

On-shore oil and gas development in Hampshire

Conventional (oil and gas) and unconventional (shale gas)

Frequently Asked Questions (FAQs)

August 2013 (Version 1)

This FAQ document has been prepared by Hampshire County Council. It addresses some FAQs associated with conventional and unconventional oil and gas in Hampshire. The FAQ considers issues relating to the following areas:

- 'Oil and Gas'
- 'Exploration, appraisal and production of oil and gas'
- 'Current planning policy and guidance for oil and gas'
- 'Licencing'
- 'The Planning Process'
- 'Other regulatory regimes involved in licencing / the planning process'
- 'Current shale gas extraction in the United Kingdom'
- 'Current oil and gas activity in Hampshire'
- 'Where can I find out more information?'

All information contained in this FAQ is based on information available to Hampshire County Council at the time of its publication (August 2013). This FAQ will be updated as required if new information emerges or if the County Council considers there to be a need to update / provide clarification on issues associated with oil and gas development in Hampshire.

Oil and Gas

1) Why are oil and gas important?

Oil and gas are primary sources of energy in the United Kingdom and to the population of Hampshire. However, they are both finite natural resources which are being depleted through our energy and manufacturing requirements. Accordingly, there is a national and local need to sustainably secure oil and gas resources. The whole of Hampshire requires oil or gas in one way or another.

Historically, conventional oil and gas extraction has taken place (see question 2 - 'What is conventional oil and gas extraction?'). Unconventional oil and gas (such as shale) extraction is now emerging as a form of energy supply and the Government believes shale gas has the potential to provide the UK with greater energy security, growth and jobs.

There are many uses for oil and gas. Oil is refined to produce petroleum for use as a fuel in vehicles, whilst natural gas can be used as an energy source for electricity. Both oil and gas can also be used for domestic heating and are important fuels for industry.

The economic benefits of oil exploration can be seen at both a local and national level. It is important to note that the likely future interest in exploration and production is highly dependant on the price of oil.

The local economic impact of oil and gas production is significant in supporting local services and direct employment.

2) What is conventional oil and gas?

'Conventional' oil and gas refers to oil and gas resources (as known as hydrocarbons) which are situated in sandstone or limestone rock formations. Conventional oil and gas does not include shale gas extraction (see *question 3 - 'What is unconventional oil and gas extraction'?*),

3) What is unconventional oil and gas?

Natural gas produced from shale is often referred to as 'unconventional' and this refers to the type of rock type in which it is found (see *question 4 - 'What is shale gas?'*).

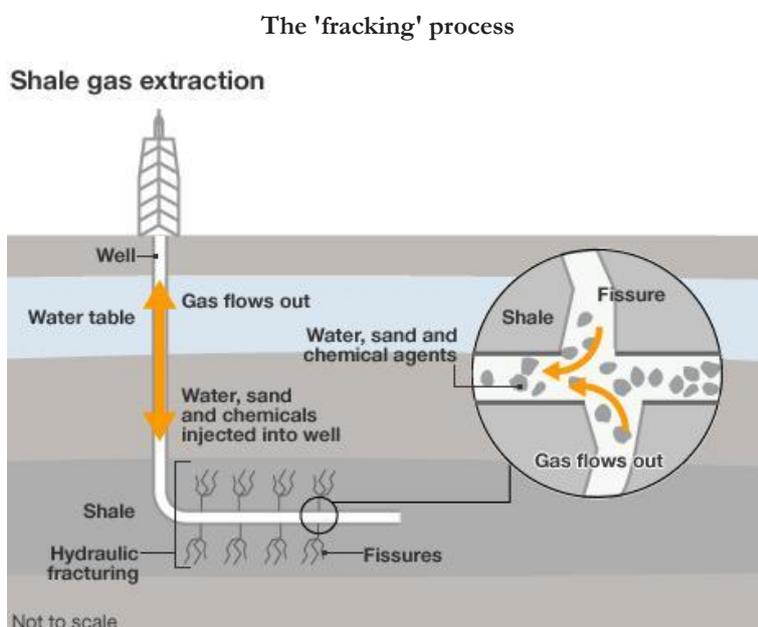
4) What is shale gas?

Shale gas is methane found in rocks deep below the earth's surface which had previously been considered too impermeable ('tight') to allow for economic recovery. Shale gas is considered to be 'unconventional'. Technological advancements over the last decade have made shale gas development economically viable.

5) What is hydraulic fracturing ('fracking')?

Hydraulic fracturing or 'fracking' is the process used to release shale gas (see *question 4 - 'What is shale gas?'*) from shale rock formations. The technique is used to release oil, natural gas including unconventional (shale) gas and oil. This type of fracturing creates fractures from a wellbore drilled into reservoir rock formations, fracturing the rock structure before chemicals and sand mixed in water are injected into the shale. The chemicals and sand act to maintain porosity once the rock structure has been fragmented so to allow the shale gas deposits to be extracted.

The following diagram summarises how shale gas is extracted.



Recent technological developments have given rise to horizontal drilling and made tapping into shale gas deposits more financially viable.

