



Natural Gas Price Outlook

For more information, visit www.NaturalGasOutlook.com

Executive Summary

Energy Solutions, Inc., offers unbiased consulting services and educational publications on natural gas prices and price trends to businesses that require straightforward and timely information regarding the natural gas industry in order to make more informed purchasing and selling decisions. Our clients include commercial and industrial businesses that consume natural gas; companies that are involved in the merchandising, production and delivery process; and investment firms. *Natural Gas Price Outlook* provides buyers and sellers with a thorough and comprehensive review of numerous market factors that will impact the price of natural gas over the next three years.

In July 2008, the price of natural gas in Louisiana was close to \$14 per MMBtu. Higher prices incited drilling, and the natural gas drilling rig count reached 1,606 in August 2008. However, as of February 8, 2012, the price of natural gas in Louisiana was around \$2.50 per MMBtu. As natural gas prices have fallen, producers have curtailed drilling, and the natural gas drilling rig count on February 10, 2012, was just 720. Logically, as the natural gas drilling rig count declines, natural gas production levels also should decline. However, this has not occurred. According to the Energy Information Administration (EIA), between January 2008 and November 2011, natural gas production levels in the Lower 48 states have actually increased by 12.92 Bcf/day.

Advancements in horizontal drilling technologies have made shale gas supplies more accessible and cost effective. In addition to improved drilling rig efficiencies, lower operating costs, and significantly higher production yields from shale wells, many producers are able to supplement natural gas revenues with the sale of natural gas liquids (NGLs), which are a byproduct of natural gas production and priced in accordance with crude oil prices. Plus, diversified producers are benefiting from the production of associated gas, which is natural gas that is produced in conjunction with crude oil at a presumed zero cost. These factors have improved final realized prices and reduced break-even price points for producers, keeping natural gas production on the rise even as natural gas prices have fallen.

A producer's final realized price consists of a combination of spot market natural gas prices, hedged production positions, the economic benefits of produced NGLs, and associated gas. Therefore, many producers have continued to remain profitable even though spot market natural gas prices have fallen to below \$3 per MMBtu. Over the past year, the economic benefits of NGLs were widely known as a contributing factor to a reduced break-even price point for producers. However, what was underestimated was the impact of associated natural gas, both in terms of increasing natural gas production levels and in reducing natural gas break-even price points.

As crude oil prices have risen to \$90-\$100 per barrel, producers are aggressively focusing on crude oil shale plays using the same successful horizontal drilling technologies applied in natural gas shale plays. On February 10, 2012, the crude oil rig count reached 1,263 rigs, an increase of 847 rigs over the August 2008 level of 416. Producers are flocking to crude oil plays, and in doing so, they are incrementally adding to natural gas supply levels through associated gas production.

Natural gas prices in 2012 are expected to be some of the weakest of this decade. Natural gas supplies continue to outpace demand, and the mild winter of 2011-2012 only makes that fact more visible. Since it appears that several natural gas producers previously hedged their forward sale price of natural gas production in 2012 at price levels that are considerably higher than the current spot market for natural gas, production curtailments are not expected to be widespread. Ultimately, with the current sluggish economic outlook and the large surplus of natural gas in storage inventories, natural gas prices at the Henry Hub in Louisiana are expected to decline to a new 2012 calendar-year low by the fall. Overall, the 2012 natural gas price environment is bearish, and barring an unforeseen change in drilling legislation or emissions regulations, that is unlikely to change.



Natural Gas Price Outlook

For more information, visit www.NaturalGasOutlook.com

Executive Summary (cont.)

However, *Natural Gas Price Outlook* also highlights the potential for a price momentum change in 2013, based on the following:

- **Producers Will Have Limited Opportunities to Hedge Forward Production** - It is estimated that producers in liquid-rich gas plays have at least 50 percent of their forward gas production volumes hedged for 2012 at profitable price levels. Conversely, on average, natural gas producers have a smaller amount of their forward gas production volumes hedged in 2013, and the volumes that are hedged for 2013 tend to be hedged at a sale price that is \$.85-\$1.00 per MMBtu lower than where the price level for 2012 volumes have been hedged. During 2012, there are expected to be few, if any, opportunities for producers to hedge forward gas supplies for 2013 at \$4-plus price levels. Given the forward-price curve, producers are likely to continue to produce natural gas volumes in 2012, voluntarily postponing more production curtailments until 2013.
- **Natural Gas Production Levels Will Exhibit Consistent Signs of Tapering Off** - As production curtailments occur and the drilling rig count declines, there will eventually be some signs that natural gas production levels are tapering off, but those signs aren't expected to surface on a consistent basis until 2013.
- **Anticipation of Increased Demand** - Even though natural gas demand is expected to remain rather anemic for the next 12-18 months, changing perceptions of demand for 2013 and beyond could initiate a price momentum shift. Primarily, an increased transition from coal to natural gas-fired generation, driven by the low price of natural gas and compliance requirements from several new Environmental Protection Agency (EPA) rules, lay the groundwork for rising natural gas demand in 2013.

