3 Energy and the Environment:

Notes and Definitions

Petroleum consumption: by transport mode and fuel type: 3.1

Motor spirit (All grades):
One tonne = 299 gallons or 1,361 litres

DERV fuel (0.005% or less sulphur):
One tonne = 264 gallons or 1,199 litres

Petroleum consumption figures are published in the *Digest of United Kingdom Energy Statistics* (DUKES) by the Department for Business, Enterprise and Regulatory Reform (BERR) at: http://www.berr.gov.uk/energy/statistics/publications/dukes/page45537.html

Road transport - Deliveries of motor spirit and DERV fuel for use in road vehicles of all kinds. As part of their work to compile the UK emissions inventory, AEA has constructed estimates for the consumption of road transport fuels by different vehicle classes. There has been a reallocation of the road transport fuel consumption between different vehicle types for years prior to 2007.

A small proportion of motor spirit and diesel (approximately 0.3 million tonnes and 0.01 million tonnes per year respectively) is not used by road vehicles, which is included in the total BERR publish for motor spirit and diesel used.

Estimates for the use of gas for road vehicles are based on information on the amounts of duty received by HM Revenue and Customs from the tax on gas used as a road fuel.

Railways - Deliveries of fuel oil, gas/diesel oil and burning oil to railways are based on estimates produced by AEA as part of their work to compile the UK Greenhouse Gas Inventory. Railway fuels include some amounts of burning oil not used directly for transport purposes.

National navigation - Fuel oil and gas/diesel oil delivered, other than under international bunker contracts, for fishing vessels, UK oil and gas exploration and production, coastal and inland shipping and for use in ports and harbours.

Air transport - Total inland deliveries of aviation turbine fuel and aviation spirit. The figures cover deliveries of aviation fuels in the United Kingdom to international and other airlines, British and foreign Governments (including armed services) and for private flying.

Energy consumption: by transport mode and source of energy: 3.2

This is the energy content of fuels delivered to consumers. The data measures the energy content of the fuels, both primary and secondary, supplied to final users. Thus it is net of fuel industry own use and conversion, transmission and distribution losses, but it includes conversion losses by final users.

Detailed data for individual fuels are converted from original units to tonnes of oil equivalent using gross calorific values and conversion factors appropriate to each category of fuel. The results are then aggregated according to the categories used in the tables. Gross calorific values represent the total energy content of the fuel, including the energy needed to evaporate the water present in the fuel.

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

This unit should be regarded as a measure of energy content rather than a physical quantity. There is no intention to represent an actual physical tonne of oil, and indeed actual tonnes of oil will normally have measurements in tonnes of oil equivalent which differ from units.

Gross calorific values are reviewed each year in collaboration with the fuel industries. Estimated average gross calorific values revised in 2007 for motor spirit and gas/diesel oil (DERV) are:

47.1 GJ per tonne of motor spirit
45.5 GJ per tonne of Gas/diesel oil (DERV)

For railways, data are based on estimates produced by AEA as part of their work to compile the UK Greenhouse Gas Inventory.

Petrol and diesel prices and duties per litre: 3.3

The price estimates are based on information provided by oil marketing companies and super/hypermarket chains and are representative of prices paid (inclusive of taxes) on or about the 15th of the month. Changes in fuel duty usually occur during the month in which a Budget is held. VAT is rebated to business users.

From 2005, the collection of Lead Replacement Petrol prices has been discontinued due to the low volume of sales.

The figures in Table 3.3 differ from those in Table 10.8 because of the differences in availability and timing of data collection. The international comparisons in Table 10.8 (supplied by BERR, and extracted from the IEA publication 'Energy Prices and Taxes'), are based on averages over the year, whereas Table 3.3 attempts to be as up to date as reasonably possible. The use of the term Tax in part (b) of Table 10.8 is necessary because some other European countries impose other taxes and fees on fuel. For the UK this includes just fuel duty and VAT.

Average fuel consumption: 3.4

Passenger cars: These figures are based upon fuel consumption as recorded by participants in the National Travel Survey (NTS). This is estimated by recording the start and finish points of both the fuel gauge and the milometer, and the amount of fuel put in the vehicle in the travel week.

From the 2005 survey, NTS data has been weighted for the first time, and weights have now been applied to data from 1995. Results published here for 1995 onwards may differ from previously published figures which were based on unweighted data.

In 2002, the drawn sample size for the NTS was nearly trebled compared with previous years, enabling key results to be presented on a single year basis for the first time since the survey became continuous. Changes to the methodology in 2002 mean that there are some inconsistencies with data for earlier years. Data for earlier years are shown for a three year time period because of the smaller sample sizes for individual years.

HGVs: These figures are based on fuel consumption as recorded by participants in the Continuing Survey of Road Goods Transport (CSRGT). Respondents report the amount of fuel purchased during the survey week, with the amount of fuel at the start and end of the week assumed to balance out across the sample as a whole.

Unlike the NTS, the sample size is sufficient to report fuel consumption on a yearly basis for the whole time series. The fuel consumption figures have not been re-weighted to the population, so the figures may not be fully representative of the HGV fleet.

The HGV fuel consumption figures were revised this year and the new time series covering 1993-2007 can be found in Road Freight Statistics 2007 (http://www.dft.gov.uk/pgr/statistics/datatablespublications/freight/goodsbyroad/roadfreightstatistics2007).

Average new car fuel consumption: 3.5

Chart 3.5 includes separate trends for diesel and petrol cars. These trends include all types of passenger cars registered including high performance cars, 4x4's and MPV's. The data are calculated from new registration weighted average CO_2 emissions for petrol and diesel cars and the typical carbon content of petrol and diesel. This approach accounts for the relative sales of different models of car. The registration weighted average CO_2 figures are produced to monitor trends in average petrol and diesel car CO_2 emissions from year to year. The CO_2 figures for individual vehicle models are obtained under carefully controlled laboratory conditions in order to ensure repeatability and a fair comparison between models. The actual fuel consumption achieved on the road will reflect many extraneous factors such as cold starts, different driving conditions, weather conditions, different loads carried, gradients, use of electrical accessories etc. The data shown here represents fuel economy on the current standard test used to obtain comparative data on the relative fuel economy of vehicles (a drive cycle simulating urban and extra-urban driving, effectively with a single occupant, on a level road and without heaters or lights on).

Emissions for road vehicles in urban conditions: 3.6

This table takes into account emission factors for cars, light goods vehicles, heavy goods vehicles, buses and coaches and motorcycles of different ages, and indexes them against a baseline emissions from a pre-1993 petrol car without a three-way catalyst (=100). The emission factors, in units of grammes of pollutant per kilometre travelled (g/km), are from the National Atmospheric Emissions Inventory, maintained by AEA Energy and Environment on behalf of DEFRA, and are

based on the latest compilation of equations derived by the Transport Research Laboratory (TRL) relating emission factor to average vehicle speed. The equations are derived from a database of emissions measured from actual in-service vehicles, the measurements being carried out by different laboratories in the UK and the rest of Europe over different drive cycles. Particulate emissions (these are fine particles less than 10 micrometres or 0.01 millimetres diameter) are much lower from vehicles with petrol engines than they are from vehicles with diesel engines. For this pollutant, the index is against emissions from a pre-1993 diesel car (=100). Measurements have been made of emissions from vehicles of different sizes within each vehicle category. The figures shown here reflect average values of emission factors at a typical urban speed, weighted by the mix of sizes of vehicles in the fleet.

Since January 1993, all new cars have had to meet new EC emission standards. This resulted in the use of three way catalysts for petrol cars to meet those standards (EC Directive 91/441/EEC).

