Department for Energy Security & Net Zero

Energy Trends

UK, January to March 2025

About this release

Information on energy production, trade, and consumption in the UK for total energy and by specific fuels.

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Additional data are available online as part of the Energy Trends series:

Total energy
Coal and derived gases
Oil and oil products
Gas
Electricity
Renewables

This publication is based on a snapshot of survey data from energy suppliers. New data are incorporated in line with the revisions policy.

Percentage change from Quarter 1 2024, primary energy basis

(Mtoe basis)	Production	Imports	Exports	Demand
Total energy	**-1.5%**	**+6.0%**	**+1.1%**	**+2.5%**
Coal	**+57%**	**+3.5%**	**-45%**	**-66%**
Primary oil	**+3.7%**	**-4.6%**	**+10%**	**-8.4%**
Petroleum products	**-7.4%**	**+3.5%**	**-10%**	**+0.6%**
Gas	**-6.9%**	**+19%**	**+1.8%**	**+8.6%**
Electricity	**+0.4%**	**-4.0%**	**+34%**	**+0.4%**

Renewable electricity generation dropped 4.9 percentage points to 46.3 per cent of total generation in the first quarter of 2025, as near record low wind speeds for the quarter led to a 13 per cent drop in wind generation. Wind generation provided 28.5 per cent of the total generation, short of the 38.1 per cent provided by gas. The increase in gas generation reflected low wind speeds and the result of a drop in net imports of electricity.

Renewable generation capacity increased by 6 per cent on the same period last year, slightly below the average growth rate of the last three years.

At 58.2 per cent, low carbon generation was down 3.5 percentage points on the same period last year, with increased output from nuclear, up 15 per cent on last year, partially offsetting the drop in renewables. Fossil fuel generation was up 3.6 percentage points to 38.6 per cent.

UK energy production fell 2 per cent on last year, mainly due to a fall in gas output stemming from the maturity of the basin, and low wind output from lower wind speeds. Nuclear output increased, albeit from a record low during the first quarter of 2024. Oil output also increased, up 4 per cent on last year, and in contrast to recent decreases. Despite these increases, oil output is 40 per cent below pre-pandemic levels, with nuclear 31 per cent below, and overall production 25 per cent below Quarter 1 2019.

Final consumption increased 3 per cent on last year. Industrial consumption was down 3 per cent, and consumption by households up 6 per cent as a result of colder weather. Transport demand increased 3 per with increases in road and aviation fuel. Final consumption remains below pre-pandemic averages, down 7 per cent on the first quarter of 2019 with lower consumption of petroleum, gas and electricity.

Section 1: UK total energy

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Key headlines

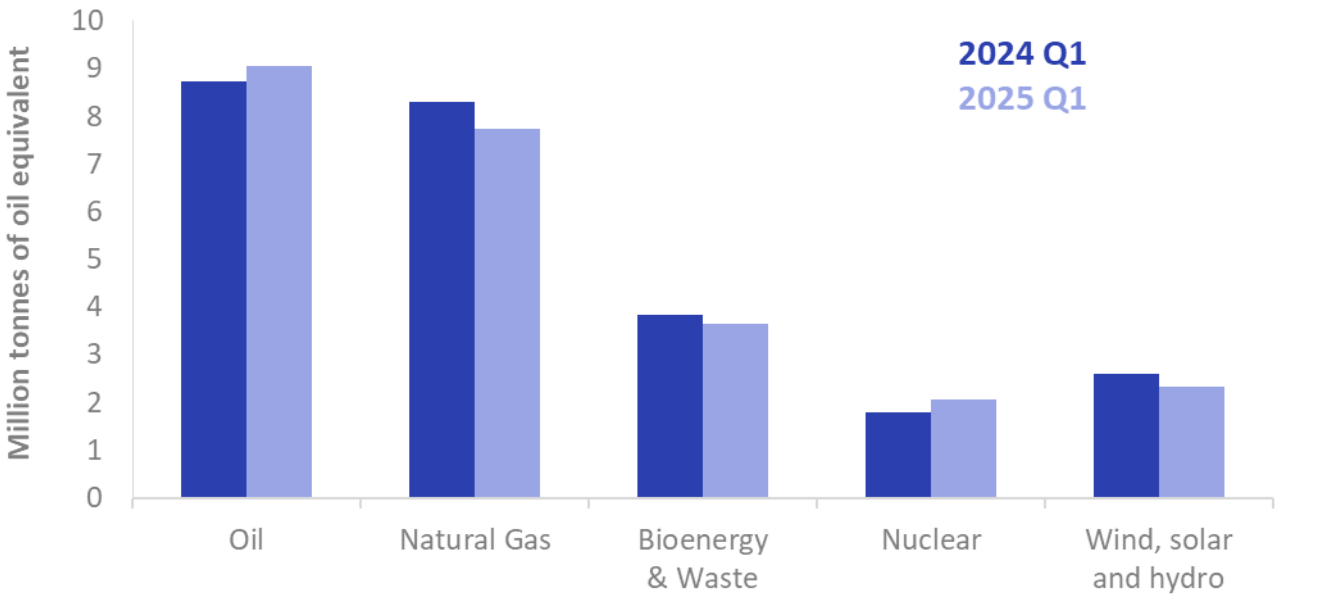
In the first quarter of 2025 **total primary energy production was 24.9 million tonnes of oil equivalent, 1.5 per cent lower** than in the first quarter of 2024 and down 25 per cent on the pre-pandemic first quarter of 2019.

Total primary energy consumption for energy uses rose by 2.3 per cent. When adjusted to take account of weather differences, primary energy consumption fell by 1.2 per cent.

Total final energy consumption (excluding non-energy use) was 3.1 per cent higher compared to the first quarter of 2024. Domestic consumption rose by 6.2 per cent with average temperatures 1.2 degrees Celsius cooler compared to last year. Transport consumption rose by 2.9 per cent, other final users consumption rose by 2.6 per cent, whilst industrial consumption fell by 3.1 per cent. On a seasonally and temperature adjusted basis, final energy consumption rose by 0.4 per cent.

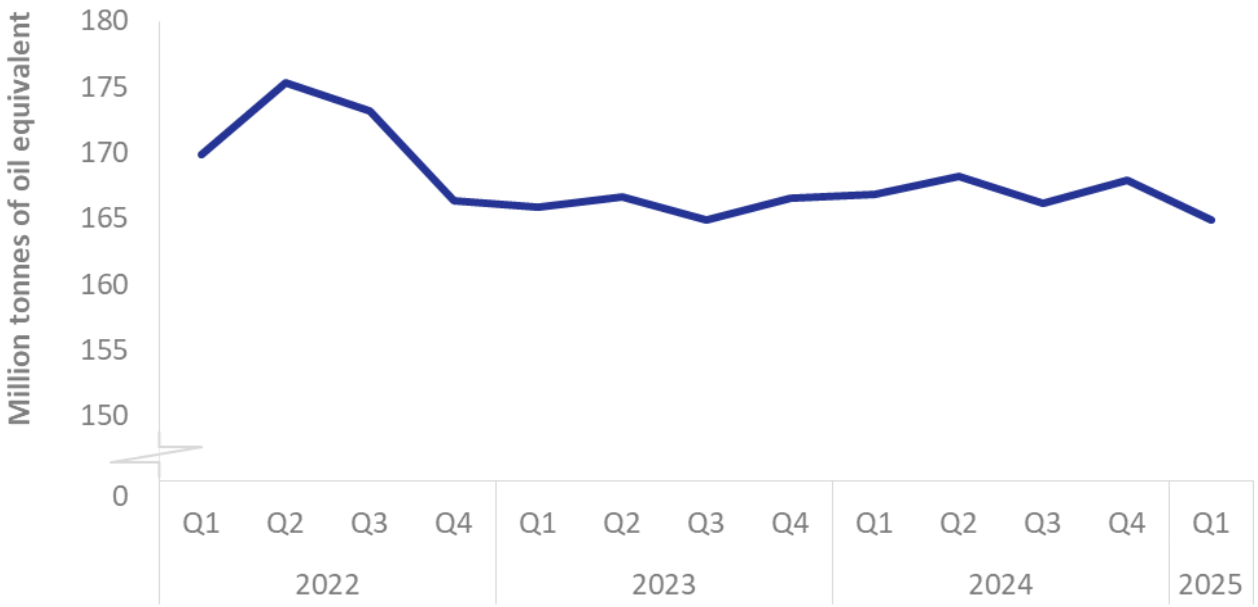
Net import dependency was 47.0 per cent in the first quarter of 2025, up 3.2 percentage points on the same quarter of 2024, with exports at near record low levels this century as a result of decreasing indigenous production of oil and gas.

Chart 1.1 UK production (Energy Trends Tables 1.1 & 1.3)



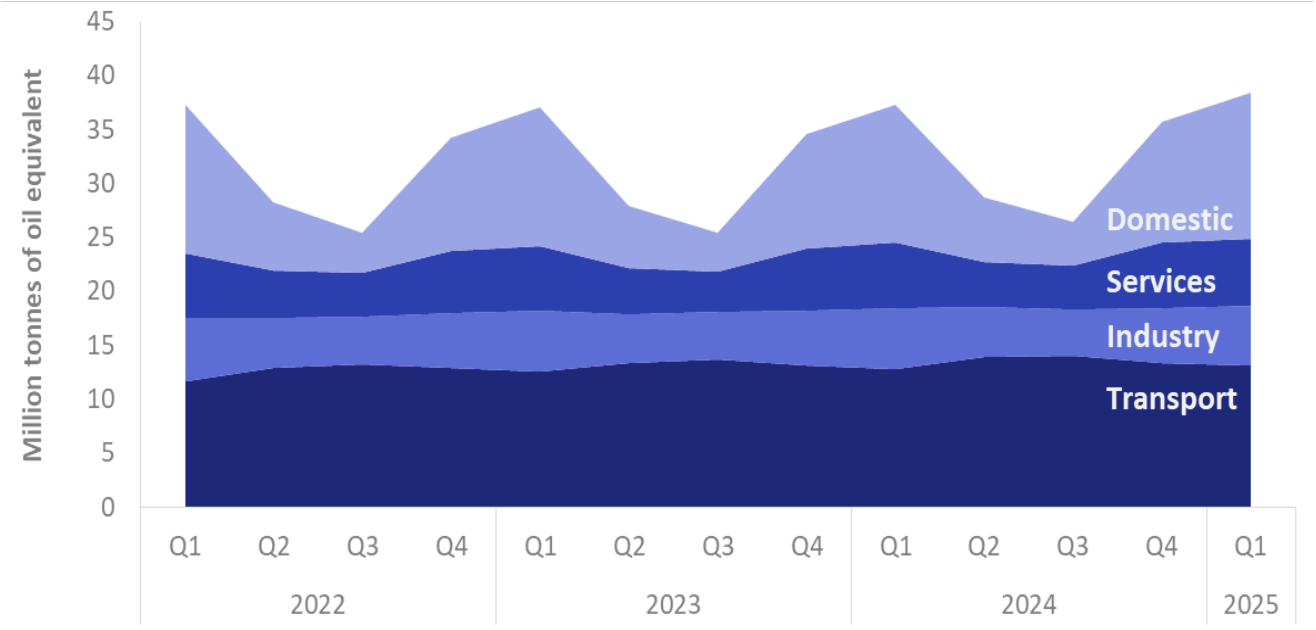
In the first quarter of 2025 **total primary energy production was 24.9 million tonnes of oil equivalent, 1.5 per cent lower** than in the first quarter of 2024. Production of all fuels fell compared to the same quarter in 2024 with the exception of oil and nuclear. Oil production rose by 3.8 per cent but remains 40 per cent lower than pre-pandemic (2019) levels, whilst gas production fell by 6.7 per cent with output still down by 20 per cent on pre-pandemic (2019) levels. Bioenergy and waste output fell by 4.7 per cent. Nuclear output rose by 15 per cent albeit from a record low during the first quarter of 2024, due to fewer outages across the UK's nuclear fleet. Wind, solar & hydro output fell by 10 per cent due to less favourable weather conditions particularly for wind generation. 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.

Chart 1.2 Total inland consumption (primary fuel input basis) (Energy Trends Table 1.2)



In the first quarter of 2025 **total inland consumption** (which includes not only fuel use by consumers, but fuel used for electricity generation and other transformation) was 164.9 million tonnes of oil equivalent, 1.2 per cent lower than in the first quarter of 2024 on a seasonally adjusted and annualised basis that removes the impact of temperature on demand.

Chart 1.3 Final energy consumption by user (Energy Trends Table 1.3)



In the first quarter of 2025 **total final energy consumption (excluding non-energy use) was 3.1 per cent higher** than in the first quarter of 2024. Domestic consumption rose by 6.2 per cent with average temperatures 1.2 degrees Celsius cooler compared to last year. Transport consumption rose by 2.9 per cent, other final users consumption rose by 2.6 per cent, whilst industrial consumption fell by 3.1 per cent.

On a seasonally and temperature adjusted basis total final energy consumption was 0.4 per cent higher than in the first quarter of 2024, within which transport consumption rose by 4.6 per cent, whilst industrial consumption fell by 4.8 per cent, domestic consumption fell by 2.1 per cent, and services consumption fell by 1.0 per cent.

