

# COUNTY COUNCIL – 4 NOVEMBER 2014

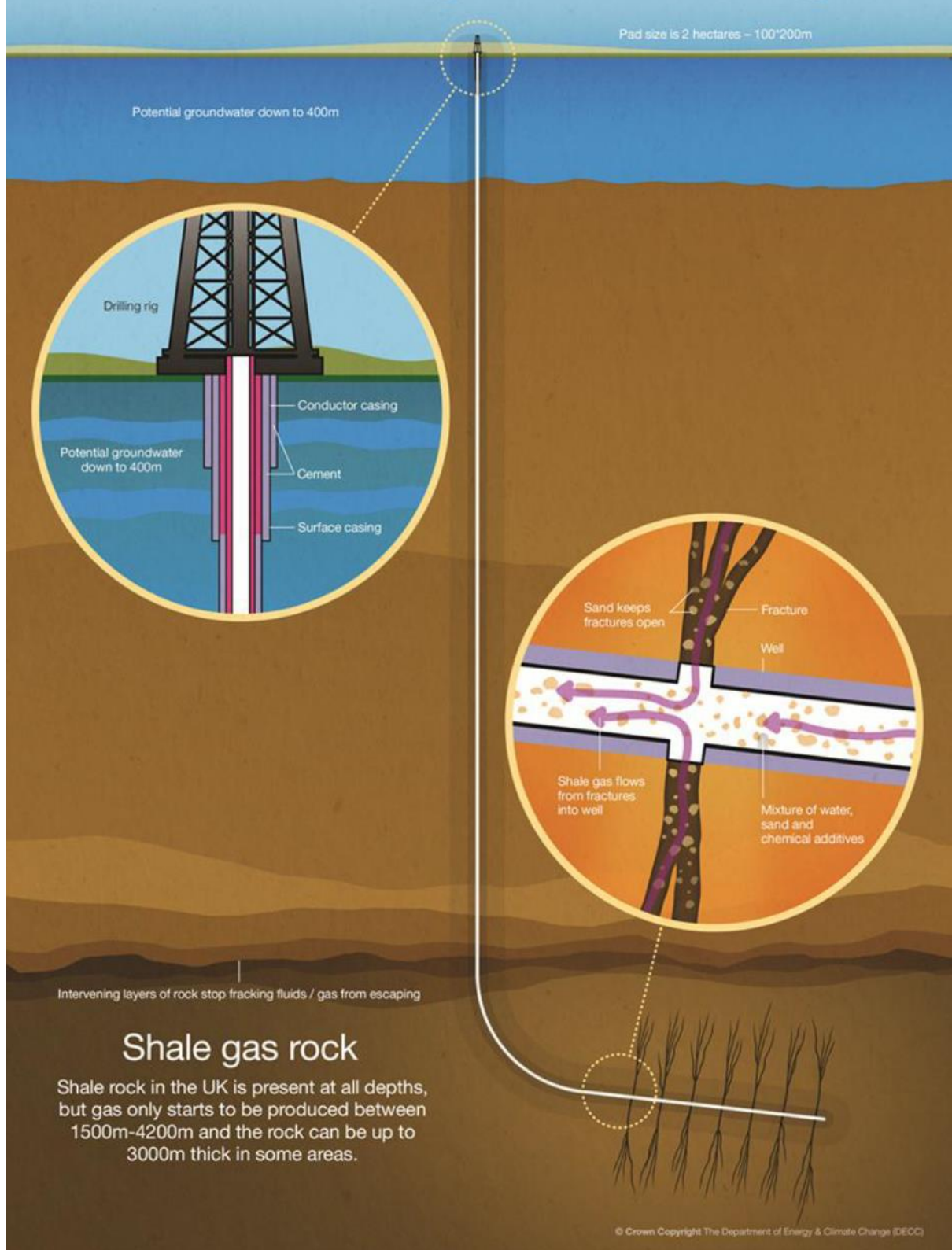
## Shale gas extraction in Oxfordshire

### 1 What is fracking?

- 1.1 Shale gas is methane and is found in shales and mudrocks at considerable depth below the earth's surface. Fracking or 'Hydraulic Fracturing', is a process of opening and/or extending narrow fractures in gas or oil bearing rock which allows gas or oil to flow into wells to be captured.
- 1.2 In the fracking process, a mixture of water, sand and chemical additives is pumped under high pressure down a borehole into the rock to open up fractures in it. The sand is used to prop the fractures open to increase gas extraction. The chemical additives are required for various purposes including providing lubrication and purification. Fracking can be used at both the exploration and production phases of the development.
- 1.3 There are three phases of onshore gas extraction: exploration, testing (appraisal) and production. Planning permission is normally required for each phase of extraction.
- 1.4 The exploratory phase seeks to acquire geological information to establish whether gas is present. It may involve seismic surveys, exploratory drilling and hydraulic fracturing.
- 1.5 The testing or appraisal phase takes place following exploration when the existence of gas has been proved, but the operator needs further information about the extent of the deposit or its characteristics to determine whether it could be economically exploited. This can involve further seismic work, longer-term flow tests or the drilling of further wells.
