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Geologists Sharply Cut Estimate of Shale Gas

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WASHINGTON — Federal geologists published new estimates this week for the amount of natural gas that exists in a giant rock formation known as the Marcellus Shale, which stretches from New York to Virginia.

The shale formation has about 84 trillion cubic feet of undiscovered, technically recoverable natural gas, according to the report from the United States Geological Survey. This is drastically lower than the 410 trillion cubic feet that was published earlier this year by the federal Energy Information Administration.

As a result, the Energy Information Administration, which is responsible for quantifying oil and gas supplies, has said it will slash its official estimate for the Marcellus Shale by nearly 80 percent, a move that is likely to generate new questions about how the agency calculates its estimates and why it was so far off in its projections.

The decision by the agency to lower the estimates comes amid growing scrutiny from Congress about how the administration calculates its numbers and why it depends on outside and industry-tied consultants to produce some of its reports.

Accurate estimates are important for lawmakers who are making long-term decisions about subsidies and policies relating to the nation's energy mix. They are also essential for landowners and investors as they decide where and whether to lease their land to drillers or invest in gas companies. Some market analysts say that the large differences between public estimates for natural gas resources provide further evidence that there may be more risk and uncertainty involved with gas drilling than many investors realize. Amid growing questions about the administration's research, Howard K. Gruenspecht, the agency's acting director, appeared before Congress in July to reiterate that, despite some uncertainties, his agency's estimates were accurate.

But on Tuesday, the administration said it would sharply downgrade those estimates. “We consider the U.S.G.S. to be the experts in this matter,” said Philip Budzik, an operations research analyst with the Energy Information Administration, according to Bloomberg, which was the first to report the decision by federal officials to downgrade their estimates. “They’re geologists; we’re not. We’re going to be taking this number and using it in our model.”

A spokesman for the administration added that while the new estimates were very important, drilling costs and well performance may have a larger impact on future natural gas production.

The new federal numbers are also much lower than the roughly 350 trillion cubic feet estimated to be technically recoverable in the Atlantic region, home to the Marcellus Shale, by the Potential Gas Committee, a nonprofit group of industry experts and academics, in an April report. Still, industry association officials cheered the new report.

Kathryn Z. Klaber, president of the Marcellus Shale Coalition, described them as “further affirmation that the Marcellus Shale will continue to safely produce prolific amounts of clean-burning American natural gas for generations to come.” The new estimates are much higher than the last assessment by the Geological Survey in 2002. Those estimates — which suggested the Marcellus contained only about two trillion feet of recoverable gas — were provided before new technology had drastically increased drilling for natural gas in shale formations.

In their report this week, federal geologists focused on “resource” estimates, which refer to the amount of gas that is in the ground and technically can be extracted. They did not focus on what are known as “reserve” estimates, which refer to how much of this gas can be profitably extracted from the ground. The geologists also did not discuss how high gas prices will have to rise before companies can make enough money to justify increased drilling.

Natural gas resource estimates like those produced by the federal Geological Survey and the Energy Information Administration have been criticized by market analysts and energy experts because they often give an overly optimistic and simplistic view of how useful natural gas will be as a source of fuel that can replace oil and coal. Resource estimates often include gas in pockets that are so small or so deep that it may never be drilled or produced at any price. The gas may also be in areas that are off limits or impractical to drill.

In April 2010, the Energy Information Administration revised its methodology for estimating natural gas production. Despite the change, some energy analysts say that in Texas significant discrepancies remain between the federal numbers and estimates produced by state regulators. Some energy analysts have also faulted regulators in Pennsylvania, which is the only gas-producing state to publish oil and gas production data every six months rather than providing it monthly. This practice, according to the energy analysts, limits the ability to accurately assess well performance and provide more exact long-term estimates for how much gas that part of the shale formation can actually produce over time.

“If the country is going to embrace natural gas as the fuel of the future,” said Bill Powers, the editor of the Powers Energy Investor, an energy research publication, “there needs to be a lot more transparency in how these estimates are calculated and a more skeptical and informed discussion about the economics of shale gas.”

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