



# **GUIDANCE ON OIL AND GAS EXPLORATION, PRODUCTION AND DISTRIBUTION**

**DRAFT FOR CONSULTATION  
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## 1. Introduction

This is a supplementary planning document (SPD) on onshore oil and gas exploration, production and distribution.

It is to assist in interpreting the policy requirements of the development plan within the context of onshore oil and gas exploration, production and distribution. It should be read in conjunction with the Minerals and Waste Local Plan (particularly policy DM2), the district Local Plan, the National Planning Policy Framework and the National Planning Practice Guidance.

It is prepared jointly by the minerals planning authorities of Lancashire County Council, Blackpool Council and Blackburn with Darwen Borough Council. As minerals and waste planning authorities they are responsible for controlling, protecting and regulating the use of land for minerals and waste developments to ensure that development in Lancashire occurs in a sustainable manner and in a way that promotes its economic, social and environmental well-being.

### 1.1 Useful documents

- Joint Lancashire Minerals and Waste Core Strategy<sup>1</sup>
- Joint Lancashire Minerals and Waste Site Allocation and Development Management Policies Local Plan<sup>2</sup>
- Statement of Community Involvement<sup>3 4 5</sup>
- Planning Application validation checklist<sup>6</sup>
- National Planning Policy Framework<sup>7</sup>
- National Planning Practice Guidance<sup>8</sup>
- About Shale Gas and Hydraulic Fracturing<sup>9</sup>
- Oil and Gas: Onshore Exploration and Production<sup>10</sup>

### 1.2 Planning Application Process

The minerals planning authority is required to determine applications of this nature within the statutory timescales (from validation to committee decision - 8 week for

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<sup>1</sup> <http://www.lancashire.gov.uk/corporate/web/?siteid=6106&pageid=35242&e=e>

<sup>2</sup> <http://www.lancashire.gov.uk/corporate/web/?siteid=6106&pageid=35243&e=e>

<sup>3</sup> <http://www.lancashire.gov.uk/corporate/web/viewdoc.asp?id=68594>

<sup>4</sup> <http://blackpool.gov.uk/NR/rdonlyres/FBEF8409-8E44-4DC2-8FBA-3E4862EFD2A0/0/FinalAdoptedSCI.pdf>

<sup>5</sup> <http://www.blackburn.gov.uk/Lists/DownloadableDocuments/2015-DL-statement-of-community-involvement.pdf>

<sup>6</sup> <http://www.lancashire.gov.uk/corporate/web/?siteid=3063&pageid=7098&e=e>

<sup>7</sup> <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

<sup>8</sup> <http://planningguidance.planningportal.gov.uk/blog/guidance/minerals/planning-for-hydrocarbon-extraction/>

<sup>9</sup> <https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking>

<sup>10</sup> <https://www.gov.uk/oil-and-gas-onshore-exploration-and-production>

planning applications, 13 weeks for major applications and 16 weeks for applications accompanied by an environmental statement), or such period as may be agreed with the applicant, or in accordance with a planning performance agreement.

In order to ensure the minerals planning authority can keep to these timescales it is important that applications, when submitted, are accompanied by sufficient information to allow full consideration of any environmental impacts and proposed mitigation measures. The validation checklist is produced to ensure applicants are aware of the necessary information that should accompany a planning application.

Pre-application discussions can assist in ensuring the efficient operation of the planning application process.

Some planning applications will also be accompanied by an environmental statement; the criteria for determining whether an environmental statement is required are contained within the Town and Country Planning (Environmental Impact Assessment) Regulations 1999. If these criteria are not clear the applicant may apply to the Council for a screening opinion to determine whether it is necessary to carry out an environmental impact assessment. An applicant may also apply for a scoping opinion, to determine the information to be provided in the environmental assessment.

Applications that are received and validated will be entered on the planning register<sup>11</sup>.

The planning application will be advertised in the press and by notice on the application site. The Parish Council and District Council will be consulted, together with other statutory consultees including the Environment Agency and Natural England. The County Councillor, and nearby residents<sup>12</sup> will also be notified.

Following this there is a statutory 21 day period<sup>13</sup> for consultation responses within which representations should be sent, either online or using the contact details in Appendix 5. If representations are received outside of this period they will still be taken into account up to the time the decision on the planning application is taken. Members of the public may inspect copies of the application, plans and any other documents submitted with it at the County Council or appropriate District Council office.

A report describing the planning application, its context and impacts, responses to the consultation, and officer recommendations is prepared by officers of the Council, and presented to the Council's Development Control Committee<sup>14</sup>.

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<sup>11</sup> Details of which are available in appendix 5

<sup>12</sup> Owners and occupiers that are adjacent to or considered to be materially affected by the development

<sup>13</sup> This may be extended at the discretion of the minerals planning authority, depending on the nature and complexity of the proposal

<sup>14</sup> Alternatively, under certain circumstances, a decision may be made under the mineral planning authority's scheme of delegation by the head of planning. Further information is available on the Council's website

The agenda and items are published on the Council's website at least 5 working days before the committee meeting. There is the opportunity to speak at the planning committee (further details can be found on the Council's website<sup>15</sup>).

The members of the Development Control Committee consider the officers report, hear any third party representations, discuss the application, and vote on whether to grant or refuse planning permission. Each application must be considered on its own merits, in accordance with the development plan and considering present guidance, national policy and other material considerations<sup>16</sup>.

If the decision is refused the applicant can appeal to the Secretary of State. Any such appeal is considered by an independent inspector of the Planning Inspectorate, who will report their findings to the Secretary of State. The appeal process can be either by written representations, an informal hearing or by full public inquiry. The decision of the Secretary of State is final, subject to a 'statutory appeal' which can consider the lawfulness of the decision that was taken.

Alternatively the lawfulness of the decision can be challenged (a judicial review), if the applicant or a third party feel that the minerals planning authority acted unlawfully. This requires the permission of the courts; there are strict time limits for applying to the courts for a judicial review.

### 1.3 Monitoring

Once planning permission is granted the developer is required to operate within the conditions imposed on the planning permission. Monitoring and inspection visits will form a key part of the successful implementation of any planning permission, to ensure the operator complies with any conditions imposed on the planning permission. The frequency with which sites are visited will depend on the nature and scale of the development. Sites where breaches of planning control have been identified will be visited more regularly.

Where a breach of planning control is identified the Council will take appropriate and proportionate action to remedy the breach using the powers at its disposal, in accordance with the Development Control Enforcement Policy<sup>17</sup>.

Monitoring will also be carried out through the other regulatory regimes, by the Environment Agency and the Health and Safety Executive, and by an independent body on behalf of the operator which reports to the Health and Safety Executive and DECC.

