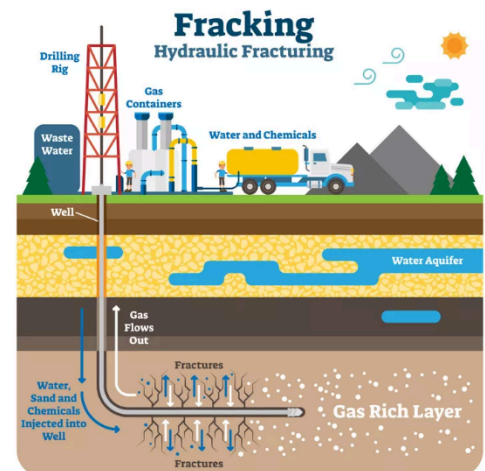


Topic #2: Addressing the Impact of Fracking on the Environment and Water Supply



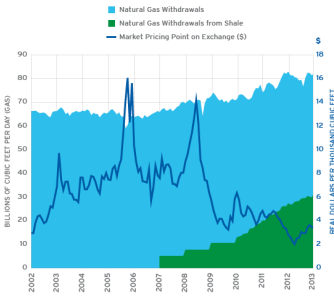
I. Background

Hydraulic fracturing, also known as fracking, is a process that drills into rocks to extract natural oil or gas. It works by drilling into rock and administering a considerably high pressurized solution of water, a thickening medium, and sand into the hole to create more cracks. The formula used is often referred to as “fracking fluid”. After the hydraulic pressure is disconnected, the residual fracking fluid keeps the fractures and cracks created open. At this stage, drillers can easily access oil and gas through the fractures. Fracking expands natural and anthropogenic cracks to obtain oil and gas from an area of land. The use of fracking methods originate in the 1860s, when dynamite and nitroglycerin were utilized to expand oil and natural gas yields from rocks. Moving into the 1940s, engineers used fracking to surge production of petroleum wells. The first modern application of fracking took place in 1947, as an experiment by the Floyd Farris of Stanolind Oil and Gas Corporation. Its success, however, did not come to fruition until 1950. From there, fracking



grew into a global practice to easily extract and increase production of oil and natural gas. Fracking's popularity is due to its efficient rate of pulling water, petroleum, and gas from older petroleum fields that have already been pumped dry. It also provides more leniency with extraction since it can enter hard-to-reach places that typical technological methods cannot touch. With oil and gas becoming higher in demand, fracking only becomes more popular. It

AS FRACKING GROWS, NATURAL GAS PRICES ARE DROPPING



Note: Shale withdrawals include not only marketed production, but also natural gas used for reservoir wells, vented and flared gas, and non-hydrocarbon gases released.
Source: U.S. Energy Information Administration

BROOKINGS

makes natural gas prices shrink significantly and is extremely beneficial for country economies. For example, in the United States of America, fracking implementation caused gas prices to decrease by forty-seven percent before fracking was popularized. Bills for gas dropped by a whopping thirteen billion dollars from 2007 to 2013, proving the benefits of fracking's prevalence. In terms of each household, this drop saved consumers two hundred dollars per year.

While fracking is a quicker, coherent way to extract natural resources, it has many disadvantages. Not only is it costly, fracking damages the environment. When fracking takes place, methane can escape the pipelines, be vented into the air, or burned in a series of events called flaring. When flaring takes place, methane is burned, releasing ammonia, volatile organic compounds (VOCs), and sulfur dioxide. These toxins can have a wide range of consequences from cancer to organ damage. A study from the Eagle Ford Shale region discovered that pregnant women rooted near consistent flaring operations gave premature births 50% more than women who were not. Health issues sprung from fracking are estimated to contribute to a \$13-29 billion dollar economic impact annually. Methane is a byproduct of oil production and its emission from fracking is largely concerning. Both a fossil fuel and a greenhouse gas, methane hurts the environment and human wellness. Methane has eighty-six times the global warming potential (GWP) of carbon dioxide on a twenty-year scale.

Fracking leaks can also contaminate nearby water sources and lead to earthquakes. Leak rates are guaranteed to be at least 7.9% for a site, and if nearby water is contaminated, aqua ecosystems suffer as well as locals who rely on freshwater for survival. In addition, fracking uses up billions of gallons of water annually. This greatly depletes local water sources and hurts aquatic habitats. Many places lack water due to droughts or extreme circumstances and fracking takes away from potential uses for this water. Additionally, transporting water to use for fracking heavily contributes to car emissions that pollute the environment and more use of gas, which contributes to the use and need for more fracking. Not only do nearby water sources suffer from leaks, but soil does too. Unnatural chemicals such as benzene, toluene, ethylbenzene and xylene (BTEX) chemicals and heavy metals including mercury and lead can damage nearby soil. Any agriculture nearby becomes unsafe for consumption, even animals that consume plants that have been exposed. This contamination can crucially impair farmers'

businesses. These pollutants can alter pH and nutrients of soil, lessening crop production and farm profit.

