



Department for
Business, Energy
& Industrial Strategy

Energy Trends

UK, January to March 2022

Percentage change from Quarter 1 2021, primary energy basis

(mtoe basis)	Production	Imports	Exports	Demand
Total energy	-2.1%	+12%	+16%	-0.3%
Coal	-26%	+33%	-56%	-6.3%
Primary oil	-11%	+63%	-5.7%	+37%
Petroleum products	+40%	+8.9%	+34%	+20%
Gas	+5.4%	-11%	+145%	-12%
Electricity	+11%	-6.3%	+132%	+11%

Renewable generation capacity increased by 6.5 per cent on the same period last year. Most of the new capacity was in offshore wind which saw two large new sites coming online in Quarter 1 2022. This is the largest increase in capacity since the first quarter of 2018.

Renewable generation increased by 9.3 per cent on the same period last year due to increased capacity and more favourable weather conditions, particularly for wind and solar PV. Generation reached 38.2 TWh, second only to the first quarter of 2020 when the UK experienced exceptionally high wind speeds. Renewables' share of electricity generation was 45.5 per cent, again, the second highest compared to the record in Quarter 1 2020.

Energy demand dropped as strong renewable generation, and warmer temperatures, displaced gas used for electricity generation and heating. Domestic energy consumption fell on the same period last year when restrictions for Covid-19 were in place. **Oil used for transport increased by 32 per cent** compared to the same period last year but remained down on pre-pandemic levels particularly for aviation fuels.

Energy production fell on the same period last year, mainly due to primary oil production which has not fully recovered following summer 2021 maintenance on the UK's Continental Shelf. **Imports of gas dropped from last year's record** high but remain relatively high compared with historic norms. Gas exported increased significantly as the UK played a part in supplying European markets.

About this release

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

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Data tables

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](#).

Section 1: UK total energy

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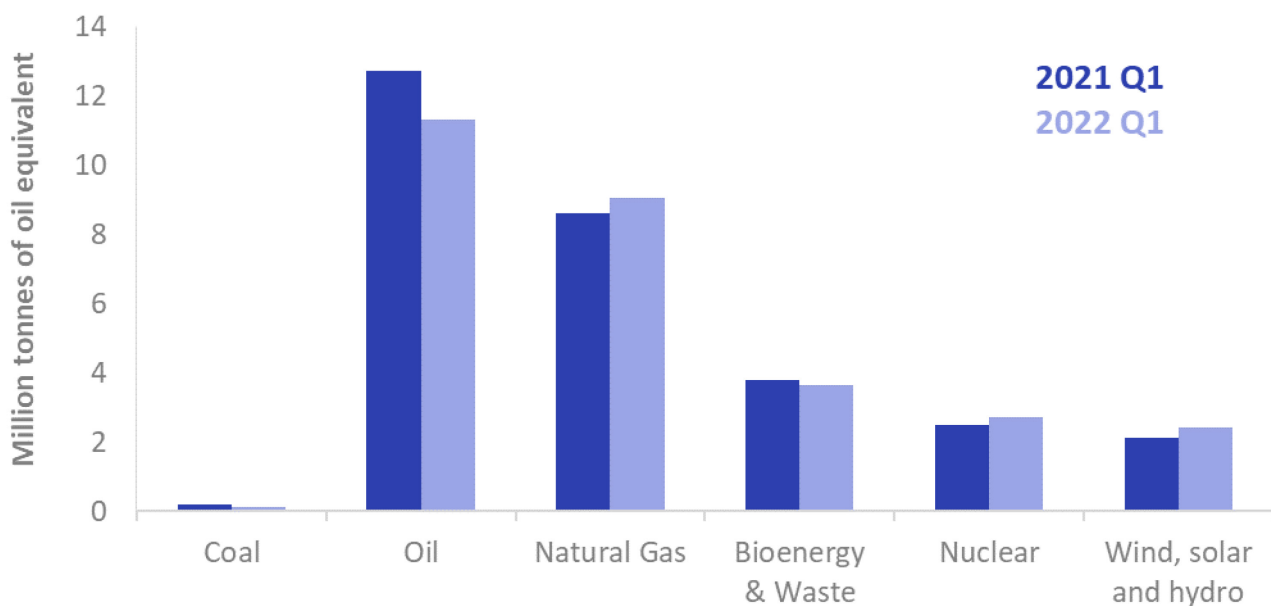
Key headlines

In the first quarter of 2022 **total production was 29.3 million tonnes of oil equivalent, 2.1 per cent lower** than in the first quarter of 2021.

Total primary energy consumption for energy uses fell by 0.2 per cent. When adjusted to take account of weather differences, primary energy consumption rose by 3.9 per cent.

Total final energy consumption (excluding non-energy use) was 0.8 per cent higher compared to the first quarter of 2021. Transport consumption rose by 31 per cent, other final users (mainly from the service sector) consumption rose by 2.5 per cent, but domestic consumption fell by 14 per cent, with average temperatures warmer than a year earlier, and industrial consumption fell by 2.7 per cent. On a seasonally and temperature adjusted basis, final energy consumption rose by 8.2 per cent, with rises in transport and other final users, but falls in the domestic and industrial sectors. Consumption has continued to pick up from the levels seen since the start of the pandemic in 2020, but the impact of restrictions on transport demand, particularly air travel, remains.

Chart 1.1 Production



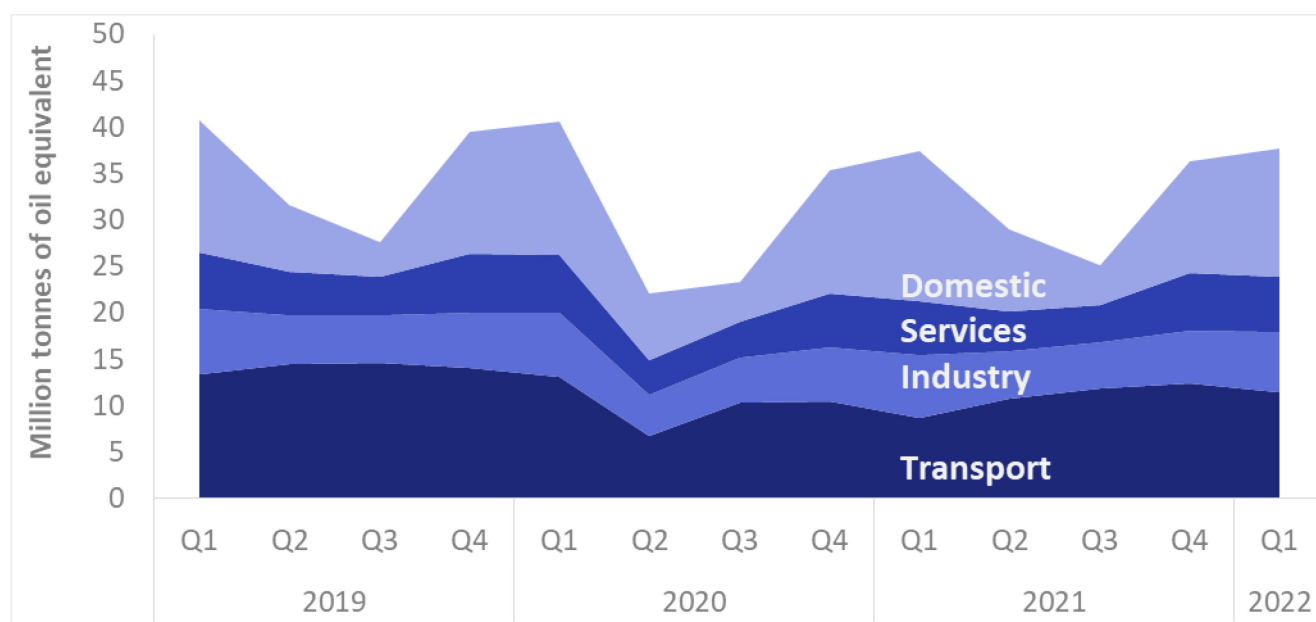
In the first quarter of 2022 **total production was 29.3 million tonnes of oil equivalent, 2.1 per cent lower** than in the first quarter of 2021. Production of coal, oil and bioenergy & waste all fell, and oil production levels remain low following maintenance activity last summer. Production of gas, nuclear and wind, solar & hydro all rose, with nuclear output up despite the closure in January 2022 of Hunterston B in Scotland, whilst wind, solar & hydro output rose due to more favourable weather conditions, particularly for wind generation. Three named storms, Dudley, Eunice and Franklin, affected the UK during February 2022 resulting in a record high monthly level for wind generation, with wind speeds 1.8 knots higher than in February 2021.

Chart 1.2 Total inland consumption (primary fuel input basis)



In the first quarter of 2022 **total inland consumption** (which includes not only fuel use by consumers, but fuel used for electricity generation and other transformation) was 169.6 million tonnes of oil equivalent, 3.9 per cent higher than in the first quarter of 2021 on a seasonally adjusted and annualised basis that removes the impact of temperature on demand, but 7.5 per cent lower than pre-pandemic levels.

Chart 1.3 Final energy consumption by user



In the first quarter of 2022 **total final energy consumption (excluding non-energy use)** was **0.8 per cent higher** than in the first quarter of 2021, with consumption in most sectors, aside from transport, returning to close to pre-pandemic levels. Transport consumption rose by 31 per cent driven by domestic travel demand, but international travel demand is still noticeably below pre-pandemic levels. Service sector consumption rose by 2.5 per cent as workplaces, particularly offices, were more populated following the introduction of hybrid working practices. With the lack of Covid-19 restrictions and warmer temperatures, domestic consumption fell by 14 per cent, whilst industrial sector energy consumption fell by 2.7 per cent.

Section 2: Coal and derived gases

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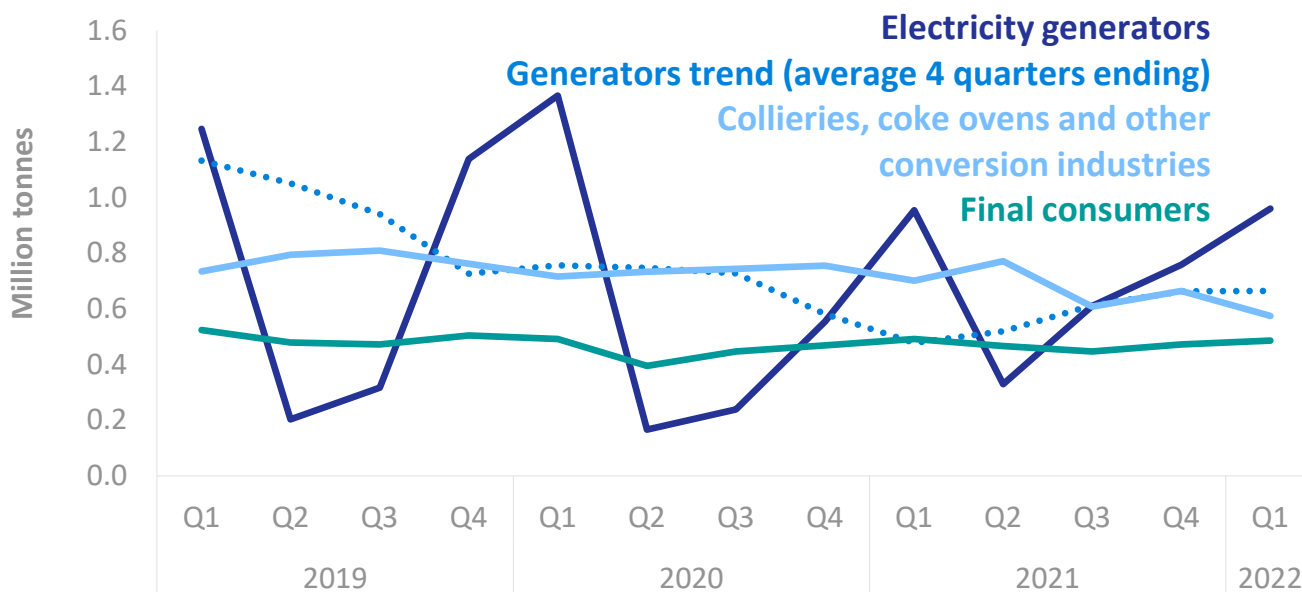
Key headlines

In the first quarter of 2022, demand for coal by electricity generators rose slightly to 960 thousand tonnes, 0.5 per cent higher than in Quarter 1 2021 (Chart 2.1).

Overall coal production **for the first quarter of 2022 fell to 197 thousand tonnes**, down 25 per cent on the first quarter of 2021. Surface mining production fell to 182 thousand tonnes with a further surface mine closure.

In Quarter 1 2022, **coal imports rose to 1.5 million tonnes**, 40 per cent up on last year, though remaining far below a decade ago when coal imports in Quarter 1 2012 totalled 10.4 million tonnes. Net imports accounted for 67 per cent of total coal supply in Quarter 1 2022. The largest provider was Russia (34 per cent). This was followed by the USA (28 per cent) and the EU (19 per cent).

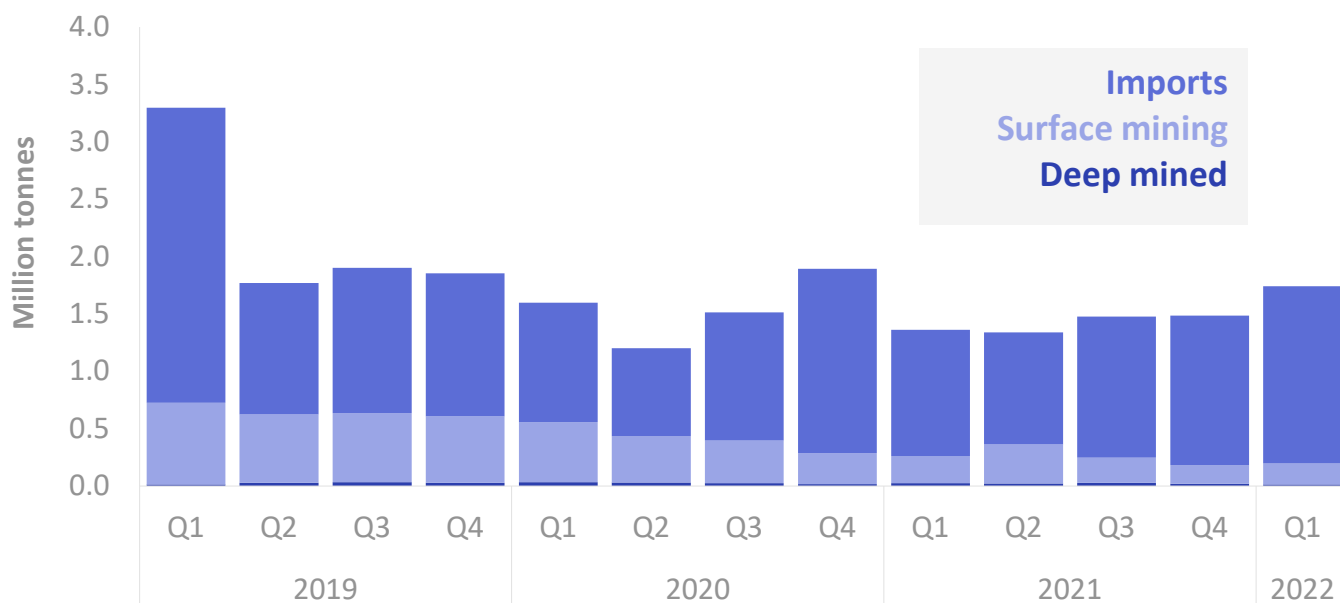
Chart 2.1 Coal Consumption



Coal demand for coal-fired electricity generation rose from 955 thousand tonnes in Quarter 1 2021 to 960 thousand tonnes in Quarter 1 2022, an increase of 0.5 per cent. Though coal is up in absolute terms on last year, coal's place in the generation mix remains near historic lows (see Energy Trends 5.4). With the Drax coal units mothballed at the end of March 2021, three coal plants remain operational in the UK. The government remains committed to ending coal use for electricity generation by October 2024.

