

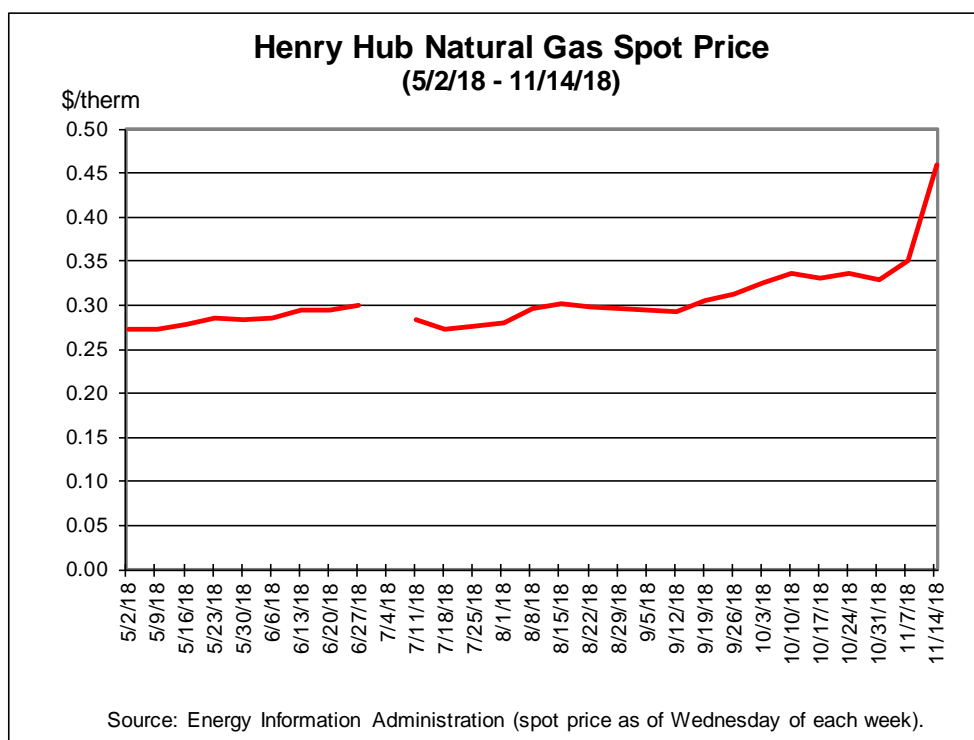
WHOLESALE NATURAL GAS MARKET ASSESSMENT

Wholesale Natural Gas Futures Prices as of November 7, 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 November 7, 2018.¹ OTRA's current assessment of the natural gas market suggests that wholesale natural gas prices may remain around \$0.30 per therm, or higher, during November 2018 (see Henry Hub Spot Price figure). Recent natural gas spot prices are around 30 percent higher 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 October 2018 was about \$0.33 per therm, up from roughly \$0.30 per therm in September 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 \$0.30 per therm in 2019.³ As of November 16, 2018, natural gas in storage stood at 3,113 billion cubic feet ("Bcf"). The working gas in storage

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* (November 2018) at 2.

is down about 17 percent from the same period a year ago, and is down by roughly 19 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 higher 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 November 2018 is 48.39 cents (\$0.48) per therm, compared with 48.09 cents (\$0.48) per therm for the same period a year ago—up about 1 percent. The PGC for November 2018 is up over 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 November 15, 2018, the National Oceanic and Atmospheric Administration (“NOAA”) indicated that its outlook for December 2018 highly favors above normal temperatures for the western portion of the nation and southern portion of Florida.⁵ Below normal temperatures are more likely for parts of the Northern Great Plains and Upper Mississippi Valley, as well as the Ohio Valley, the Great Lakes region, and the Northeast. The expected weather for December may provide upward pressure 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 November 26, 2018, there have been 15 named storms, eight of which developed into hurricanes and two that were major hurricanes—Hurricane Florence and Hurricane Michael. The Atlantic hurricane season generally runs from June 1 through November 30. As the 2018 Atlantic Hurricane Season winds down, 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 Open Market Committee (“FOMC”) maintained its target range for short-

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/>.

