



A National Statistics Publication



# UK ENERGY IN BRIEF 2012

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# UK ENERGY IN BRIEF 2012

This booklet summarises the latest statistics on energy production, consumption, prices and climate change in the United Kingdom. Figures are primarily taken from the 2012 edition of the “Digest of UK Energy Statistics”, published on 26 July 2012. Details of the Digest and other Department of Energy and Climate Change (DECC) statistical publications can be found on pages 45 and 46 of this booklet and are available on the Internet at:

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

This booklet 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)



## **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.

# Contents

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## **INTRODUCTION TO THE CHARTS AND TABLES** . . . . . 5

### **ENERGY IN THE ECONOMY**

The energy industries' contribution to the UK economy . . .	6
Contribution to GDP . . . . .	6
Trends in employment . . . . .	7
Investment . . . . .	7

### **OVERALL ENERGY**

Production of primary fuels . . . . .	8
Inland energy consumption . . . . .	9
Final energy consumption . . . . .	10
Import dependency . . . . .	11
Proportion of UK energy supplied from low carbon sources . . . . .	12
Diversity of primary energy supply in G8 countries . . . . .	13
Energy and carbon ratios . . . . .	14

### **CLIMATE CHANGE**

Greenhouse gas emissions . . . . .	15
Carbon dioxide emissions by National Communication sector .	16

### **FUEL POVERTY**

Number of households in fuel poverty . . . . .	17
Fuel poverty by household composition . . . . .	18

### **SECURITY OF SUPPLY**

Reliability . . . . .	19
-----------------------	----

### **COAL**

Supply . . . . .	20
Consumption . . . . .	21

### **PETROLEUM**

Foreign trade in crude oil and petroleum products . . . . .	22
Demand by product . . . . .	23
Demand for road fuels . . . . .	24

### **OIL AND GAS PRODUCTION**

UK Continental Shelf production	25
Remaining oil & gas reserves . . .	26

### **NATURAL GAS**

Consumption . . . . .	27
Trade . . . . .	28

### **ELECTRICITY**

Electricity supplied by fuel type .	29
Consumption . . . . .	31

### **FEED IN TARIFFS** . . . . . 32

### **RENEWABLES**

Energy sources . . . . .	33
Electricity generation from renewable sources . . . . .	34
Progress against EU Renewable Energy Directive . . . . .	35

### **COMBINED HEAT AND POWER** . . 36

### **ENERGY EFFICIENCY**

Energy efficiency . . . . .	37
Number of homes with energy efficiency measures . . . . .	38

### **PRICES**

Fuel price indices for the industrial sector . . . . .	39
Fuel price indices for the domestic sector . . . . .	40
Petrol and diesel prices . . . . .	41

### **EXPENDITURE**

Fuel expenditure of households .	42
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### **CONTACTS** . . . . . 43

### **CONVERSION FACTORS AND DEFINITIONS** . . . . . 44

### **REFERENCES** . . . . . 45

## Introduction to the charts and tables

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UK Energy in Brief aims to provide a summary of some of the key developments in the UK energy system: how energy is produced and used and the way in which energy use influences greenhouse gas emissions. It takes data from the main Department of Energy and Climate Change (DECC) statistical publications, the Digest of UK Energy Statistics, Energy Trends, Quarterly Energy Prices, Energy Consumption in the UK, the annual Fuel Poverty statistics report and statistical releases on emissions, and combines these with data produced by the Office for National Statistics and other Government Departments.

The booklet contains separate sections on the economics of the energy industry, overall energy production and consumption and trends in production and consumption of the major fuel sources, climate change and fuel poverty. Also discussed are developments in combined heat and power, renewable energy and feed in tariffs. Information is also given on energy efficiency, energy prices and energy expenditure.

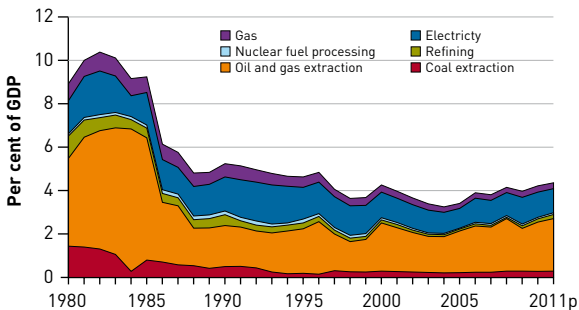
The detailed background data on energy production and consumption can be found in the Digest of UK Energy Statistics 2012 available from The Stationery Office, priced £62, but also available free of charge on the Internet at: [www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx](http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx)

# Energy in the economy

## THE ENERGY INDUSTRIES' CONTRIBUTION TO THE UK ECONOMY IN 2011

- 4.4% of GDP
- 10.1% of total investment in 2010
- 51.8% of industrial investment in 2010
- 1.5% of annual business expenditure on research and development in 2010
- 171,000 people directly employed in 2011 (7% of industrial employment) and more indirectly e.g. an estimated 207,000 in support of UK Continental Shelf production.

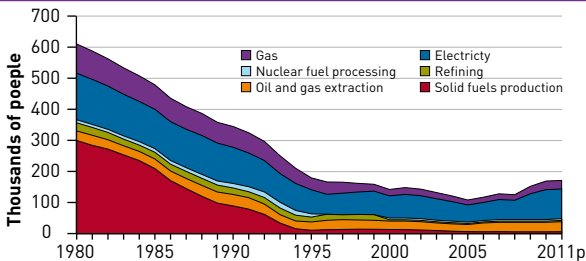
### Contribution to GDP by the energy industries, 1980 to 2011



Source: Office for National Statistics

The contribution to the UK economy by the energy industries peaked in 1982 at 10.4%. Despite its fall in 1986, oil and gas extraction is the major energy contributor to the UK economy (with its value dependent both on production and the price of oil and gas) followed by the electricity sector. For 2011, the contribution by the energy industries to the UK economy was 4.4% of GDP with oil and gas extraction accounting for 55% and electricity (including renewables) 25% of the energy total.

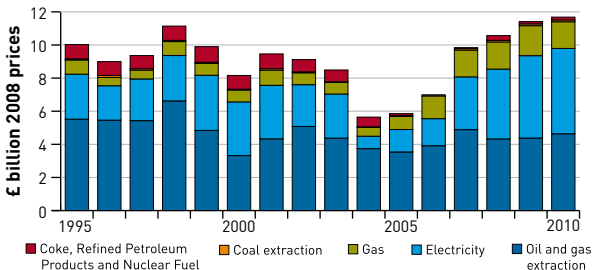
## Trends in employment in the energy industries, 1980 to 2011



Source: Office for National Statistics  
Data from 1996 onwards based on SIC 2007 classifications

Employment in the energy production and supply industries fell rapidly throughout the 1980s and mid-1990s as a result of closures of coal mines. Between 1995 and 2008, employment declined slowly, however latest data suggests employment has increased in the last three years, driven by a growth in electricity sector.

## Investment in the energy industries, 1995 to 2010

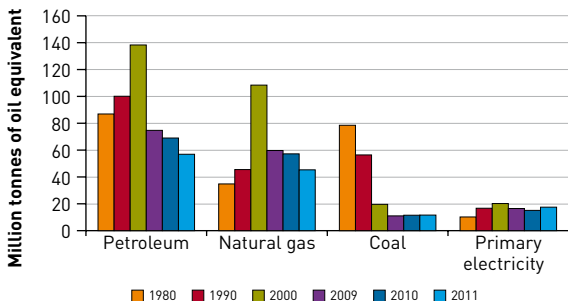


Source: Office for National Statistics

Since 2004, investment in the energy industries has continued to grow, specifically in electricity. In 2010, of the total amount invested in the energy industry, 40% was in oil and gas extraction, 44% in electricity, 14% in gas with the remaining 2% in coal extraction and coke, refined petroleum products and nuclear fuels. Data are not yet available for 2011.

# Overall energy

Production of primary fuels, 1980 to 2011



Million tonnes of oil equivalent

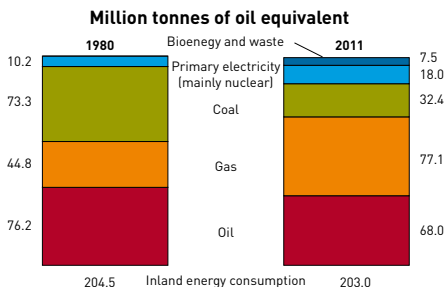
	1980	1990	2000	2009	2010	2011
Petroleum	86.9	100.1	138.3	74.7	69.0	56.9
Natural gas	34.8	45.5	108.4	59.7	57.2	45.3
Coal	78.5	56.4	19.6	11.0	11.5	11.6
Primary electricity	10.2	16.7	20.2	16.5	15.1	17.5
Bioenergy & waste	0.0	0.7	2.3	4.9	5.1	5.8
<b>Total</b>	<b>210.5</b>	<b>219.4</b>	<b>288.7</b>	<b>166.9</b>	<b>157.9</b>	<b>137.0</b>

Total production of primary fuels, when expressed in terms of their energy content, fell by 13.2% in 2011 compared to 2010. There were sharp falls in both oil and gas production due to a number of maintenance issues. Petroleum accounted for 42% of total production, natural gas 33%, coal 8%, primary electricity (consisting of nuclear, wind and natural flow hydro) 13%, while bioenergy and waste accounted for the remaining 5.8 million tonnes of oil equivalent.

Total production increased rapidly between 1980 and 2000, mainly due to the growth of oil and gas. Production in 2000 was at record levels for natural gas, whilst in 1999 it was at record levels for overall energy and petroleum. Production has since been on the decline as a number of oil and gas fields become exhausted and also due to increased maintenance activity. Production is now less than half of the level recorded in 2000.



