

# **Onshore Hydrocarbons (Oil and Gas)**

## **Frequently Asked Questions**

### **May 2025**

This note provides answers to questions that have been received regarding hydrocarbon extraction, fracking, and related matters. These questions have been received during the process of dealing with planning applications and as part of the preparation of the West Sussex Joint Minerals Local Plan.

The County Council's intention is to provide useful information on a topic that is of particular interest; the information provided is not policy, nor is it intended to be a source of definitive legal advice.

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## A: Hydrocarbon Extraction

### A1: What are conventional and unconventional hydrocarbons?

The term 'conventional hydrocarbons' refers to oil and gas that flows through porous rocks (e.g. limestone, sandstone) into reservoirs under impermeable layers/'cap rock'. Vertical and sometimes horizontal drilling is used for extraction.

The term 'unconventional hydrocarbons' refers to oil and gas that is still trapped in pore spaces within impermeable rock (e.g. shale). Different technology (e.g. fracking) is required to extract these hydrocarbons.

### A2: What is shale gas and oil?

Shale gas and oil is found in rocks, deep below the earth's surface, which had previously been considered too impermeable ('tight') to allow for the gas and oil to be recovered economically. The British Geological Survey's [Jurassic shale of the Weald Basin: resource estimation report](#) indicates that there is unlikely to be shale gas potential in the Weald Basin in which West Sussex is located. It also concludes that it likely only limited amounts of shale in the area have the potential to produce oil in commercial quantities.

### A3: What is the difference between exploration, appraisal, and production?

There are three phases of extraction: exploration, appraisal, and production. Planning permissions are required for each stage, as well as other (non-planning) consents/permits required under other regulatory regimes. However, in some cases planning applications may seek permission for more than one phase (e.g. exploration and appraisal).

**Exploration Phase** (i.e. seeing what's there and how much): Seismic surveys are used to understand the geological structure. Exploratory drilling (possibly including some hydraulic fracturing) is used to determine whether hydrocarbons are present. It is a short-term but intensive activity. It should be noted that the drilling of boreholes to monitor groundwater quality during hydrocarbon exploration and some initial seismic work may have deemed planning consent as 'permitted development'.

**Testing and Appraisal Phase** (i.e. determining how easy it is to get): This phase may involve further drilling to establish whether the deposit can be economically exploited. It is usually a short-term activity.

**Production Phase** (i.e. pumping the gas and/or oil out): This involves the long-term production of oil or gas commercially.

## B: Hydraulic Fracturing ('Fracking')

### B1: What is hydraulic fracturing?

Hydraulic fracturing, also known as 'fracking', is a process sometimes used to break open rock after a well has been drilled for natural gas and oil. The potential to use fracking depends upon the underlying geology and it is most often referred to in relation to shale gas reserves (i.e. gas trapped in shale rock).

Liquid (a mix of water, sand, and possibly chemicals) is pumped at high pressure to open up and/or extend existing narrow fractures/perforations in the rock. Sand particles in the liquid prop open fractures within the rock allowing gas and/or oil to flow out more readily. The chemicals are used for various purposes including providing lubrication for the drill and to prevent bacterial build up in the borehole.

Fracking can be used at the exploration, appraisal, and production stages.

## **B2: What are the risks from hydraulic fracturing?**

**Groundwater:** This issue is regulated by the Environment Agency (EA) under the environmental permitting regime but must also be considered in relation to planning applications.

Shale gas deposits are located below aquifers, so if the casing around the borehole is not adequate, both drilling and fracking have the potential to release emissions into groundwater.

These issues can be controlled by ensuring the casing around the borehole is of an adequate standard; ensuring an adequate separation distance (and, therefore, rock) between the fracking activity and the groundwater; ensuring that the chemicals used are harmless, and sufficiently diluted (should they enter the water supply); and by controlling the storage and disposal of waste from the sites.

**Seismic Activity:** This issue is regulated by the North Sea Transition Authority (NSTA), formerly known as the Oil and Gas Authority (OGA). NSTA controls all operations which would involve fracking, requiring the operator to:

- review details of faults in the area;
- monitor background seismicity prior to fracking;
- minimise the amount of fluid used to only that needed to make gas flow;
- introduce a 'flow-back period' after each stage, allowing pressure to reduce;
- monitor seismic activity in 'real time' using a traffic light system, with operations ceased if seismic events of greater than ML 0.5 are detected; and
- publish seismic information on their own website, and to the NSTA.

