**WHOLESALE NATURAL GAS MARKET ASSESSMENT**
**Wholesale Natural Gas Futures Prices as of August 4, 2017**

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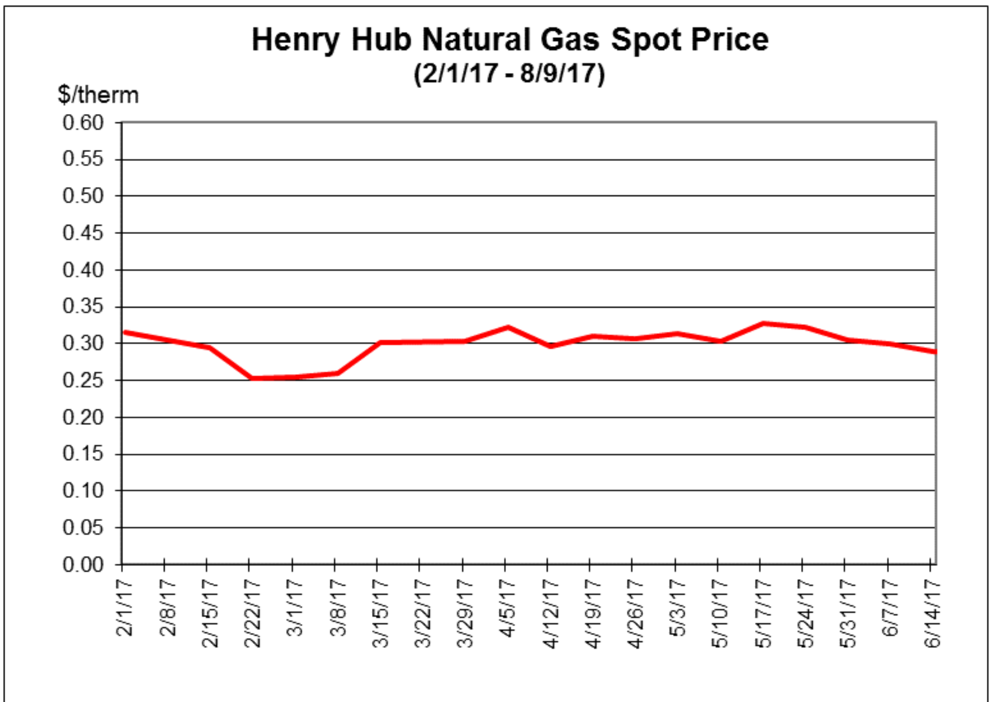
## Outlook for Wholesale Natural Gas Prices

This report presents the Office of Technical and Regulatory Analysis' ("OTRA") assessment of wholesale natural gas supply and prices for August 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 September 2017 (see Henry Hub Spot Price figure). Recent natural gas spot prices are up about 4 percent compared to prices for the same period a year ago.



Source: Energy Information Administration (spot price as of Wednesday of each week).

Data from the Energy Information Administration ("EIA") indicates that the average Henry Hub natural gas spot price for July 2017 was about $0.30 per therm, about the same as the previous month of June.[2] In its Short-Term Energy Outlook ("STEO") for August 2017, EIA indicates that **"[n]atural gas production in the Marcellus and Utica shales has risen substantially in recent years, often outpacing the growth of natural gas pipeline capacity. This growth has pushed regional natural gas prices lower relative to the benchmark Henry Hub price. [T]he difference between a regional natural gas price and the price at Henry Hub in Louisiana [such as] Dominion South in southeast Pennsylvania was [-$0.12 per**

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[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).

**therm] as of August 3, down from the average [difference] of [-$0.05 per therm] from January through May 2017. This price decrease reflects constrained pipeline takeaway capacity, which drives producers to lower their natural gas prices. Prior increases in takeaway capacity in the region have narrowed the [difference]. In November 2016, the Algonquin Incremental Market (AIM) expansion began service, and it likely contributed to the [ ] narrowing by more than [$0.10 per therm]…. However, the Federal Energy Regulatory Commission certified several new natural gas pipeline projects for the region earlier this year. Once new capacity comes on line, especially from the Atlantic Sunrise and Rover pipeline projects, the [difference] with Henry Hub could narrow."**[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 August 4, 2017, natural gas in storage stood at 3,038 billion cubic feet ("Bcf"). The working gas in storage is down 8 percent from the same period a year ago, and is up by about 2 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 August 2017 is 62.97 cents ($0.63) per therm, compared with 51.50 cents ($0.52) per therm for the same period a year ago—up 22 percent. The PGC for August 2017 is up 3 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 August 11, 2017, the National Oceanic and Atmospheric Administration ("NOAA") indicated that its outlook into early September 2017 generally calls for above normal temperatures west of the Rocky Mountains, across the northern Great Lakes region and the Northeast.[6] Below normal temperatures are predicted for a region of the Central and Southern Plains into parts of the Lower Mississippi Valley. Equal chances of below, near, or above normal temperatures are more likely for large areas of the central and southeastern portions of the nation. The expected weather for early September, at least, may be neutral for natural gas prices.

