Fracking: Controversy on the Road to Energy Independence

Center Forward Basics
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Overview

American energy independence has long been a goal of both political parties, and the energy industry is investing in several new ways to achieve that goal. In the last twenty years, improvements in two advanced drilling techniques—horizontal drilling and hydraulic fracturing (a.k.a "fracking")—have made extracting the natural gas found in shale rock formations a cost effective option, nearly doubling the amount of recoverable domestic natural gas. Burning natural gas releases 30% and 45 % less carbon dioxide than oil and coal, respectively, and—combined with price declines due to the increase in supply—natural gas has become a key component in the path to decreasing dependence on foreign energy sources. As unconventional natural gas drilling techniques are developed and implemented, policymakers continue to struggle with the best way to ensure natural gas extraction is safe and sustainable.

How is fracking different from other natural gas drilling?

Natural gas found in looser and softer rock formations can be extracted through traditional 'vertical drilling' wells, in which a drill reaches straight down into a pocket of natural gas. In contrast, fracking is a more time-consuming and technology-intensive process, often involving weeks of high-pressure injections of water, sand, and specialized chemicals into shale rock found more than ten thousand feet below the ground's surface. Generally, water represents 99 percent of the total material injected, with between three and five million gallons of water used per well. The combination of these materials releases the natural gas held in small pockets throughout the hard shale rock layer, allowing the gas to be extracted into a pipeline or storage system above ground.

What impact does fracking have on local communities?

Shale rock formations across 20 states contain significant, extractable natural gas deposits or 'plays'. The U.S. Chamber of Commerce estimates that oil and gas extraction from shale plays supported 1.75 million American jobs in 2012, with an additional 700,000 jobs expected by 2015. Often, these jobs have come in economically-depressed rural areas and have led to substantial increases in tax and royalty revenues for local and state jurisdictions. At the same time, many environmental groups, as well as some regulators and landowners, have highlighted cases in which chemicals and methane gas may have played a role in contaminating local drinking water and damaging rural landscapes.

How is fracking regulated by the government?

Although the federal Clean Water Act and Safe Drinking Water Act apply to specific portions of the fracking process, state governments currently have the primary responsibility for regulating fracking operations. Yet, concerns about drinking water contamination and other impacts around some fracking sites have led a number of policymakers to support giving the Environmental Protection Agency (EPA) the authority to regulate fracking activities at the federal level. In response, others at the federal, state, and local levels have expressed concerns that new regulation could endanger local economic development and reduce access to a fuel that can lead the way to American energy independence.

Key Facts

- Natural Gas Uses (U.S.):
  - **34%: Heating Buildings**
  - **32%: Industrial Use**
  - **30%: Producing electricity**
- Shale gas represents **48%** of the total recoverable natural gas in the U.S.
- **90%** of new natural gas wells rely on fracking
- America will spend approximately **$200 billion less on imported oil in 2020**, due to domestic energy like natural gas
- **89%** of natural gas consumed each year in the U.S. is produced in the U.S.

Other Resources

- Congressional Research Service –
  - Hydraulic Fracturing & Safe Drinking Water Act Regulatory Issues (R41760)
  - Unconventional Gas Shales (R40894)
- American Natural Gas Alliance – Hydraulic Fracturing 101
- NaturalGas.org – Shale's Growing Share of Natural Gas
- Natural Resources Defense Council – Finding the Balance
- U.S. Environmental Protection Agency – Study on Fracking Impact on Drinking Water Resources
- Government Accountability Office – Information on Shale Resources, Development & Risks

Links to Other Resources

- Congressional Research Service (CRS) – Hydraulic Fracturing & Safe Drinking Water Act Regulatory Issues (R41760)
  http://www.fas.org/sgp/crs/misc/R41760.pdf

- Congressional Research Service (CRS) – Unconventional Gas Shales (R40894)
  http://www.fas.org/sgp/crs/misc/R40894.pdf

- American Natural Gas Alliance – Hydraulic Fracturing 101
  http://www.anga.us/issues--policy/safe--responsible-development/hydraulic-fracturing-101#.Uj773NmgX5M

- NaturalGas.org – Shale's Growing Share of US Natural Gas Resource Base
  http://www.naturalgas.org/shale/growingshare.asp

- Natural Resources Defense Council – Finding the Balance
  http://www.nrdc.org/energy/naturalgas/files/balance.pdf

- US Environmental Protection Agency – Study on Hydraulic Fracturing Impact on Drinking Water Resources
  http://www2.epa.gov/hfstudy

- Government Accountability Office (GAO) – Info on Shale Resources, Development, and Environmental & Public Health Risks
  http://www.gao.gov/assets/650/647791.pdf