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The future for green taxes

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When the Labour government came to power in 1997 it set out a "statement of intent on environmental taxation" to shift the burden of taxation from 'goods' to 'bads'. It subsequently introduced two new environmental taxes: the aggregates levy and the climate change levy. It also made changes to some existing taxes to increase their environmental impact. The government however, has been criticised subsequently for its "lack of momentum" on its green tax shift.

The 2006 Stern Review said that climate change was a serious global threat which demanded an urgent global response; estimating that if no action was taken, the overall costs and risks of climate change would lead to a reduction in global GDP each year. Since then the government has accepted new legally binding obligations to reduce carbon emissions and to increase renewable energy. Environmental taxes may be one method to help deliver environmental objectives.

This paper sets out to explain environmental taxes and their use in the context of existing and forthcoming policy and legislation; it does not explore the arguments surrounding climate change science. In particular this paper sets out: how green taxes are defined; the arguments for and against their use; Labour government policy on green taxation; the new context for environmental taxation in terms of climate change targets; and proposals for the future use of green taxes.

Louise Smith

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Contents

Summary

There is no official or legal definition as to what a green or environmental tax is. Some may be taxes which have been designed specifically to meet environmental goals; some may be existing taxes which have been restructured to reflect environmental aims; and some may be taxes that have not been introduced for environmental reasons, but may have an environmental impact.

Different definitions of environmental tax are used within government for different purposes: the Treasury uses a definition based on the aims behind the introduction of a particular tax; whereas the Office for National Statistics definition looks more to the effect of a particular tax.

Some of the advantages of green taxes are that: they can drive a switch to less polluting behaviours and practices; they can put the cost of environmentally damaging behaviour onto the polluter; and revenue raised from them can be used to lower other taxes on things such as labour and to increase funding for development of low carbon technologies and renewable energy.

In contrast however, environmental taxes can be regressive and so can be publicly and politically unpopular. In some circumstances domestic environmental taxes can have a detrimental impact on international competitiveness. There are also uncertainties in quantifying the cost of environmental damage, which can make it difficult to translate into a tax. Furthermore, a tax cannot guarantee a particular environmental outcome.

Arguments exist as to whether a green tax system or a carbon trading system is the most effective way to reduce carbon emissions. A cap and trade system, such as the EU Emissions Trading System, sets a limit on the amount of carbon that certain industries are allowed to produce. Through buying and selling of carbon credits, participants can choose either to cut their own emissions, or to pay someone else to cut emissions for them. In a tax-based system the price of pollution is clear, but the impact on emissions generated by it cannot be quantified in advance. With trading the opposite is the case; limits on carbon emissions are known, but the price will depend on trading within the market.

In 1997 the Labour government published a “statement of intent on environmental taxation”. It set out the objective to reform the tax system, shifting the burden of taxation from ‘goods’ to ‘bads’. In 2002 the government said that economic instruments would have a “key role” to play in tackling climate change. Since 1997 two new instruments have been introduced as environmental taxes: the aggregates levy and the climate change levy. The government also made changes to existing taxes to further increase their environmental impact: landfill tax; fuel duty; vehicle excise duty; and air passenger duty.

The Stern Review in 2006 said that climate change presented serious global risks and that delaying action would also damage economic growth. It concluded that developing an explicit price for carbon, either through tax or trading was “essential” in order for participants in the economy to meet the full social cost of their actions.

In December 2008 the European Parliament agreed a climate and energy package to reduce greenhouse gas emissions by 20% by 2020. As part of this the UK also has a national target for 15% of all energy to come from renewable resources by 2020: this is equivalent to almost a seven-fold increase over current levels. Some argue that the current environmental tax regime does not provide enough incentives to develop the renewable energy industry.

Under the Kyoto Protocol the UK has a legally binding obligation to reduce greenhouse gas emissions by 12.5% below 1990 levels by 2012, and is on course to meet this target. International negotiation is currently underway to agree action post 2012. It is hoped that

meaningful global agreement can be reached at the Copenhagen conference in December 2009. The UK government has made clear that public funding will be required to finance future mitigation and adaptation policies both in this country and for developing countries.