Section 2: Coal and derived gases

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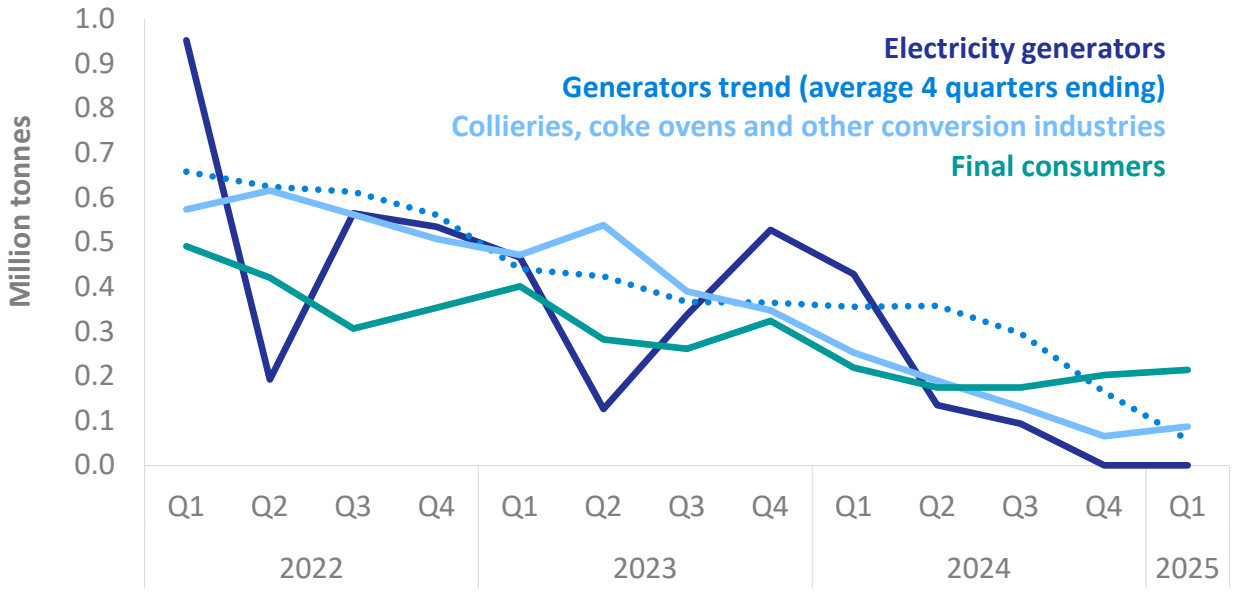
Key headlines

In the first quarter of 2025, UK coal demand fell to 301 thousand tonnes, 67 per cent lower than in Quarter 1 2024. There was no coal-fired power station generation and there was no coke oven gas production as all coke ovens had closed.

Overall coal production **for the first quarter of 2025 rose from 20 thousand to 32 thousand tonnes.** This was all deep-mined coal as the last large surface mine Ffos-Y-Fran closed at the end of November 2023. Coal production in the UK is now a small component of the UK's total energy production.

In Quarter 1 2025, coal imports rose to 429 thousand tonnes, 2.7 per cent up on last year, but was far below the peak of 13.4 million tonnes in Q2 2013. The largest provider of coal to the UK was Colombia (42 per cent). This was followed by the USA (21 per cent) and the European Union (18 per cent).

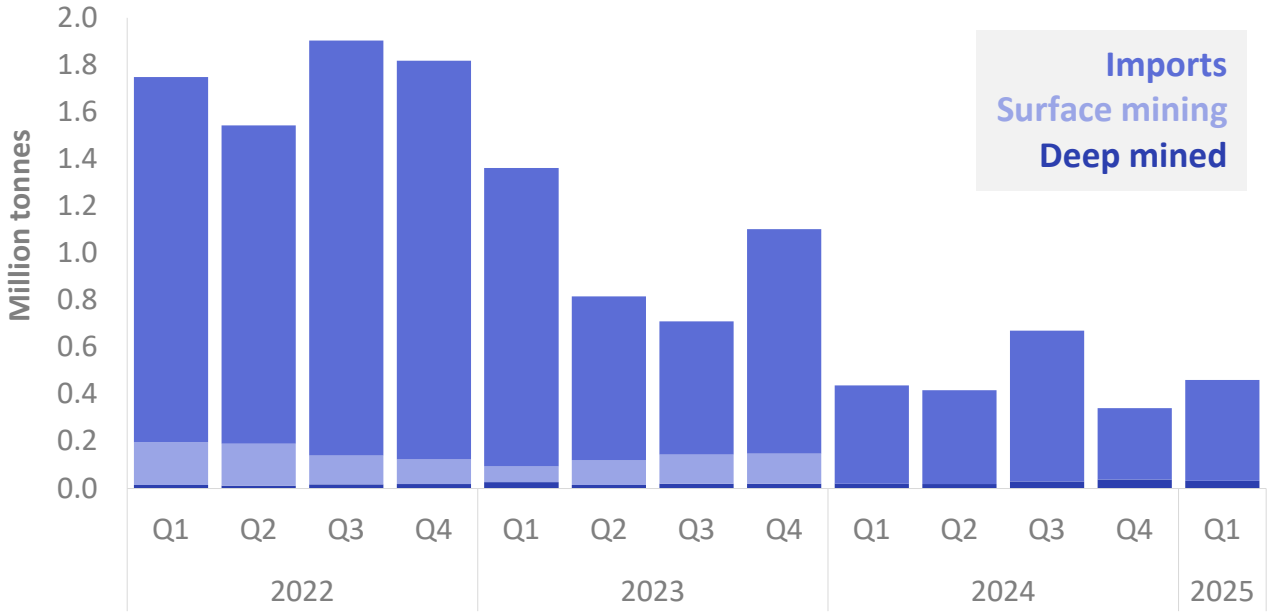
Chart 2.1 Coal Consumption (Energy Trends Table 2.1)



There was no coal-fired generation from power stations in the first quarter of 2025. The last coal-fired power plant - Ratcliffe-on-Soar - closed on 30 September 2024. Coal use has been phased out as electricity generation now favours gas, nuclear and renewables.

Domestic coal production has fallen steadily because of coal mine closures and reduced demand. **In Q1 2025, UK coal production rose to 32 thousand tonnes**, up 57 per cent compared to Q4 2024. However, there is a downward trend, and production was only 2.0 per cent of the value in Quarter 4 2015 when the last large deep mines closed. The last large surface mine Ffos-y-Fran closed at the end of November 2023. There is currently no surface mining in the UK.

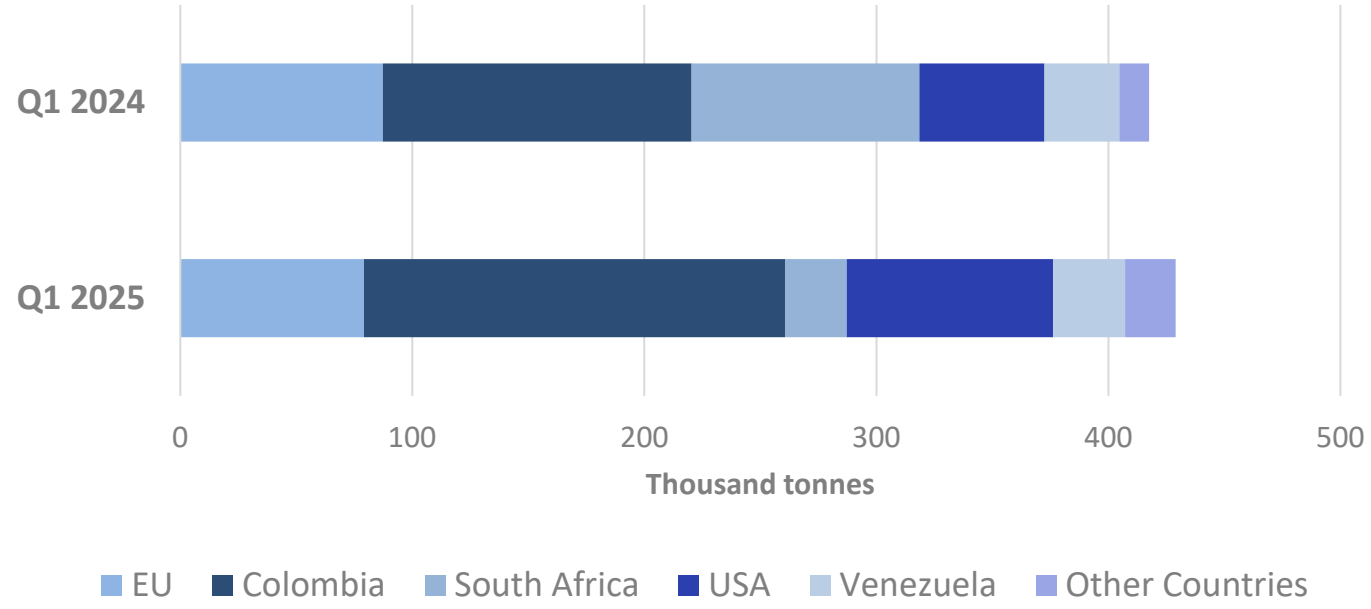
Chart 2.2 Coal Supply (Energy Trends Table 2.1)



In Quarter 1 2025, coal imports rose to 429 thousand tonnes, 2.7 per cent up on the same period last year. However, volumes are low due by historical standards due to low demand for coal (import peaked at 13.4 million tonnes in second quarter of 2013). Coal imports in Quarter 1 2025 comprised 289 thousand tonnes of steam coal (67 per cent of imports), 98 thousand tonnes of coking coal (23 per cent of imports) and 42 thousand tonnes of anthracite (10 per cent of imports).

The largest provider of coal to the UK during Quarter 1 was Colombia (42 per cent). This was followed by the USA (21 per cent) and the European Union (18 per cent). The UK banned Russian coal imports in August 2022. This reflects a decreasing reliance on Russian energy in line with that seen for both oil and gas.

Chart 2.3 Coal Imports (Energy Trends Table 2.4)



Section 3: Oil and oil products

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Key headlines

Indigenous production of primary oils rose by 3.5 per cent in Quarter 1 2025 compared to Quarter 1 2024. Production has been trending downwards both in the longer term and since 2019 from the aging North Sea basin.

The UK was a net importer of primary oils by 3.2 million tonnes, down 27 per cent compared to the same period in the previous year.

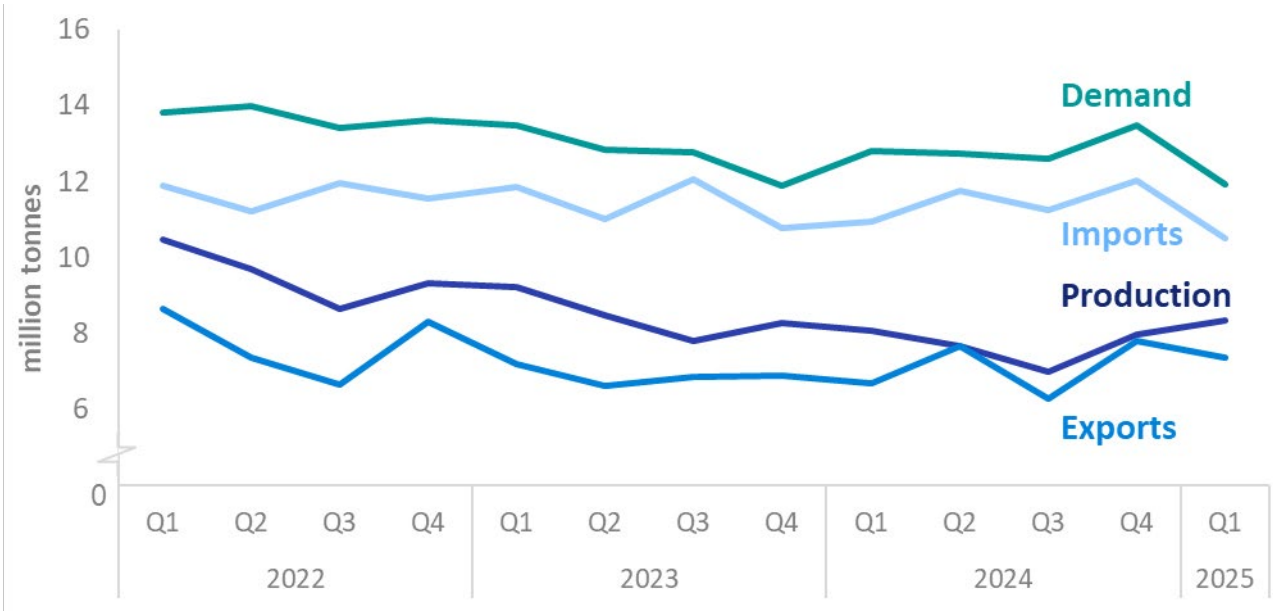
Production of petroleum products decreased by 7.1 per cent due in part to operations winding down in preparation for the closure of Grangemouth refinery. To compensate for reduced production amid stable demand, imports of products rose by 3.7 per cent while exports decreased by 10 per cent, leaving net imports at 3.3 million tonnes.

Demand for diesel increased 1.5 per cent while petrol was up by 1.7 per cent. Jet fuel demand was marginally up by 0.9 per cent.

The UK held 10.8 million tonnes of oil stocks at the end of Quarter 1 2025, remaining substantially above the IEA stocking requirement of 90 days of net imports.

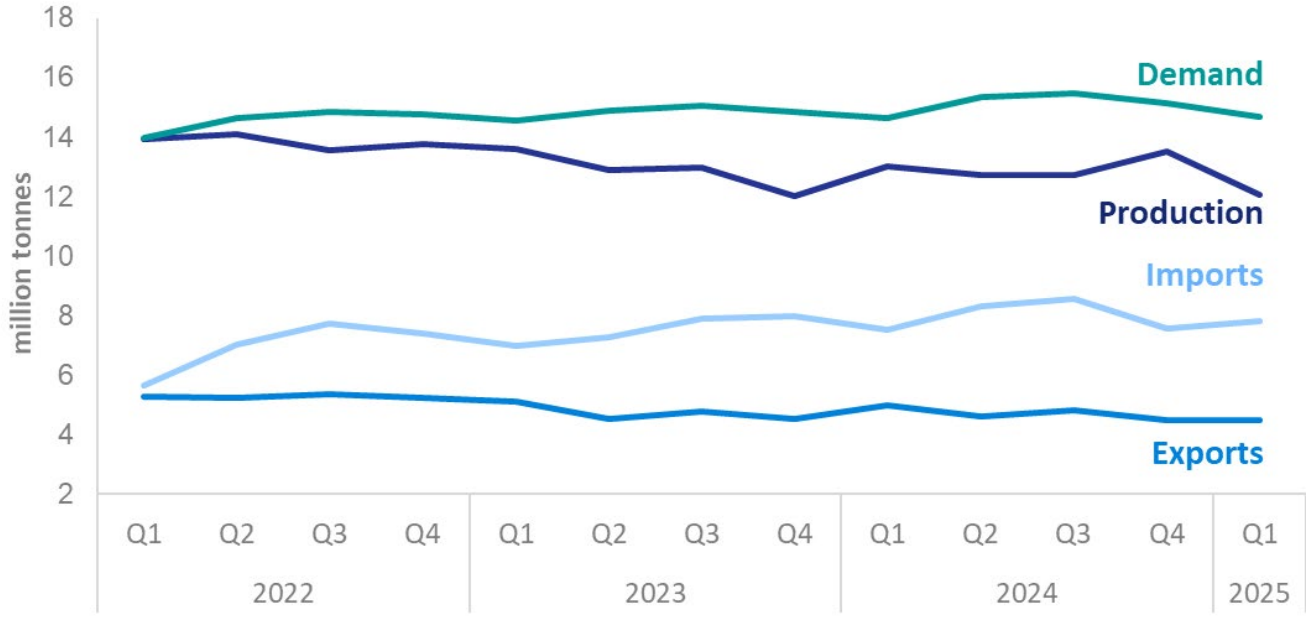
Demand for primary oils was down by 6.7 per cent in Quarter 1 2025 compared to the same period in 2024, partly due to the ramping down of operations at Grangemouth refinery in preparation for its closure in April 2025. Despite the long-term downward trends in production from the aging North Sea basin, indigenous production of primary oils was up by 3.5 per cent in Quarter 1 2025.

