



Department for  
Business, Energy  
& Industrial Strategy



Statistical Press Release

25 July 2019

## Digest of UK Energy Statistics 2019

The Department for Business, Energy and Industrial Strategy today releases 4 key publications: the **Digest of United Kingdom Energy Statistics 2019**, **UK Energy in Brief**, **Energy Flow Chart**, and **Energy Consumption in the United Kingdom** providing detailed analysis of production, transformation and consumption of energy in **2018**.

### DIGEST OF UK ENERGY STATISTICS 2019

#### Key points

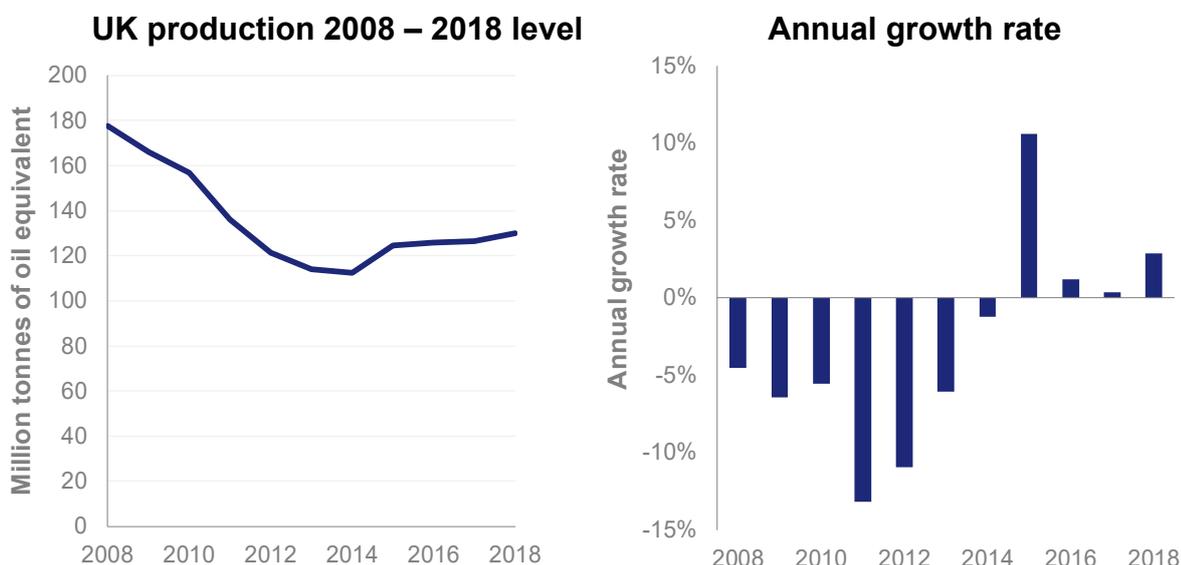
- **Primary energy production** rose in 2018, up 2.9 per cent on a year earlier. The rise was driven by growth in output from primary oil, wind, solar and biomass. Overall fossil fuel growth increased, but with coal output falling to a record low level.
- **Final energy consumption** rose by 1.1 per cent, as demand for heating increased during the 'Beast from the East' weather storm in February and March. On a temperature adjusted basis, final energy consumption rose by 0.2 per cent.
- **Total renewables**, as measured by the 2009 EU Renewables Directive, accounted for 11.0 per cent of total energy consumption in 2018, up from 9.9 per cent in 2017.
- **Electricity generated from renewable sources** in the UK in 2018 reached a record 33.0 per cent of total UK electricity generation, 3.8 percentage points higher than the previous year, also a record. This increase reflected a 10 per cent rise in renewable generation capacity to 44.3 GW.
- **Low carbon electricity's share of generation** increased from 50.0 per cent to a record 52.6 per cent, driven by the increase in renewables generation.



- Provisional BEIS estimates<sup>1</sup> suggest that **overall emissions fell by 9.1 million tonnes of carbon dioxide (MtCO<sub>2</sub>) (2.4 per cent) to 364.1 MtCO<sub>2</sub>** between 2017 and 2018, driven mainly by the changes in the fuel mix used for electricity generation.

### Main energy production and trade statistics:

- **Primary energy production** rose by 2.9 per cent in 2018; production though is down 56 per cent from its peak in 1999.



