

SHALE GAS INDUSTRY

Drilling jobs: Training, education can link workforce to energy boom

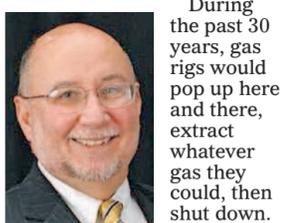
By Butch Cooper
METRO STAFF

The natural gas industry is poised to give West Virginia a much-needed economic boost.

The discovery of the Marcellus Shale gas field under the Mountain State, along with the development of horizontal drilling and hydrofracking, has transformed the state's energy future, according to Corky DeMarco, the executive director of the West Virginia Oil and Natural Gas Association.

Marcellus Shale gas wells are among the most productive in the eastern United States. Yet, it was only a few years ago that natural gas prospects in the region appeared limited.

"We thought we had a finite amount of natural gas," said DeMarco.



DeMarco

During the past 30 years, gas rigs would pop up here and there, extract whatever gas they could, then shut down. There was so little natural gas being extracted locally that it was being imported from North Africa and South America to a facility in Maryland. In addition, a pipeline was built to bring gas in from the Rocky Mountains.

"Because we thought we had a finite supply here, we built a pipeline called the Rockies Express," DeMarco explained. "It started in the Wyoming area and ended up in Ohio. It was supposed to bring gas from the Rockies."

But while the pipeline was being built, the Marcellus



Dominion workers do valve maintenance on a pipeline. (Photo courtesy of West Virginia Oil and Gas Association)

Shale discovery came.

"As soon as (the Rockies Express) was completed, we started shipping gas westward," DeMarco said. "By the time they built it, we didn't need it."

Estimates vary, but according to the Energy Information Administration, there are more than 141 trillion cubic feet of natural gas in the Marcellus Shale, which is located 5,000 feet below the surface. The shale is part of a bigger group of shales located throughout the Appalachian Basin, with names like Rogersville, Trenton-Black River and Rome Trough -- the last being 30,000 feet under the surface.

There is so much recoverable gas to be had that DeMarco predicts America will eventually achieve energy independence.

"We've probably got more natural gas in the Appalachian Basin than anywhere else in the world," DeMarco said. "There's no reason a person from this country ought to die overseas in the name of energy. We have more energy, and more water, than anyone."

Jobs outlook

With the abundance of recoverable natural gas comes an increased demand for more rigs and pipelines to deliver the resource.

The construction of the pipelines alone is estimated to provide more than 18,000 jobs just in West Virginia, according to WVONGA.

"The pipelines and export facilities are important for us right now," said DeMarco. "We've got to seize this opportunity to bring jobs here."

Several pipeline projects are being proposed (see story on page 3). All together, they would represent a \$5.7 billion investment. All require regulatory approval.

But the job opportunities don't end with rig workers and pipeline builders. Other industry jobs include welders, truck drivers, gas control officials, accountants, legal staff and other supporting roles.

"Not everybody goes outside and works on a drill rig. You can make good money doing these other kinds of things," DeMarco said.

Beyond that, DeMarco sees the potential for an industrial boom where new companies will seek to locate in the area. "I think you will see major industrialization from Pittsburgh to Portsmouth (Ohio). The Ohio River is a major river that can be used,"

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— Corky DeMarco, executive director of the West Virginia Oil and Gas Association

DeMarco said. "It's inevitable, because why would you want to make widgets somewhere where the cost of gas is high, when we are selling it here for chump change?"

DeMarco would like to see West Virginians filling all of these roles in the state's natural gas industry.

"We've got a population that wants to go to work," he said. "We've got a lot of people in southern West Virginia that have skill sets from working in the mines that can be transferred. Some don't like the idea of leaving southern West Virginia. We need to recruit them and persuade them to go where the jobs are."

Using community colleges to train workers

To train and retrain these workers, DeMarco sees the state's community colleges being a key asset.

"We started in 2004 partnering with our community colleges here. We've had petroleum and engineering programs at West Virginia Tech and at WVU and some of the other institutions for years," DeMarco said.

"As the industry has continued to change and grow, we've continued to use community colleges. Not only are they feeders for the four-year programs, but they are extremely important for worker training, because they offer a flexible curriculum."

He cites a program in well

tending as an example. Well tenders are responsible for monitoring and maintaining the wells that pump the gas out of the ground.

"We went to Southern (West Virginia Community and Technical College) and told them we needed a program to train about 50 well tenders," DeMarco said. "They worked with our folks and shadowed our people. They wrote a curriculum based on the skill sets we needed. We ended up being able to employ almost everyone who went through the program."

"Community colleges can train people fast. Do these people all stay in the industry? No. But a lot of them do and find good-paying jobs."

DeMarco sees a future where West Virginians don't have to leave the state to seek employment.

"We've got the resources. We've got the rivers, roads, rails and airports. And we've got a workforce. It may be a bit displaced right now, but we've got kids with talent who were born and raised here. Some of the talent that's left, we need to bring back. The next 50 to 75 years around here can be our best times. We have the opportunity."

"And, you know what? We've got a good place to live."

To learn more about WVONGA, go to the organization's website at wvonga.com

PIPELINES

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tion for construction with the ERC on Oct. 23, anticipating a construction start date toward the end of this year and service beginning in the final quarter of 2018.

Over the course of the construction period, project owners plan to spend \$811 million directly on resources, such as labor, materials and equipment, in West Virginia, according to a report by FTI Consulting published in October. The report also states that the project could generate \$47 million in aggregate tax revenues through 2018. During peak construction activity in 2017 and 2018, it projects 4,200 to 4,500 jobs will be created in construction and ancillary fields within the state.