Chart 3.1 Production and trade of crude oil and NGLs (Energy Trends Table 3.1)



Imports of primary oils dropped by 4.6 per cent in Quarter 1 2025 compared to Quarter 1 2024 as refinery demand fell. Indigenous production rose and primary oil exports were up by 10 per cent. The UK continues to be a net importer of primary oils and in Quarter 1 2025 net imports of primary oils were at 3.2 million tonnes, down 27% on the same period in 2024.

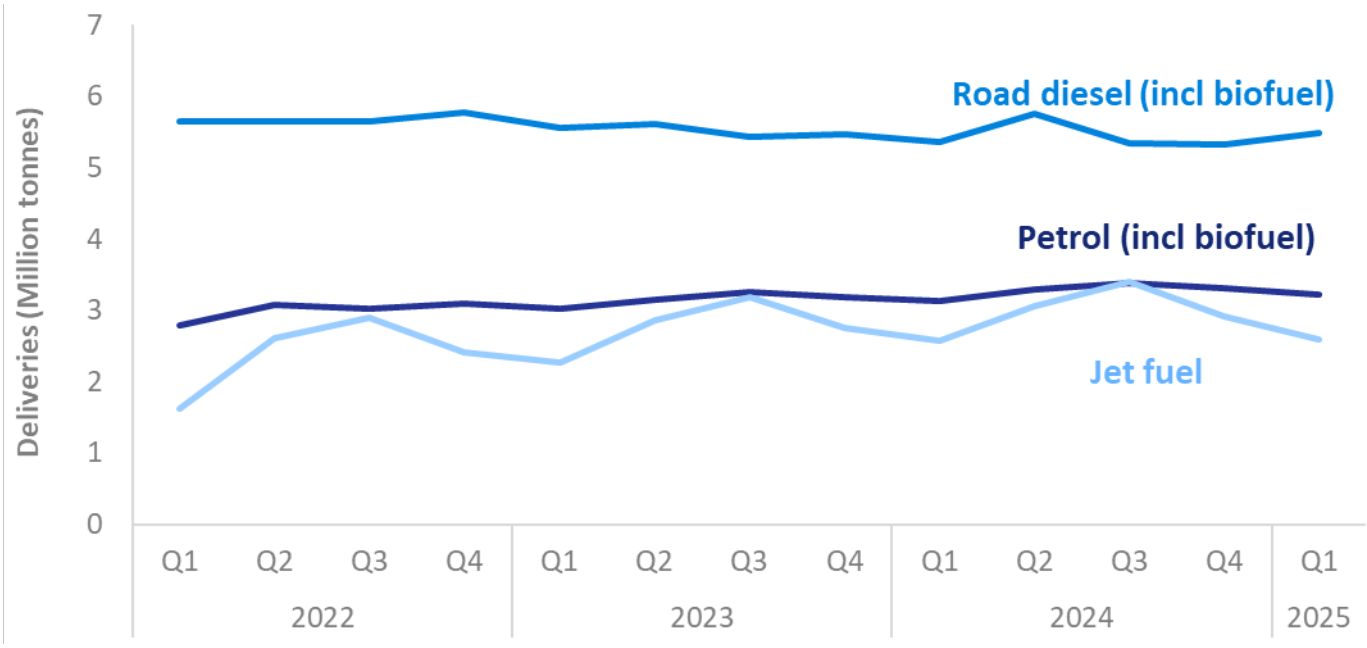
Chart 3.2 Production and trade of petroleum products (Energy Trends Table 3.2)



Total demand for petroleum products was up by 0.4 per cent in Quarter 1 2025. Due in part to the ramping down of operations in preparation for Grangemouth's closure in April, production was down by 7.1 per cent on the same period in 2024. To compensate for reduced production amid stable demand, imports of petroleum products rose by 3.7 per cent and exports fell by 10 per cent with net imports increasing by a third.

Final consumption increased by 1.6 per cent on the year before. Colder temperatures in the first quarter of 2025 led to an increase in demand from sectors which primarily rely on oil products for heating, namely domestic and other final users (which includes agriculture and public administration), which saw increases of 7.5 and 4.3 per cent, respectively. Within final consumption non-energy use hit a quarterly record low of 0.9 million tonnes.

Chart 3.3 Deliveries of transport fuels (Energy Trends Table 3.5)



Demand for jet fuel continues its gradual recovery from the low caused by the COVID-19 pandemic, being 0.9 per cent up in Quarter 1 2025 compared to the same period last year but 13 per cent down on the pre-pandemic Quarter 1 2019.

Due in part to operations at Grangemouth ramping down in advance of closure, **production of all three major fuels (petrol, diesel and jet fuel) dropped,** by 13, 7.6 and 15 per cent, respectively. Petrol and diesel saw similar increases in demand of 1.7 and 1.5 per cent, respectively, leading to increases of 15 and 6.7 per cent in each of their imports. Gas oil saw a decrease in production of 17 per cent and a 7.8 per cent increase in demand.

The UK holds emergency reserves of oil in case of a supply disruption. Through membership of the International Energy Agency the UK is required to hold stocks equivalent to a minimum of 90 days of net imports to help protect global oil markets from supply shocks. UK government meets this by obligating major suppliers to the inland market to hold compulsory stocks.

At the end of Quarter 1 2025 **the UK held 10.8 million tonnes of stock**, 6.1 per cent higher than the previous year and more than meeting the 90-day net import requirement set by the IEA.

UK oil stocks can either be held within the UK or abroad under international agreements. The UK can also hold stock on behalf of other countries. Physical stocks held within the UK rose by 1.2 per cent at the end of Quarter 1 2025 compared with the previous year, with increases in other products, petrol, and terminal stocks of primary oils.

Section 4: Gas

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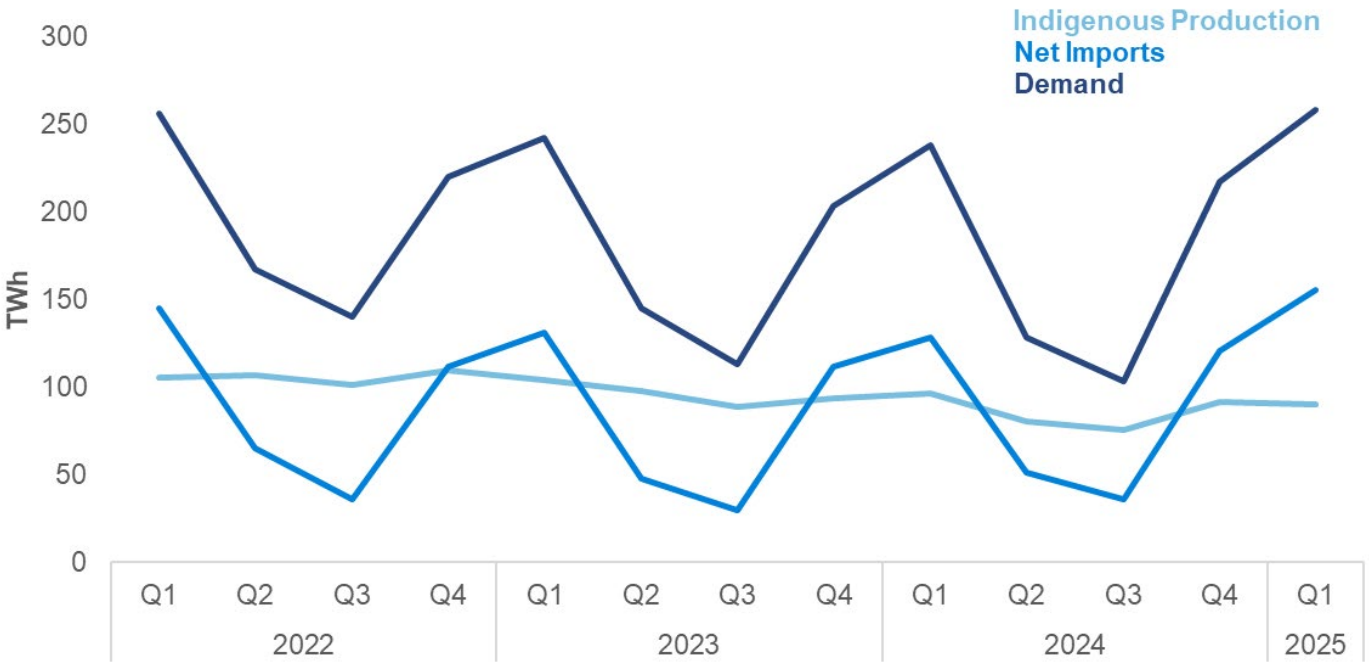
Key headlines

Gas demand increased in Quarter 1 2025, up 8.5 per cent on Quarter 1 2024. This was driven by increased gas demand for electricity generation, as well as an increase in domestic (household) and services demand in part due to colder temperatures compared to the same period last year.

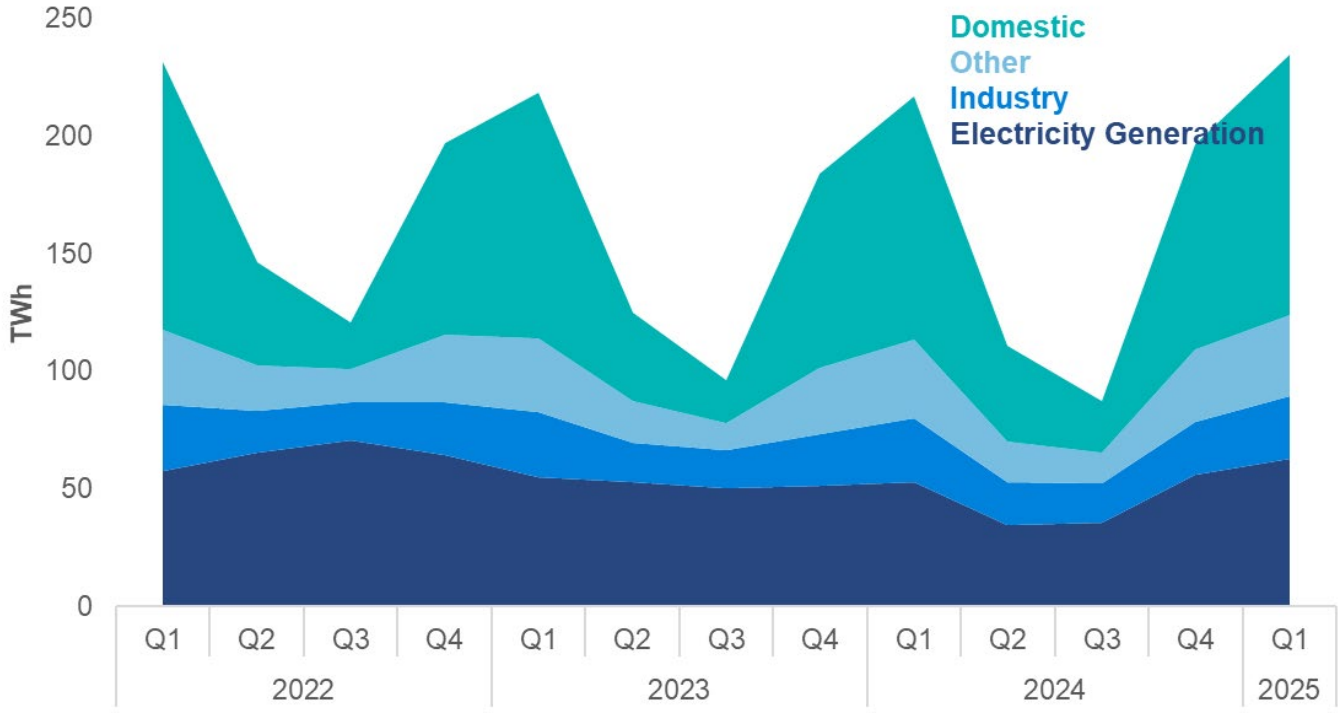
Production fell while imports increased, and exports remained stable. Gas production decreased by 6.9 per cent in Quarter 1 2025 as output from the mature North Sea basin continues to decline. Imports increased by a fifth while exports remained stable, returning to 'typical' levels following the near-record highs of 2023, when the UK saw substantial exports to Europe in a move away from Russian gas.

Chart 4.1 Natural gas production, demand and imports (Energy Trends Table 4.1)



Natural gas demand increased by 8.5 per cent in Quarter 1 2025 compared to Quarter 1 2024; the highest amount for the quarter since 2021 following a period of low demand due to high temperatures and prices. Indigenous production of gas decreased by 6.9 per cent in the same period, whilst exports remained stable meaning demand was met with increased imports, up by 19 per cent.

