

THIRD ENERGY'S ANSWERS TO QUESTIONS SENT BY COUNCILLOR PAUL ANDREWS TO RYEDALE DISTRICT COUNCIL FOLLOWING A DEPARTMENT OF ENERGY & CLIMATE CHANGE BRIEFING MEETING ON HYDRAULIC FRACTURING

General comment:

The last sentence of the second paragraph states "so these meetings have served to confirm rather than to alleviate my concerns". This misconstrues the purpose of the meeting. As Third Energy understands that the representatives from DECC and the HSE were there to provide a broad briefing to members of Ryedale District Council on hydraulic fracturing. It could not be expected that they would have the necessary knowledge to answer the wide diversity of questions being put to them; in particular when concerning details of Third Energy's operations. Being honest and saying that they "don't know" is a virtue. It should not lead to the assumption that everything that opponents to hydraulic fracturing are saying is automatically correct.

1. One needs to consider why the countries referred to i.e. France, Holland and Germany currently not allowing hydraulic fracturing. . First, the assumption that they did it for health, safety and environmental reasons is not necessarily correct. Secondly the geology has to be right as not every country has the right shale gas formations with the right organic content to make fraccing feasible. Thirdly, a country has to have a business driver for seeking alternative energy forms. The Netherland's, for example, has ample conventional gas resources both onshore and offshore so it would be natural to assume that they do not have the business driver at the moment. If their needs changed then we can be certain that resourceful people in the Netherlands would be able to extract the gas using their own regulatory regime and high standards. France on the other hand has a different energy policy to the UK, preferring to pursue nuclear power instead. The assumption that these countries have banned hydraulic fracturing purely on safety, health and environmental reasons may not be correct. We cannot comment on New York but we suspect the same reasoning could apply. While France and the Netherlands have banned fraccing, the UK, Spain, Denmark, Poland and Romania have all allowed it. Following significant scientific and academic review, the UK government has decided that, within a strong regulatory framework, hydraulic fracturing can be carried out safely and without detriment to the public's health and the environment.
2. As Third Energy was not present at the presentation we cannot comment on what may or may not have been said vis a vis environmental impact in the USA and Australia.

The USA has many states, all of which have the devolved power and autonomy to grant their own licenses and decide standards. Again not all states in the USA have the required shale gas formations which is why several states have not pursued it. The USA has a much longer oil and gas history than the UK, a different geology, more shallow hydrocarbons, a different minerals ownership regime and a different regulatory regime to the UK. These are the principle reasons for many of their past and present contaminations issues.

As the Royal Society and Royal Academy of Engineering confirmed in their report in June 2012, US micro seismic data shows that fractures created by hydraulic fracturing are very unlikely to grow more than one kilometre i.e. there is no evidence to suggest that the hydraulic fracturing process poses any risk to underground water aquifers given the distance separating them.

The Royal Society and Royal Academy of Engineering Report did highlight risks of water contamination that could be related to the integrity of the well as it passes through aquifers. Well integrity and drilling procedures used for unconventional gas are no different from the processes used during the extraction of conventional onshore oil and gas, of which there have been over 2000 wells drilled in the UK to date, of which 10% have been hydraulically fractured, and there has been no reported water contamination

The Australian situation is not easily comparable. The main extraction is Coal Seam Gas. For the most part it is conducted at much shallower depths than the UK's shale deposits and involves a de-watering process as opposed to fracking.

The regulatory regime covering the oil and gas industry in the United Kingdom, including environmental regulation, is one of the most robust in the world. We are therefore confident that the hydraulic fracturing project proposed for Kirby Misperton can be carried out safely and with minimal environmental impact.

3. As stated above, the regulatory regime covering the oil and gas industry in the United Kingdom is one of the most robust in the world. The Government published a regulatory roadmap last year that shows the onshore oil and gas industry is separately regulated by four layers of supervision provided by the Environment Agencies (EA, SEPA, NRW), the Health and Safety Executive (HSE) and also includes a further check by an independent competent examiner, the Mineral Planning Authorities (MPAs) and by the Department of Energy and Climate Change (DECC).

