

AGENDA SUPPLEMENT (1)

Meeting: Overview and Scrutiny Management Committee
Place: Kennet Room - County Hall, Trowbridge BA14 8JN
Date: Tuesday 5 July 2016
Time: 10.30 am

The Agenda for the above meeting was published on 27 June 2016. Additional documents are now available and are attached to this Agenda Supplement.

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This Agenda and all the documents referred to within it are available on the Council's website at www.wiltshire.gov.uk

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Wiltshire Council

Overview and Scrutiny Management Committee

5 July 2016

Subject: Hydrocarbon Extraction Briefing

Purpose of Report

In the context of the Petroleum Exploration and Development Licences (PEDLs) being offered by Government for four blocks of land in Wiltshire, this report provides information about hydrocarbon extraction to clarify the technical process, and considers national planning policies that are relevant to oil and gas exploration in the UK. It also reviews the Council's local planning policy and sets out the planning process in relation to hydrocarbon extraction applications.

Report Background

On 1 March 2016, the Overview and Scrutiny Management Committee received a motion on hydrocarbon extraction originally submitted to Full Council on 23 February 2016, following the granting of PEDL licences in the county. The Committee resolved that:

Officers undertake an investigation into hydrocarbon extraction, to include technical explanations of the process, current national policy, and the process of decision making, in particular what functions are devolved to local authorities or retained at a national level, and what policies are in place in Wiltshire Council in relation to these issues.

On 24 June 2016, the Committee received a presentation from Alistair Cunningham, Associate Director, Economic Development and Planning. This provided progress on the officer investigation, an explanation of national policy, regulatory controls and the decision making process. It was noted that although PEDL licences have been granted, no application had been received to begin exploration.

It was agreed that a finalised briefing assessing current policies with regard to hydrocarbon extraction would be provided to the Committee in July. Questions received by the Committee from 'Keep Wiltshire Frack Free' and the public have been considered in the preparation of this report.

Recommendation

That the Committee notes the report, which will be circulated to all Wiltshire Councillors.

ONSHORE HYDROCARBON EXTRACTION

Briefing Paper

Wiltshire Council

July 2016

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Background

1. Petroleum Exploration and Development Licences

- 1.1. On 17 December 2015, the Oil & Gas Authority (OGA) announced that licences for a total of 159 blocks were formally offered to successful applicants under the 14th Onshore Oil and Gas Licensing Round. Government offered Petroleum Exploration and Development Licences (PEDLs) for four blocks of land in Wiltshire, which encompass Westbury, Warminster, Trowbridge and parts of Bradford on Avon. More information on this process can be found in Councillor Briefing notes 252¹, 257², 270³, 271⁴.
- 1.2. The licence offers in Wiltshire have been made to South Western Energy Limited. Although their applications indicate the 'type' of activity as coal bed methane extraction, the award covers any hydrocarbon and is not limited to the 'type' specified.
- 1.3. A PEDL gives the licensee exclusivity over a defined area of land for onshore hydrocarbon exploration, appraisal and extraction, including for shale gas and oil as well as conventional forms of oil and gas. The award of a PEDL does not itself give any permission for operations to begin. There are three phases of oil and gas development which all require separate planning permissions and environmental permits (from the Environmental Agency) before each phase of development. These phases are followed by decommissioning, restoration and aftercare.

Phases of Oil and Gas Development

Exploration is the use of seismic surveys to provide information about geological structures and exploratory drilling to verify the presence or absence of oil or gas reserves.

Appraisal is the assessment of exploration prospects using extended well tests and additional drilling to determine if reservoir development is economically feasible.

Development and production cover the development of field infrastructure and the production of hydrocarbons from the reservoir until economically feasible reserves are depleted. Development and production can only be initiated by the operator once a field development plan has been submitted to and approved by OGA/DETI, as technically shale gas does not involve conventional fields.

Decommissioning, restoration and aftercare refer to operations for the abandonment of wells, the removal of surface installations and the restoration of the site.

Source: Department of Energy and Climate Change

¹ Councillor Briefing Note [252: Habitat Regulations Assessment](#)

² Councillor Briefing Note [257: Habitat Regulations Consultation Response](#)

³ Councillor Briefing Note [270: Consultation on Surface Development Restrictions](#)

⁴ Councillor Briefing Note [271: Outcome of Oil and Gas Licensing Round](#)

- 1.4. PEDLs are held by the operator for the various stages of the full development cycle of oil and gas development. PEDLs are routinely issued for a five-year Initial Term, but with an option on a Second Term where the applicant has, among other things, surrendered at least 50 percent of the initial acreage and completed an agreed exploration Work Programme. At the end of the five-year Second Term, the licensee can choose to continue their licence into a twenty-year Final Term, provided the OGA has approved a field development plan. There are other circumstances in which a licence may end - in particular, the licensee can relinquish it at any time and in certain circumstances the OGA may revoke it.
- 1.5. Although a consortium of companies can apply for a PEDL, one company has to be nominated and approved as “Operator” on the licence. This company will be responsible for the day-to-day management of operations under the licence. The company must meet the OGA’s Technical and Environmental competence criteria⁵ before they will be approved. Without this approval no activity can be undertaken under the licence.

2. Conventional and Unconventional Hydrocarbons

- 2.1. The term ‘conventional hydrocarbons’ refers to oil and gas that flows through porous rocks (e.g. limestone, sandstone) into reservoirs under impermeable layers/‘cap rock’. Vertical and sometimes horizontal drilling is used for extraction.
- 2.2. The term ‘unconventional hydrocarbons’ refers to oil and gas which is trapped in impermeable rock (e.g. shale). Different technology (e.g. fracking) is required to extract the hydrocarbons from ‘unconventional’ source rock.

3. What is Hydraulic Fracturing (‘fracking’)?

- 3.1. Hydraulic fracturing⁶ is a technique used in the extraction of oil or gas that operates by injecting water at high pressure to create narrow fractures in rock enabling shale gas to flow.
- 3.2. A well is drilled and several stages of metal pipes (“casing”) are set in concrete within the well to seal it and prevent contamination of surrounding groundwater. A well for shale gas will usually go down vertically to the shale layer and then run horizontally along it.
- 3.3. For shale gas (which is mostly methane), small particles (usually sand) are pumped into the fractures to keep them open when the pressure is released, so gas can flow into the well. Ninety-eight to ninety-nine percent of the mixture is water and sand.
- 3.4. Small quantities of chemicals are normally added to improve efficiency, for example, by reducing friction. In the UK, only non-hazardous chemicals can be

⁵ More information available at: <https://www.gov.uk/guidance/oil-and-gas-operatorship>

⁶ More information available at: <https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking>

used in the hydraulic fracturing process. The Environment Agency (EA) has the powers to require full disclosure of chemicals used in hydraulic fracturing. In its document 'Onshore Oil and Gas Exploration in England: [Regulation and Best Practice](#)', the Government states that operators should disclose the chemical additives of fracturing fluids on a well-by-well basis. This also is required in the guidelines set by industry.

- 3.5. Once the rock is fractured, some of the fluid returns to the surface, where it is sealed in containers before treatment. The gas can then flow through the well to surface operations which separate and process the gas. If a gas well goes into commercial production it will usually be connected to the country's network of gas pipelines.

4. Coal Bed Methane

- 4.1. Coalbed methane⁷ (CBM) is methane that is extracted from unworked coal seams. It is an unconventional gas resource and the majority of regulations and controls that apply to shale gas and shale oil also apply to CBM, particularly if hydraulic fracturing is involved. These regulatory controls⁸ are co-ordinated by the same UK regulators that regulate shale gas and shale oil development including the relevant MPA, Environment Agency (EA), Oil and Gas Authority (OGA), the Health & Safety Executive (HSE) and the Coal Authority.

5. Drilling for Coal Bed Methane

- 5.1. CBM is present at shallower depths than shale gas, typically between 150 - 1500 metres deep. Accessing the gas uses similar oil and gas drilling technologies to shale gas; however, the well configuration is different due to the need to pump groundwater out of the seam.
- 5.2. To extract CBM, a well is drilled into the coal seam and water is pumped out to lower the pressure in the seam. This allows methane to desorb from the internal surfaces of the coal enabling it to flow, either as free gas or dissolved in water towards the production well.
- 5.3. The quantity of gas produced from a well increases as the amount of water pumped out decreases. Permeability is necessary to achieve CBM production. The natural permeability of coal seams can be low, so some CBM wells are stimulated (by hydraulic fracturing) to improve connectivity between the well and the coal. The process of hydraulic fracturing may not actually be used if it is at shallower depth.
- 5.4. The gas is released in a controlled and safe manner by pumping out the water that occurs naturally in coal seams, or 'cleats', to reduce the underground pressure on the coal. The process is reversible and any gas left in the wellbore is re-adsorbed by the coal.

⁷ The Coal Authority have produced an [interactive map viewer](#) which provides information on the location of coalfields in England

⁸ More information available at: [PAS Planning For Shale Gas and Oil- March 2016](#)

6. National Government

6.1. Mineral Planning Authorities (MPAs) are advised to plan positively for shale gas and oil development proposal. The Government considers that shale gas and oil development should be part of the future energy mix, subject to continued environmental assessment and controls. Relatively little exploration and appraisal activity to assess the commercial viability of shale gas and oil has been undertaken in the UK, however recent Written Ministerial Statements are clear in their support for such exploration to take place in a safe and sustainable manner.

6.2. The Shale Gas and Oil Policy Statement⁹ by the Department of Energy and Climate Change (DECC) and Department for Communities and Local Government (DCLG) sets out the Government's view that there is a national need to explore and develop our shale gas and oil resources. The announced plans will ensure local people have a say over the development of shale exploration in their area and identified measures to prevent long delays in the planning system, including:

- The Communities Secretary actively considering 'calling in' shale planning applications on a case by case basis and considering recovering appeals
- Identifying Councils that repeatedly fail to determine oil and gas applications within the 16 week statutory timeframe requirement (unless applicants agree to a longer period).
- Underperforming Councils' gas and oil planning applications could be determined by the Communities Secretary.
- Adding shale applications as a specific criterion for recovery of appeals, to ensure no application can 'fall through the cracks'.
- Ensuring planning 'call ins' and appeals involving shale applications are prioritised by the Planning Inspectorate.

7. Hydraulic Fracturing Operations- Regulation Process

7.1. Oil and gas development exists within a complex regulatory regime. The DECC has produced a [Best Practice publication](#) which provides detailed information on the process operators must follow when seeking to drill for any form of onshore oil and gas in the UK and addresses the key issues that might be raised. This publication includes a 'road map' of the planning and regulatory process (**Appendix 1**).

7.2. In order to pursue any proposal for oil and gas development within a licensed area, the licence holder will be required to follow existing planning and regulatory processes, i.e. applying for planning permission and relevant environment permits, to gain consent to drill from the OGA. The licensee's proposals will also be subject to scrutiny by the HSE.

7.3. As well as gaining planning permission, the operator must also gain a 'well consent' for exploration from the DECC before commencing works. The DECC also consults with the EA and the HSE at this stage. The EA may also require environmental permits for mining waste activities, and radioactive substance

⁹ [Shale Gas and Oil Policy Statement-DECC and DCLG](#)

activities (i.e. management of naturally occurring radioactive material). If the company then wishes to go into production (i.e. actually extracting oil/gas) it must gain a new planning permission from the MPA, a Field Development Consent from the DECC, and an environmental permit(s) from the EA, with processes similar to those above.

7.4. The roles of the key regulators are explained below:

- The Department for Energy and Climate Change
The DECC issues Petroleum Licences, gives consent to drill under the licence once other permissions and approvals are in place, and has responsibility for assessing risk of and monitoring seismic activity, as well as granting consent to flaring or venting.
- The Environment Agency
The EA, through the environmental permitting regime, protects water resources (including groundwater aquifers), ensures appropriate treatment and disposal of mining waste, emissions to air, and suitable treatment and management of any naturally occurring radioactive materials.
- The Health and Safety Executive
The HSE regulates the safety aspects of all phases of extraction, in particular responsibility for ensuring the appropriate design and construction of a well casing for any borehole.

7.5. Access agreement(s) with relevant landowner(s), will also be required and development can only commence once landowner access, and all other permissions and consents have been obtained. Operators wishing to drill a well must secure a lease and negotiate access from the landowner.

8. Monitoring of Hydraulic Fracturing Operations

- 8.1. The DECC has produced a document which provides information on the [regulation and monitoring](#) of shale oil and gas sites.
- 8.2. This explains that well operators have a legal duty to manage and control the risks to people. The HSE 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 intends to jointly inspect drilling and fracking operations with the Environment Agency during the exploratory phase. HSE inspectors can visit any site at any time if there is a matter of concern.
- 8.3. 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.

The Planning Process

9. The Role of the Mineral Planning Authority

- 9.1. Obtaining planning permission is one of the main regulatory requirements that operators must meet before any conventional or unconventional oil and gas development can take place. The planning system manages the development and use of land in the public interest, and this includes:
- Ensuring that new development is appropriate for its location taking account of the effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and;
 - The potential sensitivity of the area or proposed development to adverse effects from pollution.
- 9.2. In doing so, the focus of the planning system will be on:
- Whether the development itself is an acceptable use of the land;
 - What the potential impacts of those uses (e.g. on communities and the environment) may be and any control (mitigation) processes; and
 - Health and safety issues or emissions themselves where these are subject to approval under other regimes.
- 9.3. Any planning application for oil and gas development must be submitted to the MPA, which is Wiltshire Council for applications made within Wiltshire. Oil and gas developments are not considered to be a part of the Government's major infrastructure planning regime (which applies to certain kinds of infrastructure projects, and which are determined by the Planning Inspectorate) and all oil and gas developments are decided by the local MPA.
- 9.4. A change in legislation came into force in April 2016 with regard to the drilling of boreholes for, inter alia, monitoring and investigative activities for the purposes of potential petroleum exploration, including the monitoring of groundwater. The change brought in by amended 'permitted development' rights allow "*subject to conditions and limitations, the drilling of boreholes for the purposes of:*
- *carrying out groundwater monitoring;*
 - *carrying out seismic monitoring; or*
 - *locating and appraising the condition of mine operations, which is preparatory to potential petroleum exploration*"¹⁰
- 9.5. One such limitation is that development is not permitted if the developer has not previously notified the MPA in writing of its intention to carry out the development (specifying the nature and location of the development).

¹⁰ The Town and Country Planning (General Permitted Development) (England) (Amendment) Order 2016 CM09739/1

10. National Policy

- 10.1. Section 38 (6) of the Planning and Compulsory Purchase Act 2004 requires planning applications to be determined in accordance with the Development Plan, unless material considerations indicate otherwise. Material considerations include relevant policy and guidance, particularly national planning policy in the National Planning Policy Framework (NPPF) and other relevant Government policy statements, as well as that which is provided within the Planning Practice Guidance (PPG).

11. National Planning Policy Framework

- 11.1. The NPPF, published in March 2012, sets out the Government's planning policies for England. Key sections of the NPPF relevant to shale oil and gas that should be given weight include:

- Paragraph 14 - *'At the heart of the NPPF is a presumption in favour of sustainable development'*
- Paragraph 142 - *'important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs'*
- Paragraph 144 - *'When determining planning applications, local planning authorities should... give great weight to the benefits of mineral extraction, including to the economy...(and) ensure...that there are no unacceptable adverse impacts on the natural and historic environment, human health..'*
- Paragraph 147 - *'MPAs should...when planning for on-shore oil and gas developments, 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.'*

- 11.2. In assessing planning applications for shale oil and gas, MPAs will also consider other policies within the NPPF that are material to the circumstances of the case.

12. Planning Practice Guidance

- 12.1. Planning Practice Guidance (PPG) is intended to be read alongside the NPPF.
- 12.2. [Section 9](#) of the PPG on minerals deals with planning for hydrocarbon extraction and was issued on 6 March 2014. Many parts of the guidance may be relevant to shale oil and gas proposals depending on the circumstances of the case but the following should be given weight:

- Paragraph 91- *'As an emerging form of energy supply, there is a*

pressing need to establish - through exploratory drilling – to assess whether or not there are sufficient recoverable reserves to allow full scale production on an economically viable scale...’

