Forum: General Assembly

Issue: Regulating the Fracking Practices of Major Oil Companies

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Introduction

In the energy industry, fracking practices play a key role in the oil and gas sector. The method of fracking involves injecting high-pressure liquids into underground rock formations and can help allow previously inaccessible supplies of oil and natural gas to be obtained. Many times, fracking practices are used in shale-rich areas, leading to an increase in energy production. Major companies such as ExxonMobil, Chevron, and BP have increased energy production by leveraging extensive reserves, significantly boosting the global energy supply. This increase in energy supply has resulted in lower energy costs and stimulated economic growth through job creation and enhanced competitiveness.

However, the increased use of fracking practices has also impacted on the environment and public health. The process is linked with environmental issues such as the exhaustion of water resources and the possibility of triggering seismic events. In terms of public health there are worries regarding respiratory problems and mental health impacts on communities located near fracking operations.

The different perspectives on fracking have led to a diverse array of regulatory responses. Different areas have adopted diverse strategies for fracking which show that there is a range of opinions on the benefits and risks associated with the method. Some areas fully support fracking, focusing more attention on its potential to boost economic growth and energy independence. In contrast, many areas have already banned fracking or set strict restrictions to safeguard the environment and public health.

Balancing the economic advantages of fracking with its potential effects on the environment and public health is vital today. This balance encourages sustainable energy development and safeguards our communities' well-being and Earth's health. It is critical to consider both short-term economic gains and long-term environmental and social consequences. The future of fracking relies on our ability to adopt responsible practices that protect ecosystems and ensure community safety.

Definition of Key Terms

Corporate Social Responsibility (CSR)

A self-regulating business model where companies integrate social and environmental concerns into their operations, helping a company be socially accountable to itself, its stakeholders, and the public.

Environmental Impact Assessment (EIA)

A process to identify and evaluate the potential environmental impacts of a proposed project or development to inform decision-making

Fracking/Hydraulic Fracturing

The process of injecting high-pressure fluid of usual water, sand, and chemicals into deep underground rock formations such as shale and sandstones to create cracks and release trapped oil and natural gas for extraction.

Methane Emissions

The release of methane gas, a potent greenhouse gas, into the atmosphere during the extraction and production of oil and gas contributes to climate change.

Proppants

Small solid particles are used in fracking fluid to keep fractures in the rock formation open after the pressure from injection subsides.

Seismic Activity

The occurrence of earthquakes and other ground vibrations triggered by processes such as fluid injection or extraction from the ground

Sustainable Practices

Actions and strategies that are designed to meet current energy needs without compromising the ability of future generations to meet their own needs. These practices aim to balance economic growth, social equity, and environmental protection.

Background

Fracking has emerged as a pivotal method for extracting oil and natural gas from deep underground formations. This technique, which involves injecting high-pressure mixtures of water, sand, and chemicals into underground rock formations, has prompted significant economic growth, such as job creation, and led to a

substantial increase in energy production. However, it has also raised serious environmental and public health concerns.

History of Fracking

The idea of fracking, or "shooting the well" as the practice was once referred to, dates back to 1862 and has been credited to Colonel Edward A. L. Roberts. During the Civil War's Battle of Fredericksburg, Roberts observed how artillery impacted narrow, water-filled channels. A few years later, he applied his battlefield observations to the design of an "exploding torpedo" that could be lowered into an oil well and detonated, shattering surrounding rock. When water was then pumped into the well, oil flows increased—sometimes by as much as 1200 percent—and fracking became a method to increase a well's productivity.

In the 1940s, high-pressure liquid blasts took the place of explosives, making "hydraulic" fracking the norm in the oil and gas sector. Although this method for extracting oil and natural gas was used before fracking, it did not see a major surge until the start of the 21st century, fueled by two key developments. One was the application of a particular kind of fracturing fluid: slickwater, a blend of water, sand, and additives to lower the fluid's viscosity. Another breakthrough was the integration of fracking and horizontal drilling. This method enhances the output capacity of each well by allowing access to a larger portion of the rock formation that holds the oil and gas. These developments, together with the heightened investment due to elevated global fossil fuel prices, resulted in fracking undergoing swift expansion. Between 1940 and 2014, about one million wells in the U.S. underwent fracturing, with around a third of them taking place post-2000, underscoring the rapid expansion and broad acceptance of fracking techniques in the oil and gas sector.

