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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 gas contract has declined by some 50 cents per mmBtu on a point-to-point basis. Within the period, however, the contract once again rose above \$4.00 per mmBtu as prompt WTI hit a 2009 high, but the move was unsustainable as has been the pattern over the last few months. Unlike NYMEX crude oil, which has exhibited a behavior more akin to equity markets in terms of its willingness to discount economic *expectations*, natural has reflected *current* fundamentals which, as we are all aware, are mired in economic malaise and excess storage levels. Most green shoots have died on the vine, and with crude oil now declining back more in line with our expected range for this time period, NYMEX natural remains entrenched below \$4.00 per mmBtu, with many expecting prices to break below the contract 2009 lows established back in April.

As we have previously discussed, manufacturing activity remains quite weak, with the economy continuing to experience our “stretched u” configuration. In this context, we have been compelled to modestly revise our outlook for industrial sector gas demand for the remainder of the year, while also trimming some of our supply assumptions. Thus, while U.S. natural gas demand is likely to come in modestly below our original expectations, the impact on the balance is mitigated by a more conservative supply outlook. The net effect remains a significant improvement in year-over-year working storage comparisons before the end of 2009.

This report provides our first official look at 2010. While our forecast price recovery over time will lead to a recovery in production from our assumed decline later this year, we believe the response will be lagged. Thus, even if manufacturing activity experiences only a modest recovery next year as we assume, the U.S. natural gas balance should improve significantly, with a net working storage decline forecast for next year.

+ U.S. natural gas demand is expected to rise by 2.2%, or some 510 bcf in 2010.

+ Domestic dry gas production is forecast to increase by 0.3% or about 65 bcf next year.

+ Our balances imply a net draw in working storage in 2010 totaling around 175 bcf in 2010, placing year end storage at the lowest level since 2005.

Viewpoint

Over the last month the prompt NYMEX natural gas contract has declined by some 50 cents per mmBtu on a point-to-point basis. As we issue this report, the August contract is trading around \$3.35 per mmBtu.

Within this time period, however, the prompt contract yet once again traded above \$4.00 per mmBtu as prompt WTI hit a 2009 high in excess of \$70.00 per barrel, but the move in natural was unsustainable as has been the pattern over the last few months. The prompt contract fell back below \$4.00 per mmBtu in advance of WTI's decline to current levels.

Unlike NYMEX crude oil, however, which is demonstrating a behavior similar to equity markets these days in terms of its willingness to discount economic developments down the road, natural gas prices have reflected their own *current* fundamentals. As we are all aware, the gas balance is mired in economic malaise and excess storage levels.

Most green shoots, mustard seeds, and any other flora have all died on the vine. With prompt WTI now falling back more in line with our expected range for the current time period, NYMEX natural remains entrenched in a broad \$3.00-\$4.00 per mmBtu trading range, with many analysts still expecting prices to break below the NYMEX 2009 contract lows established back in April.

As we have previously discussed and identified through our implied distillate demand analysis, manufacturing activity remains severely weak, with the U.S. economy continuing to experience our "stretched u" type of configuration.

In this context, we have no choice but to modestly revise our outlook for industrial sector gas demand for the remainder of the 2009. However, for reasons to be discussed later, we have also trimmed some of our supply expectations.

Thus, while U.S. natural gas demand is likely to come in modestly below our original Base Case forecast, the impact on the

overall balance is mitigated by a somewhat more conservative supply outlook.

The net effect remains a significant improvement in year-over-year working storage comparisons before the end of the year, as we have anticipated all along, right or wrong.

Our report this month also provides our first official forecast of the U.S. gas balance for 2010. While our expected price recovery over time will lead to a rebound in production from our anticipated decline later this year, we believe the response will be lagged as drillers exhibit an appropriate level of caution.

Thus, even if manufacturing activity experiences only a modest recovery next year as we expect, the U.S. natural gas balance should improve significantly, with a net working storage decline forecast for next year.

