

DERBYSHIRE AND DERBY MINERALS LOCAL PLAN

Towards a Minerals Local Plan: Spring 2018 Consultation

CHAPTER 8

8.2 Conventional and Unconventional Hydrocarbons and Gas from Coal

December 2017

Introduction

8.2.1 Hydrocarbons are the simplest of organic compounds containing only hydrogen and carbon. The majority of hydrocarbons occur in crude oil deposits where decomposed organic matter provides an abundance of these elements, which, when bonded, can frequently occur in forms we can utilise in energy production. Other components are used as raw materials for the petro-chemical industry and in the manufacturing of drugs and plastics. Hydrocarbons are therefore an important mineral resource and the working of these resources in the Plan area can contribute to the prosperity of the local area and the national economy. The working of these resources however, could potentially have adverse impacts on the environment and the communities close to the sites. It is important therefore that the Minerals Local Plan (MLP) recognises the respective costs and benefits and sets out an approach to guide the assessment of future proposals for hydrocarbon developments, taking account of the appropriate balance between economic, social and environmental considerations. This chapter charts how the County and City Councils have progressed towards the proposed approach set out below, including the development of an evidence base, a review of relevant national planning policy, identification of the issues and factors that need to be taken into consideration and the series of consultations undertaken to develop an approach which carries the highest level of support possible.

Geology and Production

8.2.2 Oil and gas (mostly methane) are the two main hydrocarbon resources of relevance in the Plan area. The area has a long association with the onshore oil and gas industry. The first UK oil wells were sunk in the area around Calow and Hardstoft in the early part of the 20th Century and other oil and gas wells were developed at sites in Heath, Whitwell, Golden Valley (near Ripley) and Sawley. The geology of the area is such that there is the potential for further resources of oil and gas to be found in commercial quantities. A substantial part of the area is underlain by coal. Methane gas is commonly found in coal measures and therefore the coalfield along the eastern county boundary is a potential source of further resources.

8.2.3 Gas can also be obtained from shale deposits and research by the British Geological Survey¹ has identified substantial resources within the Bowland-Hodder shale deposits. This area extends from Lancaster in the north-west, across to Scarborough in the north-east. The broadly rectangular area extends as far south as Derby and Loughborough and therefore covers a large part of the County.

8.2.4 Hydrocarbon sources have been classified into two main categories: conventional and unconventional. Conventional hydrocarbons are oil and gas where the reservoir is sandstone and limestone. Unconventional hydrocarbons refers to oil and gas which comes from sources where shale or coal seams act as the reservoir. The Plan area therefore has the geological potential for both sources of hydrocarbons. Further information about hydrocarbon resources, how they are extracted and the regulatory regime governing such developments can be found in the following Background Papers:

Towards a Minerals Local Plan: Spring 2018 Consultation

Background Paper – Conventional Coal and Gas, December 2017

Background Paper – Unconventional Gas, December 2017

Background Paper – Unconventional Gas, Shale Gas, December 2017

Vision and Objectives

8.2.5 The Vision will help to define the direction of the Plan by stating where we want to be in terms of mineral development by the end of the Plan period. It will set out what the Plan area will be like in terms of mineral development in 2030 if the policies and proposals of the Plan have been delivered successfully over the Plan period. The Objectives will set out how the Vision will be delivered and implemented.

¹ British Geological Survey and DECC report: The Carboniferous Bowland Shale Gas Study, Geology and Resource Estimation, 2013.

8.2.6 The objectives which are relevant to hydrocarbon development are:

Objective 1 - Ensuring a Steady and Adequate Supply of Minerals

Objective 2 - Delivering Sustainable Minerals Development

Objective 4 - Safeguarding Mineral Resources and Facilities

Objective 5 – Minimising Impacts on Communities

Objective 6 - Protecting the Natural and Built Environment

Objective 7 – Protecting the Peak District National Park

Objective 8 – Minimising Flood Risk and Climate Change

Further information regarding the Vision and Objectives is set out in Chapter 3.

National and Local Policy

8.2.7 Government policy and guidance on the exploration and extraction of hydrocarbons is developing rapidly in response to the discovery of new resources and the emergence of new techniques for working those resources. The Minerals Local Plan will have to take account of this emerging guidance and the policies that develop. The following section reviews the main publications which currently apply and the guidance they provide on future hydrocarbon developments.