The *Climate Change Act 2008* sets the government a legally binding target for greenhouse gas reductions of at least 80% by 2050, and an interim target of 34% by 2020, against a 1990 baseline. Through use of modelling, an independent body, the Green Fiscal Commission has concluded that a green fiscal reform is the only single policy instrument capable of meeting the 2020 target at no extra cost to the economy.

The Sustainable Development Commission and the Environmental Audit Committee have each criticised the government for a "lack of momentum" on its green tax shift. Green taxes, expressed as a proportion of gross domestic product, peaked in 1998 and have fallen subsequently. This, along with the need to meet climate change targets, has led some commentators to argue that new green taxes are needed.

A carbon tax is a tax on users of carbon intensive such as oil, gas and coal. The UK's climate change levy is a version of this, but is levied only on business and not on domestic users of energy. Some academics have suggested that a carbon tax on domestic users would be regressive and could exacerbate fuel poverty in low-income households. To date, the government has ruled out such a tax.

Carbon taxes for industrial and domestic users do exist in some EU states, such as Sweden, Denmark, Finland and Slovenia. Sweden holds the currently Presidency of the EU and is reported to want to push for an EU-wide tax on carbon dioxide. As taxation is a national preserve, this proposal will need unanimous support from all EU states. France has recently announced that it will introduce a carbon tax.

Other proposals for new green taxes have included: an EU carbon dioxide border tax, to prevent firms from trying to avoid environmental protection tariffs by relocating outside the EU; road pricing schemes as a complement to fuel duty, so that the environmental cost of motoring is accounted for; and a windfall tax on oil and gas companies that could be used to drive energy efficiency innovations.

The Conservative Party has stated that it would aim to raise the proportion of total tax revenue that comes from environmental taxes, as replacement, rather than additional taxes. The party has consulted on proposals for: a new carbon levy to replace the climate change levy; a new per-aircraft airline pollution duty, to replace air passenger duty; and a "fair fuel stabiliser" to replace the current fuel tax regime.

The Liberal Democrats have also published proposals to reform the tax system in a revenue neutral way to enable a green tax switch. Proposals include: replacing air passenger duty with an aircraft tax based on the emissions of each aircraft; more steeply graduated vehicle excise duty; reform of the climate change levy; and indexing fuel duty with inflation.

1 What is a green tax?

There is no definitive definition, legal or otherwise, as to what can constitute a green tax. In a forum held by *Taxation* magazine, John Manning, at PricewaterhouseCoopers, suggested that there were three, or possibly four, groups of green tax:

> First you've got the clearly environmental taxes, such as landfill tax and the climate change levy. Then there are the 'quasi-green' taxes such as fuel duties and vehicle excise duties – taxes with a green tinge to them, even though they were never invented as environmental taxes. Third, you have the 'greening of the tax system' where the Government tries to incentivise green policy changes by using the existing tax system. And then finally you have the prospect of carbon pricing, which is effectively a green tax too.[1]

The issue of defining environmental taxation was touched on in a written answer in 2003 from the then Chancellor, Gordon Brown:

> The Chancellor considers a range of relevant economic, social and environmental factors when deciding all taxation policy. Determining a definition of what is an environment tax is therefore difficult as:
>
> - some taxes have been specifically designed to help achieve environmental goals, such as the aggregates levy, landfill tax and the climate change levy;
> - some have been restructured to reflect environmental impacts, such as fuel duty differentials, company car tax and reforms to capital allowances to provide tax incentives for environmentally-friendly technologies;
> - and some taxes were introduced for non-environmental reasons, but can have some environmental impact - for example, air passenger duty.[2]

It is important to note that revenues from environmental taxes do not necessarily indicate the relative importance or the success of environmental policy. A tax intended to discourage environmentally damaging behaviour might be deemed successful if it changed behaviour, but raised very little revenue.

In its annual *UK Environmental Accounts*,[3] the Office for National Statistics (ONS) defines an environmental tax as one "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." In addition to pollution related taxes, all energy and transport taxes are officially classified as environmental taxes. Similar definitions are also used by international bodies such as Eurostat and the OECD.

This methodology separates the effects of taxes from the aims of their introduction. A tax introduced primarily to raise revenue is not therefore precluded from analysis as an environmental tax.

