

Shale Gas Promises Over-Hyped, Expert Says

Despite Claims of Bulstering National Security, Preparations for U.S. Gas Exportation Evident
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Over-exuberance about the promise of shale gas is overshadowing the falling profitability and productivity of shale gas wells, says economist Deborah Rogers. After working as a financial analyst in London, Rogers retired to Fort Worth, Texas. The former stockbroker for Merrill Lynch, now an artisanal cheese maker, has remained involved in the financial world and has served on the Advisory Council for the Federal Reserve Bank of Dallas since 2008.

Rogers got interested in the economics of shale gas when an energy company decided to drill a dozen wells next to her farm. She recently toured through the Southern Tier, addressing what she sees as a growing fracture between the economic reality of shale gas and the promises of plentiful cheap, clean fuel. On January 21 she spoke to a crowd of about 80 people at the Big Flats Community Center. (Rogers had also spoken on this topic in Ithaca, on January 20.)

Economically recoverable shale gas reserves, stated Rogers, have been greatly overestimated. She added that environmental degradation and health impacts in drilling areas are real and that both the number of jobs created by the natural gas industry and the amount of tax revenues resulting from producing wells appear to be seriously inflated.

Conventional gas production declined in the 1970s, about the time that shale gas showed up. As shale gas production increased, production by conventional wells decreased. Because conventional drilling depended on locating pockets of gas, and shale gas was located in large swaths of rock, drillers figured shale plays were pretty uniform – you could drill anywhere and come up with a productive well.

But drillers are learning that's not true, Rogers said. She cited figures from Art Berman, a petroleum engineer who analyzed production data from 9,100 of 15,000 wells in the Barnett Shale. Using data provided by the Texas Railroad Commission, Berman found that less than 6 percent of all wells met "minimum economic thresholds".

Rogers also cited John Lee, currently serving on the petroleum engineering staff at the University of Houston. According to his data it's only 20 percent of shale wells that "carry a project"; the other 80 percent may be "uneconomic".

Despite the widely circulated claims that natural gas offers a cheap and abundant energy source that will last 100 years, data from the Barnett shale gas play show a well failure rate that has been increasing over time. And that has hit municipal governments right where it hurts – in the pocketbook.

Gas wells revenues at the University of Texas at Arlington peaked at \$7 million with six wells. By 2010 there were 22 wells, but revenues had fallen to \$800,000. Audited records from the City of Fort Worth show a similar pattern of falling revenues. In 2008 the city took in \$50 million in income from wells drilled on city-owned properties. In 2009 that fell to \$19 million and in 2010 the income was \$38 million. During those three years the number of wells increased four-fold.

“When four times as many wells can’t keep production at prior levels, then something is happening on the production end,” Rogers said. In this case what’s happening is that geologists are finding shale gas reserves to be less homogeneous than once thought.

Rogers also refuted the gas industry’s estimates of job growth linked to natural gas production. In 2008 the gas industry claimed that 111,131 direct jobs were created in North Texas alone. How can that be, asked Rogers, when in the same year the Bureau of Labor Statistics reported that the number of direct jobs created in the entire country totaled 166,500? Two years ago Chesapeake Energy estimated that they created 53,200 jobs in the Arlington and Fort Worth areas; the Bureau of Labor Statistics reported a total of 93,800 jobs created in all U.S. on-and off-shore drilling for 2010.

Drilling results in health and environmental costs, too, Rogers noted. She reviewed air quality data collected by the Texas Commission for Environmental Quality (TCEQ): in the city of Fort Worth, benzene was detected at 94 percent of all wells tested. TCEQ also found formaldehyde, which, like benzene, is known to cause cancer. Air tests also detected hydrogen sulfide, a potent neurotoxin, at levels 400 times what is usually found in urban air. TCEQ commissioners concluded that gas drilling “contributes more air toxins than all cars, trucks and airplanes in the region combined,” said Rogers. The Dallas-Fort Worth region has surpassed Houston in the amount of air toxins, she said, and has the “dirtiest air in the state”.

The natural gas industry is promoting the conversion of vehicles to natural gas, claiming that this will result in a cleaner environment, Rogers said. At the same time, they are quietly pursuing an export market, and seeking permits to convert import terminals to export terminals. In October 2011 the first permit to do so was granted.

Instead of decreasing our reliance on gas imported from other countries, exporting shale gas will decrease the domestic gas supply, resulting in higher prices for consumers, Rogers pointed out. This is happening just as American companies are looking to bring production back home: cheaper energy costs translate into cheaper production costs. It is happening just as car manufacturers are ramping up production of gas-powered vehicles, and power plants are converting from coal to gas.

It’s a squeeze play, Rogers said. The price for gas in the U.S. is the lowest it’s been in years – \$2.50 - \$3/mcf (thousand cubic feet); they can get \$15/mcf in China. “This is only a business transaction for the companies,” she emphasized. “Their job is to find, extract and sell minerals to the entity paying the highest price.”

As if to underscore Rogers’ findings, two days after her talk at Big Flats, the U.S. Energy Information Administration (EIA) lowered their estimates of recoverable shale gas reserves in the U.S. They now estimate 141 trillion cubic feet of gas available in Marcellus Shale, down 65 percent from previous estimates. That same day Chesapeake announced that they are cutting drilling and production of gas, due to low prices.

Citizens at the Big Flats meeting contributed to this report.

Sidebar:

A Closer Look Exposes Shale Gas House of Cards

June 25, 2011 – New York Times publishes article exposing financial anomalies of shale gas finances, based on insider emails and production data.

July 2011 – SEC subpoenas a number of shale gas companies (related to above).

August 2011 – NY State Attorney General subpoenas shale gas companies (related to above).

Aug. 24, 2011 – USGS slashes estimate of Marcellus gas reserves by 80%.

Jan 23, 2012 – U.S. Energy Information Administration (EIA) slashes its July estimate of Marcellus shale reserves by 65%.

Jan 23, 2012 – Chesapeake Energy announces they will drastically cut drilling and production of gas in U.S.