National Planning Policy Framework, 2012 (NPPF)

8.2.8 National guidance for the extraction of minerals, including hydrocarbons, is set out in the National Planning Policy Framework. In general terms, the NPPF states that, "Minerals are essential to support sustainable economic growth and our quality of life. It is important therefore that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods

that the country needs. However, since minerals are a finite natural resource and can only be worked where they are found, it is important to make best use of them to secure their long-term conservation."

8.2.9 Specific but limited guidance on hydrocarbons is set out in Paragraph 147 of the NPPF which states that, "Minerals Planning Authorities should also...when planning for on-shore oil and gas development, including unconventional hydrocarbons, clearly distinguish between the three phases of development (exploration, appraisal and production) and address constraints on production and processing within areas that are licensed for oil and gas exploration or production...". In addition it states that mineral planning authorities should: "encourage underground gas and carbon storage and associated infrastructure if local geological circumstances indicate its feasibility; and encourage capture and use of methane from coal mines in active and abandoned coalfield areas".

8.2.10 When determining planning applications the NPPF states that "...mineral planning authorities should ensure that the integrity and safety of underground storage facilities are appropriate, taking into account the maintenance of gas pressure, prevention of leakage of gas and the avoidance of pollution."

National Planning Practice Guidance, March 2014 (NPPG)

8.2.11 In July 2013 the Department for Communities and Local Government published new guidance relating to onshore oil and gas developments (Planning Practice Guidance for Onshore Oil and Gas). This has now been superseded although most of the advice and guidance it contained has been incorporated into the National Planning Practice Guidance which contains guidance for oil and gas developments from both conventional and unconventional sources.

8.2.12 The NPPG states that, as an emerging form of energy supply, there is a pressing need to establish through exploratory drilling, whether or not there are sufficient recoverable quantities of unconventional resources such as

shale gas and coal bed methane present to facilitate economically viable full scale production. In terms of new guidance, the NPPG encourages mineral planning authorities to make appropriate provision for hydrocarbons in local mineral plans, based on emerging information, to allow them to highlight areas where proposals for extraction may come forward, as well as managing potentially conflicting objectives for the use of land.

8.2.13 Where mineral planning authorities consider it is necessary to update their local plan and they are in a Petroleum Licence area, the NPPG states that they are expected to include Petroleum Licence Areas on their policies maps and include criteria based policies for each phase; that is exploration, appraisal and production, setting clear guidance for the location and assessment of hydrocarbon extraction within those areas. Existing hydrocarbon extraction sites should be identified in local plans, through the local plan site allocation process, where appropriate, and mineral planning authorities may include specific locations should the oil and gas industry wish to promote specific sites. In contrast to the practice established for other minerals resources, the guidance does not advocate the creation of formal safeguarding areas for hydrocarbons due to the depth of those reserves, the ability to use drilling equipment and the small surface area required for the installations. It also does not repeat or expand on the requirement of the National Planning Policy Framework that minerals local plans should address constraints on production and processing within areas that are licensed for oil and gas exploration or production.

8.2.14 The NPPG provides a description of the different operations involved in the three phases, the technical issues associated with hydrocarbon working and the planning issues which arise from hydrocarbon developments. It includes an explanation of the role of the planning system in obtaining permission together with a summary of the role of the other official regulators also involved in the process.

8.2.15 With regard to the determination of development proposals, mineral planning authorities are advised to assess applications for each phase on their

respective merits and applications for the exploratory stage of development should not involve the consideration of the potential impacts of extraction. Mineral planning authorities should take account of Government energy policy, which indicates a preference for energy supplies to be obtained from a variety of sources, including onshore oil and gas. Mineral planning authorities should use appropriate conditions, having regard to the issues for which they are responsible, to mitigate against any adverse environmental impact. The NPPG provides some examples of model conditions. It states that above ground separation distances would be acceptable in specific circumstances where it is clear that, based on site specific assessments and other forms of mitigation measures (such as working scheme design and landscaping) a certain distance is required between the boundary of the minerals site and the adjacent development. Operators and mineral planning authorities are also encouraged to seek appropriate restoration schemes for sites once mineral extraction is completed.

National Energy Policy

8.2.16 There have been several important stages in the evolution of current national energy policy. The Department of Trade and Industry paper, Meeting the Energy Challenge, 2007 states that England, Wales and Scotland's substantial remaining coal resources, including gas contained within the coal, have the potential not only to help meet our national demand for coal and to reduce our dependence on imported primary fuels, but also to contribute to the economic vitality and skills base of the regions where they are found.