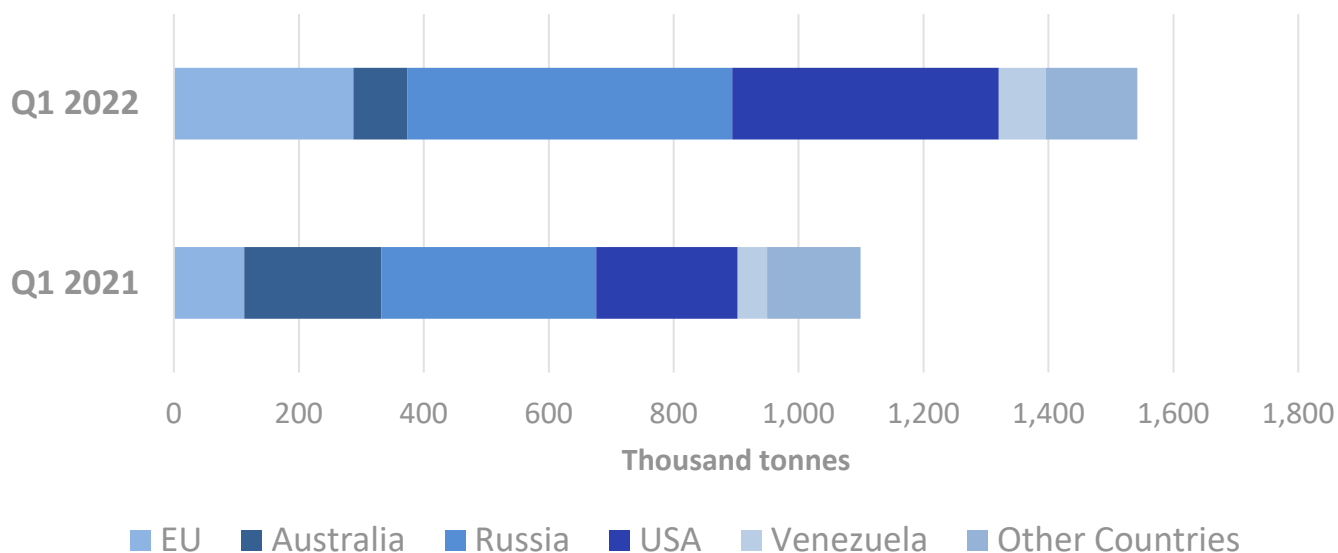
Demand for coal-fired generation is seasonal, peaking in winter when conditions are cold and dark but these peaks have declined as coal-fired generation became less competitive economically and gas and renewable sources displaced it.

Chart 2.2 Coal Supply



Domestic coal production has fallen steadily because of mine closures and reduced demand. Imports filled the gap, rising from 1.1 million tonnes in the first quarter of 2021 to 1.5 million tonnes in the first quarter of 2022. However, imports have fallen from the peak of 13.3 million tonnes in the second quarter of 2013 as overall demand dropped.

Chart 2.3 Coal Imports



As coal's place in the UK's generation mix has diminished, imports have decreased significantly. In the first quarter of 2012, the UK imported 10.4 million tonnes of coal whilst in the first quarter of 2022 this fell to 1.5 million tonnes. This comprised 1.1 million tonnes of steam coal (74 per cent of imports), 0.4 million tonnes of coking coal (24 per cent of imports) and 0.04 million tonnes of anthracite (2 per cent of imports).

In Quarter 1 2022 the largest provider was Russia (34 per cent). This was followed by the USA (28 per cent) and the European Union (19 per cent). Although Russia was the principal source of the UK's coal imports in this quarter, the volumes involved have changed significantly. In the first quarter of 2012 Russia supplied 4.3 million tonnes of coal to the UK. By 2022 this had dropped to 0.5 million tonnes.

Section 3: Oil and oil products

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Key headlines

Indigenous production of primary oils fell 11 per cent in quarter 1 2022 compared to quarter 1 2021, as maintenance delayed by the Covid-19 pandemic continued to take place.

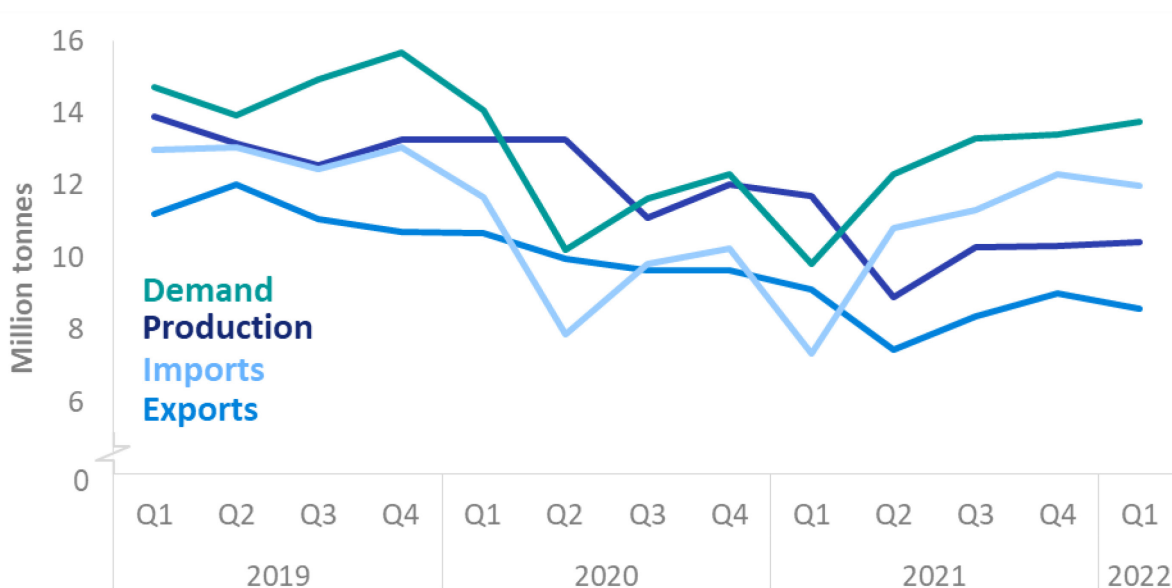
The UK was a net importer of primary oils by 3.4 million tonnes, as imports increased by two thirds to help meet increased refinery demand.

Demand for petroleum products increased by a fifth as restrictions were eased compared to the previous year. To help meet this increased demand refinery output increased by a third.

Final consumption increased by a fifth as the transport sector continues to recover, following the relaxation of travel restrictions. Demand for key road fuels is now comparable with pre pandemic levels, and whilst demand for aviation fuel more than doubled this quarter compared with quarter 1 2021, demand still remains 42 per cent lower than levels seen in quarter 1 2019.

Total stocks held in the UK fell 9.2 per cent following higher stocks during the pandemic and the UK's contribution to the [International Energy Agency's \(IEA\) coordinated stock release](#) following Russia's invasion of Ukraine. At the end of quarter 1 2022, the UK held over 840 days of net imports in stocks, which covers the stocking requirement set by the IEA.

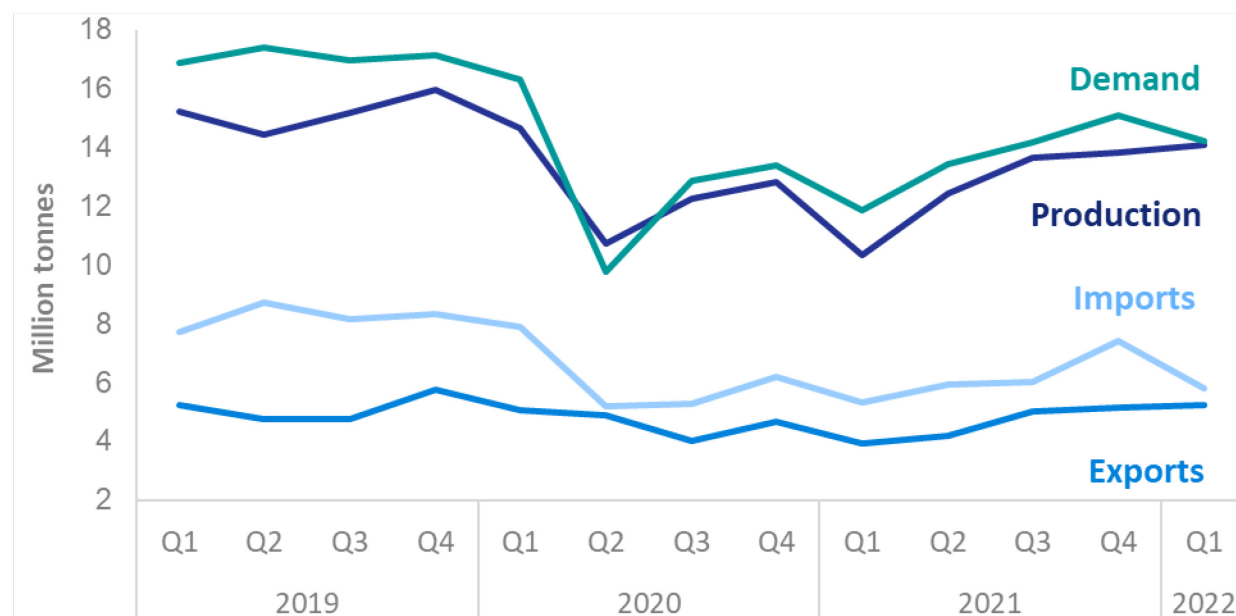
Chart 3.1 Supply and demand of primary oils



Demand for primary oils increased by 40 per cent in quarter 1 2022 compared to last year as Covid-19 restrictions eased. Demand remains below typical levels seen before the pandemic down 6.6 per cent compared to quarter 1 2019. Indigenous production of primary oils decreased 11 per cent but has recovered following an extensive summer maintenance schedule.

The rising demand for crude oil and NGLs was met through a combination of increased imports which were up 66 per cent and decreased exports which were down 7.8 per cent. In quarter 1 2022 the UK was a net importer of primary oil, by 3.4 million tonnes.

Chart 3.2 Supply and demand of petroleum products

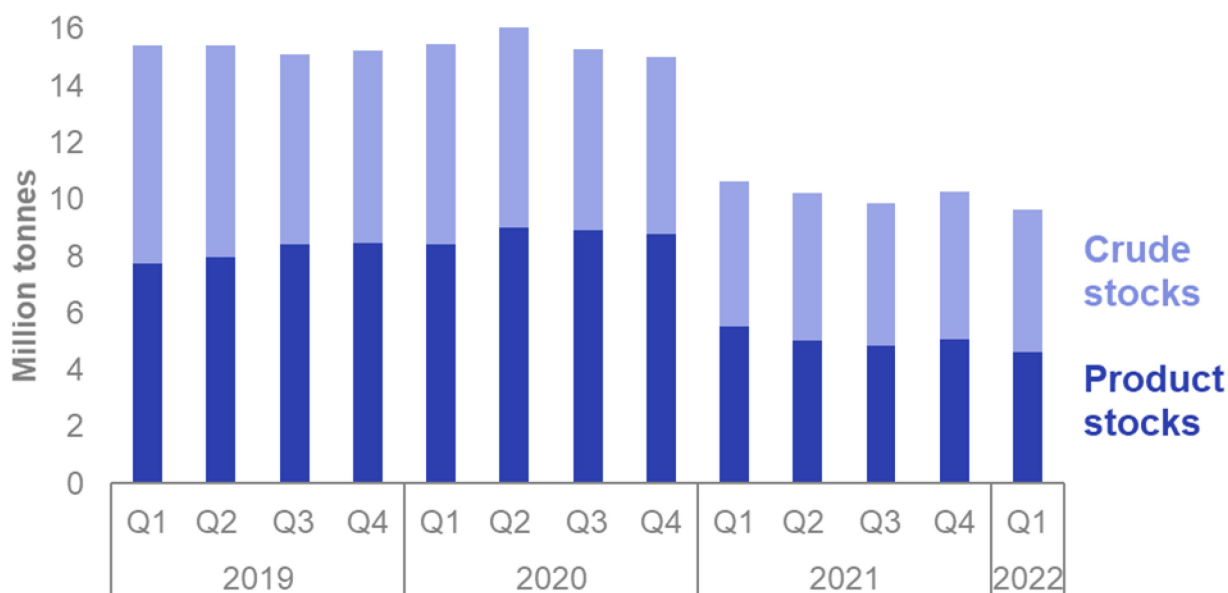


Total demand for petroleum products increased by a fifth in quarter 1 2022, compared to quarter 1 2021. This increased demand was met through a combination of increased production, up by just over a third, and increased imports which were up 8.9 per cent. Exports increased by a third particularly where UK production tends to exceed domestic demand, for example exports of petrol increased by 40 per cent. The UK remained a net importer of petroleum products by 0.5 million tonnes.

Final consumption increased by a fifth; most of this increase was seen in the transport sector which was up 32 per cent. Demand in the domestic sector fell 12 per cent on quarter 1 2021, as temperatures were milder compared with the previous year. Non-energy use also fell by 9.1 per cent.

Of the key transport fuels **aviation fuel was the most heavily affected by pandemic related restrictions**, with demand in quarter 1 2021 representing the second lowest on record. Aviation fuel demand has been recovering and has more than doubled compared with the same period in the previous year; but remains 42 per cent below that seen in quarter 1 2019. Demand for petrol and diesel are returning to pre-pandemic levels, with petrol up 40 per cent and diesel up 15 per cent compared with quarter 1 2021.

Chart 3.3 UK oil stocks



At the end of quarter 1 2022 the UK held 9.6 million tonnes of stock, of which 52 per cent was primary oils. This was 9.2 per cent lower than that held in the previous year. Much of this reduction was due to a combination of higher levels of stock in early 2021 as restrictions reduced demand, and the more recent [coordinated release of stock by the International Energy Agency \(IEA\)](#) in response to Russian's invasion of Ukraine.

In 2021, when the UK left the EU, the UK's stock holding obligation changed from both the EU and International Energy Agency (IEA) requirement to just the IEA requirement. This change resulted in an overall reduction in stocks. Following this reduction, UK stocks held abroad fell as UK companies used domestic stocks to meet requirements and remained at low levels in quarter 1 2022. Domestic stocks fell 10 per cent compared with the same period in the previous year. Most of this fall was due to a fall in kerosene stock which was down 42 per cent, and gas/ diesel oil which was down 19 per cent.

At the end of quarter 1 2022, the UK held over 840 days of net imports in stocks, which is well above the requirement set by the IEA.

Section 4: Gas

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Key headlines

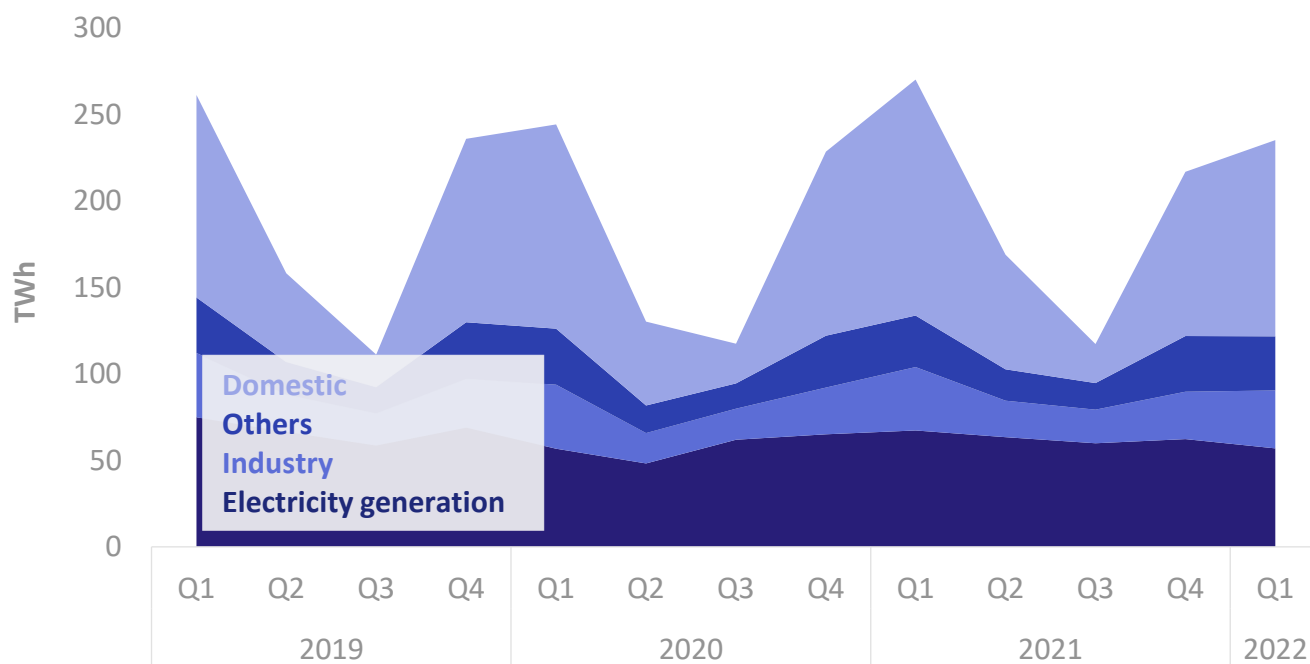
Quarter 1 2022 saw gas demand fall by 12 per cent in comparison with quarter 1 2021. This reflected reduced domestic consumption following a rise in average temperatures, the removal of most Covid-19 restrictions, and a considerable fall in gas used for electricity generation due to increased renewable output.

Gas production increased by 5 per cent, compared to the previous year when delayed maintenance took place. However, gas production remains lower than pre-pandemic levels.

LNG imports increased by nearly 50 per cent as UK regasification infrastructure was used to feed European gas supply. The UK has the second largest regasification infrastructure for LNG in Europe after Spain. Therefore, the UK played a key role in supplying gas to Europe in quarter 1 2022.

Gas exports more than doubled in quarter 1 2022, as interconnectors with Belgium and the Netherlands were utilised to export gas to mainland Europe. This reduced interconnector capacity for pipeline imports to the UK, resulting in a 22 per cent decrease in net imports in comparison with quarter 1 2021.

