Why we can't afford to frack the climate

Friends of the Earth Scotland Supporter Briefing

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Going after new sources of fossil fuels like shale gas and coalbed methane is completely irresponsible in the context of the global climate crisis. Climate change is without doubt one of the greatest threats humankind has ever faced. 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. Burning fossil fuels is the key driver of global warming. If we are serious about tackling the climate emergency, we can't afford to frack the 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 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 Scottish Government plans to review this target in light of the more ambitious Paris Agreement. 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.

No time to frack

It's unlikely that commercial scale unconventional gas production could begin in Scotland sooner than 10 years given that the industry is in its infancy. The most advanced coalbed methane 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.[2] By 2030 we will need to have very largely if not entirely decarbonised our energy system in order to meet our climate targets. 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 and other leading commentators 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.

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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] 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.

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 at the point of combustion, coal being one of the dirtiest, and natural gas less so. This has led some to argue that going after shale gas could actually help the fight against climate change.

However, so-called 'fugitive emissions' released during the drilling and fracking processes of extracting unconventional oil and gas have led some scientist to warn that shale gas could be even worse for the climate than coal. Methane is roughly 84 times as potent as carbon dioxide as a contributor to climate change over a period of 20 years, or 28 times as potent over the span of a century. Recent evidence from the US highlights that significant levels of methane are being released that have been previously unmeasured and unaccounted for; US methane emissions rose by 30% between 2002 and 2014,[3] and experts are linking these emissions to the fracking industry's leaky wells, pipes and other infrastructure.[4] Estimates for how much methane leaks from unconventional oil and gas extraction range from 0.4% to 12% of production.[5] One study[6] calculated that burning gas is only better for the climate than coal if fugitive emission levels stay below 3.2%, and many studies have measured leakage levels well above this.[7]

No place in Scotland's energy mix

The main uses of natural gas are in electricity generation and for 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. 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.

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 cannot be realised if we are to avoid catastrophic climate change.[8] 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.

Ban fracking for a safe climate!

We are calling on the Scottish Government to ban unconventional fossil fuels because of the unacceptable risk they pose in the context of the climate crisis, as well as the very serious impacts on public health and local environment.

Responding to enormous public pressure, the Scottish Government has already announced a ban on underground coal gasification. We are positive about winning on shale gas and CBM too, but this will only happen if huge numbers of people tell the Scottish Government that it is the right thing to do.

Take action, find out more and sign up for updates at: www.stopfracking.scot

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[3] 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

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

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

[6] 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

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

[8] 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