## Inland energy consumption, 1980 to 2011



## Million tonnes of oil equivalent

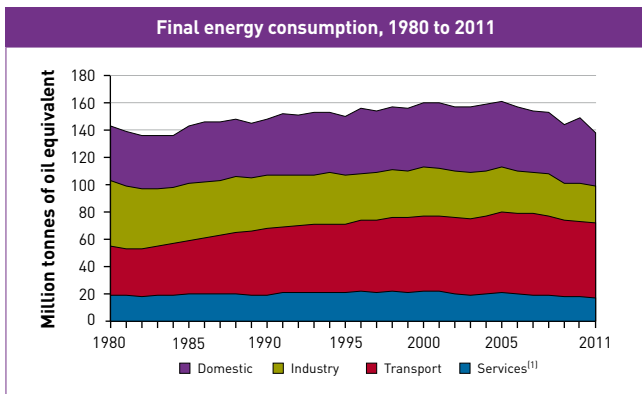
	1980	1990	2000	2009	2010	2011
Conversion losses:			53.8	50.0	49.9	48.2
Distribution losses and energy industry use:	(62.1)	66.4)		18.0	18.3	17.1
Final consumption:						
Industry	48.3	38.7	35.5	26.6	27.7	27.1
Domestic sector	39.8	40.8	46.9	43.0	48.5	38.8
Transport	35.5	48.6	55.5	56.1	55.2	55.2
Services <sup>1</sup>	18.7	19.2	21.5	17.7	18.3	17.2
<b>Total final energy consumption:</b>	<b>142.4</b>	<b>147.3</b>	<b>159.4</b>	<b>143.4</b>	<b>149.6</b>	<b>138.3</b>
<b>Total inland primary energy consumption<sup>2</sup>:</b>	<b>204.5</b>	<b>213.7</b>	<b>234.8</b>	<b>211.0</b>	<b>218.0</b>	<b>203.0</b>
<b>Temperature corrected total inland consumption:</b>	<b>206.2</b>	<b>221.6</b>	<b>239.6</b>	<b>213.1</b>	<b>213.2</b>	<b>209.5</b>

(1) Includes agriculture

(2) Excludes non-energy use

Primary energy consumption was 6.9% lower in 2011 than in 2010. Consumption fell as a result of the milder weather where the average daily temperature was 10.7°C, 1.8°C warmer than in 2010. On a temperature corrected basis, primary energy consumption was 1.7% lower than in 2010, continuing the general fall seen since 2005. In the last 30 years consumption of natural gas and primary electricity has risen considerably, whilst consumption of oil and coal have fallen. Energy industry use, losses during conversion to secondary fuels and losses during distribution accounted for 32.1% of inland energy consumption in 2011.

# Overall energy



2011

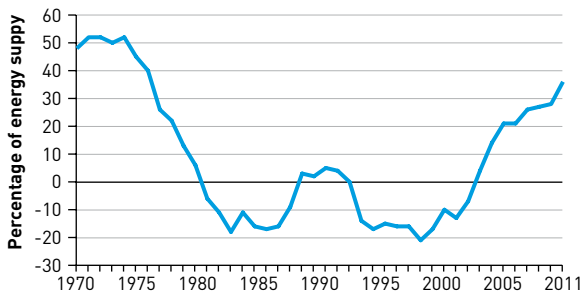
Million tonnes of oil equivalent

	Industry	Domestic	Transport	Services <sup>1</sup>	Total
Coal & manufactured fuels	1.7	0.8	0.0	0.0	2.5
Gas	10.7	25.2	-	6.5	42.4
Oil	4.5	2.7	53.7	1.4	62.3
Electricity	8.8	9.6	0.4	8.6	27.3
Bioenergy and heat	1.4	0.6	1.1	0.7	3.8
<b>Total</b>	<b>27.1</b>	<b>38.8</b>	<b>55.2</b>	<b>17.2</b>	<b>138.3</b>

(1) Includes agriculture

Total final energy consumption (excluding non-energy use) was 8% lower in 2011 compared to 2010. By sector, final consumption fell by 2% in the industry sector, 20% in the domestic sector, 6% in the service sector but remained at similar level in the transport sector. The decrease in domestic consumption was mainly due to the milder weather in 2011, which was on average 1.8 degrees warmer than in 2010. In terms of fuel types, final consumption of coal and manufactured fuels fell by 4%, gas by 18% as less gas was used for electricity generation, oil by 2%, electricity by 3%, whilst bioenergy rose by more than 1%.

Import dependency, 1970 to 2011



Percentage

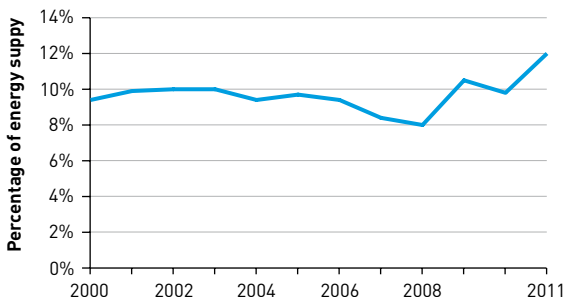
	2000	2007	2008	2009	2010	2011
Coal	39%	69%	75%	78%	51%	63%
Gas	-11%	20%	26%	32%	38%	44%
Oil	-55%	2%	9%	7%	14%	26%
<b>Total</b>	<b>-17%</b>	<b>21%</b>	<b>26%</b>	<b>27%</b>	<b>28%</b>	<b>36%</b>

In the 1970's the UK was a net importer of energy. Following development of oil and gas production in the North Sea, the UK became a net exporter of energy in 1981. Output fell back in the late 1980's following the Piper Alpha disaster, with the UK regaining a position as a net exporter in the mid 1990's. North Sea production peaked in 1999, and the UK returned to being an energy importer in 2004. The UK remains a net exporter of oil products, though the level of net imports of crude oil result in the UK being a net importer of oil. In 2011 36% of energy used in the UK was imported, up sharply from the 2010 level as North Sea oil and gas output fell following adverse weather conditions as well as a number of maintenance issues.

Latest comparable data from Eurostat, for 2010, show that the UK had the fifth lowest level of import dependency in the EU, behind Denmark, which remains a net exporter, Estonia, Romania and the Czech Republic.

## Overall energy

Proportion of UK energy supplied from low carbon sources, 2000 to 2011



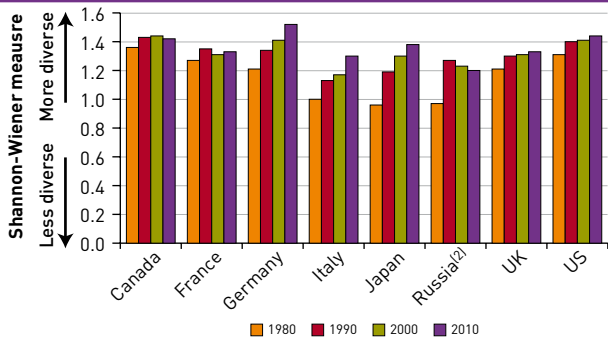
Percentage

	2000	2007	2008	2009	2010	2011
Nuclear	8.4%	6.2%	5.3%	7.2%	6.4%	7.7%
Wind	0.0%	0.2%	0.3%	0.4%	0.4%	0.7%
Hydro	0.2%	0.2%	0.2%	0.2%	0.1%	0.2%
Bioenergy	0.9%	1.7%	1.8%	2.1%	2.3%	2.7%
Transport fuels	0.0%	0.2%	0.4%	0.5%	0.6%	0.6%
Other	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
<b>Total</b>	<b>9.4%</b>	<b>8.4%</b>	<b>8.0%</b>	<b>10.5%</b>	<b>9.8%</b>	<b>12.0%</b>

In 2011 the UK obtained 12% of its energy from low carbon sources, with two thirds of this from nuclear power. The second largest component of low carbon was bioenergy.

Energy supply from both wind and hydro were both up, reflecting increased wind capacity, up 21% in 2011, as well as more favourable weather conditions, with wind speed up from 8.0 knots in 2010 to an average of 9.5 knots in 2011, and increased rainfall in the North of Scotland. Nuclear output increased in 2011 from the low output level in 2010, which were due to a number of maintenance outages.

The UK had the 9th lowest share amongst EU countries of low carbon energy in 2008, the latest year we have of comparable data, with the UK's share of supply being under half that of the EU average of 21%.

Diversity of primary energy supply in G8 countries<sup>1</sup>, 1980 to 2010

(1) Based on the shares of five groups of fuels: coal, oil, gas, primary electricity and biomass.

Shannon-Weiner measure<sup>3</sup>

	1980	1990	2000	2010
Canada	1.36	1.43	1.44	1.42
France	1.27	1.35	1.31	1.33
Germany	1.21	1.34	1.41	1.52
Italy	1.00	1.13	1.17	1.30
Japan	0.96	1.19	1.30	1.38
Russia <sup>(2)</sup>	0.97	1.27	1.23	1.20
UK	1.21	1.30	1.31	1.33
US	1.31	1.40	1.41	1.44

Source: DECC calculations based on International Energy Agency data.

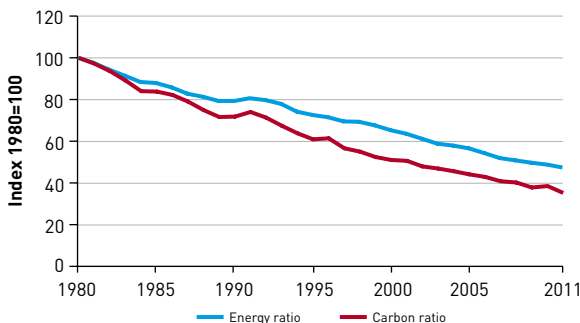
(2) Russia data for 1980 to 1990 estimated from Former USSR data. The latest available data for Russia is for 2009.

(3) See definition on page 44.

All G8 countries have seen increases in the diversity of their primary energy supplies since 1980. However, in France the dominance of nuclear power has resulted in diversity being broadly stable since 1990, with a more pronounced fall occurring in Russia. Of the G8 countries, Germany had the highest level of energy diversity in 2010, largely due to a relatively high level (9%) of contribution from bioenergy. In the UK, diversity fell slightly in 2010 from 2009 as the share of primary energy from gas increased while shares from oil and primary electricity decreased. The UK's share of primary energy from bioenergy was 3%.

# Overall energy

Energy and carbon ratios, 1980 to 2011



Index 1980=100

	1980	1990	2000	2009	2010	2011
Primary energy consumption <sup>1</sup>	100	107.5	116.2	103.5	103.6	101.3
Carbon dioxide emissions	100	97.4	90.8	78.8	81.8	75.3
GDP	100	135.6	178.1	208.4	212.1	213.7
<b>Energy ratio</b>	<b>100</b>	<b>79.3</b>	<b>65.3</b>	<b>49.7</b>	<b>48.8</b>	<b>47.4</b>
<b>Carbon ratio</b>	<b>100</b>	<b>71.8</b>	<b>51.0</b>	<b>37.8</b>	<b>38.5</b>	<b>35.2</b>

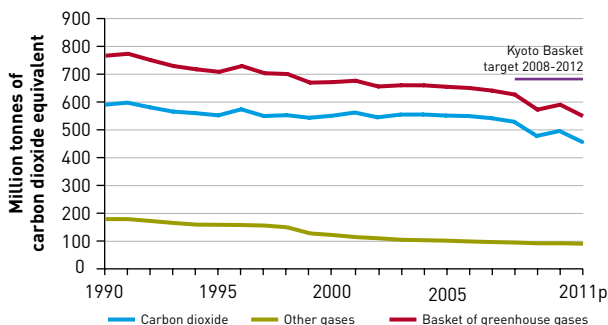
(1) Temperature corrected primary energy consumption.

