

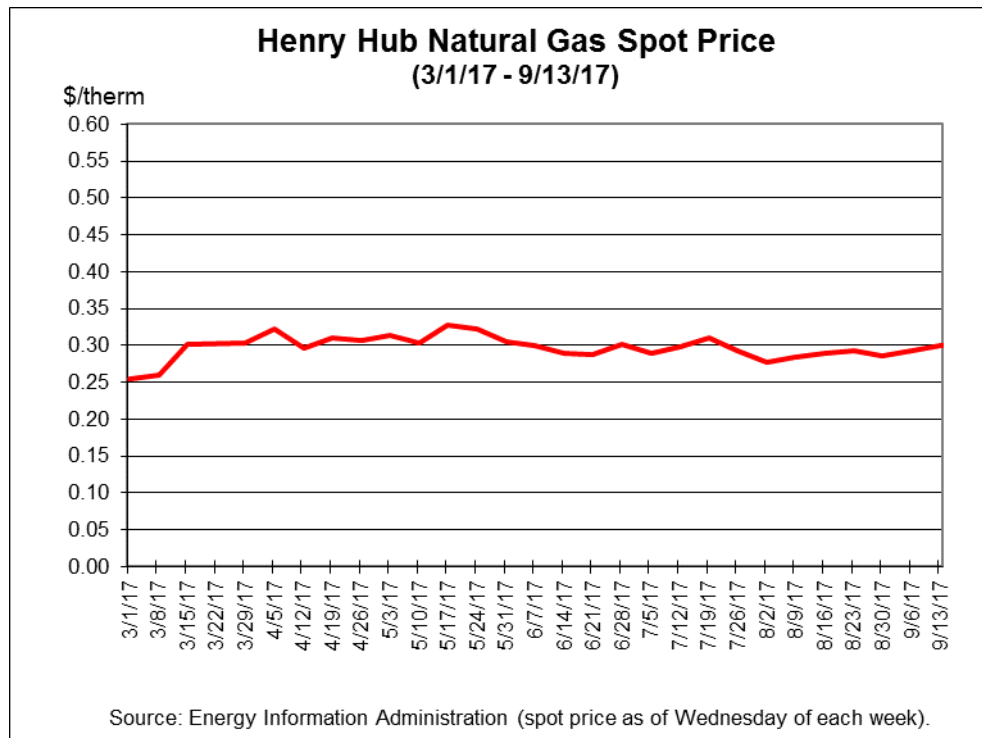
WHOLESALE NATURAL GAS MARKET ASSESSMENT

Wholesale Natural Gas Futures Prices as of September 5, 2017

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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 2017.¹ OTRA's current assessment of the natural gas market suggests that wholesale natural gas prices may remain around \$0.30 per therm during October 2017 (see Henry Hub Spot Price figure). Recent natural gas spot prices are within 2 to 3 percent of 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 2017 was about \$0.29 per therm, down slightly from the previous month of July.² In its Short-Term Energy Outlook ("STEO") for September 2017, EIA indicates that **“[n]atural gas prices traded within a relatively narrow range for most of August as supply and demand factors kept the market in relative balance. Injections into underground storage for the four weeks ending September 1 were 37 billion cubic feet lower than the five-year average build for that period, bringing inventory levels closer to the five-year average and ending the month 0.5% higher than the average. Most**

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).

of the Lower 48 states experienced temperatures close to normal or cooler than normal, which reduced cooling degree days and the need for air conditioning, which likely limited natural gas used to generate electricity. The South Census region, where more than half of the natural gas used for electricity generation is consumed, had temperatures that were 16% cooler than average for the four weeks ending August 31.”³ EIA expects natural gas prices to rise over the forecast period due to new natural gas export capabilities and growing domestic natural gas consumption. Henry Hub natural gas prices averaged about \$0.25 per therm in 2016 and the forecasted price rises to \$0.31 per therm in 2017 and \$0.33 per therm in 2018.⁴

As of September 8, 2017, natural gas in storage stood at 3,311 billion cubic feet (“Bcf”). The working gas in storage is down 5 percent from the same period a year ago, and is up by about 1 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”).⁵ The PGC for September 2017 is 48.09 cents (\$0.48) per therm, compared with 43.68 cents (\$0.44) per therm for the same period a year ago—up 10 percent. The PGC for September 2017 is down 24 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 15, 2017, the National Oceanic and Atmospheric Administration (“NOAA”) indicated that its outlook into mid-October 2017 generally calls for above normal temperatures for much of the western portion of the nation and parts of the Northeast.⁶ Below normal temperatures are predicted for a region surrounding Tennessee. Equal chances of below, near, or above normal temperatures are more likely for large areas of the central and eastern portions of the nation. The expected weather through mid-October may be neutral for natural gas prices.

As noted in the previous Outlook, on August 9, 2017, NOAA released its updated 2017 Atlantic Hurricane Outlook. In its update, NOAA now indicates that an above-normal hurricane season is most likely. In particular, the outlook calls for a 60% chance of an above-normal season, a 30% chance of a near-normal season, and only a 10% chance of a below-normal season. NOAA calls for a 70% probability for each of the following ranges of activity during the

³ EIA, *Short-Term Energy Outlook* (September 2017) at 10.

