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Briefing note

Unconventional, unnecessary and unwanted: why fracking for shale gas is a gamble the UK shouldn't take

The Government is determined that fracking for shale gas should go ahead. But Friends of the Earth believes that fracking is a risky technology and that drilling more fossil fuels, such as shale gas, is the wrong direction for UK energy policy.

What is fracking?

Shale gas is the same as 'conventional' natural gas but held within shale rocks thousands of feet underground. A well is drilled but, unlike conventional gas which flows freely, the shale rocks have to be hydraulically fractured (or fracked) to get the gas. This is done by pumping down at extremely high pressure millions of gallons of water mixed with a small amount of often toxic chemicals which help the gas to flow more freely. About half of the water comes back to the surface and has to be treated. The other half stays underground where its movement cannot be controlled

UK shale gas

Estimates of how much shale gas is under the UK differ greatly, but reserves could be substantial. The key areas being investigated are parts of Lancashire; the Weald in South East England running roughly from Kent through Sussex to Hampshire; the East Midlands and parts of Northern Ireland. Many areas are already covered by licences allowing fracking, and the Government is keen to extend this licencing to much of the rest of England and more of Wales.

The UK has big energy problems, but shale gas is not the answer

Shale gas is unlikely to cut energy bills

In the US, fracking for shale gas has boomed in the last decade and helped cut gas prices. UK supporters of shale gas, including the Government, say that the same could happen here.

But this ignores expert views that costs in Europe will be up to 50% higher than in the US because of factors including less promising geology and higher population density. Bloomberg New Energy Finance, who provide energy information to business and finance, say that hopes of shale gas cutting energy prices in the UK are "*wishful thinking*". And former Tory Energy Minister Charles Hendry has written that "*betting the farm on shale brings serious risks of future price rises*".

Shale gas brings big environmental risks

A report for the European Commission assessed fracking as having a high risk of causing problems for the local environment and human health. Potential high risk concerns include groundwater contamination, surface water contamination, water resource use and air pollution.

Experience from the US suggests strongly that, despite industry claims, there is real evidence of problems from fracking and related activities:

- **Water contamination:** The US Environmental Protection Agency has found contamination of groundwater near Pavillion, Wyoming to be likely linked to fracking. Another US report lists more than 1000 fracking-related spills of diesel, oil, chemicals and wastewater in Colorado alone in the two years to September 2011 And many fracking chemicals are known to be toxic:

an assessment of 353 chemicals used in fracking in the US found that a quarter could cause cancer and up to half could affect the nervous and immune systems.

- **Air pollution:** Monitoring of air quality near fracking sites in western Colorado found over 50 hazardous air pollutants known as non-methane hydrocarbons near shale gas wells. Of these, 35 could affect the brain and nervous system. Some were found at levels which could potentially harm children exposed pre-birth.
Emissions from shale gas wells can also cause photochemical smog: an area of rural Wyoming with a high concentration of gas wells has recorded smog levels higher than Los Angeles. The health effects of such smog include increased susceptibility to asthma. A hospital system in Texas serving six counties with intensive shale gas development has reported asthma rates three times the state's average.

The industry and its supporters claim that regulation will be tougher in the UK than in the US, and this will deal with these problems. But many others disagree. Professional body the Chartered Institute of Water and Environmental Management says that we should not encourage fracking *"until there is more evidence that operations can be delivered safely [and] that environmental impacts are acceptable"*. The United Nations Environment Program has concluded that *"fracking may result in unavoidable environmental impacts even if [gas] is extracted properly"*. Friends of the Earth believes that tougher regulation can make fracking safer, but it can't make it safe.

Shale gas won't help tackle climate change

Shale gas is underpinning the Government's 'dash for gas', pinning our energy future on a continuing role for gas in generating electricity. According to the Committee on Climate Change, this dash for gas would be incompatible with meeting our mandatory carbon budgets.

Going for shale gas could impact on investment in renewable energy: According to energy expert Professor Paul Stevens of Chatham House *"if the [shale gas] revolution fails to deliver a lot of cheap gas, by the time this is realized it could well be too late to revert to a solution to climate change based upon renewables"*

Globally, we don't need shale gas. Oxford academic Professor Dieter Helm has our known fossil fuel resources are *"more than enough to fry the planet several times over"*. Exploiting the world's reserves of unconventional gas, such as shale gas, could lead to a global temperature rise of 3.5 degrees Centigrade. This is way above the 2 degrees rise that the UK and other developed countries has said is necessary to avoid dangerous climate change.

Shale gas isn't the best way to create jobs and boost the economy

Although investing hundreds of millions of pounds in shale gas will create jobs, US experience shows that the job creation claims of the drilling companies are often overstated. Key existing economic sectors such as agriculture and tourism can also suffer,

A future based on energy efficiency and renewable energy could provide many jobs: an energy efficiency programme could create 71,000 new jobs by 2015 and renewable energy could support 400,000 jobs by 2020

Friends of the Earth believes the answer to the UK's energy problems is clean British energy, using our vast potential for wind, wave and solar power. This is also popular with the UK public: 85% of people want to see more energy produced from renewable sources and two-thirds said they wanted renewables to be providing more of their electricity in 10 years, compared to 2% for gas.

Further information

A full briefing on shale gas and fracking is at http://www.foe.co.uk/resource/briefings/shale_gas.pdf