

## PRESS NOTICE



Department for  
Business, Energy  
& Industrial Strategy



Statistical Press Release

26 July 2018

### Digest of UK Energy Statistics 2018

The Department for Business, Energy and Industrial Strategy today releases 4 key publications: the **Digest of United Kingdom Energy Statistics 2018**, **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 2017.

#### DIGEST OF UK ENERGY STATISTICS 2018

##### Key points

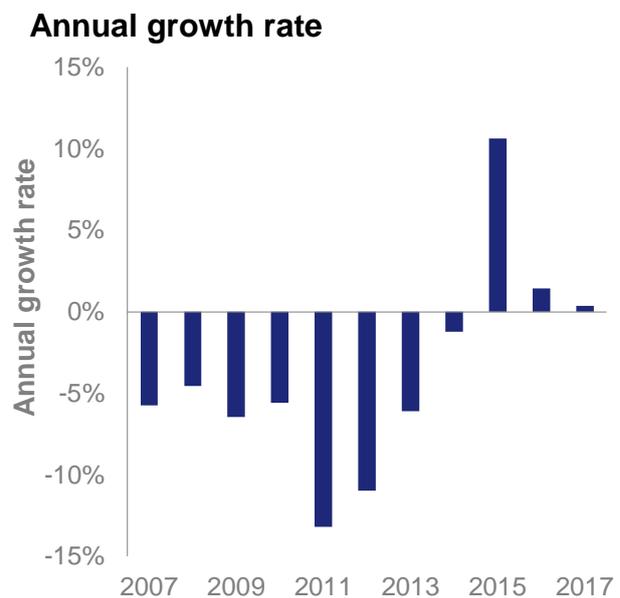
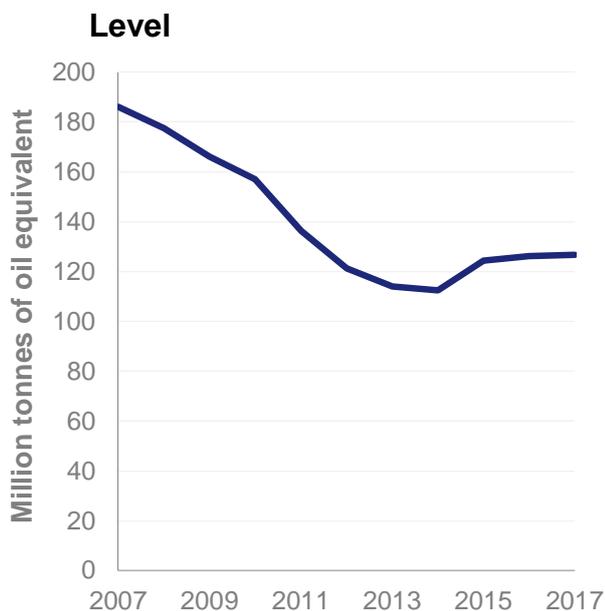
- **Primary energy production** rose in 2017, up 0.4 per cent on a year earlier. The rise was driven by growth in output from wind, solar and hydro, and bioenergy and waste. Overall fossil fuel growth contracted with coal output falling to a record low level.
- **Final energy consumption** fell by 0.7 per cent, as demand for heating decreased. On a temperature adjusted basis, final energy consumption rose by 0.9 per cent.
- Electricity generated from **renewable sources** in the UK in 2017 reached a record 29.3 per cent of total UK electricity generation, 4.8 percentage points higher than the previous year. This increase resulted from a 13.6 per cent rise in renewable generation capacity to 40.6 GW, and higher average wind speeds. Total renewables, as measured by the 2009 EU Renewables Directive, accounted for 10.2 per cent of total energy consumption in 2017, up from 9.2 per cent in 2016.
- **Low carbon electricity's share of generation** increased from 45.6 per cent to a record 50.1 per cent, driven by the increase in renewables generation.

- Provisional BEIS estimates suggest that **overall emissions fell by 12 million tonnes of carbon dioxide (MtCO<sub>2</sub>) (3.2 per cent) to 366.9 MtCO<sub>2</sub>** between 2016 and 2017, driven by the changes in electricity generation.

### Main energy production and trade statistics:

- **Primary energy production** rose by 0.4 per cent in 2017; production though is down 57 per cent from its peak in 1999.

