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Annex A – Technical Notes

Table 2.1.1

A1. The source of the prices in this table is the Retail Prices Index (RPI), published by the Office for National Statistics. The fuel components within the RPI are published, together with the all items RPI. Table A1 below gives the weights within the total index, in parts per 1,000, of the fuel components. RPI is calculated using prices collected on a day near the middle of the month.

A2. Quarterly data is published three months in arrears. Any revised data is marked with an "r". Provisional annual data is published in the March edition of QEP, with final data being published in June.

Table A1: Retail prices index, fuel component weights

	All items	Fuel and light	Coal and solid fuels	Gas	Electricity	Oil and other fuels	Petrol and lubricating oil
1975	1,000	53	11	12	25	5	47
1980	1,000	59	9	16	29	4	43
1985	1,000	65	8	24	29	4	50
1990	1,000	50	4	19	24	3	33
1995	1,000	45	2	18	23	2	37
1996	1,000	43	2	18	22	1	37
1997	1,000	41	1	17	21	2	39
1998	1,000	36	1	16	18	1	39
1999	1,000	34	1	15	17	1	38
2000	1,000	32	1	13	16	2	43
2001	1,000	29	1	12	15	1	41
2002	1,000	31	1	13	15	2	36
2003	1,000	29	1	12	14	2	38
2004	1,000	28	1	12	13	2	36
2005	1,000	31	1	13	15	2	35
2006	1,000	33	1	14	15	3	40
2007	1,000	39	1	18	18	2	36

The following notes apply to Table 2.1.1:

A3. **Coal and smokeless fuel (coal and solid fuels)** - Retail prices of one standard grade of household coal and of the boiler/room heater grade of smokeless fuel sold by the retailer, obtained from local retailers in up to 146 areas throughout the United Kingdom.

A4. **Gas and electricity** - The indices are calculated using published tariff information from British Gas (and since April 1996 other suppliers), the Public Electricity Supply Companies and Northern Ireland Electricity (NIE). When prices change in an area (including discounts and lump sum rebates), an index is re-calculated for a selection of the tariffs in use in that area at typical levels of consumption at each tariff. Electricity area indices are weighted together using the total receipts of each Public Electricity Supply Company and NIE from their sales to domestic consumers under each tariff. Gas companies are weighted by customer numbers, which currently gives most weight to British Gas. Both indices are calculated using mainly credit tariffs only.

A5. **Heating oils -** This comprises bottled gas and paraffin until January 1986, and domestic heating oils. Prices of heating oil are provided by the main suppliers.

A6. **Petrol and oil** - Retail prices of the different grades of motor spirit and engine oil are obtained from garages in more than 180 areas throughout the United Kingdom.

Tables 2.2.1 to 2.5.2

A7. Tables 2.2.1 and 2.3.1 show representative gas and electricity bills by payment type in each of the 15 Public Electricity Supply (PES) areas in the UK and 12 gas Local Distribution Zones (LDZ) in Great Britain. The unit cost represents the total cost to the consumer per unit consumed and is calculated by dividing the bill shown by the number of units consumed (18,000 kWh for gas, 3,300 kWh for electricity). The electricity PES areas and gas LDZ associated with each of the towns and cities are shown in Table A2:

Table A2: Towns and cities in Table 9.5 by LDZ and PES area

	Gas LDZ	Electricity PES area
Aberdeen	Scotland	Northern Scotland
Belfast	n/a	Northern Ireland
Birmingham	West Midlands	West Midlands
Canterbury	South East	South East
Cardiff	Wales	South Wales
Edinburgh	Scotland	Southern Scotland
Ipswich	Eastern	Eastern
Leeds	Northern	Yorkshire
Liverpool	North West	Merseyside & North Wales
London	London	London
Manchester	North West	North West
Newcastle	North East	North East
Nottingham	East Midlands	East Midlands
Plymouth	South West	South West
Southampton	Southern	Southern

A8. Provisional quarterly data is published three months in arrears. Any revised data is marked with an “r”. Provisional annual data is published in the September and December editions of QEP, with final data being published in March.

A9. Bills and unit costs are based on published prices and include standing charges. No allowances are made for introductory offers or non-cash benefits that may be available from new suppliers. Both electricity and gas bills and costs reflect the prices of all suppliers. This basis is used for all the domestic bills and cost data used in Tables 2.2.1 to 2.3.3. The bills shown relate to the total bill including VAT in cash terms received during the calendar year, for the tariff type shown, including all tariff changes and rebates. Averages are weighted by the number of domestic customers. For electricity an annual consumption of 3,300 kWh is used whilst the equivalent figure for gas is 18,000 kWh.

A10. The weighted average all supplier gas bills are based on equivalent tariffs of British Gas and other supply companies. As the estimate (like all the bills in the table) is based on bills received during the calendar year, that is consumption in Q4 of year X-1 and Q1 – Q3 of year X, customers of new gas suppliers will have received some of their gas in a year from British Gas prior to switching. This, coupled with the fact that British Gas in 2000 still supplied around 70 per cent of the domestic market, means that, especially in the early years of competition, the all supplier average is not substantially lower than the British Gas figure, despite the large savings available, as shown by the average non British Gas bill.

A11. Internet tables 2.4.2, 2.4.3 and 2.5.2 show data for ‘Economy 7’ tariffs, where a lower unit cost is applied to off-peak (night) consumption. For the total consumption of 6,600 kWh, off-peak consumption has been taken as 3,600 kWh.

Table 2.6.1

A12. Household final consumption expenditure comprises household expenditure in the United Kingdom on the fuels specified and fuel purchases by foreign tourists. It excludes expenditure on fuels by businesses. VAT was levied on domestic fuels at 8 per cent in April 1994, reduced to 5 per cent in September 1997, and is included in the table from 1994 onwards. For coal, coke and petroleum products it was assumed that all consumers paid VAT from the date of its introduction. For electricity and gas an estimate was made that 5 per cent of electricity sales and 4 per cent of gas sales were covered by customers pre-paying their bills to avoid VAT in 1994 and 1995. Figures for total consumers' expenditure are also shown for comparison.