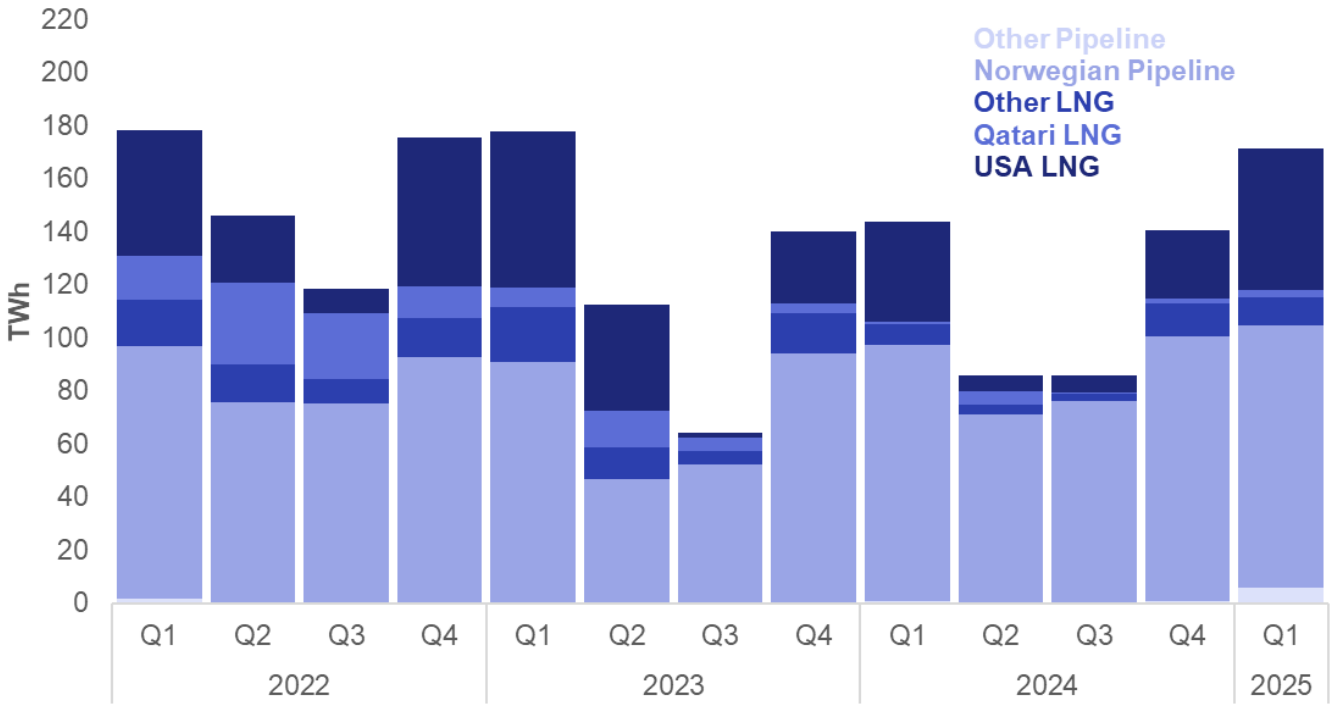
Chart 4.2 Natural gas demand (Energy Trends Table 4.1)



Increased gas demand was driven by a 19 per cent increase in gas used for electricity generation. Gas used in generation was notably low the first quarter of 2024 due to favourable weather conditions leading to high renewable output and high electricity imports (for further information see Chapter 5).

Consumption in the domestic (household) and services (including commercial and public administration) sectors increased by 6.9 and 4.1 per cent respectively in Quarter 1 2025 compared with the same period in 2024. Demand in the industrial sector remained stable, down 0.1 per cent.

Chart 4.3 UK natural gas imports by origin (Energy Trends Table 4.3)



Increased imports were mainly from US liquified natural gas (LNG) imports. Both pipeline and LNG imports increased in Quarter 1 2025, up 7.8 and 43 per cent respectively. Imports of LNG from the US increased by 42 per cent, and America remained the UK's largest LNG import source. Pipeline imports from Belgium also increased following a period of largely exporting via the Belgian interconnector [1]. Imports of LNG from Qatar and Trinidad & Tobago also increased compared with Quarter 1 2024.

[1] Interconnectors can be used to import or export gas

Section 5: Electricity

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Key headlines

Quarter 1 of 2025 saw electricity demand fall 0.2 per cent compared to Quarter 1 2024, to 87.6 TWh. Net imports were down 13 per cent from last year's highs and UK-based generation rose by 1.7 per cent to 79.8 TWh.

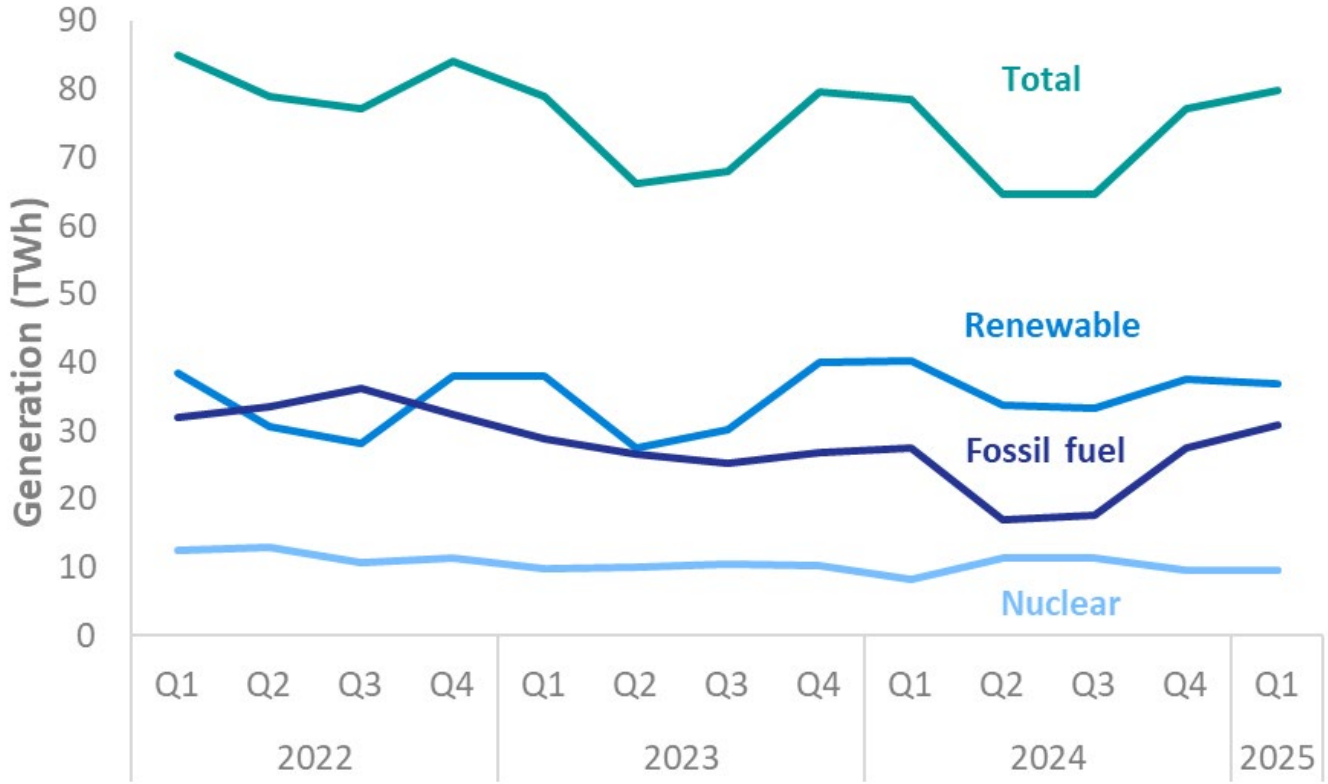
The share of electricity generation from renewables fell by 4.9 percentage points to 46.3 per cent in Quarter 1 of 2025 mainly due to low wind speeds, while the share of generation from fossil fuels rose by 3.6 percentage points to 38.6 per cent**.** Wind generation fell by 13 per cent to 22.8 TWh with the lowest wind speeds for a January to March period since 2010. Despite this fall, wind still provided 28.5 per cent of UK generation. The low carbon generation share fell by 3.5 percentage points to 58.2 per cent.

Consumption amongst final users rose overall, increasing by 0.4 percent from Quarter 1 of 2024 to 75.1 TWh in Quarter 1 of 2025. Domestic consumption rose by 2.0 per cent to 28.4 TWh in Quarter 1 of 2025, following colder weather during Quarter 1 of 2025 compared to the same period last year. Meanwhile, electricity used for transport rose by 28 per cent to 3.5 TWh as electric vehicle numbers increased.

Industrial consumption and consumption by other final users fell. Industrial consumption fell by 3.1 per cent to 22.2 TWh, and consumption by other final users, including commercial use, fell by 1.4 per cent to 21.0 TWh.

Quarter 1 of 2025 saw generation rise by 1.7 per cent to 79.8 TWh, with less demand met by imports. Total imports decreased 4.0 per cent to 10.7 TWh, suggesting less favourable price differentials across the interconnectors during Quarter 1 of 2025 compared to the same period last year. Meanwhile, total exports rose by 34 per cent to reach 2.9 TWh, the highest Quarter 1 value. Demand decreased 0.2 per cent to 87.6 TWh.

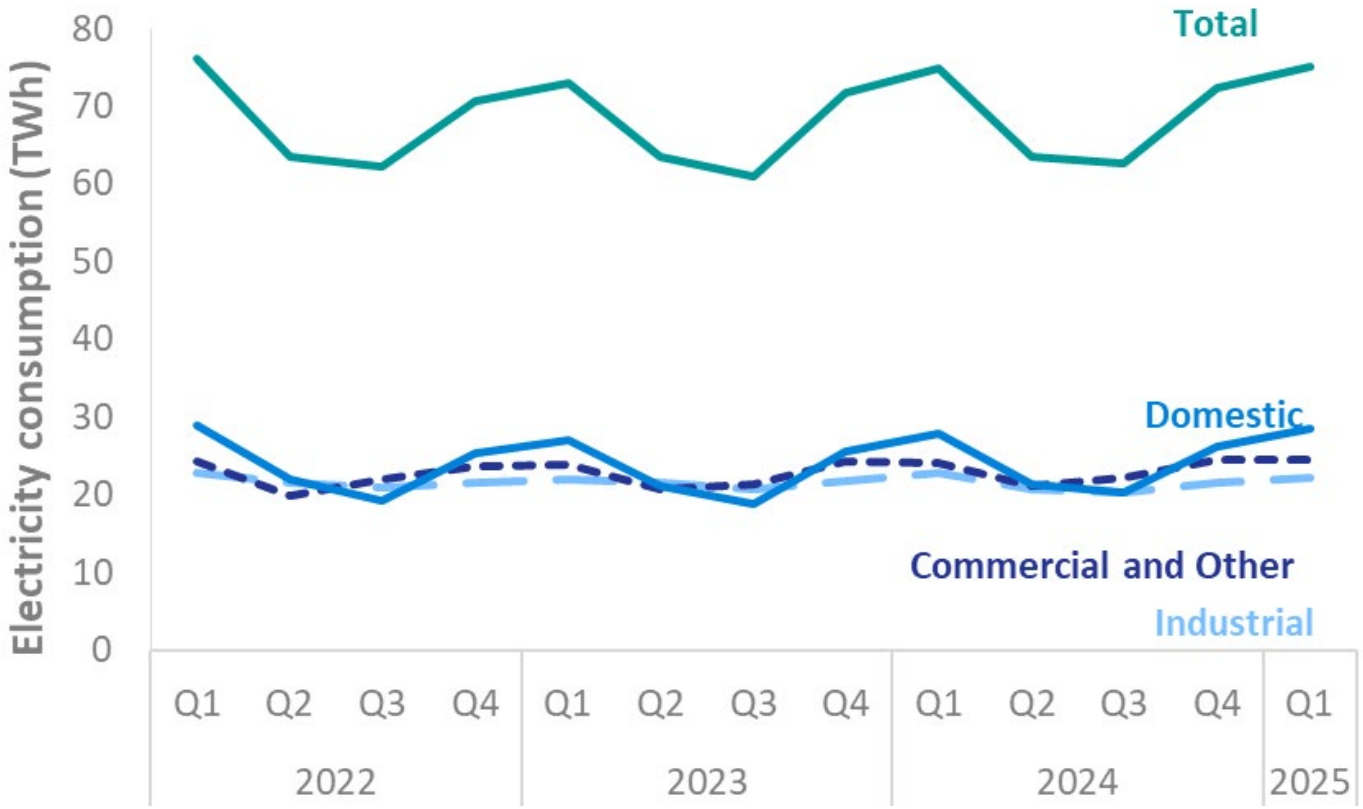
Chart 5.1 Electricity generated, by fuel type (Energy Trends Table 5.1)



The share of electricity generation from renewables fell by 4.9 percentage points to 46.3 per cent in Quarter 1 of 2025 due in the main to low wind speeds and increased gas-fired generation. Renewable generation fell by 8.1 per cent to 36.9 TWh. Average wind speeds in the quarter were 8.1 knots, 1.7 knots below the 20-year average and the lowest Quarter 1 wind speeds since 2010. Wind generation fell by 13 per cent to 22.8 TWh, the lowest Quarter 1 since 2021 but still 28.5 per cent of total electricity generation. Curtailment reduced generation at some sites. Bioenergy fell by 2.9 per cent to 9.7 TWh. Hydro fell by 19 per cent to 1.7 TWh. Solar generation rose by 45 per cent to 2.8 TWh. Even though nuclear generation rose by 15 per cent to 9.5 TWh, with fewer outages compared to last year, the share of low carbon sources fell by 3.5 percentage points to 58.2 per cent as the increase in nuclear did not fully compensate for the drop in wind output.

Fossil fuel generation share rose by 3.6 percentage points to 38.6 per cent, as generation from fossil fuels rose by 12 per cent to 30.8 TWh. Almost all fossil generation now comes from gas, which rose by 18 per cent to 30.4 TWh, giving gas a share of 38.1 per cent of total electricity generation.

Chart 5.2 Electricity consumption by sector (Energy Trends Table 5.2)



Consumption by end users rose by 0.4 percent from Quarter 1 of 2024 to 75.1 TWh in Quarter 1 of 2025. This came as industrial consumption fell by 3.1 per cent to 22.2 TWh, and consumption by other final users, including commercial use, fell by 1.4 per cent to 21.0 TWh.

Domestic consumption rose, along with electricity use in transport. Domestic consumption rose by 2.0 per cent to 28.4 TWh, as average temperatures were colder in Quarter 1 of 2025 compared to Quarter 1 of 2024. Similarly, the use of electricity for transport rose by 28 per cent to 3.5 TWh, due to greater numbers of electric vehicles.

Section 6: Renewables

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Key headlines

Renewable generation during the first quarter of 2025 was 36.9 TWh, down 8.1 per cent (3.2 TWh) on the same period last year largely due to a drop in wind generation, the result of near record low wind for the quarter, curtailment and site outages of output during periods of high wind.

The renewable share of total electricity generation reached 46.3 per cent in Quarter 1 2025, 4.9 percentage points lower than the same period last year and the lowest percentage share since the third quarter of 2023.

Renewable installed capacity was 3.7 GW (6.4 per cent) higher than in Quarter 1 2024. Solar PV accounted for 1.5 GW of the new capacity, with offshore wind contributing a further 1.3 GW.

