

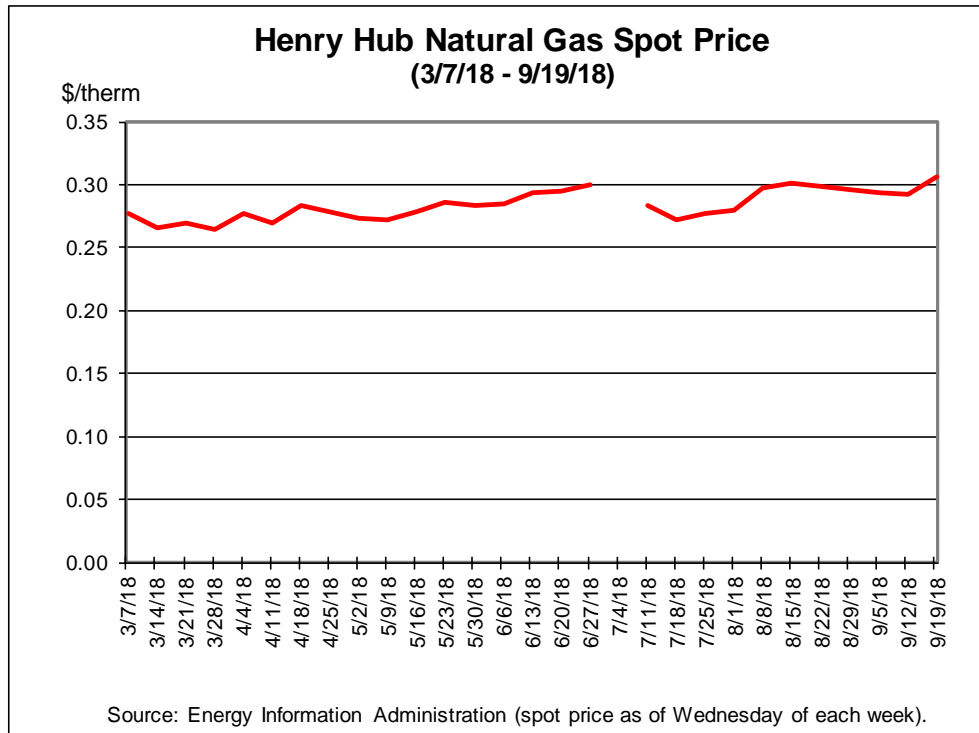
WHOLESALE NATURAL GAS MARKET ASSESSMENT

Wholesale Natural Gas Futures Prices as of September 17, 2018

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Outlook for Wholesale Natural Gas Prices

This report presents the Office of Technical and Regulatory Analysis' ("OTRA") assessment of wholesale natural gas supply and prices for September 17, 2018.¹ OTRA's current assessment of the natural gas market suggests that wholesale natural gas prices may remain around \$0.30 per therm during October 2018 (see Henry Hub Spot Price figure). Recent natural gas spot prices are around 2 percent lower than prices for the same period a year ago.



Data from the Energy Information Administration ("EIA") indicates that the average Henry Hub natural gas spot price for August 2018 was about \$0.30 per therm, up from \$0.28 per therm in July 2018.² EIA expects natural gas prices, on average, to be fairly stable over the forecast period despite new natural gas export capabilities and growing domestic natural gas consumption—with electric power generation being a leading contributor. Henry Hub natural gas prices averaged about \$0.30 per therm in 2017 and the forecasted price is expected to average \$0.30 per therm in 2018 and \$0.31 per therm in 2019.³ As of September 14, 2018,

¹ This assessment is based on information collected from various sources. Projecting future conditions is a difficult task at best, so these comments are subject to change as new information becomes available.
² EIA, *Natural Gas Weekly Update* (various issues).
³ EIA, *Short-Term Energy Outlook* (September 2018) at 2.

natural gas in storage stood at 2,722 billion cubic feet (“Bcf”). The working gas in storage is down about 20 percent from the same period a year ago, and is down by roughly 18 percent compared to the 5-year average.