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3 EIA, *Short-Term Energy Outlook* (August 2017) at 9.

4 Ibid at Table 1.

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/.

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 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 August 13, there have been seven named storms, but only one has 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 Open Market Committee ("FOMC") held its target range for short-term interest rates at a relatively low 1 to 1-1/4 percent.[7] The FOMC indicated that information received since the Committee met in June indicates that the labor market has continued to strengthen and that economic activity has been rising moderately. Job gains have been solid, on average, since the beginning of the year, and the unemployment rate has declined—down to 4.3 percent in July, compared to 4.8 percent in January. Household spending and business fixed investment have continued to expand. On a 12-month basis, overall inflation and the measure excluding food and energy prices have declined and are running below 2 percent—which is a target level for the FOMC. 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 3,038 Bcf as of August 4, 2017, a net increase of 28 Bcf from the previous week. Stocks were 275 Bcf lower than the same period a year ago—down 8.3 percent—and up 61 Bcf from the 5-year average of 2,977 Bcf—an increase of 2.0 percent.[8] EIA indicates that inventory builds have been slightly below average thus far during the injection season due to relatively high electric sector demand (associated with warmer than normal temperatures on average), high levels of natural gas exports, and storage levels that were already above average at the start of the refill season.[9] Thus, the current storage picture appears relatively neutral for natural gas prices at this time.

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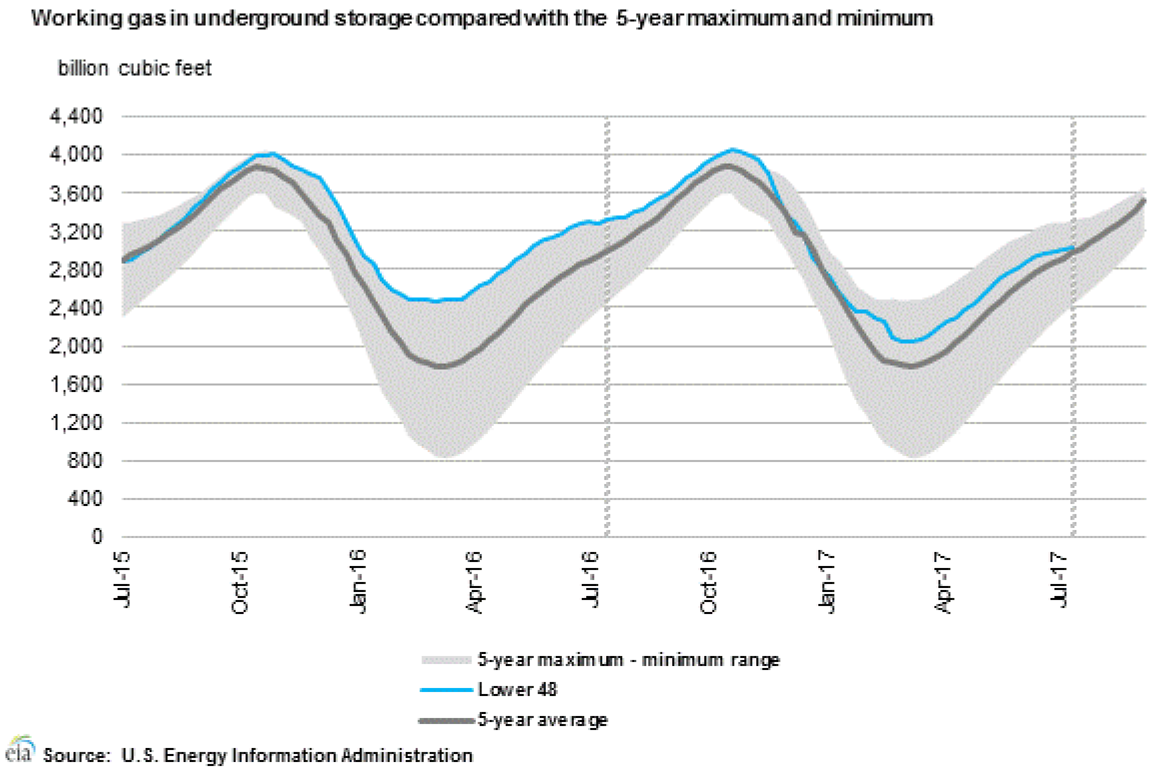
7 Statement of the Federal Open Market Committee (released July 26, 2017).

