



## **NO to shale gas extraction in Europe**

FYEG says NO to unconventional and tight hydrocarbon extraction and fracking in Europe

### Introduction

Non conventional Petroleum extraction (including, but not only, shale gas, tight gas, coalbed methane, shale oil, tar sands) has recently become a very controversial topic in many EU countries. The threat of the use of one particular technological process of extracting petroleum resources from the ground called hydraulic fracturing (or otherwise known as 'fracking') is causing significant concern.

Although hydraulic Fracturing was first utilized in 1947, the modern and more intensive form of hydraulic fracturing fully incorporating slick water, high volume fluid injection, cluster wells and horizontal drilling was only first introduced in 2007. This form of hydraulic fracturing has proven to be a much more intensive industrial process than older forms of this technology and has been linked to thousands of reports of environmental contamination.

Such is the cause for concern that the national authorities in a range of countries such as France and Bulgaria have proceeded to ban the extraction of petroleum using the hydraulic fracturing process.

In others such as the UK and Ireland companies are continuing to issue permits to explore for and extract petroleum resources using this technique.

A number of major studies have been published on the issue of unconventional and tight gas petroleum extraction. In January 2011, the University of Manchester, Tyndall Centre for Climate Change research published a research paper demonstrating both the serious environmental risks involved in fracking and the incompatibility of extracting shale gas resources with the targets to reduce greenhouse gas emissions. In April 2011, an EU study on behalf of the DG for internal policies scientific department highlighted the dangers of the process and recommending a range of steps for the EU to take. The most recent EU wide study conducted on behalf of the environmental consultants AEA and released in September 2012, revealed that the extraction of such resources presented a high risk of environmental contamination.

A wide range of environmental activists and NGOs have voiced their opposition to hydraulic fracturing. Similarly, in the 2012 Copenhagen council, the European Green Party voted in favour of a resolution to ban the process. An FYEG reaction and set of recommendations for coordinated activities for the organization at a European level is necessary.

### **Environmental concerns**

The full emergence of the adverse environmental and health impacts in locations where hydraulic fracturing is occurring is still taking place. The key concerns are as follows:

Land - Unavoidable impacts include the land area impact of drilling pads, parking and manoeuvring areas for trucks, equipment, gas processing and transporting facilities as well as access roads (impact on biodiversity protection, NATURA 2000 sites etc.). The impacts add up as shale formations are developed with a high well density (up to six wells per km<sup>2</sup>).

Air - The extraction of gas has been linked to serious instances of air contamination as a result of emissions from trucks and drilling equipment, gas processing, evaporation of chemicals from waste water and emissions from spills and well blow outs. In one example in the small city of Dish, a study demonstrated that natural gas extraction was responsible for "the presence in high concentrations of carcinogenic and neurotoxin compounds in ambient air and/or residential properties." It added "...Many of these

compounds verified in laboratory analysis were metabolites of known human carcinogens and 51 exceeded both, short-term and long-term effective screening levels.

**Water** – Fracturing fluids contain hazardous substances, and post fracturing backflow fluids can, in addition, contain heavy metals or radioactive materials from the deposit. Contamination of groundwater with toxic chemicals has been proven to occur as a result of uncontrolled gas or fluid flows from blowouts or spills, leaking wells, and uncontrolled waste – water discharge. Additionally, groundwater contamination by methane has been shown to occur, in extreme cases leading to explosions involving residential building. Evidence from Pennsylvania shows that between 6-7% of the new wells built each year between 2009 – 2011 leaked in that year.

**Earthquakes** – There is evidence that unconventional gas extraction has been connected to serious seismic activity such as the 2012 earthquake, which struck Oklahoma city. In another example hydraulic fracturing was directly blamed for an 2.3 earthquake which struck Blackpool in England. 4 days later the well casing at the gas extraction well was found to be compromised.

**Climate Change** – Evidence demonstrates that over its lifecycle the extraction and combustion of unconventional gas emits up to the same level of greenhouse gasses as that of hard coal and in one study from Colorado, up to 9% of the methane (a greenhouse gas 25 times more harmful than carbon dioxide) was found to have leaked. Serious questions must also be asked as to the sustainability of investing in yet another additional supply of petroleum into the global market. It is now clear that globally approximately only 1/3 of all fossil fuel reserves could safely be burned while enabling us to maintain our target to ensure that the world does not exceed the target of keeping a global temperature rise of lower than 2 degrees.

**Accidents and Violations** – Experience from the USA shows that many accidents can and do happen, which can be harmful to the environment and to human health. The recorded violations of legal requirements amount to about 1-2% of all drilling permits.