- 1.6 The production phase normally involves the drilling of a number of wells. Associated equipment such as pipelines, processing facilities and temporary storage tanks may also be required.
- 1.7 Recent technological advancements have resulted in horizontal drilling which has made tapping into shale gas deposits more financially viable. The shale gas extraction process broadly involves the following:
  - development of a well pad and borehole to the target rock formations that contain the shale;
  - 'fracking';
  - treatment and disposal of any water or waste materials associated with the 'fracking' process; and
  - decommissioning or suspension of the borehole.
- 1.8 99.75% of the shale gas fracking fluid is made up of water and sand. Beyond that, a very limited number of chemicals are used, all of which have been approved for use by the Environment Agency, and publicised. For all future

'unconventional' oil and gas activities, subject to appropriate protection for commercial sensitivity, the DECC has decided that operators should disclose the chemical constituents of fracturing fluids and additives on a well-by-well basis, along with a brief description of their purpose and any hazards they may pose to the water environment. The Environment Agency holds powers for the disclosure of chemicals used in the 'fracking' process.

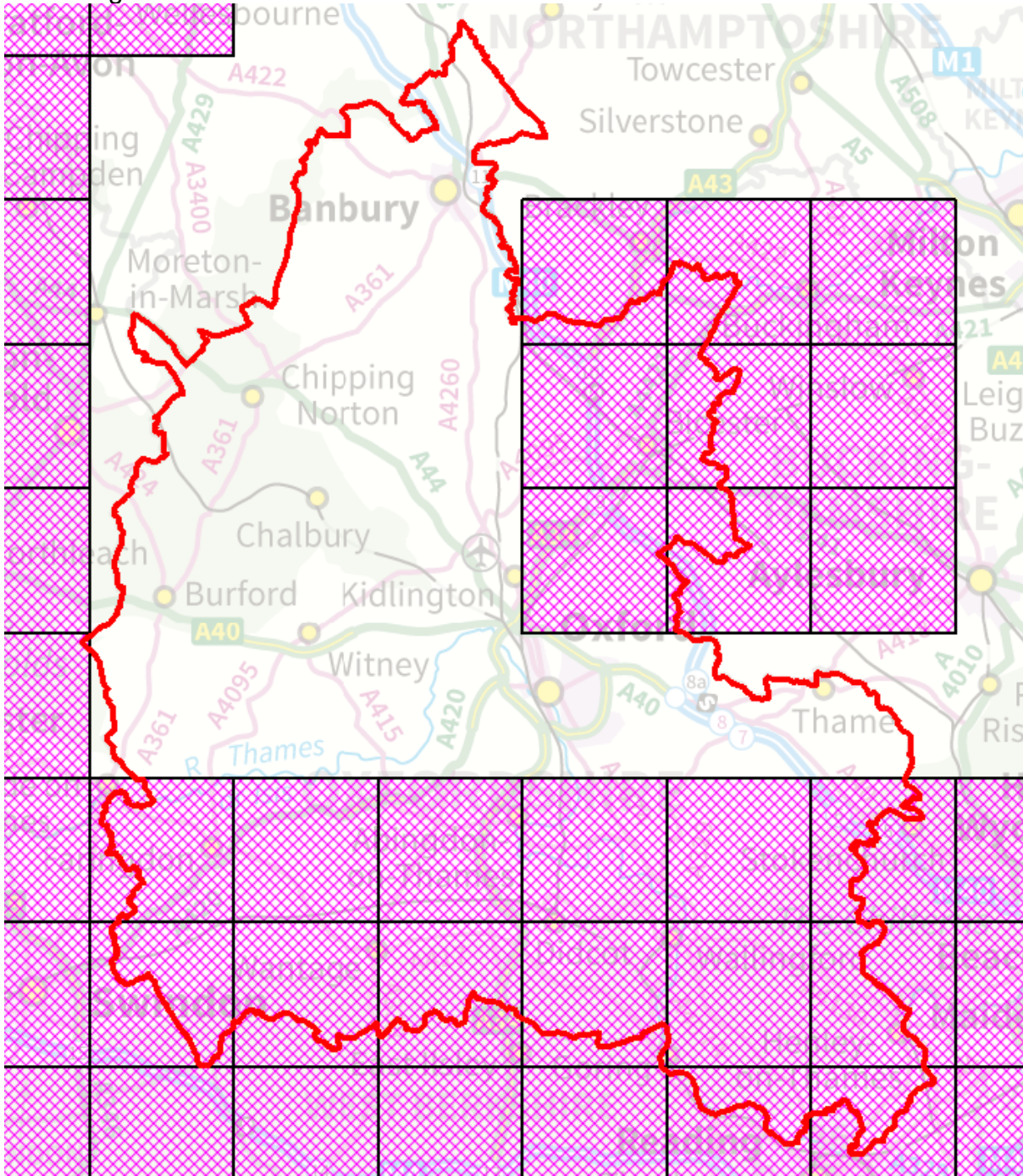
# What is shale gas and fracking?



