Department for
Business, Energy
& Industrial Strategy

ENERGY TRENDS
JUNE 2020

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- meet identified user needs
- are well explained and readily accessible
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

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Introduction

Energy Trends and Energy Prices are produced by the Department for Business, Energy and Industrial Strategy (BEIS) on a quarterly basis. Both periodicals are published concurrently in June, September, December and March. The June editions cover the first quarter of the current year.

Energy Trends includes information on energy as a whole and by individual fuels. The text and charts provide an analysis of the data in the tables. The tables are mainly in commodity balance format, as used in the annual Digest of UK Energy Statistics. The 2019 edition of the Digest was published on 25 July 2019 and is available on the BEIS section of the GOV.UK website at: www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes

The balance format shows the flow of a commodity from its sources of supply, through to its final use. The articles provide in-depth information on current issues within the energy sector.

The text and tables included in this publication represent a snapshot of the information available at the time of publication. However, the data collection systems operated by BEIS, which produce this information, are in constant operation. New data are continually received and revisions to historic data made. To ensure that those who use the statistics have access to the most up-to-date information, revised data will be made available as soon as possible. The tables are available free of charge from the BEIS section of the GOV.UK website. In addition to quarterly tables, the main monthly tables continue to be updated and are also available on the BEIS section of the GOV.UK website. Both sets of tables can be accessed at:
www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy/about/statistics

Annual data for 2019 included within this edition is on a provisional basis. New data are continually received and revisions to previous data made. Finalised figures for 2019 will be published on the 30 July 2020 in the annual Digest of UK Energy Statistics.

Energy Trends does not contain information on Foreign Trade, Weather (temperature, heating degree days, wind speed, sun hours and rainfall) and Prices. Foreign Trade and Weather tables are however available on the BEIS section of the GOV.UK website at:
www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy/about/statistics.
Information on Prices can be found in the Energy Prices publication and on the BEIS section of the GOV.UK website at:
www.gov.uk/government/collections/quarterly-energy-prices

Please note that the hyperlinks to tables within this document will open the most recently published version of a table. If you require a previously published version of a table please contact Kevin Harris (see details below).

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The main points for the first quarter of 2020:

- Total energy production was 1.8 per cent higher than in the first quarter of 2019.
- Oil production was 5.4 per cent lower when compared to the first quarter of 2019, with NGL production falling by 13 per cent due to ongoing maintenance at the Mossmorran plant in Fife.
- Natural gas production was 3.6 per cent higher, due to strong output at several terminals across the UK.
- Coal production in the first quarter of 2020 was 27 per cent lower than the first quarter of 2019. This is a result of mine closures and falling demand for coal for electricity generation. Coal imports were 56 per cent lower but generators' demand for coal rose by 10 per cent as a result of Fiddlers Ferry burning its remaining stocks in February and March before it closed on 31 March 2020. The rise in coal generation is a temporary deviation from the declining trend.
- Total primary energy consumption for energy uses fell by 0.9 per cent. However, when adjusted to take account of weather differences between the first quarter of 2019 and the first quarter of 2020, total primary energy consumption fell by 1.0 per cent.
- Temperatures in the quarter were on average 0.3 degrees warmer than a year earlier, with the average temperature in January 2020 being notably warmer than a year earlier.
- Final energy consumption (excluding non-energy use) was 0.7 per cent higher than in the first quarter of 2019. Domestic consumption rose by 4.5 per cent due to cooler weather in February and March 2020, along with a shift to increased home working in March 2020. On a seasonally and temperature adjusted basis final energy consumption rose by 1.0 per cent, within which domestic consumption rose by 7.0 per cent.
- Demand for transport fuels was 5.3 per cent lower than the first quarter of 2019, the second largest contraction on record, mostly due to a near record 14 per cent fall in demand for aviation fuel as a result of reduced international air travel following the Covid-19 outbreak.
- Gas demand was 4.6 per cent lower than the first quarter of 2019, as generators favoured renewables for electricity generation, whilst electricity consumption was 1.8 per cent lower.
- Electricity generated in the first quarter of 2020 fell 0.8 per cent compared to 2019 Q1, by 6.5 TWh to 86.9 TWh, with fossil fuel generation falling to below a 40 per cent share of generation for the first time, at 35.4 per cent.
- Coal's share of generation increased from 3.5 per cent to 3.8 per cent, whilst gas's share fell from 41.8 per cent to 31.4 per cent. Nuclear's share of generation fell from 15.9 per cent in the first quarter of 2019 to 15.1 per cent in the first quarter of 2020.
- Low carbon electricity's share of generation increased from 51.8 per cent in the first quarter of 2019 to a record high of 62.1 per cent in the first quarter of 2020.
- Renewables' share of electricity generation increased to 47.0 per cent, a record quarterly high, compared to the 35.9 per cent share in the first quarter of 2019, reflecting increased capacity and high load factors for wind technologies.
- Renewable electricity generation was 40.8 TWh in the first quarter of 2020, an increase of 30 per cent on the same period a year earlier.
- Renewable electricity capacity was 47.4 GW in the first quarter of 2020, an increase of 5.2 per cent on the same period a year earlier, mostly due to increased capacity for offshore wind which rose by 19 per cent.

Section 1 – UK Total Energy
January to March 2020

Key results show:

Total energy production was 1.8 per cent higher than in the first quarter of 2019, with rises in gas, bioenergy and waste, wind, solar and hydro output offset by falls in coal, oil and nuclear output. (**Charts 1.1 & 1.2**)

Total primary energy consumption for energy uses fell by 0.9 per cent. However, when adjusted to take account of weather differences between the first quarter of 2019 and the first quarter of 2020, primary energy consumption fell by 1.0 per cent. (**Chart 1.3**)

Final energy consumption (excluding non-energy use) rose by 0.7 per cent compared to the first quarter of 2019. Domestic consumption rose by 4.5 per cent reflecting the cooler weather in February and March 2020, along with a shift to increased home working in March 2020. Consumption by other final users (mainly from the service sector) rose by 4.8 per cent, whilst industrial consumption fell by 2.8 per cent and transport consumption fell by 3.7 per cent as demand for fuels dropped sharply in the last week of the quarter. (**Charts 1.4 & 1.5**)

On a seasonally and temperature adjusted basis, final energy consumption rose by 1.0 per cent, with rises in the domestic and other final users sectors but falls in the industrial and transport sectors. (**Chart 1.5**)

Net import dependency was 34.4 per cent, down 4.6 percentage points from the first quarter of 2019. (**Chart 1.6**)

Fossil fuel dependency was 77.6 per cent, down 2.3 percentage points from the first quarter of 2019. (**Chart 1.7**)

Relevant tables

1.1: Indigenous production of primary fuels
1.2: Inland energy consumption: primary fuel input basis
1.3: Supply and use of fuels, and Seasonally adjusted and temperature corrected final energy consumption

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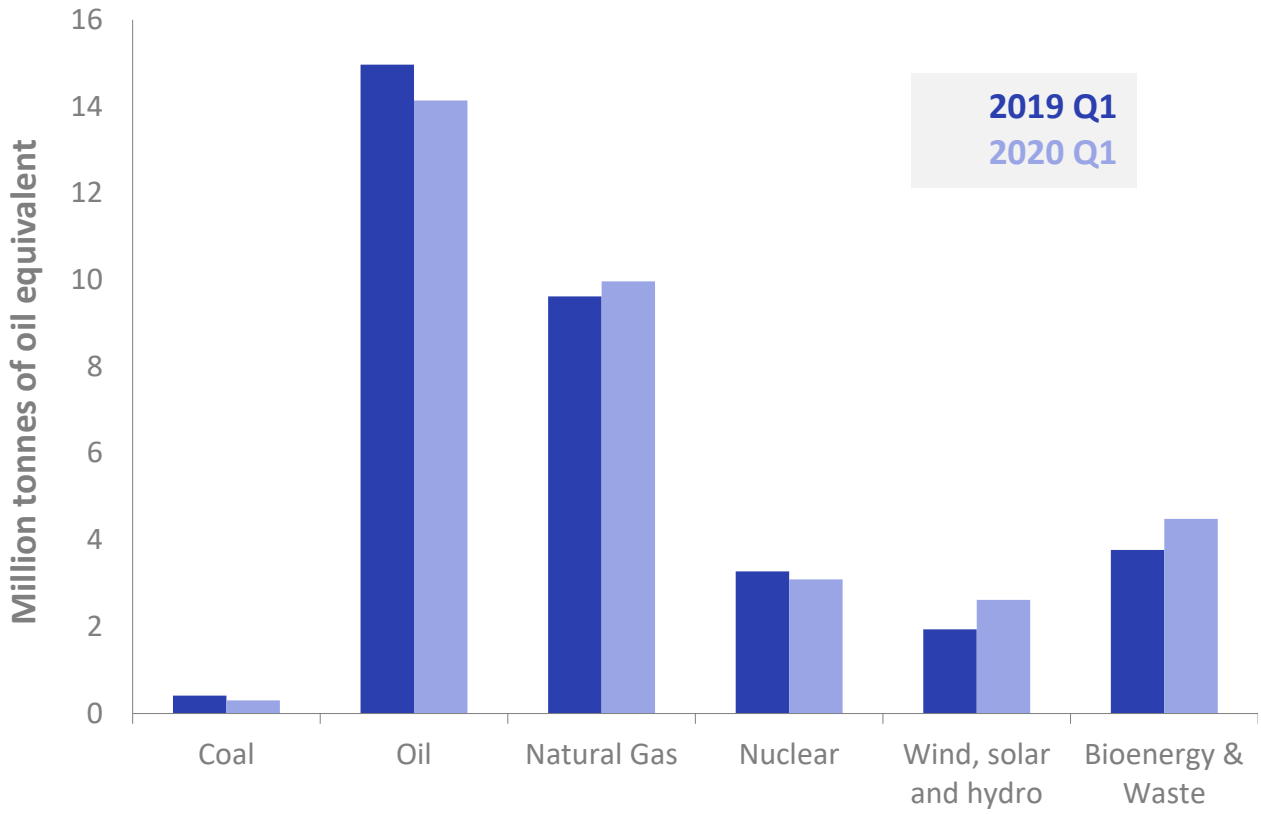
Chart 1.1 Production of indigenous primary fuels (Table 1.1)



Total production in the first quarter of 2020 stood at 34.6 million tonnes of oil equivalent, 1.8 per cent higher than in the first quarter of 2019.

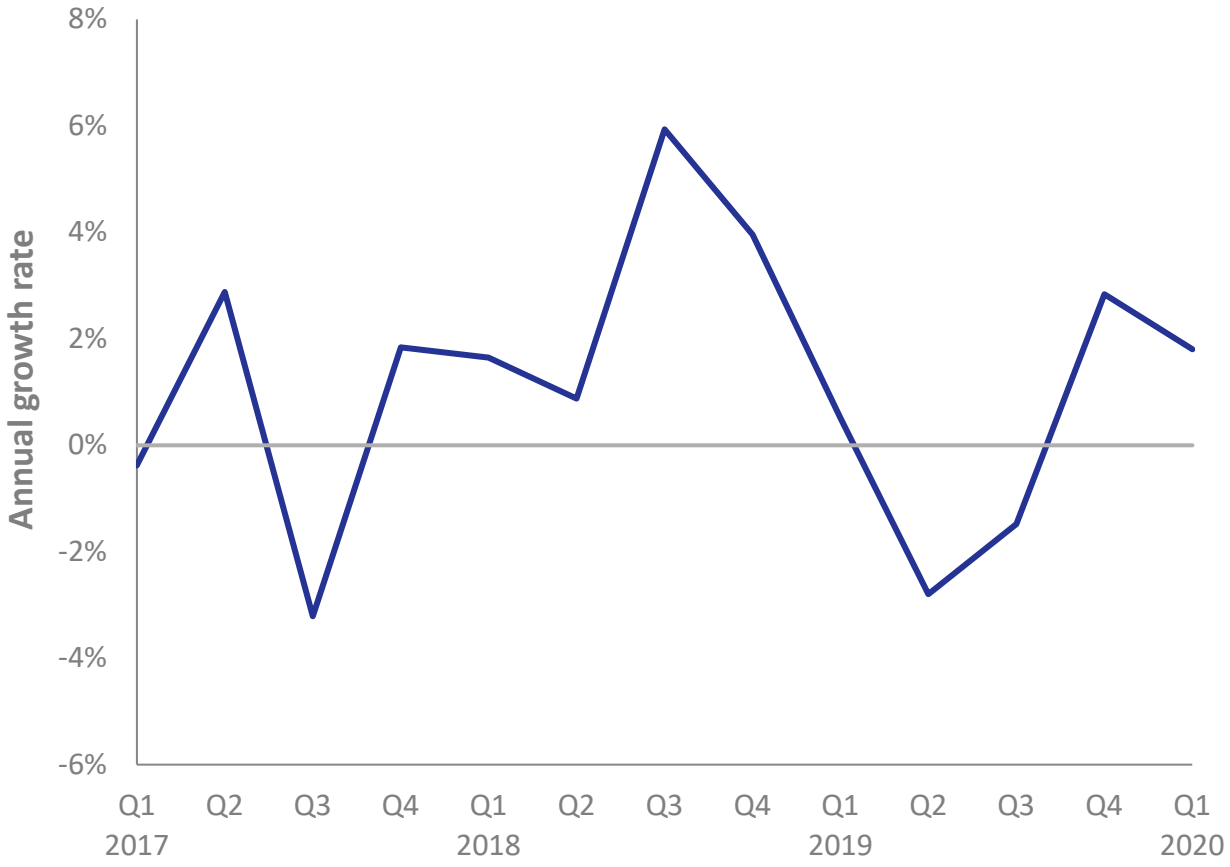
Production of oil fell by 5.5 per cent compared to the first quarter of 2019, with NGL production falling by 13 per cent due to maintenance work at the Mossmorran NGL processing plant in Fife, whilst production of natural gas rose by 3.6 per cent due to strong output at several terminals across the UK.

Primary electricity output in the first quarter of 2020 was 9.4 per cent higher than in the first quarter of 2019, within which nuclear electricity output was 5.8 per cent lower as an outage was completed at Heysham 1 while outages continued at Dungeness B, Hunterson B and Heysham 2 and started at Hinkley Point B. Output from wind, solar and natural flow hydro was 35 per cent higher and at a record quarterly high due to record levels of wind generation in February 2020 when extreme wind conditions were experienced during Storms Ciara and Dennis.

Production of bioenergy and waste was 19 per cent higher compared to the first quarter in 2019 due to increased capacity and higher load factors compared to the same period last year.

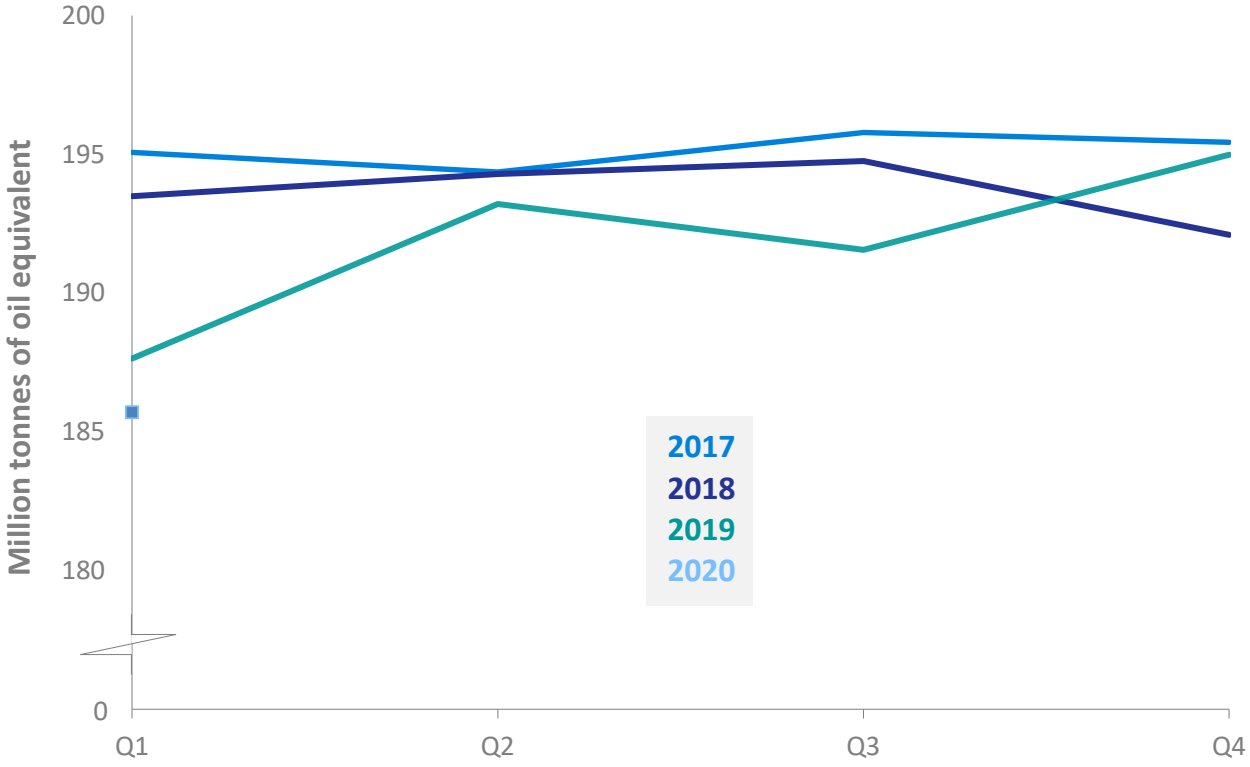
Coal production fell by 26 per cent compared to the first quarter in 2019 due to falling demand for coal for electricity generation and mine closures.

Chart 1.2 UK production (annual growth rate) (Table 1.1)



In the first quarter of 2020, the annual growth rate of UK production was +1.8 per cent, down 1.0 percentage points from the fourth quarter of 2019 but up 1.3 percentage points compared to the first quarter of 2019, with rises in gas, bioenergy and waste, wind, solar and hydro output offset by falls in coal, oil and nuclear output.

Chart 1.3 Total inland consumption (primary fuel input basis) [1] (Table 1.2)



(1) Seasonally adjusted and temperature corrected annual rates

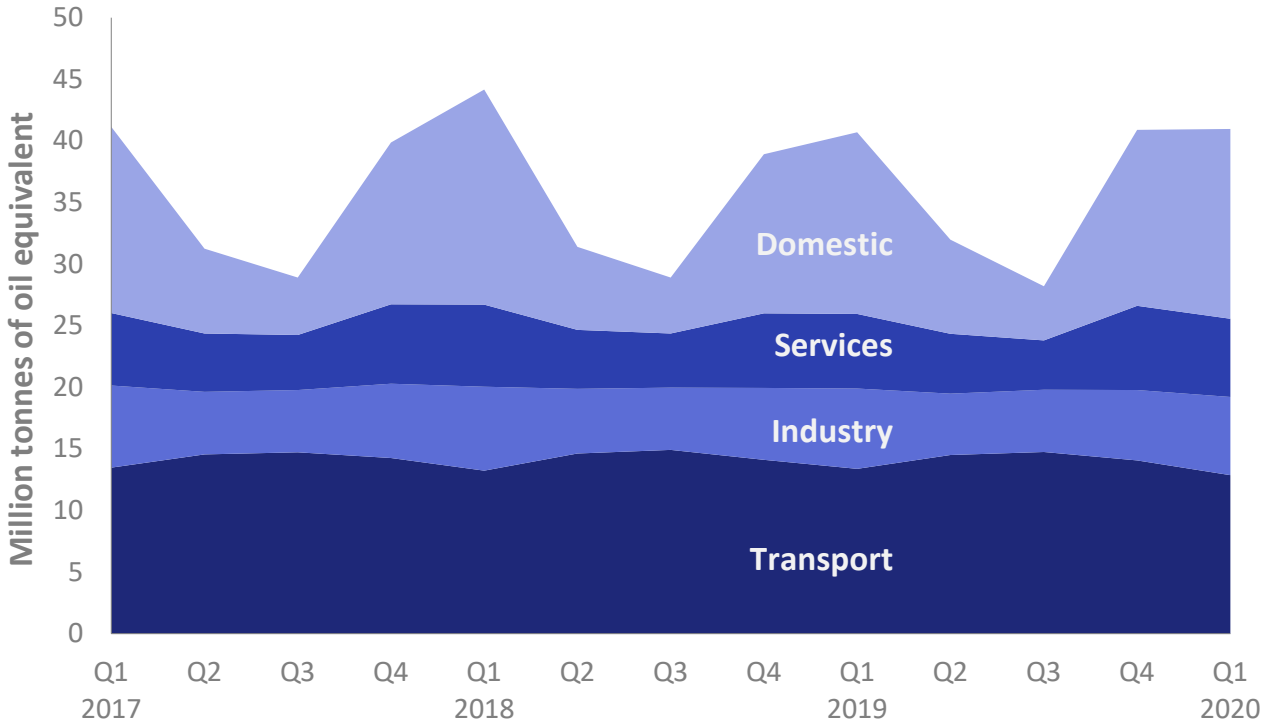
Total inland consumption on a primary fuel input basis (temperature corrected, seasonally adjusted annualised rate), was 185.7 million tonnes of oil equivalent in the first quarter of 2020, 1.0 per cent lower than in the first quarter of 2019. On an unadjusted basis inland consumption was 0.9 per cent lower, with the average temperature in the first quarter of 2020 being 6.6 degrees Celsius, 0.3 degrees Celsius higher than the same period a year earlier, with temperatures in January 2020 being noticeably warmer than January 2019. Consumption levels in March 2020, mainly demand for transport fuels, were also affected by the Covid-19 pandemic lockdown which came into effect from 23 March 2020.

Between the first quarter of 2019 and the first quarter of 2020 (on a seasonally adjusted and temperature corrected basis) coal and other solid fuel consumption rose by 5.6 per cent as Fiddlers Ferry power station burnt remaining stocks before closing on 31 March 2020.

Also, on a seasonally adjusted and temperature corrected basis, between the first quarter of 2019 and the first quarter of 2020, oil consumption fell by 2.6 per cent driven mainly by a drop in aviation demand. Natural gas consumption fell by 5.8 per cent as electricity generators favoured renewable sources.

On the same basis, bioenergy and waste consumption rose by 13 per cent between the first quarter of 2019 and the first quarter of 2020, whilst primary electricity consumption rose by 7.3 per cent. The rise in primary electricity consumption was due to an increase of 36 per cent from wind, solar and hydro, resulting in a record quarterly high due to higher wind speeds and increased offshore wind capacity, which more than offset falls of 5.6 per cent from nuclear consumption and 4.1 per cent from net imports.

Chart 1.4 Final energy consumption by user (Table 1.3a)



Total final consumption rose by 0.5 per cent between the first quarter of 2019 and the first quarter of 2020.

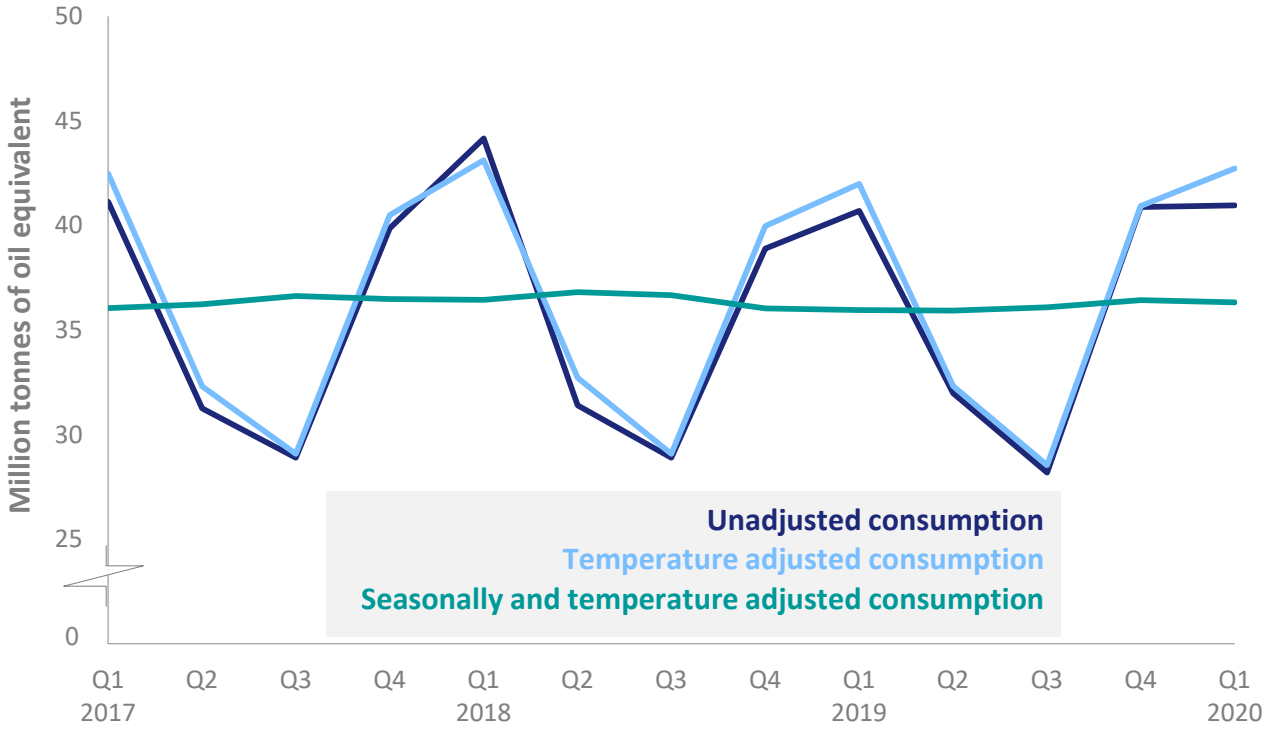
Domestic sector energy consumption rose by 4.5 per cent, reflecting the cooler weather in February and March 2020 compared to a year earlier and some shift towards home working in March 2020 because of the COVID-19 pandemic.

