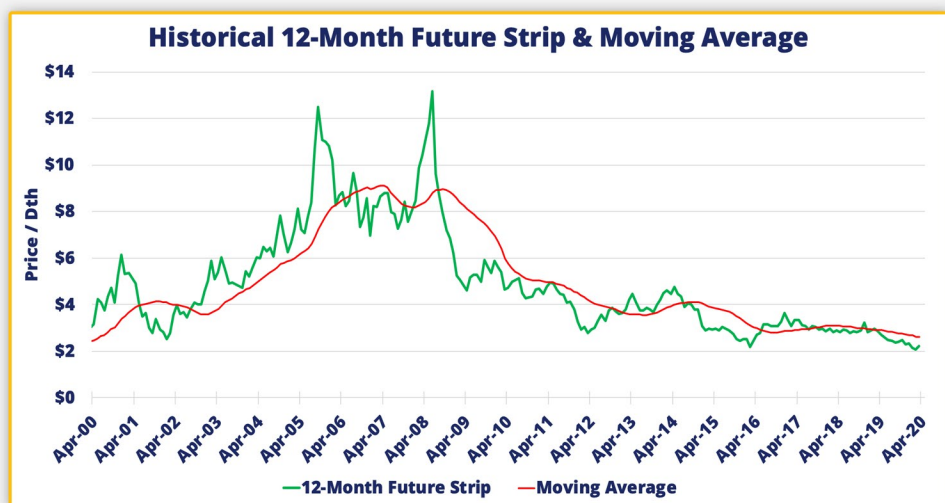
- **TAKEAWAY:** Storage withdrawals less than half the normal rate since December, coupled with the second warmest November ever, led prices to hit four-year lows in early February.
- Storage levels are forecasted to reach 12% more than the previous five-year average thanks to a mild winter and increasing production.
- Working natural gas stocks totaled 2,091 Bcf, which is 176 Bcf more than the five-year average and 680 Bcf more than last year at this time.

Production



- **TAKEAWAY:** EIA expects spot prices to average \$2.36/MMBTU in Q3, a 21 cent decline from previous forecasts.
- Due to the coronavirus, worldwide demand for LNG is declining. Ships are being re-routed and/or cancelled via force majeure.
- Last year's production in Ohio and Pennsylvania (key shale producing regions) was up again, though growth rates did slow.

Pricing



Bidweek

Month	12-Month Strip	NYMEX
Dec. '19	\$2.345	\$2.597
Jan. '20	\$2.324	\$2.158
Feb. '20	\$2.150	\$1.877
Mar. '20	\$2.103	\$1.821

Wholesale Prices per Mmbtu

Noteworthy

- Germany represents an interesting case study on the massive push away from fossil fuels. Though no country has spent more to adopt renewable energy, Germany's electricity prices are three to four times more expensive than in U.S. In fact, after Denmark, Germany has the highest prices in the world – leading to the German term, "energy poverty." Germany is now looking to build LNG facilities to expand natural gas imports, as solar and wind cannot sustain the country's electric needs.
- Several years ago, talks of cyberterrorism began to make the rounds in the energy industry. Now, forecasts are coming to fruition, as a ransomware attack shut down a natural gas compressor station for two days in the U.S.
- In response to cities in states like California banning natural gas, states like Arizona, Missouri, Montana, Oklahoma, Tennessee, and Michigan are working on legislation to safeguard business', homeowners', and manufacturers' access to natural gas.
- The U.S. recorded its largest decrease in CO2 emissions of any country last year. Using data from the International Energy Agency, emissions were down 2.9% compared to the year before (attributed to a 15% reduction in coal use in favor of natural gas. The International Energy Agency has credited the rise of natural gas in our power system as the reason why CO2 emissions have been slashed in the U.S. faster than any other country ever.