The Treasury Select Committee in 2008 commented on how different definitions of environmental tax are used within government. It highlighted how the Treasury uses a different definition to the ONS:

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1 "Green taxes round table", *Taxation*, 1 February 2007
2 HC Deb 16 July 2003 cc 301-2W
3 See *UK environmental taxes: classification and recent trends*, by Ian Gazley, in Office for National Statistics, Economic Trends No. 635, October 2006

> 84. The Treasury employs a relatively narrow definition of "environmental taxes", using the term to refer to only the climate change levy, the aggregates levy and landfill tax. By contrast, the ONS uses a much broader definition, which includes energy taxes and taxes on transport, such as Air Passenger Duty and Vehicle Excise Duty. The Treasury definition is based on the aims behind the introduction of a particular tax, whereas the ONS definition looks more to the effects of a particular tax.[4]

In its response to the Treasury Committee's report, the government explained that the different definitions have different purposes:

> The two definitions have different purposes. In both cases, the interpretation and use of measures of environmental taxes need care. As the ONS point out, 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).[5]

In its 2009 report into the 2008 Pre-Budget Report, the Environmental Audit Committee asked the Treasury to confirm whether its definition of an environmental tax was one in which the revenues are explicitly hypothecated to environmental ends.[6] In its response to the Committee's report, the Treasury confirmed that its definition of environmental tax is *not* linked to any hypothecation of revenue:

> Where the Treasury refers to environmental taxes, it means the climate change levy, aggregates levy and landfill tax—those taxes that were introduced primarily to have an environmental impact. Each of these taxes was introduced alongside a cut in National Insurance Contributions as part of the shift from 'goods' to 'bads'. Government's spending priorities are not, in general, determined by the way in which the money is raised. Hypothecating revenues to particular spending programmes imparts inflexibility in spending decisions and can lead to a misallocation of resources, with reduced value for money for taxpayers.[7]

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4 House of Commons Treasury Committee, *Climate change and the Stern Review: the implications for Treasury policy*, Fourth Report of Session 2007–08, HC 231, 5 February 2008, para 84

5 House of Commons Treasury Committee, *Climate Change and the Stern Review: the implications for Treasury policy: Government Response to the Committee's Fourth Report of Session 2007–08*, Eighth Special Report of Session 2007–08, HC 495, 30 April 2009. p8-9

6 House of Commons Environmental Audit Committee, *Pre-Budget Report 2008: Green fiscal policy in a recession*, Third Report of Session 2008–09, HC 202, 16 March 2009, para 44

7 House of Commons Environmental Audit Committee, *Pre–Budget Report 2008: Green fiscal policy in a recession: Government Response to the Committee's Third Report of Session 2008–09*, Fourth Special Report of Session 2008–09, HC 563, 8 June 2009, para 17

2 Economic theory of green taxes[8]

2.1 Market failure

Standard economic theory suggests that, in conditions of perfect competition, the free market will ensure that resources are allocated in the most efficient manner possible. No reallocation of resources would result in greater total production or consumer satisfaction. If the free market does not achieve this optimal allocation, *market failure* has occurred.[9]

Instances of market failure provide the theoretical foundation for a wide range of government interventions in the free market. For example:

- National defence is an example of a *public good*. Consumption, though beneficial to all, cannot be restricted to those who are willing to pay for it. There is therefore little incentive for individuals to pay in a free market and it will tend to be under-provided. Other examples include police forces and public information. Such goods may therefore be better provided by the government through taxation.

- Monopoly producers can exploit their dominance in the market to charge prices higher than those consistent with efficiency. In industries with large economies of scale, a *natural monopoly* may be more efficient than several smaller firms. For example, entirely separate parallel utility networks would not be practical. Governments may choose to nationalise firms with natural monopolies, or regulate to ensure more efficient output and pricing.

- *Asymmetric information* can result in market failure. A doctor is likely to know much more about a patient's needs than the patient. In a free market, the doctor may therefore have incentives to advise the patient to have expensive and unnecessary treatment. The Government may therefore choose to provide health services or regulate provision in order to increase efficiency.

Green taxes can be used to address a further instance where markets fail to allocate resources efficiently: markets where there are *externalities*.

