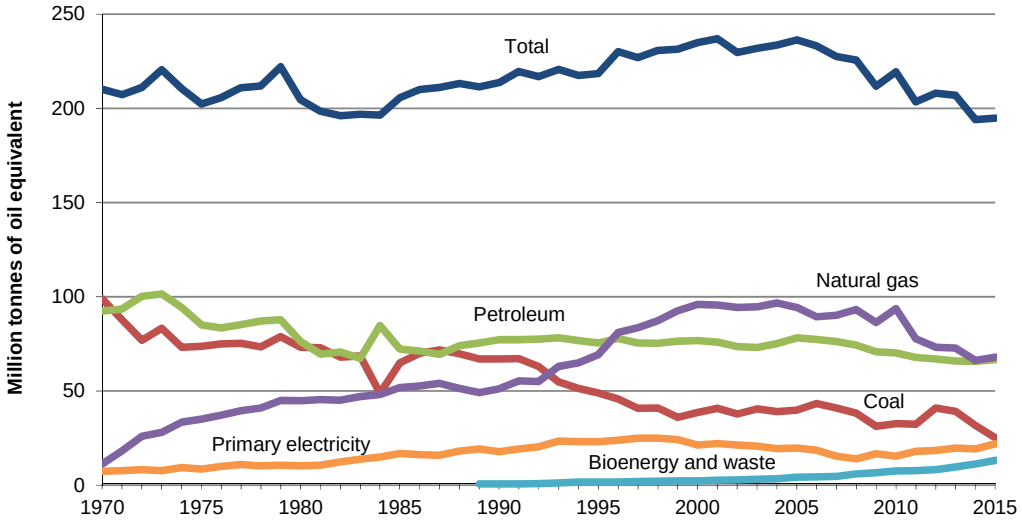
Chapter 1: Long term trends

Energy

Inland consumption of primary fuels (Table 1.1.1)

1.1.1 The trends in inland consumption of primary fuels for energy use are illustrated below in Chart 1.1.1. Overall consumption for energy use increased steadily up to 1973, when the oil price rose following the Arab-Israeli war of that year which led to a major change in patterns of fuel consumption. Having reached a level of over 220 million tonnes of oil equivalent in 1973, energy use subsequently fell, but by 1979 had returned to a similar level to that in 1973. After the outbreak of another Middle East war, consumption fell back to less than 200 million tonnes of oil equivalent in the years 1981 to 1984. It then grew again, and by 1996 had exceeded the peak levels of 1973 and 1979. In 2005 it had grown to 236.3 million tonnes, but has since fallen back by 18 per cent to 194.8 million tonnes in 2015. The last few years have been affected by a number of factors: improvements in energy efficiency, the recession in 2009 reduced consumption; particularly cold weather in 2010 resulted in an increase in demand; whilst warm weather in both 2011 and 2014 have caused consumption to fall back. Between 2005 and 2015 consumption has fallen by an average of 1.9 per cent per annum.

Chart 1.1.1: Inland consumption of primary fuels and equivalents for energy use 1970 to 2015



1.1.2 Petroleum consumption has declined since its peak in the early seventies. It grew in the period 1970 to 1973, despite strong growth in consumption of natural gas and primary electricity, mainly nuclear. After 1973, consumption of petroleum products declined for ten years, following much the same pattern as coal use. In 2003 petroleum consumption had fallen to its lowest level since 1987, but consumption then rose, peaking in 2005, though it has fallen back in each year to 2014, and was 16 per cent below its 2005 level. Petroleum consumption rose in 2015, likely due to falling prices.

1.1.3 Coal consumption has declined since 1970. Between 1970 and 1999 coal consumption declined at a fast rate down on average 3.4 per cent per year over that period. Consumption increased slightly into 2000 and then remained fairly steady until 2008, before falling back for the next three years as less coal was used in generation. In 2012, due to low coal prices compared to gas, generators demand for coal was up by almost a third resulting in overall coal demand being up by 27 per cent. Coal demand has since fallen back due to the increased availability of other forms of generation including nuclear and wind, and now accounts for a 22 per cent share of electricity generation. The kinks in the demand for coal and petroleum in 1984 are a result of the miner's strike of that year, when oil was used as a substitute for unavailable coal. In 1970 coal accounted for 47 per cent of all fuels consumed. In 1980 this figure had fallen to 36 per cent, in 1990 31 per cent, in 2000 16 per cent, in 2010 15 per cent, and in 2015 it had declined further to 13 per cent.

1.1.4 Natural gas consumption grew steadily from the seventies but has declined in recent years. In 1970 it accounted for only 5.4 per cent of all fuels consumed. By 1996 it exceeded petroleum consumption for the first time and by 2004 it accounted for 41 per cent of all fuels consumed. This fell back in 2006 to 38 per cent as the sharp rise in prices in that year resulted in generators switching some gas fired electricity production to coal fired generation. In 2010, its share had risen back to a record level of 43 per cent as a number of generators switched from using coal to gas fired stations, and there was increased domestic demand due to the colder weather. However, higher prices have since generally resulted in less use in generation, and its share fell to 35 per cent in 2015.

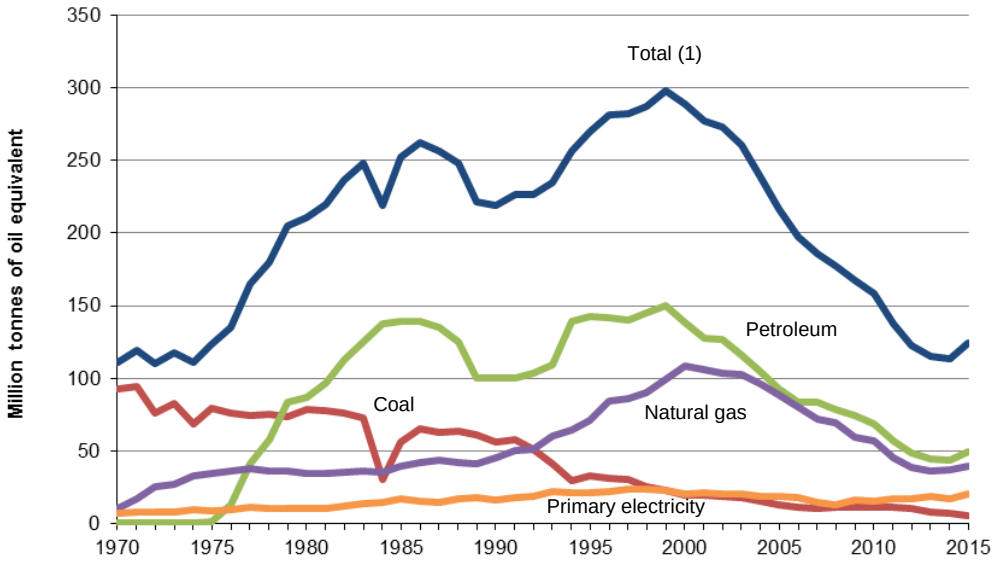
1.1.5 Consumption of bioenergy and waste continues to increase, accounting for 0.3 per cent of all fuels consumed in 1990, but increasing to 6.8 per cent in 2015[1]. The share of primary electricity peaked at 11 per cent in 1997, before falling back to a low of 6.2 per cent in 2008. Its share has since grown to 11 per cent in 2015, mainly due to increased wind production resulting from much increased capacity and though an increased level of net imports.

Availability and consumption of primary fuels and equivalents (Table 1.1.2)

1.1.6 An overall view of energy presented in the form of energy balances is given in Table 1.1.2. It is based on Tables 1.1 to 1.3, of the main Digest with the time series extended back to 1970. Supplies and uses of energy are expressed on an energy-supplied basis in tonnes of oil equivalent, and are balanced by fuel type and for total energy. More details on the derivation of these balances and on the calculation of energy contents are given in Chapter 1, paragraphs 1.30 to 1.31 and Annex A of the main Digest.

1.1.7 Trends in the production of primary fuels in the United Kingdom are illustrated in Chart 1.1.2. In 2015, total energy production was 125 million tonnes of oil equivalent, an increase of 12 per cent on production in 1970, but down by 58 per cent since output peaked in 1999. Total energy production had fallen in each year since 1999 but increased by 9.6 per cent in 2015. In the last ten years, UK energy production has declined at a rate of 5.4 per cent per year; within this coal gas production has declined at the fastest rate, down 8.2 per cent per year, followed by natural gas down 7.7 per cent, petroleum down 6.1 per cent, but with primary electricity up 0.6 per cent per year. Bioenergy and waste has grown by an average 10.4 per cent per year over this same time period, and in 2015 accounted for 7.9 per cent of the UK's energy production.

Chart 1.1.2: UK production of primary fuels 1970 to 2015



(1) Includes bioenergy & waste and heat.

[1] The renewables share was 8.3% in 2015 on the "renewable energy directive measure" – see chapter 6 of DUKES for more detail.

1.1.8 From 1975, petroleum production grew rapidly to peak at over 139 million tonnes of oil equivalent in 1985 when it accounted for 55 per cent of the total energy production of 252.5 million tonnes of oil equivalent. By 1991, temporary production problems, following the Piper Alpha disaster of 1988, had reduced petroleum production to 100 million tonnes of oil equivalent. Since then petroleum production steadily recovered, reaching a record level of 150 million tonnes of oil equivalent in 1999. Between 1999 and 2006 production of petroleum fell by 44 per cent. Production levels stabilised in 2007 as output from new fields (Buzzard) offset the general decline in production. However, output then fell back by a further 48 per cent by 2014 to leave it down 71 per cent from its peak in 1999. Production though increased by 13 per cent in 2015 due to new fields coming online and less maintenance activity than in 2014. Petroleum production currently accounts for 40 per cent of total energy production.

1.1.9 Natural gas from the North Sea started to be produced in substantial quantities from the early 1970s, accounting for 9.4 per cent of total production in 1970, and grew steadily to peak at 108.4 million tonnes in 2000. Since then natural gas production has eased and by 2015 had fallen by 63 per cent from this peak. In 2015 production increased by 7.6 per cent due to new fields coming online and less maintenance activity than in 2014, and accounted for 32 per cent of total energy production.

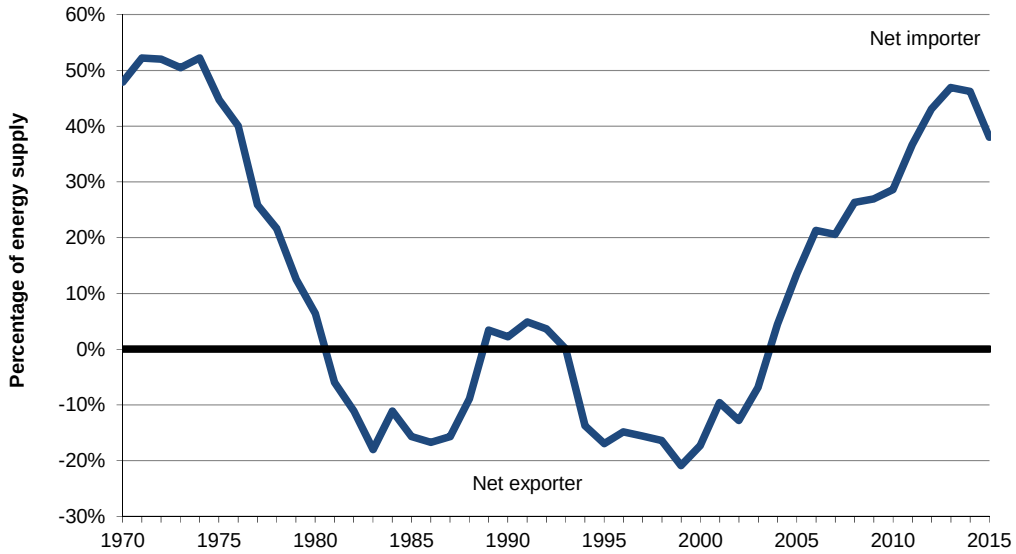
1.1.10 In 1970 coal accounted for 84 per cent of total energy production. In 1980, with the increase in petroleum and natural gas production, coal production fell to 37 per cent of total energy production, falling further to below 10 per cent in 1998. In 2015, following the closure of a number of mines, coal accounted for 4.3 per cent of total energy production.

1.1.11 Primary electricity (nuclear, wind and hydro combined) accounted for a then record 9.8 per cent of production in 2009, as nuclear output recovered from the outages of 2008, allied with strong growth in output of wind generation. Its share fell back marginally in 2010 as nuclear outages, lower average wind speeds and lower rainfall more than offset the increased wind capacity available. However, by 2013 the share had increased to 16.0 per cent, with increases in nuclear and wind, though fell back to a 15.4% share in 2014 due to outages at some nuclear plants. In 2015 production increased by 15 per cent, boosted by strong wind capacity growth, and stood at a record share of 16.2 per cent. Output of primary electricity was down 14 per cent in 2015 from its peak in 1998.

Comparison of net imports of fuel with total consumption of primary fuels and equivalents (Table 1.1.3)

1.1.12 In Table 1.1.3 and Chart 1.1.3 gross fuel consumption in the United Kingdom, including non-energy use and international marine bunkers, is compared with net imports of fuel to show the UK's net import or net export dependency ratio. The UK has in recent years been a net importer of energy after a period as an exporter following the growth of North Sea oil.

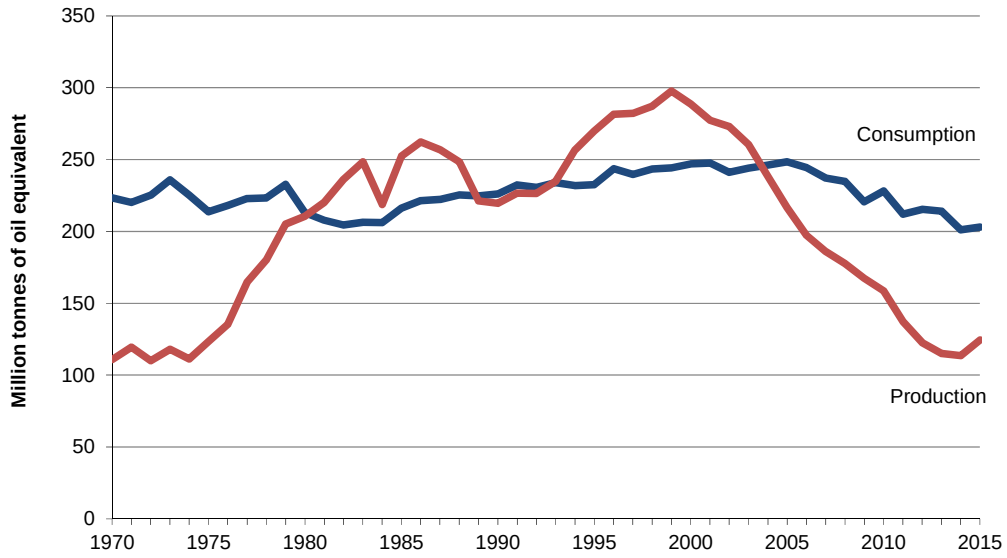
Chart 1.1.3: Net import dependency 1970 to 2015



Following development of oil and gas production in the North Sea, the UK became a net exporter 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. In 2013 the UK became a net importer of oil products, following the closure of the Coryton refinery in 2012, and the UK is now a net importer of all fuels. In 2015, 38 per cent of energy used in the UK was imported, down sharply from the 2014 level as North Sea oil and gas output rose following new fields coming online as well as a reduced level of maintenance activity.

1.1.13 Chart 1.1.4 shows United Kingdom primary energy production and consumption (from Tables 1.1.2 and 1.1.3) and also illustrates the degree to which the United Kingdom was dependent on energy imports prior to North Sea oil and gas becoming available.

Chart 1.1.4: UK energy production and consumption 1970 to 2015



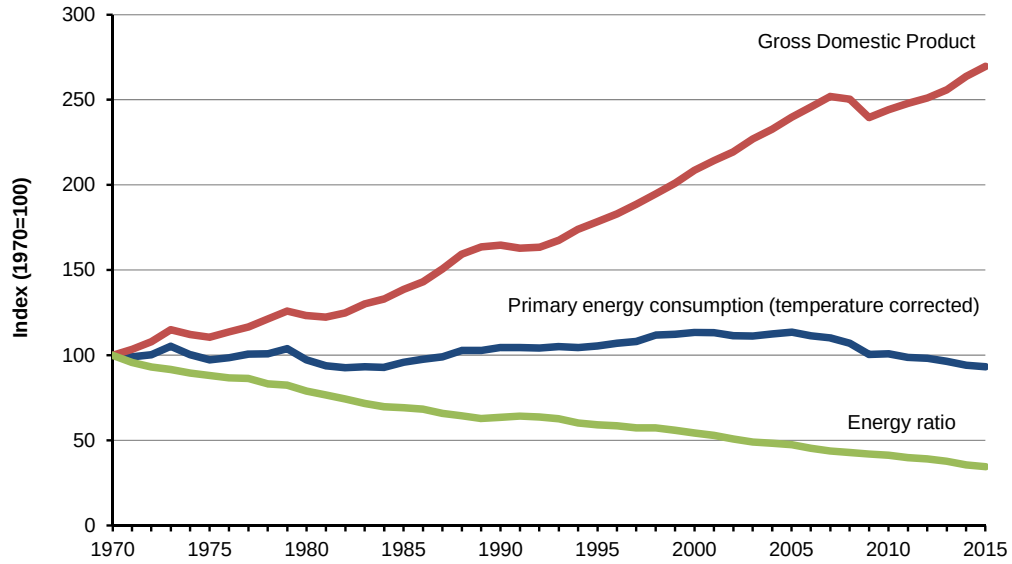
Energy ratio (Table 1.1.4)

1.1.14 The relationship between energy consumption and economic activity at the aggregate level can be gauged by comparing a country's temperature corrected inland primary energy consumption with its gross domestic product (GDP). This approach is simple and comprehensive but it has a number of drawbacks which were discussed in the articles in the August 1976, May 1981 and May 1989 issues of *Economic Trends* (The Stationery Office). In September 2011 the methodology used was modified to move from using temperature deviations to a heating degree day methodology. Heating degree days (HDD) are defined relative to a base temperature - the outside temperature above which a building needs no heating. More details of the methodology are detailed in articles in Energy Trends available on the BEIS web site.

1.1.15 Table 1.1.4 shows the United Kingdom's temperature corrected inland primary energy consumption and GDP at constant prices since 1970. Dividing energy consumption by GDP yields the energy ratio, which is expressed as energy consumed per million pound of GDP and as an index number based on 1970=100.

1.1.16 Chart 1.1.5 illustrates trends in primary energy consumption, GDP and the energy ratio over the period 1970 to 2015. It shows that energy ratio fell steadily (with the exception of 1979 and 1991) from its 1970 level to 35 per cent of that level by 2015, an average decrease of around 2.3 per cent per annum. The strong downward trend since 1970 is explained by at least four factors: improvements in energy efficiency; saturation in the ownership levels and improved efficiency of the main domestic appliances; the unresponsiveness of certain industrial uses, like space heating, to long run output growth; and a structural shift away from energy intensive activities (such as steel making) towards low energy industries (such as services).

Chart 1.1.5: Energy ratio since 1970



Energy consumption by final user (Table 1.1.5)

1.1.17 Figures for energy consumption (excluding non-energy use) by category of final users are given in Table 1.1.5. Final users' consumption is net of the fuel industries' own use and conversion, transmission and distribution losses, but it includes conversion losses by final users. The user categories are industry (including iron and steel), transport (including coastal shipping), domestic and other final users (public administration, agriculture, commerce and other sectors), see Chapter 1, paragraphs 1.56 to 1.60 of the main Digest.

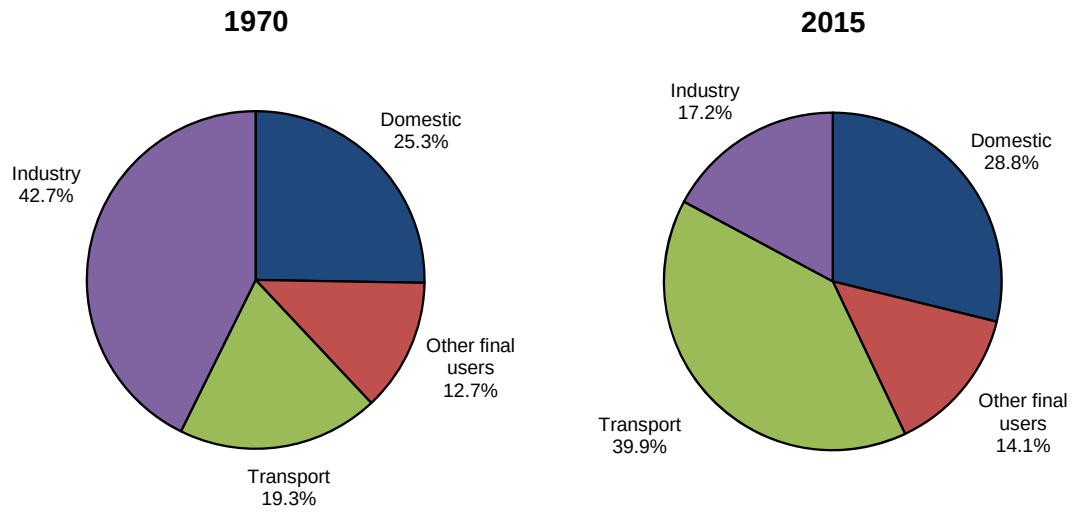
1.1.18 Up to 1986, data for final consumption of electricity include acquisitions from public supply, output of industrial nuclear stations, and amounts produced by transport undertakings and industrial hydropower for final consumption. From 1987 onwards, all consumption of electricity, whether produced by major power producers or by other generators, are included. There is a corresponding change in treatment, between 1986 and 1987, for other fuels used in electricity generation (see Chapter 1, paragraph 1.36 of the main Digest).

1.1.19 Overall consumption by final users has followed the same pattern as overall primary energy consumption since 1970, accounting for around 70 per cent of the total consumption throughout the period.

1.1.20 In 1970, the industry sector (including iron and steel) had the greatest level of consumption, with 43 per cent of total final energy consumption. However, since 1970 this sector has steadily reduced its consumption, falling to 34 per cent in 1980 and 26 per cent of total final consumption in 1990. It now stands at 17 per cent of total final consumption for energy use. This share is now less than that of the domestic sector which, has retained around the same share of around 30 per cent since 1980. In 2015 the domestic share rose to 29 per cent due to the cooler weather. The greatest growth has been in the transport sector; this had a share of 19 per cent in 1970, before growing to 25 per cent in 1980, 33 per cent in 1990 and climbing to 40 per cent in 2015. Service sector consumption has remained steady from 1970 to 2015 and accounted for 14 per cent of total final consumption in 2015.

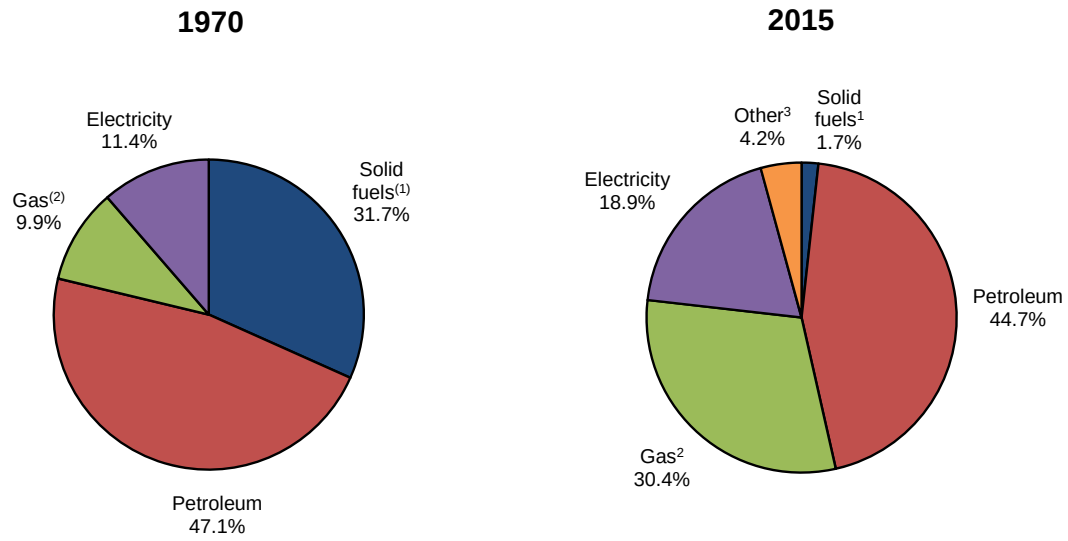
1.1.21 A comparison of energy consumption for energy purposes by final users in 1970 and 2015 is shown in Chart 1.1.6.

Chart 1.1.6: Energy consumption by final user



1.1.22 Table 1.1.5 also shows trends in final energy consumption for individual fuels. In 1970, consumption of coal and other solid fuels accounted for 32 per cent of final energy consumption, but this share has declined steadily to around 2 per cent in 2015. Over this period consumption of natural gas has increased rapidly, up from 10 per cent in 1970 to stand at 30 per cent in 2015. In 1970, town gas accounted for 7 per cent of consumption; however use of town gas was phased out in the mid 1970s. Electricity consumption has made steady progress over the last three decades, rising from 11 per cent of the total in 1970 to 19 per cent in 2015. Petroleum's share has remained broadly steady, with a 47 per cent share in 1970 falling back to 40 per cent in 1985, though this has since risen to 45 per cent in 2015. A comparison of final energy consumption for individual fuels in 1970 and 2015 is shown in Chart 1.1.7.

Chart 1.1.7: Final energy consumption by type of fuel



(1) *includes manufactured fuels and coke oven gas*
(2) *includes town gas*
(3) *includes heat sold, bioenergy and waste*

Expenditure on energy by final user (Table 1.1.6)

1.1.23 Total expenditure on fuels is presented in Table 1.1.6 from 1970, and figures for recent years are illustrated in Chapter 1, Chart 1.6 of the main Digest. Data for the latest years are taken from the value balances (Chapter 1, Tables 1.4 to 1.6 of the main Digest) whilst earlier years are taken from their forerunner tables of estimated values of energy purchases by sector. As before, coal purchased by the iron and steel sector and shown in the transformation section of the energy value balance table is included as a final purchase by the industry sector of coal.

1.1.24 Overall final expenditure on energy was down by £12.0 billion (9.5 per cent) in 2015 compared to 2014, as prices of crude oil fell sharply (down 45 per cent) with falls also recorded in prices for petroleum products. The level of £114 billion in 2015 is the lowest for this series since 2009, but still up by nearly 75 per cent on levels in 2000. The change in the final expenditure for all fuels over the past few years have mainly been driven by changes in the price of oil, which rose steadily throughout 2010 and into April 2011, before remaining at these elevated levels for the rest of the year and throughout 2013 before starting to fall at the end of 2014.

1.1.25 The makeup of total expenditure has changed through time, reflecting structural or long term changes in fuel mix and shorter term price and consumption effects. In 1970, expenditure on coal and coke accounted for around 15 per cent of total final expenditure, but was down to 1 per cent in 2015. By contrast, the general increase in the consumer price of petroleum (where duty is a major component) has meant that petroleum's share of expenditure rose from 45 per cent of all expenditure in 1970 to 64 per cent in 2004. This percentage has since fallen to 51 per cent in 2009, before rising to 57 per cent in the warm 2011, when spending on heating fuels was reduced due to the warm weather, and back to 50 per cent in 2015 as prices fell back. The share of expenditure on petroleum has not fallen back in proportion to the fall in crude oil prices as a large element of expenditure on petroleum products is for duty and taxes; rates of taxes and petrol duties have remained stable since 2011.

Mean air temperatures and heating degree days (Tables 1.1.7, 1.1.8 and 1.1.9)

1.1.26 Table 1.1.7 gives the average air temperatures in Great Britain between 1981 and 2010 by year, part year and month. Deviations from these means are presented for January 2000 to December 2015. Table 1.1.8 provides similar data, but for heating degree days rather than average temperatures. These heating degree deviations are used to provide the temperature corrected consumption series shown in Table 1.1.4.

1.1.27 Average monthly temperatures back to 1970 are also given in Table 1.1.9. The daily average temperature for 2015 was 0.4 degrees higher than the long term mean covering 1981 to 2010, but 0.6 degrees cooler than in 2014. In recent years a number of temperature records were broken. The year 2010 was the coldest since 1987 and included the coldest December for 100 years. The year 2011, according to the Met Office, was the second warmest on record at the time and included the warmest April for over 100 years. Temperatures in both 2012 and 2013, despite being below those from 1997 through to 2009, were closer to the longer term thirty year average. The year 2014 was the warmest on record, whilst in 2015 average temperatures in the fourth quarter of 2015 were the warmest on record, being 2.4 degrees Celsius warmer than the long-term average and 1.2 degrees Celsius warmer than the same period a year earlier.

