Why we can't afford to frack the climate

Friends of the Earth Scotland Supporter Briefing

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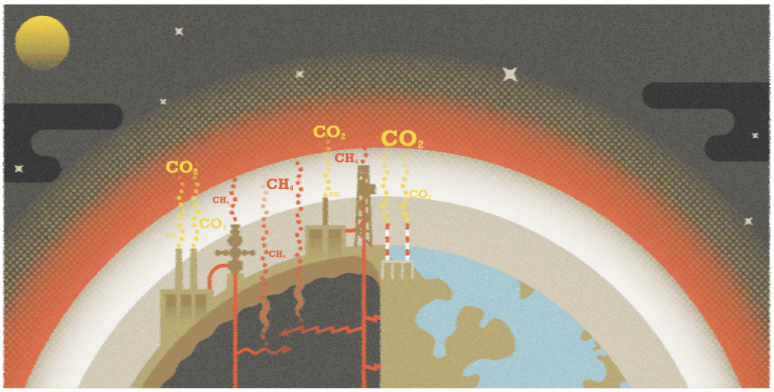
Climate change is without doubt one of the greatest threats humankind has ever faced. **Burning fossil fuels is the key driver of global warming**. In the context of the **global climate crisis** going after new sources of fossil fuels like shale gas and coalbed methane (CBM) is **completely irresponsible**.

Temperature increases of more than 1.5°C will result in **catastrophic impacts**, including an increase in extreme weather events, rising sea levels, increased famine, the destruction of livelihoods and even entire countries, significant habitat loss and species extinction, and subsequently, increased political instability and conflict. If we are serious about tackling the climate emergency, **we can't afford to frack our planet.**

Climate targets

Globally, world leaders have committed to keep global warming to **'well below 2°C'** and to 'pursue efforts' to limit warming to 1.5°C. In order to have a chance of limiting warming to 2°C around 80% of the world's proven fossil fuel reserves – coal, oil and gas – must remain in the ground unburnt.[1] Meeting the critical 1.5°C threshold that world leaders signed up to only last year at the UN Climate talks in Paris means we can burn even less. Most of the global **shale gas and coalbed methane resources are** unproven and therefore **additional to the more than 80% of known reserves that must stay in the ground**.

The Scottish Parliament has **committed to cutting Scotland's greenhouse gas emissions by 80% by 2050**, and the Government is reviewing this target in light of the global Paris Agreement on climate change. The Scottish Government's advisers on climate change say that if the fracking industry is allowed to develop, meeting Scotland's legally-binding emissions targets will be more challenging. Doing our fair share of the global effort to fight climate change will only be possible if we **rapidly decarbonise every sector of our economy and move away from a fossil fuel-based energy system**.



Dirty as coal?

Greenhouse gas emissions – the drivers of climate change – are **released when fossil fuels are burned** to create energy. Some fossil fuels release more carbon than others when burnt, coal being one of the dirtiest, and natural gas less so. This has led some to argue that shale gas could actually help in the fight against climate change.

However, the fracking process also releases **accidental emissions of methane**, and it's these 'fugitive emissions' that have led some scientists to warn that shale gas could be **even worse for the climate than coal**. A key study[2] has calculated that burning gas is only better for the climate than coal if fugitive emission levels stay below 3.2% of production, and many research projects have measured leakage levels **well above this**.[3]

Methane is roughly 84 times as potent as carbon dioxide as a contributor to climate change over a period of 20 years, and 28 times as potent over the span of a century. Because of its short-term potency, high methane emissions now risk pushing us over critical climate tipping points. Recent evidence from the US shows **significant methane leakage** previously unmeasured and unaccounted for: US methane emissions rose by 30% between 2002 and 2014,[4] and experts are linking these emissions to the fracking industry's leaky infrastructure.[5]

No time to frack

Research commissioned by the Scottish Government says that commercial scale unconventional gas production could take as long as **ten years to get underway** The most advanced CBM project, at Airth, has failed to reach commercial production after over 20 years of development, and not a single shale gas well has been drilled in the central belt to date.[6]

By 2030 we will need to have largely if not entirely **decarbonised our energy system** in order to do our fair share in tackling climate change. It simply doesn't make sense to develop a fracking industry within this time frame in order to compete with the offshore oil and gas industry for a dwindling share of the remaining carbon budget.

Further, the International Energy Agency warn that a dash for unconventional gas now could prove a **serious distraction** from badly needed investment in clean renewable energy and energy efficiency, and lock us into expensive, carbon-intensive infrastructure for years to come.

No place in Scotland's energy mix

Natural gas is mainly used for electricity and heating. In both areas Scottish Government policy is **moving away from the use of all fossil fuels**, leaving little or no market for unconventional gas in the future. Scotland has an **abundance of renewable energy resources**: 25% of Europe's offshore wind and tidal potential and 10% of its wave potential, and simple energy efficiency measures could significantly reduce our needs. Scotland has a target of 100% renewable electricity consumption by 2020, and independent research shows that all our electricity needs could be met from renewable sources, we could **phase out** fossil fuel generation by 2030 and have excess to export.

Going after new fossil fuels now isn't just bad for the climate, but it's **seriously risky in economic terms** too. The many billions currently invested in fossil fuels are part of a growing carbon bubble: stranded assets that can't be realised if we are to avoid catastrophic climate change.[7]

For a country like Scotland whose economy is already heavily dependent on hydrocarbons, it would be extremely risky to go further down this path. Instead, we should be **harnessing our huge potential in wind, wave and tidal power** that will help lay the foundations for a low-carbon, fossil-free future. A rapid transition away from fossil fuels that is planned with and fair to workers and communities currently dependent on high-carbon industries could transform our society, helping to create a more equal and socially just Scotland.

We have the chance to ban fracking, and you can help!

The Scottish Government is currently running a public consultation and wants to know YOUR views on fracking. We are positive about winning a ban on fracking, but this will only happen if huge numbers of people tell the Scottish Government that it's the right thing to do.

Find out more and take action at: www.stopfracking.scot

Friends of the Earth Scotland's work on unconventional fossil fuels is part of our campaign for a Fossil Free Scotland: A just transition to a 100% renewable, nuclear-free, zero-fossil-fuel Scotland

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[1] C McGlade and P Ekins, 2015, 'The geographical distribution of fossil fuels unused when limiting global warming to 2°C', http://www.nature.com/nature/journal/v517/n7533/full/nature14016.html .

[2] R A Alvaraz et al., 2012, 'Greater focus needed on methane leakage from natural gas infrastructure', http://www.pnas.org/content/109/17/6435.full

[3] Carbon Brief, 2014, 'Explained: Fugitive Methane Emissions from Natural Gas Production', https://www.carbonbrief.org/explained-fugitive-methane-emissions-from-natural-gas-production

[4] A J Turner, 2016, 'A large increase in U.S. methane emissions over the past decade inferred from satellite data and surface observations' http://onlinelibrary.wiley.com/doi/10.1002/2016GL067987/abstract

[5] B McKibben, 2016, 'Global Warming's Terrifying New Chemistry' https://www.thenation.com/article/global-warming-terrifying-new-chemistry/

[6] See http://www.pinsentmasons.com/PDF/ShaleGasFrackingPart1.pdf for an idea of phases of development and timescales. Pinset Masons suggest 20 years for full production.

[7] Carbon Tracker Initiative 'Unburnable Carbon – Are the world's financial markets carrying a carbon bubble?' 2011 http://www.carbontracker.org/wp-content/uploads/downloads/2011/07/Unburnable-Carbon-Full-rev2.pdf