



HORNSBY & COMPANY, INC.

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Energy Risk  
Management Services

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## U.S. Natural Gas Perspectives Monthly Review and Outlook

### Summary

Over the past month the prompt NYMEX natural contract has risen by more than \$1.50 per mmBtu. Aiding natural's gain has been firmer crude oil prices in the month of May along with the impact of prolonged downtime at Independence Hub, which is now in the process of coming back online. In addition, however, with the hurricane season and potential for summer heat waves in view, traders and funds are not only reluctant to sell natural, but are covering previously established short positions, in some cases as a hedge against crude oil longs. It is obviously uncertain as to what, if any, impact on natural gas supplies any prospective hurricane activity may have on supplies, but there is no question that the summertime gas market will be particularly sensitive this year to any potential downtime. This is despite strong domestic production gains thus far in 2008 as well as the fact that manufacturing activity remains relatively weak. From a fundamental standpoint, some analysts remain convinced that we will enter the 2008-2009 heating season setting yet another working storage record. Our balances, while somewhat revised from last month's report, continue to point to adequate supplies, but no significant surplus at the end of October. We are looking for a modest easing of domestic dry gas production growth toward the end of the year, with LNG imports coming in below the 2007 level for 2008 as a whole.

From the standpoint of price, although we expect a smaller net draw in working storage for this year than previously forecast, we have revised up modestly our price expectations both in line with the experience of May and our updated outlook for WTI for the remainder of the year. Our short-term model is now "recalibrated" for September, and our model suggests a September (basis October NYMEX) target of \$10.75 per mmBtu. For 2008 overall, we are now looking for a prompt NYMEX/Henry Hub average of around \$9.60 per mmBtu, marking an upward revision from last month's report by about \$.55 per mmBtu, consistent with our modest upward revision to our outlook for WTI.

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- + U.S. natural gas demand is expected to rise by 2.8%, or some 655 bcf this year.
  - + Domestic dry gas production is forecast to gain by 4.9%, or around 945 bcf in 2008.
  - + Our balances now imply a net draw in working storage for this year of about 35 bcf.
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## Viewpoint

Since the publication of our last monthly report the prompt NYMEX natural contract has risen by more than \$1.50 per mmBtu. As we issue this month's analysis, July is trading at around \$12.75 per mmBtu, aided by the recovery in crude oil prices back toward the all-time record highs.

Firmer crude oil prices for the month of May as a whole supported natural, along with the impact of prolonged downtime at Independence Hub which is now in the process of returning online.

In addition, however, as we move into hurricane season and with potential for summer heat waves ahead, traders and funds are not only reluctant to sell natural, they are covering previously established shorts, in some cases as a hedge against long crude oil positions.

Over the past month, CFTC-reporting active funds reduced their net shorts by a modest 2,247 contracts, and still held a substantial 69,708 contract net short position as of May 27. These funds have been net short natural gas since February 27 of last year.

It is clearly uncertain at this time as to how potentially severe hurricane activity may impact natural gas supplies. However, there is no question that summertime gas prices will be particularly sensitive this year to any possible downtime given market sentiment, irrespective of the underlying fundamental balance.

Such price support is likely despite the fact that the industry has been able to realize strong domestic production gains thus far in 2008. On the demand side of the equation, manufacturing activity remains relatively weak.

Some analysts remain convinced that we will enter the 2008-2009 heating season setting yet another working storage record precisely because of robust production in the context of moderating demand.

Our balances, while somewhat revised from last month's report, continue to imply adequate volumes in storage, but no significant surplus at the end of October.

We are looking for a modest easing of domestic dry gas production growth toward the end of the year, with LNG imports coming in below the total of 2007 for 2008 as a whole.

Thus far our conservative LNG import assumption appears close to the mark.

With regard to price, although we expect a smaller net draw in working storage for this year than previously forecast, we have revised up modestly our price expectations reflecting the actual experience of May as well as our updated outlook for WTI for the remainder of 2008.