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<sup>15</sup> Details of which are available in appendix 5

<sup>16</sup> A material consideration is a factor to be taken into account when a decision on a planning application is reached. Ultimately what is or is not a material consideration is determined by the courts. Any consideration that relates to the development or use of land is capable of being a material consideration: material considerations include for example the impacts associated with noise and dust, but do not include loss of a personal view or loss of property value. The weight to be given to a material consideration is a question of planning judgement for the planning authority.

<sup>17</sup> <http://www.lancashire.gov.uk/corporate/web/viewdoc.asp?id=47630>

## 1.4 Phases of Development

The areas currently licensed for oil and gas exploration are described in Appendix 1.

The main activities in onshore oil and gas development are exploration, appraisal, and production. Developments targeting unconventional oil and gas reservoirs will likely include a need to stimulate the flow of hydrocarbons at each of these phases, through for example hydraulic fracturing and dewatering. As a result some of these developments may not have the same discrete phases; exploration and appraisal may take place as a single process using the same wells. Information on the phases of development is presented below. Individual applications will be considered on their own merits and will not take account of future hypothetical activities for which permission has not yet been sought. Planning permission for exploration and appraisal does not carry with it any presumption that long-term production from those wells, or that the development of further wells, will be permitted.

Each phase is likely to include several distinct stages, with associated increases in activity and vehicle movements, including site establishment, delivery and removal of plant and equipment specific to that stage, drilling, and site disestablishment and restoration.

Not all exploration will lead to appraisal, and not all appraisal will lead to production.

## 2. Pre-application

Pre application discussions are a valuable part of the planning application process when a developer can obtain an understanding of the policy position regarding the proposals, and the supporting information that may be required when submitting their application. They can lead to the submission of better quality applications which avoids wasting time, money and confusion. Applicants are also directed to the validation checklist, particularly the local information requirements specific to onshore oil and gas.

Impacts should wherever possible be designed out of the scheme early in the appraisal process; mitigation should be a last resort.

The industry is encouraged to discuss its proposals fully with the minerals planning authority before a planning application is made so that all the options and longer term issues can be properly considered. Pre-application advice will be provided in accordance with the minerals planning authority's pre-application advice procedure if requested.

Consultations with communities local to the proposed development are also beneficial and are encouraged during the design phase. Community engagement is encouraged throughout the application and development process. Further information can be found in the mineral planning authority's Statement of Community Involvement<sup>18 19 20</sup>.

The Localism Act 2011 provides for the opportunity to enter into a Planning Performance Agreement in appropriate circumstances. Planning performance agreements are essentially a project management process and tool to improve the quality of major planning applications and to provide greater certainty and transparency in the development of major schemes, in the assessment of the planning applications and in the decision making process. They include requirements and timescales for consideration and determination of planning applications, and establish regular review mechanisms.

They may be particularly relevant where:

- proposals include a complex Environmental Impact Assessment - when the minerals planning authority need to commit significant officer time.
- proposals require external expertise (consultants) that the minerals planning authority do not possess and will need to commission.

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<sup>18</sup> <http://www.lancashire.gov.uk/corporate/web/viewdoc.asp?id=68594>

<sup>19</sup> <http://blackpool.gov.uk/NR/rdonlyres/FBEF8409-8E44-4DC2-8FBA-3E4862EFD2A0/0/FinalAdoptedSCI.pdf>

<sup>20</sup> <http://www.blackburn.gov.uk/Lists/DownloadableDocuments/2015-DL-statement-of-community-involvement.pdf>



Applicants should contact the mineral planning authority's development management group, using the information in Appendix 5 for further information on pre-application discussions or consultation.

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### 3. Phases of Development - Exploration

Mineral exploration is the process of ascertaining the presence, extent or quality of a mineral deposit with a view to commercial exploitation of that mineral. It encompasses a range of activities, including geological mapping, geophysical (seismic) investigations through shot holes or vibration platforms, and the drilling and investigation of wells and boreholes to assess prospects in more detail (in some instances including lateral drilling).

Many proposals for mineral exploration are small scale, have limited environmental impacts and are permitted under the Town and Country Planning (General Permitted Development) Order 1995. Exploration not permitted by the general permitted development order requires a specific planning permission from the minerals planning authority, or are subject to prior notification procedures. Drilling of wells for oil and gas exploration is not permitted development and a planning application must be made.

If the resource is 'unconventional' (shale gas or coal bed methane for example) this may include stimulating the gas flow through hydraulic fracturing or dewatering. Consequently the exploration phase may include some hydraulic fracturing and dewatering.

Applications for planning permission will be assessed against the effects of the exploration activity rather than on the merits of any possible future proposals for commercial exploitation. Consideration will not include any hypothetical future proposal for development of the oil or gas resource. Applicants should indicate what knowledge has been gained from seismic investigations in selecting the well site.

The NPPG states that "*there is a pressing need to establish – through exploratory drilling – whether or not there are sufficient recoverable quantities of unconventional hydrocarbons such as shale gas and coalbed methane present to facilitate economically viable full scale production*". Subject to the effects on the environment being appropriately addressed and mitigated, and a satisfactory restoration and aftercare plan prepared, applications for exploration may be favourably considered.

In most cases it will be appropriate to impose conditions to a planning permission to ensure any adverse impact of the operation on the environment and local residents is kept to a minimum. Any permission may also be subject to unilateral agreements for off-site mitigation and legal agreements controlling off-site activities such as vehicle routing.

#### **4. Phases of Development - Appraisal**

Should hydrocarbons be found as a result of the exploration phase the deposit will need to be defined through further testing and appraisal. Before the appraisal information is available it is difficult to evaluate the various options available or to assess the viability and potential environmental effects of commercial exploitation.

The appraisal phase may involve the carrying out of further exploratory work around an existing exploratory well (including additional drilling, in some instances including lateral drilling) to further define the deposit, and will also involve flow testing, sometimes over a period of 2 years or longer. If the resource is 'unconventional' (shale gas or coal bed methane for example) the gas flow will need to be stimulated through hydraulic fracturing or dewatering.

At this stage sufficient volumes of gas may be captured to enable on site generation to take place, rather than flaring.

As with all other forms of development an application for appraisal must be considered on its merits. However, at the appraisal stage this should take into account the long term suitability of the site since such wells may subsequently be used for production purposes. This will help to ensure that the immediate and potential longer term environmental impacts are understood, and is particularly important on sites where there are likely to be higher impacts at later stages (such as areas with biodiversity or landscape designations).

At this stage the cumulative visual effect of an increased number of wells or an intensification of development in the local area will be a key consideration. As will the concentration of vehicle movements.

In most cases it will be appropriate to impose conditions to a planning permission to ensure any adverse impact of the operation on the environment and local residents is kept to a minimum. Any permission may also be subject to unilateral agreements for off-site mitigation and legal agreements controlling off-site activities such as vehicle routing.