8.2.17 The draft National Policy Statement for Energy, published in 2009, built on the 2007 Energy White Paper. Together they formed an evolving international and domestic energy strategy in response to the changing circumstances in global energy markets. They set out to address the long-term energy challenges of security of supply, whilst acknowledging the implications of climate change. Whilst recent emphasis has been on the development of renewable energy supplies the Government recognised the important and continuing role that indigenous sources of coal, oil and gas will play in meeting national energy requirements. This was reaffirmed in the

Overarching National Policy Statement for Energy (EN-1) July 2011 which provided further clarification of the Government's plans for a transition to a low carbon economy.

8.2.18 This policy is set against the background of changes in the sources of our energy requirements. By 2004 the United Kingdom became a net importer of natural gas and a net importer of oil in 2010. By 2020, it was then estimated that the UK is likely to be importing about three-quarters of its energy supplies.

8.2.19 On 27 June 2013 the Government announced its long-term infrastructure investment plans which included a package of reforms to facilitate shale gas exploitation. The Government recognised that the simultaneous announcement of the British Geological Survey study highlighting the extent of potential reserves required further appraisal but it considers that shale gas has the potential to contribute significantly to the UKs' energy security, inward investment and growth.

8.2.20 The announcement did not make any specific statements concerning the planning system but it did expand on the provision of community benefits from shale gas extraction. It stated that the companies involved in this industry would fully engage with the local communities as early as possible and that they would provide direct benefits to the areas where shale gas extraction took place. The benefits would include £100,000 for each community situated near each exploratory well and 1% of the revenue from every production site. More recently the Government has introduced changes to the system of notifying landowners and tenants about the submission of hydrocarbon related planning applications which now only applies to the owners and tenants of land where surface operations are to take place. Notification is not now required for purely underground operations.

8.2.21 The infrastructure investment plan statement indicated that a key role for gas is consistent with the need to decarbonise our economy. It is regarded by the Government as the cleanest fossil fuel, and much of the new gas capacity

needed would be replacing the ageing coal capacity. Gas is also seen as important for balancing the increasing levels of intermittent and inflexible low-carbon energy on the system.

Energy Act 2013

8.2.22 The Energy Act received final assent on 18 December 2013. The Act has several objectives and in relation to hydrocarbons it seeks to make provision for the setting of a decarbonisation target range and duties in relation to it; or in connection with reforms to the electricity market for purposes of encouraging low carbon electricity generation, or ensuring security of supply. It is also about the designation of a strategy and policy statement concerning domestic supplies of gas and electricity. It does not actually prescribe a new strategy or policy at this stage but instead sets the procedural requirements for doing so. It is likely however that future policy and strategy will reflect the overall objective of the Act to reduce our carbon footprint and in turn this will affect the future demand for minerals including fossil fuels.

Written Ministerial Statement November 2015, 'Priorities for UK Energy and Climate Change Policy'

8.2.23 This Written Ministerial Statement (WMS) was presented to Parliament in November 2015 by the Secretary of State for Energy and Climate Change. The WMS does not change national planning policy or guidance but it does set out Government thinking on the approach to energy supply. The Secretary of State stated that one of the greatest and most effective contributions we can make to emissions from electricity generation is by replacing coal-fired power stations with gas. The programme was to be subject to consultation but indicated a restriction on the use of coal by 2023 and the possible closure of all coal fired power stations by 2025. This was subject to the development of the infrastructure to enable the shift to take place. This could have implications for the UK onshore oil and gas industry and the utilisation of indigenous resources.

Department for Business, Energy & Industrial Strategy, Guidance on fracking: developing shale gas in the UK, January 2017

8.2.24 The latest version of this guidance note was published on 13 January 2017.

The introductory overview states that the Government believes that shale gas has the potential to provide the UK with greater energy security, growth and jobs and that it is encouraging safe and environmentally sound exploration to determine this potential. It reported that in 2015, just over a third of the UK's energy came from natural gas, and another third from oil. Coal (13%), nuclear (7%), and renewables – mostly biomass and wind (10%) – supplied the rest. Just over two fifths of the natural gas came from the North Sea and Irish Sea whilst the rest was imported. Imported supplies came via pipeline from Europe but supplies were also obtained from the Middle East, Africa and the Caribbean by tanker ships. These figures underpin Government policy to provide greater supply security by increasing the production and use of domestic resources.

8.2.25 The main part of the guidance note provided information about the sources of shale gas, how it can be extracted, the environmental issues raised and the regulatory regime that controls the industry.

