



IMGA gas NEWS

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U.S. Natural Gas: Fundamentals And Outlook For 2016

Richard Zeits, Seeking Alpha

The spot natural gas Henry Hub price dropped to \$1.70 per MMBtu during December. This trading level is substantially below the low watermark registered during the natural gas price “crisis” in 2012, the year when the U.S. natural gas-directed rig count collapsed by 50% peak-to-trough, from ~800 rigs to ~400 rigs. Of note, the gas-directed rig count now stands at just 168 rigs, according to Baker Hughes.

The market's consensus for 2016 natural gas pricing also looks quite grim: the 2016 Henry Hub strip settled at just \$2.22 per MMBtu recently.

Is \$2.22 per MMBtu indeed the price that is required to fuel the industry's growth? Or is the near-term price in disconnect with natural gas economic realities, setting the stage for a contraction in production volumes and rapid bounce in prices?

A poorly kept secret is that the U.S. natural gas industry has been able to survive despite what was often presented by analysts and industry executives as unsustainable low natural gas prices. In fact, not only did the industry survive, it managed to grow production at a brisk pace.

Indeed, the average spot Henry Hub price over the past five years was just \$3.55 per MMBtu, even after adjustment for PPI inflation.

At the same time, U.S. natural production growth remained unabated. Since January 2010, U.S. natural gas volumes increased by a remarkable 36%, or 6.6% CAGR.

As they say, the proof of the pudding is in the eating. If over a five-year period, a capital-intensive industry characterized by a relatively short cycle was able to grow production volumes while simultaneously expanding its productive capacity, my intuition tells me that the commodity price during that period was indeed sufficient for sustainable growth.

Cost to Produce Natural Gas Has Been In Decline

A case can be made that currently the natural gas industry needs a somewhat lower commodity price than during the previous five years to sustain growth, with several factors contributing to the reduction of the price threshold:

Continued debottlenecking of the Marcellus.

Improving extraction technology.

Low oil prices.

Acreage Held By Production.

Midstream is increasingly a sunk cost.

Lower NGL prices.

Overall, the above factors add up to a significant reduction in the economic price threshold that is required to maintain natural gas production growth in the immediate future, I estimate this threshold reduction to be as high as \$0.75-1.00 per MMBtu relative to the average price that was required in the past five years.

Therefore, I conclude that Henry Hub prices above \$3.00 per MMBtu would be simulative for a production growth pace consistent with or exceeding the expected demand growth, assuming no change to the industry's current cost structure.

How To Interpret The 2016 Strip Price?

The market appears to finally recognize the trend towards lower cost of natural gas supply in the U.S., as one can see from the downward shift in the futures curve. Aside from the \$1.50 per MMBtu drop in the 2016 strip since March of this year, the medium portion of the curve and the long-dated futures also dropped substantially, by \$0.50-\$0.73 per MMBtu and \$0.35-\$0.40 per MMBtu, respectively (all prices are PPI-adjusted).

Notwithstanding the powerful efficiency trends discussed above, I view the recent 2016 strip price of \$2.22 per MMBtu as being below the level that is required for continued production growth matching the pace of demand growth. Structurally, it is price effectively containing natural gas production growth.

Given the overproduction of natural gas relative to demand in 2015 which led to record-high storage at the end of the injection season, further exacerbated by the very warm first half of the winter, a containment price is logical.

Moreover, given the significant volumes that remain choked back in the Marcellus and Utica, containment prices will need to prevail for some time for the market to rebalance.

Therefore, the current shape of the futures curve for 2016 does not contradict production economics and is certainly within the range of scenarios that can be rationalized.

Beyond 2016

Natural gas strip remains subdued beyond 2016, trading at \$2.71 per MMBtu and \$2.88 per MMBtu in 2017 and 2018, respectfully, based on last Friday's close and adjusting for ~1.5% annual inflation.

The scenario discounted in these medium-term prices appears consistent with the low oil price expectation reflected in WTI futures.

Indeed, assuming crude oil prices gradually rise from \$43 per barrel at the beginning of 2017 to ~\$50 at the end of 2018, as predicted by the futures, one would expect continued cost deflation for natural gas producers, from the already low current levels.
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However, there are two upside risks to these price levels, in my opinion.

First, in the event oil prices stage a strong recovery, the supply chain cost re-inflation appears inevitable and may result in as much as \$0.25 per MMBtu effective uplift to the natural gas price threshold per year in each 2017 and 2018. I discuss oil price fundamentals and outlook.

Second, in the event the current price signal results in a deep decline in operating activity, a price spike-even if temporary-may be needed as a short-term stimulus to the industry to jump-start completions and new drilling.

If both of the above risks-higher oil prices and an “overshoot” in the activity decline-materialize, a price run-up toward a \$4.00 per MMBtu level appears quite possible in 2017 time frame, albeit it is unlikely to be sustainable.

In Conclusion

The trend towards lower natural gas supply cost in North America has been powerful and may have not fully run its course. While some of the cost components are likely to continue on a secular decline trajectory, certain others-such as supply chain costs-are cyclical in nature.

The medium-to-long-term Henry Hub futures curve moved sharply lower in the past nine months, as the market appears to increasingly recognize secular cost decline trends. On an inflation-adjusted basis, the futures curve implies a price of natural gas below \$3.00 per MMBtu for the next four years, using annual averages.

A strong recovery in oil prices, combined with pent-up demand for gas, has the ability to move the cost of natural gas supply by as much as \$1 per MMBtu higher.

However, demand growth factors such as LNG exports, gas-fired power generation, Mexico exports and petrochemical uses may take three-four years to compound to a level where more marginal supply is called upon, impacting the clearing point for natural gas.

OPERATOR QUALIFICATION TESTING

The second session for this series of OQT will be held January 26 in Auburn and February 3 in Pinckneyville. This session will cover Tapping & Stopping and Valves.

The final session for this series of OQT will be held in Auburn on March 1 and in Pinckneyville on March 2. These sessions will cover Regulating Devices.

To register for one of these sessions, please contact Brenda Rubenacker, 1310 W Jefferson, Auburn, IL; 217-438-4642; or brubenacker@imga.org

SAVE THE DATE!

IMGA's ANNUAL MEETING will be held on Tuesday, March 15th in Springfield, IL at the Northfield Inn & Suites.

As always, the event is free and will have some very informative sessions. This is a wonderful opportunity to meet and talk with other municipalities. An ample breakfast and lunch buffet is included. Detailed information will be sent out soon.

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1310 West Jefferson
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