Natural Gas Prices: Raising the Bar

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INTRODUCTION

During the first quarter of 2003, monthly natural gas prices rivaled those seen in the winter of 2000/2001 and daily prices at times surpassed the price peaks of January 2001. Cold weather rapidly drove up prices to reach a peak of $18.60/MMBtu[1] in February, sparking Congressional inquires and complaints from many buyers. With current NYMEX natural gas prices for the balance of 2003 hovering in the $5/MMBtu range, we are all aware that the "normal" natural gas price level or "bar" has been moved.

The harder questions to answer are where is the new "bar" and what is the expected level of natural gas prices over the next five years. The level of natural gas pricing has a substantial impact on the cost of wholesale power generation, the cost of heating businesses and residential dwellings, the cost of fueling on-site power generation and cogeneration equipment and affects the costs of feedstocks in various chemical operations. The correct answers to these questions are, therefore, important to a wide range of businesses in planning for profitability.

From 1990 to 2000, the wellhead price of natural gas averaged $2.07/MMBtu [2], albeit with occasional spikes and valleys in pricing. During 2000 and 2001, natural gas prices roughly doubled from this level to an average of $4.08/MMBtu[3]. Despite the precipitous drop in natural gas wellhead prices in late 2001 and much of 2002, price levels have again returned to the $4-5/MMBtu range. Chart 1 shows the "bar" for natural gas pricing by using three-year averages to show these rising long-term trends.

On a long-term basis, this $4-5/MMBtu price level is sustainable based on the base case presented recently by the Potential Gas Committee (PGC)[4], other industry expert opinions and changed fundamentals. The Potential Gas Committee is a group formed from a cross-section of leading industry sources. They formally release a report biannually that evaluates critical trends, reviews the natural gas resource basis and determines important industry observations. The work is also done in connection with the Colorado School of Mines. The PGC is chaired by Darrel Pierce of Duke Energy.

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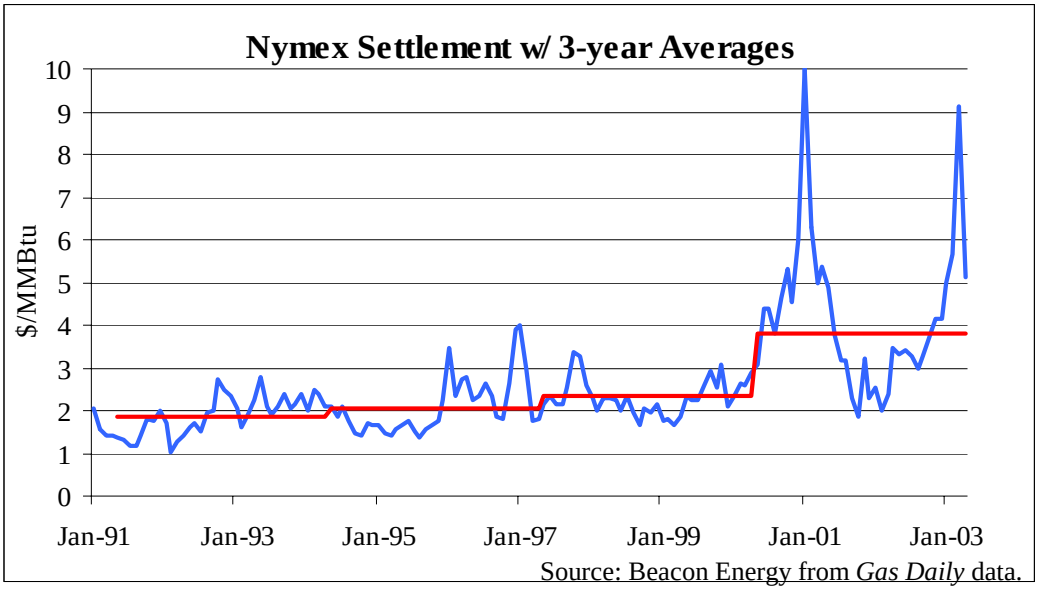
[1] *Gas Daily* Henry Hub price February 26, 2003
[2] EIA's natural gas monthly wellhead price www.eia.doe.gov The wellhead price did experience volatility during this period with the price ranging from $5.77/Mcf to $1.26/Mcf
[3] Average monthly 2000-2001 NYMEX contract close
[4] The PGC is a group of volunteers from the oil and gas industries, government agencies and academic institutions that publishes biennial estimate of the potential supply of natural gas in North America. Graph is an interpretation of the data presented in their April 2003 report.

