**Reported Prices** – natural gas pricing for October at Henry Hub is still about $2.85 per MMBtu, while Brent oil has crept up to over $79 per barrel and West Texas Intermediate is above $69. For natural gas, the forward looking seasonal strip rises to $3.00 per MMBtu for January 2019 but falls into the $2.50s for the summers of 2020 and 2021. This pattern supports the relative tightness of natural gas storage inventories expected for November of 2018, however, it may also recognize expectations of supply strength as far as three years in the future.

**Weather** – if readers can even remember, aggregate temperatures in the lower-48 states during April 2018 resulted in conditions 27 percent cooler than normal, which extended a winter heating season that included a record consumption day for natural gas in the US – January 1, 2018 to be precise. Since the end of April, however, aggregate temperatures have been warmer than normal for the country as a whole week after week and month after month. From April 28 to September 1 cooling degree days totaled 22.9 percent more than normal, meaning conditions were significantly warmer than normal. While sometimes there can be significant regional differences in the data, for this year every region of the country was warmer in aggregate over that four month period, also. In 2018, this has translated to a year-to-date increase in natural gas to power generation over the same period in 2017 of 3.2 Bcf per day or about 12.5 percent. With that said, the current weather event for the Mid-Atlantic area of the US is, of course, hurricane Florence. Perhaps counterintuitively, hurricanes often reduce gas demand when they occur at the end of summer because they tend to lower temperatures in the areas impacted and reduce demand for cooling. Hopefully, the impact on people and the economies of areas hardest hit will be minimal.

**Working Gas in Underground Storage** – storage inventories continue to lag recent history by a significant amount. Working gas totaled 2,568 Bcf at the end of August. That placed month-end volumes 20 percent behind last year and 18.7 percent below the five-year average.

**Natural Gas Production** – domestic natural gas production set a record during the long Labor Day weekend on Sunday September 2, recording a new high for lower-48 dry gas production of 83.4 Bcf per day. By September 6, however, about ten percent of offshore natural gas and oil production was shut-in due to tropical storm Gordon. With that said, what used to represent 20-25 percent of total natural gas production in the country (US offshore) now accounts for only about six percent of domestic flows, therefore, the overall impact to production totals was relatively small.

**Shale Gas** – severe weather preparation is impacting natural gas pipeline construction schedules from Pennsylvania to North Carolina given the imminent landfall of hurricane Florence. Only examination of facilities following the storm will offer a picture of critical impacts. Companies do prepare with public and worker safety the highest priority.
**Rig Count** – total rigs operating in the US at week-end September 7 remained unchanged from 1,048 the week prior. Oil-directed operations at 860 were down two rigs while gas operations were up two rigs to 186.

**Pipeline Imports and Exports** – imports from Canada slipped below 4 Bcf per day for much of this week with the September 2018 average volume at 4.1 Bcf per day, which is 0.6 Bcf per day lower than September 2017. In contrast, pipeline exports in September 2018 to Mexico are up 0.6 Bcf per day compared to one year ago.

**LNG Markets** – as the fifth LNG train at Sabine Pass in Louisiana nears completion, the Federal Energy Regulatory Commission (FERC) has approved partial service for a Kinder Morgan lateral to serve the facility. Three pipelines already provide gas service to the terminal including Cheniere’s Creole Trail Pipeline, Natural Gas Pipeline Company of America and Transcontinental Gas Pipe Line. In Texas, Cheniere is commissioning its first train at the new Corpus Christi export facility and like the fifth train at Sabine Pass expects commercial operations to begin in 2019. Additionally, the Freeport LNG facility has signed an agreement with a Japanese customer that will support construction of a fourth train at the facility with an expected start up in 2023. The Freeport terminal’s train 1 is currently scheduled to come on line in September 2019 with trains 2 and 3 to follow during the first half of 2020.

**Natural Gas Market Summary** – a word about lower than normal storage inventories now that we are two months out from the traditional winter heating season. While it is true that underground storage is behind in all regions compared to the five-year average it is only 13 percent lower in the eastern US but 30 percent lower in Gulf Coast salt cavern facilities. Storage capacity in the east tends to be dominated by local gas utilities storing gas explicitly to meet winter heating season loads. With higher volumes of real-time flowing supplies today compared to prior years, those companies balance their expected winter requirements with storage, production and their traditional seasonal supply relationships. Salt cavern storage, on the other hand, tends to be dominated by marketers that are not only meeting winter demand contractually but supplying calls for gas to power generators during the summer. In fact, natural gas injections into salt caverns in aggregate for a given week in the summer can often be negative – that is gas is withdrawn to meet peak air-conditioning inspired demand. What a difference a few years, an enormous natural gas resource, environmental advantages associated with natural gas and expanding infrastructure make.

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