OFFICE FOR NATIONAL STATISTICS

Review of Environmental Taxes in the UK Environmental Accounts

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August 2006
Eurostat/B1 Grant Agreement No. 71401.2005.001-2005.302

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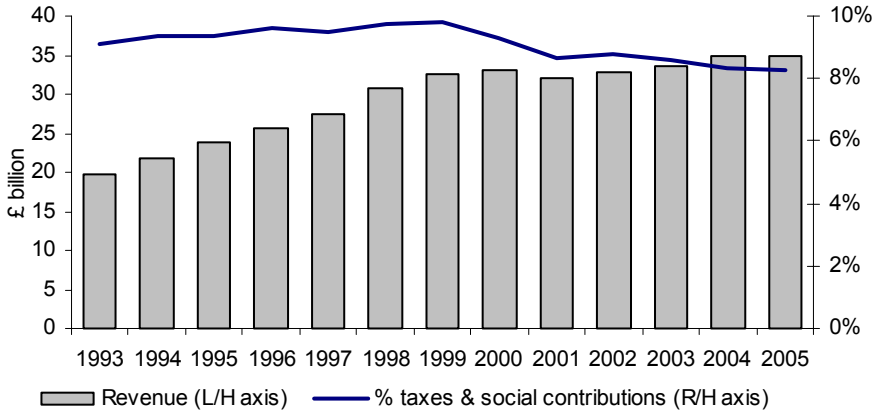
Executive summary

The Office for National Statistics compiles United Kingdom Environmental Accounts as a satellite account of the main National Accounts. Satellite accounts facilitate the analysis of the wider impact of economic change. The Environmental Accounts include inputs from the environment (the consumption of natural resources) and outputs to the environment (atmospheric emissions and waste). They feature monetary data on environmental protection expenditure by government and industry and on revenue collected through financial instruments, known as environmental taxes.

An environmental tax is defined as *a tax whose base is a physical unit such as a litre of petrol, or a proxy for it, for instance a passenger flight, that has a proven specific negative impact on the environment*.[1]

Eurostat part-funded an Office for National Statistics (ONS) review of the UK's environmental taxes and production of a new analysis looking at the main sources of environmental tax revenue. The review looked at the taxes currently included in the Environmental Accounts to consider whether they met the internationally agreed definition of an environmental tax. The review then looked at whether there were any other taxes that met the definition of an environmental tax but were omitted from the Environmental Accounts. The final part of the review looked to produce a new dataset that identified the main sources of environmental tax revenue.

The spring 2006 edition of the *Environmental Accounts* showed that environmental tax revenue amounted to £35.0 billion in 2005, 8.3 per cent of all taxes and social contributions. The main source of environmental tax revenue is duty on hydrocarbon oils (petrol and diesel), which accounted for 66.7 per cent of all environmental taxes in 2005. The next highest source of revenue is vehicle excise duty, which accounted for 13.8 per cent of all environmental tax revenue. As a proportion of total taxes and social contributions, environmental taxes have declined in recent years from their peak of 9.8 per cent in 1988 and 1989 to 8.3 per cent in 2005.



The main payers of environmental taxes are UK households, who have contributed between 52 to 56 per cent of all environmental tax revenue since 1993. This is predominately from payments of hydrocarbon duty and vehicle excise duty, where households are the largest source of revenue.

[1] *Environmental Taxes – A Statistical Guide*, European Communities, 2001, p9

The review identified three environmental taxes not previously included in the Environmental Accounts and has identified a further three taxes, which appear incorrectly classified as environmental taxes. The review also puts forward proposals on the treatment of emission trading schemes in the National Accounts. The proposal being that the UK Emissions Trading scheme's permits are intangible non-produced assets and the European Union Emissions Trading Scheme's treatment in National Accounts should be as an imputed tax and subsidy. The full impact of these changes is still unknown as data are not currently available for the Renewable Obligation Certificates or EU Emissions Trading Scheme. Providing data is available, the intention is to implement the identified changes in the autumn 2006 edition of *Environmental Accounts*.

The review provides an analysis of environmental tax receipts by industry for 2003 the most recent year for which data are available. It also compares environmental taxation in the UK with other countries of the European Union in 2003, the latest year for which comparable data are available. The comparison revealed that in 2003 environmental taxes in the UK made up a greater proportion of total taxes and social contributions than for any other European Union countries apart from Denmark and the Netherlands.

1. **Taxes in the National Accounts**

1.1 The UK Environmental Accounts are a satellite account of the main National Accounts. As such, estimates of environmental taxes published in the Environmental Accounts are consistent with those used in the National Accounts. The UK National Accounts are produced to the standards defined in the European System of Accounts 1995 (ESA95), which in turn is based on the System of National Accounts 1993 (SNA93).

1.2 Under ESA95, there are three main categories of taxes:

- Taxes on production and imports (denoted as, D.2);
- Current taxes on income, wealth, etc. (D.5);
- Capital taxes (D.91)

The majority of environmental taxes fall under the category taxes on production and imports (D.2), which ESA95 paragraph 4.14 defines as:

> *Taxes on production and imports consist of compulsory, unrequited payments, in cash or in kind which are levied by general government, or by the Institutions of the European Union in respect of the production and importation of goods and services, the employment of labour, the ownership or use of land, buildings or other assets used in production*.[2]

1.3 Taxes on production and imports are subdivided divided into:

- taxes on products (D.21):
  - value added type taxes (VAT) (D.211):
  - taxes and duties on imports excluding VAT (D.212):
    - import duties (D.2121)
    - taxes on imports excluding VAT and import duties (D.2122):
  - taxes on products, except VAT and import taxes (D.214):
- other taxes on production (D.29)

ESA95 paragraph 4.23f, specifically defines D29 as:

> *Taxes on pollution resulting from production activities. These consist of taxes levied on the emission or discharge into the environment of noxious gases, liquids or other harmful substances.*[3]

1.4 Whilst the majority of environmental taxes are allocated to taxes on production and imports (D.2), some environmental taxes are allocated to taxes on income and wealth (D.5). ESA95, paragraph 4.77, defines taxes on income and wealth as:

> *Current taxes on income and wealth, etc. (D.5) cover all compulsory, unrequited payments, in cash or in kind, levied periodically by general government and by the rest of the world on the income and*

[2] European System of Accounts: ESA1995, Office for the Publications of European Communities, 1996
[3] ibid

wealth of institutional units, and some periodic taxes which are assessed neither on the income nor the wealth.[4]

1.5 Taxes on income, wealth, etc. are divided into:

- taxes on income (D.51):
- other current taxes (D.59)

There are no environmental taxes currently classified as capital taxes (D.91).

[4] European System of Accounts: ESA1995, Office for the Publications of European Communities, 1996

2. What is an Environmental Tax?

Definition of an environmental tax

2.1 An environmental tax is defined as *a tax whose base is a physical unit such as a litre of petrol, or a proxy for it, for instance a passenger flight, that has a proven specific negative impact on the environment*. By convention, in addition to pollution related taxes, all energy and transport taxes are classified as environmental taxes. This definition has been agreed by international experts and adopted by the Statistical Office of the European Communities (Eurostat) and the Organisation for Economic Co-operation and Development (OECD). It enables analysis to be based on the effects of taxes rather than the aims behind their introduction, i.e. the aim of a tax for raising government revenue rather than reducing environmental degradation does not preclude it from being defined as an environmental tax.

2.2 Nevertheless, the interpretation and use of measures of environmental taxes need care. In particular, the levels of revenues from environmental taxes do not necessarily indicate the relative importance or the success of environmental policy. High environmental tax revenues can result either from high rates of taxes or from high levels of environmental problems (e.g. pollution) leading to a large tax base. The broad measure of revenues can also fail to capture the effect of the differential rates that encourage a shift away from higher impact behaviour (such as the use of leaded petrol).

Types of environmental tax

2.3 There are four main categories of Environmental taxes:

- Energy taxes;
- Transport taxes;
- Pollution taxes;
- Resource taxes.

Each tax is described below.

Energy taxes

2.4 Energy taxes comprise taxes on energy products used for both transport and stationary purposes. The most significant energy products for transport purposes are petrol and diesel. Energy products for stationary use include fuel oils, natural gas, coal and electricity. The Carbon Dioxide (CO_2) taxes are included under energy taxes rather than under pollution taxes. There are several reasons for this. First of all, it is often not possible to identify CO_2 taxes separately in tax statistics, because they are integrated with energy taxes, e.g. via differentiation of mineral oil tax rates. In addition, they are partly introduced as a substitute for other energy taxes and the revenue from these taxes is often large compared to the revenue from the pollution taxes. This means that including CO_2 taxes with pollution taxes rather than energy taxes would distort international comparisons. If they are identifiable, CO_2 taxes should be reported as a separate category next to energy taxes. Sulphur Dioxide (SO_2) taxes may be subject to the same problem as CO_2 taxes.

Transport taxes

2.5 This group mainly comprises taxes related to the ownership and use of motor vehicles, for example Vehicle Excise Duty. Taxes on other transport equipment (e.g. aircraft), and related transport services (e.g. air passenger duty on charter or scheduled flights) are also included here, when they conform to the general definition of environmental taxes. The transport taxes may be 'one-off' taxes related to imports or sales of the equipment or recurrent taxes such as an annual road tax.

Taxes on petrol, diesel and other transport fuels are included under energy taxes.

Pollution taxes

2.6 This group includes taxes on measured or estimated emission to air and water, management of solid waste and noise.

The CO_2 taxes are included under energy taxes as discussed above.

Resource taxes

2.7 Resource taxes are taxes levied on the commercial exploitation of natural resources such as water, minerals (excluding oil and gas), forestry, etc. However, there are differences in opinion whether the extraction of natural resources is in itself harmful although there is general agreement that it can lead to environmental problems such as soil erosion and pollution.

2.8 The European Commission publication *Environmental Taxes – a statistical guide* (EC 2001) outlined the main categories of environmental taxes in Table 1 on page 10, which is replicated below.

Table 1 : Tax bases included in the environmental tax statistics framework

Energy taxes
- Energy products used for transport purposes - Unleaded petrol - Leaded petrol - Diesel - Other energy products for transport purposes (e.g. LPG or natural gas) - Energy products used for stationary purposes - Light fuel oil - Heavy fuel oil - Natural gas - Coal - Coke - Biofuels - Other fuels for stationary use - Electricity consumption - Electricity production - District heat consumption[5] - District heat production
Transport
- Motor vehicles, one-off import or sales taxes - Registration or use of motor vehicles, recurrent (e.g. yearly) taxes
Pollution
Measured or estimated emissions to air - Measured or estimated NO_x emissions - SO_2 content of fossil fuels - Other measured or estimated emissions to air **Ozone depleting substances (e.g. CFC or halon)** **Measured or estimated effluents to water** - Measured or estimated effluents of oxydizeable matters (BOD, COD) - Other measured or estimated effluents to water - Effluent collection and treatment, fixed annual taxes **Certain non-point sources of water pollution** - Pesticides (Based on e.g. chemical content, price or volume) - Artificial fertilisers (Based e.g. on phosphorus or nitrogen content or price) - Manure **Waste management** - Waste management in general (e.g. collection or treatment taxes) - Waste management, individual products (e.g. packaging, beverage containers) **Noise (e.g. aircraft take-offs and landings)**
Resources
- Water abstraction - Extraction of raw materials (except oil and gas) - Other resources (e.g. forests)

Source: European Commission

2.9 The spring 2006 edition of the Environmental Accounts, published in May 2006, identified ten environmental taxes. The inclusion of some of these taxes and the omission of others is discussed in subsequent chapters.

[5] District heat is water heated to approximately 90c at power stations (often Combined Heat and Power –CHP- in order to maximise efficiency) and piped to homes and buildings, providing heat and hot water.

Table 2: UK environmental taxes as published in Environmental Accounts Spring 2006 edition

Tax type	Tax	National accounts (ESA95) classification
Energy	Duty on hydrocarbon oils	Taxes on products (D.214)
	VAT on duty	Taxes on products (D.211)
	Fossil fuel levy	Taxes on products (D.214)
	Gas levy	Taxes on products (D.214)
	Climate change levy	Taxes on Production (D.29)
	Hydro-benefit	Taxes on products (D.214)
Transport	Air passenger duty	Taxes on products (D.214)
	Vehicle excise duty (business)	Taxes on Production (D.29)
	Vehicle excise duty (households)	Other current taxes (D.59)
Pollution	Landfill tax	Taxes on products (D.214)
Resource	Aggregates levy	Taxes on products (D.214)

Source: ONS Environmental Accounts

3. Environmental taxes and UK government policy

3.1 The UK Government's approach to environmental taxation was first set out in the Treasury's *Statement of Intent on Environmental Taxation*[6] in 1997 and developed further in *Tax and the Environment: using economic instruments*[7], published alongside the 2002 Pre-Budget Report. The Government states that it is committed to promoting sustainable development, which is vital to ensure a better quality of life for everyone, today and for generations to come. Sustainable development is to be achieved by strong and stable economic growth and social progress balanced against action to protect and improve the environment. The Government believes that environmental taxes and other economic instruments, alongside other policy levers, have an important role to play in securing this objective. The Government's environmental tax strategy aims to increase incentives to reduce environmental damage. The latest steps in the Government's strategy are described in Chapter 7 of the Budget 2006 report[8]: extracts of which are used in the following chapter.

3.2 Paragraph 7.1 of the Budget 2006 report states that "the government is committed to delivering strong, stable and sustainable economic growth. To achieve this aim…it is crucial to take care of the natural environment and the resources on which economic activity depends". Its environmental strategies have made use of a range of measures, including fiscal instruments, regulatory and voluntary approaches and spending programmes. Consistent with the Government's goal of promoting a productive and flexible economy, a key feature of the Government's approach has been the use of economic and other market-based mechanisms, such as the climate change levy and negotiated agreements, UK and EU Emissions Trading Schemes, the Renewables Obligation, Energy Efficiency Commitment, company car tax reform and fuel duty differentials. These promote cost-effective responses, which minimise compliance costs for households and business, and help to stimulate technological innovation.

3.3 The evidence suggests that these instruments are achieving their policy goals. However, as recognised in the recent UK Sustainable Development Strategy there is more to do. The Strategy sets out the UK's sustainable development priorities and proposes a strengthened role for the Sustainable Development Commission. In addition, to ensure the UK continues to make progress in reducing carbon dioxide emissions, the Stern review[9] on the economics of Climate Change is evaluating the Government's full range of existing policy measures and appraising options for future action.

3.4 In many areas, such as climate change, international co-operation is vital to achieve environmental goals – action only at the domestic level is not enough. This is why the UK made climate change one of its key priorities as part of its G8 and EU Presidencies. To lead this international debate, the Government recognises that the UK must take action domestically and demonstrate that good environmental policy can promote, rather than stifle, enterprise and innovation, while not damaging UK business competitiveness.

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[6] http://www.hm-treasury.gov.uk/topics/environment/topics_environment_policy.cfm
[7] http://www.hm-treasury.gov.uk/pre_budget_report/prebud_pbr02/assoc_docs/prebud_pbr02_adtaxenvir.cfm
[8] http://www.hm-treasury.gov.uk/media/20F/1D/bud06_ch7_161.pdf
[9] http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm

3.5 The 2006 Budget Report identified three key environmental challenges for the Government:

- *tackling climate change*, and reducing emissions of greenhouse gases in line with domestic as well as international targets;
- *improving waste management*, so that resources are used more efficiently and waste is reused or recycled to deliver economic value; and
- *protecting the UK's countryside and natural resources*, to ensure they are sustainable economically, socially and physically.

3.6 To meet these environmental challenges, the UK Government has committed to using a range of policy measures to ensure that policy-making reflects the integrated goals of sustainable development. Some of these policy measures are summarised below along with a brief assessment of their environmental impact. The UK Government continues to learn from its use of economic instruments and other policy measures and continues to develop its approach accordingly.

Climate change and air quality

Budget measure	Environmental impact
Climate change levy package: • Climate change levy; • Climate change agreements; • Green Technology Challenge; • Exemptions for new renewables and combined heat and power (CHP); • UK Emissions Trading Scheme.	The Climate Change Levy is estimated to deliver annual CO_2 savings of over 3.5 million tonnes of carbon in 2010 – well above the 2 million tonnes of carbon figure forecast at the time of the levy's introduction. Climate Change Agreements are estimated to have saved 4.5 million tonnes of carbon in the first target period 2001-03. The Green Technology Challenge is expected to save up to 0.5 million tonnes of carbon by 2010. The UK Emissions Trading Scheme is estimated to have saved 1.4 million tonnes of carbon in 2004.
Road fuel duty escalator In 1997, the level increased from 5 per cent to 6 per cent and remained at that level until 1999.	Between 1997 and 1999, the fuel duty escalator is estimated to have reduced emissions between 0.1 million tonnes of carbon. Rising to 0.2 million tonnes of carbon per year by 2010.
Road fuel duty and differentials Budget 2006 announces, from 1 September, an inflation-based increase in main road fuel duties. Since 1997, the Government has used a series of duty differentials to promote the manufacture and take-up of less polluting road fuels. Key changes include: – Introduction of duty differentials to facilitate a market switch: • From leaded to unleaded; • From low sulphur diesel to ultra-low sulphur diesel (ULSD); • From low sulphur unleaded petrol to ultra-low sulphur unleaded petrol (ULSP). – Introduction of duty differentials to encourage growth in the use of more environmentally-friendly fuels: • For liquefied petroleum gas and natural gas; • 20 pence per litre differential for biodiesel in 2002;	Not increasing fuel duties in line with inflation from Budget day is expected to result in higher carbon emissions than would otherwise have been the case, although this is expected to be partially offset by higher oil prices. The shift to ULSP from ordinary unleaded is estimated to have reduced emissions of nitrogen oxide by 1 per cent, carbon monoxide by 4 per cent and volatile organic compounds by 1 per cent per year between 2001 and 2004. The shift to ULSD from ordinary diesel is estimated to have reduced emissions of particulates by 8 per cent and nitrogen oxides by up to 1 per cent per year between 2001 and 2004. The increased use of biodiesel and bioethanol will reduce CO_2 emissions overall by up to 54 per cent per litre of biofuel used. It is estimated that the biodiesel differential could save up to 0.2 million tonnes of carbon per year by 2010. The road fuel gas differential has reduced emissions of particulates and nitrogen oxides, which has helped to improve local air quality, and brought about a cumulative carbon saving of 0.1 million tonnes of carbon.