The British Geological Survey (BGS) provides more information on the 'fracking' process⁽¹⁾.

6) What are the concerns being raised about 'fracking'?

Fracking is a relatively new and emerging process and one which has come under intense environmental scrutiny in the United Kingdom. The main environmental concerns related to shale gas extraction include:

- seismic activities;
- water quantities;
- groundwater; and
- wider environmental concerns.

7) Why is 'fracking' water intensive?

The fracking process can use significant amounts of water as water is injected into the shale to help with the gas extraction process (see *question 5 - 'What is hydraulic fracturing ('fracking')?'*). Water use is greatest at the production stage. When proposing a site for shale gas extraction, developers must ensure that there is sufficient water and infrastructure for their operations, and, where necessary, they would need to apply for an abstraction license from the Environment Agency (see *question 25 - What is the role of the Environment Agency*).

8) How is groundwater protected during 'fracking'?

Groundwater is protected in the fracking process by:

- ensuring the casing around the wellhole is of an adequate standard;
- ensuring adequate distance (and therefore rock) between the fracking activity and the groundwater;
- ensuring the chemicals used and the amounts used render it harmless, should they enter the water supply;
- controlling the storage and disposal of waste from the sites.

The Environment Agency (EA) protects water resources (see *question 25 - What is the role of the Environment Agency*). Where risks to the environment are significant (for example where development is proposed contrary to the EA Groundwater protection policy and guidance), the EA are likely to object to any planning application for the construction and operation of individual wells.

9) What are the potential benefits of 'fracking'?

Proponents of 'fracking' point to the economic benefits from large amounts of formerly inaccessible hydrocarbons the process can extract. The UK Government considers shale gas represents a promising new potential energy resource for the UK that could contribute significantly to the UK's energy security (security of supply), reducing reliance on imported gas.

The local economic impact of oil and gas production is significant in supporting local services and direct employment.

10) Will shale gas extraction mean cheaper energy?

Production of unconventional gas could offer the United Kingdom (UK) additional security of energy supply. However, the actual impacts on energy prices is not fully known as the process is still emerging in the UK.

Exploration, appraisal and production of oil and gas

11) What are the phases of onshore oil and gas extraction?

The nature of the oil and gas exploration, appraisal and processing operations are very different from conventional mineral workings and are significantly less intrusive in terms of their limited land-take and more flexible locational requirements.

There are three phases of onshore oil and gas extraction (conventional and unconventional):

- exploration;
- testing (appraisal);
- and production.

Planning permission is required for each phase of oil and gas extraction from the Minerals Planning Authority (MPA) (such as Hampshire County Council) (see *questions 18 'What does the planning application process for onshore oil and gas development entail?'* and *19 - 'What is the role of Hampshire County Council in the planning process?'*), although some initial seismic work may have deemed planning consent (permitted development)⁽²⁾.

Phase of conventional and unconventional oil and gas development

Phase	What this phase involves (All oil and gas development)	Conventional extraction	Unconventional extraction
Exploratory	The exploratory phase seeks to acquire geological data to establish whether hydrocarbons are present. It may involve seismic surveys, exploratory drilling and, in the case of shale gas, Hydraulic fracturing.	Exploration drilling is a short term, but intensive activity. Typically, site construction, drilling and site clearance will take between 12 to 25 weeks.	Exploratory drilling is an intensive activity and may take longer than conventional drilling, especially if there is going to be hydraulic fracturing.
Appraisal	The appraisal phase takes place following exploration when the existence of oil or gas has been proved, but the operator needs further information about the extent of the deposit or its production characteristics to establish whether it can be economically exploited. The length of time take to complete this stage will depend on the size and complexity of the oil or gas reservoir involved.	The appraisal phase can take several forms including additional seismic work, longer-term flow tests, or the drilling of further wells. This may involve additional drilling at another site away from the exploration site or additional wells at the original exploration site.	The appraisal phase can take several forms including additional seismic work, longer-term flow tests, or the drilling of further wells. This may involve additional drilling at another site away from the exploration site or additional wells at the original exploration site. For unconventional hydrocarbons it may involve further hydraulic fracturing followed by flow testing to establish the strength of the resource and its potential productive life.
Production	The production phase normally involves the drilling of a number of wells. This may be wells used at the sites at the exploratory and/or appraisal phases of hydrocarbon development, or from a new site. Associated equipment such as pipelines, processing facilities and temporary storage tanks are also likely to be required.		

Phase	What this phase involves (All oil and gas development)	Conventional extraction	Unconventional extraction
	<p>Any additional sites following exploration, will be selected by the operator taking account of what they have learnt or discovered through previous phases. In doing so, they should also take account of their ability to access the resource whilst seeking to minimise or avoid any adverse environmental and amenity issues.</p> <p>Production life of an oil or gas field can be up to 20 years, possibly more. When production ceases, the facilities should be dismantled and the sites restored to their former use, or, in some circumstances, an appropriate new use.</p>		

Unconventional oil and gas (such as shale) extraction is emerging as a form of energy supply and there is a pressing need to establish (through exploratory drilling) whether or not there are sufficient recoverable quantities of unconventional hydrocarbons present to facilitate economically viable full scale production.

