

# Natural Gas Market Indicators



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**Reported Prices** – natural gas futures prices at Henry Hub have been living above \$3.00 per MMBtu both in October and for the coming winter heating season futures strip. On October 17 the forward view of natural gas trading ranged from \$3.11 to \$3.39 per MMBtu for the five month period November 2018 through March 2019. That has come down slightly but is still over \$3 per MMBtu. On the oil side of energy pricing, West Texas Intermediate (WTI) hovered above \$71 per barrel at \$71.29 on October 17, while Brent was nearly \$81 per barrel. Oil prices have since fallen more significantly to below just above \$67 per barrel for WTI and to over \$77 for Brent.

**Weather** – it can't be a great surprise but every week to begin the AGA accounting of heating degree days this October had been warmer than normal on a national average basis just as it had been warmer than normal this past summer. Then it happened. Even though we are in a swing month and not yet in the clutches of the traditional winter heating season, two weeks of colder than normal temperatures (weeks ending October 20 and 27, 2018) fell upon us. This was particularly true in the eastern half of the country with Mountain West and Pacific regions warmer than normal. As a result, October has been only 0.4 percent warmer than normal, cumulatively, and we have seen a reminder that winter is coming. Where will temperature metrics be in two months?

**Working Gas in Underground Storage** – storage volumes finally pushed above 3 Tcf for the week ending October 12, 2018 with a net weekly injection of 81 Bcf. However, compared to the five-year average working gas volumes inventories were still 16.8 percent lower even with that strong injection and another 58 Bcf the following week. So, how do we interpret this? On one hand, physical inventories are lower and as the market has digested this fact winter heating season pricing for natural gas on NYMEX has crept up above \$3 per MMBtu. That should be no surprise based on traditional supply demand relationships in the US natural gas market. But is this the traditional US natural gas market? Production is at an all time high and flowing gas supplies are up from one year ago, significantly. Will 8-9 Bcf per day of LNG and pipeline exports of gas be sustained? What will temperature patterns ultimately be and how will the pipeline system adjust to the daily requirements? These are only a few of the possible questions that may arise this winter. With these unknowns, this may primarily be a winter heating season of observation for your authors and other analysts.

**Natural Gas Production** – dry natural gas production has remained consistently above 83 Bcf per day and often 84 Bcf per day during the second half of October and even eclipsed 85 Bcf as we transition to the coming winter heating season. In addition, average daily dry gas production year-to-date at 79.3 Bcf is running 7.6 Bcf per day higher than the same period in 2017.

**Shale Gas** – data recently released from the Environmental Protection Agency shows that methane emissions from oil and natural gas production in the Permian Basin declined from 2016 to 2017 by

about 100,000 metric tons of CO<sub>2</sub> equivalent. The data includes emissions from production, gathering, and boosting equipment in the Permian basin, which covers parts of West Texas and Southeast New Mexico. Interestingly, with the development of shale plays in the basin the emissions reductions came at a time when oil production climbed from 1.9 million barrels of oil per day to 2.8 million barrels per day and gas increased from 6.5 billion cubic feet per day to 9.3 Bcf per day.

**Rig Count** – in mid-October domestic rotary rigs operating at 1,067 were up 154 or 16.9 percent from one year prior. Breaking that down, gas-directed drilling at 194 was up 17 rigs or 9.6 percent while oil-directed activity was being carried out by 873 active rigs – 18.6 percent higher than one year ago.

**Pipeline Imports and Exports** – daily natural gas pipeline imports from Canada registered 4.5 Bcf in October 2018, which is 0.7 Bcf per day or about 13 percent below the volume imported in October 2017. In contrast, pipeline exports to Mexico were up 0.7 Bcf per day to 5 Bcf per day in October 2018 compared to one year ago. Total exports of natural gas and LNG now routinely reach 8 Bcf per day and are reaching for 9 Bcf daily, representing 10 percent of daily dry gas production.

**LNG Markets** – part of the domestic export market for natural gas, of course, goes to South America in the form of LNG. However, our coming winter season is their coming summer, so we will observe if LNG exports decline at all or if more will be shipped to temperature sensitive parts of the globe such as Europe and northern Asia. US LNG feedgas for export has averaged over 3 Bcf per day in October and 3.2 Bcf per day year-to-date, which is 1.2 Bcf per day above the January to October 2017 daily average.

**Natural Gas Market Summary** – by mid-October natural gas supplied to power generators had fallen below 25 Bcf per day after averaging over 35 Bcf per day just two months earlier in August. Not surprising as seasonal swing months lead us to the coming winter. The pricing strip for the 2018-19 winter is averaging about \$3.20 per MMBtu, which is above natural gas acquisition prices earlier in the year but still relatively tame for winter commodity costs. With that said, the National Weather Service is pointing to a warmer than normal winter heating season for three-quarters of the lower-48 states, but the portions of the country not included in that warmer outlook are the Middle Atlantic and Northeast regions. Of course, those are places with population concentrations that use natural gas for home heating. Warm or not, average metrics do not always capture the variability in temperatures for the country or individual regions. Therefore, temporary basis run-ups for cold periods this winter are possible just as they are always possible.

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