Service sector energy consumption rose by 4.8 per cent.

Industrial sector energy consumption fell by 2.8 per cent.

Transport sector energy consumption fell by 3.7 per cent as the demand for fuels fell sharply as a result of the Covid-19 pandemic. This is due in the main to the drop in aviation demand during March 2020.

Chart 1.5 Seasonally adjusted and temperature corrected final energy consumption (Table 1.3c)

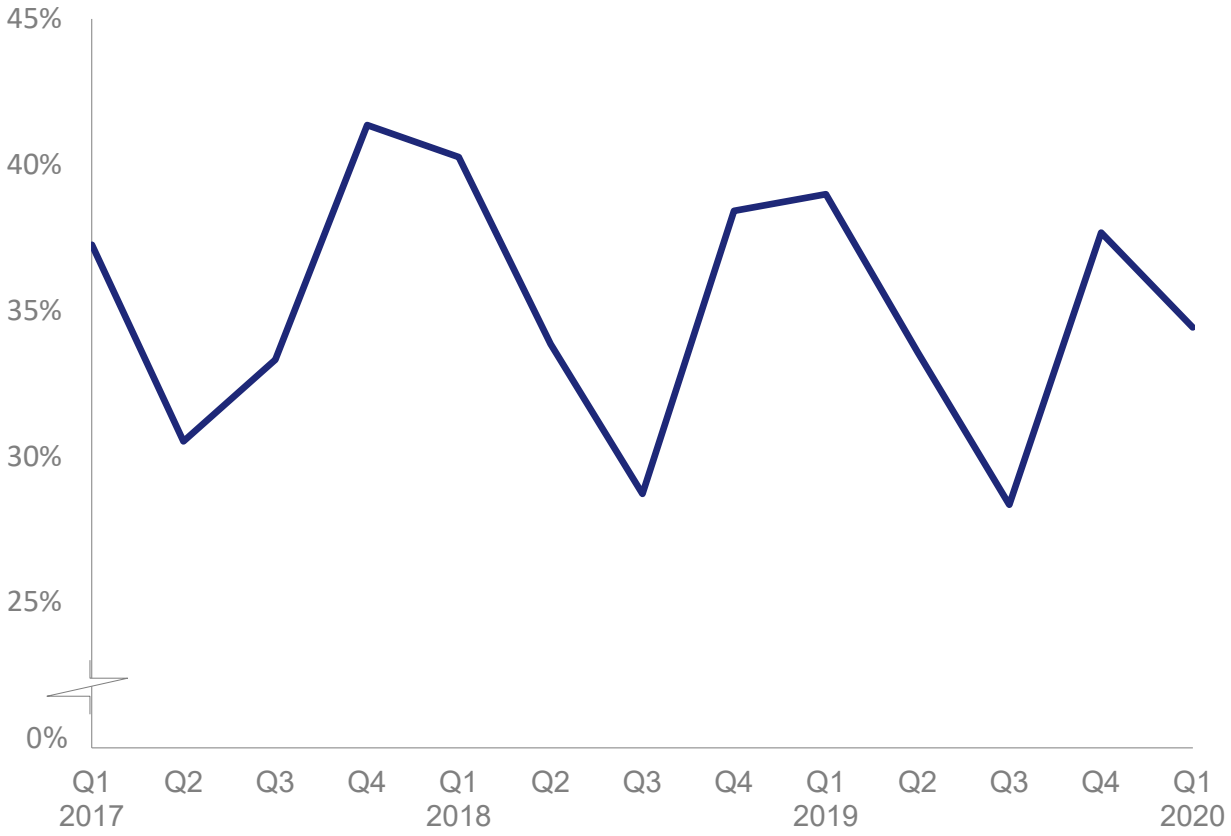


Total unadjusted final energy consumption (excluding non-energy use) rose by 0.7 per cent between the first quarter of 2019 and the first quarter of 2020.

On a seasonally and temperature adjusted basis final energy consumption (excluding non-energy use) rose by 1.0 per cent between the first quarter of 2019 and the first quarter of 2020.

Unadjusted domestic consumption rose by 4.5 per cent over the same period and was up 7.0 per cent on a seasonally and temperature adjusted basis.

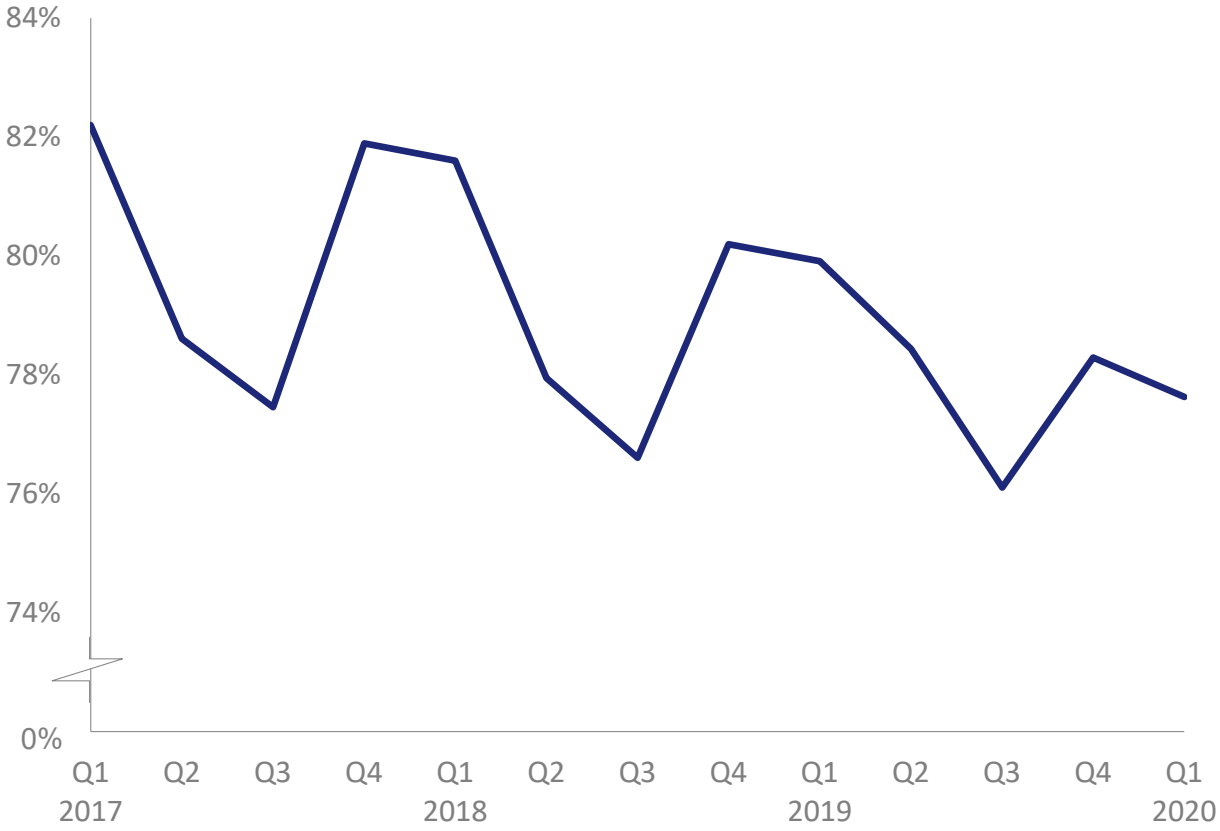
Chart 1.6 Net import dependency (Table 1.3a)



In the first quarter of 2020, imports fell by 7.8 per cent, whilst exports fell by 2.3 per cent. As a result, net import dependency fell 4.6 percentage points from the first quarter of 2019 to 34.4 per cent.

The net import dependency of oil was 26.6 per cent in the first quarter of 2020, up 1.3 percentage points from the first quarter of 2019, whilst the net import dependency of gas was 50.4 per cent, down 5.3 percentage points.

Chart 1.7 Fossil fuel dependency (Table 1.3a)



In the first quarter of 2020 fossil fuel dependency was 77.6 per cent, down 2.3 percentage points on the same quarter of 2019.

Section 2 – UK Solid Fuels and Derived Gases January to March 2020

Key results show:

Overall coal production in the first quarter of 2020 fell to a new record low of 434 thousand tonnes, down 27 per cent compared with the first quarter of 2019. Surface mining production fell to 399 thousand tonnes due to falling demand for coal for electricity generation and mine closures. **(Chart 2.1)**

Coal imports fell 56 per cent on levels shown in the first quarter of 2020 to a new record low. **(Charts 2.1 and 2.2)**

The demand for coal by electricity generators in the first quarter of 2020 was 9.6 per cent higher than demand in the first quarter of 2019 as the Fiddlers Ferry power station burnt remaining stocks before closing on 31 March 2020. The rise in coal generation is a temporary deviation from the declining trend as a result of coal plants closing and gas generation being more economically favourable compared to coal generation. **(Chart 2.3)**

Total stock levels were down 29 per cent to 4.1 million tonnes compared to a year earlier. **(Chart 2.4)**

Relevant tables

2.1: Supply and consumption of coal
2.2: Supply and consumption of coke oven coke, coke breeze and other manufactured solid fuels
2.3: Supply and consumption of coke oven gas, blast furnace gas, benzole and tars
2.4: Coal imports

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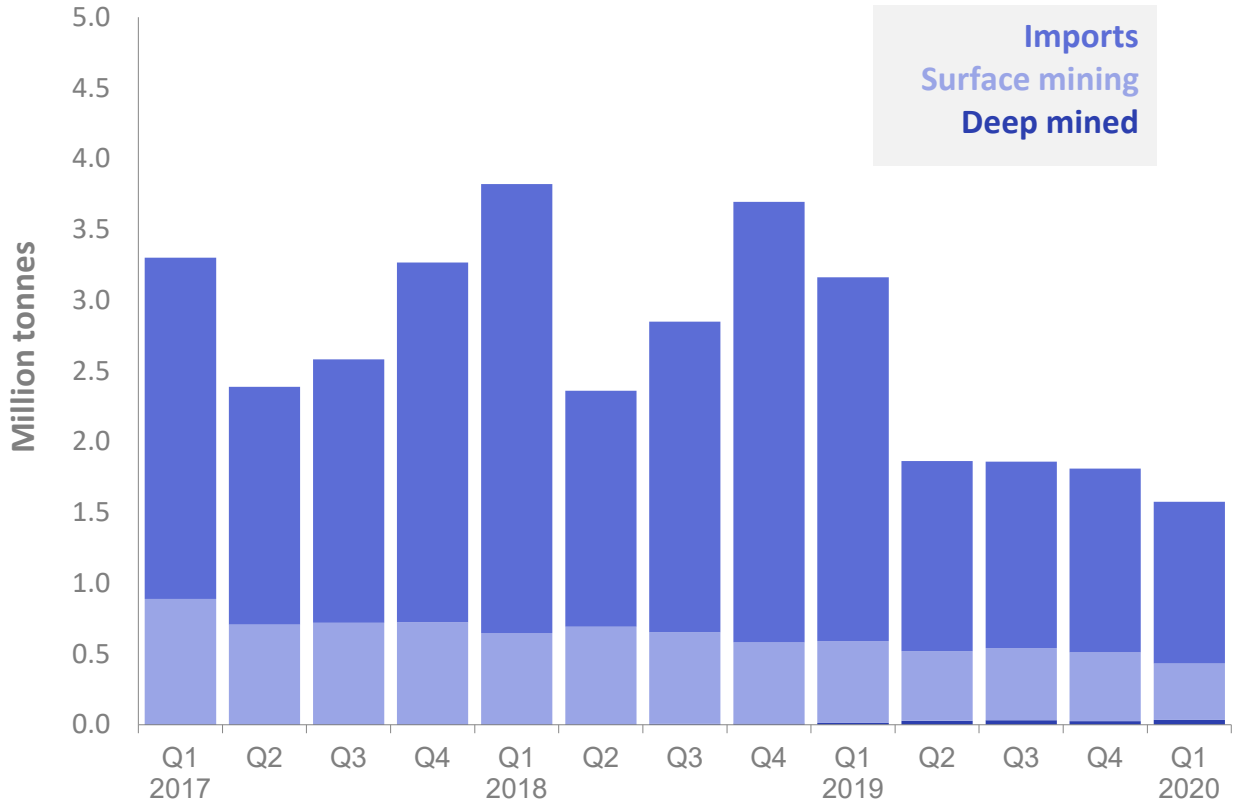
Chart 2.1 Coal supply (Table 2.1)

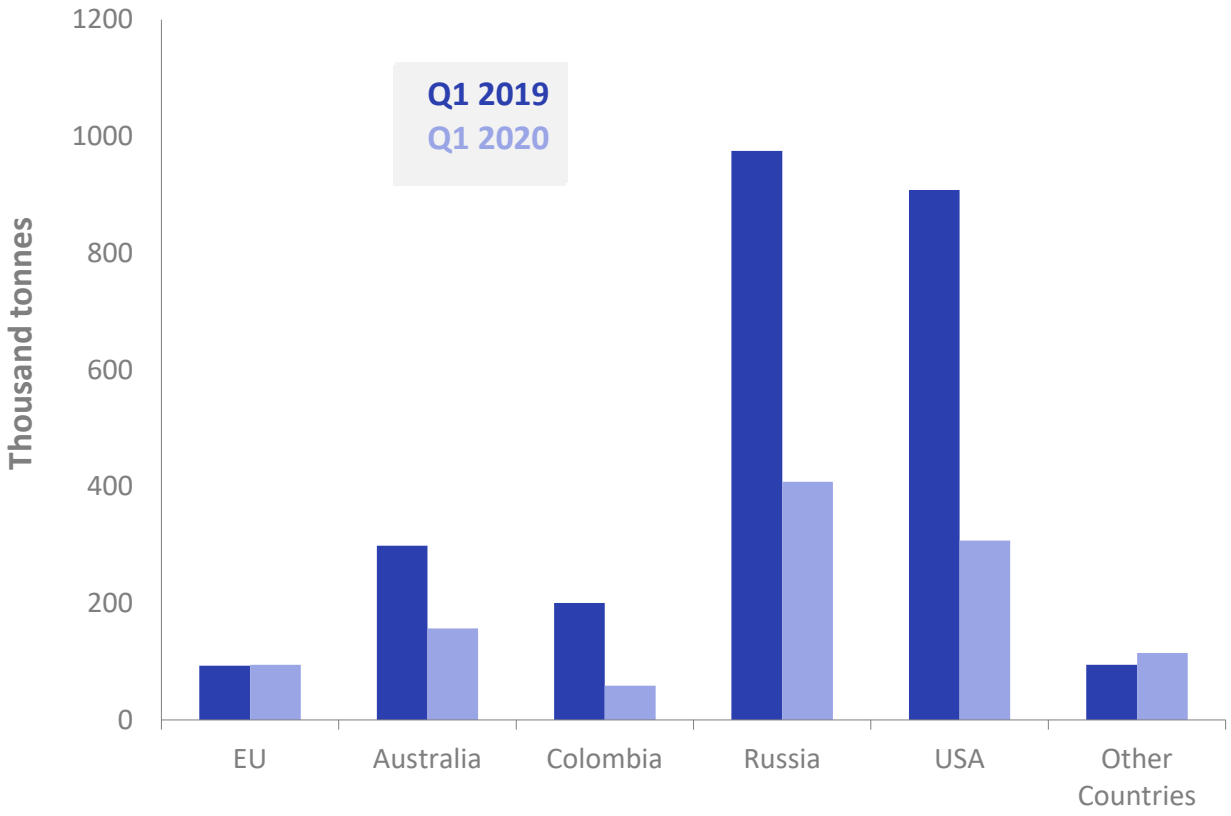


Coal production in the first quarter of 2020 was 0.4 million tonnes, 27 per cent down compared to the first quarter of 2019. The decrease came from the contraction in surface mine output.

Although output from deep mines has increased since the Aberpergwm colliery came back into operation in September 2018, it is only 7.9 per cent of total production (and a small fraction of previous production, with March's output at 6.8 per cent of the value in December 2015, the month that the last large deep mine closed). Only seven small deep mines remain.

The falls were due to decreased demand, particularly for electricity generation, but also because some mines are working towards closure whilst other mines are under 'care and maintenance' and 'not producing currently'.

Chart 2.2 Total coal imports (Table 2.4)



Imports of coal in the first quarter of 2020 were 56 per cent lower than in the first quarter of 2019 at 1.1 million tonnes, a new record low. Net imports accounted for 36 per cent of supply in the first quarter of 2020.

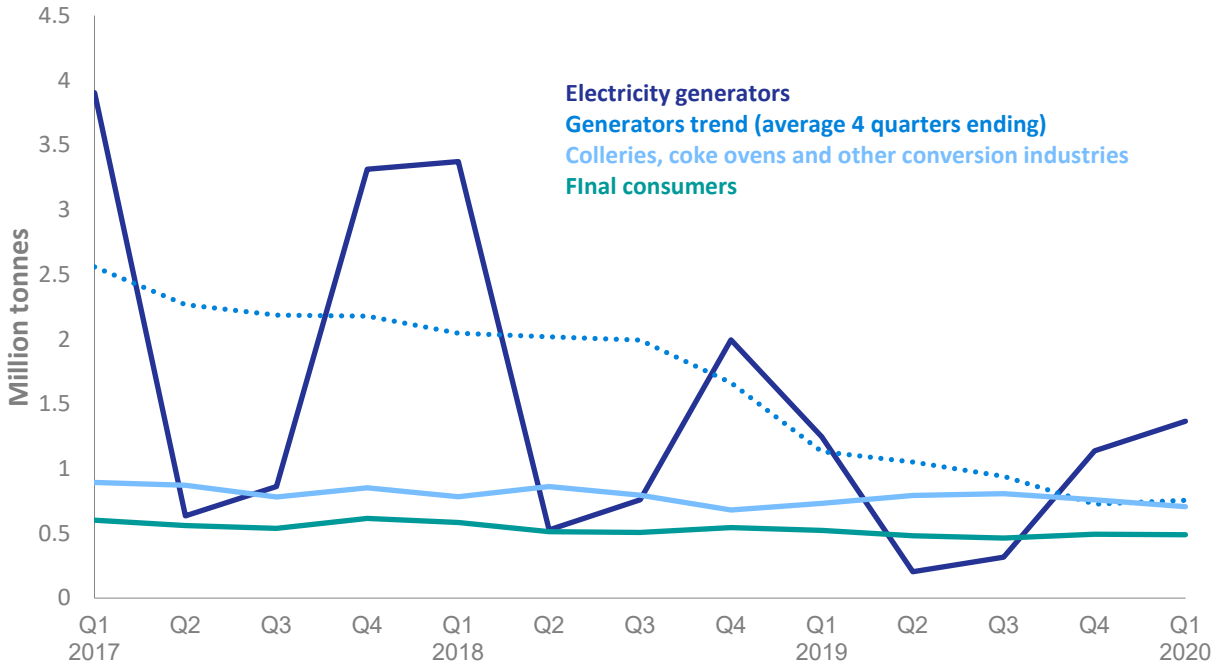
Russia (36 per cent), the USA (27 per cent) and Australia (14 per cent) accounted for 77 per cent of total coal imports in the first quarter of 2020. Steam coal imports in the first quarter of 2020 fell by 69 per cent to 0.6 million tonnes. Steam coal imports accounted for half of total coal imports. Coking coal imports in the first quarter of 2020 fell by 22 per cent to 0.6 million tonnes and accounted for 49 per cent of total coal imports, with small volumes of anthracite comprising the remainder.

Table 2A Coal imports by origin

Thousand Tonnes

	2018	2019p	2019 Q1	2020 Q1p
European Union	344	420	93	95
Russia	4,695	2,421	975	408
Colombia	635	1,078	201	59
USA	3,573	1,769	908	308
Australia	630	423	299	157
Other Countries	268	418	95	115
Total Imports	**10,144**	**6,529**	**2,571**	**1,141**

Chart 2.3 Coal consumption (Table 2.1)

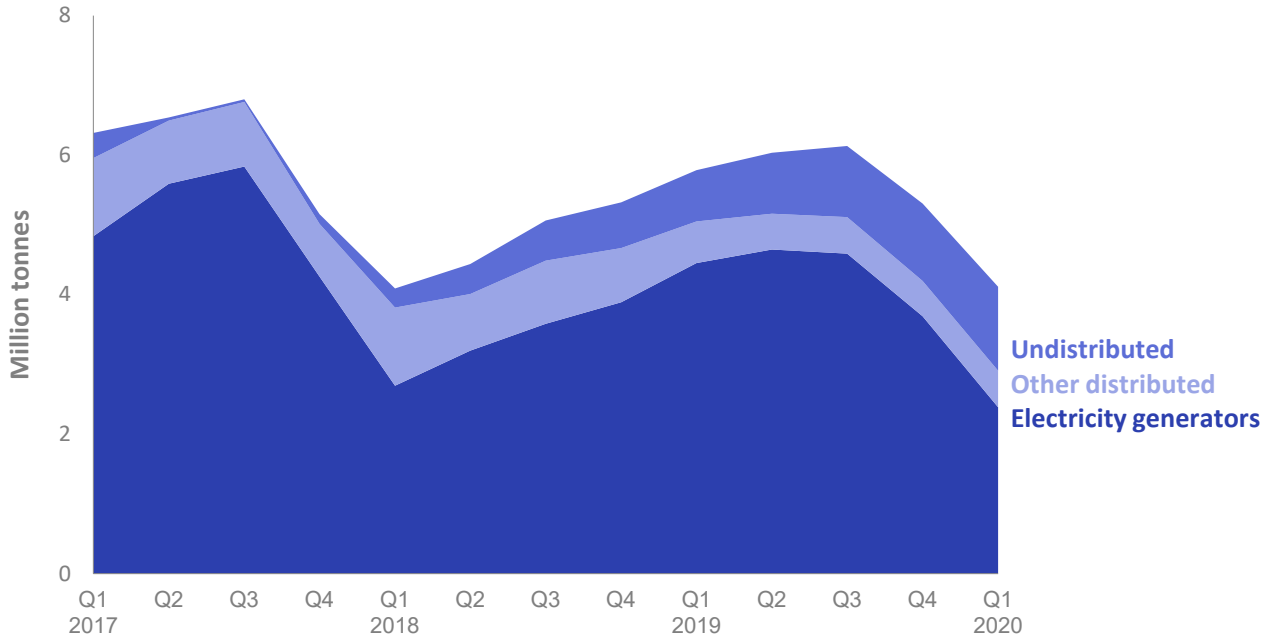


Total demand for coal in the first quarter of 2020, at 2.6 million tonnes, was 2.5 per cent higher than in the first quarter of 2019 mainly due to a spike in electricity use.

Electricity generators accounted for 53 per cent of total coal use in the first quarter of 2020. Electricity generation rose 9.6 per cent to 1.4 million tonnes during this period as a result of higher coal-fired electricity generation as Fiddlers Ferry burnt its remaining stocks before it closed on 31 March 2020. The rise in coal generation is a temporary deviation from the declining trend. In the rolling four quarters from Q2 2019 to Q1 2020 coal generation fell 33 per cent compared to the four quarters ending Q1 2019. This was a result of coal plants closing and gas generation being more economically favourable compared to coal generation because of lower gas prices and higher carbon pricing.

In the first quarter of 2020, the provisional data shows that sales to industrial users fell by 8.4 per cent to 0.3 million tonnes whilst sales to other final consumers (including domestic) decreased by 1.6 per cent to 0.2 million tonnes. Coal used in blast furnaces was up 4.9 per cent compared to the first quarter of 2019, to 0.3 million tonnes.

Chart 2.4 Coal stocks (Table 2.1)



Coal stocks fell seasonally by 1.2 million tonnes during the first quarter of 2020 and at the end of March stood at 4.1 million tonnes. This was 1.7 million tonnes lower than at the end of March 2019.