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1.1.1 Inland consumption of primary fuels and equivalents for energy use

		1970	1971	1972	1973	1974
In original units of measurement						
	Un					
Coal *(1)*	M.tonnes	156.9	139.3	122.4	133.0	117.9
Petroleum *(2)*	"	87.0	88.0	94.2	95.3	88.5
Natural gas *(3)*	GWh	131,472	212,037	300,808	325,455	389,286
Nuclear electricity *(4)*	"	26,039	27,418	29,275	27,757	33,377
Hydro electricity *(4)(5)*	"	4,539	3,397	3,429	3,874	4,095
Million tonnes of oil equivalent						
Coal *(1)*		99.0	87.7	76.8	83.2	73.3
Petroleum *(2)*		92.4	93.5	100.2	101.5	94.3
Natural gas *(3)*		11.3	18.2	25.9	28.0	33.5
Nuclear electricity *(4)*		7.0	7.4	7.9	7.5	9.0
Hydro electricity *(5)*		0.4	0.3	0.3	0.3	0.4
Total		210.1	207.1	211.0	220.5	210.4
Percentage shares (energy supplied basis)						
Coal		47.1	42.3	36.4	37.7	34.8
Petroleum		44.0	45.2	47.5	46.0	44.8
Natural gas		5.4	8.8	12.3	12.7	15.9
Nuclear electricity		3.3	3.6	3.7	3.4	4.3
Hydro electricity		0.2	0.1	0.1	0.2	0.2
Fossil fuel dependency (7)		96.5	96.3	96.2	96.4	95.5

		1975	1976	1977	1978	1979
In original units of measurement						
	Un					
Coal *(1)*	M.tonnes	120.0	122.0	122.7	119.9	129.6
Petroleum *(2)*	"	79.4	77.8	79.3	81.2	81.6
Natural gas *(3)*	GWh	407,750	432,661	459,858	477,002	521,197
Nuclear electricity *(4)*	"	30,215	35,570	39,575	37,065	38,062
Hydro electricity *(4)(5)*	"	3,789	4,552	3,919	4,038	4,289
Million tonnes of oil equivalent						
Coal *(1)*		73.7	75.0	75.3	73.3	78.8
Petroleum *(2)*		85.0	83.5	85.1	87.2	87.7
Natural gas *(3)*		35.1	37.2	39.5	41.0	44.8
Nuclear electricity *(4)*		8.1	9.6	10.6	10.0	10.2
Hydro electricity *(5)*		0.3	0.4	0.3	0.3	0.4
Total		202.2	205.6	210.9	211.8	221.9
Percentage shares (energy supplied basis)						
Coal		36.5	36.5	35.7	34.6	35.5
Petroleum		42.0	40.6	40.4	41.2	39.5
Natural gas		17.3	18.1	18.7	19.4	20.2
Nuclear electricity		4.0	4.6	5.0	4.7	4.6
Hydro electricity		0.2	0.2	0.2	0.2	0.2
Fossil fuel dependency (7)		95.8	95.2	94.8	95.2	95.2

		1980	1981	1982	1983	1984
In original units of measurement						
	Un					
Coal *(1)*	M.tonnes	120.8	118.2	110.7	111.5	79.0
Petroleum *(2)*	"	70.5	64.2	65.2	61.7	78.6
Natural gas *(3)*	GWh	521,051	528,114	525,476	547,750	560,410
Nuclear electricity *(4)*	"	36,870	37,897	44,212	50,138	53,957
Hydro electricity *(4)(5)*	"	3,934	4,383	4,558	4,563	4,005
Million tonnes of oil equivalent						
Coal *(1)*		73.3	72.9	68.0	68.6	48.7
Petroleum *(2)*		76.2	69.5	70.7	67.2	84.7
Natural gas *(3)*		44.8	45.4	45.2	47.1	48.2
Nuclear electricity *(4)*		9.9	10.2	11.9	13.5	14.5
Hydro electricity *(4)(5)*		0.3	0.4	0.4	0.4	0.3
Total *(6)*		204.5	198.4	196.1	196.8	196.4
Percentage shares (energy supplied basis)						
Coal		35.8	36.7	34.7	34.9	24.8
Petroleum		37.3	35.0	36.0	34.2	43.1
Natural gas		21.9	22.9	23.0	23.9	24.5
Nuclear electricity		4.8	5.1	6.1	6.8	7.4
Hydro electricity		0.2	0.2	0.2	0.2	0.2
Fossil fuel dependency (7)		95.0	94.6	93.7	93.0	92.4

1.1.1 Inland consumption of primary fuels and equivalents for energy use

		1985	1986	1987	1988	1989
In original units of measurement						
	Un					
Coal *(1)*	M.tonnes	105.3	113.5	116.2	112.0	108.1
Petroleum *(2)*	"	66.5	65.3	63.5	67.8	69.0
Natural gas *(3)*	GWh	602,701	612,724	629,311	597,220	571,187
Nuclear electricity *(4)*	"	61,391	59,079	55,238	63,456	71,734
Hydro electricity *(4)(5)*	"	4,093	4,780	4,198	4,919	4,758
Net electricity imports	'	..	4,255	11,635	12,830	12,631
Million tonnes of oil equivalent						
Coal *(1)*		64.8	70.0	71.7	70.0	67.0
Petroleum *(2)*		72.2	71.1	69.4	74.0	75.4
Natural gas *(3)*		51.8	52.7	54.1	51.4	49.1
Nuclear electricity *(4)*		16.5	15.4	14.4	16.6	17.7
Hydro electricity *(4)(5)*		0.4	0.4	0.4	0.4	0.4
Net electricity imports		..	0.4	1.0	1.1	1.1
Bioenergy & waste		..	..	..	..	0.7
Total *(6)*		205.7	210.0	211.0	213.5	211.4
Percentage shares (energy supplied basis)						
Coal		31.5	33.3	34.0	32.8	31.7
Petroleum		35.1	33.9	32.9	34.7	35.7
Natural gas		25.2	25.1	25.6	24.1	23.2
Nuclear electricity		8.0	7.4	6.8	7.8	8.4
Hydro electricity		0.2	0.2	0.2	0.2	0.2
Net electricity imports		..	0.2	0.5	0.5	0.5
Bioenergy & waste		..	..	..	..	0.3
Fossil fuel dependency (7)		91.8	92.3	92.5	91.6	90.6

		1990	1991	1992	1993	1994
In original units of measurement						
	Unit					
Coal *(1)*	M.tonnes	108.4	107.6	101.1	87.4	82.1
Petroleum *(2)*	"	70.6	70.6	70.9	71.5	70.0
Natural gas *(3)*	GWh	595,131	643,863	640,459	732,090	754,284
Nuclear electricity *(4)*	"	65,749	70,543	76,807	76,807	89,353
Hydro electricity *(4)(5)*	"	5,216	4,635	5,465	5,465	4,521
Net electricity imports		11,943	16,408	16,694	16,716	16,887
Million tonnes of oil equivalent						
Coal *(1)*		66.9	67.1	63.0	55.0	51.3
Petroleum *(2)*		77.2	77.1	77.5	78.1	76.7
Natural gas *(3)*		51.2	55.4	55.1	62.9	64.9
Nuclear electricity		16.3	17.4	18.5	21.6	21.2
Hydro electricity *(5)*		0.4	0.4	0.5	0.5	0.4
Net electricity imports		1.0	1.4	1.4	1.4	1.5
Bioenergy & waste		0.7	0.7	0.8	1.2	1.6
Total *(6)*		213.6	219.5	216.7	220.7	217.5
Percentage shares (energy supplied basis)						
Coal		31.3	30.6	29.1	24.9	23.6
Petroleum		36.1	35.1	35.8	35.4	35.3
Natural gas		24.0	25.2	25.4	28.5	29.8
Nuclear electricity		7.6	7.9	8.5	9.8	9.7
Hydro electricity		0.2	0.2	0.2	0.2	0.2
Net electricity imports		0.5	0.6	0.7	0.7	0.7
Bioenergy & waste		0.3	0.3	0.4	0.5	0.7
Fossil fuel dependency (7)		91.4	90.9	90.2	88.8	88.7

		1995	1996	1997	1998	1999
In original units of measurement						
	Unit					
Coal *(1)*	M.tonnes	77.2	72.1	63.5	63.2	55.8
Petroleum *(2)*	"	68.9	71.3	68.7	68.6	69.7
Natural gas *(3)*	GWh	805,058	941,841	971,503	1,015,486	1,075,907
Nuclear electricity *(4)*	"	88,282	94,671	98,146	99,486	95,133
Hydro electricity *(4)(5)*	"	5,438	3,879	4,836	5,994	6,187
Net electricity imports		16,313	16,755	16,574	12,468	14,244
Million tonnes of oil equivalent						
Coal *(1)*		48.9	45.7	40.8	41.0	36.0
Petroleum *(2)*		75.4	77.8	75.5	75.4	76.4
Natural gas *(3)*		69.2	81.0	83.5	87.3	92.5
Nuclear electricity		21.3	22.1	23.1	23.4	22.4
Hydro electricity *(5)*		0.5	0.3	0.4	0.5	0.5
Net electricity imports		1.4	1.4	1.4	1.1	1.2
Bioenergy & waste		1.7	1.8	1.9	2.1	2.2
Total *(6)*		218.4	230.0	226.8	230.7	231.3
Percentage shares (energy supplied basis)						
Coal		22.4	19.9	18.0	17.8	15.6
Petroleum		34.5	33.8	33.3	32.7	33.0
Natural gas		31.7	35.2	36.8	37.8	40.0
Nuclear electricity		9.7	9.6	10.2	10.2	9.7
Hydro electricity		0.2	0.1	0.2	0.2	0.2
Net electricity imports		0.6	0.6	0.6	0.5	0.5
Bioenergy & waste		0.8	0.8	0.8	0.9	1.0
Fossil fuel dependency (7)		88.6	88.9	88.1	88.3	88.6

1.1.1 Inland consumption of primary fuels and equivalents for energy use

		2000	2001	2002	2003	2004
In original units of measurement						
	Unit					
Coal *(1)*	M.tonnes	59.7	63.5	58.8	63.5	61.3
Petroleum *(2)*	"	69.9	69.1	67.0	66.5	68.3
Natural gas *(3)*	GWh	1,114,942	1,111,363	1,097,031	1,100,616	1,123,922
Nuclear electricity *(4)*	"	85,063	90,093	87,848	88,686	79,999
Wind & Hydro electricity *(4)(5)*	"	6,032	5,020	6,047	4,516	6,783
Net electricity imports		14,174	10,399	8,414	2,160	7,490
Million tonnes of oil equivalent						
Coal *(1)*		38.5	40.8	37.7	40.5	39.1
Petroleum *(2)*		76.7	75.9	73.5	73.0	75.1
Natural gas *(3)*		95.9	95.6	94.3	94.6	96.6
Nuclear electricity		19.6	20.8	20.1	20.0	18.2
Wind & Hydro electricity *(5)*		0.5	0.4	0.5	0.4	0.6
Net electricity imports		1.2	0.9	0.7	0.2	0.6
Bioenergy & waste		2.3	2.5	2.8	3.1	3.5
Total *(6)*		234.8	236.9	229.6	231.9	233.6
Percentage shares (energy supplied basis)						
Coal		16.4	17.2	16.4	17.5	16.7
Petroleum		32.7	32.0	32.0	31.5	32.1
Natural gas		40.8	40.3	41.1	40.8	41.4
Nuclear electricity		8.4	8.8	8.8	8.6	7.8
Wind & Hydro electricity		0.2	0.2	0.2	0.2	0.2
Net electricity imports		0.5	0.4	0.3	0.1	0.3
Bioenergy & waste		1.0	1.1	1.2	1.3	1.5
Fossil fuel dependency (7)		89.9	89.6	89.5	89.8	90.2

		2005	2006	2007	2008	2009
In original units of measurement						
	Unit					
Coal *(1)*	M.tonnes	62.4	68.0	63.7	59.0	48.8
Petroleum *(2)*	"	71.3	70.4	69.6	67.9	64.7
Natural gas *(3)*	GWh	1,096,544	1,039,629	1,048,930	1,083,615	1,003,271
Nuclear electricity *(4)*	"	81,618	75,451	63,028	52,486	69,098
Wind & Hydro electricity *(4)(5)*	"	7,834	8,829	10,365	12,280	14,530
Net electricity imports		8,321	7,517	5,215	11,022	2,861
Million tonnes of oil equivalent						
Coal *(1)*		39.9	43.4	41.0	38.2	31.2
Petroleum *(2)*		78.2	77.4	76.3	74.4	70.9
Natural gas *(3)*		94.3	89.4	90.2	93.2	86.3
Nuclear electricity		18.4	17.1	14.0	11.9	15.2
Wind & Hydro electricity *(5)*		0.7	0.8	0.9	1.1	1.2
Net electricity imports		0.7	0.6	0.4	0.9	0.2
Bioenergy & waste		4.2	4.4	4.7	6.0	6.7
Total *(6)*		236.3	233.1	227.5	225.6	211.7
Percentage shares (energy supplied basis)						
Coal		16.9	18.6	18.0	16.9	14.7
Petroleum		33.1	33.2	33.5	33.0	33.5
Natural gas		39.9	38.4	39.6	41.3	40.7
Nuclear electricity		7.8	7.3	6.2	5.3	7.2
Wind & Hydro electricity		0.3	0.3	0.4	0.5	0.6
Net electricity imports		0.3	0.3	0.2	0.4	0.1
Bioenergy & waste		1.8	1.9	2.0	2.7	3.2
Fossil fuel dependency (7)		89.9	90.1	91.2	91.2	88.9

		2010	2011	2012	2013	2014
In original units of measurement						
	Unit					
Coal *(1)*	M.tonnes	50.8	50.4	64.0	60.9r	49.1r
Petroleum *(2)*	"	64.2	61.9	61.3	60.2r	60.1r
Natural gas *(3)*	GWh	1,088,519	902,924	852,152	845,222	769,294r
Nuclear electricity *(4)*	"	62,140	68,980	70,405	70,607	63,748
Wind & Hydro electricity *(4)(5)*	"	13,862	21,576	26,476	35,114r	41,900r
Net electricity imports		2,663	6,222	11,871	14,426r	20,520r
Million tonnes of oil equivalent						
Coal *(1)*		32.6	32.2	40.9	39.1r	31.6r
Petroleum *(2)*		70.2	67.8	67.0	65.8r	65.8r
Natural gas *(3)*		93.6	77.6	73.3	72.7	66.1r
Nuclear electricity		13.9	15.6	15.2	15.4r	13.9r
Wind & Hydro electricity *(5)*		1.2	1.9	2.3	3.0r	3.6r
Net electricity imports		0.2	0.5	1.0	1.2r	1.8r
Bioenergy & waste		7.6	7.7	8.3	9.6r	11.2r
Total *(6)*		219.4	203.4	208.0	206.9r	193.9r
Percentage shares (energy supplied basis)						
Coal		14.9	15.8	19.7	18.9r	16.3r
Petroleum		32.0	33.3	32.2	31.8r	33.9r
Natural gas		42.7	38.2	35.2	35.1r	34.1r
Nuclear electricity		6.3	7.7	7.3	7.5r	7.1r
Wind & Hydro electricity		0.5	0.9	1.1	1.5r	1.9r
Net electricity imports		0.1	0.3	0.5	0.6r	0.9r
Bioenergy & waste		3.5	3.8	4.0	4.6r	5.8r
Fossil fuel dependency (7)		89.5	87.3	87.1	85.8r	84.3r

1.1.1 Inland consumption of primary fuels and equivalents for energy use

		2015
In original units of measurement		
	Unit	
Coal *(1)*	M.tonnes	38.6
Petroleum *(2)*	"	61.0
Natural gas *(3)*	GWh	789,853
Nuclear electricity *(4)*	"	70,345
Wind & Hydro electricity *(4)(5)*	"	54,161
Net electricity imports		20,938
Million tonnes of oil equivalent		
Coal *(1)*		25.1
Petroleum *(2)*		66.7
Natural gas *(3)*		67.9
Nuclear electricity		15.5
Wind & Hydro electricity *(5)*		4.7
Net electricity imports		1.8
Bioenergy & waste		13.2
Total *(6)*		194.8
Percentage shares (energy supplied basis)		
Coal		12.9
Petroleum		34.2
Natural gas		34.9
Nuclear electricity		7.9
Wind & Hydro electricity		2.4
Net electricity imports		0.9
Bioenergy & waste		6.8
Fossil fuel dependency (7)		82.0

(1) Includes other solid fuels.

(2) Excludes petroleum for non-energy use and marine bunkers.

(3) Includes colliery methane, non-energy use of natural gas up to 1988.

(4) Electricity generated i.e. including own use.

(5) Excludes pumped storage. Includes generation at wind stations from 1988.

(6) Following the introduction of the energy balance presentation it has been possible to separately identify the losses from the statistical difference for gas and electricity, bringing them onto the same basis as other fuels. This has been accounted for in the total from 1994 onwards.

(7) Fossil fuel share of energy consumption

1.1.2 Availability and consumption of primary fuels and equivalents (energy supplied basis)

Thousand tonnes of oil equivalent

	Available supply												
	Production					Imports					Exports		
	Coal	Petroleum (1)	Natural gas (2)	Primary electricity (3)	Total (4)	Coal (5)	Petroleum (6)	Natural gas	Elec-tricity	Total	Coal (5)	Petroleum (6)	Total (7)
1970	92,792	166	10,461	7,388	110,807	81	131,142	839	48	132,109	2,620	19,762	22,381
1971	94,178	227	17,384	7,661	119,450	2,887	136,359	836	10	140,092	2,048	20,024	22,071
1972	76,484	358	25,084	8,163	110,089	3,408	138,253	771	40	142,472	1,433	21,160	22,593
1973	82,636	400	27,235	7,793	118,064	1,214	144,117	738	5	146,074	2,131	22,026	24,157
1974	68,630	438	32,847	9,322	111,237	2,317	136,472	612	5	139,407	2,149	17,283	19,432
1975	79,172	1,675	34,203	8,446	123,496	3,209	111,703	844	8	115,763	1,975	16,517	18,492
1976	75,988	13,114	36,221	9,951	135,274	2,010	108,818	967	-	111,796	1,506	21,671	23,177
1977	74,769	41,186	37,845	10,973	164,773	1,761	90,004	1,680	-	93,445	1,753	33,112	34,865
1978	75,479	58,184	36,241	10,308	180,212	1,736	85,815	4,758	-	92,309	2,164	41,289	43,460
1979	74,028	83,966	36,596	10,598	205,188	3,169	77,903	8,323	-	89,394	2,025	57,607	59,632
1980	78,502	86,911	34,790	10,247	210,450	5,030	60,385	9,995	-	75,411	3,320	58,385	61,705
1981	78,008	96,941	34,712	10,562	220,223	3,192	50,040	10,681	-	63,912	6,884	69,615	76,500
1982	76,069	112,519	35,281	12,274	236,143	3,360	49,944	9,885	-	63,189	5,693	80,595	86,288
1983	72,696	125,482	36,379	13,866	248,423	3,713	43,543	10,701	-	57,957	4,844	90,608	95,452
1984	30,719	137,646	35,563	14,845	218,773	7,980	59,146	12,606	-	79,731	1,668	101,289	102,957
1985	56,572	139,404	39,679	16,851	252,506	9,482	52,577	12,645	-	74,703	2,441	106,602	109,043
1986	65,592	139,084	41,717	15,839	262,232	7,794	57,610	11,784	366	77,553	2,615	112,166	114,796
1987	63,189	135,071	43,674	14,797	256,731	7,363	54,305	11,079	1,000	73,746	1,872	107,108	108,980
1988	63,303	125,469	42,059	16,990	248,469	9,270	58,254	9,922	1,103	78,550	1,595	97,266	98,861
1989	60,882	100,373	41,188	18,150	221,320	8,840	64,153	9,784	1,163	83,941	1,738	74,434	76,249
1990	56,443	100,104	45,480	16,706	219,446	10,271	69,217	6,866	1,031	87,385	1,880	80,408	82,293
1991	57,555	99,890	50,638	17,830	226,669	13,493	72,942	6,193	1,412	94,040	1,526	81,105	82,632
1992	51,514	103,734	51,494	18,924	226,547	13,955	74,025	5,268	1,438	94,686	854	85,245	86,155
1993	41,588	109,613	60,542	21,969	234,882	13,103	77,612	4,173	1,438	96,326	954	95,312	96,854
1994	29,704	138,937	64,636	21,670	256,559	10,840	68,680	2,843	1,452	83,815	1,098	114,083	116,003
1995	32,751	142,746	70,807	21,735	269,738	11,615	63,341	1,673	1,405	78,034	889	116,001	117,859
1996	31,135	142,079	84,180	22,393	281,559	13,141	64,347	1,703	1,444	80,635	896	114,909	117,115
1997	30,303	140,443	85,887	23,535	282,082	14,400	63,813	1,209	1,429	80,850	1,061	115,815	118,743
1998	25,757	145,263	90,186	23,950	287,233	15,371	64,696	910	1,083	82,061	931	118,896	122,556
1999	23,219	150,160	99,109	22,942	297,655	14,039	64,085	1,106	1,247	80,476	774	123,920	131,976
2000	19,551	138,282	108,397	20,153	288,690	16,079	74,812	2,238	1,230	94,359	813	123,923	137,330
2001	19,969	127,828	105,870	21,227	277,426	23,565	77,235	2,619	917	104,337	679	115,680	128,277
2002	18,808	127,037	103,646	20,619	272,864	18,995	78,348	5,201	790	103,334	667	120,758	134,451
2003	17,636	116,242	102,996	20,428	260,310	21,396	77,062	7,420	440	106,430	530	107,201	123,208
2004	15,594	104,547	96,411	18,746	238,378	24,182	88,394	11,439	841	125,258	572	103,621	114,202
2005	12,714	92,883	88,219	19,044	216,541	29,157	88,805	14,904	960	134,312	509	91,503	100,527
2006	11,418	83,958	80,012	17,889	197,246	33,363	94,233	20,983	884	150,013	462	86,280	97,446
2007	10,697	83,912	72,125	14,927	185,970	28,928	90,153	29,065	741	149,340	589	88,430	100,011
2008	11,305	78,715	69,681	12,965	177,706	29,249	91,784	35,012	1,057	158,076	607	84,117	95,381
2009	11,039	74,739	59,732	16,478	167,396	25,100	84,256	39,333	568	150,565	616	77,367	90,139
2010	11,425	68,983	57,195	15,117	158,580	17,810	85,935	50,950	614	157,238	906	74,411	91,059
2011	11,532	56,902	45,289	17,480	137,264	21,432	88,239	50,600	747	162,873	725	67,069	83,985
2012	10,583	48,756	38,925	17,482	122,591	29,209	94,778	47,250	1,182	174,143	761	66,515	80,126
2013	7,973	44,468	36,523	18,462r	115,091r	32,715	95,627r	46,011	1,507r	178,064r	530r	65,656	76,130r
2014	7,289	43,705r	36,831r	17,453r	113,626r	28,250r	90,503r	41,001r	1,999r	164,954r	399r	58,622r	70,629r
2015	5,384	49,544	39,621	20,136	124,547	16,756	90,082	42,337	1,953	154,846	369	61,886	76,667

(1) Crude oil plus all condensates and petroleum gases extracted at gas separation plants.
(2) Includes colliery methane.
(3) Nuclear and natural flow hydro electricty excluding generation of pumped storage stations. From 1988 includes generation at wind stations.
(4) Includes solar and geothermal heat, solid renewable sources (wood, waste, etc), and gaseous renewable sources (landfill gas, sewage gas) from 1988.
(5) Includes other solid fuels.
(6) Crude and process oils and petroleum products.
(7) Includes exports of natural gas and electricity.

1.1.2 Availability and consumption of primary fuels and equivalents (energy supplied basis)

Thousand tonnes of oil equivalent

	Marine Bunkers	Stock changes (8)			Statistical Difference (9)			**Gross inland consumption**	Non-energy use	Inland consumption for energy use				
	Petroleum	Coal *(5)*	Petroleum (6)	Natural gas	Coal *(5)*	Petroleum *(6)*	Total *(13)*	*(14)*	*(10)*	Coal *(5)*	Petroleum *(6)*	Natural gas *(2)(11)*	Primary electricity *(3)(12)*	Total *(4)*
1970	+5,721	+8,542	-680	..	+199	+466	+665	223,341	10,859	98,994	92,366	11,300	7,435	210,095
1971	+5,874	-7,046	-3,489	..	-239	-652	-891	220,170	10,839	87,732	93,543	18,220	7,672	207,167
1972	+5,265	-1,370	+2,904	..	-242	-887	-1,129	225,109	11,474	76,847	100,212	25,855	8,203	211,117
1973	+5,769	+1,456	+458	..	+60	-340	-280	235,847	12,635	83,235	101,501	27,974	7,797	220,507
1974	+4,922	+4,839	-5,139	..	-360	-514	-874	225,116	12,865	73,278	94,327	33,460	9,326	210,391
1975	+3,572	-6,489	+3,660	..	-202	-395	-597	213,769	10,255	73,716	84,963	35,060	8,453	202,192
1976	+3,698	-1,597	-348	..	+121	-254	-133	218,116	10,925	75,016	83,480	37,188	9,951	205,635
1977	+2,942	+600	+2,466	..	-113	-557	-670	222,806	10,517	75,263	85,110	39,526	10,973	210,872
1978	+2,733	-1,368	-814	..	-363	-569	-932	223,214	10,245	73,321	87,177	40,999	10,301	211,798
1979	+2,789	+3,600	-2,229	..	+43	-806	-763	232,768	10,232	78,814	87,681	44,919	10,597	222,011
1980	+2,562	-6,789	+40	..	-171	-1,567	-1,738	213,118	7,464	73,263	76,197	44,785	10,247	204,492
1981	+2,156	-2,013	+3,882	..	+562	-154	+408	207,756	8,111	72,865	69,539	45,392	10,564	198,360
1982	+2,715	-5,660	+2,305	..	-118	-2,315	-2,433	204,540	8,134	67,958	70,671	45,166	12,274	196,069
1983	+2,118	-3,209	+1,010	..	+234	-544	-310	206,290	8,625	68,590	67,228	47,080	13,866	196,764
1984	+2,370	+11,842	+922	..	-136	+247	+111	206,052	8,847	48,738	84,651	48,168	14,845	196,402
1985	+2,239	+1,461	+297	-521	-249	-731	-980	216,184	9,230	64,824	72,179	51,803	16,851	205,657
1986	+2,212	-1,889	+338	-836	+1,126	-83	+1,043	221,432	10,247	70,008	71,148	52,665	16,189	210,010
1987	+1,756	+3,396	+338	-662	-355	-146	-501	222,311	10,290	71,721	69,431	54,090	15,796	211,038
1988	+1,932	-1,547	+1,272	-637	+189	-111	+78	225,392	10,970	69,621	74,042	51,352	18,083	213,098
1989	+2,525	-1,787	-628	-281	+817	+159	+976	224,767	12,039	67,014	75,399	49,113	19,236	211,433
1990	+2,666	+891	+1,049	+108	+1,229	+990	+2,219	226,139	11,252	66,954	77,159	51,187	17,733	213,687
1991	+2,618	-3,402	-851	-273	+947	+448	+1,395	232,330	12,184	67,067	77,137	55,362	19,240	219,505
1992	+2,688	-2,439	+709	-348	+884	-647	+237	230,549	12,890	63,060	77,492	55,080	20,359	216,815
1993	+2,618	+766	-631	+84	+411	+1,597	+2,008	233,964	13,012	54,913	78,126	62,948	23,406	220,564
1994	+2,451	+11,055	+454	+233	+772	-1,668	-87	231,956	13,521	51,272	76,668	64,857	23,087	217,491
1995	+2,602	+5,088	+1,122	+820	+820	-426	+1,752	232,458	13,735	48,924	75,421	69,236	23,116	218,421
1996	+2,813	+2,521	-315	-236	+165	-1,814	+701	243,535	13,547	45,738	77,819	80,984	23,833	229,988
1997	+3,121	-2,389	+320	-354	+462	-1,784	-1,048	239,694	12,879	40,792	75,483	83,534	24,960	226,814
1998	+3,257	+773	-741	-32	+39	-692	-38	243,480	12,737	40,970	75,357	87,316	25,023	230,743
1999	+2,471	-491	+428	+670	-669	+1,190	+715	244,291	12,963	35,993	76,433	92,511	24,166	231,328
2000	+2,208	+3,723	+807	-952	-234	+783	+920	247,090	12,283	38,541	76,720	95,868	21,372	234,807
2001	+2,433	-2,077	-1,333	-57	-196	+486	+569	247,586	10,732	40,778	75,863	95,560	22,121	236,855
2002	+2,044	+564	+1,514	-633	+154	-490	-99	241,149	11,544	37,699	73,480	94,328	21,342	229,605
2003	+1,879	+1,979	+217	+304	-146	-451	-273	244,152	12,285	40,482	73,017	94,636	20,614	231,867
2004	+2,221	-139	-476	-536	-51	-227	-6	246,062	12,429	39,065	75,056	96,640	19,390	233,633
2005	+2,180	-1,503	+1,677	+114	+17	+344	+390	248,435	12,145	39,859	78,217	94,286	19,760	236,290
2006	+2,486	-961	-1,325	-553	-156	-12	-146	244,488	11,415	43,358	77,365	89,392	18,536	233,073
2007	+2,513	+1,926	+2,038	+471	-1	-202	-221	237,221	9,729	40,961	76,310	90,192	15,376	227,492
2008	+3,663	-1,787	+115	-265	+144	+6	+221	234,801	9,163	38,160	74,376	93,174	13,912	225,638
2009	+3,485	-4,195	+959	-419	-50	-63	-284	220,683	8,971	31,196	70,855	86,266	16,724	211,711
2010	+2,956	+4,432	+605	+1,313	+626	+20	+608	228,153	8,762	32,616	70,235	93,596	15,346	219,391
2011	+3,287	+149	+877	-1,945	-23	-314	-374	211,946	8,497	32,247	67,819	77,638	18,015	203,449
2012	+2,812	+2,021	-386	-23	+215	-237	-231	215,407	7,449	40,919	67,000	73,272	18,502	207,958
2013	+2,881r	-880r	+875	+53	+74r	-217r	-157r	214,192r	7,265r	39,137r	65,790r	72,676	19,703r	206,927r
2014	+3,004r	-3,392r	-338r	-205r	+21r	-181r	-374r	201,013r	7,093r	31,612r	65,754r	66,147r	19,218r	193,920r
2015	+2,593	+3,388	-822	+302	+163	60	524	203,001	8,223	25,061	66,651	67,915	21,937	194,778

(8) Stock fall (+), stock rise (-).

(9) Recorded demand minus supply.

(10) Petroleum products for feedstock for petrochemical plants, industrial and white spirits, lubricants bitumen and wax. Also includes miscellaneous petroleum products mainly for inland consumption but excludes small quantities derived from coal. From 1989 also includes estimated quantities of natural gas used for non-energy purposes. Data for non-energy use of natural gas can be found in Chapter 1,Tables 1.1 to 1.3 and Chapter 4, Tables 4.1 and 4.2.

(11) Includes non-energy use of natural gas up to 1988. (See footnote 10).

(12) Includes net imports of electricity.

(13) As of 1994 this total includes the statistical differences for electricity and natural gas.

(14) Equivalent to primary supply as in Chapter 1, Tables 1.1 to 1.3.

1.1.3 Comparison of net imports of fuel with total consumption of primary fuels and equivalents

	Gross inland consumption of primary fuels *(1)* plus marine bunkers (A)	Net imports (+) /net exports (-) of fuels (B)	Import dependency *(2)* (C)	Export ratio *(3)* (D)
	Million tonnes of oil equivalent		Per cent	
1970	229.1	109.7	47.9	-
1971	226.0	118.0	52.2	-
1972	230.4	119.9	52.0	-
1973	241.6	121.9	50.5	-
1974	230.0	120.0	52.2	-
1975	217.3	97.3	44.8	-
1976	221.8	88.6	40.0	-
1977	225.7	58.6	25.9	-
1978	225.9	48.8	21.6	-
1979	235.6	29.8	12.6	-
1980	215.7	13.7	6.4	-
1981	209.9	-12.6	-	6.0
1982	207.3	-23.1	-	11.1
1983	208.4	-37.5	-	18.0
1984	208.4	-23.2	-	11.1
1985	218.4	-34.3	-	15.7
1986	223.6	-37.2	-	16.7
1987	224.1	-35.2	-	15.7
1988	227.3	-20.3	-	8.9
1989	227.3	7.7	3.4	-
1990	228.8	5.1	2.2	-
1991	234.9	11.4	4.9	-
1992	233.2	8.5	3.7	-
1993	236.6	-0.5	-	0.2
1994	234.4	-32.2	-	13.7
1995	235.1	-39.8	-	16.9
1996	246.3	-36.5	-	14.8
1997	242.8	-37.9	-	15.6
1998	246.7	-40.5	-	16.4
1999	246.8	-51.5	-	20.9
2000	249.3	-43.0	-	17.2
2001	250.0	-23.9	-	9.6
2002	243.2	-31.1	-	12.8
2003	246.0	-16.8	-	6.8
2004	248.3	11.1	4.5	-
2005	250.6	33.8	13.5	-
2006	247.0	52.6	21.3	-
2007	239.7	49.3	20.6	-
2008	238.5	62.7	26.3	-
2009	224.2	60.4	27.0	-
2010	231.1	66.2	28.6	-
2011	215.2	78.9	36.7	-
2012	218.2	94.0	43.1	-
2013	217.1r	101.9r	47.0r	-
2014	204.0r	94.3r	46.2r	-
2015	205.6	78.2	38.0	-

(1) Includes non-energy use. Equivalent to primary supply plus marine bunkers.

(2) Import dependency (C) = $\frac{\text{Net imports (B) x 100}}{\text{(A)}}$

(3) Export ratio (D) $= \frac{\text{Net exports (B) x 100}}{\text{(A)}}$

1.1.4 Primary energy consumption, gross domestic product and the energy ratio[(1)]

	Total inland consumption of primary energy (temperature corrected)	Gross domestic product chained volume measure (2013 prices)	Energy ratio *(2)*	
	Million tonnes of oil equivalent *(A)*	£ billion *(B)*	Tonnes of oil equivalent per £1 million GDP *(C)*	Index 1970 = 100
1970	211.9	679.9	311.7	100.0
1971	209.7	703.6	298.1	95.6
1972	212.6	733.8	289.7	93.0
1973	223.1	781.6	285.4	91.6
1974	212.4	762.3	278.6	89.4
1975	206.0	750.9	274.3	88.0
1976	208.9	772.9	270.3	86.7
1977	213.1	791.9	269.1	86.3
1978	213.7	825.1	259.0	83.1
1979	220.0	855.9	257.0	82.5
1980	206.2	838.5	245.9	78.9
1981	198.7	831.9	238.8	76.6
1982	196.3	848.7	231.3	74.2
1983	197.5	884.5	223.3	71.6
1984	196.7	904.6	217.4	69.8
1985	203.1	942.5	215.5	69.1
1986	206.8	972.2	212.7	68.2
1987	210.0	1,024.3	205.0	65.8
1988	217.7	1,083.6	200.9	64.5
1989	217.8	1,111.6	195.9	62.9
1990	221.6	1,119.6	197.9	63.5
1991	221.4	1,107.1	200.0	64.2
1992	220.6	1,111.0	198.6	63.7
1993	222.5	1,138.9	195.4	62.7
1994	221.5	1,183.1	187.2	60.1
1995	223.3	1,212.8	184.1	59.1
1996	226.8	1,243.7	182.4	58.5
1997	228.9	1,282.6	178.5	57.3
1998	236.6	1,323.5	178.8	57.4
1999	238.0	1,367.0	174.1	55.9
2000	240.2	1,418.2	169.3	54.3
2001	239.9	1,456.8	164.7	52.8
2002	236.2	1,491.8	158.3	50.8
2003	235.6	1,543.5	152.7	49.0
2004	238.2	1,582.5	150.5	48.3
2005	240.4	1,629.5	147.5	47.3
2006	236.0	1,670.3	141.3	45.3
2007	233.4	1,713.0	136.2	43.7
2008	226.9	1,702.3	133.3	42.8
2009	212.9	1,628.6	130.7	41.9
2010	213.4	1,659.8	128.6	41.3
2011	209.0	1,684.8	124.1	39.8
2012	207.9	1,706.9	121.8	39.1
2013	204.1r	1,739.6	117.3	37.6
2014	199.2r	1,793.0	111.1	35.6
2015	197.6	1,833.2	107.8	34.6

(1) See paragraphs 1.1.14 to 1.1.16.