- Paragraphs 105 and 106- *‘MPAs are encouraged to make appropriate provision for hydrocarbons in mineral local plans...Where they consider it necessary to update their local plans and they are in a PEDL they are expected to include Petroleum Licence areas on policies maps and criteria based policies for each of the exploration, appraisal and production phases of hydrocarbon extraction.’*
- Paragraph 112- *‘There exist a number of issues which are covered by other regulatory regimes and MPAs should assume that these regimes will operate effectively. Whilst these issues may be put before MPAs, they should not need to carry out their own assessment as they can rely on the assessment of other regulatory bodies. However, before granting planning permission they will need to be satisfied that these issues can or will be adequately addressed by taking the advice from the **relevant regulatory body**:*
 - *Mitigation of seismic risks –the **Department of Energy and Climate Change** is responsible for controls, usually through the licence consent regime to mitigate seismic risks. Seismic assessment of the geology of the area to establish the geological conditions, risk of seismic activity and mitigation measures to put in place is required by the Department of Energy and Climate Change for all hydraulic fracturing processes;*
 - *Well design and construction – the **Health and Safety Executive** are responsible for enforcement of legislation concerning well design and construction. Before design and construction operators must assess and take account of the geological strata, and fluids within them, as well as any hazards that the strata may contain;*
 - *Well integrity during operation – under health and safety legislation the integrity of the well is subject to examination by **independent qualified experts** throughout its operation, from design through construction and until final plugging at the end of operation;*
 - *Operation of surface equipment on the well pad – whilst planning conditions may be imposed to prevent run-off of any liquid from the pad, and to control any impact on local amenity (such as noise), the actual operation of the site’s equipment should not be of concern to mineral planning authorities as these are controlled by the **Environment Agency** and the **Health and Safety Executive**;*
 - *Mining waste – the **Environment Agency** is responsible for ensuring that extractive wastes do not harm human health and the environment. An environmental permit is required for phases of hydrocarbon extraction and this will require the operator to produce and implement a waste management plan;*

- Chemical content of hydraulic fracturing fluid – this is covered by the environmental permit as operators are obliged to inform the **Environment Agency** of all chemicals that they may use as part of any hydraulic fracturing process;
- Flaring or venting of any gas produced as part of the exploratory phase will be subject to **Department of Energy and Climate Change** controls and will be regulated by the **Environment Agency**. **Mineral planning authorities** will, however, need to consider how issues of noise and visual impact will be addressed;
- Final off-site disposal of water - Water that comes back to the surface following hydraulic fracturing may contain naturally occurring radioactive materials. Whilst storage on-site and the traffic impact of any movement of water is of clear interest to local authorities, it is the responsibility of the **Environment Agency** to ensure that the final treatment/disposal at suitable water treatment facilities is acceptable;
- Well decommissioning/abandonment - following exploration, the well is likely to be suspended and abandoned for a period of time. Health and Safety Legislation requires its design and construction that, so far as reasonably practicable, there is no unplanned escape of fluids from it. The **mineral planning authority** is responsible for ensuring the wells are abandoned and the site is restored.'

13. Local Plan Policies

- 13.1. Wiltshire Council, as MPA, is responsible for mineral planning policy. The adopted minerals and waste policy for Wiltshire County and Swindon Borough sits within a suite of adopted plans, prepared on a joint basis with Swindon Borough Council and includes:

The **Wiltshire and Swindon Minerals Core Strategy** (adopted June 2009) sets out the spatial vision, key objectives and overall principles for development covering minerals provision up to 2026.

The **Wiltshire and Swindon Minerals Development Control Policies Development Plan Document** (DPD) (adopted September 2009) sets out a limited suite of generic development control policies designed to assist with the process of determining planning applications for minerals development.

The **Wiltshire and Swindon Aggregate Minerals Site Allocations DPD** (adopted May 2013) sets out a schedule of seven sites for future sand and gravel extraction over the period up to 2026.

- 12.2 Collectively the documents are referred to as the Wiltshire and Swindon Minerals and Waste Development Framework.

14. Evidence Base

- 14.1. All aspects of the Councils' Minerals and Waste Development Framework are founded on robust and credible evidence. To accompany the Minerals Core Strategy and all other documents in the Framework, the Councils' prepared a detailed Evidence Base Document.
- 14.2. The 'Wiltshire & Swindon Minerals and Waste Development Framework, Evidence Base, Part C: Minerals, June/July 2012' (the "[Minerals Evidence Base Report](#)") provides information and data relating to the need for minerals supply within the plan area of Wiltshire and Swindon. With regard to Hydrocarbons, the Minerals Evidence Base Report states that: "*Extensive exploration operations have revealed no workable oil and gas reserves in Wiltshire and Swindon, although pressure for further exploration in the future cannot be ruled out*".
- 14.3. In 2004, the British Geological Survey prepared a series of reports for various administrative areas in England for the then Office of the Deputy Prime Minister's research project 'Mineral Resource Information in Support of National, Regional and Local Planning'. The purpose of the work was to assist all interested parties involved in the preparation and review of development plans, both in relation to the extraction of minerals and the protection of mineral resources from sterilisation. The mineral resources covered in the report include hydrocarbons.
- 14.4. Section 7.1 explores the Conventional Oil and Gas potential and concluded "*the geological setting of, and exploration results in the County suggests that hydrocarbon prospectively is likely to be poor*".
- 14.5. Section 7.2 explores Coal Bed Methane potential in the County and notes; "*Concealed coal-bearing strata are essentially absent in Wiltshire except for a small and poorly defined area of the Somerset- Bristol in the extreme west. The levels of coalbed methane in the coal seams of the Somerset-Bristol Coalfield are not accurately known, but are low (ca. 0.1m³t⁻¹). Thus the potential; for coalbed methane development from the virgin coal seams in Wiltshire is unlikely to exist.*"

15. Review of Planning Policy

- 15.1. Paragraph 163 of the NPPF states: "*Minerals planning authorities should work with other relevant organisations to use the best available information to:*

- *Develop and maintain an understanding of the extent and location of mineral resource in their areas; and*
- *Assess the projected demand for their use, taking full account of opportunities to use materials from secondary and other sources which could provide suitable alternatives to primary materials.*"

- 15.2. Planning Practice Guidance on 'Planning for Hydrocarbon Extraction' states that

where MPAs consider it is necessary to update their local plan and they are in a Petroleum Licence Area, they are expected to include the following:

- *Petroleum Licence Areas on their policies maps;*
- *Criteria-based policies for each of the exploration, appraisal and production phases of hydrocarbon extraction. These policies should set clear guidance and criteria for the location and assessment of hydrocarbon extraction within the Petroleum Licence Areas.*

15.3. PPG for onshore oil and gas identifies the principle issues which should be addressed at the planning application stage for any oil and gas development (only relevant issues will apply to individual proposals). These include:

- noise associated with the operations;
- dust;
- air quality;
- site lighting;
- visual intrusion;
- impact on the landscape character;
- archaeological and heritage features;
- traffic to and from the site;
- the risk of contamination of the land;
- soil resources;
- the impact on any 'best and most versatile' agricultural land present within the site;
- flood risk;
- land stability / subsidence;
- internationally, nationally, and locally designated sites;
- nationally protected geological and geomorphological sites and features;
- and sites restoration and aftercare.

15.4. The principle aim of the Wiltshire and Swindon Minerals Development Control Policies DPD document is to ensure that applications for minerals development received by Wiltshire Council and Swindon Borough Council (the Councils) result in sites that are operated and managed to high standards with minimum impacts to local communities and the environment.

15.5. The DPD commences with an overarching policy (MDC1: Key criteria for sustainable minerals development) that requires proposals for minerals development to contribute to the delivery of sustainable development in Wiltshire and Swindon by ensuring that the social, economic and environmental benefits of minerals development are maximised, and adverse impacts - including cross- boundary and cumulative impacts - are kept to an acceptable minimum.

15.6. The remaining policies are designed to manage the following aspects of minerals development:

- Protection of residential amenity and the environment from impacts associated with noise, dust, lighting, vibration and emissions to air
- Impacts upon groundwater and surface water
- Enabling appropriate non-minerals development within

- minerals safeguarding areas
- Protection and enhancement of Wiltshire and Swindon's landscape character
- Protection and enhancement of Wiltshire and Swindon's biodiversity and geological interest
- Protection of Wiltshire and Swindon's historic environment
- Ensuring that minerals development minimises HGV miles for transporting minerals by road and minimises the impacts upon other transport networks
- A comprehensive approach to managing the restoration of minerals developments that will deliver a range of afteruses and provide tangible benefits to the local area.

15.7. Key policies of the Minerals Development Control DPD are outlined below and a full set of policies are included in **Appendix 2**.

Minerals Development Control Policies DPD

Managing the impacts of minerals development

Policy MDC2 indicates that applications for minerals development in Wiltshire and Swindon will only be permitted where it is demonstrated that the proposal avoids and / or adequately mitigates significant adverse impacts associated with the following environmental considerations:

- Noise levels;
- Dust levels;
- Air emissions;
- Lighting; and
- Vibration levels.

Proposals for mineral development should be accompanied, where necessary, by an assessment of the impact of the proposal in terms of noise, dust, air emissions, lighting, and vibration.

Managing the impact on surface water and groundwater resources

Policy MDC3 indicates that proposals for minerals development will only be permitted where it can be demonstrated that appropriate controls will be made available to protect and, where appropriate, enhance the water environment. This includes making provisions to ensure the protection and maintenance of: The quality of groundwater, water courses and other surface water; and The volume / levels of groundwater, water courses and other surface water

Protection and enhancement of Wiltshire and Swindon's landscape character

Policy MDC5 requires that proposals include an assessment of the adverse impacts upon Wiltshire and Swindon's landscape character and the landscape character of adjacent areas, as deemed appropriate to the scale and nature of the development, and in particular in relation to the following designated areas:

- The New Forest National Park
- The Cranborne Chase and West Wiltshire Downs Area of Outstanding Natural Beauty
- The Cotswolds Area of Outstanding Natural Beauty
- The North Wessex Downs Area of Outstanding Natural Beauty.

Landscape and Visual Effects Assessments are used to understand how a development will change the local landscape character and the appearance of key views.

Biodiversity and geological interest

Policy MDC6 requires that proposals be accompanied by an objective assessment of the potential effects of the development on features of biodiversity and/or geological interest. The assessment must have particular regard to the need to maintain and / or enhance sites and species of international and national importance in accordance with the relevant statutory requirements. The assessment must also consider carefully the need to maintain and / or enhance features of local and regional importance.

The historic environment

Policy MDC7 indicates that proposals will only be permitted where it can be demonstrated through a process of assessment that historic assets of archaeological or cultural heritage importance and their settings can be appropriately protected, enhanced and/or preserved. Proposals affecting historic assets known or potential archaeological importance will be required to be accompanied by an appropriate archaeological evaluation.

Sustainable transport and minerals development

Policy MDC8 indicates that minerals development will only be permitted where it is demonstrated that proposals facilitate sustainable transport by:

- Minimising transportation distances;
- Maximising the use of rail or water to transport minerals where practicable and environmentally acceptable;
- Ensuring a proposal has direct access or has suitable links with the Wiltshire HGV Route Network or primary route network;
- Establishing mineral site transport plans;
- Mitigating or compensating for any adverse impact on the safety, capacity and use of a highway, railway, canal route, cycleway or public right of way, through improvements to the appropriate network where necessary.

A comprehensive Transport Assessment will be required to be submitted with a planning application where a development is likely to have significant transport and related environmental impacts.

- 15.8. In addition, to the above policies, the Wiltshire Core Strategy contains a number of policies that may be considered relevant to determining applications for hydrocarbon development and are also included in **Appendix 2**. In assessing planning applications for shale oil and gas, MPAs will also consider policies within the NPPF that are material to the circumstances of the case.
- 15.9. The [Guidance Note](#) 'Shale Gas and Oil Exploration and Planning', prepared by the Planning Advisory Service (PAS) notes that shale gas and oil development is too recent a phenomenon to be addressed in plans produced under the old and new plan-making system. Policies are only likely to exist for conventional (i.e. not involving hydraulic fracturing) hydrocarbon exploration, appraisal and production in areas which have seen this activity in the past.

15.10. The Note advises that MPAs which fall in areas that are the subject of PEDLs issued by the DECC, will need to consider the issues likely to be raised by shale gas and oil development. This includes those MPAs which have up-to-date policies on conventional hydrocarbon exploration, appraisal and production. It considers that in the interim, decisions on individual shale gas proposals are likely to give more weight to the 'material considerations' which apply. A full copy of the Guidance Note can be found in **Appendix 3**.

16. Planning Application Process

16.1. The MPA determines applications in accordance with planning law. Before the MPA takes a decision, it will consider the advice provided by other agencies, such as the Environment Agency, on important matters such as the protection of the environment and public.

16.2. The focus of the planning system is on whether the development is an acceptable use of the land, and the impacts of those uses, rather than any control processes, health and safety issues or emissions, where these are subject to approval under other regimes (as identified in paragraph 12.12). In line with Planning Practice Guidance, MPAs should assume that these non-planning regimes will operate effectively.

16.3. The planning application process can be separated into six key stages. The process is largely governed by legislation and is designed to allow the input of expert and interested parties into the decision making process. The six stages can be described as follows:

Step 1 - Validation

Applications are checked to make sure all documents and fees required have been submitted. Any missing information will be requested before processing can start.

Step 2 - Consultation and publicity

Consultations are sent to various bodies to obtain their expert view. Advertisements, where required, are placed in the appropriate local paper and on site and indicate how to view plans and how to comment on them, usually 21 days from the date of publishing.

Step 3 - Consideration

The site is inspected and the application assessed by the planning case officer, taking into account planning policies, consultation responses and public representations.

Step 4 - Negotiation

If problems are identified with the application which there is scope to address through alterations to the proposal, the officer will contact the applicant to seek suitable amendments. Steps 2 and 3 may require to be repeated if amendments which significantly change the application are made.

Step 5 - Recommendation

The planning officer will make a recommendation, via the officers' report on the application to the person or body authorised to make a decision.

This will be the relevant committee of the council or individual who has delegated powers to make the decision. If the application is to be decided at a committee meeting, the objectors and the applicant will be contacted to be advised of the time and venue of the meeting. All meetings are held in public and all interested parties are free to attend and observe how a decision is reached.

Step 6 - Decision

A decision is taken on the application by the appropriate body.

- 16.4. Where the decision lies with a committee, there may be a site inspection by the committee. In reaching a decision, the committee is required by law to limit the matters it takes into account to the "Development Plan" and other material considerations.

17. Environmental Impact Assessment

- 17.1. The MPA will determine whether an Environmental Impact Assessment (EIA) is required depending on the proposal. In some cases, minor initial seismic work may be considered to be 'permitted development' and would not require planning permission. If the exploration stage results in the need for further appraisal work or full scale production, planning permission will also be required from the MPAs.
- 17.2. The aim of an EIA is to protect the environment. It ensures that the MPA when deciding whether to grant planning permission for a project (which is likely to have significant effects on the environment) does so in the full knowledge of the likely significant effects and takes this into account in the decision making process.
- 17.3. If an EIA is required, the developer can ask the MPA for an opinion as to the scope and level of detail that should be covered before submitting any planning application. In other areas of England where planning applications have come forward, the submitted Environmental Statement has covered issues such as archaeology, ecology, landscape and visual amenity, traffic, noise, air quality, water resources, seismicity, waste, and lighting.
- 17.4. Case law and guidance has stressed the need for a full set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant planning permission.

18. Pre Application

- 18.1. In line with good practice, operators are encouraged to undertake a pre-application consultation with the MPA and other key consultees. This consultation will be expected to address issues such as noise, ecology, archaeology, site access and visual impact. It will define arrangements for permits from and contact with appropriate regulatory agencies. It will also detail consultative checks made with local water and power suppliers.