Chart 1



LONG-TERM OUTLOOK

While the bar of what can be considered "normal" natural gas price levels has been raised, the other consideration in the outlook for natural gas prices is the increased volatility, which has become a hallmark of this commodity. In addition to uncertain world events in past months, the recent exit of many traders from the market has reduced market liquidity causing natural gas prices to become even more volatile. The reduced liquidity and the many drivers that influence natural gas pricing on a day-to-day basis, will ensure continued price volatility.

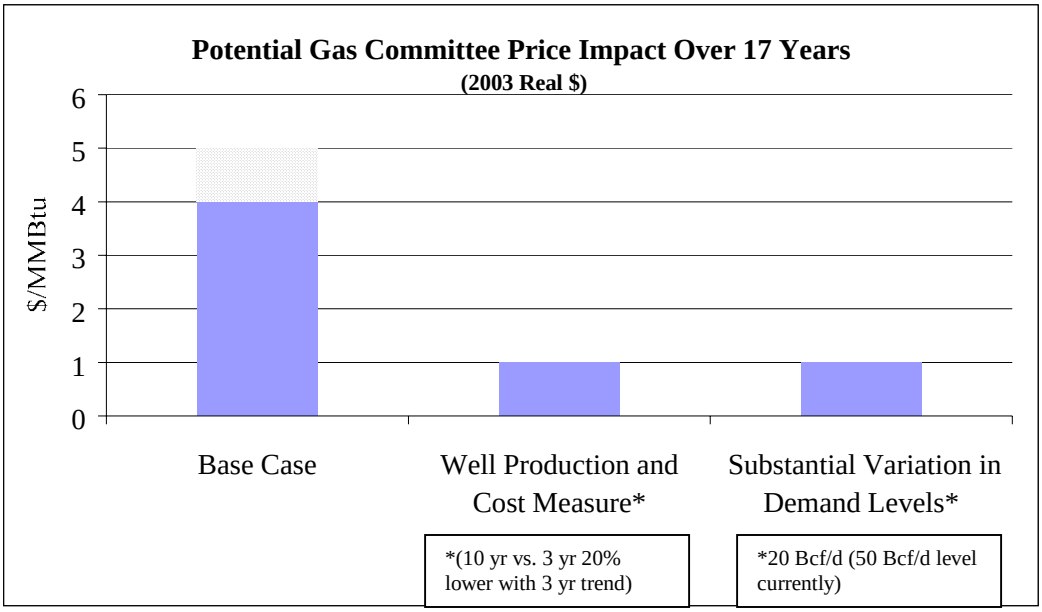
The recent biannual report released by the PGC in April evaluates gas reservoirs by basin and comments on trends, revenue expectations and the efforts by companies to find natural gas. The report highlights that total potential resources for the United States grew 3.3% to 1,127 Tcf from the report issued in 2000. Total potential resources include probable, possible, and speculative resources from traditional sources and also include coal bed gas. Current proven reserves stand at 183 Tcf with demand in the 20-23 Tcf/yr range. While the report indicates that with adequate accessibility to supply areas, the country's long-term supply needs will be met, it also highlights expected increases in natural gas prices to meet existing and new demand levels.

PGC using ten years or more of industry data, decline curves by well/basin, various assumptions mostly based on U.S. Energy Information Administration (EIA) reports and their own models, forecasts gas prices under a variety of different scenarios, with most of their forecasts showing gas prices in the $4-5/MMBtu range (2003 dollars) over the next 15 years. The forecast level of natural gas pricing varies based on factors such as demand levels, world oil prices, pipeline availability, and supply costs. For example, a $4/MMBtu (2003 dollars) price level is projected using current demand levels, 10-year average

revenue per rig returns (as a surrogate for finding and production costs) and an EIA long-term base case oil price around $24/barrel (2003 dollars). In several higher demand scenarios, linked to EIA's forecast of demand increasing by 40% in 2020 from current levels, gas prices are projected to be $1/MMBtu higher in real terms.