Our short-term model is now "recalibrated" for September, suggesting a September (basis October NYMEX) target of \$10.20 per mmBtu.

For 2008 overall, we are now looking for a prompt NYMEX/Henry Hub average of around \$9.60 per mmBtu, an upward revision from last month's report by about \$.55 per mmBtu, consistent with our modest upward revision to our outlook for WTI as discussed in our most recent World Petroleum Perspectives.

## Demand: Review and Outlook

The DOE has now reported, at least on a preliminary basis, first quarter U.S. natural gas consumption. The data reveal that total demand including all sectors gained by 3.6%, or some 260 bcf versus the first quarter of 2007.

In the residential sector, first quarter demand gained by 1.5%, or about 35 bcf. Despite evidence of conversions from heating oil to natural gas, consumers were able to reduce consumption per heating degree day for the quarter overall. The month of January was colder than January of 2007, but by March consumers had cut demand per heating degree day overall by about 11.5%.

First quarter industrial sector demand rose by 5.9%, or some 105 bcf. Manufacturing activity had begun to moderate, but preferential gas pricing in select markets as oil prices rose led to temporary fuel switching. Gas demand per unit of manufacturing activity was 3.9% higher than in the first quarter of 2007.

Some switching also occurred in the electric utility sector, where first quarter natural gas demand gained by 3.5%, or 45 bcf. The DOE reported that toward the end of 2007 and into 2008, on a BTU basis the gap between average delivered natural gas and residual fuel oil prices had widened.

Since the first quarter, however, economic growth has clearly moderated. Our customary table below reveals that manufacturing activity for the eight largest industrial consumers of natural gas weakened, on average, from March versus the prior year.

**Eight Largest Industrial Consumers  
Of Natural Gas  
April Manufacturing Output**

<b>Industry</b>	<b>YOY %Chg. Output</b>
<b>Chemicals</b>	<b>-0.6</b>
<b>Petroleum and Coal</b>	<b>+1.9</b>
<b>Primary Metals</b>	<b>+2.9</b>
<b>Paper</b>	<b>-2.7</b>
<b>Food</b>	<b>+1.0</b>
<b>Non-Metallic Mineral Fabricated Metal</b>	<b>-2.7 +0.2</b>
<b>Transportation Equip.</b>	<b>-7.4</b>

The Federal Reserve Board reported that total manufacturing activity in April declined by 0.3% from April 2007, broadly in line with our own assumptions for the second quarter. While still falling short of an “official” recession, we remain conservative in our outlook, not assuming any recovery in industrial production until the fourth quarter.

Looking at total U.S. natural gas demand and assuming normal weather for the third and fourth quarters, our latest outlook suggests a 2.8%, or 655 bcf increase in 2008 versus 2007, with almost 40% of the forecast rise in demand having occurred in the first quarter.

**Supply:  
Review and Outlook**

As we issue this report Independence Hub is in the process of coming back online, and we have incorporated such a recovery into our outlook for the remainder of the year.

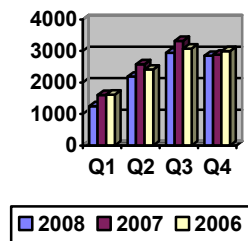
Looking at each component of supply, domestic dry gas production gains continue to be impressive thus far this year, with the DOE

reporting a first quarter rise of 9.5%, or some 40 bcf versus the first quarter of last year.

While we concede that this rate of growth could continue through the remainder of the year, we have assumed that decline rates of older, conventional onshore wells will begin to partially offset gains from Barnett Shale and other areas by the end of the year. As such, for 2008 as a whole we now expect a 4.9%, or 945 bcf increase in domestic dry gas production.

Partially offsetting this impact has been the reduction in LNG imports versus the prior year. For 2008 we are looking at a 400 bcf decline in such imports, but we have revised up our estimated pipeline import volumes from Canada in part reflecting 2008 data to date.