## **5. Phases of Development - Production and Distribution**

Proposals for the commercial development of a deposit should be presented to the mineral planning authority in an overall scheme providing for the comprehensive development of the deposit, to ensure it is exploited efficiently and in an environmentally satisfactory way. This comprehensive scheme will have to demonstrate that extraction, transportation and reclamation can be undertaken in a satisfactory way and that the potential risk from hazards can be kept to acceptable levels.

In submitting an application for the drilling of production wells the developer should justify the number of wells proposed using the knowledge gained from the exploration and appraisal stages, and demonstrate that the site(s) proposed are the most suitable given the above and below ground constraints, and that the number proposed is optimal – to minimise the cumulative visual impact the number of wellheads should be kept to a minimum.

Issues to be considered at this stage will include the need for gathering stations, compressors and scrubbers or the need for onsite generators, and the distribution infrastructure associated with either of these (gas pipelines or electricity cables). Landscape and visual impacts are likely to be significant considerations given that, whilst temporary in planning terms, the structures and land uses associated with the production and distribution phase are likely to be in place for 10-20 years. However, there will be a degree of flexibility in locating the distribution infrastructure which should be utilised to reduce the visual impact; given this flexibility gathering stations should be located where they would not have unacceptable environmental impacts. Screening, landscaping and design, and sinking facilities below ground level should be utilised where necessary. Where possible they should be located where they can feed into a long distance pipeline in preference to relying on road transport.

Proposals for distribution should also address the possible implications on the movement of animals, and agricultural activities, from the distribution network.

If the resource is 'unconventional' (shale gas or coal bed methane for example) the gas flow may need to be stimulated through hydraulic fracturing or dewatering throughout the productive life of the well. This will result in periods of increased levels of activity and infrastructure throughout the production phase.

In most cases it will be appropriate to impose conditions to a planning permission to ensure any adverse impact of the operation on the environment and local residents is kept to a minimum. Any permission may also be subject to unilateral agreements for off-site mitigation and legal agreements controlling off-site activities such as vehicle routing.

## 6. Principal Issues for the Industry in Lancashire

Policy DM2 states that developments "*will be supported where it can be demonstrated to the satisfaction of the minerals and waste planning authority, by the provision of appropriate information, that all material social, economic or environmental impacts that would cause demonstrable harm can be eliminated or reduced to acceptable levels. In assessing proposals account will be taken of the proposal's setting, baseline environmental conditions and neighbouring land uses, together with the extent to which its impacts can be controlled in accordance with current best practice and recognised standards.*"

Operators should provide sufficient information to enable a full assessment to be made of the baseline conditions, and likely effects of the proposed development. Information should be provided on how these impacts are addressed, either through the design of the scheme, or through mitigation measures. The information below provides guidance on the type of information and scheme features that a developer could include as part of an application to assist in demonstrating it is in accordance with the policies of the development plan. Information other than that listed below may be necessary, depending on the particular circumstances of each application.

In accordance with Policy DM2 (and other relevant policies of the development plan) the minerals planning authority will expect the developer to address the following, and will only support development where these issues are satisfactorily addressed<sup>21</sup>.

### 6.1 High Operating Standards

- Provide for an agreed schedule of work to avoid disruption (or prior notification of routine flow stimulation operations, where these are required through the lifetime of the development)
- Provide for suitable hours of operation as a means of minimising disturbance to neighbours
- Provide for on-going monitoring of established baseline conditions<sup>22</sup>.

Developments should implement high operating standards, sensitive working practices and environmental management systems to minimise harm and nuisance to the environment and to local communities throughout the operational life of the site. Sites should be developed in the least intrusive way to minimise disturbance. Operators should work co-operatively with regulatory agencies and other stakeholders to promote best practice(s), and improve communication with local communities<sup>23</sup>.

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<sup>21</sup> This includes consideration of impacts felt beyond the administrative boundary of the mineral planning authority.

<sup>22</sup> Some elements will be controlled through the land use planning system by the mineral planning authority, some will be controlled through the environmental permitting system by the Environment Agency.

<sup>23</sup> Operators should consider the benefits of establishing local liaison groups, and of notifying neighbours in advance of new operations being carried out on site, or in

- Noise  
Developers should carry out detailed investigations and submit appropriate levels of mitigation, including details of the noise output, and the provision of purpose designed attenuation for all noise generative plant and equipment including baffle mounds and acoustic fencing to the site or areas of the site.
- Air Quality  
Developers should carry out detailed investigations and submit appropriate levels of mitigation addressing releases to air.
- Surface and ground water protection  
Developers should carry out detailed investigations into the effect of the proposed development on groundwater and surface water courses.

Developers should discuss proposals for ground and surface water protection with the Environment Agency prior to submitting a planning application. Measures should include storing fuels and oil in appropriately designed tanks with impervious bunds and requiring operation(s) to take place on impervious hard-standings. Wastewater should be stored in purpose designed storage tanks. Wastewater generated on site should be re-used where possible and the operator should install on-site wastewater treatment if appropriate, or should demonstrate sustainable means of disposing of the waste water off site.

There is the potential with unconventional resources for impacts on the available water resource through abstraction from the water table or existing water sources. Details should be provided of the amounts of water that will be used in all operations, including information on the source of the water and the impacts associated with its implementation. Demand could however be substantially reduced if it could be met from recycling and reuse of flowback water and this is encouraged where appropriate<sup>24</sup>.

- Flaring  
Developers should demonstrate that a sequential approach has been followed when considering how to manage gases during the exploration and appraisal phase: utilisation is the preferred approach, followed by flaring. Utilisation may necessitate connection to the grid, either for gas or on-site generated electricity; where connection to the grid is proposed, details should be provided including routes of interconnection to transmission lines.

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advance of new applications being submitted.

<sup>24</sup> Proposals should be in accordance with the *Strategy for the Management of Solid Low Level Radioactive Nuclear Waste from the Non-nuclear Industry in the UK*, and the *Low Level Waste Strategy and the Strategy for the Management of Naturally Occurring Radioactive Material waste in the UK*

## 6.2 Landscape and Visual Impacts

- Provide for screening of production, distribution and security infrastructure appropriate to the landscape character area and the nature and duration of impact, including the opportunity for off-site landscaping
- Provide for the cowling of flares where they are necessary
- Provide for the screening of plant and machinery, including flare stacks where they are necessary
- Provide for the utilisation of gas produced through flow testing where the quantities produced and duration of production are sufficient to justify the installation of infrastructure for energy production

Developments should comprehensively and effectively mitigate all landscape and visual impacts arising from the development, by means appropriate to the landscape character of the area, and appropriate to the relevant stage of development. In particular, there should be a restrained use of lighting to eliminate glare and minimise light pollution on local amenity and intrinsically dark landscapes.

