



Council Meeting
17th July 2014
10.00am

Item
7
Public

REPORT TO COUNCIL PROVIDING INFORMATION ON HYDROCARBON GAS EXPLORATION IN SHROPSHIRE

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1. Summary

This report updates Members on the issue of hydrocarbon gas exploration and the potential implications for Shropshire.

2. Recommendations

- A. That Members note the contents of this report for background information in relation to any proposals concerning hydrocarbon gas exploration and development in Shropshire.

REPORT

3. Risk Assessment and Opportunities Appraisal

3.1 Risk Management Appraisal

The planning system provides a way of assessing relevant land use planning considerations and available control and mitigation mechanisms in order to establish the extent to which risks posed by the proposals can be minimised.

3.2 Human Rights & Equalities Appraisal

The policies and guidance listed in Appendix 4 seek amongst other matters to balance society's essential need for minerals and energy against the need to protect the environment and against relevant human rights considerations.

3.3 Environmental Appraisal

Any current or future applications for mineral working in Shropshire including hydrocarbon development will be assessed against relevant planning policies and guidance including the specific mineral policies listed in Appendix 4 and other relevant policies as appropriate. They will also be subject to an appropriate level of planning consultation including with technical consultees such as the Environment Agency and

Natural England in order to ensure that the potential environmental impacts of the proposals are fully appraised before a planning decision is taken.

3.4 Financial Implications

In January 2014 the Government announced that local communities will be allowed to keep millions of pounds of tax generated by the Oil and gas fracking industry. Under the plans, local councils will now be allowed to keep all of the business rates shale operators pay. That could be worth up to £1.7m a year for a typical site. Energy firms could also make direct cash payments to local residents, and set up trust funds to be managed by local communities.

The energy industry has also announced “community benefits” for people living near fracking sites, suggesting communities would receive £100,000 when a test well is fracked – and a further 1pc of revenues if shale gas is found. This could be worth a total £5m-£10m for the typical site. The industry is undertaking consultations on how that money will be handed out. Options include direct cash payments to people living near fracking sites, and establishing funds to be overseen by councils. The Prime Minister said that the new benefit plans would help boost a technology he believes can deliver huge advantages to the UK. The Government, he said, was “going all out for shale. It will mean more jobs and opportunities for people and economic security for our country”. The French energy giant Total became the first oil and gas major to back UK fracking in January and is expected to invest close to £30m in shale exploration in the East Midlands.

4. Types of hydrocarbon gas development

4.1 There are two main types of hydrocarbon gas recovery where the gas in buried geological deposits is exploited via boreholes:

- hydraulic fracturing (‘fracking’ / ‘shale gas’) where shale is fractured by pressurised liquid;
- coal bed methane (CBM) which involves exploiting the gas which is present naturally within coal seams.

4.2 There are three phases to Shale Gas and CBM development - exploration, appraisal/testing and production. The Government has produced supplementary guidance on hydrocarbon development to accompany the NPPF and this is reproduced as part of Appendix 1 (policies and guidance).

5. Shale Gas Fracking

5.1 Hydraulic fracturing ‘fracking’ is a mining technique in which a high-pressure liquid (usually water mixed with sand and chemicals) is injected into a mining borehole in order to create small fractures in deep-rock formations (normally shale). When the hydraulic pressure is removed the small grains in the ‘fracking’ liquid hold open the fractures, allowing natural gas, and in some circumstances petroleum and brine to migrate to the well which has perforations at the target horizon to allow a return flow. Fracking has been employed widely in the US since the late 1940’s to increase

productivity in end of life cycle oil wells and as a free-standing means of recovering natural gas from suitable geological deposits.

- 5.2 Supporters of fracking advocate the economic benefits to be derived from the recovery of formerly inaccessible hydrocarbons. The Government published guidance in May 2014 on 'Developing shale gas and oil in the UK'. This states that 'the Government believes that shale gas has the potential to provide the UK with greater energy security, growth and jobs and is encouraging safe and environmentally sound exploration to determine this potential' ... 'The UK has a strong regulatory regime for exploratory activities but we want to continuously improve it'. 'The UK has over 50 years of experience of regulating the onshore oil and gas industry nationally'. The Government has recently lifted a temporary ban on fracking in favour of close regulation.
- 5.3 Opponents point to potential environmental concerns including:
- Contamination of ground water;
 - Risk of surface contamination,
 - Potential for increases in seismic activity;
 - Competing land-use requirements in densely populated areas.
 - Increased fugitive emissions of greenhouse gases (although a 2013 DECC study found that overall emissions were less than for the imported Liquefied Natural Gas that it could replace).
- 5.4 The UK has abundant shales at depth. Potentially suitable deposits occur in parts of North Shropshire. However, no planning applications for fracking have yet been submitted within the county.