With regard to average NYMEX/Henry Hub price in 2010, we believe our gas balance would justify an improvement in natural relative to crude oil from current levels. Based on our forecast WTI average of \$65.00 per barrel for next year, we believe a NYMEX/Henry Hub natural average of \$5.95 per mmBtu is reasonable.

Demand: Review and Outlook

We have updated our demand side of the equation, incorporating the latest data from the DOE through April. We have also adjusted for the more recent FRB industrial production statistics for May, and now assume that manufacturing activity will take somewhat longer to recover than previously expected but will still manifest itself before the end of the year.

As a result, with little change to other gas consuming sectors, we believe U.S. natural gas demand will decline by 2.3%, or some 535 bcf this year.

Within this total, industrial sector demand is expected to fall by 5.5%, or about 360 bcf in 2009, representing more than 67% of our forecast decline in aggregate consumption. Industrial sector demand is expected to decline by the largest rate since 2005.

Our customary table below lays out for the month of May the manufacturing output versus May of 2008 for the eight largest industrial consumers of natural gas. Relative to the April year-over-year comparisons, there was little change in the aggregate, with each industry showing either a small improvement or a slight deterioration.

Eight Largest Industrial Consumers
Of Natural Gas
May Manufacturing Output

<u>Industry</u>	<u>YOY %Chg. Output</u>
Chemicals	-9.4
Petroleum and Coal	-6.6
Primary Metals	-43.9
Paper	-19.4
Food	-2.5
Non-Metallic Mineral	-20.9
Fabricated Metal	-21.8
Transportation Equip.	-22.8

While many would now consider it a long shot, we expect manufacturing output as a whole to begin to stabilize and improve versus 2008 in October, a bit later than we previously anticipated, but still earlier than the consensus likely now believes given the change in sentiment and lack of “green shoots”.

In looking at the most recent DOE industrial demand data and comparing to the FRB manufacturing statistics, there appears to have been a modest increase in implied gas demand per unit of output since the beginning of the year, suggesting some fuel switching in favor of natural gas.

We fully recognize the perils of comparing one data source to another, but such a development would make some sense to us based on relative fuel pricing in select regions combined with anecdotal evidence.

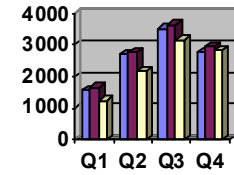
We have conservatively incorporated the trend into our third quarter outlook, consistent with the expectation that natural will continue to trade at a heavy discount to crude oil before recovering later on. This helps mitigate the downward revision to the path of industrial gas demand reflecting a delayed recovery in aggregate output.

We now provide our first official outlook for 2010. As usual, we have assumed normal winter and summer weather. The most critical assumption in our mind is industrial production and the resultant influence on industrial and electric utility sector natural gas demand.

In this regard, we have assumed that manufacturing activity will improve at an average rate of 4.0% next year, which we believe is relatively conservative based on historical post-recession recoveries.

Because we assume that gas prices will rise relative to oil, preferential pricing should largely disappear, reversing the fuel switching that we believe has taken place this year. As such, we would look for industrial sector gas demand to rise about in line with manufacturing output in 2010.

Adding up all sectors, we anticipate total U.S. natural gas consumption will rise by 2.2%, or some 510 bcf to about 23.15 tcf. If reasonable, it would bring total gas demand back up to roughly 2008 levels.



■ 2010 ■ 2009 ■ 2008

Supply:

Review and Outlook

Looking at the supply side for the remainder of the year, we still believe that before the fourth quarter, total domestic dry gas production will stabilize and fall modestly versus 2008 reflecting substantially reduced levels of drilling activity, mature reservoir depletion, and some economically-induced shut ins.

Based on more recent data we have revised down modestly our expectations for Canadian imports through the end of the year, but made little or no change to our monthly LNG import assumptions. If we are off the mark on the supply side, we concede our LNG outlook could be too conservative.