The level of coal stocks at power stations at the end of the first quarter of 2020 was 2.4 million tonnes, 2.1 million tonnes lower than at the end of March 2019.

Stocks held by coke ovens were 0.5 million tonnes at the end of the first quarter of 2020, this was 40 thousand tonnes lower than stock levels at the end of March 2019.

Stocks held by producers (undistributed stocks) at the end of the first quarter of 2020 were 1.2 million tonnes, 0.5 million tonnes higher than at the end of March 2019.

Section 3 – UK Oil and Oil Products
January to March 2020

Key results show:

Demand for transport decreased by 5.3 per cent compared with Q1 2019, the second largest contraction on record and mostly driven by a near record 14 per cent decrease in demand for aviation fuel.

On diesel, the drop in demand seen was similar to recent trends. However, in contrast to recent upward trends in demand for petrol, this fell by 3.2 per cent because restrictions on unnecessary travel were announced on the 23rd March 2020 due to the Covid-19 pandemic, reducing car miles driven. **(Chart 3.5)**

Final consumption of oil products in Q1 2020 was down 1.9 per cent due to the sharp fall in transport demand. However, interestingly demand in the domestic sector and by other final users was up substantially. This could be related to the collapse of the OPEC+ talks early in 2020 as well as the early impacts of Covid-19 reducing global oil demand, thus driving down prices. (**Chart 3.4)**

Indigenous production of petroleum products was down 4.5 per cent on Q1 2019 because of refinery maintenance. (**Chart 3.2**) There was a corresponding increase in imports of petroleum products, which were up 5.3 per cent, to meet demand. Net product imports were 3.1 million tonnes in the first quarter of 2020, up from 2.5 in Q1 2019. **(Chart 3.2)**

Total indigenous UK production of crude oil and NGLs (Natural Gas Liquids) in Q1 2020 was down 5.4 per cent on the same period last year. **(Chart 3.1)**

Net imports of primary oils decreased by 26 per cent on Q1 2019 down to 1.4 million tonnes, meeting 10 per cent of UK refinery demand, as imports fell by 6.6 per cent and exports by 3.3 per cent. **(Chart 3.3)**

Overall stocks of crude oil and petroleum products increased by 3.1 per cent compared with Q1 2019. A 14 per cent increase in total petroleum products more than offset an 8.1 per cent decrease in stocks of primary oils. Physical product stocks in the UK reached 6.0 million tonnes, the highest level in 10 years. **(Chart 3.6)**

Relevant tables

3.1: Supply and use of crude oil, natural gas liquids and feedstocks
3.2: Supply and use of petroleum products
3.4: Supply and use of petroleum products: latest quarter
3.5: Biofuels sales and sales through supermarkets
3.6: Stocks of petroleum at end of period

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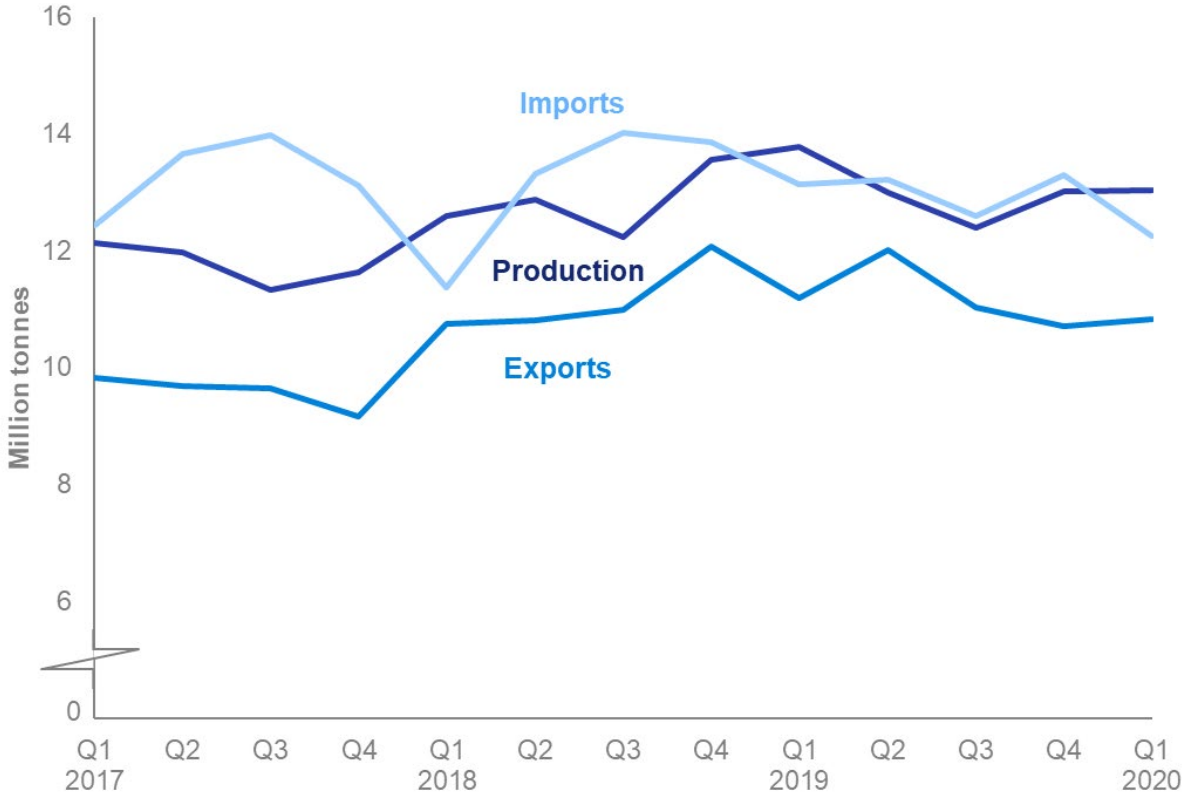
Chart 3.1 Production and trade of crude oil and NGLs (Table 3.1)



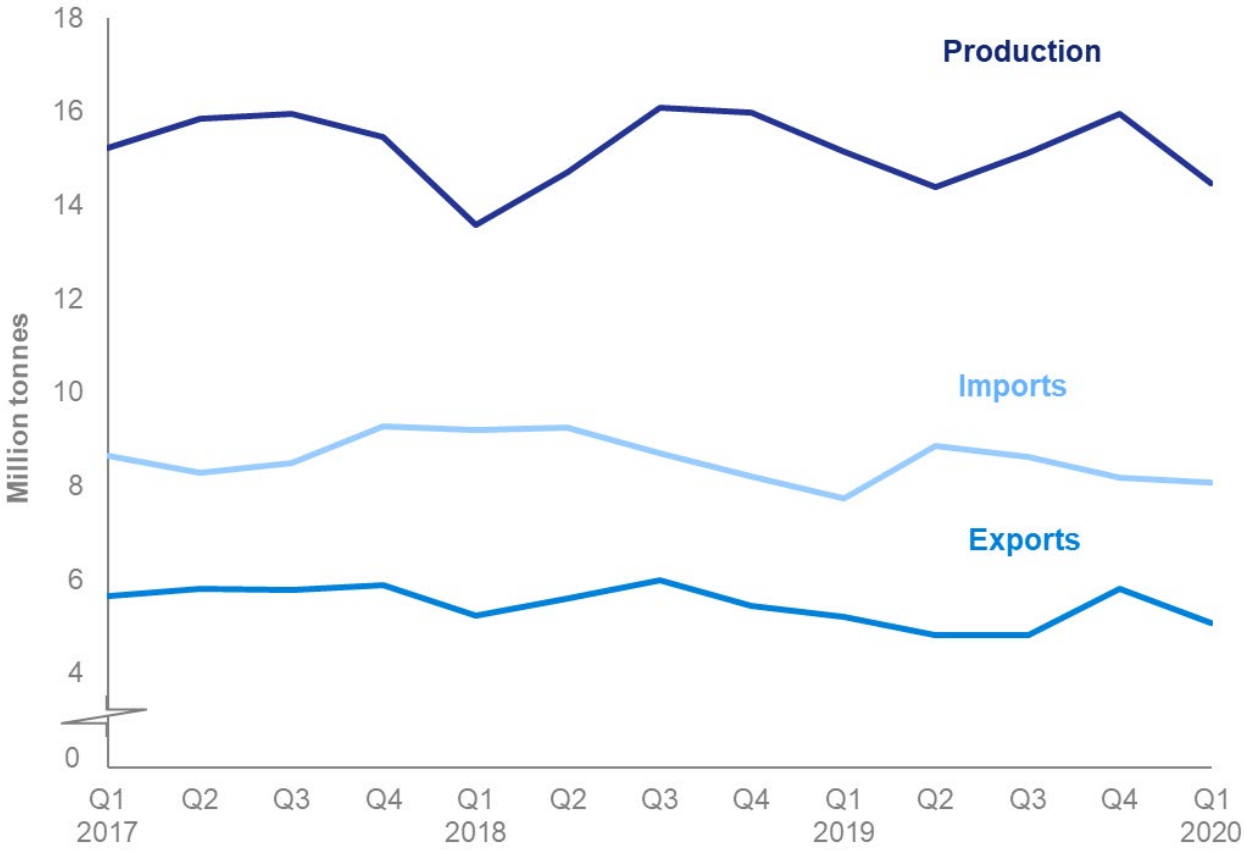
Indigenous production of primary oils was down 5.4 per cent on Q1 2019, which includes a 13 per cent contraction in NGL volumes. A contributing factor to continued low NGL production was ongoing maintenance at the Mossmorran NGL processing plant in Fife.

Imports of crude oil, NGLs and feedstocks were down by 6.6 per cent on Q1 2019. While there was a 2.7 per cent increase in imported crude oil and NGLs, feedstock imports fell to a third of volumes seen in Q1 2019. This is related to the uptick in refinery receipts of indigenous crude (Table 3.10).

Exports of crude oil and NGLs decreased by 3.3 per cent with crude oil and NGLs being the main contributor as exports of feedstocks almost doubled when compared with Q1 2019.

Overall, the total demand for Q1 2020 was 4.6 per cent lower than that of Q1 2019, a decrease of 0.7 million tonnes because of refinery maintenance during the quarter.

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

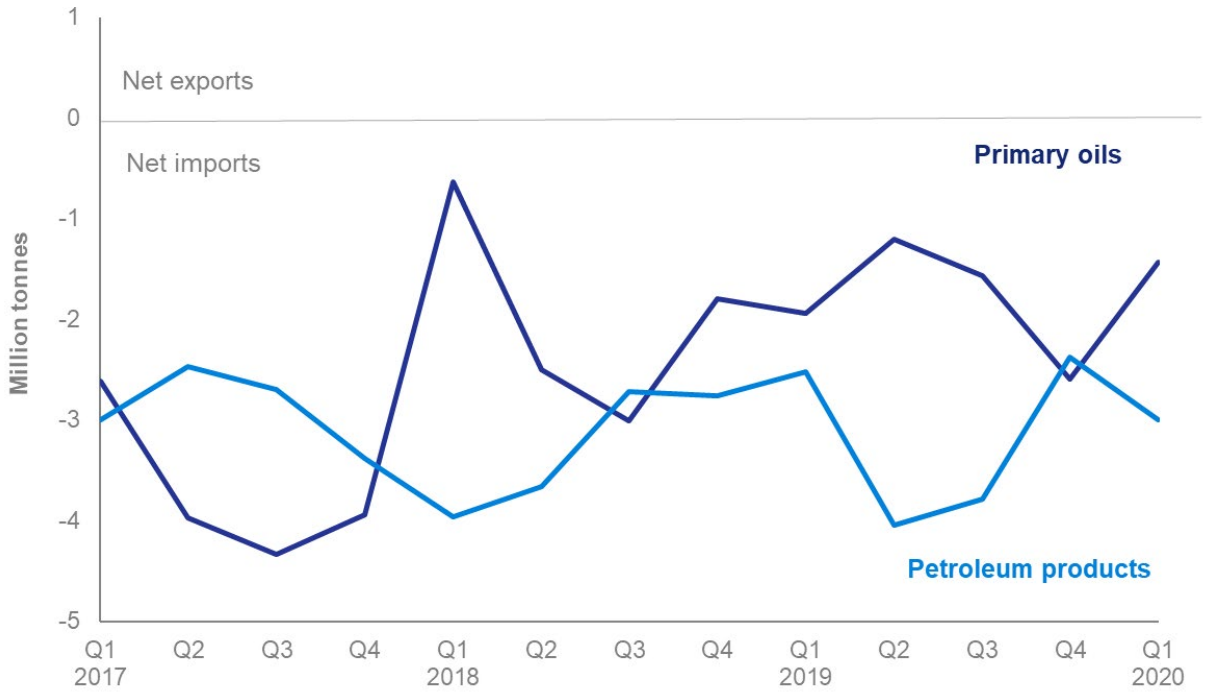


Indigenous production of petroleum products in Q1 2020 was down 4.5 per cent on the same quarter in 2019. Refinery output of petroleum products now stands at 14.5 million tonnes.

Compared to Q1 2019 imports of petroleum products increased by 5.3 per cent to 8.1 million tonnes and remained relatively stable on to Q4 2019. Exports fell by 2.6 per cent compared to Q1 2019.

On a product basis exports were down most notably for petroleum gases, motor spirit and gas oil which each decreased by 44 per cent, 16 per cent and 26 per cent respectively. In contrast exports of aviation turbine fuel increased by one half and diesel exports increased by 29 per cent.

Chart 3.3 Overall trade in primary oils and petroleum products (Table 3.1)

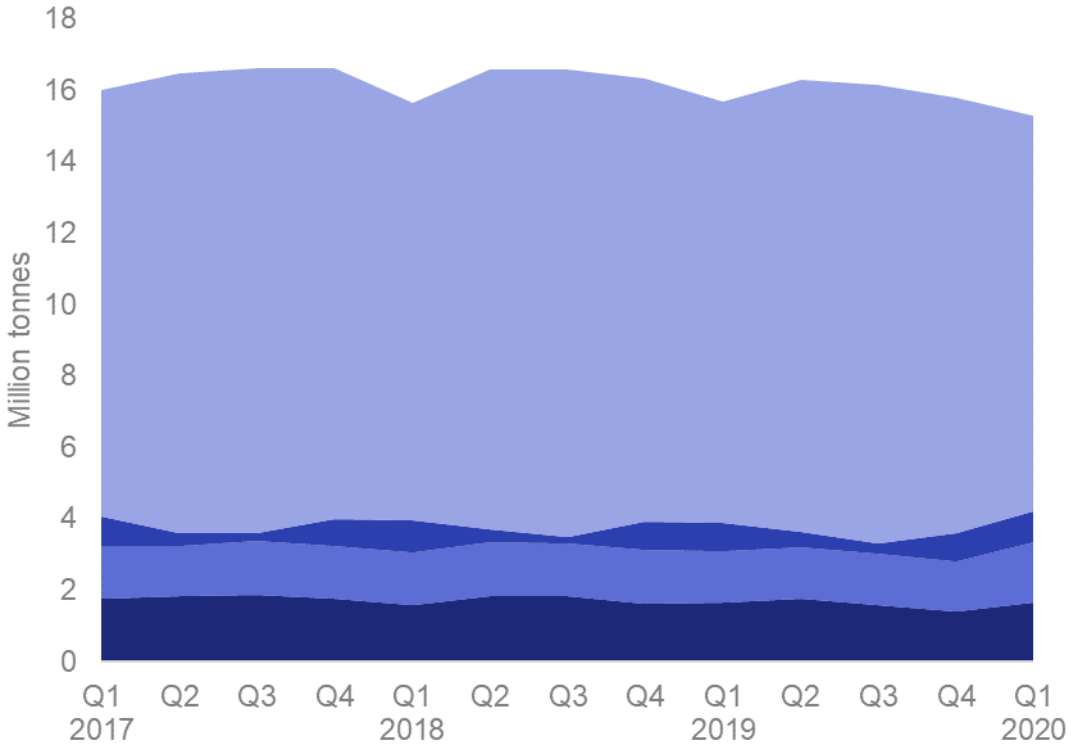


Net imports of primary oils (crude, NGLs and feedstocks) decreased by 26 per cent from 1.9 million tonnes in Q1 2019 to 1.4 million tonnes in Q1 2020, meeting 10 per cent of UK refinery demand.

There was a 4.6 per cent reduction in demand for primary oils in Q1 2020 compared to Q1 2019 as maintenance drove lower refinery production and a 5.3 per cent increase in imports of petroleum products to meet demand.

In Q1 2020 the UK was a net importer of petroleum products by 3.1 million tonnes, up by a fifth from 2.5 million tonnes in Q1 2019. Exports decreased by 2.6 per cent. Imports will continue to form an important part of the UK's supply portfolio as refinery operations continue to be rationalised in the long term.

Chart 3.4 Final consumption of oil (Table 3.4)



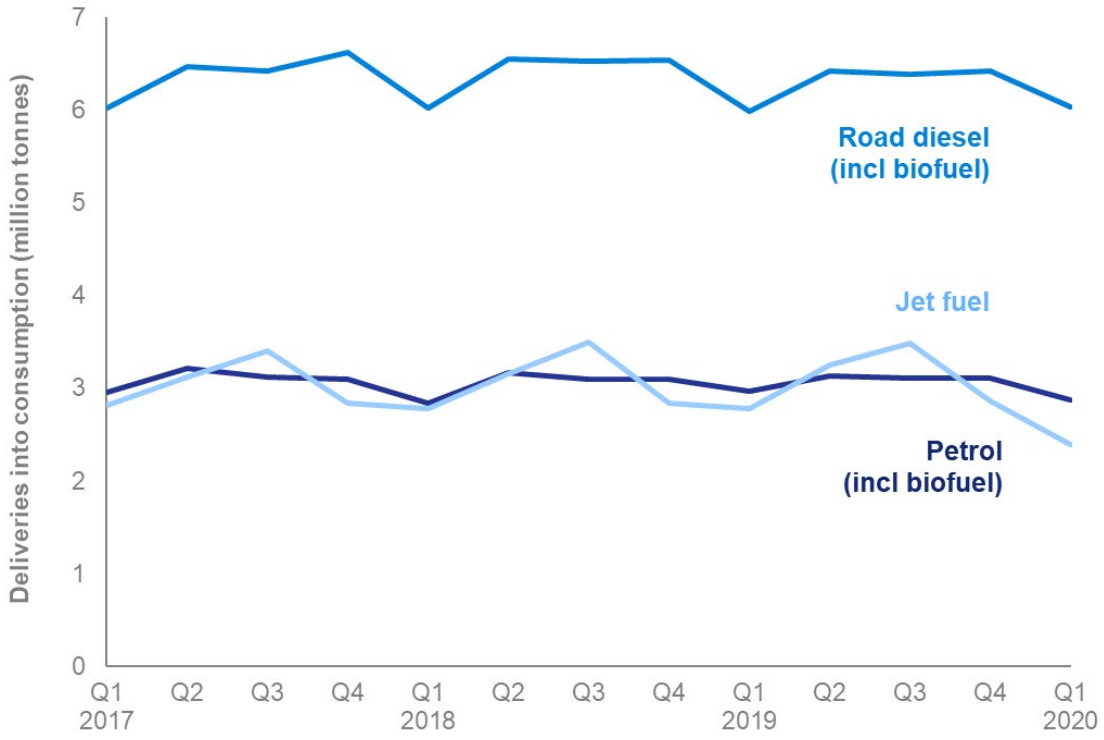
Final consumption of petroleum products decreased by 1.9 per cent, which was driven by a 5.3 per cent fall in demand for key transport fuels, the second largest fall in transport demand since the 2008 recession.

Demand for road fuels was also down substantially, by 3.2 per cent for petrol and 2.4 per cent for diesel. The reduction in road fuel demand was influenced by the UK wide lockdown implemented by the UK government on the 23rd March 2020, banning unnecessary travel in the UK due to the Covid-19 pandemic. This is reflected in a 2.1 per cent drop in vehicle miles driven in Q1 2020 to reach the lowest number of vehicle miles driven since Q1 2013[1].

In contrast, demand for burning oil was up by 24 per cent in Q1 2020 compared to Q1 2019. The collapse of the OPEC+ talks earlier in 2020 and the early impacts of Covid-19 abroad affecting global oil demand pushed oil prices down. It is likely that customers took advantage of these lower prices to order fuel for heating, meaning that demand in the domestic sector increased by 22 per cent and other final users by 14 per cent.

[1] Department for Transport Road Traffic statistics: www.gov.uk/government/statistical-data-sets/tra25-quarterly-estimates

Chart 3.5 Demand for key transport fuels (Table 3.4 and Table 3.5)



Transport demand fell by 5.3 per cent in Q1 2020 compared to Q1 2019, the second largest fall in transport demand since the 2008 recession.

Most notably demand for aviation fuel fell by a near record 14 per cent. Aviation fuel in the UK is largely used for international travel, which was impacted early by Covid-19 in countries abroad. The contraction was the second largest on record, following only the reduction in demand seen following the attacks of September 11th 2001.

Demand for road fuels was also down substantially, by 3.2 per cent for petrol and 2.4 per cent for diesel. The decline in petrol demand has bucked the recent upward trend, whereas the contraction in diesel demand was roughly equivalent to that seen in recent quarters. Both patterns can be related to the early stages of the lockdown in the UK, announced on 23rd March 2020. Commercial fleets continued to operate but discretionary travel, which more typically occurs in petrol-engined vehicles, was curbed in the latter half of March.

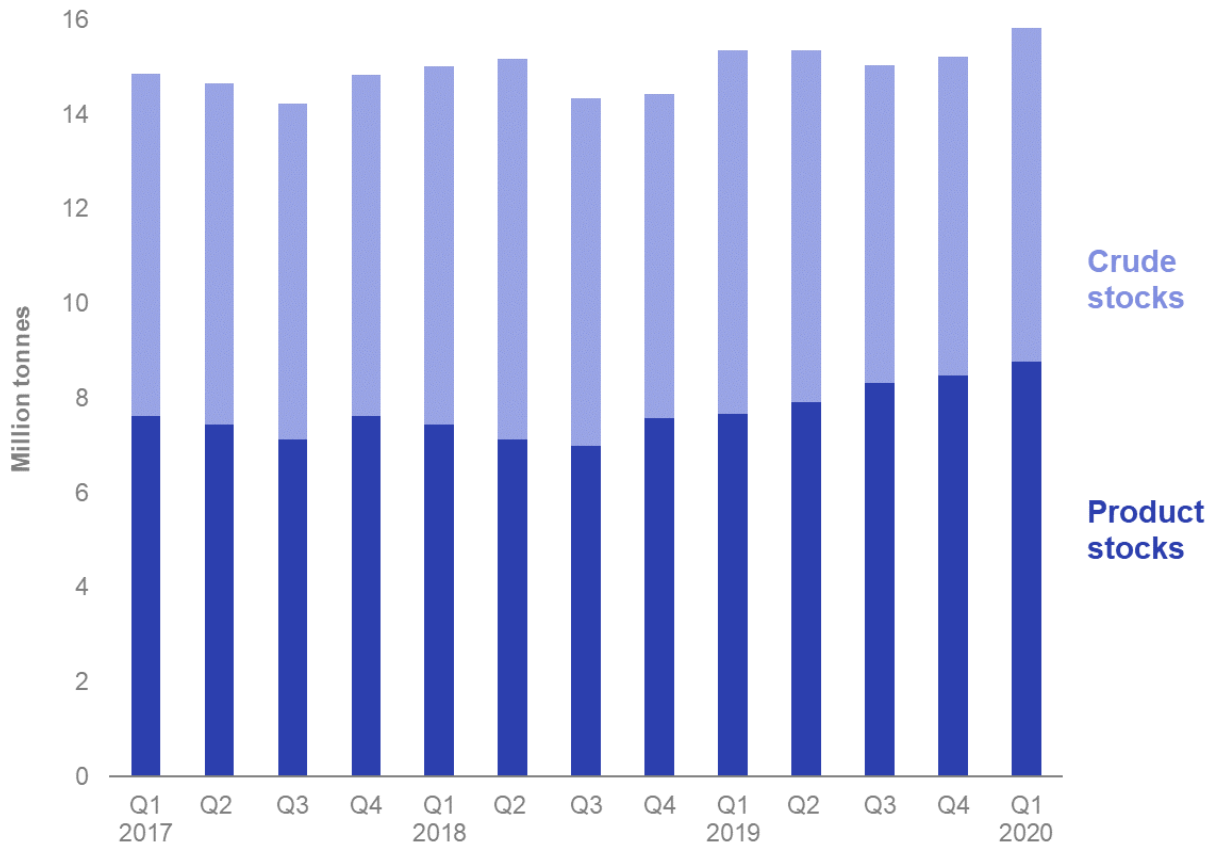
Total distances driven decreased by 7 billion vehicle miles in Q1 2020 compared to last year. However, to explain the sharper decrease in petrol demand compared to diesel we can consider miles travelled by vehicle type. The distance driven by cars was down by 6.1 billion miles, which accounted for around 87 per cent of the total decrease in miles driven. Just under 60 per cent of cars have petrol engines[2], meaning the strong decrease in car miles driven due to the ban on unnecessary travel within the UK on the 23rd March 2020 resulted in decreased petrol demand.