Commodity prices, together with the costs Washington Gas Light (“WGL”) incurs for storage, peaking, and balancing, have resulted in a lower retail price than what was experienced last year. Specifically, the costs WGL incurs to acquire and deliver natural gas to customers are reflected in WGL’s retail commodity price, called the Purchased Gas Charge (“PGC”).⁴ The PGC for September 2018 is 45.03 cents (\$0.45) per therm, compared with 48.09 cents (\$0.48) per therm for the same period a year ago—down about 6 percent. The PGC for September 2018 is up 7 percent from the previous month.

The major factors that contribute to this outlook are described below. These factors include the weather, the economy, the storage situation, the supply situation, and national security.

Weather

Weather variations always have an effect on natural gas price formation. As of September 20, 2018, the National Oceanic and Atmospheric Administration (“NOAA”) indicated that its outlook for October 2018 highly favors above normal temperatures for the western portion of the nation, but also suggests above normal temperatures for the Southeast, Tennessee Valley, and the Mid-Atlantic.⁵ A portion of the Central Plains favors below normal temperatures. The expected weather for September may be somewhat neutral on natural gas prices.

As reported in a previous Outlook, on August 9, 2018, NOAA’s Climate Prediction Center released its updated forecast for the 2018 Atlantic Hurricane Season. NOAA indicated that there is only a 40 percent chance of a near-normal to above-normal season. NOAA predicts a 70-percent likelihood of 9 to 13 named storms, of which 4 to 7 could develop into hurricanes, with only 2 of the potential hurricanes anticipated to become major hurricanes (Category 3 or higher), with winds of 111 miles per hour or more. An average hurricane season typically yields 12 named storms, of which 6 become hurricanes, including 3 major hurricanes.⁶ As of September 20, 2018, there have been 10 named storms, five of which developed into hurricanes and only one that was a major hurricane—Hurricane Florence. The Atlantic hurricane season generally runs from June 1 through November 30. No significant storm-related disruptions to the energy infrastructure have contributed to upward pressure on natural gas prices.

Economic Conditions

National economic factors also contribute to the formation of wholesale natural gas prices. The Federal Reserve’s Beige Book provides anecdotal information on current economic

⁴ The current Purchased Gas Charge reflects current market conditions and current collections. The current cost of gas (including commodity, demand, and other cost adjustments) reflects the seasonal market. Alternative suppliers’ newer fixed price offers should generally reflect the PGC benchmark, with anticipated price changes as well, over the next twelve months.

⁵ NOAA at <http://www.cpc.ncep.noaa.gov/>.

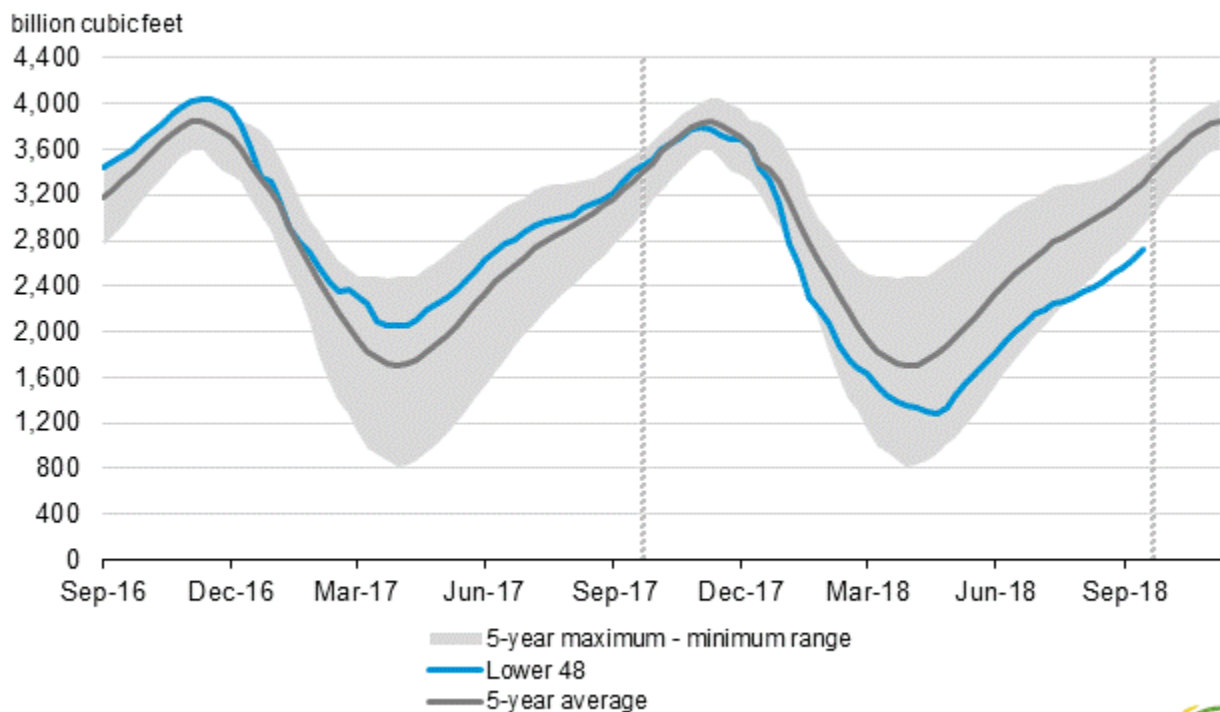
⁶ Ibid.