(2) Energy ratio (C) = $\frac{(A)}{(B)}$

1.1.5 Energy consumption by final user (energy supplied basis)(1)

Thousand tonnes of oil equivalent

	Industry (2)										
	Coal	Coke and breeze (3)	Other solid fuels(4)	Coke oven gas	Town gas	Natural gas (5)	Electricity	Heat sold	Bioenergy & waste	Petroleum	Total (3)
1970	12,681	9,655	209	1,164	1,778	1,788	6,275	..	..	28,397	**62,333**
1971	10,232	8,298	176	1,118	1,038	5,194	6,313	..	..	28,130	**60,746**
1972	7,675	7,832	252	1,111	1,154	8,136	6,292	..	..	28,674	**61,307**
1973	7,950	8,340	226	1,290	788	10,791	6,884	..	..	28,691	**65,149**
1974	7,290	7,167	201	975	494	12,320	6,517	..	..	24,968	**60,058**
1975	6,373	6,338	199	1,038	222	12,555	6,479	..	..	22,145	**55,444**
1976	5,902	7,129	131	1,091	68	14,237	6,950	..	..	21,966	**57,584**
1977	5,947	6,368	158	1,010	30	14,940	7,053	..	..	21,978	**57,574**
1978	5,627	5,932	179	899	15	15,149	7,222	..	..	21,570	**56,673**
1979	6,081	6,512	148	977	18	15,663	7,527	..	..	21,590	**58,564**
1980	5,083	3,335	133	642	13	15,258	6,854	..	..	16,938	**48,291**
1981	4,534	4,564	116	665	13	14,489	6,622	..	..	14,761	**45,776**
1982	4,668	4,083	144	605	8	14,588	6,353	..	..	13,530	**44,007**
1983	4,708	4,307	126	635	5	14,021	6,376	..	..	11,988	**42,191**
1984	3,796	4,408	68	537	5	14,686	6,758	..	..	10,859	**41,138**
1985	4,708	4,655	151	768	3	14,865	6,837	..	..	9,701	**41,702**
1986(11)	5,242	4,144	98	778	3	13,542	6,884	..	..	10,240	**40,931**
1987	4,048	4,660	80	821	3	14,137	8,005	..	..	8,456	**40,211**
1988	4,166	5,041	55	771	-	12,883	8,350	..	100	9,441	**40,807**
1989	4,489	4,286	30	613	-	12,515	8,550	..	102	8,820	**39,405**
1990	4,172	3,951	42	602	-	12,889	8,655	..	107	8,242	**38,660**
1991	4,270	3,691	14	570	-	12,311	8,563	..	109	8,729	**38,257**
1992	4,375	3,601	14	534	-	11,380	8,194	..	279	8,334	**36,711**
1993	3,553	3,613	7	560	-	11,521	8,328	..	266	8,592	**36,440**
1994	3,402	3,818	194	590	-	12,885	8,082	..	487	8,253	**37,711**
1995	2,840	3,750	184	576	-	12,680	8,654	..	526	7,066	**36,276**
1996	1,959	855	233	439	-	14,081	9,004	..	533	7,058	**34,470**
1997	1,963	787	249	457	-	14,754	9,189	..	532	6,315	**34,577**
1998	1,607	803	243	385	-	15,140	9,216	..	461	6,379	**34,512**
1999	1,353	820	215	205	-	15,203	9,542	1,086	283	5,374	**34,222**
2000	1,228	753	225	216	-	15,773	9,812	1,099	264	6,039	**35,506**
2001	1,195	719	210	154	-	15,464	9,573	1,001	243	6,611	**35,443**
2002	1,186	610	170	78	-	14,202	9,473	1,321	250	6,248	**33,764**
2003	1,248	589	166	53	-	14,292	9,396	1,128	267	6,899	**34,074**
2004	1,235	559	180	67	-	13,238	9,584	832	265	6,918	**32,912**
2005	1,180	535	171	79	-	13,022	9,976	831	201	6,282	**32,303**
2006	1,164	488	178	106	-	12,428	9,879	809	213	6,099	**31,442**
2007	1,268	513	177	101	-	11,466	9,699	896	276	6,095	**30,540**
2008	1,296	443	174	92	-	9,863	9,815	1,021	414	5,895	**29,053**
2009	1,152	387	20	49	-	7,847	8,576	763	415	5,152	**24,389**
2010	1,311	339	17	97	-	8,506	8,987	822	449	5,482	**26,098**
2011	1,194	306	17	59	-	8,127	8,801	769	506	4,500	**24,344**
2012	1,212	375	17	43	-	7,870	8,442	766	459	4,669	**23,879**
2013	1,430r	504	15	62	-	8,075r	8,333r	736r	636r	4,056r	**23,860r**
2014	1,603r	483	14r	55r	-	8,026r	7,976r	713r	776r	4,059r	**23,718r**
2015	1,342	395	-	50	-	8,123	7,940	695	1,102	3,935	**23,594**

(1) Excluding non-energy use of fuels.
(2) Includes the iron and steel industry, but from 1994 onwards excludes iron and steel use of fuels for transformation and energy industry own use purposes.
(3) Blast furnace gas is included in coke and breeze up to 1995 and covers electricity transformation, use by ovens and losses. From 1996 onwards, blast furnace gas is included in the total and covers just coke ovens and losses, which is consistent with the methodology used for compiling the energy balances.
(4) Includes, from 1994, manufactured liquid fuels.
(5) Includes colliery methane. Up to 1988 also includes non-energy use of natural gas.

1.1.5 Energy consumption by final user (energy supplied basis)[1] (continued)

Thousand tonnes of oil equivalent

	Transport											
	Rail				Road				Water		Air	
	Coal	Coke and breeze	Electricity (6)	Petroleum	Electricity	Petroleum	Bioenergy & waste	Coal derived fuel	Coal	Petroleum	Petroleum	Total (7)
1970	88	35	234	1,254	3	21,406	..	15	88	1,184	3,869	**28,174**
1971	68	13	237	1,186	-	22,412	..	-	63	1,081	4,247	**29,306**
1972	53	5	229	1,121	-	23,535	..	-	23	962	4,514	**30,442**
1973	58	-	224	1,123	-	25,125	..	-	10	1,088	4,806	**32,435**
1974	50	-	234	1,048	-	24,465	..	-	10	1,239	4,219	**31,266**
1975	40	-	249	1,000	-	23,948	..	-	8	1,300	4,340	**30,885**
1976	43	3	247	945	-	24,994	..	-	8	1,317	4,476	**32,032**
1977	40	3	252	950	-	25,633	..	-	8	1,312	4,678	**32,875**
1978	45	3	254	967	-	26,946	..	-	5	1,300	5,051	**34,571**
1979	43	3	254	947	-	27,520	..	-	5	1,363	5,224	**35,359**
1980	38	3	262	919	-	27,815	..	-	5	1,257	5,242	**35,541**
1981	38	-	259	877	-	27,009	..	-	-	1,101	5,020	**34,304**
1982	35	-	229	793	-	27,797	..	-	3	1,186	4,993	**35,037**
1983	15	-	247	849	-	28,646	..	-	3	1,207	5,093	**36,059**
1984	3	-	247	816	-	30,006	..	-	-	1,328	5,383	**37,782**
1985	3	-	254	821	-	30,586	..	-	-	1,254	5,582	**38,500**
1986*(11)*	3	-	259	809	-	32,606	..	-	-	1,151	6,126	**40,954**
1987	3	-	264	761	-	34,062	..	-	-	1,103	6,479	**42,672**
1988	-	-	282	766	-	36,233	..	-	-	1,159	6,905	**45,345**
1989	3	-	272	702	-	37,801	..	-	-	1,355	7,308	**47,442**
1990	2	-	455	668	-	38,816	..	-	-	1,363	7,332	**48,635**
1991	-	-	454	685	-	38,535	..	-	-	1,424	6,872	**47,973**
1992	-	-	461	715	-	39,363	..	-	-	1,377	7,435	**49,355**
1993	-	-	641	665	-	39,502	..	-	-	1,341	7,871	**50,024**
1994	-	-	599	651	-	39,690	..	-	-	1,239	8,070	**50,253**
1995	-	-	636	654	-	39,268	..	-	-	1,193	8,485	**50,238**
1996	-	-	710	629	-	40,772	..	-	-	1,294	8,917	**52,321**
1997	-	-	729	516	-	41,259	..	-	-	1,256	9,322	**53,083**
1998	-	-	732	608	-	41,020	..	-	-	1,175	10,237	**53,772**
1999	-	-	738	632	-	41,399	..	-	-	1,067	11,017	**54,853**
2000	-	-	741	639		41,071	..	-	-	1,032	11,978	**55,461**
2001	-	-	759	664		41,097	..	-	-	844	11,774	**55,137**
2002	-	-	727	662		41,936	..	-	-	702	11,658	**55,685**
2003	-	-	706	667		41,823	..	-	-	1,234	11,936	**56,366**
2004	-	-	347	700	2	42,221	..	-	-	1,196	12,908	**57,374**
2005	3	-	347	634	2	42,507	74	-	-	1,370	13,856	**58,793**
2006	14	-	342	632	2	42,513	188	-	-	1,812	13,999	**59,501**
2007	14	-	339	646	2	42,884	362	-	-	1,618	13,906	**59,771**
2008	14	-	338	658	2	41,098	845	-	-	1,014	13,426	**57,407**
2009	13	-	347	656	2	39,635	1,038	-	-	951	12,751	**55,408**
2010	14	-	364	660	2	39,159	1,217	-	-	948	12,288	**54,651**
2011	11	-	364	651	2	38,646	1,128	-	-	894	12,802	**54,497**
2012	12	-	364	673	2	38,508	958	-	-	833	12,408	**53,758**
2013	10	-	371r	667r	3	38,177	1,092r	-	-	736r	12,434	**53,490r**
2014	9	-	381r	676r	6	38,713	1,243r	-	-	679r	12,419	**54,126r**
2015	9	-	377	663	8	39,510	1,003	-	-	667	12,573	**54,810**

(6) Includes, from 1990, electricity used at transport premises (see footnote 11).
(7) Includes small amounts of natural gas for road transport.

1.1.5 Energy consumption by final user (energy supplied basis)[1] (continued)

Thousand tonnes of oil equivalent

	Domestic								
	Coal	Coke and breeze	Other solid fuels	Natural gas *(8)*	Electricity	Heat sold	Bioenergy & waste	Petroleum	Total *(4)*
1970	14,242	1,761	1,975	8,922	6,622	..	..	3,363	**36,884**
1971	12,164	1,136	2,156	9,900	6,937	..	..	3,328	**35,621**
1972	10,602	849	2,144	11,359	7,471	..	..	3,836	**36,261**
1973	10,565	778	2,053	12,129	7,849	..	..	4,202	**37,576**
1974	9,968	821	1,955	13,562	7,963	..	..	3,733	**38,002**
1975	8,517	645	1,778	14,840	7,670	..	..	3,612	**37,062**
1976	7,910	549	1,640	15,602	7,318	..	..	3,615	**36,634**
1977	8,136	534	1,589	16,600	7,386	..	..	3,653	**37,898**
1978	7,476	471	1,464	18,291	7,378	..	..	3,610	**38,689**
1979	7,688	479	1,431	20,718	7,711	..	..	3,539	**41,566**
1980	6,575	401	1,370	21,258	7,403	..	..	2,834	**39,841**
1981	6,214	368	1,202	22,076	7,260	..	..	2,554	**39,674**
1982	6,242	365	1,146	21,963	7,116	..	..	2,385	**39,218**
1983	5,796	335	1,141	22,346	7,129	..	..	2,267	**39,014**
1984	4,733	335	728	22,502	7,212	..	..	2,385	**37,896**
1985	6,290	385	957	24,394	7,582	..	..	2,454	**42,062**
1986*(11)*	6,121	335	965	25,797	7,892	..	..	2,590	**43,700**
1987	5,189	315	1,018	26,450	8,015	..	..	2,474	**43,460**
1988	4,741	300	907	25,833	7,940	..	205	2,441	**42,367**
1989	3,719	239	815	24,988	7,935	..	207	2,355	**40,258**
1990	3,153	254	762	25,835	8,066	..	206	2,480	**40,756**
1991	3,582	210	785	28,721	8,436	..	209	2,825	**44,768**
1992	3,105	176	709	28,389	8,555	..	243	2,889	**44,066**
1993	3,498	147	751	29,254	8,639	..	241	3,019	**45,549**
1994	2,957	67	601	28,355	8,721	..	242	3,004	**43,947**
1995	2,077	78	470	28,037	8,790	..	242	2,997	**42,691**
1996	2,084	129	588	32,317	9,244	..	241	3,518	**48,120**
1997	1,992	59	419	29,710	8,982	..	225	3,389	**44,775**
1998	1,819	85	439	30,601	9,408	..	230	3,543	**46,126**
1999	1,916	86	410	30,788	9,485	44	230	3,162	**46,121**
2000	1,448	95	365	31,806	9,617	44	236	3,239	**46,851**
2001	1,461	48	328	32,625	9,917	32	240	3,527	**48,178**
2002	1,009	127	289	32,362	10,319	33	243	3,087	**47,471**
2003	813	92	255	33,232	10,576	11	247	3,068	**48,293**
2004	733	36	230	34,085	10,679	52	252	3,265	**49,333**
2005	474	24	199	32,836	10,809	52	318	3,094	**47,805**
2006	426	16	200	31,550	10,723	52	358	3,251	**46,575**
2007	487	11	182	30,341	10,583	52	400	2,877	**44,932**
2008	515	9	229	30,916	10,301	52	943	3,033	**45,998**
2009	514	7	192	29,622	10,193	52	1,032	3,013	**44,625**
2010	537	7	221	33,499	10,218	52	1,332	3,428	**49,294**
2011	530	6	192	25,228	9,595	52	1,185	2,669	**39,457**
2012	506	5	180	29,672	9,860	52	1,495	2,707	**44,476**
2013	484	4	216	29,536r	9,755r	52	1,909r	2,845r	**44,801r**
2014	413r	4	178	23,912	9,314r	52	1,829r	2,529r	**38,232r**
2015	417	2	165	25,143	9,300	52	2,088	2,455	**39,623**

(8) Includes town gas prior to 1989. (Separate figures maybe found in previous editions of this Digest).

1.1.5 Energy consumption by final user (energy supplied basis)[1] (continued)

Thousand tonnes of oil equivalent

	Other final users (9)							
	Coal	Coke and breeze	Natural gas *(8)*	Electricity	Heat sold	Bioenergy & waste	Petroleum	Total *(4)*
1970	2,723	1,499	1,919	3,408	..	..	9,038	**18,586**
1971	2,328	688	2,181	3,534	..	..	9,184	**17,915**
1972	2,013	537	2,509	3,650	..	..	9,487	**18,195**
1973	1,731	602	2,728	3,940	..	..	9,585	**18,586**
1974	1,685	567	3,197	3,642	..	..	8,401	**17,492**
1975	1,234	408	3,393	3,894	..	..	8,431	**17,360**
1976	1,300	335	3,831	4,023	..	..	8,668	**18,157**
1977	1,370	315	3,998	4,257	..	..	9,157	**19,097**
1978	1,300	275	4,393	4,481	..	..	8,764	**19,213**
1979	1,307	285	4,955	4,731	..	..	8,754	**20,031**
1980	1,154	237	5,194	4,733	..	..	7,403	**18,721**
1981	1,174	204	5,315	4,804	..	..	7,096	**18,592**
1982	1,222	212	5,486	4,867	..	..	6,678	**18,464**
1983	1,166	257	5,915	5,106	..	..	6,403	**18,847**
1984	1,141	252	6,101	5,063	..	..	6,381	**18,938**
1985	1,123	297	6,718	5,446	..	..	6,018	**19,603**
1986*(11)*	982	390	7,308	5,731	..	..	5,723	**20,135**
1987	935	368	7,534	5,965	..	..	4,988	**19,790**
1988	831	264	7,569	6,240	..	138	5,008	**20,050**
1989	698	119	7,278	6,497	..	138	4,345	**19,075**
1990	795	127	7,329	6,426	..	139	4,402	**19,218**
1991	753	105	8,640	6,717	..	149	4,456	**20,820**
1992	622	88	8,585	6,996	..	150	4,518	**20,959**
1993	566	74	8,504	6,999	..	146	4,446	**20,735**
1994	496	34	8,695	6,951	..	172	4,289	**20,637**
1995	362	39	9,374	7,199	..	189	4,016	**21,179**
1996	385	-	10,138	7,495	..	181	3,909	**22,108**
1997	375	-	9,697	7,859	..	174	3,362	**21,467**
1998	291	-	10,114	7,788	..	174	3,144	**21,511**
1999	189	-	9,156	7,986	1,368	174	2,464	**21,338**
2000	57	-	9,498	8,155	1,371	172	2,294	**21,547**
2001	47	-	9,726	8,359	1,294	173	2,568	**22,167**
2002	14	-	8,670	8,148	730	188	1,805	**19,556**
2003	17	-	9,177	8,231	648	196	1,145	**19,414**
2004	19	-	9,757	8,532	373	198	1,438	**20,317**
2005	38	-	9,526	8,846	386	205	1,773	**20,774**
2006	24	-	8,655	8,738	384	192	1,530	**19,523**
2007	19	-	8,154	8,755	390	198	1,501	**19,016**
2008	21	-	11,017	8,921	393	229	1,411	**21,992**
2009	53	-	9,157	8,534	392	231	1,251	**19,618**
2010	28	-	9,881	8,703	392	315	1,258	**20,577**
2011	28	-	9,449	8,566	385	283	1,360	**20,071**
2012	17	-	9,587	8,672	408	294	1,340	**20,317**
2013	24	-	9,922r	8,729r	399r	407r	1,305r	**20,786r**
2014	25r	-	8,287r	8,364r	396r	465r	1,526r	**19,063r**
2015	13	-	8,441	8,406	406	494	1,643	**19,403**

(9) Mainly agriculture, public administration and commerce. Prior to 1990, including electricity used at transport premises (see footnote 6).

1.1.5 Energy consumption by final user (energy supplied basis)[1] (continued)

Thousand tonnes of oil equivalent

All final users

	Coal	Coke and breeze	Other solid fuels *(4)*	Coke oven gas	Town gas	Natural gas *(4)*	Electri-city	Heat sold	Bioenergy & waste	Petroleum	Total *(3)(10)*
1970	29,822	12,950	2,184	1,164	10,746	3,662	16,542	..	..	68,511	**145,977**
1971	24,855	10,134	2,333	1,118	8,882	9,431	17,021	..	..	69,568	**143,589**
1972	20,366	9,222	2,396	1,111	8,094	15,063	17,643	..	..	72,129	**146,205**
1973	20,313	9,721	2,280	1,290	5,852	20,584	18,898	..	..	74,620	**153,744**
1974	19,003	8,555	2,156	975	3,836	25,736	18,356	..	..	68,072	**146,818**
1975	16,172	7,391	1,977	1,038	1,796	29,212	18,293	..	..	64,776	**140,751**
1976	15,162	8,016	1,771	1,091	534	33,204	18,537	..	..	65,981	**144,407**
1977	15,502	7,220	1,748	1,010	174	35,393	18,948	..	..	67,361	**147,444**
1978	14,454	6,681	1,642	899	81	37,766	19,336	..	..	68,208	**149,146**
1979	15,124	7,279	1,579	977	91	42,262	20,223	..	..	68,937	**155,521**
1980	12,854	3,975	1,504	642	76	41,647	19,252	..	..	62,408	**142,394**
1981	11,960	5,136	1,317	665	65	41,828	18,945	..	..	58,420	**138,346**
1982	12,169	4,660	1,290	605	55	41,990	18,567	..	..	57,360	**136,726**
1983	11,688	4,899	1,267	635	45	42,242	18,856	..	..	56,453	**136,111**
1984	9,673	4,995	796	537	43	43,251	19,280	..	..	57,158	**135,753**
1985	12,124	5,338	1,108	768	40	45,940	20,118	..	..	56,416	**141,867**
1986*(11)*	12,348	4,869	1,063	778	28	46,622	20,763	..	..	59,245	**145,719**
1987	10,174	5,343	1,098	821	28	48,096	22,252	..	..	58,325	**146,132**
1988	9,738	5,605	962	771	8	46,277	22,811	..	443	61,952	**148,569**
1989	8,909	4,645	845	613	-	44,780	23,254	..	447	62,685	**146,180**
1990	8,122	4,333	804	602	-	46,052	23,601	..	451	63,302	**147,268**
1991	8,605	4,006	799	570	-	49,676	24,170	..	467	63,525	**151,818**
1992	8,101	3,866	723	534	-	48,357	24,206	..	672	64,632	**151,091**
1993	7,617	3,833	758	560	-	49,282	24,607	..	652	65,437	**152,747**
1994	6,855	3,919	795	590	-	49,935	24,353	..	901	65,196	**152,548**
1995	5,279	3,867	654	576	-	50,091	25,279	..	956	63,679	**150,384**
1996	4,429	984	821	439	-	56,536	26,453	..	954	66,096	**157,019**
1997	4,331	846	667	457	-	54,162	26,759	..	930	65,418	**153,902**
1998	3,716	889	682	385	-	55,856	27,143	..	865	66,107	**155,921**
1999	3,458	906	625	205	-	55,148	27,751	2,498	688	65,116	**156,534**
2000	2,733	848	590	216	-	57,077	28,325	2,515	672	66,293	**159,365**
2001	2,704	766	539	154	-	57,814	28,609	2,327	656	67,084	**160,926**
2002	2,209	737	459	78	-	55,234	28,667	2,084	682	66,099	**156,476**
2003	2,078	680	420	53	-	56,701	28,910	1,787	710	66,772	**158,147**
2004	1,988	595	411	67	-	57,080	29,144	1,258	715	68,647	**159,936**
2005	1,695	559	370	79	-	55,384	29,981	1,268	798	69,516	**159,676**
2006	1,627	504	378	106	-	52,633	29,684	1,245	952	69,836	**157,042**
2007	1,788	524	359	101	-	49,961	29,377	1,338	1,235	69,528	**154,259**
2008	1,845	452	403	92	-	51,796	29,391	1,465	2,430	66,535	**154,450**
2009	1,733	395	212	49	-	46,626	27,665	1,206	2,716	63,409	**144,039**
2010	1,889	346	238	97	-	51,886	28,274	1,266	3,314	63,223	**150,620**
2011	1,763	312	209	59	-	42,804	27,328	1,206	3,102	61,522	**138,370**
2012	1,747	380	197	43	-	47,128	27,340	1,226	3,206	61,138	**142,430**
2013	1,948r	509	231	62	-	47,533r	27,191r	1,187r	4,044r	60,220r	**142,937r**
2014	2,051r	487	192	55r	-	40,226r	26,042r	1,160r	4,312r	60,601r	**135,139r**
2015	1,782	397	165	50	-	41,707	26,031	1,152	4,688	61,445	**137,430**

(10) Before 1971 includes the use for transport of liquid fuel made from coal.

(11) See paragraph 1.1.18 about changed treatment of electricity produced, and fuel used by, companies other than major power producers.

1.1.6 Expenditure on energy by final user, (1)

£million

	Industry						Domestic					
	Coal and solid fuels (3)	Natural gas (4)	Electricity	Petroleum products (5)	Heat and other fuels (6)	**Total**	Coal and solid fuels (3)	Natural gas (4)	Electricity	Petroleum products (5)	Heat and other fuels (6)	**Total**
1970	285	70	475	300		**1,130**	395	385	645	85		**1,510**
1971	285	85	530	350		**1,250**	385	430	730	90		**1,635**
1972	280	120	540	345		**1,285**	360	505	830	110		**1,805**
1973	320	150	595	390		**1,455**	370	535	885	140		**1,930**
1974	410	195	775	880		**2,260**	405	605	1,070	200		**2,280**
1975	545	240	1,015	920		**2,720**	440	760	1,495	235		**2,930**
1976	720	380	1,260	1,065		**3,425**	500	1,000	1,825	295		**3,620**
1977	780	535	1,470	1,305		**4,090**	595	1,205	2,135	360		**4,295**
1978	800	695	1,670	1,255		**4,420**	620	1,365	2,380	370		**4,735**
1979	1,010	820	1,925	1,570		**5,325**	770	1,575	2,675	475		**5,495**
1980	675	1,060	2,185	1,815		**5,735**	920	1,875	3,310	510		**6,615**
1981	850	1,215	2,420	1,890		**6,375**	960	2,460	3,905	560		**7,885**
1982	860	1,335	2,560	1,870		**6,625**	995	3,070	4,200	610		**8,875**
1983	900	1,375	2,655	1,800		**6,730**	1,015	3,520	4,300	645		**9,480**
1984	845	1,555	2,695	1,810		**6,905**	830	3,655	4,495	640		**9,620**
1985	990	1,735	2,750	1,740		**7,215**	1,120	4,090	4,840	665		**10,715**
1986	1,000	1,350	2,765	1,065		**6,180**	1,135	4,385	5,105	460		**11,085**
1987	865	1,375	3,285	865		**6,390**	990	4,465	5,140	410		**11,005**
1988	880	1,225	3,590	785		**6,480**	830	4,385	5,340	365		**10,920**
1989	905	1,210	3,965	845		**6,925**	730	4,455	5,800	390		**11,375**
1990	930	1,260	3,985	900		**7,075**	700	4,865	6,255	485		**12,305**
1991	910	1,115	4,120	905		**7,050**	795	5,775	7,105	460		**14,135**
1992	775	970	4,180	790		**6,715**	710	5,685	7,460	460		**14,315**
1993	740	915	3,940	895		**6,490**	780	5,705	7,590	465		**14,540**
1994	650	1,010	3,855	865		**6,380**	685	6,020	7,870	455		**15,030**
1995	605	1,015	3,970	830		**6,420**	615	6,010	8,060	470		**15,155**
1996	590	755	3,900	965		**6,210**	640	6,510	8,380	630		**16,165**
1997	565	870	3,625	890		**5,950**	560	6,125	7,965	560		**15,210**
1998	545	990	3,535	715	40	**5,825**	525	6,015	7,595	465	30	**14,630**
1999	430	970	3,730	735	215	**6,080**	540	5,610	7,600	465	40	**14,255**
2000	430	1,115	3,435	1,145	205	**6,330**	465	5,485	7,475	735	40	**14,200**
2001	445	1,470	3,145	1,235	190	**6,485**	535	5,735	7,540	715	35	**14,560**
2002	365	1,280	2,995	1,065	265	**5,970**	465	6,090	7,510	645	35	**14,745**
2003	380	1,345	2,925	1,240	220	**6,110**	320	6,260	7,660	730	30	**15,000**
2004	525	1,480	3,255	1,485	90	**6,835**	285	6,900	8,895	805	40	**16,925**
2005	805	2,170	5,060	1,760	230	**10,025**	215	8,215	9,665	1,050	50	**19,195**
2006	975	2,695	6,775	2,060	305	**12,810**	210	10,100	11,340	1,260	60	**22,970**
2007	875	2,035	6,970	2,155	330	**12,365**	230	9,950	12,540	1,150	65	**23,935**
2008	1,425	2,510	7,225	2,670	425	**14,255**	300	12,070	14,245	1,695	65	**28,375**
2009	1,335	1,795	6,775	1,970	375	**12,250**	350	12,605	14,535	1,245	75	**28,810**
2010	1,355	1,780	6,335	2,415	395	**12,280**	385	14,275	14,085	1,730	365	**30,840**
2011	1,540	2,060	6,545	2,575	410	**13,130**	345	12,325	14,555	1,690	325	**29,240**
2012	1,300	2,180	6,755	2,705	395	**13,330**	340	15,720	15,690	1,740	755	**34,250**
2013	1,230	2,465	7,130	2,410	390	**13,625**	360	16,570	16,600	1,775	705	**36,005**
2014	1,035	2,165	6,800	2,195	320	**12,515**	310	14,290	16,800	1,410	660	**33,470**
2015	780	1,885	6,825	1,615	300	**11,410**	300	14,295	16,725	975	720	**33,015**

(1) All data is to the nearest £5 million. VAT is only included where not refundable. Methodology used to calculate the series has changed over the years, as such the data provides a guide to changing patterns of expenditure on energy, but not too much significance should be drawn from small changes.

(2) Includes commercial, public administration, agriculture and all fuels used for transport purposes.

(3) Includes coal, coke, breeze and other manufactured solid fuel. Prior to 1996, an estimate of the value of coke produced in coke ovens owned by the iron and steel industry was included, this has now been replaced by an estimate of the value of coal purchased for such ovens, which is the actual monetary trade.

(4) Includes town gas.

(5) Includes heating oils, LPG etc. Excludes motor transport fuels.

(6) Includes other fuels not listed eg coke oven gas, heat, biofuels etc. Heat data not available before 1999, and other fuels data not available before 1998.