In addition, in accordance with national planning guidance paragraph 223, the minerals planning authority will give great weight to conserving the landscape and scenic beauty of the Forest of Bowland area of outstanding natural beauty when considering proposals for unconventional oil and gas. In line with national planning guidance paragraph 116, major developments for onshore oil and gas will be refused in these areas except in exceptional circumstances and where it can be demonstrated they are in the public interest.

Advance screening of sites is considered to be an essential mitigation component, alongside the appropriate siting of the drilling and distribution infrastructure. Consideration needs to be given to the time required for natural screening to grow to a sufficient height and density to be effective, and opportunities for off-site screening where possible.

Information on the measures to deal with gas (i.e. gas processes) and whether the gas will be used on site should be submitted with the planning application; together with details of above ground infrastructure including distribution off-site. Neighbouring operators are encouraged to work together to ensure efficient provision of gas collection and water treatment infrastructure in order to reduce the cumulative visual impacts of a number of developments in a local area.

Developers will also need to take into consideration the height of extraction rigs and levels of illumination on the rigs where developments are in close proximity to the flight path(s) for Blackpool Airport and BAE Systems Warton Airfield.

Further guidance for applicants on landscape effects can be found on the Lancashire County Council webpage<sup>25</sup>.

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<http://new.lancashire.gov.uk/council/strategies-policies-plans/environmental/landscape-strategy.aspx>

### 6.3 Traffic and Transport

- Provide for appropriate traffic routing through Section 106 agreements
- Provide for suitable access
- Provide for the maintenance of the local highway infrastructure should damage occur

Heavy goods vehicles (HGVs) can have adverse impacts on residents and other sensitive land-uses; they can also cause damage to roads and verges, especially at the point of access to sites; they can contribute to noise and they can impact on road safety, if unsuitable roads are used.

Developers should seek to mitigate these potential effects, through all phases of development, using planning or highway agreements where necessary, including through committing to pre and post commencement surveys to determine if any damage caused to the highway can be attributed to the development and compensated for. The aim is to ensure that the state of the local highway network is not adversely affected and local communities are not disadvantaged. There may also be scope to restrict hours of working in order to control vehicle movements at peak times, and thereby reduce the development's impact on the local road network.

### 6.4 Site Restoration and Aftercare

- Provide for appropriate restoration scheme

Developers should consider the appropriate restoration of the site at the planning application stage. The level of detail required will depend on the expected duration of operations on the site. Restoration should be reflective of the sites former use, and restored to its former standard or higher, it should be in keeping with the surrounding landscape, and applicants should demonstrate that proposals provide for net gains in biodiversity where possible, in accordance with the NPPF.

Any necessary stripping and storage of soils should take place in accordance with best practice, and should be stored so as to enable their successful use in an agreed restoration scheme.

It may be necessary for the operator to enter into a planning obligation or financial guarantee (bond) sufficient to provide for the restoration of the proposed development in the event of operator failure.

### 6.5 Flood Risk

- Where appropriate provide for a flood risk assessment, including consideration of flood prevention and flood protection

Any developments that fall within a prescribed flood risk area will need to include the submission of a flood risk assessment, demonstrating that the development would not adversely contribute to fluvial flood risks or surface water flooding, and would not be susceptible to it, and provision should be made where there is a risk to ensure that the risk is minimised.



## 6.6 Heritage Assets

Developers will need to consider the proposed developments impact on heritage and conservation assets. The local historic environment records centre may be of assistance<sup>26</sup>. In particular the minerals planning authority has a statutory duty, under the Planning (Listed Buildings and Conservation Areas) Act 1990, to pay special regard to the desirability of preserving the setting of a listed building (s66) and for special regard to be paid to the desirability of preserving or enhancing the character or appearance of a conservation area (s72). These will be given considerable importance and weight, relative to other material considerations, when considering any planning application.

## 6.7 Nature Conservation

- Provide for habitat surveys
- Provide for a scheme to demonstrate avoidance, mitigation, and as a last resort compensation, including a seasonal schedule of work to avoid disturbance

Developers will need to consider the proposed developments impact on biodiversity, and on the hierarchy of protected sites, through habitat destruction, or through the disturbance of species on surrounding land, including the habitat of wintering and migratory wildfowl or impacts. The developer should provide information on how nature conservation interests are likely to be affected by the proposed development, and on any proposed habitat mitigation and compensation, including through Section 106 agreements where necessary. Rigorous application of the mitigation hierarchy, as embedded in the NPPF, will be required.

In addition to the policies of the development plan, the minerals planning authority has a statutory duty, under the Natural Environment and Rural Communities Act (2006), to have regard to the purpose of conserving biodiversity in exercising its functions.

The Nature on the Map<sup>27</sup> website is a useful source of information on the location and qualifying features of the international and national designations. The local environmental records centre may also be of assistance; the LERN can be contacted on [lern@lancashire.gov.uk](mailto:lern@lancashire.gov.uk), and further information can be found on the Lancashire County Council webpage<sup>28</sup>. Further guidance for applicants on nature conservation and planning can be found on the Lancashire County Council webpage<sup>29</sup>.

## 6.8 Seismic Movement Prediction and Mitigation and Geological Assessments

Developers will need to consider the proposed developments impact on land stability. Notwithstanding that DECC are responsible for controls to mitigate seismic

<sup>26</sup> <http://new.lancashire.gov.uk/libraries-and-archives/archives-and-record-office/historic-environment-record.aspx>

<sup>27</sup> <http://www.natureonthemap.naturalengland.org.uk/>

<sup>28</sup> <http://www.lancpartnerships.org/lern/>

<sup>29</sup> <http://www.lancashire.gov.uk/environment/ecology/index.asp>

risk, developers should provide details of any seismic monitoring and risk assessments carried out so as to be able to assess any land use planning implications.

### 6.9 Soil Resources and Agriculture

Developers will need to consider the proposed developments effect on the ability to work agricultural land adjacent to it, and the effect of the loss of any best and most versatile agricultural land necessary to facilitate the proposed development.

Further information is available on the MAGIC<sup>30</sup> website.

