

Alternatively a 13 MW solar farm covering around 32 hectares (or the size of 35 football pitches) would produce about the same energy. A medium sized gas fired power station of 500MW capacity would require over 200 wells to provide sufficient gas for operation.

11) Is the gas from **Fracking** wells compatible with current UK natural gas? or will modifications be needed to avoid a major reconversion of all appliances as happened in the late 1960s and early 1970s.

Until shale gas is routinely extracted in the UK, the exact energy content or calorific value of the gas will not be known, but based on typical figures from elsewhere the energy content per cubic metre is lower than traditional North Sea gas. If this is the case then, for use in the UK gas network without major adaptation of appliances, there may be the requirement of blending and this will lead to higher costs.

12) Will **Fracking** lead to lower carbon dioxide emissions?

Gas from Fracking will only lead to lower carbon emissions if it replaces electricity generation from coal. Direct substitution of conventional gas, because of increased fugitive emissions will lead to higher carbon emissions. Furthermore, if there is an over concentration on Fracking and a reduction in emphasis on renewable and nuclear, this will lead to increased gas use in the short to medium term of 10 – 15 years before to extraction of “Fracked” gas is substantial. Such a diversion from low carbon energy sources would also increase carbon emissions.

For further information please contact Rotarian Keith Tovey who is a member of the RIBI Environmental Sustainability Group

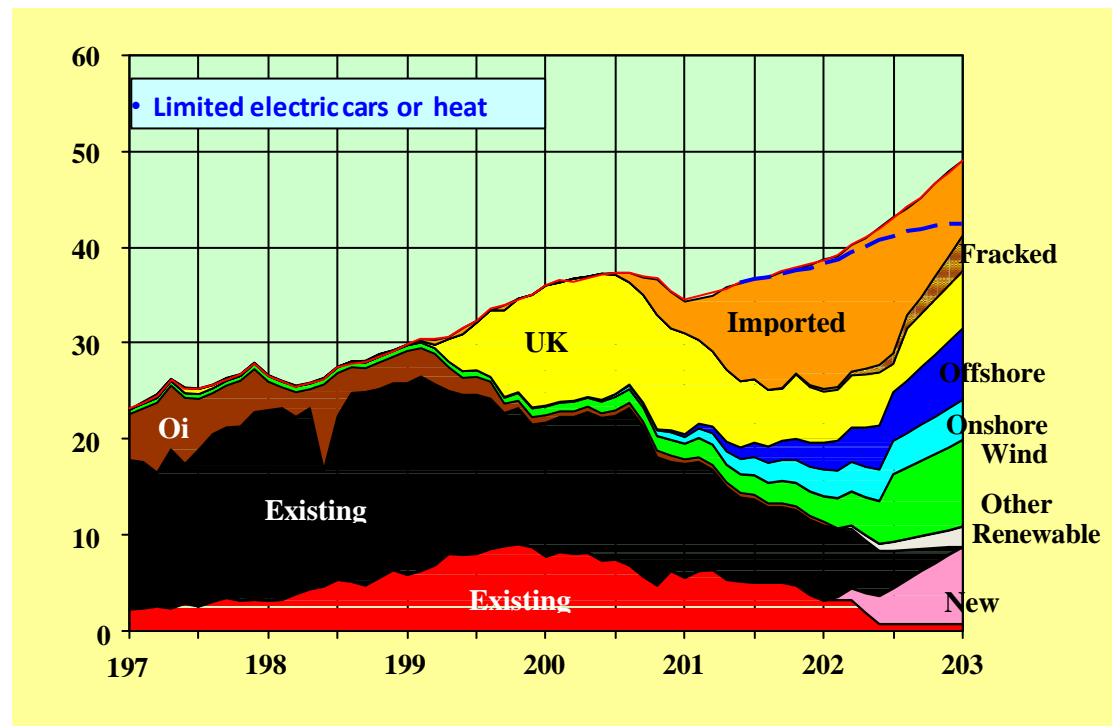
This leaflet is taken from a comprehensive document on the subject which is also available on the RIBI Environmental Website

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FRACKING

A solution to solve UK Energy Security or an unacceptable step too far?



Key Questions and Answers

1) Will **Fracking** provide Energy security for the UK particularly for Electricity?

There is the potential to provide perhaps 25% of our electricity and maybe more also a similar proportion for non-electricity uses by 2040 . This resource would be important for UK Energy Security.

2) If **Fracking** does have the potential to provide security in the longer term – i.e. from 2040/50 onwards will it help to address the critical issues in the next decade, and if not would over concentration on **Fracking** prevent us from dealing with more urgent issues?

In the short term, at best, Fracking will only provide a maximum of 10% of that required for electricity generation by 2030 even with optimistic scenarios for the deployment of renewable and nuclear. In this respect concentrating on this and ignoring opportunities from renewable and nuclear will detract from tackling the critical supply issues in the short term (i.e. the next 5 -10 years).

3) Where in the UK might **Fracking** occur?

There are many areas which are potential sources of “Fracked” Gas in the UK.

4) Can the experience of **Fracking** from America be directly applied in the UK?

There is considerable technical experience from the work done in the USA and this experience would be beneficial in the early stages of development.

5) Will **Fracking** lead to reduced energy costs as some claim, or will the different conditions of geology and regulation mean that the cost reductions in the US are less likely to be realised in the UK?

The Regulatory Regime is different, and in several areas this is likely to increase costs compared to those in the US. Thus it is unlikely that landscapes would be allowed to be degraded. The UK has limited land area compared to the US, and greater control of potential contamination of ground water will be needed. Such control is technically possible, but will almost certainly lead to higher costs. Furthermore, the initial indications are that the nature of the gas (i.e. Dry as opposed to Wet) is different and this also would increase the costs compared to US experience.

6) Will **Fracking** lead to earthquakes as some opponents suggest or is this scaremongering?

Any seismic tremors associated with Fracking are well within the range of tremors already experienced in the UK. In the worst recorded incidents so far, these have been the equivalent to heavy vehicles passing).

7) Will **Fracking** contaminate ground water, or once again is this scaremongering?

In carefully planned and well engineered schemes there should not be any contamination. However, tight Regulation is needed to ensure that best practice is always used, and this level of Regulation .will increase costs compared to the US.

8) Are the dramatic videos of people lighting tap water in areas of **Fracking** a cause for concern?

The examples shown from Pennsylvania are indeed over dramatic. It has been shown that such methane has originated from near surface biogenic sources and has not come from the thermogenic methane at depth . In this respect the methane would be present in the water anyway.

9) What about water and transport issues associated with **Fracking**? Are these acceptable or not?

In the UK there are periodic periods of water shortages, and with the projected increase in population, the water requirements of Fracking will further exacerbate the situation even if around 50% of the water is returned and potentially could be used again. In the case of transport, these truck movements of up to 100 truck visits a day in just one area of the UK would continue for the life of the project. They would be significantly more than the traffic requirements for the construction of other energy generation schemes. Enhancement to the road network may be needed which would further add to the overall costs.

10) How much energy does a **Fracking** Well actually produce in comparison with other energy sources?

Over the first year of operation, a single well on average performance will produce around 90 GWh or around 13 times that of a modern 3 MW wind turbine. However, the output drops rapidly by up to 95% over the first 3 – 4 years, and on average the output from a single well over a live time of 20 years will be will be equivalent to the output of two 3MW Wind Turbines which are around 80m high.