## **2 Where in Oxfordshire might fracking occur ?**

- 2.1 Some parts of Oxfordshire have been included in the Strategic Environmental Assessment (SEA) for the 14<sup>th</sup> Round of Onshore Licencing (Figure 1). The SEA covers any area that may potentially contain conventional and/or unconventional hydrocarbon bearing strata in the UK. The blocks included in the SEA were offered up by the Secretary of State for Energy and Climate Change under the 14<sup>th</sup> Round of Onshore Licensing from 28<sup>th</sup> July 2014 to 28<sup>th</sup> October 2014. <https://www.gov.uk/oil-and-gas-licensing-rounds>
- 2.2 There are two main SEA areas in Oxfordshire. The first covers the southern part of the county from a line running east from the county boundary with Gloucestershire near Kelmscott to the county boundary with Buckinghamshire just south of Chinnor. The second covers a roughly rectangular area north of Oxford and extending to the county boundary with Buckinghamshire from near Finmere southwards to near Waterperry and to the county boundary with Northamptonshire near Souldern. A very small third SEA area extends from the county boundary with Gloucestershire on land to the west of Westwell.
- 2.3 The SEA area covering the south of the county includes land within both the Chilterns and North Wessex Downs Areas of Outstanding Natural Beauty (AONB).

Figure 1 – SEA Areas in Oxfordshire



### 3 What would fracking operations look like, how long would they last and what benefits would there be to the local community

3.1 What an oil or gas site looks like on the ground will depend on its location, its design and the type and phase of development taking place. The location of a site will be determined by the results of geological and seismic surveys which will determine where viable oil or gas deposits may be located. These will be used as a guide to determine potential locations of sites. Preparing a site involves ensuring that it can be properly accessed and that the area where

the equipment will be placed has been properly graded. Drilling pads, roads and any other associated infrastructure will be built and maintained.

- 3.2 The well pad for an exploratory or appraisal well might be approximately one hectare in size, large enough to accommodate the drilling equipment, any on-site water storage requirements, staff facilities, parking and space for vehicle deliveries and movements. The well will normally consist of a vertical well and potentially a small number of lateral extensions. The exploratory phase would last approximately two to six months. The length of time to complete the appraisal stage will depend upon the size and complexity of the oil or gas reservoir involved.
- 3.3 The appraisal phase may involve additional drilling at another site away from the exploration site or additional wells at the original exploration site. A rig will be on site for the duration of the exploratory phase. It will also be used to drill any further boreholes which may be required within the appraisal and production stages.



