

Chapter 1: Energy

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Key headlines

Energy production fell by 6.5 per cent to a record low level as production from the UK’s mature continental shelf continues to decline. Oil production fell by 8.8 per cent and gas production fell by 10 per cent with both at record lows for the century. Oil and gas production is 75 per cent below the peak recorded in 1999 and 34 per cent below pre-pandemic (2019) levels reflecting the decline in output from the UK’s mature continental shelf. **Wind, solar and hydro output rose by 1.2 per cent to a record high level** due to increased offshore wind and solar capacity.

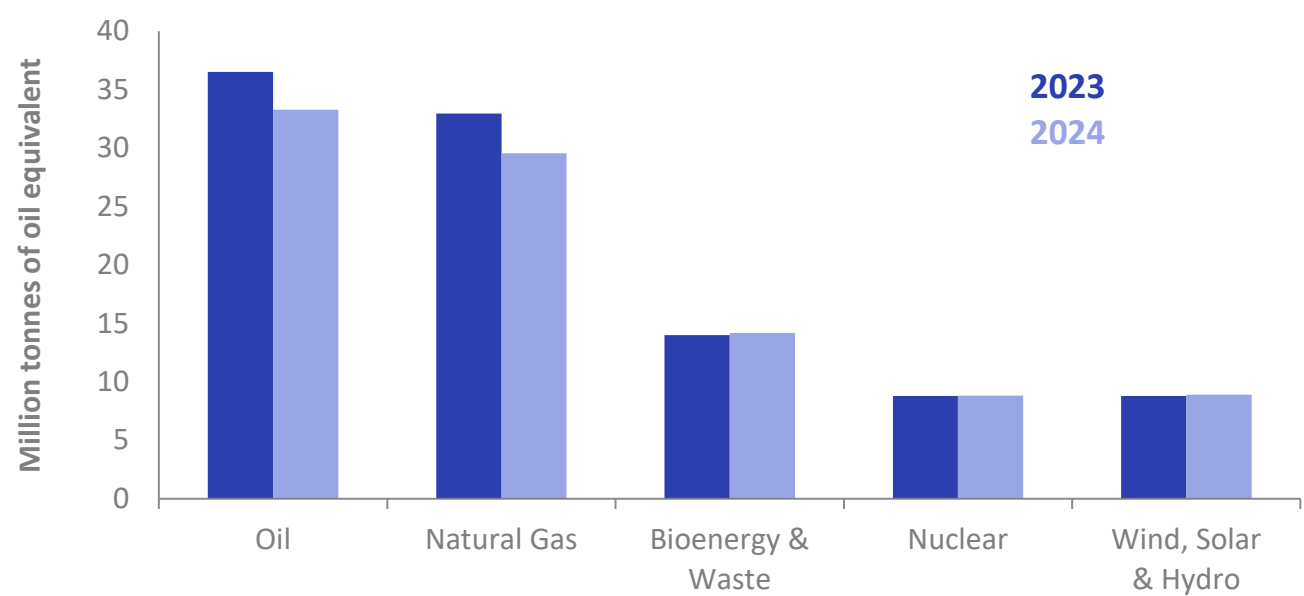
Energy consumption in 2024 rose by 2.6 per cent on 2023 but remains down 9.4 per cent on 2019. Consumption levels in 2024 rose for all sectors except for industry due to cooler weather as well as some easing from the higher energy prices in 2023. Domestic and services sector consumption both rose by 3.8 per cent, but industrial sector consumption fell by 1.2 per cent and remained at record low levels.

Transport demand rose by 2.9 per cent compared to last year but remains 4.0 per cent below pre-pandemic (2019) levels. **Aviation fuel demand rose by 9.4 per cent** and is now 1.3 per cent above 2019 levels.

Net imports rose by 8.9 per cent. Imports rose by 1.8 per cent but **exports fell by 5.5 per cent to a record 21st century low level.** The UK’s net import dependency stood at 43.8 per cent, up from 40.3 per cent in 2023.

The bulk of the UK’s energy imports, over 90 per cent, comprise oil and gas and **Norway is the UK’s primary supplier of energy imports.** The largest share of oil imports in 2024 arrived from the United States, whilst Norway provides the largest share of gas imports.

