

9239_02_US213_2162_01

Mar 2011
100-1000

Question: Is hydraulic fracturing a global concern?

Word Count (EXCLUDING REFERENCE PAGE AND IN-BODY CITATIONS): 1846

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Thesis: Hydraulic fracturing is not a global concern because fracking helps provide the prerequisite for natural resources and benefits the country's economy; however, it is detrimental to the environment and to human health.

"The fracturing process entails pumping a large quantity of hydraulic fracturing fluid composed of approximately 98.5% water, 1% sand (used as a proppant – energy or pressure to maintain flow velocity – to keep fractures open) and 0.5% chemical additives" (CIWEM, 2013). To clarify, hydraulic fracturing is a process in which fractures in rocks below the earth's surface are opened and widened by injecting chemicals and liquids at high pressure: used especially to extract natural gas or oil (Dictionary.com, 2015). When the term "fracking" is used in this paper, it is a shortened name for the term hydraulic fracturing. There has been much controversy over the chemical additives used in the fluid; the controversial question asked is, "Is hydraulic fracturing a global concern?" To answer this question, hydraulic fracturing is not a global concern because fracking helps provide the need for natural resources and benefits the country's economy; however, it is detrimental to the environment and to human health. This topic interested me when I started researching ideas for this paper and found that I wanted to focus on hydraulic fracturing. I chose to write my paper on this specific topic because I really wanted to find out to what extent the process of fracking helps provide the need for natural resources and if it really benefits the country's economy. In my opinion, the process of fracking is not a global concern.

First of all, fracking has tremendous impacts as it positively benefits the economy. The use of fracking is spreading around the world and as it grows, natural gas prices are dropping. At this point in time the "shale gas boom" turned into an economic boom! In the U.S. we have seen substantial growth in the fracking revolution. "Hydraulic fracturing has caused natural gas prices to drop 47 percent compared to what the price would have been prior to the fracking revolution in 2013" (Dews, 2015). One of the major arguments in favor of hydraulic fracturing in South Africa is that it could bring much needed economic benefits to the country. The economic benefits of fracking are claimed to be potentially immense, with intentions of creating new jobs, the country saving money in imports, as well as reducing the price of gas (Wikipedia, 2015). For instance, the United Kingdom Onshore Oil and Gas organization with professional expertise in oil and gas, that benefits and gains more support by promoting fracking as a good technique-claims,

The economic benefits of fracking in the UK specifically, fracking has the potential to create substantial numbers of employments. Hydraulic fracturing can lower imports to the UK which in turn will result in higher tax incomes and energy security. Local

communities can see significant direct benefits and it has the potential to remove unsustainable prices of natural gases that haunt the governments (UKOOG, 2013).

For people in the UK, fracking is strongly promoted and practiced, as the Prime Minister supports the technique. For example, British Broadcasting Corporation (BBC News) is the UK's global trustworthy public-service broadcaster that receives no money from outside companies, sometimes very controversial coverage of specific news stories and programming- announces,

Prime Minister David Cameron of the UK states, "Shale gas extraction through fracking can boost the economy and encourage businesses to come back to the UK." Mr. Cameron, who is attending the World Economic Forum at Davos in Switzerland, said fracking was already "flooding" energy prices in the US, and could be a "fresh driver" of UK growth. Mr. Cameron says this could deliver a large economic boost and ensure the supply of cheaper, more secure energy (BBC News, 2014).

"This practice has even spread to Poland where their government is depending on shale gas to boost their economy, as well as reduce dependence on Russian gas imports and cut energy prices" (PBS, 2013). "Poland has also been introduced to global oil majors such as Chevron, Exxon Mobil, Conoco and Marathon who have already have had hopes in drilling on Poland's lands" (Onoszko, 2012). Not only does fracking benefit the US, Poland the UK and Africa it also benefits Argentina's economy. Stephen Kass is a Brooklyn Law School Professor of International Environmental Law, but language shows to be biased- professes,

Argentina has also found hydraulic fracturing a forefront of the fracking movement in Latin America. It is estimated to have the third largest shale gas reserves in the world. If developed as planned, these wells could provide a huge boost to the Argentinean economy, which currently imports \$10 billion of oil and gas annually. With fracking, the country would be able to provide its own resources and not have to depend on imports for a large portion of their natural resources (Kass, 2014).

Therefore, hydraulic fracturing does benefit a country's economy.