Aerial view of test drilling site near Balcombe, West Sussex



Surface view of test drilling site near Balcombe, West Sussex

- 3.4 Production pads may be different sizes from location to location, depending on the specific geology and surface location but would require a larger well pad, about 2 hectares in size. A single well well pad could produce gas from an area of 5 to 10 km<sup>2</sup>. A multi-well well pad could support up to 10 individual wells each with several horizontal wells (laterals). A single horizontal lateral could reach up to 2,000 metres from the well pad. Associated equipment such as pipelines and gas processing facilities may be required at the production stage. Production life may be 20 years or more depending on the extent of the resource.
- 3.5 On completion of drilling operations a well may be suspended to allow for further testing. If it is concluded that there is no commercially viable oil or gas resources present or if the extraction of resources has been completed, then the well will be abandoned in accordance with the latest Oil and Gas United Kingdom Standards. Once abandoned wells will be made safe for abandonment and the site infrastructure will be removed. The site will then be restored to its former condition or to a more beneficial afteruse, according to a scheme approved by the Mineral Planning Authority.
- 3.6 During the exploratory phase, £100,000 of community benefits would be provided per well. During the production phase, 1% of the revenues will be paid split 2/3 to the local community and 1/3 to the County Council. Local councils can also keep 100% of the business rates collected from shale gas sites.

#### **4 Planning procedures and policies**

- 4.1 Most stages of the process would require planning permission from the County Council as Mineral Planning Authority which would be made through a full planning application as for any other mineral development. However, some initial work would be permitted development pursuant to Part 22 of Schedule 2 to the Town and Country Planning (General Permitted Development) Order 1995 as amended. Class A of part 22 allows for the

drilling of boreholes, seismic surveys or the making of excavations to be carried out for a period of up to 28 consecutive days without the need for any prior approval from the Mineral Planning Authority or over 28 days with prior approval by the Mineral Planning Authority. Development not permitted would include that it cannot be carried out in an Area of Outstanding Natural Beauty (AONB), a site of archaeological interest or a Site of Special Scientific Interest, within 50 metres of any part of an occupied residential building, hospital or school, would involve an explosive charge of more than one kilogramme or any structure of more than 12 metres in height or 3 metres in height within 3 kilometres of an aerodrome. The development would also be subject to conditions including no operations between 6.00 pm and 7.00 am, no harm to trees on the land and the removal of any structure and sealing of any borehole and restoration of the land affected as far as practicable within 28 days of the cessation of operations unless otherwise agreed in writing with the Mineral Planning Authority.

- 4.2 Class B of part 22 allows for the same developments with less restrictions, including for a longer period of time, but is subject to prior notification in writing first being given to the Mineral Planning Authority. On receipt of such notification, the Mineral Planning Authority can issue an order restricting the permitted development rights development either in total or in part (an Article 7 Direction) if it considers it is expedient to do so. The grounds for doing so include that the land is in an AONB, a site of archaeological interest or a Site of Special Scientific Interest; that the development on its own or in combination with other development would cause serious detriment to the amenity of the area or adversely affect the setting of a Grade 1 Listed Building; that it would constitute a serious nuisance to nearby inhabitants of a residential building, hospital or school; or it would endanger aircraft using a nearby aerodrome. If such a Direction were issued, then the developer would then have to apply for planning permission. The Secretary of State is required to be notified of any such Direction and can disallow it within 28 days of its being made.
- 4.3 Any planning application would be judged against relevant development plan policies and other material considerations and this would include all those matters normally considered in the determination of a minerals application including the impacts of any noise, dust and traffic on amenity and the impacts of the development on air quality, biodiversity and the water environment. The development plan for any shale gas development would include the saved policies of the Oxfordshire Minerals and Waste Local Plan 1996 (OMWLP) and any relevant District Council Local Plan/Core Strategy policies, just as for any other mineral application which falls to the determination of the County Council. Where there is more recent policy contained in the National Planning Policy Framework (NPPF), this would have precedence over development plan policies.
- 4.4 The OMWLP contains no specific policies related to shale gas extraction. The NPPF includes policy for on-shore oil and gas development, including unconventional hydrocarbons e.g. shale gas. Paragraph 144 of the NPPF states that great weight should be given to the benefits of mineral extraction,



including to the economy. Paragraph 147 of the NPPF states that Minerals planning authorities should, when planning for on-shore oil and gas development, including unconventional hydrocarbons, clearly distinguish between the three phases of development (exploration, appraisal and production) and address constraints on production and processing within areas that are licensed for oil and gas exploration or production.