2.2 Externalities

In order for a free market to allocate resources efficiently, all benefits of consumption must be enjoyed by consumers and all costs of production must be borne by producers. Where this localisation does not entirely occur, there are said to be *externalities*. These can be positive or negative.

An example of a positive externality is benefits arising to neighbours as a result of someone planting flowers in their front garden. The benefits to neighbours might include a more pleasant view and higher property values. These *social benefits* are in addition to the *private benefits* to the individual purchasing the flowers. Goods with positive externalities tend to be under-provided by the market.

An example of a negative externality is the costs of pollution from a factory. The *social costs* of factory production exceed the *private costs* incurred by the factory owner. These additional costs might include poorer air quality, ill health and lower property prices. Goods with negative externalities are over-provided by the market.

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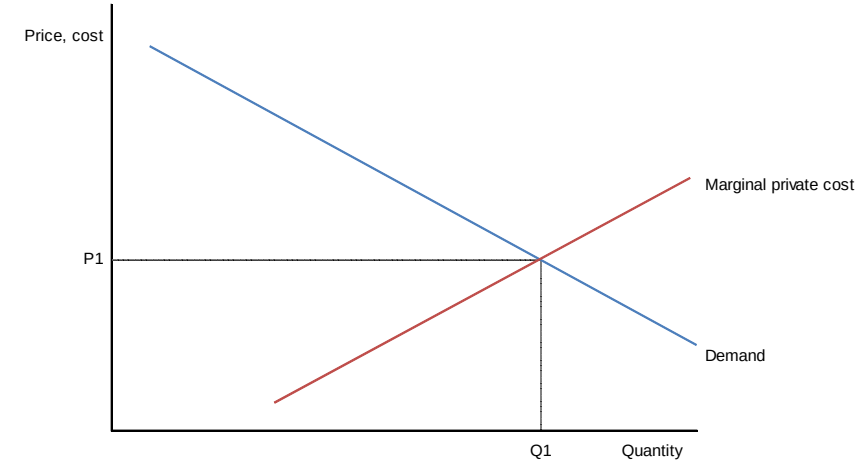
8 By Adam Mellows-Facer, Economic Policy and Statistics Section

9 For an in-depth discussion of market failure and policies to combat it see, for example, Lipsey and Chrystal, *Economics*, Tenth Edition, Oxford 2004, chapter 19

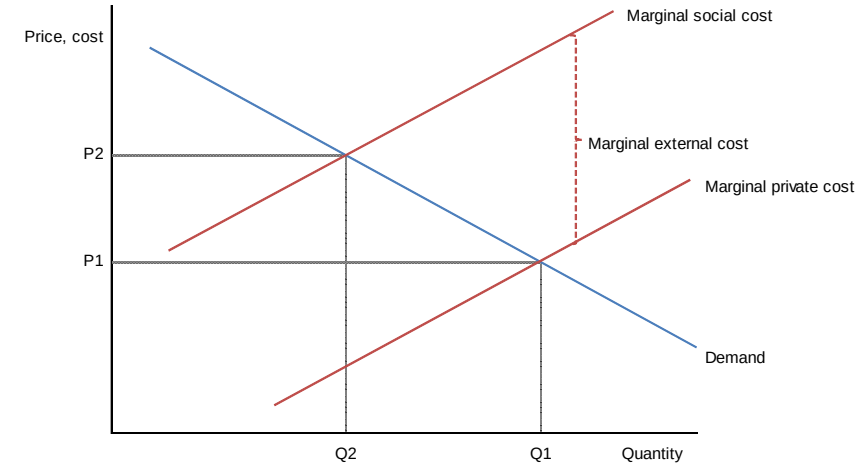
The diagrams below illustrate a negative externality and its effect on optimum price and production. In a free market, the equilibrium is found where marginal private costs equal marginal private benefit (where supply equals demand). This is at price P1 and quantity Q1.

Figure 1



However, this good has external pollution costs which are not borne by the producer. These, shown in Figure 2 by the dotted line, result in higher marginal *social* costs. In this example, the equilibrium point accounting for all costs would be at P2 and Q2, a higher price and lower production level than the market would provide.

Figure 2



Unregulated markets result in more pollution than that which balances total social costs and total social benefits. Governments may choose to intervene in an effort to correct this market failure.

2.3 Policy options

Governments are faced with a wide variety of policy options in seeking to control pollution.