Nonetheless, taking our assumptions in hand along with our demand outlook still suggests the working storage surplus versus last year will erode progressively over the next few months.

As previously discussed, over the last two weeks the weekly storage data have revealed a stabilization in the “overage” versus 2008. Thus, while the excess topped our forecast by about 100 bcf, the timing of the peak has thus far been in line with our expectations.

Under our current balances, at year end working storage will stand some 140 bcf above the end of 2008, only slightly higher than previously forecast.

End-Quarter Working Gas Storage Levels (BCF)

For 2010, we believe under our higher price outlook that domestic dry gas production will recover. For the year as a whole, however, we estimate a gain of only 0.3%, or 65 bcf, with the larger gains skewed later in the year. This appropriately reflects the initial caution and lagged recovery in drilling activity that is likely to occur.

We expect Canadian pipeline imports to decline, but at a slower pace compared to the trend in 2009. LNG imports should rise, however, with our forecast looking for a gain in excess of 80 bcf which once again we concede could err on the conservative side.

Under our higher demand outlook, however, the overall balance is expected to improve. The storage “overage” versus the prior year disappears in the first quarter of 2010. At the end of the year, working storage stands lower by more than 175 bcf compared to our estimate for the end of this year. At about 2.79 bcf, working storage would return to the lowest level since 2005.

Implications for Price

As previously discussed, prompt NYMEX natural remains stalled below \$4.00 per mmBtu almost irrespective of what WTI does, with many analysts looking for summer gas values to drop below \$3.00 per mmBtu.

This of course could occur if working storage begins to rise once again versus last year, prompt WTI falls to \$50.00 per barrel or below, and economic activity embarks on a new and deeper round of weakness. Right or wrong, however, we have not assumed that any of these events will occur.

As such, as our table below illustrates, under our updated balances and expecting WTI to recover before falling back below \$60.00 per barrel in the fourth quarter, we would still expect a more sustainable rebound back above \$4.00 per mmBtu in September, though more modest than previously anticipated.

Henry Hub Price Outlook
Average for Month of September 2009
 (\$/mmBtu)

1990-2008 Relationships	\$3.00(E)
1990-1999 Relationships	\$1.55(E)
2000-2008 Relationships	\$4.60(E)
<u>2000-2008 Relationships</u>	
<u>Plus Oil Premium</u>	<u>\$4.90(E)(a)</u>

a) @ 185 cents per gallon distillate and \$65.00 per barrel WTI.

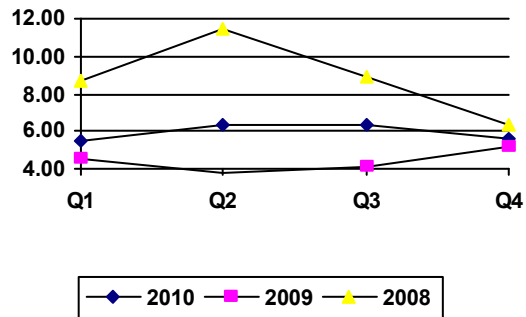
Although crude oil prices will clearly continue to influence NYMEX natural gas values, there is no doubt in our mind that the gas balance itself, as manifested through the weekly storage data, will be just as great an influence, as it should be. If we are correct that the year-over-year working storage surplus will ride substantially by year end, then prompt NYMEX natural should trade back above \$4.00 per mmBtu, even if crude oil prices do not recover back above \$70.00 per barrel in August as we have expected.

As we have discussed, there is clearly a chance that our entire 2009 Base Case forecast for WTI laid out in January will be “compressed” into the first seven months of the year, with prompt WTI remaining below \$60.00 per barrel for the foreseeable future. At this point, however, we are retaining our oil price outlook for the remainder of the year.

For 2010, we have previously forecast a WTI average of \$65.00 per barrel. Under this level in combination with an improving natural gas balance, we believe that natural’s discount to crude oil will diminish.