Due to the reclassification of Household Expenditure to conform to the European Systems of Accounts 1995 (ESA 95), COICOP (Classification of Individual Consumption by Purpose) headings have been rearranged.

The following notes apply to Table 2.6.1:

A13. **Solid Fuels** – Household final consumption expenditure on these fuels is based on estimates of inland sales of solid fuels to domestic consumers. Expenditure in Northern Ireland is estimated based on values of colliery despatches of house coal to Northern Ireland.

A14. **Gas** - Personal consumption in the United Kingdom is taken as sales to domestic premises. Estimates of the quantity and value of liquid gases purchased by domestic consumers are provided by the petroleum industry. The average price used is the average revenue per kWh for public supply sales of gas to domestic consumers.

A15. **Electricity** - Sales from the public electricity supply system to domestic consumers in the United Kingdom plus estimates of the domestic element included in sales to dual use premises. Sales are valued at the average revenue per unit for electricity sold to domestic consumers, which takes into account discounts and lump sum rebates.

A16. **Liquid fuels** (domestic heating and lighting oil) - For fuel oils and heating oils, information is available from the petroleum industry on quantities delivered to domestic consumers. The figures for domestic consumption for these are then valued using monthly prices collected by the department from oil companies.

A17. **Vehicle fuels and lubricants** (petrol, diesel, LPG, oil and lubricants, brake and other fluids, coolants) – Estimates of the quantity and value of lubricating oil purchased by domestic customers are provided by the petroleum industry. For motor spirit and diesel, estimates of business purchases of the fuels are made and deducted from total deliveries to arrive at purchases by domestic consumers. The figures for domestic consumption for these are then valued using monthly prices collected by the department from oil companies.

Table 2.6.2

A18. Figures for Internet Table 2.6.2 are taken from the Expenditure and Food Survey (EFS) conducted by the ONS. The figures are estimates based upon a representative sample of households. The averages in the table have been calculated on the basis of consuming households, i.e. only those households who consumed the particular fuel in question are included in the calculation of the average expenditure. These estimates therefore differ from those published by the ONS in the report, "Family Spending", where the total of all households is used to calculate average fuel expenditure. After the publication of data for 1993 the survey moved to a financial year basis meaning 2005/06 is the latest year for which information is available. The data presented on expenditure on fuel as a proportion of total expenditure in table 2.6.2 are based on all households, not just those consuming the fuel or other commodity, for ease of comparison.

Tables 3.1.1 to 3.1.4

A19. Prices are derived from information collected via the Quarterly Fuels Inquiry on fuel purchases from a panel of about 1,200 establishments within manufacturing industry (which excludes electricity generation). The panel consists of companies purchasing fuels in small and large quantities. To maximise the coverage of each fuel type and minimise the burden on business, larger users are surveyed proportionally more than smaller users.

A20. Provisional quarterly data is published three months in arrears, with final data being published six months in arrears. Any revised data is marked with an “r”. Provisional annual data is published in the March edition of QEP, with final data being published in June. The entire year's quarterly data is reviewed in June to ensure that each of the contributors who supply data have been placed in the correct size band based upon their annual consumption. This means that there can be revisions made to data from Q1 to Q4. Any data which has been revised since the previous edition will be marked with an "r".

A21. For each size of consumer the average price for a fuel (exclusive of VAT) is calculated by dividing the total quantity of purchases into their total value. The "all consumers-average" price uses base weighting and weights the prices for each size band according to purchases by businesses in the size band recorded in the 1984 Purchases Inquiry. (This is a large scale survey conducted every 5 years until 1989, and conducted annually for a rotating selection of industries from 1994 to 1999. From 1999 the inquiry has once again covered all industries, providing information on the purchases of materials and fuels by the whole of UK industry.) The weights will be reviewed when comprehensive up-to-date purchases data are available. The size bands are defined, for each fuel individually, according to the approximate range of annual purchases covered. (See Table A3 below).

A22. As described above the prices given are representative market prices. This means trades that, because of their size or dominance of total consumption would produce an unrepresentative price, are excluded. For example, coal and coke purchased by the iron and steel sector are excluded, as is gas purchased for electricity generation.

A23. For some fuels, the relative size in volume terms of the largest users can have the effect of moving the weighted average more towards the large user price. This is true for gas where, because of the growth in consumption, the weights provided by the 1984 purchases survey may be out of date. Therefore, for some fuels (e.g. gas and gas oil), the median price (the price at which 50 per cent of the prices paid are higher and 50 per cent lower) may be another useful guide to average prices.

A24. Data for medium fuel oil, liquefied petroleum gases and hard coke were discontinued from Q1 2005. There was no sub-division into size bands of the prices for medium fuel oil, liquefied petroleum gases and hard coke owing to the small number of sites purchasing each of these fuels. The small sample sizes reflect the small overall consumption, relative to the major fuels covered, which means that although the prices are still representative, they can be subject to more sample effects than the other fuels (e.g. if a relatively large purchaser switches fuel).

A25. To enable coal prices to be calculated in common units, companies record the calorific value of the coal they purchase. Conversion factors for fuel oil (both heavy and medium), gas oil, liquefied petroleum gas and hard coke are given in Annex B.

A26. The 10 per cent and 90 per cent deciles and the median price for each fuel are presented in addition to the prices for each size band. The 10 per cent decile is the point within the complete range of prices below which the lowest 10 per cent of those prices fall. Similarly, the 90 per cent decile is the point above which the highest 10 per cent of the prices occur. These values give some indication of the spread of prices paid by purchasers. The deciles and the median are calculated by giving equal "weight" to each purchaser, but are scaled to represent the mix of fuel users by size in the industrial population that the panel represents. From Q1 2007, decile information will only be published for gas and electricity.