6. Coal Bed Methane

- 6.1 Coalbed methane ('CBM' or 'coalbed gas' / 'coal seam gas') is a form of natural gas extracted from buried coal seams. In recent decades it has become an important source of energy in North America and Australia. CBM differs from a conventional gas reservoir in that the methane is stored in pores and fractures ('cleats') within coal seams instead of being trapped in a buried sandstone reservoir.
- 6.2 To extract the gas, a steel-encased hole is drilled into the coal seam 100 to 1,500 metres below ground. Water is pumped off, decreasing the pressure and allowing gas to be drawn to the well. Both gas and produced water come to the surface through the well. The gas is sent to a compressor station and into natural gas pipelines. The water, which typically contains dissolved solids such as salt, is either re-injected, released into streams, used for irrigation, or sent to evaporation ponds.
- 6.3 Potential environmental effects from CBM can include:
- As with shale gas, production and burning CBM produces carbon dioxide and may cause methane emissions which can contribute to global warming;
 - Over time, wells may be spaced more closely in order to extract the remaining methane, competing with other surface uses;

- The produced water brought to the surface may contain undesirable concentrations of dissolved substances such as salts. However, not all such water is saline or otherwise undesirable. Some is used in the USA to water livestock.
- Depending on the scale of operations and aquifer connectivity, water withdrawal may depress aquifers and affect groundwater flows.

6.4 Gas in the UK's coal fields has been estimated to be 2,900 billion cubic meters, but as little as one percent might be economically recoverable. Licenses for 55 onshore exploration areas were issued in 2008 including one in North Shropshire. These cover 7,000 square kilometres of potential coalbed methane, but in 2012 there were only two commercial CBM wells in the UK. Similar regulatory controls apply as for shale gas.

6.5 Shale gas and CBM development are entirely different process and should not be confused. However, the infrastructure required for both processes is similar. A typical CBM / shale gas exploration compound would occupy an area of up to 1 hectare, including the drilling rig, pumping infrastructure, contractors' cabins, parking, circulation areas, access and security fencing. A production facility may be larger due in part to the greater water handling requirements. Boreholes can be drilled laterally (sometimes for distances of kilometres) in order to run parallel with the shale / coal bearing horizon. The planning history of CBM applications in Shropshire is included in Appendix 2.

7. Regulatory regime

7.1 The UK has a very strict multi-layered regulatory regime for dealing with CBM and shale gas proposals. Prospective operators are required to:

- Obtain a licence from the Department of Energy and Climate Change (DECC);
- Obtain an Environmental Permit from the Environment Agency;
- The Health and Safety Executive (HSE) monitors the safety of such operations;
- The operator must also obtain planning permission from the relevant local authority (Shropshire Council, for operations within the county) to permit the surface operations required to explore for and extract CBM and shale gas.

7.2 A framework of control for shale gas operations is currently being developed by the European Union. In March 2014 DECC published updated guidance 'Developing shale gas and oil in the UK' including the steps that operators need to take in seeking consent for underground drilling (Appendix 3). The Government is also consulting on simplifying the procedures for obtaining consent for underground access for drilling (Appendix 4).

8. Policy context and guidance for decision takers

8.1 Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise. The National Planning Policy Framework must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions. Planning policies and decisions must also reflect and where appropriate promote relevant EU obligations and statutory requirements.