⁴ Ibid at 2.

⁵ 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.

⁶ NOAA at <http://www.cpc.ncep.noaa.gov/>.

2017 hurricane season: 14-19 named storms; 5-9 hurricanes; and 2-5 major hurricanes (rated at Category 3 or above, with a maximum sustained wind speed of at least 111 miles per hour). NOAA also mentioned that this hurricane season could be the most active since 2010. As of September 18, 2017 there have been 13 named storms, with 7 developing into hurricanes—3 of which were major hurricanes. The Atlantic hurricane season generally runs from June 1 through November 30. Any significant storm-related disruption to the energy infrastructure—in the Gulf of Mexico, for example—will tend to contribute to upward pressure on natural gas prices. However, the share of production from the Gulf of Mexico (“GOM”) has been decreasing over time and in 2016, GOM production represented just 4 percent of total U.S. natural gas production.⁷ With a growing volume of natural gas being produced from on-shore shale resources, which are typically outside of hurricane-prone areas, disruption to natural gas production from hurricane activity is lower and less severe on the natural gas market.

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 conditions from various regions—twelve Federal Reserve Districts—in the nation.⁸ Reported economic activity expanded at a moderate pace across all twelve Federal Reserve Districts in July and August. Household spending increased in most regions, with gains reported for non-auto retail sales and tourism, but mixed results for vehicle sales. Capital spending also increased in several Districts, with manufacturing activity expanding modestly on balance. Both residential and commercial construction increased slightly overall, but low inventories of homes for sale continued to weigh on residential real estate activity across the country, while commercial real estate activity increased slightly. 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 3,311 Bcf as of September 8, 2017, a net increase of 91 Bcf from the previous week. Stocks were 179 Bcf lower than the same period a year ago—down 5.1 percent—and up 43 Bcf from the 5-year average of 3,268 Bcf—an increase of 1.3 percent.⁹ EIA indicates that the recent inventory build has been helped by mild temperatures and increased production.¹⁰ Thus, the current storage picture appears relatively neutral for natural gas prices at this time.

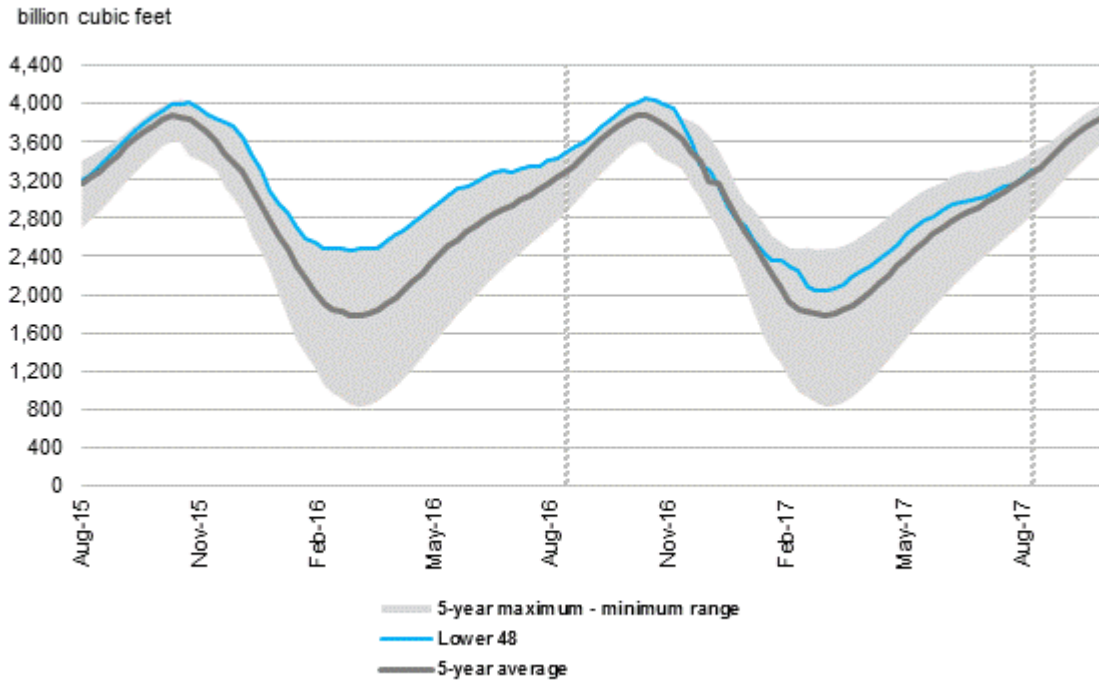
⁷ EIA, *Natural Gas Weekly Outlook* (released September 14, 2017).

⁸ Beige Book (released September 6, 2017).

⁹ EIA, *Weekly Natural Gas Storage Report* (released September 14, 2017).

¹⁰ EIA, *Natural Gas Weekly Outlook* (released September 14, 2017).

