

## PRESS NOTICE



Department  
of Energy &  
Climate Change



# Statistical Press Release

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25 July 2013

## Digest of UK Energy Statistics 2013

The Department of Energy and Climate Change today releases 4 key publications: the **Digest of United Kingdom Energy Statistics 2013**, **UK Energy in Brief**, **Energy Flow Chart**, and **Energy Consumption in the United Kingdom** (web only) providing detailed analysis of production, transformation and consumption of energy in 2012.

### DIGEST OF UK ENERGY STATISTICS 2013

#### Key points

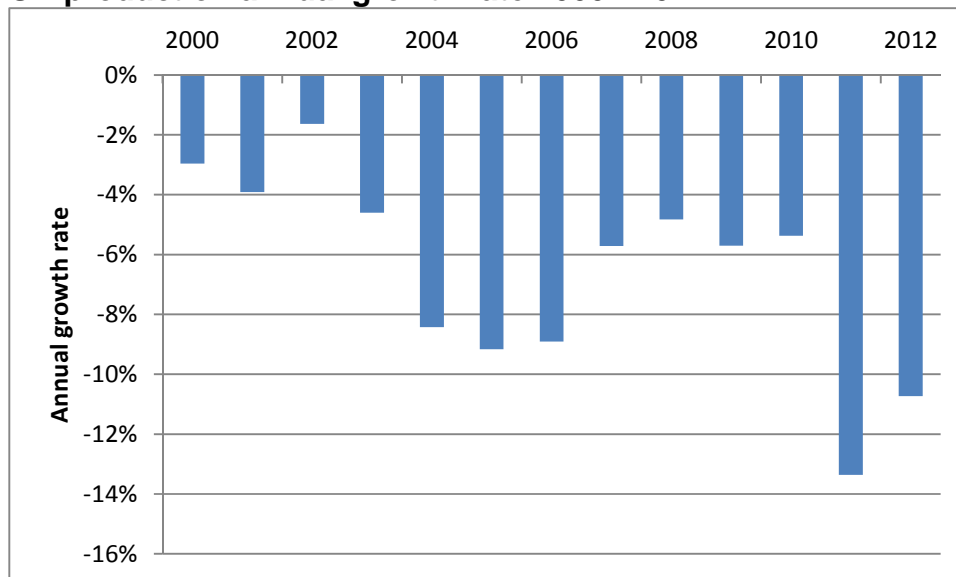
- **Primary energy production** fell by 10.7 per cent, on a year earlier, with further declines in oil and gas production.
- **Final energy consumption** rose by 1.7 per cent, reflecting the colder weather in 2012. On a temperature adjusted basis, energy consumption was down 0.7 per cent continuing the downward trend of the last eight years.
- Electricity generated from **renewable sources** in the UK in 2012 increased by 19 per cent on a year earlier, and accounted for 11.3 per cent of total UK electricity generation, up from 9.4 per cent in 2011. Total renewables, as measured by the 2009 EU Renewables Directive, accounted for 4.1 per cent of energy consumption in 2012, up from 3.8 per cent in 2011.
- With high gas prices, electricity generation shifted further from **gas to coal** in 2012, with the highest share of generation in 2012 coming from coal (39 per cent).



## Main energy production and trade statistics:

- **Primary energy production** fell by a further 10.7 per cent in 2012, following the record 13.2 per cent into 2011. There were falls in both oil and gas production caused by long term decline and maintenance activity on the UK Continental Shelf. Production has now fallen in each year since 1999, and is now less than half its 1999 levels, an average annual rate of decline of 7.1 per cent.