Chart 4.1 UK demand for natural gas

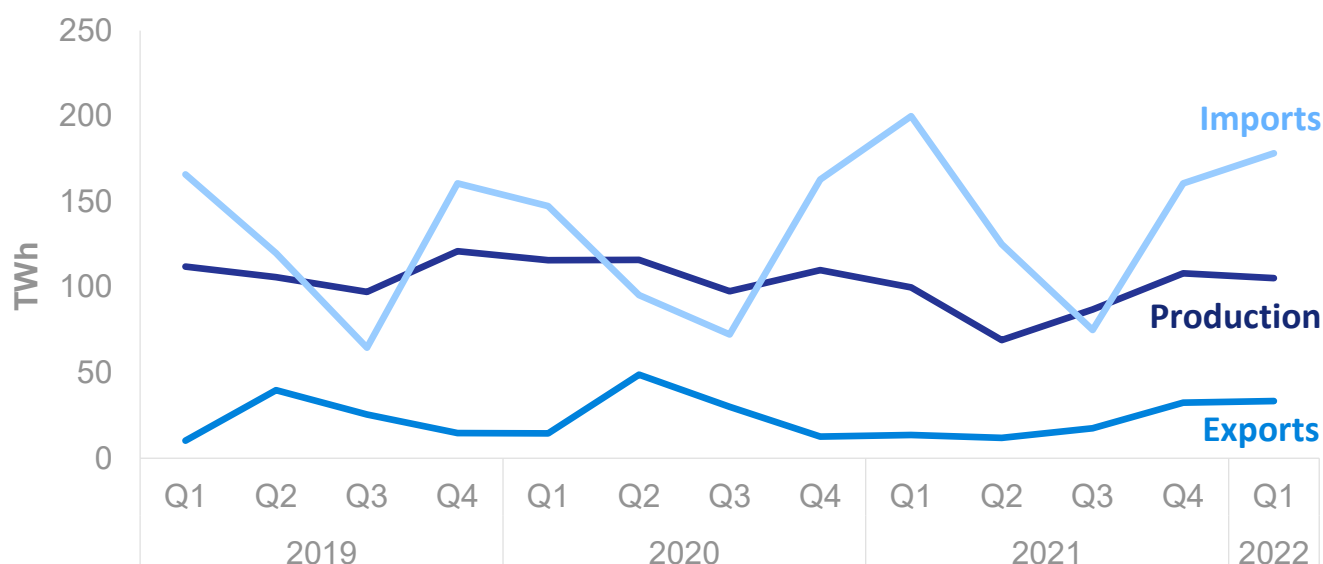


Demand for natural gas fell by 12 per cent in quarter 1 2022, in comparison with quarter 1 2021.

This reduction was largely driven by falls in gas used for domestic and electricity generation purposes. Domestic consumption fell by 17 per cent, due to warmer average temperatures reducing the need for domestic heating, and the removal of most Covid-19 restrictions. Gas used for electricity generation fell by 15 per cent, due to increased availability of renewable sources (for further information, please see Energy Trends Table 5.1).

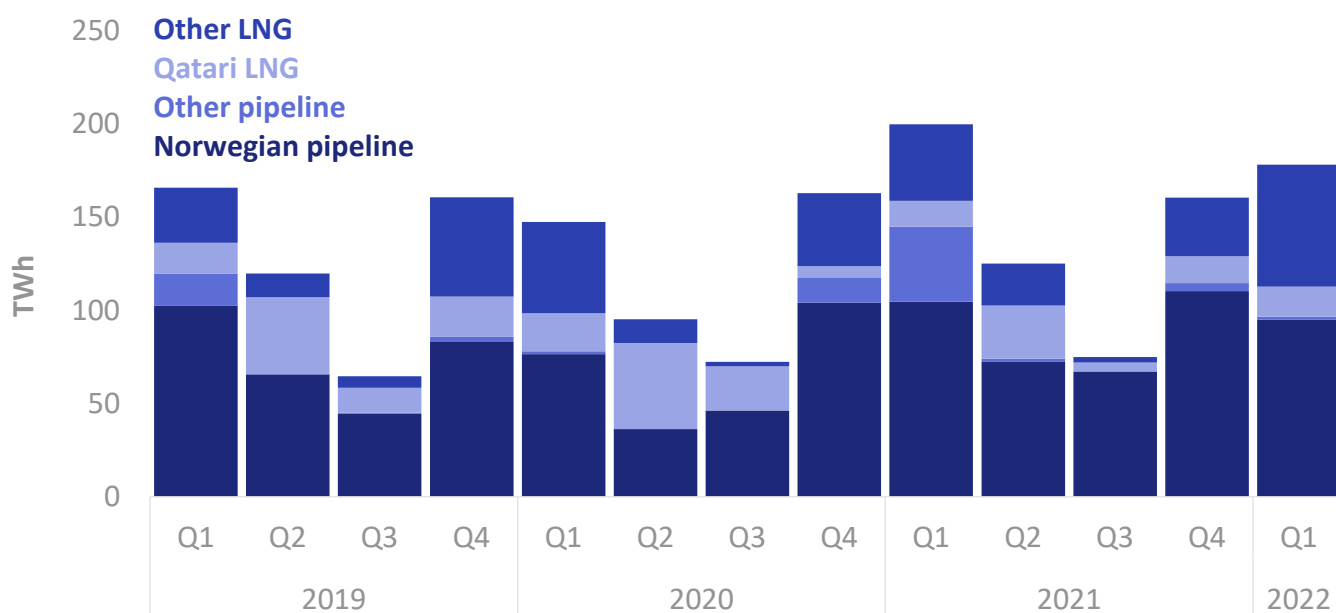
There were broad increases across commercial and public sectors (included in 'other' in Chart 4.1), following an easing of Covid-19 related restrictions in early 2021.

Chart 4.2 Supply and demand of natural gas



Gross gas production increased in quarter 1 2022, up 5 per cent on the previous year. This reflects a partial recovery in production following substantial maintenance in 2021 but remains lower than pre-pandemic levels. Maintenance shutdown key infrastructure, including the Forties Pipeline System, in addition delayed maintenance in 2020 due to restrictions to curb the Covid-19 pandemic was able to take place.

Chart 4.3 Imports by origin



LNG imports increased by almost 50 per cent in quarter 1 2022, reaching the highest level recorded in over a decade. The UK holds the second largest LNG regasification infrastructure in Europe, with the largest being in Spain. The UK has acted as a gateway for gas to enter European pipeline systems and meet demand, as countries moved away from importing Russian gas. The USA provided the largest source of LNG imports, reaching a record high and more than doubling that imported in quarter 1 2021. Conversely, LNG from Russia fell by 68 per cent on quarter 1 2021 as the UK looks to phase out Russian imports.

Gas exports substantially increased in Quarter 1 2022 as UK regasification infrastructure was used to feed European gas supply. Exports more than doubled, driven by a rise in pipeline exports to Belgium and the Netherlands. As these interconnectors are bidirectional, their increased utilisation for exports led to a corresponding fall in imports. This resulted in an 11 per cent reduction in total imports to the UK, and a 22 per cent fall in net imports.

Section 5: Electricity

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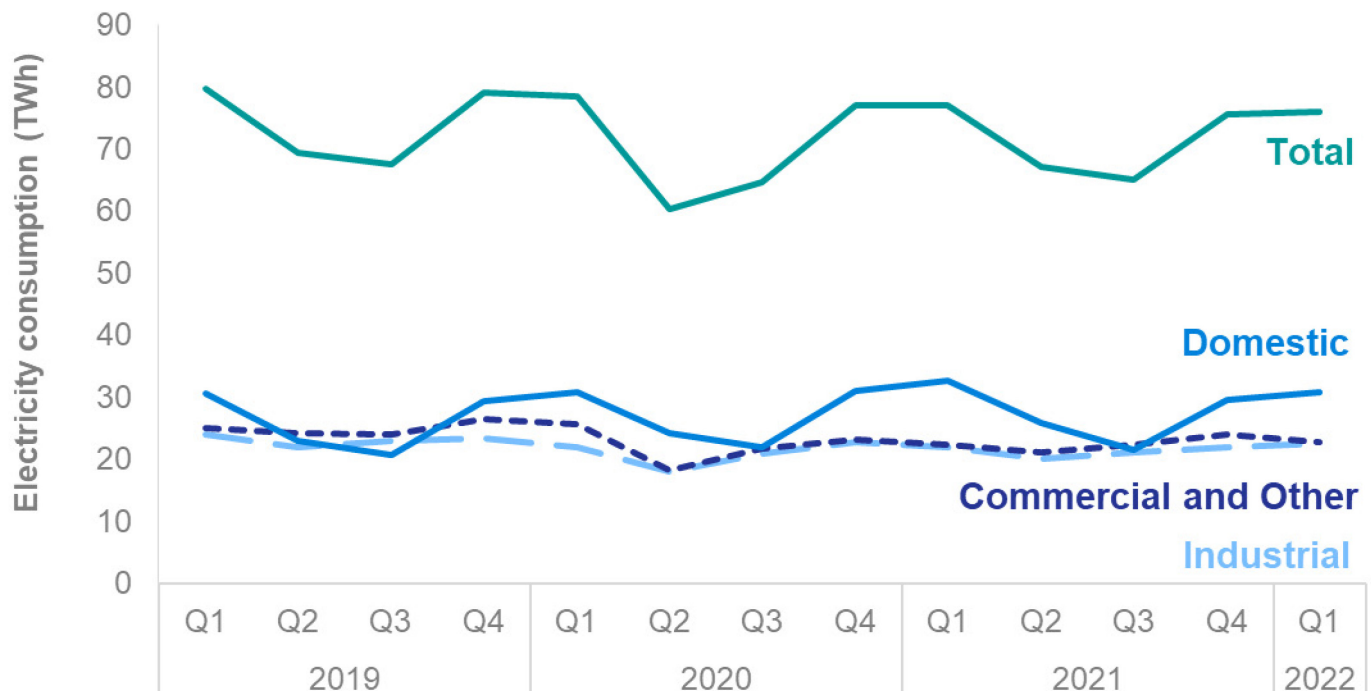
Key headlines

Quarter 1 of 2022 saw slightly lower electricity demand but similar generation compared to Quarter 1 2021. Demand was down by 1.4 per cent due to warmer weather while total generation remained consistent, with a substantial decrease in net imports (down 22 per cent) accounting for the difference. The decrease in imports meant that electricity supply was down 1.5 per cent compared to Quarter 1 2021 in line with reduced demand.

Demand increased in both non-domestic sectors in Quarter 1 2022 but decreased in the domestic sector. Electricity consumed by the industrial sector was up 3.0 per cent while consumption by other final users (including commercial users) increased by 2.0 per cent as despite warmer weather in 2022 partially offset the increased demand resulting from lifting Covid-19 restrictions. Domestic electricity consumption decreased by 6.1 per cent.

While the total amount generated was similar in Quarter 1 2021 and 2022, there was higher renewable and nuclear generation and lower generation from fossil fuels. Renewable generation was up 9.3 per cent due to favourable windy conditions while nuclear generation was up by 8.1 per cent. These increases meant that low carbon sources generated 60.4 per cent of the total in Quarter 1 2022, up 5.0 percentage points on the previous year. In contrast, generation from fossil fuels decreased by 12 per cent.

Chart 5.1 Electricity consumption by sector

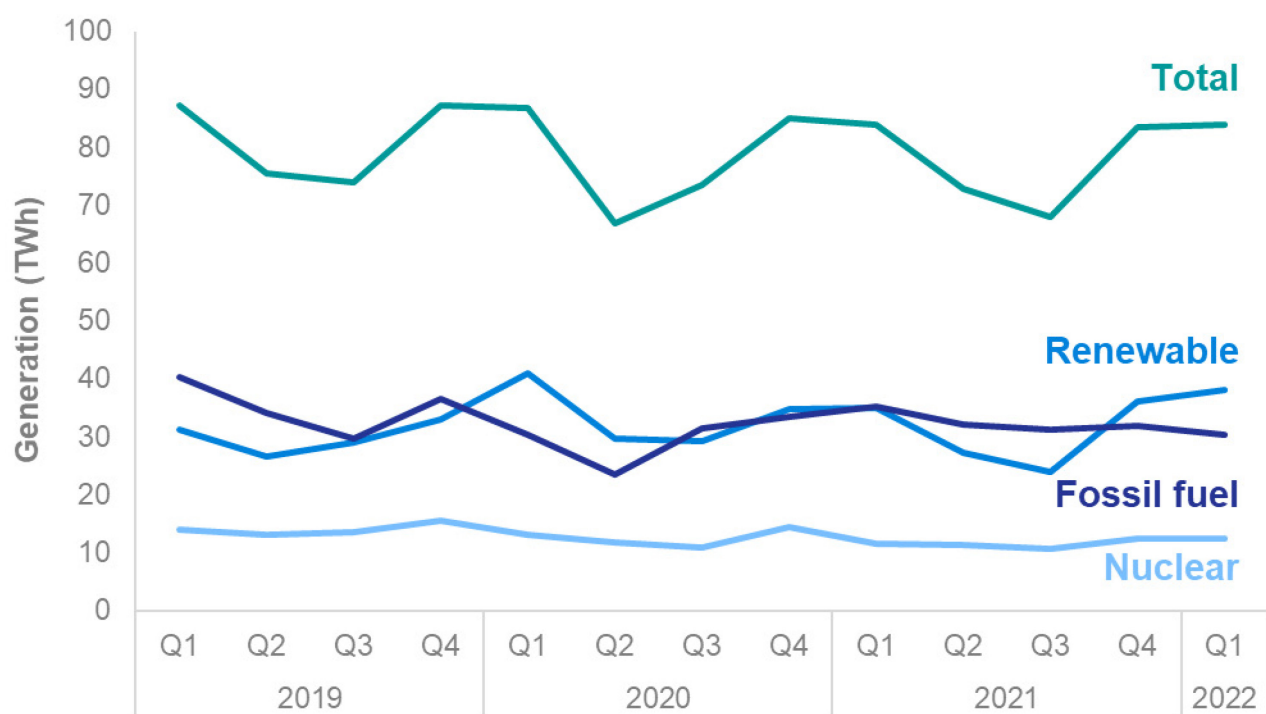


Total consumption of electricity by end users was 76.1 TWh in Quarter 1 2022, a decrease of 1.2 per cent compared to 2021. These decreases were driven by warmer average temperatures in all three months, particularly in January and February, which partially offset the increased demand resulting from the lifting of Covid-19 restrictions. The government advised people to work from home throughout January 2022, but there were no other Covid-19 restrictions in place. In contrast, 2021 saw a national lockdown imposed in January, with restrictions continuing throughout February and March.

Domestic consumption of electricity saw a decrease in Quarter 1 2022, down 6.1 per cent to 30.8 TWh. This reflects warmer average temperatures which reduced electricity demand for heating alongside the lifting of Covid-19 restrictions reducing the amount of time people spent at home.

Both non-domestic sectors saw increased consumption levels in Quarter 1 2022 as Covid restrictions were lifted. Electricity consumed by the industrial sector increased by 3.0 per cent compared to Quarter 1 2021, broadly mirroring the increase shown in the manufacturing [Index of Production](#). Consumption by other final users (including the commercial sector) increased by 2.0 per cent, with commercial venues able to operate as normal. These increases were partially offset by warmer temperatures in Quarter 1 2022.

Chart 5.2 Electricity generated, by fuel



Quarter 1 of 2022 saw total electricity generation of 84.0 TWh, which was similar compared to Quarter 1 2021. This contrasted with the 1.4 per cent decrease in demand, with a 22 per cent decrease in net imports meaning that generation rose to meet demand and therefore did not fall compared to Quarter 1 2021. Overall electricity supply (which includes net imports) was down 1.5 per cent over the same period, meeting demand.

Renewable electricity generation was 38.2 TWh in Quarter 1 2022, 9.3 per cent higher than Quarter 1 2021, but below the record peak in Quarter 1 of 2020. This increase reflected more favourable conditions for non-thermal renewable generation, with higher average wind speeds and daily sun hours than in Quarter 1 2021. Bioenergy generation decreased by 4.3 per cent in Quarter 1 2022, but this was from a high baseline in Quarter 1 2021.

Nuclear generation increased to 12.5 TWh in Quarter 1 2022, 8.1 per cent higher than the same period in the previous year. This came despite lower nuclear capacity following the closure of Hunterston B in January, with the UK's remaining nuclear plants operating at particularly high utilisations during March as maintenance outages ended. The increased nuclear and renewable generation meant that low carbon sources generated 60.4 per cent of the total in Quarter 1 2022, up 5.0 percentage points on the previous year.

Fossil fuels generated 30.8 TWh in Quarter 1 2022, below generation from renewables. This was a 12 per cent decrease compared to Quarter 1 2021 as the improved weather conditions for renewable generation meant that less fossil fuel generation was required to meet demand. Gas remained the fuel with the highest generation at 28.0 TWh but decreased by 14 per cent compared to Quarter 1 2021. Coal generation increased slightly, up by 2.5 per cent compared to Quarter 1 2021 to 2.4 TWh, representing 2.9 per cent of generation, an increase of 0.1 percentage point over the same period last year.

Section 6: Renewables

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Key headlines

With a capacity increase and favourable weather conditions, renewable generation in Quarter 1 2022 reached 38.2 TWh, a 9.3 increase compared to Quarter 1 2021. This is the second highest quarterly generation (the record being 41.0 TWh in Quarter 1 in 2020).