Table A3: Range of annual purchases for the Quarterly Fuels Inquiry

	Large	Of which:		Medium	Small
		Extra large	Moderately large		
Fuel	Greater than	Greater than			Less than
Coal (tonnes)	7,600	..	..	760 to 7,600	760
Heavy fuel oil (tonnes)	4,900	15,000	4,900 to 15,000	490 to 4,900	490
Gas oil (tonnes)	175	..	..	35 to 175	35
Electricity (thousand kWh)	8,800	150,000	8,800 to 150,000	880 to 8,800	880
Gas[(1)] (thousand kWh)	8,800	..	..	1,500 to 8,800	1,500

(1) Respondents purchasing more than one type of supply (tariff, firm contract and interruptible contract) are treated as separate entities in respect of each type of supply.

Table 3.2.1

A27. The prices for fuels used in electricity generation are collected via a quarterly inquiry of electricity generators in the United Kingdom. This covers companies that produce electricity from nuclear sources plus all companies whose prime purpose is the generation of electricity. The companies are: AES Electric Ltd., Barking Power Ltd., Centrica plc., Coryton Energy Company Ltd., Derwent Cogeneration Ltd., E.On UK plc., Fellside Heat and Power Ltd., Fibrogen Ltd., Fibropower Ltd., Fibrothetford Ltd., International Power plc., Premier Power Ltd., Rocksavage Power Company Ltd., RWE Innogy plc., Scottish Power plc., Scottish and Southern Energy plc., SELCHP Ltd., Spalding Energy Company Ltd., Teesside Power Ltd.

A28. The data reported are the value and volume of fuel purchased during the quarter and may not always reflect the fuel actually used (i.e. there can be stocking and destocking especially of coal). The prices reported are typically for long-term contracts, with price escalator factors, some of which may have been entered into some time ago. As such, the prices can be higher than those paid by large industrial users who typically negotiate contracts each year.

A29 Provisional quarterly data is published three months in arrears, with final data being published six months in arrears. Any revised data is marked with an “r”. Provisional annual data is published in the March edition of QEP, with final data being published in June.

A30. The gas beach price series is derived from gas sales by licensees in the UKCS to delivery points in the UK. It excludes gas and is adjusted to include imported gas. It is calculated as follows:

$$\frac{\text{Value of (UKCS gas sales + gas imports - gas exports)}}{\text{Volume of (UKCS gas sales + gas imports - gas exports)}}$$

where the UKCS sales value and volume data are derived from the DTI’s statistical inquiry into oil and gas extraction (PQ1100). Returns from the inquiry give the value and volume of gas sold by each licensee from a particular field (or group of fields). Data from the inquiry on sales and expenditure by licensees are covered and further explained in Annex G of the internet version of the Digest of UK Energy Statistics. Trade data are supplied by Revenue and Customs and published in the internet version of the Digest in Annex G, Chart G1.0.

A31. The gas levy applied to gas purchased under certain contracts originally entered into before July 1975. The cost of gas under these pre-July 1975 contracts had historically been substantially less than the prevailing market price. Gas sold under these contracts was not subject to Petroleum Revenue Tax (PRT) because the contracts were classified as "tax-exempt" when PRT was introduced in 1975. Instead, under the Gas Levy Act 1981, the purchaser of gas subject to the relevant contracts had to pay a levy on every therm of such gas that they purchased. The purpose

of the gas levy was to capture for the Exchequer the bulk of the economic rent which would otherwise accrue to the purchaser from purchasing this gas at below market prices. However, current and expected future gas market prices are now below the average cost of this gas (even before adding the cost of the levy). The gas levy was abolished from 1 April 1998.

Tables 3.3.1 to 3.3.2

A.32. Provisional quarterly data is published three months in arrears, with final data being published six months in arrears. Any revised data is marked with an "r". Provisional annual data is published in the March edition of QEP, with final data being published in June. The entire year's quarterly data for coal and HFO is reviewed in June to ensure that each of the contributors who supply data to the Quarterly Fuels Inquiry have been placed in the correct size band based upon their annual consumption. This means that there can be revisions made to data from Q1 to Q4. Any data which has been revised since the previous edition will be marked with an "r".

Tables 3.4.1 and 3.4.2

A33. The prices for gas and electricity consumed by non-domestic users in the United Kingdom are collected via a quarterly inquiry of gas and electricity suppliers. The data reported are the value and volume of energy sold during the quarter, for each of the sizebands below:

Table A4: Range of annual purchases for the Price Transparency survey

		Annual consumption MWh			Annual consumption MWh
Electricity	Very Small	0 - 20	**Gas**	Very Small	<278
	Small	20 - 499		Small	278 – 2,777
	Medium	500 - 1,999		Medium	2,778 – 27,777
	Moderately Large	2,000 - 19,999		Large	27,778 – 277,777
	Large	20,000 - 69,999		Very Large	277,778 – 1,111,112
	Very Large	70,000 – 150,000			
	Extra Large	>150,000			

Tables 4.1.1 to 4.1.3

A34. The data published are national average prices calculated from prices supplied by all major motor fuel marketing companies. Prior to 1977 price data were collated from a variety of sources mainly the published scheduled wholesale prices of the oil companies to which retailers margins were added. The results of various consumers' surveys were also taken into consideration in arriving at a typical price. Users of the table should bear in mind that, because of the multiplicity of petroleum marketing companies operating in the United Kingdom and the diversity of their pricing policies, prices differ from dealer to dealer and from area to area. From January 1995 sales by super/hyper markets, which now make up around 33 per cent of the retail petrol market, are included in the price estimates.

A35 Crude oil prices are shown in Table 4.1.1 as an index based on a "basket" of both indigenous and imported crude oil prices that are used as an input, along with other fuel prices, for the Producer Prices Index (produced by ONS). The index represents the average price paid by refineries for the month and is calculated in sterling on a cif basis.

