Chapter 3: Oil and Oil Products

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Key headlines

In 2024, UK production of primary oils fell 8.9 per cent to 31 million tonnes, the lowest level since North Sea production was established in the 1970s and continuing the ongoing pattern of decline from the mature North Sea basin. Net imports of primary oils increased by 12 per cent to 20 million tonnes.

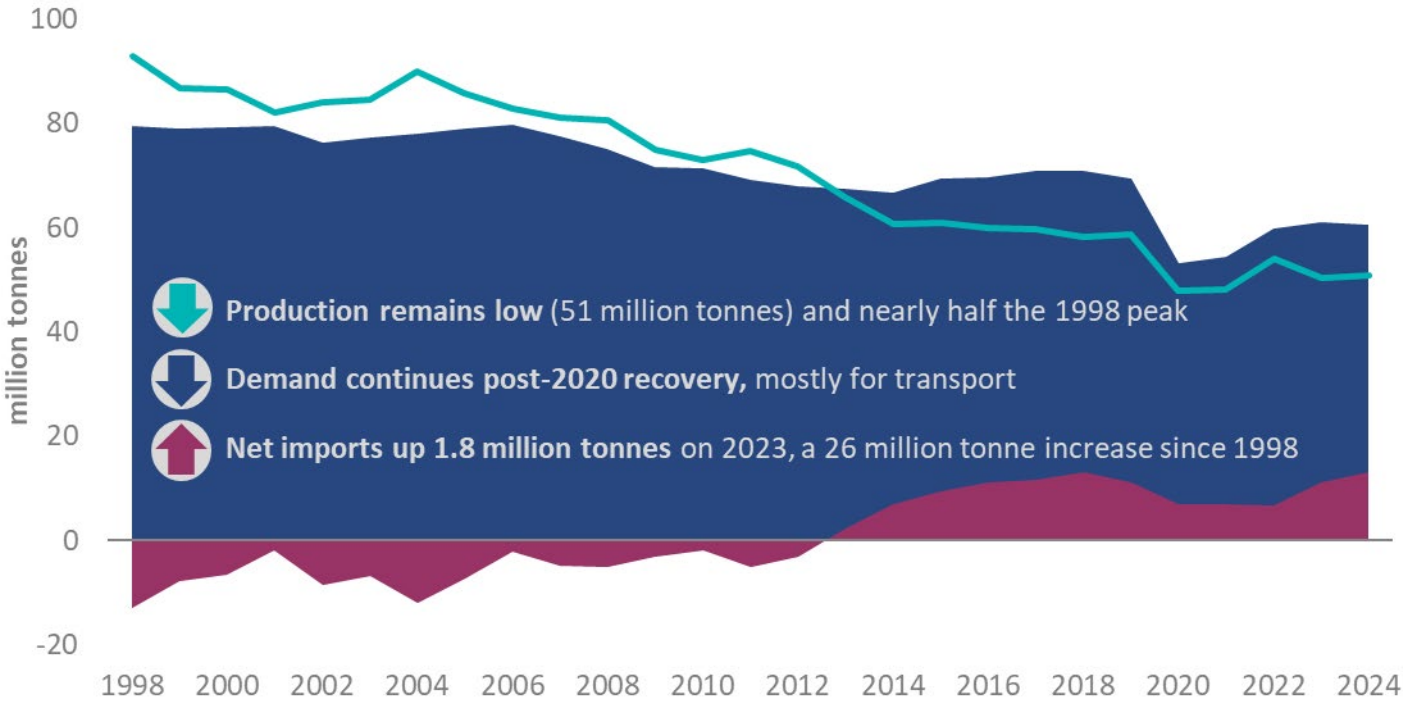
Refinery production remained low at 51 million tonnes, 14 per cent below pre-pandemic (2019) levels and around 60 per cent of 2000. The UK was a net importer of products by 13 million tonnes in 2024, the second highest figure since the UK became a net importer in 2013.

Overall demand for products increased by 2.0 per cent on 2023. As part of the continuing recovery of air travel following the COVID-19 pandemic, demand for hydrocarbon jet fuel was up 7.9 per cent to nearly pre-pandemic levels. While energy industry use was down by 8.5 per cent, final consumption was up by 2.9 per cent with increases in transport (up 2.4 per cent), domestic (up 13 per cent) and industry (up 2.2 per cent).

The UK held 11.2 million tonnes of oil stocks, exceeding the 90 days required by the International Energy Agency (IEA). **UK oil stocks increased by 18per cent compared to 2023,** partly because stocks were being re-built following an IEA-coordinated release of oil stocks in 2022, and because of an uplift in the UK obligation in July as part of the regular annual re-calculation.

Total demand for petroleum products increased by 2.0 per cent in 2024 compared to 2023 (total demand includes transformation, energy industry use and final consumption). This continued recovery to 61 million tonnes is the highest annual demand since the onset of the COVID-19 pandemic. However, demand remains 10 per cent below 2019 levels and a fifth lower than 25 years ago in 2000.

