



Chesterfield Climate Alliance
Act Now on Climate Change

Briefing on Fracking

October 2016

Chesterfield Climate Alliance is opposed to shale gas extraction locally and anywhere in the UK because this is likely to compromise the UK's legally binding climate change targets, and the Paris COP21 agreement to stop the global climate warming by 2°C above pre-industrial levels. Britain should be leading the world in moving to clean renewable power, not aiming to extract ever more inaccessible fossil fuels. There are numerous concerns about the impacts of fracking locally and globally. This short briefing sets out some of our key concerns, addressing some of the common myths surrounding fracking.

Renewables can meet all of our energy needs without fracking

The UK can be fully self-sufficient in safe, clean and cost-effective renewable energy without fossil fuels or nuclear by 2030.ⁱ To do this we also need to reduce our energy demand significantly by reducing wastage and using energy much more efficiently. This has many other benefits including reducing fuel poverty, and improved health and air quality. Renewables are already meeting 25% of our electricity demand (up from 5% in 2005) and in July 2015 renewables generated almost enough electricity for every house in the UK. The question is whether we can produce enough energy at all times from renewables even when the wind isn't blowing, the sun isn't shining and our energy demand is high. Detailed modelling has shown that renewable energy sources would produce surplus energy over 80% of the time. We can ensure there is enough energy the rest of the time by shifting energy demand using 'smart' appliances and batteries, pumped storage, heat storage, and hydrogen for storage.ⁱⁱ All of these technologies are proven and safer than fracking with its associated environmental problems and health and safety risks.

Fracking is not a bridge fuel to a low-carbon economy

Supporters of fracking argue that fracking is a bridge to a low carbon economy and will substitute for coal or imported natural gas. However fracked gas is not a substitute for other fossil fuels but is likely to be used in addition to existing fossil fuel use. Rather than being a bridge, fracking can divert investment away from renewable technologies and hinder the transition to a low-carbon economy. Burning gas in power stations produces less carbon dioxide than burning coal, but fugitive methane leaks from fracking are likely to be a problem, particularly in old mining areas where there are lots of old shafts and tunnels. Methane is a more powerful greenhouse gas than carbon dioxide and it is estimated that leakage levels above 3% would nullify any emission advantage over coal.ⁱⁱⁱ

The independent Committee on Climate Change have concluded that "*exploitation of shale gas on a significant scale would not be consistent with UK carbon budgets and the 2050 target unless three tests are met....the need to regulate tightly production emissions; the need for such shale gas production as does happen to substitute for imported gas and not add to overall gas consumption; and the need to find additional abatement measures to compensate for the emissions attached to production, even under tight regulation.*"^{iv}



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However, these abatement measures consist of Carbon Capture and Storage (CCS), an undeveloped technology, the programme for which was cancelled in November 2015. The Committee go on to say "*Should CCS not be deployed, meeting the 2050 emissions reduction target will require elimination of almost all fossil fuel use in power generation, transport and buildings. This implies a reduction in gas consumption by 2050 of around 80% on today's levels. It also implies that gas would cease to be used for electricity generation by the mid-2030s.*"

By the time that UK shale gas comes on stream (mid 2020s) the UK needs to be moving out of fossil fuels, and shale gas assets are likely to be stranded.

Fracking will not lower energy prices

Fracking is highly unlikely to reduce energy prices due to the fact that there is insufficient shale gas in the UK and Europe to change the European market price.^v

Fracking poses a risk to public health

Research studies in Pennsylvania have found that drilling and fracking activities have been associated with a 24% increase in cardiology hospitalisations, increased numbers of skin conditions and upper respiratory conditions, and high-risk pregnancy, pre-term birth, and low birth weight in infants.^{vi} New York State banned fracking on grounds of serious risk to public health following a rigorous six-year study.^{vii} Many other parts of the world, including France, Holland, Bulgaria, Tasmania and Victoria (Australia) have all banned fracking due to public health concerns.

The environmental problems associated with fracking in the US will not be dealt with by UK's stricter environmental laws

An Environmental Law Review that examined the current UK and EU regulatory controls and the ability of UK regulators to act concluded that the system governing fracking is far from satisfactory and "*Under the current regulatory system the uncertainty and risk associated with fracking is not justifiable.*"^{viii}

The UK government assumes that the environmental and health risks that have occurred in the US can be regulated so they don't occur. However, an editorial in the British Medical Journal has stated "*no amount of regulation can remedy well casing cement failures and accidental spillage of waste water. There is no reason to believe that these problems would be any different in the UK.*"^{ix} There is also a reliance on self-monitoring for the industry.