Table 3.7 (b) shows improved information on HGVs which is based on average fuel economy of the HGV fleet each year. However, this does not take into account the revised fuel consumption statistics published in Road Freight Statistics 2007.

Carbon dioxide emissions in the United Kingdom: 3.7

The data in Table 3.7 are presented in terms of weight of carbon dioxide emitted. To convert weight of carbon to carbon dioxide emissions, carbon figures are multiplied by a factor of 44/12.

Carbon dioxide:
Carbon dioxide is the most important greenhouse gas and is estimated to account for about two thirds of man made global warming. Although its global warming potential is much less per tonne than the other greenhouse gases it is present in the atmosphere in vastly greater quantities.

National Atmospheric Emissions Inventory (NAEI)

Emission figures, including more detail about the estimates and additional data, are published in the *Digest of Environmental Statistics*, by the Department for Environment, Food and Rural Affairs (DEFRA) at:
www.defra.gov.uk/environment/statistics/Index.htm

The NAEI carbon dioxide emissions figures shown in Table 3.7, part (a) are based on the reporting guidelines of the Intergovernmental Panel on Climate Change (IPCC). These are the guidelines used for international reporting of greenhouse gases. This system excludes international navigation and aviation bunker fuels from national totals, but these are shown as memo items separately from the national total.

Parts (b) and (c) of Table 3.7 show carbon dioxide emissions based on National Communication categories.

The table includes emissions from Crown Dependencies of Jersey, Guernsey and Isle of Man, and excludes emissions from Overseas Territories.

The main difference between “by source” and “end user” emissions comes from the treatment of emissions from combustion of fossil fuels, the largest source of carbon dioxide in the UK.
By source:
The **source** breakdown splits emissions by the sector producing them.
By end user:
The **end user** breakdown also shows emissions by the sector responsible for them, but redistributes emissions from power stations and other fuel processing industries to end users on an approximate basis according to their use of the fuel. Emissions by end user are subject to more uncertainty than emissions by source and should only be used to give a broad indication of emissions by sector.

Emissions from road transport are calculated either from a combination of total fuel consumption data and fuel properties or from a combination of drive related emission factors and road traffic data. The 2006 inventory contains a reallocation of the total road transport CO_2 between different vehicle types for years prior to 2006. This is a consequence of using revised fuel consumption factors for different classes of vehicles, particularly for HGVs.

The time series for railways for all years prior to 2006 was revised to take into account new fuel consumption data obtained from the Association of Train Operating Companies (ATOC). This resulted in an increase in emission estimates from the railway sector for each of these earlier years in the 2006 inventory.

The 3% decrease in domestic aviation emissions between 2005 and 2006 is due to a change in the aircraft fleet making domestic flights. In 2006, there was an increase in the use of Airbus A319 from Boeing 737-300 series. The Airbus is a more fuel efficient aircraft.

Further information on the UK atmospheric emissions estimates can be found at:
http://www.naei.org.uk

Environmental Accounts (EA)

The Environmental Accounts provide information on the demands that UK economic activity places on the environment and on the importance of natural resources to the economy. These demands include the emission of greenhouse gases and air pollutants.

The statistics presented in the Environmental Accounts are on a **UK residents** basis, as opposed to being based on fuel purchases in the UK. This means that they measure the emissions caused by people residing in the UK, and UK-registered businesses. The principle is that this is the same basis on which the National Accounts are produced, so environmental impacts can be directly compared with economic benefits.

The UK transport industries comprise: railways, buses and coaches, tubes and trams, taxis, road freight, water transport, air transport, and transport via pipelines. The road freight industry covers road haulage companies as opposed to all types of road freight. Lorries owned by retailers for instance are allocated to the retail industry.

Further information on Environmental Accounts can be found on the Office for National Statistics (ONS) website at:
http://www.statistics.gov.uk/statbase/Product.asp?vlnk=3698

The main differences between the NAEI and EA's are:

- ONS apply a cross-boundary adjustment to remove purchases by overseas residents of UK fuel, and then add purchases by UK residents of foreign fuel.
- Environmental Accounts include international aviation and shipping.
- The Environmental Accounts breaks down emissions using the Eurostat industry classification, which looks at the economic sector of the person or company responsible for the activity, rather than the activity itself.

Pollutant emissions from transport in the United Kingdom: 3.8

Emission figures, including more detail about the estimates and additional data are published in the *Digest of Environmental Statistics*, by the Department for Environment, Food and Rural Affairs (DEFRA) at:
http://www.defra.gov.uk/environment/statistics/airqual/alltables.htm

Figures shown in Table 3.8 are based on United Nations Economic Commission for Europe (UNECE) definitions. This system, like the IPCC, excludes international navigation and aviation bunker fuels from national totals, but these are shown as memo items separately from the national total.

Carbon monoxide (CO): Derived from the incomplete combustion of fuels containing carbon. It is one of the most directly toxic of substances, interfering with respiratory bio-chemistry and can affect the central nervous and cardiovascular systems. Other pollutants can exacerbate the effects. The fitting of catalytic converters to all new petrol engine vehicles made after 1992 has reduced emissions of carbon monoxide from the 1992 level.

Nitrogen oxides (NO_x) (expressed as nitrogen dioxide equivalent): A number of nitrogen compounds including nitrogen dioxide and nitric oxide are formed in the combustion of fossil fuel. Nitrogen dioxide is directly harmful to human health causing respiratory problems and can reduce lung function. Nitrogen oxides also contribute to the formation of ozone which is a harmful secondary pollutant in the lower atmosphere and also an important greenhouse gas contributing to global warming (high levels of ozone increase susceptibility to respiratory disease and irritate the eyes, nose, throat and respiratory system). Oxides of nitrogen can also have adverse effects on plants, reducing growth. In addition they contribute to acid rain. Emissions of nitrogen oxides from petrol engined vehicles have been reduced from the 1992 level as new vehicles built from 1992 onwards must comply with EC standards (normally by the fitting of a suitable catalytic converter).

Particulates (PM_{10}): Airborne particles may be measured in a number of ways. For quantifying the particles produced by transport (especially motor traffic), the most commonly used indicator relies on the use of a size-selective sampler which collects smaller particles preferentially, collecting more than 95 per cent of 5μm (0.005 millimetres) particles, 50 per cent of 10μm aerodynamic particles, and less than 5 per cent of 20μm particles. The resultant mass of material is known as PM_{10}. The road transport figures include emissions from tyre and brake wear.

Benzene: A known human carcinogen, the main source of benzene is the combustion and distribution of petrol. Some benzene evaporates

directly into the atmosphere. Benzene is also emitted in a number of industrial processes. The large reduction in benzene emissions in 2000 was due to a reduction in the benzene content of petrol.

1,3–butadiene: A suspected human carcinogen, the main source of 1,3-butadiene is motor vehicle exhausts where 1,3-butadiene is formed from the cracking of higher olefines. 1,3-butadiene is also used in the production of synthetic rubber for tyres.

Lead (Pb): Of concern because of its effects on health, particularly that of children. The main sources of lead in air are from lead in petrol, coal combustion, and metal works. The maximum amount of lead permitted in petrol was reduced from 0.45 grams per litre to 0.40 in 1981 and then again in December 1985 to 0.15. A further step to reduce lead emissions from petrol was taken in 1986 when unleaded petrol was first sold in the United Kingdom. There was a rapid increase in the uptake of unleaded petrol in the 1990s followed by a ban on the general sale of leaded petrol at the end of 1999.