19. Opportunities for public consultation

- 19.1. Public consultation forms part of every oil and gas application for planning permission.
- 19.2. Wiltshire Council as MPA will advertise and consult on individual planning applications. Notice will be given when an application has been validated and accepted by writing to residents and businesses near the application site or putting up a site notice. Information about the application will be made available on the Wiltshire Council website. Local communities will have the opportunity at this time to express their views on the application as part of the planning application process.
- 19.3. The Environment Agency (EA) will carry out public consultation for the issue of environmental permits. The length of time for these consultations varies from 4 to 12 weeks, depending on the complexity of the application. They would be advertised in the most appropriate way, depending on the circumstances. Often this will be done through local media and the EA's website, alongside targeted e-mails to interested parties.
- 19.4. As a matter of best practice, UKOOG's [Community Engagement Charter](#) also sets out that communities must be engaged from the very start of the planning application process where shale gas is being developed.

20. Considering Environmental Impacts

- 20.1. As confirmed in the Planning Practice Guidance, there are specific arrangements for considering and determining planning applications that have been subject to an EIA. It includes consideration of the adequacy of the information provided, consultation, publicity, and informing the public of the decision and the main reasons for it. The MPA should take into account the information in the Environmental Statement (ES), the responses to consultation and any other relevant information when determining a planning application.
- 20.2. It is the applicant's responsibility to prepare the ES. There is no statutory provision as to the form of an ES, although it must constitute a "single and accessible compilation."
- 20.3. The type of assessments and technical studies undertaken would need to accord with relevant UK environmental legislation and guidance, as well as topic specific legislation and guidance. It would be expected that the assessments include an explanation of the approach to defining the significance of any resulting potential effects identified by reference to published standards, guidelines and best practice criteria.
- 20.4. Generally, the content of an ES would be based on a review of the current situation through existing data, information and reports; desk-top studies; site surveys; computer modelling; consideration of relevant planning policies (national, regional and local); identification of likely environmental impacts and an evaluation of their likely duration; magnitude and significance; consideration of potential sensitive receptors; expert opinion; use of technical

guidance and best practice; and specific consultations with appropriate bodies.

- 20.5. The adequacy of the ES and planning application would be tested through the consultation and publicity process. Consultees will have the opportunity to review the ES and comment on the application for the proposal. Consultees may assist the MPA and advise on the adequacy and conclusions of the assessments. In addition to scrutiny and review through consultation with both internal professional officers and consultees, the MPA can arrange for the ES to be independently reviewed.
- 20.6. If planning permission is granted, the MPA will monitor and inspect operations to ensure that they comply with any conditions imposed.

Next Steps

21. Working with other Authorities

- 21.1. A number of other MPAs, particularly those with existing conventional oil and gas operations within their area, have produced Frequently Asked Questions (FAQ) documents to assist with information sharing. Wiltshire Council can make similar information available on its website.
- 21.2. Officers are following those MPAs who have received and determined planning applications for oil and gas development in order to keep up to date with best practice. In addition, officers continue to attend training events on the subject and participate in an informal working group on energy minerals comprising officers from Somerset County Council, Bath & North East Somerset Council, North Somerset Council, Mendip District Council and the Environment Agency.

22. Resource Implications

- 22.1. It should be noted Planning Practice Guidance does not specifically require MPAs to update their Local Plan in respect of hydrocarbon extraction, only to *'consider whether it is necessary to update the Plan'*. The Council has (particularly in the form of the Minerals Development Control Policies DPD) a number of planning policies in place designed to assist with the process of determining planning applications for minerals development and assessing the likely environmental effects of a proposal alongside the NPPF.
- 22.2. The Guidance Note 'Shale Gas and Oil Exploration and Planning', prepared by the Planning Advisory Service (PAS) advises that the issue of determining applications in a timely and appropriate manner when faced with a large number of representations and enquiries is something that authorities may find challenging in relation to shale gas and oil development applications. The Council will therefore need to consider how to resource the determination of applications.
- 22.3. The Council, working alongside other regulatory bodies will need to be equipped

to handle any high level of interest and potential opposition to 'fracking' applications by local communities and anti-fracking groups.

- 22.4. In 2015/16, a £1.2 million shale support programme from DCLG was made available for local authorities to ensure there are adequate resources locally to enable the timely determination planning applications for shale gas. DCLG has yet to announce any arrangements for 2016/17.

23. Conclusion

- 23.1. This report outlines the current position with respect to shale gas (fracking) and coalbed methane development, both nationally and in Wiltshire. 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 achieving benefits, both economically and in terms of energy security.
- 23.2. Following the granting of PEDL licences, Wiltshire Council has not received any application in relation to oil and gas exploration and hydraulic fracturing. Before an application is submitted, it is expected that engagement between the licensee and public will occur.
- 23.3. It is considered that the planning system and current national and local planning policy provides an appropriate basis for assessing the environmental implications of any such future proposals. 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.
- 23.4. The Council will continue to review the progress of PEDL licences both within Wiltshire and other Local Authority areas.

Alistair Cunningham
Associate Director;
Economic Development and Planning

28th June 2016

Background Documents

The following documents have been relied on in the preparation of this report:

- [‘Planning for Shale Gas and Oil’](#), Briefing Note, March 2016, Planning Advisory Service.
- [Planning for Hydrocarbon extraction](#); March 2014, Planning Practice Guidance.
- [Onshore oil and gas exploration in the UK](#): Onshore Oil and Gas, Regulation and Best Practice, December 2015, DECC.
- [‘The Minerals Evidence Base Report’](#) Wiltshire & Swindon Minerals and Waste Development Framework, Evidence Base, Part C: Minerals, June/July 2012’
- [‘Mineral Resource Information in Support of National, Regional and Local Planning’](#), The British Geological Survey, 2014
- [Mineral Resource Map of Wiltshire](#), The British Geological Survey, 2014

Useful Websites

- Planning Advisory Service (PAS): http://www.pas.gov.uk/pre-application/-/journal_content/56/332612/7136751/ARTICLE
- DECC Website: <https://www.gov.uk/government/organisations/department-of-energy-climate-change>
- United Kingdom Onshore Operators’ Group: www.ukoog.org.uk
- Oil and Gas Authority: www.gov.uk/government/organisations/oil-and-gas-authority
- Environment Agency: www.gov.uk/government/organisations/environment-agency
- Health and Safety Executive: www.hse.gov.uk/offshore/unconventional-gas.htm
- British Geological Society: www.bgs.ac/shalegas
- Public Health England: www.gov.uk/government/organisations/public-health-england
- The UK Onshore Geophysical Library (UKOGL): <http://ukogl.org.uk/>

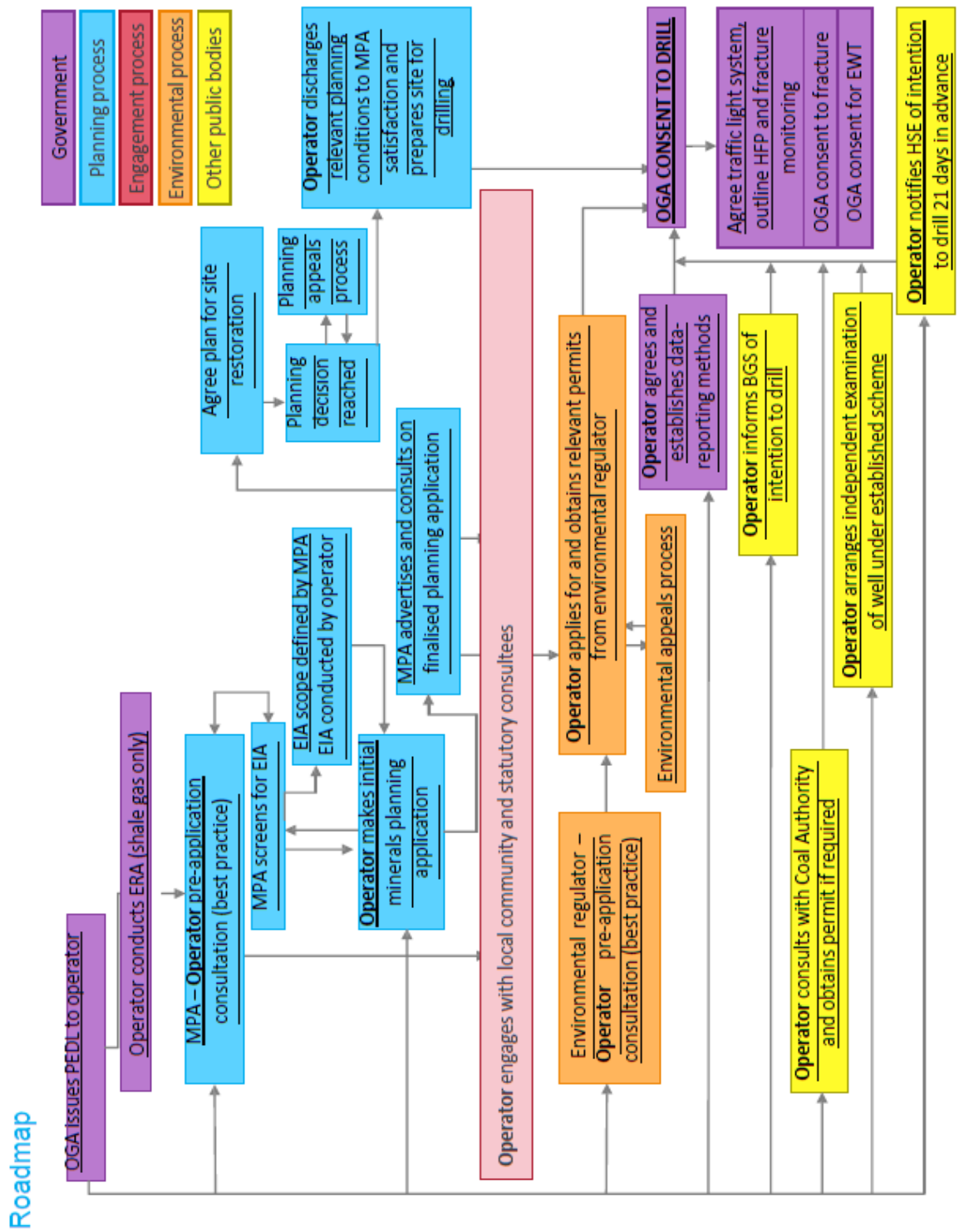
Publications

- [UK onshore shale gas well guidelines](#)
Exploration and appraisal phase, UKOOG, Issue 1 February 2013
- [Shale gas extraction in the UK: a review of hydraulic fracturing](#)
Royal Society and Royal Academy of Engineering report, June 2012
- [Bowland Shale Gas Study – Main Report](#)
The Carboniferous Bowland Shale gas study: geology and resource estimation.
DECC
- [Background note on induced seismicity in the UK and its relevance to hydraulic stimulation for exploration for shale gas](#)
Professor Peter Styles (Keele University) and Dr Brian Baptie (British Geological Survey), April 2012
- [Guidance note: Regulation of exploratory shale gas operations](#)
Environment Agency
- [Government response to Royal Academy of Engineering and Royal Society report on “Shale gas extraction in the UK: a review of hydraulic fracturing”](#)
Version: Final A04- 10 December 2012
- [Planning practice guidance for onshore oil and gas](#)
Department for Communities and Local Government, July 2013

Glossary

BGS	British Geological Survey
DCLG	Department for Communities and Local Government
DECC	Department of Energy and Climate Change
DPD	Development Plan Document
EA	Environment Agency
EIA	environmental impact assessment
ES	environmental statement
HSE	Health and Safety Executive
LPA	local planning authority
MDC	minerals development control
MPA	mineral planning authority
NPPF	National Planning Policy Framework
NPPG	National Planning Policy Guidance
OSMC	Overview and Scrutiny Management Committee
OGA	The Oil and Gas Authority
PAS	Planning Advisory Service
PEDL	petroleum exploration and development licence
UKOOG	United Kingdom Onshore Operators Group

Appendix 1: DECC Regulation and Best Practice Road Map



Appendix 3

Wiltshire Core Strategy

The local plan sets out local planning policies and identifies how land is used, determining what will be built where. In Wiltshire, the local plan includes the [Wiltshire Core Strategy](#), saved policies from district local plans and minerals and waste plans. The Core Strategy replaces the South Wiltshire Core Strategy and many saved policies from former district local plans.

	Core Policies
Core Policy 41	<p>Sustainable construction and low-carbon energy Renewable and low-carbon energy All proposals for major development⁸⁷ will be required to submit a Sustainable Energy Strategy alongside the planning application outlining the low-carbon strategy for the proposal.</p> <p>In all cases, including those listed above, proposals relating to historic buildings, listed buildings and buildings within conservation areas and world heritage sites should ensure that appropriate sensitive approaches and materials are used.</p> <p>Safeguarding of the significance of heritage assets should be in accordance with appropriate national policy and established best practice⁸⁸. In all cases the impact of these requirements on the viability of development will be taken into consideration.</p>
Core Policy 50	<p>Core Policy 50 Biodiversity and geodiversity Protection Development proposals must demonstrate how they protect features of nature conservation and geological value as part of the design rationale.</p> <p>There is an expectation that such features shall be retained, buffered, and managed favourably in order to maintain their ecological value, connectivity and functionality in the long-term. Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource, and secure the integrity of local ecological networks and provision of ecosystem services.</p> <p>All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development. Any development potentially affecting a Natura 2000 site must provide avoidance measures in accordance with the strategic plans or guidance set out in paragraphs 6.75-6.77 above where possible, otherwise bespoke measures must be provided to demonstrate that the proposals would have no adverse effect upon the Natura 2000 network. Any development that would have an adverse effect on the integrity of a European nature conservation site will not be in accordance with the Core Strategy.</p> <p>Biodiversity enhancement All development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services. Such enhancement</p>

	<p>measures will contribute to the objectives and targets of the Biodiversity Action Plan (BAP) or River Basin/ Catchment Management Plan, particularly through landscape scale projects, and be relevant to the local landscape character.</p> <p>Local sites Sustainable development will avoid direct and indirect impacts upon local sites through sensitive site location and layout, and by maintaining sufficient buffers and ecological connectivity with the wider environment. Damage or disturbance to local sites will generally be unacceptable, other than in exceptional circumstances where it has been demonstrated that such impacts:</p> <ul style="list-style-type: none"> i. cannot reasonably be avoided ii. are reduced as far as possible iii. are outweighed by other planning considerations in the public interest iv. where appropriate compensation measures can be secured through planning obligations or agreements. <p>Development proposals affecting local sites must make a reasonable contribution to their favourable management in the long-term.</p>
<p>Core Policy 51</p>	<p>Landscape Development should protect, conserve and where possible enhance landscape character and must not have a harmful impact upon landscape character, while any negative impacts must be mitigated as far as possible through sensitive design and landscape measures. Proposals should be informed by and sympathetic to the distinctive character areas identified in the relevant Landscape Character Assessment(s) and any other relevant assessments and studies. In particular, proposals will need to demonstrate that the following aspects of landscape character have been conserved and where possible enhanced through sensitive design, landscape mitigation and enhancement measures:</p> <ul style="list-style-type: none"> i. The locally distinctive pattern and species composition of natural features such as trees, hedgerows, woodland, field boundaries, watercourses and waterbodies. ii. The locally distinctive character of settlements and their landscape settings. iii. The separate identity of settlements and the transition between man-made and natural landscapes at the urban fringe. iv. Visually sensitive skylines, soils, geological and topographical features. v. Landscape features of cultural, historic and heritage value. vi. Important views and visual amenity. vii. Tranquillity and the need to protect against intrusion from light pollution, noise, and motion. viii. Landscape functions including places to live, work, relax and recreate. ix. Special qualities of Areas of Outstanding Natural Beauty (AONBs) and the New Forest National Park, where great weight will be afforded to conserving and enhancing landscapes and scenic beauty. <p>Proposals for development within or affecting the Areas of Outstanding Natural Beauty (AONBs), New Forest National Park (NFNP) or Stonehenge and Avebury World Heritage Site (WHS) shall demonstrate that they have taken account of the objectives, policies and actions set out in the relevant Management Plans for these areas. Proposals for development outside of an AONB that is sufficiently prominent (in terms of</p>

	<p>its siting or scale) to have an impact on the area's special qualities (as set out in the relevant management plan), must also demonstrate that it would not adversely affect its setting.</p>
<p>Core Policy 52</p>	<p>Green infrastructure Development shall make provision for the retention and enhancement of Wiltshire's green infrastructure network, and shall ensure that suitable links to the network are provided and maintained. Where development is permitted developers will be required to:</p> <ol style="list-style-type: none"> i. retain and enhance existing on site green infrastructure ii. make provision for accessible open spaces in accordance with the requirements of the adopted Wiltshire Open Space Standards iii. put measures in place to ensure appropriate long-term management of any green infrastructure directly related to the development iv. provide appropriate contributions towards the delivery of the Wiltshire Green Infrastructure Strategy v. identify and provide opportunities to enhance and improve linkages between the natural and historic landscapes of Wiltshire. <p>If damage or loss of existing green infrastructure is unavoidable, the creation of new or replacement green infrastructure equal to or above its current value and quality, that maintains the integrity and functionality of the green infrastructure network, will be required.</p> <p>Proposals for major development should be accompanied by an audit of the existing green infrastructure within and around the site and a statement demonstrating how this will be retained and enhanced through the development process. Development will not adversely affect the integrity and value of the green infrastructure network, prejudice the delivery of the Wiltshire Green Infrastructure Strategy, or provide inadequate green infrastructure mitigation.</p> <p>Green infrastructure projects and initiatives that contribute to the delivery of a high quality and highly valued multi-functional green infrastructure network in accordance with the Wiltshire Green Infrastructure Strategy will be supported. Contributions (financial or other) to support such projects and initiatives will be required where appropriate from developers.</p>
<p>Core Policy 55</p>	<p>Air quality Development proposals, which by virtue of their scale, nature or location are likely to exacerbate existing areas of poor air quality, will need to demonstrate that measures can be taken to effectively mitigate emission levels in order to protect public health, environmental quality and amenity. Mitigation measures should demonstrate how they will make a positive contribution to the aims of the Air Quality Strategy for Wiltshire and where relevant, the Wiltshire Air Quality Action Plan. Mitigation may include:</p> <ol style="list-style-type: none"> i. landscaping, bunding or separation to increase distance from highways and junctions ii. possible traffic management or highway improvements to be agreed with the local authority iii. abatement technology and incorporating site layout/separation and other conditions in site planning iv. traffic routing, site management, site layout and phasing v. where appropriate, contributions will be sought toward the mitigation of the impact a development may have on levels of air pollutants.