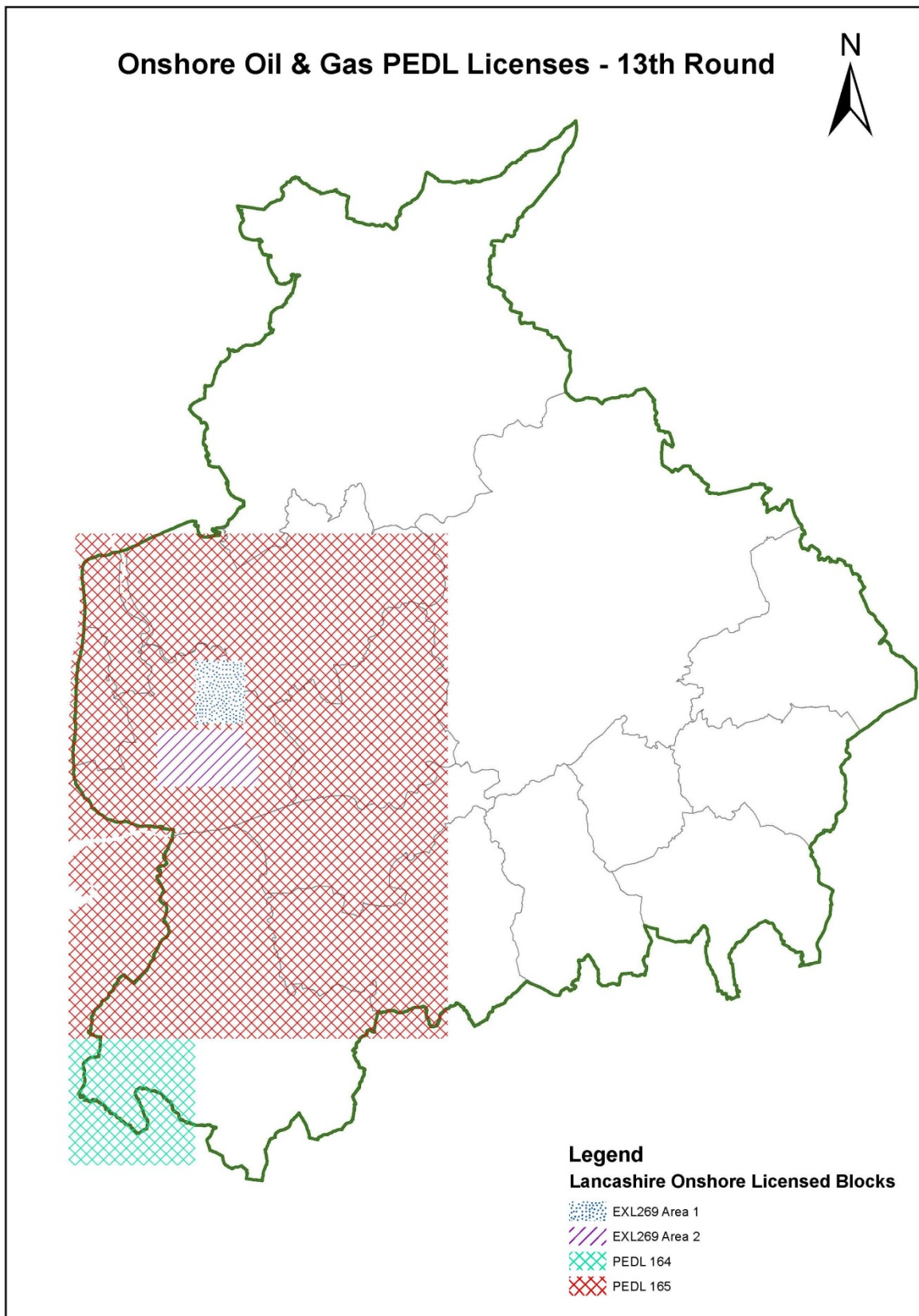
### 6.10 Economic

Developers will need to consider the positive and negative economic impacts of the proposed development. The National Planning Policy Framework states that "*when determining planning applications, local planning authorities should...give great weight to the benefits of the mineral extraction, including to the economy*". This includes direct benefits of the extraction, and indirect benefits e.g. through the development of a local supply chain or other supporting infrastructure and services. These should be considered alongside the potential negative impact on local businesses operating in other sectors. When considering the economic impact reference should be made to any relevant local economic growth strategy.

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<sup>30</sup> <http://magic.defra.gov.uk/>

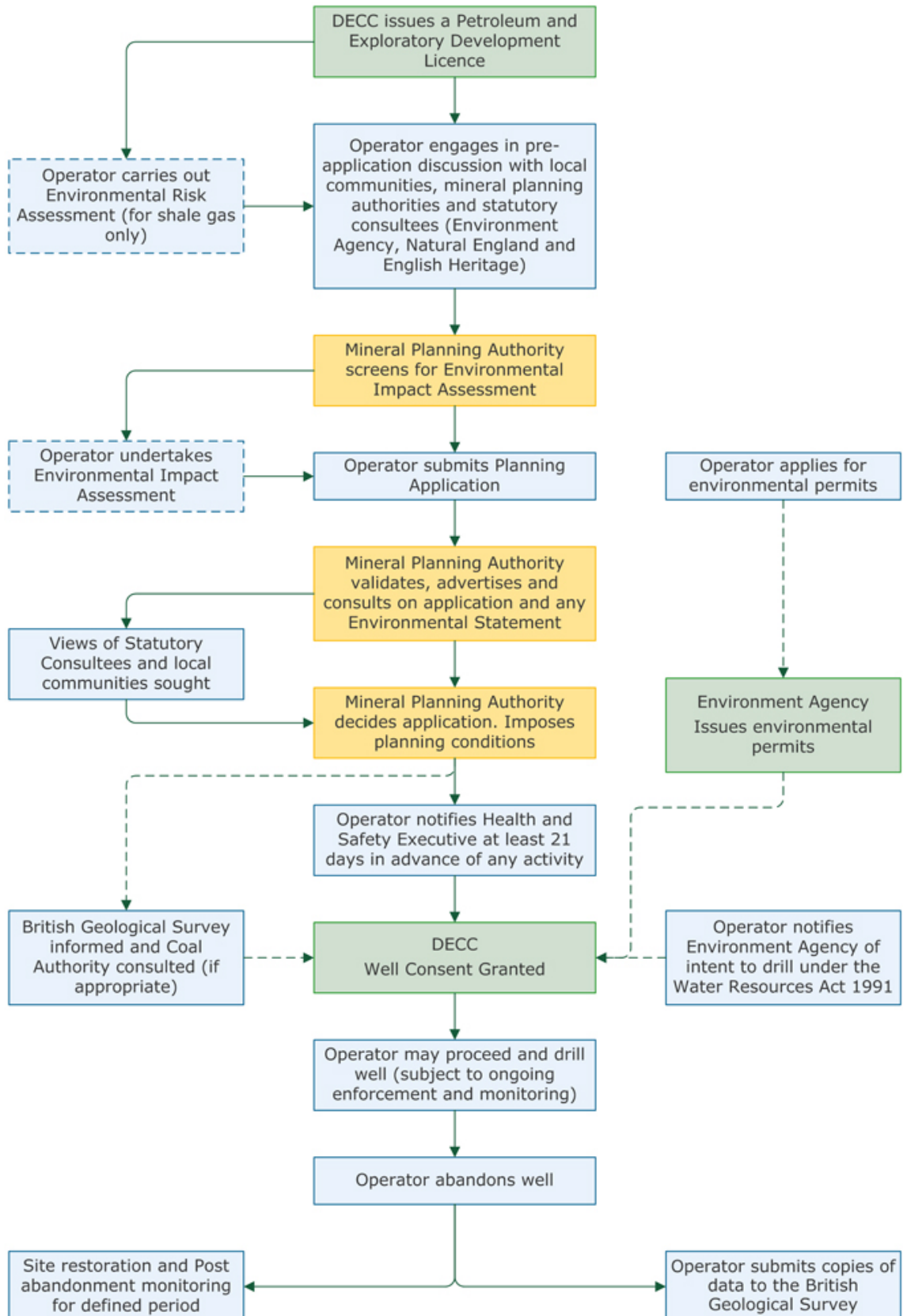
### Appendix 1: Licenced exploration areas in 2013