• 20 pence per litre differential for bioethanol in 2005.	
Rebated fuels Budget 2006 announces from 1 September, a 1.25 pence per litre increase in duty rates for rebated oils. As part of the Oil Fraud Strategy, the gap between duty on rebated oils and main road duty rates was narrowed in 2004.	Maintaining the differential with main road fuels will reduce levels of fraud, which will deliver small CO_2 and local air pollution benefits through increased use of less polluting fuels and less use of rebated fuels which are more polluting.
Reforms to Vehicle Excise Duty (VED) VED has been reformed over the years to more closely reflect environmental impacts: VED for cars and light goods vehicles registered on or after 1 March 2001 is based on CO_2 emissions. Budget 2006 announced VED rates would be set at zero for band A, the least polluting group, reduced for cars in bands B and C, frozen for those in D and E and increased for those cars in band F. A new higher band G was also introduced for those cars with emissions of 225g per kilometre or higher.	Currently small reductions in CO_2 emissions and local air pollutants. Numbers of vehicles in 3 lowest CO_2 emission graduated VED bands forecasted to grow significantly by 2006-07, in part due to reforms to VED bands.
Company Car Tax system (CCT) Budget 2006 announced a reduction in the threshold for the minimum percentage charge rate for calculating benefit in kind from company cars to 135g of CO_2 per kilometre and a new lower rate to come into effect in 2008/9 for cars emitting 120g of CO_2 or less per kilometre. A simplification of the discounts relating to bi-fuel and hybrid electric cars, was introduced in Budget 2005. A graduated scheme was introduced in 2002 to provide a lower charge to cars that emit less CO_2 and a higher charge to those with large CO_2 emissions.	Freezing Company Car Tax bands leads to a small increase in CO_2 and local air pollutants, compared with the position had the lowest band been reduced by 5g/km. Estimated CO_2 emissions savings of 0.2 to 0.3 million tonnes of carbon in 2005. In the long run it is forecast that CO_2 savings will be between 0.4 and 0.9 million tonnes of carbon per year by 2020.
Air passenger duty Budget 2006 announced a freeze on the rate of APD. APD was introduced in 1994, and reformed in 2001.	Freezing the APD rates will lead to a small increase in emissions of CO_2 and local air pollutants compared with, for example, increase in line with inflation.

Waste management

Budget measure	Environmental impact
Landfill tax Between 1999 and 2005 the standard rate increased by £1 per tonne each year. Budget 2003 announced that standard rate of landfill tax would increase by £3 a tonne in 2005-06 and by at least £3 a tonne in following years to reach a medium-long term rate of £35 a tonne.	Encourages waste producers and the waste management industry to switch away from landfill disposal towards waste minimisation, re-use and other waste management options. Planning applications for alternatives to landfill have risen significantly. The total volume of waste disposed to landfill has fallen by almost 20 per cent since the introduction of the tax.

Protecting the UK's natural resources

Budget measure	Environmental impact
Aggregates levy and aggregates levy sustainability fund Budget 2006 freezes the aggregates levy at £1.60 a tonne. In Northern Ireland a relief scheme was introduced in April 2002 and was extended in scope and duration in April 2004.	Reductions in noise and vibration, dust and other emissions to air, visual intrusion, loss of amenity and damage to wildlife habitats. An 8 per cent reduction in aggregates between 2001 and 2003.

4. UK Environmental Taxes 1993-2005[10]

4.1 Estimates of environmental taxes are published in ONS's biannual publication *Environmental Accounts*. Environmental tax estimates used in the Environmental Accounts are consistent with those compiled for the National Accounts. Data for these taxes come from other government sources such as Her Majesty's Revenue & Customs (HMRC) and, prior to its creation Her Majesty's Customs & Excise (HMCE). Environmental taxes published in the National and Environmental Accounts are published on an accrued basis i.e. when liability for the tax arises as opposed to when cash is actually received by HMRC. Accruals accounting is consistent with the recommendations of the System of National Accounts 1993 and the European System of Accounts 1995.

Government revenues from environmental taxes, 1993, 1995, 2000 to 2005

	1993	1995	2000	2001	2002	2003	2004	2005
Energy								
Duty on hydrocarbon oils	12497	15360	23041	22046	22070	22476	23412	23346
including								
Unleaded petrol[1]	4242	5901	12269	1980	0	0	0	0
Leaded petrol/LRP[2]	4502	4088	286	245	239	233	242	240
Ultra low sulphur petrol	-	-	1162	10800	11149	10857	11303	11271
Diesel[3]	3484	5127	32	60	0	0	0	0
Ultra low sulphur diesel	-	-	9061	8754	10465	11155	11614	11581
VAT on duty	2187	2688	4032	3858	3862	3933	4097	4086
Fossil fuel levy	1331	1306	56	86	32	0	0	0
Gas levy	240	161	0	0	0	0	0	0
Climate change levy	0	0	0	585	825	828	768	744
Hydro-benefit	22	27	42	46	44	44	40	10
Road vehicles								
Vehicle excise duty	3482	3954	4606	4102	4294	4595	4800	4809
Other environmental taxes								
Air passenger duty	-	339	940	824	814	781	856	909
Landfill tax	-	-	461	502	541	607	674	735
Aggregates Levy	-	-	-	-	213	340	328	333
Total environmental taxes	**19 755**	**23 835**	**33 178**	**32 049**	**32 695**	**33 604**	**34 975**	**34 972**
Environmental taxes as a % of:								
Total taxes and social contributions	9.1	9.4	9.3	8.7	8.8	8.6	8.3	8.3
Gross domestic product	3.1	3.3	3.5	3.2	3.1	3.0	3.0	2.9

1. Unleaded petrol includes super unleaded petrol.
2. Lead Replacement Petrol (the alternative to 4-Star petrol introduced in 2000) is lead-free.
3. Duty incentives have concentrated production on ultra low sulphur varieties.

Source: ONS, Environmental Accounts Spring 2006

4.2 Government revenue from environmental taxes in 2005 was £35.0 billion. Environmental taxes, as a percentage of GDP have been falling in recent years as economic growth increases faster than revenues from environmental taxes. In 2005, the proportion fell to 2.9 per cent of GDP compared with 3.5 per cent in 2000, mainly due to the decline in or slow growth of Hydrocarbon duty and VED. Similarly, environmental taxes as a percentage of total taxes and social contributions has decreased since 2000. In 2005, they were 8.3 per cent, unchanged on a year earlier but down from 8.6 per cent in 2003. The types of

[10] As published in the Spring 2006 edition of the Environmental Accounts.

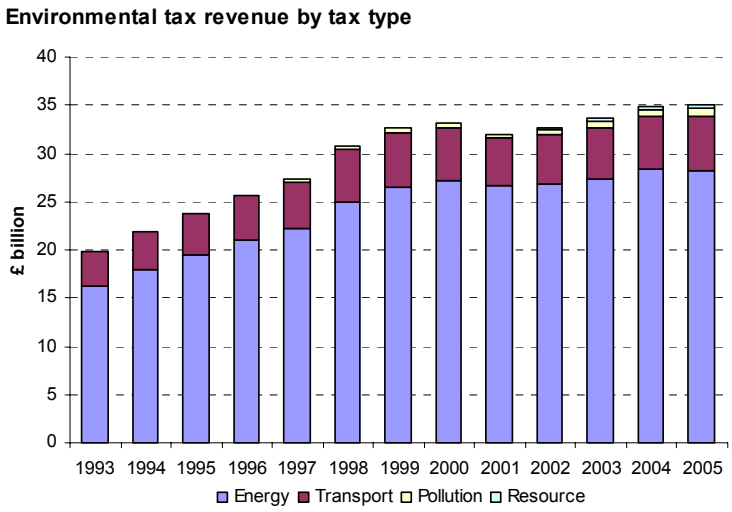
environmental tax revenues have changed significantly in recent years due, in part, to changes in the types of fuel available: leaded petrol has been withdrawn from sale and Ultra Low Sulphur Petrol and Diesel (ULSP/D) have been introduced. Following the October 2000 Budget these fuels attracted lower rates of duty than regular unleaded petrol and diesel due to their reduced particulate emissions and producers have now switched production to low sulphur varieties. A small amount of Lead Replacement Petrol (LRP) is still produced, revenues from which amounted to £0.2 billion in 2005. Duty on hydrocarbon oils such as petrol and diesel accounted for 66.7 per cent of total environmental taxation in 2005, a share that has remained broadly unchanged since 2000.

4.3 Revenue from the Landfill Tax rose by 9.4 per cent between 2004 and 2005 as a result of the policy to increase the tax rate by £1 per tonne each year. Revenue from Vehicle Excise Duty increased by 1.0 per cent to £4.8 billion in 2005.

4.4 At £0.9 billion, revenues from Air Passenger Duty are 6.2 per cent higher than a year earlier, but remain below their 2000 peak. Revenue from Air Passenger Duty was affected by the downturn in the aviation industry following the terrorist attacks on 11th September 2001. Revenues from the Aggregates Levy were similar to those in 2004, amounting to £0.3 billion in 2005.

Environmental taxes by tax type

4.5 The chart on the right shows that the largest sources of environmental tax revenue are the energy taxes, which account for approximately 80 per cent of all environmental taxes. Within the energy taxes, duty on hydrocarbon oil (petrol and diesel) is by far the largest, accounting for approximately 66 per cent of all environmental taxes. The second largest sources of environmental tax revenues are transport taxes, which account for between 15-17 per cent of all environmental taxes. The most significant transport tax is vehicle excise duty, which currently accounts for around 14 per cent of all environmental taxes. Taxes on pollution (landfill tax) and resources (aggregates levy) are still relatively small and currently account for less than 3 per cent of total environmental tax revenue.

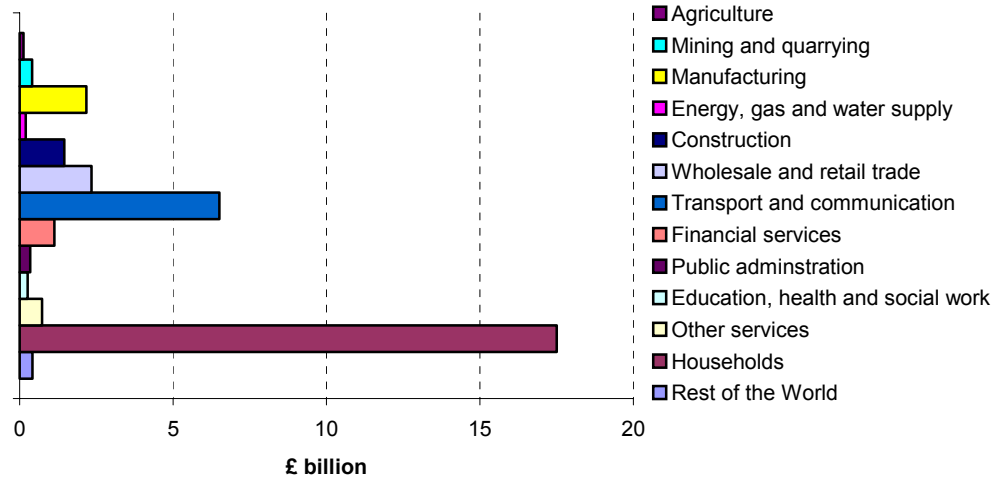


Industry breakdown of environmental taxation

4.6 A pilot study, published in the August 2004 edition of Economic Trends, analysed 2001 environmental tax payments broken down by industry and households. This 13 industry break down covered the main manufacturing and services industries as well as the household sector and the rest of the world. Taxes were broken down into the four main environmental tax types; energy, transport, pollution and resources.

The study showed that UK households contributed the most environmental taxes, just over half of all environmental taxes in 2001. This pilot study has now been expanded to cover the period 1993 to 2003. The latest results are shown in the following chart. In 2003, household's allocation was £17.5 billion, equal to 52 per cent of all environmental taxes. The next largest source was the transport and communication industry, which recorded £6.5 billion or 19 per cent of all environmental taxes. The most significant contributory factor behind this is duty on hydrocarbon oils. Duty on hydrocarbon oils is the largest of all environmental taxes and both households and the transport and communication industries consume large volumes of petrol and diesel. Payments by the rest of the world (non-UK residents) reflect the payments of Air Passenger Duty and, to a far lesser extent, payments of Hydrocarbon Duty by foreign road hauliers.

Revenue source: 2003



5. Review of current and potential environmental taxes

5.1 The following chapter looks at the various tax instruments operated by the UK Government and assess whether they meet the internationally agreed definitions of an environmental tax. The chapter assesses all the current environmental taxes as well as tax instruments not currently included in the Environmental Accounts. It also discusses the proposed National Accounts treatment of the United Kingdom Emissions Trading Scheme and the European Union Emissions Trading Scheme.

5.2 The taxes are identified under the four main tax themes: energy, transport, pollution and resource use. Each tax is be presented separately with the following information:

- when was the tax first introduced;
- background and changes since first introduced;
- latest and/or historic tax rate;
- revenue collected and shown as percentage of taxes and social contributions;
- main data source;
- methodology behind compilation of industry analysis along with summary of latest data;
- an assessment as to whether or not it meets the requirement of an environmental tax.

5.3 The conclusion of the review is summarised in the table below. Providing data are available ONS intends to implement the identified changes in the Autumn 2006 publication of *Environmental Accounts*. The table compares the current treatment of taxes and that proposed by this report for inclusion in the Autumn 2006 edition of *Environmental Accounts*.

	Environmental tax (yes or no)	
Tax or duty name	**Spring 2006 edition**	**Autumn 2006 edition**
Duty on hydrocarbon oils	Yes	Yes
VAT on duty	Yes	No
Fossil Fuel levy	Yes	Yes
Gas Levy	Yes	No
Climate Change Levy	Yes	Yes
Hydro-benefit	Yes	No
Air Passenger Duty	Yes	Yes
Vehicle Excise Duty (business)	Yes	Yes
Vehicle Excise Duty (households)	Yes	Yes
Landfill Tax	Yes	Yes
Aggregates Levy	Yes	Yes
Income tax on benefits in kind: Company car benefit tax	No	Yes
Income tax on benefits in kind: Company van benefit tax	No	Yes
Income tax on benefits in kind: Fuel benefit tax	No	Yes
Income tax on benefits in kind: Mileage allowance	No	No
Renewable Obligation Certificates	No	Yes
UK Emissions Trading Scheme	No	No
EU Emissions Trading Scheme	No	Yes

5.4 The net effect of these revisions is unknown because data are not currently available for Renewable Obligation Certificates or the EU Emissions Trading Scheme. Furthermore, a harmonised treatment of the EU Emissions Trading Scheme has still to be agreed by EU Member States and there remains a possibility that the final decision on its treatment may differ from that proposed by the Office for National Statistics. The table below shows the impact of the revisions as they currently stand. A final decision on the treatment of the trading schemes will not affect data for the earlier years.

Impact of environmental tax review **£ million**

	1993	1995	2000	2001	2002	2003	2004	2005
Existing environmental taxes								
Hydrocarbon	12,497	15,360	23,041	22,046	22,070	22,476	23,412	23,346
Fossil fuel levy	1,331	1,306	56	86	32	0	0	0
Climate change levy	0	0	0	585	825	828	756	744
Vehicle excise duty	3,482	3,954	4,606	4,102	4,294	4,595	4,763	4,809
Air passenger duty	0	339	940	824	814	781	856	909
Landfill tax	0	0	461	502	541	607	672	735
Aggregates levy	0	0	0	0	213	340	328	333
Additional environmental taxes								
Company car tax	1,333	1,443	1,933	1,840	1,710	1,650	1,610	…
Company van tax	10	10	20	20	20	28	30	…
Company fuel tax	185	210	565	640	560	508	500	…
Renewable Obligation Certificates	..	..	..	..	..	..	..	…
EU Emissions Trading Scheme	..	..	..	..	..	..	..	…
Total environmental taxes[1]	**18,838**	**22,622**	**31,622**	**30,645**	**31,079**	**31,812**	**32,927**	**30,876**
Removed environmental taxes								
VAT on hydrocarbon duty	2,187	2,688	4,032	3,858	3,862	3,933	4,097	4,086
Gas levy	240	161	0	0	0	0	0	0
Hydrobenefit	22	27	42	46	44	44	40	10
Net revision[1]	-918	-1,214	-1,557	-1,404	-1,616	-1,792	-1,997	…

1. Where known, data for additional taxes unavailable for 2005, while data regarding renewable obligations certificates and the EU Emissions Trading Scheme currently unavailable in all years.