<p>Core Policy 56</p>	<p>Contaminated land Development proposals which are likely to be on or adjacent to land which may have been subject to contamination will need to demonstrate that measures can be taken to effectively mitigate the impacts of land contamination on public health, environmental quality, the built environment and amenity.</p> <p>Developers will be required to demonstrate that the development site is, or will be, made suitable for the proposed final use and will need to provide one or more of the following documents:</p> <ul style="list-style-type: none"> i. Detailed site history identifying possibly contaminative uses. ii. Site characterisation: The nature and extent of any contamination and the hazards and risks posed. iii. Detailed remediation scheme: Including methodology and quality assurance. iv. Methodology to report unexpected contamination. v. Methodology to ensure verification of remedial works. vi. Details of long term monitoring and maintenance proposals (where necessary). <p>The need for, type and complexity of reports will depend on the specific site.</p>
<p>Core Policy 57</p>	<p>Ensuring high quality design and place shaping A high standard of design is required in all new developments, including extensions, alterations, and changes of use of existing buildings. Development is expected to create a strong sense of place through drawing on the local context and being complementary to the locality. Applications for new development must be accompanied by appropriate information to demonstrate how the proposal will make a positive contribution to the character of Wiltshire through:</p> <ul style="list-style-type: none"> i. enhancing local distinctiveness by responding to the value of the natural and historic environment, relating positively to its landscape setting and the existing pattern of development and responding to local topography by ensuring that important views into, within and out of the site are to be retained and enhanced ii. the retention and enhancement of existing important landscaping and natural features, (e.g. trees, hedges, banks and watercourses), in order to take opportunities to enhance biodiversity, create wildlife and recreational corridors, effectively integrate the development into its setting and to justify and mitigate against any losses that may occur through the development iii. responding positively to the existing townscape and landscape features in terms of building layouts, built form, height, mass, scale, building line, plot size, elevational design, materials, streetscape and rooflines to effectively integrate the building into its setting iv. being sympathetic to and conserving historic buildings and historic landscapes v. the maximisation of opportunities for sustainable construction techniques, use of renewable energy sources and ensuring buildings and spaces are orientated to gain maximum benefit from sunlight and passive solar energy, in accordance with Core Policy 41 (Sustainable Construction and Low Carbon Energy) vi. making efficient use of land whilst taking account of the characteristics of the site and the local context to deliver an appropriate development which relates effectively to the immediate setting and to the wider character of the area vii. having regard to the compatibility of adjoining buildings and uses, the impact on the amenities of existing occupants, and ensuring

	<p>that appropriate levels of amenity are achievable within the development itself, including the consideration of privacy, overshadowing, vibration, and pollution (e.g. light intrusion, noise, smoke, fumes, effluent, waste or litter)</p> <ul style="list-style-type: none"> viii. incorporating measures to reduce any actual or perceived opportunities for crime or antisocial behaviour on the site and in the surrounding area through the creation of visually attractive frontages that have windows and doors located to assist in the informal surveillance of public and shared areas by occupants of the site ix. ensuring that the public realm, including new roads and other rights of way, are designed to create places of character which are legible, safe and accessible in accordance with Core Policy 66 (Strategic Transport Network) x. the sensitive design of advertisements and signage, which are appropriate and sympathetic to their local setting by means of scale, design, lighting and materials xi. taking account of the needs of potential occupants, through planning for diversity and adaptability, and considering how buildings and space will be used in the immediate and long term future xii. the use of high standards of building materials, finishes and landscaping, including the provision of street furniture and the integration of art and design in the public realm xiii. the case of major developments, ensuring they are accompanied by a detailed design statement and masterplan, which is based on an analysis of the local context and assessment of constraints and opportunities of the site and is informed by a development concept, including clearly stated design principles, which will underpin the character of the new place xiv. meeting the requirements of Core Policy 61 (Transport and New Development).
<p>Core Policy 58</p>	<p>Ensuring the conservation of the historic environment Development should protect, conserve and where possible enhance the historic environment.</p> <p>Designated heritage assets and their settings will be conserved, and where appropriate enhanced in a manner appropriate to their significance, including:</p> <ul style="list-style-type: none"> i. nationally significant archaeological remains ii. World Heritage Sites within and adjacent to Wiltshire iii. buildings and structures of special architectural or historic interest iv. the special character or appearance of conservation areas v. historic parks and gardens vi. important landscapes, including registered battlefields and townscapes. <p>Distinctive elements of Wiltshire’s historic environment, including non-designated heritage assets, which contribute to a sense of local character and identity will be conserved, and where possible enhanced. The potential contribution of these heritage assets towards wider social, cultural, economic and environmental benefits will also be utilised where this can be delivered in a sensitive and appropriate manner in accordance with Core Policy 57 (Ensuring High Quality Design and Place Shaping). Heritage assets at risk will be monitored and development proposals that improve their condition will be encouraged. The advice of statutory and local consultees will be sought in consideration of such applications.</p>
<p>Core</p>	<p>Development impacts on the transport network</p>

<p>Policy 62</p>	<p>Developments should provide appropriate mitigating measures to offset any adverse impacts on the transport network at both the construction and operational stages.</p> <p>Proposals for new development should not be accessed directly from the national primary route network outside built-up areas, unless an over-riding need can be demonstrated.</p>
<p>Core Policy 65</p>	<p>Movement of goods</p> <p>The council and its partners will seek to achieve a sustainable freight distribution system which makes the most efficient use of road, rail and water networks. In particular:</p> <ul style="list-style-type: none"> i. developments which generate large volumes of freight traffic or involve the movement of bulk materials should make use of rail or water transport for freight movements wherever practical ii. the provision of intermodal and other rail freight terminals in suitable areas will be supported and land required for realistically deliverable proposals will be protected from inappropriate development iii. overnight lorry parking should be provided in the vicinity of the advisory freight network, either where demand can be demonstrated or to alleviate nuisance caused in local communities iv. where carriage of freight by rail and water is not realistic, encouragement will be given for heavy goods vehicles (HGVs) traffic to use those roads where a minimum of community and environmental impacts will occur, principally the advisory freight network. Where problems caused by HGVs making unnecessary and undesirable use of routes are identified (other than on advisory freight routes), freight management processes will be employed.
<p>Core Policy 67</p>	<p>Flood Risk</p> <p>Development proposed in Flood Zones 2 and 3 as identified within the Strategic Flood Risk Assessment will need to refer to the Strategic Housing Land Availability Assessment when providing evidence to the local planning authority in order to apply the sequential test in line with the requirements of national policy and established best practice. All new development will include measures to reduce the rate of rainwater run-off and improve rainwater infiltration to soil and ground (sustainable urban drainage) unless site or environmental conditions make these measures unsuitable.</p>
<p>Core Policy 68</p>	<p>Water resources</p> <p>Development must not prejudice the delivery of the actions and targets of the relevant River Basin or Catchment Management Plan, and should contribute towards their delivery where possible.</p> <p>Non-residential development will be required to incorporate water efficiency measures. Developers will be expected to submit details of how water efficiency has been taken into account during the design of proposals.</p> <p>Development proposals within a Source Protection Zone, Safeguard Zone or Water Protection Zone must assess any risk to groundwater resources and groundwater quality and demonstrate that these would be protected throughout the construction and operational phases of development.</p>
<p>Core Policy 69</p>	<p>Protection of the River Avon SAC</p> <p>In order to avoid and reduce potential environmental effects on the River Avon SAC, development will need to incorporate measures during construction and operation to avoid and prevent pollution and mitigate potential disturbance effects; appropriate measures may include consideration of suitable buffer zones along watercourses, habitat enhancements and river access management measures.</p>

	<p>All development within 20m of the river banks should submit a construction management plan to the local planning authority to ensure measures proposed during construction are satisfactory.</p> <p>Where additional sewage discharges to a STW cannot be accommodated without measures to offset phosphate loading, development will be required to undertake proportionate measures (which may include contributions towards those measures identified in the Nutrient Management Plan) to demonstrate that the proposals would have no adverse effects upon the SAC.</p>
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Minerals Core Strategy

[The Minerals Core Strategy](#) (adopted June 2009) sets out the spatial vision, key objectives and overall principles for development covering minerals provision up to 2026.

	Swindon and Wiltshire Minerals Core Strategy
MCS 1 (B):	<p>Generic Criteria for Guiding the Location of Minerals Development</p> <p>In all cases, the process of identifying, appraising, designing and implementing proposals for new or extended sites for minerals extraction and / or recycling of construction and demolition wastes will be guided by the policies of the Minerals Core Strategy, other relevant DPDs and the following indicative criteria:</p> <ul style="list-style-type: none"> • the need for the mineral within the broad locations outlined in Section (A) or the need for recycling capacity within the broad locations identified in the Waste Core Strategy; • likely effects on designated sites and other environmentally valuable features; • likely effects on designated habitats and priority species; • proximity to a defined flood zone and / or groundwater Source Protection Zone, and other water interests; • proximity to local communities and the need to maintain and enhance the local landscape character and setting of settlements; • proximity to primary end-use market(s); • proximity to the Wiltshire HGV route network as defined in the County Freight Strategy and / or alternative transport modes; and • the ability for a site or sites to deliver significant contributions to local, regional and national BAP targets for habitat creation and priority species as well as geodiversity gains where applicable.
MCS 1 (C):	<p>Linking the Strategy, Site Allocation DPDs and Community Involvement</p> <p>In preparing, monitoring and reviewing Minerals Site Allocation Development Plan Documents, the Councils will work with the minerals and waste industries, landowners, local communities within and in close proximity to defined Mineral Resource Zones and other agencies to ensure that issues associated with the development of sites are identified and addressed at the earliest opportunity.</p>
MCS 6:	<p>Safeguarding Mineral Resources, Rail-head Facilities and Mineral Recycling Facilities</p> <p>In establishing, monitoring and reviewing Mineral Safeguarding Areas (MSAs) the Councils will work with the minerals and waste industries, land owners and other local planning authorities to safeguard the following assets from potential sterilisation by other forms of development:</p> <ul style="list-style-type: none"> • Mineral Resource Zones; • All existing active and dormant minerals sites; • Land within 1km of active and dormant mineral sites; • Sites for future mineral working allocated within DPDs; • Operational land associated with existing and proposed Mineral Recycling Facilities; and

	<ul style="list-style-type: none"> Operational land associated with the existing Rail Aggregate Depot at Wootton Bassett and any proposed new rail-head facilities and sidings. <p>*If it is demonstrated that a significant area of an MSA does not contain a viable mineral reserve or if geological surveying demonstrate that the extent of the resource is greater than the area identified by the Councils, then policy MCS 6 will be reviewed.</p>
MCS 7	<p>Managing the Impacts of Minerals Development in Wiltshire and Swindon- Flooding</p> <p>Development proposals must avoid or mitigate any aspect of the development that could potentially lead to an increase in a likelihood of flooding, and where appropriate provide additional flood storage capacity to increase protection for vulnerable land uses, taking into account the impacts of climate change where an opportunity / need is identified through the SFRA / FRA process.</p>
MCS 8	<p>Living with Minerals Development – Protecting Residential Amenity</p> <p>To maintain an acceptable separation of residential areas from proposed minerals development within Wiltshire and Swindon, the Councils will work with local communities, landowners, the minerals and waste industries, regulatory bodies and other organisations to establish, plan and address the following matters prior to the implementation of development proposals:</p> <ul style="list-style-type: none"> The strategic and localised phasing and duration of operations; The design, location and extent of screening features; The control of operations to minimise pollution; The arrangements for managing the traffic associated with the development; The restoration and after-use objectives of the proposed development; and All other matters as agreed and deemed relevant by the Councils, local communities and the minerals operator. <p>Where appropriate, the Councils will encourage and support the establishment of Community Liaison Groups to help monitor, appraise and resolve operational matters associated with minerals sites throughout the life of the development.</p>
MCS 9	<p>Strategic Approach to Managing Minerals Transportation</p> <p>The sustainable transportation of minerals, recyclable wastes and material used in restoration schemes will be encouraged. Proposals for new or improved rail depots and / or sidings as well as innovative schemes utilising the potential for canals and rivers to transport minerals and recyclable wastes within Wiltshire and Swindon will be supported subject to the social, economic and environmental impacts of such development being avoided, mitigated and where necessary compensated for. Proposals for new Rail Aggregate Depots will be directed towards the Swindon area.</p> <p>Priority will be given to proposals for minerals development that demonstrate a commitment to implementing sustainable modes and methods for transporting minerals and recyclable wastes. Ultra-short transfer of minerals and recyclable wastes by conveyor either within or between sites will be encouraged. The transportation of minerals by road must utilise the Wiltshire HGV Route Network.</p>
MCS 10	<p>Strategic Approach to Restoration and After-use of Mineral</p>

	<p>Sites</p> <p>The restoration, after-care management and future after-use of mineral sites will be primary considerations in the process of planning for all new minerals development in Wiltshire and Swindon. Proposals for the restoration and management of mineral workings should be addressed at the earliest opportunity within the planning process.</p> <p>Restoration schemes must be designed to prevent increased risks associated with flooding and / or bird strike and should include long-term environmental enhancement, in accordance with the Wiltshire, Swindon and Cotswold Water Park Biodiversity Action Plans and the South West Nature Map where appropriate.</p>
<p>MCS 11</p>	<p>Strategy for Policy Implementation, Monitoring and Review</p> <p>The Councils will work with local authorities in and around Wiltshire and Swindon, the minerals industry, regulatory authorities, landowners, local communities, local environmental groups, the Regional Planning Body, the South West Regional Aggregates Working Party and Government to plan, monitor and manage minerals development in Wiltshire and Swindon through the implementation of socially, economically and environmentally responsible policies and the Annual Monitoring Report process.</p>

Minerals Development Control Policies

The Minerals [Development Control Policies \(DPD\)](#) (adopted September 2009) sets out a limited suite of generic development control policies designed to assist with the process of determining planning applications for minerals development.