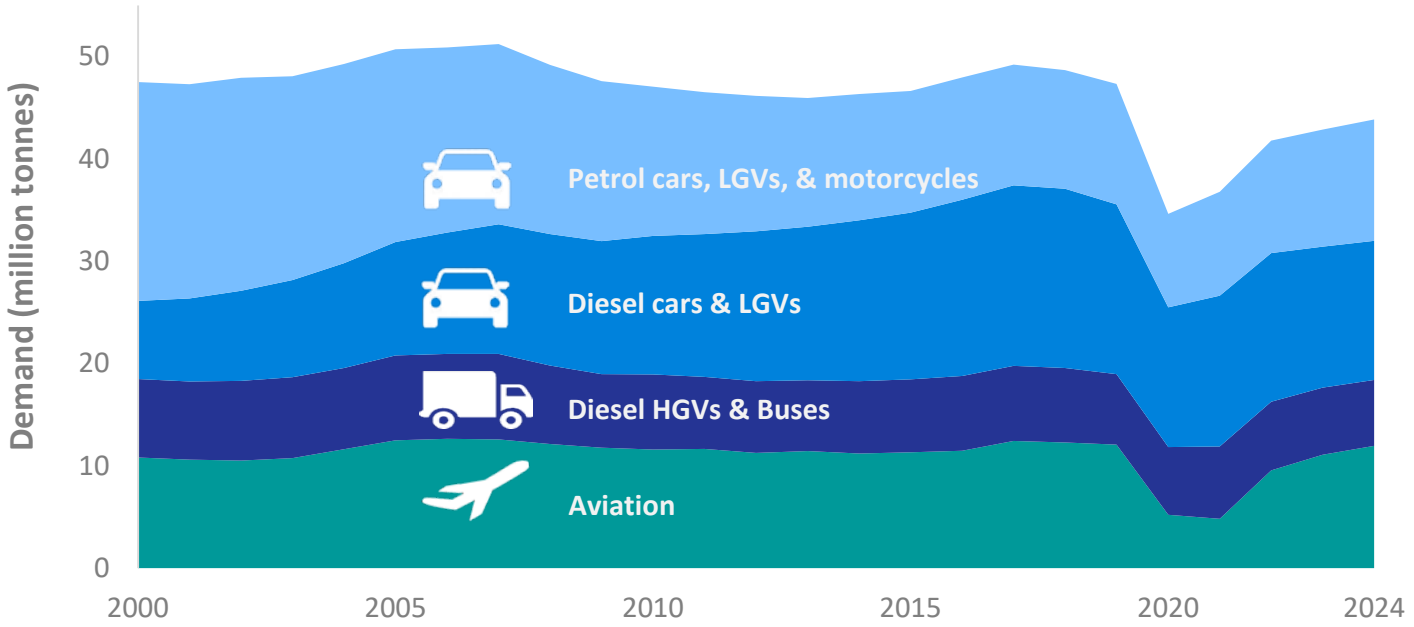
Chart 3.1 Supply and demand for petroleum products, 1998 – 2024 (DUKES Table 3.2)



Refinery production was up by 1.1 per cent compared to 2023 but remained low at 51 million tonnes and around 60 per cent of that seen 25 years ago in 2000[1]. Compared to 2019, production in 2024 was down by 14 per cent, and corresponds with a 10 per cent fall in demand – and a 17 per cent increase in net imports.

The UK was a net importer of products in 2024 by 13 million tonnes, an increase of 16 per cent on the previous year. This is the second highest level since the UK became a net importer in 2013, and 17 per cent above pre-pandemic 2019. Product exports remained stable in 2024, but imports rose by 5.9 per cent because the increase in refinery production did not keep pace with the 2.0 per cent increase in demand.

Chart 3.2 Annual demand for transport fuels, 2000 to 2024[2] (DUKES Table 3.2)



As is usual, transport was the largest demand sector for petroleum products, accounting for three-quarters of the UK's total product demand. Transport demand increased by 2.4 per cent compared to last year. In the longer term, transport demand dipped by 13 million tonnes in 2020 compared to 2019 due to travel restrictions that were put in pace to curb the spread of COVID-19. It has recovered by more than a quarter since 2020 but remains 7.5 per cent down on 2019.

Over 40 per cent of transport fuel demand was accounted for by diesel vehicles – cars, goods vehicles and buses. Nonetheless, diesel demand has not shown the post-pandemic recovery that petrol and jet fuel have but rather has continued decreasing steadily since a peak of 25 million tonnes in 2017. From 2000 to 2017, demand from diesel vehicles increased by 60 per cent. From 2017 to 2024, demand fell by one fifth. This is partly due to an increase in biodiesel, but also the increasing popularity of electric vehicles, and motorists switching away from diesel due to environmental concerns since the emissions scandal around 2017 to 2018[3].

