



Department
of Energy &
Climate Change



Department
for Business
Innovation & Skills

The Rt Hon Matthew Hancock MP
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15 September 2014

Thank you for letter of 27 August. You raised a number of questions about shale gas from the 'my fracking questions' website.

The Government is committed to an open debate around shale gas and we think it is important to engage with stakeholders closely on this issue.

Our vision for Britain is a prosperous low-carbon future. So we have made record investment in renewables. Renewable electricity capacity has more than doubled under this government, the number of homes with solar panels on their roofs has risen from 15,000 to more than 500,000 and we have been ranked the world number one for offshore wind. We know there's more to do and our journey towards a low-carbon future will take some time.

That's why this government backs shale gas. Since 2003, the UK has become a net importer of gas and North Sea reserves continue to decline. Shale is an important domestic energy resource that can be developed in a safe and sustainable manner. Alongside renewables, shale gas can bolster the UK's energy supply, create jobs and act as a bridge to the greener future that we are all working towards.

We are providing more information on shale gas through media and parliamentary debate. Together with the Environment Agency and the Health and Safety Executive, Officials from the Department of Energy and Climate Change engage in targeted events that support local understanding of regulations and best practice. We have dedicated advice pages on GOV.UK that highlight facts on shale: <https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking>.

I attach answers to your specific questions.

Yours sincerely,

THE RT HON MATTHEW HANCOCK MP

1. The first part of the report is a general introduction to the subject of the study.

2. The second part of the report is a detailed description of the methods used in the study.

3. The third part of the report is a discussion of the results of the study.

4. The fourth part of the report is a conclusion and a list of references.

5. The fifth part of the report is a list of appendices.

6. The sixth part of the report is a list of figures and tables.

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OUR WATER

Although we are being told that there are no recorded cases of water contamination from fracking in the US, there are at least 100¹ cases in Pennsylvania alone linked to the drilling process itself².

The geological structure of the UK has 400 times more fault lines than in the US³. This means that fracking in our country will be far more dangerous to our water.

Bath and Northeast Somerset council commissioned a report⁴ from the British Geological Survey in 2012, which stated that it would be "difficult to guarantee" that the famous hot water springs would not be contaminated by 'fracking'.

Will contamination of British water supplies by fracking be inevitable?

A; No. We have a strong and comprehensive regulatory system for exploration. The UK has over 50 years of experience of regulating the onshore oil and gas industry nationally without any examples of groundwater contamination.

The Environment Agency (EA) takes a risk-based approach to the regulation of chemicals in all shale activities and will consider each application site-by-site according to its circumstance, the design of the operations and its proximity to ground and surface waters. If there is a risk to groundwater the EA can serve a prohibition notice on the operator. The Health and Safety Executive (HSE) then makes sure the well is drilled as planned, As the HSE has said: "There is a robust health and safety regulatory regime in place aimed at ensuring there is no unplanned release of fluids from the well throughout its life."

The UK regulatory regime that applies to the health and safety of onshore and offshore petroleum wells is regarded as world leading."

A Hydraulic Fracture Programme has to be agreed with DECC geoscientists before the consent to hydraulic fracture is granted. One part of the hydraulic fracture programme is to conduct prior assessment of the geological risks including the location of known faults. Each application to hydraulic fracture will be considered on a case-by-case basis, and the need for 3D seismic will be dependent on the stratigraphy, degree of local tectonism, the extent of 2D seismic control and other subsurface data.

OUR HEALTH

Q: The form of fracking proposed for the UK, is a relatively new combination of technologies, not a 'proven, safe' technology¹. In this form it has only happened once in the UK², at Preese Hall near Blackpool, where there were two minor earthquakes³ as a result.

Because this is a relatively new technology, there has been little time for independent research into the short and long-term effects. But emerging research indicates^{4, 5} that fracking presents a threat to human health⁶ including birth defects, respiratory problems and cancer.

How can you be sure that our health will not be put at risk from fracking?

A: *We are certain public health will not be put at risk and public safety is our number one priority.*

We have a strong regulatory framework in place to ensure a comprehensive regime for exploratory activities, and the UK has over 50 years of experience in oil and gas drilling. All of the right regulations are in place to ensure on-site safety, prevent water contamination, air pollution and mitigate seismic activity.