<p>MDC1</p>	<p>Key criteria for sustainable minerals development Proposals for minerals development must contribute to the delivery of sustainable development in Wiltshire and Swindon by ensuring that the social, economic and environmental benefits of minerals development are maximised, and adverse impacts - including cross-boundary and cumulative impacts - are kept to an acceptable minimum. All proposals for minerals development will be assessed using the following key criteria:</p> <ol style="list-style-type: none"> a. The need for the development; b. The extent to which adverse impacts associated with the development will be minimised and managed through an integrated mitigation strategy developed through early and effective consultation with key stakeholders, including local communities and the Councils, prior to the submission of a planning application; c. The extent to which the development ensures protection and enhancement of biodiversity, geodiversity and the historic and cultural environment; d. The extent to which mineral waste generated on site is minimised, and where possible, the reception, processing and distribution of alternatives to primary aggregates is facilitated; e. The extent to which the visual / landscape impact of any structures and buildings is minimised in terms of the appropriate use of scale and form; f. The extent to which the development avoids loss of best and most versatile agricultural land and ensures the protection of soil resources throughout the life of the development; g. The extent to which the development ensures the efficient use of water resources on site and the extent that the adverse impacts on the water environment and flood risk can be avoided and / or mitigated; h. The extent to which the proposal facilitates sustainable transport; i. The quality and appropriateness of the restoration, aftercare and after-use proposals, considering the contribution that could be made to the UK, South West and/or Wiltshire, Swindon and Cotswold Water Park Biodiversity Action Plan targets, the South West Nature Map and Great Western Community Forest.
<p>MDC2:</p>	<p>Managing the impacts of minerals development Applications for minerals development in Wiltshire and Swindon will only be permitted where it is demonstrated that the proposal avoids and / or adequately mitigates significant adverse impacts associated with the following environmental considerations:</p> <ul style="list-style-type: none"> - Noise levels; - Dust levels; - Air emissions

	<ul style="list-style-type: none"> - Lighting; and - Vibration levels. <p>Proposals for mineral development should be accompanied, where necessary, by an assessment of the impact of the proposal in terms of noise, dust, air emissions, lighting, and vibration. Where a need for mitigation is identified by the assessment and / or through consultation with key stakeholders, mitigation measures should be clearly defined and submitted as part of the development proposal, where necessary incorporating appropriate separation distances to safeguard residential amenity.</p> <p>All plant and machinery associated with the mineral development will be limited to the life of the mineral reserve it serves, except where it can be demonstrated that the adverse impacts associated with retaining the plant and machinery can be effectively managed.</p>
MDC3:	<p>Managing the impact on surface water and groundwater resources</p> <p>Proposals for minerals development will only be permitted where it can be demonstrated that appropriate controls will be made available to protect and, where appropriate, enhance the water environment. This includes making provisions to ensure the protection and maintenance of:</p> <ul style="list-style-type: none"> • The quality of groundwater, water courses and other surface water; and • The volume / levels of groundwater, water courses and other surface water <p>Flood Risk Assessments (FRA) will be required for minerals development proposals in areas at risk of flooding or likely to contribute to flooding elsewhere, as appropriate to the nature and scale of the development, and must take into account cumulative effects with other existing or proposed development. Where a risk of flooding is identified through FRA, proposals must include measures to ensure the avoidance of and / or mitigation of that risk.</p> <p>Where appropriate, development proposals will also be required to include provisions for the efficient use of water resources on site and the use of Sustainable Drainage Systems (SUDS).</p>
MDC4:	<p>Safeguarding mineral resources, rail-head facilities and mineral recycling facilities</p> <p>Proposals for development within Mineral Safeguarding Areas, as defined on the Proposals Map, that may prevent or adversely affect current or possible future mineral extraction and/or associated ancillary operations, rail-head facilities, and mineral recycling facilities within Wiltshire and Swindon will be opposed unless:</p> <ul style="list-style-type: none"> • An appropriate quantity of mineral can be reasonably extracted prior to or in phase with the proposed non-mineral development such that the extraction does not unreasonably prevent or hinder the non-minerals development; or • It can be proven that the mineral deposit is unlikely to be worked due to its quality or quantity; or • The development is of a temporary nature and can be completed and the site restored to a condition that does not inhibit extraction within the timescale that the mineral is likely to be needed; or

	<ul style="list-style-type: none"> • There is an overriding need for the non-minerals development to commence without delay.
MDC5:	<p>Protection and enhancement of Wiltshire and Swindon's landscape character</p> <p>Proposals for minerals development should include an assessment of the adverse impacts upon Wiltshire and Swindon's landscape character and the landscape character of adjacent areas, as deemed appropriate to the scale and nature of the development, and in particular in relation to the following designated areas:</p> <ul style="list-style-type: none"> • The New Forest National Park • The Cranborne Chase and West Wiltshire Downs Area of Outstanding Natural Beauty • The Cotswolds Area of Outstanding Natural Beauty • The North Wessex Downs Area of Outstanding Natural Beauty. <p>The assessment should be informed by the Wiltshire Landscape Character Assessment, as a minimum, and where the proposed development is situated within or in proximity to an AONB or in proximity to the New Forest National Park, the relevant Management Plan.</p> <p>Proposals for minerals development should include appropriate provisions to protect and where possible enhance the quality and character of the countryside and landscape. Proposals in proximity to settlements must safeguard their character, setting and rural amenity through the implementation of mitigation measures that incorporate an acceptable separation distance, landscaping and planting, appropriate to the existing landscape setting and consistent with the proposed after-use of the site.</p>
MDC6:	<p>Biodiversity and geological interest</p> <p>Proposals for minerals development in Wiltshire and Swindon must be accompanied by an objective assessment of the potential effects of the development on features of biodiversity and/or geological interest, taking into account cumulative impacts with other development and the potential impacts of climate change. The assessment must have particular regard to the need to maintain and / or enhance sites and species of international and national importance in accordance with the relevant statutory requirements. The assessment must also consider carefully the need to maintain and / or enhance the following features of local and regional importance:</p> <ul style="list-style-type: none"> • Local Biodiversity Action Plan habitats and species • County Wildlife Sites (including Semi Natural Ancient Woodlands) • Regionally Important Geological and Geomorphological Sites • Local Nature Reserves • The Great Western Community Forest. <p>Proposals for minerals development will only be permitted where adverse impacts will be:</p> <ol style="list-style-type: none"> a. Avoided; or b. Where an adverse impact cannot be avoided, the impact will be adequately mitigated; or

	<p>c. Where adverse impacts cannot be avoided or adequately mitigated, compensation will result in the maintenance or enhancement of biodiversity/geodiversity.</p>
MDC7:	<p>The historic environment In the interest of protecting the rich historic environment of Wiltshire and Swindon, proposals for minerals development will only be permitted where it can be demonstrated through a process of assessment that historic assets of archaeological or cultural heritage importance and their settings can be appropriately protected, enhanced and/or preserved.</p> <p>Proposals affecting historic assets known or potential archaeological importance must be accompanied by an appropriate archaeological evaluation. Based on the findings of the initial evaluation, preservation of nationally important remains in situ may be necessary, or developers will be required to agree to a scheme of further archaeological mitigation prior to commencement of the development or as part of the overall development scheme. In the interests of recording, preserving and future management of important archaeological features affected by a proposal the Councils may seek contributions from the developer in the form of a legal agreement.</p>
MDC8:	<p>Sustainable transport and minerals development Minerals development will only be permitted where it is demonstrated that the proposals facilitate sustainable transport by:</p> <ul style="list-style-type: none"> • Minimising transportation distances; • Maximising the use of rail or water to transport minerals where practicable and environmentally acceptable; • Ensuring a proposal has direct access or has suitable links with the Wiltshire HGV Route Network or primary route network; • Establishing mineral site transport plans; • Mitigating or compensating for any adverse impact on the safety, capacity and use of a highway, railway, canal route, cycleway or public right of way, through improvements to the appropriate network where necessary. <p>Where appropriate, applications for minerals development will need to be accompanied by a Transport Assessment. The Transport Assessment will need to:</p> <ul style="list-style-type: none"> • Consider the impact of the development upon the highway network (and where relevant the local rail infrastructure, canal route, cycleway or public right of way), in the local area; • Consider the potential cross-boundary impacts and cumulative impacts of the development with other local developments; • And Identify any mitigation or compensatory works directly related to the development that may need to be funded by the developer in conjunction with the proposal.
MDC9:	<p>Restoration, aftercare and after-use management of minerals development Proposals for minerals development will be permitted where it can be demonstrated that a high quality and appropriate restoration</p>

	<p>scheme will enable the long term maintenance and enhancement of the environment after the minerals development has ceased and at the earliest practicable opportunity.</p> <p>The proposals must demonstrate that:</p> <p>1. Restoration</p> <ul style="list-style-type: none"> i. The restoration scheme incorporates phased restoration of the site that will minimise the period of operations in sensitive areas to protect settlements and residential amenity, taking into account the phasing and operations of nearby development; ii. Measures will be taken to ensure that soil quality will be adequately protected and maintained throughout the life of the development and in particular during stripping, storage and management of soils, subsoils and overburden arisings as a result of site operations; iii. There is an available supply of appropriate materials to be used for restoration purposes, as required to implement the proposed restoration scheme; and iv. The restoration scheme will not impede the successful adoption of the proposed after-use and will offer flexibility for a range of potential after-uses. <p>2. Aftercare</p> <ul style="list-style-type: none"> i. The aftercare scheme incorporates an aftercare period of at least five years commensurate with the proposed after-use; and ii. Those responsible for the ongoing management and aftercare of restored sites have been identified and agreed. <p>3. After-use</p> <ul style="list-style-type: none"> i. Where the proposed after-use will achieve habitat creation it aims to deliver the objectives of the relevant National, Regional or Local Biodiversity Action Plan, and where applicable, contribute to the delivery of the South West Nature Map and / or the Great Western Community Forest; ii. The after-use will be compatible with the wider context of the site, in terms of the character of the surrounding landscape (informed by the Wiltshire Landscape Character Assessment), existing land uses in the area, having considered the relative potential benefits of alternative after-uses in local, regional or national terms; iii. the site is designed for a primary after-use that will simplify and minimise long-term management; iv. and the after-use will benefit the local and/or wider community.
<p>MDC10:</p>	<p>Restoration within airfield safeguarding areas</p> <p>Proposals for minerals development within the following Airfield Safeguarding Areas, as identified on the Proposals Map, will be permitted when the applicant can demonstrate that the proposed extraction and after-use will not cause an unacceptable risk of bird strike:</p> <ul style="list-style-type: none"> • Boscombe Down • Colerne

	<ul style="list-style-type: none">• Fairford• Hullavington Barracks• Keevil Airfield• RAF Lyneham• Middle Wallop• Netheravon• South Cerney• Upavon (Trenchard Lines)
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Appendix 3:

PAS Guidance Note on 'Shale Gas and Oil Exploration and Planning'



PLANNING FOR SHALE GAS AND OIL – BRIEFING NOTE MARCH 2016

The exploration of shale gas and oil, and hydraulic fracturing – or 'fracking' as it has become commonly known – is a huge issue for local authorities and communities across the country.

This note provides information and advice on shale gas and oil exploration and production and how Mineral Planning Authorities plan for and make planning decisions on these highly contentious applications.

SUMMARY

Shale gas and oil exploration, appraisal and development is relatively new to the UK but is expected to be a major area of growth in the coming years.

The Government considers that shale gas and oil development should be part of the future energy mix, subject to continued environmental assessment and controls. Relatively little exploration and appraisal activity, to assess the commercial viability of shale gas and oil has been undertaken in the UK. Recent Written Ministerial Statements are clear in their support for such exploration to take place in a safe and sustainable manner.

The Government believes that the existing regulatory systems are fit for purpose whilst acknowledging that experience will enable more robust controls to be developed if necessary.

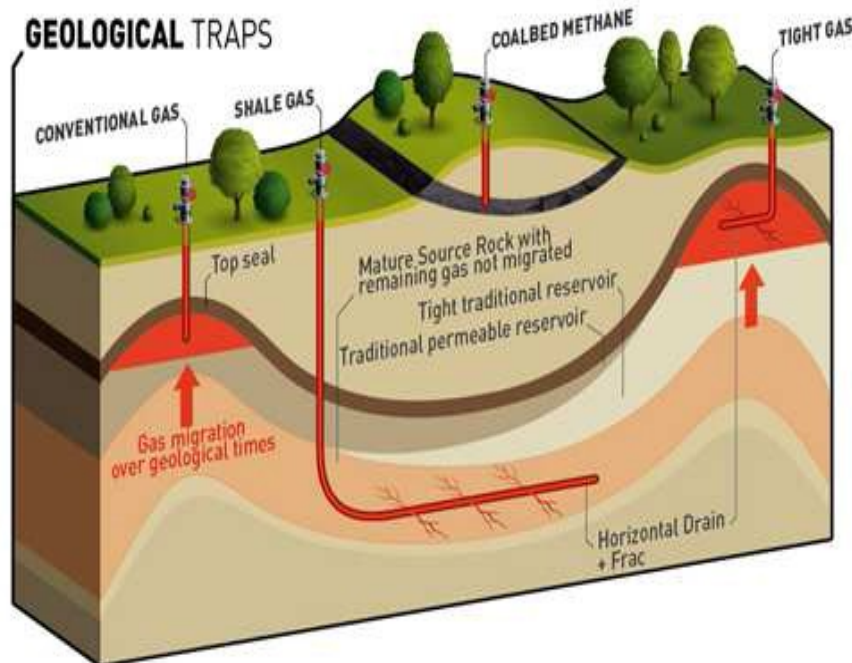
Mineral Planning Authorities are advised to plan positively for shale gas and oil development proposal. Local authorities working alongside other regulatory bodies will need to be equipped to handle the high interest and potential opposition to 'fracking' applications by some local communities and anti-fracking groups.

This briefing note aims to provide local authority officers and members with information on shale gas and oil development, government policy, the regulatory controls including the role of the planning system and the environmental and planning considerations that need to be taken into account by decision makers.

A reference list for further reading is included at the back of this guide that includes the key documents used to inform this briefing note as well as additional further reading that might be of interest.

CONVENTIONAL AND UNCONVENTIONAL HYDROCARBONS

Conventional hydrocarbons (gas and oil) are hydrocarbons that are trapped in porous reservoirs (e.g. sandstone and limestone) and are relatively easy to extract. Conventional gas and oil has been extracted on-shore in the UK for over 100 years.



Source: DECC

There are currently around 2,100 on-shore conventional oil and gas wells in the UK, some of which have been hydraulically fractured. Current production for onshore oil production is estimated at 20,000 barrels of oil per day.

Unconventional hydrocarbons are hydrocarbons that are trapped in rocks with low permeability and from which gas and oil are difficult to extract. Unconventional reserves include shale gas, shale oil, tight gas and coalbed methane.

Recent developments in drilling and well development technology have made it more economically attractive to extract unconventional gas and oil.

Shale Gas and Oil

Shale is formed from muddy sediments rich in organic matter deposited in seas millions of years ago. As these sediments were buried, they were heated and turned into rock and the organic matter was converted into gas and oil which is trapped in the rock.

These rocks are often the source rocks for conventional oil and gas fields but have low permeability so it is difficult to extract hydrocarbons from them directly. Shale gas is essentially the same as North Sea gas, i.e. mainly methane.

