

Matter 9 Hearing Statement – Mrs. Rothfield

Dear Mr. Kemp,

I am commenting on the plan for energy minerals with reference only to the plans for hydraulic fracturing. For the rest of the plan I have no comments, other than to trust the wisdom of councillors and engineers and conservationists to make good informed decisions that will be of benefit to all the people of Somerset.

Hydraulic fracturing, or fracking, is a very new, very radical and very expensive technology, not only in terms of capital outlay, but resources and environmental damage.

Question 2: The PEDL areas are so vast in Somerset. Each license granted should be very carefully researched by geologists and other experts who have no vested interest. Severe constraints must be rigorously applied on the amount of drilling to be allowed, with frequent and regular monitoring by trusted impartial authorities and experts, and these inspections being paid for by adequate funds held by local government or parish councils, paid by the company who is doing the fracking. These amounts must be considerable, and not community sweeteners for local projects, or bribes from the fracking company.

Question 3: This also will require constant supervision before and after any license or planning application is submitted. Any expense for this should be paid for by the licensee, and the inspections must be very rigorous and exact with independent inspectors from more than two local agencies. These would have to be appointed when the planning is submitted. Any errors in judgment made by hydrologists or geologists could create permanent damage to the ecology and water supplies to farms and villages and towns; making agriculture impossible and potentially destroying farms, and creating severe water shortage. This will create a lot of work and expense for the agencies in question, and they must not have to pay for it, nor the local community via its council tax. The responsibility for all of this must be met by the companies, without exception. In addition, in the event of any damage discovered to any farm, community, animals, individual, or property must be immediately and generously recompensed by the company. There must be a huge fund set aside for this, already bonded, i.e. company money held by local authorities so that anyone suffering from fracking does not have to go through the courts, adding to their personal misery.

Question 4: Yes. An EIA and an ES should be provided for every well

that is intended, and again, this expense must be paid for by the fracking company, even before any drilling is attempted. And no councillor or Mp or governing agency should be permitted to participate in the investment of fracking. It is particularly unpalatable that Lord Browne and Francis Egon and probably others have so much bullying power in Cuadrilla, being part of the government.

Question 5: Every planning application for oil and gas exploration in Somerset should be supported by an EIA and ES, without exception because: this technology is new, it has the potential for creating more damage than we can predict, it has caused so much damage in the US in its short history, and most of that denied by the industry.

There has been only the well in Lancashire that has been fracked by this technology of sand, massive amounts of water, and undisclosed chemicals, at high pressure. This one well created a seismic event; causing some structural damage to several houses. Some of the houses became uninsurable. The vast amount of waste water, containing the chemicals (and possible radioactivity) , were stored in a waste pit and eventually dumped in the nearest estuary, untreated. Somehow local authorities gave them permission to do so.

Question 6: Has sufficient account been taken of viability? No, I do not believe so. I have been researching this topic for the last two years and becoming aware of the impact that this has had in several countries, and especially the US. Fracking has only been practiced in this present form since 2006, no matter how resolutely the pro-frackers have tried to convince the public otherwise, that this has been for decades a well tested and safe procedure. Not true.

In the US, the fracking industry is now (quietly in the media) suffering from several billions of dollars of economic debt. The investment expense is so vast, for exploration and production that profit for investment is less of a reality than envisioned or promised. High drilling costs mean companies are spending more than they earn from low priced fracked gas. In the short term industry may have benefitted from from cheap gas, but now, production has peaked in all shale regions save the Marcellus in Pennsylvania.

In addition, waste disposal has become a very big problem, as there are so few places that can reprocess the wastewater, and this all has to be transported by road. The wastewater has been either left in the ground or dumped into the ground, with its undisclosed chemicals. The cost is vast, contributing to the already huge debt.

In this country, the UK government has already approved the dumping of 1.5 billion gallons under the North Moors National Park. This is equivalent to an olympic sized swimming pool everyday for the next nine years. The economic success of fracking depends on the ease of waste disposal.

