

Research examines changing role of patents in natural gas industry

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Production from unconventional -- or deep shale -- gas wells has grown exponentially over the past several years. Credit: Penn State

New research from Penn State and the University of Alberta suggests that patents related to hydraulic fracturing—or fracking—can be used in the industry to limit the availability of information about the fluids expended as part of the natural gas extraction process.

Though a variety of stakeholders have increasingly questioned potential environmental, safety, and health hazards related to fracking, many of the components used during fracking operations cannot be identified because "they are withheld as proprietary or trade secrets," according to the researchers.

Researcher Dan Cahoy, a Smeal professor of business law, and colleagues Zhen Lei from Penn State's College of Earth and Mineral Sciences along with Joel Gehman from the University of Alberta School of Business have found that [patents](#) may be controlling or limiting the release of significant [information](#) when it comes to certain aspects of fracking.

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Cahoy and his colleagues write that disclosure itself will not solve the problem. "Without the ability to analyze the consequences of specific products and processes, the disclosure of their use is largely inconsequential," he said.

Because patents are meant to facilitate the [disclosure](#) of an [invention](#) and not its impact, patent rights unexpectedly also serve as a potential barrier to learning more about how the components used in the fracking process impact the environments and communities surrounding it.

The research by Cahoy and others indicates there are two primary ways that patents also can be used for information [containment](#): by limiting follow-on research that can lead to further advancement of the innovation, and by prohibiting third-party use—including testing and analysis—even outside the realm of marketplace competitors.

"Field and laboratory experimentation is necessary to fully capture how the exploitation of shale gasses impacts the environment. Normally, third parties such as NGOs [nongovernmental organizations] and universities would be able to fill this information gap, but patents may play a new and surprising role in limiting this important source of information production," according to the researchers.

In a detailed analysis of the natural gas-related patents over the course of their use, the researchers found that patent activity related to fracking increased dramatically around the time the process was becoming more common. Most of this increase is related to fracking fluids, the researchers discovered. Patents that are related to well completion and horizontal drilling have not seen a similar increase.

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Using a search of U.S.-issued patents designed to capture those clearly related to fracking, Cahoy and his colleagues find a dramatic increase in patenting in the last 20 years. The increase is even more pronounced over the last 10 years, and the trend appears to be continuing. The researchers are currently conducting a broader search for fracking patents to get a more complete picture of the players and technology being captured.

The researchers assert that, through litigation and licensing, much information can be controlled. In matters of public concern, it may be important to assess dramatic patent accumulation. But Cahoy and his colleagues aren't necessarily touting patent right reform. They pose several other possible solutions available within the law as it currently stands. For instance, they suggest public universities play a larger role in

testing and analyzing compounds because of their increased flexibility in avoiding liability.

The paper is titled "Fracking Patents: The Emergence of Patents as Information-Containment Tools in Shale Drilling."

More information: ssrn.com/abstract=2065032

Provided by Pennsylvania State University

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