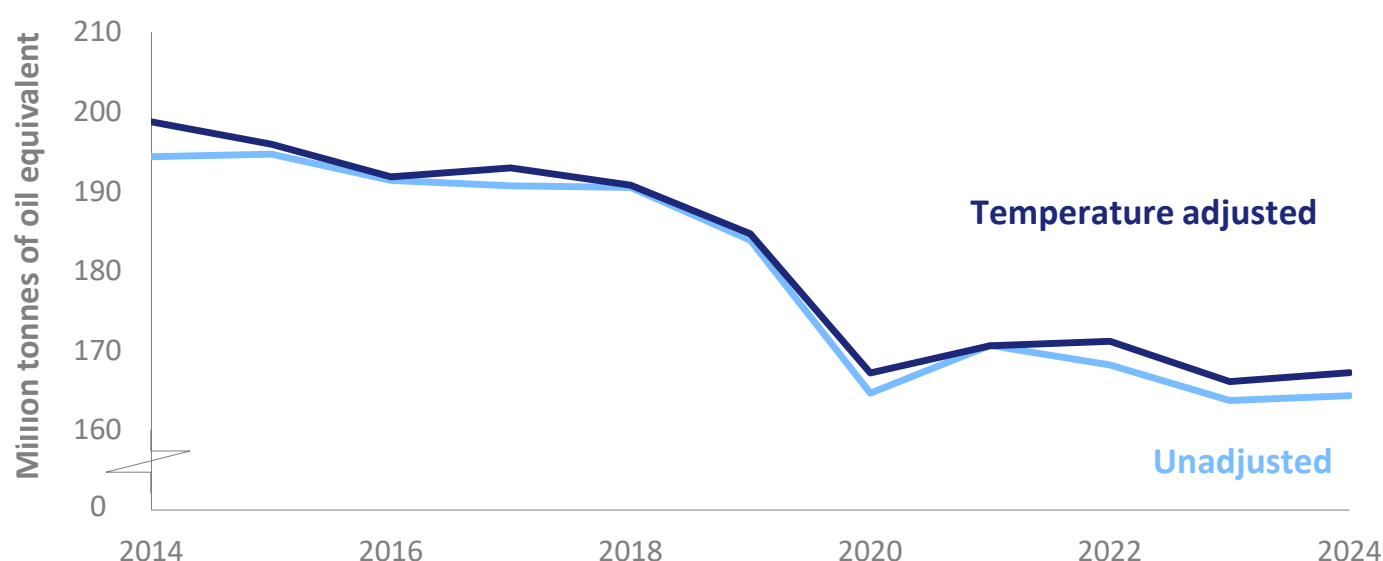
Chart 1.1 Production by fuels, 2023 and 2024 ([DUKES Table 1.1](#))



In 2024 total production was at a record low level of 94.8 million tonnes of oil equivalent, 6.5 per cent lower than in 2023, and 26 per cent lower than pre-pandemic (2019) levels. Production levels for all fuels except bioenergy & waste, nuclear and wind, solar & hydro are down on 2023, with **coal, oil and gas output at record lows for this century. UK production is 68 per cent below the peak recorded in 1999.**

In 2024 oil production fell by 8.8 per cent to a record low level, with output down by 42 per cent on pre-pandemic (2019) levels. Natural gas production fell by 10 per cent to a record low level, with output down by 21 per cent on pre-pandemic (2019) levels. Oil and gas production is 75 per cent below the peak recorded in 1999 reflecting the decline in output from the UK's mature continental shelf. Coal output in the UK is now de minimis due to the last large surface mine Ffos-y-Fran closing at the end of November 2023. Nuclear output rose marginally from the record 21st century low level of 2023. Production of bioenergy and waste rose by 1.4 per cent, whilst wind, solar and hydro output rose by 1.2 per cent to a record high level due to increased offshore wind and solar capacity.

Chart 1.2 Primary energy consumption, 2014 to 2024 ([DUKES Tables 1.1 and 1.1.4](#))