Sulphur dioxide (SO_2): An acid gas, sulphur dioxide can affect health and vegetation. It affects the lining of the nose, throat and airways of the lung, in particular, among those who suffer from asthma and chronic lung disease. The United Nations Economic Commission for Europe's (UNECE) Second Sulphur Protocol sets reduction targets for total SO_2 emissions of 50 per cent by the year 2000, 70 per cent by 2005 and 80 per cent by 2010 from a 1980 baseline. By 2000, the UK had achieved a 75 per cent reduction from 1980 baseline levels, 25 per cent ahead of the UNECE target level for that year. Road transport emissions have fallen by over 87 per cent since 1998 following a reduction in the sulphur content of fuel.

Aircraft noise: 3.9

Air transport movements are landings or take-offs of aircraft engaged in transport of passengers or cargo on commercial terms. All scheduled service movements (whether loaded or empty) are included, as well as charter movements transporting passengers or cargo. Air taxi movements are excluded.

The equivalent continuous sound level (Leq) is an index of aircraft noise exposure. It is a measure of the equivalent continuous sound level averaged over a 16 hour day from 0700 to 2300 hours BST and is calculated during the peak summer months mid-June to mid-September.

The contours referred to are broadly comparable with the previous Noise and Number Index (NNI) - The change was announced by the Minister for Aviation on 4 September 1990. 57dBA Leq represents the approximate onset of significant community disturbance (comparable with 35 NNI at the time), 63dBA Leq moderate disturbance and 69dBA Leq high disturbance. Leq is correlated with community response to aircraft noise, but it is recognised that the reactions of different individuals to aircraft noise can vary considerably. Changes in wind direction from year to year influence the area affected by aircraft noise.

The methodology underlying the calculation of the aircraft noise Leq contours is published in: *The CAA Leq Aircraft Noise Contour Model: ANCON Version 1* (DORA Report DR 9120), *The UK Civil Aircraft Noise Contour Model ANCON: Improvements in Version 2* (R&D Report 9842) and *The CAA Aircraft Noise Contour Model: ANCON Version 2.3* (ERCD Report 0606 - to be published).

Further information on the availability of annual contour reports for Heathrow, Gatwick and Stansted can be found on DfT website at: http://www.dft.gov.uk/pgr/aviation/environmentalissues/nec/

TSGB 2008: Energy and the Environment - data tables

*** To access data tables, select on the table headings or bookmarks.**

Consumption and prices

Emissions

Aircraft noise

Source: www.dft.gov.uk/pgr/statistics

3.1 Petroleum consumption: by transport mode and fuel type: United Kingdom:[1] 1997-2007

Million tonnes/percentage

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007[2]
Road transport:											
Motor spirit											
Cars & Taxis	20.58	20.25	20.36	20.11	19.76	19.73	18.91	18.56	17.86	17.29	16.76
Light goods	1.27	1.20	1.02	0.89	0.78	0.67	0.58	0.51	0.44	0.44	0.42
Motorcycles	0.14	0.14	0.15	0.15	0.15	0.15	0.17	0.15	0.16	0.15	0.14
Diesel											
Cars & Taxis	2.42	2.48	2.76	2.90	3.05	3.37	3.62	3.98	4.31	4.58	4.78
Light goods	3.13	3.36	3.36	3.41	3.66	4.10	4.36	4.63	5.60	5.85	6.11
Heavy goods	7.87	7.78	8.02	8.07	8.12	8.15	8.39	8.61	8.05	8.16	8.53
Buses & Coaches	1.55	1.52	1.36	1.24	1.22	1.30	1.33	1.28	1.47	1.55	1.62
Propane	-	-	0.01	0.02	0.05	0.09	0.10	0.11	0.12	0.13	0.12
All[3]	36.96	36.73	37.03	36.79	36.78	37.55	37.46	37.84	38.01	38.14	38.47
Railways:											
Gas/diesel oil & fuel oil	0.52	0.55	0.57	0.57	0.60	0.60	0.60	0.63	0.64	0.65	0.63
Burning oil	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
All	0.53	0.56	0.58	0.59	0.61	0.61	0.61	0.64	0.65	0.67	0.64
Water transport:											
Gas/diesel oil	1.04	0.98	0.91	0.91	0.74	0.60	1.09	0.84	0.92	1.19	0.94
Fuel oil	0.13	0.10	0.07	0.04	0.03	0.04	0.05	0.27	0.35	0.50	0.57
All	1.16	1.09	0.98	0.95	0.78	0.65	1.14	1.11	1.27	1.69	1.51
Air:											
All aviation fuels	8.45	9.28	9.98	10.86	10.67	10.57	10.81	11.69	12.55	12.69	12.67
All petroleum used by transport[3]	47.10	47.65	48.58	49.18	48.84	49.38	50.02	51.28	52.48	53.18	53.29
All petroleum use (energy and non-energy)	79.25	78.44	77.97	77.20	76.41	76.23	77.15	79.07	80.73	79.75	76.94
Transport as a percentage of all energy and non-energy use	*59*	*61*	*62*	*64*	*64*	*65*	*65*	*65*	*65*	*67*	*69*

1 There are revisions to some of the earlier data, for details see "Digest of UK Energy Statistics 2008" published by BERR.

2 Figures for 2007 for road transport mode are estimated on 2006 ratios.

3 Excludes a small amount of motor spirit and diesel not used by road vehicles.

☎020-7944 4129

Source - BERR

3.2 Energy consumption: by transport mode and source of energy: United Kingdom:[1] 1997-2007

Million tonnes of oil equivalent/percentage

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Road transport											
Petroleum	**41.26**	**41.02**	**41.40**	**41.07**	**41.10**	**41.94**	**41.82**	**42.22**	**42.39**	**42.51**	**42.81**
Railways											
Petroleum	**0.58**	**0.61**	**0.63**	**0.64**	**0.66**	**0.66**	**0.67**	**0.70**	**0.71**	**0.73**	**0.70**
Water transport											
Petroleum	**1.26**	**1.18**	**1.07**	**1.03**	**0.84**	**0.70**	**1.23**	**1.20**	**1.37**	**1.81**	**1.62**
Aviation											
Petroleum	**9.32**	**10.24**	**11.02**	**11.98**	**11.77**	**11.66**	**11.94**	**12.91**	**13.86**	**14.00**	**13.97**
All modes											
Electricity [2]	**0.72**	**0.73**	**0.74**	**0.74**	**0.76**	**0.73**	**0.71**	**0.73**	**0.76**	**0.71**	**0.71**
All energy used by transport	**53.14**	**53.77**	**54.85**	**55.46**	**55.14**	**55.68**	**56.37**	**57.75**	**59.08**	**59.75**	**59.81**
All energy used by final users	**154.37**	**155.92**	**156.53**	**159.21**	**160.93**	**156.48**	**158.03**	**159.82**	**160.19**	**157.95**	**154.87**
Energy used by transport as a percentage of all energy used by final users	***34***	***34***	***35***	***35***	***34***	***36***	***36***	***36***	***37***	***38***	***39***

1 There are revisions to some of the earlier data, for details see "Digest of UK Energy Statistics 2008" published by BERR.

