



HORNSBY & COMPANY, INC.

[www.hornsblyco.com](http://www.hornsblyco.com)

Energy Risk  
Management Services

---

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

### Summary

Since our last report the prompt NYMEX natural gas contract has fallen by about \$0.75 per mmBtu. A lack of any unexpected and sustainable early season cold spells in the context of record working storage levels has led to the decline, exacerbated by a drop in WTI from record nominal highs. A further nail has been ongoing concerns with the regard to the pace of U.S. economic activity and the potential adverse impact on industrial sector gas demand. Large CFTC-reporting funds have jumped on all of this and established the largest net short position in history. As we issue this report, the prompt NYMEX crude contract is selling at less than 50% of crude oil and is trying to establish some a degree of stability in advance of winter at roughly \$7.00 per mmBtu.

With regard to our natural gas balances, we have made relatively little revision to our Base Case from last month. Depending upon weather for the remainder of December, we would look for end-2007 working storage to come in at around 3.1 tcf, the largest year-end position on record. Still, if we are close to the mark the current storage “overage” will have declined slightly to only some 30 tcf. Such a position may lead to the closure of fund net short positions to a degree, providing some support for natural gas prices relative to crude oil. Thus, 2007 should end up with only a modest net build in working storage for the year as a whole, compared to the net build in 2006 of a full 431 bcf. For 2008, we are assuming normal weather on a NOAA basis as well as moderate growth in manufacturing activity averaging some 2.5% for the year, and thus no outright recession. The rising subprime crisis has not led us to become more conservative with regard to U.S. economic activity and particularly its impact on U.S. natural gas consumption. Under these assumptions, we believe the market will witness a net draw in working storage, with the end-2008 position coming in a bit above the level of end 2001. In terms of price, our short-term attention now turns to next March (basis April NYMEX), where we are looking for around \$7.55 per mmBtu. For 2008, we retain our \$7.50 per mmBtu estimate.

- + U.S. natural gas demand is forecast to increase by 1.6%, or some 360 bcf next year.
- + Domestic dry gas production is expected to gain by 0.4%, or 75 bcf in 2008.
- + Our balances imply a net draw in working storage of around 155 bcf.

## Viewpoint

Since our last monthly natural gas report the prompt NYMEX natural gas contract has fallen by about \$0.75 per mmBtu. As we issue this report the January contract is trying to stabilize at about \$7.00 per mmBtu.

As we anticipated months ago, as we moved through autumn the winter term structure “flattened out”, eliminating the previous premium which discounted a tighter market that obviously has yet to materialize.

Contributing to the absolute price decline over the past month has been a lack of any unexpected and/or sustainable early season cold spells in the context of record working storage levels. The weakness has been exacerbated by a drop in WTI from the record nominal settlement high achieved on November 26.

A further insult to natural has been the ongoing concern with the regard to the current pace of U.S. economic activity and the potential adverse impact on industrial sector gas demand.

Large CFTC-reporting funds have jumped on all of this and established the largest net short position in history. On Tuesday December 4 such funds held futures-only net short positions totaling 86,487 contracts, a rise in net shorts from our previous report by 31,921 contracts,

As we issue this report, the prompt NYMEX crude contract is selling at less than 50% of crude oil.

With regard to our natural gas balances, we have made relatively little revision to our Base Case from last month. Depending upon weather for the remainder of December, we anticipate end-2007 working storage to come in at about 3.1 tcf, the largest year-end position on record.

Nevertheless, if our target is close to the mark the current storage “overage” will have declined a bit more to only around 30 tcf. This marks a substantial improvement from the 83 bcf “overage” prevailing at the end of October.

Such a year-end position, implying a stability in storage comparisons, may lead to some closure of fund net short positions, helping to provide some support for natural gas prices relative to crude oil.

Thus, we expect 2007 will end up with only a modest net build in working storage for the year as a whole, in contrast to the net build in 2006 of a full 431 bcf.

For next year, we once again assume normal weather on a NOAA basis as well as continued moderate growth in manufacturing activity, averaging some 2.5% for 2008 as a whole and thus no outright recession.

The rising subprime mortgage crisis has not compelled us to become more conservative with regard to U.S. economic activity in general and its impact on U.S. natural gas consumption in particular.

Under our assumptions, we believe the market will witness a net draw in working storage, with the end-2008 position coming in a bit above the level of end 2001.

In terms of price, our short-term attention now turns to next March (basis April NYMEX) where we are looking for around \$7.55 per mmBtu. For 2008, we retain our \$7.50 per mmBtu estimate.

## Demand: Review and Outlook

In the latest Natural Gas Monthly the DOE published a number of data revisions going back to 2005 which we have incorporated into our data bases.

For 2007 the most important changes were to third quarter data, and based on our estimated demand for the fourth quarter under our weather and economic assumptions we estimate that 2007 U.S. natural gas consumption will increase by 5.0%, or almost 1.1 tcf. If reasonable, it would represent the largest annual gain in consumption in this decade. Once again, the bulk of this year’s rise occurred in the first quarter.