Derby and Derbyshire Minerals Local Plan April 2000

8.2.26 The current local plan was adopted well before the possible extraction of oil and gas from unconventional sources became such a prominent issue. The plan focused on the issues relating to the more traditional exploitation of oil and gas from conventional sources and reflected the approach of national oil and gas policy at the time. The plan contained policy MP35: Oil and Gas which stated that:

8.2.27 *“Proposals for the development of oil and gas, including facilities associated with the production, processing or transportation of oil and natural gas will be permitted only where they can be carried out in an environmentally acceptable way, and provided that:*

- 1) Any irreparable damage to interests of acknowledged environmental importance is outweighed by a proven need for the development in its proposed location*

- 2) *The proposal is consistent with an approved overall scheme for the appraisal of, or production from, the area*
- 3) *The proposed location of the development is the best having regard to geological, technical and environmental considerations*
- 4) *Satisfactory arrangements have been made for the avoidance of seepage pollution, the off-site disposal of drilling mud and other drilling residues and the flaring and disposal of unwanted gas.”*

8.2.28 The new Minerals Local Plan will need to include an expanded approach for all forms of hydrocarbon extraction and the techniques involved, as well as recent national energy policy and the developing national policy on energy based mineral extraction and the wider regulatory regimes that control such developments.

Need for Oil and Gas

8.2.29 Modern society and the benefits it enjoys are highly dependent on the continued supply of energy, including the continued supply of oil and gas. Given the volatility of the price of energy and the uncertainty about continued availability, especially imported energy supplies, the need to be more self-sufficient is a paramount requirement and this is reflected in national energy and mineral planning policy, as referred to above. The Government has given its support, in principle, to the onshore oil and gas industry, including the further exploitation of conventional sources and the promotion of oil and gas from unconventional sources such as shale gas.

8.2.30 It is known that further resources of conventional based oil and gas are present in the Plan area and recent studies demonstrate that shale bearing gas is present also. The limitations on the information about these resources does not yet enable the quantity of shale gas in the area to be quantified with any certainty and the commercial viability of those resources has still to be ascertained. However, it is likely that the oil and gas industry will seek to examine and extract these resources, if commercial viability is proven, and the new Plan will need to set out the approach to such developments to ensure that an appropriate balance between supply and environmental, social

and economic impacts is delivered. At present two companies have informed the County Council that they were undertaking preliminary stages of exploration of the shale gas resource on several sites in the plan area. One company, Ineos, has progressed to submitting a planning application (not determined at the time of writing) for an exploratory well at a site in Marsh Lane near Eckington. Further information about the volume of oil and gas production in the UK and the rest of the world and remaining resources is available in the Background Papers referred to previously.

Consultation so far – What you have told us

Consultation Stages

8.2.31 The County and City Councils have undertaken several stages of consultation in the course of the development of the new Minerals Local Plan and a summary of the hydrocarbon related issues included is presented below.

Stakeholder Workshop 2009

8.2.32 We held a stakeholder workshop in 2009, which began to identify the issues that the Minerals Local Plan should address. At this event, people recognised and identified the need for mineral extraction in general, provided that its social and environmental impact is minimised.

Issues and Options Consultation 2010

8.2.33 The issues identified for hydrocarbon minerals in this exercise were Issue 10, 'managing how we make provision for conventional oil and gas', and Issue 11, 'managing how we make provision for new coal exploitation technologies'. The 'Suggested Approach' for Issue 10 was to include a policy for oil and gas developments from conventional sources which sets out criteria similar to those in the existing Minerals Local Plan (policies MP13 and MP35). For Issue 11 the 'Suggested Approach' was to include a policy for new coal exploitation technologies which sets out criteria similar to those for conventional oil and gas developments in Policy MP35 of the existing Minerals Local Plan. It did not specifically address the issue of hydraulic

fracturing which was then a new issue and with little known relevance to Derbyshire and Derby.

8.2.34 There was agreement from all the respondents to the Issues and Options consultation to this question that a criterion based policy would be the most appropriate way of dealing with the future working of hydrocarbons. No other possible options for dealing with the issue were suggested by the respondents.

8.2.35 Further information is available in the following documents:

**Derby and Derbyshire Minerals Local Plan: Issues and
Options Consultation, 2010.**

**Responses to Derby and Derbyshire Minerals Local Plan
Issues and Options Consultation, 2011.**

Sustainability Appraisal (SA) of the Issues and Options Paper 2010

8.2.36 The SA concluded for both Issues 10 and 11 that 'there are no reasonable alternatives. The SA can influence the development of the policy approach. Full details can be found in this Report.