In June 2012 the Royal Society and Royal Academy of Engineering published an independent review of the scientific and engineering evidence on risks associated with UK shale gas development. Their report concluded that environmental (and health and safety) risks can be managed effectively in the UK, when operational best practices are implemented and enforced through regulation.

In June 2014 Public Health England published a report that evaluated available evidence on issues including air quality, radon gas, naturally occurring radioactive materials, water contamination and waste water. They concluded that "the risks to public health from exposure to emissions from shale gas extraction are low if operations are properly run and regulated."

The Environment Agency (EA) will scrutinise all proposals to ensure that water supplies are properly protected. They have powers to impose conditions to ensure proper protection or to prohibit activities which they consider to pose unacceptable risks. Their permission is also required for any water abstraction, and this will only be given where the proposed quantities are sustainable.

The most effective way to ensure the required level of action is through the United Nations Framework Convention on Climate Change (UNFCCC).

This is why the UK is working with countries across the world to achieve in 2015 an agreement to address climate change that is ambitious, legally-binding, and applicable to all. At the climate talks in Warsaw last year, the world agreed a timetable and work plan for this process.

OUR CLIMATE

Q: All international governments have agreed with the IPCC report that if global warming rises above 2 degrees centigrade, runaway climate change is inevitable. 80% of known fossil fuel reserves¹ need to remain in the ground in order to avoid this.

Recent developments² in renewable technologies have led to reductions in cost but the UK government is pushing fracking while capping³ subsidies to renewables.

Although we are told that fracking is "cheap, clean and safe"⁴, this may not⁵ be the case and in fact, fracked gas could be more harmful to global warming than coal⁶. Without independent research into the long term effects, it is impossible to know.

How does backing fracking instead of renewables help avoid catastrophic climate change?

A: Government is not backing one form of energy over another. We believe in a strong and diverse energy mix.

Whilst we have invested record amounts into renewable energy we see shale gas as being a bridging fuel to a greener future. For example, we need gas powered generation to replace coal generated electricity while we continue to develop low carbon generation. Similarly many people use gas for domestic heating while we develop and deploy renewable heat sources.

This Government is taking strident action to reduce the UK's greenhouse gas emissions. We are helping consumers to insulate their homes and switch to renewable heating, and replacing old polluting power stations with cleaner alternatives. The Government is investing over £1 billion on innovative low-carbon generation and energy efficiency technologies. This money enables the UK to develop technologies that reduce our need for gas, whilst driving down costs, and create sustainable supplies of affordable energy for consumers and businesses.

Investment in renewables has increased from £3billion a year in the last Parliament to £7billion a year in this. Likewise the proportion of electricity generated from renewables has doubled from 7% to 14% since 2010.

Professor David Mackay and Dr Tim Stone's report Potential Greenhouse Gas Emissions Associated with Shale Gas Extraction and Use concluded that the carbon footprint of UK produced shale gas would likely be significantly less than coal and also lower than imported Liquefied Natural Gas (LNG). To minimise emissions, we will require shale firms to use the best technologies available. We are preparing a research programme to monitor and minimise emissions from shale gas sites.

We are committed to the global fight against climate change. The UK accounts for less than 1.5% of global emissions, so keeping the average global temperature rise below 2°C requires global collective action.

OUR CONVERSATION

Q: Talk Fracking¹ invited over 80 key policy makers (including your predecessor), industry figures and scientists to sit on the pro-fracking panel for six debates spread over two months. Only one person would commit to attending to speak on behalf of fracking.

Several large organisations such as the Department for Energy and Climate Change, UKOOG and Cuadrilla all failed to provide anyone to engage in this public debate.

British people are demanding a public debate on fracking so that they can see both sides of the story through fair and balanced debate and make up their own minds before it is introduced to their local area.

Will you attend a Talk Fracking debate to address the public's concerns?

A: Government Ministers and officials have attended numerous public events, where we have listened to local people's concerns and answered questions, as have regulators.

We are grateful for opportunities to discuss this important issue, but cannot accept every invitation so choose the ones we think most constructively meet the public's needs.

OUR RISK

Q: Fracking may have an adverse effect on local businesses such as tourism¹, brewing², farming³ and fishing⁴, as well as on property prices^{4, 5} and insurance⁶.