There was an 80 per cent increase in bio-diesel compared to Q1 2019, which is due to government policy on reducing greenhouse gas emissions from fuels used in transport. Suppliers are obligated to supply sustainable fuel as a percentage of fossil and unsustainable renewable fuel supplied. This obligation increases annually as set out in RTFO guidance[3].

[2] Department for Transport Vehicle statistics: www.gov.uk/government/statistical-data-sets/veh02-licensed-cars

[3] The Renewable Transport Fuel Obligation guidance: www.gov.uk/government/publications/renewable-transport-fuel-obligation-rtfo-guidance-2019

Chart 3.6 UK oil stocks (Table 3.6)



Overall stocks increased by 3.1 per cent on Q1 2019 to reach 15.8 million tonnes, the highest level since 2002. The net volume of stocks held abroad[4] increased by 2.7 per cent to 4.9 million tonnes, and an increase of 3.2 per cent of stocks held within the UK to 11 million tonnes.

There was an 8.1 per cent decrease in the total amount of primary oils stocked in Q1 2020, with stocks being held in terminals and offshore fields showing the largest decrease percentage wise at 17 per cent each. There was also an 8.6 per cent decrease in net bilaterals of primary oils held abroad in Q1 2020.

The decrease in primary oil stocks was more than offset by a 14 per cent increase in petroleum product stocks on Q1 2019. Most notably net bilaterals of products, physical stocks of gas/diesel oil and other products all increased by approximately 0.3 million tonnes each at 14 per cent, 41 per cent and 16 per cent, respectively. Physical product stocks in the UK reached 6.0 million tonnes, the highest level in 10 years.

Total stocks held by the UK are near three months of demand.

Further information on how the UK meets its oil stocking obligations are set out at:
www.gov.uk/government/publications/uk-emergency-oil-stocking-international-obligations

[4] Companies who have been directed by UK government to hold stocks have the option to either hold stocks physically in tanks or enter into an arrangement with another company to hold stocks on their behalf, known as ‘tickets’. Ticketed volumes can be traded in other countries with whom the UK has a bilateral agreement.

Section 4 – UK Gas
January to March 2020

Key results show:

UK production of natural gas increased by 3.6 per cent in the first quarter of 2020 compared with the same quarter of 2019. This is associated with strong output at several terminals across the UK **(Chart 4.1).** Within this, production of associated gas was 6.6 per cent higher whilst dry gas production was down 3.0 per cent **(Chart 4.2).**

Imports in Q1 2020 fell by 12 per cent compared to 2019 **(Chart 4.4).** Despite this overall decrease, Liquefied Natural Gas (LNG) imports increased by 51 per cent to make up just under half of all imported gas **(Chart 4.5)**, resulting from increased diversification of supply from other countries.

Meanwhile exports increased by 14 per cent, driven by increased trade with the Republic of Ireland, while exports to the Netherlands were lower. As a result, net imports decreased by 14 per cent **(Chart 4.4).**

This decrease in net imports was driven by lower gas demand, down 4.6 per cent compared to Q1 2019 as demand for gas for electricity generation dropped by 24 per cent following exceptionally windy weather that increased the output of renewables **(Chart 4.6).**

Despite slightly warmer temperatures than last year domestic gas use increased by 4.4 per cent and other final users increased by 4.5 per cent, underpinning a 2.7 per cent increase in final consumption. This increase could have been due to the impact of the Covid-19 pandemic on household behaviour as people began working from home both before and after the UK government lockdown announcement on 23rd March 2020 **(Chart 4.6).**

Relevant table

4.1: Natural gas supply and consumption

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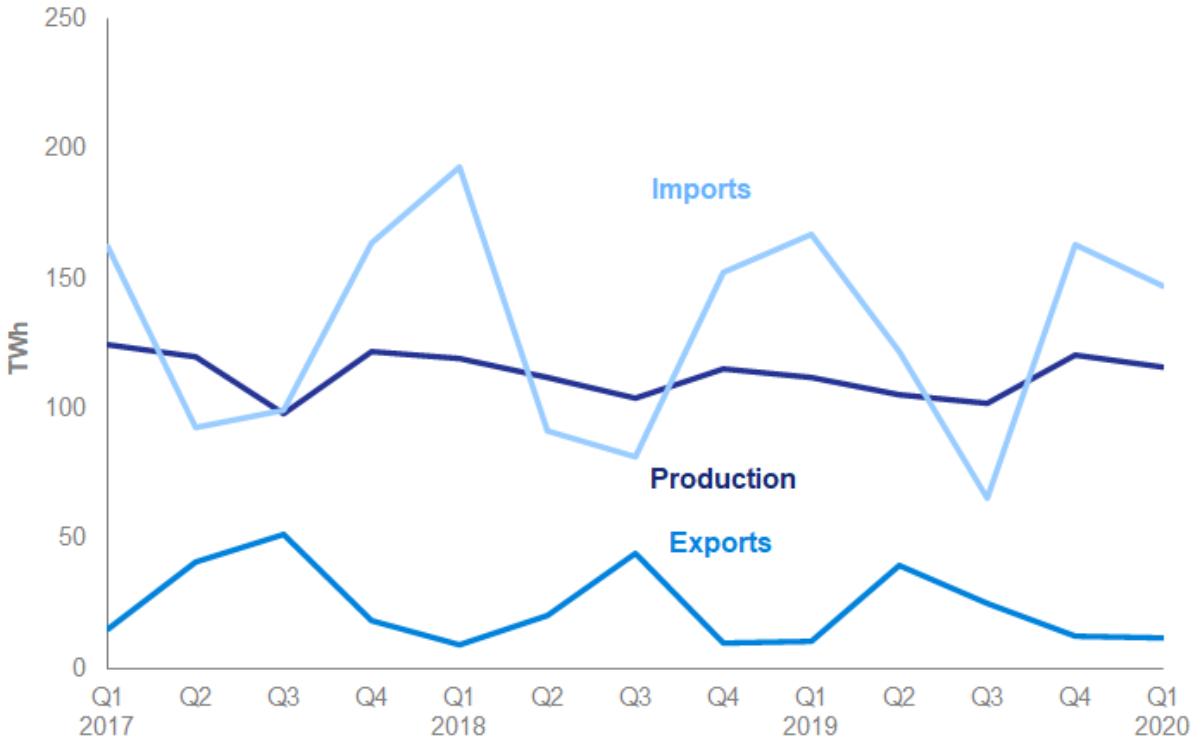
Chart 4.1 Production and nominated flow trades of natural gas (Table 4.1)



Production of natural gas in the first three months of 2020 increased by 3.6 per cent, bucking the downward trend seen earlier in 2019 as a result of strong outputs at several terminals. Since 2014 we had seen year-on-year production increases until 2018, which marked the first annual decrease in five years. In the longer term, the trend is one of decline and production in Q1 2020 was down 69 per cent on peak levels seen in Q1 2000.

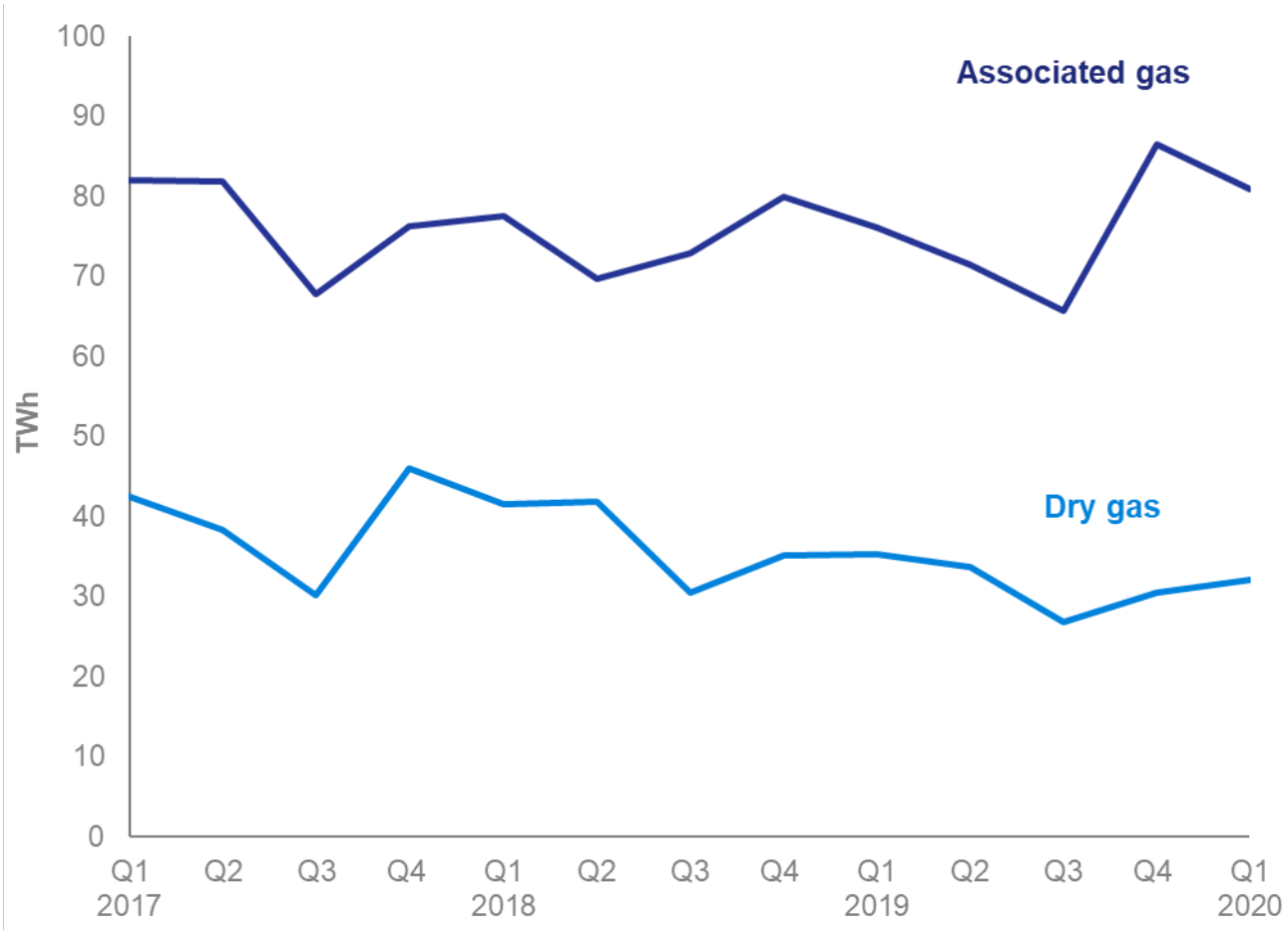
On a nominated flow basis[1], imports in Q1 2020 were down 12 per cent on the same quarter in 2019, driven by a decrease in gas demand for electricity generation.

Meanwhile, exports increased by 14 per cent in the same period, resulting in an overall reduction in net imports of 14 per cent.

For more detail on trade, see Charts 4.4 and 4.5.

[1] Nominated flows include some trade with Belgium whereby gas has been traded between companies, but then 'sold back' before the gas has been physically transferred. Table 4.3 shows physical flows.

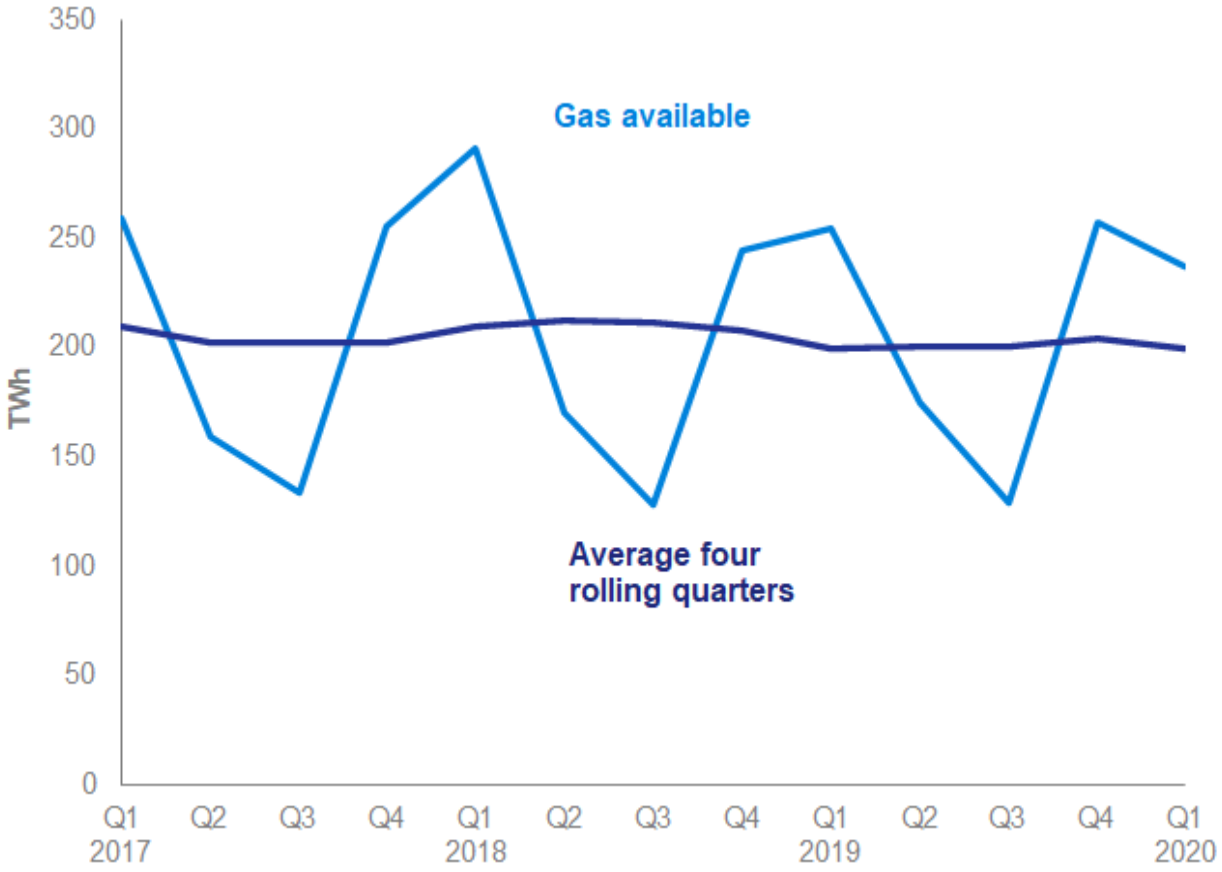
Chart 4.2 Production of dry gas and associated gas (not shown in published tables)



Production of associated gas (natural gas produced from oil fields) in Q1 2020 increased 6.6 per cent against Q1 2019, from 76 TWh to 81 TWh.

Compared to the same quarter in 2019 dry gas production (natural gas composed mainly of methane) decreased by 3.0 per cent to 32 TWh.

Chart 4.3 Gas availability (Table 4.2)

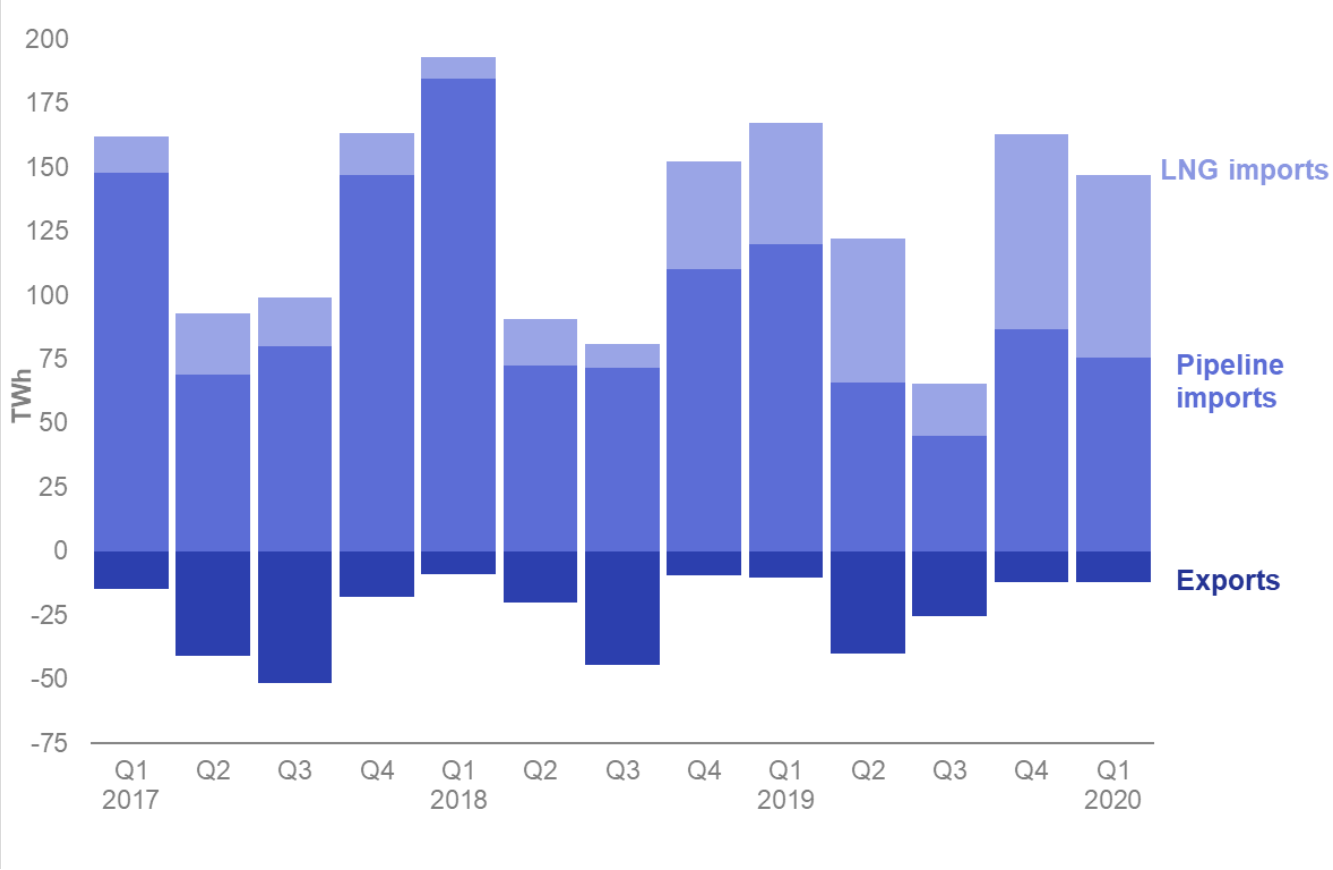


Gas available at terminals is equal to the gross gas production minus producers' own use, plus net imports. Gas availability reflects seasonal demand for gas, peaking during Q1 and Q4 each year. This demand is associated with colder temperatures over the winter months.

Due to slightly higher temperatures in January this year compared to 2019, gas availability dropped by 6.9 per cent to 237 TWh in the first three months of 2020 compared with Q1 of 2019.

Although the average availability of gas over four rolling quarters remains above average for Q1 2020, gas availability decreased for the first quarters of 2019 and 2020 following on from the severe weather in Q1 2018 and the relatively warmer temperatures in January this year compared to 2019.

Chart 4.4: Physical imports and exports of natural gas (Table 4.3 and Table 4.4)



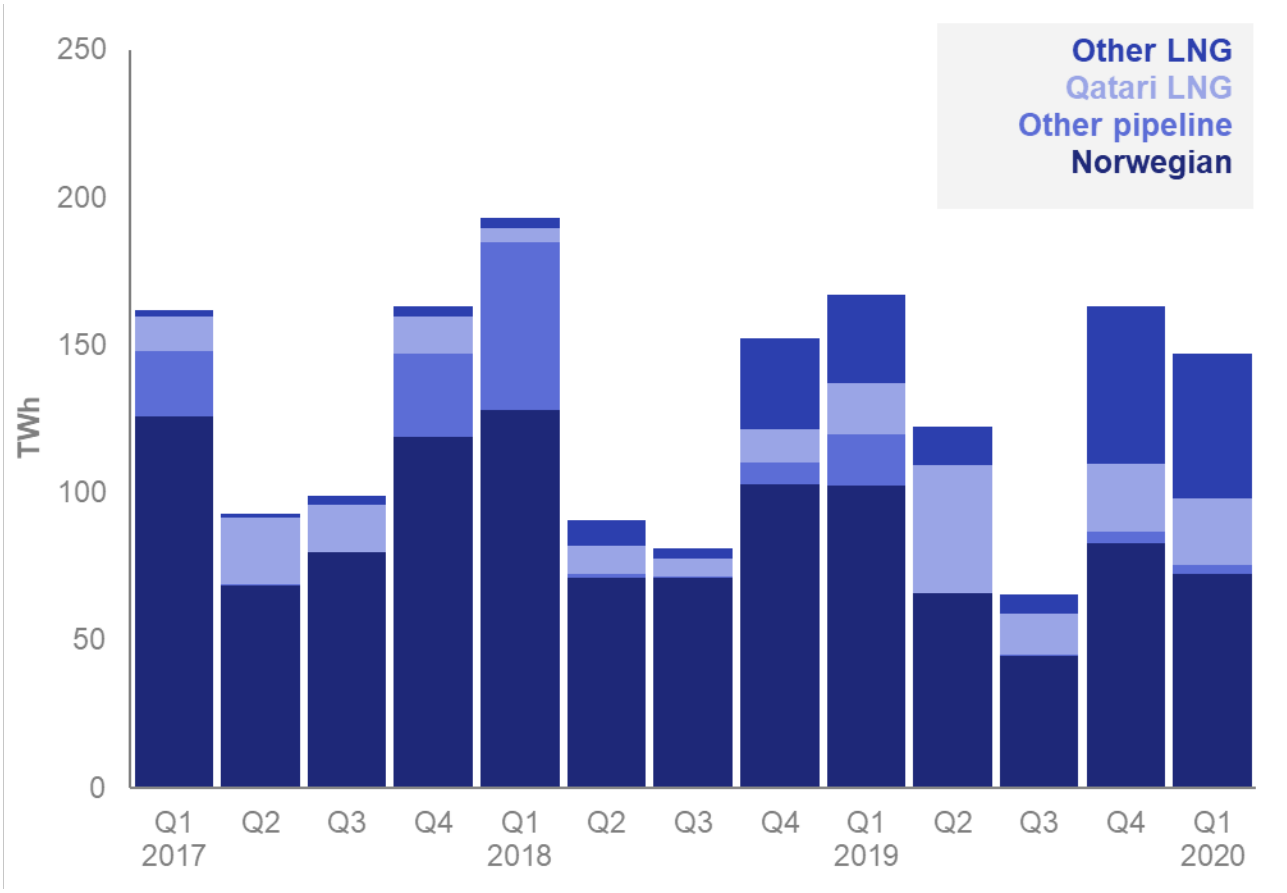
As shown in Map 4.1, the UK imports natural gas primarily from Norway (predominantly via the SAGE, FLAGS and Vesterled pipelines). Smaller volumes are imported from Belgium (via the UK-Belgium Interconnector) and the Netherlands (via the Balgzand to Bacton line).

In contrast to record levels of net imports for gas in Q1 2018, net imports in Q1 2020 were 14 percent lower than in Q1 2019 and 26 per cent lower than Q1 2018. The fall was due to a decline of 12 per cent for physical imports and an increase of 16 per cent for physical exports, mirroring lower UK demand in the first quarter of 2020.

Pipeline imports were down by 37 per cent. Apart from the Norwegian SAGE pipeline to St Fergus and the CATS pipeline to Teesside, there were decreases from all sources, especially imports from Belgium, the Netherlands and the Norwegian Frigg/Vesterland pipeline. In contrast imports of LNG have opposed this trend and increased by 51 per cent and accounted for just under half of all imports during the quarter. This contrasts to 2018 and 2019 where LNG imports during the first quarter comprised just 4.3 per cent and 28 per cent of total imports, respectively. Decreased global demand and increased availability from the diversification of the LNG market was a significant factor for this increase, as well as fivefold increases in imports from the United States. In addition, there was a global oversupply in LNG gas, pushing wholesale LNG gas prices downwards.

Over this quarter, the 16 per cent increase in total exports was driven by a 27 per cent increase in trade with the Republic of Ireland. At the same time exports to the Netherlands decreased to 1.5 TWh, which is the lowest volume in the first quarter of the year since 2007. Exports to Belgium have generally been reduced since October 2018 due to the termination of the Bacton Zeebrugge Interconnector long term capacity contract.