- 4.5 Paragraph 148 of the NPPF states that when determining planning applications, minerals planning authorities should ensure that the integrity and safety of underground storage facilities are appropriate, taking into account the maintenance of gas pressure, prevention of leakage of gas and the avoidance of pollution.
- 4.6 The Consultation Draft Oxfordshire Minerals and Waste Local Plan: Core Strategy (OMWCS) contains draft policy M6 which states that proposals for the exploration and appraisal of oil or gas will be permitted provided arrangements are made for timely and suitable restoration and aftercare of the site whether or not the exploration or appraisal is successful. The commercial production of oil and gas will be supported in the following circumstances:
- A full appraisal programme for the oil or gas field has been successfully completed;
  - The proposed location is the most suitable, taking into account environmental, geological and technical factors;
  - For major development in an Area of Outstanding Natural Beauty it is clearly demonstrated that the proposal is in the public interest, including in terms of national considerations.
- 4.7 The OMWCS is not adopted development plan policy but is a material consideration. The weight to be attached to it is therefore limited, but will increase the further the plan process progresses. The current Oxfordshire Minerals and Waste Development Scheme sets out the schedule for this and targets adoption of the plan in December 2015 following further consultation and an Independent Examination in public before an inspector appointed by the Secretary of State. The Mineral Planning Authority has at this time had no approaches from the mineral industry with regard to any proposals for shale gas extraction. It would therefore seem likely that even if initial approaches were to be made in late 2014 for pre-application discussions and advice, any application is unlikely to be submitted and determined before the OMWCS has progressed substantially further in the plan making process.
- 4.8 Any planning application will also fall for consideration under the Town and Country Planning (Environmental Impact Assessment Regulations) 2011. Applications will fall under Schedule 2 to the Regulations if they exceed the applicable threshold or any part of the development is to be carried out in a sensitive area e.g. an AONB or an SSSI. This means that provided the development exceed specified thresholds or criteria, the Mineral Planning Authority would have to adopt a Screening Opinion as to whether or not an Environmental Impact Assessment (EIA) would be required. An EIA is only

required if the project is likely to have significant environmental effects. Applications where more than 500,000 cubic metres of gas will be extracted per day may fall under Schedule 1 to the Regulations, in which case an EIA would be mandatory.

#### Other authorisations

- 4.9 The Department of Energy and Climate Change (DECC) is responsible for administering the oil and gas licensing system in Great Britain. All rights and ownerships of the hydrocarbon resources of Great Britain (and UK territorial waters) are vested in the Crown by the Petroleum Act 1998. The Secretary of State for Energy and Climate Change periodically offers licences to explore and develop these resources (Please see section 2). Petroleum Exploration and Development. Licences (PEDLs) are valid for a sequence of periods, called terms. These are designed to comprise the typical life cycle of a field: exploration, appraisal, and production as set out above. Each licence will expire automatically at the end of each term, unless the licensee has completed the working programme agreed with the DECC.
- 4.10 The initial term is usually for the exploration period. For PEDLs the initial term is set at six years and carries a work programme of exploration activity that the DECC and the licensee will have agreed as part of the application process. The second term is intended for the appraisal and development and is set at five years. The licence will expire at the end of the second term unless the Secretary of State approves a development plan. The third term is intended for production and is set at 20 years. The Secretary of State has the discretion to extend the term if production is continuing, but the DECC reserves the right to reconsider the provisions of the licence before doing so. Licensees will be required to carry out an environmental risk assessment. This is an overview assessment of environmental risks, including risks to human health, covering the full cycle of the proposed operations, including well abandonment, with the participation of stakeholders, including local communities. This should be done as early as practicable in the development of their proposals.
- 4.11 The developer will also need to submit relevant petroleum operations notices to the DECC, agreed data reporting methods with the DECC, agreed a method for monitoring induced seismicity and fracture growth height with the DECC where hydraulic fracturing is planned and received approval for an outline hydraulic fracturing programme from the DECC.
- 4.12 As well as obtaining planning permission, the developer will need to notify the Environment Agency of its intention to drill and the Environment Agency will advise on any need for any need for an Environmental Permit. The developer will also need to notify the Health and Safety Executive of all wells and significant activities at the site including that the design of each well has been examined by a competent and independent well examiner. Each well will also require further specific consent from the DECC and, if the well needs more than 96 hours of testing to evaluate its potential to produce hydrocarbons, the operator must apply to the DECC for an extended well test (once all other

