OUR GREEN AND PLEASANT GASFIELD?
Fracking and the English countryside
SUMMARY

Despite big claims in recent years, the UK fracking industry is making slow progress. But what would a full-scale fracking industry look like? What impacts could it have at the local level, and particularly on our countryside and rural economy?

To find out, Friends of the Earth commissioned research from Cardiff University Business School to assess the number of fracking wells that would be required to replace 50% of the UK’s gas imports over a 15 year period – a target that fracking industry bodies believe possible.

The findings lay bare the vast scale of fracking necessary that would be needed to do this. Assuming a central estimate for gas production from each well:

- Over 6,000 fracking wells would need to be drilled and fracked. Many of these are likely to be in rural areas. This is equivalent to more than one well every day for 15 years.
- Over 3,500 hectares of land given over to fracking, an area equivalent to 4,900 football pitches.

In this report we look at the cumulative impacts of such a large new fossil fuel industry on the English countryside.

We find that the impacts of over 6,000 fracking wells could be vast. Whether looking at the land, the pipelines or the millions of extra lorry movements up and down country roads, fracking threatens to bring serious disruption to large parts of the country.

Where fracking has been attempted, the impact of one single well has been significant. Residents of Kirby Misperton in North Yorkshire, where Third Energy wants to frack, report impacts from noise, traffic and noxious smells. They say that some local businesses have closed and the community is divided.

The combined impact of over 6,000 wells could be wide-ranging and severe.

"The one thing it’s very hard to change is that [fracking] is a big industrial enterprise. That’s one thing you can’t avoid”
Ernest Moniz, US Energy Secretary 2013 - 2017
KEY FINDINGS

6,100 wells needed to replace 50% of estimated gas imports from 2021-2035

That’s more than one well every day
KEY FINDINGS

6,100 wells would cover approximately 3,560 hectares of land. That’s over 4,900 football pitches.
The cumulative impact of 6,100 fracking wells

How many fracking wells?
Fracking requires a large number of extraction sites. This is because most of the gas from a fracked well is typically produced in the first few years, followed by a steep decline in production. Each fracking well in the UK, over its lifespan, is expected to produce only the same amount of gas as a single LNG tanker. This latest research reveals that in order to replace 50% of projected gas imports, a figure used by the fracking industry themselves, the UK could require 6,100 fracking wells between 2021 and 2035. This figure is calculated using a best estimate of how much gas will be produced from UK fracking wells, as yet unknown. If gas recovery is lower than expected, the number of wells needed could more than double to 16,550. If gas yields are higher than expected, the research finds that over 4,000 wells would still be needed.

How much land could fracking require?
The research assumes that these thousands of wells could be located, on average, six wells to a "pad" - the concreted area on which fracking wells are drilled. Each pad is likely to measure around 3.5 hectares on its own. Taken together, the 1,016 pads required would total more than 3,500 hectares of land given over to fracking - equivalent to almost 5,000 football pitches.

Even this amount of land could under-represent the overall impact on the countryside, as the pads could be supplemented by access roads, pipelines to take away the gas, and other infrastructure.

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What could the visual impacts be?
The visual impacts of one fracking well or well pad are significant - with a drilling rig of up to 175 feet high present while wells are drilled, large sound barriers, increased lorry traffic, etc.

But an industry with over 6,000 wells will result in a network of connected fracking pads peppered across the landscape. Petrochemical giant and fracking company INEOS is reported to want to build 10-15 fracking pads in each 10km by 10km area of their licenses. In this scenario if you are living in, working in or visiting the countryside in one of these areas, you are likely never to be more than three or four kilometres away from a fracking site. This network of fracking sites threatens to diminish the character of a much larger area than just the area covered by the well pads themselves.

What could this mean for traffic?
Academics have estimated that each 6 well pad could generate over 6,000 lorry movements - a large amount for small communities to deal with. Taken together, 6,100 fracking wells could result in over 6 million lorry movements, often on country roads.

