

December 13, 2010

# Natural Gas Trends

## Highlights

### STUDY FORECASTS UP TO 10% INCREASE IN DEMAND FOR NATURAL GAS

The Brattle Group, a consulting firm specializing in economics, finance and regulatory matters, released on 12/8/2010 the results of a study of emerging U.S. air and water quality regulations and the potential effects of such regulations on the energy industry. Economists Metin Celebi and Frank Graves, authors of the study, conclude that emerging U.S. air and water quality regulations applicable to coal-fired electric power plants could ultimately lead to an increase in daily demand for natural gas of up to 5.8 billion cubic feet (Bcf) or, approximately, up to 10% of total gas demand. Here's why:

- Celebi and Graves analyzed each U.S. coal plant to determine whether the cost of compliance with emerging regulations would be more or less than expected revenues. Based on their analysis, the two economists projected that about 20% of existing coal plants would retire because the cost of compliance with regulations would exceed expected revenues.
- Celebi and Graves project that the remaining 80% of non-retired coal plants would invest up to \$180 billion to install emissions control equipment and cooling towers to come into compliance with new air and water quality regulations.
- According to Celebi and Graves, projected coal plant retirements and projected increases in operating costs for non-retired coal plants could result in a 15% reduction in demand for coal by the year 2020.
- In the study, the two Brattle economists assume that 100% of electric generation capability lost from retired coal plants would be replaced by natural-gas fired combined-cycle generating plants – resulting in an increase in natural gas demand of up to 5.8 Bcf/d.

A copy of Metin Celebi's 12/8/2010 presentation titled *Potential Coal Plant Retirements Under Emerging Environmental Regulations* at a recent conference is available at: [www.brattle.com](http://www.brattle.com)

## Data

- January Natural Gas Futures Contract (Dec 10), NYMEX at Henry Hub closed at \$4.417 per million British Thermal Units (MMBtu)
- January Light, Sweet Crude Oil Futures Contract (Dec 10), NYMEX at Cushing closed at \$87.79 per U.S. oil barrel (Bbl.) or approximately \$13.98 per MMBtu

### Last week: Texas, U.S. cooler than normal

For the week beginning 12/5/10 and ending 12/11/10, heating degree days were higher than normal for Texas and the U.S. For the heating season (7/1/10 to 6/30/11), cumulative heating degree days are 7% below normal for Texas and 4% below normal for the U.S. Source: [www.cpc.ncep.noaa.gov](http://www.cpc.ncep.noaa.gov)

#### HEATING DEGREE DAYS (HDD)

City or Region	Total HDD for week ending 12/11/10	* Week HDD +/- from Normal	Year-to-date total HDD	* YTD % +/- from Normal
Amarillo	175	- 13	929	- 21 %
Austin	125	+ 43	430	+ 18 %
Dallas – FW	127	+ 9	429	- 21 %
El Paso	94	- 41	523	- 24 %
Houston	93	+ 18	287	- 16 %
San Antonio	95	+ 15	300	- 15 %
Texas**	112	+ 15	436	- 7 %
U.S.**	206	+ 34	1135	- 4 %

\* A minus (-) value is warmer than normal; a plus (+) value is cooler 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. Gas Storage at 3,725 Bcf

For the week ending 12/3/2010, U.S. working gas in storage declined from 3,814 to 3,725 Bcf compared to 3,782 Bcf in storage a year ago and compared to an average of 3,393 Bcf in storage during the 5-year period from 2005 to 2009. Working gas in storage in the producing region (which includes Texas) increased from 1,263 to 1,246 Bcf. Source: [www.eia.doe.gov](http://www.eia.doe.gov)

#### U.S. WORKING GAS IN STORAGE

Region	Week ending 12/3/10	Prior Week	One-week Change	Current Δ from 5-YR Avg (%)
East	2002	2053	- 51	+ 4.2 %
West	477	498	- 21	+ 3.2 %
Producing	1246	1263	- 17	+ 23.4 %
Lower 48 Total	3725	3814	- 89	+ 9.8 %

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

**Last week: Gas Rig Count Down 13 to 948**

The gas rig count for the U.S. was down 13 last week and up 191 when compared to 12 months ago. The U.S. total rig count was up 10 last week and up 562 when compared to 12 months ago.