consents and permissions have been granted). Permission for the extended well test will limit the quantities of gas to be produced and saved or flared. The British Geological Society must also be notified of the intent to drill. These various authorisations and approvals are applicable at each stage of the process.

- 4.13 Well operators have a legal duty to manage and control the risks to people. The Health and Safety Executive monitors well operations to check these legal duties are carried out. Its specialists will check construction matches the design by reviewing the weekly operations reports it receives from the well operator. HSE will jointly inspect drilling and fracking operations with the Environment Agency during the exploratory phase. Their inspectors can visit any site at any time if there is a matter of concern. The relevant environmental regulator will monitor the environmental impacts and inspect the operator's reports. The greater the potential risk, the greater the scrutiny by environmental regulators. Conditions attached to permits will set out the minimum level of site-based monitoring and reporting.

## **5 Fracking – views on the benefits and risks**

- 5.1 Fracking is a controversial activity. Set out below are some of the positions taken by central government, which is generally supportive, the British Geological Society which is involved in research with regard to the potential impacts and Friends of the Earth which is opposed to it. These views are for information only and no position is taken here with regard to their merits.

### **Central government**

- 5.2 A third of UK energy demand is met by gas. In 2012, around a quarter of the gas used in the UK was used to produce electricity, a fifth by industry, and around 40% domestically. As less coal is burned for electricity generation, gas will help fill the gap alongside renewable and nuclear electricity, helping the UK reduce carbon emissions. It is forecast that in 2030, the UK's gas consumption will be around the same level as it is today. North Sea production is declining and the UK is now a net importer. By 2025 it is expected that about 70% of the gas we consumed will be imported. The government's view is that to secure energy supply we must maximise UK production of fuels, including gas, increase generation from renewables and new nuclear facilities and use energy more wisely. Shale gas development could also support the economy. The Institute of Directors estimated that UK shale gas production would be a net benefit to public finances, could attract annual investment of £3.7 billion and support up to 74,000 jobs directly, indirectly and through broader economic stimulus.
- 5.3 The government therefore believes that shale gas has the potential to provide the UK with greater energy security, growth and jobs and in principle is supportive of it subject to the regulatory regime providing the necessary protection to the environment. In 2012, the Royal Society reviewed the scientific and engineering evidence on shale gas extraction conducted by the Royal Academy of Engineering and the Royal Society. This concluded that

the health, safety and environmental risks associated with hydraulic fracking as a means to extract shale gas can be managed effectively in the UK as long as operational best practices are implemented and enforced through regulation.

- 5.4 In September 2013 Professor David MacKay (the DECC's Chief Scientist) and Dr Timothy Stone wrote a report on potential greenhouse gas emissions from UK produced shale gas. They concluded that the overall effect of UK shale gas production on national emissions is likely, with the right safeguards, to be relatively small. Emissions from the production and transport of UK shale gas would likely be lower than from the imported Liquefied Natural Gas that it could replace.
- 5.5 Public Health England assessed the risk to human health of extracting shale gas in an October 2013 report. They 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.
- 5.6 The risk of water contamination is low provided operations follow industry standards and obey the regulations. Extraction takes place well below the aquifers that provide drinking water. The Environment Agency works with the Health and Safety Executive to ensure that wells would be constructed to a high standard to protect aquifers and drinking water supplies. The government is confident that the regulatory system will continue to provide robust protection of surface water and groundwater.
- 5.7 Chemicals used in drilling and frack fluids are assessed case-by-case by the environmental regulators. The operator must prove any chemicals they want to use are not hazardous in that application. Fluids returning to the surface through the well are categorised as mining waste, so the operator must obtain an environmental permit for their disposal and have an agreed waste management plan in place. The environmental regulator will assess the risks posed by the operations and decide whether they can be permitted. If groundwater contamination is possible, either directly by drilling fluids, frack fluids or indirectly by a substance disturbed by the borehole or fracking, the authority may find the environmental risk unacceptable and not permit the activity. The water and shale industries have, through Water UK and the UK Onshore Operators Group, signed an agreement to work together to identify, watch and manage risks to water quality, including waste water processing.
- 5.8 Fracturing rock for shale gas and oil is likely to use large volumes of clean water, though the amount is not exceptional compared with other industrial or leisure activities. The volume will depend on the site, but operating a shale gas well for a decade would typically use a similar volume to that needed to water a golf course for a month. Water companies will assess the amount of water available before agreeing to supply an operator. If the operator applies for a licence to extract water themselves, it will be granted by the environmental regulator only where a sustainable water supply is available. Water UK and