**Water Quantities:** This issue is regulated by the Environment Agency (EA), which ensures that water supplies are not unacceptably impacted. The process can use significant amounts of water, particularly at the production stage, even when recirculated. In Blackpool, Cuadrilla used some 8,400,000 litres of water in total for exploration – 125,000 litres per day, over 67 days (in context, all the dwellings in Mid Sussex District use around 19,740,000 litres/day). Greater quantities of water are likely to be used during the production stage.

**Waste:** It is likely that each stage of oil and gas development will generate some form of waste which will require management or disposal. Waste generated may include drill cuttings from drilling activities and flowback water.

Some of the wastes, such as drill cuttings will require disposal (e.g. to landfill). In the UK, flowback water will be collected and contained on-site in close tanks. Water may be subject to pre-treatment on site prior to conventional water treatments. In some instances, flowback water may be suitable for re-use on

site following treatment. Where water cannot be reused, the water will need to be discharged to the sewer system or transported to a waste water treatment works for treatment. Flowback water associated with both conventional and unconventional developments may contain minerals (such as salts) and Naturally Occurring Radioactive Materials (NORM) at low levels. Procedures for the management of NORM are well established in the UK.

## **C: National Context**

### **C1: What is the national policy for energy (oil and gas)?**

National energy policy is that oil and gas make an essential contribution to the country's prosperity and quality of life, and are important for energy security. While renewable energy must form an increasing part of the national energy picture, oil and gas remain key elements of the energy system for years to come. There is also a commitment to maximising indigenous resources (that is those which exist within the UK), subject to safety and environmental considerations.

In November 2019, the Government announced a moratorium on shale gas extraction in the UK.

### **C2: What is the national planning policy for onshore hydrocarbons?**

The National Planning Policy Framework gives great weight to the benefits of mineral extraction, including to the economy, and ensure that there are no unacceptable adverse impacts on the natural and historic environment, human health, or aviation safety, and taking into account cumulative impacts.

Mineral planning authorities (MPA) should also ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties.

They should also provide for restoration and aftercare at the earliest opportunity, to be carried out to high environmental standards, through the application of appropriate conditions.

### **C3: How is hydrocarbon extraction regulated in the UK?**

Before a company can explore (to see whether oil/gas reserves are available) they must obtain a Petroleum Exploration and Development Licence (PEDL) from the NSTA. This enables them to 'search and bore for and get' the Crown's resources (i.e. oil and gas). Rounds of onshore licensing take place where companies can apply for Petroleum Exploration and Development Licences (PEDLs).

The most recent round of onshore licensing completed in December 2015 and this included an award of licences to areas in West Sussex. An [interactive map](#) of these areas is available on the NSTA website.

Even if a company has been granted a licence for an area, it will still need planning permission from the Minerals Planning Authority (MPA) before it can carry out exploration for oil/gas.

As well as gaining planning permission, the operator must also gain 'well consent' for exploration from the NSTA before commencing works. The NSTA also consults with the Environment Agency (EA) and the Health and Safety Executive (HSE) at this stage.

The EA may also require environmental permits for activities associated with the management of mining waste, and radioactive substance activities (i.e. management of naturally occurring radioactive material (NORMs)).

If the company then wishes to proceed to production (i.e. actually extracting oil/gas) they must gain a new planning permission from the MPA, a Field Development Consent from the NSTA, and in most cases an environmental permit(s) from the EA, via processes similar to those above.

Further, the NPPF states that major<sup>1</sup> development should only take place within National Parks or Areas of Outstanding Natural Beauty in exceptional circumstances and when it is in the public interest. This would include any oil and gas development.

## **D: Roles and Responsibilities**

### **D1: What is the County Council's role?**

The County Council is the mineral planning authority (MPA) for West Sussex (excluding land within the South Downs National Park) and is responsible for determining planning applications for onshore hydrocarbon extraction. The County Council has to work within the planning system which governs the development and use of land in the public interest. It may not address any emissions, control processes, or health and safety issues that are matters to be addressed under other regulatory regimes (see below).

