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The Big Energy Question

How Has Fracking Changed Our Future?

 Posted by Christina Nunez of National Geographic in The Big Energy Question on February 19, 2013
(37)

Natural gas flared as waste is a new sight on the Dakota prairie, where fracking—a way of extracting hard-to-reach oil—and directional drilling have sparked a boom. (Photograph by Eugene Richards)

Has fracking changed our energy future for the better, or for the worse? Read viewpoints on both sides and **vote in the poll below**.

The use of hydraulic fracturing to extract oil and gas from the earth dates back to the 1940s, but only in the past few years has "fracking" become an energy buzzword, alluding primarily to the shale gas boom in the United States and all of the controversy that has accompanied it. Fracking—the high-pressure injection of water, chemicals and sand into shale deposits to release the gas and oil trapped within the rock—in recent years has been combined with horizontal drilling and other improvements in technology to harvest stores of gas and oil that previously were thought commercially unfeasible to access. (See interactive: "Breaking Fuel from the Rock")

The implications of this sea change are debatable, but the impact is undeniable. In the United States, oil production last year reached its highest level in 14 years, thanks in part to output from North Dakota's Bakken Shale, and is expected to keep rising. Natural gas

production, already at new highs thanks to shale gas, is expected to grow 44 percent in the U.S. between 2011 and 2040. (See "Natural Gas Nation: EIA Sees U.S. Future Shaped by Fracking.")

Now countries around the world, including China, the United Kingdom and South Africa, are eyeing shale development as the potential key to unlock a similar windfall of homegrown energy. Debate rages on about whether these worldwide reserves can be tapped safely, and whether environmental damage from fracking natural gas will outweigh the gains from using a fuel that is cleaner than oil or coal, but remains a fossil fuel nonetheless. A few viewpoints on both sides of the issue follow.

Roughnecks remove two miles of heavy steel drilling pipe, one 32-foot section at a time, as oil and natural gas spew from the well. The hard, dangerous work on oil rigs pays up to $120,000 a year. (Photograph by Eugene Richards)

Positive impacts of fracking

"The United States is in the midst of the 'unconventional revolution in oil and gas' that, it becomes increasingly apparent, goes beyond energy itself. Today, the industry supports 1.7m jobs – a considerable accomplishment given the relative newness of the technology. That number could rise to 3 million by 2020. In 2012, this revolution added $62 billion to federal and state government revenues, a number that we project could rise to about $113 billion by 2020.2 It is helping to stimulate a manufacturing renaissance in the United States, improving the competitive position of the United States in the global economy, and beginning to affect global geopolitics." –Daniel Yergin, vice chair of global consulting firm IHS, in February testimony before Congress

"Natural gas is not a permanent solution to ending our addiction imported oil. It is a bridge fuel to slash our oil dependence while buying us time to develop new technologies that will ultimately replace fossil transportation fuels. Natural gas is the critical puzzle piece RIGHT NOW. It will help us to keep more of the $350 to $450 billion we spend on imported oil every year at home, where it can power our economy and pay for our investments in a smart grid, wind and solar energy, and increased energy efficiency. By investing in alternative energies while utilizing natural gas for transportation and energy generation, America can decrease its dependence on OPEC oil, develop the cutting-edge know-how to make wind and solar technology viable, and keep more money at home to pay for the whole thing." —Pickens Plan, a site outlining BP Capital founder T. Boone Pickens' proposed energy strategy

"My town was dying. This is a full-scale mining operation, and I'm all for it. Now we can get back to work." —Brent Sanford, mayor of Watford City, a town at the center of the North Dakota oil boom, in "The New Oil Landscape" (NGM March 2013 issue)

A natural gas flare illuminates an evening tableau of discarded vehicles and farm tools. (Photograph by Eugene Richards)

Negative impacts of fracking

"According to a number of studies and publications GAO reviewed, shale oil and gas development poses risks to air quality, generally as the result of (1) engine exhaust from increased truck traffic, (2) emissions from diesel-powered pumps used to power equipment, (3) gas that is flared (burned) or vented (released directly into the atmosphere) for operational reasons, and (4) unintentional emissions of pollutants from faulty equipment or impoundment—temporary storage areas. Similarly, a number of studies and publications GAO reviewed indicate that shale oil and gas development poses

risks to water quality from contamination of surface water and groundwater as a result of erosion from ground disturbances, spills and releases of chemicals and other fluids, or underground migration of gases and chemicals."—General Accounting Office report on shale development, September 2012

"The gas 'revolution' has important implications for the direction and intensity of national efforts to develop and deploy low-emission technologies, like [carbon capture and storage] for coal and gas. With nothing more than regulatory policies of the type and stringency simulated here there is no market for these technologies, and the shale gas reduces interest even further. Under more stringent GHG targets these technologies are needed, but the shale gas delays their market role by up to two decades. Thus in the shale boom there is the risk of stunting these programs altogether. While taking advantage of this gift in the short run, treating gas a 'bridge' to a low-carbon future, it is crucial not to allow the greater ease of the near-term task to erode efforts to prepare a landing at the other end of the bridge."—from a study on shale gas and U.S. energy policy by researchers at MIT (also see: "Shale Gas: A Boon That Could Stunt Alternatives, Study Says")

"Oil is a rental business. ...When the industry goes south, and it will go south, they just walk away." Dan Kalil, charman of the Williams County Board of Commissioners in North Dakota, in "The New Oil Landscape" (NGM March 2013 issue)

What do you think? Vote below and comment with your thoughts.

Has fracking changed our energy future for the better, or for the worse?