Having said this, however, we would note that our customary table below which illustrates the gain in manufacturing output for the eight largest industrial gas consuming sectors in October versus October of last year. The numbers reveal an improvement across the board versus last month’s year-over-year comparisons. We do not believe this represents an economy where growth began to accelerate, but we look forward with interest to November’s FRB indices for these industries.

**Eight Largest Industrial Consumers  
of Natural Gas  
October Manufacturing Output**

Industry	YOY %Chg. Output
Chemicals	+1.4
Petroleum and Coal	0.0
Primary Metals	+2.1
Paper	-1.4
Food	+2.9
Non-Metallic Mineral Fabricated Metal	+1.5
Transportation Equip.	+1.8
	+4.2

For 2008, once again our assumptions include normal weather and a moderate, but continued, gain in manufacturing output averaging about 2.5% for the year as a whole.

Our first quarter forecast for the residential and commercial sectors therefore imply, all else equal, more moderate growth compared to the first quarter of this year.

NOAA data reveal that on a home gas furnace-weighted basis, January and February of 2007 were a full 26.9% and 19.7% colder than the first two months of 2006. Relative to normal, however, this past January was warmer by 8.8% while February of this year was colder by 16.4%.

Even if the first quarter comes in with normal temperatures, however, we are anticipating that U.S. natural gas demand in the residential sector in particular will receive an additional boost from conversions away from heating oil which are now taking place, tempered to a “degree” by conservation.

Taking this into account and all sectors together, we are looking for first quarter 2008 U.S. natural gas consumption to increase by 2.1%, or about 145 bcf, which contrasts to the 2007 first quarter gain of 10.7%.

For the year as a whole we anticipate that industrial sector gas demand will increase by 0.6%, or about 40 bcf. Electric utility sector gas demand is forecast to rise by 1.8%, or around 125 bcf, with both sector expectations little changed from last month.

For the U.S. as a whole, our Base Case expects gas consumption in 2008 to register a

1.6%, or 360 bcf increase, marking a modest upward revision from last month’s report.

**Supply:  
Review and Outlook**

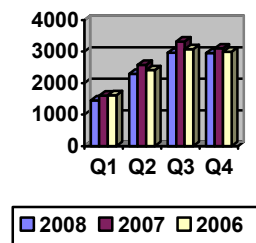
DOE data revisions reveal that third quarter domestic dry gas production came in somewhat higher than expected, and for 2007 as a whole we anticipate a gain in output of 2.1%, or some 380 bcf for 2007.

Pipeline imports from Canada are estimated to rise 2.2%, or some 80 bcf versus 2006, while LNG imports should total around 945 bcf this year, a gain of almost 360 bcf versus last year. At the same time we have slightly revised down estimated exports.

Thus, despite reasonably robust demand even adjusting for the first quarter surge, incremental supply has more than offset the rise in demand, leading to record working storage levels.

Taking our demand and supply estimates for the fourth quarter, we now target end-2006 working storage at about 3.1 tcf, a modest downward revision from last month’s assessment. If reasonable, it would a net build in working storage for 2007 of about 30 bcf.

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



For 2008 we anticipate a moderation in domestic dry gas production growth to 0.4% or about 75 bcf, unchanged from last month’s expectations. Depletion in mature onshore reservoirs is expected to have a greater influence next year, partially offsetting new field buildup. Imports in the aggregate are forecast to rise at a more modest pace compared to the rate of growth experienced in 2007.

Thus, a larger forecast rise in demand will more than offset growth in supply, leading to a net draw in working storage in 2008 of about 155 bcf. If our outlook is close to the mark, it would imply end-2008 working storage coming in at some 2.95 tcf, placing the position about 120 bcf below end-2006 levels and a bit above end-2001. Our 2008 forecast net storage draw represents a 105 bcf larger draw than anticipated in our previous report.

### Implications for Price

With 2007 now almost fully in hand, our short-term price attention turns to the first quarter of next year, and as our table illustrates below we are now presenting a target of March (basis April NYMEX), incorporating our Base Case natural gas balances as well as our customary “oil premium” based on our outlook for WTI.

As discussed in our most recent World Petroleum Perspectives, we expect a WTI average for next year of about \$71.50 per barrel, with our quarterly averages suggesting a progressive weakening from 2008’s “opening bell”. Our second quarter WTI average, right or wrong, is \$75.00 per barrel, which we have assumed will be the March average as well.

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

<b>1990-2007 Relationships</b>	<b>\$3.00(E)</b>
<b>1990-1999 Relationships</b>	<b>\$1.65(E)</b>
<b>2000-2007 Relationships</b>	<b>\$4.50(E)</b>

<b><u>2000-2007 Relationships</u></b>	
<b><u>Plus Oil Premium</u></b>	<b><u>\$7.55(E)(a)</u></b>

- a) @ 205 cents per gallon distillate and \$75.00 per barrel WTI.

Putting our numbers together suggests a March prompt NYMEX/Henry Hub average of \$7.55 per mmBtu, compared to the April contract now trading at about \$7.20 per mmBtu.