This may change if licences are issued or expire in subsequent licencing rounds

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## Appendix 2: Regulatory Bodies



The role of the Regulatory Bodies (CLG, 2013)

There are four regulatory bodies responsible for on shore oil and gas exploration and exploitation:

### **A2.1 Minerals Planning Authority**

The minerals planning authority is the strategic planning authority for mineral developments in their area: Lancashire County Council, Blackburn with Darwen Borough Council and Blackpool Council are the minerals planning authority for their respective areas. This involves managing the planning process according to planning rules set out by the government to assess applications for mineral developments, including mineral exploration. The minerals planning authority must determine applications in accordance with planning law.

Where developments involving onshore oil and gas development are not classed as permitted development and actually require planning permission, the minerals planning authority must determine planning applications in accordance with the NPPF, together with policies in the Development Plan. Planning applications are considered on their merits and whether or not they are in compliance with the policies in the Development Plan. Safety and environment are important factors and we consider the advice provided by other agencies before making those decisions. A planning application can only be refused if it is contrary to the policies of the development plan and there are legitimate reasons to do so. If planning permission is granted, the minerals planning authority monitor and inspect the operations to ensure they comply with any conditions imposed.

The minerals planning authority will consider the land use implications of matters regulated by the other regulatory authorities, such as emissions to atmosphere, water and seismic risks for example, but will not seek to duplicate their regulatory controls through the imposition of conditions etc.

### **A2.2 The Environment Agency (EA)**

The Environment Agency's key role in on-shore drilling is to protect groundwater including aquifers, and surface water including rivers and water courses from pollution and to ensure that any hydraulic fracturing flowback water is managed and disposed of responsibly.

An environmental permit (under the Environmental Permit Regulations) will be required for oil and gas developments, and may include industrial emissions activity, mining waste activity, groundwater activity, waste discharge activity, abstraction, and radioactive substances activity. The chemical content of hydraulic fracturing fluids are also covered by the environmental permitting regime.

The EA are also a statutory consultee in the planning process and will discuss proposals and provide advice to planning authorities. The EA provide advice as part of pre-application enquiries, for scoping of any Environmental Impact Assessment and on the planning application itself. Where risks to the environment are significant, for example where development is proposed contrary to groundwater protection policy and practice, the EA will object to the planning application.

Operators must demonstrate to the EA that their proposed activities are not harmful to people or the environment. The EA use a variety of methods such as audits, site inspections, check monitoring and / or sampling, and reviewing operator records and procedures. They may ask to monitor the effects their activities have on the environment and report these for inclusion on EA public registers through the permits issued. The EA have the power to serve notice on an operator to stop an activity; and where an offence is committed, the Environment Agency can prosecute.

Type of Permit	Why this type of permit may be required for oil and gas development
Groundwater activity	Where the EA considers that the risk of inputs to groundwater requires this.
Mining waste activity	Likely to apply in most circumstances.
Industrial emissions activity	When the intention is to flare more than 10 tonnes of natural gas per day (generally applies to exploration phase only).
Radioactive substances activity	Likely to apply where low level Naturally Occurring Radioactive Material (NORM) are contained in the rock cuttings or fluid returned to the surface from the well.
Water discharge activity	If surface water run-off from the site becomes polluted, for example, due to a spill of diesel.
Abstraction	If more than 20,000 litres of water per day is to be abstracted as part of the development.
Groundwater investigation consent	To cover drilling and test pumping where there's the potential to abstract more than 20 cubic metres per day (m <sup>3</sup> /day) of water.
Water abstraction licence	If the plan is to abstract more than 20m <sup>3</sup> /day for own use rather than purchasing water from a public water supply utility company.
Flood defence consent	If the proposed site is near a main river or a flood defence.

Types of Environment Agency Permits (EA, 2014)

### A2.3 Department of Energy and Climate Change (DECC)

Companies seeking to explore for or produce oil or gas must first obtain a petroleum exploration and development licence (PEDL) from DECC. These licences are bid for by operators in licencing rounds.

The issue of a PEDL conveys no permission for operations on land, but gives exclusivity for exploration operations against other oil and gas exploration companies within a defined area. DECC regulates the efficient use of the resource (i.e., the oil or gas in the ground) by scrutiny of the drilling operations and production plans, as well as proposals for flaring, and any hydraulic fracturing programme and the methods proposed to monitor, report and mitigate the associated seismic risk.

### A2.4 Health and Safety Executive (HSE)

The HSE is responsible for regulating the health and safety aspects of oil and gas operations, including considering well design and construction, inspecting well integrity, and the transport and injection of gas into the grid. Operators are required to notify HSE on well design and, whilst the HSE do not give consent, they will scrutinise the design and can undertake a range of further interventions (up to

issuing prohibition notices) if they have concerns about the proposed design. Operator are also required to have a well examination scheme, delivered by an independent well examiner who (as part of that scheme) will review the well design and monitor the construction phase of the well and its subsequent maintenance and decommissioning.

They require operators to provide them with a weekly report of drilling activity, the contents of which can trigger further interventions, including site visits.

Further information is available in the HSE questions and answers document:  
<http://www.hse.gov.uk?shale-gas/assets/docs/shale-gas.pdf>

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## Appendix 3: The Development Plan

The development plan is a carefully drafted and considered statement of policy, published in order to inform the public of the approach which will be followed by planning authorities in decision-making unless there is good reason to depart from it.

Section 70 of the Town and Country Planning Act 1990 requires that, when determining a planning application, the authority shall have regard to the development plan, and any other material considerations. Section 38 of the Planning and Compulsory Purchase Act 2004 requires that this determination must be in accordance with the development plan, unless material considerations indicate otherwise.

The development plan for the area consists of the District Council's adopted Local Plan<sup>31</sup>, and the County Council's adopted Minerals and Waste Local Plan. In areas where one has been prepared it also consists of the parish council or neighbourhood forum's adopted Neighbourhood Development Plan.