**End-Quarter  
Working Gas Storage Levels  
(BCF)**



Putting our demand and supply sides together, the implication is a smaller forecast net draw in working storage for 2008 than discussed in last month’s report. We now expect a net draw of roughly 35 bcf this year, less than last month’s assessment by some 150-155 bcf.

Despite our revision, however, we are not of the school that anticipates another record working storage position heading into next winter. Clearly, if the United States economic picture deteriorates into a substantial and prolonged recession, domestic production gains continue to accelerate, and imports are higher than expected, the simple arithmetic could arrive at such a conclusion.

Under our Base Case, however, end-October working storage is expected to stand at about 3.1 tcf, more than adequate for winter but well short of the end-October 2007 level of almost 3.6 tcf.

## Implications for Price

As we issue this report there are renewed calls for \$150.00 per barrel by the Fourth of July, with the prompt crude contract recovering back to around the all-time record high.

Natural gas, which held up extremely well during the recent WTI retracement back to \$122.00 per barrel, is rising in sympathy with some lag, and winter contracts are now trading in excess of \$13.00 per mmBtu.

The crude oil price surge clearly reflects a sudden asset reallocation now that the dollar is not expected, right or wrong, to continue to strengthen in a trend, with weaker domestic economic activity opening the door for a potential rate cut down the road in contrast to the market's interpretation of Bernanke's statements only a few days ago.

How this will all play out is uncertain as usual, but in terms of oil we have assumed that the market's attention will once again, over time, return to deteriorating demand fundamentals in both the OECD and non-OECD group of countries.

### Henry Hub Price Outlook Average for Month of September 2008 (\$/mmBtu)

<b>1990-2007 Relationships</b>	<b>\$3.50(E)</b>
<b>1990-1999 Relationships</b>	<b>\$1.95(E)</b>
<b>2000-2007 Relationships</b>	<b>\$5.50(E)</b>

**2000-2007 Relationships**  
**Plus Oil Premium**      **\$10.75(E)(a)**

**a) @ 300 cents per gallon distillate and \$105.00 per barrel WTI.**

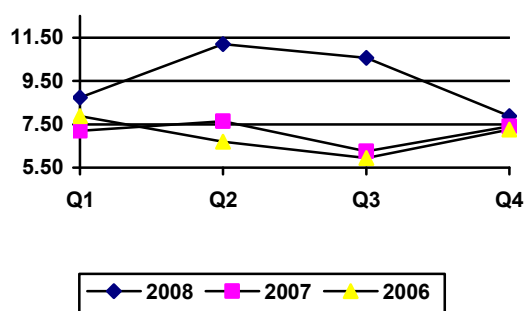
As such, we have "recalibrated" our short-term gas pricing model to September now that June is upon us and assume that in September prompt WTI will have fallen back down to around \$105.00 per barrel.

As our table above illustrates, incorporating this oil price assumption as well as our fundamental gas balances yields a September (basis October NYMEX) target of \$10.75 per mmBtu.

This lies in stark contrast to October currently trading at around \$12.80 per mmBtu. Granted, we have not incorporated a "hurricane premium" into our price outlook nor do we assume any prolonged heat waves in July and August.

If our more constructive natural gas balances are close to the mark, we concede we could end up on the low side, particularly if prompt WTI remains much higher than we currently assume.

**Henry Hub Prices  
2006-2008  
(Dollars per MCF)**



However, at this point we feel compelled to retain our fundamental as well as financial perspective on the oil market, and in turn on the natural gas market.

Given that the consensus remains much too high on the world oil demand outlook for this year and assumes a tighter physical market than is or will be the case, we still expect hydrocarbon prices to weaken from current levels in the second half of the year.

Nonetheless, because of the May experience and our modest upward revision to our oil price outlook, we now assume a higher 2008 prompt NYMEX/Henry Hub average, but to "only" \$9.60 per mmBtu, an upward revision from last month by about \$.55 per mmBtu.