5.5 The largest single revision is the exclusion of VAT on hydrocarbon duty. This is excluded as it is a tax on a tax rather than a tax imposed directly on a unit with a proven negative impact on the environment. The treatment of each tax is discussed in more detail over the remainder of the chapter.

Name	**Hydrocarbon duty**

Introduced	In 1909, although since then the nature and name of the tax has undergone numerous changes.

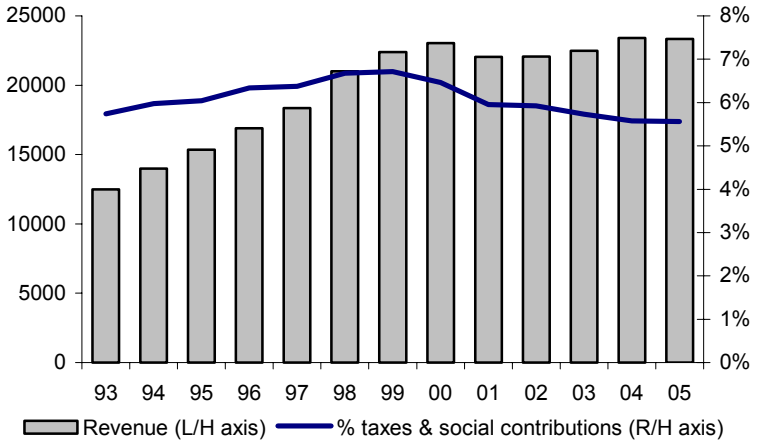
Background	Petrol duty was first introduced in 1909, at a rate of 3 old pence per gallon under the Finance Act 1908. By 1915, this had doubled to 6 old pence, albeit with a 50 per cent rebate for commercial vehicles. It was abolished under the Finance Act 1919. The price of fuel dropped dramatically in the following years, and the Government reintroduced petrol duty at a rate of 4 old pence per gallon in 1928. Since this date duty on hydrocarbon oils has remained a feature of the UK tax policy. The Budget of 1993 announced increased duties by 10 per cent and introduced "fuel duty escalator", under which duty would increase annually by 3 per cent above the inflation rate. Later the same year the escalator was increased to 5 per cent above inflation per year. This situation persisted until July 1997, when the escalator rate increased to 6 per cent above inflation. Public discontent at the price of fuel had been growing, particularly amongst farmers and road hauliers leading to fuel protests in September 2000. The Government refused to

	give in to the demands to reduce fuel duties. However, the Pre-Budget Report of November 2000 promised reductions in duty for ultra-low sulphur petrol and conventional unleaded petrol of 2p per litre, and a freeze on duty until 2002. This was implemented in the 2001 Budget. By October 2003, the Government began increasing fuel duties in line with inflation once again - although increases announced in the 2004 Budget were deferred. Similalrly, duty increases announced in the 2005 Budget and scheduled for September 2005 were deferred due to the effect on pump prices of sustained volatility in the oil market.

Tax base	Duty is charged on hydrocarbon products: petrol, diesel, aviation gasoline, road fuel gases, heavy oils and bioethanol. A full list of hydrocarbon oils and their latest rates of duty are shown below.

Exceptions	Relief from excise duty is available on oil put to certain uses. This is known in the trade as the Industrial Relief Scheme or more commonly the Tied Oils Scheme. Tied oils are any light oils or heavy oils that fall into the excise definition of gas oil, fuel oil or kerosene, which are delivered relieved of excise duty in order to be put to an eligible use. All uses are eligible for relief except use as fuel for any engine, motor or other machinery or heating fuel. Shipping and aircraft operators can claim “drawback “of excise duty on ship’s and aircraft stores providing hydrocarbon oils are loaded into a ship, or aircraft, for use as stores on a foreign voyage or flight. Horticultural producers can claim repayment of the excise duty on heavy mineral oil used for heating and sterilisation. Certain specialised “excepted” vehicles (generally non-road going) are able to purchased rebated heavy oils such as diesel and kerosene. Excepted vehicles include; tractors, light agricultural vehicles, agricultural engines, mowing machines, snow clearing machines, mobile cranes, digging machines, road rollers and unlicensed vehicles not used on public roads.

Current duty rates	**Hydrocarbon fuel**	**Duty rate**
	Leaded petrol and other light oils	56.2 per litre
	Unleaded petrol	50.2 per litre
	Ultra low sulphur petrol	47.1 per litre
	Sulphur free petrol	47.1 per litre
	Diesel	53.3 per litre
	Bio-Diesel/ Diesel blended	27.1 per litre
	Ultra low sulphur diesel	47.1 per litre
	Sulphur free diesel	47.1 per litre
	Aviation gasoline	28.1 per litre
	Road fuel gases (natural gas)	9.0 per kg
	Road fuel gases (other)	9.0 per kg
	Rebated heavy oil (fuel oil)	4.8 per litre
	Rebated heavy oil (gas oil)	5.2 per litre
	Bioethanol	27.1 per litre

Revenue raised since 1993 (excluding VAT)			
	Revenue £ million	% of taxes & social contributions	
1993	12,497	5.7	
1994	13,984	6.0	
1995	15,360	6.0	
1996	16,895	6.3	
1997	18,357	6.4	
1998	20,996	6.7	
1999	22,391	6.7	
2000	23,041	6.5	
2001	22,046	6.0	
2002	22,070	5.9	
2003	22,476	5.7	
2004	23,412	5.6	
2005	23,346	5.6	

Data source	Estimates of duty on hydrocarbon oils are supplied to the ONS by Her Majesty's Revenue and Customs.

Industry analysis	Duty on hydrocarbon oil is calculated using information on energy consumption published in the Environmental Accounts. The Environmental Accounts energy data has detailed information on fuel consumption broken down by 91 industries. The Environmental Accounts also identify two types of energy consumption by households: travel and other (heating, cooking, lighting, etc.). Duty on the various fuels types is available from Her Majesty's Revenue and Customs and this allocated proportionally to the industry and household fuel consumption. Appropriate adjustments are made for rebated fuels and for industries that are eligible to pay lower rates of duty.

Environmental tax (yes/no)	Yes. Hydrocarbon duty is collected on a physical unit with a proven negative impact on the environment i.e. per litre of petrol, diesel, heavy oil, etc.

Name	**VAT on hydrocarbon duty**

Introduced	1973.

Background	Value Added Tax was introduced in 1973 as a replacement for Purchase Tax and Selective Employment Tax, as a condition of UK entry into the European Economic Community. Value Added Tax (VAT) is tax on business transactions, charged by companies at the point of sale in respect of goods and services sold in the UK and the Isle of Man. VAT is a tax on the value added at each stage of the production process: it is not simply a tax on expenditure. As such, it is the most financially significant indirect tax in the UK today. When introduced in 1973 VAT was charged at a single rate of 10 per cent. Since its introduction rates have changed signifcantly over the years with lower and highers rates varying from zero to 25 per cent respectively. The current Basic Rate of 17.5 per cent applies to most goods and services. A Reduced Rate of 5 per cent applies to domestic fuel and power, women's sanitary products, children's car seats and certain residential conversions. The Zero Rate applies to food, construction of new dwellings, domestic and international passenger transport, books, newspapers and magazines, children's clothing, water services, prescription drugs, supplies to charities, certain ships and aircraft and vehicles and some other supplies to disabled people.

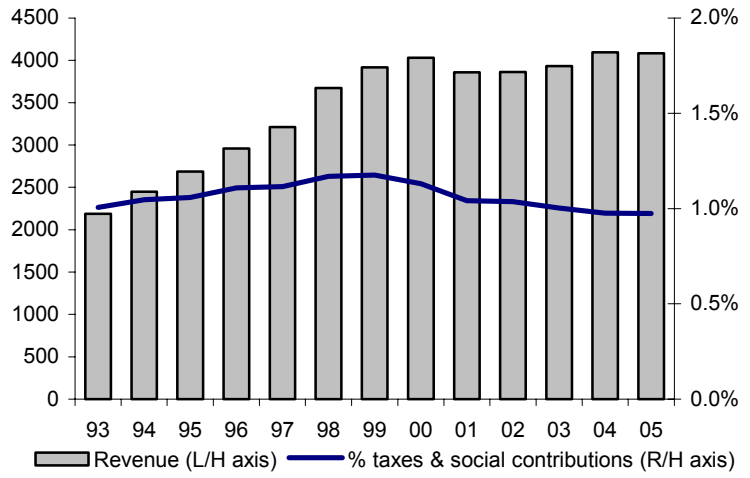
Tax base	Value Added Tax is charged on all hydrocarbon duties.

Exceptions	Most businesses can reclaim VAT on hydrocarbon duty if the fuel was used for business use.

Current duty rate	17.5 per cent of duty on hydrocarbon oils.

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	2,187	1.0
1994	2,447	1.0
1995	2,688	1.1
1996	2,957	1.1
1997	3,212	1.1
1998	3,674	1.2
1999	3,918	1.2
2000	4,032	1.1
2001	3,858	1.0
2002	3,862	1.0
2003	3,933	1.0
2004	4,097	1.0
2005	4,086	1.0



Data source	Estimates of VAT on duty on hydrocarbon oils are estimated by the ONS.

Industry analysis	The industry analysis assumes that VAT is paid equally by all enterprises. In reality, this is not the case but it is impossible to accurately estimate actual VAT payments.

Environmental tax (yes/no)	No, since it is a tax on an environmental tax. The European Commission publication *Environmental Taxes – A statistical guide* states, "Value added type taxes (VAT) are excluded from the definition of environmental taxes. This is mainly because of the special characteristics of this type of tax. VAT is a tax levied on all products (with few exceptions), and it is deductible for many producers, but not for households. Because of this, it does not influence relative prices in the same way that other taxes on environmentally related tax bases do. Another reason for excluding VAT from the definition is that revenue data for VAT are often not available by product. Environment-related revenues would have to be estimated using information on VAT rates combined with estimates of the total sales of the products and taking account of exemptions and deductibility of the VAT."

Name	**Fossil fuel levy**

Introduced	1990

Background	The Fossil Fuel Levy was imposed on sales of electricity generated from fossil fuels. The purpose of the levy was to encourage electricity generation from renewable energy sources. The levy was a mechanism for guaranteeing prices paid to certain renewable generation schemes approved under the former No-Fossil Fuel Obligation in England and Wales between 1990 and 1998 and in Scotland between 1996 and 2002. The Office of Gas and Electricity Markets administered the Levy and fixed the percentage rate at which it was set. Electricity consumers paid the levy, at the prescribed rate, on all leviable electricity. The levy rate has been set to zero since April 2002 in England and Wales and since November 2002 in Scotland. The Fossil Fuel Levy did not extend to Northern Ireland. The levy rate was set to zero per cent in England and Wales as the prices being secured at auction for the rights to the output of the renewable generators in question, including the benefit of any Climate Change Levy exemption and Renewables Obligation Certificates, exceeded the prices guaranteed under the scheme.

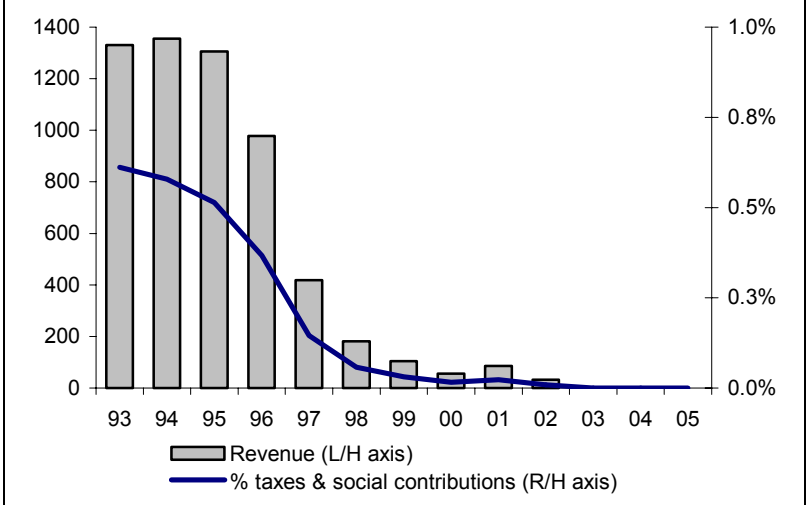
Tax base	The Fossil Fuel Levy was paid by all electricity consumers, on all leviable electricity.

Exceptions	None.

Historic duty rates	Dates	Rate (per cent)
	1 Apr 1990 to 31 Mar 1991	10.60
	1 Apr 1991 to 31 Mar 1993	11.00
	1 Apr 1993 to 30 Sep 1996	10.00
	1 Oct 1996 to 31 Mar 1997	3.70
	1 Apr 1997 to 31 Mar 1998	2.20
	1 Apr 1998 to 31 Dec 1998	0.90
	1 Jan 1999 to 30 Sep 1999	0.70
	1 Oct 1999 to 31 Mar 2002	0.30
	1 April 2002 to date	0.00

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	1,331	0.61
1994	1,355	0.58
1995	1,306	0.51
1996	978	0.37
1997	418	0.15
1998	181	0.06
1999	104	0.03
2000	56	0.02
2001	86	0.02
2002	32	0.01
2003	0	0.00
2004	0	0.00
2005	0	0.00



Data source	Estimates for the Fossil Fuel Levy are supplied to the ONS by the Office of Gas and Electricity Markets.

Industry analysis	Duty on the Fossil Fuel Levy is calculated using information on energy consumption published in the Environmental Accounts. The Environmental Accounts energy data has detailed information on fuel consumption brokendown by 91 industries. The Environmental Accounts also identify two types of energy consumption by households: travel and other (heating, cooking, lighting, etc.).

Environmental tax (yes/no)	Yes, the Fossil Fuel Levy is collected on a physical unit with a proven negative impact on the environment i.e. electricity generated from fossil fuels.

Name	Climate Change Levy

Introduced	2001.

Background	The Climate Change Levy (CCL) was introduced on in April 2001 following the recommendations made in Lord Marshall of Knightsbridge's report *Economic Instruments and the Business Use of Energy*, published in October 1998. The purpose of the levy is to encourage businesses to use energy more efficiently, which should in turn lead to the reduction of greenhouse gas emissions. The levy is imposed at the time of supply of taxable commodity, that is, electricity, coal, gas, and so on to industrial and commercial consumers rather than on the consumption by end-users. The levy will play a major role in helping the UK to meet its targets for reducing greenhouse gas emissions. It entails no increase in the tax burden on industry as a whole and no net gain for the public finances as the levy is offset through a facility for business to get an average 0.3 per cent reduction in their employer National Insurance Contributions. Additionally, some of the energy intensive industries can enter negotiated Climate Change Agreements in which they can get up to 80 per cent discounts on the Climate Change Levy if they meet the targets set in the agreement.

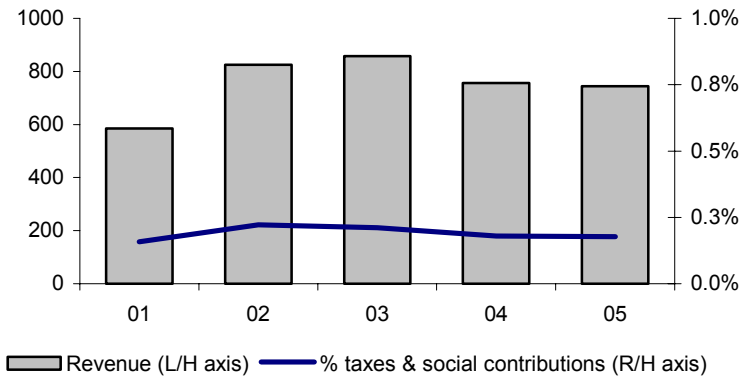
Tax base	The climate change levy is chargeable on the industrial and commercial supply of taxable commodities for lighting, heating and power by consumers in the following industries: • Industry; • Commerce; • Agriculture; • Public administration and; • Other services. Taxable supplies are certain supplies of the following taxable commodities: • electricity; • natural gas as supplied by a gas utility; • petroleum and hydrocarbon gas in a liquid state; • coal and lignite; • coke, and semi-coke of coal or lignite and; • petroleum coke.

Exceptions	The levy does *not* apply to fuels used by the household sector or transport industry, or fuels used for the production of other forms of energy (e.g. electricity generation) or for non-energy purposes. The levy does not apply to energy used by registered charities for non-business uses, and energy used by very small firms, i.e. those using a *de minimis* (domestic) amount of energy. The levy does *not* apply to oils, which are already subject to excise duty. There are also several exemptions from the levy, including: • Electricity generated from new renewable energy (e.g. solar and wind power) • Fuel used by good quality combined heat and power schemes ("Good Quality CHP" - certified via the CHP Quality Assurance Programme CHPQA) • Fuels used as a feedstock • Electricity used in electrolysis processes, for example, the chlor-alkali process, or primary aluminium smelting.

Current duty rates	Taxable commodity supplied	Rate
	Electricity	£0.0043 per kilowatt hour
	Gas supplied by gas utilities	£0.0015 per kilowatt hour
	Any petroleum gas or other gaseous hydrocarbon supplied in a liquid state	£0.0096 per kilogram
	Any other taxable commodities	£0.0117 per kilogram

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	..	..
1994	..	..
1995	..	..
1996	..	..
1997	..	..
1998	..	..
1999	..	..
2000	..	..
2001	585	0.16
2002	825	0.22
2003	828	0.21
2004	756	0.18
2005	744	0.18



Data source	Estimates of duty on hydrocarbon oils are supplied to the ONS by Her Majesty's Revenue and Customs.