conditions from various regions—twelve Federal Reserve Districts—in the nation.⁷ The report was based on information collected on or before August 31, 2018 and indicates that economic activity continued to expand at a modest pace through the end of August. Consumer spending continued to grow at a moderate rate since the last report across the nation. Manufacturing activity grew at a modest pace in most regions. Home construction activity was mixed but up modestly, on balance. Home sales were somewhat softer on balance—in some cases due to reduced demand, in others due more to low inventories. Commercial real estate construction was also mixed, while both sales and leasing activity expanded modestly. Businesses generally remained optimistic about the near-term outlook, though most Districts noted concern and uncertainty about trade tensions—particularly, though not only, among manufacturers. A number of regions noted that such concerns have prompted some businesses to scale back or postpone capital investment. Thus, at present, the current state of economic activity may still be relatively neutral for natural gas prices.

Storage

EIA reports that the working gas in storage was 2,722 Bcf as of September 14, 2018, a net increase of 86 Bcf from the previous week. Stocks were 672 Bcf lower than the same period a year ago—down 19.8 percent—and down 586 Bcf from the 5-year average of 3,308 Bcf—a decrease of 17.7 percent.⁸

Working gas in underground storage compared with the 5-year maximum and minimum



Source: U.S. Energy Information Administration



Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2013 through 2017. The dashed vertical lines indicate current and year-ago weekly periods.

Source: EIA, *Weekly Natural Gas Storage Report* (released September 20, 2018)

⁷ Beige Book (released September 12, 2018).

⁸ EIA, *Weekly Natural Gas Storage Report* (released September 20, 2018).

The natural gas storage refill season typically begins on April 1, but continued colder-than-normal temperatures throughout most of the Lower 48 states resulted in withdrawals from storage during the first three weeks of April—the first time that EIA’s Weekly Natural Gas Storage Report, which began in 1994, reported that net withdrawals from storage continued into the third week of April.⁹ EIA notes that “[n]atural gas inventories have been low compared with the five-year (2013–17) average during most of 2018. The low inventory levels reflect high residential and commercial consumption in early 2018 and growth in both liquefied natural gas and pipeline exports over the past year. High natural gas use for electric power generation during July and August also likely slowed the pace of inventory injections. EIA estimates that working gas in underground storage at the end of August totaled 2,606 Bcf, which is 577 billion cubic feet (Bcf), or 18%, lower than the five-year average at the end of August.... The end of October is typically considered the end of the natural gas storage injection season, although injections often occur into the first weeks of November. EIA forecasts that inventories will rise to 3,308 Bcf at the end of October, which would be the lowest end-of-October natural gas inventory level since 2005”¹⁰ The current storage picture may support some upward pressure on natural gas prices.