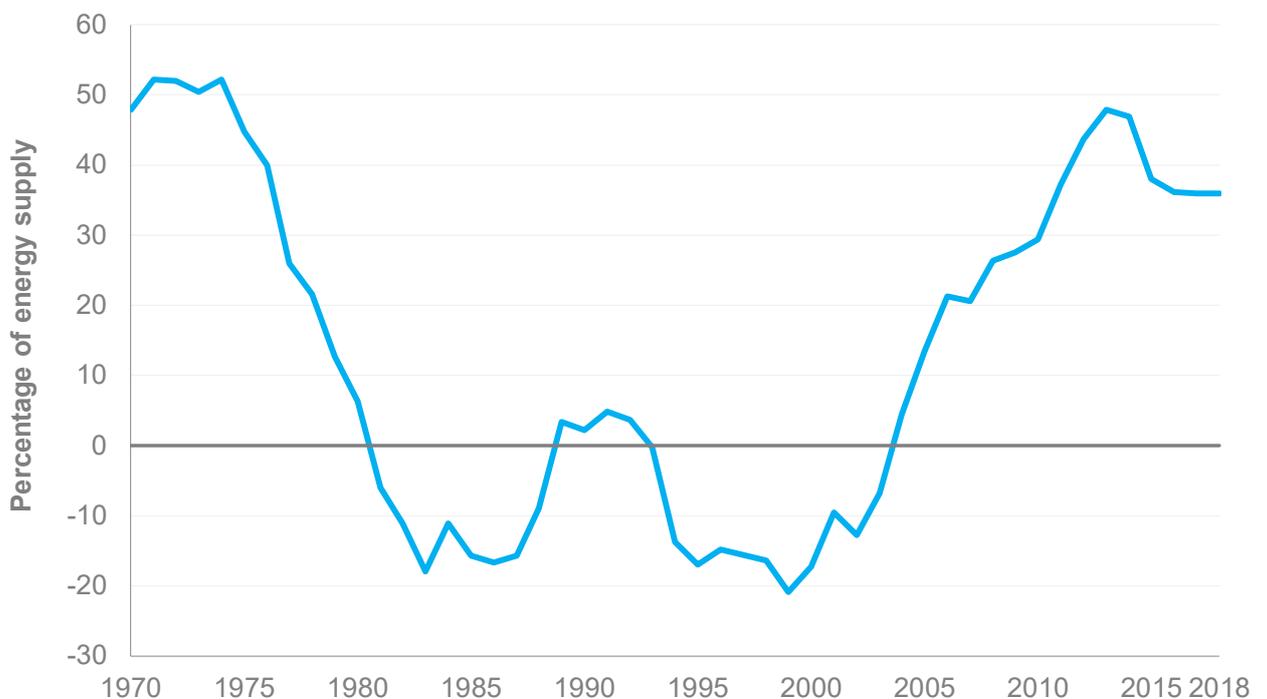
- **Crude oil (including NGL) production** in 2018, at 51 million tonnes, increased by 8.9 per cent compared to 2017 due to the opening of new fields and development of older fields. Production is 37 per cent of the UK’s peak in 1999.
- **Gross natural gas production** decreased by 3.3 per cent to 450 TWh in 2018 compared to 2017. This marks the first annual decrease in the production of natural gas in four years although the long-term pattern is one of decline with annual production 64 per cent below the peak recorded in 2000.
- **Coal production** was down by 15 per cent to a record low of 3 million tonnes in 2018 compared to 2017. This decrease was mainly due to one of the large surface mines not producing since April 2017 (it is under “care and maintenance”).