Renewable capacity grew by 3.1 GW since last year, the largest new capacity added for four years. Around half the new capacity was due to two large offshore wind sites coming online in Quarter 1 2022; the first phase of Hornsea Two (462 MW), and East Moray (950 MW).

Renewables' share of electricity generation was 45.5 per cent, second only to the record 47.1 per cent achieved in the first quarter of 2020 when the UK experienced exceptionally high wind speeds.

Total renewable generation increased by 9.3 per cent between Quarter 1 2021 and Quarter 1 2022 in part due to the 6.5 per cent increase in capacity over the same period but also in response to more favourable weather conditions such as higher wind speeds and an unusually sunny quarter.

Chart 6.1 Change in renewable generation and capacity between Q1 2021 and Q1 2022

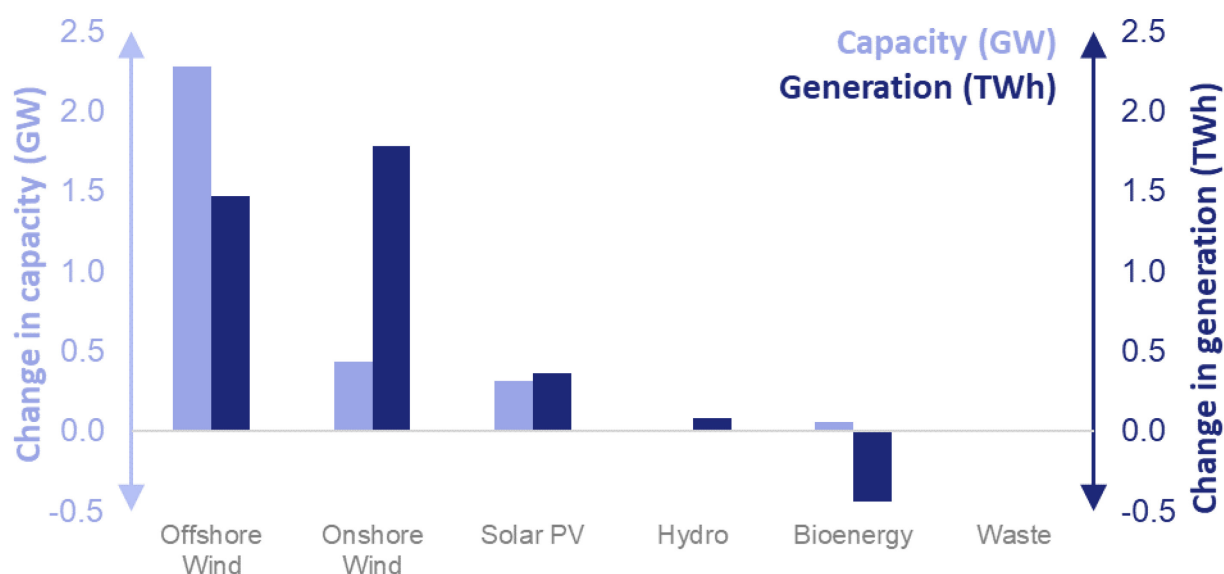
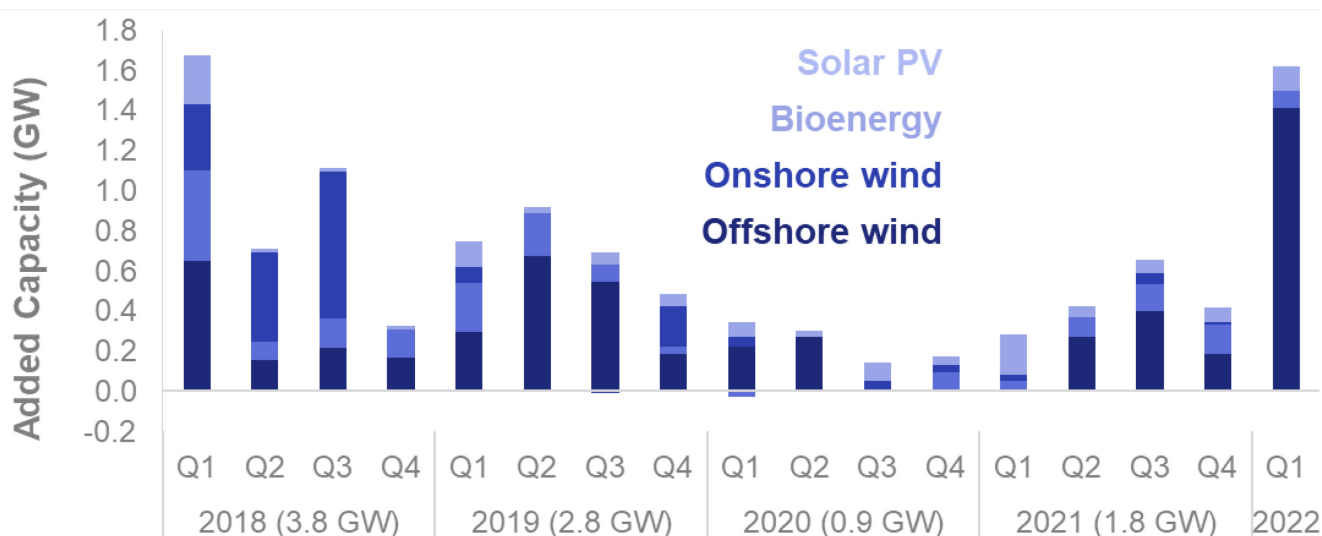


Chart 6.1 shows how each technology has contributed to the changes in generation and capacity between Quarter 1 in 2021 and 2022. Most notable for wind generation is the differing impact of new capacity on generation between onshore and offshore; although there was more new capacity for offshore wind, the increase in generation was more subdued than for onshore. This may reflect regional variations in wind speeds and with most of the new offshore capacity being concentrated in just two locations (Hornsea and East Moray). Overall wind generation increased by 15 per cent to 24.4 TWh, capacity by 11 per cent, and wind speeds by 8 per cent. Solar PV generation increased by 21 per cent to 2.1 TWh, driven partly by a 2.2 per cent increase in capacity, but mostly due to an additional 1.2 sun hours on average per day, the highest for Quarter 1 since 2003. Hydro generation increased by 4.6 per cent despite stable capacity and lower rainfall. Bioenergy and waste generation fell by 4.5 per cent, a combination of an outage at a major biomass plant and lower overall demand for electricity (down by 1.6 per cent on Quarter 1 2021, see Section 5).

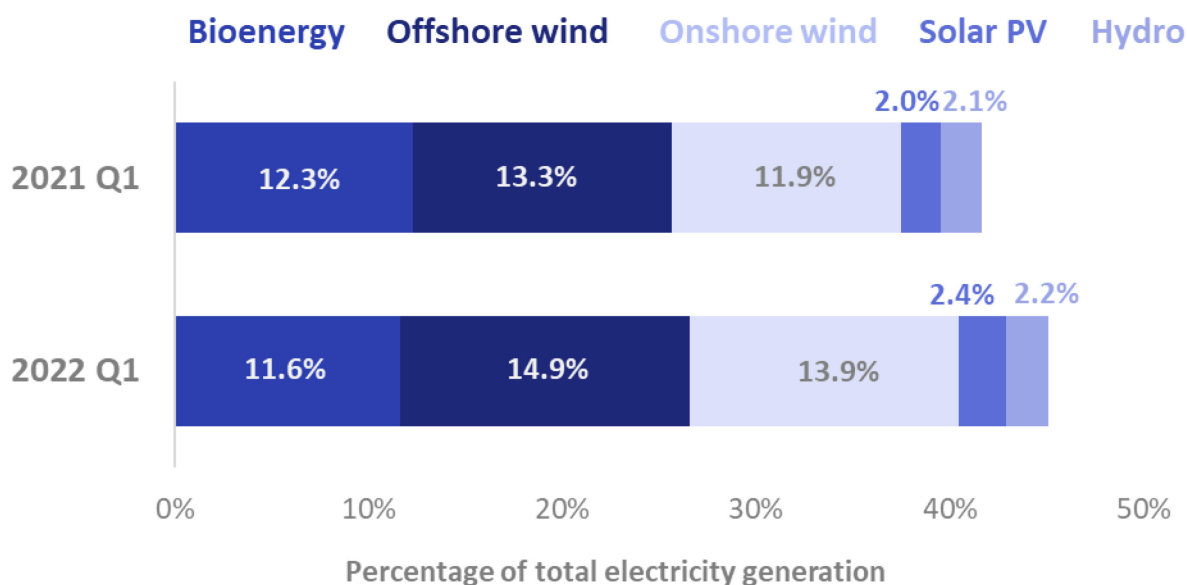
Growth in new capacity has been relatively muted over the past three years, although Quarter 1 2022 saw a total 1.6 GW being commissioned, the largest amount for a single quarter since Quarter 1 2018 as shown in Chart 6.2.

Chart 6.2 New capacity since 2018 for the leading renewable technologies



In contrast to Quarter 1 2018, where new capacity was diverse across the technologies, most of the new capacity added (87 per cent) in Quarter 1 2022 was due to two new offshore wind farms; the first phase of Hornsea Two in England (462 MW) and East Moray in Scotland (950 MW). Offshore wind has dominated the growth in capacity over this timeframe representing over half (54 per cent) of all new capacity with onshore wind accounting for 16 per cent. Total installed offshore capacity still lags onshore (12.7 GW for offshore and 14.6 GW for onshore). Capacity growth for the remaining technologies was slow in 2020, 2021, and into Quarter 1 2022, though some projects may have been affected by the Covid-19 pandemic.

Chart 6.3 Renewables' share of electricity generation – Q1 2021 and Q1 2022



In Quarter 1 2022, renewable share of total generation was 45.5 per cent. This is the second highest quarterly share on record and the highest since Quarter 1 2020. Renewables' share of generation in the first quarter of the year is typically higher than other quarters as wind speeds are often stronger than at other times of year.

Data tables and special articles

Data in this release

Data are collected by BEIS 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:

Supply of Liquefied Natural Gas in the UK, 2021

Electricity interconnectors in the UK since 2010

Energy imports from Russia

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 published on 30 July 2020:

<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 BEIS 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 published by BEIS, please contact Kevin Harris:

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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. 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 unrounded 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	.39683	toe	1	41.868	11.63	396.83
TJ	.023885	1	.27778	.0094778	GJ	.023855	1	277.78	9.4778
GWh	.085985	3.6	1	.034121	kWh	.000085985	.003600	1	.034121
million therms	2.52	105.51	29.307	1	therms	.00252	.105510	29.307	1

toe = tonne of oil equivalent

ktoe = thousand 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
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

Revisions policy

Figures for the latest periods are provisional and are liable to subsequent revision. The [BEIS 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](#).

Related publications

Recent publications of interest

Smart Meters

Statistics on the roll-out of Smart Meters in Great Britain, covering meters operating and meters installed: www.gov.uk/government/collections/smart-meters-statistics

Household Energy Efficiency

Statistics on the Energy Company Obligation (ECO), Green Deal and homes insulated. Monthly updates of ECO measures and quarterly updates of in-depth ECO statistics, carbon savings and the Green Deal schemes: www.gov.uk/government/collections/household-energy-efficiency-national-statistics

Renewable Heat Incentive

Statistics on deployment data for the domestic and non-domestic Renewable Heat Incentive (RHI) to support the uptake of renewable heat: www.gov.uk/government/collections/renewable-heat-incentive-statistics

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 BEIS'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 BEIS'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 BEIS 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

National statistics

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The Office for Statistics Regulation confirmed continued designation of Energy Trends as National Statistics in 2018 following a compliance check. A full assessment against the Code of Practice was last conducted in June 2014.

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Supply of Liquefied Natural Gas in the UK, 2021

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Key headlines

Global Liquefied Natural Gas (LNG) exports grew in 2021, with the major exporters being Australia, Qatar and the USA. US LNG exports hit a record high, rising almost 50 per cent on 2020 due to continuing expansion in liquefaction capacity.

Asia remained the key global LNG market. A cold winter in the region increased Asian LNG demand in Q1 2021 and constrained the global supply of LNG cargoes. The growth in demand also led China to overtake Japan as the largest global importer of LNG.

In 2021, UK LNG imports fell in comparison with those recorded in 2020 as prices reached record highs. LNG accounted for 17 per cent of the gas supplied to the UK through production and imports, down from 22 per cent in 2020.

The UK was the third largest LNG importer in Europe in 2021. Qatar was the largest import source to the UK, accounting for 39 per cent of LNG imports, with a further quarter of imports coming from the USA. Increased Asian demand also led the UK to source cargoes from further afield, for example Peru.

Introduction

This article provides analysis of UK trends in trade of Liquefied Natural Gas (LNG) (1), within the context of global markets (2).

Over the past few decades, LNG has become an increasingly popular method of moving natural gas to market. LNG is natural gas which has been cooled to approximately -160°C , changing its state from gas to liquid. This enables transportation of gas by ship, as the volume is significantly reduced compared to the gaseous state. Therefore, it provides an alternative means of transportation where pipeline infrastructure does not already exist or is not viable. Once at its destination, LNG is regasified and used in the same way as natural gas which has not been liquefied.

The LNG market is one of the fastest growing commodity markets globally, partly due to a depletion of easily accessible natural gas reserves. The increased importance of LNG for global gas supply is reflected in continuing investment in liquefaction infrastructure.

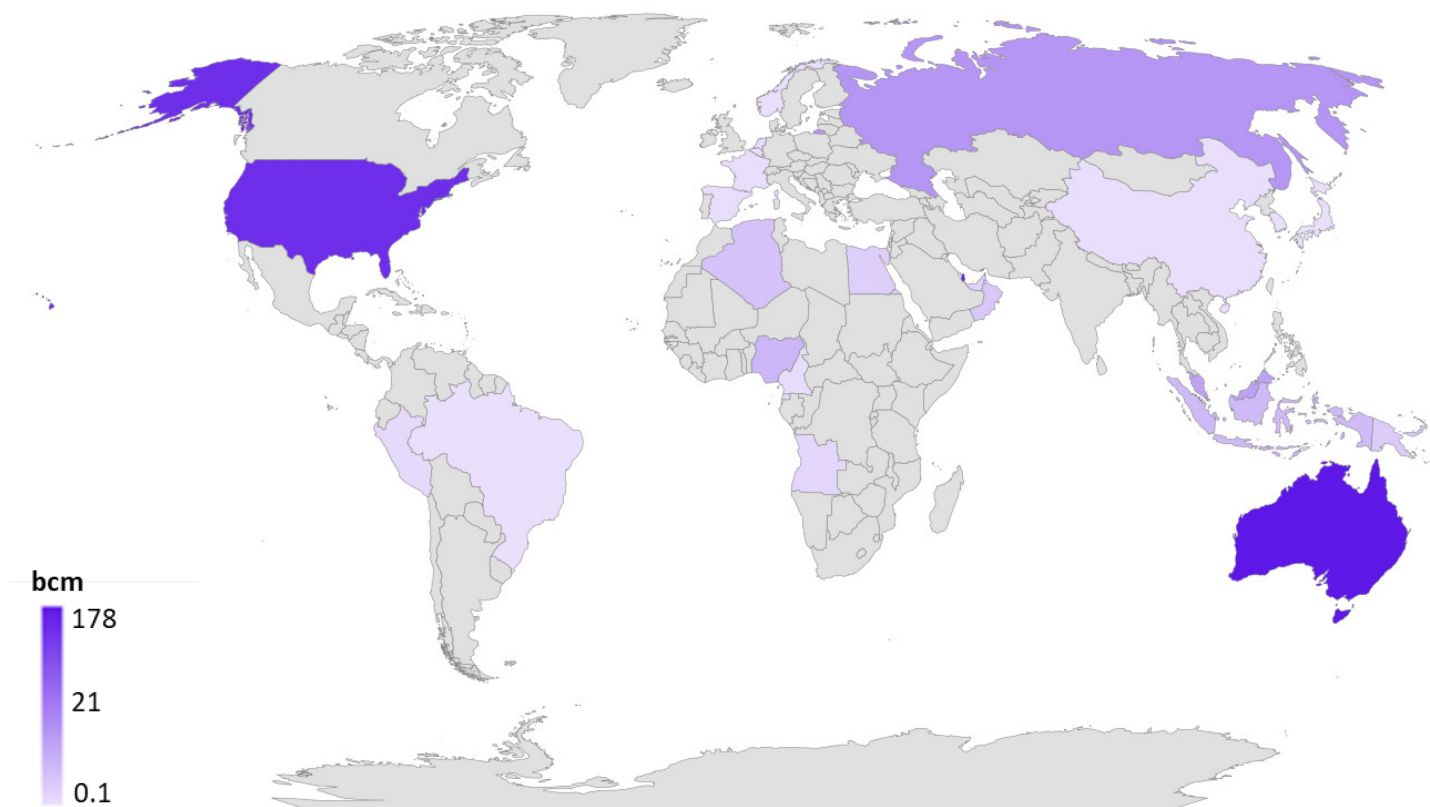
(1) UK and European data sourced from the International Energy Agency (IEA) and [Energy Trends](#).

