

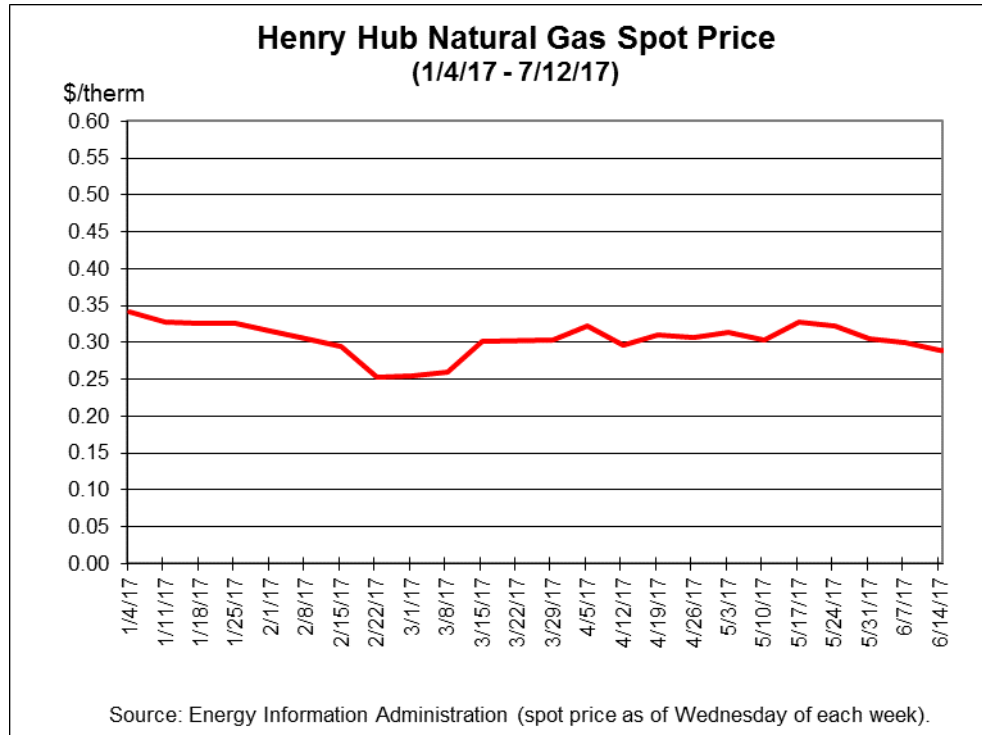
WHOLESALE NATURAL GAS MARKET ASSESSMENT

Wholesale Natural Gas Futures Prices as of July 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 July 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 August 2017 (see Henry Hub Spot Price figure). Recent natural gas spot prices are up about 5 percent compared to 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 June 2017 was about \$0.30 per therm, down slightly from the \$0.32 average for the previous month of May.² In its Short-Term Energy Outlook ("STEO") for July 2017, EIA indicates that "[b]ased on forecasts by the National Oceanic and Atmospheric Administration (NOAA), EIA projects 2017 heating degree days (HDD) to be similar to 2016 levels. The first quarters of both years were warmer than normal. EIA expects combined residential and commercial natural gas consumption to be almost unchanged in 2017 compared with 2016 levels and then rise by 1.2 Bcf/d in 2018. Growth in

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).

2018 is largely because of a forecast 8% increase in HDD, based on the NOAA forecast of a return to relatively normal temperatures.... Henry Hub spot prices have been relatively flat in 2017, averaging [\$0.30 per therm] during the first half of the year, which is the same as the fourth quarter of 2016 average price.... Closer-to-normal winter temperatures are expected this winter following last year’s warm winter, which contributes to growth in residential and commercial consumption. Also, export growth is forecast to increase in the second half of 2017 and in 2018. Both factors could contribute to modest upward price pressure.”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 \$0.250 per therm in 2016 and the forecasted price rises to \$0.31 per therm in 2017 and \$0.34 per therm in 2018.⁴

As of July 7, 2017, natural gas in storage stood at 2,945 billion cubic feet (“Bcf”). The working gas in storage is down 9 percent from the same period a year ago, and is up by about 6 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 July 2017 is 61.17 cents (\$0.61) per therm, compared with 51.50 cents (\$0.52) per therm for the same period a year ago—up 19 percent. The PGC for July 2017 is down 6 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 July 20, 2017, the National Oceanic and Atmospheric Administration (“NOAA”) indicated that its outlook for August 2017 generally calls for above normal temperatures across much of the nation, with the highest probabilities for the Northern Great Plains—particularly portions of Montana, North Dakota, and South Dakota.⁶ Equal chances of below, near, or above normal temperatures are more likely across the southwestern portion of the nation. The expected weather for August may provide some upward pressure on natural gas prices.

As noted in the previous Outlook, on May 25, 2017, NOAA released its 2017 Atlantic Hurricane Outlook. In particular, NOAA indicates that a near-normal or above-normal hurricane season is most likely. In particular, the outlook calls for a 45% chance of an above-normal

³ EIA, *Short-Term Energy Outlook* (July 2017) at 8 and 9.

⁴ Ibid at 9.