Direct regulation

Direct regulation is a common method of reducing pollution below that generated by an unregulated market. A Government might set emissions standards for vehicles or prohibit the burning of certain goods.

Direct regulation is not an economically efficient method of control. This is because it does not tend to take into account the marginal costs of abatement of each polluter. If a regulation requires each polluter to reduce pollution by the same amount, it is likely that the same reduction could be achieved at lower cost by a different allocation of pollution. This argument is used in favour of international greenhouse gas abatement schemes such as the Clean Development Mechanism. In theory, a given reduction in global emissions is achieved at lower cost by enabling reductions to take place in areas where it is cheapest to do so (often in developing countries).

Emissions taxes and subsidies

The concept of economic externalities was developed by the British economist AC Pigou.[10] Taxes designed to correct market failures resulting from negative externalities are known as *Pigouvian taxes*.

A Pigouvian tax seeks to *internalise* the externality, increasing private costs by the amount of external costs to match social costs. In theory, this means an efficient equilibrium is achieved. This is consistent with P2 and Q2 in Figure 2.

Pigouvian taxes enable pollution to be reduced in each individual firm until the marginal cost of abatement is equal to the tax. They also do not require regulators to specify how pollution should be abated. Instead, the profit motive will lead firms to find the most efficient abatement techniques.

In theory, emissions taxes can achieve economically efficient outcomes. In practice, it can be difficult or extremely expensive, to measure pollution and assess the marginal social damage associated with each unit of it. This might particularly be true when costs are uncertain and suffered well into the future.

Tradable emissions permits

Creating an emissions market is an alternative method of internalising the external costs of pollution. Under such *cap-and-trade* schemes, a government designates a maximum total quantity of pollution and auctions or sells permits to pollute up to this maximum level. These permits can be traded on an open market.

In theory, through the operation of market mechanisms, emissions trading schemes result in the most efficient reduction of pollution. Firms that can reduce pollution cheaply will sell their permits to firms with high abatement costs. A given reduction in pollution is achieved at the lowest cost.

As is the case with emissions taxes, this economically efficient outcome may not be achieved in practice. It can be difficult to monitor emission levels and compliance with the scheme. Such schemes also require regulators to assess the optimal total level of pollution.

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[10] AC Pigou, *Wealth and Welfare*, Macmillan 1912

3 For and against green taxes

The Environment Agency has stated that environmental taxation is most appropriate where the target sector can switch to alternative, readily available, less polluting practices or goods.[11] It has suggested that some of the main advantages of environmental taxes are that they:

- could promote innovation by giving firms financial incentive to change behaviour;
- could apply widely and reach firms and individuals that would be difficult and costly to regulate by other means; and
- that taxes could bring the environment to the boardroom by making it a real cost and thus raising awareness. [12]

In March 2007 the European Commission published a green paper on this issue. It argued that market-based instruments – including environmental taxes – were a proven method of supporting environmental policies, but were under-utilised across the EU.[13] The government broadly welcomed the paper, although was keen to insist that the use of taxes remained very much a national preserve.[14] In its response to the paper, the government said that environmental taxes could be particularly effective when they could play a part in consumer decision making:

> The UK supports the view that the use of economic instruments to achieve environmental policy goals is sensible in principle. It is important, however to consider when economic instruments are best applied and to ensure they are applied at the most appropriate level, either at Member State or Community level. Taxes can be particularly effective where price is an important part of consumer decisions. For example, applying reduced rates of VAT to energy-efficient products and energy-saving materials would provide an incentive for the private consumer to make more sustainable decisions. However in other circumstances mandatory regulation and providing information can be more determinative of consumer decisions.[15]

Another advantage of environmental taxes is that they allow for a cost to be placed on the externalities of polluting behaviour; this concept is sometimes known as the "polluter pays principle". A 2009 paper on green taxes by professional services firm PricewaterhouseCoopers explains further:

> Put simply, most environmental damage is allowed to take place for free, especially the release of greenhouse gases. The public is increasingly becoming aware that there is a serious cost to society of this damage in the economic cost of mitigating its effects and adapting to a warmer planet. An environmental tax is economically efficient as it allows this cost to be captured and allocated to the polluter. The private sector will make the cuts where it is cheaper than paying the tax, where emissions cuts get more expensive they will pay the tax. The challenge is to set the tax at a rate that equals the costs of cutting sufficient emissions to meet global warming stabilisation objectives. It is probable that as global warming progresses and emissions cuts potentially become more urgent, the tax rate will need to increase.[16]

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11 Environment Agency, *Delivering for the Environment: A 21st Century approach to regulation,* June 2007
12 Environment Agency, *Delivering for the Environment: A 21st Century approach to regulation,* June 2007, p16
13 European Commission press notice IP/07/430, 28 March 2007
14 *Thirty fourth report*, 12 October 2007 HC 41-xxxiv 2006-07 pp 84-87
15 HC 41-xxxiv 2006-07 para 19.5
16 PricewaterhouseCoopers, *Time arrives for coordination on green taxes*, 2009

The Green Fiscal Commission is a privately funded independent body made up of experts from business, leading academics, senior MPs from all three main UK political parties, three members of the House of Lords, and representatives from consumer and environmental organisations. It published its final report on green fiscal reform in October 2009. The report argues that a shift to green taxes could help to make the UK less vulnerable to high world energy prices through driving investment into low carbon energy:

> …market-driven increases in, for example, oil prices will stimulate investment into high-carbon substitutes for crude oil (for example, oil shale and tar sands), as indeed has happened with the relatively high oil prices over 2006-08, as well as into low-carbon energy sources. Government taxation, in contrast, can target carbon emissions through a carbon tax, which would penalise high-carbon oil substitutes, and be far more effective in promoting new investment into low-carbon energy sources.[17]

It also argues that green taxes can help to stimulate investment in low-carbon technologies through reinvestment of green tax revenue:

> Green fiscal reform would stimulate investment in the low-carbon industries of the future: investing a small proportion of the revenues from green fiscal reform in energy-efficient homes and vehicles, and in renewable energy development, would accelerate the growth of new low-carbon industries with real export potential, as well as increasing the environmental benefit of green fiscal reform.[18]

The 2006 Stern Review on the Economics of Climate Change[19], (Stern) explained that advantages of environmental taxes were that they could not only discourage "bad" behaviour, but could encourage "good" behaviour if receipts were used to cut other taxes to promote employment. This is sometimes called a "double dividend". Stern cautioned however, that a double dividend would not always be created with environmental tax.[20] This point was also made by a 2006 Institute for Fiscal Studies paper:

> This so-called 'revenue-recycling effect' generates what has been popularly known as a 'double dividend' of reduced environmental damage and increased efficiency of the tax system, all at zero net cost to the exchequer. If a double dividend meant that environmental taxes could be implemented at zero or even negative overall economic cost, then it would provide a justification for their introduction over and above the externalities argument.
>
> However, there is considerable controversy over this view. The major counterargument was the so-called 'tax-interaction effect' – environmental taxes that, for example, raise the price of energy (such as a carbon tax or climate change levy) would typically raise product prices throughout the economy as energy is a key input into most production. This reduces real wages and thus labour supply in a competitive economy.[21]

A similar point here is that taxes designed to encourage a reduction in carbon intensive behaviour can have the effect of transferring revenue to another area of the economy, in which carbon is also used. The cut in emissions can therefore be difficult to quantify.

Some further disadvantages of environmental taxation have been explained by the Environment Agency as being:

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17 Green Fiscal Commission, *The Case for Green Fiscal Reform*, October 2009, p13
18 Green Fiscal Commission, *The Case for Green Fiscal Reform: Executive summary*, October 2009
19 Further information about the Stern Review is given in section 7.1 of this paper
20 HM Treasury, *Stern Review on the Economics of Climate Change*, 30 October 2006, p319
21 Institute for Fiscal Studies, *The UK Tax System and the Environment*, October 2006, p5

- that it is a relatively blunt instrument that may only result in modest environmental improvements;
- that such a tax in itself would not guarantee a positive environmental outcome;
- that a long lead-in time and a high rate may be needed before prices affect behaviour; and
- that taxation may cause undesirable side-effects, such as fly-tipping in order to avoid a landfill tax.[22]