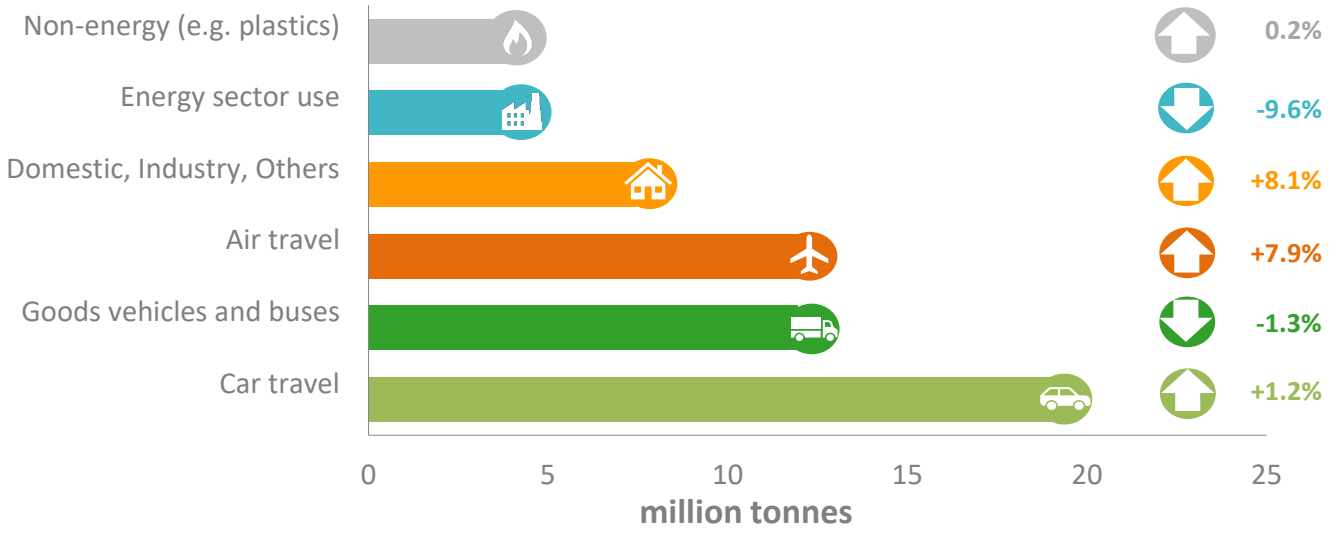
Just over 70 per cent of transport demand was for road fuels. This share is down 1.4 percentage points on 2023, reflecting the increase in fuel used for air travel.

Hydrocarbon jet fuel demand increased by 7.9 per cent in 2024 compared to 2023. The COVID-19 pandemic brought restrictions on air travel which caused jet fuel demand to drop by more than half between

[1] See Annex 2 for a map and further detail on UK refinery nameplate capacities in the methodology note
[2] See UK Energy in Brief for detailed breakdown of fuel consumption by vehicle type
[3] For further analysis see Energy Trends special article Road Diesel Demand Drivers (DESNZ, June 2025)

2019 and 2020. In 2021, demand dropped to its lowest since 1984 but by 2024 had more than doubled since the pandemic years of 2020 and 2021 and hydrocarbon jet fuel demand is now only 0.9 per cent below 2019[4].

Chart 3.3 Oil consumption in the UK, 2024 (DUKES Table 3.2)



Petroleum product demand increased by 2.0 per cent overall and total final consumption saw a 2.9 per cent increase, showing a rise across most sectors.

Notably, the domestic sector, 88% of which is composed of burning oil, increased by 13 per cent on 2023. This was despite temperatures being comparable to the year before. In recent years, domestic demand for heating oil (burning oil or gas oil) has followed price fluctuations more closely than changes in temperature. It is typical with domestic heating oil for consumers to purchase in bulk when prices are low. As such, low prices in 2020 prompted people to buy in bulk despite stable demand. Demand dropped again in 2022 as the Russian invasion of Ukraine caused prices to rise. Moving forward, price reductions in 2023 and 2024 meant that demand rose by 8.4 per cent and 13 per cent in each year respectively.

Other sectors that generally show demand trends in line with temperatures – namely public administration and agriculture – showed similar increases due to price drops.