2 Includes consumption at transport premises.

☎020-7944 4129

Source - BERR

3.3 Petrol and diesel prices and duties per litre: at April: 1998-2008

Pence/percentage

	April 1998	April 1999	April 2000	April 2001	April 2002	April 2003	April 2004	April 2005	April 2006	April 2007	April 2008
Lead replacement petrol [1]											
Price	**72.4**	**77.8**	**84.5**	**78.2**	**77.8**	**81.4**	**81.3**	**88.5**	**..**	**..**	**..**
Duty	**49.3**	**52.9**	**50.9**	**46.8**	**48.8**	**48.8**	**47.1**	**47.1**	**..**	**..**	**..**
VAT	**10.8**	**11.6**	**12.6**	**11.7**	**11.6**	**12.1**	**12.1**	**13.2**	**..**	**..**	**..**
All tax	**60.0**	**64.5**	**63.5**	**58.5**	**60.4**	**61.0**	**59.2**	**60.3**	**..**	**..**	**..**
All tax as a percentage of price	***83***	***83***	***75***	***75***	***78***	***75***	***73***	***68***	**..**	**..**	**..**
Unleaded petrol [2]											
Price	**65.8**	**70.2**	**80.0**	**75.9**	**75.0**	**78.2**	**77.8**	**85.4**	**94.1**	**91.9**	**107.6**
Duty	**44.0**	**47.2**	**48.8**	**45.8**	**45.8**	**45.8**	**47.1**	**47.1**	**47.1**	**48.4**	**50.4**
VAT	**9.8**	**10.5**	**11.9**	**11.3**	**11.2**	**11.7**	**11.6**	**12.7**	**14.0**	**13.7**	**16.0**
All tax	**53.8**	**57.7**	**60.7**	**57.1**	**57.0**	**57.5**	**58.7**	**59.8**	**61.1**	**62.0**	**66.4**
All tax as a percentage of price	***82***	***82***	***76***	***75***	***76***	***73***	***75***	***70***	***65***	***67***	***62***
Ultra low sulphur diesel [3]											
Price	**66.8**	**73.2**	**81.1**	**77.3**	**76.9**	**80.9**	**79.2**	**89.6**	**97.6**	**94.7**	**116.6**
Duty	**45.0**	**50.2**	**48.8**	**45.8**	**45.8**	**45.8**	**47.1**	**47.1**	**47.1**	**48.4**	**50.4**
VAT	**10.0**	**10.9**	**12.1**	**11.5**	**11.5**	**12.0**	**11.8**	**13.3**	**14.5**	**14.1**	**17.4**
All tax	**54.9**	**61.1**	**60.9**	**57.3**	**57.3**	**57.9**	**58.9**	**60.4**	**61.6**	**62.5**	**67.7**
All tax as a percentage of price	***82***	***83***	***75***	***74***	***74***	***72***	***74***	***67***	***63***	***66***	***58***

1 Prices prior to 2000 were for four star petrol
Pump prices are broadly the same.

2 From April 2001, Premium unleaded prices represent Ultra Low Sulphur Petrol (ULSP)
Pump prices are broadly the same.

3 Prices prior to 2000 were for diesel engined road vehicle fuel (DERV)
Pump prices are broadly the same.

☎020-7215 6935
Source - BERR

3.4 Average fuel consumption by age and type of vehicle and type of fuel: 1995/1997 to 2006

a) Passenger cars — **Miles per gallon/litres per 100 km**

	1995/1997	1998/2000	2002	2003	2004	2005	2006
Petrol cars							
Up to 2 years	32	30	31	31	32	32	32
Over 2 to 6 years	31	30	31	31	31	31	31
Over 6 to 10 years	30	30	31	31	30	30	30
Over 10 years	29	28	28	29	29	30	29
All petrol cars	31	30	30	30	30	31	31
Diesel cars [1]							
Up to 2 years	43	35	40	40	41	40	39
Over 2 years	44	39	38	38	39	38	39
All diesel cars	44	38	39	39	40	39	39
Company cars [1]	34	30	35	34	36	36	35
Private cars	32	31	31	32	32	32	32
All cars (miles/gallon)	32	31	32	32	32	33	32
All cars (litres/100 km)	8.8	9.1	8.9	8.9	8.8	8.7	8.8

b) HGVs — **Miles per gallon**

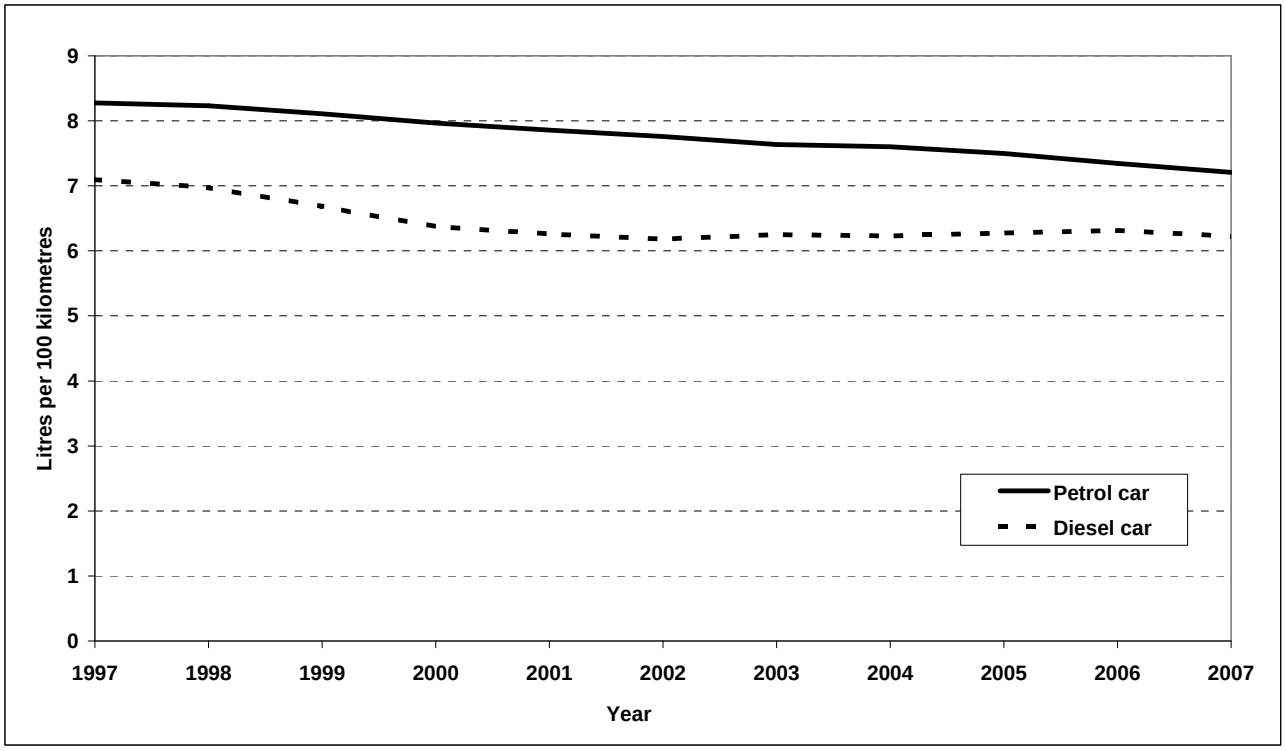
	1996[R]	1999[R]	2002[R]	2003[R]	2004[R]	2005[R]	2006[R]
Rigid vehicles	9.9	10.3	9.8	9.5	9.8	10.0	9.7
Articulated vehicles	7.6	8.0	7.8	7.8	8.0	8.2	8.1

1 These estimates have a large sampling error because of the smaller sample sizes involved.

Cars: 020 7944 3097
HGVs: 020 7944 4261

Source - Passenger cars: National Travel Survey
HGVs: Survey of Road Goods Transport

3.5 Average New Car Fuel Consumption: 1997-2007
(Registration-Weighted: petrol and diesel vehicles)



☎020-7944 4129

The figures in this graph are outside the scope of National Statistics

Source - Cleaner Fuels and Vehicles Division, DfT

3.6 Emissions for road vehicles (per vehicle kilometre) in urban conditions

Index: petrol car without three-way catalyst: pre 1993 = 100[1]