Chart 4.5 Imports by origin (Table 4.4)



Total pipeline imports in Q1 2020 fell sharply compared to 2019, with a 37 percent decrease in imports. Imports from Belgium remained low due to the Bacton Zeebrugge Interconnector long term capacity contract terminating at the beginning of October 2018. Imports from the Netherlands also fell from 14 TWh in Q1 2019 to 1 TWh in Q1 2020.

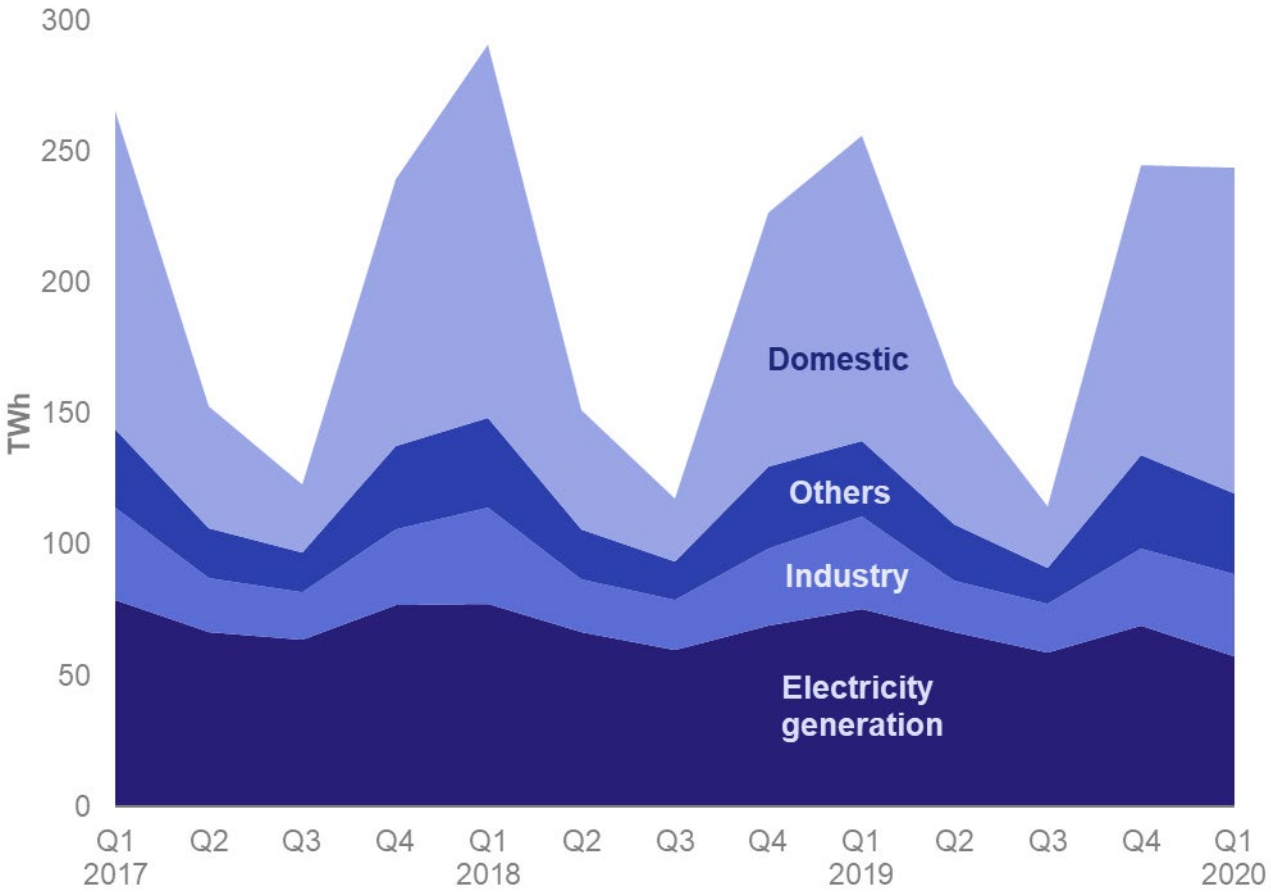
Although Norway remains the largest single source of imported gas at 51 per cent of all imports (including LNG contribution), Norway's pipeline imports were 29 per cent lower than last year and its share has fallen from 62 per cent in the first quarter of 2019.

The LNG share of imports has increased to 49 percent in the first quarter of 2020. Since 2017, Qatar has seen a decline in its shares of LNG imports from 89 per cent between 2010 and 2017 to 31 per cent in the first of quarter of 2020. By contrast, the share of LNG imports from USA has increased from 13 per cent in Q1 2019 to 36 per cent in Q1 2020, overtaking Qatar as the biggest source of LNG imports to the UK. The US shale boom and continued diversification in the LNG market contributed to this reduction in the Qatari share.

A complete country breakdown for physical pipeline and LNG imports is provided in Energy Trends Table 4.4 - *Supplementary information on the origin of UK gas imports*.

Map 4.1: UK physical imports and exports of gas Q1 2020

Chart 4.6 UK demand for natural gas (Table 4.1)



Overall total demand for gas in Q1 2020 was 4.6 per cent lower than last year, although final consumption was up by 2.7 per cent. There was a 24 per cent decline in demand for electricity generation by gas to just 58 TWh in Q1 2020, a five-year record low as renewables took a greater share of the energy mix due to high winds in the first quarter of 2020.

Despite slightly warmer temperatures than last year, demand in the domestic sector and by other final users was up by 4.4 per cent and 4.5 per cent, respectively. This increase in domestic use could have been due to the impact of the Covid-19 pandemic on household behaviour as people began working from home both before and after the UK government lockdown announcement on 23rd March 2020. Industrial demand fell by 2.9 per cent as production slowed.

A complete breakdown for gas demand is provided in Energy Trends table 4.1 - *Natural gas supply and consumption.*

Section 5 – UK Electricity
January to March 2020

Key results show:

Total electricity generation fell slightly in Quarter 1 of 2020, down by 0.8 per cent to 86.9 TWh. This was the lowest generation for any previous Quarter 1 on the published data series. Total demand for electricity was down by 1.4 per cent over the same period. **(Chart 5.1).**

Renewable generation reached record levels, up 30 per cent compared to Quarter 1 2019 to 40.8 TWh. This was a 47.0 per cent share of electricity generation, the highest quarterly value on the published data series. **(Chart 5.2).**

This quarter also saw the lowest share of generation coming from fossil fuels at 35.4 per cent. This is the first time the fossil fuel share has dropped below 40 per cent of total generation, continuing the ongoing trend away from fossil fuels. Total fossil fuel generation in Quarter 1 2020 was 30.8 TWh, which was the lowest value for any Quarter 1 and the second lowest quarterly value on the published data series. **(Chart 5.2).**

The record generation from renewable sources also led to an increase in the share of generation from low carbon sources, up to a record high of 62.1 per cent. This was despite nuclear generation falling 5.8 per cent compared to Quarter 1 2019 to 13.1 TWh. **(Chart 5.3).**

Total final consumption of electricity (total demand excluding energy industry use and losses) decreased by 1.8 per cent in Quarter 1 2020 compared to the same period the previous year. This continues an ongoing trend for lower year on year consumption. **(Chart 5.5).**

Domestic electricity consumption decreased by 0.3 per cent to 30.1 TWh. Electricity consumed by the industrial sector fell by 3.6 per cent, reflecting a drop in the manufacturing Index of Production. Consumption by other final users (including the commercial sector) decreased by 1.9 per cent. **(Chart 5.5).**

Net imports showed a 4.1 per cent decrease in Quarter 1 2020. They totalled 5.8 TWh and accounted for 7 per cent of total electricity supply (excluding own use) over the period. **(Chart 5.6).**

Relevant tables

5.1: Fuel used in electricity generation and electricity supplied
5.2: Supply and consumption of electricity
5.6: Imports, exports and transfers of electricity

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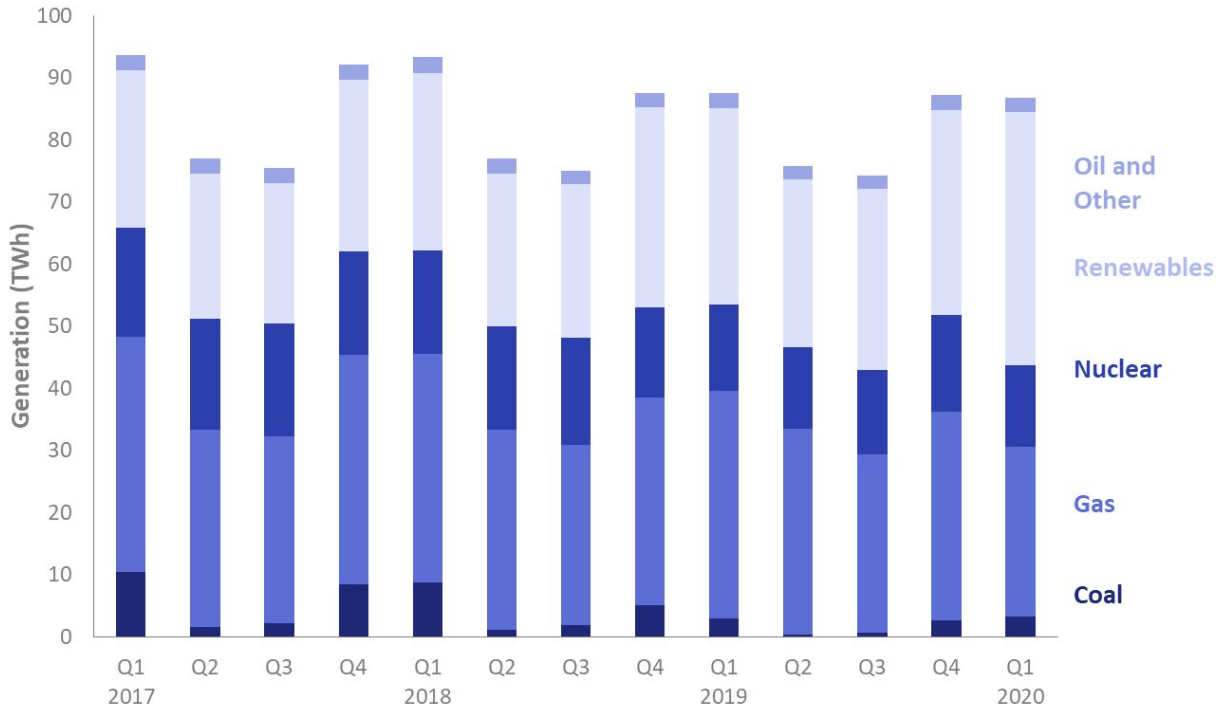
Chart 5.1 Total electricity generated by fuel type (Table 5.1)



Total electricity generation fell slightly in Quarter 1 of 2020, down by 0.8 per cent to 86.9 TWh. This was the lowest generation for any previous Quarter 1 on the published data series. Electricity generation is driven by demand, with electricity generated or imported as needed and total demand for electricity was down by 1.4 per cent over the same period. This reflected slightly higher average temperatures over the quarter as well as the early effects of the government's lockdown in response to COVID-19 which began in the middle of March.

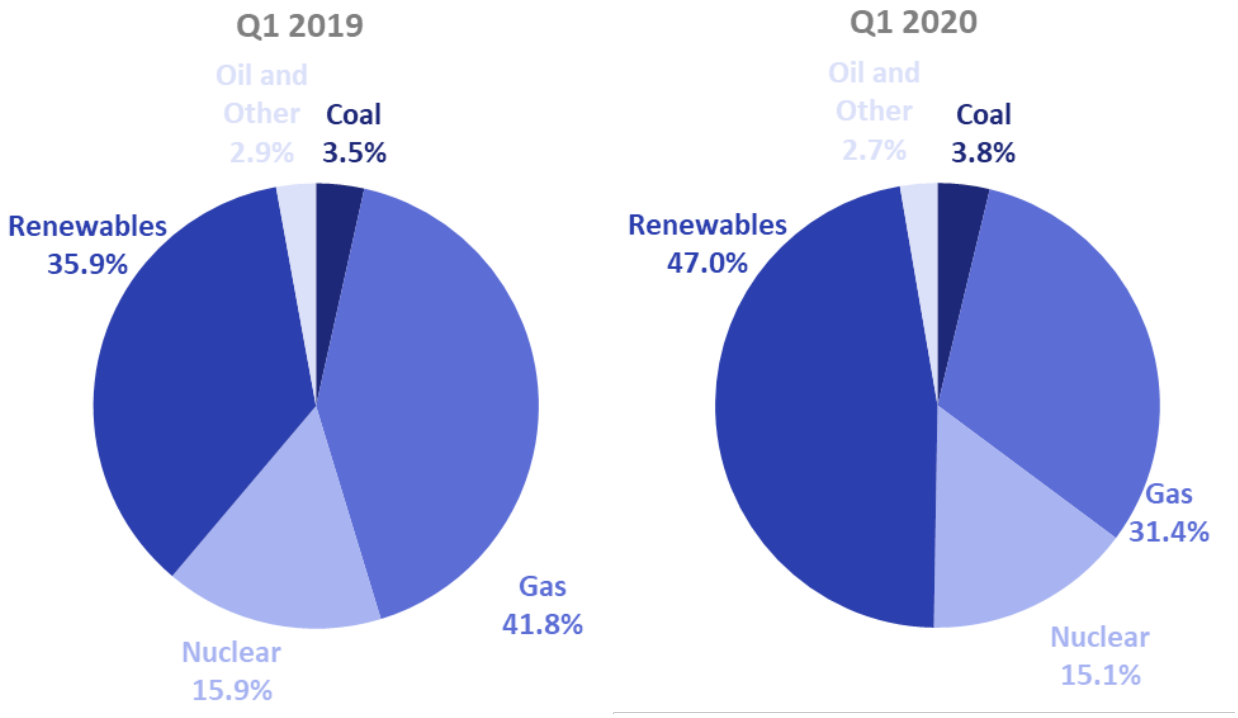
There was also a change in the balance of generation between major power producers and auto producers. Generation from major power producers was down 2.0 per cent in in Quarter 1 2020 while auto producers saw an increase of 5.9 per cent. There was also a 4.1 per cent decrease in net imports, linked to the lower demand.

Renewable generation, comprised of wind, solar, hydro and bioenergy, was 40.8 TWh in Quarter 1 2020, this exceeded the previous quarterly renewables record of 32.9 TWh. Compared to 2019 Quarter 1 renewables generated 30 per cent more electricity that in Quarter 1 2019, with particularly large increases for offshore wind (up 53 per cent), natural flow hydro (up 35 per cent) and onshore wind (up 20 per cent). This was linked to unusually wet and windy weather over the period, particularly storms Ciara, Dennis and Jorge which gave February significant rainfall and record wind speeds.

Generation from fossil fuels was down by 23 per cent in Quarter 1 2020 to 30.8 TWh. This was the lowest value for any Quarter 1 and the second lowest quarterly value on the published data series. Gas remained the fuel with the highest generation at 27.3 TWh, a decrease of 26 per cent compared to Quarter 1 of 2019. Within this trend, there was an increase of 7.7 per cent in coal generation as the remaining coal at the Fiddlers Ferry plant was burnt before its closure at the end of March.

Quarter 1 of 2020 saw a fall of 5.8 per cent in nuclear generation compared to Quarter 1 2019 to 13.1 TWh. During this time, an outage was completed at Heysham 1 while outages continued at Dungeness B, Hunterson B and Heysham 2 and started at Hinkley Point B.

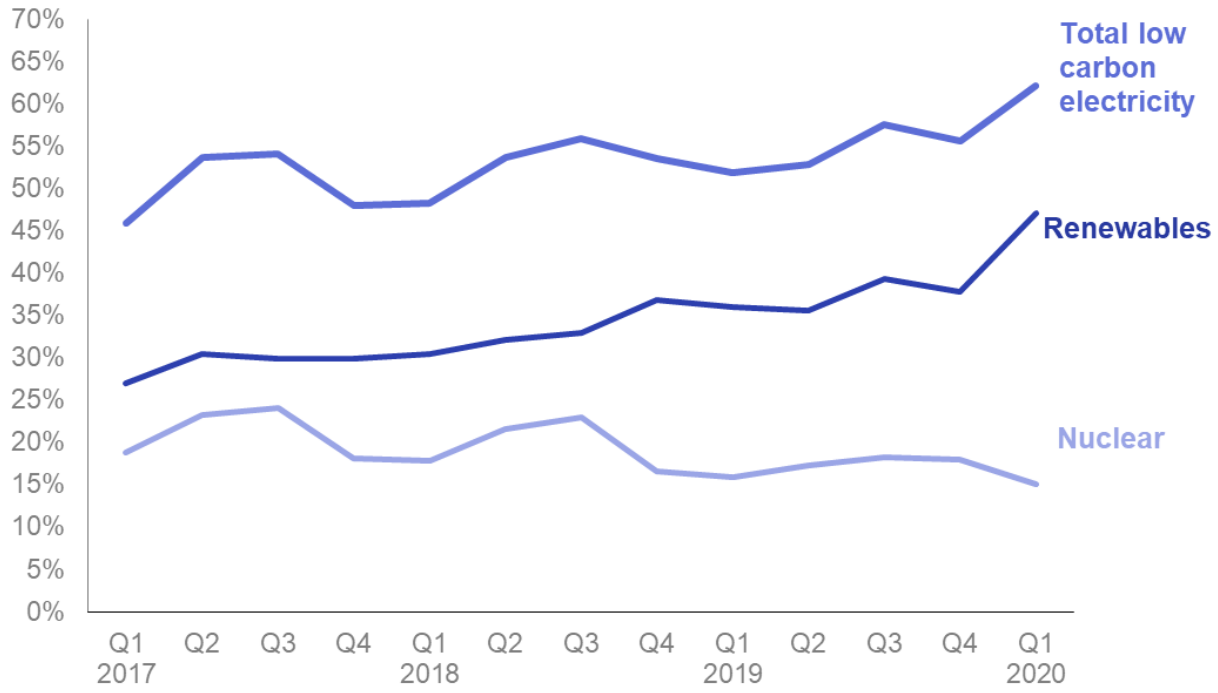
Chart 5.2 Shares of electricity generation (Table 5.1)



There was a substantial increase in the share of electricity generated from renewable sources (wind, solar, hydro and bioenergy) in Quarter 1 2020. The renewable share increased from 35.9 per cent in Quarter 1 2019 to 47.0 per cent in Quarter 1 2020, which was the highest quarterly value on the published data series. This was driven by large increases in generation for wind and solar (up by 34.9 per cent to 28.0 TWh) with the largest increase for offshore wind generation (up 53.1 per cent). The higher generation was due to high wind speeds in the quarter as well as increased capacity for offshore wind generation.

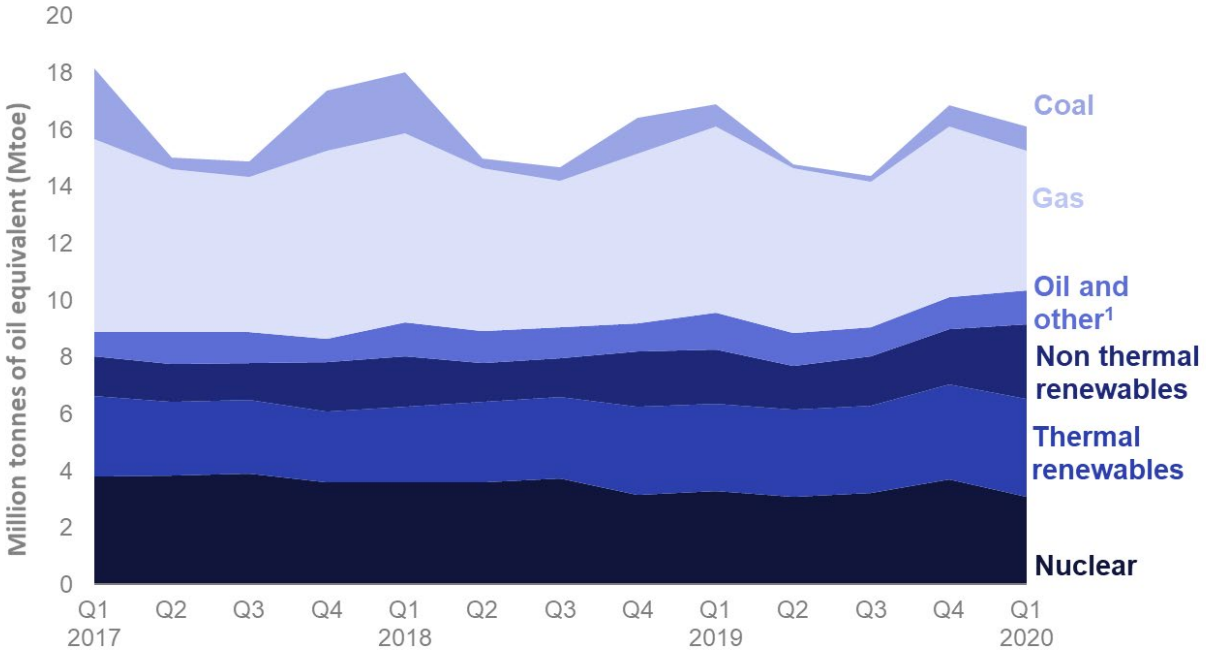
The share of generation coming from fossil fuels decreased in Quarter 1 2020 to 35.4 per cent of generation. This is the first quarter where the fossil fuel share was below 40 per cent of total generation and this continues the ongoing trend away from fossil fuels. While the share in generation from gas decreased by more than 10 percentage points, there was a small increase in the share of generation from coal as the remaining coal at the Fiddlers Ferry plant was burnt before its closure at the end of March.

Chart 5.3 Low carbon electricity's share of generation (Table 5.1)



The share of generation from low carbon sources increased again in Q1 2020, up to a record high of 62.1 per cent. This was driven by the record share of generation from renewable sources as the share of generation from nuclear fell to 15.1 per cent. As well as the lower demand and high renewable generation, nuclear generation was affected by outages. During this time, an outage was completed at Heysham 1 while outages continued at Dungeness B, Hunterson B and Heysham 2 and started at Hinkley Point B.

Chart 5.4 Fuel used in generation (Table 5.1)



[1]Includes imports

1. 'Oil and other' includes the fuel use of oil, other fuels and net imports.

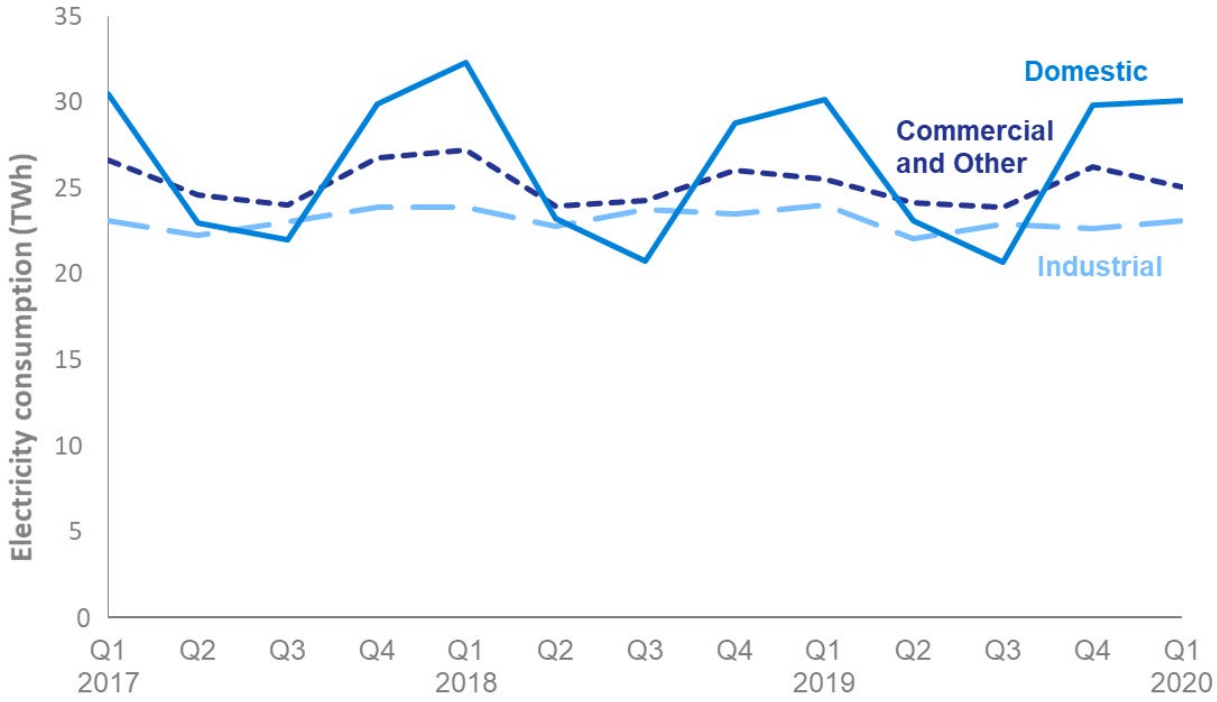
Total fuel use by electricity generators fell to 16.1 Mtoe in Quarter 1 2020, down 4.5 per cent compared to the same period the previous year. The drop in fuel use reflects a drop in demand for electricity as well as the continuing shift of the fuel mix to more efficient non-thermal renewables[1].

