



# Statistical Press Release

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## Digest of UK Energy Statistics 2011

The Department of Energy and Climate Change today released 4 key publications: the **Digest of United Kingdom Energy Statistics 2011**, **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 2010.

### DIGEST OF UK ENERGY STATISTICS 2011

#### Main trends in energy in 2010:

- **Primary energy production** fell by 5.3 per cent on a year earlier, in line with the general trend seen over the last decade.
- **Primary energy consumption** was up 3.2 per cent, though on a temperature adjusted basis, was down 0.4 per cent continuing the downward trend of the last five years.
- The UK remained a **net importer of energy**, with a dependency level of 28 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.
- In 2010 there were large increase in imports of **LNG** (liquefied natural gas), which accounted for 35 per cent of gas imports. UK Gas exports were close to record levels.



- With the coal-gas price differential again high, the commercial attractiveness of **gas for electricity generation** remained strong. However, the amount of electricity generated from coal also rose in the second half of the year as electricity demand increased in the final quarter and maintenance outages reduced nuclear availability. Gas accounted for 47 per cent of electricity supplied in 2010, with coal accounting for 28 per cent and nuclear 16 per cent.
- Coal stocks decreased by 30 per cent in 2010 compared to 2009. This represents a return to more normal levels, as stocks in 2009 were at their highest since 1994.
- **Final energy consumption** increased by 4.4 per cent compared with 2009, however, levels were still 2.8 per cent below those in 2008.
- An increase in residential gas use, combined with fuel switching away from nuclear power to coal and gas for electricity generation increased emissions of carbon dioxide by 3.8 per cent in 2010.
- Electricity generated from renewable sources in the UK in 2010 represented 6.8 per cent of total UK electricity generation, up from 6.7 per cent in 2009.
- Total renewables, as measured by the 2009 EU Renewables Directive, accounted for 3.3 per cent of energy consumption in 2010 up from 3.0 per cent in 2009.
- **Refinery production** decreased by 3 per cent, with an 8 per cent growth in petroleum product imports. A substantial component of import growth was the rise in diesel road fuel imports (up around a third).
- In 2010 **Combined Heat and Power (CHP)** capacity stood at 5,989 MWe an increase of 6.7 per cent on 2009.
- In 2010 the energy industries' accounted for 3.9 per cent of **GDP** and 9.9 per cent of **total investment**.



## Main energy production and trade statistics:

- **Primary energy production** in the United Kingdom in 2010, at 158.1 million tonnes of oil equivalent, was 5.3 per cent lower than in 2009. Production has now fallen in each year since 1999, and is down 46.9 per cent on 1999 levels, an average rate of decline of 5.6 per cent.
- **Gross natural gas** production fell 4.3 per cent in 2010. Gross natural gas production has fallen by 47.3 per cent since its peak in 2000. Net imports of gas accounted for over 40 per cent of the gas output from the transmission system. LNG imports accounted for over a third of gas imports, more than double that received by pipe from the Netherlands and Belgium combined, and up from 2% in 2008. Imports from Norway accounted for just under half of gas imports.
- **Crude oil (including NGLs) production** in 2010 was 7.7 per cent lower than in 2009 at 63 million tonnes, and now accounts for 44 per cent of primary energy production.
- **Coal production** was 3.0 per cent higher in 2010 compared to 2009. Imports of coal were lower compared to 2009 (by 30.5 per cent).
- **Electricity supplied** from nuclear sources fell in 2010, accounting for 56.5 TWh out of the total electricity supply of 363.8 TWh (16 per cent).

## Main energy consumption statistics:

- **UK primary energy consumption** in 2010 increased by 3.2 per cent, largely driven by the colder weather in 2010.
- **Overall gas demand** increased by 8.4 per cent. **Gas demand for electricity generation** increased by 3.5 per cent and gas's share of the UK's supply of electricity was 47 per cent.
- **Total oil consumption in the UK** fell marginally in 2010. The majority of final consumption of oil, around 75 per cent, was consumed in the transport sector. Energy use for transport fell by 1 per cent in 2010 compared to 2009, largely due to falls in aviation fuel resulting from disruptions due to snow and volcanoes.