Oil and gas deposits are found at much deeper levels in the ground than the other minerals worked in Hampshire and thus are less threatened by surface development.

Current planning policy and guidance for oil and gas

12) What is current national planning policy on onshore oil and gas extraction?

The National Planning Policy Framework (NPPF)⁽³⁾ sets out minerals planning policy for onshore oil and gas. The Government is clear that responsibility for determining planning applications for onshore oil and gas activities, including for the exploration of shale gas, will be with Minerals Planning Authorities (MPAs) (such as Hampshire County Council). Decisions will therefore continue to be taken in accordance with local plans (such as the Hampshire Minerals and Waste Core Strategy or the Hampshire Minerals and Waste Plan (HMWP) once this has been adopted (see *question 15 - 'What is Hampshire's current policy for onshore oil and gas (conventional and unconventional)?'*) and the NPPF.

It also makes it clear that MPAs should identify and include policies for extraction of mineral resource of local and national importance in their area. This includes both conventional and unconventional oil and gas. This issue is addressed in the HMWP.

The NPPF also expects MPAs to ensure that mineral extraction does not have an unacceptable adverse impact on the natural or historic environment or human health. These issues are addressed in the HMWP.

13) What is the current Government position on 'fracking'?

The Government believes shale gas has the potential to provide the UK with greater energy security, growth and jobs.

While shale gas in the United Kingdom (UK) is in the very early stages of development, scientists from the British Geological Survey (BGS) have estimated that the total volume of gas in the Bowland Hodder shale in northern England at some 1,300 trillion cubic feet. The BGS is doing further work to establish the amount of shale gas in the Weald Basin in the south east of England.

In January 2012, the Government stated that they were supportive of the industry '...so long as such exploitation proved to be technically and economically viable, and can be carried out with full regard to the protection of the environment'.

The Royal Society and the Royal Academy for Engineering published an independent report into the environmental, health and safety risks of fracturing for shale gas in June 2012⁽⁴⁾. This concluded:

- the health, safety and environmental risks can be managed effectively in the UK;
- fracture propagation is an unlikely cause of contamination;
- well integrity is the highest priority;
- robust monitoring is vital;
- an Environmental Risk Assessment (ERA) should be mandatory;
- seismic risks are low;
- water requirements can be managed sustainably;
- regulation must be fit for purpose.
- policymaking would benefit from further research.

In December 2012, following the completion of the reviews of potential for shale and oil extraction, and the investigation into the earthquakes in Lancashire, the Department of Energy and Climate Change announced that 'exploratory hydraulic fracturing (fracking) for shale gas can resume in the UK, subject to new controls to mitigate the risks of seismic activity'⁽⁵⁾.

The Government has prepared planning policy guidance on Fracking (see *question 14 - 'What does the Governments Planning Guidance on onshore oil cover?'*). This precedes the next round of licensing (the 14th Round).

The BGS produced an assessment of potential for 'unconventional hydrocarbon resources' in 2012 and they are due to publish further information in 2013⁽⁶⁾.

14) What does the Governments new Planning Guidance (July 2013) on onshore oil and gas cover?

As the shale gas industry develops, the Government wants to ensure an effective, locally-led planning system is in place. The guidance⁽⁷⁾ provides advice on the planning issues associated with the three phases of extraction of hydrocarbons. It will be kept under review and should be read alongside other planning guidance and the National Planning Policy Framework.

The guidance states that the exploratory, appraisal or production phase of hydrocarbon extraction can only take place in areas where the Department of Energy and Climate Change (DECC) have issued a licence under the Petroleum Act 1998 (Petroleum Licence).

It makes it clear that the planning system is about controlling the use and development of land and should not address other control processes such as health and safety, emissions etc. It sets out a number of issues that Minerals Planning Authorities (MPAs) (such as Hampshire County Council) should address is extensive. The principal issues that MPAs should address with any proposal, include the following (only relevant issues will apply to individual proposals ie some may not apply if they are not relevant to the proposal):

- noise associated with the operation;
- dust;

4 Royal Society and the Royal Academy for Engineering - <http://royalsociety.org/policy/projects/shale-gas-extraction/report>

5 DECC Press notice 2012/164

6 BGS - <http://www.bgs.ac.uk/research/energy/shaleGas/howMuch.html>

7 Government guidance on onshore oil and gas (2013)-

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224238/Planning_practice_guidance_for_onshore_oil_and_gas.pdf

- air quality;
- lighting;
- visual intrusion into the local setting and the wider landscape cause by the placement of any building or structure within the application site area;
- landscape character;
- archaeological and heritage features;
- traffic;
- risk of contamination to land;
- soil resources the impact on best and most versatile agricultural land flood risk;
- land stability / subsidence;
- internationally, nationally or locally designated wildlife sites, protected habitats and species, and ecological networks;
- nationally protected geological and geomorphological sites and features; site restoration and aftercare.