<sup>1</sup> [www.gov.uk/government/statistics/provisional-uk-greenhouse-gas-emissions-national-statistics-2018](http://www.gov.uk/government/statistics/provisional-uk-greenhouse-gas-emissions-national-statistics-2018)



- Energy **imports** rose by 1.3 per cent in 2018 but are down by 14 per cent on 2013's record level.
  - For crude oil the key source was Norway, which accounted for 39 per cent of imports. Indigenous use of crude fell to a record low, down a fifth on 2017, as demand for crude fell.
  - For gas the key source was also Norway, which accounted for nearly three quarters of UK imports, with a further 6.9 per cent from Belgium and 5.8 per cent from the Netherlands. LNG accounted for 15 per cent of gas imports, up 6.4 per cent from 2017, with 41 per cent of these imports from Qatar although Qatari volumes fell by half in 2018 as the mix of LNG sources diversified.
  - The UK sources its petroleum products widely, with a range of European countries supplying fuel. Aviation fuel is also sourced widely with significant volumes from the Netherlands and OPEC countries such as Saudi Arabia and the United Arab Emirates.
- The UK remained a **net importer of energy** at 36 per cent, down marginally from 2017. In 2018 the UK was a net importer of all main fuel types.

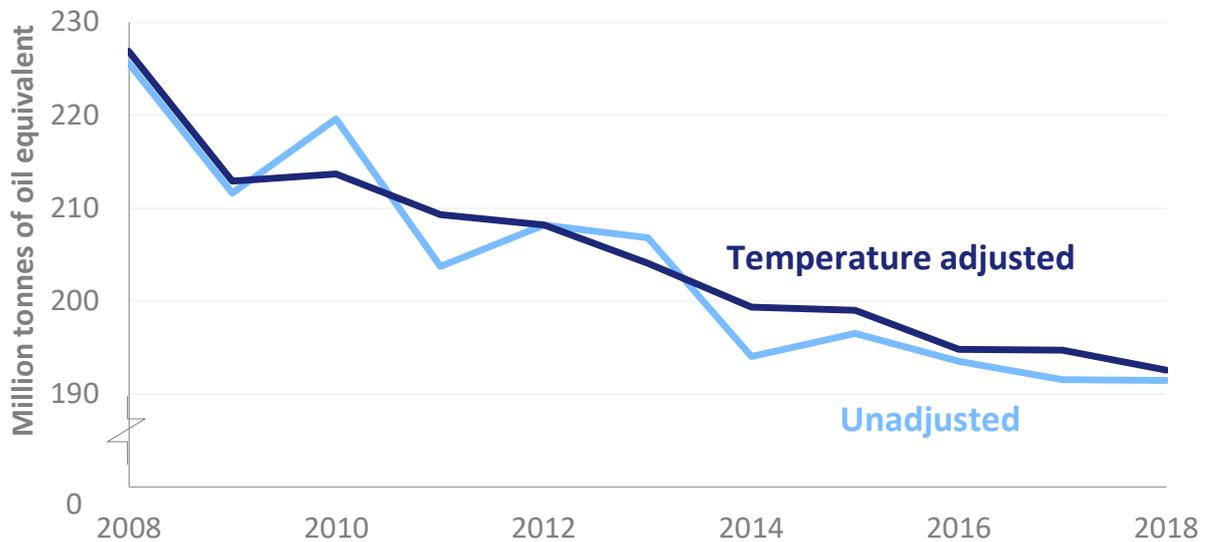
### UK import dependency 1970 – 2018



## Main energy consumption statistics:

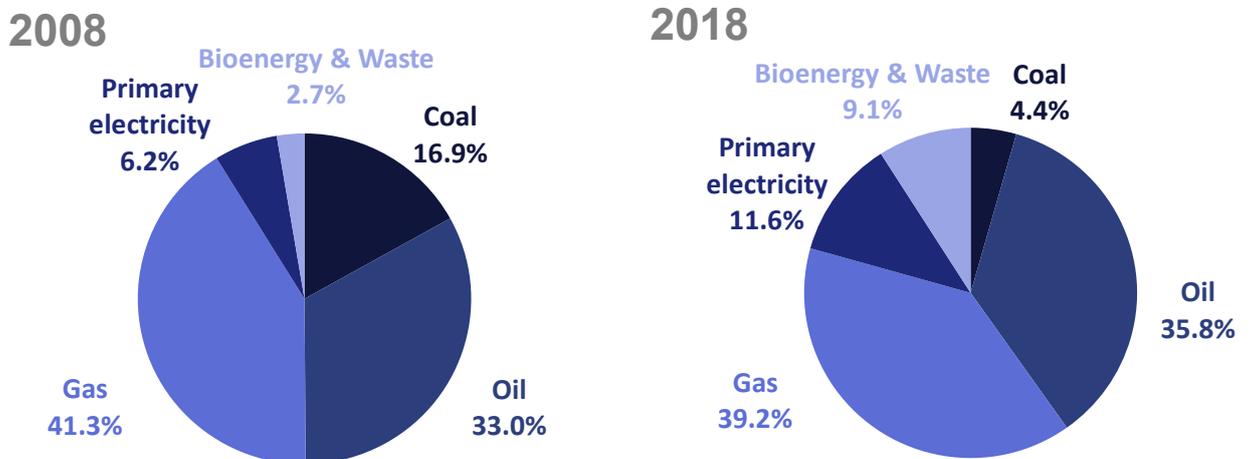
- UK **primary energy consumption** in 2018 fell marginally, and on a temperature adjusted basis consumption was down 1.1 per cent continuing the downward trend of the last ten years. The fall in 2018 was due to the continued switch in generation from coal and gas to renewable sources.