industry have also agreed to cooperate on water demand, reuse and management.

- 5.9 The DECC paused the use of hydraulic fracturing for shale gas in the UK in 2011 after two tremors occurred in the Blackpool area. It carried out a careful assessment, drawing on recommendations from independent experts, a public consultation, and the Royal Society/Royal Academy of Engineering review. In 2012 the DECC introduced measures to control seismic risks (earth tremors). Operators have to assess the location of any relevant faults before planning fracking operations for shale gas or oil. As referenced above, they must submit to the DECC the plan of operations, starting with small test fractures before main operations and install real-time monitoring systems. Operators must stop and investigate if they detect tremors above the normal range.
- 5.10 With regard to air quality, licences require operators to minimise the release of gases. Environmental permits and planning permissions may require monitoring or impose further limits. When it can't be economically used, natural gas must be 'flared' to reduce its global warming emissions. Natural gas may only be 'vented' – released into the air – when necessary for safety.

### **British Geological Society**

- 5.11 The British Geological Society's main role is to evaluate the amount of shale gas present and how safe it is to extract. It is taking a central role in shale gas research in the UK and also across Europe as follows:
- Undertaking a baseline groundwater survey of methane concentrations and other relevant chemical indicators in ground waters across Great Britain;
  - Evaluating the spatial relationship between different potential shale gas source rocks and the principal aquifers in England and Wales;
  - Researching the induced seismicity that may be related to fracking; studies of the organic content and the organic make-up of the shales to improve understanding of how much shale gas they might produce and how the gas is stored within the rocks;
  - Understanding the distribution and correlation of shale and how the shale layers behave in response to depositional and tectonic controls;
  - Advice and guidance for government in trying to understand the amount of gas that may be both in place and possibly recoverable within the shales in the UK.
- 5.12 Estimates of the amount of recoverable gas and the gas resources are variable. It is possible that the shale gas resources in UK are very large. However, despite the size of the resource, the proportion that can be recovered is the critical factor. A better understanding of the shale gas resource, and the amount of gas that is potentially recoverable, will come from further geological research.
- 5.13 Shale gas extraction and fracking, just like any other industrial process, carries associated risks. Some of those relevant to shale gas include 'induced

seismicity', such as the low magnitude earthquakes experienced in Lancashire in 2011. There is also the potential for groundwater and surface water contamination. This may arise from surface activities that may lead to spills associated with the storage and mixing chemicals at the drill/ fracking site or the storage/ management of fluids that return to the surface from the borehole, the so-called 'flowback and produced waters'. Other potential pathways for contamination of groundwater include poor well-design and well construction, and the migration of contaminants along natural pathways into overlying aquifers. Understanding the risks is a very important step in the design and approval process and very strict controls and regulations are in place to reduce the risks to an acceptable level.

