



HORNSBY & COMPANY, INC.

www.hornsbyco.com

November 20, 2008

Energy Risk  
Management Services

---

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

### Summary

Over the past month the prompt NYMEX natural contract is roughly unchanged on a point to point basis. During this period the settlement low came close to \$6.00 per mmBtu, but subsequently experienced a modest recovery reflecting the expectation of colder weather. Overall, the market remains “constrained”, reflecting progressively weaker crude oil prices and the recognition that the current economic malaise will not end soon, and could deteriorate further. As we have anticipated, however, natural gas has finally firmed relative to crude oil, with fund short covering combined with values that are more reflective of underlying fundamentals supporting price. Crude oil has suffered in particular from global financial deleveraging and the substantial net reduction in non-commercial length since last July. Updating our Base Case natural gas balances leads to a modest upward revision to our target year-end working storage level. Domestic production gains and imports remain broadly in line with our assessments, but further weakness in economic activity has compelled us to reduce electric utility sector gas demand through the remainder of 2008. For next year as a whole, however, we have not materially revised our balance.

Given all the economic uncertainty, there is a natural tendency for the consensus to extrapolate through the entirety of 2009. While this may end up being justified, we believe it is premature to do so. We therefore run the risk of being the last kids on the block to alter our view, but history has taught us that “current” conditions do not last, such as \$150.00 or \$10.00 per barrel WTI. We believe there is enough time left on the clock such that once credit conditions ease and the economy benefits from lower hydrocarbon prices, signs of a recovery in manufacturing activity and hence natural gas demand will begin to occur by the middle of next year. With regard to price, at this point we have made little revision to our outlook for 2009, anticipating prompt NYMEX/Henry Hub to average around \$8.00 per mmBtu.

- + U.S. natural gas demand is expected to rise by 0.4%, or some 100 bcf next year.
- + Domestic dry gas production is forecast to increase by 3.0%, or about 620 bcf in 2009.
- + Our balances imply that next year working storage will experience a net build of around 455 bcf.

## Viewpoint

Since the publication of our previous monthly natural gas report, the prompt NYMEX natural contract is about unchanged on a point to point basis at roughly \$6.50 per mmBtu.

Within the period, however, the settlement low came close to \$6.00 per mmBtu, but subsequently experienced a modest recovery reflecting the onset of colder weather.

Overall, however, the market remains constrained, to say the least, reflecting progressively weaker crude oil prices and the recognition that the current economic malaise will not end soon, and could weaken further.

Crude oil prices have been following equity markets, hurt by ongoing financial and credit woes as well as uncertainty over the fate of the U.S. auto industry. Natural gas in turn has not been immune from WTI's decline.

As we have long anticipated, however, natural gas has firmed *relative* to crude oil, and as we issue this report on a prompt contract basis natural is trading at around 77% of WTI, even stronger than our Base Case had anticipated.

Helping natural in absolute terms has been periodic "active" fund short covering combined with values that are more reflective of underlying fundamentals. Despite weak economic activity, hurricane-induced production reductions helped preclude setting another all-time working storage record at the official start of the 2008-2009 heating season.

In contrast, crude oil has suffered from ongoing global financial de-leveraging and hedge and pension fund length liquidation. There is no doubt that global oil market fundamentals have weakened further, but the vast bulk of the price decline has reflected the substantial net reduction in non-commercial length since last July.

Updating our Base Case natural gas balances leads to a modest upward revision to our target year-end working storage level, now estimated at around 3.1 tcf.

Domestic dry gas production gains and imports remain broadly in line with our assessments. However, further evident weakness in overall economic activity has

compelled us to reduce electric utility sector natural gas demand through the remainder of this year and into early 2009.

For next year as a whole, however, we have not been inclined to materially revise our balance. We now expect a net build in working storage next year of some 455 bcf, about 45 bcf less than forecast in last month's report.

Given all the economic uncertainty, there is a natural tendency for the consensus to extrapolate through the entirety of 2009. While this may end up as justified, we believe it is premature to do so.

Although we run the risk of being the last analyst to "throw in the towel", history has taught us that "current" conditions do not last, be they \$150.00 or \$10.00 per barrel WTI.

We believe there is enough time left on the clock such that once credit conditions ease and the economy benefits from lower hydrocarbon prices, the inklings of a recovery in manufacturing activity and hence natural gas demand will begin to occur by the middle of next year.

With regard to price, at this point we have made little revision to our outlook for 2009, anticipating that prompt NYMEX/Henry Hub will average around \$8.00 per mmBtu.

## Demand: Review and Outlook

Incorporating the latest data from the Department of Energy, virtually the only revision we have made from last month is trimming our estimate of electric utility sector natural gas demand through the remainder of this year and for the third quarter of 2009.

Otherwise, industrial sector natural gas demand is holding up reasonably well relative to the decline in manufacturing activity. For the month of October, this component of the economy declined by a full 5.3% versus October of 2007, heavily influenced by the deterioration in the auto sector.