8 EIA, *Weekly Natural Gas Storage Report* (released August 10, 2017).

9 EIA, *Natural Gas Weekly Outlook* (released August 10, 2017).




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 August 10, 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 August 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. 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.[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 $0.63 per therm for August 2017 is up 2.9 percent from the previous month, and is up 22.3 percent compared to the same period a year ago.[12] The September 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).

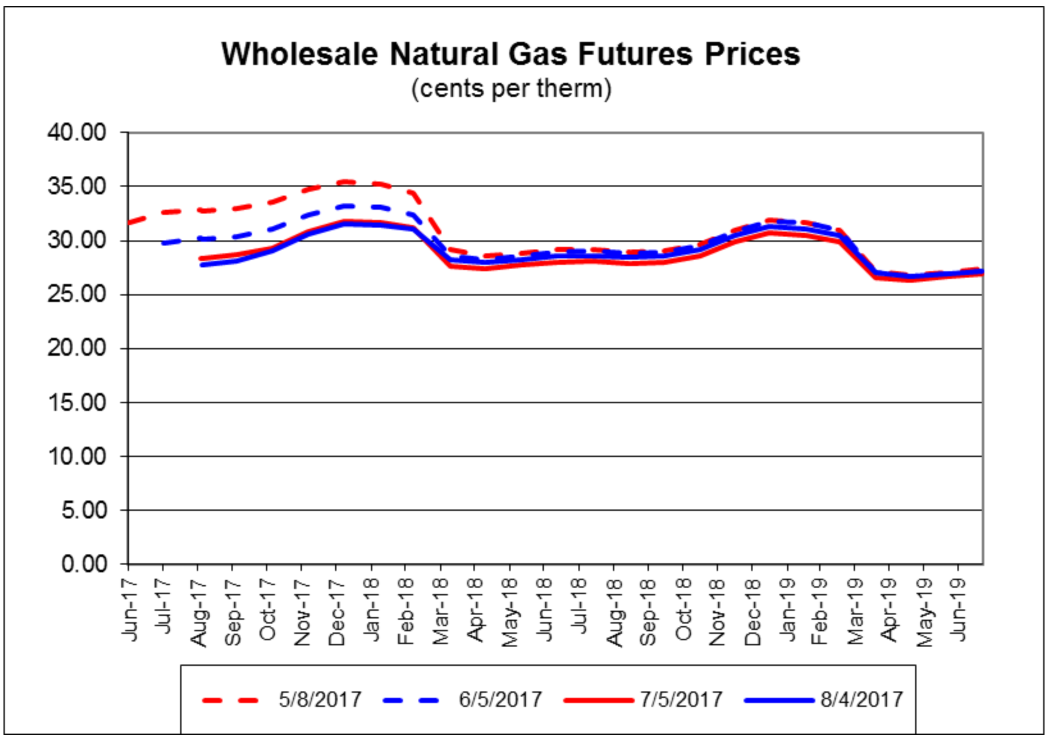
[12] The commodity market adjustment factor for the August 2017 PGC was $0.13 per therm, resulting in the adjusted PGC (excluding the commodity market adjustment factor ("CMAF")) being equal to $0.4997 per therm.

## Wholesale Natural Gas Price/Supply Assessment Information

Current for August 4, 2017

Price Information

| Twelve Month NYMEX Strip Components 8/4/17, cents per therm | | | | | | | Henry Hub Spot Market Price 8/4/17, cents per therm |
|---|---|---|---|---|---|---|---|
| Current Month | | | | Previous Month | | | Current Only Available |
| Sep | 17 | 27.74 | | Sep | 17 | 28.37 | 27.6 |
| Oct | 17 | 28.17 | | Oct | 17 | 28.65 | |
| Nov | 17 | 29.06 | | Nov | 17 | 29.28 | |
| Dec | 17 | 30.65 | | Dec | 17 | 30.85 | |
| Jan | 18 | 31.58 | | Jan | 18 | 31.81 | |
| Feb | 18 | 31.49 | | Feb | 18 | 31.68 | |
| Mar | 18 | 31.09 | | Mar | 18 | 31.16 | |
| Apr | 18 | 28.22 | | Apr | 18 | 27.69 | |
| May | 18 | 28.02 | | May | 18 | 27.42 | |
| Jun | 18 | 28.29 | | Jun | 18 | 27.71 | |
| Jul | 18 | 28.56 | | July | 18 | 28.00 | |
| Aug | 18 | 28.61 | | Aug | 18 | 28.08 | |



The current PGC for August 2017 is about $0.63 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 September 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 August 2017 is that wholesale prices may remain around $0.30 per therm, resulting in wholesale prices that are roughly 4 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
## August 14, 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.