#### UK production 2007 – 2017



- **Gross natural gas production** was relatively stable on 2016 at 465 TWh, up 0.3 per cent. Although recent years have seen modest increases in production, the long-term pattern is one of decline and 2017 production levels stood at under 40 per cent of the peak in 2000.
- **Crude oil (including NGL) production** in 2017, at 46 million tonnes, decreased by 2.0 per cent compared to 2016 despite the opening of new fields and development of older fields. Production is currently around a third of the UK's peak in 1999.
- **Coal production** was down by 27 per cent to a record low of 3 million tonnes in 2017 compared to 2016. This decrease was mainly due to one of the large surface mines not producing since April 2017 (it is under "care and maintenance").



- Energy **imports** rose by 1.2 per cent in 2017 but are down by 16 per cent on 2013's record level.
  - For crude oil the key source was Norway, which accounted for 47 per cent of imports. Indigenous use of crude fell more than a third on 2016 and to meet this shortfall in refinery demand, imports of primary oils increased by 9.4 per cent.
  - For gas the key source was also Norway, which accounted for three quarters of UK imports, with a further 5.6 per cent from Belgium and 4 per cent from the Netherlands. LNG accounted for 15 per cent of gas imports, down from 23 per cent in 2016, with 84 per cent of these imports from Qatar.
  - 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 OPEC countries such as the United Arab Emirates, Kuwait and Saudi Arabia.
- The UK remained a **net importer of energy** at 36 per cent, down marginally from 2016. In 2017 the UK was a net importer of all main fuels types.

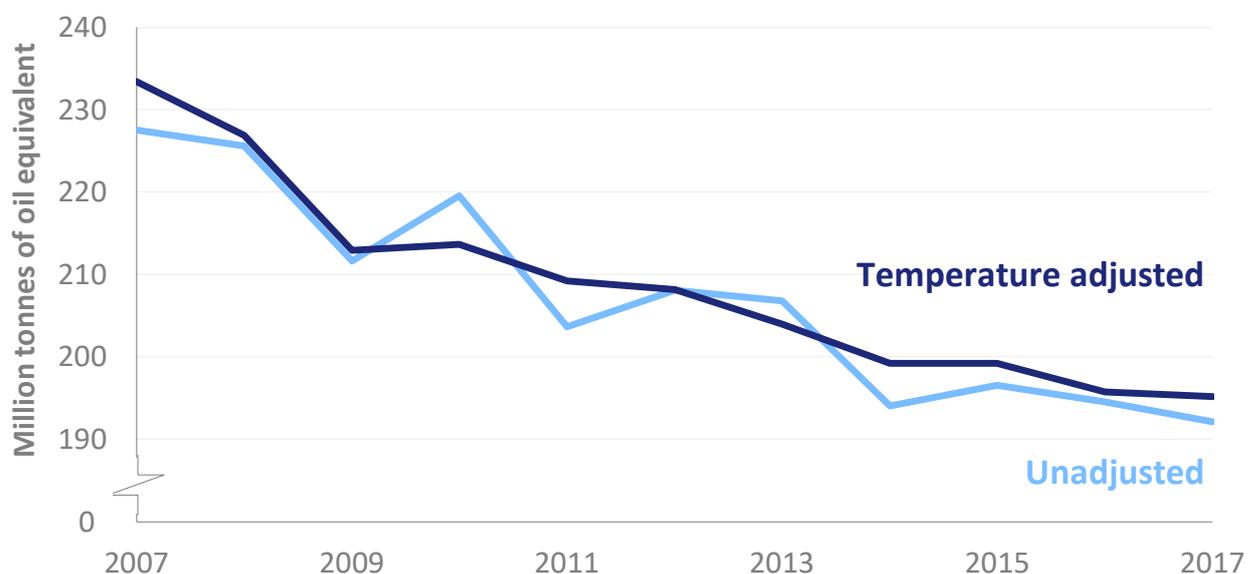
### UK import dependency 1970 – 2017



## Main energy consumption statistics:

- UK **primary energy consumption** in 2017 fell by 1.2 per cent, and on a temperature adjusted basis, consumption was down 0.3 per cent continuing the downward trend of the last ten years. The fall in 2017 was due to the switch in generation from coal to renewable sources.

