

Market Summary

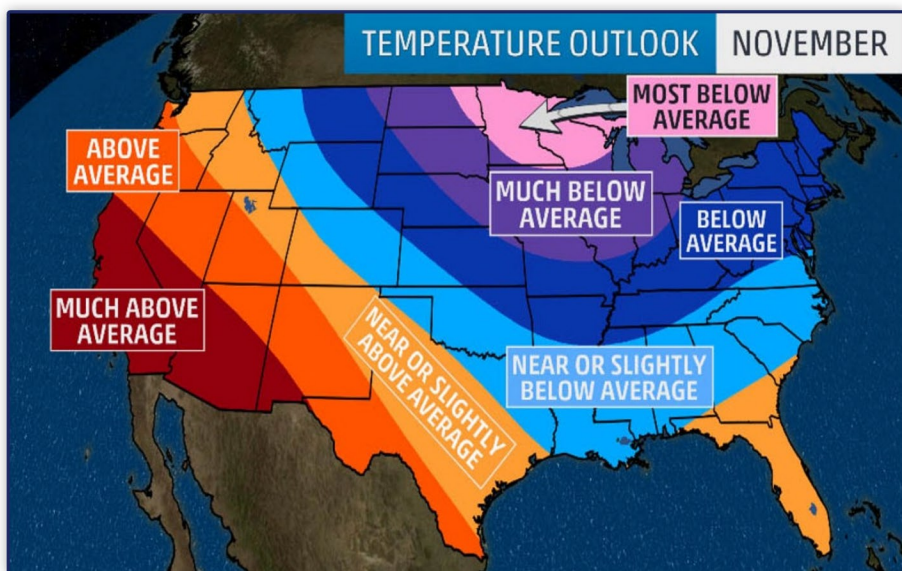
Biggest Factors: Storage & Production

Near-record injection activity during the 2019 natural gas refill season (April 1 – October 31) resulted in a rapid recovery of working gas stocks from their relatively low level at the end of the 2018–2019 heating season.

Procurement Takeaway

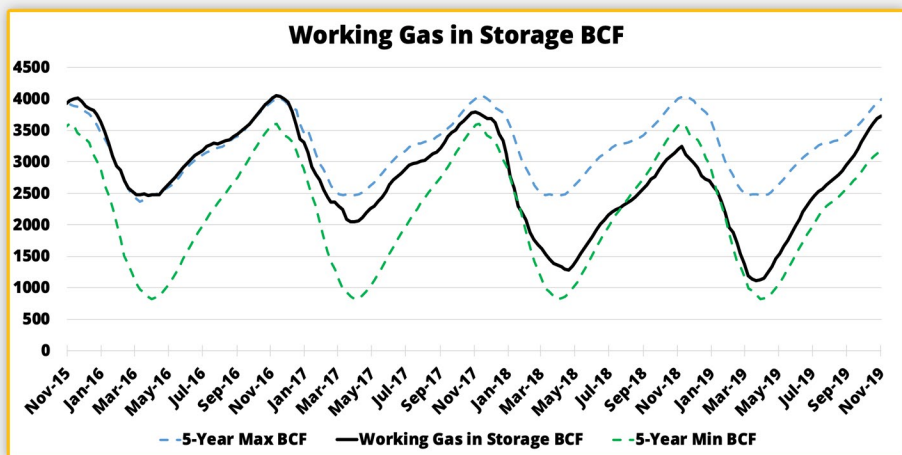
As winter nears and conditions remain favorable relative to this time last year, consider a +30% hedge heading into 2020.

Weather



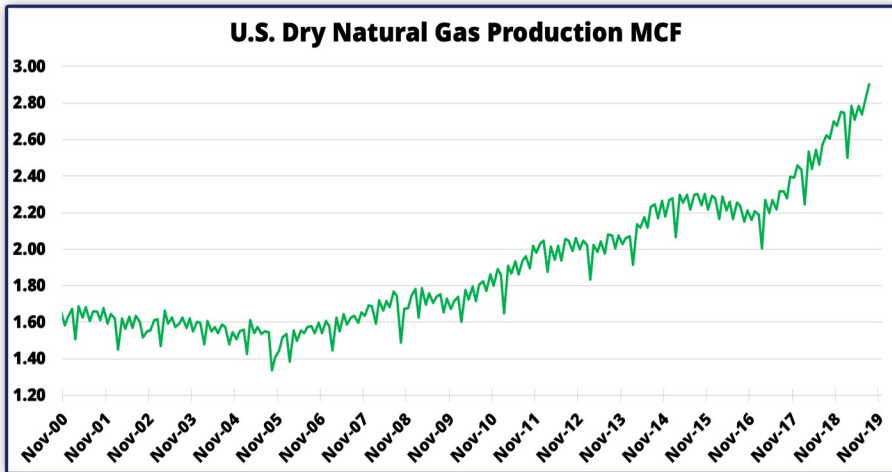
- **TAKEAWAY:** Medium-range forecast models are depicting a similar pattern to last November across the U.S. through the middle of the month.
- Mid-October prices fell 1.5% amid a natural gas supply glut even as weather forecasts pointed to cooler weather.
- Early November prices hit their highest levels since March, as expectations gained for cooler than usual fall weather.
- Patterns in the tropics are one indicator of how temperatures might evolve, and current conditions are similar to this time last year. Similarities are expected through December.

