

Shale Gas and Energy Security

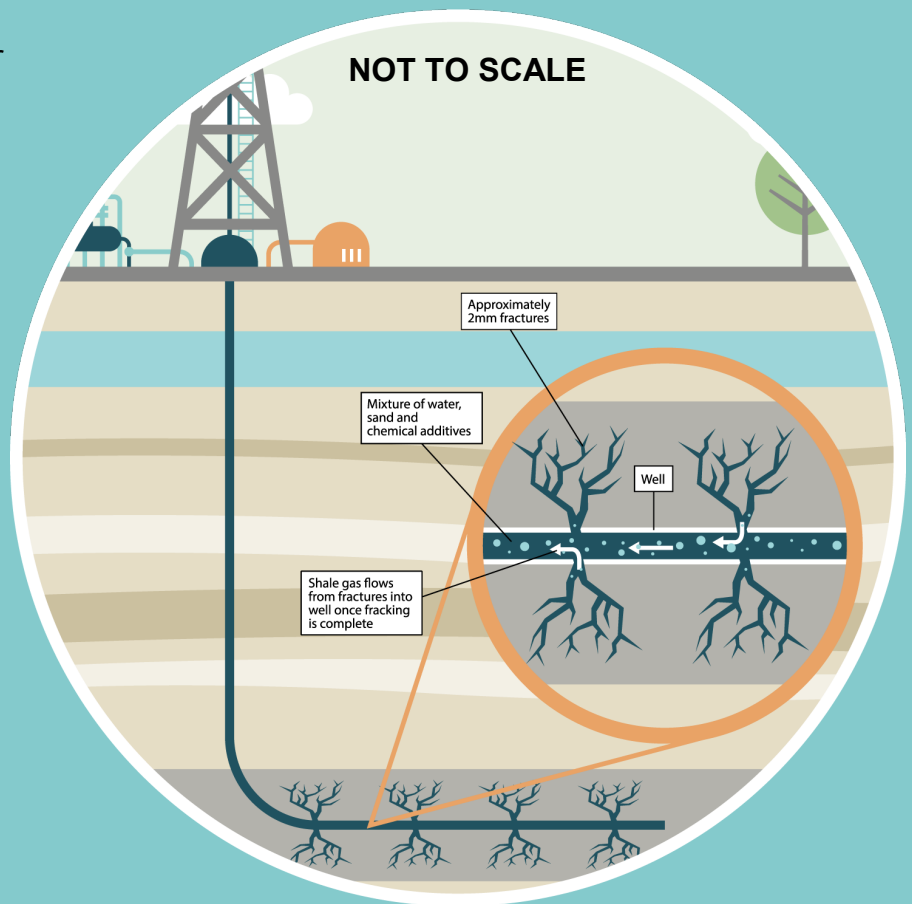
What is shale gas and what is it used for?

Shale gas is predominantly methane - the natural gas we use to generate electricity, heat our homes and cook our food.

It is found in rocks, called shale, which fluid and gas cannot flow from naturally. This means specific techniques are required to get the gas out of the rock.

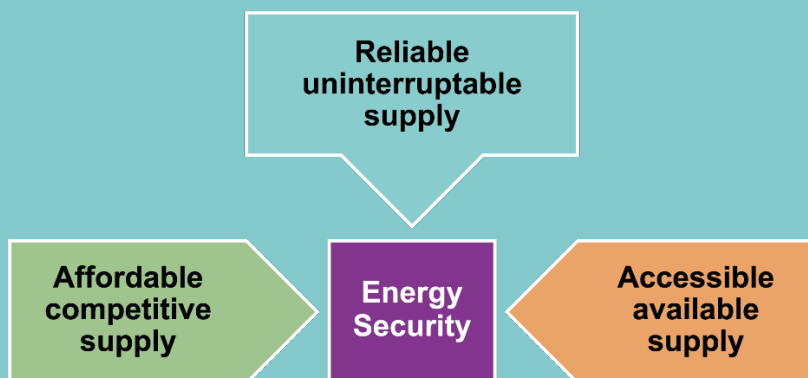
Hydraulic fracturing (sometimes known as fracking), is a method of extracting shale gas and oil. It works by pumping water, sand and tightly regulated chemicals down a well to make small hairline cracks in rocks underground. The cracks are propped open by sand contained in the fluid so that shale gas can flow out of the shale into the well. The technique has been used in gas and oil extraction for decades.