The Process of Fracking

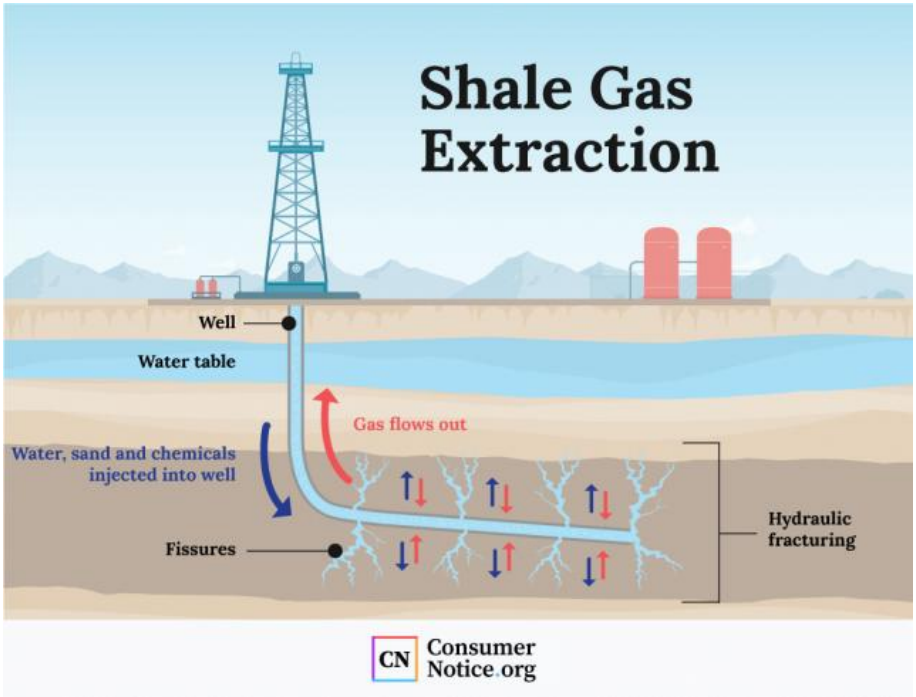

Figure 1: Illustration of Shale Gas Extraction Process using Hydraulic Fracturing (Consumer Notice)

Hydraulic fracturing is a technique used to enhance the extraction of oil and natural gas from deep underground formations. It begins with drilling a vertical or angled long well that extends a mile or more downward. As it approaches the target rock layer, the drill gradually shifts to a horizontal position and continues for several thousand feet. Steel pipes known as casings are inserted into the well, and the space between the casing and the rock is filled with cement to stabilize it.

Small holes are created in the casing using a perforating gun, or pre-perforated pipe is used during well construction. High-pressure injection of fracking fluid which is a a mixture of water, sand, and chemicals generates new fractures or widens existing ones in the rock. This process facilitates the flow of oil or gas to the surface, where it is collected, processed, and transported.

Economic Impact

Major oil companies such as ExxonMobil, Chevron, and BP spearheaded the fracking revolution, allowing access to previously inaccessible oil and gas reserves. This advancement has contributed to lower energy costs, which benefits consumers and businesses globally. For example, the U.S. economy saw reduced expenses due to the fracking boom, resulting in savings for households and companies. Moreover, countries reliant on energy imports also gained from these lower prices, which improved their economic competitiveness.

However, the economic benefits of fracking are not present in every country. While certain countries saw advantages such as reduced energy costs for consumers and job creation, other energy-exporting countries like Saudi Arabia and Russia encountered economic challenges. The increase in fracking practices presents growing difficulties for nations dependent on energy exports by lowering global oil and gas prices and decreasing their export income. This transition has compelled these countries to diversify their economies beyond dependence on oil and gas exports, frequently resulting in financial difficulties and social turmoil.

Job Creation and Economic Growth

Fracking has helped create large numbers of new job opportunities, particularly in regions rich in shale resources. Major oil companies have invested billions in infrastructure and workforce development, and this has allowed thousands of direct and indirect jobs. For instance, the Permian Basin has experienced an economic renaissance due to fracking, and this has helped boost sectors like manufacturing and services.

However, there are still many problems associated with job creation linked to fracking practices. Many positions are temporary or vulnerable to oil market volatility. As oil prices fluctuate, employment prospects will also be affected as some jobs may not be needed anymore, raising questions about the long-term viability of jobs provided by large oil corporations.

Geopolitical Shifts and Economic Stability

As oil companies increased their use of fracking practices global geopolitics has shifted through reducing the power of traditional oil-exporting countries. As the U.S. becomes a top oil producer and

exporter, many nations that rely heavily on oil revenues encounter economic challenges and become more dependent on expensive energy imports. This has caused new alliances to form and increased tensions globally as nations have to adjust to the changing energy landscape.

Furthermore, even though major oil companies profit from fracking, the volatility the practice causes can destabilize global economies. The growing sensitivity of oil supply to demand shocks makes the worldwide economy more susceptible to changes in overall demand. A positive demand shock can cause there to be more fluctuations in oil prices and global output.