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/>.

season, a 35% chance of a near-normal season, and a 20% chance of a below-normal season. NOAA calls for a 70% probability for each of the following ranges of activity during the 2017 hurricane season: 11-17 named storms, which includes Tropical Storm Arlene in April; 5-9 hurricanes; and 2-4 major hurricanes (rated at Category 3 or above, with a maximum sustained wind speed of at least 111 miles per hour). As of July 16, there have been three named storms and none have developed into a hurricane. 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. Thus far, there have been no significant impact on the energy infrastructure.

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.⁷ Reports from the twelve Districts indicated that economic activity expanded across all twelve regions in June, with the pace of growth ranging from slight to moderate. The majority of Districts also expected modest to moderate gains in the months ahead. Consumer spending appears to be rising across a majority of regions, led by increases in non-auto sales and tourism. Manufacturing and nonfinancial services activity continued to grow, with most Districts reporting modest to moderate gains since the last report. Residential and nonresidential construction activity was flat to expanding in most regions, with most Districts citing low home inventory levels in certain market segments which were constraining home sales in many areas. Employment across most of the nation maintained a modest to moderate pace of expansion as well. Labor markets tightened further for both low- and high-skilled positions, particularly in the construction and IT sectors. Wages continued to grow at a modest to moderate pace in most regions, and many firms attributed these wage gains to tighter labor market conditions. Wage pressures generally trended with employment conditions, and rising wage pressures were noted among both low- and high-skilled positions. At present, the current state of economic activity may still be relatively neutral for natural gas prices.

Storage

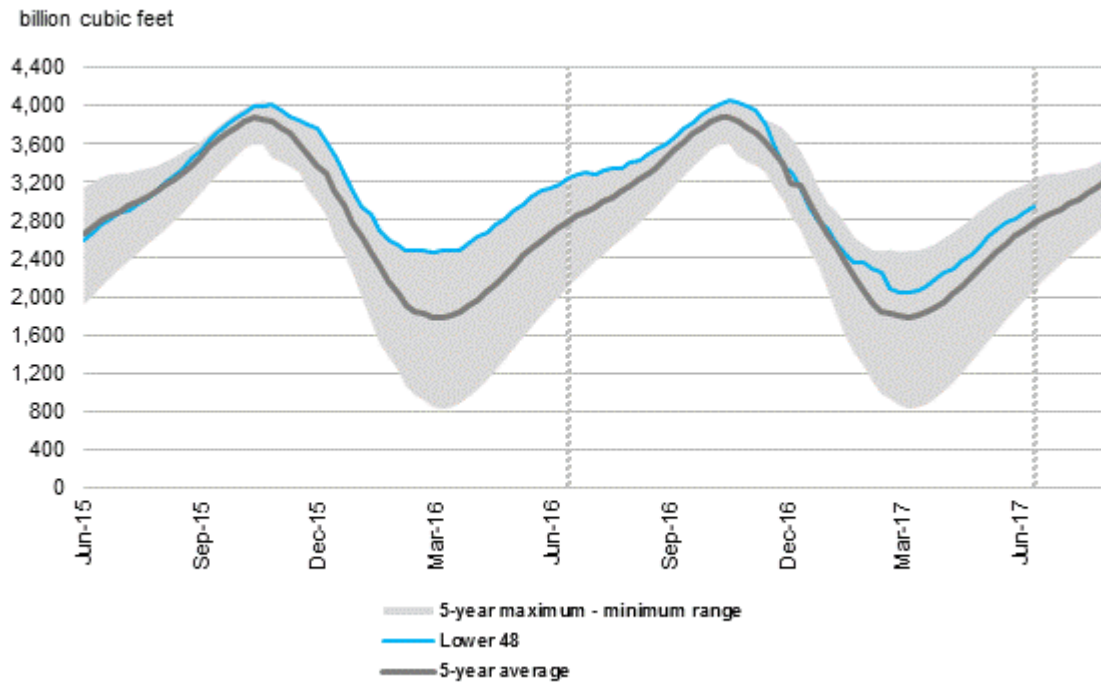
EIA reports that the working gas in storage was 2,945 Bcf as of July 9, 2017, a net increase of 57 Bcf from the previous week. Stocks were 289 Bcf lower than the same period a year ago—down 8.9 percent—and up 172 Bcf from the 5-year average of 2,773 Bcf—an increase of 6.2 percent.⁸ EIA indicates that inventory builds have been slightly below average thus far during the injection season, and expects inventories to be 3,940 Bcf at the end of October 2017, which would be 2 percent higher than the five-year average level for the end of October but 2% lower than the 2016 end-of-October level.⁹ Thus, the current storage picture appears relatively neutral for natural gas prices at this time.

⁷ Beige Book (released July 12, 2017).

⁸ EIA, *Weekly Natural Gas Storage Report* (released July 13, 2017).

