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RAILROAD COMMISSION OF TEXAS
Gas Services Division
Market Oversight Section

July 22, 2013

# Natural Gas Trends

## Highlights

**Gas to generate 54.5% of power by 2038: B&V**

Power-sector demand for natural gas is expected to grow 2.57% annually, with more than 403,000 MW of new gas-fired capacity expected in the US by 2038, Black & Veatch officials predicted Tuesday.

The consulting firm's latest projection represents a 17% jump from its previous forecast as it cited technology advancements and increased coal plant retirements.

B&V estimated that the share of gas-fired capacity will rise significantly over the next 25 years, with combined-cycle generation increasing from 21.6% of the US mix to more than 54.5% by 2038. Subsequently, coal's share of the generation mix is expected to decrease from 43% to 21 % over the same period.

The firm's analysts expect 58.7 GW of coal-fired plant retirements by 2020, with near-term retirements driven by the Environmental Protection Agency's Mercury and Air Toxics Standards compliance, although this will largely affect smaller, older coal-fired units.

The forecast called for sharp growth in gas demand in North America overall, from about 62 Bcf/d in 2013 to 108 Bcf/d in 2038. In particular, demand for electric generation is expected to nearly double in the next 20 years, with an economic recovery driving modest near-term growth in residential, commercial and industrial use, according to B&V.

At the same time, B&V analysts expect Henry Hum spot gas prices to rise steadily. "Natural gas is rising in real dollars from the $4 to $5[/MMBtu] level in 2020 to the $6[/MMBtu] level in 2025," said Ann Donnelly, director of natural gas and power fuels. "Coal again can compete. Dry gas will be more profitable and more profitable to drill for, but not as profitable compared to [natural gas liquids] and crude oil."

B&V, which collaborated with the John T. Boyd Company, a mining consultant, for its coal forecasts, predicted that coal demand will rise until 2015 as longer-term gas prices climb.

Between 2016 and 2019, B&V analysts predict relatively constant demand for coal, with profoundly negative impacts beyond 2020 with the imposition of greenhouse gas regulations and MATS compliance.

Despite that bleak long-term coal demand outlook, prices will rise to levels necessary to sustain an ongoing industry in the face of deteriorating reserves, rising costs and required new mine replacement, according to John T. Boyd.

It also said Illinois Basin coal should fare better than others due to price and location advantages, while Central Appalachian coal will see protracted declines due to rising labor costs and more regulation.

Analysts at B&V also said attractive gas prices will slow nuclear development, and to expect deferrals and cancellations of new units to continue with a decline in nuclear resources over the next 25 years. Source: Platts Gas Daily

## Data

- August 2013 Natural Gas Futures Contract (as of July 19), NYMEX at Henry Hub closed at $3.789 per million British thermal units (MMBtu)
- August 2013 Light, Sweet Crude Oil Futures Contract WTI (as of July 19), closed at $108.05 per U.S. oil barrel (Bbl.) or approximately $18.63 per MMBtu

### Last week: Texas and U.S. warmer than normal

For the week beginning 7/14/13 and ending 7/20/13, cooling degree days (CDD) were lower than normal (warmer) for the week in Texas but still higher than normal year to date for both Texas and for the US. 6ł°ß˝ˇ: www.cpc.ncep.noaa.gov

**COOLING DEGREE DAYS (CDD)**

| City or Region | Total CDD for week ending 7/20/13 | *Week CDD + / - from normal | Year-to-date total CDD | * YTD % +/- from normal |
|---|---|---|---|---|
| Amarillo | 54 | -40 | 891 | 36% |
| Austin | 123 | -15 | 1448 | 1% |
| DFW | 106 | -34 | 1296 | 6% |
| El Paso | 89 | -37 | 1542 | 28% |
| Houston | 111 | -19 | 1528 | 7% |
| SAT | 134 | -6 | 1591 | 7% |
| Texas** | 105 | -23 | 1357 | 4% |
| U.S.** | 97 | 23 | 666 | 15% |

* A minus (-) value is cooler than normal; a plus (+) value is warmer than normal. NOAA uses 65° Fahrenheit as the 'normal' basis from which HDDs are calculated.
** State and U.S. degree days are population-weighted by NOAA.

-999 = Normal Less Than 100 or Ratio Incalculable

### Last week: U.S. natural gas storage at 2,745 Bcf

For the week ending 7/12/2013 working gas in storage increased from 2,687 Bcf to 2,745 Bcf. This represents an increase of 58 Bcf from the previous week. Stocks were 414 Bcf lower than last year at this time and 34 Bcf below the 5 year average of 2,779 Bcf.