The energy ratio is calculated by dividing temperature corrected primary energy consumption by GDP at constant prices, with the carbon ratio similarly calculated by dividing carbon dioxide emissions by GDP. Both ratios have fallen steadily, with the energy ratio declining by around 2% per year, with the carbon ratio declining at a faster pace of around 3% per year.

The downward trends are due to a number of factors, with improvements in energy efficiency and the decline in the relative importance of energy intensive industries, affecting both ratios. The carbon ratio has been improved further by the increased use of more carbon efficient fuels.

Latest International Energy Authority data shows that the energy ratio is falling in all G8 countries. The UK has the second lowest energy ratio in the G8 behind Japan.

## Greenhouse gas emissions, 1990 to 2011



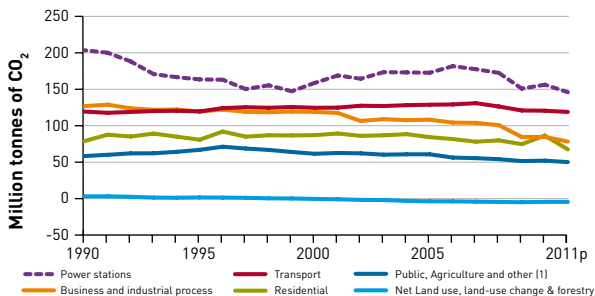
## Million tonnes of carbon dioxide equivalent

	1990	1995	2000	2005	2010	2011p
Carbon dioxide	590.3	552.0	550.5	551.2	495.8	456.3
Methane	97.4	84.0	64.0	47.1	41.3	..
Nitrous oxide	67.8	57.4	46.0	40.9	35.6	..
HFC	11.4	15.3	9.3	12.0	14.3	..
PFC	1.4	0.5	0.5	0.3	0.2	..
SF <sub>6</sub>	1.0	1.2	1.8	1.1	0.7	..
<b>'Basket' of greenhouse gases</b>	<b>766.4</b>	<b>708.4</b>	<b>671.5</b>	<b>654.7</b>	<b>590.4</b>	<b>549.3</b>

Source: AEA, DECC (2011 provisional figures)

In 2011, UK emissions of the basket of six greenhouse gases covered by the Kyoto Protocol were provisionally estimated to be 549.3 million tonnes carbon dioxide equivalent. This was 7% lower than the 2010 figure of 590.4 million tonnes and 28% lower than the 1990 figure of 766.4 million tonnes. In 2011, carbon dioxide emissions accounted for about 83% of the estimated potential global warming effect of anthropogenic emissions of greenhouse gases and are primarily created when fossil fuels are burned. Estimates based on energy production and consumption in 2011 indicate that carbon dioxide emissions were 8% lower than the previous year and 23% lower than in 1990.

## Carbon dioxide emissions by National Communication sector, 1990 to 2011



(1) Includes emissions from Public, Agriculture, Waste Management and other Energy supply.

### Million tonnes of carbon dioxide

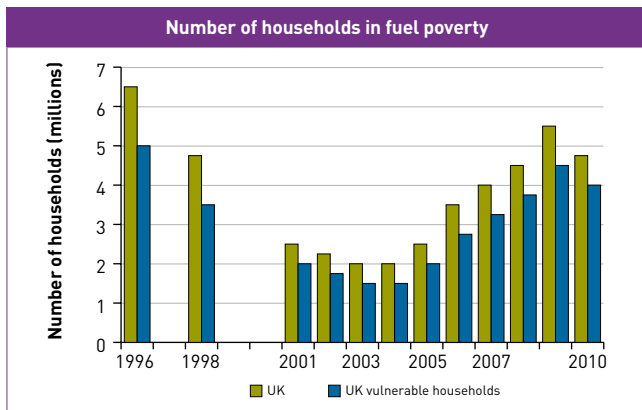
	1990	1995	2000	2005	2010	2011p
Power stations	203.5	163.5	158.7	172.7	156.3	146.0
Residential	79.0	80.8	87.1	84.3	86.5	67.5
Public, Agriculture and other <sup>(1)</sup>	58.4	66.9	61.5	60.8	52.1	50.1
Business and Industrial process	126.9	119.5	119.0	108.3	84.6	78.3
Transport	119.4	119.6	124.6	128.8	120.6	118.9
Net LULUCF	3.1	1.6	-0.4	-3.7	-4.5	-4.5
<b>Total CO<sub>2</sub> emissions</b>	<b>590.3</b>	<b>552.0</b>	<b>550.5</b>	<b>551.2</b>	<b>495.8</b>	<b>456.3</b>

Source: AEA, DECC (2011 provisional figures)

It has been provisionally estimated that 456.3 million tonnes of carbon dioxide (MtCO<sub>2</sub>) were emitted during 2011. Carbon dioxide emissions have fallen by 23% since 1990. Power stations, at 146.0 MtCO<sub>2</sub>, were the largest single source of carbon dioxide emissions in 2011. Between 1990 and 2011, emissions from electricity generation decreased by 28%. In 2011, CO<sub>2</sub> emissions from the transport sector, at 118.9 MtCO<sub>2</sub>, accounted for 26% of all CO<sub>2</sub> emissions, compared to 20% in 1990. Emissions from the residential sector accounted for around 15% of all CO<sub>2</sub> emissions in 2011; and since 1990 emissions from this sector have decreased by 15%.

The decrease in CO<sub>2</sub> emissions between 2010 and 2011 resulted primarily from a decrease in residential gas use, combined with a reduction in demand for electricity accompanied by lower use of gas and greater use of nuclear power for electricity generation.





More information can be found at

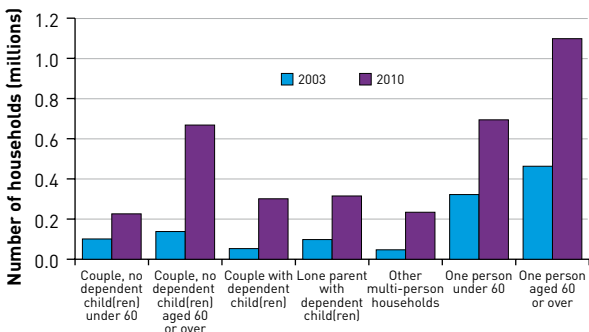
[www.decc.gov.uk/en/content/cms/statistics/fuelpov\\_stats/fuelpov\\_stats.aspx](http://www.decc.gov.uk/en/content/cms/statistics/fuelpov_stats/fuelpov_stats.aspx)

Households are considered fuel poor if, in order to maintain a satisfactory heating regime, they need to spend more than 10% of their income on all household domestic fuel use. The number of fuel poor households in the UK followed a U-shaped trend between 1996 and 2009, falling from about 6½ million in 1996 to about 2 million in 2003 before rising to 5½ million in 2009. The 2010 figure is a decrease of approximately three quarters of a million households since 2009 and is the first fall since 2003. This decrease is mainly attributable to rises in income, improvements in energy efficiency (especially boiler improvements), and little change in prices over the period 2009 to 2010.

The number of vulnerable (those that contain children, elderly people, or those with disabilities or long-term illness) fuel poor households in the UK is estimated at 4 million in 2010. The 2010 level is a fall from 4½ million vulnerable fuel poor households in 2009, and 1 million lower than in 1996.

## Fuel poverty

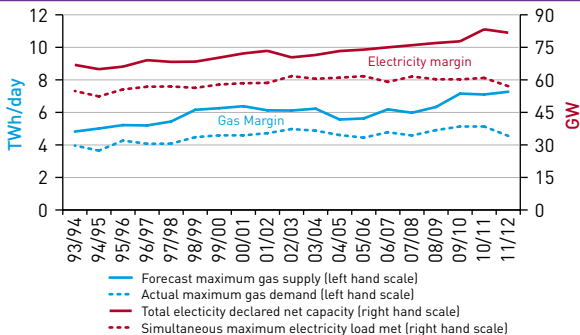
Fuel poverty by household composition, England



Households, England (000s)	2003		2010		Change (2003-2010)	
	Fuel poor households	Total households	Fuel poor households	Total households	Fuel poor households	Total households
Couple, no dependent child(ren) under 60	101	4,023	226	3,854	125	-169
Couple, no dependent child(ren) aged 60 or over	138	3,183	668	3,777	530	594
Couple with dependent child(ren)	53	4,971	301	4,783	248	-188
Lone parent with dependent child(ren)	98	1,515	315	1,724	217	209
Other multi-person households	47	1,458	234	1,537	187	79
One person under 60	322	2,649	694	2,780	372	131
One person aged 60 or over	463	2,924	1,098	3,146	635	222
<b>Total</b>	<b>1,222</b>	<b>20,723</b>	<b>3,536</b>	<b>21,600</b>	<b>2,314</b>	<b>878</b>

Fuel poverty in England has risen from 1.2m (5.9%) of households in 2003 to 3.5m (16.4%) of households in 2010. Of the increase, a large proportion were single person households, with the majority of these single-person households aged 60 or over (up from just under half a million households in 2003 to over a million households in 2010). In 2003, one in ten households with at least one person aged 60 or over were in fuel poverty, by 2010 this had increased to over one in four households.

## Reliability – gas and electricity capacity margins – maximum supply and maximum demand 1993/94 to 2011/12



Source: National Grid and DECC

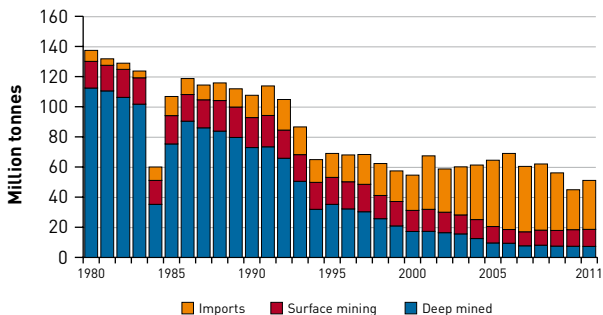
Whilst energy security is complex to measure, and subsequent charts on individual fuels provide fuller insight, this chart aims to provide a view on it, by looking at the difference between maximum supply and demand for gas and electricity.