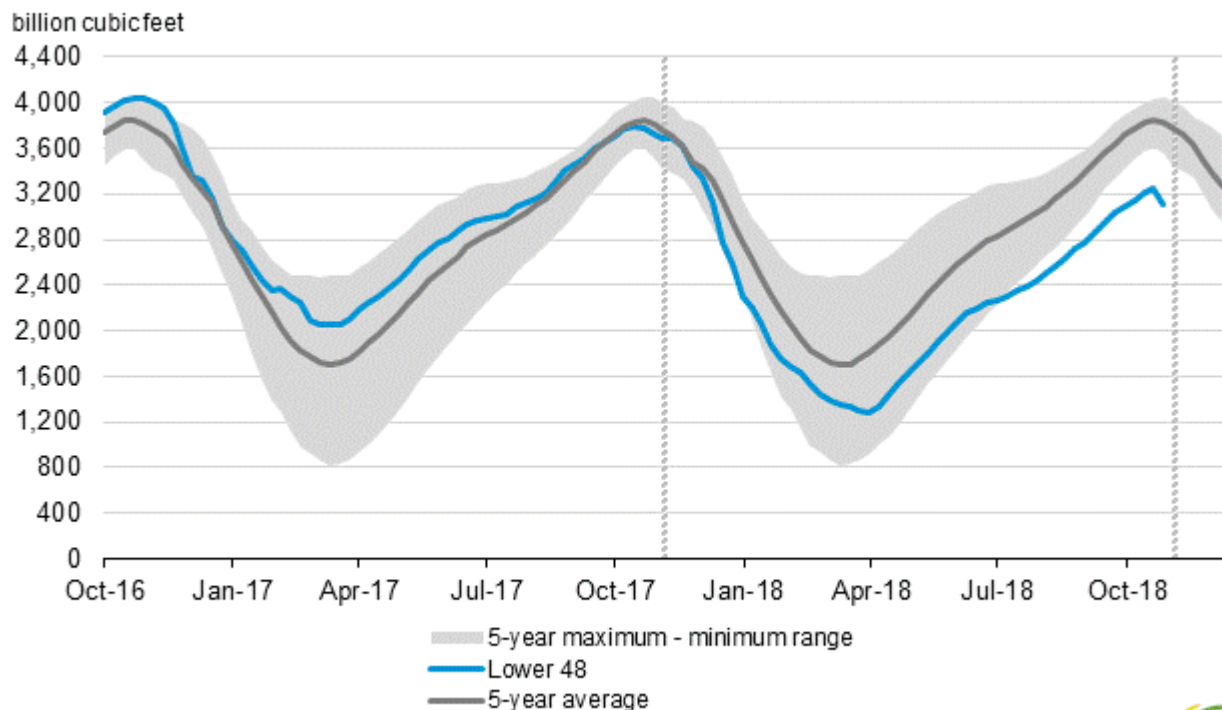
⁶ Ibid.

term interest rates at 2 to 2.25 percent.⁷ In its statement, the Committee indicated that “[i]nformation received since the [FOMC] met in September indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has declined. Household spending has continued to grow strongly, while growth of business fixed investment has moderated from its rapid pace earlier in the year. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.”⁸ Thus, 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 3,113 Bcf as of November 16, 2018, a net decrease of 134 Bcf from the previous week. Stocks were 620 Bcf lower than the same period a year ago—down 16.6 percent—and down 710 Bcf from the 5-year average of 3,823 Bcf—a decrease of 18.6 percent.⁹

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 November 21, 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

⁷ Statement of the Federal Open Market Committee (released November 8, 2018).

⁸ Ibid.

⁹ EIA, *Weekly Natural Gas Storage Report* (released November 21, 2018).

Storage Report, which began in 1994, reported that net withdrawals from storage continued into the third week of April.¹⁰ In its November 2018 Short-Term Energy Outlook, EIA mentions that the high demand for natural gas in power generation has contributed to keeping natural gas storage levels relatively low and placing upward pressure on natural gas prices.¹¹ The current storage picture may continue to 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 November 2018 Short-Term Energy Outlook ("STEO"), EIA notes that **"dry natural gas production in the United States averaged 86.9 billion cubic feet per day (Bcf/d) in October, up 0.7 Bcf/d from September. EIA forecasts that dry natural gas production will average 83.2 Bcf/d in 2018, up 8.5 Bcf/d from 2017. Both the level and growth of natural gas production in 2018 would establish new records. EIA expects natural gas production will continue to rise in 2019 to an average of 89.6 Bcf/d."**¹² Continued high natural gas production helps reduce the need for inventory to meet winter demand, which may help offset any upward pressure from the lower storage levels.

National Security

As noted in previous reports, we see little danger to the natural gas supply.¹³ 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 \$0.48 per therm for November 2018 is up 7.5 percent from the previous month, and is up 0.6 percent compared to the same period a year ago.¹⁴ The December 2018 PGC (assuming that the commodity market adjustment factor is zero) may increase to \$0.51 per therm, based, in part, on the expectation that near-term NYMEX futures prices trade between \$0.32 and \$0.43 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.