Source: http://ir.eia.gov/ngs/ngs.html

**U.S. WORKING GAS IN STORAGE**

| Region | Week ending 7/12/13 | Prior week | One-week change | Current Δ from 5-YR Average (%) |
|---|---|---|---|---|
| East | 1,281 | 1,244 | 37 | -7.3% |
| West | 451 | 445 | 6 | 7.4% |
| Producing | 1,013 | 998 | 15 | 3.7% |
| Lower 48 Total | 2,745 | 2,687 | 58 | -1.2% |

Lower 48 states, underground storage, units in billion cubic feet (Bcf)

## Last week: U.S. gas rig count increasing

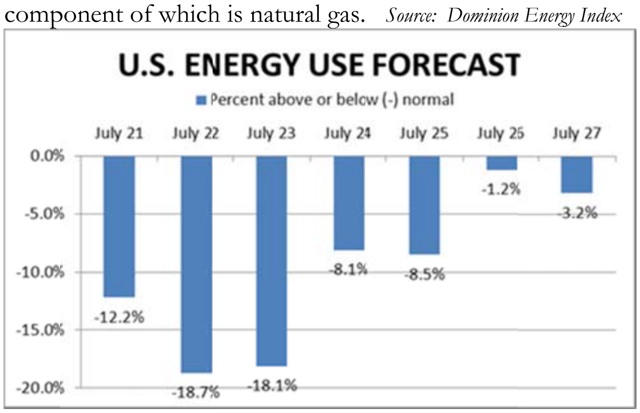
The gas rig count for the U.S. was up seven when compared to the prior week but was down 149 when compared to twelve months ago. The total rig count for the U.S. was up eleven for the week and down 165 when compared to twelve months ago. The total rig count includes both oil and natural gas rotary rigs.

Source: Baker Hughes

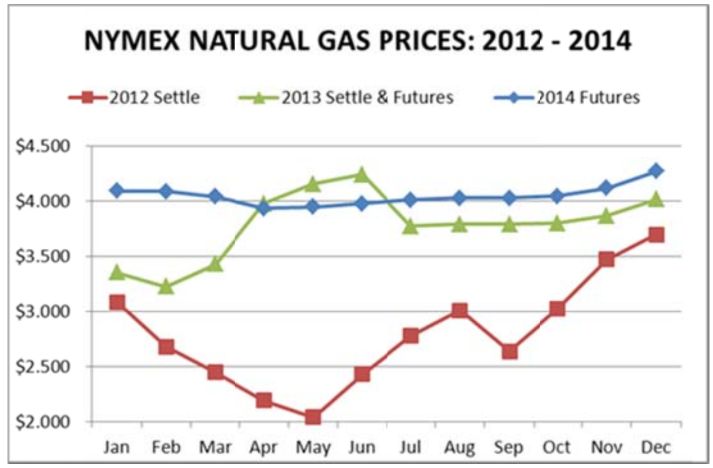
| BAKER HUGHES ROTARY RIG COUNT | | | | |
|---|---|---|---|---|
| | As of 7/19/2013 | +/- prior week | Year ago | +/- year ago |
| Texas | 845 | 9 | 900 | -55 |
| U.S. gas | 369 | 7 | 518 | -149 |
| U.S. oil | 1395 | 4 | 1414 | -19 |
| U.S. total | 1770 | 11 | 1935 | -165 |
| Canada | 324 | 30 | 328 | -4 |

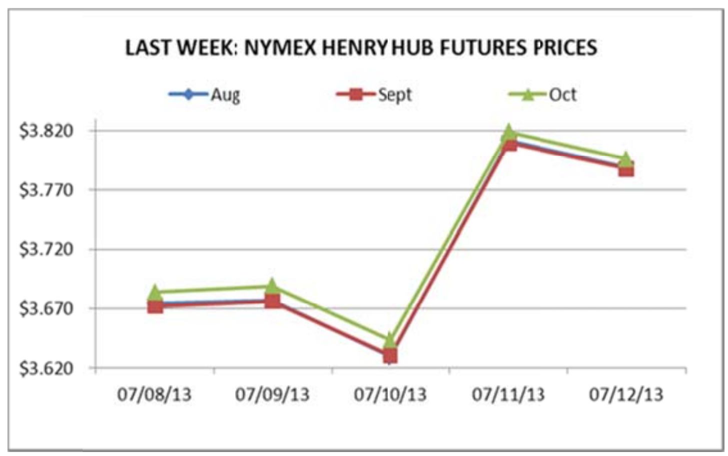
## This week: U.S. energy use above normal

U.S. energy use is predicted to be above normal for most of the week, according to the Dominion Energy Index, as shown below. Dominion forecasts total U.S. residential energy usage, a component of which is natural gas. *Source: Dominion Energy Index*




2013 prices. Natural gas prices for 2013, shown below in green, are the NYMEX settlement prices for January-July and the futures prices for the remaining months of 2013.




**NATURAL GAS PRICE SUMMARY AS OF 7/19/2013**

| | This Week | +/- Last Week | +/- Last Year | 12-Month Strip Avg. |
|---|---|---|---|---|
| US August futures | | | | |
| NYMEX | $3.789 | $0.145 | $1.015 | $3.944 |