Industry analysis	Duty on the Climate Change Levy is calculated using information on energy consumption published in the Environmental Accounts. The Environmental Accounts energy data have detailed information on fuel consumption brokendown by 91 industries. The Environmental Accounts also identify two types of energy consumption by households: travel and other (heating, cooking, lighting, etc.). Data on the various fuels types is available from Her Majesty's Revenue and Customs and this allocated proportionally to the industry fuel consumption. Appropriate adjustments are made for industries that are eligible for discount under Climate Change Agreements. Adjustments are based on information supplied by the Department for Environment and Rural Affairs (Defra) on fuel consumed by industries under Climate Change Agreements.

Environmental tax (yes/no)	Yes, the Climate Change Levy is collected on a physical unit with a proven negative impact on the environment i.e. the combustion of fossil fuels.

Name	**Hydro benefit**

Introduced	1980

Background	The origin of Hydro Benefit dates back to arrangements that were in place before the privatisation of the electricity industry. The arrangements ensured that the profits generated by hydro plant in the then North of Scotland Hydro-Electric Board's area were used to offset the high cost of distribution and transmission in that area. The Government provided for the continuation of the arrangements following privatisation. However, it became clear that the Hydro Benefit was discriminatory and contrary to European Law. The Office of Gas and Electricity Markets therefore abolished the Hydro Benefit in April 2005.

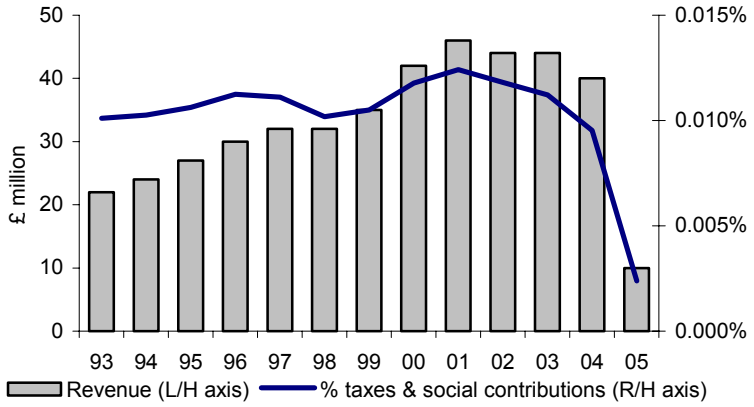
Tax base	The tax was paid from Scottish and Southern Energy's generation business to reduce the cost of distributing electricity.

Exceptions	The tax only applied to one generator.

Duty rate	The duty rate was dependent on electricity distribution costs. The rate on the tax/subsidy was therefore based on an arithmetic formula as opposed to any set rate per Kwh.

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	22	0.01
1994	24	0.01
1995	27	0.01
1996	30	0.01
1997	32	0.01
1998	32	0.01
1999	35	0.01
2000	42	0.01
2001	46	0.01
2002	44	0.01
2003	44	0.01
2004	40	0.01
2005	10	0.00



Data source	Estimates for the Hydro Benefit were supplied to the ONS by the Office of Gas and Electricity Markets.

Industry analysis	The Hydro Benefit is allocated to the electricity generation industry.

Environmental tax (yes/no)	No. The levy was introduced to use some of the profits from hydro-electricity generation to subsidise the cost of electricity distribution in the highlands of Scotland. The extent of the levy was based on distribution costs and not on any proxy with a proven negative impact on the environment.

Name	**Gas levy**

Introduced	1980

Background	The gas levy applied principally to gas purchased from offshore producers under certain contracts originally entered into before July 1975. The cost to companies 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, the British Gas Corporation, 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 buying this gas at below market prices; however by the mid to late nineties gas market prices were relatively low and there was no longer any justification for retaining the gas levy. The levy was therefore abolished from 1 April 1998.

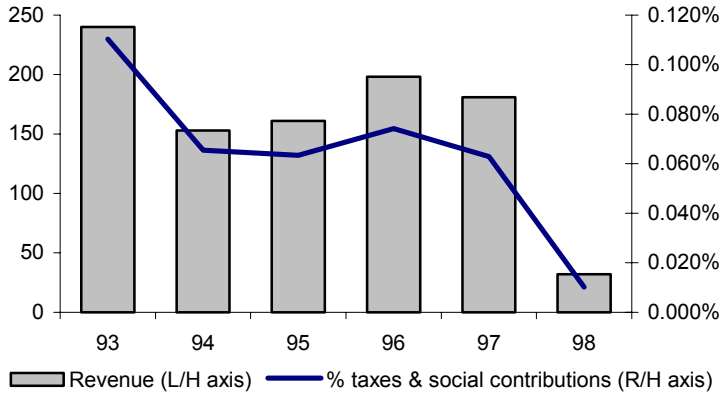
Tax base	The levy was imposed on the British Gas Corporation.

Exceptions	The levy only applied to one company.

Duty rates	**Period**	**Rate**
	1982-1997	4p per therm
	1997-1998	3p per therm
	1 April 1998	Abolished

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	240	0.11%
1994	153	0.07%
1995	161	0.06%
1996	198	0.07%
1997	181	0.06%
1998	32	0.01%
1999	..	..
2000	..	..
2001	..	..
2002	..	..
2003	..	..
2004	..	..
2005	..	..



Data source	Estimates for the Gas Levy were supplied to the ONS by the Department for Trade and Industry.

Industry analysis	The Gas Levy is allocated to the gas distribution industry.

Environmental tax (yes/no)	No *Environmental Taxes – A statistical guide* states that taxes on oil and gas extraction are excluded from the definition of environmental taxes. The main reason to exclude them is related to comparability between countries and over time. The revenue from these taxes is important in only a few EU/OECD countries. The tax systems also differ between countries, with different combinations of royalties, exploitation fees, special corporate tax rates and direct government ownership of extraction companies. This means that including these taxes in the definition would make comparisons of environmental and resource tax revenue very difficult. The tax revenue from oil and gas is also highly volatile, reflecting fluctuations in the prices of oil and gas, which in turn lead to distortions in the time series of revenue from resource taxes. Another reason is that levy was introduced as a means of capturing resource rent and not to influence the environmental impact of gas extraction.

Name	**Vehicle Excise Duty**

Introduced	1948 although the tax base has changed several times since then and only became a CO_2 based tax in 2001.

Background	Road vehicle ownership had been taxed since the earliest days of motor vehicles, with the UK's first schemes for "light locomotives" introduced in 1896. Under the Motor Car Act 1903, all road vehicles were taxed annually at a rate of 20 shillings per year, with the system administered by county councils. The Finance Act 1910 replaced the earlier system with the "Road Fund tax", based on a scale of liabilities based on horsepower rating, formulated by the Royal Automobile Club and subsequently referred to as the "Treasury rating". The Act stipulated that the funds raised should be used for maintaining the road network. The fund was administered by the Roads Board, which had considerable difficulty spending the money it raised, until it was replaced by the new Ministry of Transport in 1919, which abolished petrol duties and increased vehicle duties. The "Treasury rating" system remained in place until 1948, when it was replaced by a flat rate Vehicle Excise Duty charge of £10 per annum. This flat rate system remained in place until 2001, when the present emissions-based banding system was introduced. From 1 March 2001, any cars registered or licensed on or after this date qualified for the

	graduated Vehicle Excise Duty (GVED). This is the new version of VED, where the duty rate is based on the level of carbon dioxide emissions produced by the vehicle.

Tax base	The law requires any mechanically propelled vehicle that is used or kept on a road in the UK to pay Vehicle Excise Duty.

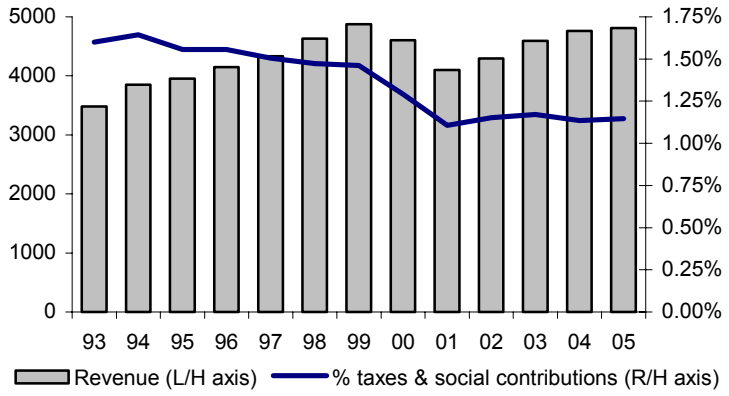
Exceptions	The main exemptions are: • Old Vehicles – vehicles constructed before 1st January 1973 that are not used for hire or reward or in connection with a trade or business. • Fire Engines/Fire Service Vehicles • Ambulances and Health Service Vehicles • Mine Rescue and Lifeboat Vehicles • Vehicles for Disabled People • Limited Use Vehicles – vehicles used for the purposes of agriculture, horticulture or forestry that are only used on public roads in passing between different areas of land occupied by the same person. The distance travelled on public roads between two such areas of land must not exceed 1.5 kilometres. • Tractors/Agricultural Engines • Mowing Machines • Steam Powered Vehicles • Electrically Propelled Vehicles • Snow Ploughs/Gritters • Trams • Electrically Assisted Pedal Cycles • Pedestrian Controlled Vehicles

Duty rate for cars, taxis and light goods vehicles registered after 1 March 2001

	The 12 month rate of GVED of cars as at March 2006 are listed below			
Band	CO_2 emissions (g/km)	Diesel car	Petrol Car	Alternative fuel car
A	Up to 100	0	0	0
B	101 to 120	50	40	30
C	121 to 150	110	100	90
D	151 to 165	135	125	115
E	166 to 185	160	150	140
F	186 to 224	195	190	180
G	225 +	215	210	200

Revenue raised since 1993

	Revenue £ million	**% of taxes & social contributions**
1993	3,482	1.60
1994	3,848	1.64
1995	3,954	1.56
1996	4,149	1.56
1997	4,334	1.50
1998	4,631	1.47
1999	4,873	1.46
2000	4,606	1.29
2001	4,102	1.11
2002	4,294	1.15
2003	4,595	1.17
2004	4,763	1.13
2005	4,809	1.15



Data source	Estimates of Vehicle Excise Duty are supplied to the ONS by the Driver and Vehicle Licensing Agency.

Industry analysis	The allocation of Vehicle Excise Duty is separated into Vehicle Excise Duty paid by households and that paid by businesses. Allocation of Vehicle Excise Duty payments to industries is based on information collected through the ONS run Annual Business Inquiry and Purchase Inquiry.

Environmental tax (yes/no)	Yes. Use of a vehicle has a negative environmental impact through the generation of atmospheric emissions. Also since 2001, Vehicle Excise Duty is a graduated tax based on the level of CO_2 emissions.

Name	**Air Passenger Duty**

Introduced	1994.

Background	Air Passenger Duty is an excise duty that is levied on the carriage, from a UK airport, of chargeable passengers on chargeable aircraft and came into effect on 1st November 1994. Duty is charged at a standard or reduced rate where the reduced rate applies to passengers carried in the lowest class of travel on any flight. Flights to European Economic Area (EEA)[11] countries also attract a lower rate of duty than flights to another other destinations (see table below). The current rates of duty have remained unchanged since 1 April 2001.

Tax base	Air Passenger Duty is levied on the carriage, from a UK airport, of all chargeable passengers on chargeable aircraft with the exception of those passengers listed below.

Exceptions	Exemptions from paying Air Passenger Duty include: • flight crew and cabin attendants • children under the age of 2 • passengers not carried for reward • transit passengers • short pleasure flights • military flights

Duty rates on direct flights		
Destination	**Standard rate**	**Reduced rate**
European Economic Areas	£10 per person	£5 per person
Other destinations	£40 per person	£20 per person

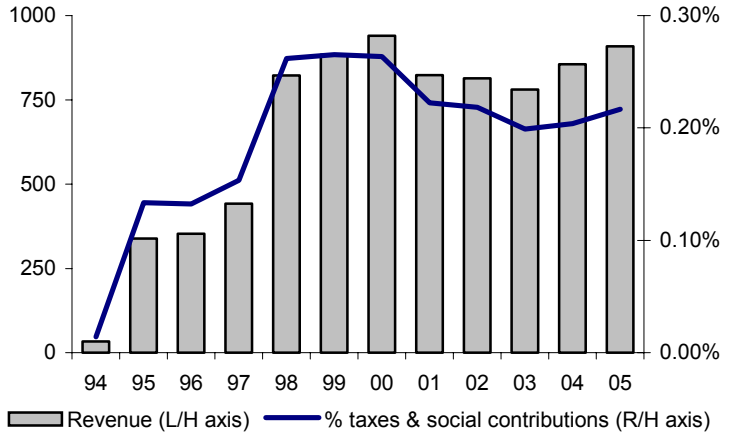
Source: Her Majesty's Revenue & Customs

Duty rates on interconnecting flights (dependent on destination)	
Domestic to domestic	£5/£10 per person
International to domestic	£0
Domestic to international	£5/£40 per person
International to international	£0

[11] The EEA includes the following countries; Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom, Iceland, Liechtenstein, Norway.

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	..	..
1994	33	0.01
1995	339	0.13
1996	353	0.13
1997	442	0.15
1998	823	0.26
1999	884	0.27
2000	940	0.26
2001	824	0.22
2002	814	0.22
2003	781	0.20
2004	856	0.20
2005	909	0.22



Data source	Estimates of Air Passenger Duty are supplied to the ONS by Her Majesty's Revenue and Customs.

Industry analysis	The allocation of Air Passenger Duty uses a combination of information from National Accounts Supply-Use tables and information on non-residents visits to the UK and UK residents' visits abroad, collected through the International Passenger Survey and published in *Travel Trends 2001*. Air Passenger Duty is allocated to three main categories of travel; UK residents travel (business), UK residents travel (non-business) and non-residents visiting the UK. The duty paid on business travel is allocated using the Supply-Use information while duty collected on non-business travel and non-resident travel are allocated using the International Passenger Survey dataset.

Environmental tax (yes/no)	Yes, Air Passenger Duty is collected on all chargeable aircraft and emissions from air transport have a proven negative impact on the environment.

Name	Landfill Tax

Introduced	1996.

Background	The Landfill Tax applies to most types of waste disposed of by way of landfill at a licensed landfill site on or after 1 October 1996. The purpose of the tax is to discourage the generation of waste. The tax is paid by landfill site operators, based on the weight of the waste deposited at their sites. The landfill site operators in turn charge those disposing wastes at their site according to the type of waste dumped. There are two rates of Landfill Tax, the lower rate and the standard rate. The rate will be increased by £3 per tonne in 2006–07 and will subsequently increase by at least £3 per tonne per year thereafter, until it reaches to the rate of £35 per tonne. A lower rate of £2 per tonne applies to inactive (or inert) wastes, such as naturally occurring rocks and soils, ceramic material and minerals. When the landfill tax was introduced it was offset by a 0.2 percentage point cut in employers' national insurance contributions. The value of this national insurance contributions cut remains greater than the revenue from the levy so the package remains consistent with the Government's objective of moving the burden of tax from 'goods' such as jobs to 'bads' such as pollution. Landfill operators can also obtain a 90 per cent tax credit against their donations to charitable bodies through the Landfill Tax Credit Scheme. These donations are capped at 6 per cent of the landfill operators. The total volume of waste disposed at landfill sites fell by almost 16 per cent between 1997 and 2005 with the largest fall occurring in the last year. The volume of active waste has fallen by 4 per cent while inert or inactive waste fell by 60 per cent.

Tax base	The Landfill Tax applies to all waste: • disposed of by way of landfill: • at a licensed landfill site: • on or after 1 October 1996: • unless the waste is specifically exempt (see below).

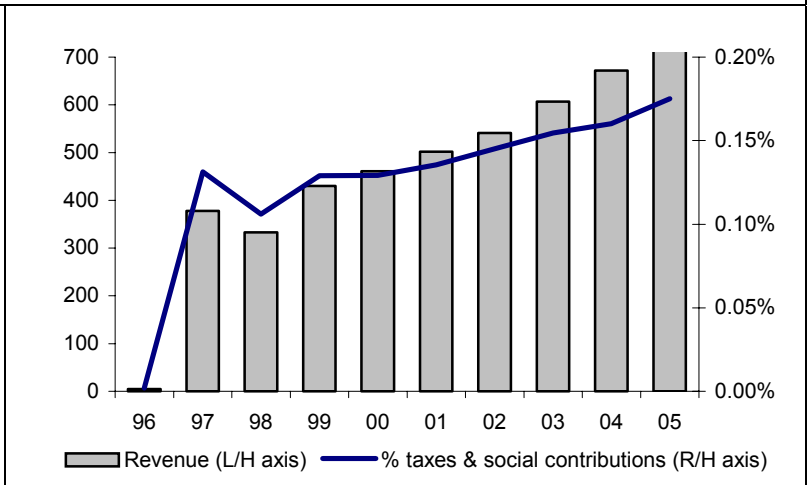
Exceptions	The following exemptions apply to Landfill Tax: • dredgings – material removed from rivers, canals, docks or harbours for purposes of navigation; • mining and quarrying waste; • pet cemeteries; • material from the clearance of contaminated land; • disposal of US forces waste; • inert waste disposed for purpose of restoring a landfill site: • inert waste disposed for the purpose of filling a quarry.