The industry currently has to comply with 17 European Directives, has to apply for up to nine separate environmental permits, and has to comply with both the Offshore Drilling and Construction Guidelines (recognised to be among the best in the world) and the onshore BSOR guidelines. Additionally, in compliance with the industry's own engagement charter, each operator engages with the public at several points during the pre-consultation, planning and permitting stages.

The comment that the EA budget has been slashed by 40% is largely irrelevant in that the EA now charge the oil and gas companies for the time spent working on their projects.

4. The TTIP is a question for the government to answer as the treaty is still being negotiated. It also encompasses a whole range of industries and types of businesses, not just oil and gas. It is premature and irresponsible to make any predictions of what may or may not happen without any solid foundation. However, the people of Ryedale can be assured that Third Energy will be working to very high health, safety and environmental standards and will ensure that the company, and all its contractors and sub-contractors, comply with all relevant UK regulatory requirements
5. Third Energy has watched the video, the majority of which covered the extraction of coal seam gas in Australia (also known as coal bed methane) which is a completely different process from the proposed hydraulic fracturing of the deep Bowland formation at Kirby Misperton. Also the land access rules in the United Kingdom are different from those in Australia. In the United Kingdom, permission is needed from landowners for surface access i.e. where the pad will be situated, and for vertical wells. A fee structure is usually agreed for the access and rental of the land where the well site is located.

At present, permission is needed for underground land access, although a court order can be obtained if permission is not granted, and only after reasonable attempts at negotiation have failed. If the Infrastructure Bill, currently making its way through Parliament, becomes law this permission will no longer be needed for depths below 300m.

6. This is not correct. Third Energy has been operating in North Yorkshire for 20 years, have drilled multiple wells in different locations to different depths and have not had a single failure.

Research (DEI Briefing Note No. 904: March 2014) published by the Durham Energy Institute (part of Durham University) reported: "...we also examined the failure rate of conventional onshore oil and gas wells in the UK. Of 143 wells active at the end of the year 2000, one (0.7%) showed evidence of well integrity failure..."

Using statistics that have been generated within the UK is obviously going to be more reliable than statistics that have come from the US for all the reasons mentioned earlier. When considering dubious statistics from the US, one needs to analyse the data to better understand how and where the statistics were generated. Please could Frack Free Ryedale provide the source document for this statement and then meet with us to answer questions on it.

7. This paragraph has a considerable number of errors from the early answer provided of "We don't know" to the supposition that " the USA oil and gas

companies are not required..." to the conclusion that "nobody really seems to know what the real risks of fracking in shale are". It would be useful if Councillor Andrews could resubmit this as a direct question(s) without these statements.

8. The document contains a large number of inaccuracies and assertions. Before attempting to critique the document, we would ask Frack Free Ryedale to provide the source and academic references for the things presented as fact.

We would like to invite Councillor Andrews to visit the Third Energy premises at Knapton where we could address the issues more closely.

However, among several inaccuracies in Frack Free Ryedale's pamphlet, there is one in particular that we feel it imperative to refute in this reply. This is related to the assertion that we had to go back to the NYCC, after the well had been drilled, for permission to drill deeper than the depth stated in the planning application. No such permission was either requested by Third Energy, nor sought or granted by the NYCC. In fact, the target geological structure stated in the planning application was not reached. The well was an outstanding success in terms of gathering good quality logging information and core data.

9. In the United Kingdom, the additives used in the hydraulic fracturing fluid have to be approved by the Environment Agency as "non-hazardous" to groundwater. Once the chemicals have been approved by the Environment Agency, Third Energy will publish them on their website. In the UK, the Environment Agency is responsible for this area of permitting and consults with the HSE and other regulators and agencies as appropriate.

"According to Frack-free Ryedale, a "recent official US report on the fracking industry....." Please could you ask Frack Free Ryedale for a copy of the report so that we can make an informed response to the question.