Shale Gas and Oil in the UK

In the UK shales containing gas and oil are present in:

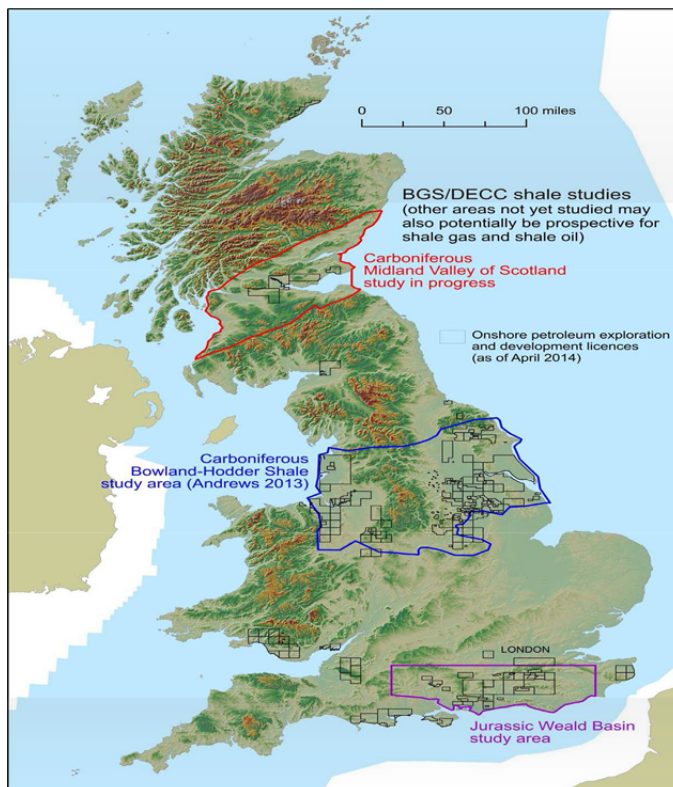
- Northern and Central England
- Southern England (Weald Basin)
- Central Scotland
- South Wales

The British Geological Survey (BGS) in association with the Department of Energy and Climate Change (DECC) has completed shale resource estimates for each of these areas.

An assessment for Northern and Central England was produced by the BGS in 2013 and the other three assessments were produced in 2014.

The assessment for Northern and Central England estimates that there is a median resource of 1,329 trillion cubic feet of shale gas in the area (i.e. the total estimated quantity of gas present). The reserve (the amount of gas which might feasibly be extracted) cannot be estimated at present without further exploration and appraisal but may be up to 10% of the total resource. If this was the case this would be equivalent of approximately 50 years gas supply in the UK (at the current rate of use). However, the recoverable reserve may be much lower than this.

The assessment for the Weald Basin (Southern England) estimates that there is a median resource of between 0.3 and 1.1 billion tonnes of shale oil in the area.



Source: DECC

Licensing for Onshore Oil and Gas Exploration

The Oil and Gas Authority (OGA) 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.

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. Each licence will expire automatically at the end of each term, unless the licensee has completed the working programme agreed with OGA.

The initial term is usually an exploration period. For PEDLs the initial term is set at five years and carries a work programme of exploration activity that OGA and the licensee will have agreed as part of the application process. The second term is intended for 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 OGA reserves the right to reconsider the provisions of the licence before doing so.

Onshore licencing rounds generally take place every other year. On 17 December 2015, OGA announced that a total of 159 blocks were formally offered to successful applicants under the 14th Onshore Oil and Gas Licencing Round. This round had been launched on 28 July 2014 and closed on 28 October 2014.

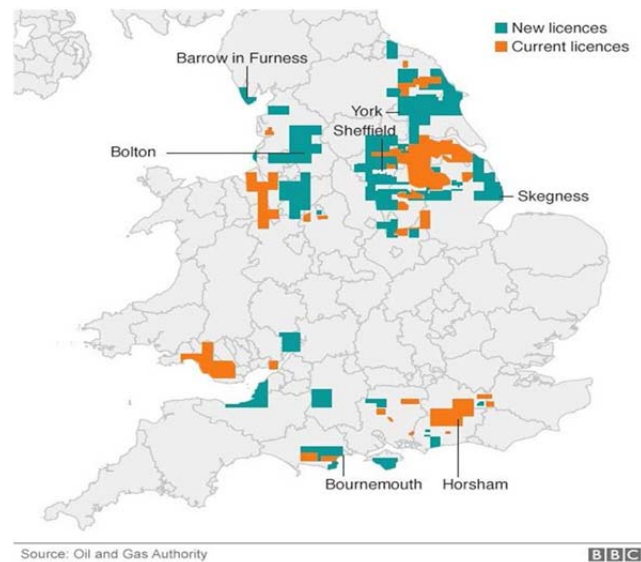
The blocks relate to all onshore oil and gas activities with about 75% being unconventional hydrocarbons.

The area under consideration for licencing had been subject to a Strategic Environmental Assessment in 2013. 132 of the 159 blocks were then subject to further detailed assessment in accordance with the Conservation of Habitats and Species Regulations 2010. In offering the 159 blocks OGA indicated that it was satisfied that there would be no adverse effect on the integrity of any protected European site.

The currently licensed blocks (1 February 2016) can be viewed on the following map and more detail is available on DECCs webpage:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/382805/Landfileds_Lics.pdf

The UK Onshore Geophysical Library (UKOGL) have produced a very useful free interactive map containing lots relevant data on licenses in the UK (including the names of license holders), along with local geological and seismic data, present well locations and district and unitary boundaries. <http://www.ukogl.org.uk/map/>



Shale Gas and Oil Exploitation

The rocks in the UK that contain significant shale gas resources are typically 2,000 metres to 4,000 metres below the ground surface. Rocks containing shale oil in the Weald Basin are typically 1,000 metres to 3,000 metres below the ground surface. Accessing the hydrocarbons requires the use of the following established oil and gas drilling techniques:

Vertical drilling – to reach the required depth below the surface.

Horizontal drilling – to maximise the amount of shale available for hydraulic fracturing.

Hydraulic fracturing – to maximise the amount of gas or oil which can be extracted from the shale.

Whilst none of these techniques are new technological advances, over the past few years they have allowed for increased control and accuracy during drilling to allow exploitation of shale gas and oil reserves

Hydraulic Fracturing

Hydraulic fracturing is the process of fracturing rocks by the injection of water (98%), sand (1%) and non-hazardous chemical additives (<1%) into the shale rock formation at high pressure. The wells are cased with steel tubes cemented in place. The tubes along the horizontal section of the well within the shale are perforated.

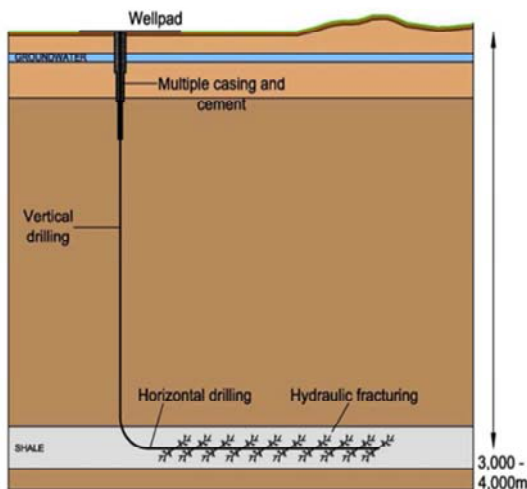
This hydraulic action or fracturing (hence ‘fracking’) opens up fractures in the impermeable shale rock that allow the gas to flow from the rock into the well. Fractures are typically < 350m long.

The process of hydraulic fracturing a horizontal well would typically take a few days.

The presence of the sand in the water acts as a “proppant” that ensures that the fractures stay open to allow the gas or oil to continue to migrate after the initial fracturing is undertaken.

Additives in the water include surfactants to enable the fluid to pass easily through fractures, bactericides and acids to prevent build-up of scale in the well. All chemical additives used in hydraulic fracturing require pre-approval by the Environment Agency and are required to be non-hazardous (non-carcinogenic).

Following fracturing, the gas or oil is allowed to migrate into the well which displaces the water forcing some of it back up the well to the surface. This is referred to as ‘flow back’ fluid.

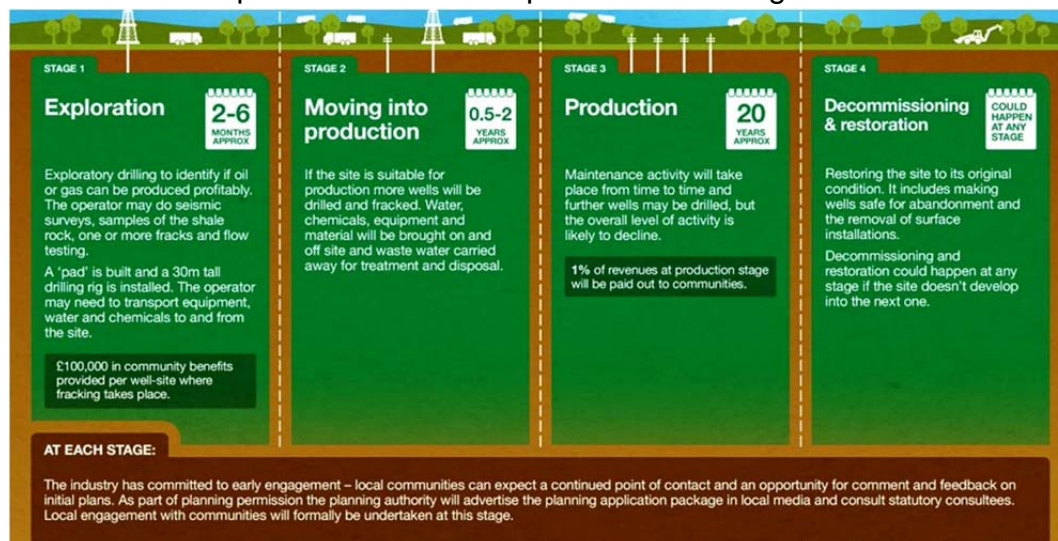


Gas reaching the surface will either be flared (during exploration/appraisal) or piped off site to the gas transmission network (during appraisal/production).

Oil reaching the surface will either be tankered off site (during exploration and appraisal) or piped off-site during production.

Shale Gas and Oil Development

There are three phases in the development of a shale gas or oil field.



Source: DECC

Exploration and Appraisal

The well is situated on a pad – the ‘wellpad’. The amount of land needed for the wellpad for an exploratory or appraisal well will vary depending on how many wells are being drilled. A single well might only require 1-2 hectares but if 4 wells are being drilled up to 6 hectares may be needed. The site must be large enough to accommodate the drilling equipment, any on-site water storage requirements, staff facilities, parking and space for vehicle deliveries and movements.

Within a given licence block there might be a number of exploratory wells but these are likely to be relatively widely spaced over a licence block that could be hundreds of square kilometres in area.

The siting of wellpads will not only have to take into account the best locations in terms of the available knowledge regarding the shale gas or oil potential of a given area but also the land use and environmental constraints that would relate to any development.

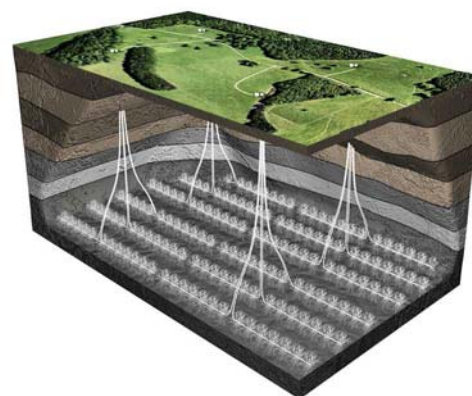
The data gathered from the exploration stage (the establishment of how much shale gas or oil might be present in the source rock) would form the basis for the appraisal stage during which the amount of gas or oil that could be produced will be assessed by undertaking hydraulic fracturing.

For each exploratory well the exploration phase itself is relatively short (2 to 4 months) and therefore some wellpads will represent very short-term development should there be insufficient gas.

When appraisal follows on from exploration the process might also be relatively short term, 4 to 6 months in duration for each well. However, the circumstances will vary for different sites. At the proposed Roseacre Wood and Preston New Road sites in Lancashire, the planning applications included provision for extended flow testing and the total period applied for exploration, appraisal and extended flow testing from 4 wells for each site was 75 months.

Production

The size of the wellpad required for the production phase will also depend on the number of wells on the site. A single well wellpad could produce gas from an area of 5 to 10 km². A multi-well wellpad 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 wellpad.



The drill rig and associated infrastructure can be removed from the site after the well is fractured, with only the gas / oil production and transmission infrastructure remaining. A single well could be expected to produce gas for up to 20 years.

Off-site infrastructure will be required to service a number of pads to allow the gas or oil to be transported to the national grid or refinery. Connecting pipework is likely to be underground.

All exploration, appraisal and production wells will ultimately be plugged and abandoned with well-heads removed and the sites restored to their original state. OGA requires operators to submit an abandonment plan and obtain consent before operations to abandon a well are commenced. Operators are responsible for wells once abandoned and have an open-ended liability to remediate any ineffective abandonment operations.

ENVIRONMENTAL CONSIDERATIONS

The environmental considerations that will need to be taken into account will generally include the following.

- Water Use
- Waste Management
- Groundwater Contamination
- Surface Contamination
- Aerial Emissions
- Seismicity
- Traffic
- Noise
- Landscape and Visual
- Ecology
- Climate change

Water Use

The hydraulic fracturing of a typical well would require between 10,000 and 20,000 cubic metres of water (the equivalent of 4 to 8 swimming pools of water). Water with additives would be stored on-site in tanks.

During multi-stage fracturing for production the additives added to the water may vary throughout the process. In order to facilitate this, a development site would need to house the necessary storage and mixing equipment.

Sources of water for hydraulic fracturing include mains water, surface water and ground water. The use of mains water would require the agreement of the relevant utilities company whilst the abstraction of surface water or groundwater would require an abstraction licence from the Environment Agency (EA).

Waste Management

Each stage of shale gas or oil development will produce waste.

Drilling activity of any kind produces drill cuttings (rock fragments and drilling mud). This waste can be disposed of to landfill, as is currently the case for other drilling activities undertaken in the UK.

Flowback water will be collected and contained on-site in closed tanks (open storage ponds are not permitted in the UK.) The water will need to be discharged to sewer or transported to a water treatment works for treatment. Flowback water may contain Naturally Occurring Radioactive Materials (NORM) at low levels. This is also the case in conventional oil and gas extraction and procedures for the effective management of these materials are well established. Flowback water containing NORM is likely to require pre-treatment prior to conventional treatment. These aspects are regulated by the Environment Agency.

Recycling and re-using the flowback water, particularly during the development of multi-well pads, can reduce the overall water consumption of the fracking process.

Groundwater Contamination

Fracturing takes place at 2,000 to 4,000 metres below the surface (gas) or 1,000 to 2,000 metres (oil) and fractures are typically less than 350 metres in length. Freshwater aquifers are at shallow depths (typically within 100 metres of the ground surface). Therefore thousands of metres of rock separate fractures from drinking water supplies (aquifers).

Aquifers are protected from leakages from the well by the use of multiple cemented casing and the contamination of aquifers therefore is very unlikely if best practice is followed during drilling and completion. The Health and Safety Executive regulates the well design and construction.

Monitoring of groundwater quality before during and after development will be essential in assessing the impact of shale gas or oil development on groundwater quality. This is regulated by the Environment Agency.

Surface Contamination

Controls such as impermeable bunded or lined wellpads, effective flowback water containment, good working practices and continual monitoring should all be employed to limit the risk of surface contamination. These will be regulated by the Environment Agency. Baseline monitoring prior to any development is again important in order to compare surface conditions throughout and after development.

Aerial Emissions

Aerial emissions associated with shale development will include:

-
- dust – as a result of well pad construction activities;
 - particulates and NO_x – as a result of HGV movements and use of on-site generators during drilling and fracking; and
 - fugitive gas from the well and from flaring during appraisal and production.

UK and EU legislation on emissions apply to shale gas and oil development and it is the role of Local Authorities under the Environmental Protection Act 1990 to inspect sites for odour and noise associated with the venting or flaring of gas as well as to monitor emissions to ensure that they do not breach local air quality standards.

Operators should adopt best practice on site as well as undertaking emissions monitoring. Flaring is a method for controlling gaseous emissions that can be employed during development for use when necessary. Venting and flaring of methane and other emissions are controlled through conditions of PEDLs and flares on-site can be enclosed. During production it is not in an operator's interest to flare gas but to capture and maximise gas production/sale from each site.

Seismicity

Earthquakes felt at surface induced by hydraulic fracturing are a very rare occurrence. Of over 35,000 hydraulically fractured wells there have only been three noticeable earthquakes at Oklahoma in 1979, Preese Hall in Lancashire in 2011 and in British Columbia in 2012.