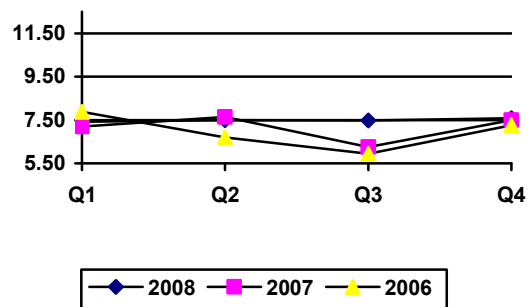
On the face of it, given the current storage position and our expectation that crude oil

prices will decline from current levels, one would normally expect a March target significantly lower than our model implies.

However, as we have previously discussed, we believe that the current all-time record of net short positions held by funds partly reflects a short hedge against long crude oil positions.

If this view is reasonable, then we would expect funds to close out short natural positions as they close out net crude oil longs, helping to reduce the current pricing gap between natural gas and WTI. Also aiding our outlook would be our belief that end-first quarter 2008 working storage will lie below the previous year, also encouraging the liquidation of short positions.

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



Our March forecast would imply a natural to WTI ratio on a BTU basis of about 60%, compared to the current ratio of less than 50%, which we believe is a reasonable expectation.

For 2008 as a whole, we retain our prompt NYMEX/Henry Hub average of \$7.50 per mmBtu, a forecast which has remained unchanged since July.

December 10, 2007

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

	Q1	Q2	Q3	Q4(E)	2007(E)	%Chg 07-06	Q1(E)	Q2(E)	Q3(E)	Q4(E)	2008(E)	%Chg 08-07
<b>Supply</b>												
Total Dry Gas Production	4,591	4,694	4,835	4,738	18,858	2.1	4,609	4,713	4,854	4,757	18,933	0.4
Withdrawals From Storage	1,791	241	325	724	3,081	23.6	1,977	383	409	524	3,293	6.9
Supplemental Gaseous Fuels	18	14	15	18	66	-1.8	19	14	15	19	67	1.5
Imports	1,171	1,149	1,191	1,159	4,669	11.5	1,163	1,155	1,193	1,163	4,673	0.1
Canada	968	853	951	897	3,669	2.2	949	836	932	879	3,595	-2.0
LNG	184	280	227	250	942		203	308	250	275	1,036	
Other	18	16	13	12	59		11	11	11	9	42	
Balancing Item	69	173	11	(337)	(85)		0	0	0	0	0	
Total Supply	7,640	6,271	6,377	6,301	26,588	5.2	7,767	6,265	6,471	6,462	26,966	1.4
<b>Disposition</b>												
Additions To Storage	328	1,209	1,063	509	3,109	6.3	331	1,221	1,074	514	3,140	1.0
Exports	203	178	183	205	768	6.1	180	185	185	205	755	-1.7
Consumption	7,109	4,884	5,131	5,587	22,711	5.0	7,256	4,859	5,213	5,743	23,071	1.6
Lease And Plant Fuel	278	285	294	284	1,141	1.6	277	283	291	285	1,136	-0.5
Pipeline and Distribution Use	192	132	139	145	608	3.8	152	151	155	157	615	1.3
Residential	2,317	761	347	1,321	4,746	8.7	2,437	713	350	1,381	4,882	2.9
Commercial(a)	1,259	562	376	788	2,985	5.3	1,323	525	374	821	3,043	1.9
Industrial	1,777	1,552	1,569	1,674	6,572	1.2	1,757	1,567	1,591	1,699	6,613	0.6
Electric Power	1,286	1,592	2,406	1,375	6,659	7.0	1,310	1,621	2,451	1,400	6,782	1.8
Total Disposition	7,640	6,271	6,377	6,301	26,588	5.2	7,767	6,265	6,471	6,462	26,966	1.4
<b>Addendum:</b>												
Net Storage Injections	(1,463)	968	738	(215)	28		(1,646)	838	665	(10)	(153)	
End Period Working Gas In Storage	1,603	2,580	3,316	3,101	3,101		1,456	2,294	2,959	2,949	2,949	
<b>Henry Hub Price (Dollars Per mmBtu)</b>	<b>7.20</b>	<b>7.64</b>	<b>6.25</b>	<b>7.50</b>	<b>7.14</b>	<b>2.9</b>	<b>7.42</b>	<b>7.50</b>	<b>7.48</b>	<b>7.58</b>	<b>7.50</b>	<b>4.9</b>
Gas Wells Drilled					34,746	10.0					38,220	10.0
Total Discoveries(Bcf)					15,636	-1.0					15,288	-2.2
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)					19,636	-0.8					19,288	-1.8
<b>Reserve Replacement Ratio</b>					104%						102%	
Total Recoverable Reserves (Bcf)					187,731	0.4					188,086	0.2
<b>Reserve To Production Ratio(Years)</b>					10.0						9.9	

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

Note: May not sum to totals in all cases due to rounding.

(Information contained herein is believed to be reliable but its accuracy cannot be guaranteed. Past performance is not indicative of future results and the risk of loss is substantial in futures trading.)

(a) Includes minor use as vehicle fuel. Hornsby & Company, Inc. and W.H. Brown may, from time to time, have positions in the futures market relative to these recommendations.