Towards a Minerals Local Plan: Rolling Consultation 2015-2017

Interim Sustainability Appraisal (SA) Report, November 2013

Towards a Minerals Local Plan Rolling Consultation 2015/16

8.2.37 In recognition of the limited scope of the two earlier consultation exercises and the changes in national minerals and energy policy and procedures for

plan preparation that had been introduced since 2010, the County and City Councils undertook a more comprehensive consultation exercise over the 2015 and 2016 period. This was a rolling consultation consisting of the distribution of 'support papers' setting out the background information for each mineral or mineral topic and 'strategy papers' that posed a series of issues and options for the development of the approach of the new plan to each of those minerals and mineral topics.

8.2.38 For hydrocarbons, separate support papers were produced and distributed for conventional oil and gas, unconventional oil and gas and gas from coal measures. One combined strategy paper was produced for all of these separate papers to provide a comprehensive coverage of future hydrocarbon developments.

8.2.39 In order to provide an appropriate context for the issues and options posed in the consultation, the support and strategy papers set out the regulatory system that controls the operation of onshore oil and gas development and the role of the planning system within the wider regulatory framework. They also identified the main planning, environmental, economic and social issues that are pertinent to hydrocarbon developments. In order to explain the rationale for the approach suggested below, a summary of these aspects are presented here as follows:

- The potential scale of the hydrocarbon resource in the Plan area. How much more may be discovered, how economical it could be to work those resources and the economic, environmental and social impacts of extraction set against the potential benefits.
- The difference in the surface site area requirements to facilitate the extraction of onshore oil and gas compared to from other forms of mineral extraction.
- The visual impact of hydrocarbon developments taking account of the size of the drilling equipment and well-head structures.

- Factors involved in the choice of location for the surface installations (need to maximise the volume of oil and gas that can be extracted whilst minimising environmental and amenity impacts).
- Potential impacts of noise, dust and vibration during initial drilling and longer-term extraction.
- Potential pollution risks and wider impacts on the water environment.
- Traffic generation.
- Impact on agricultural land take and usage.
- Potential impacts of areas of acknowledged interest (landscape, biodiversity, archaeology and heritage assets).
- Seismic activity.
- Risk of subsidence.
- Risks from drilling through coal measures, particularly through former coal workings.
- Methane leakage.

8.2.40 The papers also included a list of other factors that would need to be taken into account in developing a strategy for the provision and extraction of hydrocarbons, and which were developed from the issues set out above, together with the experience of the Councils of processing planning applications for mineral development, including coal and hydrocarbons, and the responses of local communities to those proposals. The relevant factors were identified as:

- Government energy policy to secure sufficient supplies of energy to serve the requirements of the country whilst also reducing our carbon footprint and the role of renewable energy production as part of that policy
- The benefits of an indigenous supply compared to a growing reliance on imported sources
- The uncertainty about the future of coal as a means of energy production
- The limited supply of our energy requirements currently met by renewable facilities

- The current support, in principle, of the Government for more energy supplies to be obtained from hydrocarbons
- The known availability of oil and gas resources in the Plan area and the potential for further resources to be discovered
- The limited level of information about the location, scale and economic viability of the hydrocarbon resource in the Plan area
- The likelihood that these questions may be resolved during the Plan period leading to the development of proposals to extract those resources
- The environmental and social impacts of extracting those resources, some of which are well known whilst other potential impacts are less certain
- The likelihood that proposals for exploration and appraisal will be forthcoming during the Plan period
- The potential for new extraction technologies to be developed over the Plan period
- The possible identification of potential areas for hydrocarbon extraction
- The issue of the identification of constraints
- The development of policies, including detailed criteria, which would be used to assess and determine future hydrocarbon extraction applications
- The definition of potential benefits, how they should be assessed and the role to be played in the determination of proposals for new working

8.2.41 Further details can be found in the following document:

Towards a Minerals Local Plan: Rolling Consultation 2015-2016:

Towards a Strategy for Hydrocarbons, November 2015.