Other conclusions of *Natural Gas Price Outlook* include:

- Some shale plays in the U.S. can produce five times the amount of natural gas as conventional, vertically-drilled wells, allowing shale production to offset declines in other regions like the Gulf of Mexico.
- New technologies are expected to make accessibility to stacked shale plays, such as the Utica Shale, increasingly economical. Some analysts believe the Utica Shale, which lies beneath the Marcellus Shale, may actually be host to the world's largest accumulation of natural gas confined to a single rock.
- Shale gas is a global resource, but the U.S. and Canada are the world's leaders in understanding the technologies to access it. Through joint ventures and other investments, foreign countries are learning these technologies with the goal of exploiting their own countries' shale reserves. This could reduce the need for liquefied natural gas (LNG) imports in some countries.
- Diversified exploration and production companies are increasingly turning their focus to crude oil shale plays. Aggressive crude oil production will lead to a higher amount of associated gas production. Associated gas is produced in conjunction with crude oil, and is, therefore, presumed to be produced at a zero cost.
- Announced production curtailments are expected to have minimal volume and price impacts in 2012, especially since those same producers seem to be isolating those curtailments to less efficient, higher-cost regions, while retaining current activity levels in crude oil shale plays and liquid-rich gas supply basins. In addition, there is still a backlog of approximately 3,000 completed, but not yet producing, natural gas wells that can be brought into service quite quickly, if necessary.



Natural Gas Price Outlook

For more information, visit www.NaturalGasOutlook.com

Executive Summary (cont.)

- The cost benefits of NGLs in the shale production process have reduced the break-even price point for natural gas producers because NGLs are stripped away, priced in conjunction with crude oil prices, and then sold independently of the natural gas. Liquid-rich regions of the Marcellus Shale region can be profitable even when the price of natural gas is near \$3 per MMBtu. Similarly, the Eagle Ford Shale, which is considered one of the most liquid-rich plays in the nation, has an estimated break-even price point for natural gas that is below \$2 per MMBtu.
- Ample supplies will quash weather-related price rallies, minimize hurricane-induced price impacts, and push storage inventories to new record highs by November 1, 2012.
- Natural gas producers are changing the way they view the forward natural gas market. They are budgeting at lower price levels, and they are looking for additional ways to reduce expenditures in order to continue to operate in what is projected to be a lower-priced natural gas environment. Producers now indicate that they will increase spending in the natural gas market if prices reach \$5 per MMBtu, whereas one year ago, they indicated they would increase spending at \$6 per MMBtu. Similarly, producers now indicate that they would likely cut spending at \$3.50 per MMBtu, whereas one year ago, they indicated they would likely cut spending at \$4 per MMBtu.
- Based on pending applications of companies to turn their idled or underutilized LNG import facilities into export facilities, the U.S. is expected to become a net exporter of LNG by 2016. Domestic producers are anxious to compete in the global LNG market given that other markets are willing to pay a natural gas price of \$12-\$18 per MMBtu. However, there are numerous pricing risks to the economics of LNG exports, including the potential for a global glut of LNG supply due to overbuilding, reduced demand because of applied shale production technologies in other countries, and the potential that the price correlation between long-term LNG contracts and crude oil will change because of a growing LNG spot market.
- As domestic growth in natural gas production and an improved pipeline infrastructure reduces the need for Canadian pipeline imports, the U.S. will become a net pipeline exporter of natural gas to Mexico by 2025.
- The electric power sector will be the primary driver behind rising natural gas demand as aging coal-fired electric generation is retired, some nuclear power plant construction is tabled, and lower natural gas prices incent fuel switching from coal to natural gas-fired electric generation. The largest wildcard for demand rests with the implementation of several new or pending EPA rules that mandate reductions in pollution emissions. For power plant operators, compliance means costly retrofits to existing coal-fired electric generation or, alternatively, a transition from coal-fired electric generation to natural gas-fired electric generation. While there are still several rules in limbo, even implementation of some of the EPA requirements are expected to result in a dramatic increase in natural gas demand, and increased reliance on natural gas-fired electric generation may create a tighter correlation between natural gas and electric price volatility.
- The oil-to-gas price ratio that existed before 2009 is no longer relevant in calculating the value of crude oil or natural gas commodities in the U.S.
- Improved pipeline infrastructure and additional supply sources have resulted in more equitable natural gas prices from coast to coast, and the price of pipeline basis or pipeline transportation throughout the nation is more equalized than it was five years ago. However, increased portability of natural gas has left more pipelines underutilized, prompting them to file for rate increases in order to maintain their guaranteed rates of return. This is a trend that could increase delivery costs or pipeline basis to certain geographic regions.