June 6, 2008

U.S. Natural Gas Supply and Demand Balances  
2007-2008  
(Billion Cubic Feet)

	Q1	Q2	Q3	Q4	2007	%Chg 07-06	Q1	Q2(E)	Q3(E)	Q4(E)	2008(E)	%Chg 08-07
<b>Supply</b>												
Total Dry Gas Production	4,633	4,757	4,882	5,005	19,277	4.3	5,071	5,011	5,029	5,112	20,223	4.9
Withdrawals From Storage	1,791	241	325	964	3,321	33.2	1,891	281	320	645	3,137	-5.5
Supplemental Gaseous Fuels	18	14	15	13	61	-9.6	11	14	15	13	54	-11.0
Imports	1,165	1,148	1,206	1,083	4,602	9.9	1,062	956	1,089	1,103	4,209	-8.5
Canada	963	852	967	995	3,777	5.2	983	860	968	994	3,804	0.7
LNG	184	280	227	79	771		76	85	110	100	371	
Other	18	16	12	9	54		3	11	11	9	34	
Balancing Item	41	111	11	(435)	(272)		(101)	106	50	0	55	
Total Supply	7,649	6,272	6,439	6,630	26,989	6.8	7,934	6,368	6,503	6,873	27,678	2.6
<b>Disposition</b>												
Additions To Storage	328	1,209	1,063	546	3,146	7.5	255	1,221	1,074	551	3,101	-1.4
Exports	203	171	198	238	809	11.7	303	195	185	205	888	9.8
Consumption	7,118	4,892	5,178	5,846	23,034	6.5	7,376	4,952	5,244	6,117	23,689	2.8
Lease And Plant Fuel	281	289	297	303	1,170	4.2	306	301	302	307	1,215	3.9
Pipeline and Distribution Use	192	132	140	159	623	6.5	199	160	161	169	689	10.6
Residential	2,320	761	347	1,296	4,724	8.2	2,355	777	350	1,421	4,904	3.8
Commercial(a)	1,262	564	377	806	3,009	6.2	1,303	574	375	893	3,146	4.5
Industrial	1,777	1,554	1,569	1,735	6,635	2.2	1,882	1,519	1,562	1,752	6,715	1.2
Electric Power	1,286	1,592	2,448	1,547	6,873	10.5	1,331	1,621	2,494	1,575	7,020	2.1
Total Disposition	7,649	6,272	6,439	6,630	26,989	6.8	7,934	6,368	6,503	6,873	27,678	2.6
<b>Addendum:</b>												
Net Storage Injections	(1,463)	968	738	(418)	(175)		(1,636)	940	754	(94)	(36)	
End Period Working Gas In Storage	1,603	2,580	3,316	2,879	2,879		1,247	2,187	2,941	2,847	2,847	
<b>Henry Hub Price (Dollars Per mmBtu)</b>	<b>7.20</b>	<b>7.64</b>	<b>6.25</b>	<b>7.41</b>	<b>7.12</b>	<b>2.6</b>	<b>8.74</b>	<b>11.20</b>	<b>10.57</b>	<b>7.88</b>	<b>9.60</b>	<b>34.7</b>
Gas Wells Drilled					32,910	4.2					34,556	5.0
Total Discoveries(Bcf)					14,810	-6.2					13,822	-6.7
Discoveries Per Well(Bcf)					0.45	-10.0					0.40	-11.1
Total Revisions and Adjustments(Bcf)					4,000	0.0					4,000	0.0
Total Reserve Additions(Bcf)					18,810	-5.0					17,822	-5.2
<b>Reserve Replacement Ratio</b>					98%						88%	
Total Recoverable Reserves (Bcf)					186,486	-0.3					184,085	-1.3
<b>Reserve To Production Ratio(Years)</b>					9.7						9.1	

Source: Historical Data, U.S. Department of Energy.

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(a) Includes minor use as vehicle fuel.