### Primary energy consumption 2008 - 2018



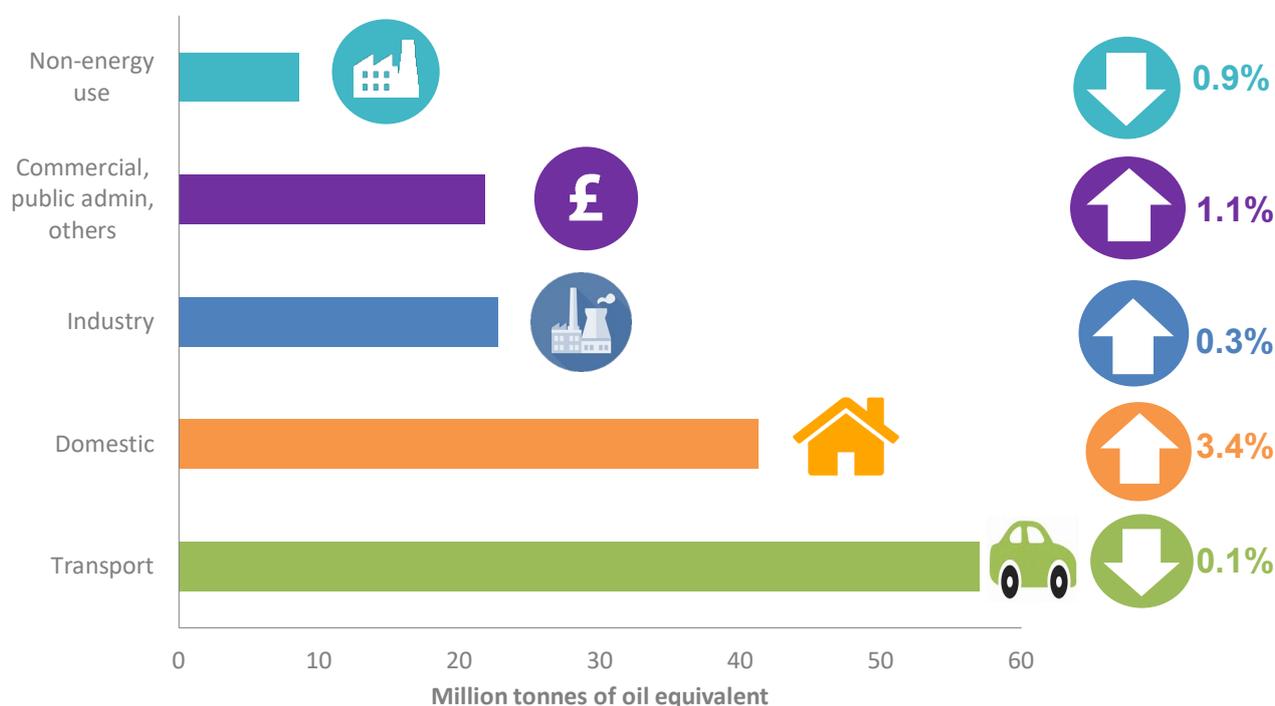
- The **composition of primary energy consumption** has changed, with coal falling from 16.9 per cent to 4.4 per cent of the total share between 2008 and 2018. The contribution of bioenergy & waste has almost trebled over that period. Gas, oil and coal now comprise 80 per cent of the primary consumption share, down from 90 per cent in 2008.

