RECLAIM POWER

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Note: As part of their contributions to the RECLAIM POWER global days of action in October 2016 for energy transformation, several Reclaim Power organizations collaborated on these series of breifing papers on dirty, harmful energy sources and false energy solutions that contribute to climate change and endanger people's lives and welfare.

RESIST DIRTY HARMFUL ENERGY AND FALSE ENERGY SOLUTIONS

GAS AND FRACKING

What is Gas?

Gas (also known as 'natural gas') is a fuel source primarily made up of meth-ane. Historically it has been extracted as a byproduct of oil production as well as in focused mining operations. Ethane, another gas found in the US' shale fields is used for plastics production and also exported. Gas is an energy source often used in heating, cooking and electricity 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 context of the Paris Agreement, in which countries agreed to make joint efforts to keep global temperature "well below 2 degrees" and "pursue efforts to limit the temperature increase to 1.5 °C," the climate impacts of gas take on even more significance. Natural gas was responsible for 20.4% of all fuel's share of total global CO2 emissions in 2010i. Due to its quick expansion, the energy-related CO2 emissions of gas have now surpassed those of coal in the US[ii].

Because gas emits less CO2 than coal when burned, 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. When its effect on global warming is measured over a time span of 100 years, methane is 34 times more powerful than CO2 as a greenhouse gas. Measured over a 20 year time span it is 86 times more powerful, and 109 times on a 10 year time span. According to one

report[iii], if just 3.2% of methane escapes throughout the entire production, transmission and consumption life-cycle of natural gas, its carbon footprint could be worse than coal-fired power generation.

What is fracking?

In recent years an expansion in the use of **fracking** (short for high volume hydraulic fracturing) has led to a major growth in the extraction of 'unconventional gas', in the form of both shale gas and coal-bed methane. Fracking enables the fossil fuel industry to extract oil and gas from previously impermeable rock formations. This process involves injecting millions of litres 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 to climate and communities

Fracking presents a danger to local communities, due to its dangerous production method, and a risk to the climate as extremely powerful greenhouse gases can 'leak' into the atmosphere. Fracking means a prolonged reliance on fossil fuels which will push the world into even more dangerous climate change.

There are thousands of cases of groundwater contamination due to oil and gas extraction in the United States, often related to spills and accidents on well sites, but also resulting from problems with the well integrity (whether or not the steel and cement casings in the wells are working properly to prevent leaks) at the site of extraction.

Fracking also poses the problems of:

- Huge volumes of water that return to the surface that can be polluted with heavy metals, Naturally Occurring Radioactive Materials or Volatile Organic compounds such as the carcinogenic benzene or toluene.
- Water waste: Millions of litres of water are permanently buried, withdrawn from the natural water cycle, and the contaminated water is often dumped in the sea or into underground disposal wells.
- Air pollution from well sites can lead to greater health risks for people (and animals) living in the vicinity of shale gas wells.
- The sand added to the fracking fluid is silica sand which, if inhaled, can lead to silicosis and lung cancer. A large area of land is required for its extraction, land that is lost for agriculture.
- 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 can affect tourism.
- Hydraulic fracturing, and the disposal of wastewater in wells is most likely responsible for the rise in earthquakes, as in the case of Oklahoma, struck by a considerable earthquake in September 2016.

Where is fracking happening?

So far, many shale gas and large-scale fracking projects are 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 is pushing fracking and threatening our planet?

The usual suspects: corporate giants like Exxon, Chevron, BP, Shell, Total, ConocoPhilips 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 or states—Cantabria in Spain, New York in the US and Victoria in Australia—have banned fracking, while countries such as the Czech Republic and Germany have issued moratoria or otherwise severely restricted the use of the technique.

Local protests in France and Bulgaria helped convince their national parliaments to ban fracking nationally.

References:

i http://www.iea.org/publications/freepublications/publication/kwes.pdf
ii https://www.eia.gov/todayinenergy/detail.php?id=27552
iii http://www.pnas.org/content/109/17/6435.full.pdf

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