Since 2007/08, the electricity capacity margin has increased year on year due to both a decrease in peak demand and an increase in capacity. However, in 2011/12, peak demand fell by nearly 4 GW, and capacity fell by nearly 2 GW, largely due to the mothballing of a large CCGT station. This resulted in an increase in the capacity margin, to 43%. This fall in peak demand was largely due to the milder winter, but improved energy efficiency, the poorer economic climate and increased generation from distribution-system connected capacity also helped reduce the demand on the UK transmission networks.

Between 2007/08 and 2011/12, the gas capacity margin also increased year on year, with a large increase seen between 2010/11 and 2011/12 when the margin rose from 38% to 60%. The peak demand in 2011/12 was 11% lower than in 2010/11, [which saw record peaks in gas demand due to the cold winter in that year]. This, together with the peak supply forecast increasing, resulted in the large increase seen.

# Coal

Coal production and imports, 1980 to 2011

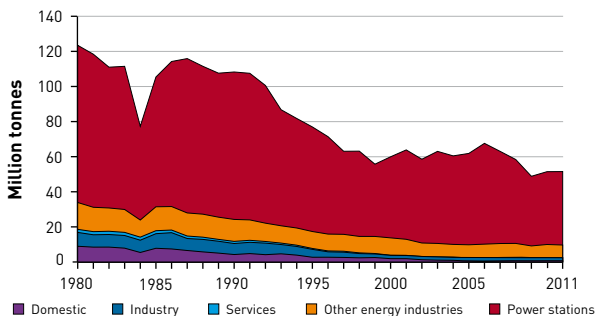


Million tonnes

	1980	1990	2000	2009	2010	2011
Deep mined	112.4	72.9	17.2	7.5	7.4	7.3
Surface mining (including slurry)	17.7	19.9	14.0	10.4	11.0	11.3
<b>Total</b>	<b>130.1</b>	<b>92.8</b>	<b>31.2</b>	<b>17.9</b>	<b>18.4</b>	<b>18.6</b>
Coal imports	7.3	14.8	23.4	38.2	26.5	32.5

Coal production was 1% higher in 2011 than in 2010; deep mined production fell by 1%, whilst surface mine production (including a small amount of slurry) increased by 3%. Imports, initially of coal types in short supply in the UK, started in 1970 and then grew steadily to reach around 20 million tonnes a year by the late 1990s. The very rapid expansion of imports in 2001 meant that imports exceeded the level of UK production for the first time. Between 2002 and 2006 imports had been rising at 15% a year on average. In 2006 imports were at a record 50 million tonnes to meet strong demand from generators and the steel industry, but have declined since. However, in 2011, UK import levels increased to 32.5 million tonnes, an increase of 23% on 2010 levels, accounting for nearly two thirds of UK supply (not including stocks).

Coal consumption, 1980 to 2011



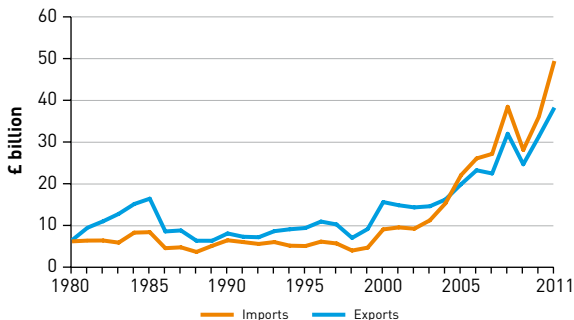
Million tonnes

	1980	1990	2000	2009	2010	2011
Power stations	89.6	84.0	46.9	39.7	41.5	41.9
Domestic	8.9	4.2	1.9	0.7	0.7	0.7
Industry	7.9	6.3	1.9	1.7	1.7	1.7
Services	1.8	1.2	0.08	0.09	0.06	0.05
Other energy industries	15.3	12.5	9.2	6.6	7.5	7.2
<b>Total consumption</b>	<b>123.5</b>	<b>108.3</b>	<b>59.9</b>	<b>48.8</b>	<b>51.5</b>	<b>51.5</b>

The proportion of coal consumed by power stations increased steadily from the 1970s to reach 85% in 2006 before falling back to 81% in 2010 and 2011. Despite this increasing proportion, coal consumption at power stations has been falling and reached a low of 41.2 million tonnes in 1999 before climbing to 57.4 million tonnes in 2006. Since then it has been in general decline to 2009 before increasing slightly to 41.9 million tonnes in 2011. Coal consumption as a whole follows the pattern of power generation use. It declined sharply during the 1990s, at an average annual rate of 6% compared with just a 1% annual decline over the previous 20 years. Between 1999 and 2006 coal consumption grew by nearly 3% per year on average but thereafter, fell back by 6% per year. There was very little change in total demand for coal between 2010 and 2011, remaining at 51.5 million tonnes.

# Petroleum

## Foreign trade in crude oil and petroleum products, 1980 to 2011



### Crude oil and petroleum products

£ billion

	1980	1990	2000	2008	2009	2010	2011
Exports	6.5	8.1	15.6	32.0	24.7	31.3	38.2
Imports	6.2	6.4	9.0	38.4	28.1	36.0	49.4
<b>Net Imports</b>	<b>-0.3</b>	<b>-1.6</b>	<b>-6.6</b>	<b>6.5</b>	<b>3.4</b>	<b>4.7</b>	<b>11.2</b>

Source: Office for National Statistics

### Crude oil and petroleum products

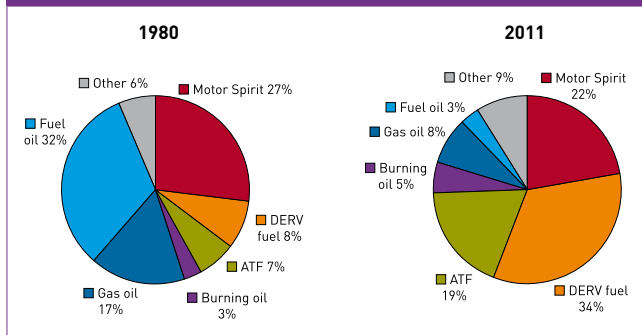
Million tonnes of oil equivalent

	1980	1990	2000	2008	2009	2010	2011
Exports	58.4	80.4	123.9	84.3	77.4	74.5	67.0
Imports	60.4	69.2	74.8	91.9	83.8	85.8	87.8
<b>Net Imports</b>	<b>2.0</b>	<b>-11.2</b>	<b>-49.1</b>	<b>7.7</b>	<b>6.4</b>	<b>11.2</b>	<b>20.8</b>

Source: DECC

Since the first 'surplus' on oil trade (£0.3 billion) which occurred in 1980, oil trade has contributed £60 billion to the UK balance of payments. The largest 'surplus' (£8 billion) in 1985 reflected high crude oil production and prices. In 1990 the 'surplus' fell from this peak due to lower prices but managed to peak again in 2000 (£6.6 billion). Since 2000 the surplus has steadily declined and in 2005 the UK became a net importer of oil (-£2.2 billion) though still an exporter of oil products. In 2011, the deficit was £11.2 billion, an increase of £6.4 billion from the previous year, mainly due to the sharp rise in oil prices which were up by over a third in 2011 on 2010 levels.

## Demand by Product, 1980 to 2011

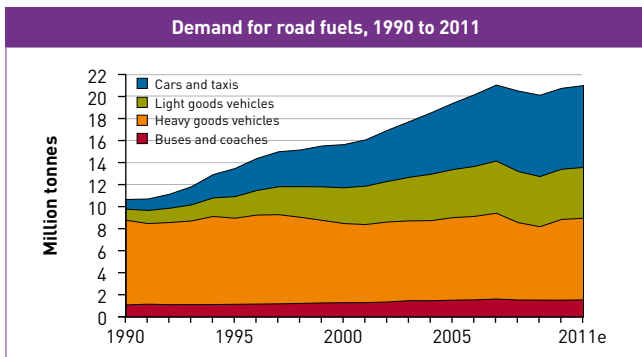


### Million tonnes

	1980	1990	2000	2009	2010	2011
<b>Energy uses<sup>1</sup></b>						
Motor spirit (Petrol)	19.2	24.3	21.4	15.6	14.6	13.9
DERV fuel	5.9	10.7	15.6	20.1	20.7	21.0
Aviation turbine fuel	4.7	6.6	10.8	11.5	11.1	11.6
Burning oil	2.1	2.1	3.8	3.7	4.0	3.3
Gas oil	11.6	8.0	6.8	5.4	5.2	5.1
Fuel oil	22.7	14.0	3.3	2.6	2.4	2.1
Other	4.3	4.9	5.3	5.6	5.5	5.3
<b>Total energy uses</b>	<b>70.5</b>	<b>70.6</b>	<b>67.1</b>	<b>64.5</b>	<b>63.5</b>	<b>62.3</b>
Of which:						
Transport fuels	31.9	43.5	49.5	49.5	48.6	48.7
Industry	14.9	7.2	5.5	4.6	4.7	4.1
Energy industry use	6.3	5.1	5.3	4.8	5.0	4.9
<b>Non-energy uses</b>	<b>7.0</b>	<b>9.2</b>	<b>10.1</b>	<b>7.4</b>	<b>7.5</b>	<b>7.3</b>
<b>Total deliveries</b>	<b>77.5</b>	<b>79.8</b>	<b>77.2</b>	<b>71.9</b>	<b>71.2</b>	<b>69.5</b>

(1) Energy uses includes uses for transformation (e.g. electricity generation) and energy industry own use (e.g. refinery fuels)

Transport use of oil has grown since 1980. However, the impact of the recession, cold weather and a variety of aviation issues have resulted in falls in transport fuel use from 2009. Despite this transport use represented over 75% of energy use of oil products in 2011. Fuel oil accounts for around 3% of total deliveries, compared to almost 30% in 1980, due to electricity generation switching to other fuels.



Total deliveries of diesel road fuel (DERV) have almost doubled in the past 20 years, this has been mainly caused by the increased use of DERV in cars, taxis and light goods vehicles.

## Demand for DERV by Vehicle Type

Thousand tonnes

	1990	1995	2000	2009	2010	2011*
Car & taxi	882	2,554	3,919	7,388	7,346	7,435
Light goods vehicles	1,006	1,958	3,251	4,550	4,559	4,614
Heavy goods vehicles	7,685	7,807	7,187	6,662	7,326	7,414
Buses & coaches	1,076	1,141	1,275	1,513	1,510	1,528
<b>Total</b>	<b>10,650</b>	<b>13,460</b>	<b>15,632</b>	<b>20,112</b>	<b>20,742</b>	<b>20,991</b>

(\*2011 estimated, total includes off road use of DERV. Figures are derived from AEA modelling)

Demand for petrol decreased further in 2011, in line with an ongoing trend that has seen the diesel share of road transport increase substantially over the last decade. Petrol is almost exclusively used in cars and taxis. Despite increasing dieselisation of the car fleet, the petrol consumed by cars and taxis is still just under double that of DERV.