As our customary table below illustrates, however, this category ranks eighth in terms of the largest U.S. industrial natural gas consumers.

As our table also shows, however, in October there was an overall deterioration in these eight industries versus the prior year, which coincides with all other evidence that October is when things began to fall off a cliff.

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

<b>Industry</b>	<b>YOY %Chg. Output</b>
<b>Chemicals</b>	<b>-6.4</b>
<b>Petroleum and Coal</b>	<b>+0.4</b>
<b>Primary Metals</b>	<b>-9.6</b>
<b>Paper</b>	<b>-3.4</b>
<b>Food</b>	<b>-0.9</b>
<b>Non-Metallic Mineral</b>	<b>-7.0</b>
<b>Fabricated Metal</b>	<b>-4.9</b>
<b>Transportation Equip.</b>	<b>-19.4</b>

Right or wrong, our Base Case assumes that by the second quarter of next year manufacturing activity begins to stabilize and experiences a modest recovery over the prior year as we progress through the remainder of 2009.

In the fourth quarter of next year manufacturing growth is pegged at about 3.0% over the current quarter. While we may end up somewhat early, such growth would be conservative by historical economic recovery standards.

These assumptions lead to a 0.4% rate of growth in industrial natural gas demand next year, and a 2.0% increase in electric utility sector consumption.

For the residential sector, once again we assume normal winter weather and a slight recovery in gas consumption per heating degree day reflecting additional conversions from oil.

Putting all sectors together we anticipate that U.S. natural gas demand will increase by 0.4%, or some 100 bcf next year, about unchanged from our prior outlook.

**Supply:  
Review and Outlook**

It would appear that despite previous hurricane-induced production reductions, domestic dry gas production this year will end up gaining more than 7.0%, or almost 1.4 tcf. Not surprisingly, Texas has accounted for well over one half of the total U.S. gain, influenced by the Barnett Shale play.

In contrast, U.S. gross imports of natural gas from all sources will likely be down by more than 11.0%, or about 520 bcf this year. In addition, gross exports to Mexico have risen.

As we anticipated, declines from Canada as a result of incremental domestic use and the lack of favorable economics for incremental LNG cargoes have been responsible for the import falloff. Domestic production gains, however, have more than offset our forecast import decline.

For next year, we believe that domestic gas production will increase at a slower rate than in 2008, influenced by declines in “conventional” onshore production. Imports, however, are expected to recover slightly.

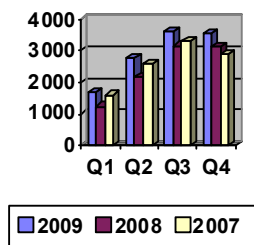
Putting our demand and supply side assumptions together, for 2009 we are looking for a net build in working storage of some 455 bcf, a downward revision in our forecast build by 45 bcf from last month’s report.

This appears quite onerous, and is derived from the carryover effect of weaker manufacturing activity into next year before our expected recovery, as well as a continued net gain in supply.

Thus, at the end of the first quarter, our balances imply that working storage will stand some 455 bcf above the end of March of this year. This compares to the current storage “underage” of 51 bcf, which is now diminishing on a weekly basis.

However, over the last several years we have commented on how remarkably “self correcting” the U.S. natural gas balance tends to be. Just when it appears we are running out of natural gas, a few months later we are setting record storage levels, and vice versa.

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



Thus, we are confident that **if our forecast storage build for next year is off the mark, the odds favor it being lower and not higher.**

**Implications for Price**

As we issue this report market sentiment, be it in equities, credit, or commodities, has rarely been this negative, and for number of reasons justifiably so.

Only five months ago many analysts were falling over themselves in raising their forecast crude oil price targets, including \$200.00 per barrel. Many hedge funds were buying winter \$20.00 natural gas calls.

This capital is gone along with billions in other markets, and whether we are accurate in our natural gas balances from here forward is obviously secondary to how close one can now come on price.

Looking first short term, we have been targeting December (basis January NYMEX) at \$7.50 per mmBtu, but this assumed a higher crude oil price than is now the case but a somewhat lower natural to crude oil price ratio.

As we issue this report the January NYMEX contract is trading about \$1.20 per mmBtu below our target. We have modestly increased our year-end working storage assumption, and it would appear that January crude oil will end up somewhat below our previous assumption, though we believe above current levels.

If we target crude oil at \$65.00 per barrel, assume the current natural to crude oil ratio eases modestly as we move into winter,

and incorporate our higher working storage assumption, our December target is revised down to about \$7.20 per mmBtu.