Gas used for electricity generation showed a substantial decrease in Quarter 1 2020 compared to the same period the previous year, down 25 per cent to 4.9 Mtoe. Similarly, overall fossil fuel use was down 22 per cent over the same period, despite a small increase in the amount of coal used. Coal used increased by 9.6 per cent to 0.87 Mtoe as a result of the Fiddler's Ferry site burning remaining coal stocks prior to its closure on the 31st March 2020.

There was also an increase of 13 per cent in bioenergy fuel use in Quarter 1 2020 compared to the same period the previous year. This supported the higher levels of renewable generation over this period and also reflects increased capacity for generation from bioenergy. Conversely, fuel used by nuclear generators was 5.8 per cent lower in Quarter 1 2020 compared to 2019. This is linked to lower demand and outages over the period.

[1] For primary renewable sources such as wind and solar, the fuel used is assumed to be the same as the electricity generated, unlike thermal generation where conversion losses are incurred

Chart 5.5 Electricity final consumption (Table 5.2)



Total final consumption of electricity (total demand excluding energy industry use and losses) decreased by 1.8 per cent in Quarter 1 2020 compared to the same period the previous year. This continues an ongoing trend for lower year on year consumption.

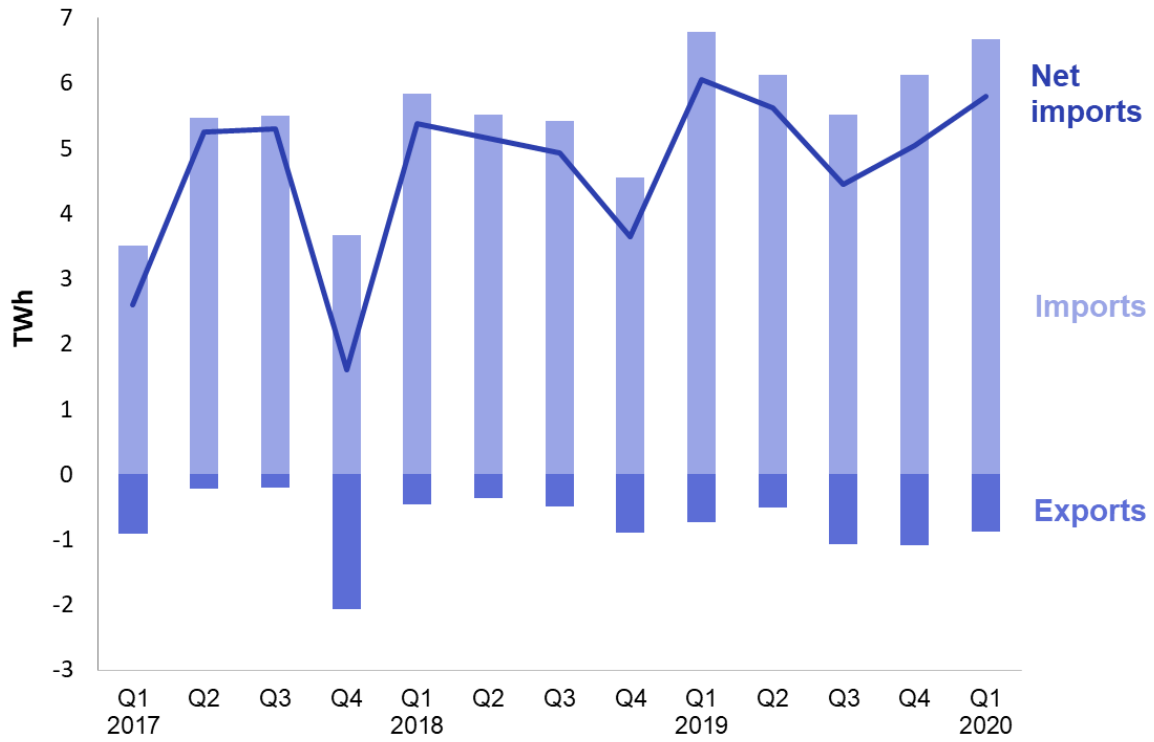
Temperature is the main driver of demand for electricity, particularly for domestic and commercial consumers. Average temperatures across the quarter were very similar to Quarter 1 2019, up by 0.3 degrees, but this does not reflect the differences seen when looking at the months individually. January 2020 was substantially warmer than January 2019, with average temperatures up 2.4 degrees, while February and March were more similar. February temperatures were down 0.5 degrees on average and March temperatures down by 1.1 degrees.

The overall demand was also affected by the additional leap year day in February 2020, which increased demand by around 1 per cent. Quarter 1 also saw the start of the UK government's lockdown in response to the COVID-19 pandemic, which came into full effect on 23rd March.

Electricity consumption was lower in all sectors in Quarter 1 2020 compared to the same period in 2019. There was a slight decrease in domestic electricity consumption and larger decreases in the non-domestic sectors. Domestic electricity consumption decreased by 0.3 per cent to 30.1 TWh reflecting the slightly higher average temperatures over the period[2], partially offset by the increased demand of the leap year day in February. Electricity consumed by the industrial sector fell by 3.6 per cent, reflecting a drop in the manufacturing Index of Production. Consumption by other final users (including the commercial sector) decreased by 1.9 per cent. Consumption in the industrial and commercial sectors is also likely to have been affected by the lockdown in response to COVID-19 resulting in the closing of services and industries at the end of the quarter.

[2] For more information on temperature trends, – see Energy Trends table 7.1 at: www.gov.uk/government/statistics/energy-trends-section-7-weather.

Chart 5.6 UK trade in electricity (Table 5.6)



The UK has five interconnectors allowing trade with continental Europe: England-France (2 GW capacity), England-Netherlands (1 GW), England-Belgium (1 GW), Northern Ireland-Ireland (0.6 GW) and Wales-Ireland (0.5 GW). The England-Belgium 'Nemo Link' interconnector has now completed its first year of operation after becoming fully operational on 31st January 2019.

The UK has been a net importer of electricity since Q2 2010, with total net imports in Quarter 1 2020 of 5.8 TWh. This accounted for 7 per cent of total electricity supply (excluding own use) over the period[3]. Net imports were down 4.1 per cent in Quarter 1 2020 compared to the same period the previous year, with a small decrease in imports (down 1.5 per cent) and a 20 per cent increase in exports. This is linked to lower demand for electricity in the UK as well as high levels of renewable generation from wind over the quarter.

Net imports decreased on most of the UK's interconnectors with Europe, down 26 per cent on the UK-Netherlands interconnector and down 13 per cent on the UK-France interconnector. The UK-Belgium indicator did show an increase in net imports (up 55 per cent) but this was because this interconnector only began operating during Quarter 1 of 2019. There was also a substantial increase in net imports from Ireland into Wales.

The interconnector data also shows record levels of net transfers between Scotland and England. These rose 53 per cent in Quarter 1 of 2020 compared to the same period in 2019, to a record 6.5 TWh. This was driven by a high supply from Scottish wind generators, which account for 39 per cent of the UK's total wind generation capacity.

[3] The shares of electricity supply calculations above do not include pumped storage.

Section 6 – UK Renewables
January to March 2020

Key results show:

Total renewable generation increased by 30 per cent on the same quarter last year to 40.8 TWh (**Chart 6.2).** This is an increase of 9.4 TWh, a record increase for year on year to quarterly renewable generation. As a result, renewables' share of electricity generation increased to 47.0 per cent, up by 11.1 percentage points on the share in 2019 Q1, reflecting increased capacity and high load factors for wind technologies. **(Chart 6.1)**

Renewable electricity capacity was 47.4 GW at the end of 2020 Q1, a 5.2 per cent increase on 2019 Q1, mostly due to increased capacity for offshore wind which increased by 19 per cent (1.6 GW). **(Chart 6.3)**

Wind generation increased significantly for both offshore (53 per cent) and onshore (29) per cent to 13.2 TWh and 12.8 TWh hours respectively, both improving on the quarterly record by almost a third. In total wind generated 7.5 TWh more than 2019 Q1. Wind contributed 30 per cent of total electricity generation. Solar generation decreased by 11 per cent, from 2.2 TWh in 2019 Q1 to 1.9 TWh in 2020 Q1. **(Chart 6.2).**

In 2020 Q1, 35 MW of small scale capacity was installed. Total small scale capacity is 6.7 GW from roughly 1.02 million installations. **(Chart 6.5)**

Liquid biofuels consumption provisionally rose by 42 per cent, from 422 million litres in 2019 Q1 to 600 million litres in 2020 Q1 with this increase due to sharp increase in biodiesel consumption. This represented 5.8 per cent of all petrol and diesel consumed in road transport. **(Chart 6.6)**

Relevant tables

6.1: Renewable electricity capacity and generation
6.2: Liquid biofuels for transport consumption

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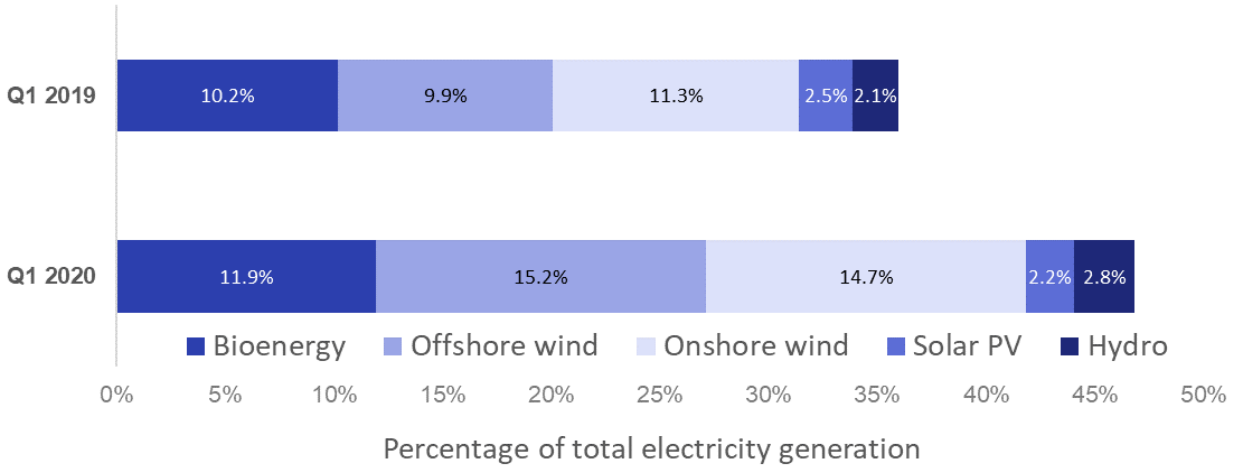
Chart 6.1 Renewables' share of electricity generation – 2020 Q1 (Table 6.1)



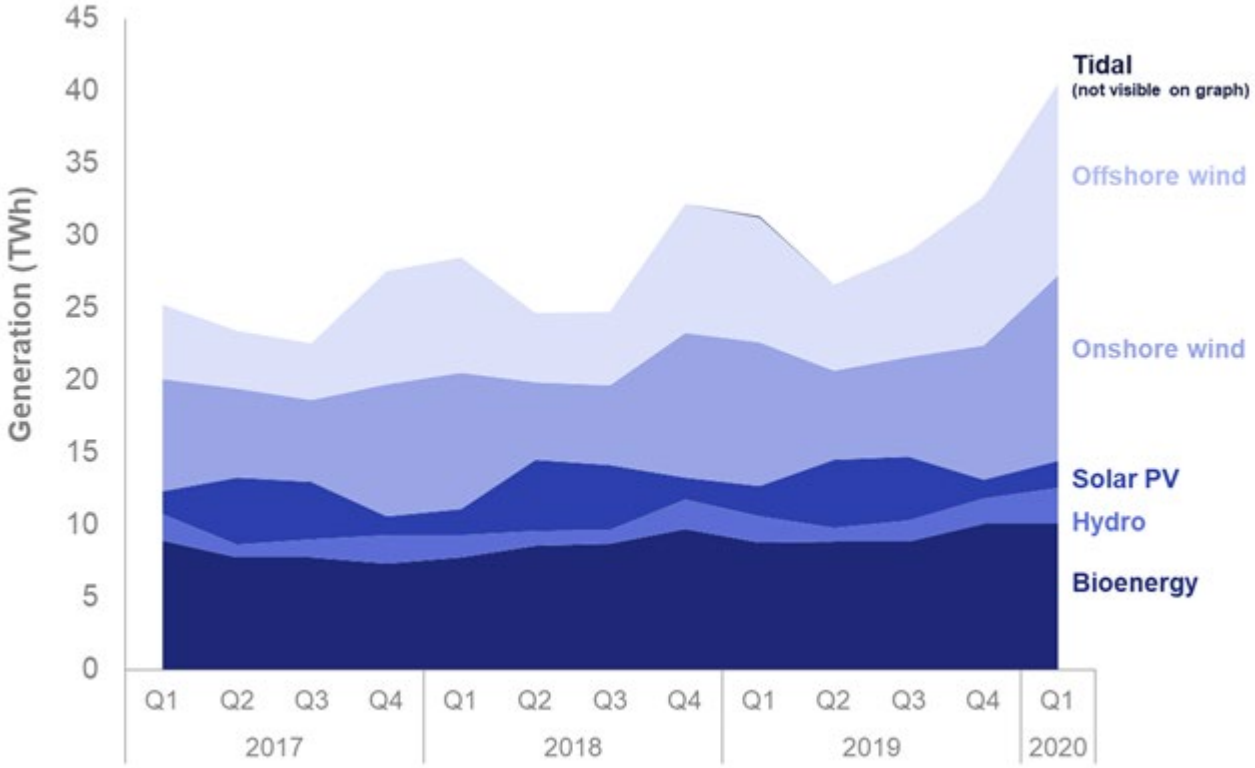
Total electricity generation from renewables in 2020 Q1 was 40.8 TWh, an increase of 30 per cent from 31.5 TWh in 2019 Q1. This broke the previous record for quarterly renewable generation by nearly a quarter and is the largest increase in year on year quarterly generation.

Renewables' share of total electricity generation increased from 35.9 per cent in 2019 Q1 to 47.0 per cent in 2020 Q1, up by 11.1 percentage points and a new record by a margin of 8 percentage points. Quarterly renewables share has never previously exceeded 40 per cent of total electricity generation.

The large increase in generation is due both to increased capacity and the weather conditions. With regards the increase in capacity, this was mostly for offshore wind (up by 1.6 GW) with smaller increases to onshore wind (up by 0.3 GW), and bioenergy (up by 0.3 GW). In addition to this increased capacity, the weather played a part. Load factors for wind were very high as wind speeds rose to the second highest quarterly average in our data series.

Total electricity generation figures (all generating companies) can be found in table ET 5.1, at: www.gov.uk/government/statistics/electricity-section-5-energy-trends

Chart 6.2 Renewable electricity generation (Table 6.1)



In 2020 Q1, generation from onshore wind was 12.8 TWh, up 29 per cent on the same quarter last year. Generation from offshore wind was 13.2 TWh, up 53 per cent on the same quarter last year, and this is the first quarter that onshore wind generated more than 10 TWh. The increase in generation for offshore wind was partly due to increase in capacity, which was up by 19 per cent compared to the same quarter of last year. In addition, both offshore and onshore generation increased due to high winds speeds, with February seeing the highest average wind speed of any month since 2000. See Energy Trends table 7.2 at:
www.gov.uk/government/statistics/energy-trends-section-7-weather.

Generation from solar photovoltaics decreased by 11 per cent (0.2 TWh) to 1.9 TWh, compared to 2019 Q1. Capacity increased slightly (1.3 per cent) this quarter however there was a decrease in the number of sunlight hours compared to the relatively high level seen in 2019 Q1, falling from 3.4 to 3.2 hours per day on average.

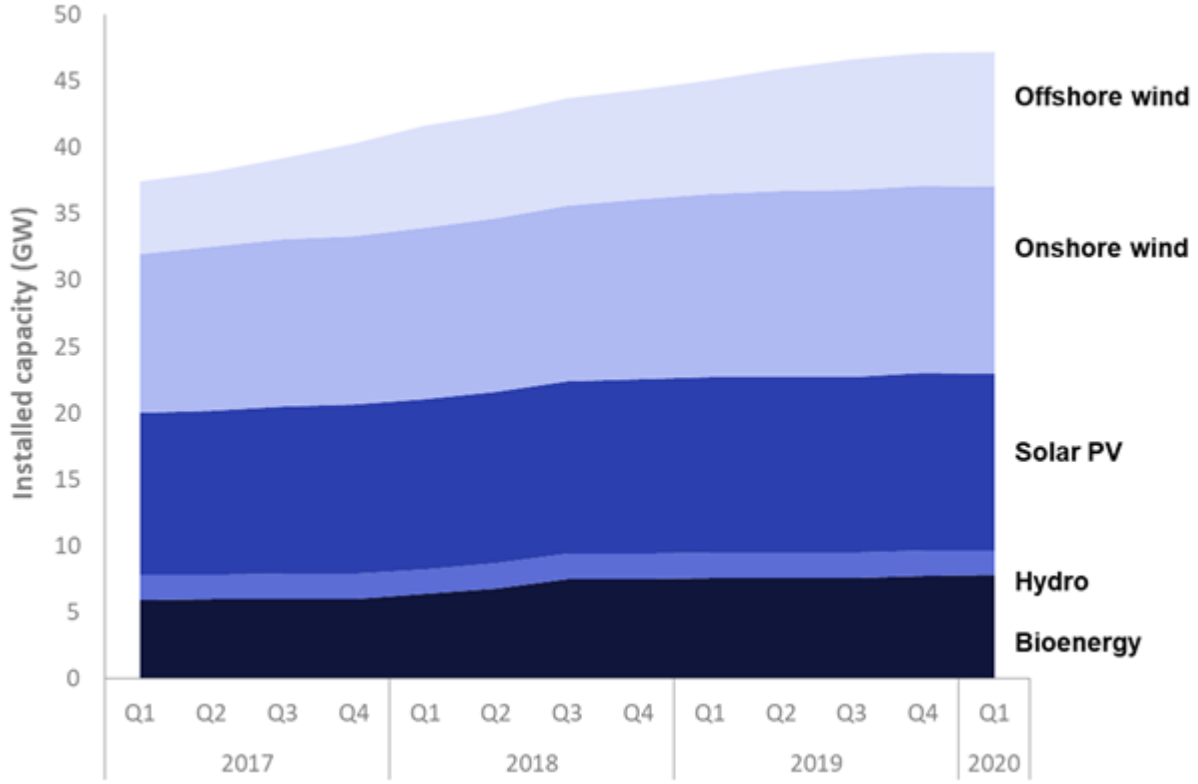
Hydro generation increased by 0.6 TWh on last year to 2.5 TWh, a 35 per cent increase. Average rainfall almost doubled compared to 2019 Q1 and this quarter was the wettest since the final quarter of 2015.

In 2020 Q1, generation from bioenergy[1] was 10.4 TWh, up by 17 per cent on the same quarter of 2019. The main component of this increase was the 1.2 TWh increase in electricity generated from Plant Biomass.

Offshore wind had the largest share of renewable generation with 32.4 per cent, followed by 31.4 per cent from onshore wind, 25.5 per cent from bioenergy, 6.0 per cent from hydro and 4.7 per cent from solar PV.

[1] Bioenergy consists of: plant biomass, animal biomass, biodegradable municipal solid waste, landfill gas, sewage gas, anaerobic digestion and co-firing (generation only)

Chart 6.3 Renewable electricity capacity (as at end of quarter) (Table 6.1)



At the end of 2020 Q1, the UK's renewable electricity capacity totalled 47.4 GW[1], an increase of 5.2 per cent on that installed at the end of 2019 Q1. Two thirds of this new capacity was from the completion of new offshore wind installations (1.6 GW). New offshore wind capacity included the completion of the Beatrice expansion, Hornsea One becoming operational in stages and the first stage of East Anglia One coming online. These three schemes are all supported by Contracts for Difference (CfD).

For more information on CfD see here: www.lowcarboncontracts.uk/contracts-for-difference-cfd

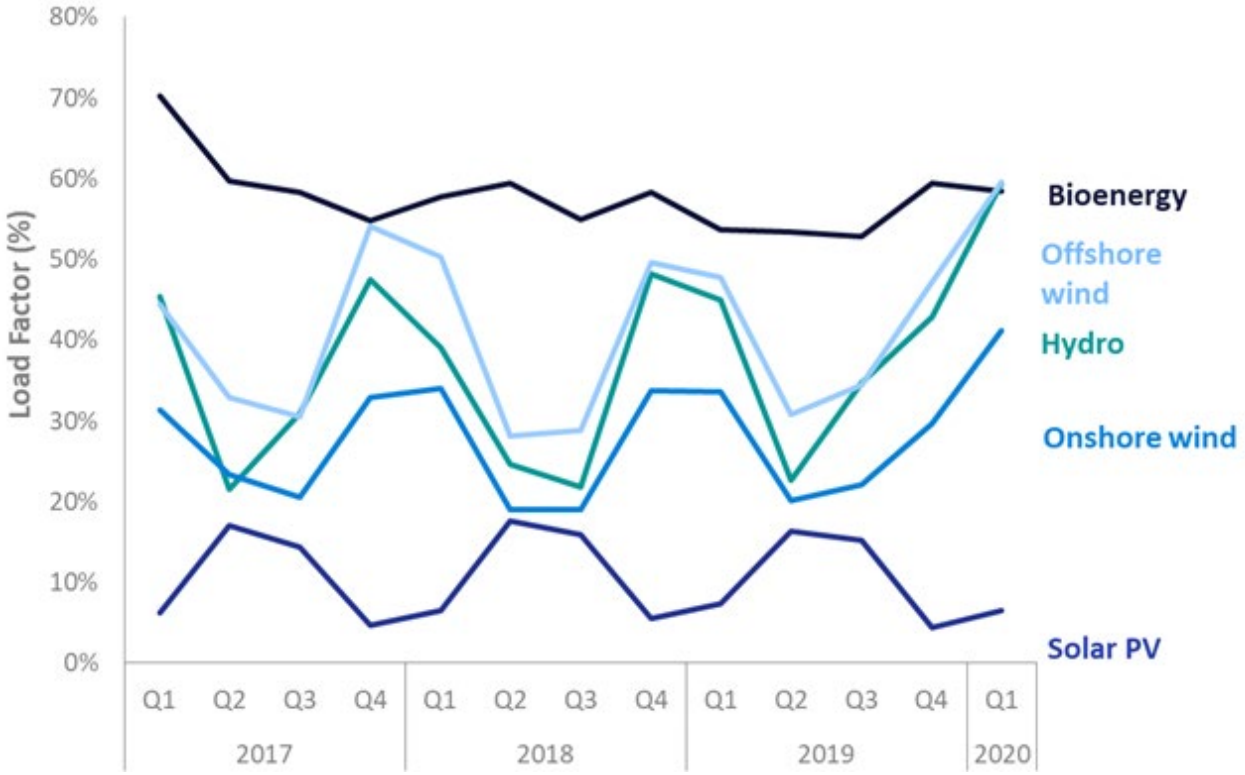
Offshore wind saw the highest rate of growth of the renewable technologies at 19 per cent. This was followed by energy from waste at 15 per cent, anaerobic digestion at 14 per cent, onshore wind at 2.5 per cent, Solar PV at 1.3 and Plant Biomass with an increase of less than 1 per cent.

At the end of 2020 Q1, onshore wind capacity at 14.1 GW represented 29.8 per cent of all renewable capacity, the highest share of renewable technologies. This was followed by Solar PV (28.2 per cent), offshore wind (21.4 per cent), bioenergy (16.6 per cent) and finally hydro (4.0 per cent).

[1] To note that renewable generation and capacity figures include installations accredited on all support schemes (Renewables Obligation, Feed in Tariffs, Contracts for Difference), as well as sub 50 kW installations commissioned, and registered on the Microgeneration Certification Scheme (MCS). In addition, the solar PV figures will also include installations awaiting accreditation when FITs closed at the end of March 2019. However, the figures presented here and in ET 6.1 do not currently include unsubsidised solar installations below 1MW capacity that are not registered on the MCS. We are reviewing data sources to improve coverage.

Chart 6.4 Renewable electricity load factors (Table 6.1)

Load factors are calculated as electricity generated by a technology as a proportion of maximum potential generation over the period, given the installed capacity.



At the end of 2020 Q1[1], the load factor for all renewables was 39.5 per cent, this is the highest quarterly load factor since the first quarter of 2014.

