Natural Gas Market Indicators

American Gas Association

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Reported Prices – domestic oil and Brent crude prices have settled lower than the month prior at under $51 and $59 per barrel, respectively. That is a plunge of more than $17 per barrel over the past four weeks. Meanwhile, gas futures have strengthened then weakened, then strengthened again, but Henry Hub futures favored pricing in the low to mid-$4 range for the prompt-month (December 2018) during the last two weeks of November.

Weather – with three consecutive weeks of colder-than-normal US temperatures, cumulative heating degree days since October finally flipped from warmer to colder than normal. Temperatures have been 6.3 percent colder than normal and 22.7 colder than 2017. For that period of time, also, only the Pacific region has been significantly warmer than normal (33.4 percent warmer) while regions like the west south central have been as much as 34 percent colder.

Working Gas in Underground Storage – natural gas storage refills continued into November, but then flipped with a vengence. Storage stocks posted a strong 134 Bcf withdrawal for the week ending November 16. The following week, the net storage pull amounted to 59 Bcf, which positions current inventories at 19.1 percent below the five-year average and 17.4 percent below last year at this time.

Natural Gas Production – dry natural gas production is now routinely above 85 Bcf per day, and even set a new daily record of over 86.0 Bcf during the second half of November 2018. Also, total average daily dry gas production year-to-date at 79.8 Bcf is running 8.1 Bcf per day higher than the first 11 months of 2017. Interestingly, as domestic production has been increasing during the past 15 years, a recent report released by the US Geological Survey showed that emissions from federal lands that may contribute to climate change fell during the period 2005-2014. Oil and natural gas operations were specifically included in the most recent analysis for the first time along with other land-use factors. Over the ten-year period, carbon dioxide emissions were down 6.1 percent, methane emissions down 10.5 percent and nitrous oxide fell 20.3 percent.

Shale Gas – dry gas production in Pennsylvania, dominated by shale gas of course, grew to 17.5 Bcf per day in September 2018, a full 20 percent higher than September 2017. Individual producers such as EQT (tagged as the nation's largest volume gas producer) grew their volumes by 32 percent in September over one year ago even accounting for their acquisition of Rice energy in November 2017.

Rig Count – the number of gas rigs in operation have held relatively steady over the course of the year, perhaps a reflection of the relatively stable pricing environment. Gas rigs are currently at 194 total in operation, according to the Baker Hughes report for the week ending November 21. The number of rigs in operation have varied between 177 and 200 during 2018. Oil rigs, however, while overall more active, have shown a bit more variance; counts have been as low as 742. Still, at 885 rigs

in operation for the week ending November 21, oil activity is only three rigs off its high, set one week prior.

Pipeline Imports and Exports – among the areas most affected by growing US natural gas production are imports from Canada. According to S&P Global Platts, pipeline imports from Canada are down 23 percent this month from last November, a remarkable fact given how cold the winter heating season has begun. Pipeline exports of natural gas to Mexico are up, however, running at 4.7 Bcf per day year-to-date, which is 0.5 Bcf more than during the first eleven months of 2017.

LNG Markets – shipments of LNG from the United States span the globe in today's international energy trade. Beginning February 2016 through September 2018, twenty-eight countries in Europe, Asia, the Middle East, Asia Minor, Africa, the Caribbean, Central and South America and, of course, Mexico have received LNG shipments from the United States. Clearly, interest in US sourced liquefied natural gas abounds. With that said, commissioning activities are ramping up at the Cheniere Corpus Christi LNG facility in Texas. Cheniere has exported its first cargo from the new export terminal, according to S&P Global Platts. The company already has five liquefaction trains operating at nearby Sabine Pass; a final investment decision to be made on a sixth in 2019. Overall, US LNG feedgas for export has averaged 4.3 Bcf per day this November, which is 1.4 Bcf per day more than November 2017.

Natural Gas Market Summary – the first recorded net withdrawal of working gas from storage in mid-November offers an analytical signal that the winter heating season is upon us. Storage inventories are down compared to the five-year average and to one year ago, but flowing gas supplies are up by 8 Bcf per day. Natural gas exports via LNG terminal and pipeline are a combined 9 Bcf per day and Henry hub pricing is moving up and down with cold spells and warm snaps in the $4s. These are the fundamental elements of the current market balance and natural gas remains an excellent energy value to consumers. However, one question will persist as we continue deeper into the winter heating season. Will there be adequate storage inventories to meet consumer needs? Some basic math says, yes. Last winter – a winter heating season that included 10 straight weeks of triple digit and near triple digit net storage withdrawals and a single week record storage net drawdown of 359 Bcf – just over 2,325 Bcf of net gas withdrawals were recorded between mid-November and the end of March 2018, which is a strong withdrawal pattern. Even if that repeated itself in 2018-19, more than 700 Bcf would be remaining in storage inventories at season's end. Of course, temperature conditions, more generally weather, and where winter hits hardest will influence the storage withdrawals from now until the end of March 2018, but the numbers tend to support adequate storage volumes available to meet core customer heating load demand.