There has been so much water drought in areas like Texas , California, spillages into rivers etc. Oklahoma, which has embraced fracking in a big way has had 140 seismic events in one year, as opposed to 6 in the last several pre-fracking years. When any earthquake happens, no matter how small, there will be obvious shifts in the underground structure, uncontrolled, impossible to detect, where aquifers and streams may collide with an underground waste chemical lake. And how will we know what is happening until the animals and wildlife start dying, or the crops and farms fail because of poisoned irrigation or soil, and Cuadrilla or other companies may say this is nothing to do with us. Prove it.

The American Chemical Society did a recent survey of 190 separate chemicals that have been used in fracking. I do not know that all are extremely toxic, but many of them are. Benzene, a known and banned carcinogen has nevertheless been found in wastewater, as well as toluene, naphthalene, and depleted uranium, which Halliburton has used in their proprietary fracking cocktail, that they have given themselves the legal right to keep secret. We know about depleted uranium for its use in weaponry in Faludja, Iraq which has resulted in huge increase of stillborn, miscarried, or children born with multiple birth defects and mutations, that are the stuff of horror movies.

I am not certain how much we can trust companies to be honest in their chemical disclosures. Recently I heard Mr. Egon on the radio declaring that the chemicals used by Cuadrilla were totally harmless, just some sand and water and the same chemical used for cleaning contact lenses. I contacted Cuadrilla and they sent an email telling me that the chemicals were the same as aforementioned, but also hydrochloric acid and a biocide

The "Halliburton loophole" freed fracking from scrutiny under the US safe water drinking act. Gagging orders have been used by the industry as compensation for wrecked farms and impaired health. The List of the 1000 (people whose health suffered from fracking), from two years ago, must be a lot longer by now. The trickle of bad news is well on the way to becoming a torrent.

Question 7: Exploration and appraisal permissions should definitely be temporary. There should be a time limit from the issue of the licence and all the very stringent regulations made clear, from the outset, with no deviations from the strict codes of practice.

Question 8: Should there be a specific policy for fracking?

Since the government announcement of intention to unleash this on 60% of the UK without much discussion as to its effects, and downright initial denial of harm caused by fracking, most media have been unforthcoming to engage in proper discussion with the public, it has been left to all of us, lay people, councillors, mps, environmental agencies to wade through the considerable information available to inform ourselves intelligently and dispassionately about something that is potentially so threatening to our way of life.

The industry as it exists in the US serves as a template on many of the issues that we are presented with the UK, with the exceptions of our population density, and the very different geology. The enthusiasm of the UK government to follow in the footsteps of the US, seems to me to indicate a cowboy goldrush mentality. I fear that also there is too much US influence behind closed doors, and the people of the UK have not been kept informed well enough. But now we see an enormous resistance all over the UK to fracking. The government response has been to take away the real power of resistance by changing laws that override local government, and allow frackers to drill beneath our homes without needing permission.

Uncontrolled and insufficient regulation in the US has devastated much of North Dakota. It looks like a 19th century California goldmining town, and functions socially in a similar way. The community is mostly transient with all the behaviours that accompany this status. The companies here are fighting to nullify local fracking bans. People are not only not considered, but their communities are run over by the companies fighting with lawsuits to overturn democratically voted on resolutions.

So many agencies and departments have begun to openly speak out against fracking. Recently the National Grid threatened legal action against Caudrilla for wanting to dig beneath their electric pylons and cables. Water companies have also expressed their warnings about shortages and contamination.

It is known that 17 to 20% of fracking wells leak almost as soon as they

are dug and the vertical and horizontal bores have been lined with the one inch of cement, even before the chemicals and water have been pumped in under pressure. Ultimately all wells leak after some years. They are either leaking chemicals or methane. Methane is a poisonous gas, it causes health problems for anyone who breathes it. Leaking methane finds its way upwards through the soil and is held in dry soil until it rains, when it bubbles up and fills the atmosphere. Methane also is highly combustible.