Active waste duty rates		
	Dates	**Standard rate**
	1 October 1996 to 31 March 1999	£7 per tonne
	1 April 1999 to 31 March 2000	£10 per tonne
	1 April 2000 to 31 March 2001	£11 per tonne
	1 April 2001 to 31 March 2002	£12 per tonne
	1 April 2002 to 31 March 2003	£13 per tonne
	1 April 2003 to 31 March 2004	£14 per tonne
	1 April 2004 to 31 March 2005	£15 per tonne
	1 April 2005 to 31 March 2006	£18 per tonne
	1 April 2006 to 31 March 2007	£21 per tonne

Inactive waste duty rate		
	Date	**Lower rate**
	From 1 October 1996	£2 per tonne

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993		..
1994	..	..
1995	..	..
1996	5	0.00
1997	378	0.13
1998	333	0.11
1999	430	0.13
2000	461	0.13
2001	502	0.14
2002	541	0.15
2003	607	0.15
2004	672	0.16
2005	735	0.18



Data source	Estimates of duty on hydrocarbon oils are supplied to the ONS by Her Majesty's Revenue and Customs.

Industry analysis	The breakdown of the Landfill Tax is mainly based on information from Supply-Use tables. This is supplemented with information on Landfill Tax paid by the public administration sector using waste data compiled by Defra. As with many of these taxes, the likelihood is that much of the cost is passed on to the final consumer. In this instance local authority expenditure on the disposal of municipal waste is covered by local residents' council tax payments.

Environmental tax (yes/no)	Yes, Landfill Tax payments are based on the tonnage of waste disposed at landfill sites.

Name	**Aggregates Levy**

Introduced	2002

Background	Introduced in 2002, the Aggregates Levy aims to reduce the amount of primary aggregate extracted from quarries and to encourage the use of alternatives. Revenue from the aggregates Levy is recycled to businesses through a 0.1 percentage point cut in employer national insurance contributions and through the Aggregates Levy Sustainability Fund. The Aggregates Levy is a tax on the commercial exploitation in the UK of rock, sand and gravel. It is charged at the rate of £1.60 per tonne and applies to anyone who is responsible for commercially exploiting aggregates in the UK, such as quarrying operators, mobile crusher operators and operators of dredgers. Between 2001 and 2003, sales of primary aggregate in Great Britain fell by 8 per cent and the estimated production of recycled aggregates increased by 3.1 million tonnes.

Tax base	The Aggregates Levy applies to any aggregate that is subjected to commercial exploitation on or after 1 April 2002 (the commencement date) unless: • it is specifically exempt;

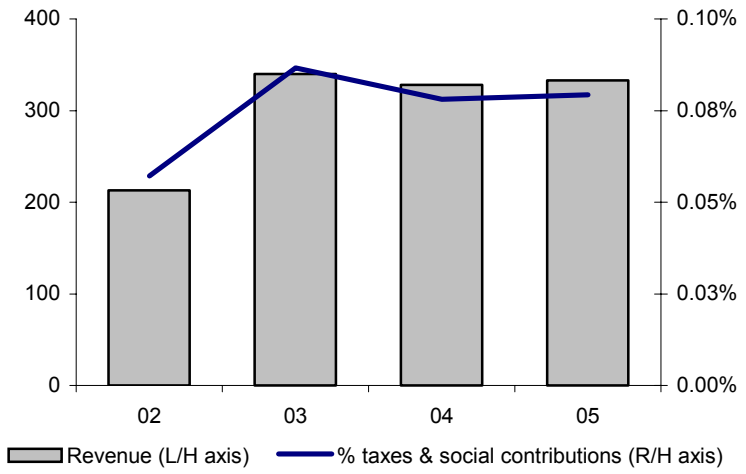
	• it has previously been used for construction purposes; • aggregates levy has already been applied to it, and not subsequently relieved, or • it was removed and not returned before the commencement date, from its originating site or from a connected site (i.e. a site that is registered under the same name as the originating site; this includes any site which was required to be registered by the commencement date). Aggregate removed to a connected site but not removed from there before the commencement date will still be subject to the levy if exploited on or after that date. However, in certain circumstances, relief is available after the levy has been applied. Relief or repayment is available where the material under consideration is not being used as an aggregate e.g. silica sand for water filtration, calcium carbonate in food, granite and marble for sculpting. For the purposes of the levy aggregate is rock, gravel or sand, together with whatever substances are incorporated in the rock, gravel or sand or naturally occur mixed with it. This includes the spoil, waste, offcuts and other by-products arising from the: • cutting of any rock to produce stone with one or more flat surfaces. This includes dimension stone building stone and other masonry products; • process of extracting industrial minerals from aggregate; and • production of lime or cement from limestone or from limestone and other substances.

Exceptions	Any material, **more than half of which** consists of the following substances is exempt from the levy: • clay, soil, vegetable or other organic matter; • coal, lignite, slate and shale; • processing waste resulting from the separation of coal, lignite, slate or shale from other aggregate after extraction (but not any other aggregate which was extracted at the same time); • all spoil or waste from, or other by-products from any industrial combustion process or the smelting or refining of metal eg industrial slag, pulverised fuel ash and used foundry sand; • drill cuttings from oil exploration in UK waters, and from land drilling in the UK if licensed under the Petroleum Act 1998 or the Petroleum (Production) Act (Northern Ireland) 1964, and • material arising from utility works e.g. laying gas or water pipes and telephone lines, if carried out under the New Roads and Street Works Act 1991, the Roads (Northern Ireland) Order 1993 or the Street Works (Northern Ireland) Order 1995. Anything that consists **completely** of the following substances is exempt from the levy: • china clay waste and ball clay waste; • spoil from the processing after extraction of industrial minerals, e.g. fluorspar, sodium chloride, talc. • aggregate necessarily arising from the footprint of any building and its pipes or cables; • aggregate necessarily arising from navigation dredging (If you obtain material that consists wholly of aggregate removed from inland waterways, such as the bed of any river, canal or watercourse (whether natural or artificial): or • aggregate necessarily arising from highway construction.

Duty rate	£1.60 per tonne of aggregate. The Aggregates Levy has been phased in Northern Ireland and is currently at 40 per cent of the standard rate i.e. £0.64.

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	..	..
1994	..	..
1995	..	..
1996	..	..
1997	..	..
1998	..	..
1999	..	..
2000	..	..
2001	..	..
2002	213	0.06
2003	340	0.09
2004	328	0.08
2005	333	0.08



Data source	Estimates of duty on hydrocarbon oils are supplied to the ONS by Her Majesty's Revenue and Customs.

Industry analysis	The Aggregates Levy is predominately paid by the mining and quarrying industry. A small amount of the Levy is raised on the import of aggregates by the construction industry.

Environmental tax (yes/no)	Yes. While the extraction of aggregates is not necessarily harmful itself, the tax was introduced to act as an incentive to encourage the use of alternatives such as recycling and re-use.

Name	**Income tax on benefits in kind: Company car benefit tax**

Introduced	1978. The tax base has changed several times since then and only became a CO_2 based tax in 2002.

Background	Since 1948 the general rule on taxing expenses payments and fringe benefits has been that most rank as taxable remuneration. In cases where someone is given a benefit in kind, rather than a cash payment, the cash value of this benefit to that person is added to their taxable income, and taxed accordingly; i.e. taxed at the same rate as the rest of their income (22 per cent or 40 per cent depending on their circumstances). Special rules applied in evaluating the cash value of certain types of benefit: the provision by an employer of a motor vehicle partly or wholly for private use by an employee is the most notable example. The system for taxing company cars was reformed under the *Finance Act 1993*. In brief, the taxable value of the car was calculated on its list price and the annual level of business mileage. The greater the business mileage, the lower the taxable value of the car. The basis for estimating company car tax changed in 2002 with the tax now based on the level of CO_2 emissions they produced. This removed the business mileage discounts and the financial incentive to do unnecessary business mileage. The reform of the company car tax is estimated to have reduced business travel in company cars by between 300 and 400 million miles, saving around 0.15 to 0.2 million tonnes of carbon.

Tax base	Where a car is made available for an employee's private use a taxable benefit arises. Company car tax was reformed in April 2002 and is now calculated by applying a percentage to the list price of the car. The percentage is related to the CO_2 emissions of the car and ranges from 15 per cent to 35 per cent (in 1 per cent increments) for a petrol car. Diesel cars that do not meet Euro IV emissions standards attract a 3 per cent supplement on the petrol percentages (capped at 35 per cent). The 2004 Pre-Budget

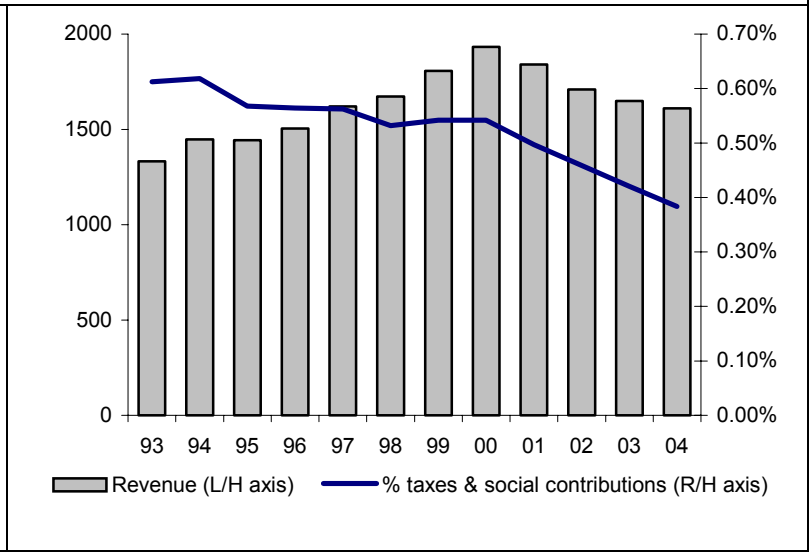
	Report announced that from April 2006, the waiver of the 3 per cent supplement for diesel cars meeting Euro IV standards will be withdrawn for all cars registered from 1 January 2006. Employers must also pay Class 1A National Insurance Contributions on the taxable benefit of a provided car.

Exceptions	Cars that are capable of running on alternative fuel such as liquid petroleum gas, compressed natural gas or battery-propelled cars, currently enjoy a discount from the equivalent company car percentage. There are different calculations of the discounts for bi-fuel gas and petrol cars depending on whether they are manufactured or converted to run on gas as well as petrol before or after the type approval. The current discounts are: • cost of conversion disregarded plus 1 per cent discount for bi-fuel gas and petrol cars converted after type approval; • 1 per cent discount plus an additional 1 per cent for each 20g/km the car's emissions fall below the level of CO_2 qualifying for the minimum petrol percentage charge for bi-fuel • gas and petrol cars manufactured or converted before type approval; • 2 per cent discount plus an additional 1 per cent for each 20g/km the car's emissions fall below the level of CO_2 qualifying for the minimum petrol percentage charge for hybrid petrol and electric cars; and • 6 per cent discount for electric-only cars. For 2006/07 the discounts for cars that run on alternative fuels will be simplified to: • cost of conversion disregarded for bi-fuel gas and petrol cars converted after type approval, no additional percentage discount; • 2 per cent discount for bi-fuel gas and petrol cars manufactured or converted before type approval; • 3 per cent discount for hybrid electric and petrol cars; and • the 6 per cent discount for electric-only cars will be maintained.

Duty rate - Percentage charge of vehicle list price								
CO_2 (g/km)	2002/03 Petrol	2002/03 Diesel	2003/04 Petrol	2003/04 Diesel	2004/05 Petrol	2004/05 Diesel	2005/06 Petrol	2005/06 Diesel
135								
140							15	18
145					15	18	16	19
150					16	19	17	20
155			15	18	17	20	18	21
160			16	19	18	21	19	22
165	15	18	17	20	19	22	20	23
170	16	19	18	21	20	23	21	24
175	17	20	19	22	21	24	22	25
180	18	21	20	23	22	25	23	26
185	19	22	21	24	23	26	24	27
190	20	23	22	25	24	27	25	28
195	21	24	23	26	25	28	26	29
200	22	25	24	27	26	29	27	30
205	23	26	25	28	27	30	28	31
210	24	27	26	29	28	31	29	32
215	25	28	27	30	29	32	30	33
220	26	29	28	31	30	33	31	34
225	27	30	29	32	31	34	32	35
230	28	31	30	33	32	35	33	35
235	29	32	31	34	33	35	34	35
240	30	33	32	35	34	35	35	35
245	31	34	33	35	35	35		
250	32	35	34	35				
255	33	35	35	35				
260	34	35						
265	35	35						

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	1,333	0.61%
1994	1,448	0.62%
1995	1,443	0.57%
1996	1,505	0.56%
1997	1,620	0.56%
1998	1,673	0.53%
1999	1,808	0.54%
2000	1,933	0.54%
2001	1,840	0.50%
2002	1,710	0.46%
2003	1,650	0.42%
2004	1,610	0.38%
2005	…	…



Data source	Estimates of revenue from company car tax are supplied to the ONS by Her Majesty's Revenue and Customs.

Industry analysis	Company car tax is a tax on employees' income and should therefore be allocated to households.

Environmental tax	Yes. Use of a vehicle has a negative environmental impact through the generation of atmospheric emissions. Also since 2002, Company Car Tax is based on the level of CO_2

(yes/no)	emissions.

Name	**Income tax on benefits in kind: Company van benefit tax**

Introduced	1991

Background	Van benefit is a charge to tax on an employee for the benefit of having a van available for private use.

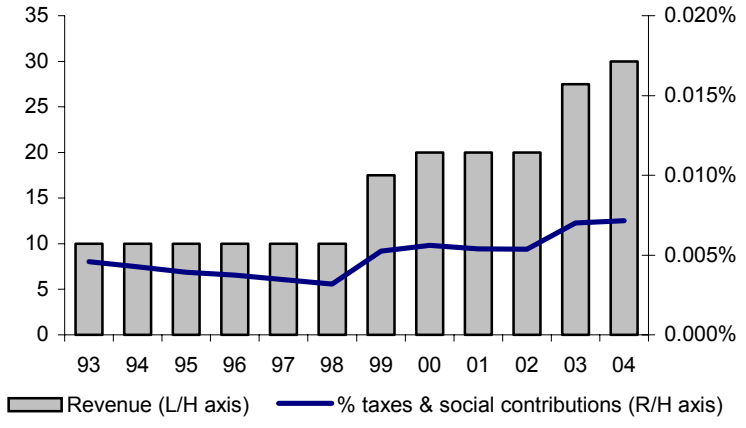
Tax base	Company van benefit is paid where a van is made available for private use (which means for use other than for business travel) to an employee who is not in an excluded employment or to members of the employee's family or household by reason of that without any transfer of the property in it and the benefit is not otherwise taxable.

Exceptions	There are the following exceptions:. • where the van is a 'pooled van' ; • where the ownership of the van is transferred to the employee; • where private use is prohibited and there is no actual private use; • where the employer is an individual and a van is not made available to an employee or a member of their family or household on business grounds but in the normal course of the employer's domestic, family or personal relationships • where a van is made available for a member of the employee's family or household in other qualifying circumstances.

Duty rate	• 2005/06 and 2006/07: £500 (£350 if the age of the van is 4 years or more on the last day of the tax year) • 2007/08 onwards (all vans, regardless of age): £3,000 • Employers must also pay pay Class 1A National Insurance Contrinutions on the taxable benefit of the van.

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	10	0.00%
1994	10	0.00%
1995	10	0.00%
1996	10	0.00%
1997	10	0.00%
1998	10	0.00%
1999	18	0.01%
2000	20	0.01%
2001	20	0.01%
2002	20	0.01%
2003	28	0.01%
2004	30	0.01%
2005	…	…



Data source	Estimates of revenue from company car tax are supplied to the ONS by Her Majesty's Revenue and Customs.

Industry analysis	Company van tax is a tax on employees' income and should therefore be allocated to households.

Environmental tax (yes/no)	Yes, use of a vehicle has a negative environmental impact through the generation of atmospheric emissions.

Name	**Income tax on benefits in kind: Fuel benefit tax**

Introduced	1978.

Background	Fuel benefit is a charge on an employee for whom fuel is provided for private use in a car for which that employee is also charged car benefit tax. Like car benefit tax, it does so by treating the employee as though their earnings for tax were higher by a notional sum (the cash equivalent of the benefit). It applies in addition to the car benefit charge. Fuel benefit tax will also be expanded to cover the private use of company vans from 2007/08.

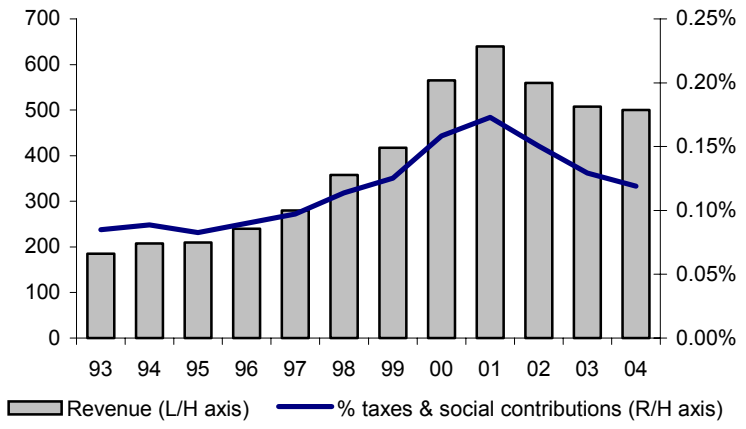
Tax base	The tax base comprises all company cars that are eligible for private use. Employers must also pay pay Class 1A National Insurance Contrinutions on the taxable benefit of the van.