(2) Global data sourced from the Independent Commodity Intelligence Services (ICIS)

The UK has imported LNG commercially since 2005, supporting a secure and diverse gas supply portfolio following a decline in indigenous production. The UK was the third largest European importer in 2021, behind Spain and France. However, European countries import much less LNG than the major global players, which are predominantly in Asia. Europe has played an important role in global LNG markets by holding significant storage capacity, which can balance markets during periods of low price or demand.

Global LNG trade

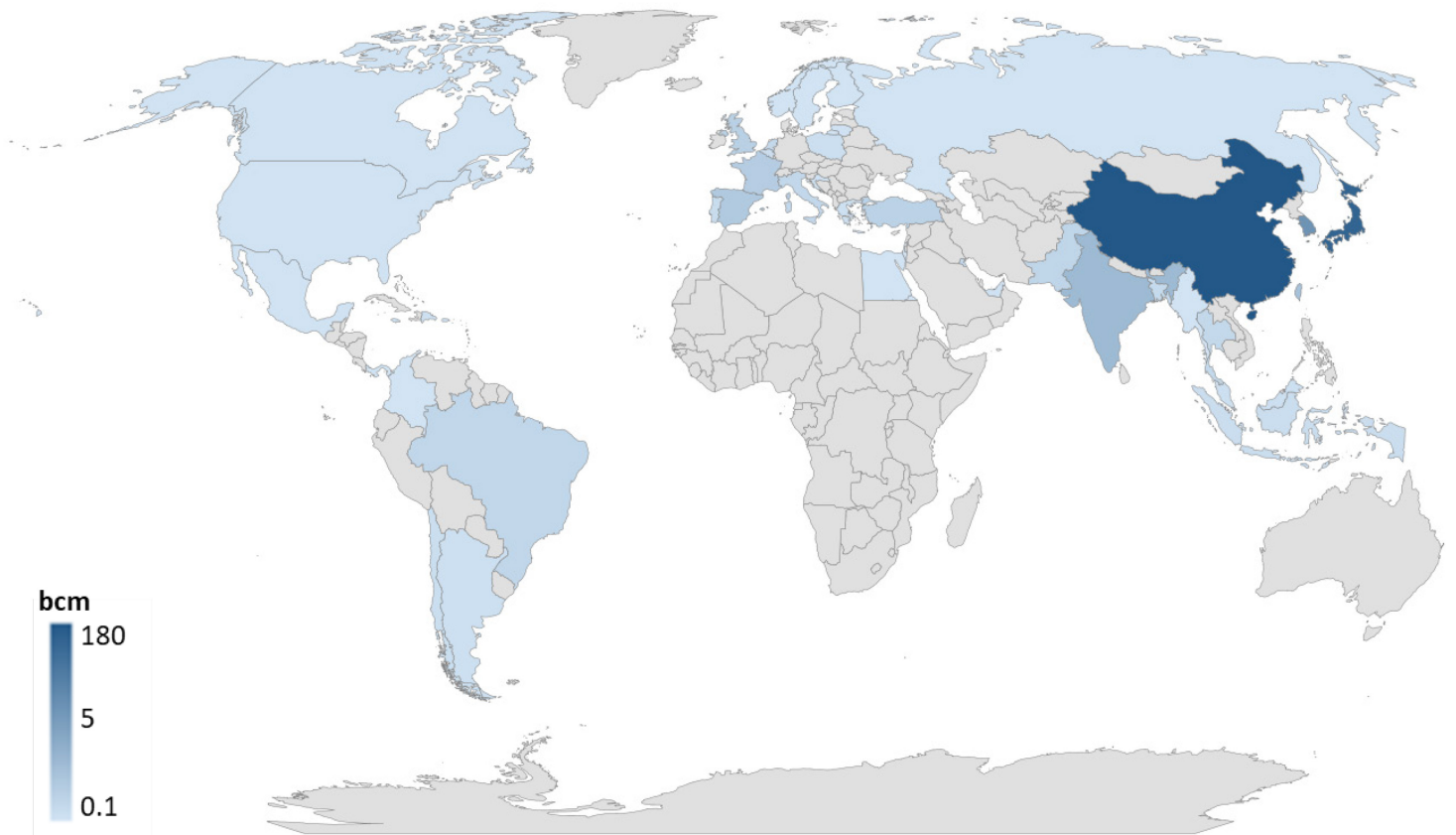
Map 1: Global exporters of LNG by volume, 2021



Map 1 shows global exporters of LNG. In 2021, Australia, Qatar and the USA were the largest exporters of LNG. Global LNG exports increased in 2021, primarily driven by a rapid expansion in supply from the USA. US LNG exports hit a record high, up close to 50 per cent on 2020, due to continuing expansion in liquefaction capacity. This trend is expected to continue, with the US projected to be the world's largest LNG exporter in 2022. Other major exporters are those with large natural gas reserves, including Russia, Malaysia, and Nigeria.

Europe is not a major exporter of LNG; accounting for just 0.6 per cent of global exports in 2021. The UK does not have gas liquification capacity but has historically re-exported imported LNG – this is called reload. Whilst LNG can be traded flexibly outside of existing pipeline supply routes, factors such as shipping costs and boil-off mean that proximity to the market plays some role in trade. A good example of this is Australia, which supplied 36 per cent of Japanese imports in 2021, whereas the UK has only ever received one cargo from Australia.

Map 2: Global importers of LNG by volume, 2021



Map 2 shows global importers of LNG in 2021. Asia remained the largest market; the top five global importers were China, Japan, South Korea, India and Taiwan. Asian LNG imports increased on 2020, largely due to increased demand for heating during a notably cold winter. China overtook Japan as the largest importer of LNG which reflects recent policy changes in China that encourage the use of gas rather than coal in key sectors. Outside of the top five importers, there are several emerging markets in Asia including Pakistan, Thailand, Kuwait and Singapore, who are looking to LNG as a stable source of supply as their economies grow.

Chart 1: Top five Asian and top five European (including Turkey) importers, by import volume in 2021

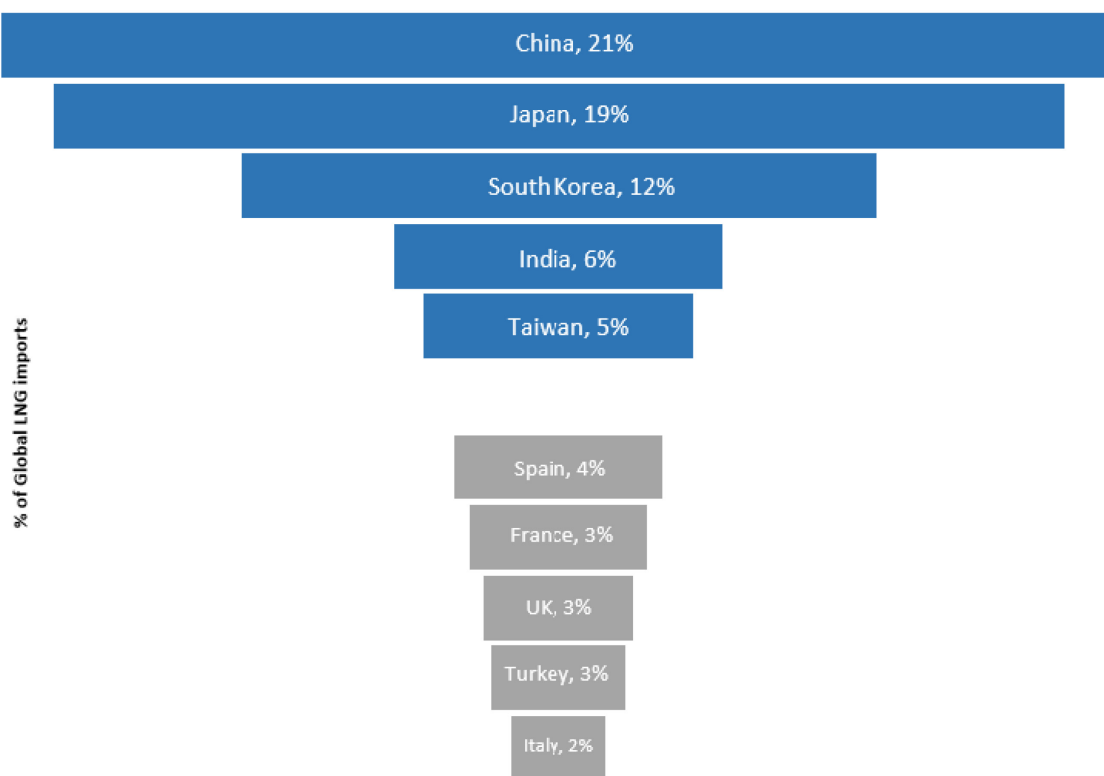


Chart 1 shows the top five Asian and European importers of LNG in 2021. As more cargoes were directed to Asia, imports to Europe fell compared with 2020. The UK was the third largest European importer of LNG, following Spain and France, however, demand in Europe is substantially lower than in Asia. In 2021, the top five European importers imported less than a quarter of that imported by the top five Asian importers.

UK Gas overview

Chart 2: Summary of UK Natural Gas supply and demand, 1993 to 2021

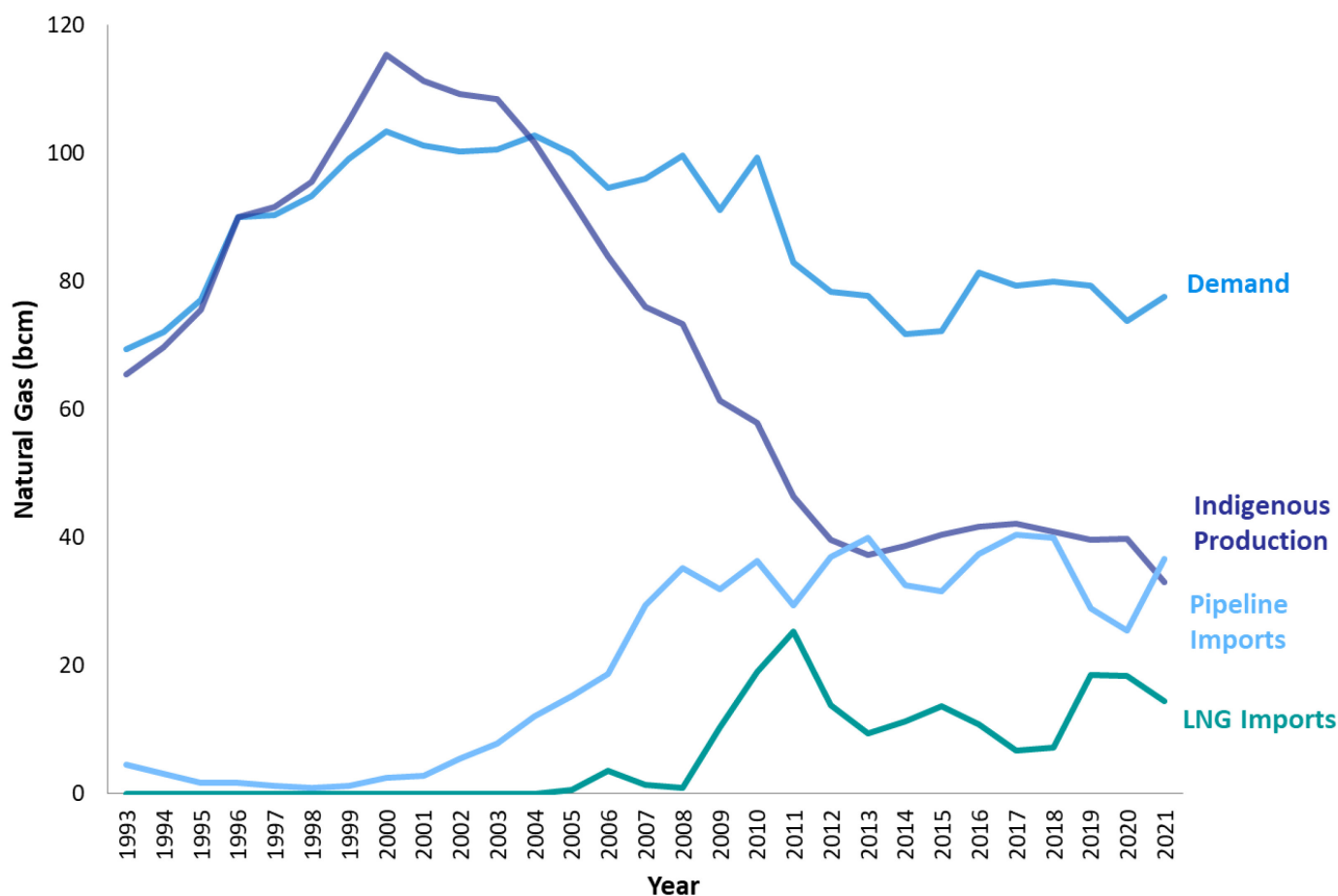


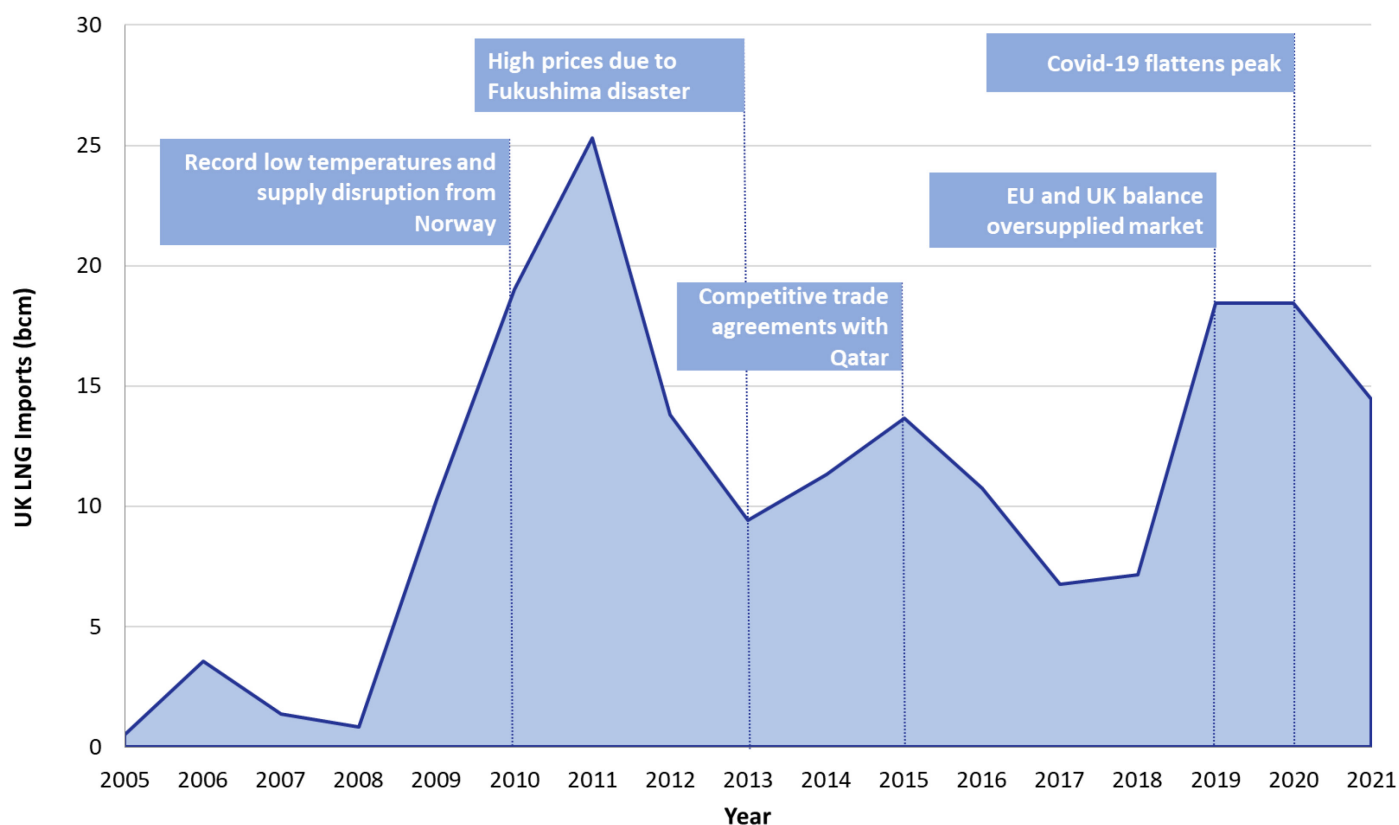
Chart 2 shows components of UK gas supply and demand from 1993 to 2021. The UK produces natural gas from the UK Continental Shelf (UKCS), which is then transported inland via pipeline. Indigenous production exceeded demand between 1997 and 2003 when the UK was a net exporter of gas. Following this, indigenous production declined and subsequently stabilised in 2013, at around a third of the peak. Since 2004, demand has also declined but at a slower rate than production. This means the UK must import natural gas to meet demand.

