Section 5 – UK Electricity
July to September 2019

Key results show:

Total demand for electricity in Q3 2019 was the lowest quarterly value on the published time series. Demand decreased by 1.9 percent from 79.7 TWh in Q3 2018 to 78.1 TWh in Q3 2019, in part due to warmer weather. Final consumption by customers was also at its lowest published value in Q3 2019, down by 1.1 per cent to 68 TWh, with lower demand in all customer sectors. (Chart 5.5).

In the third quarter of 2019, total generation was 74 TWh. Electricity supply is driven by demand and this was the lowest quarterly figure in the published data series and a decrease of 1.5 per cent compared to Q3 2018. Nuclear generation remained low during Q3 2019, down 21 per cent compared to Q3 2018. A low level of nuclear generation has been a continuing trend throughout the year and is attributed to a series of extended maintenance outages at six of the UK’s eight active nuclear power stations during the year. (Chart 5.1).

Renewable electricity generation was 29 TWh in Q3 2019, representing 38.9 percent of total electricity generation. This was the highest share seen in the UK and – marginally - surpassed the share of generation from gas (38.8 percent) for the first time. Conversely, the share of generation from fossil fuels decreased to a record low in Q3 2019 at 40.1 per cent of generation. (Chart 5.2).

High renewable generation also meant that the share of generation from low carbon sources continued to increase in Q3 2019 to reach a record high of 57.3 per cent, despite lower than usual nuclear generation. (Chart 5.3).

Gas remained the fuel with the highest generation at 29 TWh, though this was 1.2 per cent lower than in Q3 2018. Coal generation continued to decline and was down 61 per cent over this time to 0.7 TWh. These trends were also reflected in the fuel used. (Chart 5.4).

Net imports of electricity reduced by 9.7 per cent from 4.9 TWh in Q3 2018 to 4.4 TWh in Q3 2019. Despite the decrease, the UK remained a net importer of electricity in Q3 2019, a trend that has continued since Q2 2010. The decrease was driven by an increase in exports of electricity which more than doubled to 1.1 TWh in Q3 2019, up from 0.5 TWh in Q3 2018. Though imports of electricity also increased by 1.9 per cent (0.1 TWh) compared to Q3 2018, this was not enough to balance the increased exports. (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

Contacts for further information:

<table>
<thead>
<tr>
<th>Vanessa Martin</th>
<th>Chrissie Frankland</th>
<th>George Goodman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Statistics</td>
<td>Electricity Statistics</td>
<td>Electricity Statistics</td>
</tr>
<tr>
<td>Tel: 020 7215 2995</td>
<td>Tel: 020 7215 1215</td>
<td>Tel: 0300 068 5046</td>
</tr>
</tbody>
</table>

E-mail: electricitystatistics@beis.gov.uk
In the third quarter of 2019, total generation was 74 TWh, a decrease of 1.5 per cent compared to Q3 2018. This was the lowest quarterly figure in the published data series. Electricity supply is driven by demand, with electricity generated or imported as needed and demand also decreased by 1.9 per cent between Q3 2018 and Q3 2019, in part due to slightly warmer weather across Q3 2019.

Gas remained the single fuel with the highest generation at 29 TWh, though this was 1.2 per cent lower than in Q3 2018. Coal generation continued to decline and was down 61 per cent over this time to 0.7 TWh, with some slight fluctuations over the period attributed to Cottam Power Station burning its remaining coal stocks prior to closure on 30 September 2019. Cottam’s closure leaves only six major coal fired power stations in the UK with Aberthaw B and Fiddlers Ferry power stations also announcing they are due to close in March 2020.

Renewable electricity generation was 29 TWh in Q3 2019, representing 38.9 percent of total electricity generation. Increases in generation were seen for all categories of renewables but were particularly substantial for wind and solar (up 22 per cent to 18 TWh) as well as for hydro generation, which was up 58 per cent to 1.4 TWh. These increases were down to increased capacity for renewable generation (up 7.2 per cent compared to Q3 2018) as well as favourable weather conditions, particularly for offshore wind generation.

Nuclear generation remained low during Q3 2019, down 21 per cent compared to Q3 2018. A low level of nuclear generation has been a continuing trend throughout the year and is attributed to a series of extended maintenance outages at six of the UK’s eight active nuclear power stations during the year. During Q3 2019, outages continued at Dungeness B (statutory outages), Hartlepool (statutory outage) and Hunterson B reactor 3 (graphite inspection outage) and were completed at Sizewell B (statutory outage), Heysham 1 (statutory outage) and Hunterson B reactor 4 (graphite inspection outage). A statutory outage occurs when a reactor is shut down for maintenance, which is planned in advance with the National Grid to manage the impact on the national electricity supply.