### **D2: Which issues do the NSTA, the HSE, and the EA deal with?**

There are a number of matters that lie outside the planning system and which are not the responsibility of the County Council as the minerals planning authority (MPA). They include:

- seismic risks (North Sea Transition Authority - NSTA);
- well design, construction, and integrity (Health and Safety Executive - HSE);
- management of mining and other wastes (EA);
- the chemical content of fracking fluid (EA);
- flaring or venting of gas (NSTA/EA but the MPA considers the noise and visual impacts);
- the impact on water resources (EA); and
- the disposal of water following fracking (EA).

### **D3: What is the role of the North Sea Transition Authority (NSTA)?**

The NSTA issues Petroleum Licences, gives consent to drill under the Licence once other permissions and approvals are in place, and has responsibility for assessing risk of and monitoring seismic activity, as well as granting consent to

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<sup>1</sup> The term "major" reflects that used in para 190 of the NPPF.

flaring or venting. The Oil and Gas Authority took over this responsibility from the Department of Energy and Climate Change (DECC) in 2016, and was subsequently renamed as the NSTA in 2022.

**D4: What is the role of a minerals planning authority (MPA)?**

A MPA, such as the County Council, grants planning permission for the location of any wells and wellpads, and imposes conditions to ensure that the impact on the use of the land is acceptable.

**D5: What is the role of the Environment Agency (EA)?**

The EA, through the environmental permitting regime, protects water resources (including groundwater aquifers), ensures appropriate treatment and disposal of mining waste, emissions to air, and suitable treatment and management of any naturally occurring radioactive materials.

**D6: What is the role of the Health and Safety Executive (HSE)?**

The HSE regulates the safety aspects of all phases of extraction, in particular responsibility for ensuring the appropriate design and construction of a wellcasing for any borehole.

**E: Local Context****E1: What hydrocarbon-related activity has taken place in West Sussex?**

Exploration licences for oil or gas extraction have been granted by the Government since the early 1980s and cover most of the county. Exploration drilling at some sites led to the award of appraisal licences. Borehole drilling then took place at 14 sites. However, only three sites proved to be potentially productive at that time: Singleton, Storrington, and Lidsey.

**E2: What oil and gas sites are there in the County?**

There are three permitted production sites in West Sussex: Singleton (active); Lidsey (active); and Storrington (active).

There is currently no permitted exploration sites in West Sussex.

**E3: Is hydraulic fracturing taking place in West Sussex?**

Government announced a moratorium on shale gas extraction in November 2019. No hydraulic fracturing is taking place at the active exploration or production sites. However, hydraulic fracturing did take place in the early 1980s at Baxters Copse (near Graffham in Chichester District).

**F: County Council Policy and 'Position'****F1: Why can't the County Council adopt a 'no hydrocarbons/fracking' policy and refuse all planning applications for hydrocarbon extraction and fracking?**

The Government announced a moratorium on shale gas extraction/fracking in November 2019.

That notwithstanding, national policy is that mineral planning authorities should make provision for the extraction of mineral resources of local and national importance. This includes provision for conventional and unconventional hydrocarbons. Therefore, the adoption of a 'no hydrocarbons/fracking' policy would be 'unsound' as it would be contrary to national policy. The County Council cannot pre-determine whether a planning application will be permitted or refused. Every proposal must be treated on its merits taking into account the statutory 'development plan' and other material considerations.

## **F2: How will the County Council deal with any proposals for the use of hydraulic fracturing?**

The Government announced a moratorium on shale gas extraction/fracking in November 2019.

That notwithstanding, within the planning system, there is no distinction between the method of processing applications for the extraction of conventional and unconventional resources and Government guidance does not suggest that planning proposals that use fracking should be treated differently. Therefore, the County Council must determine a planning application that involves hydraulic fracturing in the same way as it would determine a planning application for hydrocarbon extraction that did not involve hydraulic fracturing.

It should be noted that even if planning permission is granted that allows hydraulic fracturing to take place for exploration, appraisal or production, fracking cannot be used unless the applicant secures consent from the North Sea Transition Authority (NSTA) and environmental permits from the Environment Agency (EA).

## **G: Planning Application and Development Management Process**

### **G1: Where can I view a planning application?**

Planning applications that will be determined by the County Council can be viewed [online](#), at County Hall in Chichester, and at the relevant district or borough council's offices. You will need to make an appointment if you want to view an application at County Hall in Chichester.