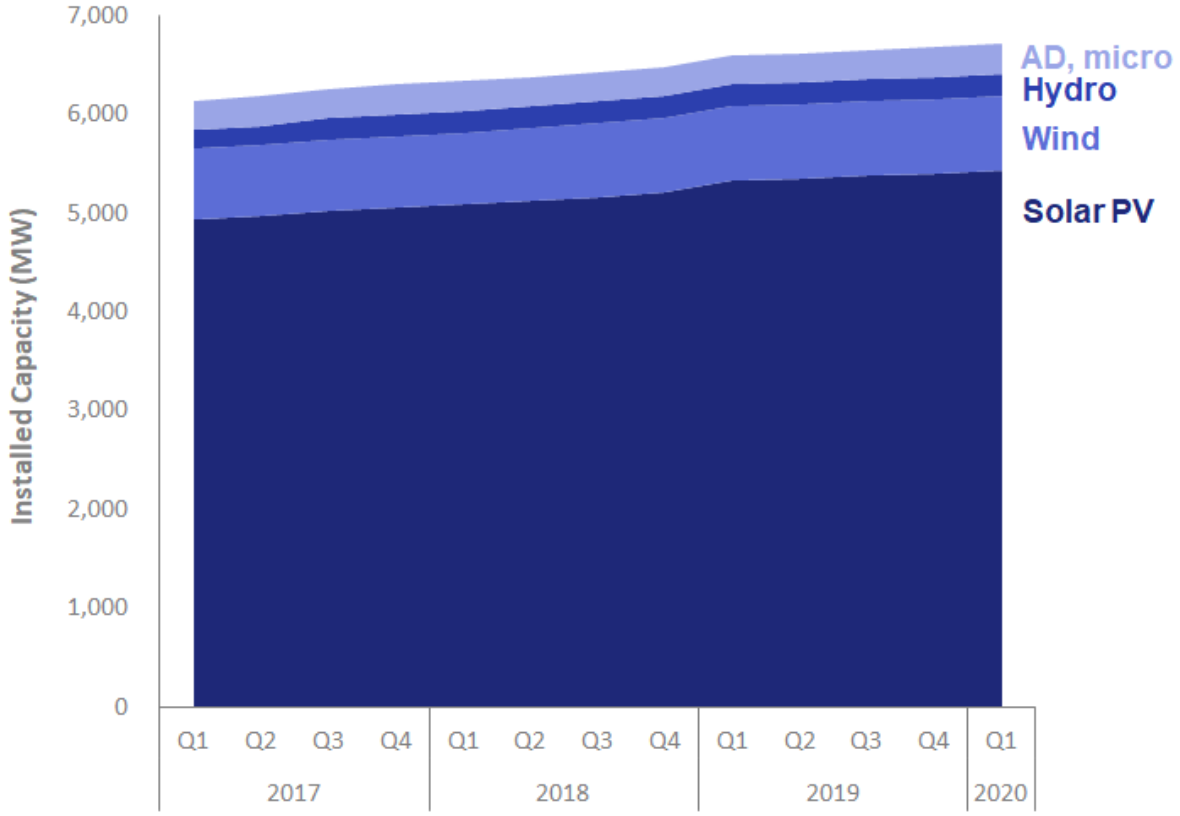
In 2020 Q1, onshore wind's load factor was 41.6 per cent whilst offshore wind's load factor was 59.7 per cent. These load factors were 33.8 per cent and 47.8 per cent for onshore and offshore wind respectively at the same time last year. This marked increase in the load factor was due to average wind speeds which were the highest since 2008. Both onshore and offshore wind saw record quarterly load factors.

Hydro's load factor in 2020 Q1 was 60.1 per cent, compared with 45.1 per cent at the same time last year. This quarter's hydro load factor is the second highest in our time series, reflecting higher than average rainfall, being the wettest quarter since 2015.

For plant biomass, the load factor in 2020 Q1 was 72.5 per cent. This is compared with 61.3 per cent in 2019 Q1.

[1] Load Factors are calculated using an average of capacity at the start and end of the quarter. Therefore, they can be influenced by the time in the quarter when any new capacity came online.

Chart 6.5 Small scale generators: installed capacity (as at end of quarter)



The Feed in Tariff (FiT) scheme[2] closed to new entrants at the end of March 2019. BEIS continues to monitor small scale generation using the Central FiTs Register as well as records of installations that register with the Micro Generation Certification Scheme (MCS) and the Renewable Energy Planning Database (REPD). The statistics published here do not currently include unsubsidised installations below 1MW capacity that are not registered on the MCS database. We are reviewing data sources to improve coverage.

There were over 1 million small scale installations (less than 5 MW) installed at the end of Q1 2020, with a total capacity of 6,712 MW. This accounts for 14 per cent of total renewable capacity.

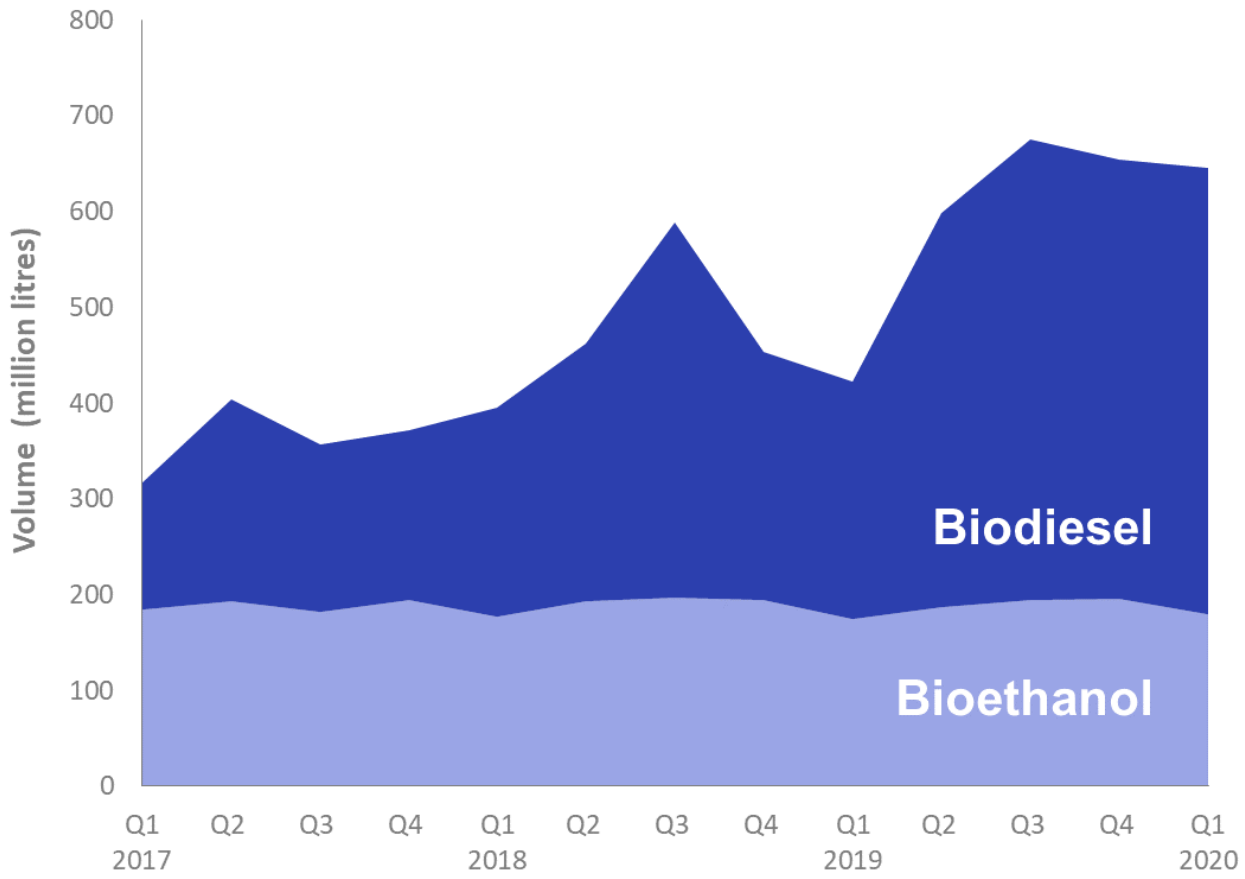
Solar photovoltaics (PVs) represents an overwhelming majority of small-scale installations at 99 per cent as well as a significant majority of the small scale capacity at 81 per cent. 940,000 of these installations are sub 4 kW retrofitted solar schemes. These account for 40 per cent of total small-scale capacity.

More statistics on small scale renewable electricity generation and Feed in Tariffs can be found at: www.gov.uk/government/collections/feed-in-tariff-statistics

Following the closure of the FIT scheme to new installations, government laid legislation in June 2019 to introduce a new supplier-led smart export guarantee (SEG) in Great Britain from 1 January 2020. Under the SEG, licensed electricity suppliers (with 150,000 domestic customers or more) are required to offer small-scale low-carbon generators a price per kWh for electricity exported to the grid. Further information on the SEG is available at: www.gov.uk/government/consultations/the-future-for-small-scale-low-carbon-generation

[2] Data are for schemes accredited under the Microgeneration Certification Scheme (MCS) and ROOFIT, which are pre-requisites for registering for the FIT scheme; not all of these installations will eventually be confirmed onto the FIT scheme.

Chart 6.6 Liquid biofuels for transport consumption (Table 6.2)



In 2020 Q1[1], 645 million litres of liquid biofuels were consumed in transport, an increase of 53 per cent on the total of 422 million litres in 2019 Q1.

Bioethanol consumption increased by 2.6 per cent, from 175 million litres in 2019 Q1 to 179 million litres in 2020 Q1. Biodiesel consumption increased by 89 per cent, from 247 million litres in 2019 Q1 to 466 million litres in 2020 Q1.

Biodiesel represented 72 per cent of biofuels consumption, with bioethanol taking the remaining 28 per cent of the total volume of biofuel consumed.

In the first quarter of 2020, bioethanol accounted for 4.7 per cent of motor spirit, up from 4.3 per cent in 2019 Q1. Biodiesel represented 6.4 per cent of diesel (DERV) consumption, a significant increase on the 3.5 per cent in the first quarter of 2019. Their combined contribution was 5.8 per cent, an increase from 3.8 per cent in the same quarter of 2019 and a new record share.

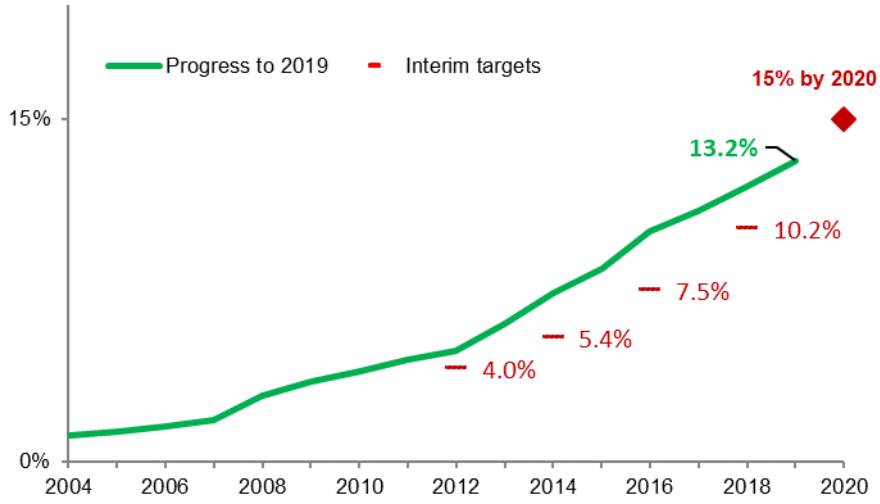
In 2018 the Renewable Transport Fuel Obligation (RTFO) increased the biofuel production targets from 4.75 per cent to 12.4 per cent by 2032 with an intermediary target of 9.75 per cent by the end of 2020.

[1] Data for the latest quarter are provisional, due to unavailability of the last months' data at the time of compilation.

Progress against the Renewable Energy Directive (2009)

- Following the March 2020 edition of Energy Trends, where a first estimate was made for renewable electricity for the year 2019 on a Renewable Energy Directive basis, the below shows overall progress against the Directive.
- In 2019, renewable energy provisionally accounted for 13.2 per cent of final energy consumption, as measured using the 2009 Renewable Energy Directive (RED) methodology, an increase of 1.2 percentage points on 2018.
- The chart below shows progress to 2019, interim targets and the final 2020 target (15 per cent);

Progress against Renewable Energy Directive and UK targets



- Renewable electricity accounted for 34.9 per cent of total generation (as measured using the RED methodology), an increase of 3.3 percentage points compared to 2018.
- Renewable heat accounted for 7.9 per cent of total heat consumption, an increase of 0.3 percentage points on 2018.
- Data for the transport estimate are being currently being reviewed and will be included in the Digest of UK Energy Statistics (DUKES) which is published on 30th July 2020. The result of that review will update the overall 13.2 per cent figure above.

What are households' perceptions of fuel poverty?

Introduction

Fuel poverty in England is measured using the Low Income High Costs (LIHC) indicator. Under the LIHC indicator, a household is fuel poor if:

1. they have required fuel costs[1] that are above average (the national median level);
2. and, were they to spend that amount, they would be left with a residual income[2] below the poverty line[3]

In 2018[4], 10.3 per cent of households were in fuel poverty, approximately 2.40 million households.

These statistics are modelled based on technical data collected in the English Housing Survey (EHS), which is a continuous national survey commissioned by the Ministry of Housing, Communities and Local Government (MHCLG). It collects information about people's housing circumstances and the condition and energy efficiency of housing in England. The survey also asks whether households perceive that they are able to keep comfortably warm in their living room during cold winter weather, if they are not able to do so why that is and how easy or difficult they find it to meet their fuel costs.

This article considers these questions on household's perceptions of their ability to heat their living room and meet their fuel costs. It compares the perception question responses with the National Statistics measures, and looks at the reasons why some households are struggling to heat their living rooms and meet their fuel costs.

Are households able to comfortably keep their living room warm in cold weather?

In 2018, 90.1 per cent of households in England said that they were able to keep comfortably warm in their living room and 8.5 per cent of households said they were not able to do so.

Of those households who are fuel poor under the LIHC measure, 82.2 per cent said that they could keep comfortably warm in their living room and only 15.9 per cent said that they could not. This compares to a larger proportion of non-fuel poor homes, 91.1 per cent, saying they can keep comfortably warm in their living room and a smaller proportion, 7.6 per cent saying they cannot. An additional 1.4 per cent of all households answered that they did not know to this question. Households giving "don't know" responses have been removed from all further analysis on this question. Where later it is said that 7.7 per cent of households cannot heat their living room, assume that 92.3 per cent can.

[1] Fuel costs required to have a warm, well-lit home, with hot water and the running of appliances. An equivalisation factor is applied to reflect that households require different levels of energy depending on who lives in the property. Further information on how fuel costs are calculated can be found in Section 5 of the Methodology Handbook: https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook

[2] Residual income is defined as equivalised income after housing costs, tax and National Insurance. Equivalisation reflects that households have different spending requirements depending on who lives in the property. Further information on how income is modelled can be found in Section 3 of the Methodology Handbook (above).

[3] The poverty line (relative income poverty) is defined as an equivalised disposable income of less than 60% of the national median, more information on the methodology can be found in the following infographic: https://www.gov.uk/government/publications/how-low-income-is-measured

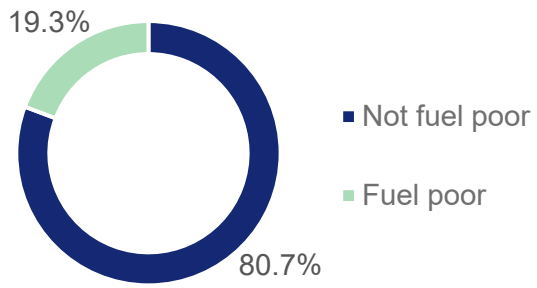
[4] 2018 Annual Fuel Poverty Statistics https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/882404/annual-fuel-poverty-statistics-report-2020-2018-data.pdf

Table 1: Number and proportion of households who can or cannot comfortably keep their living room warm

	Proportion of all households (%)	Proportion of non-fuel poor households (%)	Proportion of fuel poor households (%)
Households who **can** comfortably keep their living room warm	90.1	91.1	82.2
Households who **cannot** comfortably keep their living room warm	8.5	7.6	15.9
Households who **do not know** if they can comfortably keep their living room warm	1.4	1.3	1.9

Of those answering that they could not heat their living rooms comfortably, only 19.3 per cent are fuel poor households. This means that 80.7 per cent of those struggling are not fuel poor. This equates to 1.60 million households who are saying they are struggling to heat their living rooms but are not being classed as fuel poor.

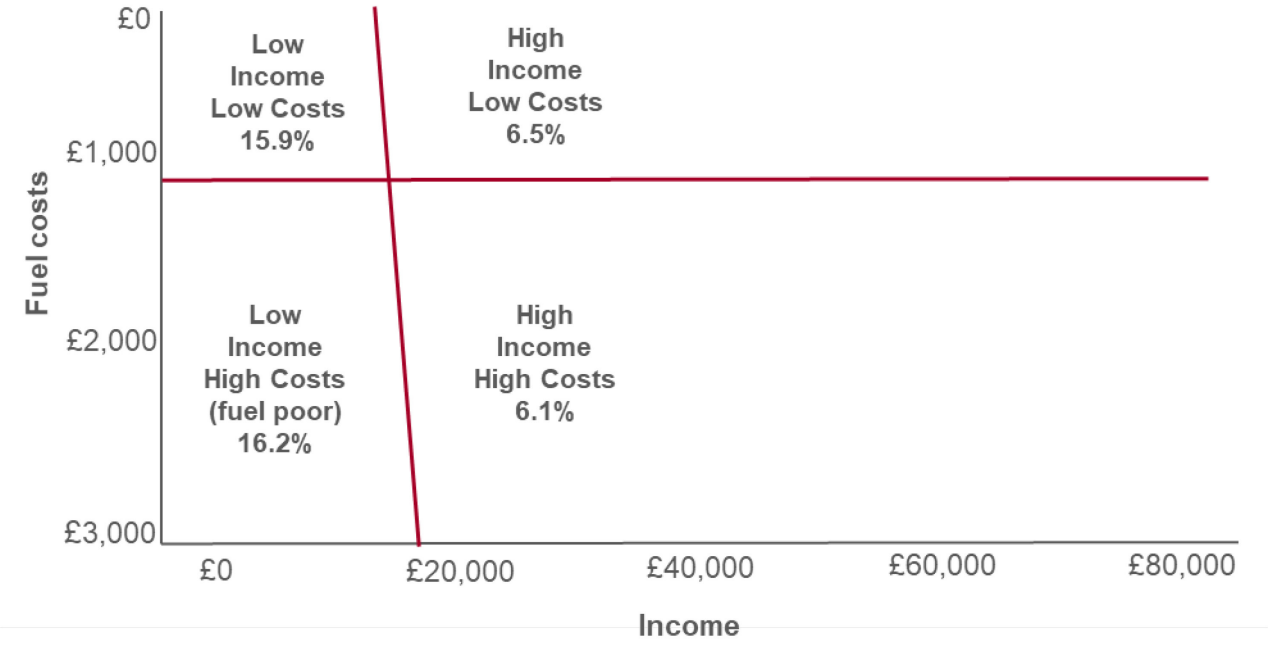
Figure 1: Fuel poor split of households who cannot comfortably keep their living room warm



Fuel poverty in England is measured using the LIHC indicator, which is defined in the introduction. Based on a combination of a household's income, energy requirements and energy prices, the indicator allows households to be grouped into one of the following four quadrants illustrated below in Figure 2.

Of households in the LIHC quadrant, 16.2 per cent of households said they cannot comfortably keep their living room warm. This was the highest figure across all quadrants. In the Low Income Low Costs (LILC) quadrant 15.9 per cent answered that they cannot comfortably keep their living room warm. Households fitting into the two low income quadrants appear to struggle more than those in the two high income quadrants. In the High Income Low Costs (HILC) quadrant 6.5 per cent of households cannot comfortably keep their living room warm and 6.1 per cent of households in the High Income High Costs (HIHC) quadrant also cannot. The survey responses would suggest that household income is the reason households cannot comfortably keep their living room warm and not fuel costs.

Figure 2: Proportion of households in each quadrant of the Low Income High Costs Matrix that find it difficult to comfortably heat their living room



Households who report that they are able to heat their living rooms to a comfortable standard have a median household income (after housing costs)[5] of £23,910 compared to the £16,192 for households who cannot. This is considerably lower than the median income of £23,212[6] for all households. In addition, households who cannot heat their living rooms comfortably have fractionally lower median fuel costs than those who can (£1,167 and £1,184 respectively).

Table 2: Median fuel costs and income split for households who can and cannot comfortably heat their living room

	Median equivalised fuel costs (£)	Median after housing costs (AHC), equivalised income (£)
Households who **can** comfortably keep their living room warm	1,184	23,910
Households who **cannot** comfortably keep their living room warm	1,167	16,192

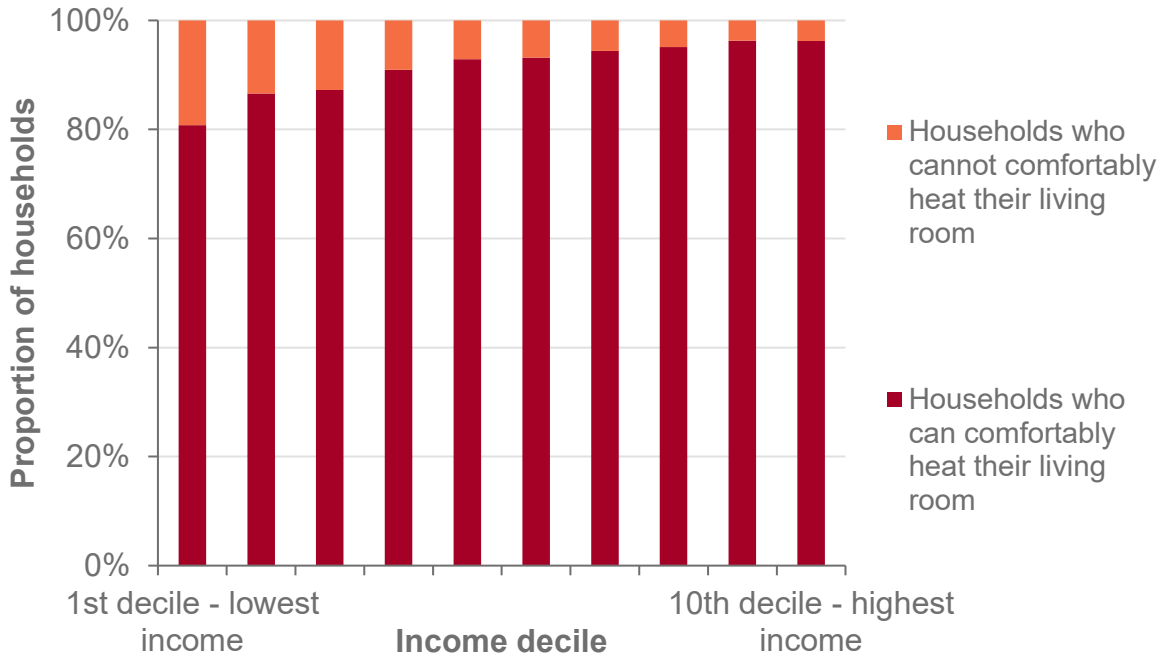
By looking at how households across the different income deciles answered the question, it is clear that those with lower household incomes are more likely to report to struggle to keep their living rooms comfortably warm. In the 1st (lowest) income decile, 19.2 per cent of households said they could not comfortably keep their living room warm. This contrasts to 3.8 per cent of households from

[5] Mortgage and rent payments (and council tax) are deducted from the full income of each household to give an after housing cost (AHC) measure of income. Once housing costs are deducted, incomes are then equivalised to reflect the fact that different household types will have different spending requirements.

[6] 2018 Fuel Poverty Supplementary tables https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/882127/fuel-poverty-supplementary-tables-2020-2018-data.xlsx

the 10th (highest) income decile who also cannot comfortably heat their living room. The proportion of households from the 1st income decile struggling is lower in comparison to 40.3 per cent of households in the decile are fuel poor[7].

Figure 3: Proportion of households who can and cannot comfortably heat their living room across all income deciles



The Standard Assessment Procedure (SAP) is used[8] to measure the technical energy efficiency of the housing stock in England and hence derive the costs of heating the property to standard heating pattern. For fuel poverty statistics, and to measure progress against the fuel poverty target (Section 2.2), BEIS is legally bound to use a fuel poverty specific energy efficiency rating.

The fuel poverty energy efficiency rating (FPEER) [9] (from hereafter referred to as energy efficiency rating), is based on SAP, but accounts for the impact of policies which discount households' energy bills (e.g. the Warm Home Discount[10]). For example, if a household has a Band E Energy Performance Certificate (EPC) and they get £140 deducted from their energy bill due to receipt of the Warm Home Discount, this could move them into an FPEER Band D.