8.2.42 The consultation received a larger number of representations compared to some of the other consultation papers but most stated an objection in principle to further oil and gas extraction, particularly the extraction of shale gas by hydraulic fracturing and did not provide responses to the options set out. Representations to the specific issues and options set out in the consultation were very limited, which in turn also limits the conclusions that can be drawn from the consultation exercise. In the absence of representations and also by inference, any opposition to the approach set out in the consultation paper, the new Plan will therefore include an approach to future hydrocarbon mineral extraction in line with national policy and which generally maintains the approach of the existing Mineral Local Plan, amended to address the issues raised by hydraulic fracturing and the use of new extraction techniques. Details of the Representations received and a considered response to the comments is set out in the following Report:

Towards a Minerals Local Plan: Spring 2018 Consultation
Report of Representations, December 2017

Duty to Co-operate

8.2.43 The Duty to Co-operate was created by the Localism Act 2011 which places a legal duty on local planning authorities, county councils and public bodies to engage constructively, actively and on an ongoing basis to maximise the effectiveness of Local Plan preparation relating to strategic cross-boundary matters. The distribution of hydrocarbon resources in the UK and the energy needs of the country as a whole represent significant cross-boundary matters for this Minerals Local Plan and those of neighbouring authorities. The geological fields which underlie the Plan area and which contain hydrocarbon resources also underlie neighbouring Counties and beyond, and some of the current PEDL areas straddle the county boundary. Derbyshire County Council and Derby City Council have, and will continue to engage with all relevant authorities and public bodies over matters relating to the development of a complementary approach to the extraction of hydrocarbons to reflect those

linkages and this will be used to help formulate the policies of the new Minerals Local Plan. Further details are set out in the following report:

Towards a Minerals Local Plan: Spring 2018 Consultation
Duty to Cooperate Report: Background and Progress,
December 2017

Sustainability Appraisal

8.2.44 The Sustainability Appraisal noted that the proposed approach was in-line with the NPPF and NPPG, which ought to lead to neutral effects in the main. Not allocating sites was considered positive with regards to climate change as it does not pre-empt the use of fossil fuels. It noted the obstacles to identifying and allocating sites at present. The draft list of criteria was considered appropriate to ensure that most aspects of environmental sustainability are addressed but suggested the addition of soil resources to the list. A full Appraisal is set out in the following Report:

Towards a Minerals Local Plan: Spring 2018 Consultation
Interim Sustainability Appraisal (SA) Report, December 2017

The Proposed Approach

Provision for Hydrocarbons

8.2.45 It is intended that the Plan will adopt an approach to the provision for hydrocarbons in line with national planning policy as expressed in the NPPF and NPPG, reflecting the need to provide for a steady and adequate supply of these resources as a mineral of national importance. It will not seek to enumerate the provision as Government guidance is that the volume and mix of energy mineral extraction is a matter for the relevant industries to determine. In addition, the scale of resources available in the Plan area and

the commercial viability of those resources are very uncertain, rendering it impossible to set out an appropriate yearly or overall level of production.

8.2.46 In line with national planning policy, the Plan will seek to ensure that developments which do proceed represent sustainable mineral development, and only those that would not give rise to unacceptable adverse impacts would be allowed to proceed. In order to deliver this important objective, the Plan will set out policies to assess the level of acceptability, or otherwise, of individual development proposals. The policies will recognise the three distinct phases of hydrocarbon development; that is exploration, appraisal and production, but the decision on whether this would involve a separate policy for each stage will not be determined until the form and content of the policies is developed further and agreed.

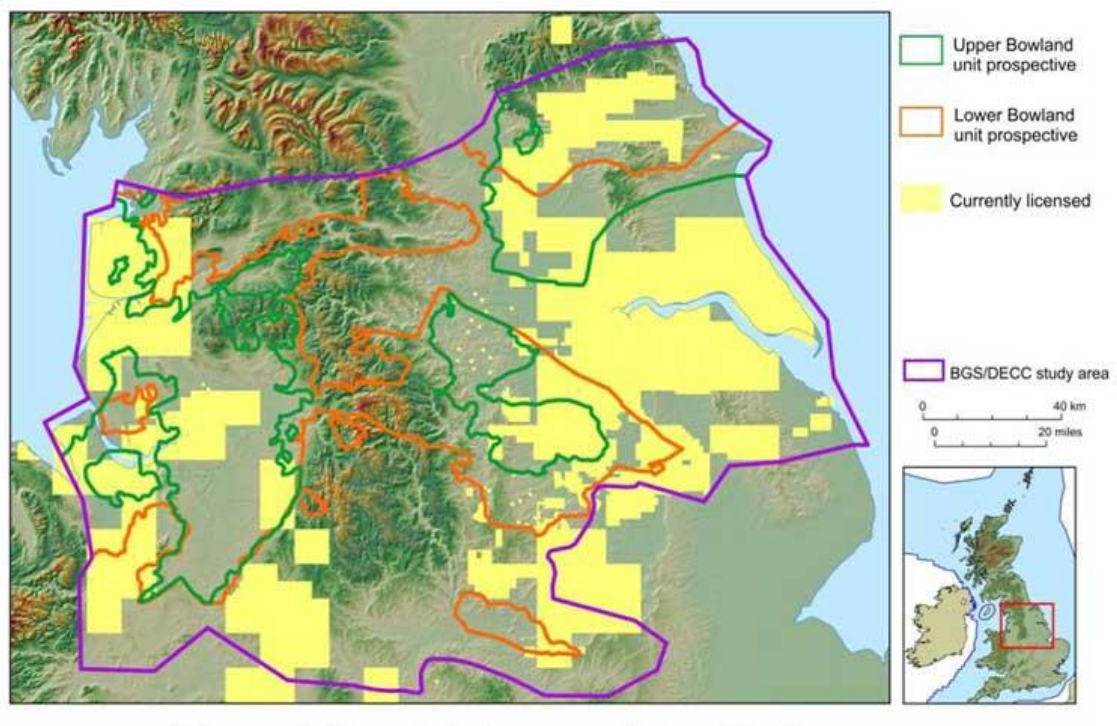
Identification of Hydrocarbon Resources within the Plan Area