As indigenous production has declined, imports have increased to meet demand. The UK began importing LNG for commercial use in 2005. Imports of LNG were minimal until 2008, when they increased rapidly before peaking in 2011. Since then, LNG imports have fluctuated. Historically, natural gas imports by pipeline and of LNG have been negatively correlated, meaning that as pipeline imports fall, imports of LNG increase, and vice versa. The UK continues to export some natural gas by pipeline, this tends to be seasonal.

In 2021, indigenous production hit a record low, down 17 per cent in comparison with 2020. This was largely the result of an extensive summer maintenance schedule, which saw shutdowns at several major terminals. Demand increased by 5 per cent compared with 2020 lows, when extensive restrictions to curb the Covid-19 pandemic, alongside strong performance from renewable electricity generation, suppressed gas consumption.

UK LNG Imports

Chart 3: UK LNG imports, 2005 to 2021



2010 to 2011

Chart 3 shows that UK imports of LNG increased rapidly from 2008, peaking in 2011 at 25.3 bcm. In 2011, LNG accounted for 46 per cent of natural gas imports and 31 per cent of demand. This peak was the result of record low temperatures and disruption to pipeline supply due to industrial action in Norway.

2013

After the 2011 peak, LNG price increases resulted in a rapid decline in imports until 2013. These price increases were associated with the Tōhoku earthquake and tsunami in 2011 which caused the Fukushima disaster. In Asia, LNG was used as an emergency fuel to meet demand, as nuclear capacity was reduced following safety concerns. This led to the creation of an LNG spot market, and subsequent changes to the global market structure.

2014 to 2015

Following this, changes to UK LNG imports have been heavily influenced by markets. The 2014/15 bump in imports is linked to supply and purchase agreements (SPAs) with Qatar. These contractual agreements can be mutually beneficial. For example, Qatar Petroleum invested in UK LNG infrastructure, including the South Hook LNG terminal, which in turn agreed to import Qatari LNG.

2019

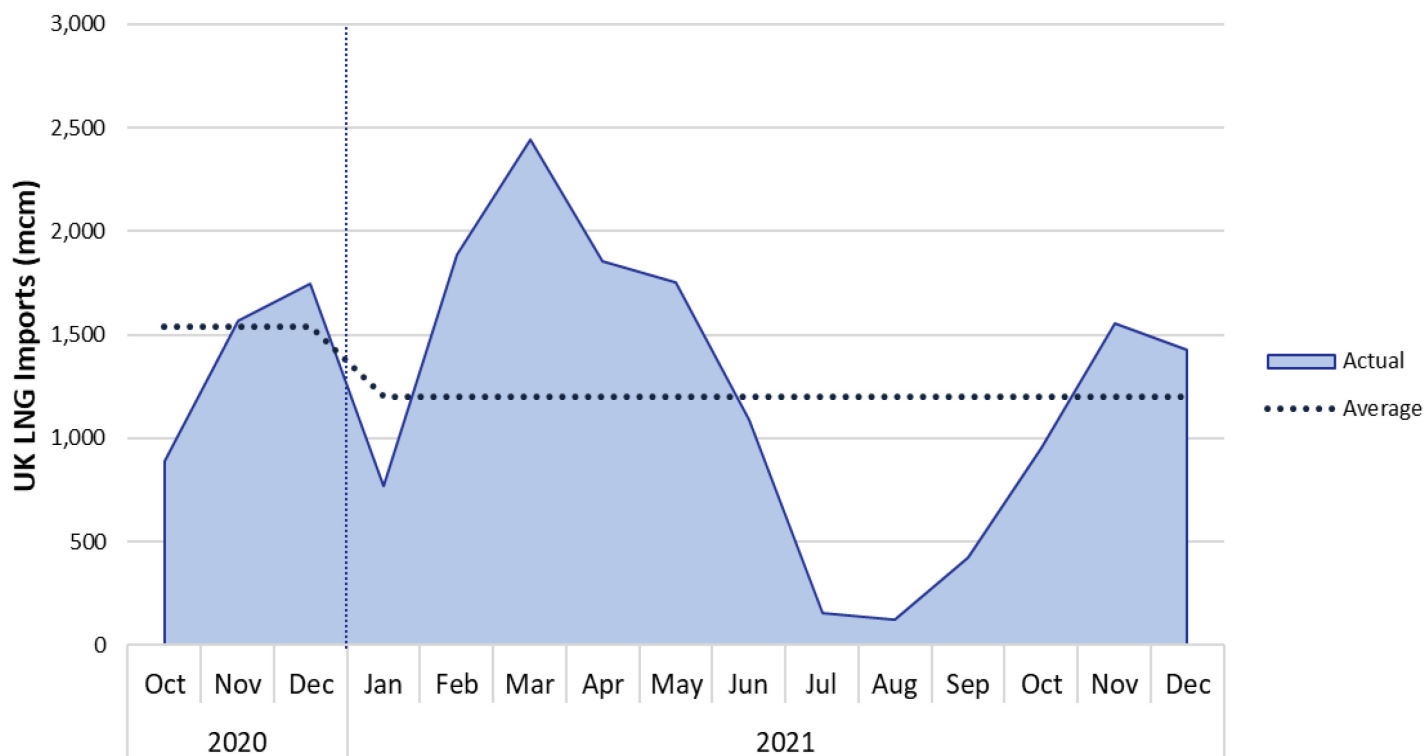
In 2019, LNG imports peaked again at 18.5 bcm - just under three quarters of the 2011 peak. The UK played a key role in the European 'LNG sink', which saw steep increases in LNG imports across Europe to balance global LNG (Chart 4). This boom in imports was the result of an oversupplied market. Warm weather in Asia reduced demand whilst new projects in Qatar, the USA and Russia increased supply. LNG spot price reached record lows and Europe played the role of balancing the market.

2020 to 2021

Moving into 2020, lockdowns imposed to curb the spread of the Covid-19 pandemic reduced demand for natural gas, particularly in key Asian markets. This led to a decline in LNG prices which buyers in Europe took

advantage of, sustaining the 2019 peak. In 2021, the UK imported 14.4 bcm of LNG, accounting for 28 per cent of natural gas imports and 17 per cent of the gas supplied to the UK through production and imports. This represented a fall in LNG imports in comparison with 2020. Chart 4 shows 2021 UK LNG imports by month, uncovering the seasonal variations within the annual figure.

Chart 4: UK LNG monthly imports, October 2020 to December 2021



LNG imports to the UK remained largely seasonal throughout 2021. This is characterised by high demand in winter months due to increased gas consumption for heating, followed by month-on-month reductions in demand through spring and summer, and an increase in demand through autumn.

There was a sharp drop in UK LNG imports in January 2021, following increased Asian demand due to cold weather. This led to low global LNG availability and an unprecedented spike in spot LNG prices, reducing cargoes to the UK.

Furthermore, the drop in import volumes throughout the summer months of 2021 was particularly pronounced in comparison with recent years. This again reflected global market conditions, as demand accelerated faster than expected following the lifting of pandemic restrictions, and gas supply experienced constraints, leading to record high gas prices.

UK LNG Import sources

Chart 5: UK import sources as a percentage of total LNG imports, 2016 to 2021

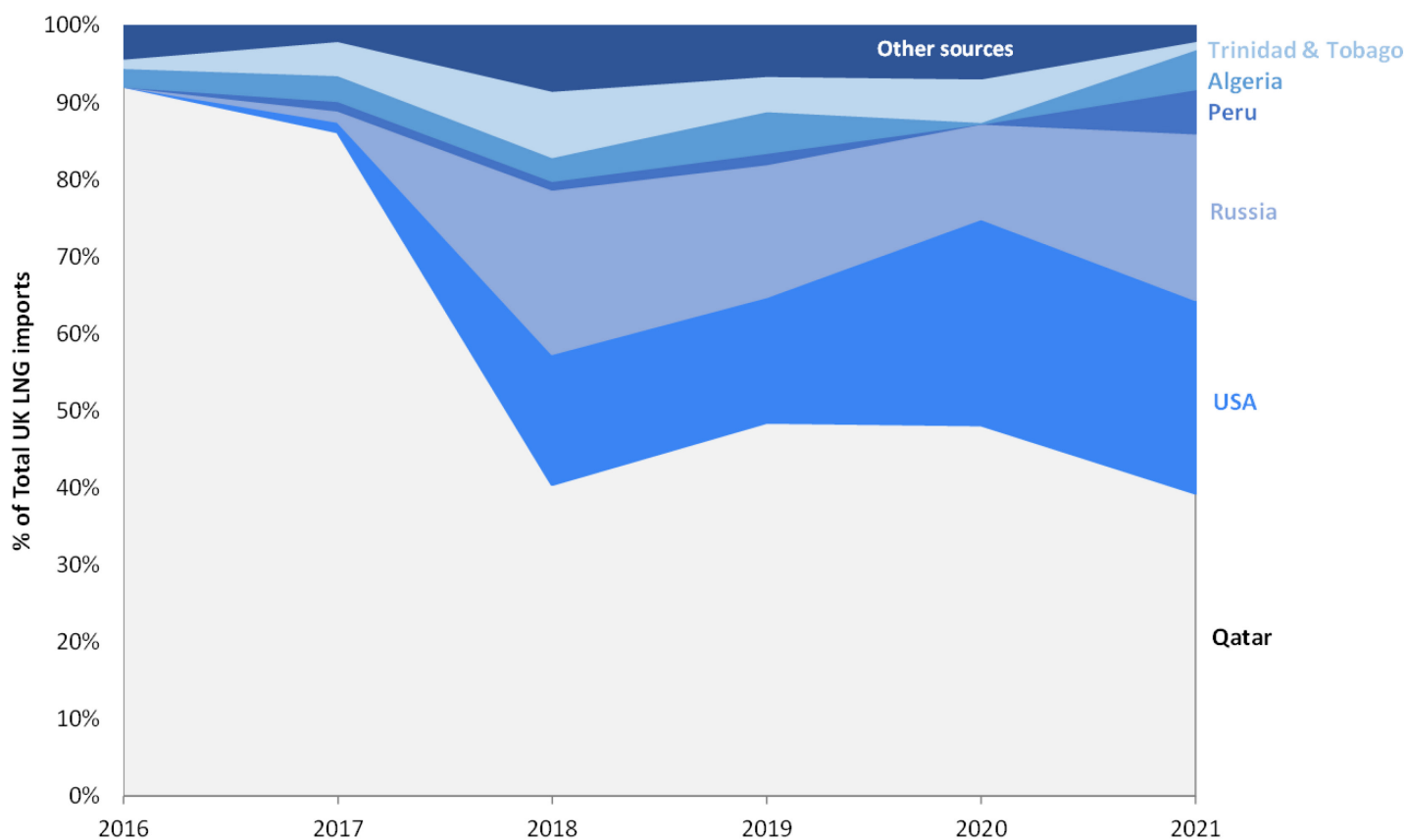


Chart 5 shows UK import sources as a percentage of total LNG imports. In 2021, Qatar was the largest import source to the UK, providing 39 per cent of UK LNG imports. This maintains Qatar's position as the dominant import source since 2009, reflecting a strong trading relationship between the two countries.

The Qatari share has declined since the 2012 peak when imports from Qatar reached 98 per cent of total LNG imports. This is in line with increased global liquefaction capacity and the end of several major Qatari contracts. This has allowed for a diversification of import sources, also shown in Chart 5. For example, in 2005 the UK only imported LNG from Algeria and Trinidad and Tobago. In 2021, the number of LNG import sources was nine, slightly lower than the peak of twelve in 2019.

Since 2018, imports from the USA and Russia have increased considerably. By 2021, US imports reached 25 percent of LNG imports and 4 percent of supply, and Russian imports reached 22 percent of LNG imports and 4 per cent of supply. However, following Russia's invasion of Ukraine the UK will end all dependency on Russian coal and oil by the end of 2022, and end imports of gas as soon as possible thereafter. Recent data shows a notable decline in Russian LNG volumes in recent months (see Energy Trends Table 4.4 for further information).

In 2021, increased demand in Asian markets led European countries to secure LNG cargoes from a more diverse range of sources, including those further afield. For example, the UK imported 6 per cent of total LNG imports from Peru, greater than all previous years combined.

Summary

The UK gas supply is comprised of natural gas from indigenous production and imports. Some of these imports arrive as Liquefied Natural Gas (LNG). The UK began importing LNG in 2005, reaching a peak in 2011 when it accounted for just over a quarter of total gas supplied to the UK through production and imports. Since 2011, LNG imports have been largely linked to economic factors. Asia is a major consumer of LNG hence Asian markets tend to influence European including UK imports.

In 2021, Asia remained the largest global LNG market. China increased their reliance on LNG for heating, and overtook Japan as the largest global importer of LNG. Furthermore, a cold winter in Asia increased the region's demand, consequently reducing availability elsewhere.

In the UK, LNG accounted for 17 per cent of supply (production + imports) in 2021, down from 22 per cent in 2020. Qatar continued to be the largest import source, accounting for 39 per cent of total LNG imports. Increased Asian demand for LNG led the UK to source cargoes from further afield, for example Peru.

Global LNG exports grew in 2021, with the major exporters being Australia, Qatar and the USA. US LNG exports hit a record high, increasing by almost 50 per cent on 2020 due to continuing expansion in liquefaction capacity.

Major commentators are projecting a decline in global natural gas demand in 2022, due to even higher gas prices following Russia's invasion of Ukraine in March. However, the International Energy Agency (IEA) are projecting global LNG trade will reconfigure, with Europe overtaking Asia as the major market for LNG in 2022.



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Electricity interconnectors in the UK since 2010

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Scope: UK Electricity trade statistics

The Digest of UK Energy Statistics (DUKES) and UK Energy Trends present statistics on energy supply, demand and trade in the UK. Statistics on electricity trade are published in [DUKES table 5.13](#) and [Energy Trends table 5.6](#). These publications consider electricity imports and exports at UK borders and define electricity supplied between the four UK regions as transfers.

The UK is covered by two electricity markets: Great Britain (England, Scotland and Wales) and the Single Electricity Market (Northern Ireland + Republic of Ireland). Two interconnectors link the markets: the Scotland-Northern Ireland Moyle interconnector and the Wales-ROI East-West interconnector.

This article focuses on international trade so excludes internal UK trade over the Moyle interconnector.

Key headlines

Between 2010 and 2021, electricity imports to the UK increased almost ten-fold to 28.7 TWh, while electricity exports remained broadly level with exports of 4.2 TWh in 2021. Since 2010, electricity imports' share of the UK's electricity supply has increased, up from 2.0 per cent in 2010 to 9.1 per cent in 2021.

As of March 2022, the UK has seven international interconnectors with a total capacity of 7,440 MW, an almost three-fold increase in capacity since 2010. In the 2020 [Energy White Paper](#), the Government set an ambition of 18 GW of interconnector capacity by 2030, with new interconnectors set to connect the UK to Germany and Denmark.

The UK's electricity exports follow seasonal trends, with higher exports in Quarter 4 than in the rest of the year due to a greater availability of renewable electricity to export. There are no clear seasonal patterns for imports or net imports.

During 2021, most of the UK's electricity imports came from France (52.7 per cent), with the remainder from Belgium (24.3 per cent), the Netherlands (15.1 per cent), Norway (4.8 per cent) and the Republic of Ireland (3.0 per cent). The majority of the UK's exports were to the Republic of Ireland (58.9 per cent), followed by France (35.5 per cent), Belgium (3.3 per cent), and the Netherlands (1.9 per cent).

Utilisation rates show that on average (excluding NSL), around 60 per cent of available interconnector capacity was used during 2021, with considerably higher utilisation for the interconnectors with France, Belgium and the Netherlands and lower utilisation for the interconnectors with the Republic of Ireland.

Background

Electricity interconnectors are high-voltage cables that enable the trade of electricity between connecting countries. In the UK, electricity interconnectors are an increasingly important component of the electricity system, with interconnectors helping to balance the grid by importing electricity at times of high demand or lower domestic generation and exporting surplus electricity when demand is lower. This also helps to balance periods of high or low generation from intermittent renewables sources which are particularly dependent on weather conditions, such as wind and solar generation.

The UK's first electricity interconnector to the continent commenced operations in 1961, with a 160 MW high-voltage direct current (HVDC) cable connecting the UK and France until 1986 when it was replaced by the current IFA interconnector. Since 1970, the UK and the Republic of Ireland have historically traded electricity via Northern Ireland through the North-South interconnector, though trade ceased in 1975 before being reinstated at 540 MW in 1995. As of March 2022, the UK has seven international interconnectors with a total capacity of 7,440 MW, connecting the UK to France, the Republic of Ireland, Belgium, Norway, and the Netherlands.

In line with the UK's net zero targets, the UK Government's ambition is to increase Great Britain's interconnector capacity to at least 18 GW by 2030 ([Energy White Paper, 2020](#)). Plans include new interconnectors linking the UK to Denmark and Germany.

UK Electricity interconnector capacity

Between 1986 and 2010, the UK had two operational interconnectors: the IFA interconnector (2,000 MW) connecting England to France and the North-South interconnector (540 MW) connecting Northern Ireland to the Republic of Ireland. Additionally, from 2001 the Moyle interconnector (500 MW) has connected the Single Electricity Market (SEM) of the island of Ireland to Great Britain (GB). The Moyle interconnector links Northern Ireland and Scotland, transferring electricity within the UK.