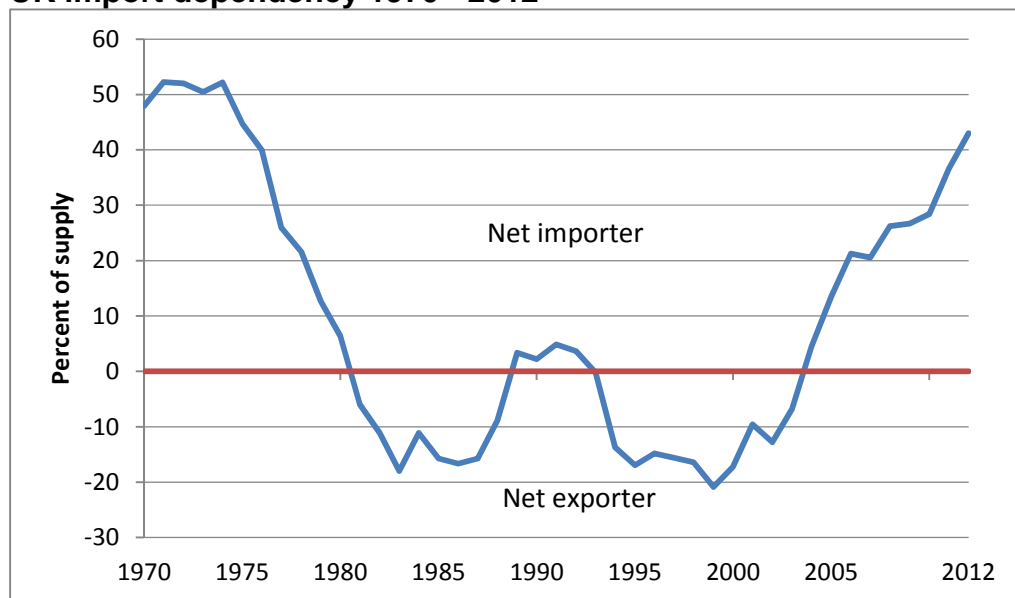
### UK production annual growth rate 2000 - 2012



- **Gross natural gas** production fell 14 per cent in 2012; driven in part by the Elgin gas leak. Gas production has fallen by 64 per cent since its peak in 2000.
- **Crude oil (including NGLs) production** in 2012 was 14 per cent lower than in 2011 at 45 million tonnes. Production has fallen by 67 per cent since 1999.
- **Coal production** was down by 8.5 per cent in 2012 compared to 2011. Imports of coal were higher compared to 2011 (by 37.8 per cent).
- Energy **imports** were at record levels in 2012, up 6.9 per cent on 2011 levels.
  - For crude oil, the key source was Norway which accounted for 46 per cent of imports, with a large growth in imports from African OPEC countries.
  - For gas the key source was also Norway, which accounted for 55 per cent of UK imports. LNG accounted for 28 per cent of gas imports, down from 47 per cent in 2011; with 98 per cent of these imports from Qatar.

- For petroleum products the UK sources its product widely, with a range of European countries supplying diesel road fuel and aviation fuel mainly being sourced from Asia.
- For coal the key source was Russia accounting for 40 per cent of UK imports, followed by Columbia and the US which accounted for 26 and 24 per cent respectively.
- The UK remained a **net importer of energy**, with an increased dependency level of 43 per cent; this continues the trend from 2004 when the UK once again became a net importer of fuel. The UK imported more coal, manufactured fuels, crude oil, electricity and gas than it exported; however the UK remained a net exporter of petroleum products, although net exports were 1.1 million tonnes in 2012, compared to 5.1 million tonnes in 2011.

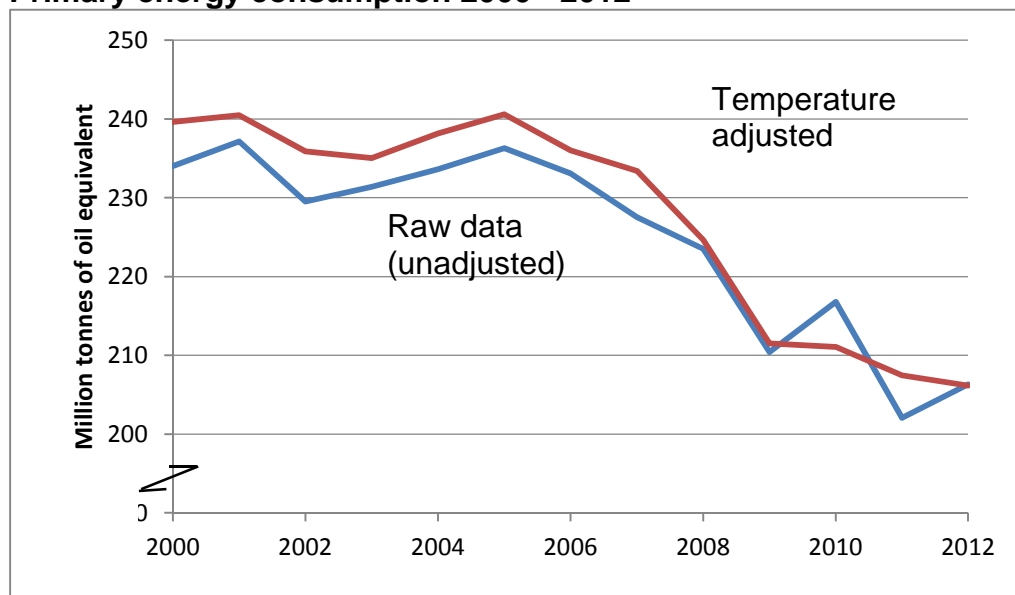
### UK import dependency 1970 - 2012



## Main energy consumption statistics:

- UK **primary energy consumption** in 2012 increased by 2.1 per cent, largely due to the colder weather in 2012. On a temperature adjusted basis, consumption was down 0.6 per cent continuing the downward trend of the last seven years.