- 8.2 The Development Plan for Shropshire includes the Core Strategy and relevant saved Local Plan policies which will be superseded when the SAMDev is adopted. Core Strategy Policy CS20 (Sustainable Mineral Working) advises amongst other matters that 'environmentally acceptable proposals for the exploration, appraisal and production of hydrocarbon resources, including coalbed methane, will be supported as a contribution to meeting the requirements of national energy policy'.
- 8.3 The emerging SAMDev policy on mineral working (Policy MD17: Managing the Development and Operation of Mineral Sites) mirrors guidance in the NPPF (section 147) in advising as follows: 'Proposals for the working of unconventional hydrocarbons should clearly distinguish between exploration, appraisal and production phases and must demonstrate that they can satisfactorily address constraints on production and processing within areas that are licensed for oil and gas exploration or production. Particular consideration will be given to the need for comprehensive information and controls relevant to the protection of water resources'. The full wording of these policies and the relevant NPPF section (147) is included in Appendix 1.
- 8.4 Whilst there is strong policy support for the development of hydrocarbon resources this needs to be balanced against the equally strong policies requiring protection of the environment, including Core Strategy Policy CS17. The planning consultation process provides a way of assessing and balancing the relevant impacts and benefits of Shale Gas and CBM development proposals.
- 8.5 Objectors to shale gas have advocated that local councils declare themselves to be 'frack free'. However, such a stance has no national or local policy basis and would be open to legal challenge. The existing planning system provides a comprehensive means for testing any future shale gas or CBM proposals in the context of relevant policies and the comments received during the planning consultation process.

9. Future implications for Shropshire

- 9.1 There are currently no planning applications for shale gas in Shropshire and no proposals. However, the possibility of future interest in localised areas of the County, mainly in North Shropshire, cannot be discounted as some of the strata within the county are geologically suitable. There is one proposal for an exploratory CBM borehole which has recently been submitted and the details are included in Appendix 4.
- 9.2 In the event that future planning applications for fracking or additional applications for CBM are received the planning system will allow these to be dealt with in an appropriate manner. Any such proposals would be subject to a full consultation process. The concerns of objectors would be carefully assessed as part of this process, whilst at the same time taking account of the potential benefits, including to the national and local economy and in terms of energy security.

10. Conclusions

- 10.1 This report outlines the current position with respect to shale gas (fracking) and coal bed methane development, both nationally and in Shropshire. These technologies are new in an onshore UK context but the Government considers that they will potentially have a significant future role to play in assisting in achieving benefits, both economically and in terms of energy security.
- 10.2 It is considered that the planning system provides an appropriate mechanism for assessing the environmental implications of any such future proposals and weighing any impacts against the potential benefits. In addition, such proposals would be subject to substantial additional controls under separate regulatory regimes administered by the Environment Agency, DECC and the Health and Safety Executive.

List of Background Papers: N/A

Key Decision: No

Included within Forward Plan: No

If a Key Decision and not included in the Forward Plan have the General Exception or Special Urgency Procedures been complied with: N/A

Name and Portfolio of Executive Member responsible for this area of responsibility:

Cllr Mal Price, Planning, Housing and Commissioning (Central)

Local Members:

All

Appendices:

- **Appendix 1 - Minerals Policies**
- **Appendix 2 - Planning history of coal bed methane and shale gas extraction in Shropshire**
- **Appendix 3 - How do companies get permission to drill?**
- **Appendix 4 - Government consultation on proposals to reform procedure for gaining underground access**

APPENDIX 1

MINERALS POLICIES

Shropshire Core Strategy

Policy CS20: Strategic planning for Minerals

Shropshire's important and finite mineral resources will be safeguarded to avoid unnecessary sterilisation and there will be a sustainable approach to mineral working which balances environmental considerations against the need to maintain an adequate and steady supply of minerals to meet the justifiable needs of the economy and society. This will be achieved by:

- i. Protecting the Mineral Safeguarding Areas (MSA's) and rail freight facilities which could contribute to the sustainable transport of minerals which are identified in Figure 10. Non-mineral development in these areas or near protected railfreight sites will be expected to avoid sterilising or unduly restricting the working of proven mineral resources, or the operation of mineral transport facilities, consistent with the requirements of national and regional policy.
- ii. Encourage greater resource efficiency by supporting the development and retention of waste recycling facilities which will improve the availability and quality of secondary and recycled aggregates in appropriate locations as set out in Policy CS 19;
- iii. Maintaining landbanks of permitted reserves for aggregates consistent with the requirements of national and regional policy guidance. 'Broad locations' for the future working of sand and gravel are identified in Figure 11. Sites capable of helping to deliver the sub-regional target for sand and gravel will be allocated within these areas in the Site Allocations and Management of Development DPD;
- iv. Only supporting proposals for sand and gravel working outside these broad locations and existing permitted reserves, where this would prevent the sterilisation of resources, or where significant environmental benefits would be obtained, or where the proposed site would be significantly more acceptable overall than the allocated sites;
- v. Supporting environmentally acceptable development which facilitates the production of other mineral resources such as crushed rock, clay and building stone to meet both local needs, including locally distinctive materials, and to help meet cross boundary requirements.
- vi. Environmentally acceptable proposals for the exploration, appraisal and production of hydrocarbon resources, including coalbed methane, will be supported as a contribution to meeting the requirements of national energy policy;
- vii. Requiring development applications for mineral working to include proposals for the restoration and aftercare of the site.
- viii. Priority will be given to environmentally acceptable proposals which can deliver targeted environmental or community benefits consistent with Policies CS8 and CS17. More detailed policies against which applications for mineral development can be assessed will be provided in the Site Allocations and Management of Development DPD.

Site Allocations and Management of Development (SAMDev) Plan **Pre-Submission Draft**

Policy MD17: Managing the Development and Operation of Mineral Sites

1. Applications for mineral development will be supported where applicants can demonstrate that potential adverse impacts on the local community and Shropshire's natural and historic environment can be satisfactorily controlled. Particular consideration will be given (where relevant) to:
 - i. Measures to protect people and the environment from adverse effects, including visual, noise, dust, vibration and traffic impacts;
 - ii. The site access and traffic movements, including the impact of heavy lorry traffic on the transport network and the potential to transport minerals by rail. Where opportunities to transport minerals by rail are not feasible there will be a preference for new mineral sites to be located where they can obtain satisfactory access to the Primary Route Network;
 - iii. The cumulative impact of mineral working, including the concurrent impact of more than one working in a specific area and the impact of sustained working in a specific area;
 - iv. Impacts on the stability of the site and adjoining land and opportunities to reclaim derelict, contaminated or degraded land (Policy CS6);
 - v. Effects on surface waters or groundwater and from the risk of flooding
 - vi. Effects on ecology and the potential to enhance biodiversity;
 - vii. The method, phasing and management of the working proposals;
 - viii. The extent to which the proposed development contributes to the comprehensive working of mineral resources and appropriate use of high quality materials;

Where necessary, output restrictions may be imposed to make a development proposal environmentally acceptable;

2. Mineral working proposals should include details of the proposed method, phasing, long term management and maintenance of the site restoration, including progressive restoration towards full reinstatement of occupied land and removal of all temporary and permanent works. A satisfactory approach will avoid the creation of future liabilities and will deliver restoration at the earliest practicable opportunity to an agreed after-use or to a state capable of beneficial after-use. Where the proposed after-use includes agriculture, woodland, amenity (including nature conservation) or other uses, a satisfactory scheme will need to include the following:
 - i. Proposals which take account of the site, its surroundings, and any development plan policies relevant to the area;
 - ii. Evidence to show that the scheme incorporates best practice advice and is practical and achievable;
 - iii. A Management Plan, which should address the management requirements during each phase of the proposed development;
 - iv. A Reclamation Plan;
 - v. Provision for a 5 year period of aftercare;

Where appropriate, a planning obligation will be sought in order to secure the after-use, long term management and maintenance of the site;

3. Proposals for the working of unconventional hydrocarbons should clearly distinguish between exploration, appraisal and production phases and must demonstrate that they can satisfactorily address constraints on production and processing within areas that are licensed for oil and gas exploration or production. Particular consideration will be given to the need for comprehensive information and controls relevant to the protection of water resources;
4. Where relevant, applications for the winning and working of coal should include proposals for the separation and stockpiling of fireclay so that its value as a mineral resource can be captured;
5. A flexible approach will be adopted to the duration of planning consents for very small scale, intermittent but long term or temporary working to work locally distinctive building and roofing stone consistent with the objectives of Policy MD2.
6. Where ancillary development is proposed, proposals should include satisfactory measures to minimise adverse effects, including:
 - i. Locating the ancillary development within or immediately adjacent to the area proposed for mineral working or on an established plant site;
 - ii. Restricting the principal purpose to a purpose in connection with the winning and working of minerals at the site or the treatment, storage or removal of minerals excavated or brought to the surface at that site;
 - iii. For imported minerals, where necessary, to limit the quantities involved to control the volume and type of traffic, and the establishment of an acceptable route for the traffic to and from the site;
 - iv. The cessation of the ancillary development when working of the mineral for which the site was primarily permitted has ceased and removal of plant and machinery to allow full restoration of the site.