The potential scale of local impacts is vast. But of course they are not the only problem with fracking. Shale gas is a fossil fuel which would add to climate change, threatening both people and nature around the world. We need to be cutting how much gas we use, not opening up a whole new industry.

Friends of the Earth believes that fracking is not the answer to energy security concerns around gas. In the words of Professor Michael Bradshaw, one of the UK’s leading experts on gas and energy security:

“The best way to reduce the energy security risks associated with the UK’s growing gas import dependence is to ... promote renewable power generation, improve energy efficiency and reduce overall energy demand.”
If we need over 6,000 fracking wells in the UK, where would they all go?

Fracking is currently banned or on hold in Scotland, Wales and Northern Ireland which means that, as it stands, all the wells would have to be drilled in England. These wells would be drilled in areas where the geology is right. Currently 17,820 km² of England are covered by Government licences allowing gas and oil exploration, much of it in the East Midlands, the North West and Yorkshire.

For a more detailed, interactive map of licence areas, go to the Friends of the Earth website.9

The potential impact of fracking on the countryside is a key concern for many people. The Government’s quarterly Public Attitudes Tracker surveys show that ‘loss/destruction of natural environment’ is consistently the most-mentioned reason for opposing fracking.9

Fracking is not just a single-party issue. In England, 170 Parliamentary constituencies have at least part of their area covered by licences allowing gas and oil exploration and production. Of these, 88 are currently held by the Conservative party and 82 by the Labour party.

WHERE WILL THE WELLS GO?

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Kirby Misperton is a small village in the rural Ryedale area of North Yorkshire. Farming and tourism are important parts of the local economy. Third Energy drilled a well near the village in 2014 and was granted permission to frack in 2016, despite huge local opposition. The company brought equipment on site and prepared the well, but fracking has been delayed. Fracking hasn’t started and residents claim it has already caused huge disruption to the village and the local area. This disruption has been caused by one well which had already been drilled. With a possible 6,100 wells, this could be replicated up and down the country.

“We came to Kirby Misperton to retire but then fracking arrived on our doorstep. Third Energy have only got as far as preparing the site but the impacts have already been huge: traffic, noise, noxious smells and a divided community. Some local businesses have shut down and people in the village can’t sell their houses. And this is before fracking even starts”

Rt Rev Graham Cray, retired bishop

By 2030, the UK would rely on a diverse mix of nine technologies – offshore wind, onshore wind, gas CCS, gas, solar, wave, tidal, geothermal, and hydro power, coupled with greater levels of interconnection”
Some of England’s most treasured natural places have not escaped the attention of fracking companies. Petrochemicals firm INEOS wants to explore for shale gas in and around Sherwood Forest – one of the UK’s most cherished natural environments and legendary home of Robin Hood.

Freedom of Information requests by Friends of the Earth have revealed that INEOS has proposed two test drills at The Lings, a site in an area Nottinghamshire County Council describes as “the heart of Sherwood Forest”. What’s more they have made an agreement permitting them to conduct seismic surveys – the first step towards fracking – in the Birklands Site of Special Scientific Interest at the centre of Sherwood Forest. Their activities could come within just a few hundred metres of the historic 800 year old Major Oak, under which legend has it that Robin Hood and his band of outlaws sought shelter.

With a possible 6,100 wells across England, could other natural places be at risk from fracking?

For more information on fracking, and to take action, go to https://www.friendsoftheearth.uk/fracking

“I have lived around here for 47 years and this forest means so much to me. It was my playground as a child, it’s been the playground of my children. It’s not very often that I’m lost for words but I cannot understand why someone would put such an ancient, majestic and beautiful forest at risk. What else are they prepared to sacrifice?”
Deborah Hodson

REFERENCES

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8 Friends of the Earth, UK Fracking Map: Where could fracking happen? https://friendsoftheearth.uk/climate-change/uk-fracking-map-where-could-fracking-happen
A test drilling site for shale gas near Banks on the outskirts of Southport, Lancashire, UK.