1.1.6 Expenditure on energy by final user, (1) (continued)

£million

Other final users (2)							All final users						
Coal and solid fuels (3)	Natural gas (4)	Electricity	Petroleum prod-ucts	Of which road transport	Heat and other fuels (6)	**Total**	Coal and solid fuels (3)	Natural gas (4)	Electricity	Petroleum prod-ucts	Heat and other fuels (6)	**Total**	
60	70	390	1,910	1,720		**2,430**	740	525	1,510	2,295		**5,070**	1970
45	80	435	2,105	1,885		**2,665**	715	595	1,695	2,545		**5,550**	1971
45	80	480	2,305	2,070		**2,910**	685	705	1,850	2,760		**6,000**	1972
45	90	515	2,580	2,305		**3,230**	735	775	1,995	3,110		**6,615**	1973
60	105	590	3,885	3,150		**4,640**	875	905	2,435	4,965		**9,180**	1974
70	140	835	4,685	3,845		**5,730**	1,055	1,140	3,345	5,840		**11,380**	1975
90	200	1,030	5,305	4,325		**6,625**	1,310	1,580	4,115	6,665		**13,670**	1976
115	255	1,200	6,030	4,835		**7,600**	1,490	1,995	4,805	7,695		**15,985**	1977
115	310	1,375	6,075	4,890		**7,875**	1,535	2,370	5,425	7,700		**17,030**	1978
130	385	1,655	8,265	6,660		**10,435**	1,910	2,780	6,255	10,310		**21,255**	1979
115	520	1,985	10,735	8,650		**13,355**	1,710	3,455	7,480	13,060		**25,705**	1980
110	585	2,460	12,345	10,060		**15,500**	1,920	4,260	8,785	14,795		**29,760**	1981
135	655	2,690	13,470	10,950		**16,950**	1,990	5,060	9,450	15,950		**32,450**	1982
135	745	2,855	14,965	12,240		**18,700**	2,050	5,640	9,810	17,410		**34,910**	1983
135	795	2,980	16,140	13,250		**20,050**	1,810	6,005	10,170	18,590		**36,575**	1984
155	920	3,265	17,640	14,615		**21,980**	2,265	6,745	10,855	20,045		**39,910**	1985
140	1,045	3,485	15,845	13,745		**20,515**	2,275	6,780	11,355	17,370		**37,780**	1986
125	1,035	3,490	16,630	14,525		**21,280**	1,980	6,870	11,915	17,905		**38,670**	1987
95	1,025	3,810	16,855	14,960		**21,785**	1,805	6,635	12,740	18,005		**39,185**	1988
95	1,015	4,185	18,755	16,690		**24,050**	1,730	6,680	13,950	19,980		**42,340**	1989
105	1,085	4,465	21,120	19,020		**26,775**	1,735	7,210	14,705	22,505		**46,155**	1990
85	1,310	4,960	21,900	19,995		**28,255**	1,790	8,200	16,185	23,265		**49,440**	1991
95	1,245	5,495	22,455	20,825		**29,290**	1,580	7,900	17,135	23,705		**50,320**	1992
70	1,155	5,555	24,365	22,540		**31,145**	1,590	7,775	17,115	25,725		**52,205**	1993
50	1,125	5,380	25,190	23,515		**31,745**	1,385	8,155	17,140	26,510		**53,190**	1994
35	1,110	5,300	25,895	24,140		**32,340**	1,255	8,135	17,330	27,195		**53,915**	1995
30	975	5,405	28,240	26,145		**34,650**	1,260	8,240	17,685	29,835		**57,020**	1996
35	855	5,420	30,645	28,685		**36,955**	1,165	7,850	17,010	32,095		**58,120**	1997
25	885	5,200	31,375	29,810	-	**37,485**	1,095	7,885	16,335	32,555	70	**57,940**	1998
10	780	4,990	38,435	36,680	235	**44,450**	980	7,355	16,330	39,640	490	**64,795**	1999
5	850	4,950	38,860	35,635	235	**44,900**	890	7,445	15,860	40,740	485	**65,425**	2000
5	1,110	4,330	37,195	34,320	225	**42,865**	985	8,310	15,020	39,145	445	**63,905**	2001
-	1,020	4,050	36,355	34,020	140	**41,565**	830	8,395	14,550	38,065	440	**62,280**	2002
5	1,120	3,830	38,160	35,055	125	**43,240**	695	8,720	14,415	40,135	375	**64,345**	2003
5	1,320	4,355	46,560	42,975	70	**52,310**	815	9,705	16,505	48,850	195	**76,070**	2004
5	1,755	5,405	49,530	44,620	200	**56,895**	1,025	12,145	20,135	52,345	475	**86,125**	2005
-	2,165	6,715	53,040	47,150	375	**62,295**	1,185	14,955	24,835	56,355	740	**98,070**	2006
-	2,040	7,050	54,625	48,810	605	**64,320**	1,110	14,020	26,565	57,930	1,000	**100,625**	2007
-	3,150	9,215	61,025	51,765	1,410	**74,800**	1,725	17,730	30,690	65,385	1,900	**117,430**	2008
-	2,730	10,020	51,205	45,505	1,580	**65,535**	1,690	17,135	31,330	54,420	2,025	**106,600**	2009
-	2,610	9,750	58,895	51,410	2,180	**73,435**	1,740	18,660	30,165	63,035	2,940	**116,540**	2010
15	2,760	9,755	67,410	57,815	2,365	**82,305**	1,900	17,150	30,855	71,675	3,100	**124,680**	2011
10	2,995	10,360	68,155	58,695	2,160	**83,675**	1,645	20,895	32,805	72,600	3,310	**131,255**	2012
10	3,345	10,920	66,930	57,810	2,370	**83,575**	1,600	22,380	34,650	71,115	3,465	**133,205**	2013
10	2,780	10,555	64,005	55,635	2,470	**79,825**	1,355	19,235	34,160	67,610	3,450	**125,810**	2014
5	2,565	10,865	53,805	48,125	2,145	**69,390**	1,090	18,745	34,415	56,395	3,165	**113,810**	2015

1.1.7 Mean air temperatures (deviations) [(1)(2)] Great Britain

Degrees Celsius

	Average 1981-2010 *(4)*	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Calendar year	9.9	+0.5	+0.2	+0.8	+0.7	+0.6	+0.6	+0.8	+0.6	+0.0	+0.2	-1.0	+0.8	-0.2	-0.2	+1.0	+0.4
First half year	8.3	+0.7	-0.2	+1.1	+0.9	+0.8	+0.7	+0.0	+1.4	+0.5	+0.2	-0.7	+0.9	+0.2	-1.2	+1.2	-0.0
Second half year	11.6	+0.3	+0.6	+0.5	+0.5	+0.5	+0.5	+1.6	-0.2	-0.5	+0.1	-1.2	+0.7	-0.5	+0.9	+0.8	+0.8
First quarter	5.2	+1.2	-0.5	+1.7	+0.5	+0.7	+0.8	-0.7	+1.5	+0.7	-0.4	-1.8	+0.4	+0.9	-1.8	+1.3	-0.1
Second quarter	11.3	+0.2	+0.1	+0.6	+1.3	+1.0	+0.5	+0.7	+1.3	+0.4	+0.8	+0.3	+1.3	-0.5	-0.7	+1.2	+0.0
Third quarter	15.6	+0.4	+0.3	+0.2	+1.1	+0.4	+0.3	+1.7	-0.7	-0.2	+0.1	-0.1	-0.3	-0.5	+0.8	+0.3	-0.8
Fourth quarter	7.5	+0.3	+1.0	+0.8	-0.1	+0.6	+0.6	+1.6	+0.3	-0.7	+0.1	-2.4	+1.7	-0.5	+0.9	+1.2	+2.4
Summer *(3)*	13.4	+0.3	+0.2	+0.4	+1.2	+0.7	+0.4	+1.2	+0.3	+0.1	+0.5	+0.1	+0.5	-0.5	+0.1	+0.8	-0.4
Winter *(3)*	6.4	-0.1	+1.4	+0.7	+0.3	+0.7	-0.1	+1.5	+0.5	-0.5	-0.8	-1.0	+1.3	-1.2	+1.1	+0.6	+1.4
January	4.6	+0.9	-0.7	+1.5	+0.3	+0.9	+1.8	-0.1	+2.3	+1.8	-1.3	-3.1	-0.7	+0.9	-0.7	+1.1	+0.2
February	4.6	+1.8	+0.2	+2.6	-0.2	+0.9	-0.1	-0.5	+1.4	+0.7	-0.3	-1.9	+1.7	-0.3	-1.3	+1.6	-0.4
March	6.5	+1.1	-1.0	+1.2	+1.3	+0.2	+0.8	-1.5	+0.6	-0.4	+0.5	-0.4	+0.3	+2.0	-3.5	+1.1	-0.1
April	8.4	-0.5	-0.6	+1.0	+1.5	+1.2	+0.4	+0.1	+2.8	-0.5	+1.3	+0.5	+3.3	-1.1	-1.0	+1.7	+0.7
May	11.4	+0.6	+1.0	+0.5	+0.7	+0.7	-0.2	+0.4	+0.5	+1.6	+0.5	-0.6	+0.8	+0.2	-0.9	+0.8	-0.5
June	14.1	+0.6	-0.1	+0.2	+1.8	+1.2	+1.3	+1.7	+0.8	-0.1	+0.7	+1.2	-0.1	-0.5	-0.1	+1.1	-0.1
July	16.4	-1.2	+0.3	-0.5	+1.0	-0.7	+0.2	+2.8	-1.2	-0.2	-0.3	+0.6	-1.1	-1.0	+1.8	+1.2	-0.7
August	16.2	+0.5	+0.5	+0.7	+1.8	+1.1	-0.1	-0.1	-0.7	-0.0	+0.3	-0.9	-0.8	+0.4	+0.7	-1.0	-0.3
September	14.0	+1.9	+0.1	+0.5	+0.4	+0.8	+1.0	+2.4	-0.1	-0.5	+0.2	-0.0	+1.1	-0.8	-0.1	+0.9	-1.2
October	10.6	-0.1	+3.0	-0.3	-1.6	-0.0	+2.4	+2.2	+0.4	-0.8	+0.9	-0.2	+1.8	-1.1	+1.9	+1.7	+0.3
November	7.3	-0.1	+0.7	+1.5	+1.1	+0.7	-0.9	+0.8	+0.3	-0.3	+1.2	-1.9	+2.3	-0.6	-0.9	+1.2	+2.2
December	4.7	+1.1	-0.6	+1.2	+0.3	+1.0	+0.1	+1.6	+0.3	-1.0	-1.7	-5.0	+1.2	+0.1	+1.7	+0.7	+4.8

(1) Latest monthly figures available at:
https://www.gov.uk/government/statistics/energy-trends-section-7-weather
(2) Average mean air temperatures calculated from the maximum and minimum daily temperature as recorded at 17 meteorological stations, selected as representative of fuel consumption in Great Britain, 2 in Scotland, 2 in Wales and 13 in England, 4 of which are counted twice. Data on temperatures recorded are provided by the Meteorological Office.
(3) The summer period is from April to September inclusive, and the winter period is the six months beginning in October and ending with March of the following year.
(4) Long term mean changed from 1971-2000 to 1981-2010 with effect from June 2013; see article in the March 2013 edition of Energy Trends at:
https://www.gov.uk/government/publications/energy-trends-march-2013-special-feature-articles-long-term-mean-temperatures-1981-2010

1.1.8 Mean heating degree days [(1)(2)(3)], Great Britain

	January	February	March	April	May	June	July	August	September	October	November	December	Total heating degrees days temperature	Year
Long-term mean (1981-2010)	10.9	10.9	9.0	7.1	4.2	2.0	0.7	0.8	2.1	5.0	8.3	10.8	2,175.8	6.0
2002	9.5	8.3	7.8	6.1	3.6	1.4	0.6	0.1	1.2	5.2	6.7	9.5	1,823.3	5.0
2003	10.6	11.1	7.7	5.6	3.6	0.3	0.0	0.3	1.5	6.1	7.1	10.5	1,948.8	5.3
2004	10.0	9.9	8.9	5.9	3.4	1.0	0.7	0.2	1.2	4.9	7.5	9.8	1,931.9	5.3
2005	9.1	11.0	8.2	6.7	4.3	1.3	0.3	0.3	1.2	2.6	9.1	10.7	1,953.8	5.4
2006	11.0	11.3	10.5	7.0	3.7	0.6	0.0	0.3	0.3	2.7	7.4	9.1	1,932.3	5.3
2007	8.6	9.5	8.4	4.3	3.7	0.9	0.5	0.5	2.1	4.5	8.0	10.5	1,860.3	5.1
2008	9.1	10.1	9.4	7.6	2.6	1.6	0.5	0.2	2.0	5.8	8.5	11.8	2,101.8	5.7
2009	12.2	11.1	8.6	5.8	3.6	1.6	0.2	0.2	1.5	4.0	7.1	12.4	2,067.2	5.7
2010	14.0	12.7	9.4	6.6	4.9	1.0	0.1	0.7	1.8	5.1	10.1	15.8	2,489.0	6.8
2011	11.6	9.2	8.7	3.8	3.3	1.9	0.5	0.8	1.0	3.4	6.0	9.6	1,815.3	5.0
2012	10.0	11.1	7.0	8.2	4.2	2.1	0.8	0.3	2.6	6.0	8.8	10.7	2,185.1	6.0
2013	11.6	12.1	12.5	8.1	4.9	1.7	0.1	0.1	1.9	3.1	9.1	9.1	2,250.3	6.2
2014	9.9	9.2	7.9	5.4	3.3	0.6	0.1	0.8	0.9	3.3	7.1	10.0	1,771.8	4.9
2015	10.7	11.2	9.2	6.4	4.6	1.9	0.7	0.4	2.8	4.6	6.0	6.0	1,948.2	5.3
2016	9.8	10.4	9.4	8.0	3.4	0.9								

(1) Latest monthly figures available at

https://www.gov.uk/government/statistics/energy-trends-section-7-weather

(2) Degree days calculated from the maximum and minimum daily temperature as recorded at 17 meteorological stations, selected as representative of fuel consumption in Great Britain with 2 in Scotland, 2 in Wales and 13 in England, 4 of which are counted twice. Data on temperatures recorded are provided by the Meteorological Office.

(3) Long term mean changed from 1971-2000 to 1981-2010 with effect from June 2013; see article in the March 2013 edition of Energy Trends at:

https://www.gov.uk/government/publications/energy-trends-march-2013-special-feature-articles-long-term-mean-temperatures-1981-2010

1.1.9 Mean air temperatures (averages) [(1)(2)(3)], Great Britain

Degrees Celsius

	January	February	March	April	May	June	July	August	September	October	November	December	Year
1970	4.0	3.2	4.0	6.8	12.7	16.1	15.4	16.1	14.5	10.9	7.9	4.5	9.7
1971	4.7	5.0	5.4	7.8	11.5	12.5	16.9	15.6	14.3	11.6	6.4	7.1	9.9
1972	4.2	4.6	6.5	8.6	10.6	11.9	15.5	15.2	11.9	10.7	6.4	5.8	9.3
1973	4.7	4.7	6.5	7.2	11.3	14.9	15.7	16.5	14.3	9.4	6.2	5.1	9.7
1974	6.1	5.8	5.8	8.0	10.9	13.7	15.1	15.2	12.1	7.9	6.7	8.0	9.6
1975	6.7	4.7	5.0	8.3	9.7	14.5	17.2	18.2	13.4	10.2	6.3	5.3	10.0
1976	5.9	4.8	5.0	8.0	11.8	16.7	18.3	17.3	13.4	10.7	6.2	2.2	10.0
1977	3.0	5.1	7.0	7.3	10.4	12.4	15.9	15.3	13.1	11.7	6.4	6.2	9.5
1978	3.4	3.6	6.8	6.4	11.3	13.6	14.7	14.9	14.0	11.9	8.6	4.3	9.5
1979	0.5	1.4	4.8	7.6	9.7	14.1	16.2	14.9	13.2	11.2	7.0	5.5	8.9
1980	2.4	6.0	4.9	8.7	11.0	13.8	14.5	15.7	14.6	9.0	6.6	5.8	9.4
1981	4.8	3.3	6.6	7.8	10.5	13.3	15.6	16.2	14.6	7.6	7.7	0.8	9.1
1982	2.8	4.8	5.8	8.2	11.1	11.2	16.2	15.4	13.8	9.8	7.4	4.1	9.2
1983	6.2	1.9	6.1	6.3	9.6	13.6	18.4	16.8	13.2	10.0	7.3	5.5	9.6
1984	3.3	3.5	4.5	7.7	9.5	13.9	16.2	17.0	13.2	10.7	7.7	5.0	9.4
1985	1.0	2.5	4.4	8.0	10.4	12.2	15.6	14.2	14.1	10.7	4.0	6.1	8.6
1986	3.2	-0.5	4.9	5.4	10.6	14.1	15.4	13.2	11.0	10.6	7.3	5.8	8.5
1987	1.1	3.7	4.1	9.4	9.7	12.2	15.5	15.2	13.3	9.3	6.4	4.7	8.7
1988	4.9	4.5	5.8	7.8	11.2	14.0	14.4	14.9	13.2	9.4	5.3	7.1	9.4
1989	6.1	5.8	7.0	6.1	12.5	14.0	17.4	16.1	14.1	11.5	6.4	4.5	10.2
1990	6.3	7.0	8.0	7.7	12.1	13.3	16.3	17.6	13.1	12.0	7.2	5.1	10.5
1991	3.7	2.4	7.8	8.0	11.0	12.2	17.1	17.0	14.7	10.3	7.0	5.0	9.7
1992	4.0	5.9	7.4	8.6	13.1	15.5	16.1	15.3	13.2	7.8	7.5	4.1	9.9
1993	6.0	5.4	6.6	9.3	11.2	14.4	15.1	14.4	12.5	8.5	5.0	5.3	9.5
1994	5.2	3.5	7.6	8.1	10.4	14.3	17.6	15.9	12.7	10.2	10.1	6.4	10.2
1995	4.9	6.7	5.6	8.9	11.6	14.0	18.4	18.9	13.8	13.2	8.1	2.8	10.6
1996	4.8	3.1	4.6	8.7	9.3	14.4	16.4	16.7	13.7	11.8	6.2	3.5	9.4
1997	2.9	6.9	8.4	9.1	11.5	14.0	16.9	18.6	14.5	10.5	8.9	6.1	10.7
1998	5.5	7.7	8.0	7.8	12.9	14.1	15.5	15.9	14.8	10.6	7.3	5.9	10.5
1999	5.8	5.6	7.4	9.4	12.8	13.7	17.5	16.3	15.7	11.0	8.1	5.0	10.7
2000	5.5	6.4	7.5	7.9	12.1	14.7	15.2	16.7	15.9	10.5	7.1	5.8	10.5
2001	3.9	4.8	5.5	7.8	12.4	14.0	16.7	16.7	14.1	13.6	7.9	4.1	10.2
2002	6.1	7.2	7.6	9.4	11.9	14.3	15.9	17.0	14.5	10.3	8.8	6.0	10.8
2003	4.9	4.5	7.8	9.9	12.1	15.9	17.5	18.0	14.3	9.0	8.4	5.0	10.6
2004	5.5	5.6	6.6	9.6	12.1	15.3	15.7	17.4	14.8	10.6	8.0	5.7	10.6
2005	6.4	4.5	7.2	8.8	11.2	15.4	16.6	16.1	15.0	13.0	6.4	4.8	10.5
2006	4.5	4.2	5.0	8.5	11.8	15.8	19.3	16.2	16.4	12.8	8.1	6.4	10.8
2007	6.9	6.0	7.1	11.2	11.9	14.9	15.2	15.5	13.9	11.0	7.5	5.0	10.5
2008	6.4	5.4	6.1	7.9	13.0	14.0	16.3	16.2	13.5	9.8	7.0	3.7	10.0
2009	3.3	4.4	6.9	9.7	11.9	14.8	16.2	16.6	14.2	11.5	8.4	3.1	10.1
2010	1.5	2.8	6.1	8.9	10.8	15.3	17.0	15.3	14.0	10.4	5.4	-0.3	9.0
2011	3.9	6.3	6.8	11.7	12.3	14.0	15.3	15.4	15.1	12.4	9.5	5.9	10.7
2012	5.5	4.4	8.5	7.3	11.6	13.6	15.4	16.6	13.2	9.5	6.7	4.8	9.8
2013	3.9	3.4	3.0	7.4	10.6	13.9	18.2	16.9	13.9	12.5	6.4	6.4	9.7
2014	5.6	6.3	7.6	10.1	12.3	15.2	17.6	15.2	14.9	12.3	8.4	5.5	10.9
2015	4.8	4.3	6.3	9.1	10.9	14.0	15.7	15.9	12.7	10.9	9.5	9.5	10.3
2016	5.7	5.1	6.1	7.5	12.2	14.9							

(1) Latest monthly figures available at
https://www.gov.uk/government/statistics/energy-trends-section-7-weather
(2) Average mean air temperatures calculated from the maximum and minimum daily temperature as recorded at 17 meteorological stations, selected as representative of fuel consumption in Great Britain, 2 in Scotland, 2 in Wales and 13 in England, 4 of which are counted twice. Data on temperatures recorded are provided by the Meteorological Office
(3) Long term mean changed from 1971-2000 to 1981-2010 with effect from June 2013; see article in the March 2013 edition of Energy Trends at
https://www.gov.uk/government/publications/energy-trends-march-2013-special-feature-articles-long-term-mean-temperatures-1981-2010

Chapter 2: Long term trends

Solid fuels and derived gases

Coal production, trade and stocks (Table 2.1.1)

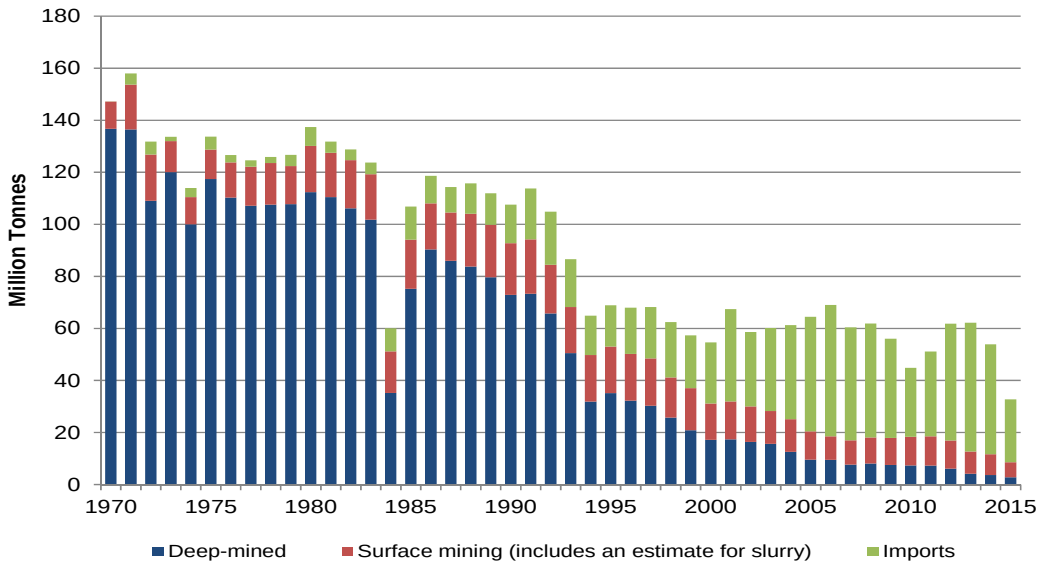
2.1.1 Figures for coal production, imports, overseas shipments and stocks are given in Table 2.1.1, which is based on Table 2.4 of Chapter 2 of the main Digest. The table series extends back to 1970.

2.1.2 Deep-mined production, which represented 93 per cent of overall production in 1970, fell gradually from 1970 to 1983 (with notable falls in 1972 and 1974 due to miners' strikes). Production then plummeted in 1984 as a result of the miners' strike, before recovering. It then continued to fall from the early 1990's as demand for coal fell and mines closed. In 2013 production fell 34 per cent compared to a year earlier as a number of coal mines closed that year (Maltby, Daw Mill and Unity) and fell further in 2014 due to unfavourable geological conditions at some of the remaining mines. Deep mining production fell 98 per cent from 137 million tonnes in 1970 to 3 million tonnes in 2015.

2.1.3 Surface mine production rose after 1970 until the early 1990s to a peak of 21 million tonnes in 1991. After 1991 production fell steadily, as mines have closed and overall demand for coal has broadly fallen, with 2010 around the same level as 1970, but represented 60 per cent of overall production. Since 2010 production has fallen further, particularly in 2013 when there was a fall of 20 per cent fall compared to 2012 due mainly to the closure of Scottish Coal Company going into liquidation in April 2013. In 2014 production fell further due to unfavourable geological conditions. Surface mining production had fallen to 6 million tonnes in 2015, 72 per cent lower than its record in 1991.

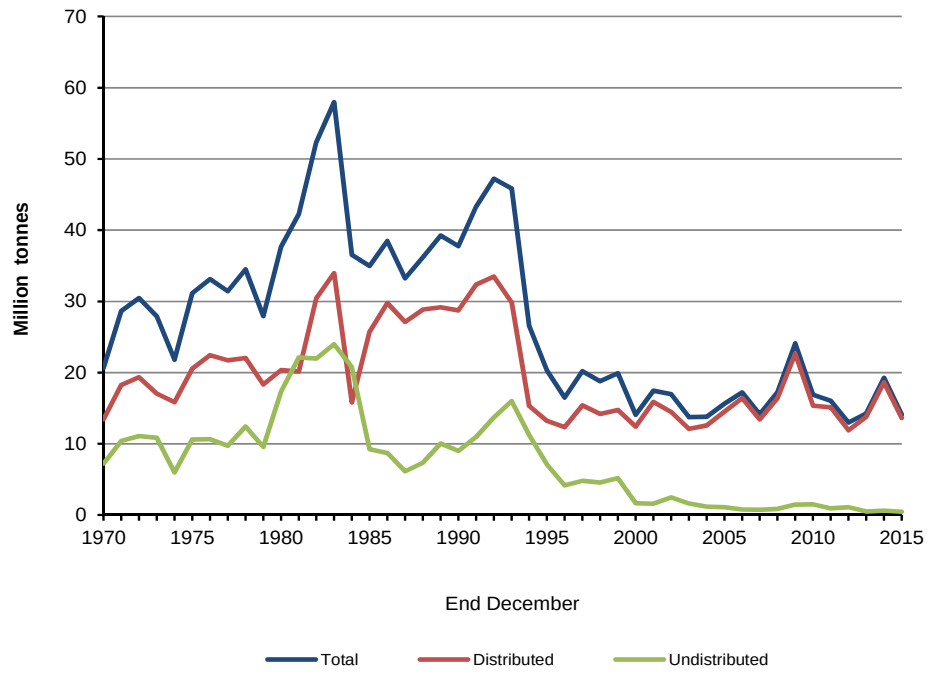
2.1.4 Since 1970, UK coal imports have grown steadily. This growth increased more rapidly over a short period of time in the early 2000s. This meant in 2001 UK imports (36 million tonnes) exceeded UK production (32 million tonnes) for the first time. This rapid growth in imports continued and in 2006 imports reached a new record of 51 million tonnes. From 2007 to 2010 levels declined due to less demand from generators. From 2011 to 2013 coal imports rose due to greater demand from generators, before falling again in 2014 and 2015 as demand fell. These trends are illustrated in Chart 2.1.1.

Chart 2.1.1: Coal production and imports 1970 to 2015



2.1.5 Total coal stocks were around 20 million tonnes in 1970. Since then distributed stocks increased substantially (mainly due to growth at electricity generators) and in 1983, total stocks, reached a record high of 58 million tonnes, of which 59 per cent was distributed. Thereafter, although there have been year-on-year fluctuations, stock levels have declined back to under 20 million tonnes a year, with the exception of 2009, where total stocks were 24 million tonnes (Chart 2.3), the highest since 1994 (27 million tonnes), as a result of a sharp decline in coal demand for generation. Since 2009, total stocks have continued to fluctuate depending on the demand for coal and generators' commercial decisions. Trends in coal stocks are shown in Chart 2.1.2.

Chart 2.1.2: Coal stocks 1970 to 2015



Inland consumption of solid fuels (Table 2.1.2)

2.1.6 Figures for inland consumption of coal by fuel producers and final users are given in Table 2.1.2, which are based on Table 2.4 of Chapter 2 of the main Digest. The table also shows final consumption figures for coke and breeze, and other solid fuels based on Table 2.5 of Chapter 2.[1]

2.1.7 Trends in inland consumption of coal, in total and by power stations, coke ovens and final consumers, are illustrated in Chart 2.1.3.

2.1.8 Total inland consumption fell gradually from 157 million tonnes in 1970. There was a large fall in 1984 due to the miners' strike. Consumption quickly rose again to pre-1984 levels before gradually falling again. The overall trend has been downwards in recent years with fluctuations driven by generators' demand. In 2015, consumption of coal was 37 million tonnes, 76 per cent lower than in 1970.

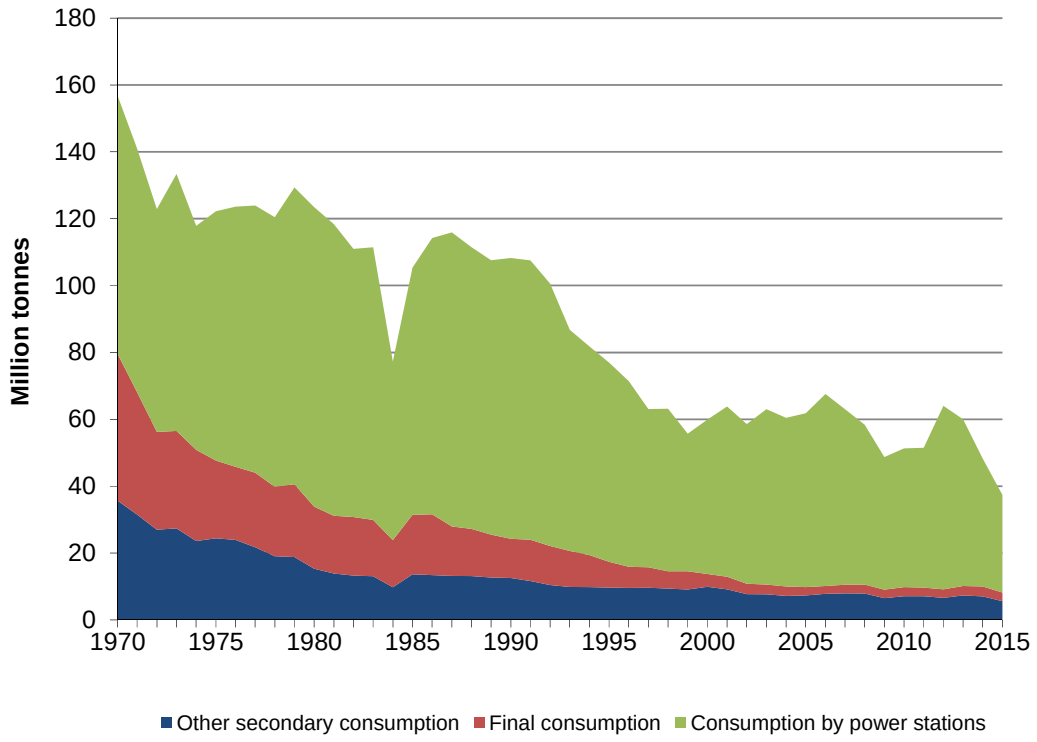
2.1.9 Consumption by the electricity generators increased from 77 million tonnes in 1970 to a peak of 90 million tonnes in 1980 and continued in the 80 to 90 million tonnes range until 1991, with the exception of the miners' strike years. Coal consumed by generators fell steadily after 1991 until 1999, as the UK's energy mix became more diverse, environmental regulations and high coal prices made natural gas more attractive to purchase for generation use. Coal consumption by generators broadly rose again after 1999 to 2006 as the price of gas encouraged generation from coal. From 2006 to

[1] These products are mainly supplied from the conversion of coal, supplemented by a small amount of foreign trade. Where possible the series have been extended back to 1970.

2010 the fall in consumption resumed. In 2012 consumption rose to 55 million tonnes, its highest level for six years, due to higher coal use due to higher gas prices making generation from coal more attractive. From 2013 consumption fell again.

2.1.10 Final consumption has fallen continually from 1970, with the exception of an increase for two years following the 1984 strike, as gas has taken over as the main heating fuel in the UK, and demand from industry has also declined (particularly from 1986), as stations closed.

Chart 2.1.3: Inland consumption of coal, 1970 to 2015



Power stations only include all generators from 1987 (see footnote (1) to Table 2.1.2).

2.1.11 More detailed information on coal statistics for 2015 are shown in Chapter 2 of the main Digest.

2.1.12 A more detailed examination of historical coal statistics was published in the September 2001 issue of Energy Trends. This looked at trends in coal production, consumption and employment in the coal mining industry over the last 150 years. The updated data set on which the article is based is available on the BEIS section of the GOV.UK website at:
www.gov.uk/government/collections/coal-statistics#historical-data, and the original article is available on request from BEIS.

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2.1.1 Coal production and stocks (1)

Thousand tonnes

	Coal production					Coal stocks (at year end) (5)		
	Total	Deep-mined	Surface mining (2,3)	Imports (4)	Exports	**Total**	Distributed	Undistributed
1970	**147,195**	136,686	10,509	79	3,191	**20,630**	13,414	7,216
1971	**153,683**	136,478	17,205	4,241	2,667	**28,664**	18,271	10,393
1972	**126,834**	109,086	17,748	4,998	1,796	**30,460**	19,351	11,110
1973	**131,984**	120,030	11,954	1,675	2,693	**27,886**	17,035	10,850
1974	**110,452**	99,993	10,459	3,547	1,865	**21,807**	15,827	5,979
1975	**128,683**	117,412	11,271	5,083	2,182	**31,159**	20,541	10,618
1976	**123,801**	110,265	13,536	2,837	1,436	**33,115**	22,457	10,658
1977	**122,150**	107,123	15,027	2,439	1,835	**31,444**	21,704	9,740
1978	**123,577**	107,528	16,049	2,352	2,253	**34,475**	22,038	12,437
1979	**122,369**	107,775	14,594	4,375	2,175	**27,908**	18,339	9,569
1980	**130,097**	112,430	17,667	7,334	3,809	**37,687**	20,370	17,317
1981	**127,469**	110,473	16,996	4,290	9,113	**42,253**	20,136	22,117
1982	**124,711**	106,161	18,550	4,063	7,447	**52,377**	30,422	21,955
1983	**119,254**	101,742	17,512	4,456	6,561	**57,960**	33,964	23,996
1984	**51,182**	35,243	15,939	8,894	2,293	**36,548**	15,794	20,753
1985	**94,111**	75,289	18,822	12,732	2,432	**34,979**	25,752	9,228
1986	**108,099**	90,366	17,733	10,554	2,677	**38,481**	29,776	8,704
1987	**104,533**	85,957	18,576	9,781	2,353	**33,246**	27,104	6,142
1988	**104,066**	83,762	20,304	11,685	1,822	**36,166**	28,834	7,332
1989	**99,820**	79,628	20,192	12,137	2,049	**39,244**	29,191	10,053
1990	**92,762**	72,899	19,863	14,783	2,307	**37,760**	28,747	9,013
1991	**94,202**	73,357	20,845	19,611	1,824	**43,321**	32,343	10,977
1992	**84,493**	65,800	18,693	20,339	973	**47,207**	33,493	13,714
1993	**68,199**	50,457	17,742	18,400	1,114	**45,860**	29,872	15,989
1994	**49,785**	31,854	17,931	15,088	1,236	**26,572**	15,301	11,271
1995	**53,037**	35,150	17,887	15,896	859	**20,330**	13,226	7,104
1996	**50,197**	32,223	17,974	17,799	988	**16,505**	12,352	4,153
1997	**48,495**	30,281	18,214	19,757	1,146	**20,188**	15,385	4,803
1998	**41,177**	25,731	15,446	21,244	971	**18,767**	14,202	4,565
1999	**37,077**	20,888	16,189	20,293	761	**19,931**	14,774	5,157
2000	**31,198**	17,188	14,010	23,446	660	**14,077**	12,431	1,646
2001	**31,930**	17,347	14,583	35,542	550	**17,468**	15,885	1,583
2002	**29,989**	16,391	13,598	28,686	537	**16,968**	14,486	2,482
2003	**28,279**	15,633	12,646	31,891	543	**13,731**	12,107	1,624
2004	**25,096**	12,542	12,554	36,153	622	**13,791**	12,598	1,192
2005	**20,498**	9,563	10,935	43,968	536	**15,628**	14,527	1,101
2006	**18,517**	9,444	9,073	50,528	443	**17,210**	16,427	783
2007	**17,007**	7,674	9,333	43,364	544	**14,155**	13,420	734
2008	**18,053**	8,096	9,958	43,875	599	**17,246**	16,392	854
2009	**17,874**	7,520	10,354	38,167	646	**24,091**	22,641	1,450
2010	**18,347**	7,390	10,956	26,541	715	**16,884**	15,368	1,517
2011	**18,552**	7,312	11,240	32,527	491	**16,041**	15,115	926
2012	**16,967**	6,153	10,814	44,815	488	**13,003**	11,883	1,120
2013	**12,767**	4,089	8,679	49,402	593	**14,292**	13,780	512
2014	**11,648**	3,685	7,962	42,225	425	**19,264**	18,641	623
2015	**8,598**	2,784	5,814	24,198	385	**14,081**	13,629	452

(1) 2008 is 4 days longer than the standard 52 week statistical reporting period (SRP) for January to December 2008. This is to enable a smooth transition to publishing data on a calendar month basis from January 2009 rather than 4 and 5 week SRPs used for previous years.