Where ancillary development could have an adverse effect on the local environment which cannot be mitigated to acceptable levels, a condition may be attached to the planning permission to control the adverse effects by limiting development to an established plant site, or introducing a stand off from sensitive land uses, or mitigating effects in other ways, or as a last resort, withdrawing permitted development rights so that the ancillary development can be properly controlled by the terms of the planning permission.

National Planning Policy Framework

Section covering onshore hydrocarbon development

147. Minerals planning authorities should also:

- 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;

- encourage underground gas and carbon storage and associated infrastructure if local geological circumstances indicate its feasibility;
- indicate any areas where coal extraction and the disposal of colliery spoil may be acceptable;
- encourage capture and use of methane from coal mines in active and abandoned coalfield areas; and
- provide for coal producers to extract separately, and if necessary stockpile, fireclay so that it remains available for use.

National Planning Policy Framework - Planning Practice Guidance

Planning for Hydrocarbon extraction

The Phases of onshore hydrocarbon extraction

What are conventional and unconventional hydrocarbons?

Hydrocarbon extraction covers both conventional and unconventional hydrocarbons. Conventional hydrocarbons are oil and gas where the reservoir is sandstone or limestone. Unconventional hydrocarbons refers to oil and gas which comes from sources such as shale or coal seams which act as the reservoirs. As an emerging form of energy supply, there is a pressing need to establish – through exploratory drilling – whether or not there are sufficient recoverable quantities of unconventional hydrocarbons such as shale gas and coalbed methane present to facilitate economically viable full scale production.

What are the phases of onshore hydrocarbon extraction?

There are three phases of onshore hydrocarbon extraction: exploration, testing (appraisal) and production.

When is planning permission required for the extraction of hydrocarbons?

Planning permission is required for each phase of hydrocarbon extraction, although some initial seismic work may have deemed planning consent under [Part 2 of Schedule 2 to the Town and Country Planning \(General Permitted Development\) Order 1995](#)

Can a single planning application cover more than one phase of extraction?

Applications are able to cover more than one phase of extraction. The operator will need to provide all relevant information, including environmental information, to support the full extent of the application.

What is the exploratory phase of hydrocarbon extraction?

The exploratory phase seeks to acquire geological data to establish whether hydrocarbons are present. It may involve seismic surveys, exploratory drilling and, in the case of shale gas, hydraulic fracturing.

What geological data will operators collect before carrying out any exploratory drilling?

It is a matter for individual operators to determine how much preliminary data is necessary before undertaking exploratory drilling. However, preliminary data which the operator might obtain to consider the most appropriate locations for exploratory drilling include:

- existing geological and other relevant data to gather information about rock formations under the earth's surface;

- information from earlier drilling for oil, water, coal or other minerals and mining or quarrying activities;
- information on aquifers and groundwater resources; seismic reflection, gravity and magnetic surveys and remote sensing data e.g. satellite photographs, and results of previous seismic surveys.

Why carry out seismic surveys?

Seismic surveys are essential to understand the structure under the earth's surface and be able to predict the depths of the key target formations. Operators will often wish to conduct new surveys with the latest technology, even where previous survey data exists. Among other things, this helps to determine the most promising target for drilling.

How long does exploratory drilling last?

For conventional hydrocarbons, exploration drilling onshore is a short-term, but intensive, activity. Typically, site construction, drilling and site clearance will take between 12 to 25 weeks.

For unconventional hydrocarbons exploratory drilling may take considerably longer, especially if there is going to be hydraulic fracturing and, in the case of coalbed methane, removing water from the coal seam.

What is the appraisal phase of hydrocarbon extraction?

