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# Amid Permian ramp up, U.N. cautions against fracking getting too big, too fast



Arren Kimbel-Sannit, *Business news intern*

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A new United Nations report cautioned nations and companies about embracing the fast-growing energy trend of hydraulic fracturing, better known as fracking, without considering the environmental risks involved.

The U.N. Conference on Trade and Development [report](#) found that the meteoric rise of natural gas production has led to "major concerns" about contamination of both ground and surface water and an increase in seismic activity. The report conceded that the risks of significant fracking-related issues are slim, but warned that consequences could be dire.

The report comes at a time when the U.S. has embraced natural gas as the single largest source of energy. About a quarter of the country's natural gas is produced in Texas, where the oil and gas sector is one of the state's largest employers.

Fracking, used in concert with horizontal drilling, has revitalized the U.S. natural gas industry, and firms have taken to shale fields across the country to get in on the action. Now, natural gas accounts for the largest share of domestic energy generation, at above 30 percent, replacing coal.

And it's cheap, making gas appealing to large-scale industrial operations and thus competitive in the energy marketplace. The average price for 2009-2017 is around half what it was from 2000-2008.



#### ENERGY

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In West Texas' Permian Basin, natural gas production is so significant that it's almost exceeding pipeline capacity. The U.S. Energy Information Administration estimated in a May 2018 [report](#) that on average, 10.3 billion cubic feet of natural gas is produced in the basin every day.

Fracking involves injecting a pressurized liquid made up of water, sand and usually a mix of chemical additives deep into rock under the earth's surface, which frees up subterranean gas. Doing so causes minor subsurface vibrations, but if the fluid is injected near sensitive fault lines, it can lead to earthquakes, according to the report.

There's been a marked increase in the frequency of earthquakes in Texas since 2008, according to a 2017 [report](#) from The Academy of Medicine, Engineering and Science of Texas. From the 1970s to 2008, there were an average of one to two noticeable earthquakes in Texas each year. After 2008, the average rate jumped to 12 to 15.



#### ENERGY

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But both the U.N. and TAMEST reports say that while fracking itself can cause seismic activity, all the recorded human-induced earthquakes related to the oil and gas industries stem from the disposal of wastewater byproducts into deep wells, a process that isn't unique to natural gas production.

"You're doing very small injections...the chances of something catastrophic happening are fairly small," said Stephen Laubach, a senior research scientist at UT Austin's Bureau of Economic Geology.

The U.N. report also points to concerns about fracking's effects on water quality. Concerns include "the contamination of surface and groundwater by fracturing fluid, flowback wastewater or (methane)."

Melinda Taylor, a senior lecturer at UT Austin's Kay Bailey Hutchison Center for Energy, Law, and Business said the scientific understanding of fracking's risks has evolved in recent years past the initial panic surrounding the practice's environmental effects.

Though she said there have been some instances of groundwater contamination and seismic activity, her more significant concerns are of how water-intensive fracking is, especially considering that shale fields are often in arid climates.

It also produces significant amounts of wastewater, she said, and while portions of it get used for the injection process, large volumes still need to be disposed through other means.

Laubach said most of the fervor around water contamination is "hyperventilation," but

he said that doesn't mean people shouldn't be aware of possible risks.

Fracking is statutorily exempt from many EPA regulations, and a 2015 state law banned cities and towns from passing their own regulations on fracking.

In Texas, the shale gas industry's regulatory body is the Railroad Commission of Texas, which permits operators, imposes requirements on well construction and requires that gas firms disclose the types and proportions of chemical ingredients used in the injection fluid.

But Texas is unusual in that it doesn't have a law giving recourse to landowners whose property was damaged by fracking and other oil and gas production, as land and oil rights are separate.

"Texas stands out as being the only state without a surface damage act," Taylor said.

That said, natural gas is more environmentally responsible than oil or coal, the U.N. report says. It calls gas a "bridge fuel" that can reduce dependence on traditional fossil fuels on the way to greater adaptation of renewable energy sources. While it still emits carbon dioxide and other pollutants, it does so less than oil or coal.

However, fracking can lead to fugitive methane emissions through leaks and other exit points, and if it isn't kept under control, the environmental benefits could be offset, Taylor said. The problem is exacerbated while natural gas is in surplus, since operators burn off gas that can't be safely stored or transported.

"It's potentially the Achilles' heel in the climate calculus," she said.



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