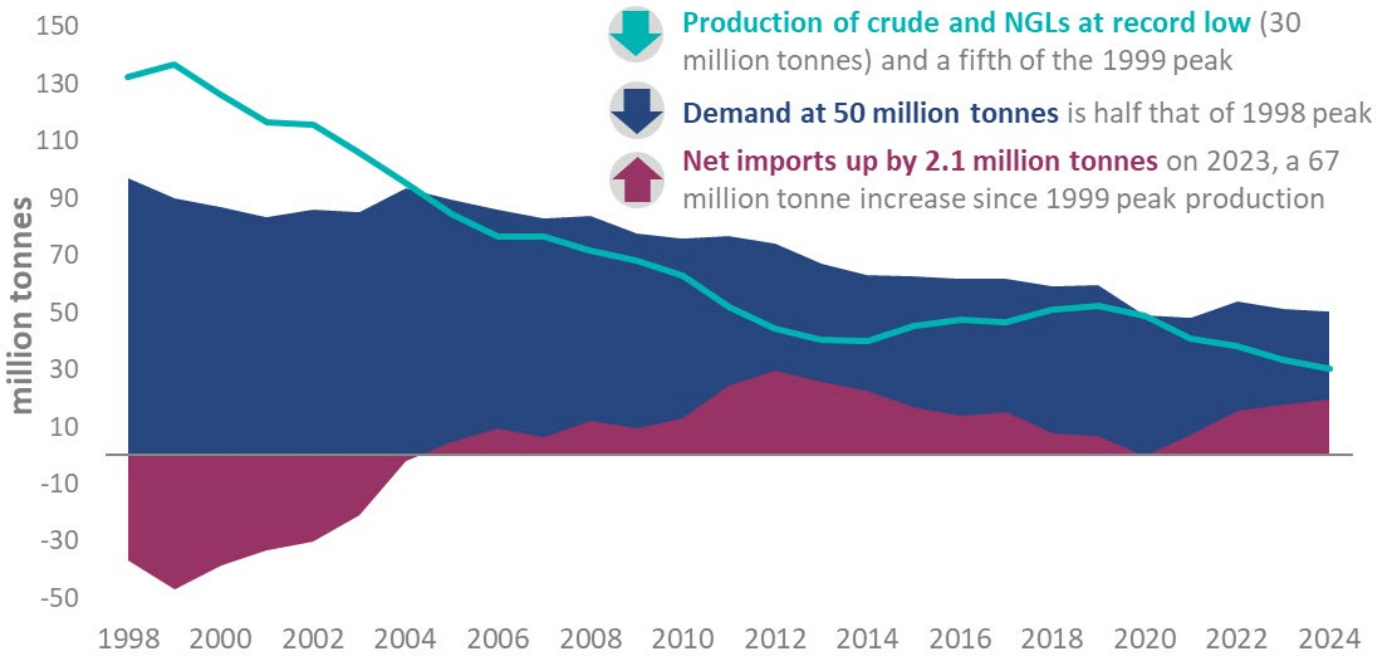
Industry demand increased by 2.2 per cent in 2024. However, over the longer-term industry oil demand has fallen by nearly two-thirds since the year 2000. Improvements in energy efficiency and a move from traditional manufacturing to higher value processes have contributed to the drop. The commercial sector also saw an increase, of 4.9 per cent. Non-energy use remained stable with petrochemical sector demand for naphtha remaining low because the plant at Teesside has been offline since the end of 2020.

Oil production reached a new record low of 31 million tonnes in 2024, down by 8.9 per cent on 2023 and in line with declining output from the mature North Sea basin. Offshore oil production began in the UK during the 1970s and peaked in 1999 at 137 million tonnes – current production is a fifth of that peak despite new fields temporarily providing a boost from 2015 until 2019. Production has been in decline since 2020, with a sharp drop in 2021 caused by planned extensive maintenance of the Forties Pipeline System, which transports a significant proportion of UK oil to onshore terminals.

Demand for primary oils increased by 1.2 per cent compared to 2023. With production down this led to a 12 per cent increase in net imports, which reached 20 million tonnes and were at the highest since 2014. Imports were up by 6.4 per cent to 48 million tonnes and exports up 2.9 per cent to 28 million tonnes.

[4] Note that once the increased use of sustainable aviation fuel (SAF) in the sector is accounted for, aviation demand is 1.3 per cent on 2019. See Table 1.1 of DUKES.