Once in service, the pipeline will support more than 50 jobs, directly, across West Virginia, with average annual wages and benefits of nearly \$65,000 per job, the report says.

Rover Pipeline

The Rover Pipeline, being built by Rover Pipeline LLC (a company under the Energy Transfer Partners umbrella), is slated to transport natural gas to markets across the United States from Marcellus and Utica Shale storage facilities.

The project is planned to gather natural gas in West Virginia (starting in Doddridge County), eastern Ohio and western Pennsylvania to a hub at Defiance in northwestern Ohio. From there, through existing pipelines, 68 percent of the gas will be shipped to locations across the country from the northeast to the Gulf Coast, while the rest will be sent to Michigan.

The project is proposed to transport 3.25 billion cubic feet per day. It is expected to provide between 1,800 and 2,200 construction jobs in West Virginia with an construction economic impact of \$400 million, according to the WVONGA.

Leach Expressway Pipeline

Columbia Pipeline Group's proposed Leach Xpress project entails the construction of roughly 160 miles of natural gas pipeline and compression facilities through West Virginia's Northern Panhandle and

"The Atlantic Coast Pipeline is a transformational project for our region. It will create thousands of construction jobs during development and significant new revenue for state and local governments throughout North Carolina, Virginia and West Virginia."

— Joint statement by ACP companies

southeastern Ohio. The \$1.4 billion project would result in the transportation of approximately 1.5 billion cubic feet to Columbia Gas and Columbia Gulf customers.

Columbia foresees construction of the Leach Xpress pipeline getting underway in the latter part of this year, with service commencing in the second half of 2017.

WB Xpress Pipeline

The Houston-based Columbia Pipeline Group is also overseeing the WB Xpress project through West Virginia and Virginia. This project would include installation of approximately three to four miles of new pipeline in the two states, as well as the replacement of approximately 26 miles of existing pipeline and construction and operation of two, new compressor stations, one in Kanawha County and the other in Fairfax County, Va.

In West Virginia, WB Xpress installations would also include approximately 1,500 feet of 36-inch-diameter pipeline from the new Kanawha County compressor station to the Panther Mountain Regulator Station and 3,300 feet of pipeline from the Kanawha County station site to other points of delivery. Modifications and system upgrades would also be made to compressor stations in Hardy, Braxton, Pendleton, Randolph and Upshur counties.

The approximately \$850 million WB Xpress project will reportedly deliver as much as 1.3 billion cubic feet per day of Appalachian natural gas supply to expanding Mid-Atlantic markets and Gulf Coast markets through a downstream, interstate pipeline expansion from an existing interconnect in West Virginia.

On Jan. 8, Columbia officials announced that Columbia Gas has formally filed a certificate application with the FERC for the

WB Xpress project.

Following FERC approval, construction on the WB Xpress project is projected to start in the winter of 2017 and service will ensue, over two phases, in 2018.

Mountaineer Expressways Pipeline

With construction anticipated to begin in fall 2017 and an Oct. 31, 2018 in-service target date, Columbia Pipeline Group's proposed Mountaineer Xpress pipeline project would span approximately 165 miles. It would supply an additional 2.7 billion cubic feet per day capacity of firm transportation service from the Marcellus and Utica production areas to Columbia Gas Transmission markets in western West Virginia and other markets.

Along with installing various-diameter pipeline along its course, the Mountaineer Xpress project would create new compressor stations in Jackson, Calhoun and Doddridge counties. Modifications would be made to existing compressor stations in Kanawha, Wayne and Marshall counties, as well.

Columbia Pipeline Group has cited a Witt Economic LLC economic impact study that says nearly 9,000 jobs would be created during Mountaineer Xpress construction and generate new tax revenue for local services. Upon completion, counties involved would see a permanent increase in property tax revenues, as well, the study said.

In September, Columbia Pipeline Group Inc. and Columbia Pipeline Partners LP announced that their subsidiary, Columbia Gas Transmission, had been notified the Mountaineer Xpress Project was accepted into pre-filing by the FERC. Columbia reportedly plans to file its formal application for the Mountaineer Xpress Project with the FERC in April.



Pipelines have a strong safety record, and are an efficient means of transporting fuel.

A FOCUS ON WEST VIRGINIA

The Atlantic Coast Pipeline will have an enormous economic impact on the state, both during construction and operation.

The Atlantic Coast Pipeline route through West Virginia will begin in Harrison County and travel southeast about 80 miles through five counties in the state before crossing into Virginia.

Pipeline Construction

Impacts in West Virginia from this phase of the project are estimated to generate:

\$478.7 million

Total economic activity

3,093

Jobs supported

\$661,000

Average annual tax revenue

Pipeline Operation

Impacts in West Virginia from this phase of the project are estimated to generate:

\$15.6 million

Total annual economic activity



\$882.6 million in capital expenditures will be spent in West Virginia.

The presence of the pipeline creates additional opportunities to generate manufacturing jobs and other economic development due to greater availability of natural gas infrastructure.

SOURCE: THE ECONOMIC IMPACT OF THE ATLANTIC COAST PIPELINE IN WEST VIRGINIA, VIRGINIA, AND NORTH CAROLINA. COLUMBIA ECONOMICS & ANALYTICS, SEPTEMBER 2014. LOCAL PROPERTY TAX REVENUES FROM ATLANTIC COAST PIPELINE EXPECTED TO TOP \$25 MILLION A YEAR. DOMINION RESOURCES, DECEMBER 2014.

ALL SOURCES AVAILABLE AT WWW.DOM.COM/ACPIPELINE