The appraisal phase takes place following exploration when the existence of oil or gas has been proved, but the operator needs further information about the extent of the deposit or its production characteristics to establish whether it can be economically exploited.

What does the appraisal phase involve?

The appraisal phase can take several forms including additional seismic work, longer-term flow tests, or the drilling of further wells. This may involve additional drilling at another site away from the exploration site or additional wells at the original exploration site. For unconventional hydrocarbons it may involve further hydraulic fracturing followed by flow testing to establish the economic viability of the resource and its potential productive life. Much will depend on the size and complexity of the hydrocarbon reservoir involved.

What is the production phase of hydrocarbon extraction?

The production phase normally involves the drilling of a number of wells. This may be wells used at the sites at the exploratory and/or appraisal phases of hydrocarbon development, or from a new site. Associated equipment such as pipelines, processing facilities and temporary storage tanks are also likely to be required.

How will any additional sites for appraisal or production be determined?

Any additional sites, following exploration, will be selected by the operator taking account of what they have learnt or discovered through previous phases. In doing so, they should take also account of their ability to access the resource whilst seeking to minimise or avoid any adverse environmental and amenity issues.

What is the production life of an oil or gas field?

Production life of an oil or gas field can be up to 20 years, possibly more. When production ceases, the facilities should be dismantled and the sites restored to their former use, or, in some circumstances, an appropriate new use.

APPENDIX 2

Planning history of coal bed methane and shale gas extraction in Shropshire

Shale gas exploration and extraction

There have been no planning applications for shale gas exploration or extraction in Shropshire.

Coal bed methane exploration and extraction

Planning decisions – planning applications

Shropshire Council has determined three planning applications for coal bed methane appraisal operations.

1. Proposed Development: Drilling of a temporary appraisal borehole (up to 60 days) to retrieve a core of coal to surface for analysing of coal structure, permeability and gas content, and appropriateness for Coal Bed Methane (CBM) production, followed by restoration of the site back to agriculture

Location: Brookfield Farm, Babbinswood, Whittington

Applicant: Composite Energy
Ref. no. 09/01502/MAW
Submitted: 2nd July 2009
Permitted: 22nd December 2009

2. Proposed development: Drilling of a temporary appraisal borehole (up to 60 days) to retrieve a core of coal to surface for analysing of coal structure, permeability and gas content, and appropriateness for Coal Bed Methane (CBM) production, followed by restoration of the site back to agriculture

Location: Land northwest of Old Marton Farm, New Marton, St Martins, Ellesmere

Applicant: Composite Energy
Ref. no. 09/01853/MAW
Submitted: 27th July 2009
Permitted: 17th December 2009

3. Proposed development: Drilling of a temporary appraisal borehole to retrieve a core of coal to surface for analysis of coal structure, permeability and gas content, and potential for Coal Bed Methane (CBM) gas production, followed by restoration of the site back to agriculture

Location: Land northwest of The Brooklands, Dudleston, Ellesmere

Applicant: Composite Energy
Ref. no. 10/00909/MAW
Submitted: 15th June 2010
Permitted: 8th November 2010

Each of these planning permissions was subject to the standard requirement that the operation commences within three years of the date of the permission. None of these three permissions were implemented within the required time period. Consequently they have all lapsed and are no longer capable of being implemented.

Planning decisions – Screening Opinion

In March 2014 Shropshire Council received a formal request from Dart Energy for a decision as to whether any future planning application for a temporary exploratory borehole at Brooklands would need to be accompanied by an Environmental Impact Assessment (EIA). This is known as a request for a Screening Opinion. Officers confirmed on 24th April 2014, under delegated powers, that an EIA would not be required. This decision was in line with recommendations from the Environment Agency, Natural England and the Council's Public Protection Officer and also Government guidance.

Planning applications

Proposed development: Drilling of a temporary coal bed methane exploration borehole

Location: Land northwest of The Brooklands, Dudleston, Ellesmere

Applicant: Dart Energy

Submitted: 13th June 2014

Status: At the time of writing this report the application had yet to be validated.

Details of the submitted documents and decisions on the above can be viewed on the Council's Public Access webpages at:

<http://planningpa.shropshire.gov.uk/online-applications/>

APPENDIX 3

How do companies get permission to drill?

