

dti

UK ENERGY IN BRIEF JULY 2003



**national
statistics**

A NATIONAL STATISTICS PUBLICATION





The DTI drives our ambition of 'prosperity for all' by working to create the best environment for business success in the UK. We help people and companies become more productive by promoting enterprise, innovation and creativity.

We champion UK business at home and abroad. We invest heavily in world-class science and technology. We protect the rights of working people and consumers. And we stand up for fair and open markets in the UK, Europe and the world.

UK ENERGY IN BRIEF JULY 2003

This booklet summarises the latest statistics on energy production, consumption and prices in the United Kingdom. Figures are taken from the 2003 edition of the "Digest of UK Energy Statistics", published on 31 July 2003.

Details of the Digest and other DTI energy publications can be found on page 27 of this booklet and are available on the internet (www.dti.gov.uk/energy/inform). This booklet is also available on the internet at:

www.dti.gov.uk/energy/inform/energy_in_brief/.



National Statistics are produced to high professional standards, as set out in the National Statistics Code of Practice. They undergo regular quality assurance reviews to ensure that they meet customer needs and are produced free from any political interference.

You can find a range of National Statistics on the Internet - www.statistics.gov.uk

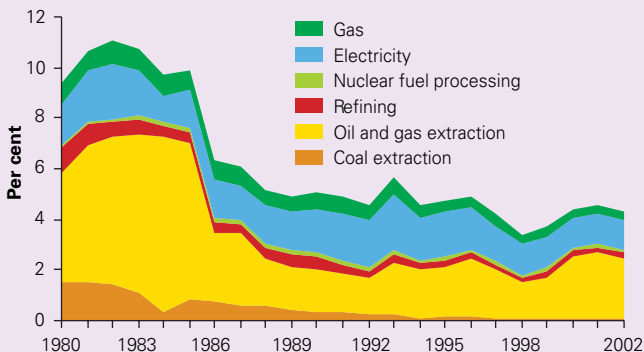
CONTENTS

ENERGY IN THE ECONOMY	
The energy industries' contribution to the UK economy	1
Contribution to GDP	1
Trends in employment	2
Investment in the energy industries	2
OVERALL ENERGY	
Production of primary fuels	3
Inland energy consumption	4
Final energy consumption	5
OIL AND GAS PRODUCTION	
UK Continental Shelf production	6
Remaining oil and gas reserves	7
PETROLEUM	
Foreign trade in crude oil and petroleum products	8
Demand by product	9
Leaded/unleaded petrol; demand for DERV fuel	10
NATURAL GAS	
Consumption	11
COAL	
Production and imports	12
Consumption	13
ELECTRICITY	
Electricity available by fuel type	14
Consumption	15
COMBINED HEAT AND POWER	16
NUCLEAR POWER	
Gross Electricity supplied by nuclear generators	17
RENEWABLES	
Energy sources	18
PRICES	
Fuel price indices for the industrial sector	19
Fuel price indices for the domestic sector	20
Petrol and diesel prices	21
EXPENDITURE	
Fuel expenditure of households	22
FUEL POVERTY	
Number of households in fuel poverty	23
ENVIRONMENT	
Emissions of greenhouse gases	24
ENERGY EFFICIENCY	25
CONTACTS, CONVERSION FACTORS AND DEFINITIONS	26
REFERENCES	27

THE ENERGY INDUSTRIES' CONTRIBUTION TO THE UK ECONOMY

- 4.3% of GDP
- 7.2% of total investment
- 35.2% of industrial investment
- 3% of annual business expenditure on research and development
- 165,000 people directly employed in 2002 (4% of industrial employment) and more indirectly e.g. an estimated 360,000 in support of UK Continental Shelf production
- Trade surplus in fuels of £6.0 billion in 2002

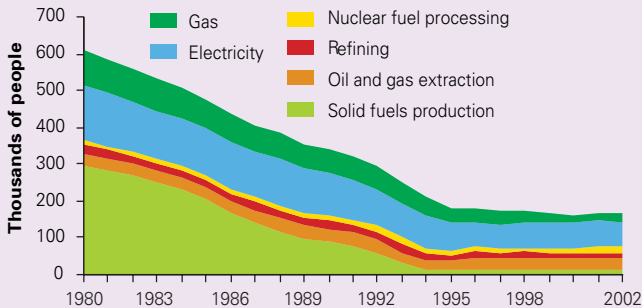
Contribution to GDP by the energy industries, 1980 to 2002



Source: Office for National Statistics

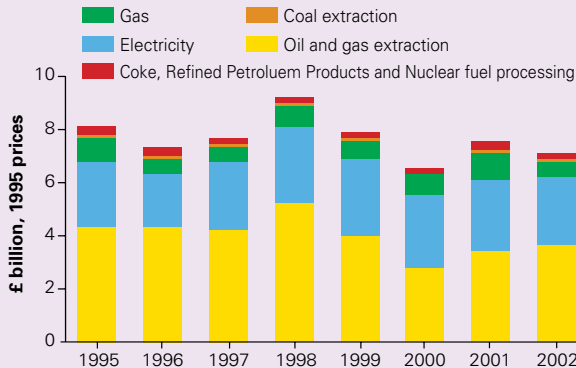
ENERGY IN THE ECONOMY

Trends in employment in the energy industries, 1980 to 2002



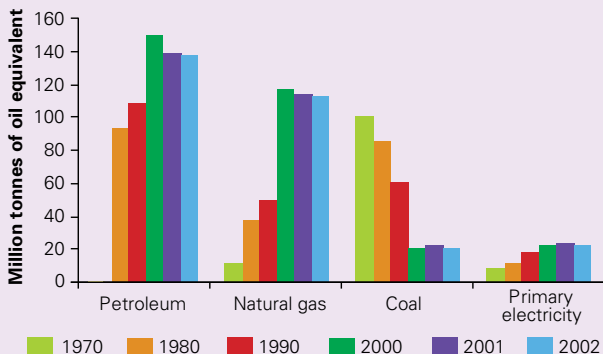
Source: Office for National Statistics

Investment in the energy industries, 1995 to 2002



Source: Office for National Statistics

Production of primary fuels, 1970 to 2002



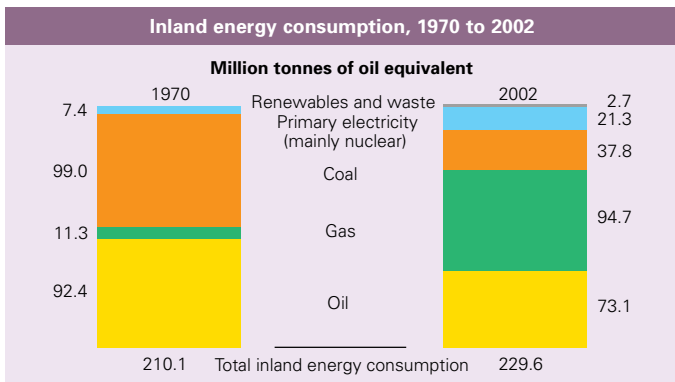
Million tonnes of oil equivalent

	1970	1980	1990	2000	2001	2002
Petroleum	0.2	86.9	100.1	138.3	127.8	127.0
Natural gas	10.5	34.8	45.5	108.4	105.8	103.6
Coal	92.8	78.5	56.4	19.6	20.0	18.8
Primary electricity	7.4	10.2	16.7	20.2	21.2	20.7
Total	110.8	210.5	219.4	288.7	277.4	272.8

Total production of primary fuels, when expressed in terms of their energy content, fell by 1.7% in 2002 compared to 2001. Petroleum accounts for 47% of total production, natural gas 38%, coal 7% and primary electricity (nuclear and natural flow hydro) 7½%. Renewables and waste (not shown) account for the remaining 2.7 million tonnes of oil equivalent.