Indubitably, fracking helps provide the need for natural resources around the world. For example, "The US Energy Information Administration states that Mexico ranks in the top 10 countries worldwide in terms of the size of its recoverable shale oil and gas reserves Mexico's shale formation holds the equivalent of sixty million barrels of oil" (Wilton, 2014). Fracking will also help provide resources in Poland, US Energy Information Administration estimates Poland has some 5.3 trillion cubic meters of recoverable reserves of gas - enough to supply it with more than 300 years of its national energy needs as well as helping other countries by exporting

(Onoszko, 2012). Like I have stated fracking will provide natural resources around the world, “The huge increase in production will make China more economically independent, and cut its gas imports” (Barnato, 2014). “The US is the only country in the whole world to fully embrace fracking” (Barnato, 2014). Fracking will provide need for natural resources and help curve a production decline. Sterling Burnett lead analyst of the environmental policy at the NCPA, is biased in his issue briefs- states,

Advancements, such as horizontal drilling (fracking), coupled with increasing global demand for oil and domestic demand for natural gas, have turned shale drilling into a bright spot for the U.S. economy. Fracking is currently responsible for more than 30 percent of U.S. domestic oil and natural gas reserves, U.S. drilling over the next decade will require fracking. In just two short years, oil production from fracking has nearly reversed a 20-year long production decline (Burnett, 2013).

Thus, fracking helps provide the prerequisite for natural resources around the world.

Conversely, fracking has been posed to be detrimental to the environment. For example, fracking is said to pollute the air and water, it also is blamed for the cause of earthquakes, and water desertification (Hoffman, 2012). Fracking has been criticized as being the cause of groundwater contamination.

Possibly one of the most shocking results of contamination is groundwater that has become flammable. Residents of states where hydraulic fracturing is common, such as Ohio and Pennsylvania, have brought suit claiming fracking has caused groundwater wells to become contaminated with combustible gas, dissolved methane, and elevated levels of natural gas (Moline, 2013).

“The National Oceanic and Atmospheric Administration is monitoring gas wells in Colorado, they estimated that 4 percent of the methane produced by these wells is escaping into the atmosphere” (Hoffman, 2012). The US is one of the few countries around the world that actually experience problems with fracking. Another country that has problems with fracking is the UK and they have the problem of water desertification. “The DECC report Fracking UK Shale-Water states that water companies must produce, and then update every 5 years, a long term plan with contingency reserves in case of a drought” (Wikipedia, 2015). Fracking is not only blamed for polluting water and the air but it’s blamed for some causes of earthquakes and groundwater contamination. The Canadian Press, a news agency with highly educated prolific professional journalists, gain support and profit by expressing fracking as a negative technique- elaborate,

A small earthquake in British Columbia's (Canada) was caused by a controversial technique used to extract natural gas from shale rock (fracking). The report said no quakes were recorded in the area prior to April 2009 (first drilling operation in that area). It said all of the events began after fracking took place. The quakes happened within five kilometers of fracking operations and within 300 meters of the depth at which the rock was being fractured. This process has drawn concern from environmentalists and landowners for the amount of water the process requires and for potential contamination of groundwater (Canadian Press, 2012).

Undoubtedly, hydraulic fracturing has been posed to be detrimental to the environment.

Nevertheless, fracking is also harmful to human health. The main substances in fracking that harm humans are some of the chemicals. Exposure to the toxic chemicals even at low levels can cause tremendous harm to humans, these health risks from the toxins do not show up immediately, it takes time for the damage done to the body to actually show up (Hoffman, 2014). With all the chemicals used in the fracking process not all of them are harmful. "Scientist William Stringfellow of the Lawrence Berkley National Laboratory in California, recently reviewed 250 chemicals commonly used in fracking. He found that 10% of the compounds are toxic to mammals or aquatic life" (Wilton, 2014). "To date in the UK, the Environment Agency has set out that the only additives that will be permitted are polyacrylamide, hydrochloric acid and a biocide" (CIWEM, 2013). Fracking has been condemned that it harms human health, according to Jonathan Hoffman a well-educated geologist and geophysicist who writes about natural gas, however is not an expert on fracking- apprises,

A 2011 article in the journal, Human and Ecological Risk Assessment, examined the potential health impacts of oil and gas drilling in relation to the chemicals used during drilling, fracking, processing, and delivery of natural gas. The paper compiled a list of 632 chemicals (an incomplete list due to trade secrecy exemptions) identified from drilling operations throughout the U.S. Their research found that 75% of the chemicals could affect the skin, eyes, and other sensory organs, and the respiratory and gastrointestinal systems. Approximately 40–50% could affect the brain/nervous system, immune and cardiovascular systems, and the kidneys; 37% could affect the endocrine system; and 25% could cause cancer and mutations (Hoffman, 2012).

To reiterate, fracking is also quite harmful to human health.