In its May 2014 consultation the Government has clarified the steps that operators need to take in seeking consent for underground drilling as follows:

1. Initial Licence – There are currently around 176 licences issued by DECC for onshore oil and gas in the UK.

2. Landowner(s) agreement to access the land for drilling – Companies need to obtain a right of access from landowners for both surface and underground land.

3. Planning permission from the local authority – A key part of this permission is consultation with the local community, where landowners will retain the right to oppose activity. This takes place at a formative stage before any activity has been permitted. There is provision for landowners whose underground land may be relevant to be notified through public notices. The planning authority may also require an Environmental Impact Assessment (EIA), in which case this will be part of the public consultation. The shale industry, through its trade body, has committed to carrying out EIAs where hydraulic fracturing is involved in the exploration stage.

4. Permits from the Environment Agency. In the case of shale gas, once an application for an environmental permit is made, the environmental regulator will publish details and publicise them on their website for public consultation. The regulator will not grant a permit if it believes the risks to be insufficiently mitigated or too great – and will take individual comments into account when deciding this.

5. Well plans examined by the Health and Safety Executive. In the UK all offshore and onshore wells must be designed and constructed in accordance with government regulations. Inspectors from the Health and Safety Executive (HSE) and an independent well examiner check that the operators are following the regulations. They review the well design and monitor its construction to ensure it matches the design. When construction is complete, they continue to monitor its maintenance. This will ensure well integrity and minimise the risk of leaks.

6. Consent for drilling or production. For any well which includes proposed fracking, DECC will consider the seismic risk before granting consent to drill; it will also require a copy of the planning permission, and that HSE and the environmental regulator are content for the activities to proceed, before consent is given.

Once companies have permission to drill, regulators will continue to monitor the activity and can stop the activity if they consider that there are imminent threats to safety or the environment.

Sources: Fracking UK shale: regulation and monitoring, DECC February 2014; Consultation on Proposal for Underground Access for the Extraction of Gas, Oil or Geothermal Energy, DECC May 2014

APPENDIX 4

Government consultation on proposals to reform procedure for gaining underground access

In May 2014 the Government commenced a consultation on proposals to reform the procedure for gaining underground access to oil and gas deposits and geothermal energy. The Queen's Speech of 4th June 2014 confirmed that Government plans to streamline underground access will, subject to this consultation, be provided by a new Infrastructure Bill. This would apply to shale gas proposals, but are not intended to apply to CBM developments as operators will already be able to obtain underground access under the terms of the Coal Industry Act 1994.

The Government considers that the current process is time consuming, uncertain and costly. At present a company wishing to carry out underground operations might have to pass through land belonging to a number of owners. In order to pass through the land, they must obtain the landowner's permission to do so. If the operator does not acquire these rights, or has not obtained a court order granting the rights, and proceeds regardless, they will have committed a trespass. Currently operators must negotiate these rights of access with every landowner living above underground drilling, even though those works occur far beneath the surface level – typically more than a mile down in the case of shale gas. In its consultation paper the Government has advised that this will not cause any inconvenience to the landowner. Given that a large area of underground land may be accessed in shale operations, companies may need to negotiate access rights with hundreds or possibly even thousands of land owners whose land is above that area.

The Government's view is that if nothing was done to address this issue, the commercial exploitation of shale gas and oil in Great Britain is unlikely to develop to a significant scale, in a timely manner, or at all. This is because the present system gives a single landowner the power to significantly delay a development regardless of how others in their community feel about it, and even though the drilling and use of underground wells does not affect their enjoyment of their land.

The Government is consulting on a proposed solution to this issue, comprising a statutory right of access to allow companies to access underground land for the purpose of extracting petroleum (and geothermal energy). There are three elements to the Government's proposals:

- a right of underground access (for land at least 300 metres below the surface);
- a payment in return for the right of access; the shale and geothermal industries have put forward a voluntary offer amounting to a £20,000 one-off payment for each unique lateral well that extend more than 200 metres laterally. The Government has stated that it supports this offer and that its preference is for this payment to be made to a relevant community body and not split between landowners
- a notification system for the community.

The consultation is open until 15th August 2014.

Reference: Consultation on Proposal for Underground Access for the Extraction of Gas, Oil or Geothermal Energy, Department of Energy and Climate Change, May 2014