A36. Provisional monthly prices are usually revised in the month following their original publication, with revisions being marked with an "r". Provisional annual prices are published in December with revisions being made during the following two months as more data becomes available.

Tables 5.1.1 to 5.10.3

A37. International comparisons are based on data published by international organisations and by Energy Advice Ltd, a private sector consultant (telephone: 020 8393 4230). Motor fuel prices are taken from the European Commission's 'Oil Bulletin'. Again, collection methodologies vary between countries, but these tend to be more consistent than with other fuels.

A38. For the analysis of annual electricity and gas prices (Tables 5.3.1, 5.5.1, 5.7.1 and 5.9.1), the data used are collated and published by the International Energy Agency in 'Energy Prices and Taxes'. Individual countries supply data to the IEA, so methodology can vary from country to country.

A39. The data presented in Sections 5.4, 5.6, 5.8 and 5.10 are derived from Eurostat's Statistics in Focus series and updated with estimates from Energy Advice Ltd. The size of consumers are defined as follows:

Industrial Electricity

	Eurostat size band	Annual consumption (kWh)	Maximum demand
Small	Id	1,250,000	500
Medium	Ig	24,000,000	4,000
Large	Ih	50,000,000	10,000
Extra large	N/A – Energy Advice data used	420,000,000	80,000

Domestic Electricity

		Annual consumption (kWh)	
	Eurostat size band	Total	of which at night
Small	Db	1,200	
Medium	Dc	3,500	1,300
Large	Dd	7,500	2,500

Industrial Gas

	Eurostat size band	Annual consumption (kWh)	Modulation
Small	I2	1,163,000	200 days
Medium	I3-1	11,630,000	200 days 1600 hours
Large	I4-1	116,300,000	250 days 4000 hours

Domestic Gas

	Eurostat size band	Annual consumption (kWh)
Small	D2	4,652
Medium	D3	23,260
Large	D3b	34,890

A40. Eurostat publishes data on gas and electricity prices six months after the reference period. The data as at 1 July 2007 has been estimated by calculating the percentage price movement in national currencies from 1 January 2007 to 1 July 2007 using data from Energy Advice Ltd. These percentage changes have then been applied to the appropriate Eurostat data as at 1 January 2007 and then converted to sterling using exchange rates as at 1 July 2007. The Eurostat data is mainly for selected cities in the EU, although some national prices are given as well. Where national data are not available, data for cities have been used instead. These cities are listed in the notes to the tables. The Energy Advice data are for countries rather than for cities.

A41. It is important when comparing international prices to keep in mind the impact of exchange rates (as the data are presented in a common pound sterling basis, the changing level of the pound will cause some changes in relative prices) and inflation rates in individual countries. The relative strength of the pound in 1997, 1998 and 1999 (e.g. sterling appreciated by 21 per cent against the German Mark between 1996 and 1999) to some extent will have had an adverse effect on comparisons of UK data.

A42. For tables 5.3.1 to 5.10.3, where data is not available, we have estimated the price in relation to the EU 15 median. A '+' indicates that the price is likely to exceed the median and is given a high price, '+/-' indicates that the price is likely to be around the median, '-' indicates that the price is likely to be below the median price and is given a low price. This methodology is intended to give a better indication of the UK position, when compared with those countries where up-to-date data is not available.

Annex B – Calorific values and conversion factors

B1: Estimated average gross calorific values of fuels 2006

	GJ per tonne
Coal:	
All consumers (weighted average)[1]	26.8
Power stations [1]	26.2
Coke ovens [1]	30.5
Low temperature carbonisation plants and manufactured fuel plants	29.5
Collieries	30.0
Agriculture	28.0
Iron and steel	30.4
Other industries (weighted average)	26.6
Non-ferrous metals	25.0
Food, beverages and tobacco	29.0
Chemicals	26.7
Textiles, clothing, leather etc.	29.6
Pulp, paper, printing etc.	29.4
Mineral products	27.6
Engineering (mechanical and electrical engineering and vehicles)	30.4
Other industries	25.5
Domestic	
House coal	30.5
Anthracite and dry steam coal	33.9
Other consumers	29.6
Imported coal (weighted average)	27.2
Exports (weighted average)	32.5
Coke (including low temperature carbonisation cokes)	29.8
Coke breeze	24.8
Other manufactured solid fuel	32.5

	GJ per tonne
Renewable sources:	
Domestic wood [2]	10.0
Industrial wood [3]	11.9
Straw	15.0
Poultry litter	8.8
Meat and bone	18.6
General industrial waste	16.0
Hospital waste	14.0
Municipal solid waste [4]	9.5
Refuse derived waste [4]	18.5
Short rotation coppice [5]	10.6
Tyres	32.0
Petroleum:	
Crude oil (weighted average)	45.7
Petroleum products (weighted average)	45.8
Ethane	50.7
Butane and propane (LPG)	49.5
Light distillate feedstock for gasworks	47.5
Aviation spirit and wide cut gasoline	47.4
Aviation turbine fuel	46.2
Motor spirit	47.1
Burning oil	46.2
Gas/diesel oil (DERV)	45.6
Fuel oil	43.3
Power station oil	43.3
Non-fuel products (notional value)	43.1
	MJ per m^3
Natural gas [6]	39.8
Coke oven gas	18.0
Blast furnace gas	3.0
Landfill gas [7]	21 – 25
Sewage gas [7]	21 – 25

(1) Applicable to UK consumption - based on calorific value for home produced coal plus imports and, for "All consumers" net of exports.
(2) Based on 50 per cent moisture content.
(3) Average figure covering a range of possible feedstock.
(4) Average figure based on survey returns.
(5) On an "as received" basis. On a "dry" basis 18.6 GJ per tonne.
(6) The gross calorific value of natural gas can also be expressed as 11.055 kWh per cubic metre. This value represents the average calorific value seen for gas when extracted. At this point it contains not just methane, but also some other hydrocarbon gases (ethane, butane, propane). These gases are removed before the gas enters the National Transmission System for sale to final consumers. As such, this calorific value will differ from that readers will see quoted on their gas bills.
(7) Calorific value varies depending on the methane content of the gas.