Total production has risen by 146% since 1970, primarily due to the growth of oil and gas. Production in 2000 was at record levels for natural gas, whilst in 1999 it was at record levels for overall energy and petroleum.

OVERALL ENERGY



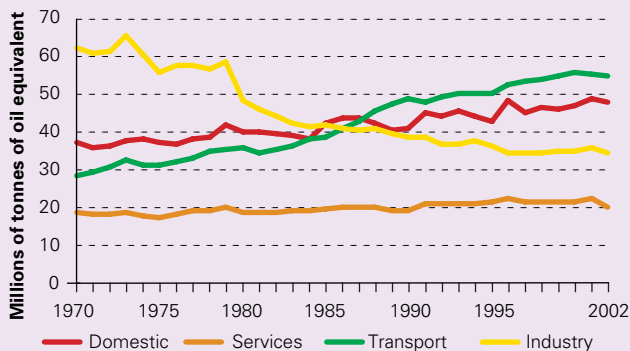
	Million tonnes of oil equivalent					
	1970	1980	1990	2000	2001	2002
Conversion losses	} 64.1	62.1	66.4	{ 53.9	54.9	52.4
Distribution losses and energy industry use						
Final consumption						
Industry	62.3	48.3	38.7	34.8	35.6	34.8
Domestic sector	36.9	39.8	40.8	46.9	48.5	47.9
Transport	28.2	35.5	48.6	55.8	55.0	54.5
Services ¹	18.6	18.7	19.2	22.5	22.1	20.0
Total final energy consumption	146.0	142.4	147.3	159.0	161.2	157.2
Total inland primary energy consumption²	210.1	204.5	213.7	233.4	236.4	229.6
<i>Temperature corrected total</i>	<i>211.9</i>	<i>206.2</i>	<i>221.6</i>	<i>238.7</i>	<i>239.8</i>	<i>235.4</i>

(1) Includes agriculture

(2) Excludes non-energy use

Primary energy consumption in 2002 was down 2.9% from 2001. Since 1970, consumption of natural gas and primary electricity has risen considerably, whilst consumption of oil and coal has fallen. Energy industry use, losses during conversion to secondary fuels and losses during distribution accounted for 31% of inland energy consumption in 2002.

Final energy consumption, 1970 to 2002



2002

Million tonnes of oil equivalent

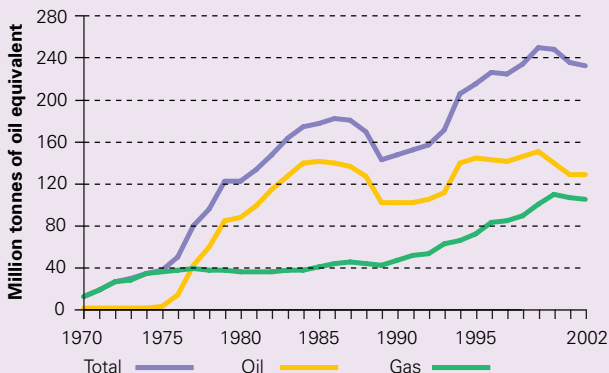
	Industry	Domestic	Transport	Services ¹	Total
Coal & manufactured fuels	1.9	1.8	-	-	3.8
Gas	15.2	32.4	-	8.7	56.3
Oil	6.7	3.6	53.8	1.8	66.0
Electricity	9.6	9.8	0.7	8.4	28.6
Renewables and heat	1.3	0.3	-	0.9	2.5
Total	34.8	47.9	54.5	20.0	157.2

(1) Includes agriculture

Final energy consumption (excluding non-energy use) was 2.6% lower in 2002 than in 2001. Since 1970, energy consumption by individual sectors has changed substantially: there have been rises of 94% for transport, 30% for the domestic sector and 7% for the service sector, whilst consumption by industry has fallen by 44%. The rate of increase in transport has slowed in recent years.

OIL AND GAS PRODUCTION

UK Continental Shelf production, 1970 to 2002



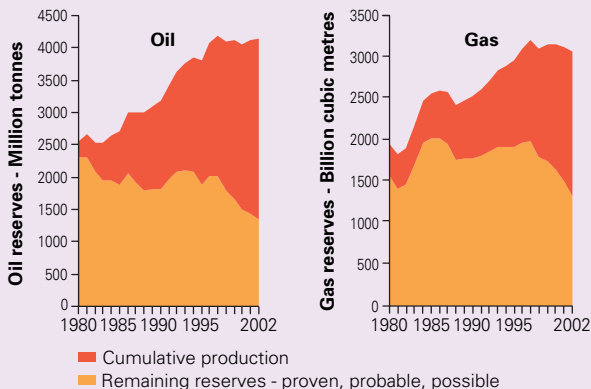
Million tonnes of oil equivalent

	1970	1980	1990	2000	2001	2002
Oil	0.2	86.9	100.1	138.3	127.8	127.0
Gas	10.5	34.8	45.5	108.4	105.8	103.6
Total	10.7	121.7	145.6	246.7	233.6	230.6

Oil production in 2002 was 15% lower than the record level seen in 1999 and 1% lower than in 2001. Only eight new oil fields started producing during the year 2001. Gas production in 2002 was 2% lower than in 2001.