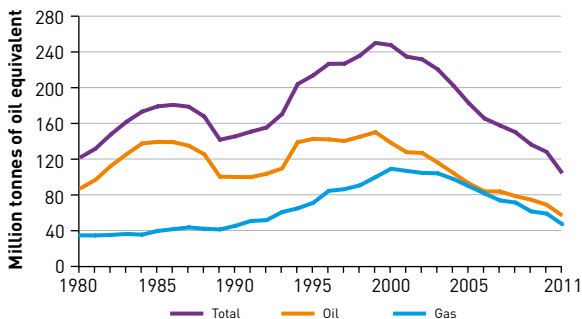
## Demand for Petrol

Thousand tonnes

	1990	1995	2000	2009	2010	2011
Total	24,310	21,950	21,403	15,613	14,602	13,895



## UK Continental Shelf production, 1980 to 2011



### Million tonnes of oil equivalent

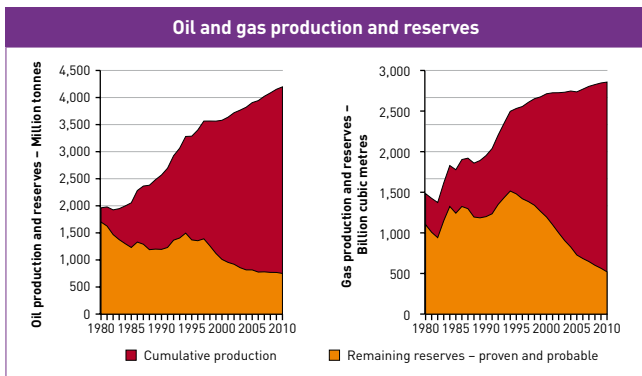
	1980	1990	2000	2009	2010	2011
Oil	86.9	100.1	138.3	74.7	69.0	56.9
Gas	34.8	45.5	108.4	59.7	57.2	45.3
<b>Total</b>	<b>121.7</b>	<b>145.6</b>	<b>246.7</b>	<b>134.5</b>	<b>126.2</b>	<b>102.2</b>

Oil production in 2011 was 62% lower than the record 150.2 million tonnes in 1999, with output down 18% in 2011, due to slowdowns and maintenance issues.

As with oil, UK gas production is also declining as UK Continental Shelf reserves deplete. Gas production in 2011 was 21% lower than in 2010 and 58% lower than the record level seen in 2000.

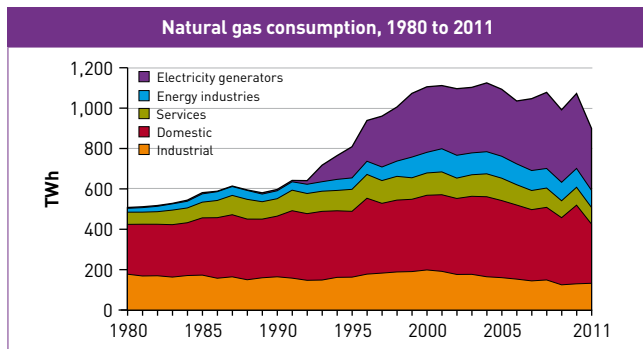
The rate of decline has increased in the past year. Oil and gas production levels decreased by 18% and 21% respectively; significantly above the long term decline rates in the last decade of around 7%.

# Oil and gas production



	1980	1990	2000	2008	2009	2010
<b>Oil</b>	<b>Million tonnes</b>					
Cumulative production	263	1,374	2,570	3,315	3,383	3,446
Proven plus probable reserves	1,700	1,195	1,010	770	769	751
<b>Estimated Ultimate Recovery</b>	<b>1,963</b>	<b>2,569</b>	<b>3,580</b>	<b>4,084</b>	<b>4,152</b>	<b>4,196</b>
<b>Gas</b>	<b>Billion cubic metres</b>					
Cumulative production	382	752	1,518	2,225	2,282	2,337
Proven plus probable reserves	1,101	1,200	1,195	601	564	520
<b>Estimated Ultimate Recovery</b>	<b>1,483</b>	<b>1,952</b>	<b>2,713</b>	<b>2,826</b>	<b>2,846</b>	<b>2,857</b>

The Estimated Ultimate Recovery (EUR) shows the cumulative total of production to the end of the years given and the total of proven plus probable reserves as estimated at the end of those years. For both oil and gas, EUR has grown substantially since 1980, increasing by 114% for oil and by 93% for gas. This reflects increased new discoveries and the effect of new technology allowing exploitation of resources that were previously regarded as uncommercial. Total cumulative production of oil and gas are 76% and 58% respectively greater than the estimated EUR in 1980.



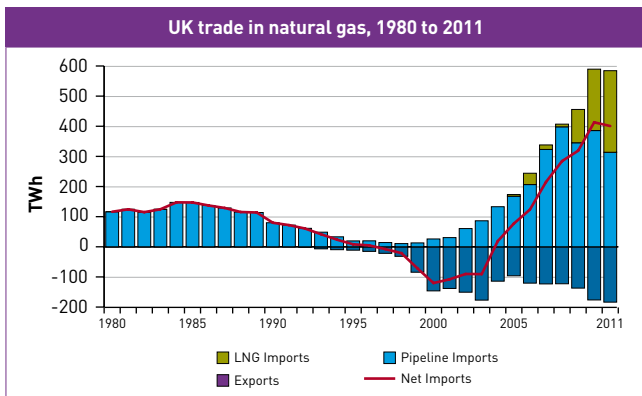
TWh

	1980	1990	2000	2009	2010	2011
Electricity generators	4.0	6.5	324.6	359.3	371.1	306.7
Energy Industries	19.1	39.2	102.1	91.4	93.3	84.9
Industry	177.5	164.6	198.5	124.9	129.7	132.4
Domestic	246.8	300.4	369.9	332.5	389.6	293.0
Services	60.4	86.4	110.5	83.7	88.6	82.4
<b>Total</b>	<b>507.8</b>	<b>597.0</b>	<b>1,105.5</b>	<b>991.8</b>	<b>1,072.3</b>	<b>899.4</b>

From the early 1970s, following the expansion of UK production of natural gas, gas consumption grew rapidly reaching a record high in 2004 of 1,125.0 TWh. Since then, consumption has seen an overall decline, mostly as a result of higher prices, energy efficiency, and, to a lesser extent, warmer than average temperatures. In 2011, total gas consumption was 899.4 TWh, more than 20% below its 2004 peak.

All sectors saw a rise in gas use in 2010 from 2009 levels due to the particularly cold weather in 2010. These rises though, were reversed in 2011, as demand generally fell back in the warmer weather. Consumption by generators fell particularly sharply in 2011, down 18% on 2010 levels, as high prices resulted in gas' share of generation falling.

# Natural gas



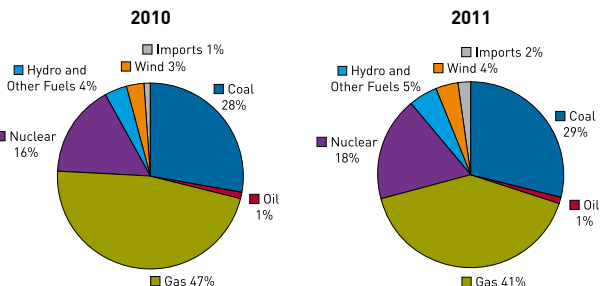
TWh

	1980	1990	2000	2009	2010	2011
Natural gas production	404.8	528.8	1,260.2	694.0	664.4	526.0
Imports	116.3	79.8	26.0	455.8	589.5	584.4
of which						
LNG	-	-	-	110.6	203.8	270.7
Exports	-	-	-146.3	-137.1	-176.4	-183.7
Net imports(+) or exports(-)	+116.3	+79.8	-120.3	+318.7	+413.1	400.7

UK gas production peaked in 2000 and has since been in general decline. With declining production the UK has become increasingly reliant on gas imports to meet demand. Since 2000 net imports have been steadily increasing year on year, with the exception of 2011 which saw a 3 per cent decrease on last year's level. This decrease in imports can be attributed to the reduced gas demand for domestic and generation use.

Despite this small fall in imports, LNG's share of total gas imports rose once again from 35 per cent in 2010 to 46 per cent in 2011 via two new LNG terminals at Milford Haven (South Hook and Dragon) and the expansion of the Isle of Grain LNG terminal. The growth in LNG has also contributed to the UK's record gas export levels which stand at 183.7 TWh, 4% higher than in 2010 and 26% above the level in 2000.

## Electricity supplied by fuel type, 2010 and 2011



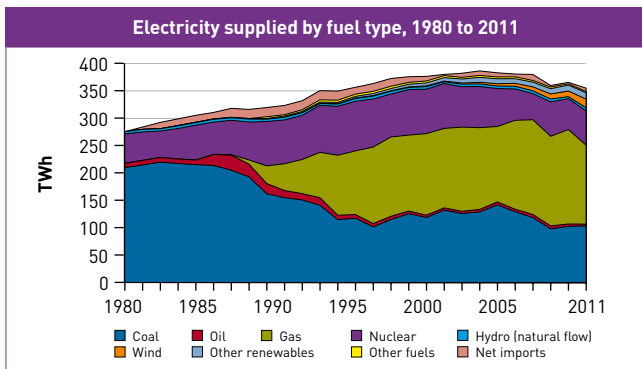
TWh

	1980	1990	2000	2009	2010	2011
Coal	220.8	213.4	114.7	97.8	102.3	103.1
Oil	8.1	20.0	5.9	5.4	4.3	3.3
Gas	-	0.4	144.9	163.5	172.5	144.1
Nuclear	32.3	58.7	78.3	62.8	56.4	62.7
Hydro <sup>1</sup>	3.9	5.2	4.2	4.0	2.5	4.7
Wind	-	-	0.9	9.3	10.2	15.8
Other fuels	-	-	8.3	12.6	13.2	13.8
Net Imports	-	11.9	14.2	2.9	2.7	6.2
<b>Total electricity available for supply</b>	<b>264.9</b>	<b>309.4</b>	<b>371.4</b>	<b>358.3</b>	<b>364.1</b>	<b>353.7</b>

(1) Hydro includes net supply from pumped storage.