## **Energy Security and Prices**

Among many others, lobbyists behind shale gas mining companies often argue that larger use of shale gas may help to lower our dependency on fossil fuel imports. While, European Greens recognize that the aim of petroleum companies is profitability, rather than lowering European dependency on import, it is becoming increasingly evident that unconventional and tight petroleum will not become a significant source of supply in Europe. Evidence is now also emerging from North America indicating that fracking companies have significantly overestimated their reserves of petroleum and the production rates in each well resulting in a speculative bubble. In particular, there is very real evidence indicating that the collapse of gas prices in the USA as a consequence of the gas to gas has made the economics of the whole operation also unsustainable.

FYEG recognizes that any Government support for unconventional fossil fuel extraction, a non renewable source of energy, is also in complete contradiction with a sustainable and smart energy policy for Europe, which requires a focus on demand reduction and a quick transition to renewable energy. Unconventional fossil fuel extraction is a “dead end” energy policy and one that will not only prolongs our dependency on fossil fuels but also lock us into such a dependency.

## **FYEG says NO to shale gas extraction in Europe**

Based on the core Green principle of sustainability, FYEG stands for a firm NO to the development of unconventional fossil fuels in Europe. This position<sup>103</sup> is based on scientific research which has demonstrated that there is a high risk of environmental contamination and of unacceptable greenhouse gas emissions should unconventional

and tight hydrocarbon extraction take place. FYEG will remain opposed to all these forms of extreme energy as they (1) cannot be proven safe for the local environment and (2) are incompatible with the reality of climate change and the need for more ambitious emissions reduction targets.

FYEG is calling for the European Institutions and those responsible at the nation state level to take immediate action to ban hydraulic fracturing and unconventional hydrocarbon extraction.

### **Next steps to be taken by FYEG**

FYEG will take the following steps on issue of unconventional hydrocarbon extraction:

- Issue an FYEG press statement calling for an immediate ban on unconventional and tight hydrocarbon exploration and extraction, hydraulic fracturing and all forms of extreme energy in Europe.
- Investigate the potential of initiating an FYEG led EU wide Citizens Initiative with the objective of putting an immediate halt on unconventional and tight hydrocarbon extraction and hydraulic fracturing.
- Assign the topic of extreme energy to the FYEG climate change working group to seek to further develop FYEG policy and a robust campaign on this issue.
- To seek collaboration from the Global Young Greens to initiate a global campaign to oppose extreme energy including unconventional and tight hydrocarbon extraction and hydraulic fracturing.
- Establish contact with the EGP working group on shale gas and appoint representative(s) to represent FYEG.

1 Hydraulic fracturing is a method used for shale gas extraction, where several vertical and horizontal shafts are drilled into stony areas of gas deposits. Within the stone layers, explosives are used to create small fractures. These fractures are then artificially widened by filling them with pressurized water. Once the pressure is reduced the wastewater reflows to the surface including the gas, chemicals and materials from the rock formation.

2Lecture by Cornell University Professor, Anthony Ingraffea. See:<http://www.youtube.com/watch?v=mSWmXpEKEPg141>

3For some examples, see <http://earthjustice.org/features/campaigns/fracking-across-the-united-states142>

4The bans and moratoriums in place on Hydraulic fracturing can be found here<https://www.facebook.com/groups/FellowFractivists/doc/440805319293741/144>

5See: <http://europeecologie.eu/IMG/pdf/shale-gas-pe-464-425-final.pdf145>

6See: <http://europeecologie.eu/IMG/pdf/shale-gas-pe-464-425-final.pdf146>

7See:

[http://www.psehealthyenergy.org/data/NYS\\_DEC\\_Proposed\\_REGS\\_comments\\_Ingraffea\\_Jan\\_2013.pdf147](http://www.psehealthyenergy.org/data/NYS_DEC_Proposed_REGS_comments_Ingraffea_Jan_2013.pdf147)

8See: <http://www.nature.com/news/methane-leaks-erode-green-credentials-of-natural-gas-1.12123148>

9See: <http://www.monbiot.com/2013/03/14/frozen-assets/149>

10See: <http://europeecologie.eu/IMG/pdf/shale-gas-pe-464-425-final.pdf150>

11E.g. <http://www.ewea.org/blog/2013/04/future-of-shale-gas-challenging-cost-of-renewables-falling/151>

12See: <http://shalebubble.org152>

13See: <http://www.highbeam.com/doc/1P2-34075581.html153>