Note: The above estimated average gross calorific values apply only to the year 2006. For calorific values of fuels in earlier years see Table B2. The calorific values for coal other than imported coal are based on estimates provided by the main coal producers. The calorific values for petroleum products have been calculated using the method described in Chapter 1, paragraph 1.29 of the Digest of UK Energy Statistics. The calorific values for coke oven gas and blast furnace gas are provided by the Iron and Steel Statistics Bureau (ISSB).

B2: Estimated average gross calorific values of fuels 1980, 1990, 2000 and 2003 to 2006

GJ per tonne (gross)

	1980	1990	2000	2003	2004	2005	2006
Coal							
All consumers [1][2]	25.6	25.5	26.2	26.0r	26.1r	25.8r	25.7
All consumers - home produced plus imports minus exports [1]	..	..	27.0	26.7	26.7r	26.9	26.8
Power stations [2]	23.8	24.8	25.6	25.5	25.4	25.0	25.0
Power stations - home produced plus imports [1]	..	..	26.0	26.0	26.1r	26.1r	26.2
Coke ovens [2]	30.5	30.2	31.2	31.4	31.6	32.5r	32.3
Coke ovens - home produced plus imports [1]	..	..	30.4	30.5	30.5	30.5	30.5
Low temperature carbonisation plants and manufactured fuel plants	19.1	29.2	30.3	31.0	30.5	29.6r	29.5
Collieries	27.0	28.6	29.6	31.0r	29.9	29.8	30.0
Agriculture	30.1	28.9	29.2	28.0	28.0	28.0	28.0
Iron and steel industry [3]	29.1	28.9	30.7	30.4	30.4	30.4	30.4
Other industries [1]	27.1	27.8	26.8	26.6	26.6r	26.6r	26.6
Non-ferrous metals	..	23.1	25.1	25.3	24.8	24.5	25.0
Food, beverages and tobacco	28.6	28.1	29.5	30.5	29.4	29.8	29.0
Chemicals	25.8	27.3	28.7	27.8	26.6	26.6	26.7
Textiles, clothing, leather & footwear	27.5	27.7	30.4	29.9	29.5	29.5	29.6
Pulp, paper, printing, etc.	26.5	27.9	28.7	28.8	28.7	28.9	29.4
Mineral products [4]	..	28.2	28.5	27.9	27.9	27.6r	27.6
Engineering [5]	27.7	28.3	29.3	30.5r	30.6	30.7r	30.4
Other industry [6]	28.4	28.5	30.2	28.3	27.8r	25.9r	25.5
Unclassified	..	27.1	..	..	..	..	..
Domestic							
House coal	30.1	30.2	30.9	31.0	30.9	30.7	30.5
Anthracite and dry steam coal	33.3	33.6	33.6	33.8	33.8	33.8	33.9
Other consumers	27.5	27.5	29.2	29.6	29.8	29.1r	29.6
Imported coal [1]	..	28.3	28.0	27.2r	27.1r	27.3	27.2
of which Steam coal	..	..	26.6	26.3r	26.5r	26.6r	26.5
Coking coal	.	..	30.4	30.4	30.4	30.4	30.4
Anthracite	..	..	31.2	30.0r	30.4r	30.4r	31.8
Exports [1]	..	29.0	32.0	31.6	32.3	32.7	32.5
of which Steam coal	..	..	31.0	29.9	29.9	32.9	32.2
Anthracite	..	..	32.6	32.3	32.5	32.6	32.5
Coke [7]	28.1	28.1	29.8	29.8	29.8	29.8r	29.8
Coke breeze	24.4	24.8	24.8	24.8	24.8	24.8	24.8
Other manufactured solid fuels [1]	27.6	27.6	30.8	31.1	31.8	32.5	32.5
Petroleum							
Crude oil [1]	45.2	45.6	45.7	45.7	45.7	45.7	45.7
Liquefied petroleum gas	49.6	49.4	49.4	49.4	49.4	49.5	49.5
Ethane	52.3	50.6	50.7	50.7	50.7	50.7	50.7
LDF for gasworks/Naphtha	47.8	47.9	47.7	47.2	47.5	47.6	47.5
Aviation spirit and wide-cut gasoline (AVGAS & AVTAG)	47.2	47.3	47.3	47.3	47.5	47.4	47.4
Aviation turbine fuel (AVTUR)	46.4	46.2	46.2	46.2	46.2	46.2	46.2
Motor spirit	47.0	47.0	47.0	47.1	47.1	47.0	47.1
Burning oil	46.5	46.2	46.2	46.2	46.2	46.2	46.2
Vaporising oil	45.9	45.9	..	..	..	..	..
Gas/diesel oil (including DERV)	45.5	45.4	45.6	45.6	45.6	45.7	45.6
Fuel oil	42.8	43.2	43.1	43.6	43.5	43.5	43.3
Power station oil	42.8	43.2	43.1	43.6	43.5	43.5	43.3
Non-fuel products (notional value)	42.2	43.2	43.8	43.2	43.4	42.9	43.1
Petroleum coke	..	39.5	35.8	35.8	35.8	35.8	35.8
Orimulsion [8]	..	29.7	..	..	..	..	..

(1) Weighted averages.
(2) Home produced coal only.
(3) From 2001 onwards almost entirely sourced from imports.
(4) Based on information provided by the British Cement Industry Association; almost all coal used by this sector in the latest 4 years was imported.
(5) Mechanical engineering and metal products, electrical and instrument engineering and vehicle manufacture.
(6) Includes construction.
(7) Since 1995 the source of these figures has been the ISSB.
(8) Orimulsion use ceased in 1997.