Supply

Flexibility in the nation’s domestic production has helped to soften upward price pressure, especially with the continued development of natural gas in shale formations. In the September 2018 Short-Term Energy Outlook (“STEO”), EIA notes that “**dry natural gas production in the United States was 82.2 billion cubic feet per day (Bcf/d) in August, up 0.7 Bcf/d from July. Dry natural gas production is forecast to average 81.0 Bcf/d in 2018, up by 7.4 Bcf/d from 2017 and establishing a new record high. EIA expects natural gas production will continue to rise in 2019 to an average of 84.7 Bcf/d.**”¹¹

National Security

As noted in previous reports, we see little danger to the natural gas supply.¹² Most of the U.S. supply is secure, in that it is generally domestically produced or imported from Canada.

Future Natural Gas Prices

The PGC rate of roughly \$0.45 per therm for September 2018 is up 7.1 percent from the previous month, and is down 6.4 percent compared to the same period a year ago.¹³ The October

⁹ EIA, *Short-Term Energy Outlook* (July 2018) at 12.

¹⁰ EIA, *STEO* (September 2018) at 9 and 10.

¹¹ EIA, *STEO* (September 2018) at 1.

¹² The Department of Homeland Security (“DHS”) recently issued an advisory bulletin on September 14, 2018. The bulletin mentioned threats such as foreign terrorist organizations exploiting the internet to inspire, enable, or direct individuals to commit terrorist acts. In addition, terrorist groups are urging recruits to adopt easy-to-use tools to target public places and events. An informed, vigilant, and engaged public remains one of the greatest assets to identify potential homegrown terrorists and prevent attacks. The National Terrorism Advisory System, or NTAS, replaces the color-coded Homeland Security Advisory System.

2018 PGC (assuming that the commodity market adjustment factor is zero) may increase slightly to \$0.47 per therm, based, in part, on the expectation that near-term NYMEX futures prices trade between \$0.27 and \$0.30 per therm, among other things. OTRA's assessment of natural gas prices may be significantly different from actual market prices if: (i) there are significant variations in weather-related factors, (ii) crude oil prices change significantly, (iii) other substantial disruptions to the energy market occur, or (iv) certain cost-related assumptions are significantly different.

As always, investments in energy efficiency and conservation measures are important ways toward reducing energy consumption and lowering energy bills. Ratepayers are encouraged to invest in measures such as insulation, weather stripping, or replacing an old inefficient water heater and/or furnace. Finally, for those residential consumers whose budgets are severely challenged, arrangements for assistance should be made as soon as possible in anticipation of need. Contact either the District Department of the Environment's Energy Office or the D.C. Public Service Commission's Office of Consumer Services for advice and/or solutions as well as programs such as the Washington Area Fuel Fund (888-318-9233).

¹³ The commodity market adjustment factor for the September 2018 PGC was \$0.00 per therm, resulting in the adjusted PGC (excluding the commodity market adjustment factor ("CMAF")) being equal to \$0.4503 per therm.