**Henry Hub Price Outlook  
Average for Month of December 2008  
(\$/mmBtu)**

<b>1990-2007 Relationships</b>	<b>\$3.60(E)</b>
<b>1990-1999 Relationships</b>	<b>\$1.90(E)</b>
<b>2000-2007 Relationships</b>	<b>\$5.80(E)</b>

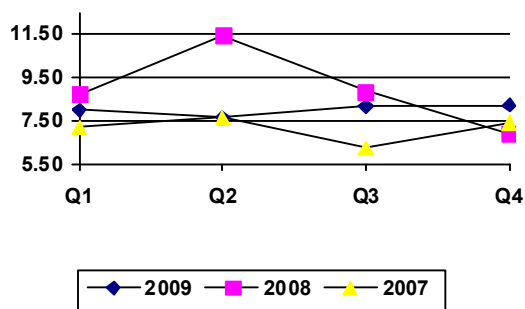
**2000-2007 Relationships**  
**Plus Oil Premium**      **\$7.20(E)(a)**

a) **@ 190 cents per gallon distillate and \$65.00 per barrel WTI.**

This still make strike many as too optimistic. However, in the early part of November January natural was trading at or above this target when WTI was trading in the low \$60s per barrel.

For next year, at this point we retain our Base Case outlook, calling for prompt NYMEX/Henry Hub to average around \$8.00 per mmBtu.

**Henry Hub Prices  
2007-2009  
(Dollars per MCF)**



November 20, 2008

U.S. Natural Gas Supply and Demand Balances  
2008-2009  
(Billion Cubic Feet)

	Q1	Q2	Q3(E)	Q4(E)	2008(E)	%Chg 08-07	Q1(E)	Q2(E)	Q3(E)	Q4(E)	2009(E)	%Chg 09-08
<b>Supply</b>												
Total Dry Gas Production	5,080	5,128	5,166	5,289	20,663	7.2	5,232	5,282	5,321	5,447	21,283	3.0
Withdrawals From Storage	1,891	242	86	599	2,818	-15.1	1,668	112	411	615	2,806	-0.4
Supplemental Gaseous Fuels	11	14	14	13	53	-12.9	11	15	14	13	54	1.5
Imports	1,088	894	995	1,103	4,080	-11.3	1,102	900	1,009	1,108	4,119	0.9
Canada	1,009	790	883	994	3,677	-2.6	1,019	798	888	999	3,704	0.7
LNG	76	97	101	100	374		80	92	110	100	382	
Other	3	7	11	9	29		3	9	11	9	32	
Balancing Item	(36)	104	374	(185)	258		0	0	0	(270)	(270)	
Total Supply	8,034	6,383	6,636	6,819	27,872	3.2	8,013	6,308	6,755	6,914	27,991	0.4
<b>Disposition</b>												
Additions To Storage	255	1,173	1,248	551	3,227	2.6	258	1,185	1,260	557	3,259	1.0
Exports	324	215	180	205	923	12.3	317	202	185	205	909	-1.5
Consumption	7,455	4,995	5,209	6,063	23,722	3.0	7,439	4,921	5,310	6,152	23,822	0.4
Lease And Plant Fuel	307	311	312	317	1,247	6.6	314	317	319	327	1,277	2.4
Pipeline and Distribution Use	201	135	150	175	660	6.0	165	166	170	180	681	3.1
Residential	2,355	776	348	1,421	4,901	3.7	2,382	695	352	1,436	4,864	-0.7
Commercial(a)	1,303	569	381	892	3,146	4.6	1,298	497	379	888	3,062	-2.7
Industrial	1,867	1,603	1,559	1,680	6,709	1.2	1,830	1,613	1,582	1,713	6,738	0.4
Electric Power	1,422	1,601	2,459	1,577	7,059	2.7	1,450	1,633	2,508	1,608	7,200	2.0
Total Disposition	8,034	6,383	6,636	6,819	27,872	3.2	8,013	6,308	6,755	6,914	27,991	0.4
<b>Addendum:</b>												
Net Storage Injections	(1,636)	931	1,162	(48)	409		(1,410)	1,072	849	(58)	453	
End Period Working Gas In Storage	1,247	2,171	3,160	3,112	3,112		1,702	2,774	3,623	3,565	3,565	
<b>Henry Hub Price (Dollars Per mmBtu)</b>	<b>8.74</b>	<b>11.46</b>	<b>8.86</b>	<b>6.92</b>	<b>9.00</b>	<b>26.3</b>	<b>8.00</b>	<b>7.63</b>	<b>8.17</b>	<b>8.20</b>	<b>8.00</b>	<b>-11.1</b>
Gas Wells Drilled					33,733	2.5					34,239	1.5
Total Discoveries(Bcf)					14,168	-4.3					13,353	-5.7
Discoveries Per Well(Bcf)					0.42	-6.7					0.39	-7.1
Total Revisions and Adjustments(Bcf)					4,000	0.0					4,000	0.0
Total Reserve Additions(Bcf)					18,168	-3.4					17,353	-4.5
<b>Reserve Replacement Ratio</b>					88%						82%	
Total Recoverable Reserves (Bcf)					183,991	-1.3					180,061	-2.1
<b>Reserve To Production Ratio(Years)</b>					8.9						8.5	

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

Notation 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 markets. (E) WHB Energy Research Group, Inc. and W.H. Brown may, from time to time, have positions in the futures market relative to these recommendations. (a) Includes minor use as vehicle fuel.