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POLICY BRIEFS

Gas and Fracking

What is 'Gas'?

Gas (also known as 'natural gas') is a fuel source primarily made up of methane. It is found deep underground, often near deposits of coal and methane. Historically it has been extracted as a byproduct of oil production as well as in focused mining operations. Gas is an energy source often used in heating, cooking and energy generation, and has been deceptively described as a 'clean' alternative to coal and oil. Today, countries and communities all over the world face a potential expansion of 'unconventional gas' extraction – often called 'fracking.'

Gas Contributes to Climate Change

As a fossil fuel, the burning of gas releases a range of greenhouse gases into the atmosphere, contributing to climate change. In the US, the average emissions rate from natural gas-fired electricity generation are 1135 lbs/MWh of carbon dioxide equivalent.¹ While this is only half the carbon dioxide of coal-fired electricity generation, it is still very significant. Natural gas was responsible for 20.4% of all fuel's share of total CO₂ emissions in 2010².

Because gas emits less than coal, gas is often presented as a "transition fuel" from dirty fossil fuels to renewables. However, not only does gas emit significant amounts of CO₂, it also emits other greenhouse gases. Natural gas is mainly composed of CH₄ or methane, which is a very powerful greenhouse gas particularly when its effect on global warming is measured over a time span of 20 years.

Methane is 72 times or more powerful than CO₂. If just 3.2% of methane escapes throughout the entire production, transmission and consumption life-cycle of natural gas, its carbon footprint is worse than coal-fired power generation.

Fracking Makes Gas Even More Dangerous

What is fracking?

In recent years a major growth in the extraction of 'unconventional gas', also known as shale gas or coal-bed methane has led to an expansion in the use of "fracking" (short for high volume hydraulic fracturing).

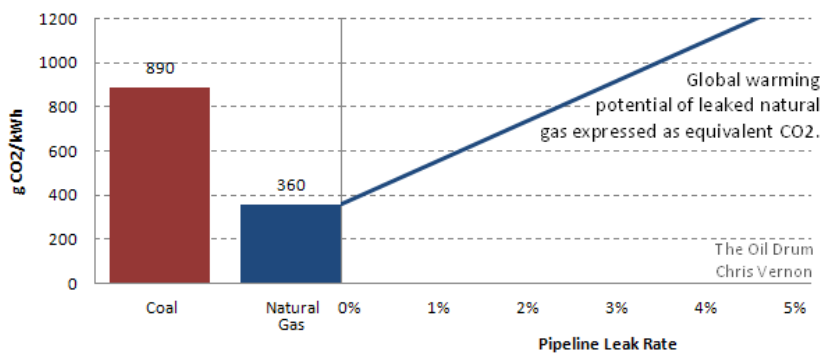
Fracking enables the fossil fuel industry to extract oil and gas from previously impermeable rock formations. This process involves injecting millions of liters of fresh water underground, laced with toxic chemicals and sand at high pressures in an effort to "hydraulically fracture" the underground rock formations and free the gas.

Fracking is dangerous for the climate and communities

Fracking presents a danger to local communities, due to its dangerous production method, and a risk to the climate as it allows extremely powerful greenhouse gases to 'leak' into the atmosphere.



CO2 Emissions per kWh Electricity



There are thousands of cases of groundwater contamination due to shale gas development in the United States, often related to spills and accidents on well sites, but also resulting from problems with the well integrity at the site of extraction.

Fracking also poses the problems of:

- Huge volumes of water that return to the surface that are heavily polluted with heavy metals, such as Naturally Occurring Radioactive Materials, Volatile Organic compounds such as the carcinogenic benzene or toluene.
- Water waste: Millions of liters of water are permanently buried, withdrawn from the natural water cycle.
- Air pollution from well sites leads to greater health risks for people (and animals) living in the vicinity of shale gas wells.
- The thousands of wells needed for a large-scale exploitation of shale gas – combined with the ancillary infrastructure of pipelines, compressor stations, etc. – have a negative impact on rural landscapes and affect tourism.
- High levels of emissions associated with unconventional resources such as shale gas means a prolonged reliance on a fossil fuel like natural gas will push the world into even more dangerous climate change.

Where is fracking happening?

So far, shale gas and large-scale fracking projects are mostly underway in North-America, but oil and gas companies are keen to unlock unconventional gas resources all around the world: China, Argentina, North Africa, Russia and Europe, all have proposals. As a result of this scale of supply, shale gas risks perpetuating the world's reliance on fossil fuels, turning natural gas into a destination rather than a "transition" fuel.

Who are pushing fracking and threatening our planet?

The usual suspects: corporate giants like Exxon, Chevron, BP, Shell, Total, ConocoPhillips and Statoil are all deeply involved. And they rely for the fracking expertise on service providers such as Haliburton, and Schlumberger.

We are fighting back!

Many local municipalities, driven by community efforts to resist fracking projects, have declared themselves 'frack-free' or have banned the underground injection of fracking waste water within their boundaries.

Some regions --Cantabria in Spain, or states such as Vermont in the US--have also banned fracking completely through local laws.

Local protests in France and Bulgaria even convinced their national parliaments to vote in favour of proposals to ban fracking nationally.

(Endnotes)

- 1 <http://www.epa.gov/cleanenergy/energy-and-you/affect/natural-gas.html>
- 2 <http://www.iea.org/publications/freepublications/publication/kwes.pdf>