(2) Includes estimates for slurry etc recovered from dumps, ponds, rivers etc. Slurry has not been produced since 2013 as the only mine producing slurry has ceased trading.

(3) The term 'surface mining' has now replaced opencast production. Opencast production is a surface mining technique.

(4) The 1993 import figure includes an additional estimate for unrecorded trade.

(5) Excludes distributed stocks held in merchants' yards, etc, mainly for the domestic market and stocks held by the industrial sector.

2.1.2 Inland consumption of solid fuels [4]

Thousand tonnes

		Coal consumption by fuel producers						Final consumption					
		Primary	Secondary					Coal (1)					
	Total inland consumption of coal	Collieries	Power stations (1)	Coke ovens and blast furnaces	Other solid fuel plants (3)	Gas works	Total	Industry	Domestic	Other	Total	Coke and breeze (2)	Other solid fuel (3)
1970	**156,885**	1,916	77,237	25,340	4,150	4,280	**111,007**	19,613	20,190	4,159	**43,962**	18,090	3,203
1971	**140,931**	1,581	72,847	23,554	4,477	1,855	**102,733**	16,105	17,185	3,327	**36,617**	15,100	3,456
1972	**122,883**	1,405	66,664	20,476	4,547	575	**92,262**	11,663	14,554	2,999	**29,216**	14,090	3,514
1973	**133,371**	1,381	76,838	21,888	3,607	512	**102,845**	12,062	14,502	2,581	**29,145**	15,000	3,375
1974	**117,887**	1,256	67,026	18,461	3,788	107	**89,382**	11,077	13,667	2,505	**27,249**	13,220	3,184
1975	**122,213**	1,238	74,569	19,085	4,063	9	**97,726**	9,685	11,616	1,948	**23,249**	11,640	2,919
1976	**123,604**	1,132	77,819	19,402	3,405	8	**100,634**	8,970	10,823	2,045	**21,838**	12,460	2,647
1977	**123,977**	1,124	79,956	17,406	3,173	-	**100,535**	9,033	11,136	2,149	**22,318**	11,310	2,609
1978	**120,477**	1,010	80,643	14,946	3,070	-	**98,659**	8,550	10,217	2,041	**20,808**	10,484	2,453
1979	**129,379**	834	88,790	15,081	2,883	-	**106,754**	9,232	10,508	2,051	**21,791**	11,361	2,364
1980	**123,460**	663	89,569	11,610	3,022	-	**104,201**	7,898	8,946	1,752	**18,596**	6,221	2,252
1981	**118,386**	616	87,226	10,805	2,458	-	**100,489**	7,046	8,454	1,781	**17,281**	7,952	1,975
1982	**110,998**	534	80,228	10,406	2,326	-	**92,960**	7,175	8,474	1,855	**17,504**	7,248	1,921
1983	**111,475**	486	81,565	10,448	2,114	-	**94,127**	7,218	7,872	1,772	**16,862**	7,600	1,889
1984	**77,309**	209	53,411	8,246	1,300	-	**62,957**	7,006	5,406	1,731	**14,143**	7,653	1,186
1985	**105,386**	332	73,940	11,122	2,176	-	**87,238**	8,313	7,799	1,704	**17,816**	8,230	1,658
1986	**114,234**	306	82,652	11,122	1,959	-	**95,733**	9,278	7,421	1,496	**18,195**	7,558	1,601
1987	**115,894**	235	87,960	10,859	2,052	-	**100,871**	6,827	6,536	1,425	**14,788**	8,233	1,652
1988	**111,499**	196	84,258	10,902	2,006	-	**97,166**	7,131	5,741	1,265	**14,137**	8,591	1,443
1989	**107,581**	146	82,053	10,792	1,717	-	**94,562**	6,763	5,048	1,062	**12,873**	8,159	1,253
1990	**108,257**	117	84,014	10,852	1,544	-	**96,410**	6,280	4,239	1,211	**11,730**	7,637	1,214
1991	**107,514**	112	83,542	10,011	1,501	-	**95,054**	6,426	4,778	1,144	**12,348**	7,136	1,200
1992	**100,580**	79	78,469	9,031	1,319	-	**88,819**	6,581	4,156	945	**11,682**	6,887	1,089
1993	**86,756**	48	66,136	8,479	1,329	-	**75,944**	5,300	4,638	826	**10,764**	6,638	1,138
1994	**81,767**	22	62,406	8,581	1,190	-	**72,177**	4,946	3,901	721	**9,568**	6,578	949
1995	**76,942**	8	59,588	8,657	982	-	**69,227**	4,494	2,690	523	**7,707**	6,541	742
1996	**71,400**	8	55,511	8,632	946	-	**65,089**	3,075	2,705	524	**6,303**	6,925	835
1997	**63,080**	8	47,333	8,750	864	-	**56,947**	2,993	2,587	545	**6,125**	6,784	616
1998	**63,152**	5	48,588	8,728	635	-	**57,951**	2,414	2,366	416	**5,196**	6,545	630
1999	**55,724**	10	41,178	8,413	646	-	**50,237**	2,040	2,517	920	**5,477**	6,705	572
2000	**59,931**	12	46,197	8,685	1,195	-	**56,078**	1,876	1,883	82	**3,841**	6,283	521
2001	**63,850**	10	50,931	7,895	1,246	-	**60,072**	1,826	1,874	68	**3,768**	5,394	483
2002	**58,554**	9	47,741	6,533	1,153	-	**55,427**	1,810	1,286	22	**3,118**	4,715	414
2003	**63,023**	6	52,463	6,611	1,019	-	**60,093**	1,856	1,043	25	**2,923**	5,337	358
2004	**60,450**	8	50,444	6,382	801	-	**57,626**	1,848	941	27	**2,816**	5,146	316
2005	**61,852**	6	52,058	6,609	725	-	**59,392**	1,781	614	59	**2,455**	5,003	256
2006	**67,594**	4	57,438	7,049	733	-	**65,220**	1,756	561	54	**2,370**	5,263	257
2007	**63,029**	5	52,511	7,174	750	-	**60,434**	1,896	648	45	**2,590**	5,183	235
2008	**58,385**	5	47,808	7,045	855	-	**55,707**	1,940	683	49	**2,672**	5,104	294
2009	**48,718**	5	39,681	5,787	720	-	**46,188**	1,742	689	94	**2,525**	3,735	269
2010	**51,324**	5	41,498	6,378	708	-	**48,584**	1,959	719	58	**2,736**	3,424	311
2011	**51,507**	4	41,850	6,277	820	-	**48,946**	1,798	705	55	**2,557**	3,084	270
2012	**64,042**	4	54,901	5,952	645	-	**61,498**	1,826	674	40	**2,541**	3,500	253
2013	**60,014**	3	49,875	6,698	621	-	**57,194**	2,132	636	48	**2,817**	4,428	304
2014	**48,255**	1	38,234	6,490	531	-	**45,255**	2,405	546	48	**3,000**	4,269	250
2015	**37,372**	**-**	29,197	5,143	436	**-**	**34,776**	2,012	552	32	**2,596**	3,815	232

(1) Up to 1986 power stations include those in the public electricity supply, railways and transport industries. Consumption by other generators is included in final coal consumption. From 1987, coal consumption at power stations also includes other generators' consumption, which is therefore excluded from final coal consumption (see also Table 2.4). From 1999 includes coal consumption for heat sold to third parties.

(2) This series comprises final consumption and consumption at blast furnaces which can now be separated following production of energy balances in Tables 2.5 and 2.6 of the main Digest.

(3) Low temperature carbonisation and patent fuel plants and their products.

(4) 2008 is 4 days longer than the standard 52 week statistical reporting period (SRP) for January to December 2008. This is to enable a smooth transition to publishing data on a calendar month basis from January 2009 rather than 4 and 5 week SRPs used for previous years.

Chapter 3: Long term trends

Petroleum

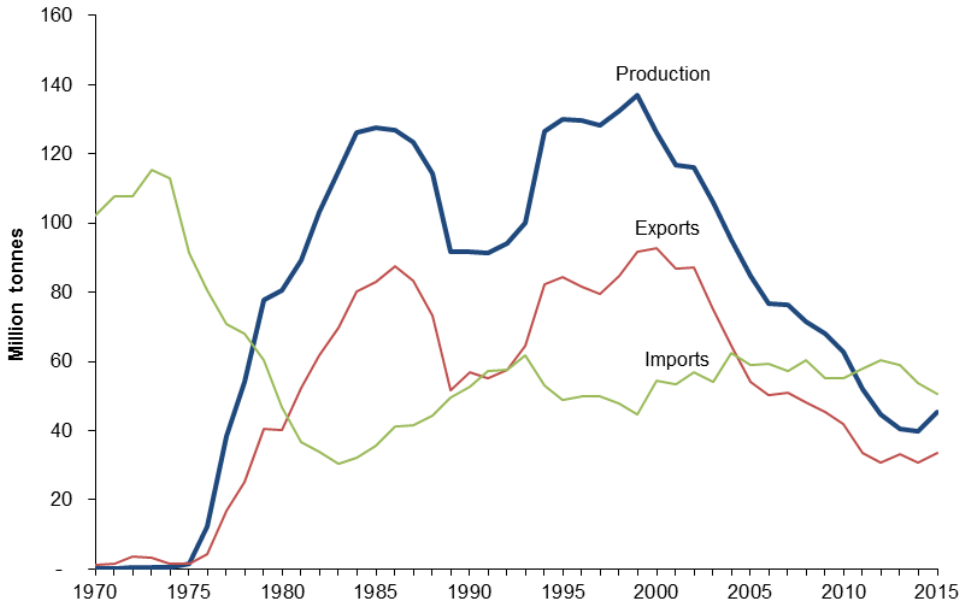
3.1.1 Tables 3.1.1 and 3.1.2 present extended time series of selected, more aggregated data, from the tables in Chapter 3 of the main Digest. They give additional background on the historic development of the crude oil and petroleum sectors.

Crude oil and petroleum products: production, imports and exports (Table 3.1.1)

3.1.2 The left-hand side of Table 3.1.1 shows data from 1970 to 2015 for production, imports and exports of crude oil (including natural gas liquids and feedstocks) and oil products. This part of the table also shows United Kingdom refinery throughput of crude oil, and the inland deliveries of oil products. Indigenous production of crude oil is shown in total with landward production shown separately.

3.1.3 The first three columns of the right-hand side of Table 3.1.1 consist of time series showing net exports of crude oil and products. It should be noted that exports of crude oil include some imports that have been re-exported. In years of significant indigenous production these have little effect on exports as a proportion of indigenous production, but in the earlier years (approximately pre-1975) the re-exports exceeded indigenous production and thus the ratio of exports to indigenous production was greater than one.

Chart 3.1.1: Production, exports and imports of oil[(1)] 1970 to 2015



(1) Includes crude oil, natural gas liquids and process oils.

3.1.4 Chart 3.1.1 illustrates the trends in the production, exports and imports of crude oil. It shows that indigenous production of crude oil was negligible up to 1974 and then increased rapidly as North Sea production came on stream. Imports peaked in 1973, immediately prior to the first OPEC price 'hike'. The chart shows the rapid decline of net imports thereafter as indigenous production rose, until 1981 when the surplus turned from net imports to net exports. Net exports first peaked in 1986, one year after the first peak for North Sea production in 1985.

3.1.5 The large fall in production in 1988 and particularly 1989 reflects the effects of the Piper Alpha disaster and subsequent incidents, and the continued 'low' production in 1990 and 1991 reflects the consequent safety work. Production has been declining since the peak production of 137 million tonnes in 1999 with a slight increase between 2014 and 2015. Production is at just under 33 per cent of the UK's peak production recorded in 1999.

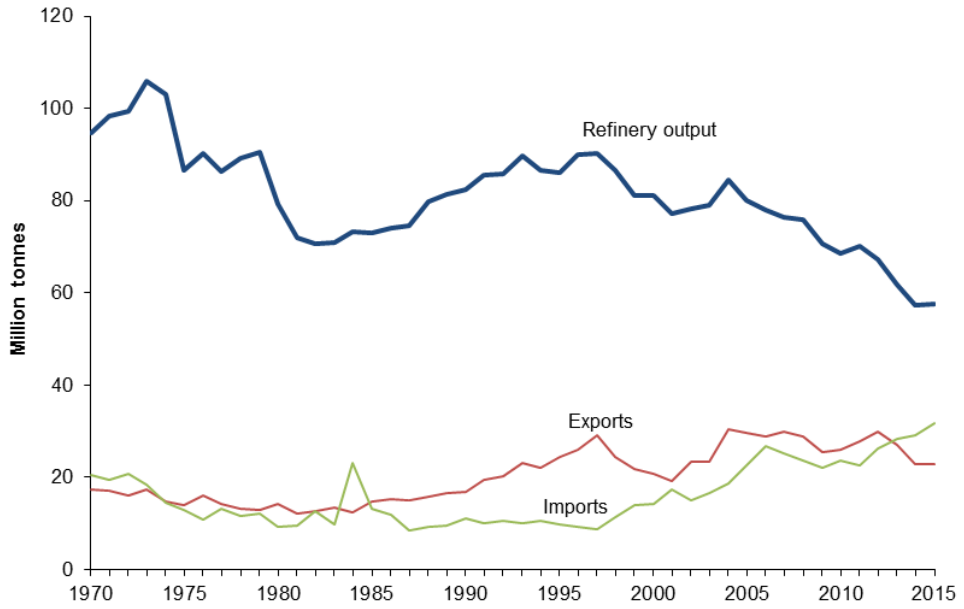
3.1.6 Table 3.1.1 also shows that the import share of refinery throughput of crude oil fell from nearly 100 per cent, prior to North Sea oil production starting, to a low of 39 per cent in 1983 (the lowest year for imports), before rising to 64 per cent in 1993. Since then, indigenous production has increased significantly leading to the import share falling to 51 per cent in 1999, the year of record UK production of crude oil. Since 2000, the share of imported crude used in refineries has been increasing due to the lower levels of production mentioned above. These developments are mirrored by the changes in the ratio of indigenous production to refinery throughput. Ignoring pre-1976 figures, the proportion of indigenous primary oils that were exported increased from 35 per cent in 1976 to around two-thirds towards the end of the 1980s. Although the decreases in production in the late 1980s did lead to some reduction in the level of exports, the proportion of primary oils going to export remained at roughly this level during the 1990s. In the last decade, the proportion has risen again to just over two thirds and was slightly less than three quarters in 2015.

3.1.7 Imports of crude oil in 1991 (and marginally again in 1992) exceeded exports for the first time since 1980. Net exports of crude oil resumed in 1993, and continued to rise until 1999. In 1999 net exports of crude oil were 47 million tonnes at their highest since 1984 with overall net exports of crude oil and oil products at a record level of almost 55 million tonnes. However, the decreased level of crude oil production since 1999 had seen net exports of crude oil falling in the 1990s.In 2005, the UK became a net importer of crude oil, this has continued since with a trend for greater net imports each year until 2013 where net imports have been falling since.

3.1.8 Refinery throughput peaked in 1973 but subsequently fell to pre-1970 levels together with refinery output. (The difference between refinery throughput and output is refinery use of fuel and gains/losses). Since the low point of 1983 (throughput 77 million tonnes), both refinery throughput and output increased to a new peak in 1997. However, with the closure of the Gulf Oil refinery in late 1997, refinery output fell by 4 per cent in 1998 and then by another 6 per cent in 1999 to the lowest level seen since 1989. The remaining refineries in the UK worked to increase their capacity and utilisation rates and to a large extent offset the closures of the Gulf Oil and Shell Haven refineries. The fall in refinery output in 2001 is the result of the shutdowns mentioned above. Since, 2006 refining output has been on a general declining trend and this was reduced with further refinery closures; in 2009, Petroplus Teesside was mothballed and converted to a storage site, citing economic difficulties. This was followed by the closure of the Coryton refinery in 2012 and Milford Haven in 2014 for the same reasons.

3.1.9. In 1984 the UK was a net importer of refined oil products when there was increased demand for oil products as a result of the miners strike. The UK has generally been a net exporter with exports being greater than imports from 1984 onwards, net exports increased during the 1990s leading to a record high in 1997. In recent years however net exports have been falling UK was a net importer in 2014 and then again in 2015 (See Chapter 3). The increases in net exports of products in the 1990s reflect the increased throughput from refineries mainly feeding through to increased exports of oil products, rather than increases in deliveries to the domestic market. Since then net exports have decreased as a result of refinery closures. There was also a sharp fall in net exports in 2001 due to a number of slowdowns at refineries to allow upgrade work for the introduction of ultra low sulphur petrol. Imports of oil products were at their highest in 1967 (24 million tonnes) and, apart from a 'blip' in 1984 as a result of the miners' strike, were less than half this peak until 1999. In recent years, with the reduced refinery output due in part to the Teeside, Coryton and Milford Haven refinery closures, imports have increased and now make up nearly half of inland deliveries, over double the level of 2000. Chart 3.1.2 summarises the trend in refinery output, exports and imports of oil products over the period.

Chart 3.1.2: Refinery output, exports and imports of oil products 1970 to 2015



Inland deliveries of petroleum products (Table 3.1.2)

3.1.10 Table 3.1.2 shows data for deliveries of petroleum products from 1970 to 2015, split between non-energy uses in total and the major products delivered for energy use. While data for deliveries are considered to be a good proxy for consumption, differences can occur mainly due to stock changes along the chain of consumption. Total deliveries for energy use shown in the first (left-hand) half of the table and include 'own use' by refineries that are separately identified in the right-hand part of the table.

3.1.11 Deliveries of petroleum products peaked in 1973, in common with other aggregate oil figures (see Table 3.1.1). The 'blip' in 1984 reflects the increased deliveries (of fuel oil in particular) during the miners' strike. Fuel oil deliveries are now just 2 per cent of their level in 1970 while gas oil deliveries (excluding DERV fuel) are half their 1970 level. In contrast, deliveries of aviation turbine fuel have more than tripled during the period. After limited growth during the 1970s and early 1980s, deliveries of DERV fuel resumed the high growth rates apparent in the 1960s, and have increased by nearly a quarter over the last 10 years. The upward surge of deliveries of transport fuels slowed in 1990 and ceased in 1991 with the twin impacts of the Gulf crisis and recession, with some recovery being seen in 1992.

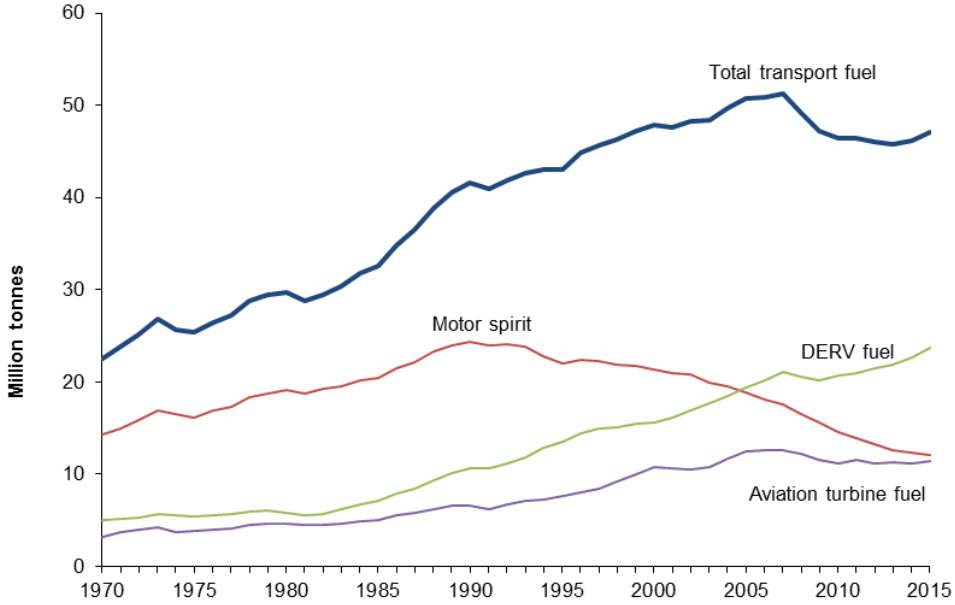
3.1.12 Since 1992, motor spirit deliveries have generally declined each year. In 2010 deliveries of motor spirit were a third lower than in 2000. These changes reflect the switch to diesel-engine cars and are mirrored by the pattern of increases in deliveries of DERV fuel since 1990. Consumption of motor spirit is also lowered by a more efficient road fleet. In 2005, deliveries of DERV fuel exceeded motor spirit in mass terms for the first time, and in 2007 DERV deliveries surpassed motor spirit in terms of both mass and volume, which has continued into 2014. Deliveries of aviation turbine fuel also increased each year from 1992 to 2000. However deliveries of aviation turbine fuel fell in 2001 due to the terrorist attacks on the United States on 11th September 2001 that caused a downturn in the global aviation industry. Developments in Afghanistan and Iraq during 2002 also impacted on the aviation industry with deliveries of aviation turbine fuel in 2002 being 1 per cent lower than in 2001. Deliveries of aviation turbine fuel increased by two thirds between 1990 and 2010. Deliveries increased year on year between 2003 and 2006, but fell year on year between 2007 and 2010. These recent falls in consumption reflect the impacts of the economic downturn, and specific drops in aviation fuel consumption as a result of poor weather and the ash eruption from the Eyjafjallajökull volcano in 2010. - Despite robust passenger numbers post the economic downturn, increased efficiencies in the air-line

industry have meant that fuel deliveries have not kept pace with passenger numbers. Chart 3.1.3 shows the trends in deliveries of all transport fuels from 1970 to 2015.

3.1.13 By the end of the 1980s and during the 1990s deliveries for non-energy uses were not far off their peak of the early to mid-1970s. Non-energy use has declined steadily in recent years with a slight increase in 2015 compared to 2014. It is down about 35 per cent on the most recent peak, in 2004.

3.1.14 The right hand columns of Table 3.1.2 (headed "Energy industry use" and "Final users") show a sector-by-sector breakdown of the total deliveries for energy use given in the left hand columns. Fuels used in blast furnaces are included in the "other energy industry uses" column rather than in the iron and steel column. Total uses by the transport sector are now roughly double the amount delivered in 1970 as Chart 3.1.3 shows. Deliveries to every other major sector are below 1973 levels - well below for electricity generators, iron and steel and 'other industries', and other final users (mainly agriculture, public administration and commerce).

Chart 3.1.3: Inland deliveries of transport fuels 1970 to 2015



3.1.15 Additional analysis to that presented in this publication has been conducted on the information provided in Tables 3.1.1 and 3.1.2. The main purpose of this analysis was to extend the information provided back as far as possible, which has meant back to 1870 for some information. The tables are available at the link below and an article containing this analysis was published in the March 2007 edition of Energy Trends which is available on request from BEIS:
www.gov.uk/government/collections/oil-statistics#historical-data

A publication marking the 60th anniversary of the Digest of UK Energy Statistics is also available at:
www.gov.uk/government/statistics/digest-of-uk-energy-statistics-dukes-60th-anniversary

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3.1.1 Crude oil and petroleum products: production, imports and exports[1][2]

Thousand tonnes

	Crude oil (3)						Oil products			
	Imports	Indigenous production			Exports	Refinery throughput	Refinery output *(5)*	Exports	Imports	Inland deliveries *(5)*
		Total	Landward	Feedstocks (4)						
1970	102,155	156	83	-	1,182	101,911	94,696	17,424	20,428	91,151
1971	107,736	212	85	-	1,569	105,342	98,245	17,166	19,369	91,991
1972	107,706	333	85	-	3,558	106,980	99,368	15,979	20,827	98,469
1973	115,472	372	88	-	3,235	114,338	105,954	17,404	18,300	99,786
1974	112,822	410	107	-	1,404	111,217	103,060	14,631	14,537	93,409
1975	91,366	1,564	99	-	1,524	93,597	86,647	13,924	12,786	82,824
1976	80,466	12,169	99	-	4,285	97,784	90,284	15,988	10,709	81,579
1977	70,697	38,265	99	-	16,793	93,615	86,338	14,160	13,050	82,759
1978	68,144	54,006	88	-	25,200	96,390	89,156	13,194	11,586	84,141
1979	60,380	77,748	121	-	40,569	97,806	90,583	12,988	12,035	84,554
1980	46,717	80,467	237	-	40,180	86,341	79,227	14,110	9,245	71,177
1981	36,855	89,454	232	-	52,206	78,287	72,006	12,256	9,402	66,256
1982	33,754	103,211	253	-	61,670	77,130	70,747	12,637	12,524	67,246
1983	30,324	114,960	316	-	69,923	76,876	70,927	13,331	9,907	64,464
1984	32,272	126,065	345	-	80,143	79,117	73,187	12,478	23,082	81,435
1985	35,576	127,611	380	-	82,980	78,431	72,904	14,828	13,101	69,781
1986	41,209	127,068	504	-	87,437	80,155	74,089	15,283	11,767	69,227
1987	41,541	123,351	578	-	83,220	80,449	74,656	14,980	8,570	67,701
1988	44,272	114,459	761	-	73,330	85,662	79,837	15,802	9,219	72,317
1989	49,500	91,710	722	-	51,664	87,669	81,392	16,683	9,479	73,028
1990	52,710	91,604	1,758	-	56,999	88,692	82,286	16,899	11,005	73,943
1991	57,084	91,261	3,703	-	55,131	92,001	85,476	19,351	10,140	74,506
1992	57,683	94,251	3,962	-	57,627	92,334	85,783	20,250	10,567	75,470
1993	61,701	100,189	3,737	-	64,415	96,273	89,584	23,031	10,064	75,790
1994	53,096	126,542	4,649	-	82,393	93,161	86,644	22,156	10,441	74,957
1995	48,749	129,894	5,051	-	84,577	92,743	86,133	24,420	9,879	73,694
1996	50,099	129,742	5,251	-	81,563	96,660	89,885	26,018	9,310	75,390
1997	49,994	128,234	4,981	-	79,400	97,023	90,366	29,118	8,706	72,501
1998	47,958	132,633	5,161	-	84,610	93,797	86,615	24,375	11,418	72,261
1999	44,869	137,099	4,285	-	91,797	88,286	81,195	21,730	13,896	72,436
2000	54,386	126,245	3,247	-	92,917	88,013	81,130	20,677	14,212	71,944
2001	53,551	116,678	2,921	-	86,930	83,343	77,051	19,088	17,234	71,354
2002	56,968	115,944	2,673	-	87,144	84,784	78,319	23,444	14,900	70,557
2003	54,177	106,073	2,198	-	74,898	84,585	79,073	23,323	16,472	71,697
2004	62,517	95,374	1,938	-	64,504	89,821	84,411	30,495	18,545	73,649
2005	58,885	84,721	1,648	-	54,099	86,134	80,146	29,722	22,481	75,496
2006	59,443	76,578	1,380	-	50,195	83,213	77,961	28,945	26,836	74,896
2007	57,357	76,575	1,271	-	50,999	81,477	76,509	29,983	25,110	72,748
2008	60,335	71,789	1,248	-	48,235	81,034	75,858	28,803	23,741	70,264
2009	55,002	68,199	1,181	-	45,351	75,551	70,523	25,491	22,172	67,060
2010	55,064	62,962	941	-	42,064	73,543	68,599	26,065	23,665	66,295
2011	58,092	51,972	678	-	33,625	75,080	70,122	27,800	22,656	64,243
2012	60,476	44,561	870	-	30,946	71,839	67,331	29,904	26,207	63,048
2013	58,967r	41,101r	1,003	454r	33,105	65,972r	61,638r	26,910	28,418r	62,397r
2014	53,638r	40,328r	1,014r	400r	30,869r	61,063r	57,194r	22,748	29,093r	62,554r
2015	50,480	45,698	853	410r	33,660	61,375	57,615	22,835	31,727	64,390

(1) Aggregate monthly data on crude oil production and trade in oil and oil products are available - see Chapter 3 paragraph 3.73 and Annex C.

(2) See paragraphs 3.1.2 to 3.1.9.

(3) Includes natural gas liquids and feedstocks.

(4) Backflows received from petrochemical processing plants have been included from 2013. See paragraphs 3.60 to 3.61 for further details.

(5) Excludes products used as fuels within refinery processes.

(6) A minus (-) signifies that in that particular year imports were greater than exports.