Since 2010, the UK's interconnector capacity has nearly trebled from 2,540 MW in 2010, to 7,440 MW in 2021. In 2011, the 1,000 MW BritNed interconnector became operational with 160 miles of HVDC cables connecting the Isle of Grain in England to the Maasvlakte in the Netherlands. The second interconnector between the UK and Republic of Ireland opened in October 2012, with the 500 MW East-West connecting Wales to the Republic of Ireland. In 2019 the UK's electricity interconnector capacity increased further when the GB-Belgium interconnector (Nemo Link) opened. In 2021, two new interconnectors became operational, with the second GB-France interconnector (IFA 2) opening in January and the GB-Norway interconnector North Sea Link (NSL) commencing operation in October.

These new interconnectors increased the UK's diversification between its connecting countries. In 2010, 78.7 per cent of the UK's total interconnector capacity was between GB and France with the remainder connecting to the Republic of Ireland. By the end of 2021, there were operational interconnectors to five different countries and France's interconnector capacity share had dropped to 40.3 per cent, despite increased capacity from the IFA 2 interconnector. The NSL interconnector with Norway commenced operations in October 2021, marking the first time that the UK has traded electricity with a non-EU member state.

Chart 1: UK electricity interconnector capacity, 2010-2021

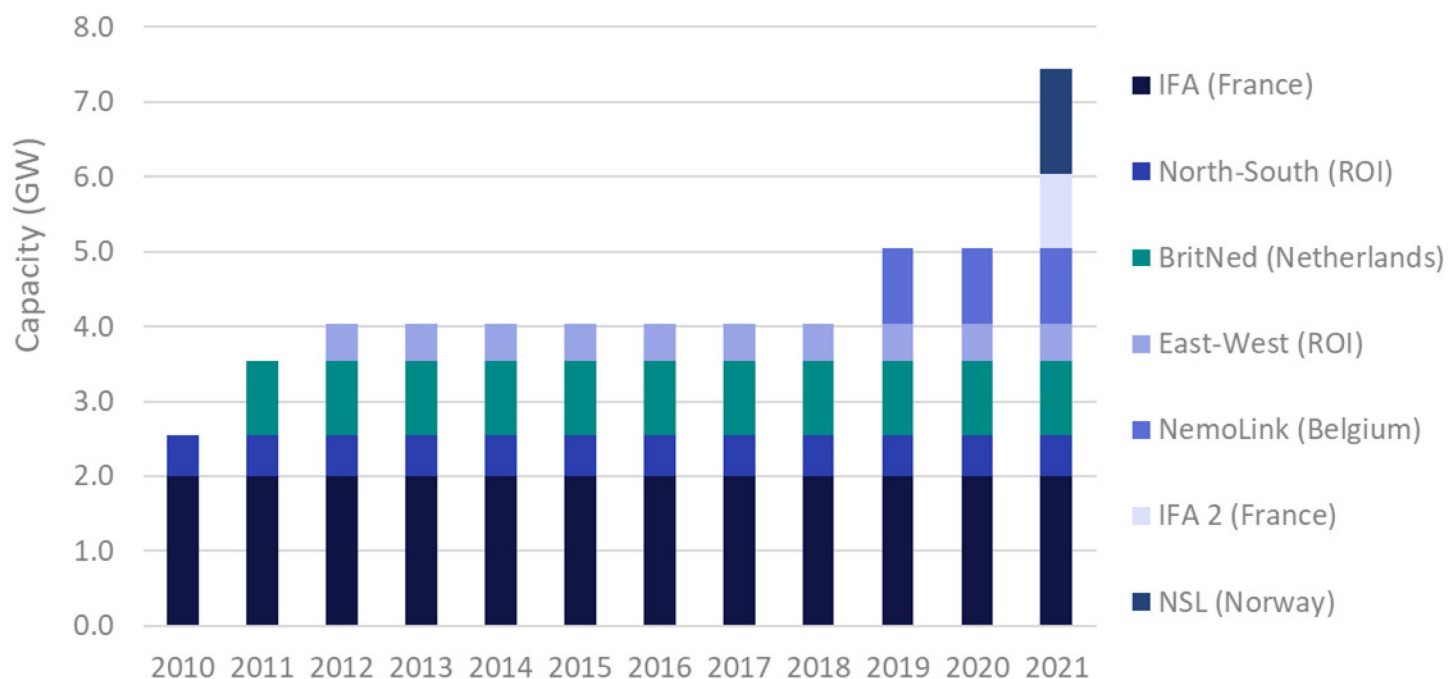


Table 1: UK electricity interconnectors

Interconnector Name	Connecting Country	Capacity (MW)	Year Commissioned
IFA	France	2,000	1986
North-South	Republic of Ireland	540	1995 [Note 1]
Moyle	within the UK	500	2001 [Note 2]
BritNed	Netherlands	1,000	2011
East-West	Republic of Ireland	500	2012
Nemo Link	Belgium	1,000	2019
IFA 2	France	1,000	2021
North Sea Link (NSL)	Norway	1,400	2021

[Note 1] Trade through the North-South interconnector originally started in 1970, though the interconnector was shut in 1975 due to damage but was reopened in 1995.

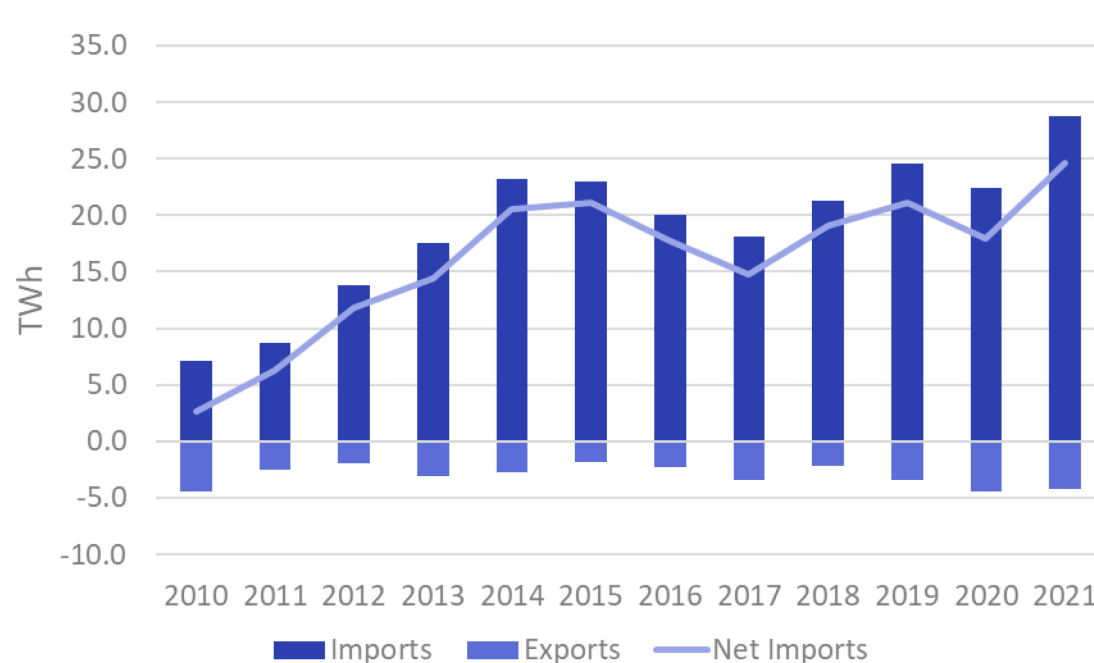
[Note 2] The Moyle interconnector links the island of Ireland's Single Electricity Market (SEM) and the GB market. It connects Northern Ireland to Scotland and is not included in UK import/export statistics in this report as it operates within the UK.

UK Electricity imports and exports

Between 2010 and 2021 net electricity imports (imports minus exports) to the UK increased substantially, from 2.7 TWh in 2010 to 24.6 TWh in 2021. In this time electricity imports rose from 7.1 TWh, to 28.7 TWh, while electricity exports stayed broadly level at an average of 3.0 TWh.

Notably, net electricity imports fell by almost 16 per cent between 2015 and 2016, before falling a further 17 per cent between 2016 and 2017. The reduction in net imports was primarily caused by lower operational capacity at the IFA interconnector, with chart three showing the impact of long-term outages on the IFA interconnector between October 2016 and February 2017 due to damage caused by a ship's anchor. This was compounded by nuclear outages in France from late 2016 to early 2017 and then again in late 2017 which reduced the amount of electricity available for UK imports and increased the demand for electricity exports to France.

Chart 2: Annual UK electricity imports and exports since 2010

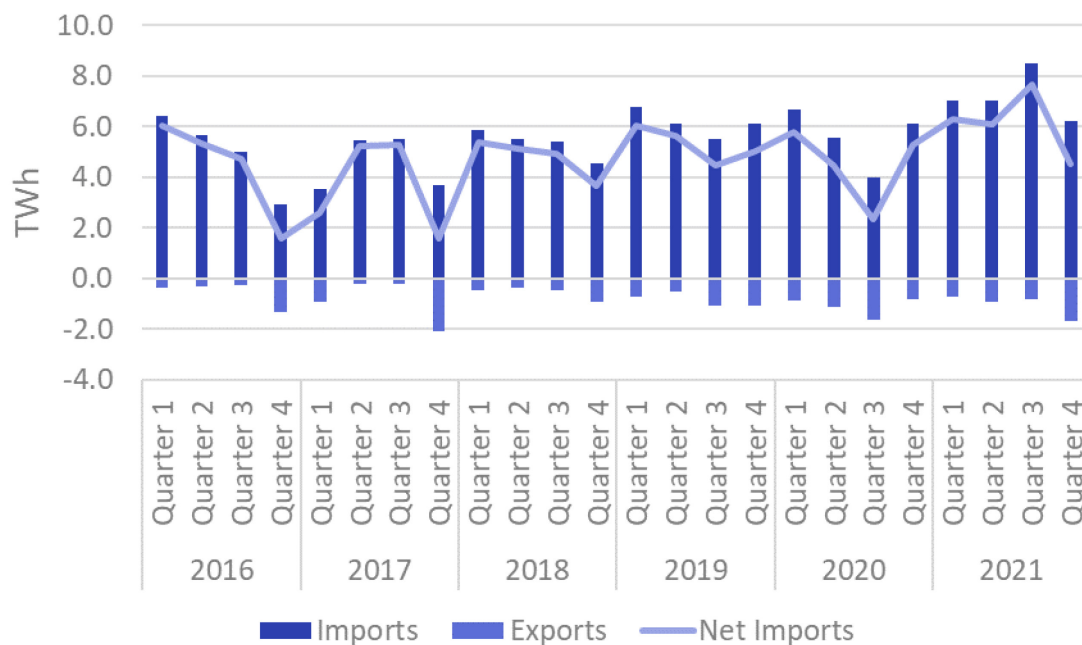


Between 2019 and 2020 net electricity imports to the UK fell by 15 per cent, with imports down 9 per cent and exports up 32 per cent. 2020 was a record-breaking year for UK renewables, with favourable weather

conditions across the year fuelling record generation by the UK's wind, solar and hydro assets. This meant that fewer imports were needed to meet demand and increased opportunity for exports.

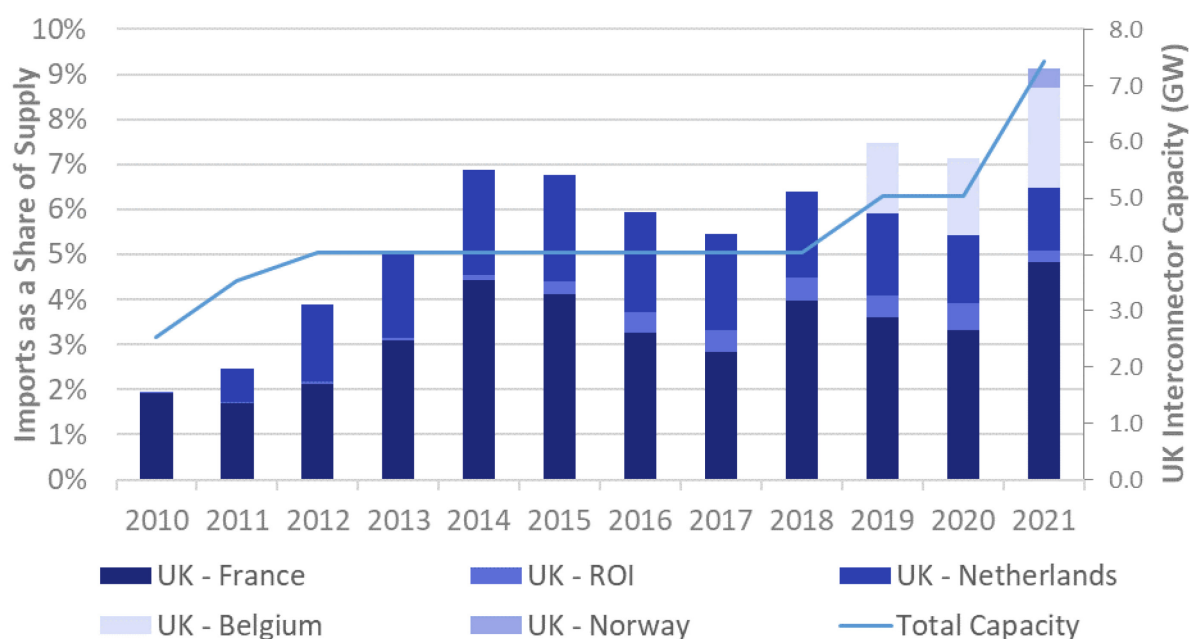
Net electricity imports rose to record levels in 2021, with imports rising to 28.7 TWh and exports falling to 4.2 TWh. This is the opposite of what occurred between 2019 and 2020, both in terms of the cause and the result. Weather conditions during 2021 were much less favourable for renewables, with lower-than-average wind speeds and rainfall suppressing generation, meaning that imports were increasingly used to meet demand. This was exacerbated during Quarter 3, with record gas prices increasing the cost of gas generation and increasing import demand. After record electricity imports of 8.5 TWh during Quarter 3, imports fell to 6.2 TWh during Quarter 4, with less electricity available to import from France due to French nuclear outages and reduced IFA interconnector capacity following a fire.

Chart 3: Quarterly UK Electricity imports and exports since 2016



UK electricity exports broadly follow seasonal trends, with exports up during Quarter 4 compared to the rest of the year. This correlates with seasonal weather patterns, when weather conditions are typically most favourable for wind generation, increasing opportunity for exports. There is no clear seasonal trend for imports or net imports.

Chart 4: Annual electricity imports as a share of total electricity supply, 2010-2021



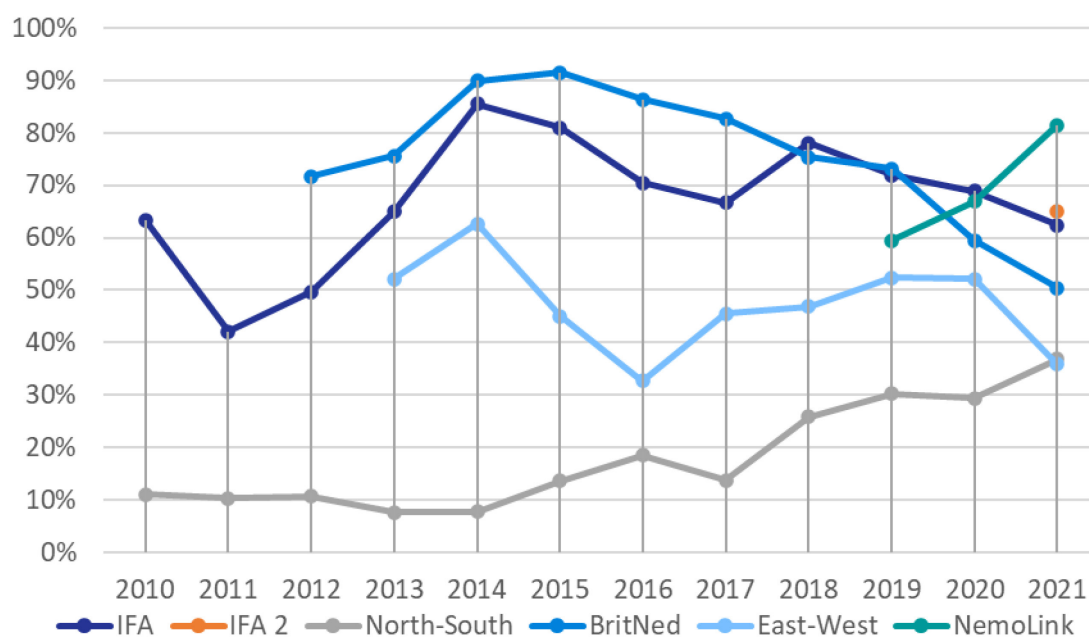
Since 2010, electricity imports' share of UK electricity supply rose. Electricity imports as a share of supply increased from a low baseline of 2.0 per cent in 2010 to 6.9 per cent in 2014, before gradually falling to 5.4 per cent in 2017, then rising to a record 9.1 per cent in 2021. This trend of rising imports as a share of supply is broadly in line with the increase in interconnector capacity, with additional capacity being used as it comes online.