### Primary energy consumption 2000 - 2012



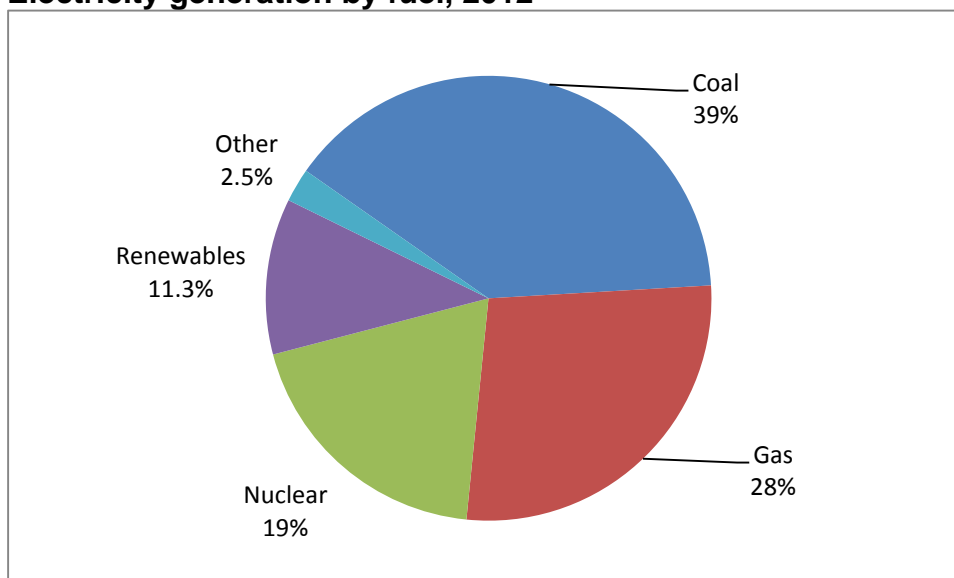
- **Overall gas demand** decreased by 6 per cent. **Gas demand for electricity generation** decreased by 30 per cent and gas's share of the UK's generation of electricity was 28 per cent, down from 40 per cent last year. Domestic demand was up by 16 per cent.
- **Total oil consumption in the UK** was broadly stable, falling by 2 per cent when compared with 2011. Over 75 per cent of oil is consumed in the transport sector, which showed little change in overall consumption from 2011.
- **Consumption of diesel road fuel exceeded the consumption of motor spirit** in 2012 by over 8 million tonnes due in part to increased substitution of diesel for motor spirit use in the UK's car fleet. Up until 2005, motor spirit exceeded diesel road fuel sales. Petrol consumption has fallen by 4.4 per cent per annum in the past 10 years, whilst diesel use has increased by 2.4 per cent per annum, over the same period.

- **Coal consumption** increased by 24.5 per cent in 2012. There was a 31.2 per cent increase in **consumption by major power producers** (consumers of 86 per cent of total coal demand). Coal accounted for 39 per cent of the electricity generated in the UK in 2012, up from 29 per cent in 2011. The domestic sector accounted for only 1.1 per cent of total coal consumption.
- **Energy consumption by final users** at 148.2 million tonnes of oil equivalent increased by 1.7 per cent in 2012. Consumption in the domestic sector was up 11.0 per cent, due to increased gas use for heating, with service sector use up by 2.7 per cent. There was reduced consumption from industry, transport and non-energy use, which were down 2.9, 1.4 and 10.0 per cent respectively. Average temperatures in 2012 were 1.0 degrees cooler than in 2011. On a temperature adjusted basis final energy consumption was down by 0.9 per cent continuing the downward trend of the last eight years.
- **Refinery production** decreased by 8 per cent on 2011 and 20 per cent on 2000. The closure of the Coryton refinery in the summer of 2012 contributed to the decrease in production. As a result imports of petroleum product imports have increased by 15 per cent and exports have decreased by 3 per cent. Petrol accounts for nearly a third of exports.