In other PGC scenarios, such as using the recent 3-year revenue per rig, which is 20% higher than the 10-year average, long-term average gas prices are also about $1/MMBtu higher in real terms. However, in other scenarios, including substantially lower demand, an increase in LNG projects with a likely floor pricing of $3.50/MMBtu, improved finding costs, or lower than expected oil prices long-term gas prices could be depressed into the $3/MMBtu range (2003 dollars). Chart 2 shows some of the assumptions and the range of pricing considered by PGC.

Chart 2



Source: Beacon Energy from Potential Gas Committee Report.

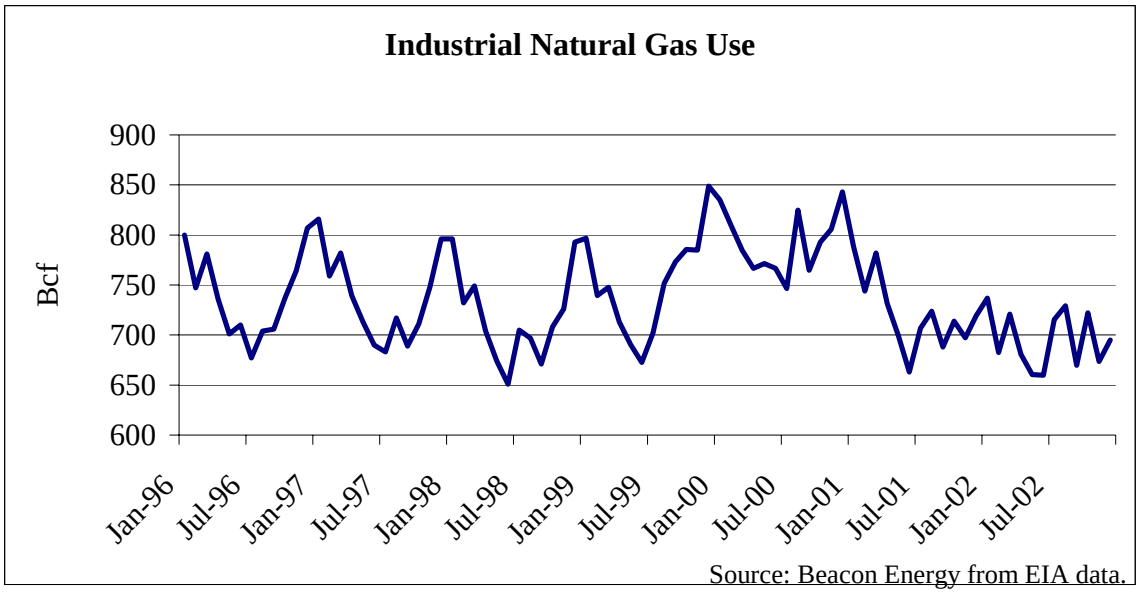
SHORT-TERM CONDITIONS IN 2003 AND 2004

With the current gas storage at record low levels there will be sustained upward price pressure through the upcoming winter. A 3,000 Bcf working gas level in storage is thought of as a good comfort level. As of April 25, 2003, EIA was reporting that working gas stocks were at 741 Bcf, well below last year's 1,606 Bcf and outside the 5-year band of historic levels. To reach 3,000 Bcf by the end of the injection season, an average of more than 83 Bcf will need to be injected every week. The biggest injection year in recent memory was 2001 and that year only averaged approximately 77 Bcf a week during the traditional injection season. The likely question is not if storage levels will be low going into the heating season, but rather, how low will they be. Therefore, the current

storage crunch will likely push prices up through at least the end of next winter. Current forward prices for the winter are over $6/MMBtu.[5]

From December 2000 to June 2001, the industrial sector, which accounts for 40-43% of annual gas demand, responded to high natural gas prices by reducing its total consumption by more than 20% through fuel switching, idling plants and curtailing production (see Chart 3). The effort and momentum to reduce or eliminate this demand may be higher than some in the industry have suspected, since industrial demand remained depressed even when prices dropped to the $2-3/MMBtu range in the latter part of 2001.