In and before 2010, almost all the UK's electricity imports came from France, with the small remainder imported from the Republic of Ireland to Northern Ireland. In 2021 the share of imports from France dropped to 52.7 per cent, a decrease of 45 percentage points compared with 2010. This reflects the growth in interconnector capacity to other countries. The remainder of the UK's imports in 2021 came from Belgium (24.3 per cent), the Netherlands (15.1 per cent), Norway (4.8 per cent) and the Republic of Ireland (3.0 per cent). In contrast to imports, the majority of outward UK electricity trade is to the Republic of Ireland (58.9 per cent), followed by France (35.5 per cent), Belgium (3.3 per cent), and the Netherlands (1.9 per cent). The UK is typically a net exporter to the Republic of Ireland, but a net importer from France, Belgium and the Netherlands. In addition, the new interconnector with Norway has been a net importer for the first three months of its operation. With growth in renewable electricity generation, particularly offshore wind, the UK is expected to become a net electricity exporter.

UK Electricity interconnector utilisation

Utilisation compares an interconnector's maximum potential imports and exports with its actual usage. The potential is measured by multiplying capacity by the number of hours it has operated for, which is then compared with the total amount of electricity imported or exported during this time. During 2021, the UK's electricity interconnectors operated at an average utilisation of 60 per cent (excluding data for the NSL interconnector that opened mid-year), which is broadly level with the average interconnector utilisation between 2010 and 2020. Since its first year of full operation in 2012, the BritNed interconnector with the Netherlands has typically operated at the highest utilisation of the UK's interconnectors, averaging 76 per cent between 2012 and 2021. However, BritNed's utilisation has dropped gradually in recent years, from a high of 91 per cent in 2015, to 73 per cent in 2019 and then to 50 per cent in 2021. The IFA interconnector with France typically has the second highest utilisation with an average utilisation of 67 per cent between 2010 and 2021. The UK-ROI interconnectors normally operate at lower utilisations than those to continental Europe, with the North-South interconnector operating at an average utilisation of 18 per cent between 2010 and 2021 and the East-West interconnector operating at an average utilisation of 47 per cent between 2013 and 2021. Since starting operations in 2019, the Nemo Link interconnector with Belgium has risen to a utilisation of 81 per cent in 2021, the highest of all the UK interconnectors.

Chart 5: Annual interconnector utilisation, 2010-2021



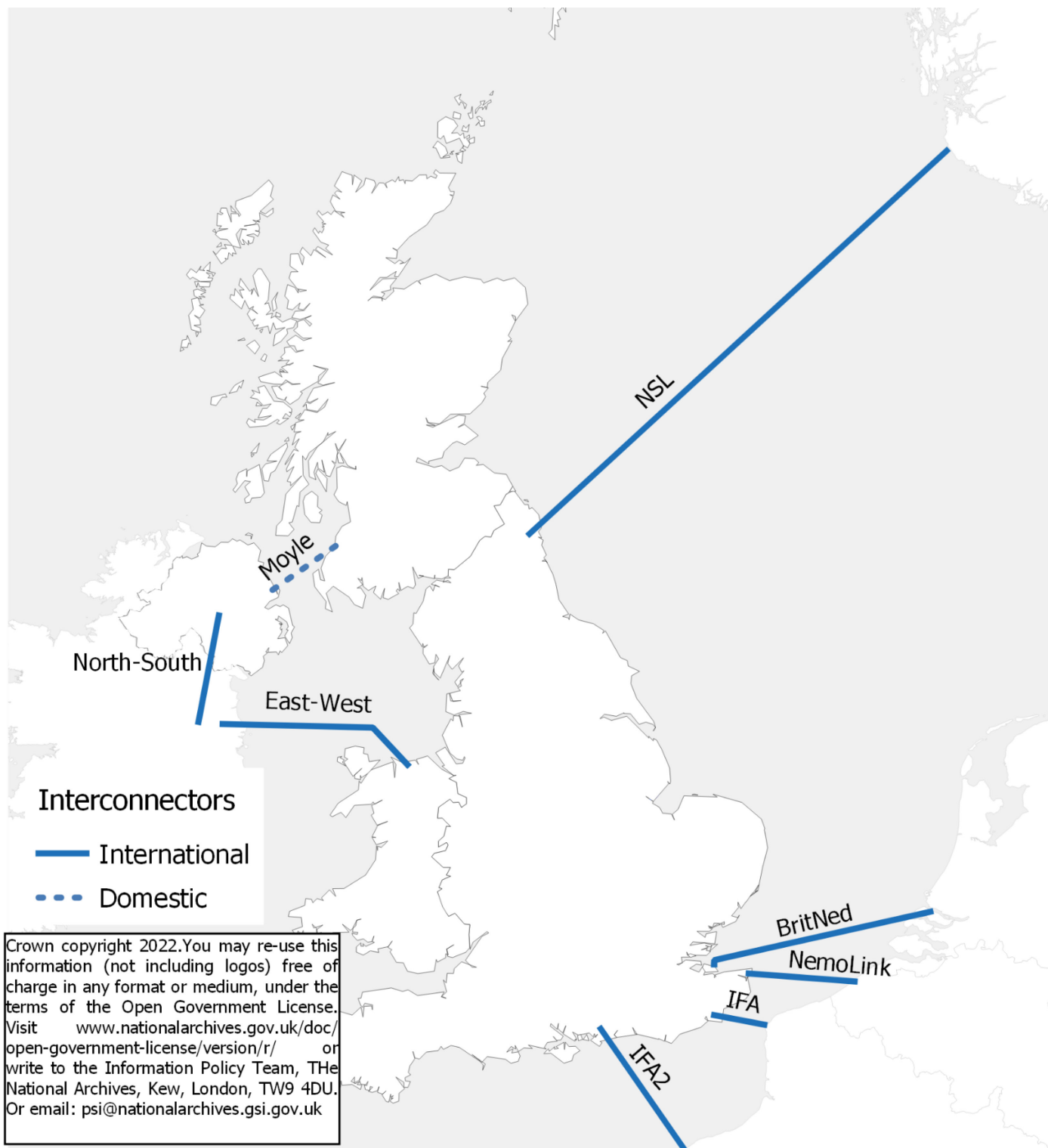
Appendix 1: Interconnector availability

This table collates interconnector asset availability for the interconnectors owned by National Grid and reported in its annual statements. Other interconnectors are outside the scope of the C17 license condition and do not report availability and reliability.

Year	IFA	BritNed	NemoLink
2011	0.598363014	0.671000822	[x]
2012	0.609502732	0.978749454	[x]
2013	0.758839726	0.968475616	[x]
2014	0.913560548	0.960838630	[x]
2015	0.899465479	0.973341370	[x]
2016	0.840430601	0.981328142	[x]
2017	0.919210959	0.979155616	[x]
2018	0.938287671	0.980840274	[x]
2019	0.916775616	0.985394521	0.961602192
2020	0.962880328	0.913892896	0.991674863
Lifetime Average (from 2011 to 2020)	0.835705831	0.963043868	0.976659097

Source: [National Grid ESO, [Transmission System Performance Reports](#)]

Appendix 2: UK Electricity interconnector map (correct as of June 2022)



[Note 1] – Interconnectors on this map are a representation only. Cables do not follow these exact paths.

[Note 2] – Moyle is an intra-UK interconnector and trades electricity between the National Grid in Scotland and the Single Electricity Market in Northern Ireland. This article focuses on international trade so excludes internal UK trade over the Moyle interconnector.

[Note 3] – The North-South interconnector is not a traditional interconnector as it is situated within the Single Electricity Market of the island of Ireland, but is treated as an interconnector for this article as it focuses on international trade.

Data for this article

The data used to produce this article can be found in the Digest of UK Energy Statistics (DUKES) chapter 5 and Energy Trends chapter 5 (see references below).

References

Digest of UK Energy Statistics (DUKES) – Electricity (Chapter 5):

<https://www.gov.uk/government/statistics/electricity-chapter-5-digest-of-united-kingdom-energy-statistics-dukes>

Energy Trends – Electricity (Chapter 5):

<https://www.gov.uk/government/statistics/electricity-section-5-energy-trends>

Energy Trends – Weather (Chapter 7):

<http://www.gov.uk/government/statistics/energy-trends-section-7-weather>

Energy White Paper: Powering our net zero future

<https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future>



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Energy imports from Russia

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Key headlines

The UK is one of the larger producers of energy in Europe and met 45 per cent of supply through indigenous production in 2021. Imports made up the remaining 55 per cent and, in total, 5.8 per cent of our energy supply¹ was sourced from Russia in 2021.

The data below describe the changes in Russian imports since 2012 and the proportion of supply sourced from Russia in 2021.²

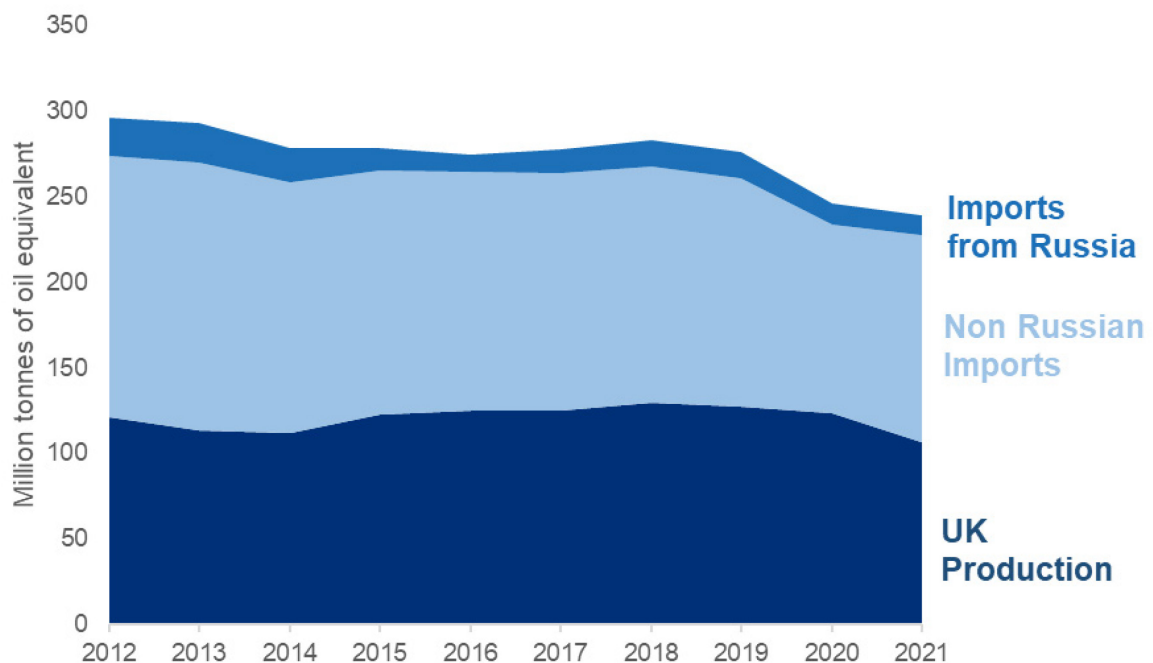
Background

The UK has relatively large indigenous production of oil, gas and primary electricity (including nuclear, wind, solar and hydro) and the contribution of Russian imports is relatively small compared with indigenous production and imports from countries other than Russia.

Russian imports as a share of the UK's energy supply

Chart 1 shows that of the 239 million tonnes of oil equivalent produced or imported into the UK, 14 million tonnes (5.8 per cent) were imported from Russia in 2021. This is up from 5.0 per cent in 2020, but down on 7.6 per cent in 2013.

Chart 1: Russian imports as a share of UK energy supply, 2012 – 2021

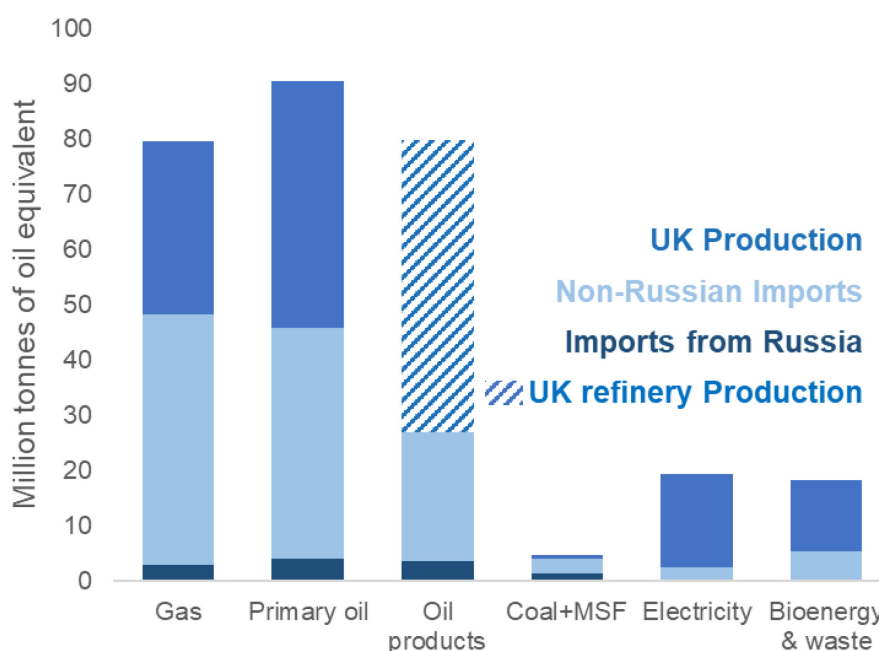


¹ In this article UK supply is defined as domestic production plus imports. It excludes exports and stocks.

² More recent and monthly data on oil imports can be found in table 3.14 of [Energy Trends](#), and more recent data on gas imports in table 4.4 of [Energy Trends](#). Coal data are updated quarterly in table 2.4, also of [Energy Trends](#).

Chart 2 shows that the contribution of imports from Russia by fuel type. While imports from Russia make up a relatively high share of coal supply, coal use in the UK is now much lower than oil or gas and makes up only 2 per cent of the UK supply.

Chart 2: Russian imports as a share of UK energy supply by fuel type, 2021³



Gas

In 2021 3.7 per cent of the UK's supply came from Russia (see Annex A) despite Russia being a large producer of natural gas. All imports from Russia reported by BEIS are shipped to the UK as LNG (Liquefied Natural Gas).

Oil

In 2021, 4.4 per cent of the UK's supply of primary oil came from Russia (see Annex A). The UK is the second largest producer of primary oil in Europe behind Norway. **In 2021, 6.9 per cent of the UK's supply of petroleum products came from Russia** (see Annex A). Within this, nearly 18 per cent of UK diesel supply came from Russia. However, there were no imports of petrol.

The UK imports petroleum products from a diverse range of countries, the UK's supply is more diverse than the OECD average⁴.

Coal

In 2021, 34 per cent of the UK's coal supply came from Russia (see Annex A). The UK imported nearly 2 million tonnes (1.4 million tonnes of oil equivalent) of coal from Russia (including steam coal, coking coal and anthracite). However, coal imports are far lower than they have been in previous years. The total volumes of coal imports have reduced by 90 per cent since 2012 as the UK has moved away from coal as a major source of energy. In particular, the UK has almost phased out its use of coal to generate electricity.

Electricity

The UK has interconnectors with France, Belgium, the Netherlands, Ireland and Norway. There are no interconnectors between the UK and Russia, therefore there are **zero imports** of Russian electricity.

³ Production of oil products is shown differently to the other fuels in Chart 2 as the oil used for production is already counted in the primary oil supply. The volume shown refers to the transfer for primary oils to petroleum products.

⁴ For more information see the special feature article at: <https://www.gov.uk/government/publications/energy-trends-september-2021-special-feature-article-diversity-of-supply-for-oil-and-oil-products-in-oecd-countries-in-2020>

Annex A: Supply and imports from Russia of natural gas, primary oil, oil products and coal in 2021, thousand tonnes of oil equivalent

2021	Natural gas ⁵	Crude Oils and NGLs ⁶	Feedstock	Total primary oil	Petrol	Diesel	Jet fuel	Other products	Total oil products	Coal ⁷
Gross production	31,297	44,737	324	45,061	16,105	13,051	2,025	24,306	55,488	736
Total imports	48,223	41,663	4,022	45,685	2,910	13,454	5,003	5,719	27,087	3,197
<i>of which: Imports from Russia</i>	2,903	3,120	843	3,962	-	4,641	403	628	5,672	1,354
Supply	79,519	86,400	4,346	90,746	19,015	26,505	7,028	30,026	82,574	3,933
% of supply from Russian imports	3.7%	3.6%	19.4%	4.4%	0.0%	17.5%	5.7%	2.1%	6.9%	34.4%

⁵ Gas imports published in Energy Trends table 4.4 at: <https://www.gov.uk/government/statistics/gas-section-4-energy-trends>

⁶ Imports of primary oils and petroleum products published in Energy Trends table 3.14 at: <https://www.gov.uk/government/statistics/oil-and-oil-products-section-3-energy-trends>

⁷ Coal imports published in Energy Trends table 2.4 at: <https://www.gov.uk/government/statistics/solid-fuels-and-derived-gases-section-2-energy-trends>



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