The National Farmers' Union⁷ are concerned "that long-term responsibilities (for compensation, restoration and aftercare of sites) may be reassigned, possibly defaulting to the landowner" and the Angler's Trust⁸ states that "the current system is simply not fit for purpose and it would be irresponsible to allow fracking to proceed until effective controls are in place."

Insurance analysis from the US⁶ suggests that accidents are inevitable, that some fracking operations may be uninsurable and that the costs of short and long term adverse effects may default to the community affected. It is unclear to what extent drilling companies will be responsible for remediation of accidents caused by 'fracking' or what level of bonds will be put in place to ensure they can fulfill this responsibility.

How will you ensure fracking companies have responsibility for compensation in the event of environmental or economic damage?

A: *The UK has a long history of offshore and onshore oil and gas exploitation over 50 years, and has developed a robust regulatory framework to ensure that all such operations will be carried out to high standards of safety and environmental protection.*

Projects must be approved by the relevant environmental agency and the Health and Safety Executive (HSE), and pass through the planning system. Consent from DECC is also required before drilling or production activities can commence.

In fact local businesses and communities stand to benefit from development. A recent EY report projected that a flourishing industry could lead to 64,500 jobs.

Operators are responsible for meeting very exact standards, ensuring the safety of the well and the site and are liable for any accidents. HSE scrutinises well design, which an independent examiner also reviews. HSE assesses all well notifications before construction and monitors well operations based on weekly reports to its well specialists.

OUR DEMOCRACY

Q: A number of influential figures in the UK government have close connections to the fracking and energy industry¹. One of David Cameron's chief advisors² is a lobbyist for the fracking industry and incoming chairman of the Environment Agency, Philip Dilley, had drillers Cuadrilla as a client until recently³.

Lord Browne is the major shareholder in fracking company Cuadrilla while also being an unelected special advisor to the government on energy policy. He has been responsible for appointing corporate individuals⁴ to powerful positions in the Department for Energy and Climate Change.

Documents show that Lord Browne personally intervened on a reported "argument"⁵ between fracking company Cuadrilla and the Environment Agency "over whether tough regulations on environmental waste should be applied to its operations".

How can we trust the Government on fracking when there are clear conflicts of interest?

A: All onshore oil and gas projects, including shale gas, need a licence and undergo detailed scrutiny from DECC, environmental and health and safety approvals. They are also subject to scrutiny through the planning system, which addresses impacts on local residents such as traffic movements, noise, working hours, etc. Separate approvals provide expert, specialised and independent oversight.

Lord Browne does not advise the Government on shale gas or energy policy. Lord Browne's role is as a Government Lead Non-Executive. His remit is to work with Secretaries of State to appoint non-executives to the board of each government department; to improve governance across Whitehall; and to build leadership and management through the non-executives and the boards. Lord Browne also convenes network meetings of non-executives across Whitehall to consider the big issues that challenge all government departments and share best practice.

Sir Phillip Dilley has been appointed as Chair of the Environment Agency by Defra Secretary of State following a rigorous and open competitive process. His appointment was reviewed by the Environment, Food and Rural Affairs Select Committee. The committee confirmed that Sir Philip has the professional competence and personal independence required for the post of Chair of the Environment Agency.

7 topics on talk fracking campaign

OUR ENERGY SECURITY

Q: The fracking industry does not know if it can extract fossil fuels on an economically viable basis in the UK and it won't know for the next ten to twenty years¹. Some of the estimates for recoverable fossil fuels through fracking have proved to be grossly overestimated². Despite this, the British government has no satisfactory plan B if shale reserves are less than predicted and no long term plan when reserves are exhausted.

Analysts even state that the fracking industry is a 'ponzi scheme' ³, is showing signs of failure⁴ and will only contribute to energy insecurity.

Given doubts about the economic viability and size of reserves, how will fracking provide energy security?

A: The shale gas beneath the UK is an important domestic energy resource that has the potential to bolster our energy security, create jobs and provide a bridge to a greener future. We believe shale will be a significant part of our future energy mix but make no assumptions, and believe in a strong and diverse energy mix.

Recent events in Eastern Europe underline the potential impact on countries highly dependent on Russian gas, and the importance that all governments ensure continued security of their energy supplies. Alongside renewables, domestic gas supplies, including shale, can enhance energy security as well as reducing carbon emissions by replacing coal.