Policies in the Development Plan are either generic, or specific to a particular land use issue. The District Local Plan contains policies on need for, amongst other things, retail and industrial space, and housing, with associated land allocations. The Minerals and Waste Local Plan contains policies on need for, amongst other things, landfill, aggregates, and waste management facilities, with associated land allocations.

Both also contain generic policies addressing, for example, development in the countryside, flooding, biodiversity. Most of these are contained in the District Local Plan.

The Minerals and Waste Local Plan consists of the Joint Lancashire Minerals and Waste Core Strategy, and the Joint Lancashire Minerals and Waste Site Allocation and Development Management Policies Local Plan. The policies that this supplementary planning document seeks to provide further guidance on are:

- Core Strategy Policy CS5: Achieving Sustainable Minerals Production
- Core Strategy Policy CS9: Achieving Sustainable Waste Management
- Site Allocation and Development Management Policy NPPF1: Presumption in Favour of Sustainable Development

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<sup>31</sup> They may also be called local development frameworks, core strategies, or development plan documents, depending upon the time when they were produced. Under the current set of regulations they are called Local Plans.

- Site Allocation and Development Management Policy DM1: Management of Waste and Extraction of Minerals
- Site Allocation and Development Management Policy DM2: Development Management
- Site Allocation and Development Management Policy DM3: Planning Obligations

Though other policies in the development plan, particularly the District Local Plan, are also relevant.

The National Planning Policy Framework (NPPF) sets out, amongst other things, minerals policy for onshore oil and gas developments<sup>32</sup> in England. This policy is expanded on in the National Planning Practice Guidance (NPPG). These are material considerations.

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<sup>32</sup> Minerals policy is contained in section 13 of the NPPF, though other sections are relevant to minerals developments

## Appendix 4: Unconventional reservoirs

Hydrocarbons (gas and oil) are predominantly extracted from permeable rock formations such as sandstones. Here hydrocarbons have flowed over time from their source rock through the permeable rock until they are trapped under an impermeable rock formation where it collects and forms a reservoir.

'Unconventional' or 'tight' reservoirs are rock formations that are not as permeable. These are both source rock and reservoir. Processes need to be applied to these formations in order to stimulate the flow of gas.

One example of this kind of formation is shale<sup>33</sup> with significant organic content. The Lancashire Bowland Shales have been identified as having potential to hold shale gas which could be exploited for commercial purposes. Shale gas mainly consists of methane, although other gases may also be present. Shale has low permeability (i.e. does not allow gas to flow) so gas production in commercial quantities requires the rock structure to be fractured to provide permeability; the process to achieve this is known as hydraulic fracturing ('fracking').

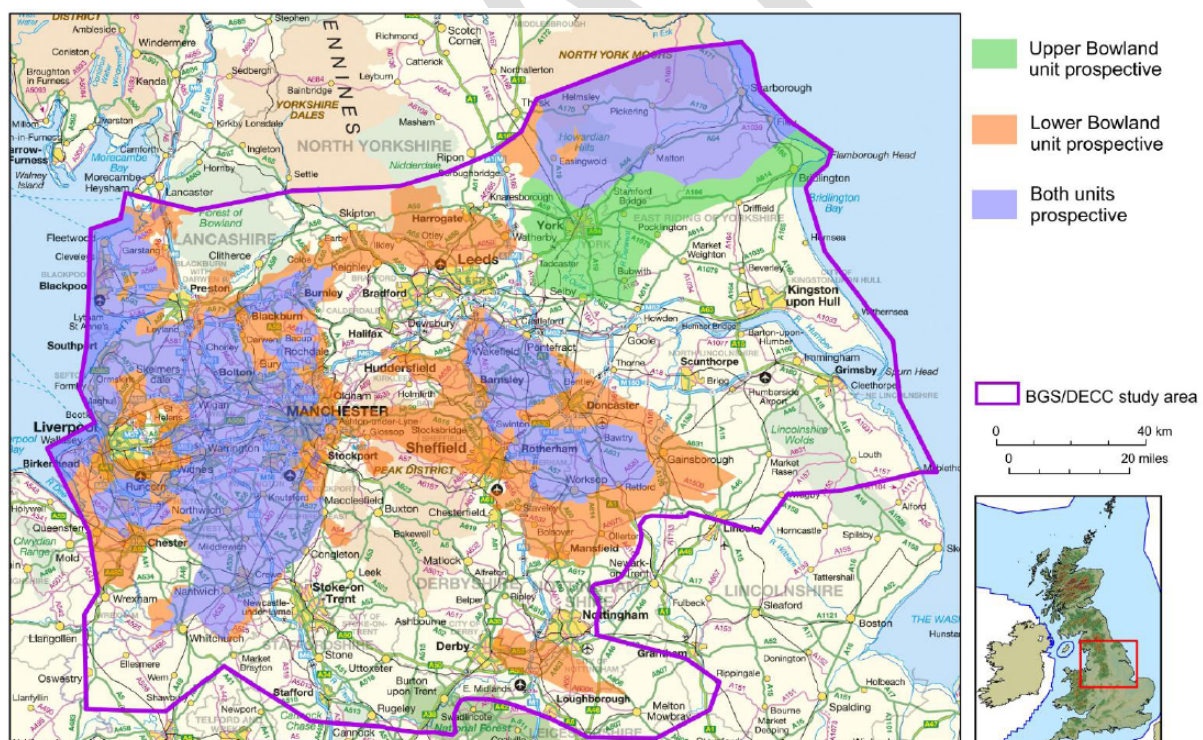


Figure 1: Schematic geology of natural gas resources (BGS, 2013)

Similar processes can also be applied to old coal mines or coal seams (Coal Bed Methane), which may require dewatering operations and possibly hydraulic fracturing, or be generated by burning the coal in place underground (Underground

<sup>33</sup> Shale is a common type of sedimentary rock formed from deposits of mud, silt, clay and organic matter.

Coal Gasification), which requires the injection of oxygen and steam into the coal measure<sup>34</sup>.

Hydraulic fracturing (“fracking”) is a generic term for operations which aim to improve hydrocarbon flow rates in low permeability oil/gas reservoirs by increasing the natural fracturing in the rocks, or by creating artificial fractures. These operations vary, in choice and volume of fluid injected, pressures and rates, depending on specific reservoir attributes.

