

Even experts don't know the long-term risks of fracking – so why would a local council?

June 25 2015, by Domenico Bau



Party town Blackpool is just a few miles from the proposed sites. Credit: James West, CC BY-SA

Fracking is relatively new and hi-tech – and even experts armed with cutting-edge instruments are only just beginning to get their heads

around some of the risks involved. No one really knows exactly what it will mean in the medium to long-term. It's not just that there aren't enough informed opinions – there isn't enough conclusive research anywhere in the world to enable anyone to make truly informed decisions on fracking and its risks.

So why, then, would a county council in the UK be any different? The issue has come to a head as council officials in Lancashire, north-west England, decide on whether to let energy firm Cuadrilla [begin shale gas operations](#) at two sites in the region.

Over the past decade, hydraulic fracturing of deep gas-rich shale formations – fracking – has become widespread in both the US and in Europe where there are estimated to be large reserves.

Fracking relies on complex technological advances in horizontal drilling and [hydraulic fracturing](#), where pressurised liquid is used to break open underground rocks and release natural gas. It is these advances which have made the production of [shale gas](#) economically viable. And fracking can indeed bring considerable benefits in some areas: [significant economic growth](#), [reduced carbon emissions](#) and dependence on foreign oil imports.

Yet scientists have uncovered numerous examples of potential environmental problems associated with fracking. The truth is that our current understanding of the links between fracking and freshwater and air contamination is still too limited to effectively reduce risks.

Given this limited understanding, it seems unreasonable to expect regional authorities, like Lancashire County Council, to take on the burden of decision-making.

Different risks are associated with different stages of the process.

During exploration and drilling these include the destruction of various habitats and the contamination of drinking water due to spills, well leaks and drilling sludge stored on site, the depletion of freshwater supplies, leaks of volatile organic compounds, ozone and methane from well heads and machinery.

During the fracturing and gas production stage, the major issues include surface water contamination, toxic chemicals in the fracturing mixture, depletion of water supplies, methane leakage, increased seismic activity, contamination of both groundwater and surface water, and increased emissions of greenhouse gases.

Longer term, there is the risk of watershed contamination, continued leakage of methane and radioactive compounds in waste water. There is also the threat to human health and the environment from prolonged exposure to contaminants – not to mention [reduced property values](#).

Don't follow the American dream

The US experience should not be used as a model. There, the shale gas boom has in part leveraged the 2005 Energy Policy Act, which made fracking exempt from requirements of the 1974 Safe Drinking Water Act and, practically, limited research and controls on groundwater pollution.

A study published in April 2015 in the [Proceedings of the National Academy of Sciences](#) in the US reports cases of groundwater pollution due to fracking in Pennsylvania. The detection of this was made possible only through the use of cutting-edge instrumentation not available in most commercial laboratories.

Another document released in early June by the US [Environmental Protection Agency](#) contains the results of a long-term study on the

potential impact of fracking on groundwater resources. Although it shows that, thus far no consistent evidence has been found of widespread groundwater contamination due to fracking, the EPA recognises that this might well be an underestimation of these effects due to a lack of pre and post-development data, the short-term duration of available studies and limited or undisclosed information on fracking activities.

These accounts confirm our limited scientific knowledge on the environmental impact of fracking. So extreme caution is needed before this technique is implemented safely in the UK. Lancashire County Council's [recommendation](#) to allow shale gas exploration at one of the two sites may be allowed within the UK's regulations, yet even so the council isn't making a truly informed decision – there's no such thing.

We are surely expecting too much of regional planning authorities that cannot have the necessary expertise or knowledge needed to make a decision on the limited data that currently exists and perform site monitoring using conventional techniques. In order to fully understand [fracking](#) risks in the UK independent pilot studies are necessary before the technology can be safely implemented at a scale that makes it economically viable.

This story is published courtesy of [The Conversation](#) (under Creative Commons-Attribution/No derivatives).

Source: The Conversation

Citation: Even experts don't know the long-term risks of fracking – so why would a local council? (2015, June 25) retrieved 18 May 2024 from <https://phys.org/news/2015-06-experts-dont-long-term-fracking-local.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.