### Primary energy consumption 2007 - 2017



- **Consumption by final users** at 149.1 million tonnes of oil equivalent decreased by 0.7 per cent in 2017. Consumption in the domestic sector was down by 3.7 per cent, whilst service sector use was down by 1.4 per cent. Industrial use was up by 1.6 per cent. There was increased consumption from transport, up 0.9 per cent, with increased demand in air transport consumption. On a temperature adjusted basis final energy consumption was up 0.9 per cent on 2016 levels.
- **Coal consumption** decreased by 20 per cent in 2017. There was a 28 per cent decrease in **consumption by major power producers** (consumers of 61 per cent of total coal demand). The decline was due to reduced capacity, with the closure of Longannet and Ferrybridge C in 2016. In addition to that production favoured gas over coal, partly due to the carbon price per GWh being higher for coal. The price of gas relative to coal was also a key reason for the decline. Coal accounted for 6.7 per cent of the electricity generated in the UK in 2017, down from 9 per cent in 2016. The domestic sector accounted for only 3.8 per cent of total coal consumption.

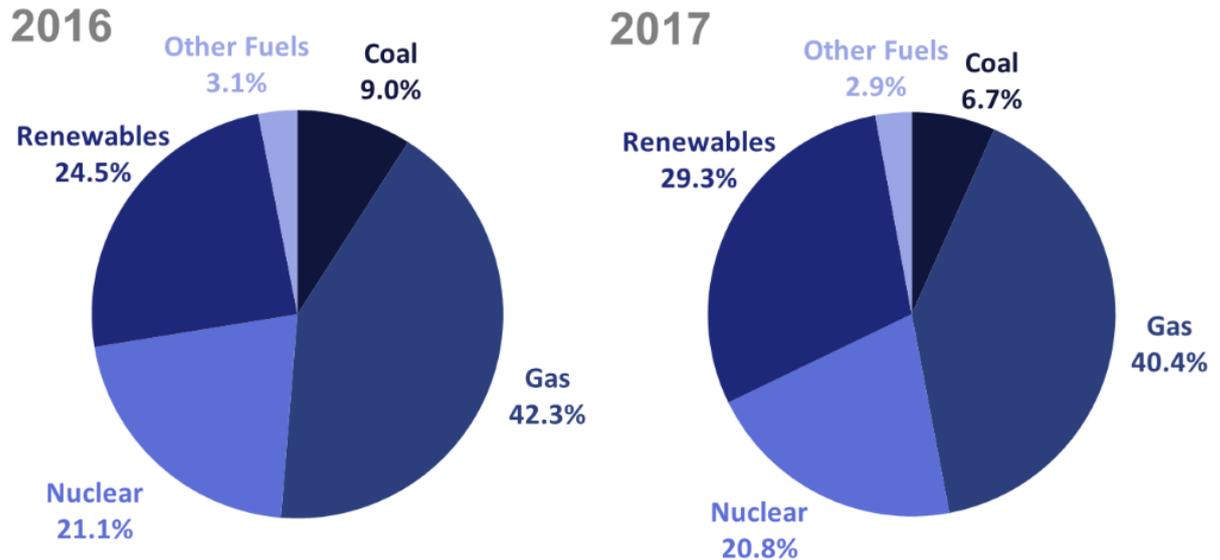


- **Final consumption of oil in the UK increased by 0.6 per cent in 2017, the fourth successive increase following several successive years of falls.** More than three-quarters of this was demand for transport fuels, which showed an increase of 0.9 per cent from 2016. An increase in demand for diesel and jet fuel has driven the overall increase.
- **Consumption of diesel road fuel exceeded the consumption of motor spirit in 2017 by 13 million tonnes.** 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. Petrol consumption has typically been falling by around 3.5 per cent per annum since 2000, but in 2017 reduced by just 1.7 per cent. Over the same period diesel use typically increased by 2.8 per cent per annum, but in 2017 was up 1.1 per cent.
- **Natural gas demand** decreased by 3.0 per cent, mainly driven by decreased gas usage for power generation down by 4.1 per cent on 2016. Domestic demand, which is influenced by temperature, was 4.6 per cent lower than in 2016.

#### **Main electricity generation and supply statistics:**

- There was a 1.0 per cent drop in the **total supply of electricity** in the UK in 2017, to 353 TWh, as demand fell. Indigenous electricity supply was stable while net imports of electricity fell by 17 per cent, to 14.8 TWh. The UK remained a net importer of electricity in 2017.
- **Final consumption of electricity** fell by 1.0 per cent to 300.7 TWh, its lowest level since 1995.
- In 2017, **renewable generation rose to a record high of 29.3 per cent**, further displacing fossil fuelled generation. This stemmed from a 14 per cent increase in renewable capacity and higher average wind speeds than the previous year. Coal-fired generation continued its decline, falling below a third of its 2015 level. Its share fell from 22 per cent in 2015 to 9 per cent in 2016 then to 7 per cent in 2017 as the carbon price made coal generation more expensive than gas. Consequently, gas' fall was less marked falling from 42 per cent in 2016 to a 40 per cent share of generation. Nuclear's share was stable at 21 per cent.