The guidance also makes it clear where issues should be addressed by other agencies (ie not the MPA) these may be relevant to planning applications and therefore may be put before an MPA.

15) What is Hampshire's current planning policy for onshore oil and gas (conventional and unconventional)?

Hampshire County Council will use the relevant adopted minerals and waste policies to determine any oil and gas development within its administrative boundaries e.g. policies on oil and gas, protection of water resources and protection of amenity etc.

Currently, adopted policy is the Hampshire Minerals and Waste Core Strategy (HMWCS)⁽⁸⁾. This includes a policy on oil and gas development which any conventional or unconventional oil or gas proposal would be considered against, alongside other relevant policies in the plan e.g. protection of health, safety and amenity etc. However, a replacement for the HMWCS is in advanced stages of plan preparation – the Hampshire Minerals and Waste Plan (HMWP)⁽⁹⁾. The HMWP has been publicly examined and found sound (subject to modifications). It is anticipated that the Plan will be adopted in Autumn 2013 and will replace the HMWCS as planning policy for minerals and waste development in Hampshire.

Once adopted, the HMWP will provide a robust planning framework including adequate safeguards for potential environmental, community or amenity impacts from the development, against which any proposal for conventional or unconventional oil and gas development will be judged and considered on their own merits. This includes a policy specifically on oil and gas development. Any proposal for conventional or unconventional oil and gas development would be judged against this policy, its associated supporting text as well as all other relevant policies in the plan in relation to protecting the environment, maintaining communities and supporting the economy. The policy is as follows:

8 Hampshire Minerals and Waste Core Strategy (2007) - <http://www3.hants.gov.uk/mineralsandwaste/core-strategy-review.htm>

9 Hampshire Minerals and Waste Plan (2013) – anticipated adoption Autumn 2013 - <http://www3.hants.gov.uk/mineralsandwaste/planning-policy-home.htm>

Policy 24: Oil and gas development

Oil and gas development will be supported subject to environmental and amenity considerations.

- a. **Exploration and appraisal of oil and gas will be supported, provided the site and equipment:**
 - i. is not located within the New Forest National Park or South Downs National Park except in exceptional circumstances, where the reasons for the designation are not compromised and where the need for the development can be demonstrated; and
 - ii. is sited at a location where it can be demonstrated that it will only have an acceptable environmental impact; and
 - iii. the proposal provides for the restoration and subsequent aftercare of the site, whether or not oil or gas is found.
- b. **The commercial production of oil and gas will be supported, provided the site and equipment:**
 - i. is not located within the New Forest National Park or South Downs National Park except in exceptional circumstances, where the reasons for the designation are not compromised and where the need for the development can be demonstrated; and
 - ii. a full appraisal programme for the oil and gas field has been completed; and
 - iii. the proposed location is the most suitable, taking into account environmental, geological and technical factors.

The HMWP does not include any sites (site allocations) for onshore conventional or unconventional oil and gas development.

Licencing

16) What are licences?

Licences and consents both make a distinction between exploration and extraction of oil and gas and each stage is assessed independently.

Licences for on-shore drilling and exploration are granted by the Department for Energy and Climate Change (DECC). In the 13th Onshore Licensing Round in 2008, consent was given to drill for shale gas in five locations in the United Kingdom⁽¹⁰⁾. No method for drilling is specified in the initial licence, as it only conveys exclusivity in an area for the licensee.

Applications for the 14th Round will follow the outcome to the Environmental Assessment which was published for comment in 2011.

In an area that has been granted a licence from DECC, potential operators still need to consider:

- consent from the landowner;
- planning permission of each stage of development (explorations, extraction and production);
- regulatory consents (such as from the Environment Agency); and
- an additional consent from DECC for drilling operations.

DECC will also consider the view of the Health and Safety Executive in coming to the final decision. DECC states that ‘final consent to any well or well operations is dependent on confirmation that all other necessary permits and consents have been obtained’⁽¹¹⁾.

Before starting works the operator must also gain a ‘well consent’ for exploration from the DECC. An operator will then seek planning permission from the MPA to drill (see *question 18 - 'What does the planning application process for onshore oil and gas development entail?'*).

Hampshire County Council, as Minerals Planning Authority (MPA) does not issue licences for oil and gas development.

The granting of a licence for the exploration for the resource does not imply that planning permission would be granted for the extraction of the resource.

17) Are there any unconventional oil and gas ('fracking') licences in Hampshire?

Licences (see *question 16 - 'What are licences?'*) conventional and unconventional oil and gas in Hampshire have been issued by the Department for Energy and Climate Change (DECC)⁽¹²⁾. Hampshire County Council, as Minerals Planning Authority (MPA) does not issue licences for oil and gas development.