Chart 6.1 Changes in renewable generation and capacity between Q1 2024 and Q1 2025 (Energy Trends Table 6.1)

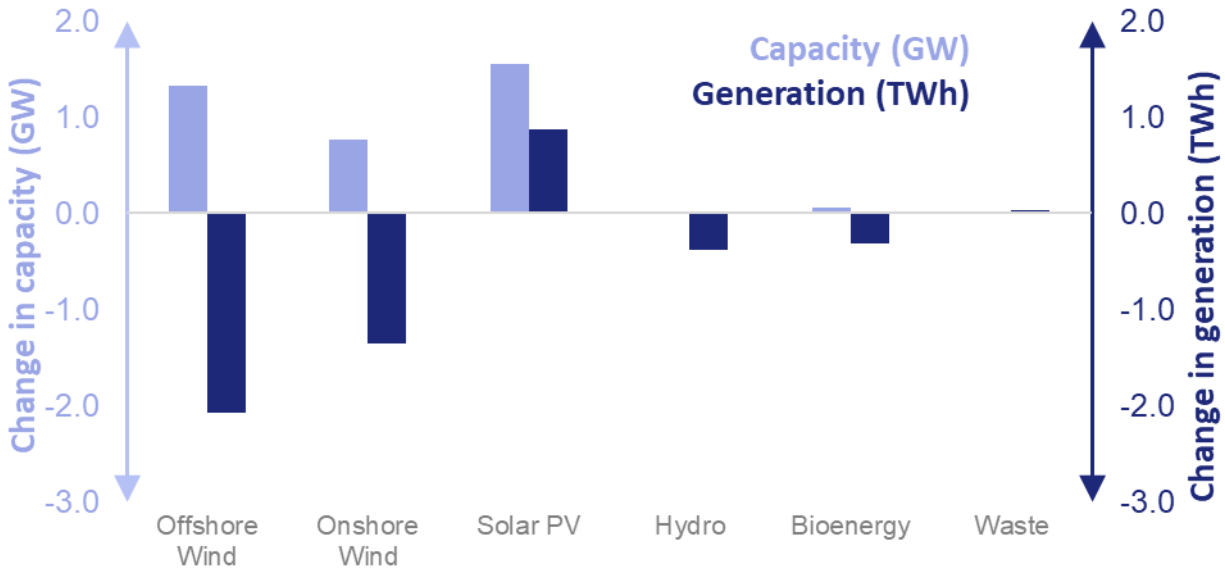


Chart 6.1 shows how each technology has contributed to the overall change in generation and capacity between Quarter 1 in 2024 and 2025. The largest decrease in generation came from onshore and offshore wind which were down by 12 per cent and 14 per cent respectively, broadly in line with the fall in average wind speeds [see ET 7.2]; although this may have been offset by an increase of 8.4 per cent in offshore wind capacity, generation is not yet fully up to full capacity at the new sites. In addition, several sites experienced curtailment and there was a connection issue at a major plant.

Generation from solar PV was a record for Quarter 1, increasing by around 45 per cent on Quarter 1 2024, driven by new capacity and an increase in average sun hours. However, the first quarter of the year is not a major quarter for solar generation, so this increase only amounts to 0.9 TWh and is more than offset by the decrease in wind generation. Hydro generation fell by 19 per cent on last year caused by very dry conditions; 2025 saw the driest Quarter 1 since 2013. Generation from solid biomass, municipal solid waste, and biogases all saw modest decreases resulting in an overall decrease for bioenergy of 4.1 per cent compared to Quarter 1 2024.

Chart 6.2 New capacity (cumulative) since 2021 for the leading renewable technologies (Energy Trends Table 6.1)

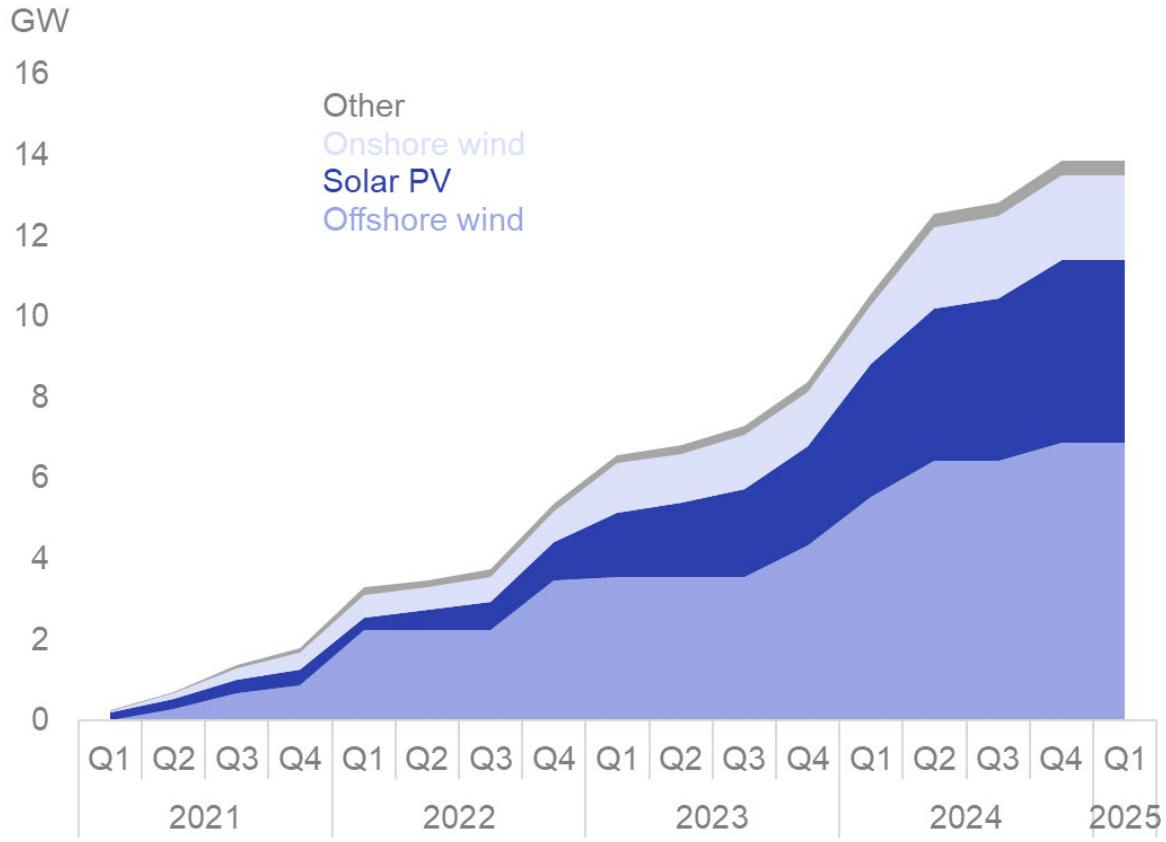
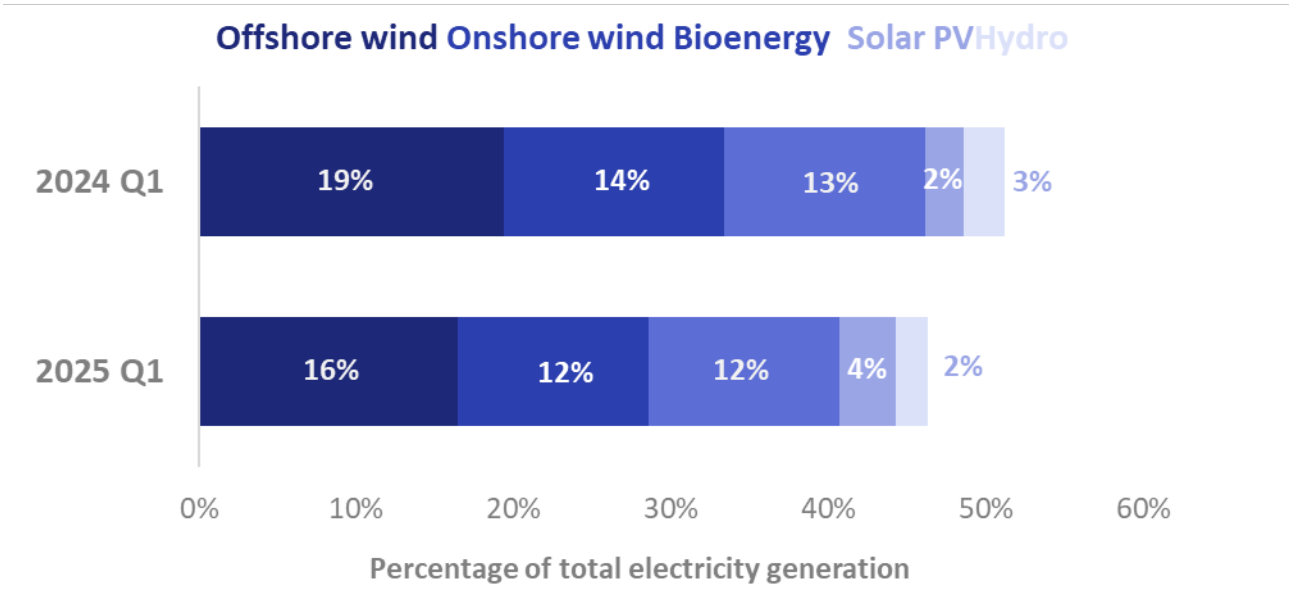


Chart 6.2 shows how renewable capacity has grown since 2021. Offshore wind and solar PV have dominated new capacity installed since 2021; offshore wind accounts for half, with solar PV accounting for a third. Although new installed capacity began to pick up during 2022, particularly for offshore wind, new capacity began to tail off over the last few quarters. New capacity over the last 12 months includes the first phases of Moray West and Dogger Bank, both are still expanding and should be completed in 2025. Conversely, new solar PV capacity has continued to grow mostly in small scale and domestic solar PV but also including some larger scale sites such as Breach Solar (67 MW).

Chart 6.3 Renewables' share of electricity generation – Q1 2024 and Q1 2025 (Energy Trends Table 6.1)



In Quarter 1 2025, renewables' share of total generation was 46.3 per cent. This is down 4.9 percentage points on the first quarter of 2024, driven by the large fall in wind generation. Offshore wind's percentage share of generation fell by 2.9 percentage points to 16.4 per cent but remains the leading renewable technology. The next highest shares were for onshore wind and bioenergy, both at 12.1 per cent, although they both witnessed falls on last year. Solar PV's share was up but only accounted for 3.6 per cent of total generation as solar generation is generally low in the first quarter of the year.

Data tables and special articles

Data in this release

Data are collected by DESNZ through surveys of energy suppliers. This publication highlights key stories in energy in the UK for the specified period. Additional data are available in the quarterly and monthly statistical tables for each fuel and total energy. The tables are generally in commodity balance format, showing the flow from the sources of supply through to final use.

Special articles

Special articles that explore current topics of interest are available alongside this summary report. Included in this publication are:

Methodology changes: gas

Road diesel demand drivers

Update to estimates of industrial consumption within Energy Consumption in the UK (ECUK)

Statistical tables*

Data tables available as part of the Energy Trends series:

Total energy

Solid fuels and derived gases

Oil and oil products

Gas

Electricity

Renewables

The full range of special articles is available here: https://www.gov.uk/government/collections/energy-trends-articles

Additional sources of information

Index of Production, published by the Office for National Statistics:
https://www.ons.gov.uk/economy/economicoutputandproductivity/output/bulletins/indexofproduction/previousReleases

Index of Services, published by the Office for National Statistics:
https://www.ons.gov.uk/economy/economicoutputandproductivity/output/bulletins/indexofservices/previousReleases

Detailed annual Digest of UK Energy Statistics:
http://www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes

Tables showing foreign trade flows of energy:
https://www.gov.uk/government/statistics/dukes-foreign-trade-statistics

Weather tables produced by DESNZ using Met Office data:
https://www.gov.uk/government/collections/weather-statistics

Information on Energy Prices:
http://www.gov.uk/government/collections/quarterly-energy-prices

*Hyperlinks will open the most recently published table. If you require a previously published version of a table, please contact DESNZ at: energy.stats@energysecurity.gov.uk

Technical information

Methodology and revisions

More detailed notes on the methodology used to compile the figures and data sources are available on the collection pages for each fuel (see links at end of glossary). The figures have not been adjusted for temperature or seasonal factors except where noted.

Percentage changes relate to the corresponding period a year ago. They are calculated from rounded figures. They are shown as (+) or (-) when the percentage change is very large. Quarterly figures relate to calendar quarters. All figures relate to the United Kingdom unless otherwise indicated. Further information on Oil and Gas is available from the North Sea Transition Authority at https://www.nstauthority.co.uk/

Table of conversion factors

To	ktoe	TJ	GWh	million therms	To	toe	GJ	kWh	therms
From	Multiply by				**From**	Multiply by			
ktoe	1	41.868	11.63	0.39683	**toe**	1	41.868	11,630	396.83
TJ	0.023885	1	0.27778	0.0094778	**GJ**	0.023885	1	277.78	9.4778
GWh	0.085985	3.6	1	0.034121	**kWh**	0.000085985	0.0036	1	0.034121
million therms	2.52	105.51	29.307	1	**therms**	0.00252	0.10551	29.307	1

ktoe = thousand tonne of oil equivalent toe = tonne of oil equivalent

Sector breakdowns

Categories for final users are defined by Standard Industrial Classification 2007:

Fuel producers	05-07, 09, 19, 24.46, 35
Final consumers	
Iron and steel	24 (excluding 24.4, 24.53 and 24.54)
Other industry	08, 10-18, 20-23, 24.4 (excluding 24.46), 24.53, 24.54, 25-33, 36-39, 41-43
Transport	49-51 (part*)
Other final users	
Agriculture	01-03
Commercial	45-47, 52-53, 55-56, 58-66, 68-75, 77-82
Public administration	84-88
Other services	90-99
Domestic	Not covered

* Note – transport sector includes only energy used for motion/traction purposes. Other energy used by transport companies is classified to the commercial sector.

Revisions policy

Figures for the latest periods are provisional and are liable to subsequent revision. The DESNZ statistical revisions policy sets out the revisions policy for these statistics, which has been developed in accordance with the UK Statistics Authority Code of Practice for Statistics.

Glossary

Tonne of Oil Equivalent

A common unit of measurement which enables different fuels to be compared and aggregated, and equal to 41.868 gigajoules. Usually expressed in Trends as ktoe (Thousand tonnes of oil equivalent) or Mtoe (Million tonnes of oil equivalent).

