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Economic Spark

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State's natural gas industry ready for energetic future.

Story by Juliet A. Terry [Email](#) | [Bio](#)

Most chefs will say they prefer to cook on a gas stove, something about controlling the flame to get the perfect amount of heat. But most chefs probably don't know how the gas gets to their stove.

Many people, in fact, probably do not know how natural gas gets from its home, deep in the strata, to their homes. And many West Virginians may not realize coal is not the only extractive industry thriving in the Mountain State.

"It's not a misconception. It's a lack of knowledge about this industry -- the size, economic impact and its value to the state of West Virginia," said Nicholas "Corky" DeMarco, executive director of the West Virginia Oil and Gas Association. "We've kept it as the best-kept secret in the state. We've been under the radar."

According to a 2005 study prepared by the Marshall University Center for Business and Economic Research, half of West Virginia's homes are heated by natural gas. West Virginia is the third-largest producer of natural gas east of the Mississippi River, and the industry is poised for steady growth for at least the next 20 years.

It may have flown under the radar in the past, but the state's oil and gas industry is speaking out now because it needs workers. Like the coal industry, the average age of someone working in the natural gas industry is over 50.

"The biggest burden we have right now is to find employees," DeMarco said. "There is a tremendous need for employees, and the jobs pay very well. Because of the boom in the energy industry, this can be a career job rather than cyclical like it was 20 to 30 years ago."

Energy is booming, indeed. Natural gas production in 2004 was nearly 200 million Mcf (thousand cubic feet) in West Virginia, and it is selling at prices more than four times as high as it was in 1988.

Of course, consumers aren't pleased with the increase in prices.

"Most of the general public understands their gas bills," said Lloyd Jackson, former state senator from Lincoln County whose family owns Jackson Gas Co., which has been producing natural gas for generations.

"But the industry is so much more than that. It is multi-segmented ... and encompasses a lot of people," Jackson said.

According to information provided by Mark Muchow, state fiscal policy director, natural gas extraction and related pipeline transportation industries historically account for roughly 1 percent of the overall economic activity in West Virginia. Total employment -- direct and indirect workers -- is about 15,000 people.

Decades of Drilling

West Virginia is considered the birthplace of natural gas. It was discovered in 1815 near Sistersville, but historical records as far back as the 1750s indicate then-General George Washington learned of oil and gas springs in western Virginia (now West Virginia).

Since then, the state has remained a major player in the industry, and the future holds plenty of promise.

The Appalachian Basin, which covers nearly all of West Virginia and parts of New York, Pennsylvania, Maryland, Ohio and Kentucky, is considered one of the most drilled but least explored natural gas basins.

According to Katharine Lee Avary of the West Virginia Geological Survey, West Virginia's gas reserves are estimated at about 3.3 trillion cubic feet of gas. At existing production levels, she said the state has at least 16 more years of drilling, but she stressed that reserve numbers include only what is known.

"There is a lot of West Virginia that has not been fully explored," Avary said. "There are only 11 wells that have been drilled in the state that have completely tested all of the sedimentary rocks preserved today.

"We estimated that on the order of 140,000 wells have been drilled in West Virginia since 1858," she continued. "However, the majority of these wells were drilled to relatively shallow depths. So I think there is a lot of room for additional drilling to deeper depths. ... I think there are many more years of additional drilling and production in West Virginia's future."

Economics of Drilling

Drilling thousands of feet below the surface in the hope of finding natural gas is an expensive proposition, but one made slightly more affordable thanks to the increase in prices.

"You're in the ballpark of \$200,000 to \$400,000 for just a shallow well," Jackson said. "It depends on where you drill, of course."

Former state senator Mike Ross, owner of Mike Ross Inc., a natural gas production company in central West Virginia, said getting just one well started is "a lot of work, a lot of expense and subject to a lot of regulations."

First, the mineral and land rights have to be worked out so the gas company legally can begin its exploratory work. But drilling for the gas is only part of the expense. Getting the gas into the pipeline and on the distribution pathway takes money as well.

Jackson said West Virginia's pipeline system could stand some expansion.

"West Virginia has a lot of pipeline bottlenecks. It's hard to get the gas to market," he said. "There was a lack of investment for a while. During the 1990s, there was a real collapse in natural gas prices."

Ross said the cost of drilling, transportation and distribution on top of royalties paid to the land owner plus local and state taxes mean a natural gas producer spends a good bit of money before recovering any product.

"More than 30 percent of your well is gone the day you start drilling," Ross said. "You have about 60 percent left to try and make a profit on."

Today, larger natural gas producers are able to drill more and make capital investments, but smaller companies still struggle to attract investors.

"It's hard to come by financing," Jackson said, explaining that Wall street still does not view the credit worthiness of smaller producers the same as larger producers. "Wall Street is just not designed to invest in small business. But the industry still has a bright future in West Virginia."

Regulating the Industry

With drilling expected to increase steadily in the next several years, keeping the industry safe is of paramount

importance.

West Virginia's Department of Environmental Protection has about 16 field inspectors in the Office of Oil and Gas. Those 16 inspectors are tasked with making certain the state's nearly 50,000 active wells are operating safely.

"We look for superficial disturbances ... and make sure there isn't any excess sedimentation or erosion. Basically, we make sure that it's done right, both in terms of access to the site and the activity itself," said James Martin, chief of the Office of Oil and Gas. "We also look at groundwater protection."

Martin said natural gas drilling leaves a much smaller "footprint" behind than coal mining or timbering. Most consumer complaints, he said, involve questions about whether a natural gas producer is doing its job correctly. To that end, the Office of Oil and Gas is putting together a surface owner's booklet "to help them know what to expect," Martin said.

Looking to the Future

With a renewed focus on improving the nation's domestic supply of energy, West Virginia's oil and gas industry is ready to play a major role, said Scott Rotruck, director of corporate development at Chesapeake Energy.

"We have 400 people right now in our Eastern Division, and we fully expect to grow," Rotruck said. "If you want to know about energy production, you come to West Virginia. We have great expertise here, and it will serve us well."

Rotruck said in the "big picture of energy, this is one of West Virginia's brightest opportunities."

"Natural gas makes economic senses. It's something we know a lot about, and we have established excellence in this area," he said.

Steve Warnick, Chesapeake's vice president of marketing, said people assume West Virginia natural gas deposits are highly developed, but "there are so few deeper wells drilled."

Most wells drilled in the state are shallow, no deeper than 5,000 feet. But natural gas can be found in much deeper wells, as deep as 15,000 feet. Thanks to increased prices, companies now can afford to spend millions accessing those deeper reservoirs, Warnick said.

In addition, West Virginia's proximity to major markets on the east coast make it perfectly situated to maximize its role in the energy boom, he said.

Looking forward, Rotruck said West Virginia can build on its experiences to create a promising future for energy production.

"We have a very long history, but we also have a long future," he said. "This is not a five-year horizon. It's really important for folks to understand that there are long careers to be had in this industry."

FAST FACTS

The nation's energy boom means West Virginia's oil and gas industry is busy, and it keeps getting busier. According to the West Virginia Department of Environmental Protection Office of Oil and Gas, natural gas well-work permits have increased by more than 1,000 since 2002. Total annual natural gas permits, which are issued for new wells, reworking old wells and any other work requiring a permit, are as follows:

- 2002 -- 1,667
- 2003 -- 2,156
- 2004 -- 2,248

- 2005 -- 2,661

James Martin, chief of the Oil and Gas Office, said permits for 2006 are 30 percent higher than they were a year ago.

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