In light of the seismic activity experienced at Preese Hall the Secretary of State for Energy announced the introduction of new regulatory requirements to ensure that seismic risks are effectively mitigated.

The Oil and Gas Authority is responsible for enforcing the controls. Operators will first be required to review the available information on faults in the area of the proposed well to minimise the risk of activating any fault by fracking, and required to monitor background seismicity before operations commence.

Real time seismic monitoring will also continue during operations, with these subject to a "traffic-light" regime, so that operations can be quickly paused and data reviewed if unusual levels of seismic activity are observed.

GREEN: Go, injection proceeds as planned

AMBER: Injection proceeds with caution, possibly at reduced rates, Monitoring is intensified

RED: Injection is suspended immediately

If a magnitude greater than M_L 0.5 is detected operations will stop and the pressure of the fluid will be reduced. A magnitude of M_L 0.5 would only be detectable by sensitive equipment and would not be felt by people at the surface.

Traffic

Development will result in an increase in HGVs on local roads associated with the delivery of materials for well pad construction and drilling and fracking operations, the importation of water if a local piped supply is not available and the management of wastes, particularly flow back fluid. A traffic impact assessment will therefore normally be required to be submitted with the planning application.

Noise

Noise impacts may occur as a result of construction of the site and well pad, drilling and fracking operations and the transport of materials. As with all new developments, the impact of noise on the local environment will need to be assessed. The applicant should carry out an appropriate assessment having regard to the relevant national and local planning policy and guidance. Drilling and fracking operations may take place 24/7 and in such cases noise impacts during the night will need to be considered.

Landscape and visual

The main impacts on landscape character and visual amenity will take place during the exploration and appraisal stages from the drilling rig(s). The rig may be over 50m high but its use will be temporary and intermittent and painting an appropriate colour may reduce the visual impact. The site will contain storage containers and staff facilities. It is likely to be surrounded by security fencing and landscaping/acoustic soil mounds that will screen some of the structures and activities taking place on the well-pad but will themselves have landscape and visual effects. The impact of lighting will need to be considered particularly night time illumination.

Ecology

Impacts on ecology may include those on protected species and habitats as a result of development sites. Ecological surveys undertaken at the appropriate time of year should identify baseline, potential effects and appropriate mitigation taken wherever possible.

Climate Change

Greenhouse gas emissions from shale gas and oil development are primarily associated with two different elements of the process:

- emissions released by the extraction process; and
- the carbon footprint of shale gas and oil when used commercially

The process of extracting shale gas or oil has the potential to release methane into the atmosphere. During exploration and appraisal gases are released and flaring is employed to minimise emissions of greenhouse gases. 'Green completion

technologies' will be utilised to allow operators to capture the methane from the flowback fluid for flaring.

DECC recommend that unconventional hydrocarbon exploration and production in the UK should be accompanied by careful monitoring and inspection of greenhouse gas emissions relating to all aspects of exploration, pre-production and production, at least until any particular production technique is well understood and documented in the context of UK usage.

A recent study undertaken by DECC found that the carbon footprint for shale gas is significantly less than that for coal when used for electricity generation and that the majority of carbon emissions will come from its final use as a fuel. The production of shale gas could increase global cumulative greenhouse gas emissions if the fossil fuels displaced by shale gas are used elsewhere. This is not specific to shale gas and would apply to the exploitation of any new fossil fuel reserve.

COAL BED METHANE (CBM)

Coalbed methane is a further unconventional gas resource. Methane is bound within coal by a process known as adsorption, where gas molecules adhere to surfaces or fractures within the coal.

To extract coalbed methane a well is drilled into the coal seam and water is pumped out to lower the pressure in the seam. This allows methane to desorb from the internal surfaces of the coal enabling it to flow, either as free gas or dissolved in water, towards the production well.

The quantity of gas produced from a well increases as the amount of water pumped out decreases.

Permeability is necessary to achieve CBM production. The natural permeability of coal seams can be low, so some CBM wells are stimulated (by hydraulic fracturing) to improve connectivity between the well and the coal.

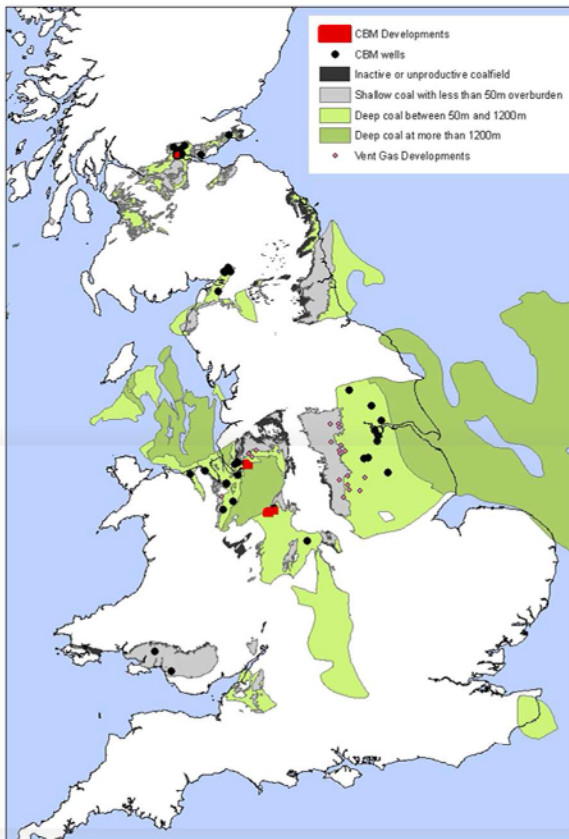
Licensing for CBM in the UK

A Petroleum Exploration and Development Licence (PEDL) allows a company to pursue CBM exploration activities in the same way as for shale gas and oil exploration.

CBM in the UK

The map below shows those areas of the UK where there are deep coal resources and where there are current CBM developments. As at 2012 three CBM development plans had been approved by DECC, but as yet no full scale developments have been constructed. Between 2007 and 2012 over 40 CBM exploration and appraisal wells and 12 pilot production development wells were drilled.

The BGS has estimated that the total CBM resource in the UK is 2,900 billion cubic metres. However a study by the BGS in 2004 estimated that as little as 1% of this resource could be recovered, because of perceived widespread low seam permeability, low gas content, resource density and planning constraints. If 10% of the UK CBM resource potential could be developed, the produced 290 billion cubic metres would correspond to over three years of UK natural gas supply.



DECC 2012

Drilling for CBM

CBM is present at shallower depths than shale gas - typically from 150 – 1,500 metres deep.

Accessing the gas uses similar oil and gas drilling technologies to shale gas. However, the well configuration is different due to the need to pump groundwater out of the seam (including the need for multiple wells in certain cases).

Groundwater Contamination

Fracking may be required to extract CBM if seams are insufficiently permeable. Fractures formed by hydraulic fracturing commonly extend beyond the coal seam and may serve as conduits between the coal seam and groundwater aquifers if the coal being targeted is present at shallow depths.

To prevent contamination, detailed knowledge of coal seam properties (porosity, fluid conductivity, seam thickness, etc.) is required before the decision about the location for a CBM production well that may be hydraulically fractured is made.

CBM Regulation

The majority of the same regulations and controls that apply to shale gas and shale oil also apply to CBM, particularly if hydraulic fracturing is involved. The regulatory controls that apply to CBM development are co-ordinated by the same UK regulators that regulate shale gas and shale oil development including the relevant Minerals Planning Authority (MPA), Environment Agency (EA), Oil and Gas Authority (OGA), the Health & Safety Executive (HSE) and the Coal Authority.

ASSESSMENT AND REGULATION

Planning applications for shale oil and gas developments will require an Environmental Impact Assessment (EIA) where the site is larger than 0.5 ha in size or if the proposed development is likely to have significant effects on the environment by virtue of factors such as its nature, size or location.

Developers can submit an EIA voluntarily even where the development may not fall into the scope of the EIA Regulations. As with all EIA development applications the 'scope' of the assessment should be agreed with the MPA.

An EIA requires baseline monitoring to be undertaken for groundwater and surface water, air and noise and seismicity before development commences. The impact assessment identifies mitigation of predicted impacts where necessary and specifies the scope for ongoing monitoring as required. Assessment of the cumulative effects of field development will be very important at the production stage of shale gas and oil development.

Infrastructure Act 2015

The Infrastructure Act 2015 received royal assent on 12th February 2015. The Act simplified the procedure for obtaining the right to use underground land 300 metres and below for the purpose of exploiting oil and gas. Most of the provisions came into force on 12 April 2015 and the remaining provisions come into force in April 2016.

Part 6 of the Act introduces a number of 'Onshore hydraulic fracturing safeguards'. In summary, hydraulic fracturing is prohibited from taking place in land at a depth of less than 1000 metres; and associated hydraulic fracturing is prohibited from taking place in land at a depth of 1000 metres or more unless the licensee has the Secretary of State's consent for hydraulic fracturing to take place.

The Secretary of State may not issue a hydraulic fracturing consent unless the operator provides evidence that the following conditions have been met.

-
- The environmental impact of the development, which includes the relevant well, has been taken into account by the local planning authority.
 - Appropriate arrangements have been made for the independent inspection of the integrity of the relevant well.
 - The level of methane in groundwater has, or will have, been monitored in the period of 12 months before the associated hydraulic fracturing begins.
 - Appropriate arrangements have been made for the monitoring of emissions of methane into the air.
 - The associated hydraulic fracturing will not take place within protected groundwater source areas.
 - The associated hydraulic fracturing will not take place within other protected areas.
 - In considering an application for the relevant planning permission, the local planning authority has (where material) taken into account the cumulative effects of a) that application; and b) other applications relating to the exploitation of onshore petroleum obtainable by hydraulic fracturing.
 - The substances used, or expected to be used, in associated hydraulic fracturing: a) are approved; or b) are subject to approval, by the relevant environmental regulator
 - In considering an application for the relevant planning permission, the local planning authority has considered whether to impose a restoration condition in relation to that development.
 - The relevant undertaker has been consulted before grant of the relevant planning permission.
 - The public was given notice of the application for the relevant planning permission.

The Act also sets out that the Secretary of State must, by regulations, specify a) the descriptions of the areas which are 'protected groundwater source areas'; and b) the descriptions of areas which are 'other protected areas'. In December 2015 the Government approved the protected areas in which hydraulic fracturing will be prohibited. It cannot therefore take place at depths above 1200 metres in National Parks, the Broads, AONBs and areas that are most vulnerable to groundwater pollution (SPZ1s).

Regulatory Controls

Shale gas and oil development is subject to a range of regulatory controls co-ordinated by different UK regulators including the relevant Minerals Planning Authority (MPA), Environment Agency (EA), the Oil and Gas Authority (OGA), the Health & Safety Executive (HSE) and, if drilling encroaches on coal seams, the Coal Authority.

A number of studies have been undertaken and reports produced with regards to the effectiveness of the current regulatory regimes in the UK to manage shale gas and oil development. Regulators have also produced and are continuing to develop industry specific guidance as to how development will be monitored and managed and also

how the different regulatory bodies envisage working together going forwards. Key document references are included at the back of this note.

The Royal Society/Royal Academy of Engineering – Shale Gas Extraction in the UK: A Review of Hydraulic Fracturing 2012 report states:

“Shale gas extraction in the UK is presently at a very small scale. [...] Uncertainties can be addressed through robust monitoring systems and research [...] Co-ordination of the [regulators] must be maintained. Regulatory capacity may need to be increased.”

Public Health England – Draft Review of Public Health Impacts 2013 states:

“The currently available evidence indicates that the potential risks to public health from exposure to the emissions associated with shale gas extraction are low if the operations are properly run and regulated.”

In addition to the guidance provided by statutory regulatory bodies, the United Kingdom Onshore Operators Group (UKOOG) has published their UK Onshore Shale Gas Well Guidelines for the exploration and appraisal phases of development. The document contains details of what is considered to be good industry practice and it references relevant legislation, standards and practices.

Policy makers need to design policies that strike the right balance between the role of the MPA and the other regulatory regimes involved in shale gas and oil development.

Case law has established that impacts regulated under another regime and the existence of that regime, are both material considerations for the planning decision maker. MPAs will therefore need to be satisfied that matters regulated by others have been addressed by the applicant and that the relevant regulatory body recommends that there are no reasons to refuse planning permission due to such impacts.

PLANNING FOR SHALE GAS AND OIL DEVELOPMENTS

Planning Application Process

Planning permission is one of the regulatory approvals required before any activity may start.

A Minerals Planning Authority (MPA) will decide whether the activity is acceptable in planning terms at that particular location, after local communities and other interested people have had the opportunity to set out their views on the benefits and impacts of the proposal through a public consultation process.

The MPA in England will be the county or unitary authority in which the development is proposed.

Planning permission is required for each stage of the process; exploration, appraisal and production. An applicant may apply for more than one stage in the same application. Most commonly this will be for exploration and appraisal.

The issues for planning consideration for shale gas and oil developments are likely to include the following:

- noise;
- air quality and dust;
- lighting;
- visual impact on the local and wider setting;
- landscape character;
- heritage features;
- traffic and impact on the highways network;
- land contamination;
- soils and impact on agricultural land;
- internationally, nationally and locally designated wildlife sites, protected species and ecological networks;
- nationally protected geological sites and features; and
- site restoration and aftercare.

Development Plans

The Planning and Compulsory Purchase Act 2004 introduced a new plan making system and the procedures were consolidated by the Town and Country Planning (Local Planning) (England) Regulations 2012. Some Local Planning Authorities do not yet have adopted plans prepared under the new system and the development plan may comprise a mix of policies from the old and new systems.

Shale gas and oil development is a recent phenomenon and adopted policies in Development Plans are only likely to exist for conventional (i.e. not involving hydraulic fracturing) hydrocarbon exploration, appraisal and production in areas that have seen this activity in the past. In areas that have not experienced conventional hydrocarbon activities, Development Plan policies are likely to be of a generic nature (e.g. applying to all types of mineral development).

Current development plan policies largely carry forward the approach originally set out in Department of the Environment Circular 2/85 'Planning Control over Oil and Gas Operations':

- encourage exploration and production;
- maximum exploitation consistent with good practice;
- onus on the industry to demonstrate need.

Existing policies are also typically structured in terms of the 3 phases of development (exploration, appraisal and production) – to reflect:

- different policy considerations at each stage; and
- planning decisions for exploration and appraisal should not pre-empt decisions to be taken later at the production stage.

MPAs which fall in areas that are the subject of PEDLs issued by OGA will need to consider the issues likely to be raised by shale gas and oil development. This includes those MPAs that have up to date policies on conventional hydrocarbon exploration, appraisal and production.

MPAs are presently taking different approaches towards the preparation of Development Plan policies for shale oil and gas. Some authorities intend to rely on the same policy approach for both conventional and unconventional hydrocarbons whereas others are proposing a tailored policy approach that recognises the distinctive features of unconventional hydrocarbons.

Some authorities are preparing Supplementary Planning Documents (SPD) on shale oil and gas that will provide detail to support policies in higher order planning policy documents. Care needs to be taken, however, as SPDs cannot introduce new policy on shale oil and gas.

Until new Development Plan policies are adopted dealing specifically with unconventional hydrocarbons, decisions on individual shale gas proposals will need to have regard to generic policies where they exist as well as other ‘material considerations’ that apply.

Material Considerations

There is no statutory definition of “material considerations”. They have been established through case law and a wide range of policy and evidential documents can also be considered as material.

In the case of shale gas and oil there are two key policy / guidance documents that apply:

- National Planning Policy Framework (DCLG, March 2012); and
- Planning Practice Guidance. Minerals. Planning for Hydrocarbon Extraction. (DCLG, March 2014 and April 2015)

Important evidential material includes governmental statements, professional reports published and studies undertaken regarding shale gas and oil development in the UK (key study references are included at the back of this note). Also relevant are the Ministerial Statements by Amber Rudd (Secretary of State for Energy and Climate Change) made on 16 September and 18 November 2015.