Households with lower energy efficiency ratings were slightly more likely to say they could not heat their living rooms. For example, 11.6 per cent of Band F and G properties said they could not comfortably heat their living rooms compared to 7.7 per cent of Bands A, B and C. The proportion of Band F and G households who cannot comfortably heat their living rooms is noticeably lower than expected, when taking into account 20.8 per cent of the group are fuel poor[11].

[7] Fuel poverty (2018) Detailed Tables – Table 30
[8] Every household in England can be assessed using SAP, and a score 1-100 awarded, with 1 indicating the least energy efficient and 100 being the highest. For the purposes of Energy Performance Certificates (EPC), SAP scores are banded to give a rating A-G, A being the highest.
[9] Fuel Poverty Energy Efficiency Rating methodology https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332236/fpeer_methodology.pdf
[10] Warm home discount www.gov.uk/the-warm-home-discount-scheme
[11] Fuel poverty Detailed Tables 2018 – Table 3

Table 3: FPEER split of households who can and cannot comfortably heat their living room and fuel poverty

FPEER Band	Proportion of households in group who cannot comfortably heat their living room (%)	Proportion of households in group who are fuel poor (%)
A/B/C	7.7	3.5
D	8.5	11.9
E	11.1	21.5
F/G	11.6	20.8

Furthermore, there is a difference in how households from different tenures responded to this question. A total of 95.9 per cent of owner-occupied homes said they were able to comfortably heat their living room and only 4.1 per cent said they could not. This contrasts to 83.4 per cent of households in the private rented sector saying they can comfortably heat their living room and 16.6 per cent saying they cannot. Within the private rented sector, 17.7 per cent of households are fuel poor. In the social housing sector 16.5 per cent of households said they cannot heat their living rooms compared to 9.1 per cent of that group who are fuel poor.

Figure 4: Tenure comparison of households who can and cannot comfortably heat their living room

Table 4: Tenure split of households who cannot comfortably heat their living room and fuel poverty

Tenure	Proportion of households in group who cannot heat their living room (%)	Proportion of households in group who are fuel poor (%)
Owner-occupied	4.1	8.3
Private rented	16.6	17.1
Social sector	16.5	9.1

Why can some households not comfortably heat their living room in cold weather?

Households who said that they could not comfortably heat their living room were asked to give a reason as to why they were unable to do so. Most, 47.0 per cent, gave the reason of it not being possible to heat their living room to a comfortable standard and 26.6 per cent said it was because it costs too much to keep their heating on. An additional 20.1 per cent said that it was a combination of both of those reasons.

However, when we split this into fuel poor and non-fuel poor, a slightly smaller proportion of fuel poor homes have said it is because it is not being possible to heat their living room to a comfortable standard than non-fuel poor homes have (38.3 per cent compared to 49.1 per cent). This suggests that there are 1.6 million households who are not classed as fuel poor but struggle to comfortably heat their living room and feel they cannot do so for energy performance reasons. More fuel poor households, 30.5 per cent compared to 25.7 per cent, said it was because it costs too much to keep their heating on. A further 24.1 per cent of fuel poor households said it was both reasons compared to 19.1 per cent of non-fuel poor homes.

Table 5: The reasons households cannot heat their living room with a fuel poor split

	Proportion of all households (%)	Proportion of households within group who are non-fuel poor (%)	Proportion of households within group who are fuel poor (%)
Costs too much to keep heating on	26.6	25.7	30.5
Not possible to heat to a comfortable standard	47.0	49.1	38.3
Both of the above	20.1	19.1	24.1
Neither	6.3	6.1	7.0

Those who said that it costs too much to keep their heating on, have the lowest median income of £14,115 and low median fuel costs of £1,148. Households who said that it was because it is not possible to heat their living room to a comfortable standard had a higher median income of £18,447 and only fractionally higher median fuel costs of £1,156. Those who said it was both also had a low median household income of £15,200 and the most expensive fuel costs of £1,197.

Table 6: Median fuel costs and income for each reason given as to why households could not heat their living room to a comfortable standard

	Median equivalised fuel costs (£)	Median after housing costs (AHC), equivalised income (£)
Costs too much to keep heating on	1,148	14,115
Not possible to heat to a comfortable standard	1,156	18,447
Both of the above	1,197	15,200
Neither	1,209	16,944

Are households able to meet their fuel costs?

A further question was asked on how easy or difficult households find it to meet their fuel costs. A total of 72.7 per cent of all households said that they find it easy, 11.6 per cent said they find it difficult and 14.6 per cent said they find it neither easy nor difficult. An additional 1.0 per cent of all households answered that they didn't know to this question. These households have been removed from all further analysis on this question.

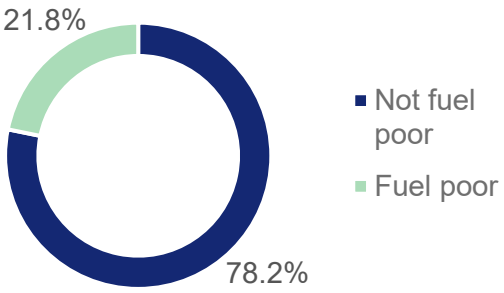
There is also a clear difference in how fuel poor and non-fuel poor homes answered. Whilst the majority of fuel poor homes, 55.2 per cent, said they find it easy to meet their fuel costs this is noticeably lower than the 74.7 per cent of non-fuel poor homes who answered the same. Additionally, a quarter of fuel poor households said they find it difficult to meet their fuel costs compared to only 10.1 per cent of non-fuel poor homes. Although this does highlight that the fuel poor group are struggling to meet their fuel costs compared to the non-fuel poor group, it is still notable that the majority of fuel poor households have said they find it easy to meet their fuel costs.

Table 7: Number and proportion of households who find it easy or difficult to meet their fuel costs

	Proportion of all households (%)	Proportion of non-fuel poor households (%)	Proportion of fuel poor households (%)
Easy	72.7	74.7	55.2
Difficult	11.6	10.1	24.8
Neither easy nor difficult	14.6	14.2	18.6
Don't know	1.0	1.0	1.5

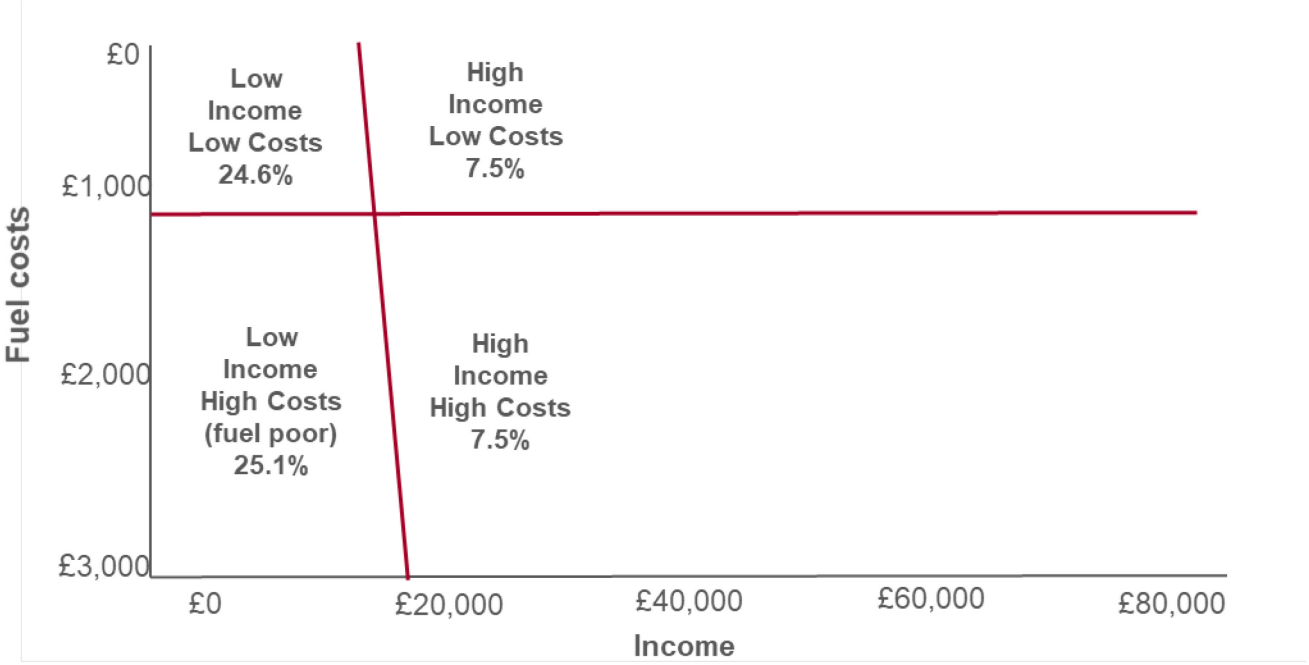
Of those answering that they find it difficult to meet their fuel costs, 21.8 per cent are fuel poor households. Therefore, 78.2 per cent of those struggling are not fuel poor. This equates to 2.13 million households who are saying they find it difficult to meet their fuel costs but are not classed as fuel poor.

Figure 5: Households who find it difficult to meet their fuel costs split by fuel poverty



Of those households in the LIHC quadrant, 25.1 per cent said they find it difficult to meet their fuel costs. Similarly, 24.6 per cent of households in the LILC quadrant said they also find it difficult. This compares to 7.5 per cent of households in both the HILC and HIHC quadrants saying they find it difficult. This provides further evidence that household income is the reason households struggle to meet their fuel costs.

Figure 6: Proportion of households in each quadrant of the Low Income High Costs Matrix that find it difficult to meet their fuel costs



Those households finding it easy to heat their living room have a considerably higher median income than those finding it difficult (£25,922 compared to £14,698). They also have slightly more expensive median fuel costs of £1,190 compared to £1,160 for households finding it difficult, although in comparison to the differences in household income this is not as significant. As the median fuel costs

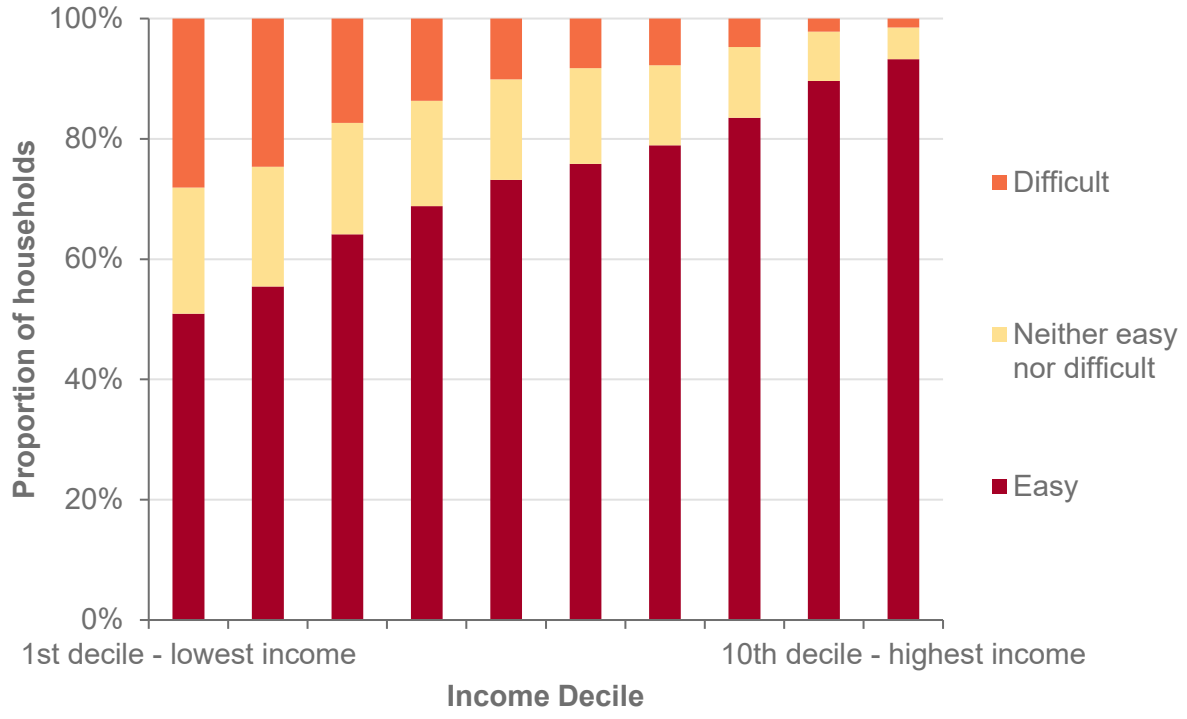
for households finding it difficult to meet their fuel costs are below the median of £1,181[12] for all households but their median income is below the average of £23,212[3] for all households, it suggests that it is not necessarily high fuel costs that are the reason households are struggling but household income.

Table 8: Median fuel costs and income for each reason given as to how easy or difficult households find it to meet their fuel costs

	Median equivalised fuel costs (£)	Median after housing costs (AHC), equivalised income (£)
Easy	1,190	25,922
Difficult	1,160	14,698
Neither easy nor difficult or don't know	1,165	19,320

There is also a marked difference between how those from the 1st (lowest) income deciles answered compared to those from the 10th (highest) decile. Although 50.9 per cent from the 1st decile said they find it easy to meet their fuel costs, this is considerably lower than the 93.3 per cent from the 10th income decile that also find it easy. Additionally, 28.1 per cent of households in the first income decile find it difficult compared to 1.5 per cent of those from the 10th decile. This is further evidence of the impact of a household's income on their perceptions of fuel poverty.

Figure 7: Different income deciles and how easy or difficult they find it to meet their fuel costs



[12] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/882127/fuel-poverty-supplementary-tables-2020-2018-data.xlsx

There is some difference between dwellings with lower energy efficiency in how easy or difficult they find it to meet their fuel costs, although this has a lesser effect than income. For Bands A-C homes 86.5 per cent said they find it easy and 13.5 per cent said they find it difficult. For Bands F and G households, 80.3 per cent find it easy and 19.7 per cent said they find it difficult. Whilst this is a smaller proportion of less energy efficient households finding it easy to meet their fuel costs than the most energy efficient, it is only a difference of 6.2 percentage points.

Similarly, there are more F and G homes finding it difficult to meet their fuel costs, but this is not significantly higher than Band A-C homes finding it difficult. This would suggest that it is not the energy efficiency of a dwelling that is influencing how easy or difficult households find it to meet their fuel costs. This is also a similar proportion of F and G homes finding it difficult to meet their fuel costs as there are in fuel poverty, but there are more households in Bands A, B and C finding it difficult compared to only 3.5 per cent of that group in fuel poverty.

Table 9: FPEER split of how easy or difficult households find it to meet their fuel costs

FPEER Band	Proportion of households in group who find it difficult (%)	Proportion of households in group who are fuel poor (%)
A/B/C	13.5	3.5
D	13.1	11.9
E	15.8	21.5
F/G	19.7	20.8

A large proportion of owner-occupied homes, 81.2 per cent, find it easy to meet their fuel costs compared to only 57.6 per cent of households from the social sector. In the private rented sector, 61.7 per cent find it easy to meet their fuel costs and 19.2 per cent find it difficult. In addition, 24.6 per cent of households from the social sector find it difficult to meet their fuel costs compared to 6.1 per cent of owner-occupied households. This is also a high proportion of households from the social sector considering only 9.1 per cent of the group are fuel poor.

Figure 8: Tenure of households who find it easy and those who find it difficult to meet their fuel costs

Table 10: Proportions of households finding it easy and difficult from each tenure compared to proportion who are non-fuel poor and fuel poor

Tenure	Proportion of households who find it difficult (%)	Proportion of households in group who are fuel poor (%)
Owner occupied	7.0	8.3
Private rented	23.8	17.1
Social sector	30.0	9.1

Summary:

It is interesting to note that using a qualitative indicator has identified a greater number of households who struggle to comfortably heat their living rooms compared to the official measurement of fuel poor households. These households who have reported that they struggle are across the income and energy efficiency spectrum but in particular those on low incomes. There is little difference seen between households with modelled high or low energy costs. Additionally, most (82%) fuel poor homes say that they can comfortably heat their living rooms and over half (55%) can easily meet their fuel costs. This could be due to some households not being comfortable in admitting they are struggling in a face to face interview process like EHS. This analysis has shown that in addition to those households identified as fuel poor, there are 1.60 million households who are not fuel poor saying they cannot comfortably heat their living rooms and 2.13 million households finding it difficult to meet their fuel costs.

As for the reasons why households are struggling to heat their living rooms and meet their fuel costs, there is some evidence to suggest that it is due to the energy performance of dwellings. For example, 46.8 per cent of households said the reason they could not heat their living room was due to it not being possible to heat it to a comfortable standard. However, when looking at the difference between how households across different energy efficiency ratings answered the questions there were no notable difference between the higher and lower energy efficient homes. However, there is more evidence to show that household income is the key driver in why these households have said they are struggling. This is picked up on through the notable differences in lower median incomes in households struggling and in more lower income decile households struggling. There is less evidence that high fuel costs are causing households to struggle due. This is seen in those saying they cannot heat their living room and find it difficult to meet their fuel costs despite having below average fuel costs.

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Recent and forthcoming publications of interest to users of energy statistics

Annual Fuel Poverty statistics report and sub-regional data

This annual publication details the latest statistics on fuel poverty in England. The 2020 edition, detailing the 2018 statistics, was published on 30 April 2020, along with a series of detailed data tables, at: www.gov.uk/government/collections/fuel-poverty-statistics. Data for 2018 at sub-regional was also published on 30 April 2020 at: www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics

Smart Meters quarterly statistics

This publication provides estimates of the number of Smart Meters installed and operating in homes and businesses in Great Britain. The latest release, covering estimates of the number of Smart Meters deployed up to the end of March 2020, was published on 28 May 2020 at: www.gov.uk/government/collections/smart-meters-statistics

Household Energy Efficiency statistics

This series presents statistics on the Energy Company Obligation (ECO), Green Deal and homes insulated. The headline release presents monthly updates of ECO measures and quarterly updates of in-depth ECO statistics, carbon savings and the Green Deal schemes. The latest release was published on 18 June 2020 at:
www.gov.uk/government/collections/household-energy-efficiency-national-statistics

Renewable Heat Incentive statistics

This series presents statistics on deployment data for the non-domestic Renewable Heat Incentive (RHI) to support the uptake of renewable heat in the non-domestic sector, and the domestic RHI to encourage a switch to renewable heating systems in the domestic sector. The latest release was published on 18 June 2020 at:
www.gov.uk/government/collections/renewable-heat-incentive-statistics

Local Authority carbon dioxide emissions

This annual publication provides estimates of local authority carbon dioxide emissions in the United Kingdom. Data for 2018 was published on 25 June 2020 at:
www.gov.uk/government/collections/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics

National Energy Efficiency Data-framework 2020

This publication presents analysis from the National Energy Efficiency Data-Framework (NEED). It provides updated domestic energy consumption results to include 2018 gas and electricity consumption data. It also includes updated estimates of the impact of installing energy efficiency measures on a household's gas consumption for measures installed between June 2017 and June 2018, along with longitudinal estimates of savings from earlier installations. The latest edition was published on 25 June 2020 at:
www.gov.uk/government/collections/national-energy-efficiency-data-need-framework.

Sub-national road transport consumption

This annual publication provides estimates of road transport fuel consumption in the United Kingdom, by vehicle and fuel type. Data for 2018 was published on 25 June 2020 at:
www.gov.uk/government/collections/road-transport-consumption-at-regional-and-local-level

Digest of United Kingdom Energy Statistics (DUKES)

This annual publication provides essential information for everyone involved in energy, from economists to environmentalists, and from energy suppliers to energy users. The 2020 edition will be published on 30 July 2020. With extensive tables, charts and commentary covering all the major aspects of energy, it provides a detailed and comprehensive picture of energy production and use over the last 5 years. It will be available (along with additional annexes and key series back to 1970) at: www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes

UK Energy in Brief

This annual publication summarises the latest statistics on energy production, consumption, prices and climate change in the United Kingdom. The figures are primarily taken from the Digest of United Kingdom Energy Statistics (see above). The 2020 edition will be published on 30 July 2020 at: www.gov.uk/government/collections/uk-energy-in-brief

Energy Flow Chart

This annual publication illustrates the flow of primary fuels from home production and imports to their eventual final uses. The flows are shown in their original state and after being converted into different kinds of energy by the secondary fuel producers, and are measured in million tonnes of oil equivalent, with the widths of the bands approximately proportional to the size of the flows they represent. The 2020 edition of the chart, showing the flows for 2019, will be published on 30 July 2020 at: www.gov.uk/government/collections/energy-flow-charts

Sub-national consumption of residual fuels

This publication presents the findings of the residual fuels sub–national energy consumption analysis in the UK for the period covering 1 January to 31 December 2018. Residual fuels are defined as non-gas, non-electricity and non-road transport fuels, and cover consumption of coal, petroleum, manufactured solid fuels and bioenergy and waste not used for electricity generation or road transport. The release will be published on 24 September 2020 at:
www.gov.uk/government/collections/sub-national-consumption-of-other-fuels

Sub-national total final energy consumption

This publication presents the findings of the sub–national energy consumption analysis in the UK for all fuels, for the period covering 1 January to 31 December 2018, with gas consumption covering the period mid-May 2018 to mid-May 2019. The release will be published on 24 September 2020 at:
www.gov.uk/government/collections/total-final-energy-consumption-at-sub-national-level

Sub-national electricity and gas consumption in Northern Ireland

This publication presents estimates of the latest analysis of electricity consumption in Northern Ireland at District Council level, with electricity covering the period 31 January 2018 to 30 September 2019, and with gas consumption covering the period mid-May 2018 to mid-May 2019. The release will be published on 24 September 2020 at:
www.gov.uk/government/collections/sub-national-electricity-consumption-in-northern-ireland.

Energy Consumption in the United Kingdom (ECUK)

This annual publication is normally published alongside DUKES at the end of July. However, as the demand increases for statistics and data to measure the impact of the coronavirus (COVID-19) pandemic, we have had to change data gathering and release practices. This is to focus our efforts on priority analysis and statistics. As such, we are rescheduling this release until Autumn 2020. Further information on the publication date will be made available at:
www.gov.uk/government/statistics/announcements/energy-consumption-in-the-uk-2019

Explanatory notes

General

More detailed notes on the methodology used to compile the figures and data sources are available on the BEIS section of the GOV.UK website.

Symbols used in the tables

.. not available
- nil or not separately available
p provisional
r revised; where a column or row shows 'r' at the beginning, most, but not necessarily all, of the data have been revised.
e estimated; totals of which the figures form a constituent part are therefore partly estimated

Notes to tables

- Figures for the latest periods and the corresponding averages (or totals) are provisional and are liable to subsequent revision.
- The figures have not been adjusted for temperature or seasonal factors except where noted.
- Due to rounding the sum of the constituent items may not equal the totals.
- Percentage changes relate to the corresponding period a year ago. They are calculated from unrounded figures but are shown only 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 Oil & Gas Authority at: www.ogauthority.co.uk/

Conversion factors

1 tonne of crude oil =	7.55 barrels
1 tonne =	1,000 kilograms
1 gallon (UK) =	4.54609 litres
1 kilowatt (kW) =	1,000 watts
1 megawatt (MW) =	1,000 kilowatts
1 gigawatt (GW) =	1,000 megawatts
1 terawatt (TW) =	1,000 gigawatts

All conversion of fuels from original units to units of energy is carried out on the basis of the gross calorific value of the fuel. More detailed information on conversion factors and calorific values is given in Annex A of the Digest of United Kingdom Energy Statistics.

Conversion matrices

To convert from the units on the left hand side to the units across the top multiply by the values in the table.

To:	**Thousand toe**	**Terajoules**	**GWh**	**Million therms**
From	**Multiply by**			
Thousand toe	1	41.868	11.630	0.39683
Terajoules (TJ)	0.023885	1	0.27778	0.0094778
Gigawatt hours (GWh)	0.085985	3.6000	1	0.034121
Million therms	2.5200	105.51	29.307	1

To:	**Tonnes of oil equivalent**	**Gigajoules**	**kWh**	**Therms**
From	**Multiply by**			
Tonnes of oil equivalent	1	41.868	11,630	396.83
Gigajoules (GJ)	0.023885	1	277.78	9.4778
Kilowatt hours (kWh)	0.000085985	0.003600	1	0.034121
Therms	0.0025200	0.105510	29.307	1

Note that all factors are quoted to 5 significant figures

Abbreviations

ATF	Aviation turbine fuel
CCGT	Combined cycle gas turbine
DERV	Diesel engined road vehicle
LNG	Liquefied natural gas
MSF	Manufactured solid fuels
NGLs	Natural gas liquids
UKCS	United Kingdom continental shelf

Sectoral breakdowns

The categories for final consumption by user are defined by the Standard Industrial Classification 2007, as follows:

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 by SIC 2007