8.2.47 The National Planning Practice Guidance states that the exploratory, appraisal and production phases of hydrocarbon extraction can only take place in areas where the Department of Energy and Climate Change (now Department for Business, Energy & Industrial Strategy) has issued a licence under the Petroleum Act 1998 (Petroleum Licence). These licence areas together with the Bowland-Hodder shale resource referred to at paragraph 8.2.3 are shown on the map below. The new Minerals Local Plan will identify Petroleum Licence Areas and any existing oil and gas extraction sites which are present in the Plan area.

8.2.48 In addition, the NPPG also encourages mineral planning authorities to make provision for hydrocarbons by the use of published data on the location of conventional and unconventional hydrocarbons, use of ordnance survey based policies maps and available data on existing wells. There are practical limitations concerning the extent to which the new Minerals Local Plan can identify other areas where hydrocarbon extraction may be possible and also potentially acceptable. The limitations for the identification of these resources are similar to those for coal. The level and accuracy of information which is currently available about the location, scale and the economic viability of the

remaining hydrocarbon resource is very limited. In the absence of detailed information about an individual site and how the hydrocarbon would be extracted it is difficult to assess the acceptability of working the resource on particular sites.

Map of areas of prospective for gas in the Bowland-Hodder Shale resource and PEDL areas (April 2013)²



² British Geological Survey and DECC report: The Carboniferous Bowland Shale Gas Study, Geology and Resource Estimation, 2013 – Figure 43

Identification of Constraints on the Production and Processing of Hydrocarbons

8.2.49 The National Planning Policy Framework states that mineral local plans should address the constraints on the production and processing of hydrocarbons within the areas that are licensed for oil and gas exploration or production (paragraph 147).

8.2.50 The limited responses to the consultation did not provide support or opposition to any of the options put forward. In terms of area coverage, it is therefore likely that the Plan will identify constraints, where possible, for all areas where hydrocarbon resources are known to exist and which could potentially be subject to development proposals. It is likely that the Plan will seek to identify those constraints listed in the NPPF and NPPG which relate to environmental constraints which are matters within the remit of mineral planning authorities when determining planning applications together with constraints of a cumulative, social and economic nature.

Use and Range of Criteria Based Policies

8.2.51 Most respondents who commented on the relevant options supported the approach advocated in the NPPF of setting out criteria based policies to assess and determine planning applications for hydrocarbon based developments. In addition, the NPPF states that planning permission is required for each of the three separate stages of hydrocarbon development; exploration, appraisal and production, and that local plans should include policies for each stage. It does clarify whether each stage should be covered by separate policies with differing sets of criteria or whether the three phases could be addressed by one all-embracing policy, and the responses to the relevant options were not supportive of any one option more than another. It was noted in the consultation that the range of criteria available to a mineral planning authority is now well established and these are set out in relevant guidance. Most, if not all of these criteria could be relevant to each phase of development. Whilst the form and wording of policies is to be addressed

further in this and subsequent consultations, initial indications are that there may be sufficient similarities for one policy covering both exploration and appraisal and a separate policy for production. The policies set out below are examples of how those of the new Plan could appear and the form they could take.

