

## Fracking for natural gas: EPA hearings bring protests

Fracking, or hydraulic fracturing, is a controversial process for extracting natural gas from shale. Critics of fracking question the environmental and health effects of pumping thousands of gallons of water and chemicals underground.



A Chesapeake Energy natural-gas well site near Burlington, Pa., photographed April 23, is one of many that sit atop vast reserves that could require 'fracking,' a controversial procedure, to tap.

Ralph Wilson/AP/File

By Mark Clayton, Staff writer / September 13, 2010

Public hearings over hydraulic fracturing or "fracking" brought hundreds of protesters to Binghamton, N.Y., Monday, carrying signs and shouting slogans either opposing or favoring expansion of the controversial process for extracting natural gas from shale. **[Editor's note: Binghamton was misspelled in the original version.]**

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The Environmental Protection Agency's public hearings are part of a broad investigation, begun in March, into the human health and environmental effects of fracking – focusing on air pollution and water pollution. The chemical effects that fracking fluids may have on water supplies after being injected into the ground to extract gas are a special focus.

But a new study conducted for the American Public Power Association (APPA) suggests that if wider use of natural gas in electric power production comes to pass nationwide – as many analysts now expect – such controversies may be just beginning.

"Even if fracturing continues, serving a much larger market will require even more drilling that is already at record levels," the APPA study found.

In Pennsylvania, for instance, at least 1,600 fracking wells have been drilled with about 4,000 permits granted, the Associated Press reported Monday. But the new study suggests that as the flood of gas drives prices down, electric power generators will increasingly see it as a good alternative to burning coal. That, in turn, would mean vastly expanded fracking.

Lying beneath New York, Pennsylvania, and other parts of the Northeast, the rich Marcellus shale beds could supply the region with trillions of cubic feet of natural gas for decades, according to some estimates. But opponents say the process that involves pumping tons of toxic chemicals into the ground under pressure can pollute groundwater and greatly increase air pollution.

Thanks to expanded use of fracking, however, US natural-gas reserves have soared. Proven natural gas reserves have increased by more than enough to cover annual production for each of the last 15 or so years, the APPA report says. Natural-gas reserves now total 245 trillion cubic feet – enough to meet 2009-level demand for more than 10 years, it says.

The APPA study also recounts environmental impacts found by other groups. It said a recent study by the New York City Department of Environmental Protection, for instance, found that fracturing a single well could involve "pumping three to eight million gallons of water and 80 to 300 tons of chemicals" into it at high pressure over several days.

"Half or so of the injected solution returns back up the well," the New York City study said. "The water that flows back up the well also tends to contain hydrocarbons and dissolved solids such that it must be disposed of via underground injection or industrial treatment." Conventional wastewater treatment was "not feasible," it said.

With injection water typically trucked in, the NYC study estimated "1,000 or more truck trips per well to haul in water and equipment and then haul out wastewater." But that's not the end of it, since as production falls off, the fracturing process is repeated on a well. Some shale gas wells need fracking every five years over a period of 20 to 40 years. The New York study calls fracturing "an ongoing process rather than something that occurs only when the wells are originally drilled."

The EPA hearings are likely to increase debate as more information about the chemistry of the fracking process emerges, environmentalists and energy analysts say.

"They have never done a hydraulic fracking study as comprehensive as the one now beginning," says Scott Anderson, a senior policy adviser for the Environment Defense Fund. "The results of this study will inform future congressional decisions on whether to continue to exempt hydraulic fracturing from the federal Safe Drinking Water Act."

Little is known about the chemical composition of fracking fluids – and the state of New York has held up permitting until more information emerges. While the natural-gas industry says many of the chemicals in such fluids can be found under a kitchen sink, the industry has long resisted identifying those chemicals. That could be changing soon, too.

That's because the EPA hearings could cause Congress to require that fracking fluid chemicals be identified, and could remove fracking's exemption from regulation under the Safe Drinking Water Act, according to Kevin Book, an energy analyst with energy market research firm ClearView Energy Partners.

"On August 31, EPA quietly released interim results of its ongoing review of possible drinking water contamination at several sites near Pavilion, Wyoming," he writes in a new analysis. "Although EPA's latest data did not conclusively link contamination to fracking, EPA's guidance that residents should avoid drinking their water may offer Congressional fracking opponents a valuable sound bite to use when calling for mandatory disclosure rules."

While the Energy Policy Act of 2005 prevents the EPA from explicitly regulating fracking wells under the Safe Drinking Water Act, "the Agency already possesses considerable regulatory authority under other existing laws," writes Mr. Book. As a result, he contends, even without Congressional action, the EPA could, under other federal laws, "investigate other reports of fracking-linked contamination."

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