Indigenous production

The extraction or capture of primary fuels: for oil this includes production from the UK Continental Shelf, both onshore and offshore. Production by fuel is shown in Table 1.1. As with all data in Tables 1.1 to 1.3, these data are presented in either Million tonnes of oil equivalent or Thousand tonnes of oil equivalent. Various conventions are involved in the presentation of these data (e.g. for nuclear production the energy input is the heat content of the steam leaving the reactor) and these conventions are detailed in the Table notes, the energy balance methodology note and methodology notes for individual fuels (see links at end of glossary).

Primary supply

Primary supply is the sum of production, other sources, imports (+), exports (-), stock change, marine bunkers and transfers. A breakdown of supply by fuel is shown in Table 1.3.

Primary demand

Primary demand is the sum of the transformation, energy industry use, losses and final energy consumption by the industry sectors including non-energy use. A breakdown of demand by fuel is shown in Table 1.3.

Primary inland energy consumption

The sum of primary supply less non-energy use (Table 1.2).

Final energy consumption

Energy consumption by final user, i.e., which is not being used for transformation into other forms of energy. Final energy consumption is shown by sector and for individual fuels in Table 1.3.

Non-energy use

Includes fuel used for chemical feedstock, solvents, lubricants, and road making material, see Table 3.2.

Imports

Goods entering the UK, e.g. via pipeline from Norway or LNG cargoes from Qatar and the US for gas (Table 4.3) and interconnectors for electricity from The Netherlands (Table 5.6).

Exports

Goods leaving the UK, e.g. via LNG regassification cargoes to Europe for gas (Table 4.4) and interconnectors for electricity to France (Table 5.6).

Transformation

Transformation covers those activities that transform fuels into a form which is better suited for specific uses. Most of the transformation activities correspond to particular energy industries whose main business is to manufacture the product associated with them. Certain activities involve transformation to make products that are only partly used for energy needs (e.g. coke and oven coke) or are by-products of other manufacturing processes (e.g. coke oven and blast furnace gases). A breakdown of transformation by fuel is shown in Table 1.3.

Seasonally and temperature adjustment

The temperature corrected series of total inland fuel consumption, Table 1.2 indicates what annual consumption might have been if the average temperature during the year had been the same as the average for the years 1991 to 2020. Table 1.3 shows seasonal and temperature adjusted final consumption.

Primary oil

Crude oil, natural gas liquids and feedstocks. (Table 3.1)

Petroleum products

Motor spirit, diesel, gas oil, aviation turbine fuel, fuel oils, petroleum gases, burning oil and other products. (Table 3.4)

Transport fuels

Motor spirit and diesel for road and aviation turbine fuel for aviation. (Table 3.4)

Electricity generation

Electricity generation represents the quantities of fuels burned for the generation of electricity. The activity is divided into two parts, covering the Major Power Producers such as those generating electricity for sale, as their main business activity, and autogenerators such as those generating electricity for their own needs but who may also sell surplus quantities (Table 5.1).

Fossil fuels

Coal, oil and natural gas. The percentage share of electricity generation by fossil fuels is shown in Table 5.1.

Renewables

Renewable energy includes solar power, wind, wave, tidal, hydroelectricity, and bioenergy. Solid biomass includes wood and wood pellets, straw, short rotation coppice, and the biodegradable component of wastes (the non-biodegradable component is shown as a memo item in Table 6.1). Liquid biofuels include bio diesel and bioethanol, along with new and emerging fuels such as bio LPG (liquified petroleum gas). Biogases include landfill gas, sewage gas, and anaerobic digestion. The percentage share of electricity generation by renewables is shown in Table 5.1.

Low carbon

Nuclear and renewables. The percentage share of electricity generation by low carbon sources is shown in Table 5.1.

Additional information

A more detailed glossary is available in The Digest of United Kingdom Energy Statistics (DUKES), Annex B, whilst the energy balance methodology note provides background detail on the compilation of an energy balance, as well as an explanation of each of the key energy balance flows. Notes in individual Energy Trends tables and individual fuel methodology notes (see links below) provide further detail.

Coal methodology note

Oil methodology note

Gas methodology note

Electricity methodology note

Renewables methodology note

Related publications

Recent publications of interest

Energy Consumption in the United Kingdom (ECUK)
Detailed data on end use estimates of energy in the UK: www.gov.uk/government/collections/energy-consumption-in-the-uk

Sub-national total final energy consumption
Findings of the sub–national energy consumption analysis in the UK for all fuels, for the period covering 1 January to 31 December, with gas consumption covering the annual period from mid-May: www.gov.uk/government/collections/total-final-energy-consumption-at-sub-national-level

Sub-national electricity consumption
Electricity consumption by consuming sector for Great Britain and devolved administration areas. Data are based on the aggregation of Meter Point Administration Number readings as part of DESNZ's annual meter point electricity data exercise: www.gov.uk/government/collections/sub-national-electricity-consumption-data.

Sub-national gas consumption
Gas consumption by consuming sector for Great Britain, and devolved administration areas. Data are based on the aggregation of Meter Point Reference Number readings throughout Great Britain as part of DESNZ's annual meter point gas data exercise. Data are subject to a weather correction factor to enable comparison of gas use over time: www.gov.uk/government/collections/sub-national-gas-consumption-data.

Sub-national road transport consumption
Road transport fuels consumption in the UK at regional and local authority level. Data is modelled and provided to DESNZ by Ricardo Energy & Environment, with estimates based on where the fuel is consumed, rather than where it is purchased.
www.gov.uk/government/collections/road-transport-consumption-at-regional-and-local-level

Sub-national consumption of residual fuels
Non-gas, non-electricity and non-road transport fuels consumption in the UK. Includes coal, petroleum, solid fuels, and bioenergy not for generation or road use: www.gov.uk/government/collections/sub-national-consumption-of-other-fuels

Further information

Accredited official statistics

These statistics are accredited official statistics. Accredited official statistics are called National Statistics in the Statistics and Registration Service Act 2007.

These accredited official statistics were independently reviewed by the Office for Statistics Regulation (OSR) in June 2014. They comply with the standards of trustworthiness, quality and value in the Code of Practice for Statistics.

Our statistical practice is regulated by the Office for Statistics Regulation.

OSR sets the standards of trustworthiness, quality and value in the Code of Practice for Statistics that all producers of official statistics should adhere to.

You are welcome to contact us by emailing energy.stats@energysecurity.gov.uk with any comments about how we meet these standards.

Alternatively, you can contact OSR by emailing regulation@statistics.gov.uk or via the OSR website.

Pre-release

Some ministers and officials receive access to these statistics up to 24 hours before release. Details of the arrangements for doing this and a list of the ministers and officials that receive pre-release access to these statistics can be found in the DESNZ statement of compliance with the Pre-Release Access to Official Statistics Order 2008.

User engagement

Users are encouraged to provide comments and feedback on how these statistics are used and how well they meet user needs. Comments on any issues relating to this statistical release are welcomed.

This publication is available from: https://www.gov.uk/government/collections/energy-trends

If you need a version of this document in a more accessible format, please email energy.stats@energysecurity.gov.uk

Please tell us what format you need. It will help us if you say what assistive technology you use.

Methodology changes: Gas

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Introduction

This article explains methodological changes that we intend to make to gas balances in the July 2025 edition of the Digest of UK Energy Statistics (DUKES), to be published on Thursday 31st July 2025.

The 2025 edition of DUKES will include new data for 2024 and revisions to 2022 and 2023. Where methodology has been updated this has been rolled back to 2022 in the first instance; further revisions to the time series could be included in future editions of DUKES where there is user need. This break in the time series should be noted when undertaking any secondary analysis including data outside of this period.

Summary of changes

Losses

Alternate/ new data sources and updating legacy monthly gas methodology has enabled us to update our estimates of gas losses. Gas theft will now be estimated as 0.1 per cent of demand. Metering differences will be replaced with unaccounted for gas as published by National Gas[1]. This will result in revisions to total losses of between -23 and 5 per cent between 2022 and 2024 (a maximum of 0.2 per cent of demand).

Transport

Data on gas consumption by the transport sector was no longer available. However, new information published by the Department for Transport (DfT) has enabled us to model consumption in this sector which will now be included in the gas balance. This will result in revisions equivalent to a maximum of 0.1 per cent of demand.

Tables

In addition to methodological improvements changes have been made to the main DUKES tables to improve dissemination. These changes are largely cosmetic and based on user feedback.

To provide feedback please email gas.stats@energysecurity.gov.uk.

[1] Unaccounted for gas, National Gas

Losses

Losses includes gas 'lost' during transportation, distribution and storage as well as gas losses due to theft (Gas Methodology Note). Due to their nature gas losses are impossible to directly measure and difficult to estimate. We have become aware of alternate/ new data sources for losses. Additionally, we made substantial improvements to our monthly gas methodology in March 2024 (Energy Trends: March 2024, Updates to Energy Trends monthly gas tables) relevant to how we previously estimated losses. We have investigated whether changes to data sources and estimation can improve our estimate of gas losses compared to those which are currently used.

Theft

Theft is currently estimated at 0.2 per cent of throughput. Throughput is a measure of gas flowing through the transmission and distribution network similar to gas output from the transmission system. Throughput/ gas output from the transmission system were previously used in our monthly methodology however, this was updated in March 2024 (see Energy Trends: March 2024, Updates to Energy Trends monthly gas tables for more information about this change). As our monthly and annual methodology now considers demand as the ultimate measure of gas consumption, we will update theft methodology such that is also uses demand to measure gas theft. Furthermore, this enables us to utilise a newer estimate of theft published by the Retail Energy Code Company (RECCo). This report utilises a machine learning model based on Elexon, Xoserve and ONS data, estimating theft to be 636-1059 GWh per year, equivalent to approximately ~0.1 per cent of demand. This model is also used to estimate electricity theft in the electricity balances.

Theft	
Old	New
0.2 per cent of throughput	0.1 per cent of demand

Metering differences/ unaccounted for gas

The old monthly methodology published data on 'metering differences'. Metering differences relate to the difference between gas input to and output from transmission and were previously considered as losses. National Gas consider 'unaccounted for gas' which is defined as the remaining quantity of gas that is unallocated after considering all measured inputs and outputs from the system (Unaccounted for gas, National Gas); this is comparable to metering differences. As well as moving away from legacy methodology our analysis found unaccounted for gas, which is published by National Gas, to be higher quality than metering differences. For this reason, we will move to using unaccounted for gas rather than metering differences when estimating losses.

Unaccounted for gas	
Old	New
Metering differences	Unaccounted for gas

Leakage

Leakage is gas which leaks from the distribution network due to junction points between pumps and valves or because of damage. Leakage is reported by the distribution network operators annually. The operators estimate leakage based on measurements of various pipe materials and sizes in various conditions when operated at different pressures, which is then modelled according to the average pressures at which the

network is operated each year. This is a common and accepted approach across the industry. We currently use this data to estimate leakage and this will remain unchanged.

Revisions to losses

These updates will result in revisions to published losses of -23 to 5 per cent (a maximum of 1,500 GWh, or 0.2 per cent of demand) in 2022-2024, see table 1:

Revisions to losses		
Year	**Old**	**New**
2022	5,314	6,883
2023	4,921	2,709
2024	3,874	2,700

Transport

Some road transport vehicles can use natural gas as a fuel in the form of compressed natural gas (CNG) or liquified natural gas (LNG). Previously, data for gas consumption in the transport sector from 2018 to 2021 was sourced from trade associations. However, this data source is no longer available to us, and published data on gas for transport was held stable in DUKES between 2022 and 2023 whilst new data was sourced.

In 2022, the Department for Transport (DfT) added fuel type to their vehicle licensing statistics (df_VEH0120). This has enabled us to develop a model to estimate natural gas consumption in the transport sector. DfT consider natural gas and liquified petroleum gas (LPG) as the fuel type 'gas'. However, in Energy Statistics LPG is considered a petroleum product (Energy Statistics Manual, IEA, p.59). For this reason, we have only considered heavy goods vehicles (HGVs), buses and coaches as those likely using natural gas rather than LPG. The model uses DfT's Road Traffic Estimates (TRA01) and applies the total mileage of natural gas vehicles in the UK to an average gas consumption rate to estimate their total natural gas consumption. The average gas consumption rate has been sourced from Emissions Testing of Gas-Powered Commercial Vehicles, a 2017 study by Zemo Partnership (formerly the LowCVP), uplifting for lower heating value and assuming a high usage scenario. The outcomes of the model were benchmarked against HMRC duty payment data and discussed with the Renewable Transport Fuel Association (RTFA) to support accuracy and check assumptions. See RTFO Guidance for Biomethane for more information about how biomethane is used in the transport sector.

Revisions to transport

This update will result in revisions of a maximum of 830 GWh, or 0.1 per cent of demand in 2022-2024.

Tables

In addition to improving data quality, this year we have updated the main DUKES tables to improve readability and reduce duplication between the tables. These changes are largely cosmetic based on user feedback. Table 2 summarises the changes to the tables:

Old	New	Change
4.1 Natural gas: commodity balances	4.1 Natural gas: commodity balances	Colliery methane removed as duplicated (available in 4.2)
4.2 Supply and consumption of natural gas and colliery methane	4.2 Supply and consumption of colliery methane	Natural gas removed as duplicated (available in 4.1)
4.3 UK continental shelf and onshore natural gas production and supply	4.3 Natural gas losses	Outdated (historic monthly methodology) fields removed, now losses only
4.4 Gas storage sites and import/export facilities in the United Kingdom, November 2023	4.4a Natural gas stock, and 4.4b Natural gas storage sites	Gas storage sites information remains the same with inclusion of stock data previously published in 4.3. Import/ export facilities information moved to table 4.5.
4.5 Natural gas imports and exports	4.5a Natural gas imports and exports, and 4.5b Natural gas import and export facilities	Trade data largely unchanged with removal of duplicated/ redundant fields. Import/ export facilities information added.
4.6 Liquefied Natural Gas imports by terminal	4.6 Liquefied Natural Gas imports by terminal	No change

To provide feedback on the new tables or updated methodology please email gas.stats@energysecurity.gov.uk.

Road diesel demand drivers

Natalie Cartwright **0300 068 5260** natalie.cartwright@energysecurity.gov.uk

Key headlines

Diesel is the main road fuel in the UK but demand following the COVID-19 pandemic has been muted, down 16 per cent in 2024 compared to 2019, in contrast to the six per cent increase in petrol demand over the same period. This article explores reasons for that decline by looking at changes in the vehicle fleet and the purpose of the miles being driven.