(a) Road vehicles (per vehicle kilometre) in urban conditions:			Carbon monoxide	Hydro-carbons[2]	Oxides of nitrogen	Particu-lates[3]	Carbon dioxide[4]
Petrol car without three-way catalyst	Pre-Euro I	pre 1993	100	100	100	16	100
Petrol car with three-way catalyst	Euro I	1993-1996	10	2	13	2	98
Petrol car with three-way catalyst	Euro II	1997-2000	7	2	12	-	98
Petrol car with three-way catalyst	Euro III	2001-2005	6	1	5	-	92
Petrol car with three-way catalyst	Euro IV	2006-	5	1	4	-	82
Diesel car	Pre-Euro I	pre 1993	6	10	38	100	97
Diesel car	Euro I	1993-1996	3	5	33	37	95
Diesel car	Euro II	1997-2000	2	4	33	33	93
Diesel car	Euro III	2001-2005	1	3	33	21	83
Diesel car	Euro IV	2006-	1	3	17	11	75
Petrol light goods vehicle without three-way catalyst	Pre-Euro I	pre 1994	136	96	94	19	109
Petrol light goods vehicle with three-way catalyst	Euro I	1994-1997	20	3	19	2	138
Petrol light goods vehicle with three-way catalyst	Euro II	1998-2000	5	2	17	1	146
Petrol light goods vehicle with three-way catalyst	Euro III	2001-2005	4	1	7	1	139
Petrol light goods vehicle with three-way catalyst	Euro IV	2006-	3	1	5	1	128
Diesel light goods vehicle	Pre-Euro I	pre 1994	10	19	81	187	141
Diesel light goods vehicle	Euro I	1994-1997	4	9	63	52	141
Diesel light goods vehicle	Euro II	1998-2001	4	9	60	53	143
Diesel light goods vehicle	Euro III	2002-2005	3	7	45	37	131
Diesel light goods vehicle	Euro IV	2006-	3	4	23	24	122
Heavy goods vehicle - Rigid	Pre-Euro I	pre 1993	25	118	344	277	
Heavy goods vehicle - Rigid	Euro I	1993-1996	14	43	437	143	*See*
Heavy goods vehicle - Rigid	Euro II	1997-2001	11	34	373	100	*table*
Heavy goods vehicle - Rigid	Euro III	2002-2005	8	23	258	72	*3.6b*
Heavy goods vehicle - Rigid	Euro IV	2006-	6	17	194	16	
Heavy goods vehicle - Artics	Pre-Euro I	pre 1993	29	100	969	407	
Heavy goods vehicle - Artics	Euro I	1993-1996	40	107	1,159	375	*See*
Heavy goods vehicle - Artics	Euro II	1997-2001	31	88	799	260	*table*
Heavy goods vehicle - Artics	Euro III	2002-2005	21	60	554	187	*3.6b*
Heavy goods vehicle - Artics	Euro IV	2006-	16	44	416	42	
Buses		pre 1993	81	90	840	399	649
Buses		1993-1996	25	67	674	202	537
Buses		1997-2001	21	48	603	132	485
Buses		2002-2005	14	33	418	95	485
Buses		2006-	12	33	292	29	470
Motorcycle (less than 50cc) - two stroke		pre 2000	236	854	2	26	42
Motorcycle (less than 50cc) - two stroke		2000-2005	24	188	1	26	19
Motorcycle (less than 50cc) - two stroke		2006-	24	188	1	26	19
Motorcycle (greater than 50cc) - two stroke		pre 2000	231	662	2	26	52
Motorcycle (greater than 50cc) - two stroke		2000-2005	119	458	2	26	41
Motorcycle (greater than 50cc) - two stroke		2006-	50	174	2	26	41
Motorcycle (greater than 50cc) - four stroke		pre 2000	206	115	9	78	52
Motorcycle (greater than 50cc) - four stroke		2000-2005	69	48	13	78	45
Motorcycle (greater than 50cc) - four stroke		2006-	29	18	13	78	45

(b) Fleet averaged CO_2 emissions for HGVs (per vehicle kilometre) in urban conditions[5]

Year	Rigid	Articulated
1990	407	677
1991	414	675
1992	414	670
1993	435	674
1994	402	635
1995	418	604
1996	410	587
1997	414	573
1998	388	543
1999	397	546
2000	402	537
2001	415	533
2002	400	533
2003	410	538
2004	433	510
2005	400	492
2006	405	493

1 Particulates index is diesel car: pre 1993 =100.
2 Figures based on non-methane hydrocarbons.
3 Legislative standards exist only for diesel vehicles.
4 Legislative standards do not apply to CO2 emissions, but average factors are available for different legislative vehicle classes based on test cycle data. Better information on HGVs is based on average fuel economy of the HGV fleet each year, see table 3.6b.
5 Based on fleet averaged fuel economy of HGVs using data from DfT survey of road goods transport, corrected for urban driving conditions for comparison with indices in Table 3.6a.

☎020-7944 4276
The figures in this table are outside the scope of National Statistics
Source - AEA Energy and Environment

