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November 25, 2013

Shale Gas Extraction/ Fracking in Europe

In 2010, shale natural gas accounted for 27% of all US natural gas [production](#). Just two years later, that number jumped to [39%](#). Today, the US is the global leader in shale gas production; Canada comes in second followed by [China](#). As shale gas production rapidly increases in these countries, other nations are looking to capitalize on their own shale gas reserves. More specifically, Europe is starting to explore this booming [industry](#). While there are some notable perks of shale gas, shale gas extraction may be a costly endeavor and pose a threat to our health and the environment. European countries are currently in the midst of choosing between adopting shale gas as an energy resource or forgoing [it](#).

Natural gas trapped deep in the Earth's crust in shale rock formations is called shale gas. Shale natural gas is produced and extracted by two major processes: horizontal drilling and hydraulic fracturing. The latter, colloquially known as fracking, involves pumping thousands of gallons of a highly pressurized mixture of water, sand, and chemicals into shale rock formations. This fracturing fluid creates fissures in the rock allowing natural gas to escape where it is then collected in a [well](#).

Domestic shale gas offers several promising benefits. Among those is the prospect of increased tax revenues, generation of jobs, meeting the needs of growing energy requirements, and decreased dependency on gas imports by creating a self-sufficient energy [source](#). However, these potential economic benefits could come at a steep price. Emerging evidence from the US illustrates that fracking can cause numerous environmental and public health problems. One major concern highlights the potential of fracking fluid polluting groundwater and surface water. A US based environmental group, Environmental New York, reported 1,000 incidents of contaminated water [sources](#). The group also stated that over 280 billion gallons of wastewater was generated in 2012 in the United [States](#). Furthermore, due to the high volume of water needed for hydraulic fracturing, there is concern that surrounding water sources will be [depleted](#). Shale gas operations emit air [pollution](#) and fracturing rock formations can trigger small-scale earthquakes. While the magnitude of these earthquakes is usually extremely small, earthquakes with a magnitude as great as 4.8 have been reported at fracking sites in the [US](#). There is also fear that placing heavy emphasis on shale gas reduces interest and advancement of alternative renewable energy like solar and [wind](#).

The topics of shale gas extraction and hydraulic fracturing have been rapidly gaining worldwide notoriety for the past decade. While a few countries have

already been extracting shale gas at a dizzying rate for years, there is still great debate over whether the benefits of shale gas extraction outweigh the aforementioned risks. Several European countries have joined in on this debate as commercial energy companies seek out potentially vast shale gas reserves and begin exploratory drilling [activity](#). Unlike the US, many European countries are more hesitant to delve into shale gas production.

For example, France and the Netherlands have placed bans on shale gas exploration citing concern that current hydraulic fracturing technology causes earthquakes, generates wastewater, and contaminate drinking water. They also call for further studies to assess additional long-term environmental [impacts](#). Another concern is whether or not shale gas production is economically feasible. It was previously thought that Europe had vast untouched reserves of shale [gas](#). However, some exploratory drilling has been less than promising. For instance, ExxonMobil failed to yield a substantial amount of natural gas from two gas wells in [Poland](#). Additionally, it now appears that gas reserves in Europe are trapped much deeper in the rock layers than seen in the US, which raises the cost of extraction thus deterring commercial [interest](#). In Germany and Austria, permits on large-scale exploration activity have been halted because of doubt over commercial success. Moreover, Germans and Austrians are insisting that gas companies conduct further environmental studies causing these companies to back out due to increased [cost](#).

On the other hand, some nations show serious interest in shale gas as an alternate energy source. For instance, Ukraine, [Romania](#), Spain, Poland and the UK are moving forward with shale gas exploration; however, doing so cautiously and with vocalized public [opposition](#). The UK government has recently attempted to alleviate public concerns over the environmental impacts by releasing a report from the government agency Public Health England (PHE) stating that, “according to currently available evidence, the risks to public health from exposure to emissions from shale gas extraction are low if the operations are properly run and [regulated](#)”. The PHE does recognize that “good on-site management and appropriate regulation are essential” to minimize the risk of environmental and public health [disasters](#). Additionally, Spain recently included guidelines and regulations for fracking in their existing oil/hydrocarbon exploration law to uphold environmental impact [standards](#).

Although it currently seems that the European shale gas market is expected to [grow](#), the future of shale gas exploration in Europe is indeterminable and may not mirror the success seen in other parts of the [world](#). The possible economic and financial benefits of shale gas are enticing but many agree that the current practice of fracking is seen as too risky to our health and environment. Yet, as renewable energy resources strive to create a lasting [impact](#), shale gas could catapult natural gas as the number one source of global [energy](#).