10. For the proposed KM-8 hydraulic fracturing project, the flowback water may be transported back to Knapton via the existing pipeline or if the quantities are small, it could be taken off site by lorry. From there it will be sent for safe disposal, via an authorised waste carrier, to an Environment Agency permitted waste facility.

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There is a comprehensive permitting and approvals regime for the treatment of such water. The flow-back water from hydraulic fracturing is classed as mining waste and, as such, will require a mining waste permit and an RSR permit from the Environment Agency with regard to both its transport and safe disposal by authorized contractors.

The contracts for the transport and management of the flow back water and

waste have not yet been awarded. Third Energy does not have a contract with Yorwaste and have never stated that they did, nor would we (as a gas energy company) ever want to dispose of radioactive waste for hospitals. As part of Third Energy's contractor selection process, both the transport and waste management contractors will be assessed for experience and competence. Only contractors that are authorised by the Environment Agency to perform these duties will be selected.

The disclosure of the hydraulic fracturing fluid will be threefold. Firstly, the intention is to publicise the information on the Third Energy website. Secondly, the information will be included in the planning application and thirdly, the information will be included within the environmental permit application. The information will also be available during the public consultation process. Both the planning application process and the environmental permit process include a statutory public consultation period, during which time the respective applications can be reviewed publically.

11. Attached are two links to the UKOOG (the onshore oil and gas industry's trade association) website. The first link gives an overview on testing and monitoring of casing and cement. The second is a link to UK Onshore Shale Gas Well Guidelines. If, after reading these, Councilor Andrews has any further questions relating to the project at Kirby Misperton, Third Energy would be pleased to answer them.

<http://www.ukoog.org.uk/knowledge-base/drilling-process-kb/how-do-you-test-and-monitor-the-casing-and-cement>

<http://www.ukoog.org.uk/images/ukoog/pdfs/ShaleGasWellGuidelines.pdf>

12. See links in point 11 above re wells and drilling
13. See links in point 11 above re wells and drilling

In the UK there will be baseline monitoring for multiple environmental factors – including water quality, noise, air quality and seismic activity – before, during and after any hydraulic fracturing operations. This monitoring process will be publicly available and will be reviewed by regulators. Monitoring and testing will be carried out by independent, expert, professional firms contracted by Third Energy. The North Yorkshire County Council will be consulted on the proposed programme prior to commencement of the monitoring.

14. See links in point 11 above re wells and drilling

It should be noted that the questions asked in 12, 13 and 14 above display a creative but completely wrong understanding across the entire well planning and

construction business. It is not possible to answer these questions without long technical explanations on well integrity, casing design, muds, steels, cements, barriers, pore pressures, overbalance, API standards etc. It would be better to meet with Councillor Andrews in person to give him a brief introduction into the world of well engineering to improve his level of understanding. It should be noted that it takes around 10 years after graduation with years of course work, exams and practical experience to become a highly competent well engineer.

15. Any "substances" would still be subject to the full Environment Agency approval and permitting process. All substances used in the fracking process must be determined as non-hazardous by the environmental agency before they can be injected into the deep formations.
16. This is a question for the Government to answer not Third Energy. However as we don't want to be criticised for backing away from the question, Third Energy's view is that all forms of energy are necessary to provide the UK with the energy it needs in the years ahead towards a low carbon future. Natural gas in our view is overall the most reliable, versatile and cleanest of the fossil fuels. And of course to extract natural gas from within the UK has more benefits to the UK in terms of energy security and arguably a smaller carbon footprint than importing it from elsewhere.
17. This statement is certainly not accepted by us and probably not by other onshore UK Operators, UK universities, UK scientific bodies and DECC. It looks like another piece of evidence taken from the US, without any form of diligence or screening of the data, and transferred to a UK setting. Could the paper in question please be identified and/or sent to Third Energy for our review.

The truck movements associated with Third Energy's proposed project are similar or less than our normal drilling and workover operations which we have been conducting for the past 20 years without inconvenience to the local population.

18. Could Frack Free Ryedale please provide the source material for the assertion that property prices have fallen by 70% in other parts of the UK. To Third Energy's knowledge, there is no fracking planned in East Yorkshire.