The analysis indicates that demand for road diesel has dropped because 1) changes to vehicle buying patterns have meant that there are now two million fewer diesel cars on UK roads in 2024 compared to 2019, and 2) miles being driven in diesel cars have also dropped sharply which is linked to changes in travel patterns post-pandemic.

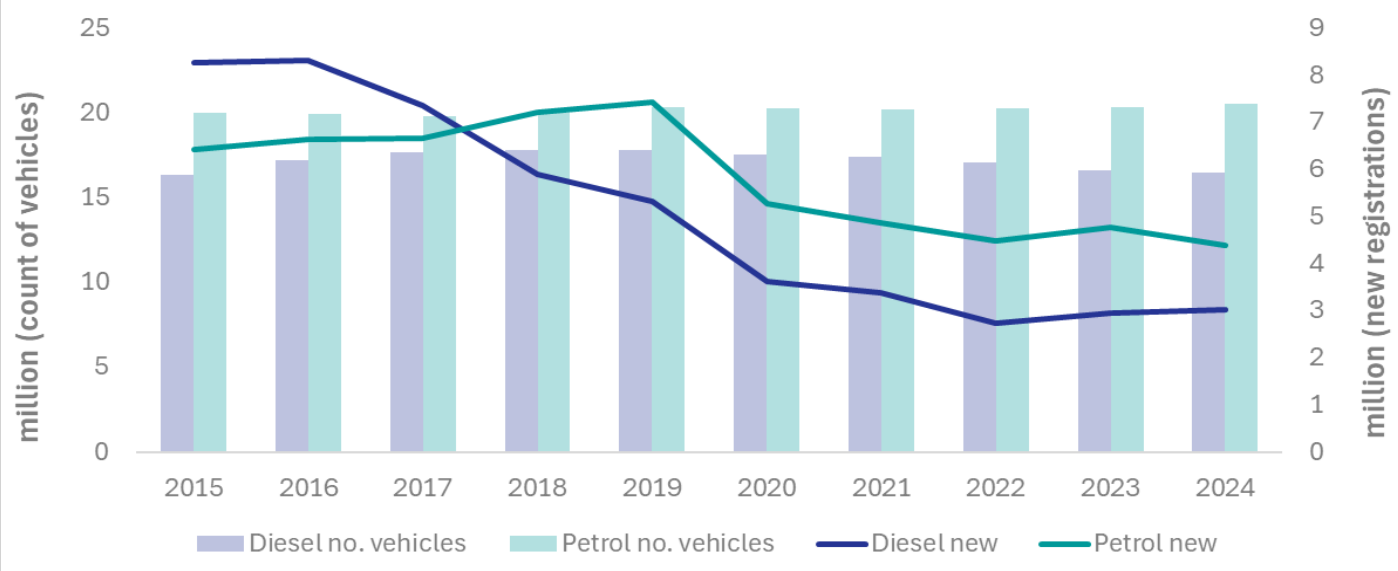
Road fuel demand trends are changing with a drop in diesel

Demand for road diesel had been increasing since the 1990s until 2018, with only one small annual drop following the 2008 recession. However, over recent years diesel demand has been in decline and in 2024 was down 16 per cent compared to 2019, the last full year before the COVID-19 pandemic[1]. In contrast, miles being driven has been increasing, and demand for petrol has bucked a pattern of decline to increase over the same period. This article seeks to understand the reasons for changing patterns of road diesel demand.

There are fewer diesel cars on UK roads

Demand for road fuels closely follows vehicle sales and registrations. Chart 1 shows the fall in new diesel vehicles from 2016 as evidence of manipulation of diesel emissions became widely known, and taxation changes increased the cost of owning a diesel vehicle.

Chart 1: Number of new registrations and count of vehicles in the UK fleet by petrol and diesel engines[2] (Department for Transport Vehicles statistics, Tables 1153a and 0105)



There were 2.8 million fewer diesel vehicles on UK roads in 2024 compared to 2019, with a 0.9 million increase in Light Goods Vehicles (LGVs) being more than offset by a sharp fall of 3.7 million diesel cars. There have been changes in both company and private patterns of car ownership in that time.

[1] All road fuel use data is taken from Energy Trends Tables 3.4 and 3.5 unless otherwise indicated.
[2] Note: Q3 and Q4 2024 new registrations estimated. 2024 count of vehicles is for the 12-month period ending June 2024.

Diesel cars were initially displaced in the company-owned fleet by an increasing number of petrol cars, but companies quickly turned to adoption of alternative fuels and hybrid electric vehicles. Cars running on other fuels[3] have seen a rapid emergence, reaching 1.4 million cars and nearly half per cent of the company-owned fleet in 2024 compared to just 235,000 in 2019. Taken together, only just over half of the company-owned car fleet is now fuelled by petrol (around 40 per cent) or diesel (less than 20 per cent) with nearly half by alternative-fuelled engines.

Over the same period, private car ownership has also seen a switch away from diesel. In 2024 privately-owned diesel cars were down by one million compared to 2019 (-8.9 per cent) and had been displaced almost entirely by one million electric hybrid cars, 0.7 million other fuelled cars[3], and only one hundred thousand petrol cars.

Clearly, the total reduction in diesel cars contributed to the fall in diesel consumption.

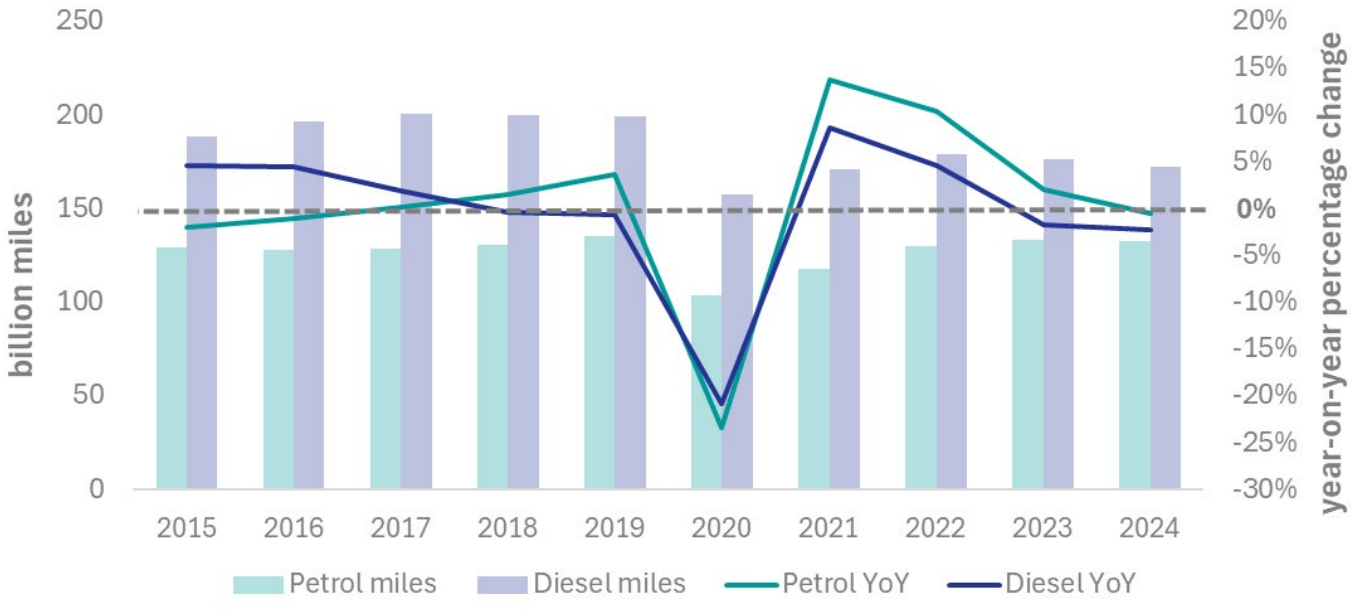
Fewer miles are being driven in diesel cars

While petrol vehicles have always dominated in number on UK roads, diesel vehicles such as Heavy Goods Vehicles (HGVs), LGVs, buses, and company-owned cars have been used to drive more miles. However, since the pandemic in 2020 the number of miles driven by diesel vehicles has not recovered in the same way that petrol miles have.

The lines in Chart 2 show the sharp drop - more than 20 per cent - in miles driven for both petrol and diesel vehicles in 2020, and the following recovery in petrol miles but smaller recovery in diesel miles in 2021.

The bars in Chart 2 show that by 2024 the number of miles driven by petrol vehicles had nearly recovered to levels in 2019 (down just 2.1 per cent), but diesel miles remained much reduced (down by 13 per cent). This corresponds closely with the 16 per cent drop noted in road diesel fuel demand in 2024 compared to 2019.

Chart 2: Miles driven and annual changes for petrol and diesel vehicles (analysis of Department for Transport Road Traffic Estimates Table TRA0101 and Transport Analysis Guidance Table A 1.3.9)



Diesel cars comprise nearly 60 per cent of all diesel miles driven so are an important factor in determining road diesel fuel demand. Provisional Department for Transport road traffic estimates for the period January to September 2024 shows diesel car miles were down by 19 billion miles (a reduction of a quarter), compared to

[3] Other fuels include battery electric, range extended electric, and petrol and diesel plug-in hybrid electric vehicles, Department for Transport Table 0142.

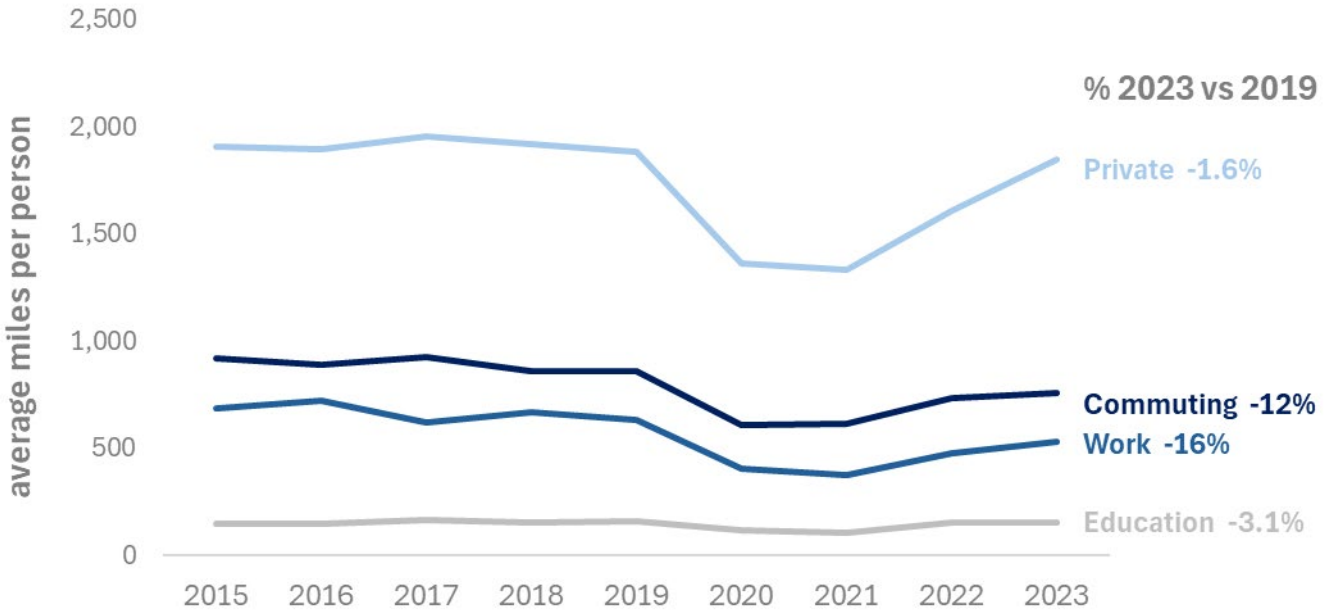
the same period in 2019. Around a third of diesel miles are driven in LGVs, and these were up by five billion miles (an increase of 9.7 per cent), reflecting the uplift in delivery vans as shopping habits move online, while HGVs and buses were broadly stable compared to 2019.

The drop in diesel car mileage is very likely related to changes in work and social patterns since the pandemic.

Reasons for travel have changed since restrictions during the COVID-19 pandemic

Chart 3 shows that mileage travelled in any vehicle for private reasons (including shopping, personal business and leisure) was down by around 30 miles per person per year (just 1.6 per cent) in 2023 compared to 2019. However, mileage for commuting and work were down by 12 per cent and 16 per cent respectively, equalling a reduction of around 200 miles per person per year and reflecting increased working from home and fewer business trips since the nature of some office-based roles remains changed by lockdown travel restrictions.

Chart 3: Average annual mileage in vehicles, per person, by purpose (Department for Transport National Travel Survey, Table NTS0409b, 2024. England only. Available to 2023.)



The reduced miles driven for commuting and work are key to understanding diesel demand because many would have driven been in work vehicles, and company-owned cars were historically diesel[4].

Conclusion

The recent decline in demand for diesel road fuel has been caused directly by a sharp reduction in the number of diesel car miles being driven over recent years, which can be explained by two main factors.

First, diesel car ownership has fallen sharply following the emissions scandal and changes to tax policy. By the end of 2024 the total number of licensed private- and company-owned diesel cars had fallen by more than two million from the peak in 2018.

Second, a compounding factor to the reduced number of diesel cars in the company-owned fleet is the reduced number of miles driven for work and commuting purposes. These miles have not recovered since the COVID-19 pandemic in the same way as for private purposes due to fundamental changes to work culture in some sectors. Work miles (and likely many commuting miles) are driven in company-owned cars, which were historically diesel but are being replaced by alternative-fuelled and hybrid cars.

Taken together, changes to the way that we travel for work since the pandemic and changes in the composition of commercial and private car fleets are the key factors affecting road diesel demand trends.

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[4] Road Traffic Statistics, Department for Transport, Table TRA2501, 2025

Update to estimates of industrial consumption within *Energy Consumption in the UK* (ECUK)

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Key headlines

The Department for Energy Security and Net Zero (DESNZ) collects data on industrial energy consumption at a level which groups together various individual industry sectors into high level aggregates including (for example) chemicals, mechanical engineering, vehicles, food & beverages etc. These groupings form the basis for the annual energy balances that are published in the Digest of UK Energy Statistics (DUKES)[1].

DESNZ also provide more detailed estimates at the finer granularity of SIC division (2-digit SIC code level) in Energy Consumption in the UK (ECUK[2]), published annually in September. In ECUK, the high-level aggregates are broken down into smaller constituent elements using modelling and other data sources.