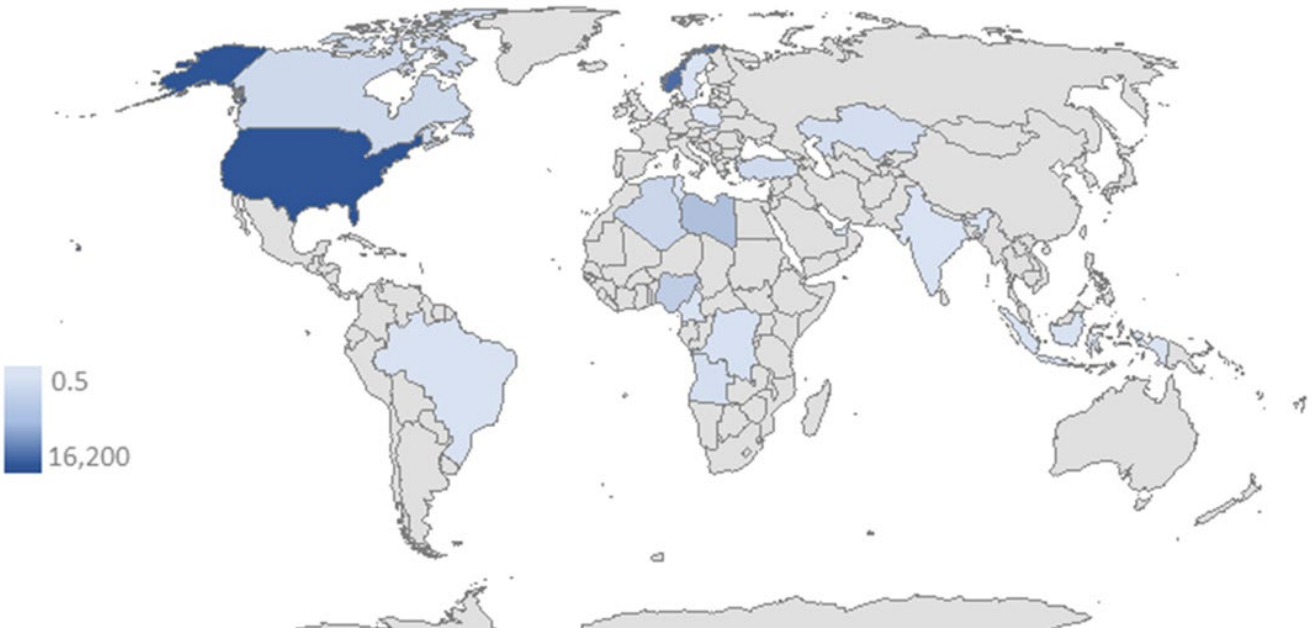
Chart 3.4 Supply and demand for primary oils, 1998 – 2024 (DUKES Table 3.1)



Note: Demand excludes transfers and stock changes

Refineries took receipt of 4.0 million tonnes of crude produced from the UK Continental Shelf in 2024, down by 41 per cent compared to 2023 and meeting just 7.7 per cent of refinery demand compared to 13 per cent in 2023[5]. Historically, UK refineries took receipt of more North Sea crude as a share of total supply but changes in maritime shipping fuel rules since 2020[6], prices on the global market, and Grangemouth being prepared for closure in early 2024, mean more crude has been imported - mainly from the US and Norway.

Map 3A Sources of UK crude oil imports 2024 (thousand tonnes, DUKES Table 3.7)



[5] See Energy Trends Table 3.10
[6] International Maritime Organization 2020, cutting sulphur oxide emissions

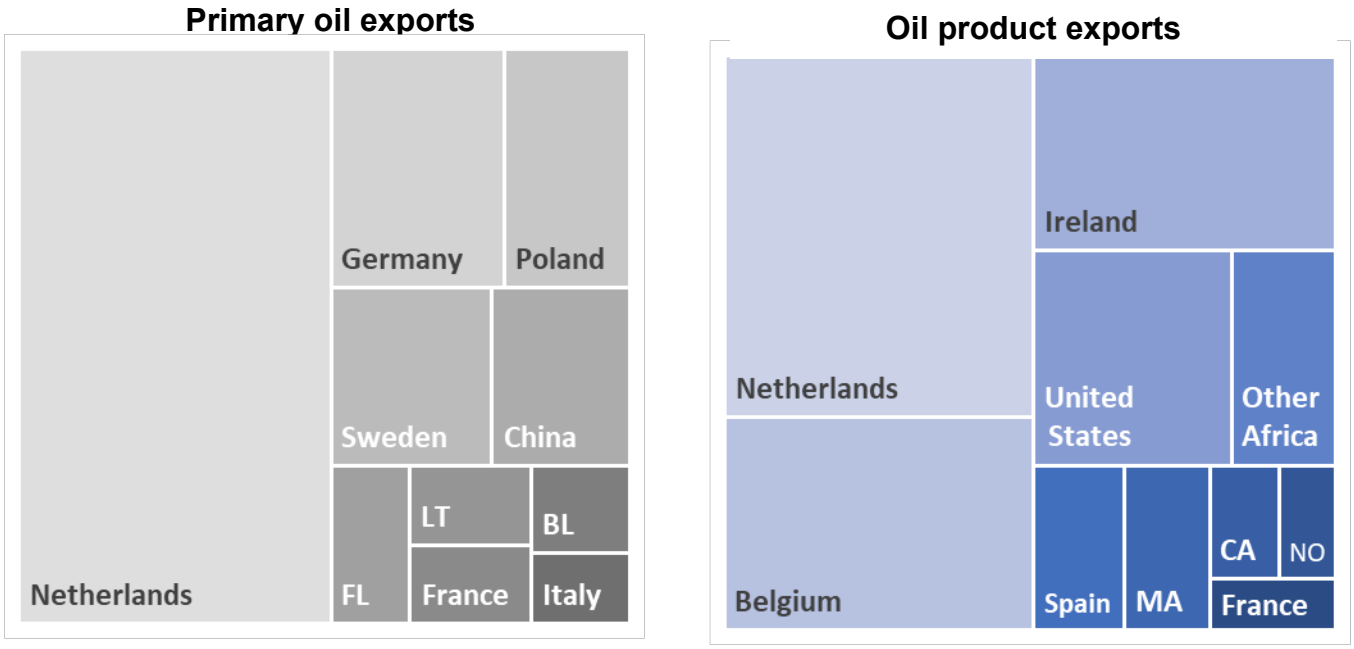
In 2024 the United States took back its position from Norway as the number one exporter of crude oil to the UK by almost three million tonnes. Imports from the US accounted for over a third of total crude imports and were up by 23 per cent compared to 2023, a year in which Norway exported over one million tonnes more crude to the UK than the US. At 16 million tonnes, 2024 was a record year for UK crude imports from the US.