¹⁰ EIA, *Short-Term Energy Outlook* (July 2018) at 12.

¹¹ EIA, *STEO* (November 2018) at 8.

¹² EIA, *STEO* (November 2018) at 1.

¹³ The Department of Homeland Security ("DHS") last 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.

¹⁴ The commodity market adjustment factor for the November 2018 PGC was \$0.00 per therm, resulting in the adjusted PGC (excluding the commodity market adjustment factor ("CMAF")) being equal to \$0.4839 per therm.

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).

Wholesale Natural Gas Price/Supply Assessment Information

Current for November 7, 2018

Price Information

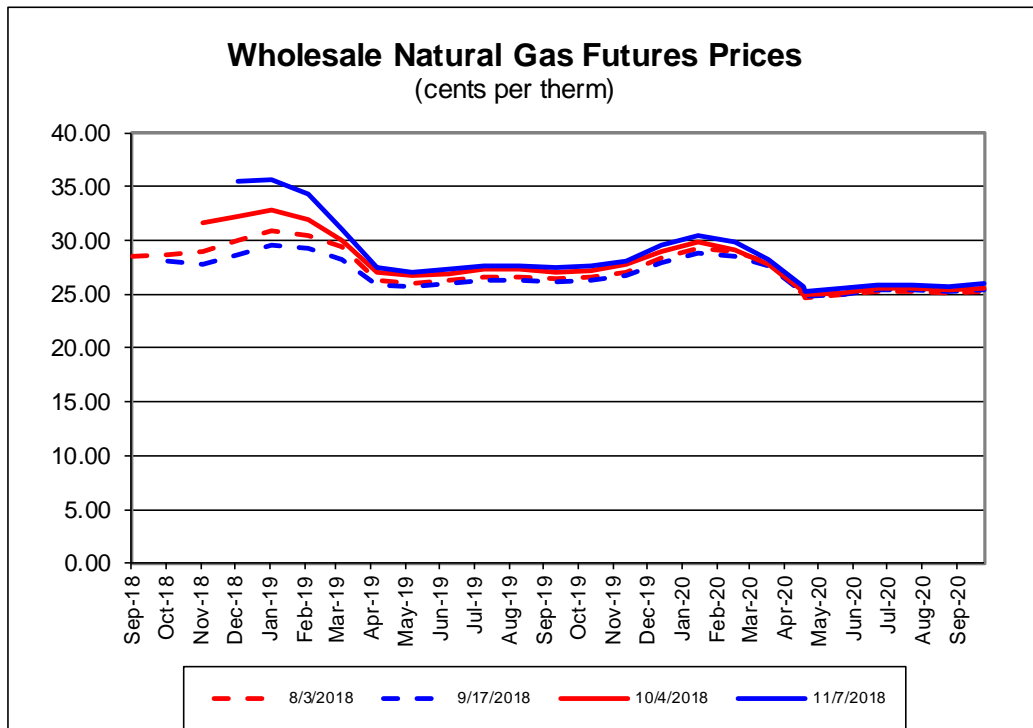
Twelve Month NYMEX Strip Components

11/7/18, cents per therm

Henry Hub Spot Market Price

11/7/18, cents per therm

	<u>Current Month</u>	<u>Previous Month</u>	<u>Current Only Available</u>
Dec 18	35.55	Dec 18 32.21	35.1
Jan 19	35.69	Jan 19 32.88	
Feb 19	34.28	Feb 19 31.95	
Mar 19	31.08	Mar 19 29.98	
Apr 19	27.45	Apr 19 27.04	
May 19	27.00	May 19 26.66	
Jun 19	27.29	Jun 19 26.95	
Jul 19	27.64	Jul 19 27.27	
Aug 19	27.67	Aug 19 27.28	
Sep 19	27.47	Sep 19 27.07	
Oct 19	27.63	Oct 19 27.25	
Nov 19	28.14	Nov 19 27.70	



The current PGC for November 2018 is about \$0.4839 per therm. Assuming, among other things, that near-term futures prices are around \$0.32 to \$0.43 per therm, the PGC rate (excluding the commodity market adjustment factor) for December 2018 may increase to \$0.51 per therm. However, given the uncertainty about the weather, as well as other factors, this assessment could easily change. The assessment for November 2018 is that wholesale prices may remain around \$0.30 per therm, or higher, resulting in wholesale prices that are up at least 12 percent compared 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

November 26, 2018

Factors	Next Month	Winter 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.