B3: Standard conversion factors

1 tonne of oil equivalent (toe)	=	10^7 kilocalories
	=	396.83 therms
	=	41.868 GJ
	=	11,630 kWh

1 therm = 100,000 British thermal units (Btu)

The following prefixes are used for multiples of joules, watts and watt hours:

kilo (k)	= 1,000	or 10^3
mega (M)	= 1,000,000	or 10^6
giga (G)	= 1,000,000,000	or 10^9
tera (T)	= 1,000,000,000,000	or 10^{12}
peta (P)	= 1,000,000,000,000,000	or 10^{15}

WEIGHT

1 kilogramme (kg)	= 2.2046 pounds (lb)
1 pound (lb)	= 0.4536 kg
1 tonne (t)	= 1,000 kg
	= 0.9842 long ton
	= 1.102 short ton
1 Statute or long ton	= 2,240 lb
	= 1.016 t
	= 1.120 sh tn
1 barrel	= 159.0 litres
	= 34.97 UK gal
	= 42 US gal

VOLUME

1 cubic metre (cu m)	= 35.31 cu ft
1 cubic foot (cu ft)	= 0.02832 cu m
1 litre	= 0.22 Imperial gallons
1 UK gallon	= 8 UK pints
	= 1.201 U.S. gallons
	= 4.54609 litres

LENGTH

1 mile	= 1.6093 kilometres
1 kilometre (km)	= 0.62137 miles

TEMPERATURE

1 scale degree Celsius (C) = 1.8 scale degrees Fahrenheit (F)

For conversion of temperatures: °C = 5/9 (°F - 32); °F = 9/5 °C + 32

B4: Average conversion factors for petroleum

		Imperial gallons per tonne	Litres per tonne
Crude oil:			
Indigenous		264	1,199
Imported		260	1,181
Average of refining throughput		262	1,192
Ethane		601	2,730
Propane		433	1,969
Butane		382	1,736
Naphtha (l.d.f.)		313	1,421
Aviation gasoline		308	1,401
Motor spirit:			
All grades		298	1,354
Unleaded	Super	299	1,358
	Premium	299	1,357
	Ultra low sulphur petrol	298	1,354
Lead replacement petrol		299	1,361
Middle distillate feedstock		247	1,122
Kerosene:			
Aviation turbine fuel		275	1,251
Burning oil		275	1,250
DERV fuel:			
0.005% or less sulphur		265	1,203

	Imperial gallons per tonne	Litres per tonne
Gas/diesel oil:		
Gas oil	256	1,161
Marine diesel oil	255	1,158
Fuel oil:		
All grades	224	1,017
Light fuel oil:		
1% or less sulphur	224	1,019
Medium fuel oil:		
1% or less sulphur	224	1,019
Heavy fuel oil:		
1% or less sulphur	223	1,014
Lubricating oils:		
White	246	1,119
Greases	239	1,085
Other	248	1,127
Bitumen	217	988
Petroleum coke	185	843
Petroleum waxes	258	1,173
Industrial spirit	274	1,247
White spirit	282	1,283

Note: The above conversion factors, which for refined products have been compiled by the UK Petroleum Industry Association, apply to the year 2006, and are only approximate for other years.

Annex C - Effective rates of duty on principal hydrocarbon oils, 1964 to 2006[1]

Pence per litre

Date from which duty effective		Motor spirit[2][3]					Diesel[2]	
		Leaded	Lead replacement	Unleaded	Super unleaded	Ultra low sulphur	Regular	Ultra low sulphur
11 November	1964	3.575	..	..	..	..	3.575	..
21 July	1966	3.932	..	..	..	..	3.932	..
11 April	1967	3.941	..	..	..	..	3.941	..
19 March	1968	4.308	..	..	..	..	4.308	..
22 November	1968	4.739	..	..	..	..	4.739	..
15 April	1969	4.949	..	..	..	..	4.949	..
3 July	1972		..	..	..	..		..
10 April	1976	6.599	..	..	..	..	6.599	..
30 March	1977	7.699	..	..	..	..	7.699	..
8 August	1977	6.599	..	..	..	..		..
13 June	1979	8.100	..	..	..	..	9.200	..
26 March	1980	10.000	..	..	..	..	10.000	..
10 March	1981	13.820	..	..	..	..	13.820	..
2 July	1981		..	..	..	..	11.910	..
9 March	1982	15.540	..	..	..	..	13.250	..
15 March	1983	16.300	..	..	..	..	13.820	..
13 March	1984	17.160	..	..	..	..	14.480	..
19 March	1985	17.940	..	..	..	..	15.150	..
19 March	1986	19.380	..	..	..	..	16.390	..
17 March	1987		..	18.420	..	..		..
15 March	1988	20.440	..		..	..	17.290	..
14 March	1989		..	17.720	..	..		..
20 March	1990	22.480	..	19.490	..	..	19.020	..
19 March	1991	25.850	..	22.410	..	..	21.870	..
10 March	1992	27.790	..	23.420	..	..	22.850	..
16 March	1993	30.580	..	25.760	..	..	25.140	..
30 November	1993	33.140	..	28.320	..	..	27.700	..
29 November	1994	35.260	..	30.440	..	..	30.440	..
1 January	1995	36.140	..	31.320	..	..	31.320	..
28 November	1995	39.120	..	34.300	..	..	34.300	..
15 May	1996		..		37.620	..		..
26 November	1996	41.680	..	36.860	40.180	..	36.860	..
2 July	1997	45.100	..	40.280	43.600	..	40.280	..
17 March	1998	49.260	..	43.990	48.760	..	44.990	42.990
9 March	1999	52.880	..	47.210	52.330	..	50.210	47.210
1 October	1999		49.210		49.210	..		
21 March	2000	54.680	50.890	48.820	50.890	..	51.820	48.820
1 October	2000					47.820		
7 March	2001		(4)	46.820	(4)	45.820		45.820
15 June	2001			48.820				
1 October	2003	56.200		50.190		47.100	53.270	47.100
	2004		(5)		(5)			
7 December	2006	57.680		51.520		48.350	54.680	48.350