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 2012 through 2016. The dashed vertical lines indicate current and year-ago weekly periods.
 Source: EIA, *Weekly Natural Gas Storage Report* (released September 14, 2017)

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 2017 STEO, EIA indicates that natural gas production is expected to rise through 2017 and 2018 in response to forecast price increases and increases in liquefied natural gas (“LNG”) exports.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.

¹¹ EIA, *STEO* (September 2017) at 2.

¹² The Department of Homeland Security (“DHS”) issued its last advisory bulletin on May 15, 2017, which highlighted the continuing threat from homegrown terrorists, many of whom are inspired online to violence by foreign terrorist organizations. The bulletin went on to indicate that 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.

Future Natural Gas Prices

The PGC rate of roughly \$0.48 per therm for September 2017 is down 23.6 percent from the previous month, and is up 10.1 percent compared to the same period a year ago.¹³ The October 2017 PGC (assuming that the commodity market adjustment factor is zero) should be around \$0.49 per therm, based, in part, on the expectation that near-term NYMEX futures prices trade between \$0.28 and \$0.32 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 2017 PGC was \$0.0 per therm, resulting in the adjusted PGC (excluding the commodity market adjustment factor ("CMAF")) being equal to \$0.4809 per therm.

Wholesale Natural Gas Price/Supply Assessment Information

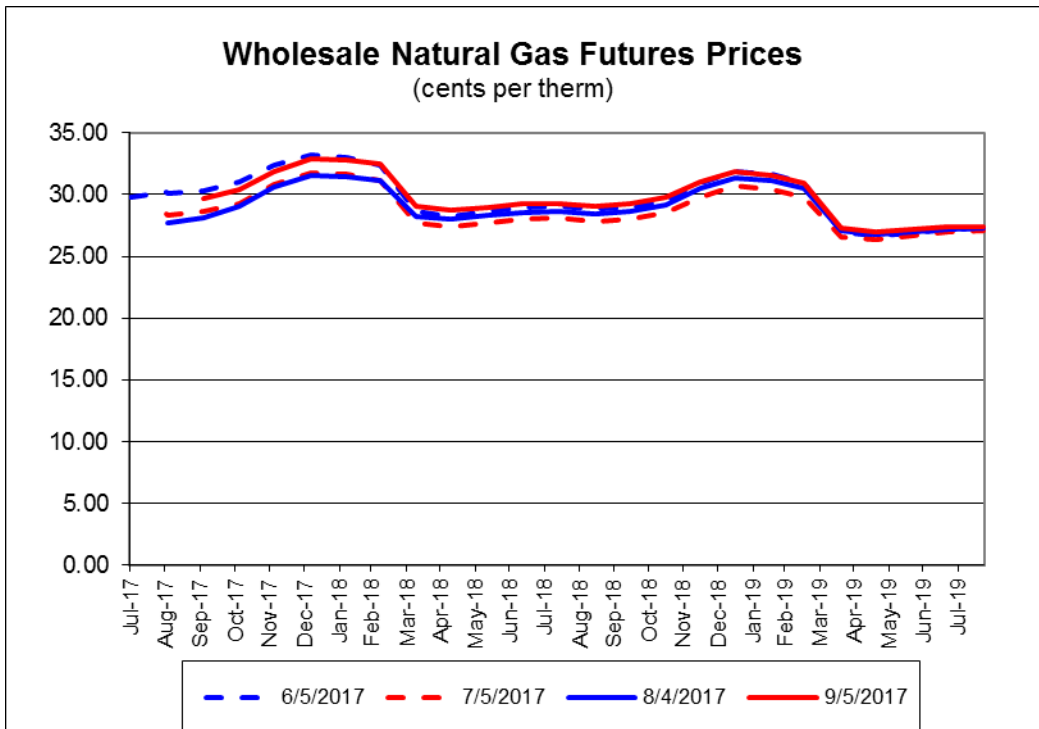
Current for September 5, 2017

Price Information

Twelve Month NYMEX Strip Components
9/5/17, cents per therm

Henry Hub Spot Market Price
9/5/17, cents per therm

<u>Current Month</u>	<u>Previous Month</u>	<u>Current Only Available</u>
Oct 17 29.72	Oct 17 28.17	28.6
Nov 17 30.44	Nov 17 29.06	
Dec 17 31.89	Dec 17 30.65	
Jan 18 32.87	Jan 18 31.58	
Feb 18 32.85	Feb 18 31.49	
Mar 18 32.44	Mar 18 31.09	
Apr 18 29.11	Apr 18 28.22	
May 18 28.75	May 18 28.02	
Jun 18 29.01	Jun 18 28.29	
Jul 18 29.27	July 18 28.56	
Aug 18 29.31	Aug 18 28.61	
Sep 18 29.07	Sep 18 28.41	



The current PGC for September 2017 is about \$0.48 per therm. Assuming, among other things, that near-term futures prices are around \$0.28 to \$0.32 per therm, the PGC rate (excluding the commodity market adjustment factor) for October 2017 may be about \$0.49 per therm. However, given the uncertainty about the weather, as well as other factors, this assessment could easily change. The assessment for September 2017 is that wholesale prices may remain around \$0.30 per therm, resulting in wholesale prices that are within 2 to 3 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 September 19, 2017

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.