### Primary energy consumption 2008 vs 2018



- **Energy consumption by final users** at 151.3 million tonnes of oil equivalent increased by 1.1 per cent in 2018. Consumption in the domestic sector was up by 3.4 per cent, whilst service sector use was up by 1.1 per cent. Industrial use was up by 0.3 per cent. There was a fall in consumption from transport, down 0.1 per cent, but with increased demand in air transport consumption. On a temperature adjusted basis final energy consumption was up 0.2 per cent on 2017 levels.

### Final consumption by sector, 2018



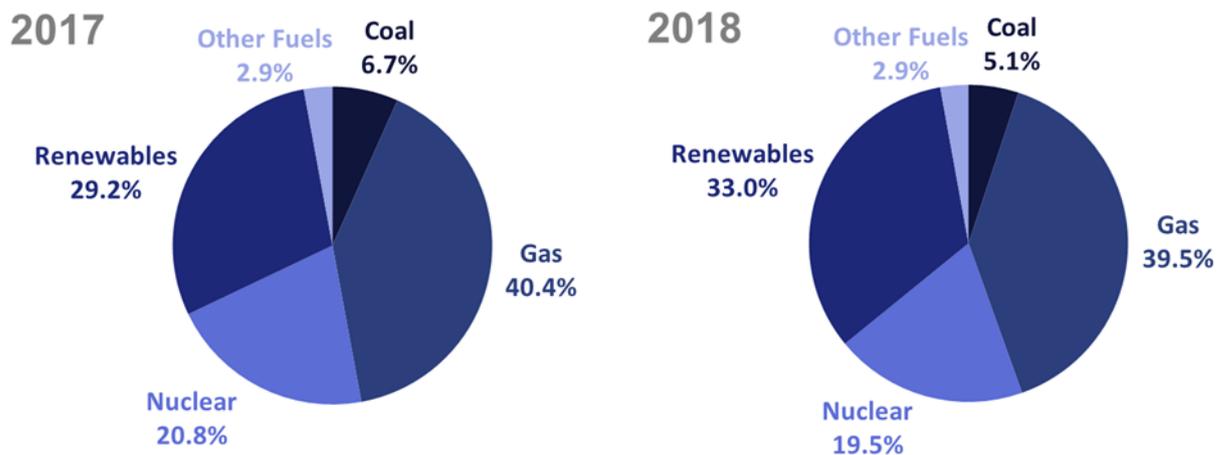
- **Coal consumption** decreased by 17 per cent in 2018. There was a 24 per cent decrease in **consumption by major power producers** (consumers of 56 per cent of total coal demand). The decline was due to gas, nuclear and renewables being favoured over coal for electricity generation due to economic reasons, as well as the continued rationalisation of the coal generation capacity with Eggborough power station closing in September 2018. Coal accounted for 5.1 per cent of the electricity generated in the UK in 2018, down from 6.7 per cent in 2017. The domestic sector accounted for only 4.3 per cent of total coal demand.
- **Final consumption of oil** in the UK decreased by 1.2 per cent in 2018, the first decrease since 2014. Transport fuels accounted for more than 70 per cent of demand for oil, but consumption decreased by 0.7 per cent from 2017.

- Consumption of **diesel road fuel** at 25 million tonnes is more double the consumption of motor spirit. Up until 2005 motor spirit exceeded diesel road fuel sales; since then a large element of the UK's car fleet has switched to diesel.
- **Natural gas demand** increased by 0.9 per cent to 881 TWh compared with 2017. Domestic demand, which is influenced by temperature, increased by 4.8 per cent due to colder temperatures brought over from 'Beast from the East' at the beginning of the year. In contrast, gas demand for transformation, including electricity and heat generation, was down 4.2 per cent on 2017.