Norway was the second largest source of crude imports at 13 million tonnes, down 6.3 per cent on 2023, but still accounting for 31 per cent of the UK's imported crude.

The ban on imports of Russian oil introduced on 5th December 2022 forced importers to diversify and seek different crude sources. The UK has not imported any oil from Russia since the ban. Crude sourced from current OPEC countries increased by over a third from 2022 to 2023 following the ban and increased another 9.1 per cent from 2023 to 2024. In 2024, OPEC countries were the source of 20 per cent of UK crude imports. The UK also exports a significant amount of crude oil, mainly to the Netherlands and other European countries, with crude exports up by 1.6 per cent compared to 2023.

UK exports of total primary oils were up by 2.9 per cent in 2024 compared to 2023, with 90 per cent going to the EU and mainly to the refining hubs in the Netherlands where it is processed into road diesel, gas oil, and heating fuels – oil types that the UK relies on imports to meet demand.

Chart 3.5 UK primary oil and oil product export destinations (DUKES Table 3.8)

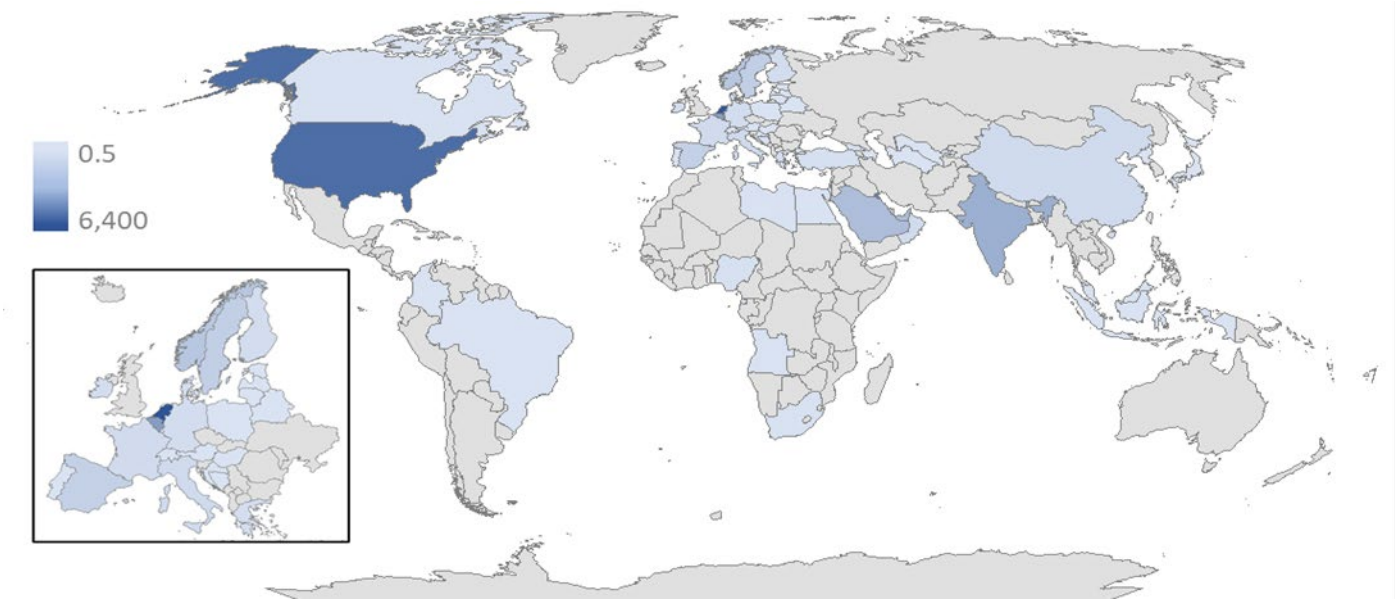


Key
BL Belgium, **CA** Canada, **FL** Finland, **LT** Lithuania, **MA** Morocco, **NO** Norway

Oil product exports were stable compared to 2023, with the majority (around 70 per cent) going to the EU. The UK is more than self-sufficient for petrol, so petrol is typically around half the product export total. In 2024 the UK exported 2.3 million tonnes of petrol to the Netherlands, 2.0 million tonnes to the US, and 1.9 million tonnes to Belgium (together more than 70 per cent of petrol exports). While the UK is reliant on imports to meet demand for jet fuel, exports of 1.4 million tonnes to Ireland in 2024 were 97 per cent of total UK jet fuel exports.