3.7 Carbon dioxide emissions in the United Kingdom:[1] 1996-2006

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Per cent of total in 2006
(a) By IPCC source category (NAEI)[2]												**Million tonnes of carbon dioxide/percentage**
Transport:												
Road transport	115.2	116.6	115.9	116.8	116.0	116.0	118.4	118.2	119.4	119.9	120.3	*21.7*
Passenger cars	71.8	72.2	71.3	72.6	72.2	71.6	72.5	70.8	70.8	69.6	68.7	*12.4*
Light duty vehicles	13.4	13.9	14.4	13.8	13.6	14.0	15.1	15.6	16.3	19.1	19.9	*3.6*
Buses	5.1	4.9	4.8	4.3	3.9	3.8	4.1	4.2	4.0	4.6	4.9	*0.9*
HGVs	24.3	24.9	24.6	25.4	25.6	25.7	25.8	26.6	27.2	25.5	25.8	*4.7*
Mopeds & motorcycles	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	*0.1*
LPG emissions (all vehicles)	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.4	0.4	*0.1*
Other (road vehicle engines)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	*-*
Other transport	7.3	7.3	7.3	7.2	7.2	6.9	6.5	8.2	8.4	9.2	10.5	*1.9*
Civil aviation	1.4	1.4	1.5	1.7	1.9	2.0	2.0	2.1	2.2	2.4	2.3	*0.4*
Railways[3]	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.1	2.1	2.2	*0.4*
National navigation	4.0	3.8	3.6	3.2	3.1	2.6	2.2	3.7	3.7	4.2	5.5	*1.0*
Other mobile sources and machinery	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	*0.1*
Total domestic transport	122.5	123.9	123.2	123.9	123.2	122.9	124.9	126.3	127.7	129.0	130.8	*23.6*
Net emissions all sources	571.0	548.1	549.9	540.3	548.6	559.4	542.7	554.7	555.1	555.2	554.5	*100.0*
Memo items[4]												
International bunkers - Aviation	21.4	22.8	25.3	27.5	30.3	29.6	29.0	29.7	32.5	35.1	35.6	.
International bunkers - Navigation	7.3	8.2	9.0	6.5	5.7	6.4	5.3	5.1	5.9	5.9	6.8	.
(b) By National Communication source category (NAEI)[2]												**Million tonnes of carbon dioxide/percentage**
Transport:												
Road	115.2	116.6	115.9	116.8	116.0	116.0	118.4	118.2	119.4	119.9	120.3	*21.7*
Aviation	1.4	1.4	1.5	1.7	1.9	2.0	2.0	2.1	2.2	2.4	2.3	*0.4*
Railways[3]	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.1	2.1	2.2	*0.4*
Railways - stationary combustion	0.5	0.5	0.5	0.5	0.4	0.5	0.4	0.1	0.04	0.04	0.04	*-*
Shipping	4.0	3.8	3.6	3.2	3.1	2.6	2.2	3.7	3.7	4.2	5.5	*1.0*
Aircraft support vehicles	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	*0.1*
Military aircraft and shipping	3.8	3.6	3.2	3.1	2.9	2.9	3.1	2.8	2.9	2.8	2.7	*0.5*
Transport Total	126.8	128.1	126.9	127.6	126.6	126.2	128.4	129.2	130.7	131.9	133.5	*24.1*
Net emissions all sources	571.0	548.1	549.9	540.3	548.6	559.4	542.7	554.7	555.1	555.2	554.5	*100.0*
(c) By National Communication end user category (NAEI)[5]												**Million tonnes of carbon dioxide/percentage**
Transport:												
Road	133.1	134.2	133.4	134.2	133.3	133.4	137.4	136.5	136.2	137.0	135.0	*24.3*
Aviation	1.6	1.6	1.8	2.0	2.2	2.3	2.3	2.4	2.5	2.7	2.6	*0.5*
Railways[3]	3.4	3.4	3.5	3.4	3.5	3.6	3.7	3.7	3.8	3.9	4.1	*0.7*
Railways - stationary combustion	0.6	0.5	0.5	0.5	0.5	0.5	0.4	0.1	0.05	0.05	0.05	*-*
Shipping	4.5	4.4	4.1	3.7	3.6	3.0	2.5	4.3	4.2	4.7	6.1	*1.1*
Aircraft support vehicles	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	*0.1*
Military aircraft and shipping	4.4	4.2	3.7	3.6	3.3	3.4	3.5	3.2	3.3	3.2	3.1	*0.6*
Transport Total	148.0	148.7	147.3	147.8	146.7	146.5	150.2	150.6	150.5	152.2	151.5	*27.3*
Net emissions all end users	571.0	548.1	549.9	540.3	548.6	559.4	542.7	554.7	555.1	555.2	554.5	*100.0*
(d) By industry code (Environmental Accounts)[6]												**Million tonnes of carbon dioxide/percentage**
Transport industries:												
Railways	1.7	1.8	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.2	2.2	*0.4*
Buses and coaches	5.7	5.5	5.5	5.0	4.6	4.3	4.8	4.8	4.7	5.3	5.5	*0.9*
Tubes and trams	0.6	0.5	0.6	0.5	0.5	0.5	0.4	0.1	0.1	0.1	0.1	*-*
Taxis operation	1.9	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.3	2.3	*0.4*
Freight transport by road	18.4	18.9	19.3	19.6	19.7	20.3	19.5	20.3	19.7	18.7	18.8	*3.0*
Transport via pipeline	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*-*
Water transport	19.9	19.6	19.4	16.5	16.0	20.4	22.1	23.6	27.2	27.1	19.2	*3.1*
Air transport	26.2	27.8	31.1	33.5	37.0	36.5	35.8	37.0	39.2	42.4	43.2	*6.9*
All transport industries	74.6	76.2	79.8	79.3	82.0	86.3	86.8	90.1	95.3	98.0	91.4	*14.6*
Household use of private vehicles	59.8	60.7	60.2	61.3	60.9	61.7	63.6	62.8	63.1	62.4	61.8	*9.9*
Total emissions all sectors	620.5	600.3	606.2	597.4	608.8	624.3	609.3	624.4	631.7	634.4	626.3	*100.0*

1 Data are presented as the weight of carbon dioxide emitted.
UK national emission estimates are updated annually and any developments in methodology are applied retrospectively to earlier years.

2 Source categories relate directly to the vehicle or other piece of equipment producing the emission. See Notes and Definitions for further details.

3 Railway emissions in the NAEI are those from diesel trains only.

4 Categories not included in the national total that is reported to the UNFCCC.

5 End user emissions now follow the 'IPCC Nomenclature for reporting' categories.
End user emissions for transport include a share of the emissions from combustion of fossil fuels at power stations and other fuel processing industries.
See Notes and Definitions for further details.

6 The economic sectors are based on similar concepts and classifications of industries to those used in the National Accounts.
See Notes and Definitions for further details.

☎020-7944 4276

Source - AEA Energy and Environment/Defra (NAEI); Office for National Statistics (Environmental Accounts)