OIL AND GAS PRODUCTION

Remaining oil and gas reserves

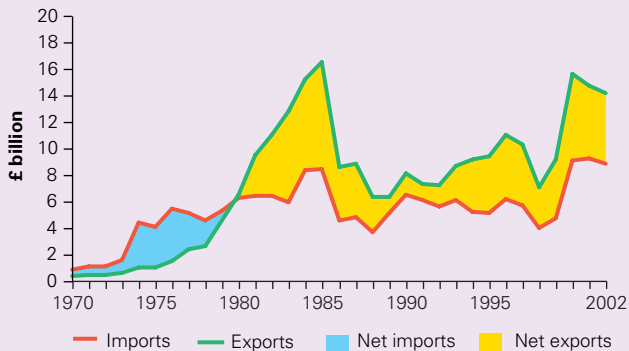


	1980	1990	2000	2001	2002
Oil	Million tonnes				
Cumulative production	263	1,374	2,570	2,682	2,799
Estimate of remaining reserves in present discoveries	2,300	1,815	1,490	1,430	1,345
Total reserves in present discoveries	2,565	3,190	4,060	4,115	4145
Gas	Billion cubic metres				
Cumulative production	382	752	1,518	1,625	1,726
Estimate of remaining reserves in present discoveries	1,560	1,785	1,630	1,495	1,330
Total reserves in present discoveries	1,940	2,535	3,143	3,120	3,055

In earlier years, estimates of remaining reserves in present discoveries stayed at broadly similar levels despite the large increase in oil and gas extracted. This was due to newfound discoveries being made and new technology allowing exploitation of discoveries that were previously regarded as not viable.

PETROLEUM

Foreign trade in crude oil and petroleum products, 1970 to 2002



Crude oil and petroleum products

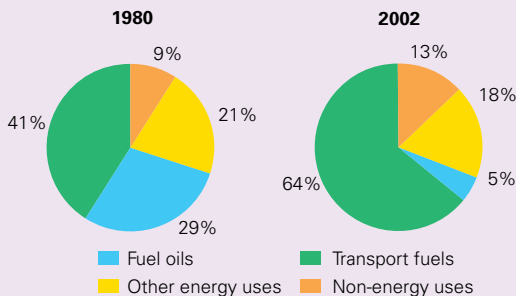
£ billion

	1970	1980	1990	2000	2001	2002
Exports	0.3	6.5	8.1	15.6	14.8	14.2
Imports	0.8	6.2	6.4	9.0	9.2	8.8
Net exports	-0.5	0.3	1.6	6.5	5.6	5.4

Source: Office for National Statistics

Since the first 'surplus' on oil trade (£0.3 billion) in 1980, oil trade has contributed more than £85 billion to the UK balance of payments. The largest surplus (£8 billion) in 1985 reflected high crude oil production and prices. Prices since then have been lower, but with crude oil production (and hence net exports) increasing in recent years, the 'surplus' has increased from £1.6 million in 1990 to £5.4 billion in 2002.

Demand by product, 1980 to 2002



Million tonnes

	1980	1990	2000	2001	2002
Energy uses¹					
Petrol	19.2	24.3	21.6	20.9	19.8
DERV fuel	5.9	10.7	15.9	16.4	17.7
Aviation turbine fuel	4.7	6.6	10.7	10.3	10.1
Burning oil	2.1	2.1	3.8	4.2	3.9
Gas oil	11.6	8.0	6.5	6.5	6.4
Fuel oils	22.7	14.0	3.4	4.2	3.8
Other	4.3	4.9	5.3	4.7	4.0
Total energy uses	70.5	70.6	67.2	67.2	65.7
Of which:					
Transport fuels	31.9	43.5	49.8	48.9	48.7
Non-energy uses	7.0	9.2	10.1	8.8	9.5
Total deliveries	77.5	79.8	78.0	76.0	75.3

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

The large fall in the share of fuel oils for energy uses results from the switch to natural gas by electricity generators and industry as the preferred energy source, though there was a small increase in demand in 2001 before reverting to trend again in 2002.

In contrast, transport fuels have increased their share of overall oil demand, apart from a small decline in 2001. The lower demand for transport fuels in 2001 was a direct result from the reduction in air travel following the 11th September terrorist attacks. Road transport has remained broadly at the same level over the last three years, but with a switch away from petrol to DERV fuel.

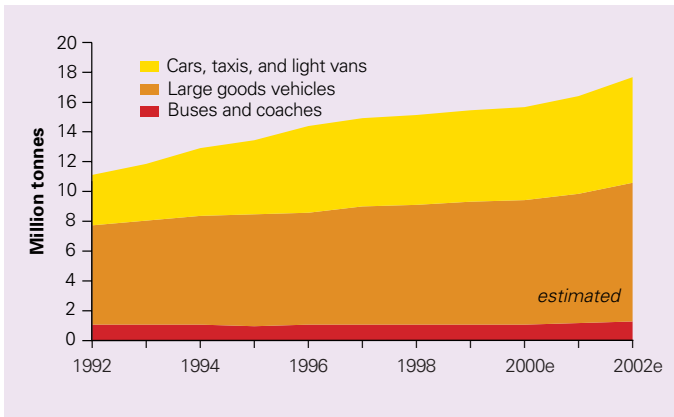
PETROLEUM

Leaded/unleaded petrol; demand for DERV fuel

Petrol

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
% unleaded	46.9	52.6	57.6	63.0	68.0	71.9	78.6	87.6	93.0	95.8	97.9

DERV fuel



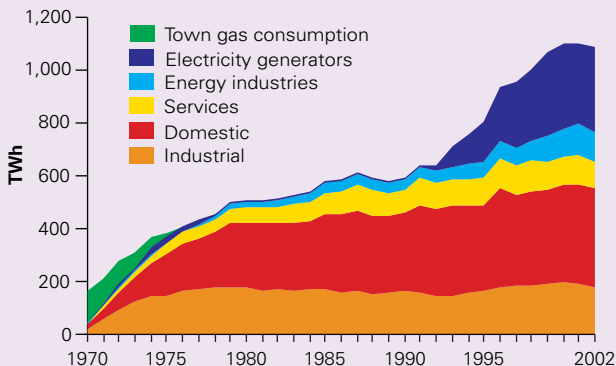
DERV fuel demand

Thousand tonnes

	1990	1995	2000	2001	2002
Cars, taxis & light vans	2,570	4,999	6,352 estimated	6,566 estimated	7,060 estimated
Large goods vehicles	7,034	7,462	8,417 estimated	8,702 estimated	9,357 estimated
Buses & coaches	1,048	996	1,112 estimated	1,150 estimated	1,237 estimated
Total	10,652	13,457	15,881	16,418	17,654

The breakdown in use of DERV fuel given above is estimated from information provided by the Department for Transport. Since 1990, demand for DERV fuel has increased, largely for use in cars, supplanting petrol (see p9). Unleaded petrol sold as such, now accounts for nearly 98% of petrol sold. In addition, Lead Replacement Petrol (the alternative to 4-star Leaded Petrol introduced in 2000) is itself lead-free. Thus, effectively all petrol sold in the UK is now lead-free.