Between 2010 and 2011, supply of electricity fell by 2.9% (10.4 TWh). Electricity supplied from gas decreased from 47% to 41%, as gas prices increased sharply. There were increases in supply from most other sources, with nuclear up from 16% to 18% due to increased availability in 2011 after extensive maintenance outages in 2010, notably to Sizewell B. Coal's share rose from 28% to 29%. Wind's share rose from 3% to 4% with much increased capacity and higher wind speeds than in 2010. The share of imports rose from 1% to 2%. Further details on renewable electricity generation can be found on page 34.

# Electricity



The mix of fuels used to generate electricity continues to evolve. Since 1990, the decline of coal and oil and the rise of gas and, in more recent years, renewables, have been the most marked features, but none of these fuels have followed a smooth path.

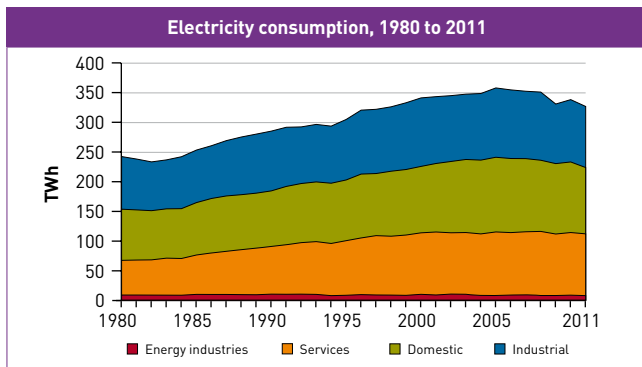
Gas rose most markedly over this period from 0.4 TWh in 1990 to a peak of 173.0 TWh in 2008. After falling in 2009, as overall demand fell, gas rose again in 2010. Gas fell again in 2011 to its lowest level since 2006 due to poor market conditions.

Nuclear grew to a peak in 1998 before falling back, particularly during 2006 to 2008, as station closures and maintenance outages reduced supply, but recovered again in 2009. Nuclear fell again in 2010 due to further outages. In 2011, nuclear rose again as stations returned from outages.

Coal recorded its highest level for 10 years in 2006, making up for the reduced availability of nuclear stations and as a substitute for high priced gas. It fell back again in the next three years before rising again in 2010, particularly due to higher winter electricity demand. Supply from coal was up further in 2011, again substituting for gas.

Supply from wind has followed an upward trend since 2000, as capacity levels have increased each year. In 2011, wind supplied 15.8 TWh, a record level also partly attributable to high wind speeds.

Total electricity available for supply rose continuously from 1997 to reach a peak in 2005. It has subsequently fallen, due to energy efficiency, economic and weather factors. After an increase in 2010, in part due to a particularly cold final quarter, supply fell once again in 2011, to its lowest level since 1997, as winter temperatures increased.



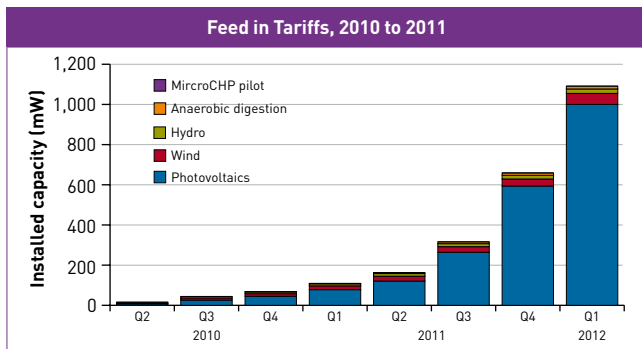
TWh

	1980	1990	2000	2009	2010	2011
Industrial	88.6	100.6	115.3	100.3	104.9	102.8
Domestic	86.1	93.8	111.8	118.5	118.8	111.6
Services	58.4	80.0	103.5	103.5	105.4	104.0
Energy industries	8.5	10.0	9.7	7.7	8.3	7.5
<b>Total</b>	<b>241.6</b>	<b>284.4</b>	<b>340.3</b>	<b>330.0</b>	<b>337.4</b>	<b>325.9</b>

Between 2000 and 2005, electricity consumption in the domestic sector grew by 12% to reach a record high of 125.7 TWh. However, between 2006 and 2008 mild winters and energy efficiency resulted in domestic consumption falling. Domestic consumption continued to fall in 2009 due to energy efficiency and adverse economic conditions, before rising slightly in 2010, mainly due to a very cold final quarter. With warmer first and final quarters, domestic consumption fell again in 2011, to its lowest level since 1999.

Electricity consumption in the services sector has remained largely steady since 1999, with a peak in 2008. In 2009, it fell before rising again in 2010 as the economic climate improved, and temperatures fell in the final quarter. It fell again in 2011 as economic conditions remained tight. Industrial consumption has varied more: it rose every year between 1994 and 2000, before falling between 2001 and 2003 but subsequent growth meant that in 2005 it had risen to a record high. Since then, however, industrial consumption has fallen, with 2009 showing a fall of 12.5% on 2008, to its lowest level since 1994. Increased energy efficiency within the industrial sector, and the economic downturn will have contributed to the fall over this period, with improving economic conditions contributing to a rise of 4.6% in 2010, before falling again in 2011.

## Feed in tariffs



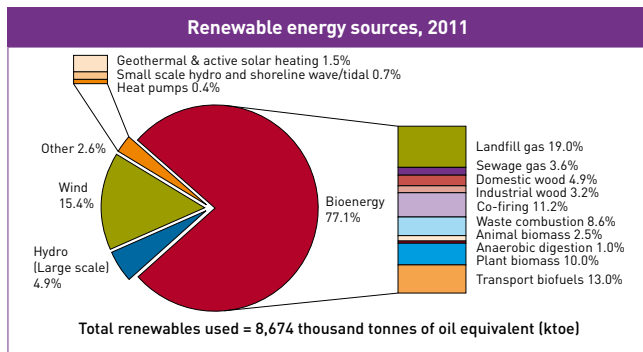
	2010			2011			2012	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
	<b>Cumulative Installed capacity (MW)</b>							
Micro CHP	-	-	-	0.1	0.2	0.3	0.3	0.4
Anaerobic Digestion	-	-	0.7	1.8	5.0	8.8	11.6	13.7
Hydro	3.3	7.1	8.8	9.9	12.8	15.4	18.2	22.0
Wind	5.3	10.6	13.5	18.9	24.2	28.0	34.8	54.9
Photovoltaics	6.7	26.3	44.8	77.8	121.5	264.0	593.7	999.9
<b>Total</b>	<b>15.2</b>	<b>43.9</b>	<b>67.8</b>	<b>108.4</b>	<b>163.5</b>	<b>316.5</b>	<b>658.6</b>	<b>1,090.8</b>

Source: Extracted on 4th April 2012 from the Central Feed-in Tariffs Register (CFR), Ofgem. The register is a live database and is continually being updated and revised, so statistical reports extracted at a later date may not exactly match the totals presented here. Registration on the CFR represents the final stage in the Feed-in Tariff (FiTs) registration process. There will be installations eligible for FiT that have been installed but have not yet been registered onto CFR.

The Feed in Tariff scheme (FiTs) was introduced on 1st April 2010 and is a financial support scheme for eligible low-carbon electricity technologies, aimed at small-scale installations up to a maximum capacity of 5 Megawatts (MW).

At the end of quarter 1 of 2012, 1090.8 MW of capacity (247,953 installations) was confirmed on FiTs, nearly 11 times the total installed capacity and more than 8 times the number of installations than that confirmed at the end of quarter 1 2011. Of the 982.4 MW increase (217,885 installations) from the end of quarter 1 2011, 94 per cent (922.2 MW, 216,399 installations) were from Solar photovoltaics, with the other technologies (micro-CHP, anaerobic digestion, hydro and wind) contributing to the remaining 6 per cent of this increase. At the end of quarter 1 2012, 69 per cent (756.6 MW) of the total installed capacity, was in the domestic sector, 6 percentage points lower than at the end of quarter 1 2011, when domestic sector capacity represented 76 per cent (82.2 MW) of total installed capacity.



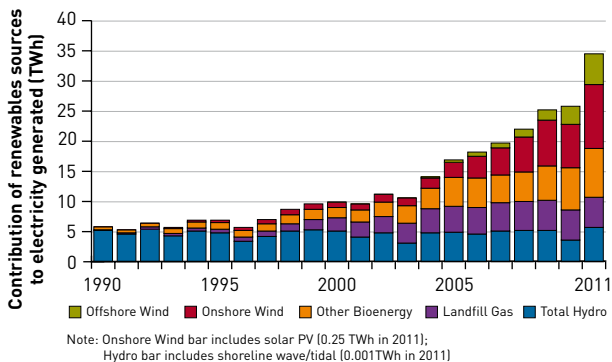
**Total use of renewables****Thousand tonnes of oil equivalent**

	1990	2000	2009	2010	2011
Geothermal and active solar heating	7.2	12.0	72.0	90.6	131.8
Wind	0.8	81.3	799.9	875.4	1,332.5
Hydro (large & small scale) and wave	447.7	437.3	450.7	313.4	489.0
Landfill gas	79.8	731.1	1,637.8	1,658.1	1,646.7
Sewage gas	138.2	168.7	247.1	286.6	313.8
Wood (domestic and industrial)	174.1	458.4	598.6	647.5	705.5
Municipal waste combustion	100.8	374.8	655.8	684.6	750.0
Heat pumps	-	-	10.9	21.2	32.5
Transport biofuels	-	-	1,038.5	1,214.4	1,127.5
Cofiring	-	-	533.0	765.0	972.0
Other bioenergy	71.9	265.5	863.2	983.1	1,173.0
<b>Total</b>	<b>1,020.5</b>	<b>2,529.0</b>	<b>6,907.5</b>	<b>7,539.9</b>	<b>8,674.4</b>

In 2011, bioenergy accounted for 77.1% of renewable energy sources used, with most of the remainder coming from large-scale hydro and wind generation. Wind (with a 15.4 % share) accounted for around three times the shares of large scale hydro (4.9%) in primary input terms.

Of the 8.7 million tonnes of oil equivalent of primary energy use accounted for by renewables, 6.3 million tonnes was used to generate electricity, 1.2 million tonnes was used to generate heat, and 1.1 million tonnes was used for road transport. Renewable energy use grew by 15.0% between 2010 and 2011 and is now nearly three and a half times the level it was at in 2000.