Chart 3



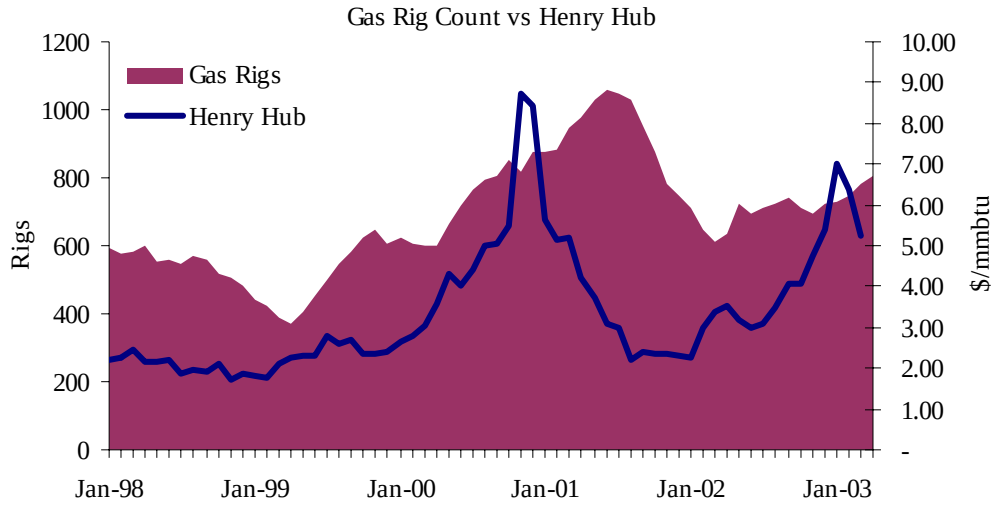
While some of this drop in demand can be attributed to the economic slowdown, the industries that had switched fuels but not curtailed production may not have returned to natural gas because of the continued volatility in the fuel. It is unclear what direction industrial consumers are taking. The economic recovery is in an early stage and war uncertainties have just ended. If industrial demand remains soft, this will place downward pressure on natural gas prices since this sector accounts for the largest portion of total demand.

The rig count correlates with natural gas prices at greater than 90% at a 6-month lag. Chart 4 shows that while operating rigs have increased, companies are more hesitant to place wells into service out of concern that the market will collapse as quickly as it did after the previous rig run up following the gas peak associated with the January 2000 NYMEX high. This hesitation is causing a more gradual build up of operating rigs that,

[5] The average price of the November 2003-February 2004 monthly NYMEX futures was $6.22/MMBtu on May 12th.

while still keep pricing at a higher level, may help to ameliorate some of the volatility that has been present in the commodity for the past several years.

Chart 4



Source: Beacon Energy from *Gas Daily* and Baker Hughes data.

Weather is always the wild card that should never be forgotten when looking at future natural gas prices. It affects prices in the short term and can have a huge effect. Weather can exacerbate already adverse gas fundamentals, calm an otherwise chaotic scenario or stir up pricing when nothing else is happening. During the first quarter of 2003, weather demand increased consumption by over 4% from previous levels. As of May 2003, NOAA is predicting, through its 90-day forecast that temperatures will be above normal during the summer quarter. This will push both the price and volatility of natural gas up as additional generators are brought online to meet the peak loads.

CONCLUSION

While continued soft industrial demand and unexpected weather conditions could cause a $1/MMBtu drop in short-term natural gas prices, it is likely that natural gas pricing in the $4-5/MMBtu range is here to stay for a long time. Still, because of continuing volatility, prices as low as $2/MMBtu or as high as $10/MMBtu should not be unexpected at various points in time. These volatile prices will be driven by changing weather patterns, variations in investment by gas producers, changes in industrial and electric generation demand levels, world oil prices, changing levels of storage and other factors. However, natural gas prices in the $4-5/MMBtu range should no longer be viewed as high and it should not be expected that the "bar" would revert to the average of the 1990s.

Formed in 1997, Beacon Energy LLC is a leading independent energy consulting firm specializing in the domestic and international electric power and fuel industries. Beacon Energy LLC is located in McLean, VA, www.BeaconEnergy.com; 703-905-8110