Methane has 20 times the global warming effect of carbon dioxide. There are also methane plumes at higher levels from the ground that are more concentrated than the emissions that occur during the drilling phase. A recent airborne study in Colorado revealed that greenhouse gases leaked up to seven times more than regulators previously estimated from gas sites.

My policy on fracking would be that fracking would not be allowed anywhere in Somerset, as the geology is unsuitable and the land for farming is presented with too much risk. The promises of such an industry as this do not inspire confidence. They will do what they can and get away with whatever they can, and the people concerned are not really the most important part of their consideration, if at all.

The government has other ideas, and its own interests to pursue, and doing away with local decision making is part of that. Fracking will not create lower energy prices, and I would rather pay more than be for us to be subject to the woes that fracking will bring. Many communities in the US have taken on the companies and got fracking banned. This is forced submission to ill advised government policy.

They have made fracking favourable to investors, while all but obliterating the movement for wind energy as part of the energy mix. I am pleased that there is so much enthusiasm for solar by the general population, even though it does not solve all the problems. However, almost daily I read about some way to advance solar energy and enhance its usefulness. Last week I read about the latest projects with graphene, which has enormous storage capabilities, flexibility and very very high conductivity. The article also said that one day we would have a paint made of graphene, that would act like a solar cell does on the roof.

Other countries are forging ahead on graphene technologies, in particular China, and Taiwan. There is also a solar energy storage glass being manufactured than can be placed over windows,

as it is completely transparent, and generate solar energy continuously, again like a solar cell.

There is also a machine that converts plastic to oil, its original state. One kilo of plastic can create a litre of oil, and very quickly. Some of these new energy technologies come from resources at our fingertips, not 2500 feet below ground.

The government has also not been particularly inventive with energy conservation. A couple of months ago I watched the BBC programme *Bang Goes the Theory*. The presenters were investigating the National Grid, who were trying to reduce the huge draw on energy at peak times. They involved 1000 London hotels and requested them to turn off their air conditioning for an hour, at peak time, the saving was very surprising even to them, and no one seemed to experience any discomfort in the lack of air con, or even become aware of it. A little imagination could give us a lot more of these energy saving projects.

- Question 9: Yes transport of energy minerals needs its own considerations. There must be a fund given by the companies for road maintenance, for a start, as the trucks will be heavy and frequent, and create traffic problems throughout the county. If they carry methane this is an added danger. The roads are narrow and go through the centre of most villages, making more traffic, in areas already so dangerous for pedestrians and children going to school. It is already so difficult to get drivers to lower their speed to even 30 mph. A heavy lorry laden with water or chemicals or methane heaving through my daughters small village at frequent intervals is a frightening prospect, and is likely to change the character and peace of the place into something we all will not like.

Finally, if we have to submit to fracking at all, I implore that it is not closer than two miles from any school, primary or secondary. Two years ago I watched a programme on channel 4 called *The Town that Got Tourettes*. The summer of 2012 in Leroy New York, at least 16 youngsters, age about 14 or 15 developed tourettes like symptoms that cause them to twitch and make involuntary movements and noises. Their speech was also disturbed. Local doctors hadn't a clue, they tried everything, even antibiotics. Psychologists came to interview them. The findings were inconclusive. Later I found a CNN news item on line that told us that there was a fracking well near the school playground, and it had been found to be leaking at the time the children were afflicted.

They said there was some yellow substance oozing up onto their

trainers. The symptoms came on not long after this. It was so sad and distressing to see these youngsters with these afflictions that came on so suddenly. I do not know if time has restored their health or the neurological dysfunction is permanent. We do not know if it was chemicals or methane, but methane is a neurological poison. and they were only just playing on it, and obviously breathing it in.

The Minerals Plan otherwise I find to be written with so many careful considerations and has my approval in every respect but fracking. I have confidence that you will do well to protect the countryside and the people. Thank you for hearing and considering my comments.

Respectfully yours,

Mrs. N. Rothfield

