Key results show:

Total electricity demand decreased by 0.5 per cent in Q2 2019 compared to the same period in 2018, to 81.9 TWh. Total generation decreased by 0.9 per cent to 76.3 TWh with the remaining demand met by imports. (Chart 5.1).

Q2 2019 was the first quarter since the 19th century with coal-fired generation below 1% of total generation (0.5 TWh). Coal’s share of supply fell to a record low in May after just 5 days of coal-fired generation on the GB grid during the month and the UK’s longest period without coal generation since the 1880s, at 18 days and 6 hours. Gas remained the dominant fuel type with its share of generation increasing to 43.6 per cent. (Chart 5.2)

Renewables’ share of electricity generation increased from 32.0 per cent in Q2 2018 to 35.5 per cent in Q2 2019. As weather conditions for renewable generation were similar in both quarters, this is largely due to increases in capacity. (Chart 5.2)

More than half (52.6 per cent) of generation in Q2 2019 was from low carbon sources (renewables and nuclear generation). This was down from Q2 2018 (53.6 per cent) because planned and unplanned outages at five reactors substantially reduced nuclear generation over the period (down 21 per cent) (Chart 5.3).

Final consumption showed a slight increase over the same period, up by 0.2 per cent from 70.1 TWh in Q2 2018 to 70.3 TWh in Q2 2019. This came from increased demand by domestic and commercial consumers, but a reduction in demand from industry. (Chart 5.4).

The UK remains a net importer of electricity with 7.2 per cent of electricity supplied from net imports in Q2 2019. This was supported by the new interconnector with Belgium which became fully operational in February 2019 and was the second largest source of net imported electricity in the quarter. (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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Generation from fossil fuels was the highest contributor to the total generation at 34.0 TWh in Q2 of 2019, up 1.3 percent compared to Q2 2018. Almost all fossil fuel generation was from gas generation (33.3 TWh), with only 0.5 TWh coming from coal generation. The use of fossil fuels was slightly higher in Q2 2019 than in Q2 2018 (33.5 TWh) as fossil fuels compensated for reduced generation from nuclear plants.

In particular, coal-fired electricity continued to decline in Q2 of 2019, which was the first quarter since the 19th century with coal generation below 1% of total generation (0.5 TWh). Coal's share of supply by MPPs fell to a record low of 0.2 per cent in May after just 5 days of coal-fired generation on the GB grid during the month and the UK’s longest period without coal generation since the 1880s, at 18 days and 6 hours\(^1\).

Lower demand for electricity in Q2 2019 reduced generation needed. Q2 2019 saw total electricity generation fall to 76.3 TWh, down 0.9 per cent compared to Q2 2018. This was the lowest level for Q2 in recent years.

Renewable generation, comprised of wind, solar, hydro and bioenergy, saw a 9.9 per cent rise for Q2 of 2019 compared to the same period in 2018. Whilst both solar and bioenergy saw small increases, it was wind generation that was the driving factor, with a 19 per cent increase in generation. The increase was even more dramatic for offshore wind, which saw a 25 per cent increase. Overall, weather conditions for renewables were similar for Q2 2019 as for the same time last year, though June saw substantially higher average wind speeds in June 2019 (7.9 knots compared to 7.0 in June 2018). Sunlight hours were also slightly lower for Q2 2019 compared to 2018. Instead the increased generation from renewables was driven by increases in capacity (up 6.6, 17.8 and 2.8 per cent for onshore wind, offshore and solar photovoltaics respectively).

Nuclear generation was 21.4 per cent lower in Q2 of 2019 than 2018 at 13.1 TWh, the lowest quarterly nuclear generation since Q3 2010. This came as a result of two major nuclear outages at Hunterston B (unplanned outage) and Dungeness B (statutory outage) as well as a recent major outage at Sizewell B (statutory/refuelling outage) and refuelling at both Hartlepool and Heysham 1.