- **Consumption of diesel road fuel exceeded the consumption of motor spirit** in 2010 by almost 6 million tonnes.
- **Coal consumption** increased by 5.2 per cent in 2010. There was a 4.4 per cent increase in **consumption by major power producers** (consumers of 85 per cent of total coal demand). Twenty-eight per cent of the electricity generated in the UK came from coal in 2010, up from 27 per cent in 2009. The domestic sector accounted for only 1.4 per cent of total coal consumption.
- **Energy consumption by final users** (i.e. after conversion to secondary fuels, such as electricity or road transport fuels and including non-energy use) at 159.1 million tonnes of oil equivalent rose by 4.4 per cent in 2010, the first rise since 2004. Consumption increased in all sectors except transport which fell by 0.8% due to weather and aviation disruptions; domestic consumption increased by 12.6% mainly due to the cold weather in 2010, which was on average 1.1 degrees colder than in 2009.

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

- There was a 1.1 per cent increase in the **total supply of electricity** in the UK in 2010 to 383.8 TWh. This is following four successive years of falls in the total electricity supply. Indigenous electricity supply rose by 1.2 per cent and net imports of electricity fell by 6.9 per cent to 2.7 TWh as exports increased by more than imports.
- Energy industries' use of electricity fell by 3.3 per cent in 2010 to 28.6 TWh. **Final consumption of electricity** rose by 1.7 per cent to 328.3 TWh.
- The **domestic sector** was the largest electricity consumer in 2010 (118.7 TWh), while the **industrial sector** consumed 104.5 TWh, and the **service sector** consumed 101.2 TWh. Industrial consumption increased by 3.6 per cent, while domestic consumption increased by 0.1 per cent.
- In 2010 the proportion of UK **electricity generated from renewables** was 6.8 per cent. On the basis of the policy measurement of the contribution of renewables eligible under the Renewables Obligation to UK electricity sales, 2010 showed a 0.3 percentage point increase, with the percentage increasing from 6.7 per cent in 2009



to reach 7.0 per cent in 2010. Installed electrical generating capacity of renewable sources rose by 15 per cent in 2010, mainly as a result of a 42 per cent increase in offshore wind capacity, a 16 per cent increase in onshore wind capacity and a 9 per cent increase in the capacity of sites fuelled by biomass and wastes.

## ENERGY CONSUMPTION IN THE UNITED KINGDOM

- The overall increase in final energy consumption between 2009 and 2010 was 6.6 million tonnes of oil equivalent – an increase of 4.6 per cent (this excludes non-energy use). The changes in the main sectors, between 2009 and 2010 were:

	Million tonnes of oil equivalent / <i>Percentage</i>		
	2009	2010	<i>Percentage change</i>
Industry	26.6	27.5	+3.7
Transport	56.1	55.7	-0.8
Domestic	43.0	48.5	+12.6
Services, public administration & agriculture	17.7	18.4	+3.7
<b>Total</b>	<b>143.4</b>	<b>150.1</b>	<b>+4.6</b>

- Energy consumption in 2010, was 2.8 million tonnes higher than in 1990 – an increase of 1.9 per cent. The changes in the main sectors, between 1990 and 2010 were:

	Million tonnes of oil equivalent / <i>Percentage</i>		
	1990	2010	<i>Percentage change</i>
Industry	38.7	27.5	-28.8
Transport	48.6	55.7	+14.5
Domestic	40.8	48.5	+18.9
Services, public administration & agriculture	19.2	18.4	-4.5
<b>Total</b>	<b>147.3</b>	<b>150.1</b>	<b>+1.9</b>

- In 2010, the largest energy consuming single sub-sector in the **industrial sector** was **chemicals**, which accounted for 16 per cent of all industrial energy consumption. In 2010, energy consumption in the chemical sector was 4 per cent (0.2 million tonnes of oil equivalent) higher than the previous year. The iron and steel sector showed the largest percentage increase on the year in 2010, with a rise of 12 per cent to 1.3 million tonnes of oil equivalent. Energy consumption per unit of output fell by 46.7 per cent in the chemicals sector between 1990 and 2010, while there was a fall of 9.2 per cent in the same measure for the iron and steel sector; for all industries there was a fall of 27.0 per cent.