- 5.14 The two main induced earthquakes in Lancashire in 2011 were very small. To put them into context, they were smaller than most of the earth tremors that have been associated with coal mining in the 1950s and 60s and that still occur today. A report published by the DECC which included a British Geological Society co-author concluded that these earthquakes were induced by hydraulic fracture treatments at the Preese Hall well (PH1), operated by Cuadrilla resources Ltd. The report also concluded that further small earthquakes cannot be ruled out, however the risk from these earthquakes is low, and structural damage is extremely unlikely.
- 5.15 The report also recommends a number of measures to reduce the likelihood of earthquakes associated with hydraulic fracturing in future. These include :
- Less fluid should be injected during future hydraulic fracture treatments. Since, the number of earthquakes should increase roughly proportionally to the injected volume, injecting less fluid should reduce the probability of larger earthquakes. Also, the fluid should be allowed to 'flow back' out of the formation after the hydraulic fracture forms, to minimise the probability of fluids percolating.
  - Earthquake activity should be carefully monitoring before, during and after fracture treatments. If any earthquakes above a certain magnitude threshold occur, the operations should be temporarily suspended. A magnitude of 0.5 ML is suggested as an appropriate threshold.
  - Detailed microseismic monitoring should be carried out for the next hydraulic fracture treatment in the Bowland shale. Microseismic is routinely used in the oil and gas industry to image fracture networks and estimate stimulated volumes. This should improve understanding of fracture growth and the hazards associated with this.
- 5.16 There are two potential impacts on groundwater. The first is associated with the supply and consumption of water for fracking as groundwater may be considered as a source of this water. The second is contamination of groundwater. In both cases the regulations that apply to shale gas extraction will require a detailed risk assessment before any authorisation or permit is granted. Before granting a permit the Environment Agency will need to be satisfied that the activity will not cause pollution of groundwater or lead to

unsustainable abstraction. Once approved, monitoring of the environment will be required as part of permit conditions to demonstrate that no impact is occurring. To provide an independent environmental baseline against which this compliance monitoring can be compared, the British Geological Society is undertaking a baseline survey of methane concentrations in groundwater ahead of any shale gas development as there is currently no UK baseline. The baseline study is not only restricted to methane. A wider range of chemical indicator parameters are also being measured and the results will supplement the data already published by the British Geological Society and used to set groundwater threshold values (standards) for the EU Water Framework Directive.

## Friends of the Earth

- 5.17 The climate change impacts of extracting and burning unconventional gas are not adequately assessed: this risks fracking releasing climate changing emissions undermining UK Climate Change Act commitments. The risks of water contamination are not adequately identified or considered: this risks unforeseen water contamination that could potentially have major impacts. Regulators have failed to set out a clear water supply strategy for fracking in water-stressed areas: this risks problems for local water supply, especially in times of drought. Decision makers fail to adequately address potential impacts on protected species and habitats or screen out protected areas from exploration and extraction altogether: this risks some of the UK's most precious wildlife being harmed. There are problems with the application of the Environmental Impact Assessment Regulations, which fails to address all the risks arising at unconventional gas sites and is being inadequately applied: this means that potential environmental risks are not being identified and mitigated.
- 5.18 There is a lack of dedicated regulation on unconventional gas and oil, despite expert body recommendations from bodies including the Royal Society: this means there are few industry-specific checks and balances on fracking. There are major shortcomings in planning practice guidance, this risks wrong decisions being taken because local decision-makers have inadequate information about and understanding of proposed activities. There is inadequate monitoring and enforcement by planning authorities and regulators leading to a culture of self-regulation: this means that it may not be known if fracking companies are complying with basic standards. The impact of regulation risks being reduced further through 'salami-slicing' whereby companies get permission from regulators in increments, rather than being open about their overall plans from the start: this undermines scrutiny and the opportunity to object. The Government has smoothed the path for the unconventional gas and oil industry, undermining democracy and public participation in decision-making through:

Removing the responsibility for companies to notify individual landowners of their intention to frack.

Proposing changes to trespass laws that would give fracking companies the right to drill under homes and businesses without permission.

Proposing to introduce “standard” environmental permits which will normally remove the right of local people to be consulted.

Failing to consult on planning practice guidance which means planning rules override the interests of communities.

## **6 Conclusion**

- 6.1 There is no doubt that fracking is a matter of considerable concern and there are conflicting views on its merits and uncertainties about its potential impacts. To those local communities which may be affected by it is undoubtedly a matter of great concern. It is also the case that it has the potential to release significant energy reserves when some other sources are diminishing. It is clearly not without risks and this paper has, in part, sought to set out in summary terms the regulatory regimes which would apply, including planning control which, in Oxfordshire, would be a matter for the County Council. As the County Council would be the planning authority for any such development, in this capacity, it must maintain a neutral stance so that it can determine applications at the time they are received in accordance with development plan policies and other material considerations.

## **RECOMMENDATION**

**The Council is invited to note the matters identified in the report.**