

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](#)

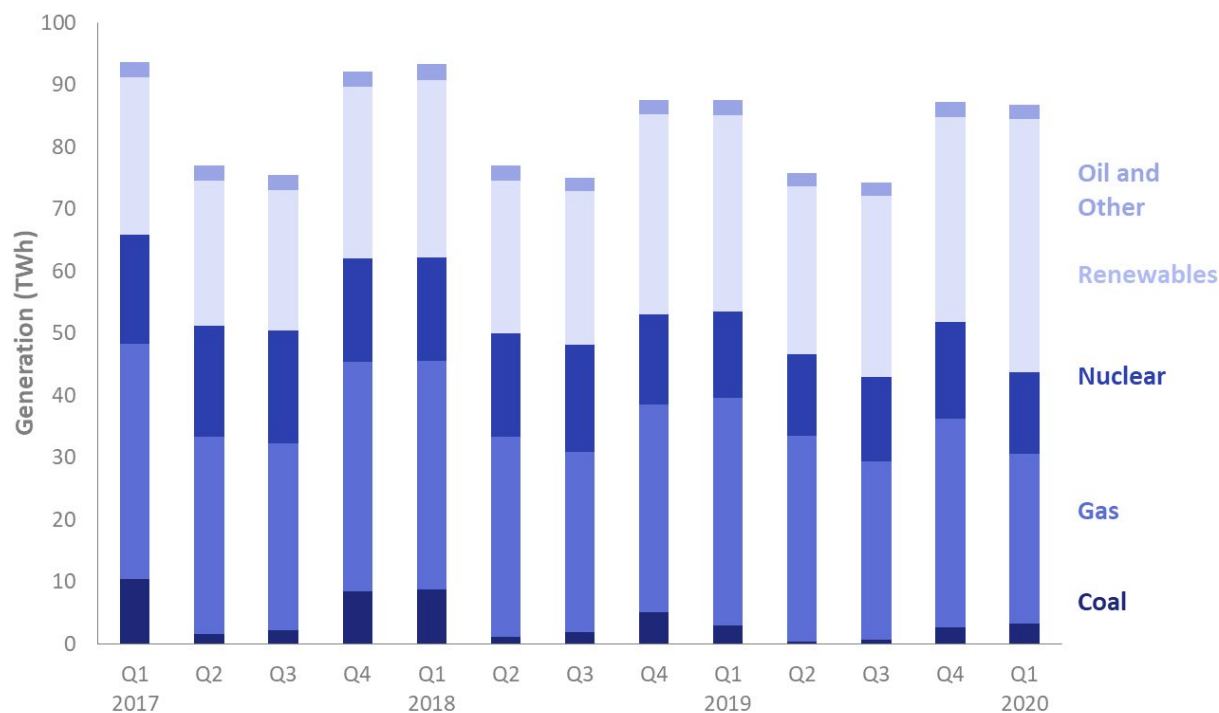
[5.6: Imports, exports and transfers of electricity](#)

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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.

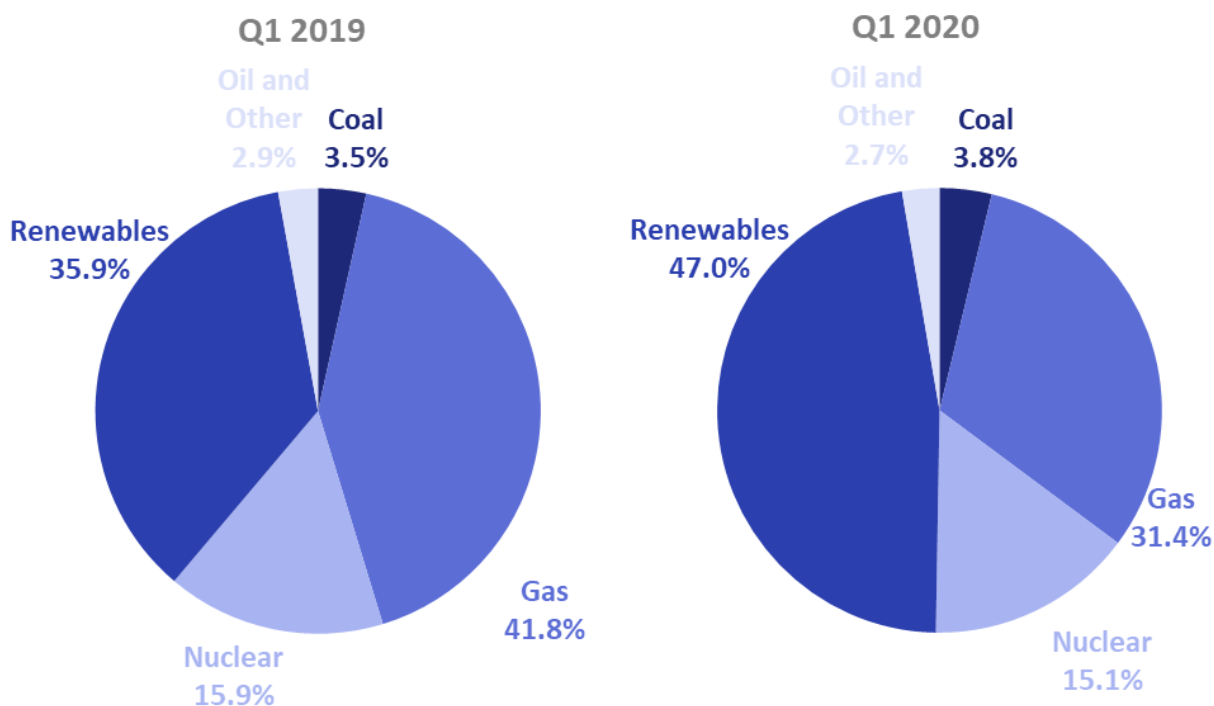
There was also a change in the balance of generation between major power producers and auto producers. Generation from major power producers was down 2.0 per cent in Quarter 1 2020 while auto producers saw an increase of 5.9 per cent. There was also a 4.1 per cent decrease in net imports, linked to the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