- Energy consumption in the **transport sector** has now fallen for three consecutive years signalling an end to the continuous growth seen since 1970, with the falls related to the recession and specific weather events. Transport energy consumption rose 15 per cent (7.1 million tonne of oil) between 1990 and 2010. Within this, the largest increase occurred in the **air transport** sector, where consumption rose by 68 per cent - accounting for 70 per cent of the total increase seen in transport energy consumption. Over the same period, **passenger road** fuel rose by 3 per cent and **water transport** by 8 per cent.
- **Domestic energy consumption** increased by 19 per cent between 1990 and 2010, to its highest level since the peak of 2004, reflecting the cold temperatures experienced in 2010. This follows on from the lowest level of domestic consumption seen in 2009 since 1995.
- For context, since 1990, the number of households in the UK increased by 17 per cent, the population by 9 per cent and total household disposable income by 54 per cent in real terms.
- In 2009, **space heating** accounted for 61 per cent of all energy consumed in the domestic sector, **water heating** a further 18 per cent, with **lighting and appliances** and **cooking** responsible for 18 and 3 per cent.
- It is estimated that had the savings through insulation and heating efficiency improvements from 1970 onwards not been made, then energy consumption in homes would be around twice current levels.
- In the **service sector**, energy consumption in the **private commercial sector** fell by 3.8 per cent between 1990 and 2010, in the **public sector** by 23.9 per cent and by 25.2 per cent in the **agriculture sector**. Over the same period, output, measured as the contribution made to the UK economy, increased by 93 per cent in the private sector and increased by 35 per cent in the public sector, in real terms. In 2009, space heating accounted for 45 per cent of energy consumption in the services sector, and lighting accounted for a further 21 per cent. The retail sub-sector accounts for 21 per cent of energy use by service sector organisations.
- Increased energy consumption between 2009 and 2010 impacted on carbon dioxide emissions. Emissions are estimated to be around 4 per cent higher in 2010 than in 2009; however since 1990 there has been a reduction of around 17 per cent.



## NOTES TO EDITORS

1. The **Digest of United Kingdom Energy Statistics 2011**, 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 2010 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 combined heat and power and renewable sources of energy. 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 2011** is available from the Stationery Office at a cost of £60 (ISBN 9780115155277) and on the Internet at:

[www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx](http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx)

**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.decc.gov.uk/en/content/cms/statistics/publications/brief/brief.aspx](http://www.decc.gov.uk/en/content/cms/statistics/publications/brief/brief.aspx)

**The 2010 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 2010 Energy Flow Chart is also available on the Internet at:

[www.decc.gov.uk/en/content/cms/statistics/publications/flow/flow.aspx](http://www.decc.gov.uk/en/content/cms/statistics/publications/flow/flow.aspx)

UK Energy in Brief and the 2010 Energy Flow Chart are available on request from DECC, 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.decc.gov.uk/en/content/cms/statistics/publications/ecuk/ecuk.aspx](http://www.decc.gov.uk/en/content/cms/statistics/publications/ecuk/ecuk.aspx)

5. **UK Energy Sector Indicators**, previously released in July alongside the above publications, will now be released on Thursday 27 October 2011. DECC, has published on our website a table showing where the indicators data previously released in July, can be obtained from within other DECC statistical publications and releases

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 30 June 2011. It is available on subscription (with Quarterly Energy Prices, see below) through Amey plc - contact Nicola Mullen, tel: 01633 682228. Single copies



are available from the Publications Orderline priced £6. It is also available on the Internet at: [www.decc.gov.uk/en/content/cms/statistics/publications/trends/trends.aspx](http://www.decc.gov.uk/en/content/cms/statistics/publications/trends/trends.aspx)

7. 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 30 June 2011. It is available on subscription (with Energy Trends, see above) through Amey plc - contact Nicola Mullen, tel: 01633 682228. Single copies are available from the Publications Orderline priced £8. It is also available on the Internet at: [www.decc.gov.uk/en/content/cms/statistics/publications/prices/prices.aspx](http://www.decc.gov.uk/en/content/cms/statistics/publications/prices/prices.aspx)

8. 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.decc.gov.uk/en/content/cms/statistics/source/source.aspx](http://www.decc.gov.uk/en/content/cms/statistics/source/source.aspx)

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#### **This is a National Statistics publication**

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the UK Statistics Authority: Code of Practice for Official Statistics.

Designation can be broadly interpreted to mean that the statistics:

- meet identified user needs
- are well explained and readily accessible
- are produced according to sound methods, and
- are managed impartially and objectively in the public interest

Once statistics have been designated as National Statistics it is a statutory requirement that the Code of Practice shall continue to be observed.