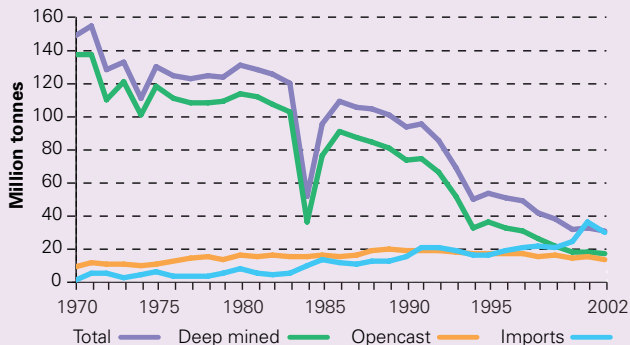
Natural gas consumption, 1970 to 2002



	TWh					
	1970	1980	1990	2000	2001	2002
Electricity generators	1.9	4.0	6.5	324.6	309.8	326.3
Energy Industries	1.2	19.1	39.2	102.1	113.9	110.5
Industry	20.8	177.5	164.6	197.9	194.2	181.3
Domestic	18.4	246.8	300.4	369.9	379.2	376.3
Services	3.4	60.4	86.4	110.5	112.5	101.3
Total	45.6	507.8	597.0	1,105.0	1,110.0	1,095.8

In the early 1970s, following the advent of natural gas, gas consumption grew rapidly. Over the last 20 years industrial consumption has grown by 7%, while domestic consumption has grown by 48% and services consumption by 63%. However, since 1991 the growth in gas consumption has been dominated by its increasing use in electricity generation, which now accounts for 30% of all natural gas consumption.

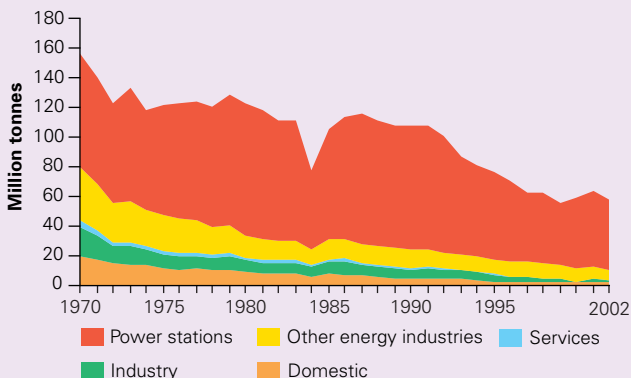
Coal production and imports, 1970 to 2002



	Million tonnes					
	1970	1980	1990	2000	2001	2002
Deep mined	136.7	112.4	72.9	17.2	17.3	16.4
Opencast	7.9	15.8	18.1	13.4	14.2	13.1
Total (including slurry)	147.2	130.1	92.8	31.2	31.9	30.0
Coal imports	-	7.3	14.8	23.4	35.5	28.7

Coal production was 6% lower in 2002 than in 2001; deep mined production fell by 5%, while opencast production fell by 7%. Coal production in 2002 was less than a quarter of the level in 1980 and only about a third of the level in 1990. Imports, initially of coal types in short supply in this country, started in 1970 and then grew steadily to reach the 20 million tonnes a year mark by the late 1990s. The very rapid expansion of imports in 2001 meant that imports exceeded the level of UK production for the first time. However, 2002 saw a 19% fall in imports to take them below the level of production again.

Coal consumption, 1970 to 2002



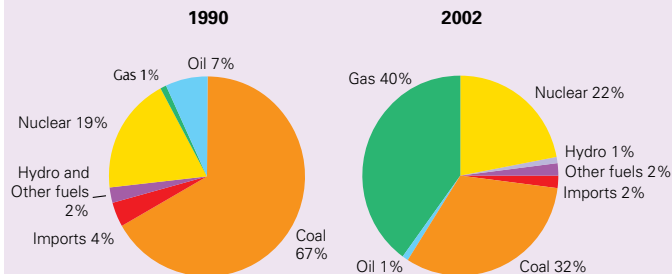
Million tonnes

	1970	1980	1990	2000	2001	2002
Power stations	77.2	89.6	84.0	46.9	51.7	48.5
Domestic	20.2	8.9	4.2	1.9	2.4	1.8
Industry	19.6	7.9	6.3	0.7	1.7	1.3
Services	4.2	1.8	1.2	0.2	0.1	0.1
Other energy industries	35.7	15.3	12.5	9.2	8.4	6.9
Total consumption	156.9	123.5	108.3	58.9	64.2	58.6

The proportion of coal consumed by power stations has increased steadily since the 1970s, reaching a level of 83% in 2002. Coal consumption by power stations has declined at a slower rate than other uses of coal over this period. Coal consumption as a whole declined sharply during the 1990s, at an average annual rate of 7% compared with just a 2% annual decline over the previous 20 years. Following a small increase in coal consumption between 1999 and 2001, 2002 saw a 9% decrease from the previous year, taking consumption back to levels comparable to those in 2000.

ELECTRICITY

Electricity available by fuel type, 1980 to 2002

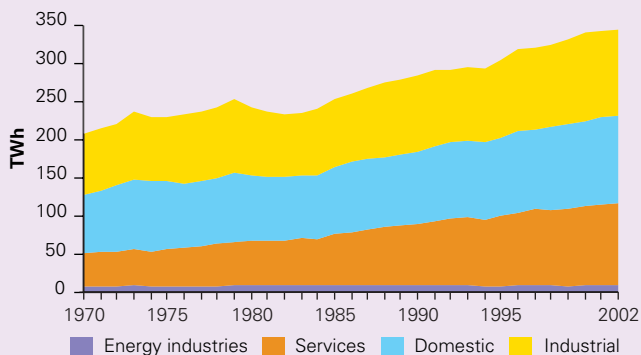


	TWh				
	1980	1990	2000	2001	2002
Coal	190.0	208.0	114.7	125.4	118.6
Oil	33.9	21.1	5.9	4.8	4.2
Gas	1.6	1.6	145.0	138.8	148.7
Nuclear	32.3	58.7	78.3	83.0	81.1
Hydro	} 7.3	} 7.9	{ 4.2	} 3.2	} 3.9
Other fuels					
Net imports	-	11.9	14.2	10.4	8.4
Total	265.1	309.4	371.6	374.8	374.7

The mix of fuels used to generate electricity continues to evolve. Since 1990, the use of all fuels in electricity generation has fallen, except gas, which has risen markedly over this period from 1.6 to 148.7 TWh. Net import levels averaged over 16 TWh in the mid 1990s but more recently have fallen to half that level. There was a break in the trend of the generation pattern in 2000 when output from coal-fired stations grew by 13%, followed by further growth of 9½% in 2001. However, the pattern of decline reappeared in 2002, when use of coal in electricity generation fell by 5% from the previous year. The reverse was true of gas-fired stations, where a 4% fall in 2001 was followed by a 7% increase in 2002 taking gas use to a new record level.