Based on information available from DECC, the existing licences are located geographically across Hampshire. These are located at the following locations:

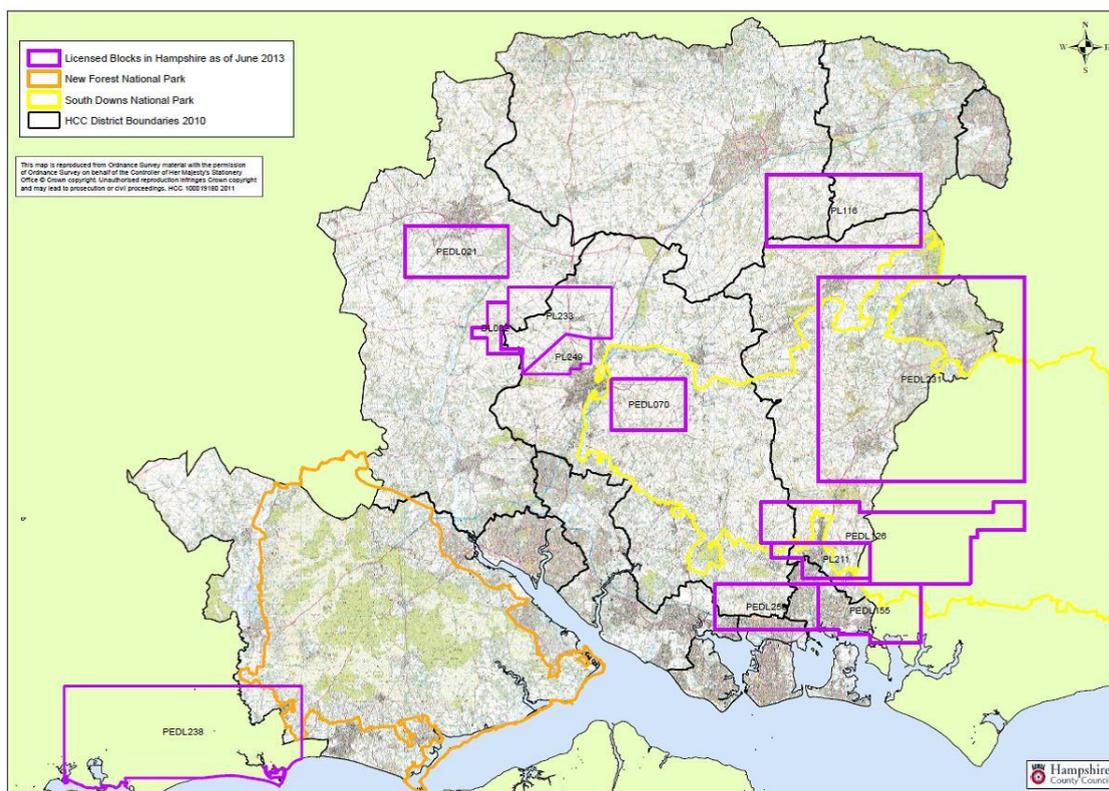
- north of Winchester, from Kings Worthy stretching west almost to Stockbridge;
- further north, reaching from Chilbolton west to Ampport;
- east of Winchester, underneath Hampage Wood;
- stretching west from Hinton, in the New Forest;
- from east of Fareham, stretching further east; and
- licences stretching east from the Hambledon area.

Existing licences (for both conventional and unconventional oil and gas) in Hampshire are outlined in the following map:

11 DECC- http://www.decc.gov.uk/en/content/cms/meeting_energy/oil_gas/shale_gas/shale_gas.aspx#4

12 DECC Licencing - <https://www.gov.uk/browse/business/licences/oil-and-gas-licensing>

On shore licences in Hampshire (2013) as issued by DECC



Although it has been widely reported in the local media of Hampshire that there is a licence covering the area from North Baddesley to the A3051 at Fairthorne (licence number PEDL 125), this is not an existing licence. This has been confirmed by the DECC.

The granting of a licence for the exploration for the resource does not imply that planning permission would be granted for the extraction of the resource. Planning permission for any oil and gas development would still be required as well as other associated consents (see *questions 19 - 'What is the role of Hampshire County Council in the planning process?'* and *23 - 'How does the planning process link to other regulatory regimes?'*).

The Planning Process

18) What does the planning application process for onshore oil and gas development entail?

Planning permission is one of the main regulatory requirements that operators must meet before drilling a well, for both conventional and unconventional oil and gas.

The planning system controls the development and use of land in the public interest and this includes:

- ensuring that new development is appropriate for its location taking account of the effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and
- the potential sensitivity of the area or proposed development to adverse effects from pollution.

In doing so the focus of the planning system should consider:

- whether the development itself is an acceptable use of the land;
- the impacts of those uses and any control processes;
- health and safety issues or emissions themselves where these are subject to approval under other regimes (see *question 22 'How does the planning process link to other regulatory regimes?'*).

There are three stages of oil and gas development (see *question 11 - What are the phases of phases of onshore oil and gas extraction?*). Planning permission is required for each phase of hydrocarbon extraction from the Minerals Planning Authority (MPA) (such as Hampshire County Council) although some initial seismic work may have deemed planning consent (permitted development)⁽¹³⁾. If the exploration stage results in the need for further appraisal work or full scale production, planning permission will also be required from the MPA.