**Main electricity generation and supply statistics:**

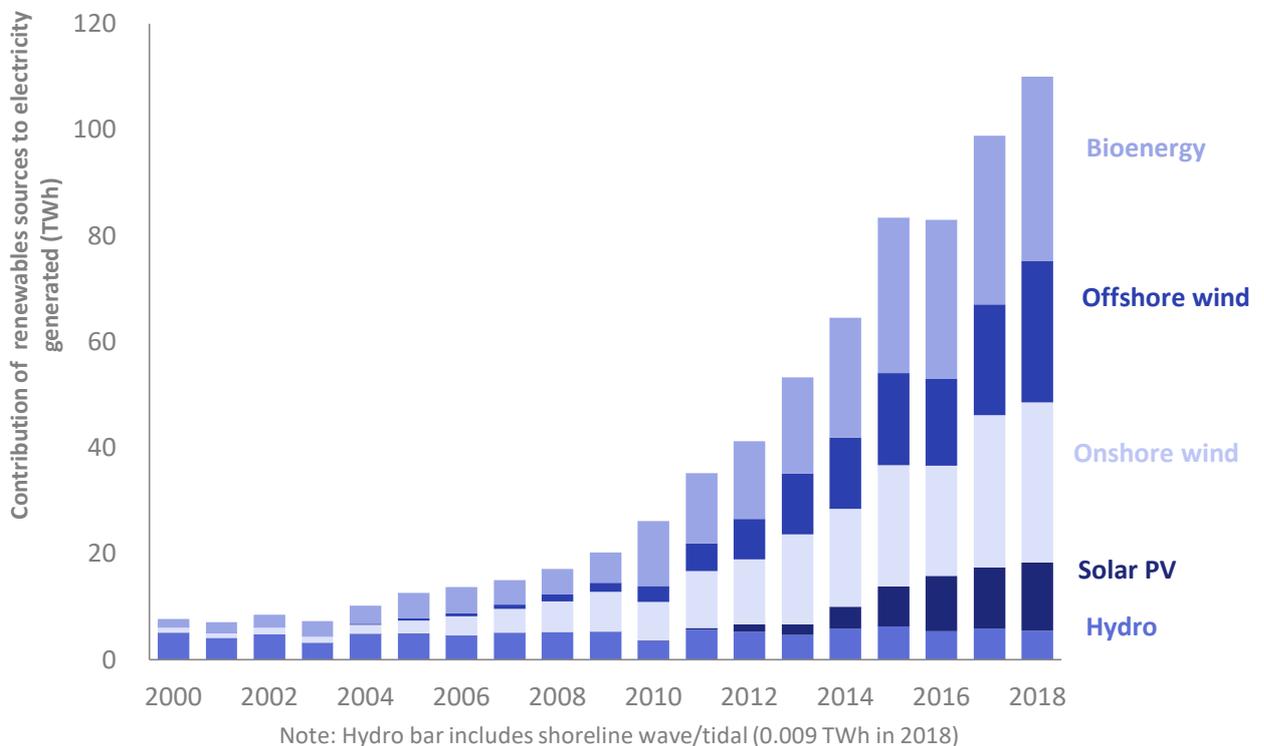
- There was a 0.3 per cent drop in the **total supply of electricity** in the UK in 2018, to 352 TWh, as demand fell. Indigenous electricity supply fell 1.6 per cent while net imports of electricity rose by 29 per cent, to 19.1 TWh, with a return to more typical imports from France following interconnector damage and a price spike in 2017. The UK remained a net importer of electricity in 2018.
- **Final consumption of electricity** was stable at 300 TWh, remaining at its lowest level since 1995.
- In 2018, **renewable electricity generation rose to a record high of 33.0 per cent**, further displacing fossil fuelled generation. This stemmed from a 10 per cent increase in renewable capacity. Coal-fired generation continued its decline, falling below a quarter of its 2015 level. Its share fell from 22 per cent in 2015 to 5.1 per cent in 2018 as the carbon price increase in April 2015 made coal generation more expensive than gas. Gas fell from 40.4 per cent in 2017 to a 39.5 per cent share of generation. Nuclear's share fell to 19.5 per cent due to maintenance and outages.

**Electricity generation by fuel, 2017 vs 2018**



- **Electricity generated from renewable sources** in the UK in 2018 increased by 11 per cent to a record 110 TWh on a year earlier. Generation from onshore and offshore wind increased by 5.2 per cent and 28 per cent respectively to new records, both boosted by higher capacities, offsetting lower wind speeds. Generation from solar rose by 12 per cent and hydro generation dropped 7.0 per cent.