3.1.1 Crude oil and petroleum products: production, imports and exports[(1)(2)] (continued)

Net exports			Crude oil			Oil products	
Crude oil (6)	Oil products (6)	Total (6)	Ratio of imports to ref. throughput	Ratio of indigenous production to ref. throughput	Ratio of exports to indigenous production	Imports: Share of inland deliveries	
Thousand tonnes			Ratio			Percentage	
-100,973	-3,004	-103,977	1.002	0.001	7.577	22.4	1970
-106,167	-2,203	-108,370	1.023	0.001	7.401	21.1	1971
-104,148	-4,848	-108,996	1.007	0.002	10.685	21.2	1972
-112,237	-896	-113,133	1.010	0.002	8.696	18.3	1973
-111,418	94	-111,324	1.014	0.002	3.424	15.6	1974
-89,842	1,138	-88,704	0.976	0.012	0.974	15.4	1975
-86,181	5,279	-80,902	0.925	0.118	0.352	13.1	1976
-53,904	1,110	-52,794	0.755	0.409	0.439	15.8	1977
-42,944	1,608	-41,336	0.707	0.560	0.467	13.8	1978
-19,811	953	-18,858	0.617	0.796	0.522	14.2	1979
-6,537	4,865	-1,672	0.541	0.932	0.499	13.0	1980
15,351	2,854	18,205	0.471	1.143	0.583	14.2	1981
27,916	113	28,029	0.438	1.338	0.597	18.6	1982
39,599	3,424	43,023	0.394	1.497	0.608	15.4	1983
48,141	-10,604	37,537	0.408	1.593	0.638	28.3	1984
47,404	1,727	49,131	0.454	1.627	0.650	18.8	1985
46,228	3,516	49,744	0.514	1.585	0.688	17.0	1986
41,679	6,410	48,089	0.516	1.533	0.675	12.7	1987
29,057	6,583	35,640	0.517	1.336	0.641	12.7	1988
2,164	7,204	9,368	0.565	1.046	0.563	13.0	1989
4,289	5,894	10,183	0.594	1.033	0.622	14.9	1990
-1,953	9,211	7,258	0.620	0.992	0.604	13.6	1991
-56	9,683	9,627	0.625	1.021	0.611	14.0	1992
2,714	12,967	15,681	0.641	1.041	0.643	13.3	1993
29,297	11,715	41,012	0.570	1.358	0.651	13.9	1994
35,828	14,541	50,369	0.526	1.401	0.651	13.4	1995
31,464	16,708	48,172	0.518	1.342	0.629	12.3	1996
29,406	20,412	49,818	0.515	1.322	0.619	12.0	1997
36,652	12,957	49,609	0.511	1.414	0.638	15.8	1998
46,928	7,834	54,762	0.508	1.553	0.670	19.2	1999
38,531	6,464	44,995	0.618	1.434	0.736	19.8	2000
33,378	1,854	35,232	0.643	1.400	0.745	24.2	2001
30,176	8,544	38,720	0.672	1.368	0.752	21.1	2002
20,720	6,851	27,571	0.641	1.254	0.706	23.0	2003
1,987	11,950	13,937	0.696	1.062	0.676	25.2	2004
-4,786	7,241	2,455	0.684	0.984	0.639	29.8	2005
-9,249	2,109	-7,140	0.714	0.920	0.655	35.8	2006
-6,357	4,874	-1,484	0.704	0.940	0.666	34.5	2007
-12,100	5,062	-7,037	0.745	0.886	0.672	33.8	2008
-9,652	3,319	-6,333	0.728	0.903	0.665	33.1	2009
-13,000	2,400	-10,600	0.749	0.856	0.668	35.7	2010
-24,468	5,145	-19,323	0.774	0.692	0.647	35.3	2011
-29,529	3,698	-25,832	0.842	0.620	0.694	41.6	2012
-25,862r	-1,508r	-27,369r	0.894r	0.623r	0.805r	45.5r	2013
-22,769r	-6,345r	-29,114r	0.878r	0.660r	0.765r	46.5r	2014
-16,821	-8,892	-25,713	0.822	0.745	0.737	49.3	2015

3.1.2 Inland deliveries of petroleum (1)(2)

Million tonnes

	Total	Deliveries for energy uses								Deliveries for non-energy uses
		Motor spirit	DERV fuel	Aviation turbine fuel	Burning oil	Gas oil (3)	Fuel oils (4)	Petroleum gases	Total for energy uses (5)	
1970	**97.18**	14.24	5.04	3.25	2.48	11.56	42.12	3.54	**87.05**	**10.13**
1971	**98.17**	14.96	5.19	3.67	2.57	12.13	42.74	3.84	**88.04**	**10.13**
1972	**104.89**	15.90	5.25	3.93	2.93	14.56	44.85	4.08	**94.21**	**10.68**
1973	**106.84**	16.93	5.66	4.20	3.18	14.60	43.40	4.43	**95.25**	**11.59**
1974	**100.39**	16.48	5.52	3.69	2.78	13.12	40.71	3.80	**88.53**	**11.86**
1975	**88.85**	16.13	5.41	3.83	2.63	12.61	33.81	3.51	**79.41**	**9.44**
1976	**87.92**	16.88	5.59	3.99	2.62	12.53	30.90	3.85	**77.81**	**10.11**
1977	**89.00**	17.34	5.71	4.17	2.62	13.38	30.74	3.88	**79.28**	**9.72**
1978	**90.56**	18.35	5.88	4.51	2.65	13.19	31.50	3.84	**81.16**	**9.40**
1979	**91.09**	18.69	6.06	4.67	2.70	13.49	30.95	3.88	**81.56**	**9.53**
1980	**77.50**	19.15	5.85	4.69	2.10	11.62	22.69	3.52	**70.50**	**7.00**
1981	**71.70**	18.72	5.55	4.50	1.91	10.93	18.64	3.15	**64.15**	**7.55**
1982	**72.79**	19.25	5.73	4.47	1.75	10.50	19.16	3.45	**65.19**	**7.60**
1983	**69.77**	19.57	6.18	4.57	1.66	9.88	15.03	3.84	**61.75**	**8.02**
1984	**86.79**	20.23	6.76	4.83	1.71	9.92	30.26	3.79	**78.61**	**8.18**
1985	**74.96**	20.40	7.11	5.01	1.87	9.71	18.19	3.15	**66.48**	**8.48**
1986	**74.62**	21.47	7.87	5.50	2.02	9.22	14.64	3.46	**65.26**	**9.36**
1987	**72.92**	22.18	8.47	5.82	2.03	8.51	11.90	3.45	**63.52**	**9.40**
1988	**77.80**	23.25	9.37	6.20	1.99	8.39	13.83	3.62	**67.80**	**10.00**
1989	**78.85**	23.92	10.12	6.56	1.94	8.26	13.14	3.88	**68.97**	**9.88**
1990	**79.78**	24.31	10.65	6.59	2.06	8.03	14.02	3.88	**70.61**	**9.17**
1991	**80.56**	24.02	10.69	6.18	2.38	8.02	14.17	4.00	**70.61**	**9.95**
1992	**81.55**	24.04	11.13	6.67	2.47	7.86	13.74	3.84	**70.92**	**10.63**
1993	**82.18**	23.77	11.81	7.11	2.63	7.78	13.13	4.05	**71.45**	**10.73**
1994	**81.22**	22.84	12.91	7.28	2.66	7.51	11.73	4.06	**70.04**	**11.18**
1995	**80.17**	21.95	13.46	7.66	2.77	7.25	10.30	4.26	**68.85**	**11.32**
1996	**82.01**	22.41	14.37	8.05	3.34	7.65	9.15	4.55	**70.72**	**11.29**
1997	**79.25**	22.25	14.98	8.41	3.34	7.38	6.25	4.22	**68.30**	**10.95**
1998	**78.44**	21.85	15.14	9.24	3.57	7.31	5.35	4.05	**67.75**	**10.69**
1999	**77.97**	21.79	15.51	9.94	3.63	6.73	4.45	3.97	**67.24**	**10.73**
2000	**77.20**	21.40	15.63	10.81	3.84	6.81	3.35	3.99	**67.14**	**10.05**
2001	**76.41**	20.94	16.06	10.61	4.24	6.60	4.26	3.76	**67.53**	**8.89**
2002	**76.23**	20.81	16.93	10.52	3.58	5.94	3.77	3.84	**66.56**	**9.67**
2003	**77.15**	19.92	17.71	10.76	3.57	6.24	3.56	3.90	**66.74**	**10.41**
2004	**79.07**	19.48	18.51	11.64	3.95	5.97	3.74	4.11	**68.48**	**10.58**
2005	**81.10**	18.85	19.38	12.50	3.87	6.83	3.78	4.19	**70.66**	**10.44**
2006	**79.77**	18.09	20.16	12.64	4.02	6.31	3.25	4.15	**70.02**	**9.76**
2007	**77.42**	17.61	21.04	12.57	3.63	6.12	3.23	3.88	**69.46**	**7.97**
2008	**74.97**	16.54	20.50	12.14	3.68	5.63	2.66	4.16	**67.38**	**7.59**
2009	**71.36**	15.61	20.11	11.53	3.73	5.03	2.11	3.83	**64.01**	**7.35**
2010	**70.67**	14.60	20.74	11.12	4.01	5.06	1.89	4.06	**63.57**	**7.11**
2011	**68.83**	13.89	20.99	11.57	3.29	4.72	1.41	4.01	**61.77**	**7.06**
2012	**67.35**	13.23	21.54	11.22	3.33	5.15	1.05	3.43	**61.24**	**6.11**
2013	**66.16r**	12.57	21.93	11.24	3.51	4.73r	0.82r	2.59r	**60.23r**	**5.93r**
2014	**65.75r**	12.33	22.68	11.22	3.18	4.83r	0.59r	2.72r	**59.93r**	**5.82r**
2015	**67.79**	12.08	23.66	11.37	3.11	4.82	0.81	2.49	**60.96**	**6.83**

(1) Aggregate monthly and quarterly data on inland deliveries of oil products are available - see Chapter 3, paragraph 3.73 and Annex C.

(2) This table has been revised from previous editions to be fully compliant with the commodity balances format used in Chapter 3, Tables 3.2 to 3.4. This has involved adding in the refinery fuel elements into the above product totals, and an adjustment to the data for fuels used by the iron and steel industry as detailed in footnote (6) below.

(3) Other than DERV fuel. From 1999 includes marine diesel oil.

3.1.2 Inland deliveries of petroleum (1)(2) (continued)

Million tonnes

Energy industry use				Final users					
Electricity generators	Gas works	Refineries	Other energy industry uses (6)	Iron & steel	Other industries	Transport	Domestic	Other final users (7)	
12.60	4.56	6.03	4.25	1.42	21.55	25.00	3.05	8.59	1970
14.68	2.59	6.18	3.97	1.32	21.55	26.07	3.01	8.67	1971
18.87	2.21	6.42	3.78	1.26	22.14	27.14	3.48	8.91	1972
16.95	2.32	7.05	3.74	1.25	22.18	28.96	3.80	9.00	1973
17.21	1.28	6.95	3.02	1.01	19.82	27.92	3.38	7.95	1974
12.82	0.59	6.03	2.48	0.83	17.89	27.57	3.27	7.93	1975
10.18	0.25	6.34	2.48	0.83	18.06	28.60	3.27	7.80	1976
10.60	0.16	6.24	2.21	0.74	18.06	29.37	3.31	8.60	1977
11.64	0.35	6.42	2.12	0.71	17.55	30.87	3.26	8.24	1978
11.12	0.42	6.49	2.14	0.71	17.62	31.58	3.21	8.27	1979
6.52	0.31	6.27	1.19	0.40	14.51	31.74	2.55	7.01	1980
4.86	0.25	5.45	1.00	0.33	12.67	30.63	2.31	6.65	1981
6.87	0.21	5.55	0.89	0.30	11.64	31.31	2.15	6.28	1982
4.65	0.16	5.30	0.77	0.26	10.23	32.25	2.14	6.00	1983
20.91	0.16	5.35	0.63	0.21	9.39	33.82	2.14	6.00	1984
9.72	0.15	5.18	0.52	0.17	8.43	34.46	2.20	5.65	1985
5.66	0.17	5.40	0.50	0.17	9.02	36.66	2.32	5.36	1986
5.36	0.09	5.05	0.42	0.14	7.36	38.22	2.21	4.67	1987
6.07	0.06	5.29	0.55	0.18	8.23	40.62	2.13	4.67	1988
6.17	0.05	5.62	0.56	0.19	7.52	42.54	2.11	4.21	1989
7.98	0.05	5.07	0.53	0.18	7.03	43.45	2.22	4.11	1990
7.56	0.05	5.26	0.53	0.18	7.49	42.86	2.52	4.17	1991
8.32	0.04	4.16	0.51	0.17	7.13	43.79	2.58	4.22	1992
6.02	0.04	5.89	0.64	0.21	7.17	44.56	2.71	4.21	1993
4.04	0.05	6.04	0.67	0.22	7.47	44.82	2.70	4.03	1994
4.37	0.05	5.99	0.62	0.21	6.41	44.81	2.70	3.69	1995
3.57	0.05	6.50	0.65	0.09	6.41	46.64	3.17	3.65	1996
2.24	0.05	6.16	0.57	0.11	5.68	47.32	3.06	3.12	1997
1.40	0.05	6.18	0.27	0.08	5.75	47.92	3.20	2.92	1998
1.17	0.05	5.54	0.98	0.06	5.28	48.85	2.85	2.47	1999
0.98	0.04	5.25	0.90	0.14	5.35	49.45	2.92	2.11	2000
0.97	0.00	5.06	0.82	0.08	5.98	49.11	3.18	2.32	2001
0.67	0.00	5.68	0.44	0.08	5.62	49.64	2.78	1.66	2002
0.54	0.00	5.46	0.38	0.02	6.25	50.29	2.76	1.05	2003
0.59	0.00	5.42	0.36	0.03	6.27	51.55	2.94	1.32	2004
1.26	0.00	5.60	0.33	0.02	5.92	52.77	2.78	1.62	2005
1.24	0.00	4.88	0.29	0.02	5.50	53.33	2.93	1.40	2006
1.13	0.00	4.68	0.26	0.06	5.43	53.49	2.59	1.41	2007
1.58	0.00	4.71	0.27	0.01	5.46	50.88	2.73	1.30	2008
1.56	0.00	4.30	0.12	0.01	4.73	48.87	2.71	1.15	2009
1.14	0.00	4.38	0.07	0.01	5.06	48.07	3.08	1.15	2010
0.72	0.00	4.59	0.07	0.00	4.11	48.01	2.40	1.25	2011
0.69	0.00	4.30	0.08	0.00	4.31	47.49	2.43	1.23	2012
0.54r	0.00	3.76	0.06	0.00	3.77r	47.14r	2.56r	1.20r	2013
0.49r	0.00	3.20r	0.06r	0.01	3.77r	47.58r	2.28r	1.39r	2014
0.55	0.00	3.40	0.06	0.01	3.61	48.43	2.21	1.49	2015

(4) Includes Orimulsion from 1989. Imports / deliveries of Orimulsion ceased in February 1997.

(5) Includes aviation spirit, naphtha (LDF) for gasworks and wide cut gasoline.

(6) Use of gas oil & fuel oil by iron & steel industry in blast furnaces. Data from 1999 provided by the Iron & Steel Statistics Bureau and include estimates of fuel used to generate heat that is sold to third parties.

(7) Mainly agriculture, public administration, commerce and other services.

Chapter 4: Long term trends

Gas

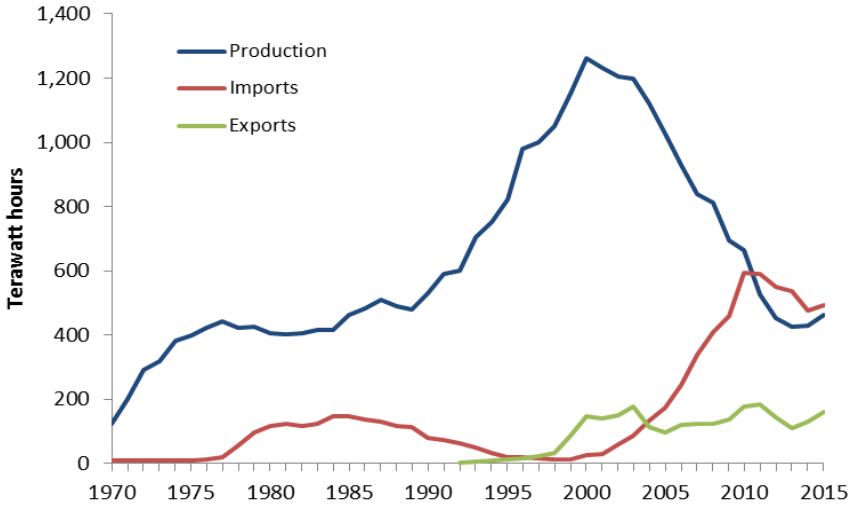
Natural gas and colliery methane production and consumption (Table 4.1.1)

4.1.1 Table 4.1.1 shows data for production, imports, exports, and the consumption of natural gas and colliery methane by major sector in each year from 1970 to 2015. Separate figures are shown for consumption of town gas and methane. Total consumption in Table 4.1.1 is defined to match the definition of gas consumption used in the gas tables before the 1999 Digest. This enables a consistent long term series to be presented.

4.1.2 Chart 4.1.1 illustrates the data in Table 4.1.1. It shows how the supply of natural gas became established during the first part of the 1970s. Thereafter, the supply of natural gas continued to grow less rapidly, with indigenous production bolstered from 1977 by imports from the Norwegian sector of the North Sea. By 1998 imports had fallen to only 7 per cent of their peak in the mid-1980s. This was due to both the depletion of the (mainly Norwegian) Frigg field (which ceased production in October 2004), along with the resurgence of UK production, which achieved a new record each year from 1989 to 2000. Since 2000, UK production has fallen by over 63 per cent, as UK reserves deplete.

4.1.3 The first exports of natural gas were seen in 1992 from the United Kingdom's share of the Markham gas field to the Netherlands. In 1995, these were supplemented by the first exports to the Republic of Ireland, followed by the start of gas exports from the Windermere field via the Markham field during 1997, and exports via the UK-Belgium interconnector during 1998. By 2000, exports were almost six times the volume of imports. This pattern has now reversed: by 2015, imports were just over three times the volume of exports.

Chart 4.1.1: Production, imports and exports of natural gas 1970 to 2015



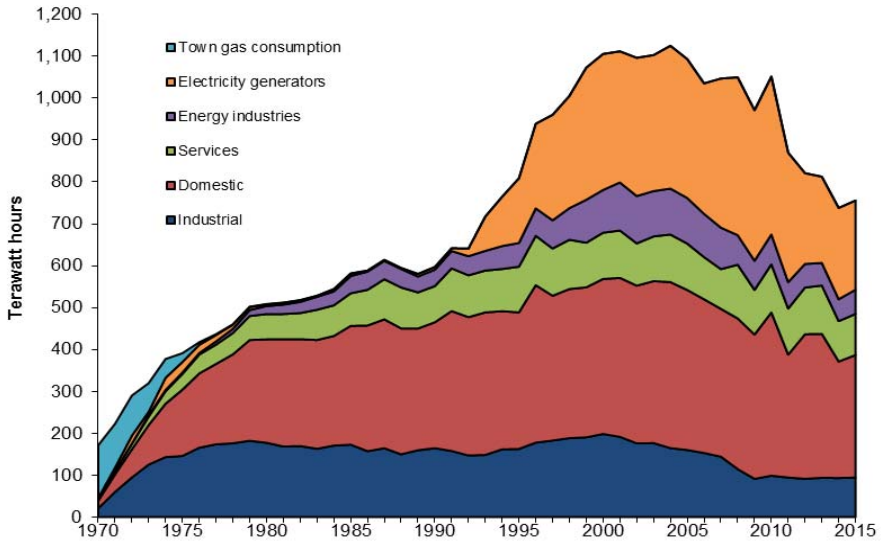
4.1.4 In October 2001, new gas supplies began to arrive from the Norwegian sector of the North Sea via the newly commissioned Vesterled pipeline. In December 2003 imports re-commenced from the UK/Norway trans-median line Statfjord field. These additional supplies of gas from the Norwegian sector of the North Sea saw the UK become a net importer of gas in 2004 for the first time since 1996. In 2005, imports of liquefied natural gas (LNG) via the Isle of Grain import/storage facility began increasing UK net imports. In October 2006, the first gas flowed through the Langeled pipeline giving the UK additional access to Norwegian gas fields. Also in October 2006, the compressors at Zeebrugge were upgraded increasing the import capacity through UK-Belgium interconnector. In December 2006, a second interconnector from Balgzand in the Netherlands to Bacton gave the UK access to the Dutch Continental Shelf. In 2007 three new fields, Chiswick, Grove and Minke, joined Markham and Windermere in exporting gas directly to the Netherlands. 2007 also saw gas exports to

Norway, ie UK gas from the Blane field to the Norwegian Ula field for injection into the Ula reservoir. In 2008 additional direct exports of gas to the Netherlands began from the new Stamford field.

4.1.5 In 2009, two new LNG import facilities became operational. As a result, LNG's share of total gas imports rose to 47 per cent in 2011. Strong competition from the global market for LNG resulted in a drop back from this peak to 2014 and 2015 when there was in an upturn in LNG imports to the UK, despite this 2015 LNG imports were down 45 per cent on their 2011 peak.

4.1.6 Chart 4.1.2 shows where natural gas has been consumed. The bulk of the rapid growth in consumption in the 1970s was in the domestic and industrial sectors. Industrial use of gas has fallen in the last 15 years, and by 2015 was less than half of the amount of 2000. Between 1980 and 2004, gas consumption by the service sector (see Table 4.1.1 for definition) increased by almost 90 per cent and has remained reasonably stable until 2015. Domestic gas use had been between 300 and 400TWh since the mid-1980s, until 2014 and 2015 when it reduced to 278TWh and 292TWh respectively. Over the past five years, domestic gas use has been strongly influenced by UK temperature variation.

4.1.2: Consumption of town gas and natural gas 1970 to 2015



4.1.7 The largest increase in gas consumption occurred in the 1990s with the growth of gas fired generation. Gas use for generation grew from 6.5 TWh in 1990 to 324.6 TWh in 2000. However, since 2010, gas use for electricity generation has dropped by 44 per cent. This reflects a shift from gas to coal, brought about by more favourable coal prices. Overall consumption of natural gas continues to fall from its peak in 2004, and in 2015 was 30 per cent below this peak.

4.1.8 A more detailed examination of historical gas statistics was published in the December 2001 issue of Energy Trends. This looked at trends since 1882 in gas production, gas consumption and fuel used in the past to manufacture gas. The updated data set on which the article is based is available on the BEIS web site at: www.gov.uk/government/collections/gas-statistics#historical-data. The original article is available on request from BEIS.

4.1.9 Analysis of gas statistics from 1948 to 2008 can also be found in chapter 4 of the DUKES: 60th anniversary article, available at:
www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes#60th-anniversary

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4.1.1 Natural gas and colliery methane production and consumption 1970 to 2015

GWh

	Production		Imports	Exports	Total for consumption			Domestic	
	Town gas *(1)*	Methane *(2)*	Methane *(3)*	Methane	**Total**	Town gas	Methane *(2)*	Town gas	Methane
1970	49,617	121,712	9,759	-	**171,564**	125,933	45,631	85,430	18,376
1971	24,882	201,721	9,730	-	**222,616**	104,245	118,371	73,502	41,675
1972	17,848	291,078	8,968	-	**290,287**	95,834	194,453	64,974	67,172
1973	21,336	317,132	8,587	-	**319,917**	68,286	251,631	46,598	94,515
1974	12,221	382,253	7,122	-	**377,388**	44,840	332,548	30,450	127,339
1975	5,393	397,932	9,818	-	**391,250**	20,984	370,237	14,507	158,141
1976	1,700	421,700	11,254	-	**417,655**	6,272	411,120	4,250	177,279
1977	762	440,544	19,548	-	**436,793**	2,051	434,742	1,290	191,844
1978	615	422,257	55,361	-	**460,297**	938	459,359	557	212,242
1979	674	425,832	95,424	-	**502,382**	1,055	501,327	586	240,465
1980	586	404,760	116,291	-	**508,684**	909	507,775	557	246,766
1981	557	401,742	124,262	-	**512,112**	791	511,321	469	256,379
1982	557	405,815	115,001	-	**518,149**	674	517,475	410	255,118
1983	586	416,454	124,497	-	**528,642**	528	528,114	322	259,661
1984	557	414,314	147,415	-	**544,584**	498	544,086	293	261,507
1985	498	461,851	147,122	-	**581,717**	469	581,248	293	283,517
1986	440	483,040	137,099	-	**588,691**	410	588,281	234	299,929
1987 *(4)*	322	508,126	128,893	-	**614,247**	322	613,925	147	307,578
1988	88	489,133	115,441	-	**594,766**	88	594,678	29	300,515
1989	-	478,931	113,770	-	**580,522**	-	580,522	-	290,557
1990	-	528,843	79,833	-	**597,046**	-	597,046	-	300,410
1991	-	588,822	72,007	-	**641,763**	-	641,763	-	333,963
1992	-	598,761	61,255	620	**640,818**	-	640,818	-	330,101
1993	-	703,971	48,528	6,824	**717,357**	-	717,357	-	340,162
1994	-	751,588	33,053	9,557	**764,667**	-	764,667	-	329,710
1995	-	823,336	19,457	11,232	**808,786**	-	808,786	-	326,010
1996	-	979,019	19,804	15,203	**938,848**	-	938,848	-	375,841
1997	-	998,871	14,062	21,666	**960,243**	-	960,243	-	345,532
1998	-	1,048,859	10,582	31,604	**1,005,306**	-	1,005,306	-	355,895
1999	-	1,152,635	12,862	84,433	**1,072,963**	-	1,072,963	-	358,066
2000	-	1,260,656	26,032	146,342	**1,105,537**	-	1,105,537	-	369,909
2001	-	1,231,263	30,464	138,330	**1,111,729**	-	1,111,729	-	379,426
2002	-	1,205,405	60,493	150,731	**1,096,267**	-	1,096,267	-	376,372
2003	-	1,197,030	86,298	177,039	**1,102,774**	-	1,102,774	-	386,486
2004	-	1,121,257	133,033	114,112	**1,124,996**	-	1,124,996	-	396,411
2005	-	1,025,989	173,328	96,181	**1,093,331**	-	1,093,331	-	381,879
2006	-	930,538	244,029	120,591	**1,035,325**	-	1,035,325	-	366,928
2007	-	838,809	338,026	123,158	**1,046,817**	-	1,046,817	-	352,868
2008	-	810,390	407,188	122,670	**1,083,378**	-	1,083,378	-	359,554
2009	-	694,687	457,447	137,100	**1,000,800**	-	1,000,800	-	344,499
2010	-	665,182	592,554	176,399	**1,083,573**	**-**	1,083,573	-	389,595
2011	-	526,711	588,475	183,689	**898,679**	**-**	898,679	-	293,400
2012	-	452,696	549,518	144,023	**851,834**	**-**	851,834	-	345,080
2013	-	424,757	535,105	109,664	**842,448**	**-**	842,448	-	343,501
2014	-	428,346	476,837	128,076	**768,996**	**-**	768,996	-	278,101
2015	-	460,797	492,382	161,575	**786,376**	-	786,376	-	292,417

(1) In most years production of town gas is less than consumption because of transfers into town gas of North Sea and imported methane.
(2) Includes colliery methane.
(3) Before 1977 imports were of liquefied natural gas. These imports continued until the early 1980s.
(4) From 1987 data for industrial use of gas exclude gas used for electricity generation within industry (see Chapter 1, paragraph 1.27).

4.1.1 Natural gas and colliery methane production and consumption 1970 to 2015 (continued)

GWh

Analysis of consumption							
Industrial *(5)*		Electricity generators	Other energy industries *(6)*		Services *(7)*		
Town gas	Methane *(2)*	Methane *(2)*	Town gas *(8)*	Methane *(2)*	Town gas	Methane	
20,691	20,808	1,858	-	1,160	19,812	3,428	1970
12,075	60,431	7,808	-	926	18,669	7,531	1971
13,423	94,662	18,563	-	633	17,438	13,423	1972
9,173	125,552	8,453	-	2,743	12,514	20,369	1973
5,744	143,341	28,967	-	3,094	8,646	29,806	1974
2,579	146,067	25,245	-	3,241	3,898	37,542	1975
791	165,644	19,501	-	3,563	1,231	45,132	1976
352	173,820	15,310	-	7,637	410	46,131	1977
176	176,253	10,006	-	9,952	205	50,906	1978
205	182,232	7,104	-	14,143	264	57,382	1979
147	177,513	4,027	-	19,096	205	60,373	1980
147	168,574	4,174	-	22,320	176	59,874	1981
88	169,717	3,793	-	26,657	176	62,190	1982
59	163,123	2,357	-	30,819	147	72,154	1983
59	170,831	5,317	-	33,193	147	73,238	1984
29	172,941	5,873	-	41,135	147	77,781	1985
29	157,496	2,269	-	43,421	147	85,166	1986
29	164,442	2,415	-	43,743	147	95,746	1987 *(4)*
-	149,935	2,407	-	44,109	59	97,712	1988
-	159,701	6,210	-	37,850	-	86,204	1989
-	164,595	6,513	-	39,159	-	86,369	1990
-	157,932	6,650	-	41,472	-	101,746	1991
-	147,218	17,969	-	45,660	-	99,871	1992
-	148,522	81,848	-	47,006	-	99,819	1993
-	161,815	117,606	-	54,700	-	100,836	1994
-	162,797	154,393	-	56,565	-	109,020	1995
-	177,794	201,969	-	65,336	-	117,908	1996
-	182,867	251,822	-	67,245	-	112,777	1997
-	188,595	267,733	-	75,459	-	117,624	1998
-	190,415	315,493	-	102,502	-	106,487	1999
-	198,506	324,563	-	102,103	-	110,456	2000
-	191,600	312,939	-	114,653	-	113,111	2001
-	176,168	329,847	-	113,047	-	100,833	2002
-	176,778	324,580	-	108,197	-	106,733	2003
-	164,702	340,824	-	109,584	-	113,475	2004
-	160,295	331,658	-	108,709	-	110,791	2005
-	153,065	311,408	-	103,270	-	100,654	2006
-	144,298	355,878	-	98,946	-	94,827	2007
-	123,630	376,810	-	95,251	-	128,133	2008
-	98,601	359,303	-	91,904	-	106,492	2009
-	107,659	377,121	-	94,285	-	114,912	2010
-	100,918	309,076	-	85,388	-	109,898	2011
-	97,560	216,543	-	81,159	-	111,493	2012
-	99,876	205,869	-	77,812	-	115,391	2013
-	99,112	217,842	-	77,563	-	96,378	2014
-	100,063	212,976	-	82,757	-	98,163	2015

(5) Industrial consumption in Chapter 4, Tables 4.1 and 4.2 plus use in coke manufacture and blast furnaces and non energy gas use.

(6) Energy industry use in Chapter 4, Tables 4.1 and 4.2 less use in coke manufacture and blast furnaces plus gas transferred to heat for sale.

(7) Public administration, commercial, agriculture and miscellaneous in Chapter 4, Tables 4.1 and 4.2.

(8) Town gas consumption by the energy industries is included with the industrial sector.

Chapter 5: Long term trends

Electricity

Fuel input for electricity generation (Table 5.1.1)

5.1.1 This table extends the series shown in Table 5.3 of Chapter 5 of the main Digest back to 1970. For the period up to 1987, only fuel inputs for electricity generation at stations owned by the major power producers, transport undertakings, and industrial hydro-electric and nuclear power stations are given; data for conventional thermal electricity generated by industrial producers are not available for this period. From 1987 onwards the table covers all generating companies. Trends in percentage shares of electricity generation are shown in Chart 5.1.1.

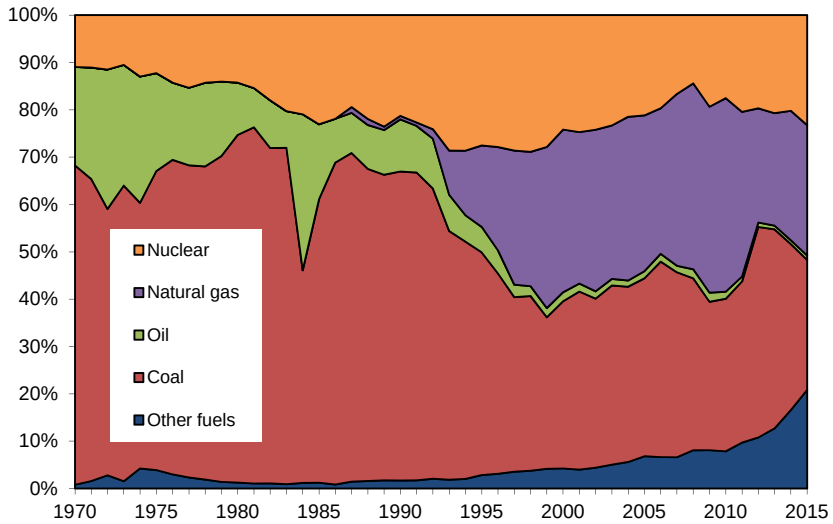
5.1.2 In 1970, coal provided over two thirds of the fuel input for electricity generation, oil made up two thirds of the rest. By 1999, coal's share had fallen to 32 per cent. Making up for station unavailability and substituting high priced gas since, its share recovered to 38 per cent in 2001 and continued to rise as gas prices rose making coal more attractive to purchase. During 2015, coal's share in the fuel input for electricity generation mix decreased by eight percentage points on the 2014 share of 35 per cent. This was due to reduced capacity as a result of the closure of several power stations and the conversion of a third unit at Drax from coal to high-range co-firing (85% to <100% biomass).

5.1.3 Oil made up 29 per cent of fuel input in 1972, but this share fell after the oil supply crisis in 1973. It briefly rose during the 1984/85 coal miners' dispute where it peaked at 33 per cent of fuel input in 1984, with coal at a then record low 45 per cent. Since then it has become the minority fuel representing 0.9 per cent in the 2015 fuel input for electricity generation mix.

5.1.4 Between 1975 and 1990, a European Community directive limited the use of natural gas in public supply power stations. During the 1990s, gas use in electricity generation grew, its share rising from 1 per cent in 1990 to 41 per cent in 2010 but has since declined due to high gas prices. In 2015, gas use in electricity generation remained roughly constant at 28 per cent.

5.1.5 Nuclear generation grew from 11 per cent in 1970, peaking at 29 per cent of input in 1998. Outages and older station closures reduced this, stabilizing at around 20 per cent between 2011 and 2014 and increasing to 23 per cent in 2015. Since the early 1990s, the share of renewables in the generation mix has grown, from 1.7 per cent in 1990 to 18 per cent in 2015, as renewables capacity has increased[1]. For non-thermal renewables, the fuel used is assumed the same as the electricity generated, unlike thermal generation where conversion losses are incurred. This means that renewables share will be lower on a fuel use basis than on a generation basis due the issue of thermal efficiency.

Chart 5.1.1 Percentage shares of fuel input for electricity generation, 1970 to 2015



[1] Further information can be found in the long term trends chapter 6, which focuses on renewables.

Electricity supply, availability and consumption (Table 5.1.2)

5.1.6 Figures for the supply, availability and consumption of electricity are given in Table 5.1.2. This table retains the nomenclature of electricity chapters in the 1999 and earlier Digests, whereas the balance methodology has introduced a new nomenclature (see Chapter 5 of the main Digest, paragraph 5.33 and Table 5.4). The series in Table 5.1.2 are extended back to 1970.

5.1.7 Virtually all electricity came from the UK until the France-England interconnector opened in 1986. Net imports from France provided over 5 per cent of electricity available in 1994. By 2002 the proportion of imports fell, as did electricity prices, removing French electricity's previous cost benefits. In 2003, exports to continental Europe increased due to higher electricity prices there, reducing net imports to 0.6 per cent of electricity available. The proportion of imports then increased following the opening of the Netherlands-England and Ireland-Wales interconnectors in 2011 and 2012 respectively to a record 6.2 per cent in 2015 as electricity produced in the UK declined from 376.5 TWh in 2003 to 318.7 TWh in 2015.

5.1.8 Industrial electricity consumption accounted for 37 per cent of consumption in 1970, decreasing gradually to 30 per cent in 2015, reflecting de-industrialisation as the UK switched to services.

5.1.9 The biggest growth in consumption has been in the services sector, its share of consumption rising gradually from 21 per cent in 1970 to 33 per cent in 2015, broadly the same as in the previous two years.

5.1.10 The domestic sector's share of total consumption averaged to 39 per cent during the 1970's, declining to an average of 36 per cent in the 1980's and has remained around those levels since then.