Exceptions	None

Duty rate	The taxable benefit calculation was reformed in April 2003 to align the charge with the environmental principles of the company car tax system. Since April 2003 the fuel benefit charge has been calculated by applying the company car tax appropriate percentage to a set figure. In 2004/05 the figure was £14,400. For 2005/06 the figure for the company car fuel benefit charge will be frozen at £14,400. When introduced, the van fuel benefit charge will be as follows: • 2007/08 onwards: £500

Revenue raised since 1993

	Revenue £ million	% of taxes & social contributions
1993	185	0.09%
1994	208	0.09%
1995	210	0.08%
1996	240	0.09%
1997	280	0.10%
1998	358	0.11%
1999	418	0.13%
2000	565	0.16%
2001	640	0.17%
2002	560	0.15%
2003	508	0.13%
2004	500	0.12%
2005	…	…



Data source	Estimates of revenue from company car tax are supplied to the ONS by Her Majesty's Revenue and Customs.

Industry analysis	Fuel benefit tax is a tax on employees' income in kind and should therefore be allocated to households.

Environmental tax (yes/no)	Yes, the tax is on fuel consumption. The rate of tax for cars is in turn based on the vehicle's level of CO_2 emissions.

Other taxes in kind: Mileage allowance

5.6 This review also considered whether mileage allowance, which is another income tax on benefits in kind, might be an environmental tax. Mileage allowance payments are payments to an employee for use of their own vehicle (car, van, motorcycle or cycle) for business travel. Payments may be a mileage rate for business travel only, paid in arrears on an actual basis, a payment based on estimated mileage or a lump sum payment aimed at covering the business proportion only of the standing costs of the car.

5.7 From April 2002, mileage allowance payments that employers made to employees who used their own vehicle or bicycle for business travel were not liable for tax if they did not exceed the appropriate approved mileage allowance payment limit. Payments that exceed the approved mileage allowance payment limit were taxed to the extent that they exceed the limit in line with other taxable earnings. Mileage allowance tax payments amount to approximately £70 million per annum.

5.8 Despite the name and the obvious linkage to an environmental negative such as vehicle mileage, the decision is not to classify mileage allowance as an environmental tax. The tax is on income received above and beyond the approved mile allowance payment limit as opposed to be a tax on the mileage itself. Although the income itself may have been generated from mileage driven, the tax is on the income received above a preset threshold. Therefore, the tax is based on income rather than an environmental negative such as the use of a car.

Classification of emission trading schemes in the National Accounts

5.9 The UK Government is a signatory to international climate change agreements to reduce greenhouse gas emissions. It plans to encourage electricity generation using wind farms and other renewable energy projects, which will reduce the level of greenhouse gas emissions. The UK Government has set a target of generating 10 per cent of all electricity from renewable sources by 2010 and this is expected to increase to 30 per cent by 2030. The UK Government has also set a target to reduce emissions of CO_2, the most important greenhouse gas, by 20 per cent by 201 The government also committed to putting the UK on the path to reduce carbon dioxide emissions by some 60 per cent by about 2050, with real progress by 2002

5.10 The Government imposed new obligation on electricity suppliers in April 2002 that 3 per cent of all electricity supplied must have been generated from renewable sources. Evidence of compliance with this obligation must be presented by the supplier to the regulator the Office for Gas and Electricity Management (Ofgem). The evidence will take the form of Renewable Obligation Certificates (ROCs).

5.11 The UK government has also overseen the establishment of emissions trading schemes in the UK with the ultimate goal of achieving significant reduction in the level of greenhouse gas emissions. There are currently two emission trading schemes operating in the UK; the UK Emissions Trading Scheme (UK-ETS) and European Union Emissions Trading Scheme (EU-ETS). The UK-ETS was launched in April 2002 and was the world's first emissions trading scheme. The EU-ETS commenced on 1 January 2005.

5.12 National Accounts classification of both the Renewable Obligation Certificates and the emissions trading schemes is unclear in the European System of Accounts (ESA95). The treatment of both was discussed by the Office for National Statistics National Accounts Classification Committee and the findings are presented over the following chapter.

Renewable Obligation Certificates

5.13 Since April 2002, every licensed electricity supplier is required to ensure that a specified proportion of the electricity it sells to customers in Great Britain is generated from renewable sources. Renewable energy is defined to include a wide range of sources (e.g. solar, wind, hydro, tide, biomass) but excludes fossil fuels and, as a matter of policy, nuclear. Although nuclear energy does not produce greenhouse gas emissions, there are other externalities detrimental to the environment.

5.14 The level of the obligation placed on each company will be calculated as a proportion of that company's total electricity sales. Evidence of compliance with the obligation must be presented by suppliers to the regulator Ofgem. This evidence will take the form of Renewable Obligation Certificates (ROCs). As part of the arrangements being put in place these will be first issued to renewables generators on the basis of their eligible generation.

5.15 The expectation was that when the suppliers purchase electricity from the generators that they would have be given a certificate as evidence of the purchase. However, what actually happened was

described as "selling" the ROC where suppliers subsequently and additionally traded the certificates between themselves, or via third parties, separate from the electricity to which the ROCs related. Renewable Obligation Certificates are tradable instruments and there is a market in them where the market price theoretically reflects the additional costs of generating from renewable sources and the certificates are a means of redistributing the costs across all suppliers. This is needed since the renewables generators tend to be clustered in geographical locations, so it is not easy for each supplier to purchase their allocation directly. In practice, therefore, the electricity may not have been supplied by the supplier that presents the ROCs to Ofgem but they will have met the additional cost of that supply.

5.16 There also needed to be an appropriate compliance incentive, since in a perfect market companies would have preferred to pay a fine if that was cheaper than buying their ROC allocation. However, the government did not want to impose criminal or financial penalties on suppliers, who would pass such costs on to their customers, for not achieving an obligation that might prove unattainable or prohibitively expensive.

5.17 This issue has been resolved through use of a "buy-out" mechanism. Suppliers will, at their discretion, be able to buy-out all or part of their obligation at a price of 3p/kWh per ROC. To avoid any supplier being in breach of their statutory obligation if they exercise this option, buying out is formally a means of compliance. Breach of the obligation only occurs if the total amount of ROCs presented plus the amount of buy-out, undertaken by a supplier in any year, does not equate to its level of obligation. That would then be a breach of the supplier's licence conditions and subject to separate penalties imposed by Ofgem under the Utilities Act. So in practice just before each supplier has to prove they have met their obligation they will purchase enough "buy-outs" to get them up to their limit. If the market mechanism works it should be cheaper to purchase ROCs in the market than go down the "buy-out" route. The buy-out payments are kept by Ofgem in a bank account. The money is eventually redistributed to the suppliers, according to the proportion of each supplier's presented ROCs compared to the total.

National Accounts classification

5.18 The National Accounts Classification Committee looked at the treatment of purchasing of the Renewable Obligation Certificates and the buy-out scheme and concluded that both were an imputed tax and subsidy. It could be argued that the subsidised amounts redistributed to the renewables generators are being subsidised by the electricity suppliers (or indirectly by the household/business customers as you can be sure the suppliers will pass the costs on). However, the decision to classify ROCs as taxes has been based on the fact that government organises the redistribution scheme and it is not something the suppliers would have done voluntarily.

5.19 The following table shows an imaginary trade where company A buys ROCs worth £1,000 from company B with an imputed payment and receipt by central government. The currency and deposit change represents the flow of money between company bank accounts.

Transactions in UK-ETS allowances

	Company A	Central government	Company B
D.21 – Taxes on production	-£1,000	+£1,000	
D.31 – Subsidies on production		-£1,000	+£1,000
F.2 - Currency & deposits	-£1,000		+£1,000

5.20 As the value of the trade in Renewable Obligation Certificates is classified in the National Accounts as an imputed tax, the Environmental Accounts will therefore treat them as an environmental tax. It passes the criteria for an environmental tax as the tax is paid by electricity suppliers where the generation source is non-renewable e.g. fossil fuel.

UK Emissions Trading Scheme

5.21 The UK-ETS was launched in April 2002 and was the world's first emissions trading scheme. The objectives of the UK trading scheme were:

- to provide a reduction in greenhouse gas emissions at reasonable cost;
- to enable business to gain experience of emissions trading ahead of the EU and other international systems;
- to help the City of London establish itself as the global centre for emissions trading.

5.22 Each participant in the scheme is given an emission target and allowances (each unit = one allowance) equal to that target. Participants can either:

- meet their target by reducing their emissions to that level;
- reduce their emissions below their target and "sell or bank" the excess allowances;
- exceed their target and buy allowances to cover the additional emissions.

There are three types of participants in the UK Emissions Trading Scheme.

Direct participants

5.23 These are voluntary participants, offered financial incentives by the Government to take on voluntary targets involving a reduction for 2002-6 against their baseline position in 1998-2000. The incentives are contingent on meeting the targets. The scheme began with an auction in March 2002, in which companies and other organisations (known collectively as Direct Participants) bid emission reductions in return for a share of incentive funding from the Department for Environment, Food and Rural Affairs.

Climate Change Agreement participants

5.24 These are companies that already have targets set through Climate Change Agreements and use the trading scheme either to help meet their target or sell any over-achievement. There is a restriction on the flow of allowances from these participants to the rest of the scheme. Climate Change Agreements are contracts between Government and energy intensive users. The contracts are voluntary, but there is a significant incentive (an 80 per cent reduction on their Climate Change Levy bill), conditional on meeting

targets. The Climate Change Levy is a flat rate levy on businesses use of electricity, coal and gas and is classified as a tax on production.

Others

5.25 Anyone who wants to enter the market and trade allowances on a speculative basis.

5.26 At the end of each target period, the participants must demonstrate compliance with the scheme and meet their targets. After the submission of allowances that demonstrate this, the allowances are "retired". Information on allocations, retirements, cancellations (distinct from retirements), transfers (within company groups) and trades (transactions between companies) is available.

5.27 The first compliance period for Direct Participants ran from April 2002 until December 2002, and thereafter compliance periods were annual. There is a three month period in the following year (e.g. by end-March) in which to demonstrate compliance.

National Accounts classification of the UK-ETS

5.28 The National Accounts Classification Committee looked at the treatment the UK Emissions Trading Scheme and concluded that trading in allowances was a transaction in an intangible non-produced asset. Participation in the UK-ETS is on a voluntary basis therefore any payments are also voluntary thus ruling out the possibility that it is a tax/subsidy as taxes comprise compulsory payments. The purchase of an allowance under the scheme allows the purchaser to generate at set unit of CO_2. These purchases are similar to the right to exploit mineral deposits or fishing grounds, which are deemed to be intangible non-produced assets (K.2).

5.29 ESA95 describes non-produced assets as:

> *Non-financial assets that come into existence other than through processes of production. Non-produced assets consist of tangible assets and intangible assets, as defined below. Also included are costs of ownership transfer on and major improvements to these assets*[12].
>
> Intangible non-produced assets are then broken-down into:
>
> - *Patented entities*
> - *Leases and other transferable contracts*
> - *Purchased goodwill*
> - *Other intangible non-produced assets*

5.30 As the UK emissions trading scheme is not classified as a tax in the National Accounts it will not be treated as an environmental tax in the Environmental Accounts.

[12] http://forum.europa.eu.int/irc/dsis/nfaccount/info/data/esa95/en/titelen.htm

EU Emissions Trading Scheme

5.31 The European Union Emissions Trading Scheme is an EU Directive with the aim of reducing emissions of carbon dioxide (CO_2) and other greenhouse gases and combating climate change. The scheme commence on 1 January 2005 with the first phase running from 2005-2007. A second phase will run from 2008-2012 to coincide with the first Kyoto Commitment Period. Further five-year periods are expected subsequently.

5.32 EU Member State governments are required to set a maximum emission limit for all "installations" covered by the scheme. This limit is referred to as the "allowance". The scheme operates on the basis that those exceeding their allowances will be fined, and compliance will be checked annually. The allocation issued to operators is on an annual basis with the entity surrendering allowances at the end of the trading year equal to its emissions. Surrendered allowances are then cancelled. If the entity emits less than its allowance it can either carry the allowance over to the following year or sell that allowance to another entity. If it emits more than its allowance it either needs to buy allowances or will face a fine. The fine is set by the EU at €40 for phase one, rising to €100 in phase two. Payment of the fine does not release the entity from its obligation to surrender sufficient allowances to offset its emissions. No allowances can be carried between phase 1 and phase 2. So, those who exceed can purchase allowances from those who have under-used theirs, creating a market in allowances. Phase 2 allowances cannot be borrowed to pay for phase 1 emissions but it is viewed that it is highly unlikely that there will be insufficient allowances at the end of phase 1 (end-2007). This is because any shortage of allowances would have driven their price above the abatement cost, therefore making it cheaper to invest in emissions reduction technology with the result that emissions will fall to levels below the anticipated levels.

National Accounts classification of the EU-ETS

5.33 The National Accounts Classification Committee looked at the treatment the EU Emissions Trading Scheme and concluded that trading in allowances were imputed taxes and subsidies. Classification in the National Accounts was then very much dependent on whether the tax was deemed to be an EU-tax and subsidy or a UK-tax and subsidy. Intra-UK transaction would be D.29 – taxes on production and D.39 – subsidies on production regardless of whether a UK or EU-tax. However, transaction between the UK and the rest of the world must differ as the UK government cannot subsidise foreign companies. Therefore, if deemed to be a UK tax, transactions in allowances between the UK and the rest of the world would be a classified as D.29 – taxes on production and D.74 – current international co-operation.

Intra-UK transactions in EU-ETS allowances

	Company A	Central government	Company B
D.29 – Taxes on production	-£1,000	+£1,000	
D.39 – Subsidies on production		-£1,000	+£1,000
F.2 - Currency & deposits	-£1,000		+£1,000

UK/RoW transactions in EU-ETS allowances if deemed to be an EU-tax

	Company A	Central government	Company B
D.29 – Taxes on production	-£1,000	+£1,000	
D.39 – Subsidies on production		-£1,000	+£1,000
F.2 - Currency & deposits	-£1,000		+£1,000

UK/RoW transactions in EU-ETS allowances if deemed to be an UK-tax

	Company A	Central government	Company B
D.29 – Taxes on production	-£1,000	+£1,000	
D.74 – International co-operation		-£1,000	+£1,000
F.2 - Currency & deposits	-£1,000		+£1,000

Government retention of allowances

5.34 In phase one, EU law requires 95 per cent of allowances to be free, but governments can charge for the other five per cent at the end of each annual compliance period. In phase two the percentage drops to 90 per cent. The rationale for this is that five per cent is set aside for new entrants to the scheme. So, if the five per cent were sold, it would simply be government issuing into the emissions market (e.g. selling K.2 intangibles). An asset of government, priced by marking to market, should be scored in the Government's balance sheet. The expectation is the UK Government will not sell any spare allowances but other member states may. The auction will be open to all entities able to trade emission, not just operators in that member state.

5.35 As the EU Emissions Trading Scheme will be classified in the National Accounts as an imputed tax, the Environmental Accounts would therefore treat them as an environmental tax. It passes the criteria for an environmental tax as the tax is paid by enterprises on the level the level of CO_2 they produced above and beyond their annual limit.

6. Industry analysis of environmental tax payments

6.1 To assess the effectiveness of environmental tax policy it is necessary to identify who pays the tax i.e. does the polluter pay? Until now, there has been no analysis of environmental tax payments by payee. In 2003, the ONS completed a one-off look at environmental tax payments for 2002, primarily based on supply-use data. This project has enabled a thorough review of the methodology used to compile that original analysis and the compilation of timeseries from 1993 to 2004. This chapter looks at the various taxes and provides an initial assessment of who pays and why. The industry breakdown is compiled for the standard 93-industries used for NAMEA[13] plus payments by the rest of the world (non-residents). However, due to quality and disclosure concerns, the data are presented aggregated to the 13-industries shown in the charts below.

6.2 The industry analysis is compiled by the ONS using a variety of sources including:

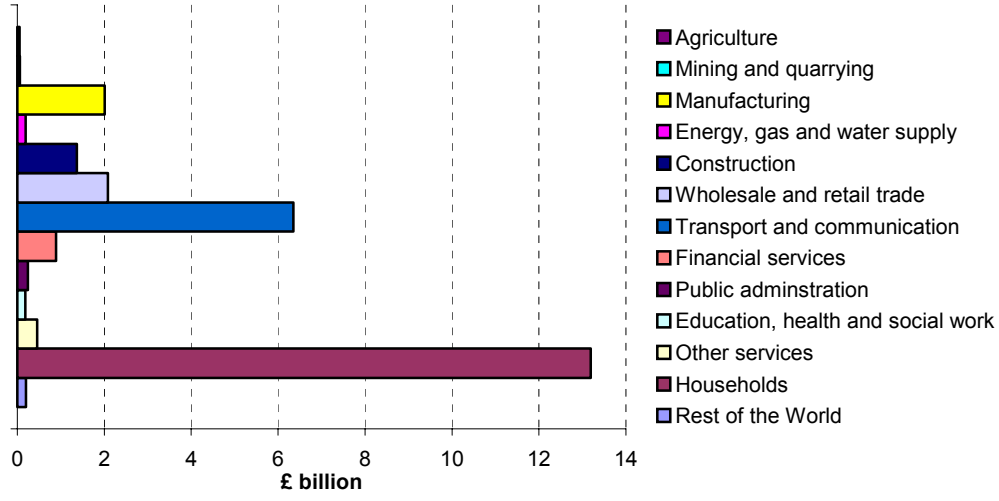
- UK supply-use tables;
- Environmental Accounts energy consumption data;
- International Passenger Survey data;
- Driver and Vehicle Licensing Centre data.