## Electricity generation from renewable sources since 1990



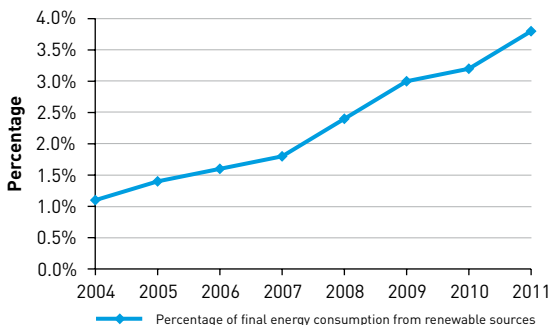
## Renewable Electricity Generation, TWh

	1990	2000	2009	2010	2011
Onshore wind	-	0.9	7.6	7.2	10.6
Offshore wind	-	-	1.7	3.0	5.1
Hydro	5.2	5.1	5.2	3.6	5.7
Landfill Gas	0.1	2.2	5.0	5.0	5.0
Other Bioenergy	0.5	1.7	5.2	7.0	8.0
<b>Total Renewables</b>	<b>5.8</b>	<b>9.9</b>	<b>25.3</b>	<b>25.8</b>	<b>34.4</b>

At 34.4 TWh, renewables accounted for 9.4% of electricity generated in the UK during 2011, 2.6 percentage points higher than during 2010. Overall generation from renewables increased by 33% between 2010 and 2011. Wind generation saw the largest increases – offshore wind up 68 per cent, and onshore wind up 45 per cent; hydro generation increased by 56 per cent. The size of the increases compared to 2010 are partly due to low generation resulting from low wind speeds and rainfall in that year.

When taking into account only renewable sources eligible under the Renewables Obligation, they accounted for 9.7% of UK electricity sales, up from 7.0% in 2010.

## UK progress against 2009 EU Renewable Energy Directive



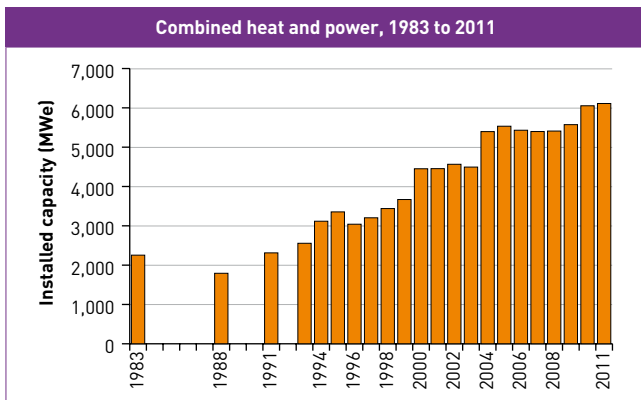
## Progress against the 2009 Renewable Energy Directive

	2006	2007	2008	2009	2010	2011
Percentage of electricity from renewable sources	4.5	4.8	5.4	6.6	7.4	8.7
Percentage of heating and cooling from renewable sources	1.0	1.1	1.4	1.7	1.7	2.2
Percentage of transport energy from renewable sources	0.5	0.9	2.1	2.6	3.0	2.9
Overall renewable consumption as a percentage of capped gross final energy consumption using net calorific values	1.6	1.8	2.4	3.0	3.2	3.8

In March 2007, the European Council agreed to a common strategy for energy security and tackling climate change. An element of this was establishing a target of 20% of the EU's energy to come from renewable sources. In 2009 a new Renewable Energy Directive was implemented on this basis and resulted in agreement of country "shares" of this target. For the UK, by 2020, 15% of **final energy consumption** – calculated on a net calorific basis, and with a cap on fuel used for air transport – should be accounted for by energy from renewable sources.

Provisionally in the UK during 2011, 3.8% of final energy consumption was from renewable sources; this is up from 3.2% in 2010. The Eurostat methodology measures energy based on a net calorific value basis, as opposed to a gross basis that is generally used in presenting data in UK Energy in Brief and other UK Energy statistics publications.

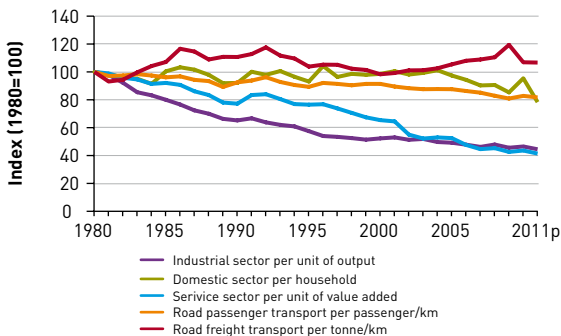
## Combined heat and power



	1995	2000	2009	2010	2011
CHP electrical capacity (MWe)	3,354	4,451	5,573	6,053	6,111
CHP electrical generation (GWh)	14,778	25,246	26,428	26,772	27,191
CHP heat generation (GWh)	56,833	54,877	48,096	48,273	48,627
Number of CHP sites					
Less than 100 kWe	617	556	445	453	535
100 kWe to 999 kWe	396	532	760	821	1,024
1 MWe to 9.9 MWe	139	182	208	232	252
10 MWe and greater	68	70	72	71	69
<b>Total</b>	<b>1,220</b>	<b>1,340</b>	<b>1,485</b>	<b>1,577</b>	<b>1,880</b>

In 2011, CHP electrical capacity increased slightly on the 2010 level (which saw a relatively large increase after having remained broadly unchanged over the previous 6 years). Electricity generation in 2011 was 1.6% higher than in 2010, while heat generation was just 0.7% higher. Around 28% of UK CHP installations are small schemes with an electrical capacity of less than 100 kWe, but account for less than 1% of the total CHP installed electrical capacity. Schemes larger than 10 MWe account for 82% of the total CHP installed electrical capacity. In 2011, around 7.4% of the total electricity generated in the UK came from CHP plants.

## Energy efficiency, 1980 to 2011



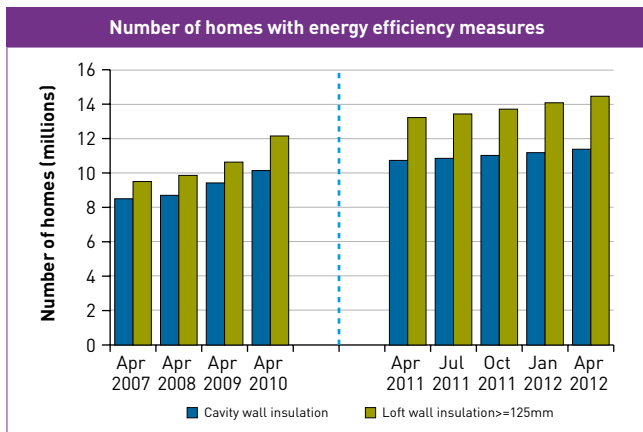
Tonnes of oil equivalent

	1980	1990	2000	2009	2010	2011p
Industrial energy consumption per million units of GVA	306.3	199.6	160.1	139.6	142.4	136.4
Domestic energy consumption per household	2.0	1.8	1.9	1.7	1.9	1.5
Service sector energy consumption per million units of GVA	46.4	35.8	30.3	19.8	20.2	19.2
Road passenger energy consumption per million passenger-kilometres*	45.5	42.1	41.6	36.8	37.6	37.1
Road freight energy consumption per million freight-kilometres*	77.6	85.9	76.3	92.6	82.9	82.7

\* DECC estimates for 2011

Energy consumption per unit of output, known as energy intensity, gives a broad indication of how efficiently energy is being used over time. Changes in energy intensity can occur for a number of reasons: process change, technological change and structural change (in the case of industry and the service sector) as well as efficiency change. The largest falls in energy intensity over the last thirty years have occurred in the industrial sector mainly due to structural change in the period before 2000, and in the service sector due to general energy efficiency improvements. The fall in domestic consumption in 2011 was due to the milder weather when the average temperature was 1.8 degrees above the 2010 average.

## Energy efficiency



### Insulated homes in Great Britain (Thousands)

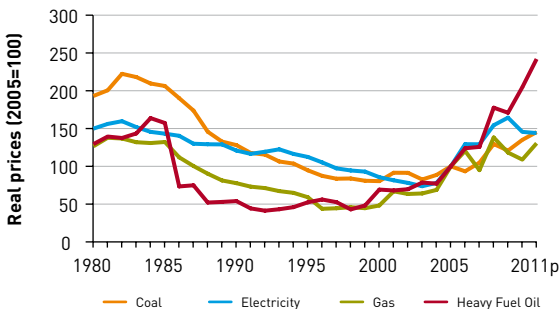
	Apr 2008	Apr 2009	Apr 2010	Apr 2011	Apr 2012
<b>Cavity wall insulation</b>	8,700	9,420	10,140	10,730	11,380
<b>Loft insulation &gt;=125mm</b>	9,860	10,630	12,150	13,220	14,460

Cost effective methods of improving energy efficiency in homes are to install cavity wall and loft insulation where these measures are practical. Building Regulations require new homes to reach thermal efficiency standards which would typically be met by installing these measures. In addition, existing homes have had these measures retrofitted through Government schemes or through a DIY loft insulation. These data show the change in the number of insulated homes as a result of new build and retro fitting insulation.

The number of homes with cavity wall insulation has increased by 31 per cent between April 2008 and April 2012 such that 11.4 million, of the 19.0 million homes with cavities, are insulated.

The number of homes with loft insulation, of at least 125mm, has increased by 47 per cent between April 2008 and April 2012 meaning that 14.5 million, of the 23.4 million homes with lofts, are insulated to this level.

Fuel price indices for the industrial sector, 1980 to 2011



Real prices, 2005 = 100

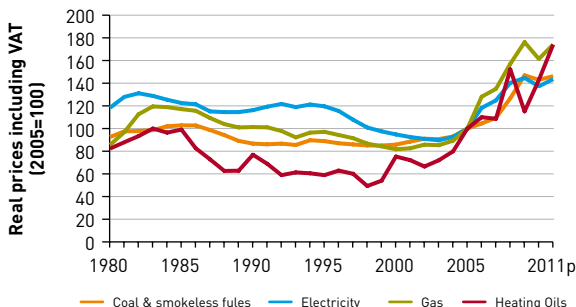
	1980	1990	2000	2009	2010	2011
Coal	193.1	128.1	80.4	120.8	135.0	145.3
Electricity	149.9	120.9	85.6	164.4	145.6	144.0
Gas	126.5	77.7	48.2	118.2	108.9	130.5
Heavy fuel oil	129.4	54.0	69.2	170.9	204.6	242.0
Industrial prices	141.2	103.5	75.1	156.0	150.8	160.9

Includes the Climate Change Levy that came into effect in April 2001.

Compared to 2010, industrial coal prices increased in 2011 by 8% in real terms, and were 59% higher than 10 years earlier in 2001. Electricity prices decreased in 2011 by 1% in real terms, but were 77% higher than 10 years earlier in 2001. Gas prices increased by 20% in 2011, but were 95% higher than in 2001. Heavy fuel oil prices increased by 18% in the year to 2011, and were over two and a half times as high as in 2001. The rise in heavy fuel oil prices is due to the high price of crude oil in 2010 and 2011.