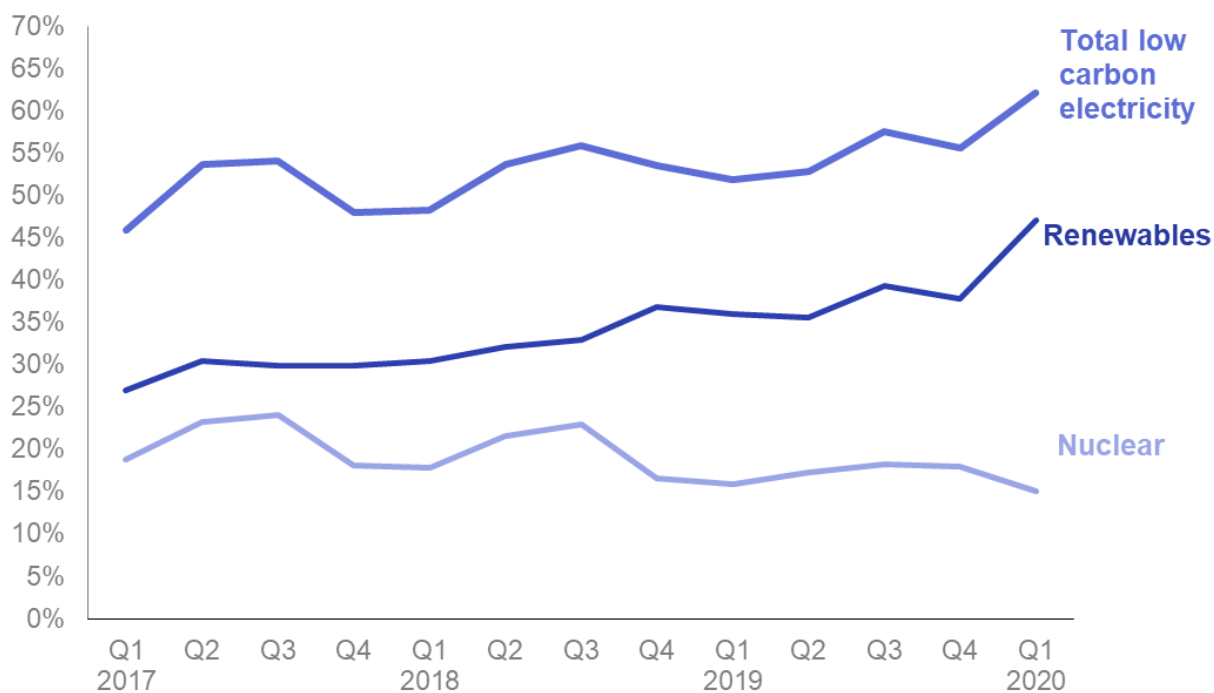
Quarter 1 of 2020 saw a fall of 5.8 per cent in nuclear generation compared to Quarter 1 2019 to 13.1 TWh. During this time, an outage was completed at Heysham 1 while outages continued at Dungeness B, Hutton B and Heysham 2 and started at Hinkley Point B.

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.