### **G2: What is an Environmental Impact Assessment (EIA) and what role does it play?**

An environmental impact assessment (EIA) is an assessment of the possible impacts that a proposed project may have on the environment, consisting of the environmental, social, and economic aspects. The purpose of the assessment is to ensure that decision makers consider the environmental impacts of a project. Government regulations state that an EIA is required where a proposal (due to its scale and/or nature) is likely to have significant environmental effects. If an EIA is required, the applicant has to submit, with the planning application, an Environmental Statement that addresses the potential environmental impacts of

the proposal, and states how they have been addressed including proposed mitigation.

Even if an EIA is not required by law, the potential environmental impacts of a proposal will still need to be assessed by the County Council before a planning application is determined.

### **G3: What consultation will take place on any planning applications?**

Every planning application is subject to public consultation in accordance with the County Council's policy and practice, set out in its [Statement of Community Involvement](#). Depending upon the type of application, this will involve a combination of site notices, neighbour notification, and an advertisement in a local newspaper. Consultation also takes place with statutory consultees including the District Council or Borough Council, the Parish Council, and other bodies such as the Environment Agency and local highway authority.

### **G4: How can I comment on a planning application?**

Comments can be made:

- [online](#) via the website;
- by post to County Planning, West Sussex County Council, County Hall, Chichester, PO19 1RH); or
- by email to [planningapplications@westsussex.gov.uk](mailto:planningapplications@westsussex.gov.uk).

All comments will be available for public view on the website and at County Hall.

### **G5: What issues can I address when commenting on a planning application?**

The County Council **can** take certain issues into account. These issues include:

- whether the proposal is an acceptable use of the site;
- the visual impact of a new building or structure (location, size, and appearance) on the local area and on the wider landscape (including designated landscapes);
- the impact on neighbours and the surrounding area resulting from overshadowing, overlooking, loss of privacy, and disturbance caused by noise and lighting;
- the impact on health and the local environment including dust and air quality;
- whether new roadways, accesses, and parking are adequate and the impact on highway capacity and road safety;
- the impact of the rights of way network;
- the impact on the historic environment including archaeological and heritage sites or features;
- the impact on the ecology and biodiversity including designated wildlife sites, protected habitats and species, and Biodiversity Net Gain;
- the risk of contamination to land and impact on soil resources;
- the risk of flooding;
- surface and in some cases groundwater issues;
- water abstraction;



- land stability and subsidence;
- site restoration and aftercare;
- consistency with national and local planning policies.

The County Council **cannot** take into account some issues, including:

- the demand for, or alternatives to, onshore oil and gas resources;
- emissions, control processes, or health and safety issues that are matters to be addressed under other regulatory regimes;
- potential future planning applications;
- loss of views;
- boundary and other disputes between landowners and other civil matters;
- loss of property value.

#### **G6: Who decides whether permission should be granted or refused?**

All future planning applications for hydrocarbon extraction in West Sussex will be determined by the County Council's Planning Committee (other than for any site within the South Downs National Park where the Park Authority is the mineral planning authority). Both objectors and supporters may, with prior approval, speak at a meeting of the Planning Committee before a planning application is determined.

#### **G7: What can the County Council take into account in determining a planning application?**

Every proposal must be treated on its merits. Planning applications must be determined in accordance with the statutory 'development plan' (i.e. adopted local plans) unless 'material considerations' indicate otherwise; the latter include draft plans, Government guidance, and the views of consultees, landowners, and the public.

The planning system controls development and the use of land in the public interest. Therefore, the focus must be on ensuring that the proposed development is appropriate for its location and that the impacts (including on health, the natural environment, and amenity) are acceptable or can be made acceptable (e.g. by attaching conditions to a permission to minimise or mitigate potential adverse impacts).

However, the Government has also stated that account should be taken of national energy policy, which makes it clear that energy supplies should come from a variety of sources, including onshore oil and gas.

#### **G8: What weight is given to the views of the public and others?**

The responses submitted by statutory consultees and representations received from third parties are 'material considerations' and they are fully considered before a decision is made. However, it should be noted that the number of objections or supporting representations is not important; consideration is only given to the validity of the objection or representation in planning terms regardless of whether one or 100 people hold that view.