## Electricity generation by fuel, 2016 vs 2017



- **Electricity generated from renewable sources** in the UK in 2017 increased by 19 per cent to a record 99.3 TWh on a year earlier. Renewables accounted for 29.3 per cent of total UK electricity generation, up 4.8 percentage points on 2016. Generation from onshore and offshore wind increased by 39 per cent and 27 per cent respectively to new records, it was boosted by higher capacity and higher wind speeds. Generation from solar and hydro sources rose by 11 and 10 per cent respectively.
- **Installed electrical generating capacity of renewable sources** rose by 14 per cent, to 40.6 GW in 2017. Onshore wind capacity increased by 18 per cent to 12.8 GW, slightly above the capacity of solar photovoltaics for the first time. Taken together, onshore and offshore wind represent nearly a half (49 per cent) of renewable electrical capacity.
- The **domestic sector** was the largest electricity consumer in 2017 (105.4 TWh), while the **industrial sector** consumed 92.6 TWh, and the **service sector** consumed 97.8 TWh. Industrial consumption rose by 0.9 per cent, although was still down 11.4 per cent compared to 2010. Domestic consumption fell by 2.4 per cent, reflecting milder temperatures, and services consumption fell by 1.5 per cent.

## ENERGY CONSUMPTION IN THE UNITED KINGDOM

- Final energy consumption excluding non-energy use was 141.2 Mtoe in 2017, 1.0 Mtoe (0.7 per cent) lower than in 2016. On a temperature corrected basis, consumption increased by 1.3 Mtoe (0.9 per cent).
- Energy consumption in 2017 was 18.2 Mtoe (11 per cent) lower than in 2000 (141.2 Mtoe compared to 159.4 mtoe), and 4.8 Mtoe (3.3 per cent) lower than in 1970.
- In 2017, energy consumption in the **industrial sector** was 24.1 Mtoe, a 1.6 per cent increase since 2016. Consumption increased in the chemicals sub-sector (by 7.0 per cent), construction (by 5.9 per cent), food, drink, and tobacco (by 3.5 per cent), and the vehicles sub-sector (by 2.9 per cent). The largest increase in absolute terms was in the chemicals sector which increased from 3.3 Mtoe in 2016 to 3.5 Mtoe in 2017; this increased the chemicals sub-sector share of consumption from 13.9 per cent to 14.6 per cent.
- Since 2016, energy consumption in the **transport sector** increased by 0.5 Mtoe (0.9 per cent) to 56.5 Mtoe in 2017. The majority of the increase was in **air transport** which increased by 0.4 Mtoe (3.5 per cent). Consumption in **road transport** also increased slightly from 2016 to 2017 (by 0.1 per cent), with **rail transport** remain unchanged. Consumption in the **transport sector** peaked in 2007 and decreased to 2013; since then it has increased by 3 Mtoe (5.6 per cent).
- In 2017, **domestic energy consumption** decreased by 1.5 Mtoe (3.7 per cent), reflecting warmer average temperatures particularly during the heating season. On a temperature corrected basis, consumption was 0.1 Mtoe (0.3 per cent) higher in 2017. Since 2000, consumption has fallen by 14 per cent despite a 15 per cent increase in the number of households and a 12 per cent increase in the population. Per household, consumption has fallen by 26 per cent since 2000.
- In the **service sector**, energy consumption in the **private commercial sector** fell by 1.0 per cent between 2016 and 2017, in the **public sector** it fell by 1.7 per cent. Consumption in the **agricultural sector** increased by 3.4 per cent in 2017, to 1.5 Mtoe.

## NOTES TO EDITORS

1. The **Digest of United Kingdom Energy Statistics 2018**, 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 2017 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 on key events in the energy industries in recent years and a glossary of terms.

3. The **Digest of United Kingdom Energy Statistics 2018** 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 efficiency, intensity and output in the UK since the 1970s, with a particular focus on trends since 1990. 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. **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 28 June 2018, and is available at: [www.gov.uk/government/collections/energy-trends](http://www.gov.uk/government/collections/energy-trends)

7. **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 28 June 2018, and is available at: [www.gov.uk/government/collections/quarterly-energy-prices](http://www.gov.uk/government/collections/quarterly-energy-prices)



8. 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.

9. 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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