The industry analysis is available from 1993 and will be updated annually when the annual supply-use dataset becomes available.

Energy taxes

6.3 The most significant of all environmental taxes are taxes on energy, which account for 82 per cent of all environmental taxes. Within energy taxes, taxes on hydrocarbon fuels are largest single tax source, accounting for 95 per cent of all energy taxes. Therefore, consumption of hydrocarbon oils is the biggest contributory factor behind the industry analysis. UK households are the largest consumers of hydrocarbon oils resulting in them being the largest source of energy tax revenue. UK households paid £13.1 billion in 2002, just under

Energy taxes: 2003



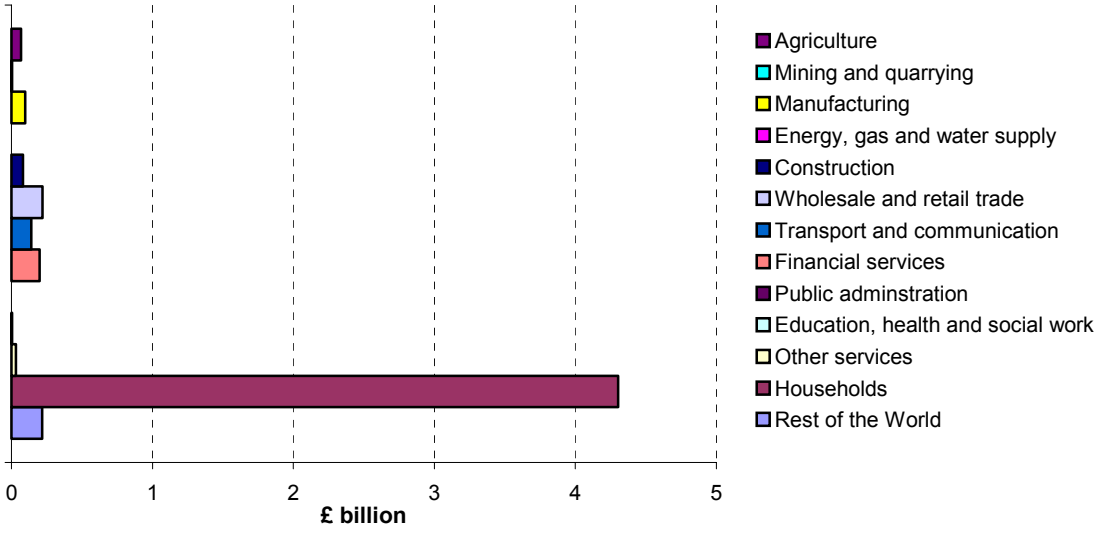
[13] National Accounts Matrix incorporating Environmental Accounts

half of all energy taxes. The next largest sources of revenue are the transport and communication industries who paid £6.7 billion in 2002, 25 per cent of all energy taxes. Once again the vast majority of this revenue was raised through duty on hydrocarbon oils. The impact of other energy taxes such as the Climate Change Levy is only significant for certain industries such as manufacturing.

Transport taxes

6.4 Transport taxes, comprising Vehicle Excise Duty and Air Passenger Duty, are the second largest source of environmental tax revenue, accounting for 16 per cent of environmental taxes in 2003. Vehicle Excise Duty is by far the larger, accounting for 85 per cent of all transport tax revenue. Once again, UK households are the largest source of tax revenue as over 99 per cent of all households own some form of taxable vehicle. UK households paid £4.3 billion in transport taxes in 2003, with Vehicle Excise Duty accounting for £4.6 billion and Air Passenger Duty £0.8 billion. This amounted to 80 per cent of all transport tax revenue in 2003. No other industry or sector contributes more than 4 per cent of the total. The second largest source of transport tax revenue, at £2 billion, is the rest of the world, mainly through payment of Air Passenger Duty.

Transport taxes: 2003

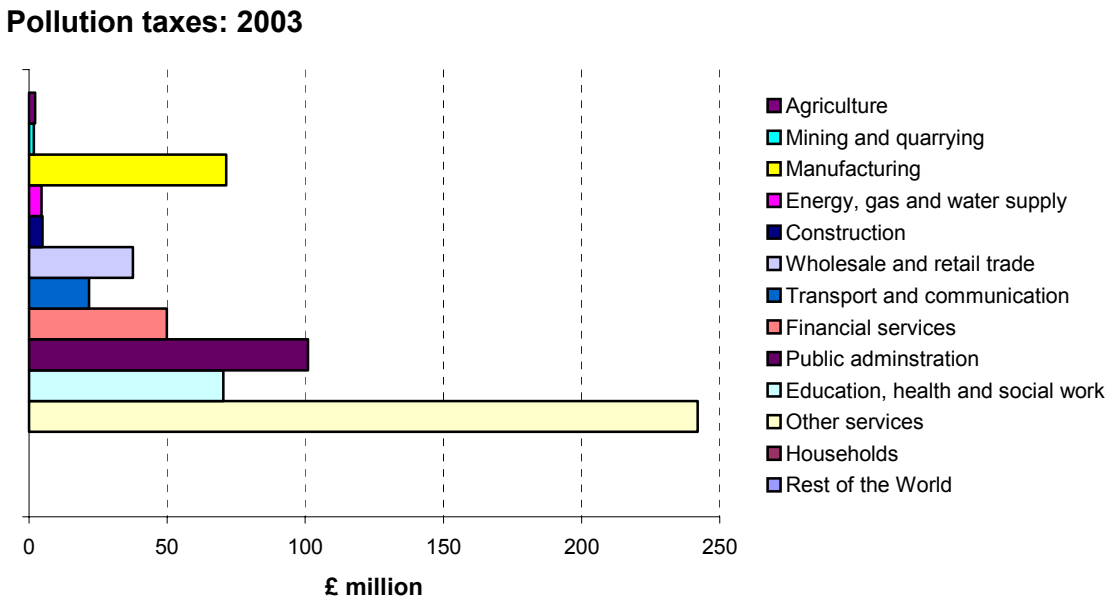


6.5 Transport taxes paid by the transport and communication industries amounted to £1 billion in 2003, just 2 per cent of all transport taxes. This is due to the relatively low proportion of Vehicle Excise Duty paid by those industries. The transport industry in this context comprises road hauliers whose primary activity is road haulage. It excludes haulage and all other vehicles owned by other industries e.g. wholesalers and retailers.

6.6 Payments by the financial services industry are from payments of Air Passenger Duty paid for business travel.

Pollution tax

6.7 Currently the only Pollution tax is the Landfill Tax. The largest sources of Landfill Tax revenue are other services industries, who paid £242 million in 2003. This mainly reflects payments by the waste management companies included under the other services industrial classification. Allocation of Landfill Tax payments is particularly problematic, as it is difficult to identify the original source of the waste. For instance, much of the revenue is paid by waste management services who pass their costs on to their customers. It is here that the difficulty arises, as the customers of the waste management companies are unknown to anyone but the companies themselves. It is clear from the chart that there are no payments by households, one of the main sources of landfilled waste. This reflects the problems in identifying the original source of the waste.



Household waste is collected by private contractors, who charge the respective local authority for the service they provide. The local authority in turn passes much of this cost on to their residents through Council Tax. Therefore, much of the cost for disposing of household waste is met by the households, but it does not show up in this analysis.

6.8 The second largest source of revenue is public administration and reflects the disposals of central government, local authority and the armed services waste.

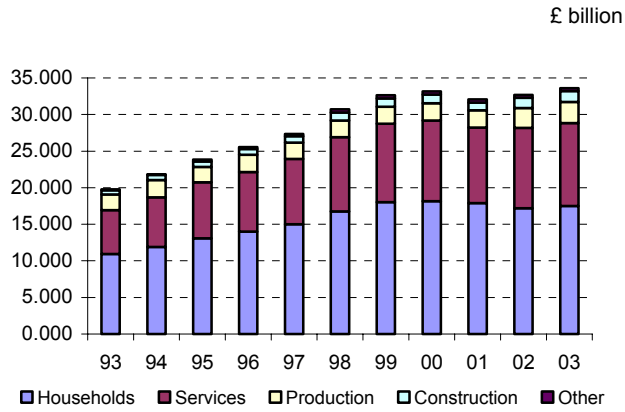
Resource tax

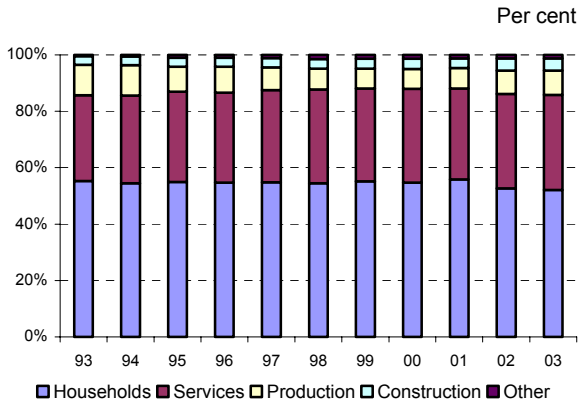
6.9 Currently the only Resource tax is the Aggregates Levy. This is paid on the extraction of aggregate from the natural environment. Therefore, the vast majority, over 99 per cent, is paid by the mining and quarrying industry. However a small amount, less than one per cent, is paid by the construction industry. In 2003, the mining and quarrying industry paid £338 million while the construction industry paid £2 million.

Total payments

6.10 As can been from the charts below, UK households are the largest source of environmental tax revenue. Since 1993, UK households have contributed between 52 to 56 per cent of all environmental taxes. This predominately stems from payments of hydrocarbon duty and vehicle excise duty. The most recent two years has seen a slight downturn in the contribution of households as their proportion fell from 56 per cent in 2001 to 52 per cent in 2003. The contribution of the service sector has also remained relatively stable at between 30 to 34 per cent. Service sector contributions rose slightly in recent years to a peak of 34 per cent in 2003, largely as a result of increased landfill tax payments. The remaining sectors of the economy contribute between 12 to 14 per cent of revenue payments with the largest remaining proportion coming from the productions industries.

Sources of environmental tax revenue





7. An international comparison of environmental taxes

7.1 This part of the review considers environmental taxes as a percentage of total taxes and social contributions in the UK, compared with the other countries of the EU15[14]. This approach rather than for instance, comparing environmental taxes with GDP, has been chosen to try to understand the relative importance of environmental taxes in the overall national tax framework. National differences in the composition of environmental taxes are also included in this review. Finally, there are some conclusions offered regarding the current state of environmental taxes among the EU15, and some ideas suggested for further research.

Overview

7.2 During the period 1995–2003, the member states of the then EU15 have levied a variety of environmental taxes. These range from 'traditional' energy taxes such as those on petrol and diesel, to others that address specific environmental issues. For instance, in response to the burden on landfill, Ireland has introduced a plastic bag tax and Denmark has applied tax to both plastic and paper bags. In response to a different environmental pressure, the Netherlands and Sweden have both introduced an aviation noise tax.

7.3 However, in all the countries included here the composition of environmental tax types levied is broadly similar, with the majority of revenues derived from energy taxes. Transport taxes were the second most significant environmental taxes type, with pollution and resource taxes making up the remainder. During the period 1995 to 2003 total environmental tax revenues have generally risen across the EU15 although as a proportion of total taxes and social contributions they have remained broadly stable.

7.4 The environmental taxes data have been sourced from the Eurostat website[15]. Information regarding the particular taxes levied in individual countries has been taken from the OECD website[16].

Definitions

7.5 For an explanation of the definition of environmental taxes used in this analysis please refer to table 1 on page 7 of this report.

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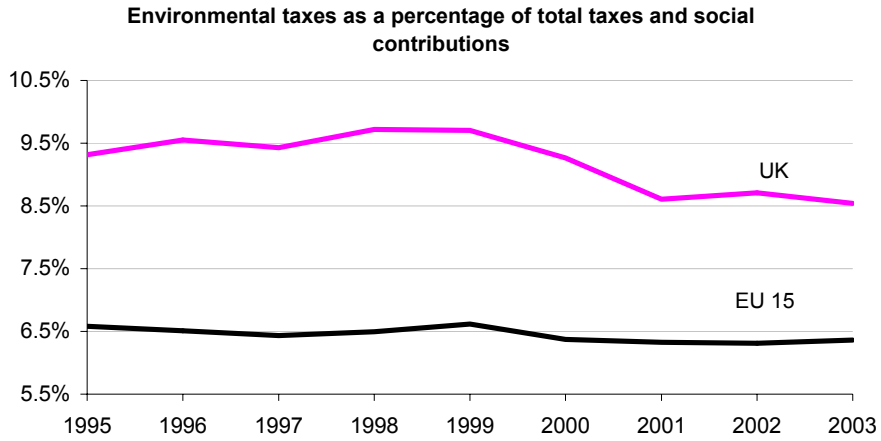
[14] We have concentrated on the EU15 because at the time of writing a full range of data from the EU25 was unavailable.
[15] Eurostat, Environment and Energy
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136239,0_45571447&_dad=portal&_schema=PORTAL downloaded 9/8/2006
Eurostat, Economy and Finance – Government Statistics – Taxes and Social Contributions
http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136173,0_45570701&_dad=portal&_schema=PORTAL downloaded 9/8/2006
[16] OECD tax database - http://www2.oecd.org/ecoinst/queries/index.htm as at 25/10/2005

Total environmental taxes

Chart 1

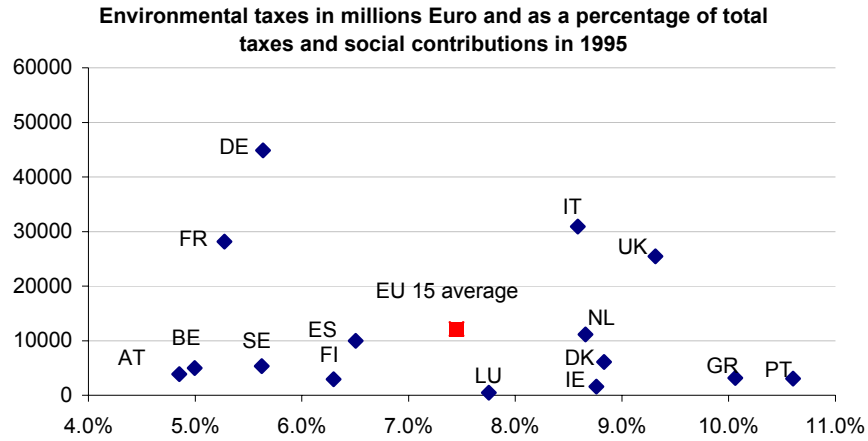


7.6 Chart 1 shows total environmental taxes as a percentage of total taxes and social contributions in the UK and EU15. The UK level is higher than the EU15 in all years by a maximum of 3.2 percentage points in 1998 and a minimum of 2.2 percentage points in 2003. The UK data follows a path that rises in the late 1990s to a peak of 9.7 per cent in 1998 and 1999, before falling to 8.5 per cent in 2003. The UK data reflects the adoption and subsequent cessation of the fuel escalator and the negative impact of the 11th September 2001 terrorist attacks in the USA on transport based revenues.

7.7 Data for the EU15 follows a similar if shallower path, with a noticeable drop between 1999 and 2000. This was driven by falls in that year of total taxes and social contributions for some members of the EU15, particularly France and Germany. Growth in the EU15 since 2000 has been more subdued than in the UK due to more evenly matched increases in environmental and total taxes, which, between 2000 and 2003, were up 5.3 per cent and 5.5 per cent respectively. In contrast, over the same period total taxes and social contributions in the UK rose 10.3 per cent and environmental taxes rise 1.7 per cent.

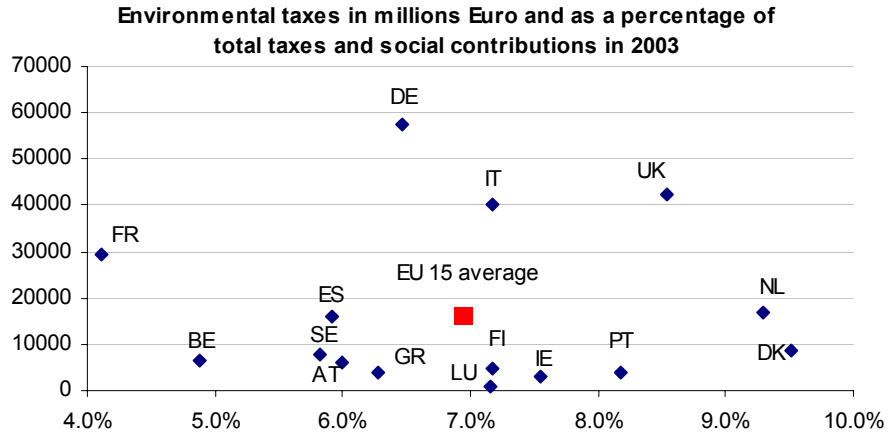
7.8 Charts 2 and 3 below show how total environmental tax revenue and the level of environmental taxes as a percentage of total taxes and social contributions changed for EU15 countries in the years 1995 and 2003.

