DAVID PORTER, Chairman
CHRISTI CRADDICK, Commissioner
RYAN SITTON, Commissioner

RAILROAD COMMISSION OF TEXAS
Oversight and Safety Division
Market Oversight Section

July 11, 2016

Natural Gas Trends

Highlights

US LNG exports driving break from oil-linkage

The expected growth of US LNG exports is driving a transformation in the global market that could lead to the end of oil-linked pricing, according to Friday's Bernstein Research report. Recent changes in market sentiment, pricing and perceived security of supply have sped the push for a decoupling of LNG and oil prices, coming particularly from Asian consumers. In May, the call for change appeared to reach an inflection point when Japan's Ministry of Economy, Trade and Industry declared the LNG to crude linkage as "no longer justifiable." Since the advent of the LNG industry in the 1960s, oil-linked pricing has served an important function in the industry. For sellers, long-term contracts provide certainty for offtake volumes and pricing. For buyers, such contracts offer security of supply. And contracts have reduced investment risks for financiers that have invested billions on liquefaction and export projects. While the shift away from the added security offered by oil-linked contracts appears to be global, US exports have played an important role in that evolution, according to Bernstein.

US exports fortify buyers' market sentiment

The expected growth of US LNG exports is responsible, in several ways, for the drive away from oil-linked pricing. First, US exports contribute to a market sentiment characterized by oversupply. This situation according to Bernstein, is giving buyers a chance to "flex their muscles," by calling for changes to contracts and pricing. US exports thus far have contributed only marginally to excess supply. However, broad expectations for a buyer's market through the end of the decade depend quite heavily on the global availability of US natural gas. Second, US LNG is about more than the export of US natural gas – it's about the export of Henry Hub-linked pricing. The distinction points to the growing relevance of Henry Hub-linked hedging and trading for global natural gas buyers. Finally, the growth of US shale gas supply has fortified that notion of "a gas-long world in the mind of many," said Bernstein. Thus, diminishing concerns over security of supply are giving buyers greater confidence in the market and reducing the perceived need for long-term contracts.

Asian market poses challenges to hub pricing

While buyers seem more ready now than ever to move away from oil-linked LNG pricing, several attributes of the Asian gas market pose challenges to the emergence of hub-based pricing. The phasing-out of oil-linked LNG in Asia, according to Bernstein, depends heavily on the viability of natural gas trading hubs in the region. In order for a trading hub to emerge, the market must first offer open access – not only to LNG terminals, but also to storage and international pipelines. Secondly, a hub must provide fully transparent and trustworthy pricing mechanisms. Third, a hub must be liquid enough to support spot pricing along with forwards, futures and swaps markets. Bernstein identifies Singapore, Shanghai and Tokyo as potential candidates for an Asian gas hub, but notes that none of them is yet capable of meeting all three of the above-named requirements. What Singapore offers in open access and transparency, it lacks in liquidity – a factor that would be difficult to build up on a small island nation. While Shanghai is a highly liquid and well-connected market, open access and transparency are questionable at best, according to Bernstein. Tokyo, meanwhile, offers liquidity and has been working on building up transparency. As an island nation with a highly segmented gas grid though, Japan is lacking in connectivity and open access.

Source: Platts Gas Daily

Data

- Aug. 2016 Natural Gas Futures Contract (as of July 8 NYMEX at Henry Hub closed at $2.801 per million British thermal units (MMBtu)
- August 2016 Light, Sweet Crude Oil Futures Contract WTI (as of July 8), closed at $45.41 per U.S. oil barrel (Bbl.) or approximately $7.83 per MMBtu

Last week: Texas warmer than normal last week

For the week beginning 7/3/16 and ending 7/9/16, cooling degree days (CDDs) were higher than normal (warmer) on average for the week and for the year to date for most of the Texas cities shown.

Source: www.cpc.ncep.noaa.gov

COOLING DEGREE DAYS (CDD)

City or Region	Total CDD for week ending 7/9/16	*Week CDD + / - from normal	Year-to-date total CDD	* YTD % +/- from normal
Amarillo	131	40	630	24%
Austin	164	31	1224	0%
DFW	148	14	1191	18%
El Paso	176	50	1205	20%
Houston	168	42	1308	7%
SAT	166	33	1352	6%
Texas**	149	25	1221	10%
U.S.**	80	11	545	17%

-999 = Normal Less Than 100 or Ratio Incalculable

* 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.