Electricity generated and supplied (Table 5.1.3)

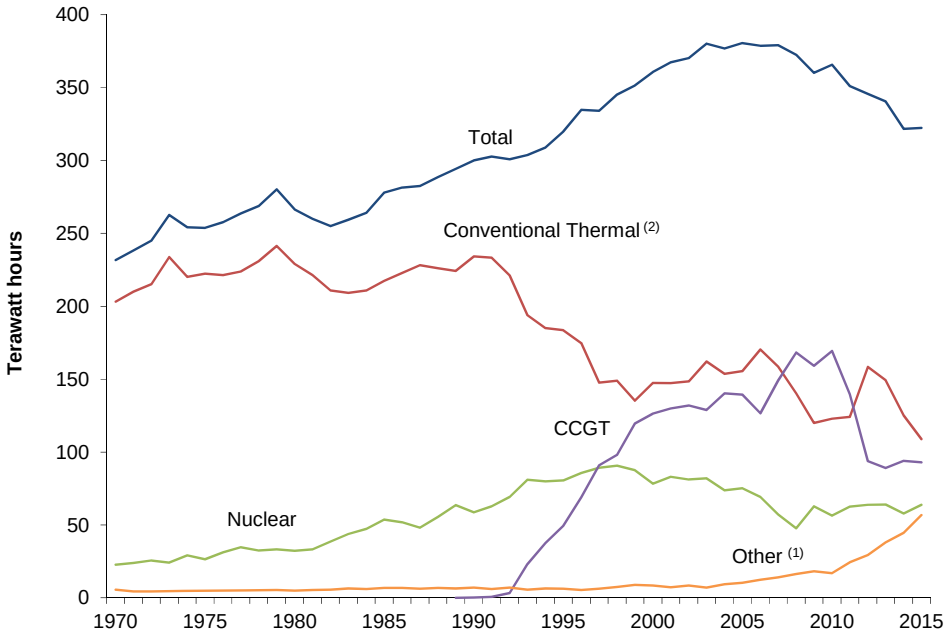
5.1.11 Figures for the generation and supply of electricity are given in Table 5.1.3. Data are given for major power producers, for other generators and for all generators in total, with separate series for the different types of power station.

5.1.12 Total gross electricity supplied has gradually increased since 1970 and first peaked in 2003 at 380.1 TWh. Over the long term, this has been the result of the rise in demand due to an increasing population size and the expanding market for electrical goods. From 2003 total gross electricity supplied has declined, to 322.4 TWh in 2015, due to increased energy efficiency measures.

5.1.14 In 1970, conventional thermal power stations produced 88 per cent of gross electricity supplied; output peaked in 1990 before falling due to new generating technologies developing and the closure and conversion of many coal plants in recent years. Nuclear generation supplied only 10 per cent of total gross electricity by UK generators in 1970 but by 1993 accounted for 27 per cent. Since then nuclear's share has generally seen a downward trend due to nuclear plants reaching the end of their running lifetime along with the growth of supply from CCGT plants. In 2015, electricity supplied by nuclear plants was 20 per cent (63.9 TWh) of total gross electricity supplied.

5.1.15 The share of non-thermal renewables' of electricity supplied varied between 1 and 4 per cent between 1970 and 2010. However, the share has increased by around two percentage points year-on-year since 2010, and represented 17 per cent of total gross electricity supplied during 2015, the highest share recorded, mainly due to large expansion in wind generation capacity.

Chart 5.1.2: Gross electricity supplied by all generating companies by type of plant, 1970 to 2015



5.1.16 A more detailed examination of historical electricity statistics was published as an article in the September 2002 issue of Energy Trends. This looked at trends in the generation, supply and consumption of electricity over the last 80 years. The updated data set on which the article is based is available on the BEIS section of the GOV.UK website at: www.gov.uk/government/collections/electricity-statistics#historical-data. The original article is available on request from BEIS.

5.1.17 Analysis of electricity statistics from 1948 to 2008 can also be found in chapter 5 of the DUKES: 60th anniversary publication, available at:
www.gov.uk/government/collections/digest-of-uk-energy-statistics-dukes#60th-anniversary

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5.1.1 Fuel input for electricity generation

Million tonnes of oil equivalent

	Total all fuels	Coal	Oil *(1)*	Natural gas *(2)*	Electricity			Coke and breeze	Other fuels *(4)*	Shannon-Weiner measure of diversity
					Nuclear	Natural flow hydro *(3)*	Wind *(3)*			
1970	**63.84**	43.07	13.27	0.11	7.00	0.39	-	-	-	0.88
1971	**66.46**	42.42	15.63	0.64	7.37	0.29	-	0.11	-	0.95
1972	**68.37**	38.47	20.13	1.61	7.87	0.29	-	-	-	1.05
1973	**70.93**	44.30	18.09	0.64	7.46	0.33	-	0.11	-	0.96
1974	**69.01**	38.71	18.41	2.46	8.97	0.35	-	0.11	-	1.10
1975	**66.25**	41.85	13.70	2.14	8.12	0.33	-	0.11	-	1.02
1976	**66.97**	44.49	10.92	1.61	9.56	0.39	-	-	-	0.96
1977	**69.32**	45.71	11.35	1.28	10.64	0.34	-	-	-	0.96
1978	**69.64**	46.05	12.31	0.86	9.96	0.35	-	0.11	-	0.95
1979	**72.80**	50.10	11.45	0.54	10.23	0.37	-	0.11	-	0.90
1980	**69.46**	51.01	7.67	0.42	9.91	0.34	-	0.11	-	0.81
1981	**65.98**	49.64	5.46	0.21	10.18	0.38	-	0.11	-	0.77
1982	**65.98**	46.75	6.64	0.21	11.88	0.39	-	0.11	-	0.84
1983	**66.37**	47.16	5.14	0.21	13.47	0.39	-	-	-	0.81
1984	**69.18**	31.07	22.80	0.42	14.50	0.39	-	-	-	1.11
1985	**71.54**	42.81	11.35	0.54	16.50	0.34	-	-	-	1.00
1986	**70.46**	47.91	6.51	0.18	15.44	0.41	-	-	-	0.89
1987 *(5)*	**70.50**	50.37	5.14	0.19	14.44	0.36	-	-	-	0.80
1987 *(5)*	**74.31**	51.58	6.30	0.91	14.44	0.36	-	-	0.72	0.91
1988	**75.57**	49.83	7.01	0.97	16.57	0.42	-	-	0.77	0.96
1989	**75.27**	48.59	7.11	0.54	17.74	0.41	-	-	0.88	0.96
1990	**76.34**	49.84	8.40	0.56	16.26	0.44	-	-	0.84	0.97
1991	**76.87**	49.98	7.56	0.57	17.43	0.39	-	-	0.94	0.96
1992	**76.57**	46.94	8.07	1.54	18.45	0.46	-	-	1.09	1.05
1993	**75.40**	39.61	5.78	7.04	21.58	0.37	-	-	1.02	1.20
1994	**74.01**	37.10	4.11	10.10	21.20	0.44	-	-	1.06	1.23
1995	**77.15**	36.29	4.15	13.27	21.25	0.40	-	-	1.79	1.28
1996	**79.56**	33.67	3.87	17.37	22.18	0.29	0.04	-	2.14	1.32
1997	**76.76**	28.30	2.01	21.74	21.98	0.38	0.06	-	2.29	1.32
1998	**81.14**	29.94	1.69	23.02	23.44	0.44	0.08	-	2.52	1.31
1999	**79.72**	25.51	1.54	27.13	22.22	0.46	0.07	-	2.79	1.32
2000	**81.21**	28.67	1.55	27.91	19.64	0.44	0.08	-	2.93	1.31
2001	**84.01**	31.61	1.42	26.87	20.77	0.35	0.08	-	2.91	1.29
2002	**83.00**	29.63	1.29	28.33	20.10	0.41	0.11	-	3.13	1.30
2003	**85.95**	32.54	1.19	27.85	20.04	0.28	0.11	-	3.93	1.30
2004	**84.57**	31.31	1.10	29.25	18.16	0.42	0.17	-	4.15	1.31
2005	**86.68**	32.58	1.31	28.52	18.37	0.42	0.25	-	5.23	1.34
2006	**87.06**	35.94	1.43	26.78	17.13	0.39	0.36	-	5.02	1.33
2007	**84.28**	32.92	1.16	30.60	14.04	0.44	0.46	-	4.68	1.31
2008	**82.52**	29.96	1.58	32.40	11.91	0.44	0.61	-	4.67	1.32
2009	**78.67**	24.66	1.51	30.89	15.23	0.45	0.80	-	4.87	1.37
2010	**79.33**	25.56	1.18	32.43	13.93	0.31	0.89	-	5.04	1.35
2011	**76.42**	26.03	0.78	26.58	15.63	0.49	1.37	-	5.56	1.40
2012	**77.20**	34.33	0.73	18.62	15.21	0.45	1.82	-	6.05	1.39
2013	**74.53**	31.33	0.59	17.70	15.44	0.40	2.62	-	6.45	1.43
2014	**68.49**	24.01	0.55	18.73	13.85	0.51	3.10	-	7.75	1.51
2015	**66.53**	18.26	0.62	18.31	15.48	0.54	4.12	-	9.21	1.58

(1) Includes oil used in gas turbine and diesel plant or for lighting up coal fired boilers, Orimulsion (until 1997), and refinery gas (from 1987).
(2) Includes colliery methane from 1987 onwards.
(3) Fuel inputs have been calculated on an energy supplied basis - see explanatory notes at Chapter 5, paragraph 5.75.
(4) Main fuels included are coke oven gas, blast furnace gas, waste products from chemical processes, refuse derived fuels and other renewable sources.
(5) Data for all generating companies are only available from 1987 onwards, and the figures for 1987 to 1989 include a high degree of estimation. Before 1987 the data are for major power producers, transport undertakings and industrial hydro and nuclear stations only.

5.1.2 Electricity supply, availability and consumption

TWh

	Electricity supplied (net)	Purchases from other producers	Net imports *(1)*	Electricity available	Losses in transmission etc *(2)*	Electricity consumption					
						Total	Fuel industries	Final users *(3)*			
								Industrial	Domestic	Other *(4)*	Total
1970	215.76	0.19	0.55	216.50	17.50	199.00	6.59	72.99	77.04	42.38	192.41
1971	222.92	0.53	0.12	223.57	19.01	204.56	6.60	73.43	80.67	43.86	197.96
1972	229.45	0.53	0.48	230.46	18.91	211.55	6.37	73.16	86.89	45.13	205.18
1973	245.42	0.59	0.06	246.07	19.59	226.48	6.67	80.07	91.30	48.44	219.81
1974	237.21	0.60	0.05	237.86	18.22	219.64	6.12	75.81	92.63	45.08	213.52
1975	237.76	0.70	0.08	238.54	19.47	219.07	6.29	75.36	89.21	48.21	212.78
1976	240.22	0.61	-0.10	240.73	18.73	222.00	6.39	80.84	85.12	49.65	215.61
1977	246.82	0.74	-	247.56	20.76	226.80	6.41	82.06	85.90	52.43	220.39
1978	252.65	0.66	-0.08	253.23	21.81	231.42	6.52	84.00	85.80	55.10	224.90
1979	264.34	0.63	-	264.97	22.97	242.00	6.78	87.55	89.67	58.00	235.22
1980	252.02	0.61	-	252.63	21.53	231.11	6.86	79.73	86.11	58.41	224.25
1981	246.60	0.74	-	247.34	20.13	227.21	6.86	77.03	84.44	58.88	220.35
1982	242.48	0.82	-	243.30	20.48	222.82	6.81	73.91	82.79	59.31	216.01
1983	246.15	1.15	-	247.30	21.21	226.09	6.69	74.17	82.95	62.28	219.40
1984	251.47	0.55	-	252.02	21.06	230.96	6.64	78.64	83.90	61.78	224.32
1985	263.56	0.92	-	264.48	22.63	241.85	7.76	79.53	88.23	66.33	234.09
1986*(5)*	266.81	1.10	4.26	272.17	22.83	249.34	7.68	80.15	91.83	69.68	241.66
1986*(5)*	278.48	-	4.26	282.73	22.91	259.82	9.51	88.80	91.83	69.68	250.31
1987	279.71	-	11.64	291.34	22.96	268.38	9.49	93.14	93.25	72.50	258.89
1988	285.71	-	12.14	297.85	23.35	274.50	9.16	97.14	92.36	75.84	265.34
1989	291.75	-	12.63	304.38	24.98	279.40	9.00	99.42	92.27	78.71	270.40
1990	297.50	-	11.91	309.41	24.99	284.42	9.99	100.64	93.79	80.00	274.43
1991	300.65	-	16.41	317.06	26.22	290.84	9.79	99.57	98.10	83.38	281.05
1992	298.55	-	16.69	315.24	23.79	291.45	9.98	95.28	99.48	86.71	281.47
1993	301.87	-	16.72	318.59	22.84	295.75	9.62	96.84	100.46	88.83	286.13
1994	306.94	-	16.89	323.83	31.00	292.83	7.52	96.12	101.41	87.78	285.31
1995	317.63	-	16.61	334.24	30.32	303.92	8.07	101.78	102.21	91.86	295.85
1996	332.36	-	16.76	349.11	29.34	319.78	9.21	107.63	107.51	95.42	310.57
1997	331.63	-	16.57	348.20	27.14	321.07	8.62	108.10	104.46	99.88	312.44
1998	342.70	-	12.47	355.17	29.82	325.35	8.41	108.44	109.41	99.09	316.94
1999	347.67	-	14.24	361.92	29.86	332.05	8.04	112.25	110.31	101.46	324.02
2000	357.27	-	14.17	371.44	31.14	340.30	9.70	115.29	111.84	103.47	330.59
2001	364.17	-	10.40	374.57	32.07	342.50	8.63	112.49	115.34	106.05	333.88
2002	366.66	-	8.41	375.07	30.96	344.11	10.06	110.82	120.01	103.22	334.05
2003	376.53	-	2.16	378.69	32.07	346.13	9.26	109.93	123.00	103.94	336.87
2004	373.40	-	7.49	380.89	33.18	347.71	8.14	112.09	124.20	103.28	339.57
2005	376.78	-	8.32	385.10	27.90	357.20	7.85	116.70	125.71	106.94	349.35
2006	373.86	-	7.52	381.38	27.52	353.86	8.00	115.53	124.70	105.63	345.87
2007	374.06	-	5.22	379.28	27.83	351.45	9.19	113.41	123.08	105.78	342.26
2008	367.18	-	11.02	378.20	28.10	350.10	7.71	114.72	119.80	107.87	342.39
2009	355.31	-	2.86	358.17	28.15	330.02	7.67	100.34	118.54	103.47	322.35
2010	361.45	-	2.66	364.11	27.03	337.50	8.25	104.94	118.83	105.47	329.25
2011	347.15	-	6.22	353.37	27.88	325.87	7.66	102.74	111.59	103.88	318.21
2012	341.63	-	11.87	353.50	28.82	325.17	6.72	98.66	114.67	105.12	318.44
2013	336.59r	-	14.43	351.02r	26.67r	324.35r	7.54r	97.49r	113.45r	105.87r	316.81r
2014	317.81r	-	20.52r	338.33r	27.44r	310.89r	7.46	93.33r	108.32r	101.78r	303.43r
2015	318.71	-	20.94	339.65	29.03	310.62	7.46	92.76	108.16	102.24	303.16

(1) Net transfers between the Irish Republic and Northern Ireland (ceased in 1981 and recommenced in 1996), between France and England (from 1986), the Netherlands and England (from 2011) and the Irish Republic and Wales (from 2012)

(2) Losses on the public distribution system (grid system and local networks) and other differences between data collected on sales and data collected on availability.

(3) Industry includes some iron and steel consumption that is counted as energy industry use in the main DUKES tables.

(4) Public administration, transport, agricultural and commercial sectors.

(5) Data for all generating companies are only available from 1986 onwards. Before 1986 the data are for major power producers, transport undertakings and industrial hydro and nuclear stations only.

5.1.3 Electricity generated and supplied

GWh

	Major power producers *(1)*										
	Electricity generated	Electricity used on works	Electricity supplied (gross) *(2)* Total	Conventional thermal and other *(3)*	CCGT	Nuclear	Hydro Natural flow	Hydro Pumped storage	Wind	Electricity used in pumping at pumped storage stations	Electricity Supplied (net) *(4)*
1970	232,378	16,429	215,949	188,175	-	22,805	3,846	1,123	-	1,487	214,462
1971	240,080	17,143	222,937	195,181	-	24,013	2,835	908	-	1,209	221,728
1972	246,843	17,439	229,404	200,048	-	25,639	2,847	870	-	1,184	228,220
1973	263,140	18,157	244,983	216,796	-	24,310	3,214	663	-	882	244,101
1974	254,688	17,763	236,925	203,478	-	29,232	3,520	695	-	896	236,029
1975	255,084	17,136	237,948	207,159	-	26,463	3,186	1,140	-	1,430	236,518
1976	258,656	17,962	240,694	205,048	-	31,153	3,128	1,365	-	1,729	238,965
1977	265,649	18,468	247,181	207,904	-	34,660	3,320	1,297	-	1,608	245,573
1978	270,677	17,907	252,770	215,761	-	32,462	3,378	1,169	-	1,429	251,341
1979	283,186	18,744	264,442	226,329	-	33,335	3,617	1,161	-	1,424	263,018
1980	269,945	17,765	252,180	215,418	-	32,291	3,298	1,173	-	1,453	250,727
1981	263,658	16,983	246,675	208,589	-	33,191	3,906	989	-	1,196	245,479
1982	259,410	16,940	242,470	198,822	-	38,721	3,873	1,054	-	1,272	241,198
1983	264,589	17,380	247,209	197,600	-	43,911	3,882	1,816	-	2,337	244,872
1984	270,471	17,643	252,828	200,240	-	47,256	3,358	1,974	-	2,613	250,215
1985	284,712	18,903	265,809	205,906	-	53,767	3,435	2,701	-	3,494	262,315
1986	287,330	18,819	268,511	210,452	-	51,843	4,087	2,129	-	2,993	265,518
1987	287,701	18,740	268,961	215,290	-	48,205	3,460	2,006	-	2,804	266,157
1988	293,100	19,341	273,759	211,932	-	55,642	4,160	2,025	-	2,888	270,871
1989	297,890	19,315	278,575	209,169	-	63,602	3,992	1,812	-	2,572	276,003
1990	302,936	18,632	284,304	219,364	-	58,664	4,384	1,892	-	2,626	281,678
1991	305,704	19,142	286,562	218,260	309	62,761	3,767	1,465	-	2,109	284,453
1992	303,715	19,157	284,558	206,245	2,964	69,135	4,579	1,635	-	2,257	282,301
1993	305,433	18,170	287,264	178,773	22,611	80,979	3,513	1,388	-	1,948	285,316
1994	307,476	16,696	290,780	168,321	36,815	79,962	4,265	1,417	-	2,051	288,729
1995	315,510	16,510	299,000	164,324	48,525	80,598	4,051	1,502	-	2,282	296,718
1996	326,235	14,967	311,268	155,574	65,604	85,820	2,763	1,507	-	2,430	308,838
1997	324,133	15,411	308,722	127,961	86,682	89,341	3,299	1,439	-	2,477	306,245
1998	333,764	16,140	317,624	128,235	93,005	90,590	4,225	1,569	-	2,594	315,030
1999	336,608	15,461	321,147	113,493	112,768	87,672	4,409	2,804	-	3,774	317,373
2000	341,783	14,952	326,831	125,468	116,110	78,334	4,316	2,603	-	3,499	323,332
2001	353,057	16,066	336,991	127,119	121,344	82,985	3,203	2,340	-	3,210	333,781
2002	353,994	15,746	338,248	128,795	121,886	81,090	3,914	2,562	-	3,463	334,785
2003	362,600	16,747	345,853	140,196	118,546	81,911	2,559	2,641	-	3,546	342,308
2004	358,313	15,582	342,732	133,607	128,983	73,682	3,901	2,559	-	3,497	339,235
2005	362,212	16,265	345,947	135,999	128,179	75,173	3,821	2,776	-	3,707	342,240
2006	361,232	17,031	344,201	151,866	115,695	69,237	3,680	3,722	-	4,918	339,283
2007	361,317	16,090	345,227	138,793	137,657	57,249	4,114	3,846	3,569	5,071	340,156
2008	355,239	14,662	340,577	121,816	157,417	47,673	4,209	4,075	5,388	5,371	335,206
2009	342,011	14,750	327,260	101,100	148,907	62,762	4,279	3,672	6,540	4,843	322,417
2010	347,846	14,403	333,443	105,142	157,818	56,442	2,694	3,139	8,208	4,212	329,231
2011	332,461	14,479	317,983	105,345	129,669	62,655	4,578	2,895	12,840	3,843	314,140
2012	328,270	15,859	312,411	139,994	84,207	63,949	4,168	2,956	17,137	3,978	308,433
2013	324,725	15,669	309,056	133,330	81,145	64,133	3,596	2,894	23,958	3,930	305,127
2014	300,823	13,957	286,865	107,945	86,775	57,903	4,606	2,873	26,763	3,884	282,981
2015	295,742	13,805	281,937	89,505	86,256	63,895	4,889	2,730	34,662	3,711	278,226

(1) From 2007, major wind farm companies are included under Major Power Producers, see paragraph 5.67 in the main Digest, previously all wind was covered under other generators.

(2) Electricity generated less electricity used on works.

(3) Includes electricity supplied by gas turbines and oil engines. From 1988 also includes electricity produced by plants using thermal renewable sources.

(4) Electricity supplied (gross) less electricity used in pumping at pumped storage stations.

(5) Natural flow hydro, wind, wave and solar photovoltaics.

5.1.3 Electricity generated and supplied

GWh

Other generators *(1)*				All generating companies							
Electricity supplied (gross) *(2)*				Electricity supplied (gross)							
Total	Conventional thermal and other *(3)*	CCGT	Non-thermal renewables *(5)*	Total	Conventional thermal and other *(3)*	CCGT	Nuclear	Non-thermal renewables *(5)*	Pumped storage	Electricity supplied (net) *(4)*	
15,674	14,996	-	678	231,623	203,171	-	22,805	4,524	1,123	230,136	1970
15,388	14,837	-	551	238,325	210,018	-	24,013	3,386	908	237,116	1971
15,746	15,175	-	571	245,150	215,223	-	25,639	3,418	870	243,966	1972
17,655	17,008	-	647	262,638	233,804	-	24,310	3,861	663	261,756	1973
17,222	16,660	-	562	254,147	220,138	-	29,232	4,082	695	253,251	1974
15,766	15,175	-	591	253,714	222,334	-	26,463	3,777	1,140	252,284	1975
17,013	16,414	-	599	257,707	221,462	-	31,153	3,727	1,365	255,978	1976
16,434	15,848	-	586	263,615	223,752	-	34,660	3,906	1,297	262,007	1977
16,034	15,387	-	647	268,804	231,148	-	32,462	4,025	1,169	267,375	1978
15,720	15,062	-	658	280,162	241,391	-	33,335	4,275	1,161	278,738	1979
14,132	13,509	-	623	266,312	228,927	-	32,291	3,921	1,173	264,859	1980
13,264	12,801	-	463	259,939	221,390	-	33,191	4,369	989	258,743	1981
12,613	11,943	-	670	255,083	210,765	-	38,721	4,543	1,054	253,811	1982
12,152	11,486	-	666	259,361	209,086	-	43,911	4,548	1,816	257,024	1983
11,319	10,685	-	634	264,147	210,925	-	47,256	3,992	1,974	261,534	1984
12,112	11,467	-	645	277,921	217,373	-	53,767	4,080	2,701	274,427	1985
12,957	12,278	-	679	281,468	222,730	-	51,843	4,766	2,129	278,475	1986
13,551	12,831	-	720	282,512	228,121	-	48,205	4,180	2,006	279,708	1987
14,840	14,085	-	755	288,599	226,017	-	55,642	4,915	2,025	285,711	1988
15,747	15,007	-	740	294,322	224,176	-	63,602	4,732	1,812	291,750	1989
15,824	14,729	280	815	300,128	234,093	280	58,664	5,199	1,892	297,502	1990
16,202	15,056	298	848	302,764	233,316	607	62,761	4,615	1,465	300,655	1991
16,246	14,987	394	865	300,804	221,232	3,358	69,135	5,444	1,635	298,547	1992
16,552	14,979	584	989	303,816	193,752	23,195	80,979	4,502	1,388	301,868	1993
18,207	16,356	738	1,113	308,987	184,677	37,553	79,962	5,378	1,417	306,936	1994
20,909	18,851	933	1,125	319,909	183,175	49,458	80,598	5,176	1,502	317,627	1995
23,519	19,091	3,358	1,070	334,786	174,664	68,962	85,820	3,833	1,507	332,356	1996
25,384	19,703	4,192	1,489	334,107	147,665	90,874	89,341	4,788	1,439	331,630	1997
27,669	20,766	5,157	1,746	345,293	149,001	98,162	90,590	5,971	1,569	342,699	1998
30,299	21,769	6,785	1,745	351,446	135,263	119,553	87,672	6,154	2,804	347,672	1999
33,934	21,926	10,318	1,690	360,765	147,394	126,428	78,334	6,006	2,603	357,266	2000
30,391	20,066	8,531	1,794	367,382	147,185	129,875	82,985	4,997	2,340	364,173	2001
31,873	19,716	10,049	2,108	370,120	148,511	131,935	81,090	6,022	2,562	366,657	2002
34,220	21,942	10,336	1,941	380,073	162,138	128,882	81,911	4,500	2,641	376,528	2003
34,165	20,046	11,260	2,859	376,896	153,653	140,243	73,682	6,760	2,559	373,399	2004
34,539	19,494	11,204	3,842	380,486	155,493	139,382	75,173	7,662	2,776	376,780	2005
34,578	18,598	10,859	5,121	378,779	170,464	126,554	69,237	8,802	3,722	373,861	2006
33,908	19,801	11,471	2,637	379,136	158,594	149,127	57,249	10,320	3,846	374,064	2007
31,974	18,369	10,947	2,658	372,551	140,185	168,364	47,673	12,255	4,075	367,180	2008
32,888	18,953	10,251	3,684	360,149	120,053	159,159	62,762	14,503	3,672	355,306	2009
32,216	17,771	11,509	2,936	365,660	122,914	169,327	56,442	13,838	3,139	361,448	2010
33,009	18,854	10,033	4,122	350,992	124,200	139,702	62,655	21,540	2,895	347,149	2011
33,200	18,480	9,571	5,149	345,611	158,474	93,778	63,949	26,454	2,956	341,633	2012
31,466	16,054	7,886	7,525	340,522	149,385	89,031	64,133	35,080	2,894	336,592	2013
34,825	17,152	7,199	10,475	321,691	125,097	93,974	57,903	41,844	2,873	317,807	2014
40,486	19,309	6,617	14,559	322,423	108,814	92,874	63,895	54,111	2,730	318,712	2015

Chapter 6: Long term trends

Renewables

Renewables sources used to generate electricity, heat and for transport; and electricity generated from renewable sources (Table 6.1.1)

6.1.1 This table extends the series shown in Tables 6.4 and 6.6 of Chapter 6 of the main Digest back to 1990, the earliest year for which comprehensive data on renewables and wastes are available.

6.1.2 Between 1990 and 2000, renewable sources increased by a factor of two and a half with an average growth rate of 9.9 per cent. During the following ten years (2000 to 2010) renewable sources increased by a factor in excess of three with an average growth rate of 13 per cent. The average growth rate has further increased since 2010 and now stands at 15 per cent.

6.1.3 Between 1990 and 2000, the volume of renewables used to generate electricity more than doubled with an average growth rate of 12 percent. Average growth for the next ten years was slightly less at 10 per cent. Since 2010, average growth has increased to 19 per cent and renewable volumes doubled over this period.

6.1.4 Chart 6.1.1 shows the amount of primary renewable sources used for generating electricity, for heat, and as a transport fuel, whilst chart 6.1.2 shows how much electricity was generated from 6 main renewable categories.

6.1.5 Between 2000 and 2010, the rate of growth in electricity generated from all renewables averaged 10 per cent a year, which incorporates a smaller (2 per cent) rise between 2009 and 2010, reflecting lower rainfall and wind speeds.

6.1.6 Between 2000 and 2010, the main contributors to the growth in electricity generated from renewables were wind (+27 per cent a year on average), landfill gas (+9 per cent a year), small scale hydro schemes (+8 per cent a year), sewage sludge digestion (+7 per cent a year), and energy from waste (+6 per cent a year). Co-firing of biomass with fossil fuels was zero until 2002, but more than doubled each year between 2002 and 2005 before levelling off in 2006; following a decline until 2008, co-firing increased in 2009 and 2010. When combined, electricity generated from all forms of bioenergy increased by an average of 12 per cent a year between 2000 and 2010. Recent years have seen a switch away from co-firing, as the main generators have converted to dedicated biomass. Between 2010 and 2015, the bulk of the growth in absolute terms has come from plant biomass which increased twelve fold and onshore wind which increased three fold. The biggest increase in percentage terms was from solar photovoltaics which went from 41 GWh in 2010 to 7,561 GWh in 2015.

6.1.7 The use of renewables to generate heat grew from 1990 to 1996 with an average growth rate of 19 per cent. Up until 2005, growth was more modest and for several years was negative mainly because the use of industrial wood declined by over one-half due to the introduction of more stringent emission controls. Since 2005, there has been an increase in renewable heat, due to policy incentives. There was a sharp increase between 2007 and 2008 marking a new baseline set for domestic wood for the year 2008. Between 2010 and 2015, renewable heat has increased by an average of 13 per cent.

6.1.8 Liquid biofuels for transport were first included in the energy mix through blending with fossil fuels in 2002. There was a steady increase until 2010, when over 1.2 million tonnes of oil equivalent was used. However, falls in biodiesel use reduced the total contribution during the following two years, and although 2014 saw a new high, consumption has fallen back in 2015.

6.1.9 More detailed analysis of renewables statistics for 2013 onwards are shown in Chapter 6 of the main Digest.

6.1.10 To note that long term trends table 6.1.1 now includes a table showing long term average load factors of renewable technologies, based on an average load factor of the five years ending that year. With the exception of wind, where a longer time-series is available, this begins in 2012 (since the first

data point of the annual load factor series on which this is based - in table 6.5 in the main Digest - is 2008).