## Main electricity generation and supply statistics:

- With high gas prices, the commercial attractiveness of **gas for electricity generation** weakened further in 2012, with generation switching to coal as a result. Gas's share of electricity generation fell by 12 percentage points, with coal's increasing by nine. Meanwhile, nuclear's share of electricity generation was unchanged, despite a slight increase in generation. Gas accounted for 28 per cent of electricity supplied in 2012, with coal accounting for 39 per cent and nuclear 19 per cent.

### Electricity generation by fuel, 2012



- Electricity generated from renewable sources in the UK in 2012 increased by 19 per cent on a year earlier, and accounted for 11.3 per cent of total UK electricity generation, up from 9.4 per cent in 2011. Offshore wind generation increased by 46 per cent, with a load factor of 33.7 per cent (greater than the gas load factor of 30.4 per cent).
- In 2012, the proportion of UK **electricity generated from renewables** was 11.3 per cent. On the basis of the policy measurement of the contribution of renewables eligible under the Renewables Obligation to UK electricity sales, 2012 showed a 1.2 percentage point increase, with the percentage increasing from 9.4 per cent in 2011 to reach 10.6 per cent in 2012. Installed electrical generating capacity of renewable sources rose by 27 per cent in 2012, mainly as a result of a 27 per cent increase in onshore wind capacity, 63 per cent increase in offshore wind capacity, and solar photovoltaic capacity increasing by 71 per cent (due to high uptake of Feed in Tariffs).

- There was a 0.6 per cent increase in the **total supply of electricity** in the UK in 2012, to 375.9 TWh. Indigenous electricity supply fell by 1.0 per cent, but net imports of electricity almost doubled, to 12.0 TWh, as imports rose and exports fell.
- **Final consumption of electricity** was broadly unchanged at 317.6 TWh, the lowest level since 1998.
- The **domestic sector** was the largest electricity consumer in 2012 (114.7 TWh), while the **industrial sector** consumed 97.8 TWh, and the **service sector** consumed 101.0 TWh. Industrial consumption decreased by 4.4 per cent, while domestic consumption rose by 2.8 per cent.

#### **Other energy statistics:**

- **Total renewables**, as measured by the 2009 EU Renewables Directive, accounted for 4.1 per cent of energy consumption in 2012 up from 3.8 per cent in 2011.
- In 2012, **Combined Heat and Power (CHP)** capacity stood at 6,136 MWe, an increase of 2.8 per cent on 2011.
- In 2012 the energy industries' accounted for 3.5 per cent of **GDP**.

The increase in residential gas use, due to the cooler weather in 2012, combined with fuel switching away from gas to coal for electricity generation, provisionally increased **emissions** of carbon dioxide by 4 per cent in 2012.



## ENERGY CONSUMPTION IN THE UNITED KINGDOM

- Final energy consumption, excluding non-energy use, rose by 3.3 million tonnes of oil equivalent between 2011 and 2012 – an increase of 2.4 per cent. The changes in the main sectors, between 2011 and 2012 were:

	Million tonnes of oil equivalent / Percentage		
	2011	2012	Percentage change
Industry	25.9	25.2	-2.9%
Transport	54.0	53.2	-1.4%
Domestic	38.9	43.2	11.0%
Services, public administration and agriculture	18.5	19.0	2.7%
<b>Total</b>	<b>137.3</b>	<b>140.6</b>	<b>2.4%</b>

- Energy consumption in 2012 was 6.7 million tonnes lower than in 1990 – a decrease of 4.5 per cent. The changes in the main sectors between 1990 and 2012 were:

	Million tonnes of oil equivalent / Percentage		
	1990	2012	Percentage change
Industry	38.7	25.2	-34.9%
Transport	48.6	53.2	9.5%
Domestic	40.8	43.2	5.9%
Services, public administration and agriculture	19.2	19.0	-1.0%
<b>Total</b>	<b>147.3</b>	<b>140.6</b>	<b>-4.5%</b>

- In 2012, energy consumption in the **industrial sector** decreased 3 per cent since 2011, with the iron and steel sector showing a 5 per cent decrease to 1.2 million tonnes of oil equivalent. The largest energy consuming single sub-sector in the **industrial sector** was **chemicals**, which accounted for 16 per cent of all industrial energy consumption. Energy consumption per unit of output fell by 47 per cent in the chemicals sector between 1990 and 2012, while there was a fall of 12 per cent in the same measure for the iron and steel sector; for all industries there was a fall of 33 per cent.
- Energy consumption in the **transport sector** fell by 1 per cent between 2011 and 2012. Transport energy consumption rose 9 per cent (4.6 million tonnes of oil equivalent) between 1990 and 2012. Within this, the largest increase occurred in the **air transport** sector, where consumption rose by 69 per cent – with this sector accounting for 23 per cent of total transport consumption in 2012. Over the same period, **road transport** fuel rose by 2 per cent and **rail transport** use fell by 7 per cent.