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\(^{1}\) Data for these statistics was provided by Elexon. Half-hourly electricity generation data is available from their website.
There were differences in most fuels’ share of generation between Q2 2019 and Q2 2018. As described above, coal generation continued to decline and represented 0.6 per cent of supply in Q2 2019, down from 1.6 per cent in Q2 2018. The biggest fall in share of generation was seen for nuclear, which was 17.1 per cent in Q2 2019 but 21.6 per cent in Q2 2018. This is largely due to outages at nuclear power stations as detailed above. There were increases in the share of generation for renewable sources and also for gas generation, compensating for the reduction in generation from nuclear power. The share of generation coming from renewables increased from 32.0 per cent in Q2 2018 to 35.5 per cent in Q2 2019, while the share for gas increased from 41.7 per cent to 43.6 per cent over the same period.
Low carbon electricity accounted for 52.6 per cent of electricity generated in Q2 2019. This was a slight decrease compared to the same period last year (53.6 per cent). This decrease was driven by the decrease in nuclear's share of generation (down 4.5 percentage points at 17.1 percent), which was not fully offset by an increase in share for renewables. Renewable generation share increased by 3.5 percentage points to 35.5 percent of total generation.
Fuel used in generation continued to fall in Q2 2019. The total used over this period was 14.7 Mtoe (million tonnes of oil equivalent), a 1.6 per cent decrease compared to Q2 2018. This was the lowest amount used for any Q2 in the time series and reflects the continuing shift towards more efficient non-thermal renewable sources as well as a reduction in fuel used by nuclear power stations over this period. Fuel used for nuclear power decreased by 21 per cent in Q2 2019 compared to Q2 2018, as a result of outages at several nuclear power plants.

Lower electricity demand and high carbon prices led to less coal being used for electricity generation. Q2 2019 had the first quarter since the 19th century with coal generation below 1% of total generation and this was reflected in the very low amount of coal used over this period. The amount of coal used for electricity was down to 0.13 Mtoe, a 61 per cent decrease compared to Q2 2018. Gas use was slightly higher for Q2 of 2019 at 5.8 Mtoe, up 0.4 per cent on the same period last year.
Total demand for electricity decreased slightly (-0.5 per cent) in Q2 2019 compared to Q2 2018, from 82.3 TWh in 2018 to 81.9 TWh in 2019. This was partly a result of a 16 per cent reduction in energy industry use, which includes electricity used in generation and for pumping, along with energy used by other fuel industries. In particular, electricity used for pumped storage was down 49 per cent compared to Q2 2018 at 0.3 TWh.

Final consumption by customers showed a slight increase over the same period, up by 0.2 per cent from 70.1 TWh to 70.3 TWh in Q2 2019. This came from increased demand by domestic and commercial consumers, but a reduction in demand from industry.

Domestic electricity consumption in Q2 2019 increased by 1.1 per cent compared to Q2 2018, to 23.5 TWh. There was also a 1.0 per cent rise in consumption by commercial users. This reflects slightly cooler average temperatures over the quarter, particularly in May and June\(^2\), although the effect of temperature on consumption is typically weaker for the summer months. Overall, industrial electricity consumption dropped to 22.6 TWh, a decrease of 1.3 percent from Q2 2018. This is broadly in line with decreases in industrial productivity as measured by the ONS’ Index of Production\(^3\).

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\(^2\) More information about weather trends can be found in Energy Trends table 7.1 at: www.gov.uk/government/statistics/energy-trends-section-7-weather.

\(^3\) For more information on the Index of Production, please see the latest publication from ONS.
Electricity

Chart 5.6: UK trade in electricity (Table 5.6)

UK based electricity generation is supported by 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 is the newest and became fully operational on 31st January 2019.

Net imports for Q2 2019 were up by 9.2 per cent in comparison to the same period last year and totalled 5.6 TWh, with 2019 setting peak net import records for both Q1 and Q2. This was supported by the new interconnector with Belgium which became the second largest source of net imported electricity in Q2 2019 after marginally surpassing the UK-Netherlands interconnector.

UK exports increased across all European interconnectors compared to Q2 2018, with total exports rising by 36 per cent to the highest level for Q2 since 2015. Exports remained particularly high on the NI–Ireland interconnector in Q2 2019 and were up 34 per cent compared to Q2 2018 at 0.2 TWh. This accounted for 47 per cent of UK exports and it remained the UK’s only net exporting interconnector at +0.1 TWh for the quarter.

Net transfers from Scotland to England fell 23 per cent from Q2 2018 to 2.1 TWh as the England–Scotland system reported its greatest transfer for Q2 since 2012. Net transfers from Scotland to NI were also down to 0.1 TWh, the lowest quarterly transfer since Q3 of 2017.