The following chart summarises the process for exploratory drilling for onshore oil and gas.

19) What is the role of Hampshire County Council in the planning process?

Hampshire County Council is a Mineral Planning Authority (MPA). The MPA has the responsibility of processing and determining any planning application for onshore oil and gas development in the administrative areas of Hampshire County Council. Before operations can begin any operator must submit a planning application to the relevant MPA to seek planning permission for exploration, appraisal or production as well as any relevant environmental permits from the Environment Agency.

Hampshire County Council is not responsible for determining any applications in the Southampton City Council, Portsmouth City Council, New Forest National Park Authority and South Downs National Park Authority administrative areas.

Hampshire County Council will use the relevant adopted minerals and waste policies to determine any proposal for development (see *question 15 - 'What is Hampshire's current planning policy for onshore oil and gas?'*).

Hampshire County Council does not issue licences for oil and gas (see *question 16 - 'What are licences?'*).

Any proposal for oil and gas development will include consultation with statutory consultees, such as Natural England and the Environment Agency (see *question 25 - 'What is the role of the Environment Agency (EA)?'*) and other interested parties such as the Health and Safety Executive (see *question 26 - 'What is the role of the Health and Safety Executive (HSE)?'*) and the Health Protection Agency. Local communities will also be consulted where they live in proximity to a proposal (see *question 19 - 'How will the community be consulted on any planning application for oil and gas development?'*)

20) How will the community be consulted on any planning application for oil and gas development?

Public consultation forms an important part of every minerals or waste planning application (including oil and gas). Following submission on an application for oil and gas development, the local community in which the proposal is located will be consulted. More information on this process can be found in Hampshire County Council's Statement of Community Involvement⁽¹⁴⁾.

For shale gas development, the industry's own charter sets out that communities must be engaged from the very start of any planning application process.

The Office for Unconventional Gas and Oil⁽¹⁵⁾ has made it a priority to help people understand the facts about shale gas, including supporting local authorities' engagement with their communities to help resolve any issues.

21) If planning permission is granted, what else is required before shale gas extraction can commence?

If the Minerals Planning Authority (MPA) grants permission to explore oil and gas resources, Department of Energy and Climate Change (DECC) will consider an application to drill and at least 21 days before drilling is planned. The Health and Safety Executive (HSE) must also be notified of the well design and operation plans to ensure that major accident hazard risks to people from well and well related activities are properly controlled, subject to the same stringent regulation as any other industrial activity.

Before starting works the operator must also gain a 'well consent' for exploration from the DECC.

HSE regulations also require verification of the well design by an independent third party. Notification of an intention to drill has to be served to the environmental regulator under S199 of the Water Resources Act, 1991.

14 Hampshire Statement of Community Involvement - <http://www3.hants.gov.uk/mineralsandwaste/sci-2.htm>

15 Office for Unconventional Gas and Oil - <https://www.gov.uk/government/policy-teams/office-of-unconventional-gas-and-oil-ougo>

Once DECC checks the geotechnical information and that Environment Agency (EA) and HSE are aware of the scope of the well operations, they may consent to drilling.

At this stage, if the intention is to 'frack', the DECC would impose the new controls introduced in December 2012 which include:

- a geological assessment identifying faults;
- a 'Frack Plan', and
- monitoring of seismic activity before, during and after fracking.

The DECC also consult the EA and the HSE.

Following exploration, if operators then wish to go into production to actually extract gas, the company must gain:

- a new planning permission from the relevant MPA;
- a Field Development Consent from the DECC; and
- an Environmental Permit from the EA.

22) What community benefits can be associated with shale gas extraction?

The shale industry has set out their commitment to community engagement in its Charter. The industry has committed to a package for communities that host shale gas extraction in their area. This includes:

- At exploration stage, £100,000 in community benefits will be provided per well-site where fracking takes place;
- 1% of revenues at production stage will be paid out to communities;
- Operators will publish evidence each year of how these commitments have been met;
- The charter and offer to communities will be regularly reviewed as the industry develops, and operators consult further with communities.

Other regulatory regimes involved in licencing / the planning process

23) How does the planning process link to other regulatory regimes?

The planning and other regulatory regimes are separate but complementary.

The planning system controls the development and use of land in the public interest (see *question 18 - What does the planning application process for onshore oil and gas entail?*).

Some issues of importance may be covered by other regulatory regimes but may be relevant to the planning process in specific circumstances. For example, the Environment Agency (EA) has responsibility for ensuring that risk to groundwater is appropriately identified and mitigated. Where an Environmental Statement is required, Minerals Planning Authorities (MPAs) (such as Hampshire County Council) can and do play a role in preventing pollution of the water environment from hydrocarbon extraction, principally through controlling the methods of site construction and operation, robustness of storage facilities, and in tackling surface water drainage issues.