The probability of well failure for a single well may be low if designed and constructed according to 'best practice', but the chances of failure with hundreds of wells and standard practice combined with the risks of human error, is not insignificant.

INEOS has a poor safety record (though one of the better ones for the chemical industry!) with numerous fines for large oil spills, emissions, chemical spills and explosions from around the world in the last 8 years. Oil and chemical plants run by INEOS at Grangemouth have breached health and safety regulations 34 times in the last 4 years.



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Fracking will only create a small number of jobs

The fracking industry claims that fracking will create thousands of jobs. However only a fraction of these are direct jobs. The government estimates 16,000 to 32,000 full time jobs (direct and indirect) for the UK at peak construction, one third of which would be overseas. This is fewer than the 27,000 jobs already lost or threatened due to government cuts in support to the solar industry alone.

By contrast investment in energy efficiency and renewable energy can create many more jobs. A mini-Stern report for the Sheffield City Region estimates that cost effective investment in low carbon measures could result in the creation of about 6,189 additional jobs in the region per year and additional Gross Value Added (GVA) of £293 million per year in the region over a 10 year period.^x

The public are not supportive of fracking

There is massive public support for renewables with over 80% of people in support.^{xi} By contrast more people oppose fracking than support it. Many countries and cities across the world are on target to be 100% powered by renewables in the next 20 years, or even sooner. For example, Munich, Germany has a target to supply the entire municipality of one million people with renewable electricity by 2025.

Local impacts are likely to be extensive

In a 10km by 10km area there are likely to be up to 30 well sites and nearly 400 subsurface horizontal wells (according to information from INEOS). These well sites would require pipeline corridors, access roads, compressor stations and other infrastructure, blighting large areas.

We hope that local councillors will take note of our concerns and the evidence against fracking, and vote against any planning applications to approve extraction of shale gas in Derbyshire.

Acknowledgements to [Frack Free Notts](#) and [Frack Free South Yorkshire](#) for some of the information used in this briefing. For more information please contact Lisa at info@transitionchesterfield.org.uk

ⁱ Centre for Alternative Technology (2013). Zero Carbon Britain. <http://zerocarbonbritain.org/>

ⁱⁱ See reference above

ⁱⁱⁱ Alvarex, R. A. et al (2011) Greater focus needed on methane leakage from natural gas infrastructure. Proc. Nat. Ac Sci US, 109 (17), 6435-6440. <http://www.pnas.org/content/109/17/6435>

^{iv} Committee on Climate Change (2016) Onshore Petroleum.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/535207/Compatibility_of_onshore_petroleum_with_meeting_UK_carbon_budgets_-_Committee_on_Climate_Change_-_2016.pdf

^v Bloomberg (2013) UK Shale Gas No "Get Out of Jail Free Card". <https://about.bnef.com/press-releases/uk-shale-gas-no-get-out-of-jail-free-card/>

^{vi} Peng, L. et al (2016) The Health Implications of Unconventional Natural Gas Development in Pennsylvania. http://ageconsearch.umn.edu/bitstream/235745/2/fracking_AAEA.pdf

^{vii} New York State Department of Health (2014) A public health review of high volume hydraulic fracturing for shale gas development. https://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf

^{viii} Hawkins, J (2015) Fracking: Minding the Gaps. Environmental Law Review, 17, 1, 8-21. <http://elj.sagepub.com/content/17/1/8.full.pdf>

^{ix} British Medical Journal (2014) Editorials. Public Health England's draft report on shale gas extraction. <http://www.bmj.com/content/348/bmj.g2728>

^x Centre for Low Carbon Studies. The Economics of Low Carbon Cities: A Mini-Stern Review for the Sheffield City Region. <http://www.lowcarbonfutures.org/reports/economics-low-carbon-cities-mini-stern-review-sheffield-city-region>

^{xi} BEIS (2016). Energy and Climate Change Public Attitudes Tracking Survey <https://www.gov.uk/government/collections/public-attitudes-tracking-survey>