This paper outlines the steps we intend to take to revise the method for estimating the consumption levels of these finer-grained groupings and introduce detailed consumption breakdowns for bioenergy and waste for the first time.

ECUK industrial consumption

UK energy statistics in the Digest of UK Energy Statistics

The Department for Energy Security and Net Zero (DESNZ) is responsible for publishing data on the UK's energy system. The annual energy balances, which show the UK's production, consumption and trade of energy, are published in the Digest of UK Energy Statistics (DUKES). For industrial energy demand, data is collected in line with the requirements of the International Energy Agency (IEA)[3]. These aggregates collate industrial consumption into 13 sectors. To maintain consistency between publications and data providers these industry sectors in the energy balance are defined by the UK Standard Industrial Classification (SIC) codes, which provide a framework for collecting and publishing data on economic activity[4].

The SIC codes that make up each DUKES sector are given in the methodology documentation for the energy balances[5].

Energy Consumption in the UK

The DESNZ publication Energy Consumption in the UK (ECUK) builds on the data released in DUKES to provide a more detailed breakdown of end-use energy consumption. The methodology for ECUK differs from DUKES as it uses modelling and other data sources to estimate consumption at a greater level of disaggregation. For the industrial sector ECUK estimates the consumption for specific industry groupings (SIC division) and different types of industrial processes (e.g. high temperature processes, refrigeration).

Industry consumption by SIC division

ECUK Table C3 provides the industrial consumption data presented in DUKES disaggregated to SIC divisions (2-digit SIC codes). For example, the mineral products industry sub-sector consumption given in DUKES is split into SIC division 08 (other mining and quarrying) and SIC division 23 (manufacture of other non-metallic mineral products).

The data in Table C3 is generated using a reference table (labelled Ref 2 in the current ECUK data tables) which defines the proportion of consumption in each industry sub-sector that is allocated to each SIC division

[1] Digest of UK Energy Statistics (DUKES) - GOV.UK
[2] Energy Consumption in the UK - GOV.UK
[3] Questionnaires – Data and statistics - IEA
[4] Information on SIC codes can be found at: UK Standard Industrial Classification of Economic Activities - Office for National Statistics
[5] Energy balance: methodology note - GOV.UK

that makes up that sub-sector. This reference table is applied to each year of data from DUKES to generate the SIC division consumption data given in Table C3.

The reference table has been prioritised for updating in ECUK 2025 because:

- The table was last fully updated in the late 2000s using data from the ONS Purchases Inquiry survey[6]. Industrial energy consumption patterns have likely changed in the subsequent years, meaning the reference table may no longer provide an accurate representation of how energy is consumed.
- The fuel mix in use in the UK has evolved since the generation of the reference table. In particular bioenergy & waste and heat have increased in usage and are covered within the DUKES data. These were not present in the data used to generate the reference table and therefore estimates of consumption by SIC division for these fuels could not be provided in ECUK.

Methodological updates for ECUK 2025

Data sources

The Department now has access to data on energy and emissions from UK industry under two schemes, the EU (now UK) Emissions Trading Scheme (ETS)[7], and Climate Change Agreements (CCA)[8] which were not available at the time of the generation of the existing reference table. The CCA data runs in two-year target periods, with the latest data available at the time of this analysis being 2021-22 data. The ETS data is available on an annual basis.

The ETS and CCA are administrative schemes designed to contribute to the reduction of energy use and hence emissions. The ETS applies to energy intensive industries, the power generation sector and aviation. Climate change agreements are voluntary agreements available to a wide range of sectors from energy intensive processes to supermarkets and agricultural businesses. Under both schemes participants monitor and report their energy use. While many smaller businesses may not be part of the ETS or CCA, many large businesses will be covered by the reported data.

For the purposes of this analysis, we assume that the energy use reported through the ETS and the CCA can operate as a proxy for energy use in the UK. Users should note that smaller industrial users are not captured in these data because they are not captured in those schemes. Combined, around two thirds of the industrial consumption reported in ECUK is covered by one of these administrative schemes. There is reasonable coverage of most industrial sectors in the combined ETS/CCA data. Those with least coverage, and therefore highest uncertainty in the resulting estimates, are mechanical/electrical engineering and textiles and leather. The Department continues to investigate options to improve these estimates and reduce the associated uncertainty.

The SIC division a business sits within is not reported directly as part of the data provided under either the ETS or CCA. However, for the purposes of this analysis businesses have been allocated to SIC divisions by matching with data from Companies House and other government data sources[9]. While this allocation is likely to be imperfect, retrospective analysis of the largest consumers suggests the vast majority of businesses were allocated to an expected SIC division. Therefore, we assume any incorrect classification will have negligible impacts on any further analysis.

New reference table

The ETS and CCA data have been combined to generate a new industry SIC division reference table using 2021 and 2022 data (shown in full in Annex 1). In most cases (fuel/industry sector combinations) the ETS/CCA data has allowed for the generation of new estimates of the proportion of consumption for each SIC division within an industry sector. In a limited number of cases (typically when either a fuel wasn't covered by ETS/CCA, or there was no recorded consumption for a fuel within a particular industry sector) proxy estimation was necessary to provide a complete update to the reference table. In practice these proxy estimations are likely to have limited impact on ECUK outputs as a lack of data in ETS/CCA suggests there is likely to be low overall consumption of those particular fuels within the national level DUKES data.

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[6] Development of the Annual Purchases Survey - Office for National Statistics

[7] Participating in the UK ETS - GOV.UK

[8] Climate change agreements - GOV.UK

[9] It is possible for companies to operate in more than one SIC division (multiple SIC codes can be listed on Companies House for example). In these cases a SIC code was selected based on the most predominant output.

The new table improves on the reference table currently being used in ECUK by being estimated from the most recent available data, and including estimates for bioenergy & waste, for which SIC division splits were not previously available[10].

Implementation in ECUK 2025

The intention is to implement the new reference table in ECUK 2025. This will be used for each year of data from 2021 onwards, with the previous reference table used for 2020 and earlier. To implement within ECUK we are proposing making some changes to the way the industrial consumption data is presented:

- Table C3 will be adjusted to show a single years' worth of data. I.e. in ECUK 2025 Table C3 will show the industrial consumption data for the calendar year 2024 disaggregated to SIC divisions. This is a change from previous ECUK publications for which Table C3 has contained several distinct tables, with each one giving the data for a particular year. This change will improve the readability of Table C3 for users, giving a clear representation of the detailed industrial consumption for the latest year.
- A new table will be added to give users access to the time series of industrial consumption data containing the SIC division estimates. This will be presented in a two-dimensional 'flat-file' format. This addition will allow users to better interrogate and compare the consumption data over time and between fuels/sectors.

Next steps

The reference table presented in this article (Annex 1) is indicative, as we may refine the analysis before the publication of ECUK in September 2025. Going forward, the changes to the reference table described in this article are intended to be the first step in improving the industry consumption data within ECUK and providing more regular updates to the reference tables used. As and when new ETS/CCA data become available we will consider further analysis to generate new reference tables and implement those within ECUK as appropriate. Furthermore, we will continue to investigate other potential data sources to ensure we are basing our industrial consumption estimates on the best available evidence.

Our intention with updating the ECUK reference table in the manner described in this article is to provide higher quality industrial consumption estimates at the SIC division level, a consistent and accessible time-series in ECUK 2025, and to provide a basis on which to provide further updates as and when new information becomes available.

As ever, we welcome comments on these changes.

[10] Heat is not included within the ETS and CCA data sets, therefore SIC division consumption estimates for this fuel remains unavailable in the updated reference table

Annex 1. Updated SIC division reference table

Grey shading represents sectors/fuels for which there was not sufficient data within ETS/CCA to provide specific estimates. For these the average value from similar fuels was used to estimate SIC division splits. For example, for mineral products the manufactured fuel values are estimated using the results for coal, and the naphtha and DERV values are estimated from the outputs for LPG, burning oil, gas oil and fuel oil.

DUKES Sector	SIC code	SIC division	Coal	Manufactured fuel	LPG	Naphtha	Burning oil
Unclassified			100.0%	100.0%	100.0%	100.0%	100.0%
Iron and steel	24 (excl. 24.4, 24.54)	Iron and steel	100.0%	100.0%	100.0%	100.0%	100.0%
Non-ferrous metals	24.4, 24.54	Non-ferrous metals	100.0%	100.0%	100.0%	100.0%	100.0%
Mineral products	8	Other mining and quarrying	0.0%	0.0%	83.5%	52.0%	69.0%
	23	Manufacture of other non-metallic mineral products	100.0%	100.0%	16.5%	48.0%	31.0%
Chemicals	20	Manufacture of chemicals and chemical products	100.0%	100.0%	96.5%	100.0%	96.1%
	21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	0.0%	0.0%	3.5%	0.0%	3.9%
Mechanical engineering etc.	25	Manufacture of fabricated metal products, except machinery and equipment	87.3%	87.3%	80.6%	90.1%	90.1%
	28	Manufacture of machinery and equipment n.e.c.	12.7%	12.7%	19.4%	9.9%	9.9%
Electrical engineering etc.	26	Manufacture of computer, electronic and optical products	92.0%	92.0%	100.0%	100.0%	100.0%
	27	Manufacture of electrical equipment	8.0%	8.0%	0.0%	0.0%	0.0%
Vehicles	29	Manufacture of motor vehicles, trailers and semi-trailers	38.9%	38.9%	76.4%	27.5%	0.0%
	30	Manufacture of other transport equipment	61.1%	61.1%	23.6%	72.5%	100.0%
Food, beverages etc	10	Manufacture of food products	99.9%	97.6%	68.4%	69.1%	92.4%
	11	Manufacture of beverages	0.1%	2.4%	31.6%	30.9%	7.6%
	12	Manufacture of tobacco products	0.0%	0.0%	0.0%	0.0%	0.0%
Textiles, leather etc	13	Manufacture of textiles	100.0%	79.4%	91.6%	81.0%	81.0%
	14	Manufacture of wearing apparel	0.0%	0.0%	0.0%	0.0%	0.0%
	15	Manufacture of leather and related products	0.0%	20.6%	8.4%	19.0%	19.0%
Paper, printing etc	17	Manufacture of paper and paper products	100.0%	98.2%	98.2%	87.3%	100.0%
	18	Printing and reproduction of recorded media	0.0%	1.8%	1.8%	12.7%	0.0%
Other industries	16	Manufacture of wood and of products of wood and cork	24.7%	24.7%	0.4%	100.0%	0.3%
	22	Manufacture of rubber and plastic products	43.8%	43.8%	75.9%	0.0%	32.5%
	31	Manufacture of furniture	0.1%	0.1%	0.0%	0.0%	0.0%
	32	Other manufacturing	8.4%	8.4%	22.3%	0.0%	7.9%
	33	Repair and installation of machinery and equipment	10.2%	10.2%	0.0%	0.0%	58.8%
	36	Water collection, treatment and supply	0.2%	0.2%	0.0%	0.0%	0.0%
	37	Sewerage	3.1%	3.1%	0.3%	0.0%	0.0%
	38	Waste collection, treatment and disposal activities; materials recovery	9.5%	9.5%	1.1%	0.0%	0.6%
	39	Remediation activities and other waste management services	0.1%	0.1%	0.0%	0.0%	0.0%
Construction	41-43	Construction	100.0%	100.0%	100.0%	100.0%	100.0%

DUKES Sector	SIC code	Gas oil	DERV	Fuel oil	Petroleum coke	Natural gas	Electricity	Bioenergy & waste	Heat
Unclassified		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Iron and steel	24 (excl. 24.4, 24.54)	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Non-ferrous metals	24.4, 24.54	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Mineral products	8	28.3%	52.0%	79.3%	0.0%	12.0%	51.7%	0.0%	[x]
	23	71.7%	48.0%	20.7%	100.0%	88.0%	48.3%	100.0%	[x]
Chemicals	20	88.7%	96.8%	99.4%	100.0%	90.6%	95.4%	100.0%	[x]
	21	11.3%	3.2%	0.6%	0.0%	9.4%	4.6%	0.0%	[x]
Mechanical engineering etc.	25	99.6%	90.1%	90.1%	90.1%	81.8%	78.3%	87.3%	[x]
	28	0.4%	9.9%	9.9%	9.9%	18.2%	21.7%	12.7%	[x]
Electrical engineering etc.	26	100.0%	100.0%	100.0%	100.0%	84.0%	78.2%	92.0%	[x]
	27	0.0%	0.0%	0.0%	0.0%	16.0%	21.8%	8.0%	[x]
Vehicles	29	6.0%	27.5%	27.5%	27.5%	73.0%	94.1%	99.8%	[x]
	30	94.0%	72.5%	72.5%	72.5%	27.0%	5.9%	0.2%	[x]
Food, beverages etc	10	61.0%	69.1%	54.6%	69.1%	80.1%	85.5%	80.6%	[x]
	11	39.0%	30.9%	45.4%	30.9%	19.9%	14.5%	19.4%	[x]
	12	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	[x]
Textiles, leather etc	13	52.4%	81.0%	99.0%	81.0%	94.3%	93.4%	87.5%	[x]
	14	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	[x]
	15	47.6%	19.0%	1.0%	19.0%	5.7%	6.6%	12.5%	[x]
Paper, printing etc	17	98.5%	87.3%	52.4%	87.3%	96.2%	79.5%	100.0%	[x]
	18	1.5%	12.7%	47.6%	12.7%	3.8%	20.5%	0.0%	[x]
Other industries	16	17.7%	23.7%	0.0%	23.7%	29.8%	8.2%	73.6%	[x]
	22	15.5%	44.8%	100.0%	44.8%	38.9%	70.6%	0.0%	[x]
	31	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	0.0%	[x]
	32	7.1%	7.5%	0.0%	7.5%	13.3%	18.2%	0.0%	[x]
	33	1.4%	12.0%	0.0%	12.0%	0.8%	0.2%	0.0%	[x]
	36	1.2%	0.2%	0.0%	0.2%	0.0%	0.0%	1.6%	[x]
	37	15.2%	3.1%	0.0%	3.1%	3.0%	0.0%	24.8%	[x]
	38	41.9%	8.7%	0.0%	8.7%	13.6%	2.2%	0.0%	[x]
	39	0.0%	0.0%	0.0%	0.0%	0.3%	0.2%	0.0%	[x]
Construction	41-43	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%