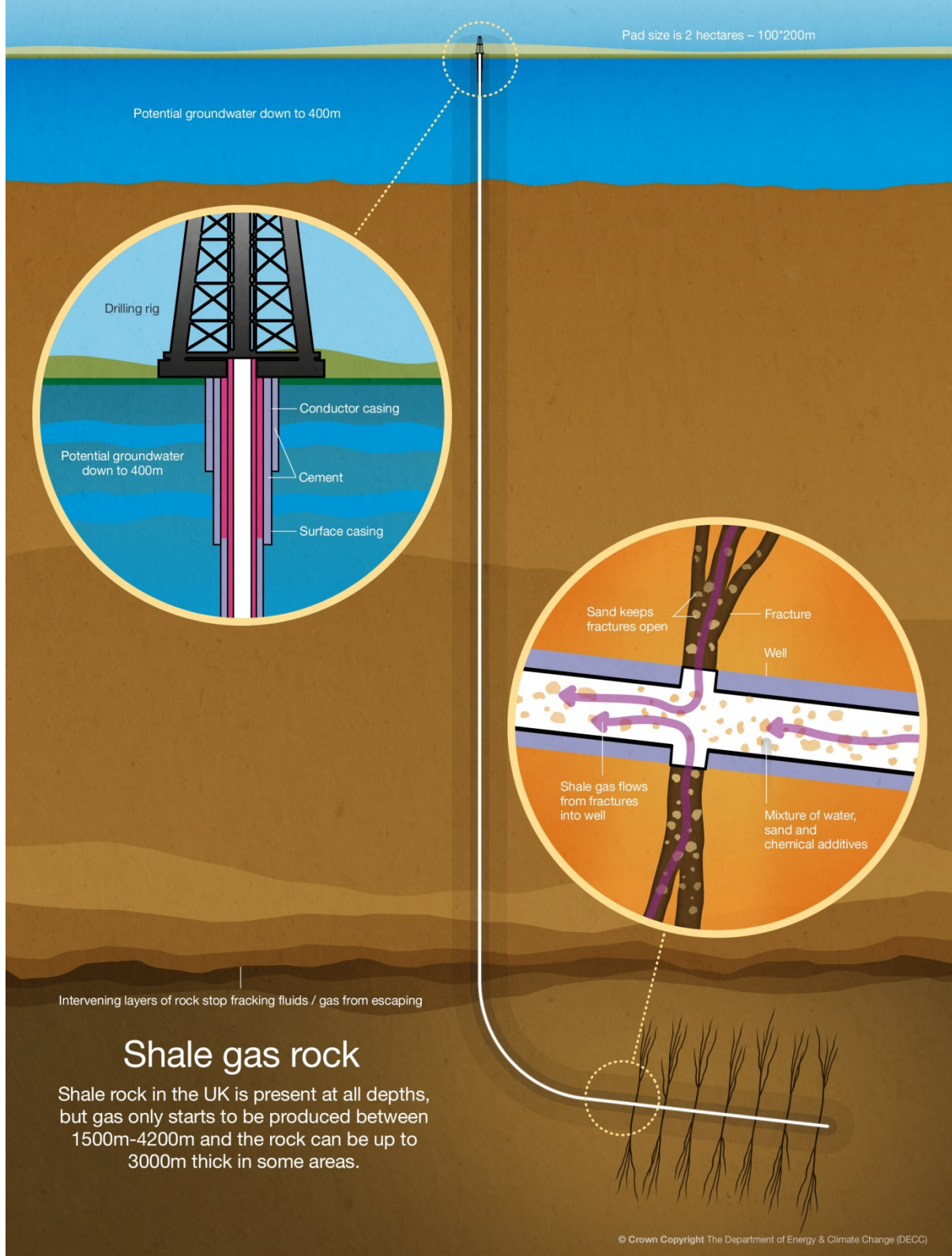
The fluid consists of water, fine sand particles to act as a proppant and a combination of chemicals chosen relative to geology type to act as a lubricant. Fluids are pumped into the shale under pressure in a controlled way to fracture the rock. Additional fluids are pumped into the well to maintain the pressure in the well so that fracture development can continue and the proppant can be carried deeper into the formation. A well may be too long to maintain sufficient pressure to stimulate fractures across its entire length. Plugs may be inserted to divide the well into smaller sections (‘stages’). Stages are fractured sequentially, beginning with the stage furthest away and moving towards the start of the well. After fracturing, the plugs are drilled through and the well is de-pressurised. This creates a pressure gradient so that gas flows out of the shale into the well.

As the pressure is released, the pressurised fracturing fluid flows back to the surface (‘flow-back water’) but it now also contains saline water with dissolved minerals from the shale formation (‘formation water’). Some fracturing fluid is left within the shale including the sand which resides within the fractures and creates a migratory pathway from which gas can flow to the surface via the borehole. Fracturing fluid and formation water returns to the surface over the lifetime of the well as it continues to produce shale gas (‘produced water’) and may contain naturally occurring radioactive materials (NORM), depending on the source rock. This is common to oil and gas exploration, but due to the processes involved in fracking, it has the potential to generate larger volumes. Vertical and horizontal drilling is often used with shale gas wells, with lateral extensions up to 10,000 feet within the shale, to enable the creation of a very large fracture network within the shale.

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<sup>34</sup> The exploitation of these require permission from the Coal Authority (for access to the coal) and a licence from DECC (for capture of the hydrocarbons). The Coal Authority manages the UK’s coal reserves and must agree to any access to coal formations for any purpose, including drilling through it.

# What is shale gas and fracking?



## Appendix 5: Contact Details

Lancashire County Council  
Development Management Group  
PO Box 100  
County Hall  
Preston  
PR1 0LD

[devcon@lancashire.gov.uk](mailto:devcon@lancashire.gov.uk)

01772 531929

Online planning register:  
<http://planningregister.lancashire.gov.uk/>

[www.lancashire.gov.uk](http://www.lancashire.gov.uk)

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Blackburn with Darwen Borough Council  
Planning  
Town Hall  
King William Street  
Blackburn  
BB1 7DY

[Planning@blackburn.gov.uk](mailto:Planning@blackburn.gov.uk)

01254 585960

Online planning register:  
<http://planning.blackburn.gov.uk/Northgate/PlanningExplorer/Home.aspx>

[www.Blackburn.gov.uk](http://www.Blackburn.gov.uk)

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Blackpool Council  
Planning Department  
PO Box 17  
Corporation Street  
Blackpool  
FY1 1LZ

[planning@blackpool.gov.uk](mailto:planning@blackpool.gov.uk)

01253 476229

Online planning register:

<http://publicaccess.blackpool.gov.uk:90/online-applications/search.do?action=weeklyList>

[www.blackpool.gov.uk](http://www.blackpool.gov.uk)

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This document has been prepared jointly by Lancashire County Council, Blackpool Council and Blackburn with Darwen Borough Council.

Further details of the local plan, and to download this and other documents, please visit our website [www.lancashire.gov.uk/mwdf](http://www.lancashire.gov.uk/mwdf). Or contact:

- Lancashire County Council, PO Box 100, Cross Street, County Hall, Preston, PR1 0LD
- Telephone: 01772 534294
- Email: [lmwf@lancashire.gov.uk](mailto:lmwf@lancashire.gov.uk)