Storage



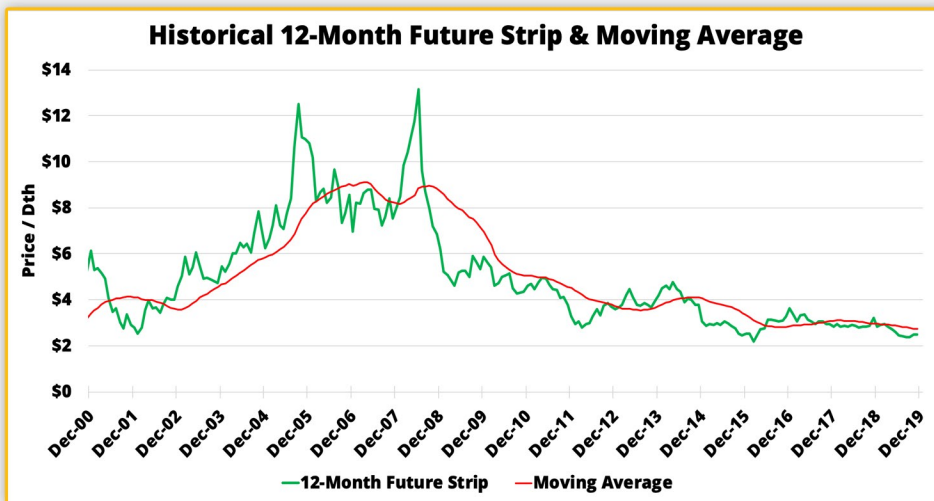
- **TAKEAWAY:** Net injections have posted their second-largest refill season on record; working gas stocks ended the refill season higher than the five-year average.
- In the Permian Basin (TX), the supply of natural gas continues to grow even with flaring, which is the burning off of natural gas that cannot be used.
- Working gas stocks total 3,729 Bcf, which is 29 Bcf more than the five-year average and 530 Bcf more than last year at this time.

Production



- **TAKEAWAY:** Supply growth is set to limit spot prices of natural gas in 2020.
- The U.S. will add 16 Bcf/d to 17 Bcf/d of natural gas pipeline capacity in 2019, most of which was built to provide additional takeaway capacity out of supply basins.
- Mid-October saw natural gas inventories surpass the five-year average from fall 2017, with the preceding three weeks' injections 27% more than usual for that time of year.

Pricing



Bidweek

Month	12-Month Strip	NYMEX
Jan. '19	\$2.806	\$3.642
Feb. '19	\$2.818	\$2.950
Mar. '19	\$3.008	\$2.860
Apr. '19	\$2.847	\$2.713
May 19	\$2.671	\$2.566
Jun' 19	\$2.548	\$2.633
Jul' 19	\$2.516	\$2.291
Aug' 19	\$2.317	\$2.141
Sept. '19	\$2.481	\$2.251
Oct. '19	\$2.410	\$2.291
Nov. '19	\$2.592	\$2.597

Wholesale Prices per Mmbtu

Noteworthy

- China could double its natural gas demand by 2030 as it uses gas to replace coal.
- Projected global natural gas use will rise another 40-45% by 2050 as countries shift away from coal.
- Natural gas end users - including households and businesses, manufacturers, and electric generators - have realized \$1.1 trillion in savings since 2008 due to natural gas in the Midwest Shale region (OH, PA, WV).
- Natural gas continues to grow faster than all other energy sources in the United States – more than wind and solar. Coal has decreased to 27% from 40% over the last 15 years. Gas has increased to 35% from 17%. GHG emissions dropped to a 25-year low two years ago, although now are rising with the economy.
- United States net natural gas exports in the first half of 2019 more than doubled from the same time last year due to more LNG export capacity coming online, with Louisiana taking the lead.