(1) Duty rates remain the same unless otherwise stated.
(2) These fuels became liable to Value Added Tax as follows:-
- (i) 10% with effect from 1 April 1974
- (ii) 8% with effect from 29 July 1974
- (iii) For motor spirit 25% with effect from 18 November 1974
- (iv) For motor spirit 12.5% with effect from 12 April 1976
- (v) 15% with effect from 18 June 1979
- (vi) 17.5% with effect from 1 April 1991

(Notes continued on following page)

Annex C - Effective rates of duty on principal hydrocarbon oils, 1964 to 2006[1] (continued)

Pence per litre

Date from which duty effective		Aviation gasoline[2]	Gas for use as road fuel [2][8]	Fuel oil[6]	Gas oil[6][7]	Kerosene[6]
11 November	1964	3.575				
21 July	1966	3.932		0.202	0.202	0.202
11 April	1967	3.941				
19 March	1968	4.308				
22 November	1968	4.739		0.222	0.222	0.222
15 April	1969	4.949		0.220	0.220	0.220
3 July	1972		2.475			
10 April	1976	6.599	3.300			
30 March	1977	7.699	3.849	0.550	0.550	
8 August	1977	6.599	3.300			
13 June	1979	8.100	4.050	0.660	0.660	
26 March	1980	10.000	5.000	0.770	0.770	
10 March	1981	13.820	6.910			
2 July	1981					
9 March	1982	7.770	7.770			
15 March	1983	8.150	8.150			
13 March	1984	8.580	8.580			zero
19 March	1985	8.970	8.970			
19 March	1986	9.690	9.690		1.100	
17 March	1987					
15 March	1988	10.220	10.220			
14 March	1989					
20 March	1990	11.240	11.240	0.830	1.180	
19 March	1991	12.930	12.930	0.910	1.290	
10 March	1992	13.900	13.900	0.950	1.350	
16 March	1993	15.290	15.290	1.050	1.490	
30 November	1993	16.570	16.570	1.160	1.640	
29 November	1994	17.630	33.140	1.660	2.140	
1 January	1995	18.070				
28 November	1995	19.560	28.170	1.810	2.330	
15 May	1996					
26 November	1996	20.840	21.130	1.940	2.500	
2 July	1997	22.550		2.000	2.580	
17 March	1998	24.630		2.180	2.820	
9 March	1999	26.440	15.000	2.650	3.030	
1 October	1999					
21 March	2000	27.340		2.740	3.130	
7 March	2001		9.000			
15 June	2001					
9 April	2003			3.820	4.220	
1 October	2003	28.100				
3 December	2004			4.820	5.220	
6 December	2005			6.040	6.440	
7 December	2006	28.840	10.810	7.290	7.690	

(3) With effect from 14 March 1989 until 20 March 1990, the rate of duty for 2-star and 3-star leaded motor spirit was 21.220 pence per litre.
(4) With the separate duty rate abolished, duty on these fuels is now charged at the rate appropriate to unleaded petrol or ultra low sulphur petrol, dependent upon the sulphur and aromatic content of the fuel.
(5) Duty now charged at the rate appropriate to ultra low sulphur petrol.
(6) For industrial and commercial consumers these fuels became liable to the standard rate of Value Added Tax on 1 July 1990 (at 15% to 31 March 1991 and at 17.5% from 1 April 1991), recoverable by the majority of such consumers. These fuels attracted Value Added Tax for domestic consumers from 1 April 1994 at an initial rate of 8%. This was reduced to 5% from 1 September 1997.
(7) AVTUR (aviation turbine fuel) attracted the gas oil rate until 18 March 1986 after which it was zero-rated.
(8) From 29 November 1994 this duty is priced in pence per kilogram as the relative calorific values of the different types of road fuel gases are very similar when related to mass (kilogram).

Annex D – Further Sources of Information

D1 Energy prices

Energy Prices (annual); Statistical Office of the European Communities Summarises price information published in the European Commissions Weekly Oil Bulletin, and half-yearly Statistics in Focus on Gas Prices and Electricity Prices

Energy Prices and Taxes (quarterly); OECD International Energy Agency

Electricity prices; Eurostat (annual)

Gas prices; Eurostat, (annual)

D2 Fuel poverty

The UK Fuel Poverty Strategy 4th Annual Progress Report – published in June, and includes statistics for the number of fuel poor households in 2004. It is being accompanied by an internet-only series of annexes, including a detailed analysis of the profile of the fuel poor and an update of the nineteen Fuel Poverty Indicators as developed by the Fuel Poverty Monitoring and Technical Group. BERR also published detailed documentation of the fuel poverty methodology at this time. The web reference for all documents is:
http://www.berr.gov.uk/energy/fuel-poverty/strategy/index.html

Fuel Poverty in England: The Government's Plan for Action - Published by the Department for Environment, Food and Rural Affairs in November 2004.

This document sets out how the Government intends to meet the first of its fuel poverty target in England – eradicating fuel poverty in vulnerable households by 2010 – and explains how Government Departments are working together with stakeholders to meet this target.

Available to view at:
http://www.defra.gov.uk/environment/climatechange/uk/household/fuelpoverty/pdf/fuelpov_actionplan.pdf

The UK Fuel Poverty Strategy – Published by the Department for Business, Enterprise and Regulatory Reform and the Department for Environment, Food and Rural Affairs in November 2001.

This document presents the Government's strategy for tackling fuel poverty. It includes information on how we plan to monitor progress in tackling this issue.

Available from the BERR publication order line: Admail 528, London SW1W 8YT, tel 0845 015 0010, fax 0870 1502 333, minicom 0870 1502 100, e-mail publications@berr.gsi.gov.uk

Also available at: www.berr.gov.uk/energy/fuel-poverty/strategy/index.html

Further sources of information

D3 Department of Business, Enterprise and Regulatory Reform publications on energy

Unless otherwise stated, all titles are available from EMU/SIID 2, Department for Business, Enterprise and Regulatory Reform, Bay 2100, 1 Victoria Street, London SW1H 0ET, tel. 020-7215 2697/2698

Energy Trends
Contains quarterly data on production and consumption of overall energy and of the individual fuels in the United Kingdom. Also includes data on foreign trade in fuels.