Overall petroleum product imports increased by 5.9 per cent compared to 2023, reflecting the increase in demand and continued low refinery production. Just under 40 per cent of product imports were diesel, with the United States (35 per cent), the Netherlands (21 per cent) and Belgium (16 per cent) collectively making up just over 70 per cent of those imports, reflecting a change since the 2022 sanctions given that Russia used to be an important source of diesel for the UK.

Map 3B Sources of UK petroleum product imports 2024 (thousand tonnes, DUKES Table 3.7)

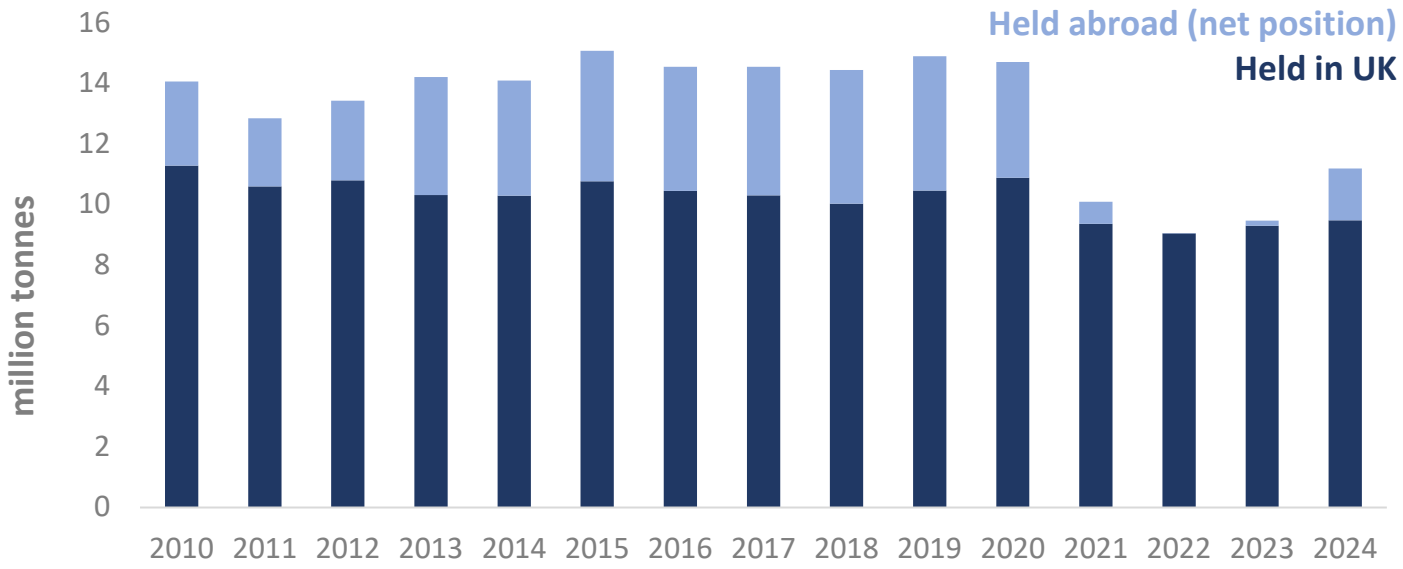


The Netherlands is the UK's closest major oil refining and trading hub, so accounts for most oil trade with the UK. Dutch product imports represented a fifth of the total at 6.4 million tonnes, with the next highest source being the United States, accounting for 16 per cent of the total at 5.3 million tonnes. Imports from Kuwait have been increasing since 2022, and in 2024 Kuwait was the third largest source of product imports at 14 per cent (see information on jet fuel below).

Jet fuel made up one-third of product imports and increased by 9.5 per cent in 2024. This uptick met a 7.9 increase in demand as UK hydrocarbon jet demand recovered to within one per cent of pre-pandemic levels, recovering from the low air traffic because of COVID-19 travel restrictions. In recent years, Kuwait has become the primary source of imported jet fuel for the UK, accounting for 38 per cent of the total at 4.1 million tonnes. India, the UAE, and Saudi Arabia also each supplied more than one million tonnes.

UK government is required to hold stocks of oil which can be released in the event of severe disruption to global supply. Government meets this obligation (under membership of the International Energy Agency) by directing industry to hold stocks. The drop in stocks in 2021 (Chart 3.6) follows the end of the EU transition deal (stocks were 60 days of demand) and the UK move to the IEA stockholding system (90 days of net imports).