Gas continues to retain the largest share of the market (40%) while coal's share of the market has fallen from two thirds in 1990 to less than a third in 2002. Nuclear's share peaked at 26% in 1997 but in 2002 it was only 22%.

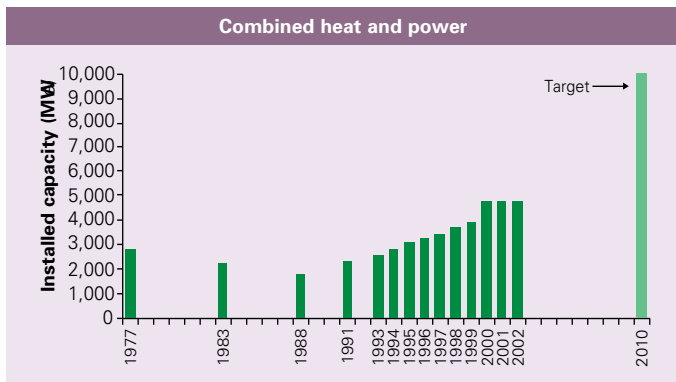
Electricity consumption, 1970 to 2002



	1970	1980	1990	2000	2001	2002
Energy industries	8.2	8.5	10.0	9.7	8.5	10.0
Industry	81.1	88.6	100.6	115.3	112.9	112.8
Domestic	77.0	86.1	93.8	111.8	115.3	114.5
Services	42.4	58.4	80.0	103.5	106.0	106.5
Total	208.7	241.6	284.4	340.3	342.8	343.8

Over the last 5 years, electricity consumption in the domestic and services sectors has grown by 10% and 7% respectively. Industrial consumption varies with business activity: it rose every year between 1994 and 2000, fell back by 1% in 2001 then remained close to the 2001 level in 2002.

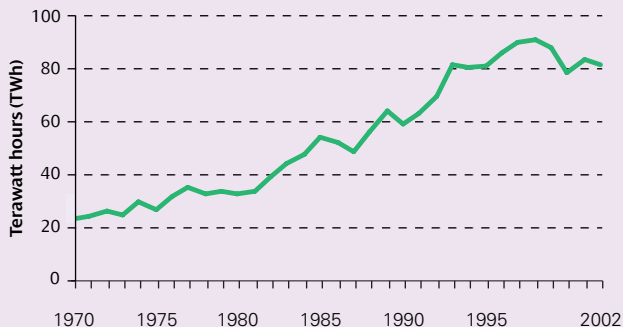
COMBINED HEAT AND POWER



	1995	2000	2001	2002
CHP electrical capacity	3,094 MWe	4,730 MWe	4,753 MWe	4,742 MWe
CHP electricity generation	14,468 GWh	26,539 GWh	22,568 GWh	24,236 GWh
CHP heat generation	57,401 GWh	62,121 GWh	61,025 GWh	60,738 GWh
Number of CHP sites				
Less than 100 kWe	686	667	665	664
100 kWe to 999 kWe	411	593	635	625
1 MWe to 9.9 MWe	147	192	189	182
10 MWe and greater	64	70	72	68
Total	1,308	1,522	1,561	1,539

In 2002, difficult market conditions caused CHP capacity in the UK to decline by 11 MWe, although electrical output rose by 7%. Just over 43% of the CHP installations in the UK are small schemes with an electrical capacity of less than 100 kWe, however schemes larger than 10 MWe account for 81% of the total CHP installed electrical capacity. In 2002, just over 6% of the total electricity generated in the UK came from CHP plants. The Government has a target of reaching at least 10,000 MWe of CHP electrical capacity by 2010, as part of its Climate Change Programme.

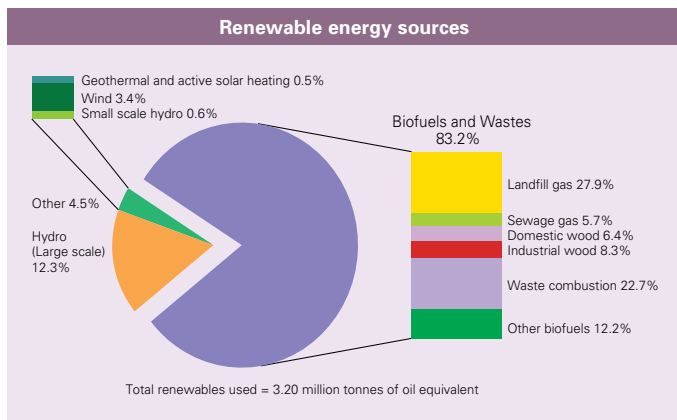
Gross electricity supplied by nuclear generation, 1970 to 2002



	1990	2000	2001	2002
Electricity supplied (gross)	59 TWh	78 TWh	83 TWh	81 TWh
% of electricity generation	21%	22%	23%	22%

Electricity output from nuclear generators in 2002 (81 TWh) was 11% lower than the record output of 91 TWh achieved in 1998 and down 2% from the previous year. It represented just over a fifth of the total volume of electricity generated in the UK in 2002. Nuclear electricity output was 38% higher in 2002 than in 1990.

RENEWABLES



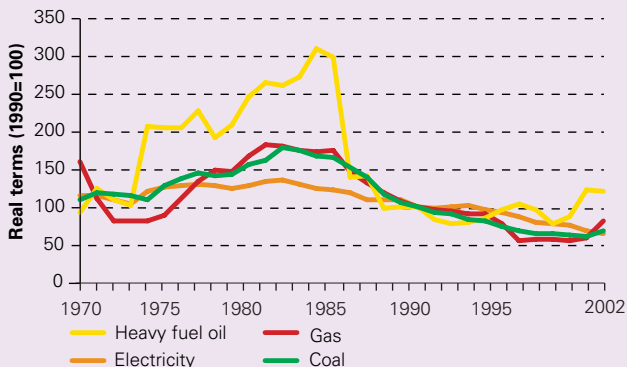
Total use of renewables

Thousand tonnes of oil equivalent

	1990	2000	2001	2002
Active solar heating and photovoltaics	6.4	12.0	14.2	17.1
Wind and wave	0.8	81.3	83.0	108.4
Hydro (small and large-scale)	447.7	437.3	348.7	411.7
Landfill gas	79.8	731.2	835.8	892.1
Sewage gas	138.2	168.7	168.4	183.7
Wood (domestic and industrial)	174.1	502.8	468.8	469.8
Waste combustion	119.1	610.1	665.8	726.1
Other biofuels	64.7	287.4	388.9	392.6
Total	1,102.7	2,830.5	2,973.5	3,201.1

In 2002, biofuels and wastes accounted for 83% of renewable energy sources with most of the remainder coming from large-scale hydro electricity production. Hydro accounted for 12% and wind power contributed 3½%. Of the 3.2 million tonnes of oil equivalent of primary energy use accounted for by renewables, 2.5 million tonnes was used to generate electricity and 0.7 million tonnes to generate heat. Renewable energy use grew by 8% in 2002 and has almost tripled in the last 12 years. Renewables accounted for 3% of electricity generated in the UK in 2002.