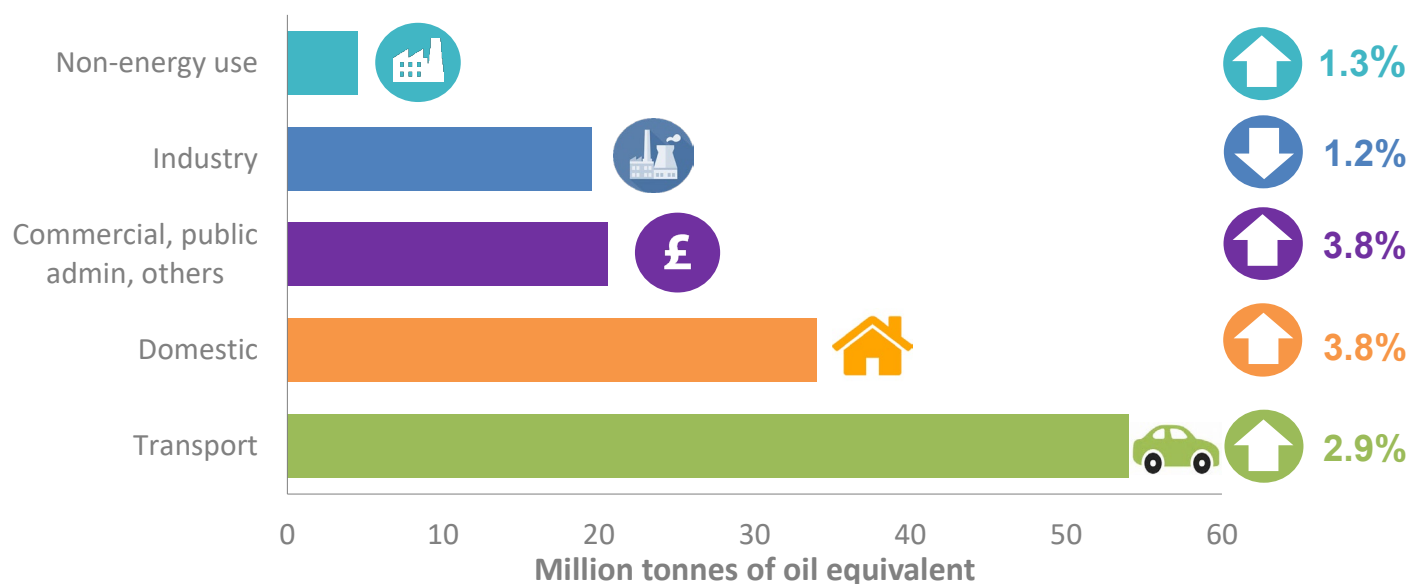
In 2024 total primary energy consumption was 164.4 mtoe, 0.4 per cent higher than in 2023, with cooler temperatures and an easing of the higher energy and other prices a key factor in the increased consumption levels.

Primary energy consumption includes use by consumers, fuel used for electricity generation, and other transformation activities. On a seasonally adjusted and annualised rate that removes the impact of temperature on demand, consumption was 167.2 mtoe, 0.7 per cent higher than in 2023. Total consumption levels on both an unadjusted and adjusted basis are now similar to 2020, when consumption levels were severely impacted by the COVID-19 pandemic, but this masks some variation between fuels.

In 2024 total primary energy consumption levels rose for all fuels except for coal and other solid fuels and gas. Consumption of oil rose by 2.1 per cent, within which aviation fuel sales were up on 2023 and at pre-pandemic levels. Consumption of bioenergy & waste rose by 8.3 per cent. Primary electricity consumption rose by 4.9 per cent, within which nuclear rose by 0.3 per cent, wind, solar and hydro rose by 1.2 per cent, and net imports rose by 40 per cent boosted by the Denmark-UK interconnector being in operation for its first full year.

Consumption of coal and other solids fell by 44 per cent due to there being no coal fired generation in the UK since the closure of the Ratcliffe-on-Soar power plant at the end of September 2024. Natural gas consumption fell by 2.1 per cent as electricity generators made more use of renewable sources as well as increased electricity imports; conversely, gas demand in the commercial and domestic sectors increased as prices eased.

Chart 1.3 Final energy consumption by sector, 2024 ([DUKES Table 1.1](#))