3.8 Pollutant emissions from transport in the United Kingdom (by source):[1] 1996-2006

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Per cent of total in 2006
(a) Carbon monoxide (CO)												**Thousand tonnes/percentage**
Transport:												
Road transport	3,999	3,664	3,337	3,003	2,500	2,127	1,852	1,593	1,365	1,124	984	*43.4*
Passenger cars	3,353	3,065	2,785	2,526	2,108	1,802	1,584	1,360	1,169	951	830	*36.6*
Light duty vehicles	445	400	359	283	218	166	121	89	69	54	48	*2.1*
Buses	41	35	29	23	18	13	11	9	7	7	6	*0.3*
HGVs	70	68	66	64	60	57	53	50	48	44	42	*1.9*
Mopeds & motorcycles	90	95	99	108	96	90	84	85	72	68	58	*2.6*
Other transport	55	60	61	67	74	79	68	68	74	79	77	*3.4*
Civil aviation	34	39	39	46	53	59	50	46	53	56	51	*2.2*
Railways	11	11	12	12	13	13	12	11	12	12	12	*0.5*
National navigation	9	9	8	7	7	6	5	8	8	9	13	*0.6*
Other mobile sources[2]	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.8	*0.1*
All domestic transport	4,055	3,724	3,398	3,070	2,574	2,206	1,921	1,660	1,439	1,203	1,061	*46.8*
Total	6,151	5,678	5,273	4,926	4,230	3,880	3,338	2,932	2,689	2,388	2,268	*100.0*
Memo items[3]												
International bunkers - Aviation	15	15	17	18	19	18	17	18	19	20	20	.
International bunkers - Navigation	17	19	21	15	13	15	12	12	14	13	16	.
(b) Nitrogen oxides (NO_x)												**Thousand tonnes/percentage**
Transport:												
Road transport	1,068	1,014	960	900	818	749	692	636	596	549	515	*32.3*
Passenger cars	596	550	502	458	397	347	310	273	245	215	195	*12.2*
Light duty vehicles	70	70	70	67	65	64	60	59	59	58	54	*3.4*
Buses	59	57	55	52	48	45	43	42	38	36	36	*2.3*
HGVs	342	336	332	322	307	292	277	261	253	238	228	*14.3*
Mopeds & motorcycles	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.2	1.2	1.3	1.2	*0.1*
Other transport	125	124	122	119	122	111	96	129	129	143	174	*10.9*
Civil aviation	4.5	4.7	5.2	6.0	6.8	7.0	6.9	7.2	7.9	8.8	8.8	*0.6*
Railways	27	30	32	35	40	42	36	34	36	37	38	*2.4*
National navigation	87	84	79	71	69	56	47	82	80	92	122	*7.7*
Other mobile sources[2]	5.5	5.8	6.1	6.2	6.3	6.0	5.8	5.7	5.6	5.6	5.2	*0.3*
All domestic transport	1,193	1,138	1,082	1,019	939	860	787	764	726	692	689	*43.2*
Total	2,315	2,163	2,089	1,976	1,899	1,828	1,715	1,721	1,659	1,620	1,595	*100.0*
Memo items[3]												
International bunkers - Aviation	99	106	117	125	137	133	129	132	145	156	159	.
International bunkers - Navigation	167	187	203	147	129	145	121	116	132	132	153	.
(c) Particulates (PM_{10})												**Thousand tonnes/percentage**
Transport:												
Road transport	51.3	47.5	45.2	43.3	38.6	37.7	36.9	36.2	35.4	33.7	32.3	*21.3*
Passenger cars	13.6	12.8	11.6	10.6	8.3	8.0	7.7	7.3	6.9	6.4	6.0	*4.0*
Light duty vehicles	9.9	10.1	10.5	11.0	10.3	10.8	11.0	11.3	11.3	10.8	10.2	*6.7*
Buses	4.7	3.6	2.9	2.2	1.7	1.3	1.1	1.0	0.8	0.7	0.7	*0.5*
HGVs	14.3	12.0	11.2	10.2	9.0	8.1	7.4	6.8	6.4	5.7	5.3	*3.5*
Mopeds & motorcycles	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	*0.4*
Automobile tyre & brake wear	8.3	8.5	8.6	8.8	8.8	8.9	9.1	9.2	9.4	9.4	9.5	*6.3*
Other transport	6.4	6.2	5.9	5.4	5.1	4.5	3.9	5.6	6.4	7.4	9.6	*6.3*
Civil aviation	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*0.1*
Railways	0.7	0.7	0.8	0.8	0.8	0.9	0.7	0.6	0.6	0.7	0.7	*0.4*
National navigation	5.2	4.8	4.4	3.9	3.7	3.0	2.6	4.4	5.2	6.2	8.3	*5.5*
Other mobile sources[2]	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	*0.3*
All domestic transport	57.7	53.6	51.1	48.7	43.7	42.2	40.8	41.8	41.9	41.1	41.9	*27.6*
Total	233	224	209	197	184	177	155	154	153	150	152	*100.0*
Memo items[3]												
International bunkers - Aviation	1.3	1.4	1.6	1.7	1.9	1.8	1.8	1.8	2.0	2.2	2.2	.
International bunkers - Navigation	14.5	17.0	17.3	12.4	10.5	10.9	9.3	9.5	10.9	11.5	13.2	.
Road transport resuspension[4]	18.2	18.6	19.0	19.3	19.4	19.7	20.2	20.3	20.7	20.7	21.0	.
(d) Benzene												**Thousand tonnes/percentage**
Transport:												
Road transport[5]	25.7	22.8	19.8	17.0	5.6	5.2	4.6	4.0	3.4	2.9	2.6	*18.0*
Passenger cars	21.7	19.1	16.5	14.1	4.8	4.4	3.9	3.4	2.9	2.4	2.2	*15.2*
Light duty vehicles	1.6	1.4	1.3	1.0	0.3	0.3	0.2	0.2	0.2	0.2	0.2	*1.1*
Buses	-	-	-	-	-	-	-	-	-	-	-	-
HGVs	-	-	-	-	-	-	-	-	-	-	-	*0.1*
Mopeds & motorcycles	0.9	0.9	0.9	1.0	0.2	0.3	0.3	0.3	0.2	0.2	0.2	*1.2*
Gasoline evaporation	1.4	1.3	1.1	0.9	0.2	0.2	0.1	0.1	0.1	0.1	0.1	*0.4*
Other transport	0.9	0.9	0.9	0.9	0.9	0.8	0.7	0.9	1.0	1.1	1.2	*8.6*
Civil aviation	-	-	-	-	-	-	-	-	-	-	-	*0.2*
Railways	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.5	*3.6*
National navigation	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.5	0.5	0.5	0.7	*4.8*
Other mobile sources[2]	-	-	-	-	-	-	-	-	-	-	-	*0.1*
All domestic transport	26.6	23.7	20.7	17.8	6.4	6.0	5.3	4.9	4.4	4.0	3.8	*26.6*
Total	41.2	38.0	34.2	30.9	18.4	17.5	16.2	15.6	15.2	14.5	14.4	*100.0*
Memo items[3]												
International bunkers - Aviation	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	.
International bunkers - Navigation	0.9	1.1	1.2	0.8	0.7	0.8	0.7	0.7	0.8	0.7	0.9	.

3.8 (Continued) Pollutant emissions from transport in the United Kingdom (by source):[1] 1996-2006

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Per cent of total in 2006
(e) 1,3-butadiene												**Thousand tonnes/percentage**
Transport:												
Road transport	6.7	5.9	5.2	4.5	3.8	3.2	2.7	2.2	1.9	1.6	1.4	*55.4*
Passenger cars	4.4	3.9	3.3	2.8	2.3	1.9	1.5	1.2	0.9	0.7	0.6	*22.3*
Light duty vehicles	0.4	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	*2.9*
Buses	0.4	0.3	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	*2.9*
HGVs	1.3	1.2	1.1	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	*22.8*
Mopeds & motorcycles	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	*4.5*
Other transport	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	*8.8*
Civil aviation	-	-	-	-	-	-	-	-	-	-	-	*0.9*
Railways	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	*7.6*
National navigation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*0.0*
Other mobile sources[2]	-	-	-	-	-	-	-	-	-	-	-	*0.3*
All domestic transport	6.9	6.1	5.4	4.7	4.0	3.4	2.9	2.4	2.1	1.8	1.6	*64.2*
Total	8.2	7.3	6.5	5.9	5.1	4.4	3.8	3.4	3.0	2.7	2.5	*100.0*
Memo items[3]												
International bunkers - Aviation	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	.
International bunkers - Navigation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.
(f) Lead (Pb)												**Tonnes/percentage**
Transport:												
Road transport[6]	892	782	573	301	2.2	2.0	2.0	2.0	2.0	2.1	2.1	*1.9*
Passenger cars	831	731	537	284	1.5	1.3	1.2	1.2	1.2	1.3	1.3	*1.2*
Light duty vehicles	55.5	45.4	31.9	14.4	0.2	0.2	0.2	0.2	0.3	0.3	0.3	*0.3*
Buses	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	*0.1*
HGVs	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	*0.4*
Mopeds & motorcycles	5.2	4.8	3.6	2.1	-	-	-	-	-	-	-	-
Other transport	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.5	0.6	0.7	0.8	*0.8*
Civil aviation	-	-	-	-	-	-	-	-	-	-	-	-
Railways	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	*0.2*
National navigation	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.4	0.6	*0.5*
Other mobile sources[2]	-	-	-	-	-	-	-	-	-	-	-	-
All domestic transport	893	782	574	302	2.6	2.4	2.4	2.5	2.6	2.7	2.9	*2.7*
Total	1,316	1,153	849	493	163	155	142	129	134	117	106	*100.0*
Memo items[3]												
International bunkers - Aviation	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	.
International bunkers - Navigation	1.0	1.2	1.2	0.9	0.7	0.7	0.6	0.7	0.8	0.8	0.9	.
(g) Sulphur dioxide (SO_2)												**Thousand tonnes/percentage**
Transport:												
Road transport	38.3	28.3	23.3	14.3	6.7	4.2	3.8	3.8	3.5	3.0	2.7	*0.4*
Passenger cars	15.7	17.3	12.6	11.9	5.4	3.0	2.6	2.6	2.4	2.1	2.0	*0.3*
Light duty vehicles	5.9	3.4	3.4	1.0	0.5	0.4	0.4	0.4	0.4	0.4	0.3	-
Buses	2.9	1.1	0.7	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-
HGVs	13.8	6.4	6.5	1.1	0.6	0.6	0.7	0.7	0.6	0.5	0.4	*0.1*
Mopeds & motorcycles	0.1	0.1	0.1	0.1	-	-	-	-	-	-	-	-
Other transport	31.8	29.7	27.6	24.4	22.6	19.0	16.9	27.2	34.0	40.1	53.3	*7.9*
Civil aviation	0.3	0.5	0.5	0.4	0.4	0.5	0.4	0.5	0.6	0.6	0.7	*0.1*
Railways	1.5	1.5	1.6	1.6	1.5	1.4	1.7	1.9	1.9	1.9	2.0	*0.3*
National navigation	29.7	27.4	25.1	22.1	20.3	16.8	14.5	24.4	31.1	37.2	50.2	*7.4*
Other mobile sources[2]	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	*0.1*
All domestic transport	70.1	58.0	50.8	38.7	29.2	23.2	20.7	30.9	37.5	43.2	56.1	*8.3*
Total	2,003	1,661	1,633	1,209	1,198	1,095	978	967	812	688	676	*100.0*
Memo items[3]												
International bunkers - Aviation	5.4	7.2	8.1	6.1	6.9	7.5	6.1	7.2	8.5	9.1	11.0	.
International bunkers - Navigation	93.9	110.7	111.2	79.1	66.3	67.3	58.3	60.2	69.6	74.6	85.3	.