Fuel price indices for the industrial sector, 1970 to 2002



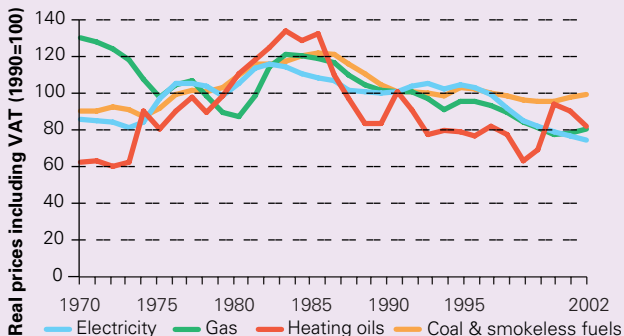
Real prices, 1990 = 100

	1970	1980	1990	2000	2001 ¹	2002 ¹
Electricity	114.1	127.0	100	67.7	64.1	60.7
Gas	158.9	166.8	100	58.6	80.6	76.6
Heavy fuel oil	91.1	245.4	100	122.5	119.7	121.4
Coal	108.1	154.5	100	60.1	67.9	66.1
Industrial prices	109.4	174.4	100	76.8	78.4	75.9

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

Industrial electricity prices fell again in 2002 by 5%, in real terms, compared to 2001, and are 39% lower than they were in 1990. Average industrial electricity prices are now lower in real terms than for any year since records began in 1970. Gas prices decreased by an average of 5% in 2002 and were 23% lower than in 1990. Heavy fuel oil prices increased by 1% in the year to 2001, but were 21% higher than in 1990.

Fuel price indices for the domestic sector, 1970 to 2002



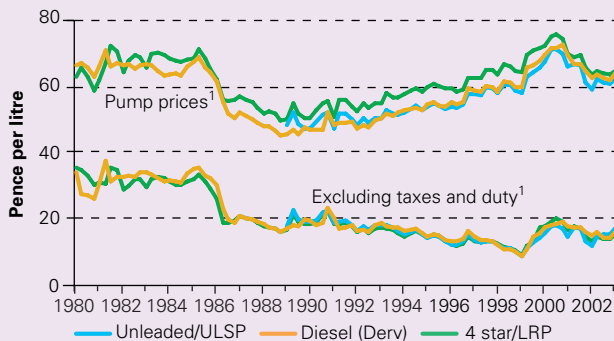
Real prices including VAT, 1990 = 100

	1970	1980	1990	2000	2001	2002
Coal and smokeless fuels	89.2	109.3	100.0	94.6	96.9r	98.8
Gas	129.2	86.4	100.0	77.1	77.5r	79.8
Electricity	84.9	104.3	100.0	78.0	75.6r	73.6
Heating oils	61.9	109.7	100.0	93.6	89.1r	81.5
Domestic prices (fuel & light)	91.0	99.0	100.0	78.9	77.8r	77.7

Source: Retail Price Index, ONS

Overall, total domestic energy prices fell in real terms for the eighth year running in 2002. Average real prices in 2002 were 0.1% lower than in 2001. Within the overall movement, electricity prices fell by an average of 2.6% and heating oils by 8.5%. These falls were offset to some extent by a real terms rise of 2% in the price coal and smokeless fuels and a 3% rise in real terms in the price of gas. Between 1990 and 2002, real prices have fallen by 26%, 20%, 19% and 1% for electricity, gas, heating oils and coal and smokeless fuels respectively.

Petrol and diesel prices, 1980 to 2002



(1) Deflated using GDP(mp) deflator 1995 prices.

Current retail prices

	Pence/litre		
	4 star/LRP	Unleaded	Diesel
1980	28.32	..	29.67
1985	43.14	..	41.94
1990	44.87	42.03	40.48
1995	59.70	53.77	54.24
1996	61.63	56.52	57.71
1997	67.22	61.82	62.47
1998	71.11	64.80	65.50
1999	77.20	70.16	72.49
2000	84.89	79.93	81.34
2001	79.71	75.72	77.84
2002	77.03	73.24	75.46

Petrol and diesel prices decreased in 2002 in real terms. Real prices in 2002 were 6% lower than in 2001. These decreases mean that, in cash terms, a litre of Lead Replacement Petrol costs nearly 3 pence less in 2002 than a year ago, whilst unleaded and diesel both decreased by 2 pence per litre over the same period.

EXPENDITURE

Fuel expenditure of households¹, 2001/02

	Income decile					All
	Lowest	Third	Fifth	Eighth	Highest	
households						
Expenditure (£ per week)						
Gas	3.0	4.2	4.8	5.9	7.3	5.0
Electricity	4.1	4.9	5.5	6.3	7.7	5.8
Other Fuels	0.5	0.8	0.9	1.2	1.5	0.9
Total fuel expenditure	7.6	9.9	11.1	13.4	16.4	11.7
Total expenditure	127.0	220.2	322.6	528.7	884.7	397.7

Percentage of total expenditure

Gas	2.4	1.9	1.5	1.1	0.8	1.3
Electricity	3.2	2.2	1.7	1.2	0.9	1.5
Other Fuels	0.4	0.4	0.3	0.2	0.2	0.2
Total fuel expenditure	6.0	4.5	3.4	2.5	1.9	2.9

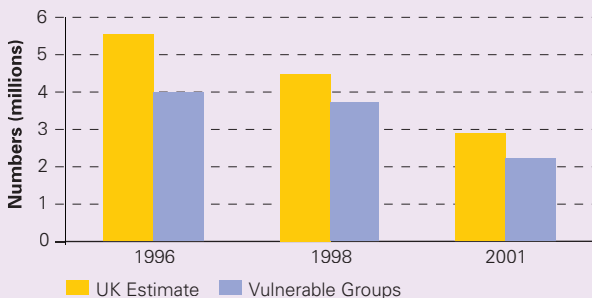
(1) includes non-consuming households

Fuel purchases as a percentage of total household expenditure

	1970	1980	1990	1999/00	2000/01	2001/02
Gas	1.5	1.6	1.7	1.3	1.2	1.3
Electricity	2.5	2.7	2.3	1.6	1.6	1.5
Coal and Coke	1.9	0.9	0.3	0.2	0.3	0.2
Heating oil	0.3	0.4	0.2			
Total	6.3	5.6	4.5	3.1	3.1	2.9

Source: Expenditure and Food Survey, ONS

A household in the highest income decile (i.e. the 10% of households with the highest income) spent more than twice as much on fuel in 2001/02 as a household in the lowest decile (with differences similar for all fuels). However, as total expenditure for the highest decile is nearly 7 times more than for the lowest, fuel expenditure counts for a far higher proportion of total expenditure for households on lower incomes. The percentage of expenditure on fuel for low-income households is just over twice that of the average household and slightly over 3 times as large compared to the highest earners. Falling energy prices (relative to other costs) have contributed to an overall reduction in the amount spent on fuel, falling from 6.3% of expenditure in 1970 to 2.9% in 2001/02.