Environmental Concerns

Water Supply Depletion

A major issue with fracking practices is the large amount of water used during the process of fracking. Each well may require between 1.5 million and 9.7 million gallons, and this large amount would put more pressure on local freshwater sources. In regions with limited water resources, such as West Texas's Permian Basin, water demand has increased by up to 770% from 2011 to 2016. This over extraction adversely affects drinking water supplies while also jeopardizing irrigation and disrupting the aquatic ecosystems. Additionally, contaminated water from fracking is often disposed of deep underground, which would remove the water from the freshwater cycle and make access to clean water in the future more difficult.

Water Contamination

Spills and leaks could happen at many stages of the fracking process, including during transportation, mixing, and waste management. Poor well construction raises contamination risks by allowing oil, gas, and fracking fluids to escape and go into nearby water sources. Additionally, fractures formed during fracking might extend unexpectedly, intersecting with natural faults and threatening the contamination of underground aquifers. Wastewater from fracking, such as flowback, produced water, and naturally occurring contaminants, can pose environmental dangers if not managed correctly, which could lead to spills or leaks at treatment plants.

Air Pollution

The oil and gas industry during fracking heavily impacts air quality due to flaring, venting, and leaks. Natural gas consists of methane and is a significant greenhouse gas that retains over 80 times as much heat as carbon dioxide. Fracking also releases toxic pollutants like benzene, toluene, and fine particles, which are associated with serious health risks, including respiratory problems, cardiovascular damage, and cancer. On-site workers face especially high risks of inhaling these dangerous substances, which makes their exposure especially hazardous.

Induced Seismic Activity

Fracking wastewater disposal has been positively correlated with increased seismicity, noted especially in regions that previously did not experience earthquakes. Wastewater injections deep in the earth can increase pressure and trigger motion along with geologic faults, leading to induced earthquakes. While the fracking process itself is not to blame for the quakes, disposal wells used in the fracking process are problematic, something that has the potential to create safety- and infrastructure-related concerns in regions that are going through these geo-spatial occurrences.

Environmental Degradation

Constructing well pads, access roads, pipelines, and utility corridors creates substantial number of industrial footprints that alter natural landscapes. This industrial development can lead to habitat fragmentation, harm wildlife, and decrease biodiversity. Research shows that fracking can damage essential habitats in the environment. For example, fracking impacts mule deer habitats in Colorado and causes tree deaths where wastewater management or spraying is mishandled. The combined impacts of these activities threaten ecosystems and the services they provide.

Public Health Risks

Air Quality and Respiratory Health

The process of fracking to get oil and natural gas has the capability to pollute air through releasing a variety of harmful emissions. According to the NRDC, air pollutants emitted through fracking activities can have volatile organic compounds (VOCs), benzene, and methane, which have a direct correlation with serious health problems. For example, the American Lung Association quotes that exposure to such air pollutants worsens respiratory health and leads to hospitalizations. In addition, the U.S. Environmental Protection Agency (EPA) has quoted oil and gas operations as the largest industrial source of methane emissions that enhance climate-related health risks.

Water Contamination

Water contamination is a large concern that can lead to major health risk. The EPA reports cases where fracking has caused drinking water pollution due to spills, leaks, and poor wastewater management. Wastewater from fracking can contain toxic chemicals, heavy metals, and radioactive materials, as stated by the NRDC. Improper treatment and disposal can then cause these pollutants to reach local water sources, which would bring serious health dangers to communities if they went into individuals' bodies.

Mental Health Impacts

Research shows that residents living in areas with copious amounts of fracking practice tend to experience higher stress and anxiety levels, potentially resulting in long-term mental health issues. A study from the University of California, Berkeley, found that individuals living near fracking sites experienced increased stress levels and this affects their overall quality of life. Noise from fracking operations causes

anxiety, sleep disturbances, and cardiovascular diseases or other conditions that stress can negatively influence.

Major Parties Involved

United States of America

The United States has had a significant boost in its oil and natural gas production since the early 2000s, becoming a global leader in hydraulic fracturing. The U.S overall supports fracking, especially in terms of the federal government and many state agencies, due to economic benefits like job creation and energy independence that fracking brings. However, there have also been more worries about the environmental and health impacts of fracking practices. Different states have their own rules, with some, like New York and Maryland, banning them outright due to concerns about groundwater contamination and air quality.

Canada

Canada considers fracking as a key element of its energy strategy. For example, provinces like Alberta and British Columbia have abundant natural gas and oil reserves. While the federal government supports fracking, regulatory authority is given to the provinces. Some provinces, such as Quebec, have implemented moratoriums or bans on environmental concerns, and many others are expanding their fracking operations.

European Union (EU)

The European Union does not have a unified position. Still, most member states have decided to ban or heavily restrict fracking due to the environmental and geological issues, such as water contamination, that fracking practices bring. Although there is no EU-wide ban, the practice is mostly prohibited in countries like France, Germany, Spain, Bulgaria, and the Netherlands.