---

1 See tables 7.1-7.4 for details on weather conditions.
The share of electricity generated from renewables (wind, solar, hydro and other renewables) as 38.9 per cent in Q3 2019, up from 32.9 per cent in Q3 2018. This was the highest share on the published data series and surpassed, albeit marginally, the share of generation from gas for the first time. There was a decrease in the share of generation from nuclear, down to 18.4 per cent in Q3 2019, down from 23.0 per cent for the same period last year. This was because of a series of outages at the UK’s nuclear plants, as detailed previously.

Fossil fuels accounted for 40.1 per cent of generation in Q3 2019. This is the lowest value on the published data series and continues the ongoing trend away from fossil fuels. The share for gas and ‘oil and other’ remained consistent between the two years, with the decrease coming from the reduced share in generation coming from coal, down to 1 per cent in Q3 2019.

---

2 Oil and other includes pumped storage, oil, and non-renewable wastes.
Despite reduced generation from nuclear, the share of generation from low carbon sources continued to increase in Q3 2019 to reach 57.3 per cent, the highest value for the UK. This was up from 55.9 per cent in Q3 2018 due to the strong output from renewable sources.
During Q3 2019, fuel used in electricity generation decreased by 4.2 per cent, from 15 million tonnes of oil equivalent (mtoe) in Q3 2018 to 14 mtoe in Q3 2019. This was the lowest level recorded in the UK and can be linked to the ongoing decrease in coal usage and lower nuclear generation as a result of outages, as well as to lower demand for electricity overall.

In terms of the fuels used for generation, the amount of coal used continued its downward trend, and fuel used for nuclear generation was down 21 per cent over the same period as a result of outages. There are also apparent increases for non-thermal renewables, but this reflects their increased generation since no actual fuel is used\(^3\).

\(^3\) For wind and solar (and other primary renewable sources), the fuel used is assumed the same as the electricity generated, unlike thermal generation where conversion losses are incurred.
Total demand for electricity in Q3 2019 was the lowest quarterly value recorded in the UK. Demand decreased by 1.9 percent from 79.7 TWh in Q3 2018 to 78.1 TWh in Q3 2019. Final consumption by customers was also at its lowest published value in Q3 2019, down by 1.1 per cent to 67.7 TWh, with lower demand in all customer sectors.

Domestic consumption was down to 20 TWh in Q3 2019, a decrease of 1.3 per cent compared to Q3 2018. This reflected slightly warmer temperatures over the period reducing the electricity demand from heating, with lower numbers of heating degree days (-0.3) over the period. Similar trends were seen for other users, down 1.3 per cent compared to Q3 2018.

Industrial electricity consumption also decreased in Q3 2019 to 23 TWh, a reduction of 1.4 percent compared to Q3 2018. This is in line with reductions in industrial output as measured in the Index of Production.

---

For more information on the Index of Production, please see the latest publication from Office for National Statistics: www.ons.gov.uk/economy/economicoutputandproductivity/output/bulletins/indexofproduction/september2019
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 is the newest and became operational on 31st January 2019.

Net imports of electricity reduced by 9.7 per cent from 4.9 TWh in Q3 2018 to 4.4 TWh in Q3 2019. Despite the decrease, the UK remained a net importer of electricity in Q3 2019, a trend that has continued since Q2 2010. Imports of electricity accounted for 6.0 per cent of total electricity supply (excluding own use) over the period.

Imports of electricity increased by 1.9 per cent to 5.5 TWh in Q3 2019 compared to Q3 2018. There were reduced imports on all interconnectors which were operational in 2018, with a particularly large decrease for both the Northern Ireland-Ireland and Ireland-Wales interconnectors, down 39 per cent and 41 per cent respectively. This decrease was balanced by imports of 1.2 TWh on the new England-Belgium interconnector, which is now the second largest source of net imports after the England-France interconnector.

Exports of electricity more than doubled to 1.1 TWh in Q3 2019, up from 0.5 TWh in Q3 2018. There was an increase in exports for all interconnectors which were operational in 2018, with particularly large increases in exports to France (up 280 percent) and to the Netherlands (up 281 per cent).

Imports from Ireland to Northern Ireland decreased in Q3 2019 (down 39 per cent), while exports increased (up 62 per cent). Northern Ireland remained a net exporter to Ireland in Q3 2019, which continued the trend since Q3 2017. On the Ireland-Wales interconnector, imports decreased by 41 per cent to 0.2 TWh. This was set against exports of 0.3 TWh (up 72 per cent), making Ireland a net exporter to Wales for the first time since Q1 of 2016.

Net transfers from Scotland to England increased by 43 per cent compared to Q2 2018. The net transfers totalled to 3.6 TWh, the highest for the England–Scotland system for any Q3 on the published time series. Net transfers from Scotland to Northern Ireland also more than doubled to 0.4 TWh in Q3 2019. This reflects higher than usual wind generation in Scotland during the quarter, particularly from offshore wind.