While fracking's effects are extremely concerning, fundamental action is yet to be taken because of its substantial interwoven presence in economies across the world. It provides millions of people with jobs and keeps oil and gas prices low, making it difficult to simply find an alternative for it or wane its usage. However, many countries have recognized fracking's intense effects. France, Germany, Spain, Bulgaria, Denmark, the Netherlands, Scotland, Switzerland, and other regions have banned fracking in recognition of its harmful status.

II. United Nations Involvement

The United Nations has not been intensely focused on fracking due to the conflicting views on its relevance by many member states. At the beginning of 2018, the UN Conference on Trade and Development produced a report that mentioned fracking, yet did not address whether it was frowned upon. The report mentioned both fracking's beneficial nature and harmful consequences without stating which takes precedent concern. Since this report, the United Nations has made two recommendations against fracking. First, in the United Kingdom, it was suggested that the government contemplate a complete ban on fracking. Second, in Argentina, the government was asked to reevaluate the decision to implement a large fracking project.

While these are the only direct instances of action against fracking from the UN, there are also indirect actions. Since fracking leads to the destruction of the environment, many of its effects are covered by the UN Environment Programme (UNEP). UNEP is a subbranch of the UN that was created in 1972 from a UN General Assembly resolution (2997 XXVII). Its purpose serves to address environmental concerns. It addresses Sustainable Development Goals such as 13, Climate Action and 15, Life on Land. It touches matters that arise with the environment such as air and water pollution. Fracking contributes to the issues UNEP aims to eradicate. Their most recent action was taken at the sixth session of the United Nations Environment Assembly at UNEP headquarters in Nairobi, Kenya. Here, fifteen resolutions were adopted to mitigate climate change, pollution, and the elimination of nature. Multilateralism, or cooperation between at least over three states, was cited as the solution to the issues presented. 190 countries were in attendance with over 5,600 representatives. Since the UN has a total of 193 member states, 190 countries in attendance shows substantial international support.

The Paris Agreement has also been a notable step toward preserving the environment. Its framework focuses on climate change. The Paris Agreement is an international treaty that is legally binding. 196 Parties signed on to the treaty at the United Nations Climate Change Conference on December 12, 2015, in Paris, France. The agreement became officially active the next year on November 4, 2016. The goal of the treaty is to ensure the average temperature globally does not exceed above 2° Celsius and limit the temperature from becoming hotter than

1.5° above preindustrial temperatures. Since methane from fracking contributes to climate change, it is important to keep this agreement in mind as a basis for international regulations.

III. Questions to Consider

1. How can countries phase out fracking without damaging their economies?
2. What are the sustainable, cost-effective solutions and replacements to fracking methods that are efficient yet implementable?
3. How can countries mitigate the effects of fracking?
4. How might countries keep their citizens safe from fracking health effects?
5. How can you leverage your country's position to implement effective solutions?
6. Has your country signed major documents such as the Paris Agreement? If so, which ones, and how active is your country in upholding them?

Remember to keep your country's policy in mind when formulating resolutions. Research your country's fracking status, as well as the role it plays in your country's economy.

IV. Sources and Useful Links

Explanations of Fracking:

- <https://www.nrdc.org/stories/fracking-101#what-is>
- <https://www.bbc.com/news/uk-14432401>
- <https://www.investopedia.com/terms/f/fracking.asp#:~:text=Fracking%20is%20a%20slang%20term.be%20recovered%20from%20subterranean%20wells.>
- <https://earthworks.org/issues/hydraulic-fracturing-101/>
- <https://www.bbc.com/news/uk-14432401>

Fracking Negative Effects:

- <https://environmentamerica.org/texas/articles/fracking-and-methane-in-the-permian-basin/>
- <https://www.nytimes.com/2020/07/22/climate/gas-flares-premature-babies.html>
- <https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality>
- <https://www.biologicaldiversity.org/campaigns/fracking/#>
- <https://www.fractracker.org/resources/oil-and-gas-101/health-environmental-effects-of-fracking/#:~:text=With%20increasing%20emissions%20from%20truck,over%20a%2020%20year%20period.>
- <https://www.aeroqual.com/blog/what-is-btex>

Fracking Positive Effects:

- <https://wwstanks.com/2018/07/16/the-economic-benefits-of-fracking/#:~:text=In%20communities%20where%20fracking%20occurs,jobs%20added%20to%20other%20sectors.>

United Nations Action on Fracking & Its Effects:

- <https://aida-americas.org/en/blog/un-finally-turning-against-fracking#:~:text=Since%20October%202018%2C%20there%20have,of%20a%20large%20fracking%20project.>
- <https://www.unep.org/who-we-are/frequently-asked-questions#:~:text=When%20was%20UNEP%20founded%3F,the%20world's%20greatest%20environmental%20challenges.>
- <https://unfccc.int/process-and-meetings/the-paris-agreement>
- <https://www.unep.org/environmentassembly/unea6>

Fracking Economic Effects:

- <https://www.thebusinessresearchcompany.com/report/hydraulic-fracturing-global-market-report>
- <https://www.brookings.edu/articles/the-economic-benefits-of-fracking/>

Bans on Fracking:

- <https://sgkplanet.com/en/in-which-countries-is-fracking-prohibited/>