Natural gas currently supplies just over a third of the UK's energy demand, with the rest coming from coal, oil, nuclear and renewables.¹



What is energy security?

Energy security is about ensuring people have access to an uninterrupted supply of the energy that they need, at a price that is affordable to them.² It is affected by a country's diversity of energy sources and by how much they produce at home compared to how much they import from abroad.



KEY FACT

A key part of energy security is using a range of energy sources. This means that, should one or more source not be available, there is always enough energy to meet the amount we need.



How could shale gas affect the UK's energy security?

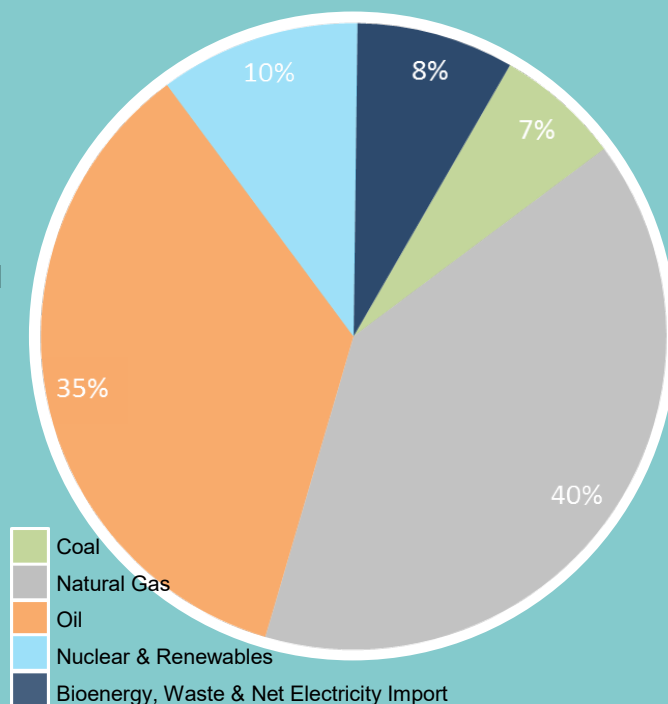
In 2017 the UK's energy came from five main sources: oil, coal, natural gas, nuclear and renewables.³ As shown in the pie chart opposite, gas supplied over one third of the UK's energy production.

While we have seen very positive developments in renewable energy in recent years, the electricity it generates cannot be used by the vast majority of households in the UK (85%) who use gas cookers and gas heaters.

Currently we import just under half of the gas we use. But by 2035 it is predicted that around 73% of the gas we consume will be met from imports, with our diverse import supply sources able to meet this demand securely.⁴

The UK's shale gas resource, as a home-grown supply, could add to the diversity of our gas supplies and help to support our energy security.

Where does the UK's Energy come from?



How much gas is in shale rocks?

It is uncertain how much gas might be recovered from shale in the UK.

The British Geological Survey estimates that there is between 1300 trillion cubic feet of shale gas across Northern England and the Midland Valley of Scotland.⁵ This is much larger than our annual gas usage. However, the amount of shale gas that can be extracted is currently unknown and is likely to be smaller.

The Government is encouraging shale gas exploration, so we know how much of the shale in the UK is commercially viable.

Where can I find out more?

For more information about shale gas and hydraulic fracturing, please visit:

www.gov.uk/government/publications/about-shale-gas-and-hydraulic-fracturing-fracking

¹ (DUKES Natural gas 2018) <https://www.gov.uk/government/statistics/natural-gas-chapter-4-digest-of-united-kingdom-energy-statistics-dukes>

² (What is Energy Security?) <https://www.iea.org/topics/energysecurity/>

³ (DUKES Natural gas 2018) <https://www.gov.uk/government/statistics/digest-of-uk-energy-statistics-dukes-2018-main-report>

⁴ UKCS oil and gas production projections (OGA, October 2018) <https://www.ogauthority.co.uk/data-centre/data-downloads-and-publications/production-projections/>

⁵ (The Carboniferous Bowland Shale gas study: geology and resource estimation) <https://www.gov.uk/government/publications/bowland-shale-gas-study>