## Prices

Fuel price indices for the domestic sector, 1980 to 2011



Real prices including VAT, 2005 = 100

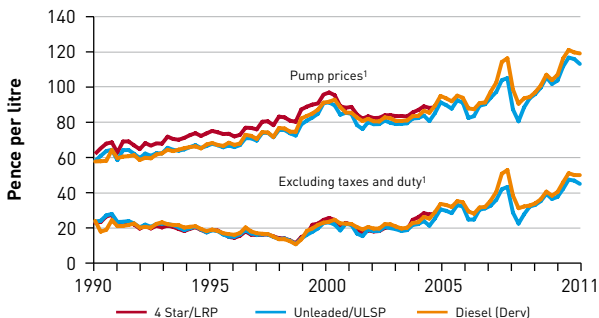
	1980	1990	2000	2009	2010	2011
Coal and smokeless fuels.	92.5	86.7	85.8	146.9	143.0	146.2
Electricity	118.3	116.2	94.8	144.6	137.3	143.5
Gas	85.5	101.3	81.7	176.2	161.4	174.1
Heating oils	82.3	76.9	75.3	115.1	142.9	174.1
<b>Domestic prices (fuel &amp; light)</b>	<b>101.7</b>	<b>105.1</b>	<b>86.7</b>	<b>153.5</b>	<b>145.4</b>	<b>156.8</b>

Source: Retail Price Index, Office for National Statistics

Compared to 2010, total domestic energy prices in 2011 increased in real terms by 8%. Within the overall movement, heating oils increased by 22%, reflecting the high price of crude oil throughout 2011. Electricity prices increased by 5%, whilst gas prices increased by 8%. Over the last ten years, between 2001 and 2011, real prices for domestic energy have risen by 82%, with the real price of electricity increasing by 55% and the real price of heating oil and gas increasing by 141% and 111% respectively.



## Petrol and diesel prices, 1990 to 2011



(1) Deflated using GDP (market prices) deflator (2005 = 100).

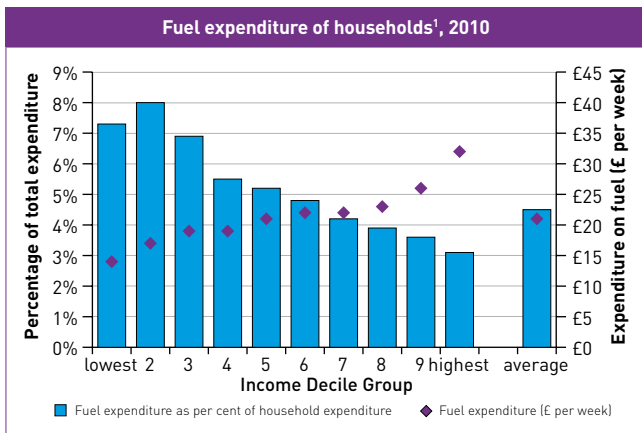
## Current retail prices

Pence/litre

	Unleaded	Diesel
1990	42.0	40.5
1995	53.8	54.2
2000	79.9	81.3
2005	86.8	90.9
2006	91.3	95.2
2007	94.2	96.9
2008	107.1	117.5
2009	99.3	103.9
2010	116.9	119.3
2011	133.3	138.7

In real terms the price of Ultra Low Sulphur Petrol (ULSP) rose by 11% between 2010 and 2011, whilst the price of diesel rose by 13%. In cash terms ULSP cost 16.4 pence more in 2011 than in 2010, whilst diesel cost 19.5 pence per litre more. This reflects the price of crude oil in 2011, which rose steadily for the first 4 months and then settled at around \$110 – \$115 for the rest of the year. Crude oil prices have since fallen back below \$100 a barrel in June 2012, with falls in both petrol and diesel prices.

# Expenditure



## Fuel expenditure as a percentage of total household expenditure, 1980 to 2010

Fuel type	1980	1990	2000/01	2007	2008	2009	2010
Gas	1.6%	1.7%	1.2%	1.5%	1.9%	2.1%	2.0%
Electricity	2.7%	2.3%	1.6%	1.6%	1.7%	2.2%	2.1%
Coal and Coke	0.9%	0.3%	} 0.3%	0.3%	0.4%	0.3%	0.4%
Heating oil	0.4%	0.2%					
<b>Total</b>	<b>5.6%</b>	<b>4.5%</b>	<b>3.1%</b>	<b>3.5%</b>	<b>4.0%</b>	<b>4.7%</b>	<b>4.5%</b>

Source: Living Costs and Food Survey 2010, Office for National Statistics

(1) Includes non-consuming households

Since 2004/05, the proportion of household expenditure spent on fuel has been increasing, however there was a small decrease in 2010. Households in the lowest income decile group (i.e. the 10% of households with the lowest income) spend less than half as much on domestic fuel per week compared to households in the highest income decile group (£14 compared to £32 per week). However, when comparing expenditure on domestic fuels as a proportion of total expenditure, then those in the lowest income decile group spend more (7.3%) than those in the highest income decile group (3.1%).

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All of the above can be contacted by fax on 0300 068 5006

In addition, there is a general enquiry number, which the deaf and hard of hearing can use to contact DECC: 0300 060 4000

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## Conversion factors and definitions

To convert from the units on the left hand side to the units across the top multiply by the value in the table.

	<i>to:</i>	<b>Thousand toe</b>	<b>TJ</b>	<b>GWh</b>	<b>Million therms</b>
		<i>multiply by</i>			
<i>from:</i>	<b>Thousand toe</b>	1	41.868	11.630	0.39683
	<b>TJ</b>	0.023885	1	0.27778	0.0094778
	<b>GWh</b>	0.085985	3.6000	1	0.034121
	<b>Million therms</b>	2.5200	105.51	29.307	1

Data relating to the energy content of fuels are on a gross calorific value basis.

Prices are presented in real terms i.e. the effect of inflation has been removed by adjusting each series using the GDP deflator.

The symbol '-' is used in the tables where the figure is zero or less than half the final digit shown, and '..' is used to indicate 'not available'.

The Department of Energy and Climate Change is the source of all data except where stated.

All data within this publication are classified as National Statistics except for those on page 38 which are classified as experimental official statistics.

All figures are for the United Kingdom, except for pages 13 and 18.

### Shannon-Wiener measure of diversity

The Shannon-Wiener measure of diversity shows how the diversity of a particular market is changing over time. It is the sum of the market share multiplied by the natural log of the market share for each fuel in the market, e.g.

$$\text{Shannon-Wiener measure} = \sum_i \rho_i \ln(\rho_i),$$

where  $\rho_i$  represents the proportion of the total supplied by fuel  $i$ .

The minimum value that the Shannon-Wiener measure can produce is zero which occurs when only one fuel is available for use and in which case, there would be no diversity of supply. Five fuels have been used to calculate the Shannon-Wiener measure of diversity for the primary energy supply. If each fuel making up the energy supply are in equal proportion, the maximum value of the Shannon-Wiener measure, showing total equality, is 1.61.

The Department of Energy and Climate Change (DECC) also produces the following statistics publications:

The **Digest of United Kingdom Energy Statistics** is the annual energy statistics publication of DECC. With extensive tables, charts and commentary covering all the major aspects of energy, it provides a detailed and comprehensive picture of the last three years and a detailed picture for the last five years. It includes detailed information on the production and consumption of individual fuels and of energy as a whole. The 2012 edition was published by The Stationery Office on 26 July 2012 and costs £62. It can also be accessed 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)

The **Energy Flow Chart** is an annual publication illustrating the flow of primary fuels from home production and imports to their eventual final uses. They are shown in their original state and after being converted into different kinds of energy by the secondary fuel producers. The 2012 edition of the chart, published on 26 July 2012, shows the flows for 2011 and can be accessed 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) Free copies are available from the Publications Orderline 0845 504 9188.

**Energy Trends** is a quarterly publication of statistics on energy in the United Kingdom. It includes tables, charts and commentary covering all major aspects of energy. It provides a comprehensive picture of energy production and use, to allow readers to monitor trends during the year. It is available on annual subscription together with Quarterly Energy Prices, or material can be accessed 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) Single copies are available from the Publications Orderline 0845 504 9188 priced £6. Monthly updates to tables in Energy Trends are split by fuel source and can be accessed on the Internet at: [www.decc.gov.uk/en/content/cms/statistics/energy\\_stats/source/source.aspx](http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/source/source.aspx)

**Quarterly Energy Prices** is a quarterly publication that contains tables, charts and commentary covering energy prices, to domestic and industrial consumers, for all the major fuels. It also presents comparisons of fuel prices in the European Union and G7 countries. It is available on annual subscription together with Energy Trends, or material can be accessed 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) Single copies are available from the Publications Orderline 0845 504 9188 priced £8.

## References

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**UK Energy Sector Indicators** is designed to show the extent to which secure, diverse and sustainable supplies of energy to UK businesses and consumers, at competitive prices, are ensured. It can be accessed on the Internet at: [www.decc.gov.uk/en/content/cms/statistics/publications/indicators/indicators.aspx](http://www.decc.gov.uk/en/content/cms/statistics/publications/indicators/indicators.aspx)

**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 since the 1970s, with a particular focus on trends since 1990. The information is presented in five sections covering overall energy consumption and energy consumption in the transport, domestic, industrial and service sectors. It can be accessed on the Internet 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)

**Sub-National Energy Consumption statistics** are produced by DECC to emphasise the importance of local and regional decision making for energy policy in delivering a number of national energy policy objectives. Data can be accessed on the Internet at: [www.decc.gov.uk/en/content/cms/statistics/energy\\_stats/regional/regional.aspx](http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/regional/regional.aspx)

DECC has constructed a **National Energy Efficiency Data-framework (NEED)** to enable detailed statistical analysis of energy efficiency. The data framework matches the gas and electricity consumption data collected for DECC sub-national energy consumption statistics and records of energy efficiency measures in the Homes Energy Efficiency Database (HEED) run by the Energy Saving Trust (EST), as well as typographic data about dwellings and households. Data can be accessed on the Internet at: [www.decc.gov.uk/en/content/cms/statistics/energy\\_stats/en\\_effic\\_stats/need/need.aspx](http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/en_effic_stats/need/need.aspx)

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The cover illustration used for UK Energy in Brief and other DECC energy statistics publications is from a photograph by Peter Askew. It was a winning entry in the DTI News Photographic Competition in 2002.

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