Natural Gas Price Outlook

For more information, visit www.NaturalGasOutlook.com

Executive Summary (cont.)

- Investigations into the environmental impacts of horizontal drilling and hydraulic fracturing, which are the technologies used for shale production, are ongoing, and the potential for increased regulations remains real. In addition, there are new investigations into the cause of increased earthquakes, and some seismologists are pointing to shale drilling and the use of deep injection wells for water disposal as a potential factor. Increased regulations or the restriction of shale drilling would potentially cause natural gas prices to rise.
- U.S. crude oil production is expected to surge over the next three years because of increased drilling in crude oil shale plays. However, crude oil prices are not expected to plummet as natural gas prices did because of global increases in crude oil demand. Plus, crude oil prices tend to respond less to general supply/demand issues and more to changes in the U.S. Dollar, geopolitical tensions, and economic data.
- Natural gas market conditions for 2012 are bearish, and conditions point to the potential for natural gas prices to decline to a new calendar-year natural gas price low in the fall of 2012.
- The potential for a price momentum shift increases in early 2013 as producers have less of their sales production hedged, and there is further clarity on how compliance with various EPA rules will impact demand.
- The two potential industry-changing events that could alter the outlook for natural gas prices in this analysis are the restriction or widespread regulation of shale drilling technologies and/or earlier-than-expected compliance with EPA emissions regulations.

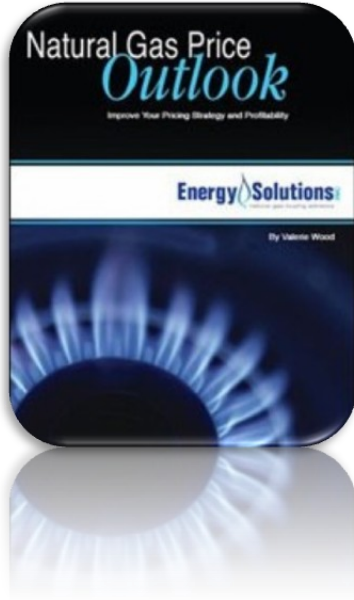
Natural Gas Price Outlook provides an outline of natural gas price forecasts for the next several years. As a result, *Natural Gas Price Outlook* will help businesses better understand the changing natural gas environment so that they can make more informed decisions related to the purchase or sale of natural gas or related products. *Natural Gas Price Outlook* concludes that while there appear to be no immediate threats of a changing price trend higher, the price downside in 2012 is somewhat limited. By early 2013, changing perceptions of the future, caused by increased natural gas demand from the electric power sector and visible reductions in gas production levels, are expected to impact the forward natural gas price curve, causing it to shift to a slightly higher trading range. From that point, natural gas prices gradually move higher reaching a projected price range of \$5-\$6 per MMBtu by 2015.

For natural gas buyers, a major price bottom is not likely very far away. The later part of the first quarter of 2012, the third quarter of 2012, and the first quarter of 2013 are expected to provide some very good buying opportunities for 2013 and beyond.

For natural gas sellers, however, lower prices are not expected to disappear quickly, and selling opportunities over the next 12-15 months will likely be limited.



Natural Gas Price Outlook



Natural Gas Price Outlook was published on February 13, 2012. This 50-plus page analysis offers businesses a straightforward and comprehensive analysis of the natural gas market, evaluating numerous price drivers, and is a must-read for those who want answers to what the future holds for natural gas prices.

With *Natural Gas Price Outlook*, businesses are better prepared to act when prices move in their favor. Formed in 1996, Energy Solutions is independently owned. Plus, Energy Solutions, Inc. is not a buyer or seller of natural gas, so our advice and recommendations are unbiased. We sort through the “noise” in the natural gas industry and bring the pertinent information to your attention to save you both time and money.

This analysis will benefit businesses that consume sufficient natural gas to impact their budget; companies that are involved in the merchandising, production, and/or delivery of natural gas; and even investment firms, which may be recommending the buying or selling of natural gas or other energy-related commodities.

Just \$179 - Order by March 9, 2012, and save \$70

[Online Order Form: Use Discount Code save70](#)

[Printable Order Form: Use Discount Code save70](#)

[Learn More about Natural Gas Price Outlook](#)

Visit www.energysolutionsinc.com to learn more about the services of Energy Solutions, Inc.

Please direct questions or comments on this analysis to

Valerie Wood, President of Energy Solutions, Inc. ([Click here](#) for biography)

Tel: (608) 848-6255

E-mail: vkwood@energysolutionsinc.com