Natural Resources Defense Council (NRDC)

The NRDC is a trustworthy environmental group in the United States that opposes fracking due to concerns about environmental and health impacts of fracking like air pollution and respiratory problems. The NRDC believes that the dangers of fracking outweigh potential economic gains and urges stricter regulations, more scientific research, and a shift to renewable energy sources like wind and solar power.

American Petroleum Institute (API)

The API is a leading organization that advocates for the oil and gas industries in the U.S. The organization supports fracking belief that the practice can help create jobs and promote energy independence. The API believes that fracking drives economic growth by enabling the use of shale resources that were previously inaccessible. The API tries to shape public policy to reduce restrictions on fracking, putting an emphasis on that the industry will focus on safety and environmental protections while highlighting the benefits of fracking for the US economy.

Saudi Arabia

Saudi Arabia being among the biggest oil producers globally and pays close attention to advancements in fracking, particularly in the U.S., where the fracking surge has heightened competition in the worldwide oil market. The increase in U.S. shale oil output via fracking has impacted global oil prices, putting pressure on Saudi Arabia's market share. The nation has reacted by modifying its production approaches to uphold its position as a top oil exporter in light of increased competition from the U.S. shale surge

Qatar

Qatar as one of the major players in the global liquefied natural gas (LNG) market, faces increasing competition from the United States due to the shale gas revolution. The growth of U.S. shale gas output has boosted the supply of natural gas in the U.S. and caused a spike in its LNG exports which has influenced worldwide prices and market distribution. This competition affects Qatar's standing in the LNG market since Qatar is a top exporter of LNG.

Previous Attempts to Resolve the Issue

- UNEA Resolution on Mineral Resource Governance, 19 April 2019 **(UNEP/EA.4/Res.19)**
- The imperative of defossilizing our economies, 15 May 2025 **(A/HRC/59/42)**

Many legislative and regulatory actions have been created to help oversee fracking activities with the objective of mitigating the impacts of environmental and health issues associated with fracking practices. The 1972 Clean Water Act Amendments established regulations for managing pollutant releases into U.S. waters, which indirectly impact fracking, particularly regarding wastewater handling. Furthermore, the 2005 Safe Drinking Water Act Amendments released particular fracking operations from federal regulation and have led to discussions about the necessity for enhanced safeguards for drinking water. Globally, the 2019 resolution from the United Nations Environment Assembly urges nations to implement regulations that consider the environmental and social effects of hydraulic fracturing while promoting sustainable resource extraction. These legislative initiatives indicate a growing recognition of the challenges and dangers associated with fracking. However, enforcement remains to be quite challenging are more active actions are required to ensure thorough safeguards for both communities and the environment.

Additionally, California's SB 4 which was passed in 2013 helped create a system for hydraulic fracturing that mandates environmental assessments and the public disclosure of chemicals utilized. This was an important advance in enhancing governance at the state level. Similarly, in 2014, New York banned hydraulic fracturing because of health and environmental concerns which helped set a standard for the entire nation. In Colorado, the 2022 HB22-1348 transparency law enacted new rules mandating public disclosure of chemical components and water quality oversight, aiming to reduce public health hazards linked to fracking.

Possible Solutions

Firstly, establishing a global regulatory framework for fracking can help set standardized rules for hydraulic fracturing operations. This framework can be created by collecting and citing effective global agreements to guarantee that member nations adhere to optimal practices in safeguarding the environment and public health, while accommodating regional variations. Encouraging global collaboration can support the process of sharing scientific studies, technological advancements, and effective methods, allowing nations to gain new insights on policies from each other. A tiered approach can also be introduced where more advanced regulatory systems can help to assist those less developed, promoting capacity building and collaboration.

Moreover, delegates may consider the approach of enforcing Mandatory Environmental Impact Assessments (EIAs) for all fracking projects. These evaluations would help companies assess and openly reveal the possible environmental and health effects of their activities. This clarity can assist local communities in understanding the environmental impacts of the activities. Additionally, implementing an organized public consultation process during the EIA phase would help communities to express their views and request clarifications in turn promoting a sense of ownership and responsibility. This forward-thinking method not only builds public confidence in the regulatory framework but also motivates companies to embrace more responsible behaviors as companies are answerable for their potential effects on environmental and public health.

Finally, to promote greener fracking technologies and practices additional policies could be introduced to encourage sustainable approaches. For instance, offering tax incentives or grants to companies that use less harmful chemicals or invest in water-saving and emission-reducing technologies. Governments can motivate companies to focus on environmental results and innovation by providing financial rewards. These incentives could be linked to tangible outcomes, such as reduced greenhouse gas emissions or enhanced water quality, to ensure accountability for environmental impacts.

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