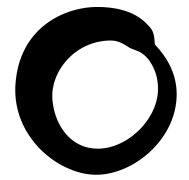


# Unconventional Gas: unsafe, unnecessary, unwanted



**Friends of  
the Earth  
Scotland**

You've probably come across fracking in the news and wondered if the reality is as ugly as the word. Maybe you've heard about the new natural gas boom and wondered what shale gas and coalbed methane mean for our energy needs.

As conventional oil and gas sources run out, and the cost of extraction rises, we are in the middle of a big push to exploit fossil fuels by ever more extreme means. However, not only does climate science demand we that we leave these fossil fuels in the ground, there is a growing body of evidence from the USA and Australia, where the unconventional gas industry is far more developed, that there are inherent and unacceptably high environmental and health risks associated with coalbed methane and shale gas extraction.

## What is unconventional gas?

Shale gas is a form of gas trapped inside shale rock, while coalbed methane is trapped inside coal seams. They are known as 'unconventional' because of the novel techniques - like fracking - used to extract the gas.

Hydraulic fracturing, or 'fracking', is a controversial technique often used to exploit unconventional sources of gas, such as shale gas and coal bed methane. It is an expensive process that is only economically viable when the price of fossil fuels are high. It involves drilling to depths of around 3km and pumping millions of litres of water, and toxic chemicals under high pressure into the borehole to open up fractures and ease the flow of gas for extraction.

Unlike shale gas, coalbed methane extraction doesn't always involve fracking – at least not in the early years of a development. Instead, coal seams are de-pressurised by pumping out large volumes of water. But as gas flow starts to decline after a few years, wells are often fracked to increase productivity. In Australia the industry estimates that up to 40% of coalbed methane wells end up being fracked.

## Unsafe

In addition to the highly toxic chemicals used in drilling muds and fracking fluids, drilling and fracking processes can mobilise harmful chemicals and radioactive substances naturally occurring in the coal and shale, which can contaminate groundwater and soil, and leak into the atmosphere with consequences for public health and the climate. Conservative estimates put well failure on newly drilled wells – which can result in leakage of methane and toxins into air

and water – at between 5-9%, and at upwards of 50% during their lifespan.

Communities in the USA and Australia living in and around gas fields report symptoms associated with exposure to fracking and drilling chemicals, including respiratory problems, nausea and rashes. A growing body of research points to serious longer-term impacts such as low birth weights and birth defects. Many of the naturally occurring and introduced chemicals are known carcinogens. Researchers in the USA recording the extreme impacts of accidental exposure of farm animals and pets to concentrated fracking fluids warn that the industry is a public health disaster waiting to happen.

Many of these risks apply to coalbed methane whether or not fracking takes place. In fact, because coalbed methane is significantly shallower than shale rock certain risks, such as groundwater contamination, are increased, and fracking simply exacerbates these impacts. Research from the USA demonstrates that air pollution around gas pads is higher during drilling stages than fracking stages.

Even if it was safe to extract this gas (and it is increasingly clear that it isn't), if we want to prevent the worst impacts of climate change it isn't safe to burn it. We already know we have 5 times as many fossil fuels as it is safe to burn, so it doesn't make sense to waste time and resources recklessly pursuing even more. Investing in unconventional gas now will lock us into to dangerously high greenhouse gas emissions and make it extremely difficult to meet our legally binding carbon reduction targets in 2050.

## Unnecessary

Scotland has an abundance of renewable energy resources: 25% of Europe's offshore wind; 25% tidal; and 10% wave potential. Not only is the Scottish Government on track to meet its 100% renewable electricity consumption by 2020 target, but independent research demonstrates that Scotland could meet all our electricity needs from renewable sources and phase out fossil fuel generation by 2030 and have excess to export.

The renewables industry in Scotland is a valuable growth area, providing over 12,000 jobs last year, and many thousands more in the pipeline. However, the International Energy Agency and other leading commentators such as Deutsche Bank warn that a dash for unconventional gas could prove a serious distraction from badly needed investment in clean renewable energy and energy efficiency, and see us locked into expensive, carbon-intensive infrastructure for years to come.

Not even the shale gas industry itself claims that fracking will bring down household energy bills in the UK anymore (although some politicians cling to the belief it will!), job figures tend to be overstated, and fail to include the negative impact on local industries such as tourism and agriculture. Even if there were no health and environmental concerns, economists and geologists agree that the UK would not see a repeat of the USA experience as our complex geology and dense population make extraction much more challenging and expensive.

## Unwanted

People around the world and here in Scotland faced with the unconventional gas industry are increasingly aware of its dangers and are resisting its advance. Communities at Airth, Canonbie and Cumbernauld are currently fighting coalbed methane developments, while people the length and breadth of Scotland are opposing UK Government plans to license a huge swathe of central and southern Scotland to the fracking industry.

France was the first country in Europe to ban hydraulic fracturing and other countries and states have followed suit with moratoriums and bans. In New South Wales the Government has introduced 2km buffer zones between communities and coalbed methane drilling in response to the widespread 'Lock the Gate' coalition.

**More info:** [www.foe-scotland.org.uk](http://www.foe-scotland.org.uk)

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- Scotland: moratorium announced Jan 2015
- France: First country to ban March 2011
- Denmark: Moratorium on fracking
- Germany: Moratorium on hydraulic fracturing since 2012 considering a ban
- Bulgaria: Ban since January 2012
- Czech Republic: Moratorium in May 2012
- Netherlands: Moratorium on unconventional fossil fuel drilling
- Spain: Cantabria banned fracking in 2013 La Rioja, Navarra and Catalonia followed suit
- Switzerland: Moratorium on fracking in the canton of Fribourg 2011
- Ireland: 2-year moratorium in March 2013
- Northern Ireland: Assembly voted for moratorium, Government failed to implement
- Canada: Quebec, Newfoundland & New Brunswick moratoriums on fracking, Nova Scotia working toward ban
- USA: Vermont banned fracking in May 2012, and New York ban Dec 2014; New Jersey ban on waste water disposal
- Australia: New South Wales, ban on any coal seam gas activity in 2km of residential areas, Feb 2013; Victoria moratorium on fracking

## Our campaign

In January 2014 four years of campaigning alongside grassroots and communities paid off when the Scottish Government announced a moratorium on unconventional gas and fracking!

Now our job is to turn this moratorium into a ban, and ensure that it encompasses underground coal gasification too. We are convinced that a full and thorough assessment of the public health, climate and environmental impacts of this industry will lead to a full ban. But the industry will be gearing up with the opposite aim in mind. Its very important that the public momentum behind this campaign doesn't stall at this crucial stage, but keeps the pressure up to ensure the most robust assessments and consultation are carried out.

## What you can do

- Stay in touch! Sign up for regular email updates about our fracking and unconventional gas campaign
- Visit our website for more information and regular campaign actions
- Write to your MSPs and MPs and ask them to work for a ban now
- Get together with your neighbours and community to declare yourselves a frack free zone! The Lock the Gate movement in Australia has had huge wins this way.