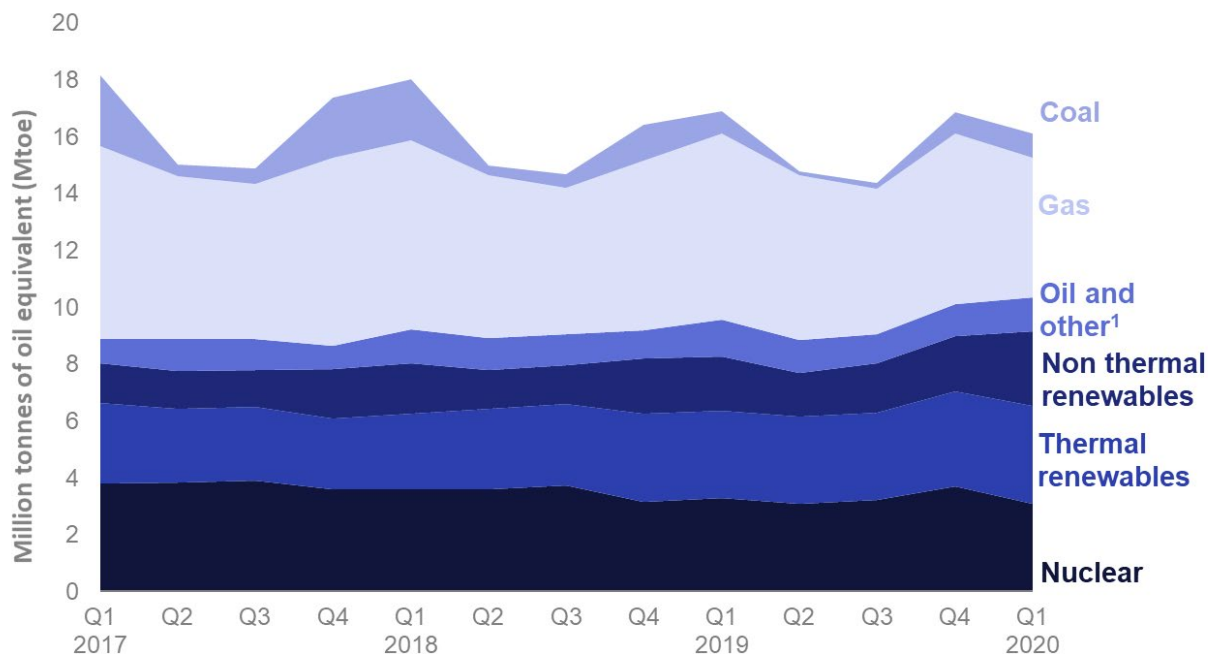
The share of generation coming from fossil fuels decreased in Quarter 1 2020 to 35.4 per cent of generation. This is the first quarter where the fossil fuel share was below 40 per cent of total generation and this continues the ongoing trend away from fossil fuels. While the share in generation from 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, Hutton B and Heysham 2 and started at Hinkley Point B.

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Chart 5.4 Fuel used in generation (Table 5.1)



¹Includes imports

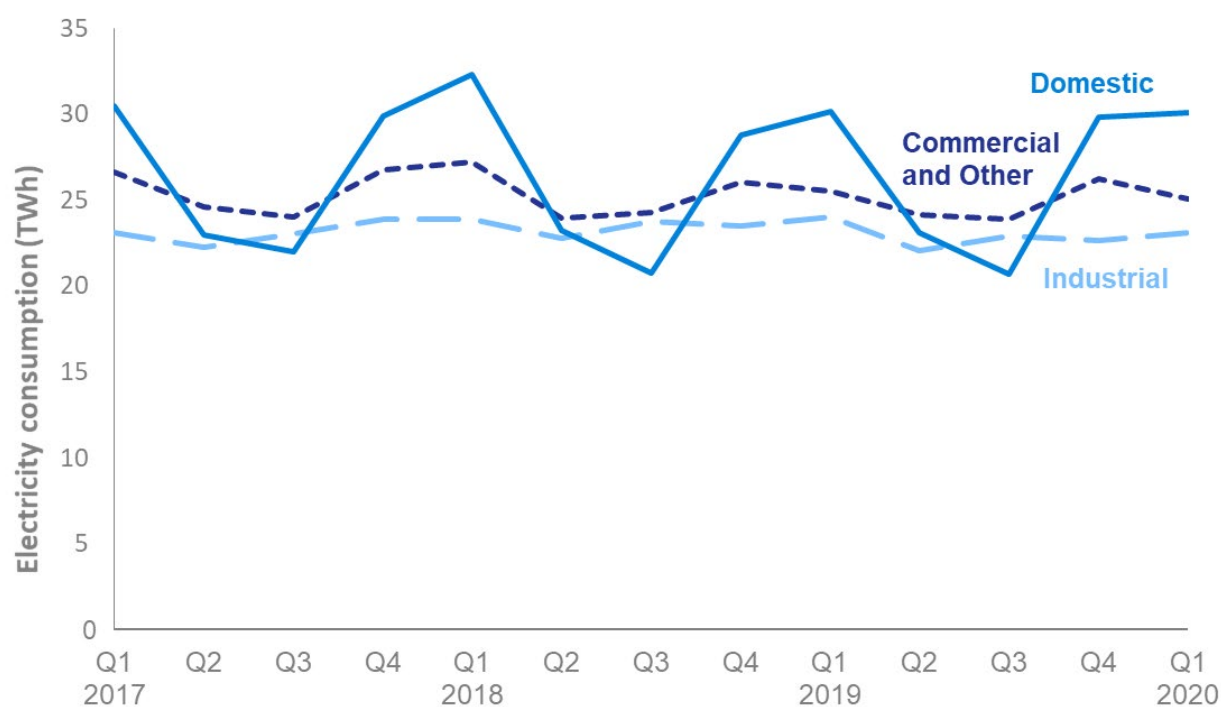
1. 'Oil and other' includes the fuel use of oil, other fuels and net imports.