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

- Mitigation of seismic risks – Department of Energy and Climate Change (DECC) is responsible for controls, usually through the licence consent regime, to mitigate seismic risks. Seismic assessment of the geology of the area to establish the geological conditions, risk of seismic activity and mitigation measures to put in place is required by the DECC for all hydraulic fracturing processes;
- Well design and construction – The Health and Safety Executive (HSE) are responsible for enforcement of legislation concerning well design and construction. Before design and construction operators must assess and take account of the geological strata, and fluids within them, as well as any hazards that the strata may contain;
- Well integrity during operation – Under health and safety legislation the integrity of the well is subject to examination by independent qualified experts throughout its operation, from design through construction and until final plugging at the end of operation;
- Operation of surface equipment on the well pad – Whilst planning conditions may be imposed to prevent run-off of any liquid from the pad, and to control any impact on local amenity (such as noise), the actual operation of the site's equipment should not be of concern to MPAs as these are controlled by the EA and the HSE
- Mining waste – The EA is responsible for ensuring that extractive wastes do not harm human health and the environment. An environmental permit is required for phases of hydrocarbon extraction and this will require the operator to produce and implement a waste management plan;
- Chemical content of hydraulic fracturing fluid– This is covered by the environmental permit as operators are obliged to inform the EA of all chemicals that they may use as part of any hydraulic fracturing process;
- Flaring or venting of any gas produced as part of the exploratory phase will be subject to DECC controls and will be regulated by the EA. MPAs will, however, need to consider how issues of noise and visual impact will be addressed;
- Final off-site disposal of water – Water that comes back to the surface following hydraulic fracturing may contain naturally occurring radioactive materials. Whilst storage on-site and the traffic impact of any movement of water is of clear interest to local authorities, it is the responsibility of the EA to ensure that the final treatment/disposal at suitable water treatment facilities is acceptable
- Well decommissioning/abandonment – Following exploration, the well is likely to be suspended and abandoned for a period of time. Health and Safety Legislation requires its design and construction that, so far as reasonably practicable, there is no unplanned escape of fluids from it. The MPA is responsible for ensuring sites are restored through planning permissions granted.

24) What is the role of the Department of Energy and Climate Change (DECC)?

DECC issues Petroleum Licences, gives consent to drill under a Petroleum Exploration and Development Licence which gives operators exclusive rights to explore for, and develop the resource.

Licences are issued once other permissions and approvals are in place, and have responsibility for assessing risk of and monitoring seismic activity, as well as granting consent to flaring or venting (see *question 16 - 'What are licences?'*).

25) What is the role of the Environment Agency (EA)?

The EA protects water resources (including groundwater aquifers), ensures appropriate treatment and manages any naturally occurring radioactive materials. The EA may also require an Environmental Permit at the exploration phase. It is also likely to require an abstraction licence if more than 20,000 litres of water per day is to be abstracted as part of the development. The EA has issued guidance relating to shale gas extraction and fracking⁽¹⁶⁾⁽¹⁷⁾⁽¹⁸⁾⁽¹⁹⁾.

26) What is the role of the Health and Safety Executive (HSE)?

The HSE regulates the safety aspects of all phases of extraction of oil and gas and has a particular responsibility for ensuring the appropriate design and construction of a well casing for any borehole. The HSE has issued guidance relating to shale gas extraction and fracking⁽²⁰⁾.

Current shale gas extraction in the United Kingdom**27) Where does fracking take place in the United Kingdom (UK) currently?**

There are large reserves of shale gas beneath the UK, but it is not known what fraction of this could be economically viable to access. Currently, there is only one well in the UK has been partially fractured and tested in Lancashire. The Government placed a temporary moratorium on fracking to allow for investigations into the small earthquakes in Lancashire in late 2011. This was completed and concluded they may have been caused by the shale gas extraction and recommended a series of safeguards to prevent a similar situation occurring in the future. In December 2012 the Department of Energy and Climate Change announced that 'exploratory hydraulic fracturing (fracking) for shale gas could resume in the UK, subject to new controls to mitigate the risks of seismic activity'⁽²¹⁾. It is believed that operations in Lancashire are currently halted for a short time as the operator carries out an Environmental Impact Assessment (EIA) in relation to the planning permissions granted for this development.

Currently, there are no shale gas extraction or fracking activities taking place in Hampshire.

Current oil and gas activity in Hampshire**28) What oil and gas exploration, processing or production currently takes place in Hampshire?**

Historically there has been quite a lot of borehole exploration across Hampshire, with concentrations in the south-east, central and north-east parts of the county. This has resulted in the development of three productive oil and gas fields (conventional) at South Wonston, near Winchester, Humbly Grove near Alton and at Horndean. These three oilfields have been operating for a number of years and are all currently in production. They are comprised of a central production centre with satellite well sites supporting them. The following map highlights the locations of current conventional oil and gas activity in Hampshire.

16 Environment Agency webpage's on Unconventional Oil & Gas - <http://www.environment-agency.gov.uk/business/topics/126689.Asp>.

