

Debate

IS FRACKING FOR SHALE GAS THE ANSWER TO THE UK'S FUTURE ENERGY REQUIREMENTS?

YES

Francis Egan chief executive of Cuadrilla, an independent oil and gas exploration and production company in the UK

Natural gas has been an essential part of the UK's energy supply since the 1960s. Just 15 years ago, all our gas needs could be supplied from the North Sea, but with the decline in production, we now import two-thirds of our gas, and in 10 years' time, we will import almost all of it. Although the UK government is committed to increasing use of non-fossil fuels, there will still be a need for gas for many decades.

So where will it come from? Most likely from increasingly remote areas, transported to the UK over long distances in liquefied form via gas tankers. This is expensive, potentially insecure and certainly emission-intensive. However, there is an alternative. The natural gas believed to exist within the Bowland Shale Formation presents a huge opportunity to significantly reduce our gas import requirements, while at the same time providing a major contribution to our economy. Even if just 10% of the Bowland Shale gas can be extracted, it could meet the UK's current gas demand for more than 40 years. And at today's gas prices, this recoverable 10% would have a market value of almost £1tn. What's more, local communities will benefit financially, and the Institute of Directors predicted that shale gas development could create 74,000 new jobs.

There are scare stories about fracking, based on what's alleged to have occurred elsewhere, but here we have a robust regulatory framework, and the engineering, environmental, and health and safety expertise, to develop our shale gas resources in a safe and responsible way. The UK has the opportunity to become a world leader in shale gas, setting the standard for safety and environmental responsibility, and making our gas resources an essential part of a diverse energy mix. Let's seize that opportunity.

'The UK could become a world leader in shale gas production'



NO

David Hughes, geoscientist and president of research consultancy Global Sustainability Research Inc

Following the British Geological Survey report on in-place gas resources of 38tn cubic metres in the Bowland Shale, chancellor George Osborne declared a 50% tax break for shale gas development. 'I want Britain to be a leader of the shale gas revolution,' he said. But he would be well advised to understand the shale gas experience in the US, and the prospects for the UK, before declaring energy salvation.

Firstly, there's currently no shale gas production in the UK, so the proportion of the purported shale gas resource that could be recovered at an affordable price is uncertain. The most-likely estimate of the amount that might be recovered from Bowland Shale is perhaps 1.19tr cubic metres, which represents just 12-15 years of UK consumption. Then, if well productivity corresponds to the Barnett Shale in the US, which is of comparable size, 30,000 or more wells will need to be drilled. What's more, average well declines over the first three years in the five largest US shale plays range from 77-89%, showing that a treadmill of drilling is required to maintain production.

Higher population densities and different land tenure regulatory regimes will complicate access to the thousands of drilling locations required, and the high levels of environmental opposition to fracking will further hinder development. This opposition includes concerns about water use, groundwater contamination, industrial footprint, induced earthquakes and greenhouse gas emissions.

Shale gas is no panacea for the UK's energy woes. If it can be developed at scale in Europe, it will take much longer than in the US, and it won't be cheap – either economically or environmentally – as some major companies, such as Shell, have been finding out with writedowns on US shale assets.

'Shale gas is no panacea for the UK's energy woes'

DRILLING DOWN

Environmental activists outside the Houses of Parliament campaign against hydraulic fracturing (fracking), a technique used to extract shale gas