Last week: U.S. natural gas storage at 3,179 Bcf

For the week ending 7/01/2016 working gas in storage increased from 3,140 Bcf to 3,179 Bcf. This represents an increase of 39 Bcf from the previous week. Stocks were 538 Bcf higher than last year at this time and 599 Bcf above the 5 year average of 2,580 Bcf. Source: http://ir.eia.gov/ngs/ngs.html

U.S. WORKING GAS IN STORAGE

Region	Week ending 7/01/16	Prior week	One-week change	Current Δ from 5-YR Average (%)
East	654	632	22	10.1%
Midwest	764	742	22	26.5%
Mountain	202	198	4	35.6%
Pacific	313	315	-2	3.3%
South Central	1,246	1,253	-7	33.8%
Lower 48 Total	3,179	3,140	39	23.2%

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

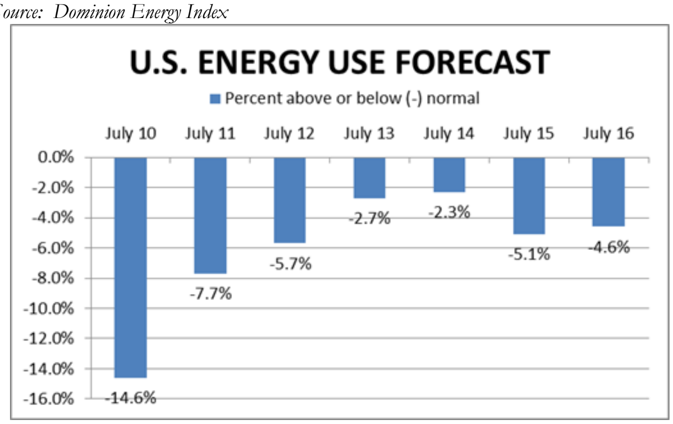
Last week: U.S. gas rig count down for the week

The gas rig count for the U.S. was down one for the week and down 129 when compared to twelve months ago. The total rig count for the U.S. was up nine compared to last week and down 423 when compared to twelve months ago. The total rig count includes both oil and natural gas rotary rigs.
Source: Baker Hughes

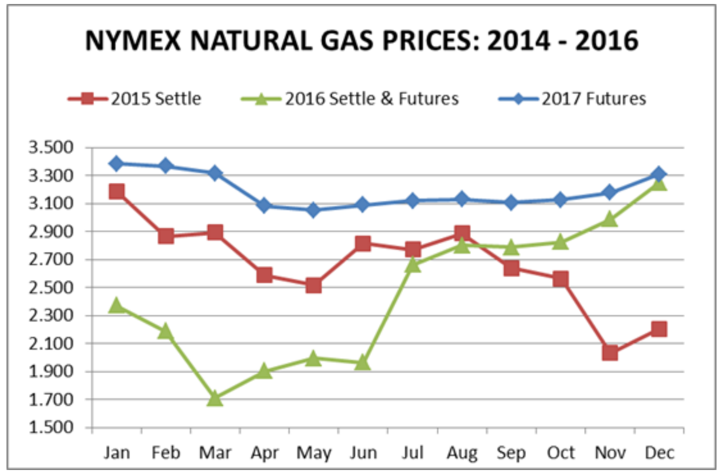
BAKER HUGHES ROTARY RIG COUNT				
	As of 7/8/2016	+/- prior week	Year ago	+/- year ago
Texas	201	3	368	-167
U.S. gas	88	-1	217	-129
U.S. oil	351	10	645	-294
U.S. total	440	9	863	-423
Canada	81	5	169	-88

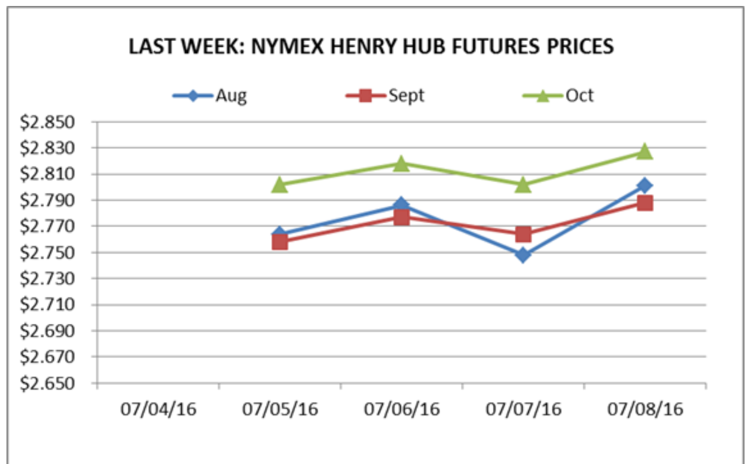
This week: U.S. energy use below average

U.S. energy use is predicted to be below average this 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



2016 prices. Natural gas prices for 2016, shown below in green, are the NYMEX settlement prices for Jan-June and futures prices for the year.





*7/4/16 Data is unavailable due to the July 4th holiday.

NATURAL GAS PRICE SUMMARY AS OF 7/8/2016

	This Week	+/- Last Week	+/- Last Year	12-Month Strip Avg.
US August futures				
NYMEX	$2.801	-$0.186	-$0.927	$2.664