

## Critique of comments on fracking by Professor Ernest Rutter

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In *The Guardian*, 15 August 2013, Ernie Rutter makes a number of innocuous, if naïve and optimistic, comments about fracking potentially benefiting the UK economy. I agree with him about the limited impact of earthquakes that may be triggered by the fracking process. But at the end of the piece he states:

*"But why should the people of the UK get the benefits of home-grown energy without a bit of the inconvenience that would otherwise be visited on people of other countries, from which we would have to buy our gas? Burning gas is environmentally cleaner than burning coal and will actually lead to a decrease in CO2 emissions – as has been shown in the US."*

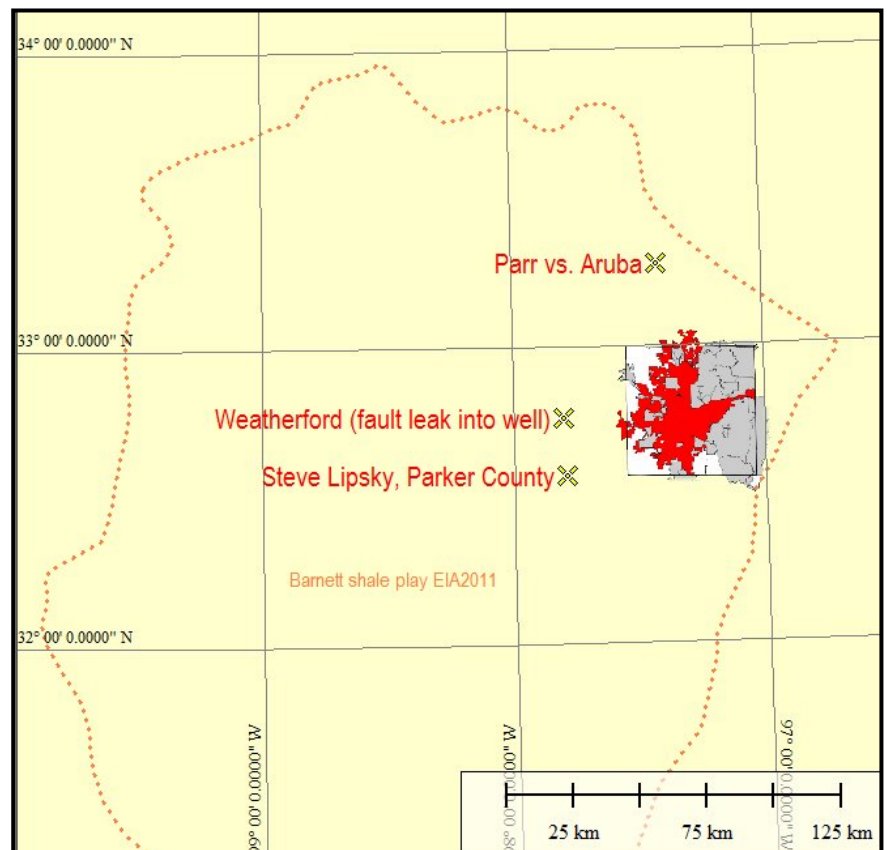
Here he is mixing up conventional gas (possibly imported from Russia by pipeline across Europe, or all the way by sea from, say, Kuwait) with putative onshore UK unconventional gas. The greenhouse gas footprint of methane is worse than that for coal or oil over a 20-year period, and still comparable to the latter two fuels on a 100-year timescale. Shale gas is not a clean energy source.

A more recent article, in the *Manchester Evening News*, 7 March 2014, quotes him as follows:

*"The US Environmental Protection Agency has shown beyond doubt that no frack fluids have contaminated groundwater. A more significant concern would be methane leaking from badly set borehole casing, but this would be true for any gas well, whether fracked or not."*

*Shale gas has remained in place since it was formed hundreds of millions of years ago. The improbability of serious shale gas exploitation problems occurring in densely populated areas is illustrated by the fact that beneath the city of Fort Worth, Texas, there are 1,800 fracked gas wells."*

Rutter is off the mark regarding the Fort Worth Basin, where the Barnett shale play is developed (orange dotted line shown in the map opposite). No doubt he is correct that there have not yet been any proven problems within the actual city



(the red patch; incidentally the official Fort Worth city web page highlights the compulsory water restrictions now in place due to the ongoing drought, due in turn to ... well, need I go on?).

However, there are three celebrated contamination cases all within 50 km of the city (yellow crosses on map). I will deal with these in more detail elsewhere, but, in summary, evidence is slowly but surely emerging that wells fracked by Range Resources have contaminated the aquifers. Complicating factors in these cases include the fact that the Environmental Protection Agency withdrew a previous order against Range, and the fact that 'independent' hydrogeologists employed (by Range) to test the allegedly contaminated water found contaminant levels many times lower than did other university-based hydrogeologists.

In Decatur, Wise County, TX, the Parr family was been awarded \$3M in damages against Aruba Petroleum on 22 July 2014, in compensation for tangible health problems caused by the dozens of wells around their home (marked by the most northerly cross on the map). Aruba is appealing against the decision on the ground that, since there are other companies' wells in the locality, it cannot be determined which particular company is responsible for the health damage.

Pennsylvania's Department of Environmental Protection has compiled 243 separate cases (as of 29 August 2014) *"where DEP determined that a private water supply was impacted by oil and gas activities. The oil and gas activities referenced in the list below include operations associated with both conventional and unconventional drilling activities that either resulted in a water diminution event or an increase in constituents above background conditions."* The list can be accessed at: [http://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/OilGasReports/Determination\\_Letters/Regional\\_Determination\\_Letters.pdf](http://files.dep.state.pa.us/OilGas/BOGM/BOGMPortalFiles/OilGasReports/Determination_Letters/Regional_Determination_Letters.pdf)

and each case can be examined in detail. Pennsylvania is renowned as the state in which another family reached a settlement of \$750,000 with Range Resources, but on condition that no member of the family, including a 10- and a 7-year old child, could ever talk about the case.

In conclusion, I would ask Ernie Rutter to make a thorough investigation of the environmental and health impacts of fracking, particularly in Texas and Pennsylvania, and then reconsider his views on the subject.

Professor Rutter is in the department of Manchester University which was given £5000 by Cuadrilla.