Digest of UK Energy Statistics 2006
Available at: http://www.berr.gov.uk/energy/statistics/publications/dukes/page29812.html and from The Stationery Office and can be ordered through Government Bookshops. Contains quarterly and annual data on production and consumption of overall energy and of the individual fuels in the United Kingdom. Also includes a commentary covering all the major aspects of energy and gives a comprehensive picture of energy production and use over the last five years with key series taken back to 1970.

White Paper: Our energy future - creating a low carbon economy
Available from The Stationery Office and at: http://www.berr.gov.uk/files/file10719.pdf
This paper defines a long-term strategic vision for energy policy combining our environmental, security of supply, competitiveness and social goals. It builds on the Performance and Innovation Unit's Energy Review, published in February 2002, and on other reports which have looked at major areas of energy policy.

Third Annual Report on the Energy White Paper
The Energy White Paper published in February 2003 set out the strategy for energy policy until 2050. A third annual report reviewing progress over the last 12 months and the way ahead was published in July 2006 and made available on the sustainable energy policy network part of the BERR web site at: http://www.berr.gov.uk/files/file32497.pdf

UK Energy Sector Indicators
Available at: http://www.berr.gov.uk/energy/statistics/publications/indicators/page29741.html
The indicators cover a variety of energy topics; the role of the industry in the UK economy, conversion efficiency, energy use, fuel prices, fuel poverty, competition and energy in the environment. The Government is proposing to use these indicators to measure progress in achieving its energy policy objectives, but these will continue to develop over the coming months to reflect White Paper policies.

Energy - its impact on the environment and society
Available on the internet at:
http://www.berr.gov.uk/energy/environment/energy-impact/page29982.html
This booklet outlines the environmental and social impacts of energy production and use, including the interaction between economic, social and environmental trends. It includes information on emissions and other environmental consequences from energy production and supply, and the social impacts of domestic competition, service quality issues and fuel poverty.

Energy Consumption in the UK
Available only on the internet at:
http://www.berr.gov.uk/energy/statistics/publications/ecuk/page17658.html
This brings together statistics from a variety of sources to produce a comprehensive review of energy consumption in the UK since the 1970s. This 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 sections covering firstly overall energy consumption, then energy consumption in the transport, domestic, industrial and service sectors.

The Energy Challenge, Energy Review Report 2006

The government has four long term goals for energy policy:

- To put the UK on a path to cut our carbon dioxide emissions by some 60 per cent by about 2050 with real progress by 2020;
- To maintain reliable energy supplies
- To promote competitive markets in the UK and beyond, helping to raise the rate of sustainable economic growth and to improve our productivity; and
- To ensure that every home is adequately and affordably heated.

In November 2005 the Prime Minister announced a major review of the country's progress on achieving these goals and this report is the Review's conclusions. It sets out the next steps that need to be taken in responding to the energy challenges facing the United Kingdom. It makes a number of proposals for actions to be taken now, identifies proposals on which Government intends to consult further, and indicates where Government considers there is further work to be done.

The report is available from The Stationery Office and costs £22 (ISBN 0 10 168872 5)
www.tso.co.uk/bookshop Telephone: 0870 600 5522

It is also available, free of charge, on the BERR web site along with supporting documentation at
http://www.berr.gov.uk/energy/review/page31995.html

D4 Energy related websites

The BERR website can be found at www.berr.gov.uk, the energy information and statistics website is at www.berr.gov.uk/energy/statistics/index.html

Other Government websites

Central Office of Information	www.coi.gov.uk/
HM Revenue and Customs	www.hmrc.gov.uk
Department for Environment, Food and Rural Affairs	www.defra.gov.uk
HM Government Online	www.direct.gov.uk/
Department for Transport	www.dft.gov.uk
National Statistics (ONS)	www.statistics.gov.uk
Northern Ireland Executive	www.northernireland.gov.uk
Department for Communities and Local Government	www.communities.gov.uk/
Ofgem (The Office of Gas and Electricity Markets)	www.ofgem.gov.uk
Scottish Executive	www.scotland.gov.uk
The Scottish Parliament	www.scottish.parliament.uk
National Assembly for Wales	www.wales.gov.uk
UK Parliament	www.parliament.uk

Other useful energy related websites

AEA Energy and Environment	www.aea-energy-and-environment.co.uk/
Air Quality Archive	www.airquality.co.uk
Association of Electricity Producers	www.aepuk.com
BP	www.bp.com/home.do
British Wind Energy Association	www.bwea.com
Building Research Establishment	www.bre.co.uk
Environmental Industries Sector Unit (EISU)	www.berr.gov.uk/sectors/environmental/index.html
Coal Authority	www.coal.gov.uk/
Energywatch	www.energywatch.org.uk/
Energy Institute	www.energyinst.org.uk
Energy Networks Association	www.energynetworks.org
Europa (European Union Online)	www.europa.eu/
Eurostat	epp.eurostat.cec.eu.int/
Interconnector (UK) Ltd	www.interconnector.com
International Energy Agency	www.iea.org
Iron and Steel Statistics Bureau	www.issb.co.uk
National Grid	www.nationalgrid.co.uk
Organisation of the Petroleum Exporting Countries (OPEC)	www.opec.org/home/
The Stationery Office	www.tso.co.uk/
UKOOA (UK Offshore Operators Association)	www.ukooa.co.uk
UK Petroleum Industry Association	www.ukpia.com
United Nations Statistics Division	unstats.un.org/unsd/default.htm
US Department of Energy	www.energy.gov
US Energy Information Administration	www.eia.doe.gov