Specific Issues Relating to Hydraulic Fracturing

8.2.52 The consultation exercise considered options for including one criteria policy for all hydrocarbon developments or having a separate, additional policy specifically for hydraulic fracturing. Again the limited number of responses and the contrasting suggestions did not provide definitive support for either option. Whilst the authorities have experience of processing planning applications for oil and gas production from conventional sources, at this point we have received a limited number of development proposals from unconventional sources. However, and on the basis that only those parts of a policy or policies which are relevant to a particular development proposal will be taken into consideration, there is no indication, as yet, that one policy only for hydrocarbons would not enable all the relevant issues of developments from the differing sources or the use of different extraction technologies to be fully examined.

Possible Draft Policies

8.2.53 As stated above, the approach of the Plan to hydrocarbon development is not yet as advanced as for some other minerals. The consultation responses did not provide the steer we were hoping to receive but it is important that the approach is developed as part of this consultation so that we can progress towards a draft plan. It is acknowledged that national planning policy requires the plan to include policies setting out the criteria against which mineral development proposals will be determined. The emerging Plan will therefore include such policies for hydrocarbon development, although the number and form of those policies has yet to be agreed.

8.2.54 In order to stimulate debate and progress this issue we have included a set of potential policies covering the range of factors that will need to be included in the hydrocarbon policies of the new Minerals Local Plan. They are intended to show how the policy requirements for hydrocarbons could appear.

Policy MS17: Proposals for Oil and Gas Exploration and Appraisal

Proposals for exploration and appraisal of onshore oil and gas will be permitted where they meet all of the following criteria:

- **Well sites and associated facilities are sited in the least sensitive location from which the target reservoir can be accessed**
- **It has been demonstrated that possible effects that might arise from the development would not adversely affect the integrity of sites designated or recognised for their landscape, historic heritage or biodiversity interests**
- **The application demonstrates that there would be no adverse impact on the underlying integrity of the geological structure**
- **The application provides an indication of the extent of the reservoir and the extent of the area of search within the reservoir**
- **Exploration and appraisal operations are for an agreed temporary period**
- **Well sites and associated facilities are restored at the earliest opportunity if oil and gas is not found in economically viable volumes, or they are developed within an agreed time frame.**

An alternative option is:

Proposals for the exploration and appraisal of onshore gas and oil will be permitted where the applicant can demonstrate that the development would satisfy all of the following criteria:

- **Well sites and associated facilities are sited in the least sensitive location from which the target reservoir can be accessed;**
- **The applicant has demonstrated that all potential adverse environmental, social and economic impacts can be mitigated to levels which are acceptable to the Mineral Planning Authority;**
- **The applicant has demonstrated that the integrity of the geological structure is suitable;**
- **An indication of the extent of the reservoir and the extent of the area of search within the reservoir is provided to the Mineral Planning Authority;**
- **The exploration and appraisal operations are for an agreed, temporary length of time; and**
- **Well sites and associated facilities are restored at the earliest practicable opportunity if oil and gas is not found in economically viable volumes, or they are developed within a time frame which has been agreed in writing by the Mineral Planning Authority.**

Policy MS18: Proposals for Oil and Gas Production and Ancillary Development

Proposals for hydrocarbon production well sites and facilities, and other related ancillary development, will be permitted where they meet all of the following criteria:

- **A full appraisal programme for the oil and gas field has been completed to the satisfaction of the Mineral Planning Authority;**
- **A framework for the full development of the field is submitted for approval by the Mineral Planning Authority;**
- **Facilities required for hydrocarbon production sit within the agreed development framework, are justified in terms of their number and extent, and are progressively installed wherever possible;**
- **Extraction, processing, dispatch and transport facilities are sited, designed and operated to minimise environmental and amenity impacts and provide proportionate environmental enhancements;**
- **Any adverse impacts, both individual and cumulative, can be avoided or mitigated to the satisfaction of the Mineral Planning Authority;**
- **It has been demonstrated that possible effects that might arise from the development would not adversely affect the integrity of designated and non-designated biodiversity sites, either alone or in combination with other plans or projects;**
- **It can be demonstrated that there would be no adverse impact on the underlying integrity of the geological structure, including any disturbance to former coal mining shafts and seams that could result in additional adverse impacts from those sources;**
- **Existing facilities are used for the development of any additional fields discovered unless the applicant satisfies the Mineral Planning Authority that this would not be feasible and any adverse impacts can be mitigated;**
- **Where a proposal uses existing production facilities, the integrity of the existing infrastructure can be demonstrated, having regard to local environmental factors;**
- **The development includes the use of pipelines for the transport of the oil or gas unless it is demonstrated that this is not feasible. In such cases rail or road will be considered but in the case of road it will only be allowed where it has been demonstrated that it would not give rise to unacceptable impacts on the environment or highway safety.**