Chart 2[17]



7.9 Chart 2 shows that in 1995 at 9.4 per cent environmental taxes as a percentage of total taxes and social contributions in the UK were above the average for the EU15. In € million, the UK revenues were also above the EU15 average. The two countries with the highest percentage of environmental taxes to total taxes and social contributions were Portugal and Greece at 10.6 per cent and 10.1 per cent respectively, although in nominal terms environmental taxes in these two countries was less than the EU15 average. The two countries with the lowest percentage of environmental taxes to total taxes and social contributions were Belgium and Austria with 5.0 per cent and 4.9 per cent respectively. The range between countries with the highest (Portugal) and lowest (Austria) percentages of environmental taxes as a proportion of total taxes and social contributions in 1995 was 5.7 percentage points.

Chart 3



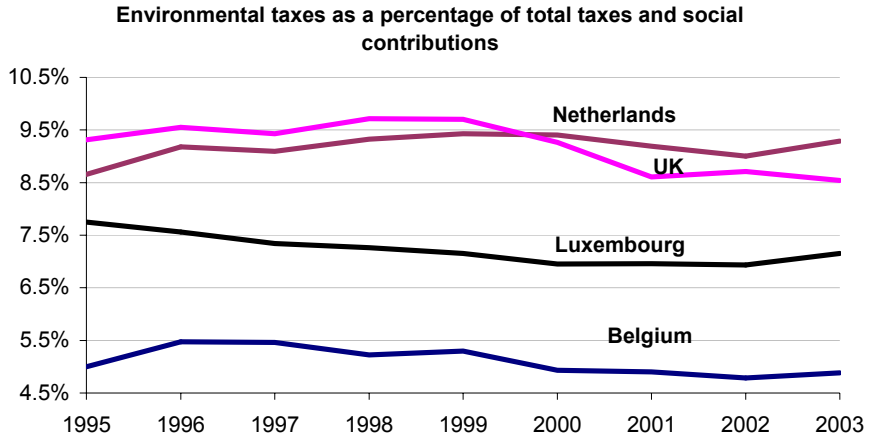
7.10 Chart 3 shows that in 2003 the UK remained above the average for environmental taxes as a percentage of total taxes and social contributions in the EU15. In € million, UK revenues were significantly above the EU15 average. Denmark and the Netherlands are the two countries with the greatest proportion

[17] AT= Austria; BE=Belgium; DE=Germany; DK=Denmark; ES=Spain; FI=Finland;; FR= France; GR=Greece; IE=Ireland; IT=Italy; LU=Luxembourg; NL=Netherlands; PT=Portugal; SE=Sweden; UK=United Kingdom

of environmental taxes as a percentage of total taxes and social contributions, with 9.5 per cent and 9.3 per cent respectively. Although in nominal terms environmental taxes were below the EU15 average in these two countries. In many other nations environmental taxes as a percentage of total taxes and social contributions have fallen compared with 1995, most notably Greece and Portugal. France and Belgium were the two countries with the lowest environmental taxes as a percentage of total taxes and social contributions, accounting for 4.1 and 4.9 per cent respectively. The range between countries with the highest and lowest percentages of environmental taxes as a proportion of total taxes and social contributions in 2003 at 5.4 percentage points was slightly narrower than in 1995.

7.11 The following series of charts detail changes in environmental taxes as a percentage of total taxes and social contributions for a number of European countries, compared with the UK, between 1995 and 2003. Data is presented in four different charts to avoid a large and confusing single chart, the country groupings are arbitrary.

Chart 4

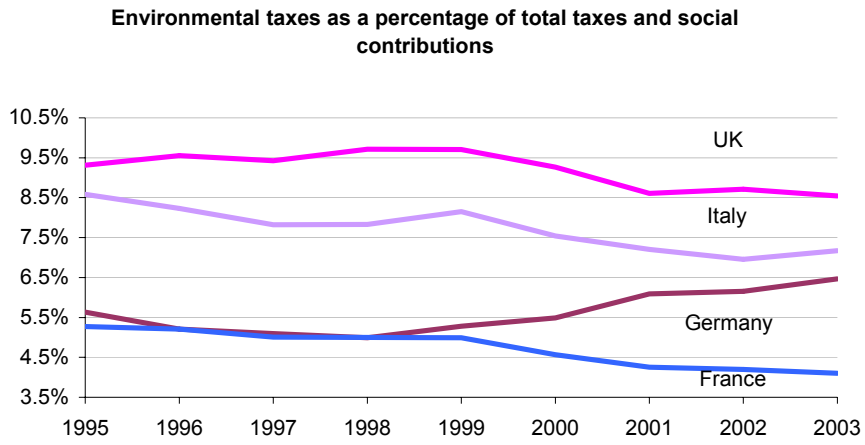


7.12 Chart 4 shows the UK with the highest environmental taxes as a percentage of total taxes as social contributions, of the four countries, in most years. However, in 2000 the Netherlands overtook the UK due to rising percentage of environmental taxes in the late 1990s, mainly driven by higher revenues from energy taxes such as mineral oils, motor vehicle duty and the introduction of Regulatory Energy Tax. This upward trend reversed between 2001 and 2002, when total taxes and social contributions rose 2.3 per cent compared with a marginal rise in environmental taxes. A combination of energy taxes rising at a slower rate than previously and lower revenues from transport taxes led to this reversal. However, environmental taxes in the Netherlands have increased again in the latest year.

7.13 Luxembourg and Belgium share a downward trend through most of the period due to total taxes and revenues growing at a faster rate than environmental taxes, although there has been a slight increase in the latest year. In the UK environmental taxes as a percentage of total taxes and social contributions started to rise in 2001 mainly driven by higher revenues from Vehicle Excise Duty and the introduction of a new environmental tax, the Aggregates Levy. However, this trend has reversed in recent years as

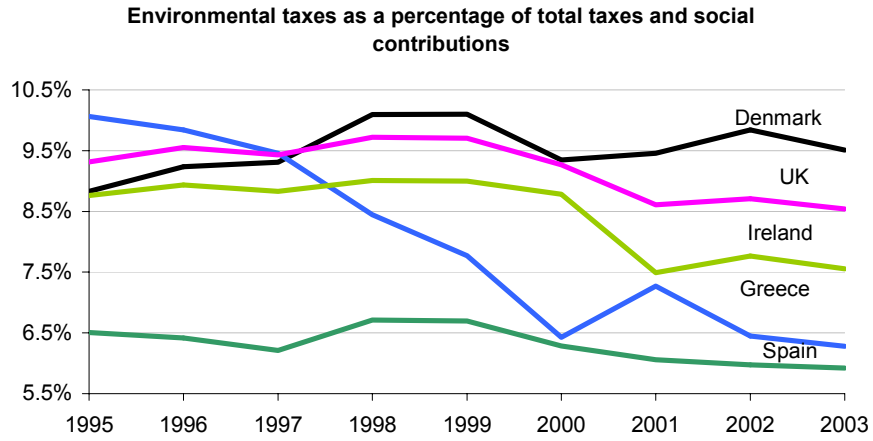
increases in revenues from environmental taxes failed to match those of total taxes and social contributions.

Chart 5



7.14 Chart 5 shows the UK with the highest environmental taxes as a percentage of total taxes as social contributions, of the four countries. France and the UK follow a similar path, especially in the period from 1999 onwards. However, in France environmental taxes form a less significant percentage of total taxes in all years. In Italy, environmental taxes as a percentage of total taxes and social contributions fell between 1999 and 2002 before recovering in the most recent year. This was due to lower revenues from mineral oil and electrical energy taxes. Comparatively high receipts of energy taxes drove the peak in 1999. Receipts amounted to €3.3 billion in 1999 compared with €3.1 billion in 1998 and 2000. In Germany, the trend has been upwards, driven by rises in duty on mineral oils and motor vehicle tax.

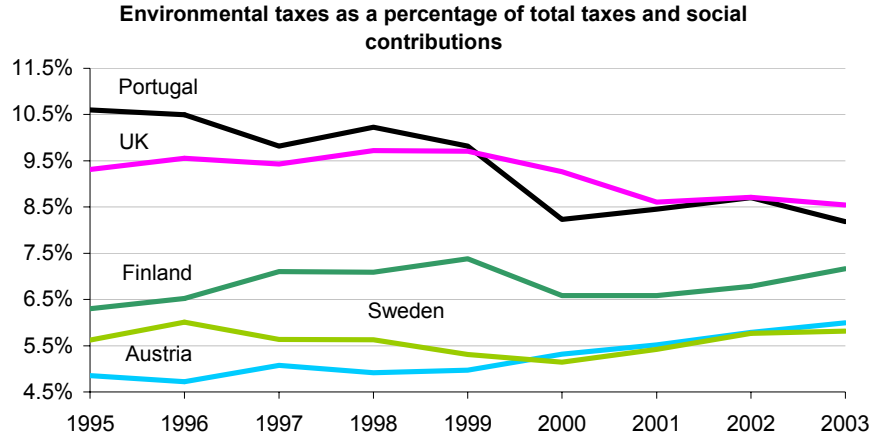
Chart 6



7.15 Chart 6 above shows the UK with the second highest environmental taxes as a percentage of total taxes as social contributions, of the five countries. Denmark has the highest levels from 1998 onwards driven in the main by receipts from energy taxes. However, high rates of environmental tax are supported in Denmark, by a wider range of environmental taxes than exists in many members of the EU 15, including revenues on such items as tyres and disposable tableware. In Greece, levels have fallen sharply in recent

years although there was a brief upturn in 2001. This fall was driven by an almost doubling of total taxes and social contributions compared with a 20.3 per cent rise in revenues from environmental taxes.

Chart 7



7.16 Chart 7 shows the UK with either the highest or second highest level of environmental taxes as a percentage of total taxes as social contributions, of the five countries. All countries show increases in environmental taxes as a proportion of total taxes and social contributions in recent years following a general upturn in revenues from mineral oils. However, Portugal shows a general decline over the period as a result of environmental taxes rising 34.7 per cent compared with total taxes and social contributions increasing 74.5 over the same period. In contrast, Austria shows an increase in environmental taxes of 57.3 per cent driven by revenues from mineral oils and motor vehicle insurance, while total taxes and social contributions rose 27.3 per cent.

Environmental taxes by type

7.17 The data in charts 8 and 9 show that the composition of environmental taxes in the EU15 is similar and changed little over the period 1995 to 2003. The majority of environmental taxes are energy taxes such as those on mineral oils, the next most significant type are transport taxes such as Air Passenger Duty followed by pollution and resource taxes. These last two categories include taxes on waste and material use. The average share of pollution and resource taxes was 2.2 per cent in 1995 and 2.8 in 2003, the share of transport taxes was 23.4 per cent in 1995 and 24.7 per cent in 2003 and energy taxes accounted for 74.4 per cent of total environmental taxes in 1995 and 72.5 per cent in 2003.

Chart 8

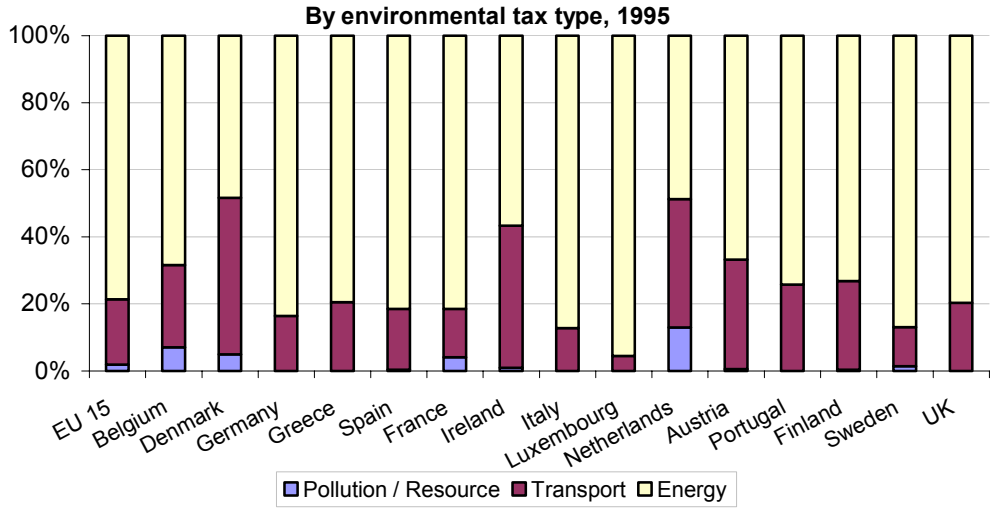
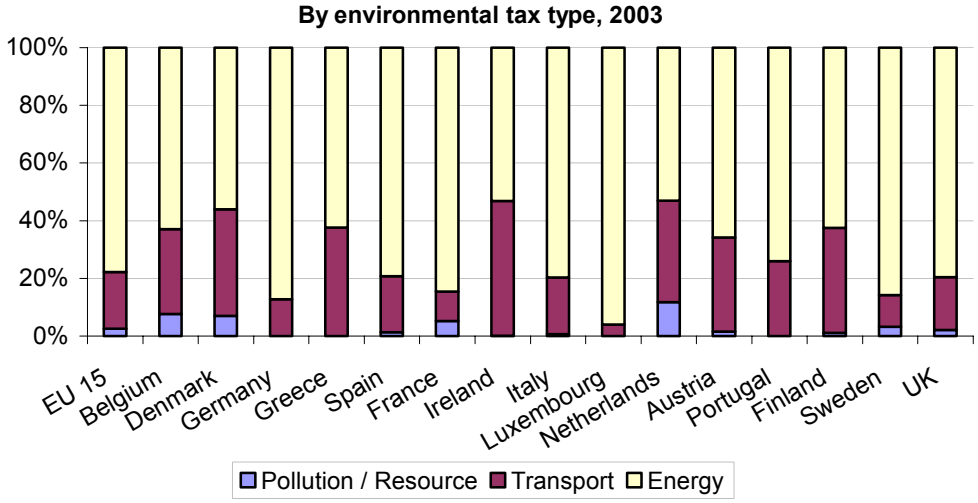


Chart 9



7.18 Denmark, Ireland, and the Netherlands have a comparatively high proportion of transport taxes, amounting to 46.7, 42.4 and 38.3 per cent respectively in 1995. By 2003, these proportions had fallen to 37.0 for Denmark and 35.1 per cent for the Netherlands, while Ireland's proportion of transport taxes rose to 46.7 per cent of total environmental taxes. Germany, Greece, Luxembourg and Portugal have no pollution or resource taxes. In member states where pollution or resource taxes have been introduced revenue levels are low compared with other types of environmental tax.

Conclusions

7.19 There are many similarities between the countries of the EU15 both in terms of the types of environmental taxes levied and environmental taxes as a percentage of total taxes and social contributions. In 2003, the difference between the country with the lowest environmental taxes percentage

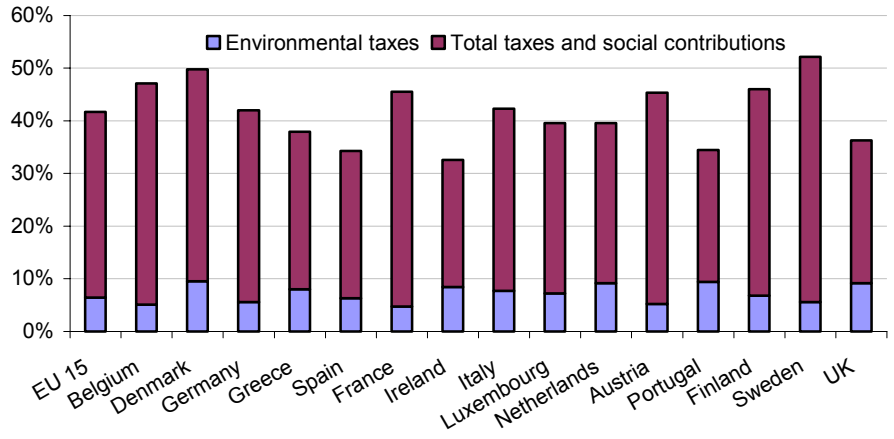
of total taxes and social contributions and the highest was 5.4 percentage points. This perhaps reflects shared environmental priorities and the impact of international trends on tax returns in national economies.

7.20 The proportions of environmental tax types were also similar in the countries reviewed. Although increasingly, more varied types of environmental taxes are being introduced as outlined previously.

7.21 Overall, the UK has one of the highest levels of environmental tax as a percentage of total taxes and social contributions. However, as chart 10 shows, the UK has one of the lowest percentages of total tax to GDP. It is possible that a low level of taxation, compared with other European countries allows the UK government more flexibility to introduce new environmental taxes, or apply higher rates to existing taxes.

Chart 10

Total taxes and social contributions and environmental taxes as a percentage of GDP (average 1995 - 2003)



7.22 Further work on international comparisons could examine environmental taxes in the rest of the world to see whether the trends identified here are part of wider developments in the implementation and impact of environmental tax policies. It may also be useful to produce a Europe wide analysis of environmental taxes by industry to study their relationship with emissions, energy and resource use data.

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