On balance, we believe a prompt NYMEX/Henry Hub average of about \$5.95 per mmBtu is reasonable for next year, with the quarterly pattern as shown in our table at the end of this report. Such a price level would imply a natural to WTI ratio averaging about 55%, compared to the current NYMEX ratio of only 34%.

Henry Hub Prices
2008-2010
 (Dollars per MCF)



July 10, 2009

**U.S. Natural Gas Supply and Demand Balances
2009-2010
(Billion Cubic Feet)**

	Q1	Q2(E)	Q3(E)	Q4(E)	2009(E)	%Chg 09-08	Q1(E)	Q2(E)	Q3(E)	Q4(E)	2010(E)	%Chg 10-09
Supply												
Total Dry Gas Production	5,205	5,233	4,957	5,066	20,461	-0.5	5,101	5,251	5,032	5,142	20,525	0.3
Withdrawals From Storage	1,546	132	406	1,323	3,407	1.2	1,768	114	488	1,389	3,758	10.3
Supplemental Gaseous Fuels	17	15	14	16	63	13.3	17	16	15	16	64	1.4
Imports	1,006	840	891	952	3,689	-6.9	1,008	830	909	969	3,717	0.7
Canada	914	718	804	860	3,296	-7.6	900	707	788	843	3,238	-1.7
LNG	86	121	86	85	378		100	120	120	120	460	
Other	6	1	2	7	15		8	3	2	7	19	
Balancing Item	86	(157)	0	(432)	(503)		0	0	0	(432)	(432)	
Total Supply	7,860	6,063	6,269	6,925	27,118	-1.5	7,894	6,210	6,443	7,085	27,632	1.9
Disposition												
Additions To Storage	378	1,241	1,283	644	3,546	6.3	382	1,253	1,296	651	3,581	1.0
Exports	331	198	195	205	930	-7.5	225	225	225	225	900	-3.2
Consumption	7,151	4,625	4,792	6,075	22,642	-2.3	7,287	4,732	4,923	6,209	23,151	2.2
Lease And Plant Fuel	325	318	297	304	1,244	-3.2	306	315	302	309	1,232	-1.0
Pipeline and Distribution Use	193	157	158	167	676	7.6	193	159	161	170	682	1.0
Residential	2,287	669	348	1,422	4,727	-2.8	2,329	676	352	1,436	4,794	1.4
Commercial(a)	1,286	480	380	868	3,013	-3.5	1,291	477	378	863	3,010	-0.1
Industrial	1,629	1,425	1,448	1,757	6,259	-5.5	1,694	1,482	1,506	1,827	6,509	4.0
Electric Power	1,431	1,575	2,159	1,557	6,723	0.9	1,474	1,622	2,224	1,604	6,924	3.0
Total Disposition	7,860	6,063	6,269	6,925	27,118	-1.5	7,894	6,210	6,443	7,085	27,632	1.9
Addendum:												
Net Storage Injections	(1,168)	1,108	876	(678)	139		(1,386)	1,139	808	(738)	(177)	
End Period Working Gas In Storage	1,656	2,764	3,641	2,963	2,963		1,577	2,716	3,524	2,786	2,786	
Henry Hub Price (Dollars Per mmBtu)	4.48	3.81	4.15	5.17	4.40	-50.2	5.50	6.33	6.38	5.58	5.95	35.2
Gas Wells Drilled					21,926	-35.0					22,803	4.0
Total Discoveries(Bcf)					8,551	-39.6					8,665	1.3
Discoveries Per Well(Bcf)					0.39	-7.1					0.38	-2.6
Total Revisions and Adjustments(Bcf)					4,000	0.0					4,000	0.0
Total Reserve Additions(Bcf)					12,551	-30.9					12,665	0.9
Reserve Replacement Ratio					61%						62%	
Total Recoverable Reserves (Bcf)					176,345	-4.3					168,485	-4.5
Reserve To Production Ratio(Years)					8.6						8.2	

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

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

(E) WHB Energy Research LLC estimates.

(a) Includes minor use as vehicle fuel.