



Department  
of Energy &  
Climate Change

# Fracking UK shale: regulation and monitoring

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Hydraulic fracturing, known as fracking, is a technique used in the extraction of gas and oil from 'shale' rock formations by injecting water at high pressure. This guide sets out which bodies are responsible for overseeing the shale gas and oil industry, and its processes, from licensing to production.

## Licensing and planning permission

Licences granting exclusive rights to oil and gas operators in a given area are issued by the Department of Energy and Climate Change (DECC). Operators must also get the necessary consents and planning permission before beginning any activities on that land.

When an operator wants to drill an exploration well, it must first negotiate with landowners for access to the site. If the well encroaches on coal seams, the operator must also get permission from the Coal Authority.

The next step is to seek planning permission from the minerals planning authority (in Scotland, the planning authorities). They can order the operator to complete an environmental impact assessment before making a decision on planning permission if they think there may be a significant environmental impact. This requirement is made on a case-by-case basis.

Appropriate permits or authorisation from the relevant environmental regulator (the Environment Agency in England, Natural Resources Wales, or the Scottish Environment Protection Agency in Scotland) are also required.

These planning and environmental permitting steps must be repeated at each exploratory stage of the site's development, to drill any further wells and before the site goes into production.

Planning authorities and industry can approach Public Health England or Health Protection Scotland for advice on the potential impacts on health.

These steps are outlined in detail in [DECC's regulatory roadmap](#).

## Before drilling

Health and Safety Executive (HSE) regulations require an independent and competent person to examine the well's design and construction.

The operator must notify the HSE of the well design and operation plans at least 21 days before drilling is due to start. The HSE inspects the well design to ensure that measures are in place to control major hazards to people from well-related activities and accidents.

Operators must also notify the environmental regulator of their intention to drill. The operator must meet all baseline monitoring requirements set out in planning permission and environmental permits before drilling can begin.

Final consent for drilling operations rests with DECC. It will check with the relevant environmental agencies and HSE that they have no objections, and review the operator's plans to minimise the risk of seismic activity, before giving consent.

## During drilling

Well operators have a legal duty to manage and control the risks to people. The HSE monitors well operations to check these legal duties are carried out. Its specialists will check construction matches the design by reviewing the weekly operations reports it receives from the well operator. HSE intends to jointly inspect drilling and fracking operations with the Environment Agency or Scottish Environmental Protection Agency during the exploratory phase. HSE inspectors can visit any site at any time if there is a matter of concern.

The relevant environmental regulator will monitor the environmental impacts and inspect the operator's reports. The greater the potential risk, the greater the scrutiny by environmental regulators. Conditions attached to permits will set out the minimum level of site-based monitoring and reporting.

Planning authorities are responsible for enforcing any conditions attached to the planning permission. For example, this may include monitoring of noise or dust levels.

## Testing and operations

As described above, operators will have to meet the conditions of their planning permission and permits. They must also monitor, report to DECC and mitigate any seismic activity caused by hydraulic fracturing. For more information on how seismic risks are managed please see the "Understanding earthquake risk" factsheet (<https://www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking>).

## Restoring the environment and long-term monitoring

When operations finish, the operator is responsible for safe abandonment of the well and for restoring the well-site to its previous state or a suitable condition for re-use. The relevant planning authority will require suitable restoration of the site as a condition of the planning permission.

The procedures for abandoning a well ensure that all the fluids it contains are permanently sealed. This is done by inserting cement plugs to seal the well, removing some of the steel casing and fitting a steel cap, in compliance with the Oil & Gas UK guidelines for the suspension and abandonment of wells.

DECC is discussing with industry arrangements so site restoration and aftercare (including any monitoring of abandoned wells) will be ensured, even when the operator goes out of business.

## Enforcement and penalties

HSE inspectors will take enforcement action if a well operator does not comply with its legal duties. Enforcement can range from ensuring well operators change the design of the well to prohibiting operations until the breach is rectified. The HSE can also prosecute a well operator for breaches of the law.

If an environmental regulator finds that an operator is in breach of an authorisation or permit, it will take action to stop any activity, prevent further impacts and remedy those that have happened.

## Footing the bill

Government (including devolved governments) funds the work of the environmental regulators up to the point at which a company applies for a permit. The permit charge the operator pays is designed to cover the cost of permitting a facility.

The HSE can recover its costs from operators for assessment and inspection activities.

DECC already recovers costs from operators for offshore environmental regulation. It is developing plans for cost recovery from onshore operators for consenting drilling, etc.

## More information

The Department of Energy and Climate Change has published [a Regulatory Roadmap](#) setting out the process operators should follow when seeking to drill for onshore oil and gas in the UK. The Roadmap is intended as a first point of reference for operators, planners and the public. It covers the regulatory differences between England, Scotland, Wales and Northern Ireland. It focuses on the exploration and appraisal phases, rather than production and decommissioning.

The [Health and Safety Executive](#) is responsible for regulating the requirements that ensure operators manage and control safety risks.

The [Scottish Environment Protection Agency](#) (SEPA) has more information on environmental regulation in Scotland, including the Water Environment (Controlled Activities) (Scotland) Regulations 2011, which are used to control borehole drilling, water abstraction and the discharge of fracking fluids.

SEPA has powers under the Pollution Prevention and Control (Scotland) Regulations 2012 for certain activities, such as those involving refining of gas, gasification or other heat treatments, combustion, or disposal of solid or liquid wastes. It also has powers to control any naturally occurring radioactive materials (NORM) via the Radioactive Substances Act (1993). The Mining Waste Directive is regulated by the planning authorities in Scotland.

[Natural Resources Wales](#) has more information on environmental regulation in Wales.

The [Environment Agency](#) has more information on environmental regulation in England. The primary legislation is the Environmental Permitting Regulations 2010, which incorporate the requirements of several different pieces of legislation, such as the Mining Waste Directive, Water Framework Directive, the Groundwater Daughter Directive and the Radioactive Substances Act 1993.

The Environment Agency and Natural Resources Wales also have the provisions of s30 and s199 of the Water Resources Act 1991 available to them.

The [Department of Energy and Climate Change](#) issues exclusive licences in competitive offerings (licence rounds).

The Environment Agency and Health and Safety Executive have drawn up an agreement that explains their [joint approach to the regulation of unconventional oil and gas developments](#).

The Department of Energy and Climate Change, Environment Agency (England), Scottish Environment Protection Agency and Health and Safety Executive have worked with the UK Onshore Operators Group to agree best practices for onshore shale gas wells. The [UK Onshore Operators Group's UK Onshore Shale Gas Well Guidelines](#) provide a description of the Hydraulic Fracturing Programme (HFP).

Oil & Gas UK publishes [guidelines](#) on well integrity that the onshore industry has committed to meet. The guidelines describe good industry practice for “typical” wells and “standard” operations, and refer to relevant legislation, standards and practices.

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