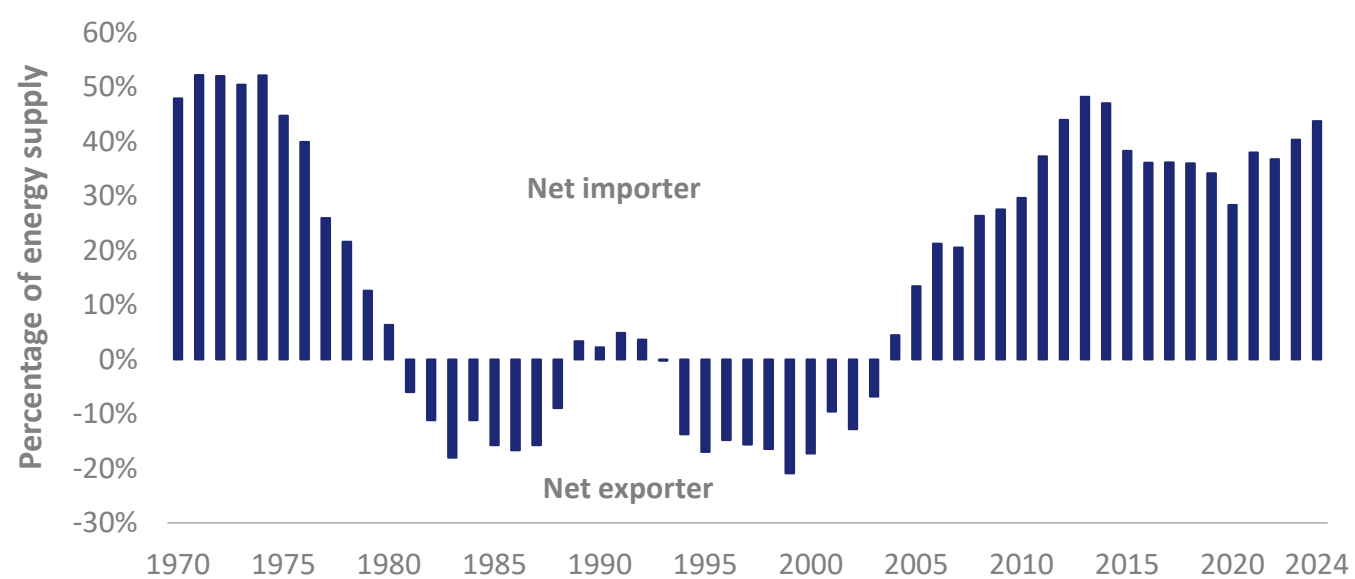
In 2024 total final energy consumption including non-energy use was 132.6 mtoe, 2.6 per cent higher than in 2023, but 9.4 per cent lower than pre-pandemic (2019) levels.

Except for industry, consumption levels in 2024 all rose with jet fuel for air transport rising to pre-pandemic (2019) levels.

Domestic sector consumption rose by 3.8 per cent, with average temperatures in 2024 marginally cooler than in 2023 as well some easing from the higher energy prices in 2023 likely contributing to the rise. Service sector consumption rose by 3.8 per cent with the easing from the higher energy price last year also likely a factor in the increased consumption levels. Transport sector consumption rose by 2.9 per cent, with road transport (petrol and diesel) consumption rising slightly and air consumption increasing by 9.4 per cent. Overall transport demand is 4.0 per cent below pre-pandemic (2019) levels. Industrial sector consumption fell by 1.2 per cent, to the lowest level in at least 50 years. In common with many other European countries, industrial consumption has contracted over time and the UK's industrial energy consumption has fallen 45 per cent since 2000. Improvements in energy efficiency and a move from traditional manufacturing to higher value processes such as pharmaceuticals have contributed to the fall.

Final energy consumption excluding non-energy use rose by 2.6 per cent, whilst on a temperature corrected basis consumption rose by 3.0 per cent with rises in all sectors except industry. Domestic consumption rose by 5.0 per cent, other services consumption rose by 4.3 per cent, transport consumption rose by 2.7 per cent, whilst industry consumption fell by 0.8 per cent.

Chart 1.4 Net import dependency, 1970 to 2024 (DUKES Table 1.1.3)



In 2024 net import dependency was 43.8 per cent¹, 3.4 percentage points higher than in 2023.

Imports in 2024 at 138.9 mtoe were 1.8 per cent higher than in 2023, but 23 per cent lower than their peak in 2013. Gas imports fell 8.4 per cent to the lowest level recorded since 2008. Pipeline imports rose 20 per cent but Liquefied Natural Gas (LNG) imports fell 47 per cent. Conversely crude oil imports rose 7.6 per cent to the highest level recorded since 2019.

Exports in 2024 at 64.1 mtoe were 5.5 per cent lower than 2023 and were at a record 21st century low level. Gas exports fell 33 per cent as trade returned to ‘typical’, pre Russia-Ukraine conflict levels. Exports to Belgium fell 56 per cent in 2024 compared to 2023, conversely, exports to the Netherlands and the Republic of Ireland rose by 7.8 per cent and 4.6 per cent respectively over the same period.

Net imports at 74.8 mtoe were 8.9 per cent higher than in 2023 and at the highest level recorded since 2015, and accounted for 43.8 per cent of consumption in 2024, up from 40.3 per cent in 2023 and at the highest dependency share level since 2014.

Despite net imports rising, the UK decreased its use of fossil fuels. The main fossil fuel sources in the UK are coal, gas and oil. In 2024, the share of primary energy consumption from fossil fuels fell to a record low 75.2 per cent from 76.6 per cent in 2023, whilst that from low-carbon sources stood rose to a record high 21.7 per cent from 20.8 per cent in 2023.

¹ Net imports as a proportion of primary supply (including an addition for the energy supplied to marine bunkers).



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