1 UK national emission estimates are updated annually and any developments in methodology are applied retrospectively to earlier years

2 Includes machinery.

3 Categories not included in the national total that is reported to UNECE

4 Resuspension of particles caused by the turbulence of passing vehicles. Not included in totals for PM_{10} to avoid double-counting, but is important in reconciling roadside concentration measurements

5 Reduction in road transport benzene emissions in 2000 mainly due to reduction in benzene content of petrc

6 Reduction in road transport lead emissions in 2000 is mainly due to a ban on the general sale of leaded petro

☎020-7944 4276

Source - AEA Energy & Environment/Defra

3.9 Aircraft noise: population affected by noise around airports: 1997-2007

(a) Heathrow	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Air transport movements (thousands)	429.2	441.2	449.5	459.7	457.6	460.3	457.1	469.8	472.0	470.9	475.79
Area (sq kms) within:											
57 Leq contour	158.3	163.7	155.6	135.6	117.4	126.9	126.9	117.4	117.2	117.4	119.6
63 Leq contour	53.8	55.4	53.9	48.2	41.2	43.8	43.8	40.3	39.1	38.4	37.6
69 Leq contour	23.2	22.8	21.9	19.0	14.1	16.4	15.6	13.3	12.4	11.9	12.2
Population (thousands) within:											
57 Leq contour	300.0	341.0	331.6	275.2	240.4	258.3	263.7	239.7	251.7	258.0	251.9
63 Leq contour	84.2	82.2	91.2	71.9	54.9	64.2	64.6	55.9	51.8	51.2	45.1
69 Leq contour	13.8	15.5	13.8	11.5	6.8	8.6	8.0	5.7	3.9	3.6	3.7
(b) Gatwick											
Air transport movements (thousands)	227.3	240.2	244.7	251.2	244.0	233.6	234.5	241.2	252.0	254.4	258.9
Area (sq kms) within:											
57 Leq contour	85.9	76.8	71.4	71.9	55.9	45.2	46.1	48.0	49.3	46.7	49.0
63 Leq contour	30.4	28.2	26.4	26.4	19.6	15.8	16.5	16.7	16.9	15.6	16.3
69 Leq contour	10.3	9.7	8.9	9.0	6.0	4.6	4.8	4.8	5.1	4.6	4.9
Population (thousands) within:											
57 Leq contour	12.6	9.0	7.8	8.7	5.2	3.5	4.2	4.5	4.7	4.5	4.8
63 Leq contour	2.0	1.4	1.4	1.4	0.8	0.5	0.6	0.6	0.7	0.6	0.6
69 Leq contour	0.4	0.3	0.3	0.2	0.1	0.1	0.1	0.1	0.1	-	-
(c) Stansted											
Air transport movements (thousands)	82.2	102.2	132.3	143.6	150.6	152.4	169.2	176.8	178.0	190.0	191.5
Area (sq kms) within:											
57 Leq contour	52.1	64.5	52.3	52.4	32.1	31.7	33.3	29.9	27.4	29.3	30.8
63 Leq contour	17.7	22.3	20.5	20.4	11.6	11.3	11.7	9.9	8.7	8.6	8.9
69 Leq contour	6.6	8.7	7.9	7.6	3.6	3.4	3.5	2.8	2.4	2.3	2.5
Population (thousands) within:											
57 Leq contour	6.0	7.6	4.4	5.7	2.3	2.0	2.3	2.9	2.0	2.0	2.5
63 Leq contour	0.9	1.3	1.4	1.3	0.4	0.3	0.5	0.3	0.3	0.3	0.3
69 Leq contour	0.2	0.3	0.2	0.2	0.1	0.1	-	-	-	-	-
(d) Manchester											
Air transport movements (thousands)	145.7	161.8	169.3	177.6	182.1	177.5	191.5	208.5	218.0	213.0	206.5
Area (sq kms) within:											
57 Leq contour	51.6	53.5	48.5	46.4	43.4	40.3	39.1	39.6	40.2	37.7	37.5
63 Leq contour	17.2	16.9	17.6	15.8	14.6	12.8	13.3	13.7	14.3	13.0	12.4
69 Leq contour	6.5	6.1	5.9	5.0	4.8	4.2	4.4	4.6	4.8	4.6	4.4
Population (thousands) within:											
57 Leq contour	45.6	44.7	53.5	48.4	44.9	38.7	40.6	40.9	41.6	39.2	36.8
63 Leq contour	9.5	10.1	11.9	9.4	6.4	4.5	5.8	5.1	5.6	4.0	3.5
69 Leq contour	2.4	2.0	1.9	1.2	0.5	0.5	0.6	0.6	0.6	0.2	0.1
(e) Birmingham											
Air transport movements (thousands)	79.8	88.2	98.4	108.4	111.0	112.3	116.0	109.2	113.0	108.7	104.5
Area (sq kms) within:											
57 Leq contour	..	35.3	..	19.0	..	14.8	..	16.2	..	16.8	..
63 Leq contour	..	12.3	..	6.2	..	4.4	..	5.1	..	5.2	..
69 Leq contour	..	4.5	..	1.7	..	1.2	..	1.3	..	1.4	..
Population (thousands) within:											
57 Leq contour	..	65.6	..	33.7	..	23.7	..	26.2	..	26.8	..
63 Leq contour	..	16.5	..	5.5	..	2.6	..	3.8	..	3.6	..
69 Leq contour	..	2.5	..	0.1	..	-	..	-	..	-	..
(f) Luton											
Air transport movements (thousands)	36.9	43.6	50.8	55.5	56.0	55.0	58.4	64.2	75.4	78.8	83.3
Area (sq kms) within:											
57 Leq contour	17.8	15.8	19.6	17.6	10.6	10.9	12.2	12.8	13.5	14.9	15.4
63 Leq contour	6.9	5.5	7.3	6.6	3.5	3.6	4.0	4.2	4.2	4.8	5.1
69 Leq contour	2.5	2.0	2.5	2.4	1.2	1.2	1.3	1.3	1.3	1.5	1.6
Population (thousands) within:											
57 Leq contour	5.5	5.8	7.4	8.1	2.3	2.4	3.2	3.8	2.6	3.0	4.4
63 Leq contour	1.2	1.1	1.2	1.7	-	0.1	0.1	0.1	0.1	0.1	0.1
69 Leq contour	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

☎020-7944 4276
The figures in this table are outside the scope of National Statistics
Source - Noise contour data: Major UK airports
Air transport movements: Civil Aviation Authority