17 Environment Agency webpage's on Regulating Unconventional Gas - <http://www.environment-agency.gov.uk/business/topics/133885.Asp>

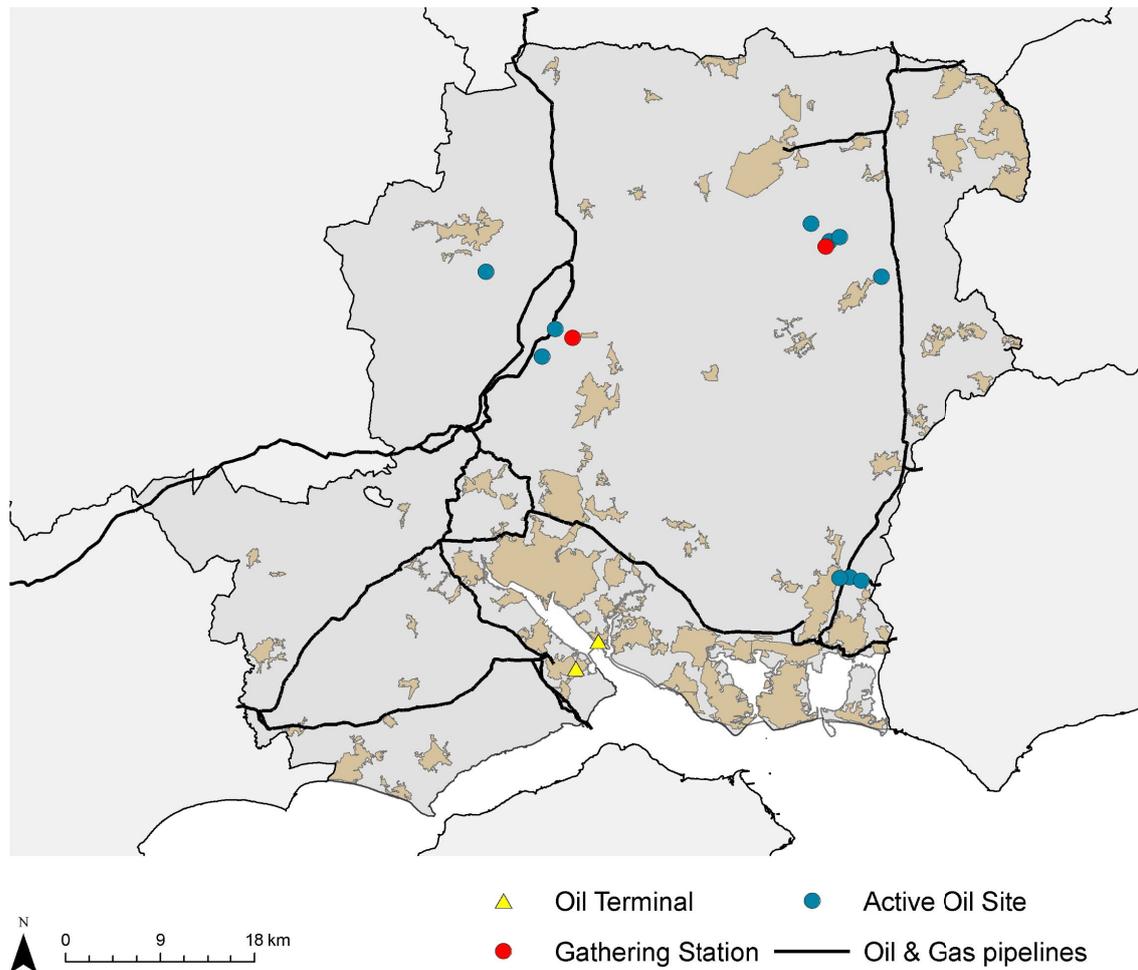
18 Environment Agency Guidance Note: Regulation of exploratory shale gas operations - http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/LIT_7284_231c35.Pdf

19 The Environment Agency and the Health and Safety Executive: Working together to regulate unconventional oil and gas developments - http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/LIT_7317_e1b401.pdf

20 The Environment Agency and the Health and Safety Executive: Working together to regulate unconventional oil and gas developments - http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/LIT_7317_e1b401.pdf

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Existing oil and gas sites in Hampshire (conventional)



These sites only extract conventional oil and gas and do not extract unconventional oil and gas (such as shale gas).

The Department for Energy and Climate Change has issued licences for conventional and unconventional oil and gas development in Hampshire (see map under *question 17 - 'Are there any unconventional oil and gas ('fracking') licences in Hampshire?'*).

29) Does unconventional oil and gas development ('fracking') currently occur in Hampshire?

Currently, there are no shale gas extraction or 'fracking' activities taking place in Hampshire.

30) Are there any known proposals for 'fracking' in Hampshire?

Hampshire County Council do not know of any current proposals for shale gas extraction or 'fracking' in Hampshire.

Where can I find out more information?

More information on oil and gas development in Hampshire can be obtained in the following ways:

Website: www.hants.gov.uk/county-planning

By email: planning@hants.gov.uk

By telephone: 0845 6035634

In writing: County Planning, Economy, Transport and Environment Department, Hampshire County Council, The Castle, Winchester, Hampshire. SO23 8UD.

FAQ produced by Hampshire County Council (August 2013)