Number of households in fuel poverty¹

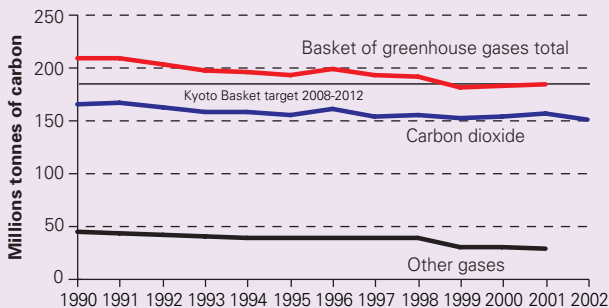
Source: Various²

Numbers in Fuel Poverty in England ^{3,5}	Total number of households (millions)			Number of vulnerable households (millions) ⁴		
	1996	1998	2001	1996	1998	2001
Including HB/ISMI	4.3	3.3	1.7	3.0	2.7	1.4
Excluding HB/ISMI	5.3	4.5	2.4	3.7	3.7	1.9

- (1) The chart above shows the incidence of fuel poverty in the UK when Housing Benefit and Interest for Mortgage relief payments (HB/ISMI) are included as household income.
- (2) Sources: English House Condition Survey 1996, 2001 and 1998 Energy Follow Up Survey, Scottish House Condition Survey, Welsh House Condition Survey, Northern Ireland Family Expenditure Survey.
- (3) The tables show the incidence of fuel poverty on the two commonly used definitions of fuel poverty, when HB/ISMI are included as income and when they are excluded from income.
- (4) Vulnerable households are households that contain elderly people, those with disabilities or long-term illness or children.
- (5) Figures for England have been included separately as, at present, recent estimates for the devolved administrations are not available

The number of households in fuel poverty has been reducing since 1996, as has the number of vulnerable fuel poor. In broad terms, it is estimated that the number of fuel poor households in the UK has fallen from about 5½ million in 1996 to about 3 million in 2001. The number of vulnerable fuel poor is estimated to have fallen from about 4 million to about 2 million in the same period.

Emissions of greenhouse gases, 1990 to 2002



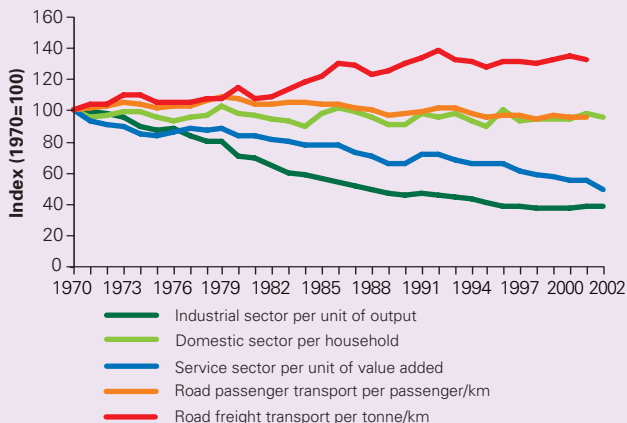
Million tonnes of carbon

	1990	1995	2000	2001	2002 prov
Carbon dioxide	164.8	154.1	152.6	156.1	150.4
Methane	21.0	17.5	13.3	12.6	-
Nitrous oxide	18.5	15.6	12.2	11.6	-
HFC	3.1	4.1	2.4	2.4	-
PFC	0.6	0.3	0.2	0.2	-
SF6	0.2	0.3	0.5	0.5	-
'Basket' of greenhouse gases total	208.2	191.9	181.1	183.3	-

Source: Department for Environment, Food and Rural Affairs

Naturally occurring greenhouse gases maintain the earth's surface at a temperature 33°C warmer than it would be in their absence. At present greenhouse gas concentrations in the atmosphere are increasing as a result of human activities. Greenhouse gas emissions fell by 12% between 1990 and 2001, mainly due to a fall in carbon dioxide emissions of 5 per cent. Carbon dioxide emissions contribute about 70% of the potential global warming effect of anthropogenic emissions of greenhouse gases and are created when fossil fuels are burned. The increased use of coal in power stations in 2000 and 2001, in place of gas, which releases fewer carbon dioxide emissions per unit of energy burned, resulted in higher levels of carbon dioxide emissions in 2000 and 2001. However, provisional estimates of carbon dioxide emissions for 2002, based on energy consumption data, indicate a reduction between 2001 and 2002 due mainly to switching to less carbon intensive fuels.

Energy efficiency 1970 to 2002



Tonnes of oil equivalent

	1970	1980	1990	2000	2001	2002
Domestic energy consumption per household	2.0	1.9	1.8	1.9	1.9	1.9
Road passenger energy consumption per million passenger-kilometres	43.0	45.7	41.8	40.7	40.5	-
Road freight energy consumption per million freight-kilometre	67.5	76.6	86.9	90.0	88.9	-

Energy consumption per unit of output, known as energy intensity, gives a broad indication of how efficiently energy is being used over time. Changes in energy intensity can occur for a number of reasons: process change, technological change and structural change (in the case of industry and the service sector) as well as efficiency change. The largest fall in energy intensity over the last thirty years has occurred in the industrial sector and is mainly due to structural change. The largest increase has occurred in the road freight transport sector where the move towards heavier vehicles has resulted in higher levels of energy consumption, although the trend has been relatively stable over the last decade.

CONTACTS

For enquiries please contact:	Telephone (020 7215)		e-mail
General enquiries on Energy Statistics	Rebecca Martyn	3839	Rebecca.Martyn@dti.gsi.gov.uk
Total energy statistics	Chris Michaels	2710	Chris.Michaels@dti.gsi.gov.uk
Coal and other solid fuels	James Achur	2717	James.Achur@dti.gsi.gov.uk
Natural gas consumption			
Natural gas production	Clive Evans	5189	Clive.Evans@dti.gsi.gov.uk
Petroleum production			
Petroleum consumption and stocks	Ian Corrie	2714	Ian.Corrie@dti.gsi.gov.uk
Gas and petroleum exploration drilling	Philip Beckett	5260	Philip.Beckett@dti.gsi.gov.uk
Gas and petroleum investment			
Electricity statistics	Joe Ewins	5190	Joe.Ewins@dti.gsi.gov.uk
Temperatures	Chris Michaels	2710	Chris.Michaels@dti.gsi.gov.uk
Foreign trade			
Indicative tariffs	Suhail Siddiqui	5262	Suhail.Siddiqui@dti.gsi.gov.uk
Energy prices (Industrial, International & oil prices)	Sara Atkins	6532	Sara.Atkins@dti.gsi.gov.uk
Energy prices (Domestic)	Julia Thomas	6935	Julia.Thomas@dti.gsi.gov.uk
Fuel Poverty	Paul Turner-Smith	2721	Paul.Turner-Smith@dti.gsi.gov.uk
Emissions of greenhouse gases	Chris Michaels	2710	Chris.Michaels@dti.gsi.gov.uk
Energy efficiency			

In addition, there is a Textphone number that the deaf and hard of hearing can use to contact DTI. 020 7215 6740

CONVERSION FACTORS AND DEFINITIONS

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

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

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

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

The symbol ‘-’ is used in the tables where the figure is zero or less than half the final digit shown.