Chart 6.1.1: Renewable sources used to generate electricity, heat and for transport, 1990 to 2015

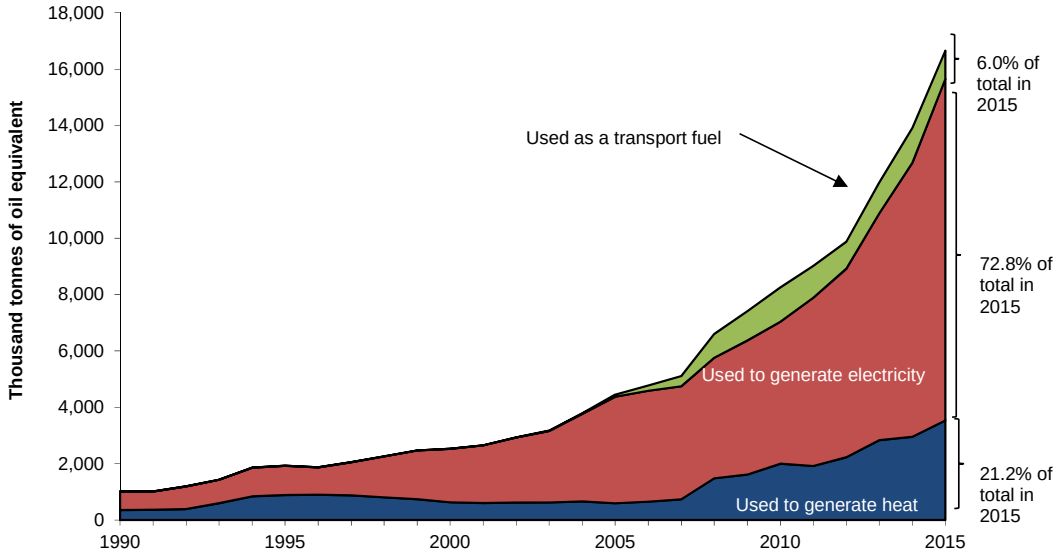
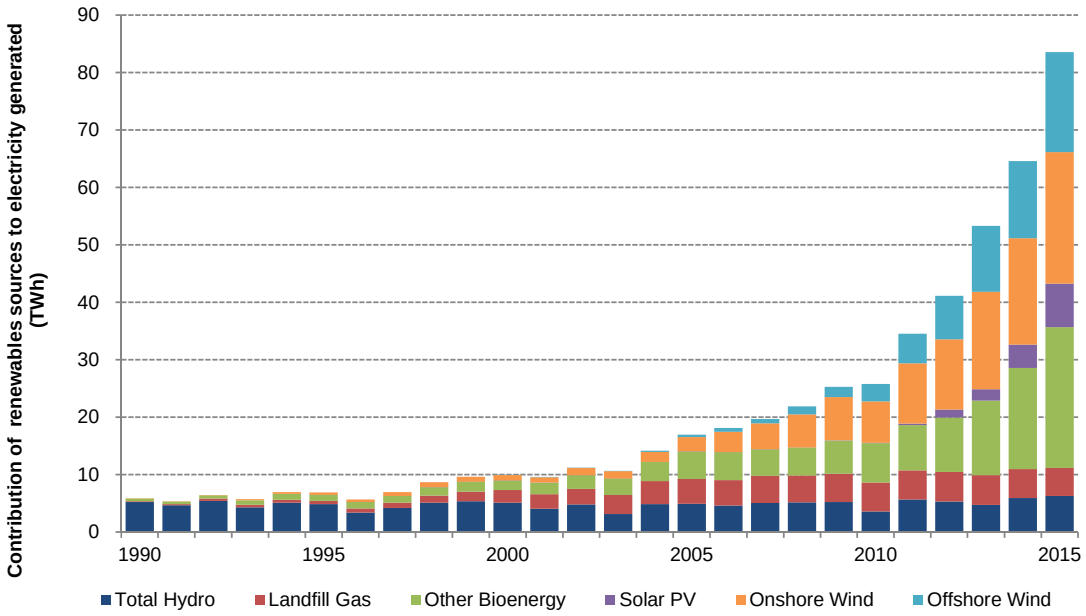


Chart 6.1.2: Electricity generated from renewable sources, 1990 to 2015



Note: Hydro bar includes marine energy (0.002TWh in 2015)

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6.1.1 Renewable sources used to generate electricity and heat; electricity generated from renewable sources

Thousand tonnes of oil equivalent

	Wind (1)		Wave and	Solar	Hydro (1)		Bioenergy								Total	Wastes
	Onshore	Offshore	Tidal (1)	photo-voltaics	Small scale	Large scale *(2)*	Landfill gas	Sewage sludge digestion	Energy from waste combustion *(3)*	Animal Biomass *(4)*	Plant Biomass *(5)*	Anaerobic Digestion *(6)*	Co-firing with fossil fuels	Total bioenergy		*(7)*
Used to generate electricity																
1990	0.8	-	-	-	10.9	436.8	45.6	103.6	69.8	-	-	0.0	-	219.0	667.5	41.0
1991	0.7	-	-	-	12.2	385.4	68.2	107.6	70.5	0.5	-	0.1	-	246.9	645.2	41.4
1992	2.8	-	-	-	12.8	454.1	123.6	107.6	85.9	17.4	-	0.2	-	334.6	804.4	50.4
1993	18.7	-	-	-	13.6	356.2	146.6	123.8	119.1	52.3	-	0.2	-	442.0	830.5	76.4
1994	29.5	-	-	-	13.6	424.3	169.5	118.3	192.0	70.8	-	0.1	-	550.8	1,018.3	156.3
1995	33.7	-	-	-	14.2	401.7	184.3	134.6	198.6	71.2	-	0.1	-	588.7	1,038.4	178.6
1996	41.9	-	-	-	10.1	281.6	232.1	134.6	205.3	67.0	-	0.1	-	639.1	972.7	184.8
1997	57.4	-	-	-	14.1	344.4	301.1	133.7	258.2	67.8	-	0.0	-	760.8	1,176.6	236.0
1998	75.4	-	-	-	17.7	422.3	388.8	126.5	346.5	76.2	0.1	-	-	938.0	1,453.4	302.8
1999	73.1	-	-	-	17.8	441.0	558.4	134.6	345.0	156.8	0.2	-	-	1,195.0	1,726.9	272.5
2000	81.3	0.1	-	0.1	18.4	418.8	717.6	120.4	350.1	182.5	10.8	-	-	1,381.3	1,900.0	253.3
2001	82.5	0.4	0.0	0.2	18.1	330.7	822.2	119.0	387.1	205.3	80.7	-	-	1,614.4	2,046.3	266.2
2002	107.6	0.4	0.0	0.2	17.5	394.2	878.5	120.6	420.2	184.4	92.4	-	94.0	1,790.0	2,309.9	286.1
2003	109.7	0.8	0.0	0.3	12.9	256.9	1,074.5	129.3	445.8	169.4	136.7	3.0	197.3	2,156.1	2,536.7	273.8
2004	149.3	17.1	0.0	0.3	24.3	392.2	1,313.1	144.3	429.5	179.4	123.1	2.9	335.1	2,527.4	3,110.6	263.9
2005	215.1	34.6	0.0	0.7	38.2	385.0	1,407.2	152.8	426.3	158.9	129.4	2.6	830.7	3,107.8	3,781.4	262.0
2006	307.3	56.0	0.0	0.9	41.1	353.9	1,451.1	145.9	479.0	144.8	122.9	3.8	829.0	3,176.4	3,935.6	293.7
2007	386.2	67.3	0.0	1.2	45.0	391.6	1,533.9	161.9	486.8	217.6	137.8	4.9	576.4	3,119.2	4,010.4	298.3
2008	497.5	114.8	0.0	1.5	46.5	395.5	1,540.1	179.8	506.8	260.4	242.0	6.6	487.6	3,223.4	4,279.3	310.3
2009	647.2	150.8	0.1	1.7	48.5	401.0	1,612.8	197.8	624.5	232.0	386.7	14.3	439.8	3,507.9	4,757.2	365.2
2010	617.5	264.2	0.2	3.5	40.7	265.9	1,649.9	228.5	604.1	238.9	461.2	36.4	625.2	3,844.3	5,036.2	395.8
2011	903.1	442.7	0.1	20.9	59.4	429.0	1,667.9	250.4	567.4	224.0	553.7	89.4	763.5	4,116.4	5,971.7	415.5
2012	1,051.8	653.8	0.3	116.3	56.2	398.2	1,687.6	235.9	638.5	225.0	1,062.3	164.3	400.5	4,414.1	6,690.6	520.3
2013	1,455.2	986.4	0.5	172.7	58.3	346.2	1,692.4	249.6	564.7	226.4	2,009.1	238.2	53.7	5,034.1	8,053.4	513.1
2014	1,596.0	1,152.6	0.2	347.4	72.2	434.5	1,654.6	277.4	689.9	224.8	2,912.9	334.1	25.1	6,118.9	9,721.8	696.2
2015	1,967.9	1,498.1	0.2	650.1	83.8	456.9	1,598.0	291.1	982.4	235.3	3,847.6	468.6	37.8	7,460.7	12,117.8	988.7

	Active solar heating	Landfill gas		Bioenergy							Deep geo-thermal	Heat pumps *(11)*	Total	Wastes *(12)*
			Sewage sludge digestion	Wood combus-tion - domestic	Wood combus-tion - industrial	Animal Biomass *(8)*	Plant Biomass *(9)*	Anaerobic Digestion *(10)*	Energy from waste combustion	Total bioenergy				
Used to generate heat														
1990	6.4	34.2	-	34.6	174.1	-	-	71.7	0.2	31.1	345.8	0.8	-	353.1	41.1
1991	6.8	36.3	-	43.5	174.1	-	-	71.7	0.2	33.5	359.3	0.8	-	366.9	42.9
1992	7.1	31.5	-	43.5	204.2	-	-	71.7	0.3	30.8	381.9	0.8	-	389.9	49.1
1993	7.4	15.0	-	34.0	204.2	236.8	-	71.7	0.3	28.2	590.1	0.8	-	598.3	53.6
1994	7.7	18.9	-	52.1	204.2	455.1	-	71.7	0.3	29.5	831.8	0.8	-	840.3	60.6
1995	8.1	15.1	-	58.5	204.2	498.1	-	71.7	0.3	30.5	878.4	0.8	-	887.3	68.3
1996	8.7	16.6	-	58.5	204.2	505.5	-	71.7	0.3	31.9	888.6	0.8	-	898.1	63.1
1997	8.9	15.5	-	58.2	204.2	506.1	-	71.7	0.3	9.0	864.9	0.8	-	874.6	52.3
1998	9.1	13.6	-	54.1	204.2	436.9	-	71.7	0.3	15.2	796.0	0.8	-	805.9	49.6
1999	9.4	13.6	-	54.2	204.2	367.7	-	71.9	0.3	20.2	732.1	0.8	-	742.3	49.3
2000	11.1	13.6	-	48.3	204.2	254.2	-	71.9	0.3	24.7	617.1	0.8	-	629.0	76.4
2001	13.2	13.6	-	49.4	204.2	225.2	-	71.9	0.3	26.2	590.7	0.8	-	604.8	80.7
2002	16.1	13.6	-	53.4	204.2	225.2	-	71.9	0.3	33.7	602.4	0.8	-	619.3	92.2
2003	19.8	13.6	-	52.4	205.8	225.2	-	71.9	0.3	33.7	602.9	0.8	-	623.5	117.1
2004	24.6	13.6	-	54.8	232.4	225.2	-	71.9	2.0	33.7	633.6	0.8	-	659.0	115.7
2005	29.4	13.6	-	52.9	265.6	93.1	12.4	92.4	2.0	33.7	565.8	0.8	-	596.0	127.5
2006	36.3	13.6	-	44.1	298.8	97.0	22.9	103.0	2.0	33.7	615.1	0.8	-	652.2	111.6
2007	44.9	13.6	-	49.5	332.0	101.2	45.8	112.9	2.0	33.7	690.7	0.8	-	736.4	137.3
2008	29.6	13.6	-	49.7	895.7	220.3	40.4	193.9	2.0	31.8	1,447.5	0.8	3.9	1,481.8	153.4
2009	33.2	13.6	-	50.9	975.8	223.4	38.3	227.8	2.0	31.6	1,563.4	0.8	15.7	1,613.1	143.9
2010	39.2	13.6	-	57.7	1,258.0	255.7	40.3	270.8	4.7	27.8	1,928.6	0.8	30.6	1,999.2	138.1
2011	44.4	13.6	-	64.3	1,096.7	281.9	35.8	289.6	9.7	33.1	1,824.6	0.8	48.6	1,918.4	152.6
2012	47.8	13.6	-	63.7	1,392.3	289.5	31.5	276.6	14.5	29.8	2,111.5	0.8	68.4	2,228.4	144.1
2013	47.9	13.6	-	68.3	1,790.3	374.2	29.1	346.0	18.5	30.1	2,670.1	0.8	116.5	2,835.3	155.0
2014	49.6	13.6	-	67.7	1,698.1	501.4	34.5	379.0	42.9	23.3	2,760.6	0.8	142.5	2,953.5	159.3
2015	50.7	13.6	-	73.1	1,906.2	790.8	30.7	359.4	95.5	45.7	3,315.0	0.8	168.3	3,534.8	158.6

	Solar heating and photovoltaics	Wind		Wave and Tidal	Hydro	Bioenergy	Deep geothermal	Heat pumps	Transport biofuels *(13)*	Total	Wastes
		Onshore	Offshore								
Total use of renewable sources											
1990	6.4	0.8	-	-	447.7	564.8	0.8	-	-	1,020.5	82.1
1991	6.8	0.7	-	-	397.6	606.2	0.8	-	-	1,012.1	84.3
1992	7.1	2.8	-	-	467.0	716.6	0.8	-	-	1,194.3	99.6
1993	7.4	18.7	-	-	369.9	1,032.1	0.8	-	-	1,428.9	130.0
1994	7.7	29.5	-	-	438.0	1,382.6	0.8	-	-	1,858.6	217.0
1995	8.1	33.7	-	-	415.9	1,467.1	0.8	-	-	1,925.7	247.0
1996	8.7	41.9	-	-	291.7	1,527.7	0.8	-	-	1,870.8	247.9
1997	8.9	57.4	-	-	358.4	1,625.7	0.8	-	-	2,051.2	288.3
1998	9.1	75.4	-	-	440.0	1,734.0	0.8	-	-	2,259.3	352.4
1999	9.4	73.1	-	-	458.8	1,927.1	0.8	-	-	2,469.2	321.8
2000	11.2	81.3	0.1	-	437.3	1,998.4	0.8	-	-	2,529.0	329.7
2001	13.4	82.5	0.4	0.0	348.7	2,205.1	0.8	-	-	2,651.1	347.0
2002	16.3	107.6	0.4	0.0	411.7	2,392.4	0.8	-	2.4	2,931.6	378.3
2003	20.0	109.7	0.8	0.0	269.8	2,759.0	0.8	-	15.1	3,175.3	390.9
2004	24.9	149.3	17.1	0.0	416.5	3,161.0	0.8	-	16.7	3,786.3	379.6
2005	30.1	215.1	34.6	0.0	423.2	3,673.6	0.8	-	74.1	4,451.4	389.5
2006	37.2	307.3	56.0	0.0	394.9	3,791.6	0.8	-	187.8	4,775.6	405.3
2007	46.1	386.2	67.3	0.0	436.6	3,809.9	0.8	-	361.7	5,108.5	435.6
2008	31.0	497.5	114.8	0.0	442.1	4,670.9	0.8	3.9	844.5	6,605.6	463.8
2009	34.9	647.2	150.8	0.1	449.5	5,071.3	0.8	15.7	1,038.5	7,408.8	509.1
2010	42.7	617.5	264.2	0.2	306.5	5,772.9	0.8	30.6	1,217.3	8,252.7	533.9
2011	65.3	903.1	442.7	0.1	488.4	5,941.1	0.8	48.6	1,127.5	9,017.6	568.1
2012	164.0	1,051.8	653.8	0.3	454.4	6,525.6	0.8	68.4	957.8	9,876.9	664.4
2013	220.6	1,455.2	986.4	-	404.5	7,704.2	0.8	116.5	1,091.6	11,980.3	668.1
2014	396.9	1,596.0	1,152.6	-	506.7	8,879.6	0.8	142.5	1,242.7	13,917.9	855.5
2015	700.8	1,967.9	1,498.1	-	540.7	10,775.7	0.8	168.3	1,003.1	16,655.7	1147.3

6.1.1 Renewable sources used to generate electricity and heat *(1)*; electricity generated from renewable sources (continued)

GWh

	Wind (1)		Wave and	Solar	Hydro (1)		Bioenergy								Total	Wastes
	Onshore	Offshore	Tidal (1)	photo-voltaics	Small scale	Large scale *(2)*	Landfill gas	Sewage sludge digestion	Energy from waste combustion *(3)*	Co-firing with fossil fuels	Animal Biomass *(4)*	Plant Biomass *(5)*	Anaerobic Digestion *(6)*	Total bioenergy		*(7)*
Electricity generated																
1990	9	-	-	-	127	5,080	139	316	141	-	-	-	0	596	5,812	83
1991	9	-	-	-	142	4,482	208	328	150	-	1	-	0	688	5,320	88
1992	33	-	-	-	149	5,282	377	328	177	-	52	-	1	934	6,398	104
1993	217	-	-	-	159	4,143	447	378	252	-	121	-	1	1,198	5,717	165
1994	344	-	-	-	159	4,935	517	361	449	-	192	-	0	1,518	6,956	352
1995	392	-	-	0	166	4,672	562	410	471	-	198	-	0	1,642	6,872	412
1996	488	-	-	0	118	3,275	708	410	489	-	197	-	0	1,805	5,685	417
1997	667	-	-	0	164	4,005	918	408	585	-	199	0	0	2,110	6,946	483
1998	877	-	-	0	206	4,911	1,185	386	849	-	234	0	-	2,654	8,649	583
1999	850	-	-	1	207	5,128	1,703	410	856	-	459	1	-	3,429	9,616	559
2000	945	1	-	1	214	4,871	2,188	367	840	-	456	31	-	3,882	9,914	519
2001	960	5	0	2	210	3,845	2,507	363	880	-	542	234	-	4,526	9,549	528
2002	1,251	5	0	3	204	4,584	2,679	368	907	286	568	272	-	5,080	11,127	545
2003	1,276	10	0	3	150	2,987	3,276	394	965	602	525	402	9	6,174	10,600	579
2004	1,736	199	0	4	283	4,561	4,004	440	971	1,022	556	362	9	7,364	14,147	583
2005	2,501	403	0	8	444	4,478	4,290	466	964	2,533	460	382	8	9,102	16,936	578
2006	3,574	651	0	11	478	4,115	4,424	445	1,083	2,528	423	363	12	9,277	18,106	651
2007	4,491	783	0	14	523	4,554	4,677	494	1,189	1,757	585	607	15	9,325	19,690	714
2008	5,786	1,335	0	17	541	4,600	4,696	548	1,239	1,575	620	867	20	9,566	21,846	744
2009	7,527	1,754	1	20	564	4,664	4,918	603	1,509	1,625	637	1,379	43	10,714	25,244	868
2010	7,182	3,073	2	41	473	3,092	5,031	697	1,530	2,332	627	1,593	111	11,921	25,783	987
2011	10,503	5,149	1	244	691	4,989	5,085	764	1,503	2,964	615	1,749	273	12,953	34,529	1,085
2012	12,232	7,603	4	1,352	654	4,631	5,145	719	1,774	1,783	643	4,083	501	14,648	41,124	1,429
2013	16,924	11,472	6	2,008	678	4,026	5,160	761	1,649	309	628	8,929	726	18,163	53,278	1,481
2014	18,562	13,404	2	4,040	839	5,053	5,045	846	1,923	133	614	13,105	1,019	22,684	64,584	1,923
2015	22,887	17,423	2	7,561	975	5,314	4,872	888	2,782	183	648	18,587	1,429	29,388	83,550	2,784

	Wind		Wave and	Solar	Hydro		Bioenergy							Total
	Onshore	Offshore	Tidal	photo-voltaics	Small scale	Large scale *(3)*	Landfill gas	Sewage sludge digestion	Energy from waste combustion *(14)*	Animal Biomass *(15)*	Plant Biomass *(16)*	Anaerobic Digestion	Total bioenergy and wastes	
Declared net capacity														
1990	4.3	-	-	-	26.3	1,084.0	16.5	72.7	30.9	-	-	0.1	120.3	1,234.8
1991	6.3	-	-	-	37.9	1,377.1	28.7	91.4	30.9	0.2	-	0.1	151.3	1,572.7
1992	21.3	-	-	-	40.3	1,383.0	51.1	91.4	44.6	12.8	-	0.1	200.0	1,644.5
1993	55.2	-	-	-	42.2	1,383.0	78.7	88.4	69.8	25.5	-	0.1	262.5	1,743.0
1994	65.7	-	-	-	42.2	1,383.0	84.9	87.1	106.8	25.5	-	0.1	304.4	1,795.3
1995	85.1	-	-	0.2	48.6	1,383.0	94.7	87.2	106.8	25.4	-	0.1	314.2	1,831.1
1996	113.0	-	-	0.3	49.1	1,405.8	145.7	87.2	135.0	25.4	-	0.1	393.4	1,961.6
1997	135.4	-	-	0.5	58.5	1,428.8	169.4	86.8	135.0	25.4	0.1	0.1	416.8	2,039.9
1998	139.4	-	-	0.6	61.6	1,413.0	220.6	89.8	182.1	63.9	0.3	-	556.7	2,171.3
1999	150.5	-	-	1.2	63.6	1,413.0	309.0	91.3	180.6	63.9	0.3	-	645.1	2,273.4
2000	175.0	1.6	0.2	2.0	66.1	1,419.0	382.6	85.3	204.0	73.7	39.3	-	784.9	2,448.7
2001	181.7	1.6	0.2	2.8	67.9	1,440.0	418.3	85.0	208.9	73.7	39.3	-	825.2	2,519.5
2002	223.4	1.6	0.2	0.7	70.3	1,388.8	439.2	96.0	217.8	76.7	58.5	-	888.1	2,573.0
2003	285.6	26.6	0.2	1.0	47.1	1,354.5	575.1	123.7	237.2	76.7	64.5	1.4	1,078.6	2,793.7
2004	340.8	51.6	0.2	1.4	51.7	1,355.9	670.9	131.9	238.5	70.3	64.8	1.5	1,178.0	2,979.6
2005	569.0	89.2	0.2	1.9	57.2	1,343.2	759.7	137.8	248.7	70.3	74.5	1.6	1,292.7	3,353.2
2006	695.0	126.7	0.2	2.4	55.5	1,361.4	795.4	143.8	257.3	70.3	107.3	3.9	1,377.9	3,619.2
2007	877.2	164.2	0.2	3.1	59.0	1,358.7	836.7	150.2	257.3	94.3	211.3	3.9	1,553.6	4,015.9
2008	1,199.9	248.7	0.2	3.8	59.4	1,463.8	829.1	150.6	267.4	94.3	211.5	7.2	1,560.0	4,535.8
2009	1,461.6	396.8	1.0	4.5	63.4	1,464.4	898.9	156.7	276.6	94.3	285.5	12.0	1,724.0	5,115.7
2010	1,709.5	559.4	1.0	16.3	66.5	1,458.8	937.8	192.7	308.3	94.3	315.3	30.3	1,878.7	5,690.2
2011	1,949.4	766.6	1.2	169.2	73.0	1,476.8	977.4	198.0	367.3	94.3	1,148.7	70.7	2,856.3	7,292.4
2012	2,485.8	1,249.1	2.7	298.6	78.8	1,476.8	963.6	204.4	376.0	94.3	1,170.6	118.6	2,927.4	8,519.1
2013	3,164.8	1,541.2	2.9	488.4	83.9	1,476.8	971.4	199.3	396.2	94.3	1,955.3	162.6	3,779.0	10,537.1
2014	3,594.1	1,877.0	3.5	922.1	91.1	1,476.8	982.5	215.5	494.7	94.3	2,245.3	238.2	4,270.4	12,235.0
2015	3,868.4	2,128.1	3.6	1,561.9	102.1	1,476.8	986.0	216.3	672.3	94.3	2,619.3	286.4	4,874.6	14,015.4

Per cent

	Wind		Hydro		Bioenergy						Total
	Onshore	Offshore	Small scale	Large scale *(2)*	Landfill gas	Sewage sludge digestion	Energy from waste combustion *(3)*	Animal Biomass *(4)*	Plant Biomass *(5)*	Anaerobic Digestion *(6)*	Total bioenergy	*(17)*
Long term average load factors (average of five years ending *(18)*												
2002	28.9											
2003	27.9											
2004	27.6											
2005	27.5											
2006	27.7											
2007	27.5											
2008	28.1											
2009	27.6											
2010	26.3	30.5										
2011	26.4	32.0										
2012	26.0	33.2	36.8	35.8	58.9	49.5	40.8	65.9	63.3	54.6	61.4	37.0
2013	26.4	33.7	35.8	33.2	57.5	43.7	40.3	65.0	51.3	58.5	51.9	33.5
2014	26.2	36.0	36.1	33.8	56.4	44.1	38.2	64.6	52.9	59.8	52.5	32.8
2015	27.7	38.1	38.4	37.2	55.2	44.4	37.4	65.0	58.2	60.2	55.2	33.5

(1) For wind, wave, tidal and hydro, the figures represent the energy content of the electricity supplied, but for biofuels ti figures represent the energy content of the fuel used

(2) Excluding pumped storage stations

(3) Biodegradable part only

(4) Includes electricity from poultry litter combustion, and meat & bone combustio

(5) Includes electricity from straw and energy crops

(6) Includes electricity from farm waste digestion and other AI

(7) Non-biodegradable part of municipal solid waste plus waste tyres, hospital waste, and general industrial was

(8) Includes heat from meat & bone combustion and sewage sludge combustior

(9) Includes heat from straw, energy crops and paper & packaging

(10) Includes heat from farm waste digestion and other non-farm AI

(11) It is understood that there was a negligable contribution from heat pumps prior to 200

(12) Includes heat from waste tyre combustion, hospital waste combustion, and general industrial waste combustio

(13) Liquid biofuels are generally blended for use in transpo

(14) Includes the use of waste tyres and hospital waste.

(15) Includes the use of poultry litter and meat & bone

(16) Includes the use of straw combustion and short rotation coppic

(17) Excludes co-firing and non-biodegradable waste

(18) On an unchanged configuration basis. With the exception of wind, this measure has only been calculated since 2008, hence the shorter time-serie

Chapter 7: Long term trends

Combined Heat and Power

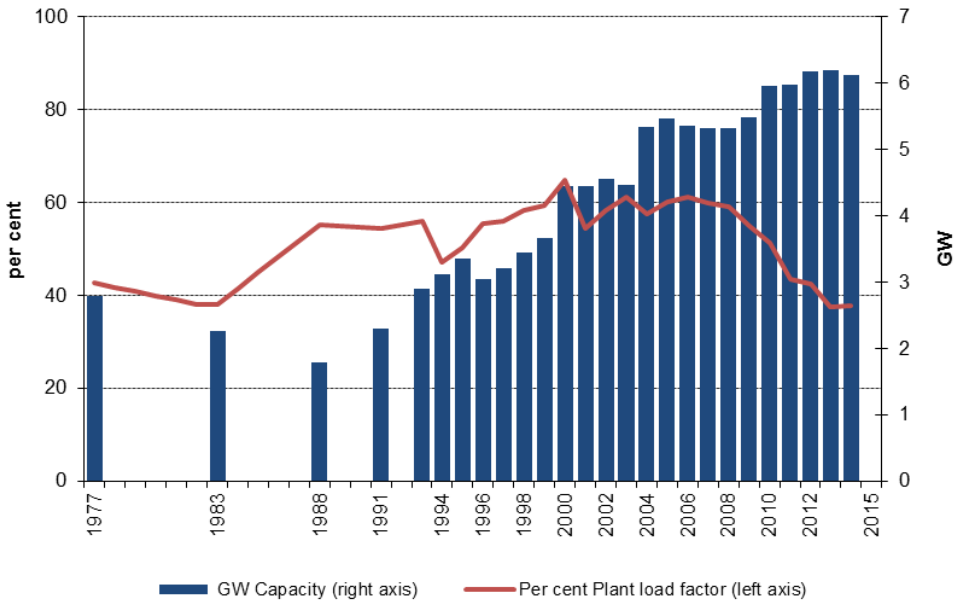
Combined Heat and Power: capacity, generation and fuel use (Table 7.1.1)

7.1.1 This table extends the summary series shown in Table 7A of Chapter 7 of the main Digest back to 1977, the earliest year for which data on Combined Heat and Power (CHP) are available. CHP data have been collected on an annual basis since 1993, but before that the data were collected on an occasional basis. The text below summaries changes up to 2011; recent trends are outlined in Chapter 7 of DUKES.

7.1.2 As Chart 7.1.1 shows, between 1993 and 2006 the electricity generating capacity of CHP increased by 85 per cent, at an average rate of around 5.2 per cent a year. Between 2005 and 2009 capacity levelled off before increasing again in 2010 due to increases within the oil refinery sector. Capacity levelled off again in 2011.

7.1.3 The plant load factor measures how intensively the CHP plants are used. The average load factor peaked in 2000 at 64.7 per cent and fluctuated between 57 and 62 per cent between 2002 and 2008 before falling in 2009, 2010, and 2011. The decrease in 2011 was largely due to changes in utilisation of power generating capacity in the oil refineries sector.

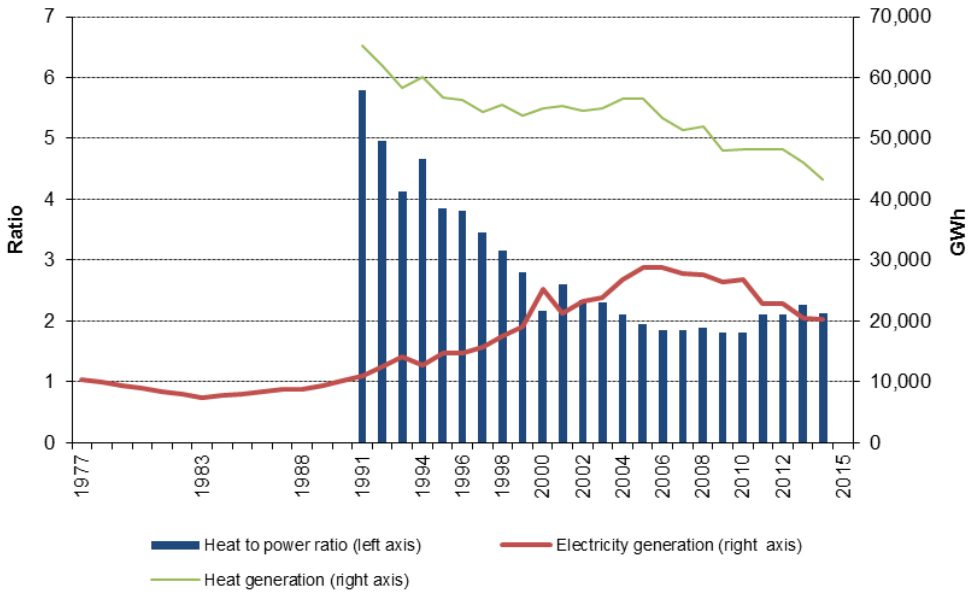
Chart 7.1.1: CHP electricity generation capacity and average load factor 1977 to 2015



7.1.4 Between 1995 and 2005 heat generation at CHP plants showed a fairly stable pattern remaining within the 53,000 to 57,000 GWh band. Since then, the general trend has been decreasing with slight positive growth in 2008 and 2010.

7.1.5 Over the same period (1995-2005), electricity generation from CHP almost doubled, equivalent to a growth rate of around 8.2 per cent a year. The rise in generation up to 2000 reflected the liberalisation of the electricity markets which gave a strong incentive to design schemes to maximise the electricity generation for a given heat load since the electricity could be sold on to suppliers. Newer CHP schemes thus tended to have lower heat to power ratios as Chart 7.1.2 shows. One of the effects of the introduction of the New Electricity Trading Arrangements (NETA) in March 2001 was a fall in the price of electricity, including the price of electricity exported from CHP plants. This may have led to a decline in investment in new plants and also a decline in the electrical output of existing CHP plants between 2000 and 2001. Electricity generation at CHP plants rose from 2001 to its peak in 2005, exceeding the 2000 level by 14 per cent. Although 2014 and 2015 saw modest growth rates, the underlying trend has been decreasing since 2006.

Chart 7.1.2: CHP electricity and heat generation and heat: power ratio 1977 to 2015



Heat to power ratios and heat generation data are not available before 1991

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7.1.1 Combined Heat and Power: capacity, generation and fuel use

	Number of schemes	Electricity capacity *(1)*	Heat capacity (2)	Heat to power ratio *(3)*	Fuel input	Electricity generation	Heat generation *(4)*	Overall efficiency *(5)*	Load factor
		MWe	MWth		GWh	GWh	GWh	Per cent	Per cent
1977	..	2,793	..	..	..	10,450	..	..	43
1983	..	2,254	..	..	..	7,500	..	..	38
1988	..	1,793	..	..	..	8,700	..	..	55
1991	266	2,293	13,361	5.80	113,537	10,917	65,174	67.0	54.3
1993	996	2,893	14,442	4.12	101,650	14,171	58,418	71.4	55.9
1994	1,139	3,117	15,704	4.67	97,468	12,853	60,079	74.8	47.1
1995	1,220	3,355	15,698	3.85	106,504	14,778	56,833	67.2	50.3
1996	1,298	3,041	15,276	3.81	97,993	14,782	56,285	72.5	55.5
1997	1,318	3,204	15,528	3.46	97,881	15,699	54,329	71.5	55.9
1998	1,328	3,439	15,557	3.16	100,877	17,568	55,579	72.5	58.3
1999	1,352	3,669	15,426	2.81	100,549	19,104	53,755	72.5	59.4
2000	1,339	4,451	26,150	2.17	106,229	25,245	54,877	75.4	64.7
2001	1,366	4,453	26,479	2.61	109,348	21,231	55,410	70.1	54.4
2002	1,328	4,548	27,056	2.35	112,668	23,221	54,564	69.0	58.3
2003	1,292	4,472	26,122	2.30	113,085	23,933	54,977	69.8	61.1
2004	1,263	5,340	22,505	2.10	120,180	26,852	56,520	69.4	57.4
2005	1,284	5,464	22,390	1.96	124,602	28,827	56,441	68.4	60.2
2006	1,271	5,361	22,067	1.86	122,340	28,729	53,405	67.1	61.2
2007	1,314	5,318	21,235	1.84	118,598	27,832	51,297	66.7	59.7
2008	1,327	5,323	21,133	1.89	118,685	27,528	51,911	66.9	59.0
2009	1,379	5,492	22,258	1.82	111,290	26,425	48,091	67.0	54.9
2010	1,455	5,950	22,203	1.80	112,559	26,768	48,267	66.7	51.4
2011	1,789	5,762	21,744	2.12	94,486	22,046	46,635	72.7	43.7
2012	1,945	5,966	22,545	2.10	95,709	22,228	46,694	72.0	42.5
2013	2,032	5,925	22,168	2.26	88,435	19,593	44,353	72.3	37.7
2014	2,081	5,894	22,230	2.13	86,217	19,698	41,962	71.5	38.2
2015	2,102	5,692	19,711	2.03	83,178	19,900	40,325	72.4	39.9

(1) (CHP_{QPO}) basis from 1995 onwards

(2) Complete heat capacity data is only available from 2000 onwards following the introduction of CHPQA

(3) Heat to power ratios are calculated from the qualifying heat output (QHO) and the qualifying power output (QPO) (and their equivalents in the years before the CHPQA scheme was used for CHP statistics).

(4) These are calculated using gross calorific values; overall net efficiencies are some 5 percentage points higher.

(5) (CHP_{QHO}) basis from 1995 onwards