### Electricity generation by main renewable sources



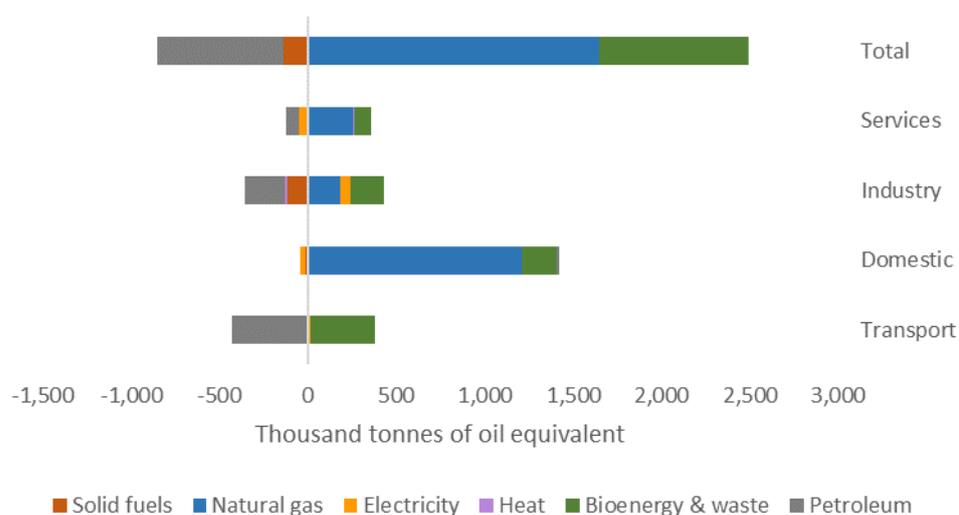
- **Installed electrical generating capacity of renewable sources** rose by 10 per cent, to 44.3 GW in 2018. Onshore wind had the highest share of capacity, 1.0 percentage point greater than solar photovoltaics. Taken together, onshore and offshore wind represent nearly a half (49 per cent) of renewable electrical capacity.
- The **domestic sector** remained the largest electricity consumer in 2018 (105.1 TWh), while the **industrial sector** consumed 93.0 TWh, and the **service sector** consumed 96.6 TWh. Industrial consumption rose by 0.8 per cent, although was still down 11 per cent compared to 2010. Domestic consumption fell by 0.3 per cent and services consumption fell by 0.6 per cent.



## ENERGY CONSUMPTION IN THE UNITED KINGDOM

- Final energy consumption (that is, excluding non-energy use) was 142.7 Mtoe in 2018, 1.6 Mtoe (1.1 per cent) more than in 2017. On a temperature corrected basis, consumption increased by 0.2 Mtoe (0.2 per cent).

### Change in consumption 2017 to 2018 by sector and fuel



- Energy consumption in 2018 was 16.6 Mtoe (10 per cent) lower than in 2000 (142.7 Mtoe compared to 159.4 mtoe), and 3.3 Mtoe (2.2 per cent) lower than in 1970.
- In 2018, energy consumption in the **transport sector** remained the same as 2017 at 57 Mtoe. Consumption across all transport sub-sectors remained unchanged. Consumption in the transport sector peaked in 2007 and decreased to 2013; since then it has increased by 3.5 Mtoe (6.5 per cent).
- In 2018, **domestic energy consumption** increased by 1.4 Mtoe (3.4 per cent) compared to 2017 to 41.2 Mtoe, reflecting colder average temperatures particularly during the heating season, largely due to the 'Beast from the East'. On a temperature corrected basis, consumption was 0.1 Mtoe (0.1 per cent) lower in 2018. Since 2000, consumption has fallen by 12 per cent despite a 12 per cent increase in the number of households and a 13 per cent increase in the population. Per household, consumption has fallen by 22 per cent since 2000.