The Department of Trade and Industry is the source of all data except where stated. All figures are for the United Kingdom.

The Department of Trade and Industry also produce the following publications:

Energy Trends is a quarterly publication that contains tables, charts and commentary covering all major aspects of energy. It provides a comprehensive picture of energy production and use, to allow readers to monitor trends during the year, and complements the annual Digest of United Kingdom Energy Statistics publication. It is available on annual subscription (June 2003 to March 2004) from the DTI, priced £35 for UK subscribers. For further information call 020 7215 2698. It can also be accessed via DTI's energy website:

www.dti.gov.uk/energy/inform/energy_trends/index.shtml, together with monthly tables, which can be found at:

www.dti.gov.uk/energy/inform/energy_stats/index.shtml.

Quarterly Energy Prices is a quarterly publication that contains tables, charts and commentary covering energy prices, to domestic and industrial consumers, for all the major fuels. It also presents comparisons of fuel prices in the European Union and G7 countries. For further information call 020 7215 2720 or it can be accessed via DTI's energy website: **www.dti.gov.uk/energy/inform/energy_prices/index.shtml**.

The **Digest of UK Energy Statistics 2003** is the annual energy statistics publication of the DTI. The 2003 edition of the Digest is the latest in a series that began 53 years ago. With extensive tables, charts and commentary covering all the major aspects of energy, it provides a detailed and comprehensive picture of the last three years. It includes detailed information on the production and consumption of individual fuels and of energy as a whole. The 2003 edition was published by The Stationery Office on 31 July 2003 and costs £35.50. It can also be accessed via DTI's energy website: **www.dti.gov.uk/energy/inform/dukes/index.shtml**.

The **Energy Sector Indicators** booklet is free from the DTI and contains over a 100 charts covering energy in the economy, use of energy (including conversion efficiencies), fuel prices, fuel poverty, competition and the environment. For further information call 0207 215 2698. It can also be accessed via DTI's energy website: **www.dti.gov.uk/energy/inform/energy_indicators/index.shtml**.

Publication of **Development of UK Oil and Gas Resources**, commonly known as the "Brown Book", ended with the 2001 edition. Up-to-date information on the UK offshore industry is available via DTI's Oil and Gas website: www.og.dti.gov.uk.

Energy Consumption in the United Kingdom brings together statistics from a variety of sources to produce a comprehensive review of energy consumption in the UK since the 1970s. The booklet describes the key trends in energy consumption in the UK since 1970 with a particular focus on trends since 1990. It includes an analysis of the factors driving the changes in energy consumption; the impact of increasing activity, increased efficiency, and structural change in the economy, while detailed tables can be found on the internet. The information is presented in five

REFERENCES

sections covering overall energy consumption, energy consumption in the transport, domestic, industrial and service sectors. Both the booklet and the detailed tables can be found on the DTI website:

www.dti.gov.uk/energy/inform/energy_consumption/ecuk.pdf

The Government's Energy White Paper, "Our energy future - creating a low carbon economy", was published by the Secretary of State for Trade and Industry on 24 February 2003. The report addresses the challenges facing energy, by setting out a long-term strategic vision for energy policy. It is the product of extensive consultative and analytical work and has over 6,500 contributions. The White Paper is available on the DTI web site at **www.eti.gov.uk/energy/whitepaper/index.shtml** and in hard copy from the The Stationery Office

Energy Projections for the UK, Energy Paper 68 presents the results of an exercise to update the Government's projections of future UK energy demand and related emissions of carbon and sulphur dioxides to 2020. It builds on work issued as a working paper in March 2000 and its projections underpin the Climate Change Programme launched by the DETR in November 2000. The paper contributes to policy development and assessment of the UK's efforts to meet its national and international greenhouse gases targets. Energy Paper 68, published 8 December 2000, is available from the Stationery Office priced £32.50. It can also be accessed via DTI's energy website: **www.dti.gov.uk/energy/inform/energy_projections/index.shtml**.

The UK Fuel Poverty Strategy, 1st Annual Progress Report 2003 is produced by the Department of Trade and Industry and Defra in association with the Devolved Administrations. This report sets out what progress has been made on tackling fuel poverty following the publication of the UK Fuel Poverty Strategy in November 2001. It is accompanied by detailed annexes published on the DTI web site at: **www.dti.gov.uk/energy/consumers/fuel_poverty/index.shtml**. It is available free from Department of Trade and Industry, Orderline, Admail 528, London, SW1W 8YT. Tel. 0870 1502 500, Fax 0870 1502 333, E-mail: publications@dti.gsi.gov.uk.

Energy - Its Impact on the environment and society outlines the environmental and social impacts of energy production and use. It includes information on carbon dioxide and other emissions, the environmental consequences of energy production and supply activities and an analysis of the drivers of energy demand. It also covers the evolution and impact of competition on the energy market, quality of service and fuel poverty. Available from the Department of Trade and Industry, telephone number: 020 7215 2698. It can also be accessed via DTI's website: **www.dti.gov.uk/energy/environment/energy_impact/**.

Other DTI publications: Energy Liberalisation Indicators in Europe, The Social Effects of Energy Liberalisation, and Social, Environmental and Security of Supply Policies in a Competitive Energy Market are accessible via DTI's energy website:

www.dti.gov.uk/energy/publications/policy/. To order a copy of the Digest of United Kingdom Energy Statistics, the Energy White Paper and Energy Projections for the United Kingdom, please call the Stationery Office on 0870 600 5533, or visit

www.tso.co.uk/bookshop.

The cover illustration used for UK Energy in Brief and other 2003-2004 DTI energy statistics publications is from a photograph by David Askew. It was a winning entry in the DTI News Photographic Competition in 2000.

Produced by the Department of Trade
and Industry. For further information
telephone 020 7215 2697.



Printed in the UK on recycled paper with a minimum HMSO score of 75.
First published July 2003. Department of Trade and Industry. www.dti.gov.uk/
© Crown Copyright. DTI/Pub 2222/2k/03/NP. URN 03/220