Wholesale Natural Gas Price/Supply Assessment Information

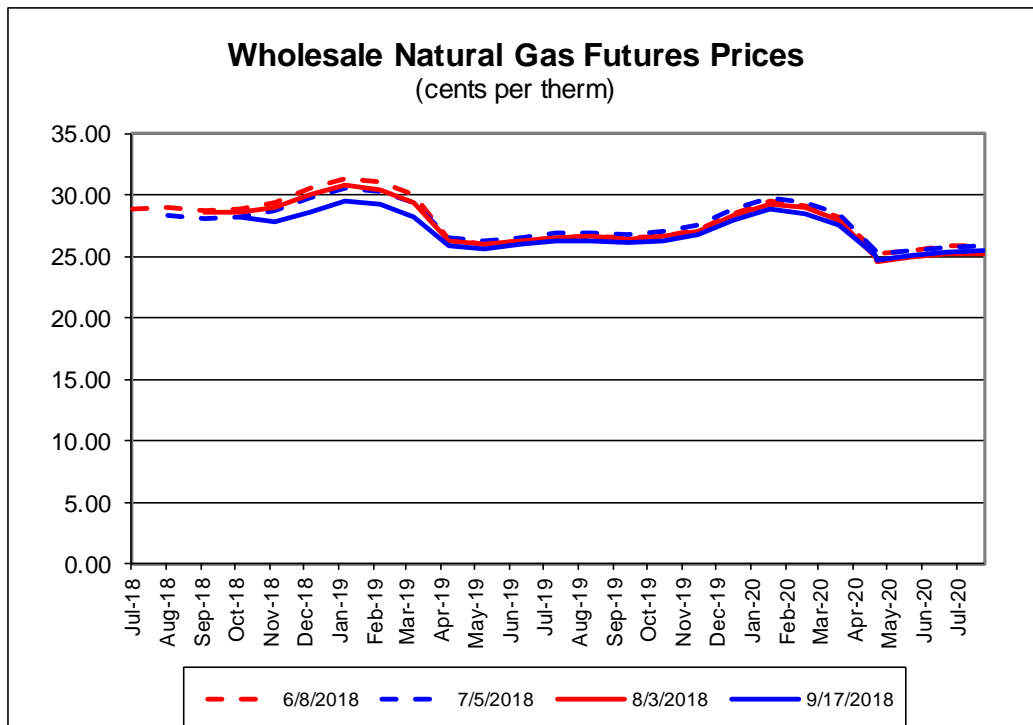
Current for September 17, 2018

Price Information

Twelve Month NYMEX Strip Components
9/17/18, cents per therm

Henry Hub Spot Market Price
9/17/18, cents per therm

| | <u>Current Month</u> | <u>Previous Month</u> | <u>Current Only Available</u> |
|--------|----------------------|-----------------------|-------------------------------|
| Oct 18 | 28.14 | Oct 18 28.62 | 29.0 |
| Nov 18 | 27.79 | Nov 18 28.98 | |
| Dec 18 | 28.62 | Dec 18 29.98 | |
| Jan 19 | 29.52 | Jan 19 30.82 | |
| Feb 19 | 29.22 | Feb 19 30.45 | |
| Mar 19 | 28.25 | Mar 19 29.41 | |
| Apr 19 | 25.89 | Apr 19 26.26 | |
| May 19 | 25.66 | May 19 25.95 | |
| Jun 19 | 25.93 | Jun 19 26.24 | |
| Jul 19 | 26.25 | Jul 19 26.57 | |
| Aug 19 | 26.31 | Aug 19 26.62 | |
| Sep 19 | 26.12 | Sep 19 26.44 | |



The current PGC for September 2018 is about \$0.4503 per therm. Assuming, among other things, that near-term futures prices are around \$0.27 to \$0.30 per therm, the PGC rate (excluding the commodity market adjustment factor) for October 2018 may increase to \$0.47 per therm. However, given the uncertainty about the weather, as well as other factors, this assessment could easily change. The assessment for October 2018 is that wholesale prices may remain around \$0.30 per therm, resulting in wholesale prices that are comparable to year ago levels (see Market Conditions Summary).

Weather Forecast

1. Current for next few days to one week:

<http://www.cnn.com/Weather/>
<http://home.accuweather.com/>

2. National Oceanic and Atmospheric Administration Forecast for the Winter

<http://www.noaa.gov/>

3. U.S. Weather Service Atlantic Hurricane and Storm Reports

<http://www.nhc.noaa.gov/>

Wholesale Natural Gas Market Conditions Summary September 21, 2018

| Factors | Next Month | Summer Season |
|-----------------------|------------|---------------|
| Oil Prices | | |
| Weather - Temperature | | |
| Weather - Hurricanes | | |
| Economic Conditions | | |
| Storage | | |
| Natural Gas Supply | | |
| National Security | | |
| Overall | | |

Code: Red - Upward Pressure

Blue - Downward pressure

Yellow - No Change

No color - Not Applicable
N.A.