- In 2018, energy consumption in the **industrial sector** was 22.7 Mtoe, a 0.3 per cent increase since 2017. Consumption increased in the 'other industries' sub-sector (by 2.8 per cent, chemicals (by 1.6 per cent), food, drink, and tobacco (by 8.1 per cent) though consumption fell slightly in mineral products (down by 1.1 per cent). The largest increase in absolute terms was in the food, drink and tobacco sector which increased from 2.9 Mtoe in 2017 to 3.1 Mtoe in 2018; this increased the food, drink and tobacco sub-sector share of industrial consumption from 12.7 per cent to 13.7 per cent.
- In the **service sector**, energy consumption in the **private commercial sector** increased by 2.0 per cent between 2017 and 2018 to 13.2 Mtoe, in the **public sector** it fell by 0.4 per cent to 5.6 Mtoe. Consumption in the **agricultural sector** increased by 0.5 per cent in 2018, to 1.6 Mtoe.



## NOTES TO EDITORS

1. The **Digest of United Kingdom Energy Statistics 2019**, compiled by the Department for Business, Energy and Industrial Strategy, contains tables and extensive commentary, charts and technical notes. As well as giving new data for 2018 it also presents some revised data for earlier years.

2. The Digest provides a comprehensive account of energy supply and demand in the United Kingdom, with the majority of the tables covering the last five years. The first chapter covers aggregated overall energy statistics, energy balances and the estimated value of fuel purchases. This chapter gives details of the conversion of fuels by the energy supply industries and figures for consumption by final users, with an analysis of consumption by main industrial groups. Other chapters cover the individual fuels and particular topics such as renewable sources of energy and combined heat and power. The Digest also contains annexes, including a **glossary of terms (Annex B)** and details of key events in the energy industries in recent years (Annex D).

3. The **Digest of United Kingdom Energy Statistics 2019** is available at: [www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes](http://www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes). **UK Energy in Brief**, a summary of the main figures in the Digest, is available at: [www.gov.uk/government/collections/uk-energy-in-brief](http://www.gov.uk/government/collections/uk-energy-in-brief). **The Energy Flow Chart**, a chart showing the UK energy flows of primary fuels from home production and imports to their eventual final uses, is available at: [www.gov.uk/government/collections/energy-flow-charts](http://www.gov.uk/government/collections/energy-flow-charts).

4. As last year, BEIS have made available a beta release of an [Application Programming Interface \(API\)](#) that will allow users to download data from DUKES quickly and flexibly. Comments on the API are welcome to [energy.stats@beis.gov.uk](mailto:energy.stats@beis.gov.uk).

5. **Energy Consumption in the United Kingdom** brings together statistics from a variety of sources to produce a comprehensive review of energy consumption and changes in intensity and output in the UK since the 1970s, with a particular focus on trends since 2000. The updated information is released in tables at: [www.gov.uk/government/collections/energy-consumption-in-the-uk](http://www.gov.uk/government/collections/energy-consumption-in-the-uk)

6. BEIS have made available a beta release of an [interactive dashboard](#) that will allow users to interact and visualise data from ECUK through a number of user inputs that assist in filtering the data. Comments on the dashboard are welcome to [energy.stats@beis.gov.uk](mailto:energy.stats@beis.gov.uk).

7. **Energy Trends** is a quarterly publication that contains tables, charts and commentary covering all major aspects of energy. It provides a comprehensive picture of energy production and use over recent months and enables readers to monitor trends during the year and complements the annual publications. The latest edition was published on 27 June 2019, and is available at: [www.gov.uk/government/collections/energy-trends](http://www.gov.uk/government/collections/energy-trends)



8. **Energy Prices** is a quarterly publication that contains analyses of petroleum product prices, industrial energy prices, domestic electricity and gas prices, and international comparisons of energy prices. It contains the information on energy prices that until 2001 was published in the Digest of United Kingdom Energy Statistics. The latest edition was published on 27 June 2019, and is available at:

[www.gov.uk/government/collections/quarterly-energy-prices](http://www.gov.uk/government/collections/quarterly-energy-prices)

9. In addition to the above statistical publications, the BEIS section of the GOV.UK website also contains key energy data in downloadable spreadsheet format. The spreadsheet format includes data on energy production, consumption, trade and prices and is available in monthly, quarterly and annual time-series format.

10. UK Greenhouse Gas Emissions statistics are also produced by BEIS to show progress against the UK's goals, both international and domestic, for reducing greenhouse gas emissions. These data are available at: [www.gov.uk/government/collections/uk-greenhouse-gas-emissions](http://www.gov.uk/government/collections/uk-greenhouse-gas-emissions)

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