Source: Baker Hughes

**BAKER HUGHES ROTARY RIG COUNT**

	As of 12/10/10	+/- Prior Week	Year Ago	+/- Year Ago
U.S. total	1723	+ 10	1161	+ 562
Gas	948	- 13	757	+ 191
Oil	763	+ 21	393	+ 370
Texas	753	+ 4	458	+ 295
N. Amer.	2205	+ 43	1515	+ 690

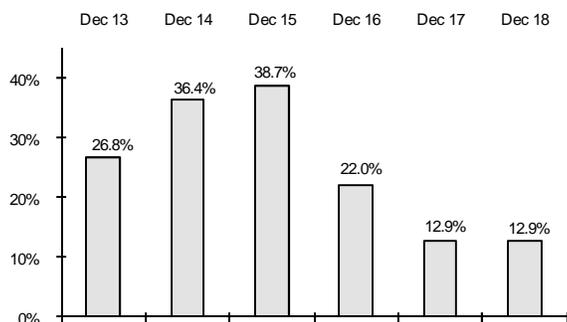
Numbers are excerpted and not meant to be totaled

**This week: U.S. Energy Use Higher Than Normal**

U.S. energy use is forecasted to be higher than normal this week, according to the Dominion Energy Index, as shown below. The index forecasts total U.S. residential energy usage, a component of which is natural gas.

Source: Dominion Energy Index

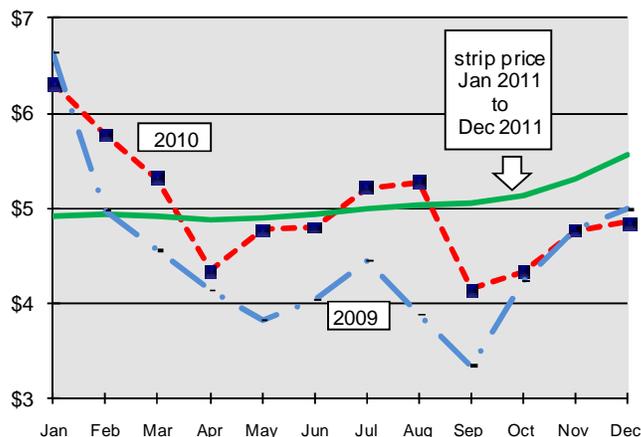
**U.S. ENERGY USE FORECAST**



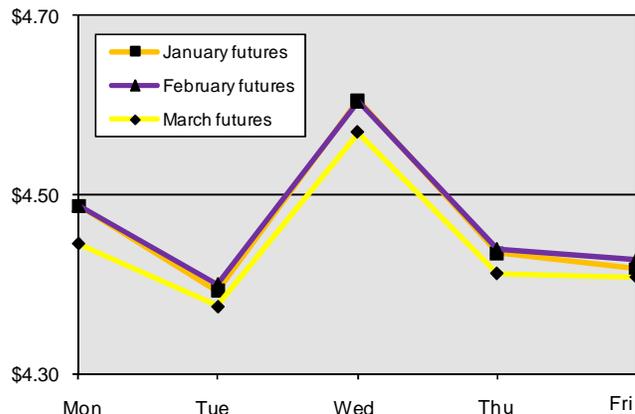
**GAS PRICE SUMMARY AS OF 12/10/10**

	This Week	+/- Last Week	+/- Last Year	12-Month Strip Avg.
US January futures				
NYMEX	\$4.417	\$0.068	-\$1.397	\$4.546

**NYMEX HENRY HUB FUTURES PRICES**



**NYMEX NATURAL GAS PRICE MOVEMENT 12/6/10 - 12/10/10**



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