



UK

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What is fracking and why is it controversial?

An independent geological report has found that it is "highly probable" a controversial technique to extract gas, known as fracking, triggered two minor earthquakes on the Lancashire coast earlier this year.

The energy company Cuadrilla - which suspended its fracking test operations in June following the tremors - said the conditions that caused them are unlikely to occur again. But what are the other concerns over the practice and what exactly does it involve?

What is fracking?

The process of drilling down and creating tiny explosions to shatter and crack hard shale rocks to release the gas inside. Water, sand and chemicals are injected into the rock at high pressure which allows the gas to flow out to the head of the well. The process is carried out vertically or, more commonly, by drilling horizontally to the rock layer. The process can create new pathways to release gas or can be used to extend existing channels.

Why is it called fracking?

It is shorthand for hydraulic fracturing and refers to how the rock is fractured apart by the high pressure mixture. Experts also refer to a "frac job" and a "frac unit".

Why is it controversial?

Much of the water used in fracking is collected from the well and processed, but there are concerns that potentially carcinogenic chemicals can sometimes escape and find their way into drinking water sources. Some American householders also claim that shale gas leaking into their drinking supply causes tap water to ignite.

However, Tim Yeo MP - chairman of the energy select committee - told the BBC: "We can't see any evidence that UK water supplies might be at risk from shale gas - if it is done properly." The committee has also said that [environmental problems suffered in the US could be overcome](#) by tight regulation and good industry practice.

The industry itself also vigorously denies that shale gas is unsafe and blames pollution incidents as examples of bad practice, rather than an inherently risky technique.

Shale gas may also present a problem for global warming, because it is an abundant fossil fuel that could be a cheaper substitute than many renewable energy sources. However, carbon (and noxious gas) emissions from natural gas are much lower than from oil and coal.

There are also worries that the fracking process can cause small earth tremors. Two small earthquakes of 1.5 and 2.2 magnitude hit the Blackpool area this year and fracking operations have now been suspended pending an investigation.

"It's always recognised as a potential hazard of the technique", says Professor Ernie Rutter from the University of Manchester, "But they're unlikely to be felt by many people and very unlikely to cause any damage."

Why are the advantages of shale gas?

It boosts overall worldwide gas supplies and can help to reduce market cost. Shale is not anticipated to supply a large proportion of Britain's gas needs, but it is contributing to a worldwide flow of gas that has halved gas prices in the US domestic market, and led to a glut in world markets. It's estimated to have offered gas security to the US and Canada for about 100 years, and has presented an opportunity to generate electricity at half the CO2 emissions of coal. Exploration companies are also claiming there is a potential [£70bn of reserves in rocks deep under south Wales](#).

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