

# Ecological Issues Slow Production of Shale Gas

By [Howard Amos](#)

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Shale gas extraction can result in natural gas seeping into aquifers, making tap water flammable — a risk highlighted in the documentary "Gasland."

France's National Assembly voted Wednesday to rescind licenses granted for unconventional gas exploration in a move that is likely to put smiles on faces in Gazprom headquarters.

The vote was a culmination of months of Gallic protests over the environmental risks of hydraulic fracturing — or "fracking" — dramatically highlighted by the Academy Award-nominated documentary "Gasland" that examined the United States' shale gas industry.

French Environment Minister Nathalie Kosciusko-Morizet said Tuesday that fracking involved "risks we don't want to take," Bloomberg reported.

The French developments are unlikely to alter increasing European preoccupation with the potential of unconventional gas, however.

According to a study released in April by the European Center for Energy and Resource Security, or EUCERS, the continent's unconventional gas reserves are between 33 trillion and 38 trillion cubic meters. Total conventional reserves are a mere 2.42 tcm.

Comparisons are often drawn with the United States, where sharp growth has meant unconventional gas makes up 50 percent of total production. The United States overtook Russia as the planet's biggest gas producer in 2009.

Some would like to think Europe is on the cusp of a similar revolution, which would stem falling internal production and have significant consequences for Russia, which supplies 40 percent of Europe's gas imports.

"Even if only a fraction of the potential unconventional gas resources becomes available," the EUCERS report said, it would undercut the high price of Russian gas fields, put into doubt the development of Arctic reserves — like the enormous Shtokman gas field — and improve the European Union's energy security situation.

The report added that even the threat of shale gas — without the digging of a single well — could alter the European gas market and weaken dependence on Russia.

Shale gas reserves, the most abundant variant of unconventional gas, are extensive in three large European basins that stretch under countries including the United Kingdom, France, Sweden, Poland and Ukraine.

Mikhail Korchemkin, director of East European Gas Analysis, said, "Gazprom should be afraid of shale gas reserves in Europe."

He pointed to the falling costs of shale gas production, which dropped in the United States from \$140 per 1,000 cubic meters in 2008 to \$93 in 2010. Gazprom, he said, was providing gas to Europe for \$346 per 1,000 cubic meters in the first quarter of 2011.

However, as the French example demonstrates, there are a number of stumbling blocks.

Extraction of the gas from rock sometimes as impermeable as concrete requires horizontal drilling deep underground, followed by fracking — the high-pressure injection of a water-based chemical mixture to fracture the rock and release the gas.

Besides a lack of equipment and land ownership structures that complicate access, Europe presents its own specific logistical challenges, the EUCERS report said.

Denis Daniilidis, spokesman for the European Delegation to Moscow, said there was a lack of conviction that shale gas will substantially alter the EU's energy relationship with Moscow.

"We do not share initial enthusiasm that this will bring about sweeping changes," he told The Moscow Times.

The biggest obstacle could be environmental objections, which have been publicized by Josh Fox's "Gasland," a documentary in the polemical style of Michael Moore that shows people igniting the water from their home taps because aquifers have been polluted by the fracking process.

Shale gas company Cuadrilla has only two sites in Britain and 50 staff, but was forced to conduct a huge public relations campaign after the release of "Gasland" dramatically raised awareness.

A company spokesman said they had hosted seven or eight television crews in less than a year and been featured in almost all national newspapers.

An unlikely bedfellow of filmmaker Fox was state-owned Gazprom, which, according to media reports, looked at ways of supporting the project.

In public, Gazprom has been more blasé about the threat from shale gas than rumors of an alliance with the anti-corporate Fox might indicate. "We would suggest that a little time is taken before the strategic effects [of shale gas] are determined," said Gazprom deputy chief executive Alexander Medvedev in February, the Financial Times reported.

While shale gas developments in Western Europe are stalling on environmental concerns, however, Eastern Europe — where popular protest against shale gas is practically nonexistent — is drawing ahead.

Poland, with reserves of 5.2 tcm, is furthest along with more than 70 drilling licenses already issued.

Ukraine has not issued licenses yet, but this year began talks with international oil majors Shell, Chevron and ExxonMobil.

"The regulation and legislation of environmental safety is much stronger and stricter in Western Europe than in Eastern Europe, particularly Ukraine," said Alexander Besspalov, a gas analyst at Alfa Bank.

Ian Baron, chief executive of Cadogan Energy, a British-based gas firm operating in Ukraine, said there was "a lot of industry interest" in shale gas.

Though he estimated that, at best, production could only begin in four or five years, Ukrainian gas currently meets only 30 to 40 percent of internal demand, with the rest purchased from Gazprom. Ukrainian businesses, he said, "are desperate to buy" domestically produced gas.

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