- Better
- Worse

Vote

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Keywords: Big Energy Question, fracking, hydraulic fracturing, natural gas, Shale, shale oil

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Comments

1. Peter Terezakis 
   San Diego - New York
   August 15, 11:51 am

   This article skips over the relationship between earthquakes and fracking. It also leaves out the multi-billion dollar investments by China and other countries into fracking operations in the United States as well as the $15.1 billion dollar acquisition by China of Canada's leading petroleum producer AND China's purchase ($2.1 billion) of Canada's oil sands producing entity OPTI Canada Inc.

   Given China's environmental record, the quality of drinking water in the United States and Canada is at risk in both near and long term.

   Has National Geographic become a public relations pulpit for the fossil fuel industry or was this article simply a naive lapse in critical thinking?

2. Meghan R 
   United States
   August 23, 11:01 am

   How about the fact the 1 in every 20 wells will be faced with cement failure and leaks? How about that fact that these Energy companies are buying our politicians and taking away our rights as citizens to be free from physical harm? The methane that we are buring off into the air is a greenhouse gas too. The science is bunk. EPA studies showed Benzene at 50x the allowable limit in these towns and their water, yet as soon as Obama started promoting this energy policy they made every effort to hide these results and lie. It's sick and disheartening. It's almost all of our representatives choosing these companies and their money over the citizens they swore to work for. Shame!

This is issue is representative of a much larger problem which is that this country is no longer for the people. Look up the studies(not the ones bought and paid for by Gas scientists) on alternative solutions such as combination Wind and Hydroelectric. We have energy sources available that can power the world without poisoning our water and our people but we need to make sure halliburton, the repubs and dems can make their money at the expense of our planet and our childrens future. I don't know how these people sleep at night.

3. Meghan R
   August 23, 11:06 am

   Oh and by the way- don't count on it lowering our gas prices they want to export this gas to China and and we will continue to see an increase in prices. Read financial analysis on this policy see where we are heading. What a joke.

4. Bill
   N.E. ohio
   August 23, 3:26 pm

   My wife and I owned a house in the country, by any ones opinion,for 26 years. While living there we enjoyed the purest and best tasting well water in the area. The water was tested several times over the years. To see if the water was changing or contaminated. We always got reports that were very good.We understood that certain minerals would be in our water. In the year 2010, there was a gas well less than a half of a mile away,that was fracked.. We immediately noticed, our water had changed.The water was terrible it smelled so bad and also changed color you couldn't drink it,wash clothes, or shower or just be near it without gagging. We were from the same area,our place of 15 acres had belonged to my wife's Grand parents. it is still in our family, but changed owner ship. The well fracturing procedures , in my opinion should be stopped and make these companies financially responsible for dropping newer water wells way deeper than usual. or not drill at all.

5. Dean
   August 25, 7:13 pm

The Chinese bought Nexen. A company working in the oilsands. They don't do any fracking. They drill into sand and inject steam to melt the oil and pump it out. Fracking wouldn't do anything to the zone they are extracting. The Chinese are held to the same standards that all oil company's are held to that working in the oil sands.

6. R. Thomas Nast 
   Oxnard, CA (not just another pretty name)
   August 25, 8:30 pm

   No one disputes that California's tight shale oil holds economic promise. However, it has rapidly become a mixed blessing without adequate risk assessment , severance tax or impact fee and oversight regulations. The fact that our environmental oversight personnel are dangerously under-staffed and under-resourced only adds to the problem. As reported, California has enough well inspectors to inspect each well once every two years! California's Division of Oil, Gas and Geothermal Resources (DOGGR) requires additional resourcing, staffing and re-focusing. The Division urgently needs a major augmentation and revision of their current regulations in order to provide their field engineers with more productive and less labor intensive tasking and oversight processes.

   Right now, a "boom mentality" has taken over (just as it did in SD) and driven the current pace of fracking/acidizing for tight oil in CA dangerously out of control (in my opinion). The Division needs to catch up with the drillers (it has been almost 4 years and still no regulations).

7. jillo 
   Catskills, NY
   August 27, 8:34 am

   Too bad this article doesn't mention how the gas companies are legally "gagging" people from telling the truth about the health effects of fracking. That's ok, right?

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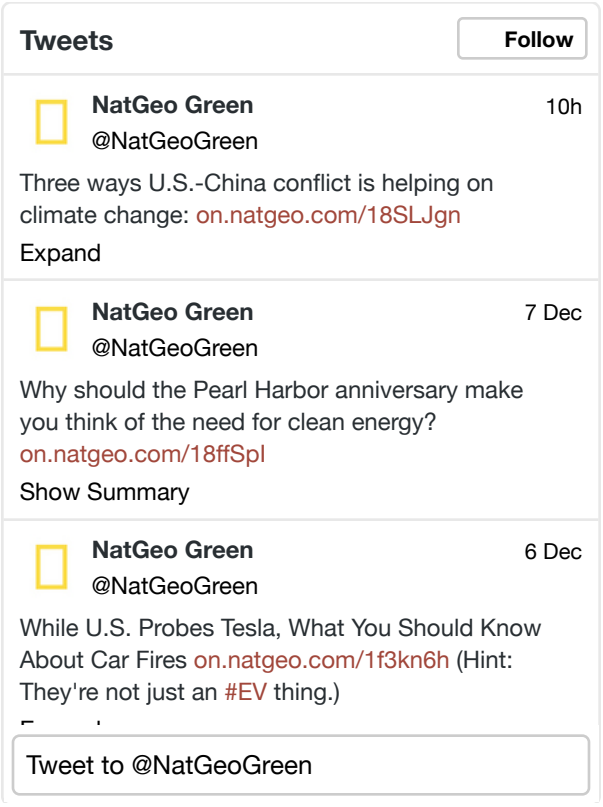

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