Dog Days For Dry Gas

As we watch the shale revolution take hold in the U.S., it is difficult to imagine that it was just nine years ago when Federal Reserve Chairman, Alan Greenspan, warned Congress about the possibility of natural gas shortages in North America.

"Access to world natural gas supplies will require a major expansion of U.S. LNG (liquefied natural gas) terminal import capacity," he said in a public statement. "Without the flexibility such facilities will impart, imbalances in supply and demand must inevitably engender price volatility."

Since then, technology has radically changed the U.S. oil and natural gas business. It has become extremely commonplace for U.S. oil and gas producers to drill a vertical hole downward 12,000 feet, take a right turn and drill a horizontal leg an additional 10,000 to 12,000 feet through a shale formation no thicker than 10 feet.

The impact of that technological breakthrough is staggering when analyzed from a current "available supply" standpoint.

Gas supply

A recent Raymond James analysis indicates that current horizontal well productivity is five times greater than the average U.S. vertical wells drilled in 2006. This study compares the estimated average rate of first-year production for present-day horizontal wells against vertical wells drilled in 2006.

In addition to the breakthroughs in horizontal drilling, the industry has honed a hydraulic fracturing process utilized on more than 1 million wells during the past 60 years. American ingenuity has truly created an energy revolution admired throughout the world.

"If you compared the shale gas revolution in the U.S. to a baseball game, it is the top of the second inning, the U.S. is ahead by 10 runs, we are playing a home game, we invented all the equipment, and we wrote all the rules," said Robert Bryce, senior fellow at the Manhattan Institute and author of *Power Hungry*.

Is the shale revolution real? U.S. natural gas production is up nearly 7 billion cubic feet (Bcf) per day from 2010. That is more than a 10% increase in less than 18 months. Current production is about 64 Bcf per day. The pre-2010 daily U.S. production record was under 60 Bcf per day. Since first-quarter 2011, U.S. daily natural gas production has been higher on each successive day.

Gas price

Meanwhile, the combination of higher supply volumes and the financial meltdown that negatively affected demand has had a dramatic effect on the price of U.S. natural gas. From 2003 through 2008, the average price for the Nymex Henry Hub natural gas contract was more than $7 per million Btus (MMBtu). In 2008 alone, the Nymex averaged $9 per MMBtu.

Thus far in 2012, the price has averaged less than $3 per MMBtu. According to Bryce, that price reduction of $4 per MMBtu is now saving the U.S. economy $264 million per day. It also means an annual savings in cash spent on energy of $600 for the average household in the U.S. that uses natural gas for heating, cooking and drying.

Wet versus dry gas

The overabundance of natural gas in the U.S. has created an important financial distinction for producers and investors between dry-gas and wet-gas plays. It has become clear that natural gas liquids (NGLs) production drives investment decisions for natural gas.

For example, an analysis by Bentek Energy shows a dramatically different internal rate of return for the Granite Wash (found in Oklahoma and Texas) producers when natural gas liquids are part of the production slate, versus wells that lack NGLs. The study found that the average Btu of Granite Wash gas is about 1,250 Btu per thousand cubic feet (Mcf).

As a result, a Granite Wash producer can realize a greater internal rate of return, thanks in large part to the liquids value. Without the NGLs and associated oil, the Granite Wash producer would only receive a 5% internal rate of return on every dollar invested.

These are definitely the dog days for dry-gas producers. According to a report by Credit Suisse, on February 3, 2012, "With the current front month gas futures at $2.56 per MMBtu, and the remaining 2012 strip at $2.97 per MMBtu, we do not see any pure dry-gas basins providing economic returns."

A February study released by Raymond James Equity Capital Markets, based on Baker Hughes drilling data, supports the claim that the U.S. production industry has shifted from gas to oil rigs.

Today, two immediate questions confound the industry. First, will recent gas production gains be affected by a slowdown in drilling for dry gas? Second, will new demand appear to save the day? Stay tuned for that discussion in next month's column. ■

John Harpole *is senior advisor to* Midstream Business, *founder and president of Mercator Energy LLC and a board member of the Western Energy Alliance, Colorado Oil and Gas Association, Leadership Program of the Rockies, University of Colorado's Global Energy Management Program and Energy Outreach Colorado.*