Chart 3.6 UK oil stocks, 2010 to 2024 (DUKES Table 3.5)

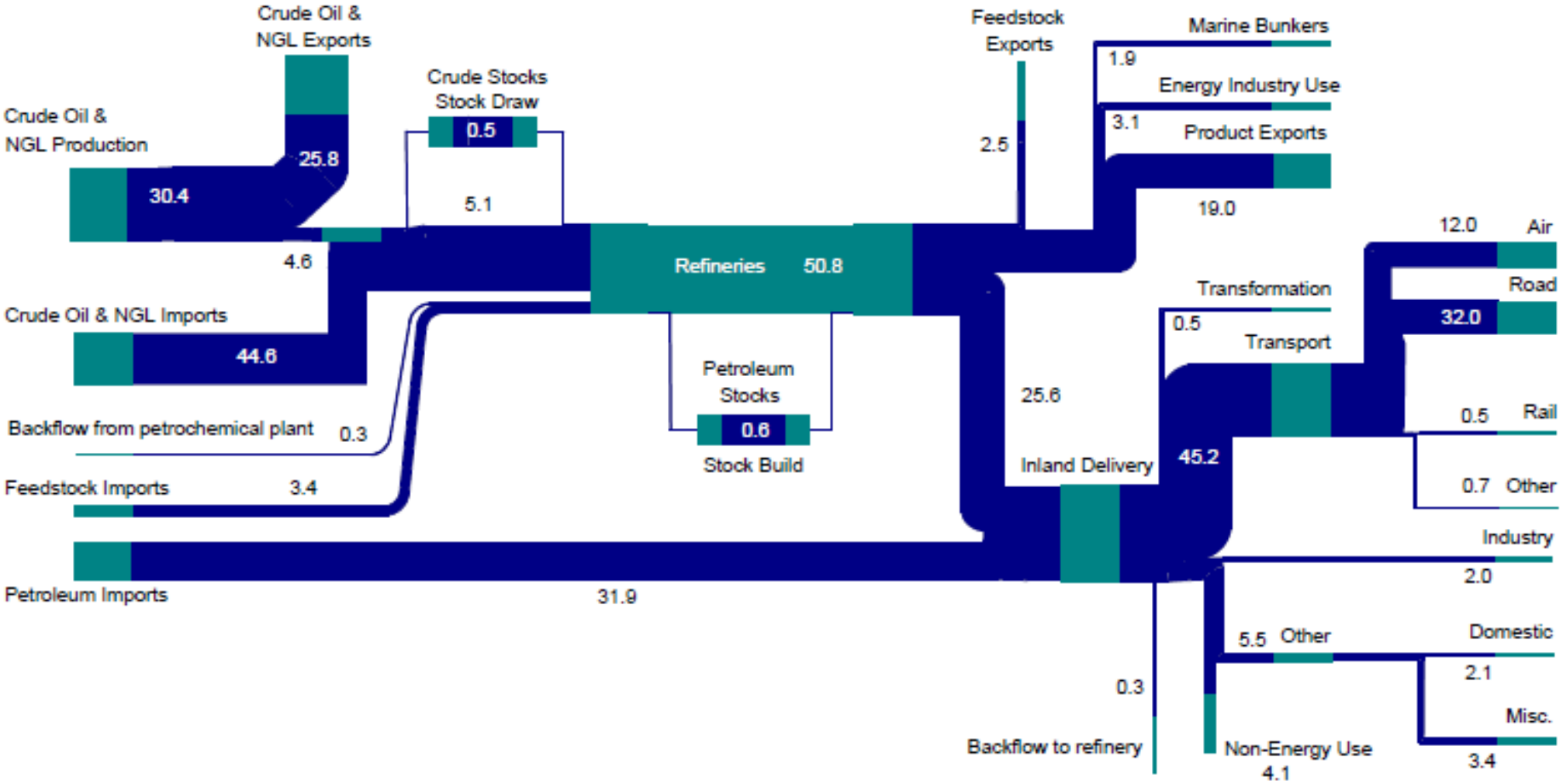


The UK held 11.2 million tonnes of stocks at the end of 2024 (DUKES Table 3.5), more than enough to meet the required 90 days of net imports. In March and April 2022, the UK participated in an IEA co-ordinated release of oil stocks in response to Russia's invasion of Ukraine. Stocks had been re-built after this release by April 2024. Stocks were up by 18 per cent on the year before, partly because of the re-build but also because of an uplift in the UK obligation when the calculation period was rolled over to 2023 in July of 2024. Net imports had been higher in 2023 compared to 2022, meaning the overall obligation increased.

Companies may choose to hold stocks within the UK or abroad via legal agreements with other countries. At the end of 2024 the UK held 9.5 million tonnes (85 per cent) in the UK, with most of that held abroad being in the Netherlands, as well as in Germany and Belgium.

The flow chart shows the movement of primary oils (on the left) into refineries which are then transformed and consumed by various sectors of the UK economy (on the right), in addition to trade. The widths of the bands are proportional to the size of the flow they represent.

Petroleum flow chart 2024 (million tonnes)



Notes:

This flow chart is based on the data in Tables 3.1 and 3.2.
The numbers on either side of the flow chart will not match due to losses in transformation.
Biofuels are not included.

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