Ultimately, my research on this topic allowed me to see the pros and cons of hydraulic fracturing. Millions of people all around the world consider hydraulic fracturing a global concern because they are unaware of how accommodating fracking is to today's society. Unawareness and misunderstanding lead to the controversy within the topic of hydraulic fracturing. I was one

of those people that did not take the topic to deep thought; I believed everything I heard and saw on the news so I immediately saw fracking as a negative technique. I did not know that fracking can help provide the need for natural resources as well as aid in benefiting the providing country's economy. Also, in the future I would like to see more people in favor of fracking as to the point where hydraulic fracturing is practiced globally. In conclusion, although hydraulic fracturing is somewhat detrimental to the environment and to human health, it is not a global concern because it provides the prerequisite for natural resources and benefits the country's economy - which are two important ideals in today's society.

References

- Barnato, K. (2014, May 6). *US-China shale gas rivalry bad news for poor countries*. Retrieved from CNBC: <http://www.cnbc.com/id/101646609>
- BBC News. (2014, January 24). *Davos: Fracking to boost UK economy, David Cameron says*. Retrieved from BBC News: <http://www.bbc.com/news/uk-politics-25868997>
- Burnett, S. (2013, October 24). *How Fracking Helps Meet America's Energy Needs*. Retrieved from NCPA: <http://www.ncpa.org/pub/ib132>
- Canadian Press. (2012, September 6). *Fracking causes minor earthquakes, B.C. regulator says*. Retrieved from CBC News: <http://www.cbc.ca/news/canada/british-columbia/fracking-causes-minor-earthquakes-b-c-regulator-says-1.1209063>
- CIWEM. (2013). *Hydraulic Fracturing (Fracking) of Shale in the UK*. Retrieved from CIWEM.org: [http://www.ciwem.org/policy-and-international/policy-position-statements/hydraulic-fracturing-\(fracking\)-of-shale-in-the-uk.aspx](http://www.ciwem.org/policy-and-international/policy-position-statements/hydraulic-fracturing-(fracking)-of-shale-in-the-uk.aspx)
- Dews, F. (2015, March 23). *The economic benefits of fracking*. Retrieved from Brookings : <http://www.brookings.edu/blogs/brookings-now/posts/2015/03/economic-benefits-of-fracking>
- Dictionary.com. (2015). *hydraulic fracturing*. Retrieved from Dictionary.com: <http://dictionary.reference.com/browse/hydraulic+fracturing>
- Hoffman. (2014, June 26). *Potential Health and Environmental Effects of Hydrofracking in the Williston Basin, Montana*. Retrieved from SERC Carleton College: <http://serc.carleton.edu/67733>
- Hoffman, J. (2012). *Potential Health and Environmental Effects of Hydrofracking in the Williston Basin, Montana*. Retrieved from NAGT: http://serc.carleton.edu/NAGTWorkshops/health/case_studies/hydrofracking_w.html

Kass, S. (2014, January 2). *Countries Approach Fracking With Interest and Caution*. Retrieved from ELM
Ledyard & Milburn, Partners for Your Business: <http://www.elm.com/publication/HM10-A1/>

Molive. (2013, January 27). *The Effect of Hydraulic Fracturing on Groundwater Quality*. Retrieved from
Environmental Health:
<http://wordpress.vermontlaw.edu/environmentalhealth/2013/01/27/the-effect-of-hydraulic-fracturing-on-groundwater-quality/>

Onoszko, M. (2012, March 2). *Polish fracking well probe shows no harm to environment*. Retrieved from
Reuters: <http://www.reuters.com/article/2012/03/02/us-poland-shale-idUSTRE8210KX20120302>

PBS. (2013, May 6). *In Poland, Pursuing Valuable Energy Deep in the Earth Fuels Dissent Above Ground*.
Retrieved from PBS: http://www.pbs.org/newshour/bb/environment-jan-june13/poland_05_06/

UKOOG. (2013). *Economic Benefits*. Retrieved from United Kingdom Onshore Oil and Gas:
<http://www.ukoog.org.uk/economy/benefits>

Wikipedia. (2015, January 3). *Hydraulic fracturing in South Africa*. Retrieved from Wikipedia:
http://en.wikipedia.org/wiki/Hydraulic_fracturing_in_South_Africa

Wikipedia. (2015, April 30). *Hydraulic fracturing in the United Kingdom*. Retrieved from Wikipedia:
http://en.wikipedia.org/wiki/Hydraulic_fracturing_in_the_United_Kingdom#Water_depletion

Wilton, J. (2014, December 26). *Fracking in Mexico gets green light during 2014*. Retrieved from
Roarmag.org: <http://roarmag.org/2014/12/fracking-us-mexico/>