

Fact Sheet: The History of Onshore Oil and Gas

What is the history of the onshore oil and gas industry in the UK?

The onshore exploration of home-grown sources of oil and gas in the UK can be traced back to 1850. Despite some commentary the onshore oil and gas industry, and the techniques used by it, are not new.

1850 to 1918

Before the First World War, the UK's total petroleum requirements, at less than 50,000 barrels per day, were supplied almost exclusively via imports. The only home-grown supply came from the production of oil from shale, which started in 1851 in the Midland Valley of Scotland and at its peak in 1913 reached an average of 6,000 barrels of oil per day – and continued until 1962.

The earliest reports of hydrocarbons in southern England come from the Sussex area, with gas detected in water wells in 1836 and 1875.

Wells drilled subsequently in 1895 and 1896 at Heathfield in Sussex, to provide water for a hotel and railway station, also encountered gas. The railway station well reached Kimmeridgian strata, with a strong gas odour noted. On ignition, it produced a 5 metre - high flare. The well became Britain's first natural gas well, with production of 1000 cubic feet per day (cfd) used to provide gaslight for the station.

With the onset of the First World War a secure supply of oil became strategically more important, with oil requirements doubling in 1916 and 1917. As a result the Government introduced legislation, the Petroleum (Production) Act 1918, which prohibited exploration and production other than by the Crown or under licence from the Crown.

1918 to 1934

The first oil in England was discovered in 1919 at Hardstoft, in Derbyshire. Despite the 1918 legislation, only 11 wells were drilled between 1918 and 1922 with only one discovery proving to be commercial.

1934 to 1964

In 1934, the Government produced the second major piece of legislation, The Petroleum (Production) Act 1934, which effectively gave the ownership of petroleum to the Crown and limited surface owner rights. In 1935, the first licences were introduced and given to four companies. Exploration started in 1936 and the first commercial discoveries came in 1937.

During the Second World War, drilling was carried out in Nottinghamshire to support the war effort, and is celebrated by the "Oil Patch Warrior" memorial at Dukes Wood.

In 1947, the US performed the first hydraulic fracture in the Houghton Gas field, Kansas.

Up to 1964 in the UK, there were 25 discoveries of which seven were gas fields. Production rose to around 3,000 barrels per day.

In the 10 years to 1964, imports on average increased by an annual 8.5% and were putting a considerable strain on the balance of payments.

1964 to 1980

The UK’s interest offshore started with the gas discoveries in the Netherlands in 1959 and led to the UK Continental Shelf Act in 1964, essentially making petroleum rights the same both onshore and offshore. Also in 1964, new offshore licences were created.

Onshore oil production was dominated by the discovery, in 1973, of the Wytch Farm Oilfield in Eastern Dorset. This oilfield, the largest onshore UK by several orders of magnitude, was discovered after a phase of seismic reflection surveying in 1970 and early 1971.

The first hydraulic fracture in the UK was believed to be performed in the mid to late sixties.

1980 to present day

Onshore activity once again started to accelerate after the 1979 increases in oil price. The first onshore licensing round was announced formally in June 1985, and included changes made in the Petroleum (Production) (Landward Areas) Regulations 1984, which among other things included the requirement for the first time to have local planning permission.

The Petroleum Act of 1998 vests all rights and ownership to hydrocarbons resources to the Crown.

On 28 May 2008, the Department of Business Enterprise and Regulatory Reform (BERR) announced that it was offering 93 new licences, to 54 companies, under the 13th Onshore Licensing Round. In addition to conventional oil and gas, applications were received for coal bed methane, coal mine methane and shale gas.

In June 2013, The British Geological Survey (BGS) in association with the Department of Energy and Climate Change (DECC) completed an estimate for the resource (gas-in-place) of shale gas in part of central Britain in an area between Wrexham and Blackpool in the west, and Nottingham and Scarborough in the east. The central estimate for the resource was 1,300 trillion cubic feet (tcf) this compares to the annual consumption in the UK of just over 3 tcf.

Around 2,000 wells have now been drilled onshore in the UK with about 10% of them having been hydraulically fractured. There are currently around 120 producing sites with c.300 operating wells producing in excess of 20,000 barrels of oil equivalent per day or about 1% of the UK’s consumption. Approximately 250,000 barrels per day of produced water is disposed of safely under permits from the EA and SEPA.