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 renewables¹.

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.

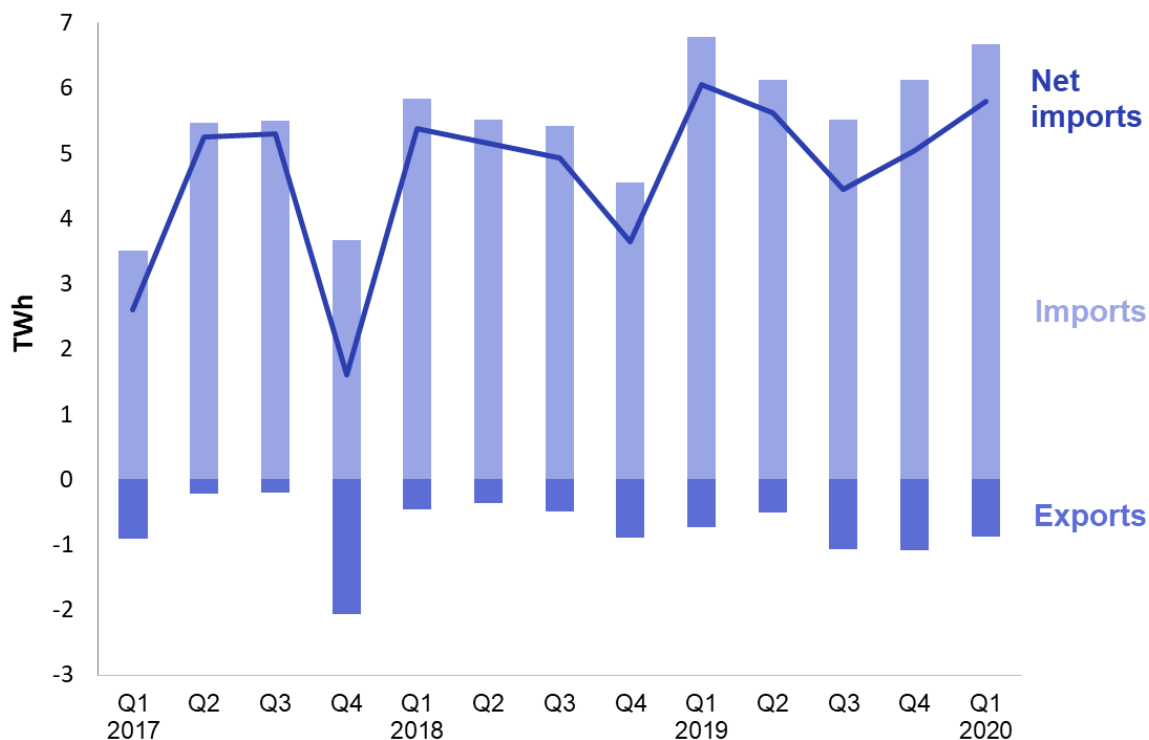
The overall demand was also affected by the additional leap year day in February 2020, which increased demand by around 1 per cent. Quarter 1 also saw the start of the UK government's lockdown in response to the COVID-19 pandemic, which came into full effect on 23rd March.

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 period², 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.

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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 period³. 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.