- In 2012, **domestic energy consumption** was 11 per cent higher than consumption in 2011, with consumption returning to 2009 levels. The intermediate years had unusual weather spells (the high levels of consumption in 2010 were largely driven by colder temperatures and the lower levels of consumption in 2011 were due to a warmer than usual year).
- The 6 per cent rise since 1990 is set in the context of an increase of 20 per cent in the number of UK households and a 12 per cent increase in the UK population. At a per household level, energy consumption has fallen by 12 per cent since 1990.
- In 2012, **space heating** accounted for 66 per cent of all energy consumed in the domestic sector, **water heating** a further 17 per cent, with **lighting and appliances** and **cooking** responsible for 15 and 3 per cent.
- In the **service sector**, energy consumption in the **private commercial sector** increased by 12 per cent between 1990 and 2012, in the **public sector** it fell by 13 per cent and by 30 per cent in the **agriculture sector**. Over the same period, output, measured as the contribution made to the UK economy, increased by 79 per cent in the private sector and increased by 45 per cent in the public sector, in real terms. In 2012, space heating accounted for 48 per cent of energy consumption in the services sector, and lighting accounted for a further 19 per cent. The retail sub-sector accounts for 20 per cent of energy use by service sector organisations.

## NOTES TO EDITORS

1. The **Digest of United Kingdom Energy Statistics 2013**, compiled by the Department of Energy and Climate Change, contains tables and extensive commentary, charts and technical notes. As well as giving new data for 2012 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. It also contains a table covering fuel used for electricity generation by industries whose main activity is not the generation of electricity (i.e. autogenerators). 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 2013** is available from the Stationery Office at a cost of £65 (ISBN 9780115155291) and on the Internet at:

[www.gov.uk/government/organisations/department-of-energy-climate-change/series/digest-of-uk-energy-statistics-dukes](http://www.gov.uk/government/organisations/department-of-energy-climate-change/series/digest-of-uk-energy-statistics-dukes)

**UK Energy in Brief** included with this year's Digest, is a booklet summarising the main figures in the publication. UK Energy in Brief is also available on the Internet at:

[www.gov.uk/government/organisations/department-of-energy-climate-change/series/uk-energy-in-brief](http://www.gov.uk/government/organisations/department-of-energy-climate-change/series/uk-energy-in-brief)

**The Energy Flow Chart** included with this year's Digest, is a chart showing the UK energy flows of primary fuels from home production and imports to their eventual final uses. The Energy Flow Chart is also available on the Internet at:

[www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-flow-charts](http://www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-flow-charts)

UK Energy in Brief and the Energy Flow Chart are available on request from DECC, Tel: 0300 068 5056.

4. **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 on the Internet only at:

[www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-consumption-in-the-uk](http://www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-consumption-in-the-uk)



5. **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 2013. It is available on subscription (with Quarterly Energy Prices, see below) through SSD, tel: 01904 455527. Single copies are available from the Publications Orderline priced £6. It is also available on the Internet at:

[www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-trends](http://www.gov.uk/government/organisations/department-of-energy-climate-change/series/energy-trends).

6. The **Quarterly Energy Prices** publication issued with Energy Trends by DECC presents information on energy prices. It 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 2013. It is available on subscription (with Energy Trends, see above). Single copies are available from the Publications Orderline priced £8. It is also available on the Internet at:

[www.gov.uk/government/organisations/department-of-energy-climate-change/series/quarterly-energy-prices](http://www.gov.uk/government/organisations/department-of-energy-climate-change/series/quarterly-energy-prices)

7. In addition to the above statistical publications on the internet, the DECC's 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. These data are available at:

[www.gov.uk/government/organisations/department-of-energy-climate-change/about/statistics](http://www.gov.uk/government/organisations/department-of-energy-climate-change/about/statistics)

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