Fracking or Drinking Water? That May Become the Choice

MARK KOBA, NBC NEWS, 9-14-14

Fracking for oil and natural gas—or having enough water to drink.

That's the possible dilemma facing a number of countries including the United States, according to a new report released by the World Resources Institute last week—though experts disagree on the real implications of the report and what should be done about it.

Forty percent of countries with shale-rich deposits—the types where hydraulic fracturing or "fracking" is used to extract natural gas and oil—face water scarcity in and around the shale deposits, according to the WRI report.

That's significant because water is a key component in fracking. And many of these countries, like the U.S., are suffering from ongoing severe drought conditions and other causes of dwindling water supplies.

"This is a warning signal for the energy industry and governments around the globe," said Paul Reig, an associate with the water program at WRI and lead author of the report. "We're not taking a pro- or anti- position on fracking, but we're saying that the scarcity of water where fracking's used could cause major problems when it comes to water supplies from agriculture to drinking it."

Dozens of countries, from the United States and Germany to New Zealand, use fracking or are considering its use to develop their shale gas and oil supplies. And not without some benefits: Shale gas could boost the world's recoverable natural gas resources by 47 percent, said the WRI report, as well as cut greenhouse gas emissions, compared with coal.

However, fracking requires around 3 to 6 million gallons of water for drilling per well. The report said that for countries like China, Pakistan, India and Mexico—which have large shale deposits in regions of water scarcity—that amount of water could mean those deposits might have to remain undeveloped.

And more importantly, said the report, if they are developed, the need of water for oil exploration could conflict with farming and daily use. That would spur water conflicts for the 386 million people who live on the land where the shale deposits exist.

But Katie Brown of Energy in Depth (EID), a research firm of the Independent Petroleum Association of America, said fracking's water use pales in comparison to other industries.

"When you dig into this report, WRI's aqueduct data show that oil and gas development has one of the lowest water risks in North America," Brown argued. "Even in the most prolific oil and gas states, producers only account for a fraction of one percent of their state's total water use."

According to EID, all shale gas wells drilled and completed in the United States in 2011 consumed approximately 135 billion gallons of water, equivalent to about 0.3 percent of total U.S. freshwater consumption—while 70 percent of the water used in the U.S. goes to agriculture.

Brown added that overall water use is important to track, and that's why oil producers are trying to develop recycling methods for water used in fracking so it can be used in more than just one well.

While the recycling of fracking water is a step in the right direction, it still misses the larger environmental picture, said Chrisitana Peppard, professor of science, theology and water ethics at Fordham University in New York.

"Water used in fracking can't be used in anything else, not showers, not gardens and certainly not for drinking," Peppard said.

She added that toxicity from water used in fracking is a major problem. The standard approaches to deal with the contaminated water are to hold it in lined pools above ground or inject that water deeper into the earth, which could cause earthquakes, Peppard said.

However, the EID refutes any connection between earthquakes, toxic water and fracking.

The group does admit that despite what it calls a "clean" record, there may have been isolated accidents from fracking and that accidents of any kind are "impossible to prevent." On its website, EID says: "Drilling a natural gas well is not an endeavor without risk. Neither is crossing the street."

The bigger question

The debate over the merits of fracking will likely continue, experts say. But a lack of water won't stop the practice, said Jose Lopez, professor of physics at Seton Hall University.

"The study simply cautions that regional, competing water use demands like farming and industry must be properly managed and balanced," he explained.

Will Sarni, director and practice leader, Enterprise Water Strategy at Deloitte Consulting, said that if it comes down to a choice between fracking and drinking water, the world's done a terrible job of controlling a strategic resource.

"We have the ability to manage water resources to support agriculture, power production as well as resource extraction," he said. "We need to focus on reuse, recycling and be more efficient with water."

In the end, said Fordham's Peppard, the future of fracking may depend on how the global community views one of its most indispensable elements.

"We need energy to power our lifestyles from cars to iPhones," she said. "But we need to ask ourselves if fracking is the most constructive use of fresh water."