National Planning Policy Framework (NPPF)

The NPPF was published in March 2012 and sets out the Government's planning policies for England. Key sections of the NPPF relevant to shale oil and gas that should be given weight include:

Paragraph 14 – 'At the heart of the NPPF is a presumption in favour of sustainable development'

Paragraph 142 - 'important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs'

Paragraph 144 - 'When determining planning applications, local planning authorities should... give great weight to the benefits of mineral extraction, including to the economy...(and) ensure...that there are no unacceptable adverse impacts on the natural and historic environment, human health....'

Paragraph 147 - 'MPAs should...when planning for on-shore oil and gas developments, 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.'

In preparing Development Plan policies or assessing planning applications for shale oil and gas MPAs will also need to consider other policies within the NPPF that are material to the circumstances of the case.

Planning Practice Guidance

Accompanying the NPPF the Government has consolidated a number of planning practice guidance notes, circulars and other guidance into a single Planning Practice Guidance suite that is available as an on-line resource. The guidance is intended to be read alongside the NPPF and other planning guidance. Most of the guidance was issued in March 2014 but it is revised and updated as appropriate.

Many parts of the guidance may be relevant to shale oil and gas proposals depending on the circumstances of the case but the following should be given weight.

Section 9 of the guidance on minerals deals with planning for hydrocarbon extraction and was issued on 6 March 2014. Paragraph 91 states: 'As an emerging form of energy supply, there is a pressing need to establish - through exploratory drilling - to assess whether or not there are sufficient recoverable reserves to allow full scale production on an economically viable scale.'

The guidance also includes information on the phases of hydrocarbon development and the issues raised by such developments including those that are specific to unconventional oil and gas reserves.

MPAs are encouraged to make appropriate provision for hydrocarbons in mineral local plans. Where they consider it necessary to update their local plans and they are in a PEDL they are expected to include Petroleum Licence areas on policies maps and criteria based policies for each of the three phases of development. Specific locations may be included should the industry wish to promote specific sites. Safeguarding areas are not normally needed (paragraphs 105 and 106).

The guidance notes that ‘some issues may be covered by other regulatory regimes but may be relevant to MPAs in specific circumstances’ (paragraph 112). The example of risk to groundwater is referred to, where the Environment Agency has responsibility for ensuring the risk is appropriately identified and mitigated, but MPAs have a role in preventing pollution through controlling such aspects as site construction and operation.

Paragraph 112 continues: ‘there exist a number of issues which are covered by other regulatory regimes and MPAs should assume that these regimes will operate effectively. Whilst these issues may be put before MPAs, they should not need to carry out their own assessment as they can rely on the assessment of other regulatory bodies. However, before granting planning permission they will need to be satisfied that these issues can or will be adequately addressed by taking the advice from the relevant regulatory body’.

Ministerial Statements

Amber Rudd, Secretary of State for Energy and Climate Change, made a written ministerial statement ‘*Shale Gas and Oil Policy Statement*’ to the House of Commons on 16 September 2015. It states that it should be taken into account in planning decisions and plan making.

The statement sets out the Government’s view ‘that there is a national need to explore and develop our shale gas and oil resources in a safe, and sustainable and timely way’. It continues ‘exploring and developing our shale gas and oil resources could potentially bring substantial benefits and help meet our objectives for secure energy supplies, economic growth and lower carbon emissions’.

The statement lists a number of potential economic benefits of indigenous shale gas production leading it to conclude ‘that there is a clear need to seize the opportunity now to explore and test our shale potential’. It states that ‘this must be done whilst maintaining the very highest safety and environmental standards’. It continues: ‘The Government is confident we have the right protections in place now to explore shale safely.... Planning authorities can also have confidence that the regulators will enforce safety, environmental and seismic regulation effectively’.

The statement also set out a number of expectations for the planning system. ‘There is a clear expectation that local planning authorities should ensure that decisions on planning applications are made within statutory timeframes: 16 weeks where an

application is subject to Environmental Impact Assessment. This should be supported by an upfront timeline agreed with the applicant including the anticipated decision date. To avoid unnecessary work causing delay, when determining planning applications, local planning authorities should carefully consider which issues can be left to other regulatory regimes, taking full account of the Government's planning guidance on this issue.'

The Government provided a £1.2m shale support programme for 2015/16 to assist local planning authorities to determine applications in a timely manner. At the time this note was produced, the Government had not announced whether a similar funding programme would be available for 2016/17.

Amber Rudd also announced that the recovery criteria would be revised to enable the Secretary of State for Communities and Local Government to recover appeals for exploring and developing shale gas, subject to review after two years.

On 18 November 2015 Amber Rudd set out the '*Priorities for UK energy and climate change*' in a further written ministerial statement. This stated: 'New nuclear and gas will be central to our energy secure future and we are encouraging investment in our shale gas exploration so we can add new sources of home-grown supply to our real diversity of imports'.

There has subsequently been some discussion and speculation on the implications for UK energy policy, including shale oil and gas development, of the Paris climate change agreement to cap global warming at 2C. However, to date there has been no further update to Amber Rudd's statement of 18 November 2015.

Public Engagement

As part of the planning process, MPAs will make applications and supporting documents including the Environmental Statement available to local people and will ask for their comments.

These will be considered with the planning application. Other organisations, including statutory consultees such as the Environment Agency, will also be consulted on any application.

Each planning application must be publicised by a display on-site and in local newspapers and information must also be available on the relevant local authority website. This must include a section on how interested people can submit representations about the application.

Pre-application Discussions

It is good practice for the applicant to discuss the proposal with the MPA and other interested parties including local residents before the planning application is submitted. Such engagement can improve the quality of planning applications. The

approach to pre-application engagement needs to be tailored to the nature of the proposed development. Pre-application discussions are particularly recommended for major planning applications and controversial proposals such as shale gas and oil developments. Increasing numbers of local planning authorities are charging applicants for pre-application advice.

Planning Performance Agreements

A planning performance agreement (PPA) is a project management tool that the MPA and the applicant can use to agree timescales, actions and resources for handling planning applications. It can also involve other interested parties including statutory consultees. The agreement can cover all stages of the process from pre-application discussions through to determination of the planning application. A PPA can be particularly useful in setting out an efficient and transparent process for determining major and complex planning applications, providing increased certainty on timescales and responsibilities for all concerned.

PPAs will not be appropriate for all MPAs or for all applications. However, there could be advantages in using a relatively simple PPA for shale gas and oil proposals but because of their controversial nature there is a need for openness and transparency to avoid any perception that a PPA could be viewed as ‘buying a permission’.

Some advantages and barriers to using a PPA for shale gas and oil developments are noted below:

Advantages:

- Provides a framework for handling pre application discussions and the application in an efficient and effective way.
- Provides an effective project management tool for setting out the timescales and responsibilities.
- Provides additional certainty on the process and timescales to all interested parties.
- As pre-application charging is now the norm, the perception of a ‘permission being bought’ is reduced.
- Provides funding to offset e.g. the abnormal costs involved in processing representations and security measures.

Barriers:

- Public perception of ‘buying a permission’.
- Mindset that PPAs are a tool for dealing with housing and multi-use applications not minerals applications.

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- Perceived as being too complex and 'legalistic'.
 - Concern that MPA will have difficulties in meeting the agreed timescales because of lack of resources, committee cycles, delays in applicant providing the required information, delays in receiving key consultee responses etc.
 - Lack of understanding on how a PPA can assist the process.
 - Resistance from councillors.

Some of the barriers can be overcome by:

- Giving public clarity on the role of a PPA and that entering into the PPA does not prejudice the decision making process.
- Officer and member training on PPAs.
- Use of a model PPA.
- Highlight the advantages in particular the additional funding obtained to assist in meeting abnormal costs of handling these type of applications.
- Agree with statutory consultees their role or engagement in the PPA process.

PAS has prepared a model template and user guide for a PPA for shale gas and oil developments. The PPA template is available on the PAS web site for MPAs to adapt to their own circumstances and to use.

Public Concern

Shale gas and oil development has attracted a lot of attention from the media and the public. Public concerns include a wide range of matters including groundwater protection and induced seismicity as a result of hydraulic fracturing.

Weight to be given to public concern has been considered by the courts and can be broadly summarised as:

- public safety is capable of being a material consideration;
- public opposition per se is not a material consideration;
- concerns may be a material consideration if they relate to a planning matter, are objectively justified and may have land-use consequences; and
- where public concern is not justified, it cannot be conclusive.

There have been several cases where public concern has resulted in widespread public protests against shale gas and oil proposals. Sometimes demonstrations have been peaceful and well ordered but in some cases this has involved such actions as vandalism and public disorder. This poses additional challenges for local authorities and other agencies including the police.

DEALING WITH CONTROVERSIAL APPLICATIONS

Determining applications in a timely and appropriate manner when faced with a large number of representations / enquiries is an issue that MPAs may find challenging in relation to shale gas and oil development applications. Senior planning officers in a number of MPAs that have dealt with planning applications for shale gas/oil developments have commented that:

- the level of media and public interest is unprecedented with thousands of representations being received;
- there is public concern about the capacity of the regulators and lack of understanding of their roles;
- applicants have a responsibility to aspire to and deliver “highest environmental standards”; and
- decisions in this area are subject to highest level of scrutiny.

There are a variety of techniques that local planning authorities can use to help address these issues.

Best practice in engaging with local communities could involve the following:

- Sharing information about shale oil and gas developments through the MPA’s website.
- Links on the MPA website to accredited sources of information on fracking and related issues.
- Encouraging the potential applicant to engage with local communities at an early stage in the pre-application process.
- Encouraging local residents, businesses, Parish Councils etc to work collaboratively highlighting that it is the quality not the quantity of representations that the MPA is seeking.
- Learn lessons from the experiences of other MPAs that have dealt with similar controversial applications.
- Use plain and simple language and avoid emotive terminology such as ‘fracking’ and ‘unconventional’.

The industry can assist in this process by following a number of techniques.

- Early engagement with local communities that will be affected by the proposed development.

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- Provide guidance and good practice on the UKOOG website.
 - Ensuring that all necessary information is provided with the planning application.

Local Planning Authorities can use the following techniques for dealing with large numbers of representations:

- Use of digital tools to group representations that contain similar subject matter.
- State in the Statement of Community Involvement that all representations will be taken into account but they will not receive a response or acknowledgment.
- Encourage the public to submit representations on-line as this makes processing easier.

The following can assist the determination of applications within statutory timescales:

- Use of Planning Performance Agreements to agree timescales and responsibilities.
- Specialist, dedicated teams of planning officers and support staff within MPAs (whilst recognising that resource availability could be an issue).
- Getting the information right when the application is submitted and avoiding the need to seek further information after submission.
- Do not validate the application until all the required information to the required standard has been submitted.
- Good project and programme management.
- Early engagement between applicant and MPA and other interested parties (statutory consultees, local communities etc.) as appropriate at pre-application stage or earlier, with MPA being proactive in contacting companies awarded PEDLs in its area.

The interface between the MPA and the regulators is a key consideration for shale oil and gas developments. The following can assist in ensuring that the MPA and the regulators work effectively together and that the public are aware of their respective roles and responsibilities:

- Good websites with clear information on respective roles and responsibilities
- Effective networking between the MPA and the regulators either through meetings or telephone calls.

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- Greater visibility of regulators including attendance at public engagement events, training events, committee meetings etc.

FINANCIAL MATTERS

The UK Onshore Operators Group (UKOOG) has adopted a “Community Engagement Charter” which includes a commitment to provide:

- £100,000 per well site where hydraulic fracturing takes place; and
- 1% of revenues from production allocated approximately 2/3rd to the local community and 1/3rd at the county level.

In addition to this, the Prime Minister announced on 13 January 2014 that Councils will be able to keep 100 per cent of business rates they collect from shale gas and oil sites. This is double the current 50 per cent figure and DECC has stated that the business rates could be worth up to £1.7 million a year for a typical site.

In January 2015 DCLG published a summary of responses to a consultation on draft regulations to allow the 100% local retention of business rates on shale gas and oil sites. The publication includes the Government’s position on this matter following the consultation and how it intends business rates to be split between two-tier authorities.

In addition Amber Rudd in her ministerial statement in September 2015 stated: ‘we also strongly believe that communities hosting shale gas developments should share in the financial returns they generate. The Government welcomes the shale gas companies’ commitment to make set payments to these communities, which could be worth £5-10m for a typical 10 well site, and we want to go further. As announced by the Chancellor in the 2014 Autumn Statement, and set out in our manifesto, we are determined to ensure that local communities share more of the proceeds and feel more of the benefits, using a proportion of the tax revenues that are recouped from shale gas production, we will present our proposals later this year for how we propose to design the sovereign wealth fund.’

Regulation 122 of the Community Infrastructure Levy Regulations 2010 sets out the limitations which apply to the use of planning obligations. Regulation 122(2) states that: “A planning obligation may only constitute a reason for granting planning permission for the development if the obligation is necessary to make the development acceptable in planning terms; directly related to the development; and fairly and reasonably related to scale and kind to the development.

The type of local community benefits scheme which UKOOG has adopted fails all three of the tests set out in Regulation 122(2). MPAs are therefore likely to be advised that it would be improper to take any account of such financial benefits when determining applications.

FURTHER READING

Key Studies/publications:

The Unconventional Hydrocarbon resources of Britain's onshore basins – Shale Gas, 2012, Department of Energy & Climate Change

The Unconventional Hydrocarbon resources of Britain's onshore basins – Coalbed Methane (CBM), 2012, Department of Energy & Climate Change

The Carboniferous Bowland Shale gas study: geology and resource estimation, 2013 (Updated March 2015), British Geological Survey, Department of Energy & Climate Change

Shale gas extraction in the UK: a review of hydraulic fracturing, June 2012, The Royal Society and The Royal Academy of Engineering.

Shale gas: challenges and opportunities - A briefing note by the Geological Society of London, Summary of public briefing meeting held in June 2012

Potential groundwater impact from exploitation of shale gas in the UK - Groundwater Science Programme Open Report OR/12/001, British Geological Survey, 2012

Review of the Potential Public Health Impacts of Exposure to Chemical and Radioactive Pollutants as a Result of Shale Gas Extraction, Public Health England, June 2014

Industry Guidance

UK Onshore Shale Gas Well Guidelines, Exploration and appraisal phase: Issue 2 January 2015, United Kingdom Onshore Operators Group.

Community Engagement Charter Oil and Gas from Unconventional Reservoirs, 2013, United Kingdom Onshore Operators Group.

Regulatory Guidance

Onshore oil and gas exploration in the UK: regulation and best practice, England (different versions available for Scotland, Wales and Northern Ireland), December 2015, Department of Energy & Climate Change

Guidance on fracking: developing shale oil and gas in the UK, 6 January 2016, December 2015, Department of Energy & Climate Change

Fracking UK Shale: safety from design to decommissioning, February 2014, Department of Energy & Climate Change.

Onshore oil and gas exploratory operations: technical guidance, Consultation Draft, Environment Agency, August 2013.

Guidance Note: Regulation of exploratory shale gas operations – Environment Agency, November 2012

The Environment Agency and the Health and Safety Executive: Working together to regulate unconventional oil and gas developments, November 2012

Other Guidance:

Fracking UK Shale: Climate change, February 2014, Department of Energy & Climate Change.

Potential Greenhouse Gas Emissions Associated with Shale Gas Extraction and Use, September 2013, Professor David J C MacKay FRS, Dr Timothy J Stone CBE, Department of Energy & Climate Change.

Recommended Web Sites:

United Kingdom Onshore Operators' Group: www.ukoog.org.uk

Oil and Gas Authority: www.gov.uk/government/organisations/oil-and-gas-authority

Environment Agency: www.gov.uk/government/organisations/environment-agency

Health and Safety Executive: www.hse.gov.uk/offshore/unconventional-gas.htm

British Geological Society: www.bgs.ac/shalegas

Public Health England: www.gov.uk/government/organisations/public-health-england

Planning Advisory Service: www.pas.gov.uk

The UK Onshore Geophysical Library (UKOGL): <http://ukogl.org.uk/>

This advice note has been produced by Stephenson Halliday for PAS following the delivery of a programme of workshops for Mineral Planning Authority officers and councillors on Planning for Shale Gas and Oil in March 2016. It builds on a previous advice note PAS produced.



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