

# The Telegraph

## Britain faces a nasty shock when the global energy cycle turns



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A Cuadrilla shale drilling rig

Britain's energy industry is dying. While the US is striving for self-sufficiency in fuel and power as a primary goal of strategic security in a dangerous world, this country has acted with strange insouciance.

We have let matters drift for so long that half of our nuclear reactors will be phased out over the next nine years with nothing ready to replace them. North Sea oil and gas is a spent reserve. Britain's dependency on imported fuels and electricity has jumped from 17pc to 46pc since 2000.

Energy is becoming a corrosive element in Britain's current account deficit, now 6.9pc of GDP, and the scale of vulnerability has been masked by the slump in world energy prices. When the global fossil cycle turns - inevitable, given the \$400 investment freeze in oil and gas projects over the last two years - Britain will face a national energy 'margin call'.

The confluence of Brexit, a new government, and [the review of the Hinkley Point nuclear plant](#) have suddenly thrown open the debate on how the UK should power its economy. It is a dangerous moment, but also giddily fluid.

As a summer exercise, I will float a few thoughts on how to seize this chance, open to suggestions from *Telegraph* readers for better ideas. My heterodox mix will satisfy nobody: it includes fracking a l'outrance, micro-nuclear and molten-salt reactors, more off-shore wind, a Norwegian-style push for electric vehicles by 2030, and a grand plan for carbon capture and storage to take advantage of Britain's unique competitive advantage in this field and revitalize Northern industries.

What is fracking? Video guide to how hydraulic fracturing works [Play!02:34](#)

There is no shortage of funds. Britain can borrow at 1.47pc for half a century, and it should do so without compunction as an investment stimulus to carry the country through the post-Brexit storm. Oil and gas fracking does not require public money anyway. Britain's shale industry is already poised to drill, so that is where I will begin today.

Bob Gatliff from the British Geological Survey (BGS) says nobody knows how much recoverable shale there really is in the key fields: the giant Bowland gas basin in Lancashire and Yorkshire, the Weald oil basin in Sussex, and Midland Valley in Scotland.

"We haven't got a clue, and we won't know until they have drilled hundreds of wells," he said. Tectonic shocks over the last 300 million years may have caused the gas to lose pressure.

The [BGS](#) thinks there are 1,300 trillion cubic feet (TCF) of gas resource in the Bowland, enough in theory to replace the North Sea and profoundly change British fortunes.

"Four or five years ago the recovery rate in the US was 10pc and now they are moving towards 20pc. I don't see why we can't do that in the Bowland," Stephen Bowler, the chief executive of IGas. Anything like that would be enough to meet Britain's entire annual consumption of 2.7 TCF through the 21st Century.

IGas is in partnership with Total, GDF Suez, and INEOS, expects initial flows in the Bowland in early 2017, building up to commercial output within two or three years.

Those on the cutting edge are exasperated by the static critiques of the hydraulic fracturing, typically five years out of date. The gains in technology, seismic imaging, computer data, and smart drills are moving at lightning speed.

New methods allow for three, six, or even ten wells to be drilled from the same pad, greatly reducing disruption. Walking rigs move on the next spot without the need for the vast fleets of vehicles that bedeviled the early years of shale. Fracking remains 'dirty', but less than a decade ago. The BGS says that most early stories of water contamination have been false alarms.

British geologists are better prepared. They have already pre-collected readings on methane levels that will enable them to detect any leakage from fracking wells. "They never had that data in the US so we will have a much better handle," said Mr Gatliff.

Burning gas emits CO<sub>2</sub> of course - albeit half as much as coal - but fracking is still a net plus for global warming if it displaces imports of liquefied natural gas (LNG) from places like Qatar. LNG must first be frozen to minus 160 degrees Centigrade and then shipped across the world. A study by Cambridge Professor David Mackay concluded that LNG's carbon footprint is 20pc higher than shale gas.

Whether drilling in the Bowland will ever be viable depends on flow rates and on whether LNG prices rise above \$5 (per MMBtu). The spot price of natural gas in the US is \$2.70, but the February 2017 contracts are \$3.35. The cost of shipping to Europe - the 'Atlantic

spread' - adds another \$1 to \$2. "we think there should be comfortable margins," said Mr Bowler.

Britain's shale saga has been stormy. Cuadrilla drilled the last well in 2011 but was forced to stop after setting off tremors. Local authorities denied all permits until Third Energy finally won approval for a rig in North Yorkshire two months ago. It will start drilling later this year.

The long hiatus is now over. Approvals are becoming easier. The United Kingdom Onshore Oil and Gas (UKOOG) says five wells are the final planning stage, and four more are nearly there. The Swiss chemicals group INEOS plans to lodge 30 requests over coming months and start drilling next year.

As a rule of thumb, it costs twice as much to drill a well in the UK as in the US, due to higher land prices and environmental rules. Yet the cost curve is coming down fast for everybody. The 'decline rate' of production in the US over the first four months of each well was 90pc a decade ago. It is now 18pc.

Britain lacks the acquired know-how but enjoys a 'late-comer advantage' in technology. Its geology may be just as rich. UKOOG's chief Ken Cronin said shale layers in England are four to six times thicker and should yield more gas.

Oil is another story, though the 'Gatwick Gusher' at Horse Hill has already produced flows comparable to the North Sea. The British Geological Survey estimates that total resource of the Weald's Jurassic marine shale is 4.4bn barrels. There could be far more but the basin could equally prove be a total flop, with no 'free oil' flowing at all.

Shale is a calculated gamble for Britain, but on good odds. We know from America's energy revival that home-drilled energy has been a geo-economic earthquake, reversing the country's manufacturing decline and stoking an investment boom in chemicals, plastics, and glass.

There are \$130bn of industrial projects in the pipeline along the corridor from Houston to New Orleans alone. And lest it be forgotten, cheap power has saved America's steel mills from the fate of Port Talbot.

We cannot hope to repeat the stunning success of the US, but we can at least avert a fiasco staring us in the face.