**G9: Why can't the County Council consider 'non-planning' issues?**

As the minerals planning authority, the County Council is required to assume that non-planning regimes will operate effectively. Accordingly, in determining planning applications for onshore hydrocarbons, it may not address any emissions, control processes, or health and safety issues that are matters to be addressed by other organisations under different regulatory regimes.

**G10: Can the County Council secure 'community benefits' from future proposals for hydrocarbons extraction?**

Planning legislation includes the essential principle that development should pay for the social and physical infrastructure to support and facilitate a development. Therefore, it is fair to expect developers to contribute to limiting the impact of their own development on the local area. However, any contributions secured through a legal agreement attached to a planning permission must be: necessary; directly related to the proposed development; and fairly and reasonably related in scale and kind. 'Community benefits', over and above these developer contributions can only be secured through consensual or voluntary arrangements with the developer.

**G11: What happens if planning permission is refused?**

If a planning application is refused by the County Council, it has to give valid planning reasons why it has done so. The applicant has the right to appeal the decision and a Planning Inspector is appointed by the Government to decide whether the decision to refuse permission should be upheld or whether permission should be granted. If an appellant considers that the County Council has acted unreasonably, e.g. that there is insufficient evidence to support a reason for refusal, they can also seek to recover the costs of the appeal; the Inspector would determine whether costs should be awarded against the County Council.

**G12: Can I appeal against a decision made by the County Council?**

Only the applicant has a right of appeal. Therefore, if an application is refused permission, the applicant can lodge an appeal but if a third party objects to a planning application and it gets approved, they do not have a right of appeal. However, anyone can challenge the lawfulness of the decision through applying for judicial review if they consider a legal mistake has been made in the decision making process. Judicial Review does not consider the policy merits of the decision. It considers its lawfulness and whether it was legally sound. Applications for judicial review must be made within six weeks of the date of the decision.

**G13: How does the County Council control the development that it permits?**

When a development is granted permission by the County Council it is typically subject to conditions, limiting how the development can take place. The development is monitored to ensure that it is in 'compliance' with the terms of the conditions attached to the permission. The number of visits undertaken for each site takes account of: the nature and scale of the development; the location of the site and its proximity to residents; the sensitivity of the

environment of the site and of the wider area; the history of compliance at the site; and the 'reputation' of the developer/operator.

All possible breaches of planning control are investigated and, where necessary, appropriate enforcement action taken. The precise form of any action taken against a breach of planning control is at the County Council's discretion. Further detail is set out in the County Council's [Planning Compliance and Enforcement Plan](#).

## **H: Other Questions**

### **H1: What are the long-term health effects of oil and gas extraction?**

Oil and gas has been extracted in West Sussex over many decades. We are not aware of evidence of any impact on health.

In terms of shale gas extraction, Public Health England has concluded that, "*the risks to public health from exposure to emissions from shale gas extraction are low if operations are properly run and regulated*".

However, as set out in response to Question A2, the BGS Report indicates that there is unlikely to be shale gas potential in the Weald Basin in which West Sussex is located.

### **H2: How will the landscape in West Sussex be preserved with visible and obtrusive oil and gas infrastructure?**

As with any development, each application has to be considered on its merits, including consideration of visual impacts such as those mentioned, and the cumulative impacts of multiple developments.

### **H3: What is the situation with regards to drilling under homes?**

This is outside of the planning process and not something within WSCC's remit to consider. The Government has clarified through legislation<sup>2</sup> that notice of planning applications is not required to be given to land which is to be used solely for underground operations.

### **H4: Will oil/gas development take place near me?**

The most recent round of onshore licensing completed in December 2015 and this included an award of licences to explore, appraise and produce onshore hydrocarbon resources in West Sussex. An [interactive map](#) of these areas is available on the NSTA website.

Even if a company has been granted a licence for an area, it will still need planning permission from the relevant MPA before it can carry out exploration for oil/gas.

Planning applications can be submitted for development in any location. The County Council has no control over this but must consider the application submitted on its merits.

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<sup>2</sup> [Article 13 \(3\)\(a\) of the Town and Country Planning \(Development Management Procedure\) \(England\) Order 2015](#)