⁹ EIA, *STEO* (July 2017) at 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 2012 through 2016. The dashed vertical lines indicate current and year-ago weekly periods.
Source: EIA, *Weekly Natural Gas Storage Report* (released July 13, 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 July 2017 STEO, EIA indicates that natural gas production is expected to rise through 2017 and 2018 in response to forecast price increases and large increases in liquefied natural gas (“LNG”) exports. Natural gas pipeline exports to Mexico have risen this year and EIA expects that growth to continue as Mexico undergoes an energy market reform—due to a relatively cheap natural gas export price, rising demand in Mexico, and increased pipeline takeaway capacity. EIA projects that the United States will become a net exporter of natural gas, on average, in 2017.¹⁰

National Security

As noted in previous reports, we see little danger to the natural gas supply.¹¹ Most of the U.S. supply is secure, in that it is generally domestically produced or imported from Canada.

¹⁰ EIA, *STEO* (July 2017) at 9.

¹¹ 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 \$0.61 per therm for July 2017 is down 6.4 percent from the previous month, and is up 18.8 percent compared to the same period a year ago.¹² The August 2017 PGC (assuming that the commodity market adjustment factor is zero) should remain around \$0.48 per therm, based, in part, on the expectation that near-term NYMEX futures prices continue to trade between \$0.28 and \$0.31 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).

¹² The commodity market adjustment factor for the July 2017 PGC was \$0.13 per therm, resulting in the adjusted PGC (excluding the commodity market adjustment factor ("CMAF")) being equal to \$0.4817 per therm.

Wholesale Natural Gas Price/Supply Assessment Information

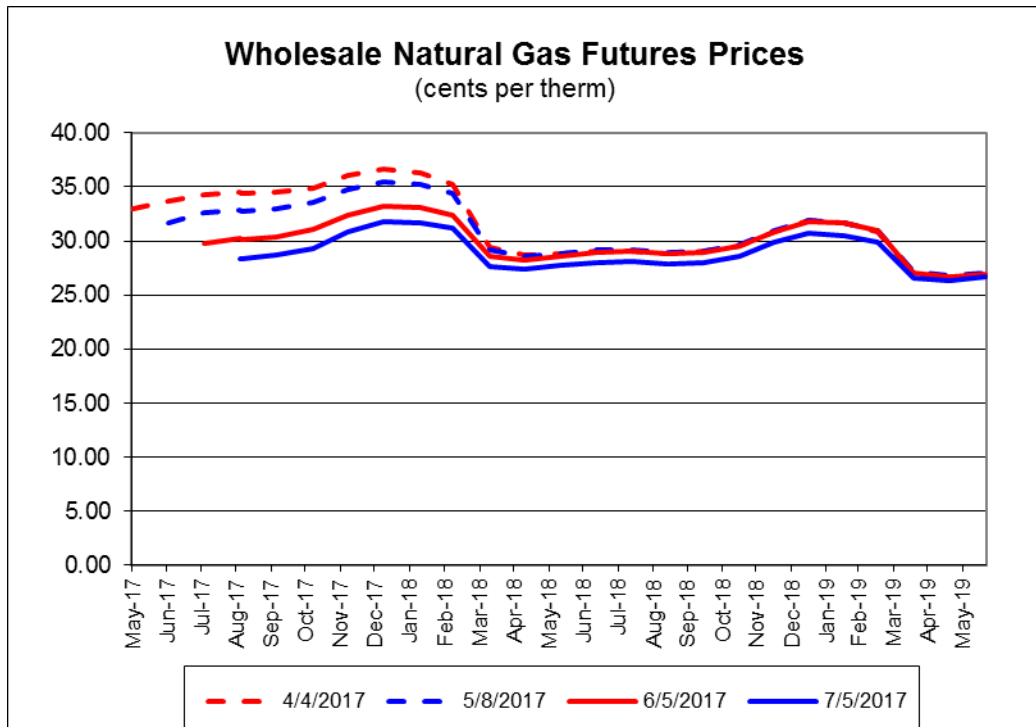
Current for July 5, 2017

Price Information

Twelve Month NYMEX Strip Components
7/5/17, cents per therm

Henry Hub Spot Market Price
7/5/17, cents per therm

	<u>Current Month</u>	<u>Previous Month</u>	<u>Current Only Available</u>
Aug 17	28.40	Aug 17 30.24	29.0
Sep 17	28.37	Sep 17 30.14	
Oct 17	28.65	Oct 17 30.36	
Nov 17	29.28	Nov 17 31.03	
Dec 17	30.85	Dec 17 32.41	
Jan 18	31.81	Jan 18 33.21	
Feb 18	31.68	Feb 18 33.05	
Mar 18	31.16	Mar 18 32.41	
Apr 18	27.69	Apr 18 28.64	
May 18	27.42	May 18 28.28	
Jun 18	27.71	Jun 18 28.60	
Jul 18	28.00	July 18 28.93	



The current PGC for July 2017 is about \$0.61 per therm. Assuming, among other things, that near-term futures prices remain around \$0.28 to \$0.31 per therm, the PGC rate (excluding the commodity market adjustment factor) for August 2017 may remain around \$0.48 per therm. However, given the uncertainty about the weather, as well as other factors, this assessment could easily change. The assessment for July 2017 is that wholesale prices may remain around \$0.30 per therm, resulting in wholesale prices that are at least 5 percent higher 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 July 17, 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 - N.A.
Not Applicable