In its Fourth Report of session 2007-08, the House of Commons Treasury Committee explained that using environmental taxes in the context of climate change can be problematic because of the uncertainties around quantifying the costs and benefits of emissions in the real world:

> There are several problems with the application of environmental taxes to real-world scenarios, not least determining the level at which the tax should be set in the first place, and designing a system that is flexible enough to cope with changing circumstances. In the case of climate change, these problems are magnified because the costs (and benefits, if any) of current emissions are uncertain, and will be felt over extremely long time horizons. The Government must take great care in designing environmental taxes, but nevertheless we are firmly of the view that environmental taxes are a useful and valuable tool to combat carbon emissions.[23]

Environmental taxes can also be regressive and be a disproportionate burden on low-income households. A working paper produced for the European Commission in June 2009 on the role of fiscal instruments in environmental policy, explains this further:

> Taxing such goods may put a disproportionate burden on low-income households who spend more on these goods in relative terms (i.e. as a share of household income) than high-income households. Empirical evidence indicates that taxes on electricity and heating may indeed have a regressive impact, as low-income households generally spend a larger share of their total spending on these items than high-income households. Transport taxes, in contrast would burden relatively more higher-income than lower income groups. As a result of these two counteracting effects the distributional impact of energy taxation as a whole tends to be moderately regressive. The distributional impacts of pollution taxes are however generally found to be neutral.[24]

The paper also explores the possible impact of domestic environmental taxes on international competitiveness:

> (b) International competitiveness may be adversely affected, when a country unilaterally sets taxes on industrial inputs, in particular on energy. This increase of production costs could put local firms in a competitive disadvantage, with, as possible consequences, firms relocating to other regions or losing market shares to foreign competitors. The sectors that are particularly vulnerable in this respect are the ones with high energy-intensity, a large share of internationally-traded products and a low capacity to pass through cost increases to market prices. If the production moves

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22 Environment Agency's, *Delivering for the Environment: A 21st Century approach to regulation,* June 2007, p16

23 House of Commons Treasury Committee, *Climate change and the Stern Review: the implications for Treasury policy*, Fourth Report of Session 2007–08, HC 231, 5 February 2008, para 80

24 Kosonen, K. and Nicodème, G., *The role of fiscal instruments in environmental policy*, June 2009, p7-8

> permanently away from the region applying the strict environmental policy, the reduction of emissions would be offset by an increase in other regions and global emissions would be barely affected. In the case of energy and carbon taxation, the phenomenon is referred to as "carbon leakage". However, existing empirical evidence does not give so far strong support to any major negative competitiveness effects of environmental tax reforms or carbon leakage. This is not surprising as such, since all the countries that have carried out more ambitious green tax reforms, have also taken measures to protect their most vulnerable industries from the losses of competitiveness, for instance, by exempting these sectors partly or totally from these taxes. In addition, revenue recycling, which reduces indirect labour costs for the employers, helps to mitigate the adverse competiveness effects of environmental taxation.[25]

Finally, a 2009 *Green Tax Report* by the Chartered Institute of Taxation has argued that a disadvantage of environmental taxation can be its public perception:

> Environmental taxes are politically unpopular. People tend to dislike them more than other taxes, and to regard them as an illegitimate source of general government revenues. There are a number of possible reasons for this:
>
> - energy taxes affect highly valued forms of consumption (e.g. driving, flying);
> - energy taxes have become regarded as 'stealth' taxes – because energy taxes can be (but do not need to be) regressive, they are regarded as unfair;
> - energy taxes (like other consumption taxes) are not related to ability to pay;
> - environmental taxes should be intended to change behaviour, not raise revenue – revenues deriving from them should therefore be hypothecated back to promote the behaviour change.
>
> In addition, where environmental taxes are proposed as part of an environmental tax reform, people do not trust governments to implement the environmental taxes in a fiscally neutral way. The identification of such taxes as 'stealth' taxes exacerbates this lack of trust. It may also be noted that the promise of revenue neutrality conflicts with a perceived need for hypothecation (which implies an increase in overall taxation).
>
> However, both factors – the lack of trust and the demand for hypothecation – tend to limit the politically feasible scope for environmental taxes.[26]

Polling research conducted for the Green Fiscal Commission (GFC) in 2007 by the British Market Research Bureau however, suggested that there was public support for green taxes. The GFC found that public support rose if taxes were hypothecated or if they would lead to a reduction in other taxes:

> There was substantial support in principle for green taxes - 51 per cent support against 32 per cent opposition. There was a significant increase in support if revenue is hypothecated to be spent on projects to directly reduce carbon dioxide emissions. Support rose to 73 per cent and opposition fell to 17 per cent.
>
> Support for green taxes rose even higher if other taxes were to be reduced at the same time. Support was 77 per cent vs. 9 per cent opposition. [27]

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25 Kosonen, K. and Nicodème, G., *The role of fiscal instruments in environmental policy*, June 2009, p8-9
26 Chartered Institute of Taxation, *Green Tax Report*, May 2009, p11
27 Green Fiscal Commission, *Public Opinion on a Green Tax Shift*, Briefing Paper Three, June 2009, p2

4 Taxes versus trading

4.1 Tax versus trading in theory[28]

In theory, both taxes and trading schemes can achieve identical and economically efficient reductions in pollution. As environmental economist Weitzman noted, "from a strictly theoretical point of view there is really nothing to recommend one mode of control over the other".[29]

Achieving this efficiency through taxes requires the regulator to calculate the equilibrium price of the polluting good, P2 in Figure 2 (see page 6). The optimum quantity of production, Q2, then results. Achieving efficiency though a cap-and-trade scheme requires the regulator to calculate the equilibrium production of the polluting good, Q2. The optimum price, P2, then results. Knowing these equilibrium levels requires the same, perfect, information:[30]

> A reason often cited for the theoretical superiority of prices as planning instruments is that their use allegedly economizes on information. The main thing to note here is that generally speaking it is neither easier nor harder to name the right prices than the right quantities because in principle exactly the same information is needed to correctly specify either.

In practice, regulators operate in conditions of imperfect information and exact equilibrium prices and production are unlikely to be achieved or maintained. The most effective policy instrument for reducing pollution will depend on the costs of monitoring and administering each scheme and the relative costs associated with uncertain output, in the case of taxes, and uncertain pricing, in the case of trading schemes. A tax may be preferred because it can be fixed at a perceived fair level. It also generates government revenue, which is not the case with a permit trading system unless permits are sold, rather than distributed for free, by the government. Alternatively, a government may prefer a trading scheme, because it provides certainty that a given reduction in pollution can be achieved.

An alternative suggestion is a *safety valve* scheme, which is a hybrid of price and quantity control mechanisms. Pollution is traded through a permit scheme, but polluters have the option of trading with the government at a predetermined maximum or minimum price. The government can directly manage both the quantity and price of pollution, but not both at once.[31] Such schemes have been included in various US proposals to reduce greenhouse gas emissions in an attempt to protect against unexpectedly high permit costs.[32]

4.2 Tax versus trading: reducing carbon emissions

Arguments exist as to whether an environmental tax system or a trading system for carbon is the most effective way to reduce carbon emissions.

The Stern Review, concluded that both systems could be effective at reducing carbon emissions, provided that there was international agreement as to their use and that any system was based on a long-term stabilisation target for carbon dioxide levels:

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28 By Adam Mellows-Facer, Economic Policy and Statistics Section

29 Martin L. Weitzman, *Prices vs Quantities*, *The Review of Economic Studies*, Vol. 41, No. 4 (October 1974), pp. 477-491

30 *Ibid*

31 See, for example, Henry D. Jacoby and A. Denny Ellerman, *The Safety Valve and Climate Policy*, *Energy Policy* Vol. 32, Issue 4 (March 2004), pp. 481-491

32 See, for example, Dallas Burtraw, Karen Palmer and Danny Kahn, *A Symmetric Safety Valve*, Resources for the Future Discussion Paper 09-06, February 2009

> …a long-term stabilisation target should be used to establish a quantity ceiling to limit the total stock of carbon over time. Short-term policies (based on tax, trading or in some circumstances regulation) will then need to be consistent with this long-term stabilisation goal. In the short term, the amount of abatement should be driven by a common price signal across countries and sectors, and should not be rigidly fixed.
>
> This common price signal could – in principle – be delivered through taxation or tradable quotas. A country can levy taxes without consultation with another, but harmonisation requires agreement. In practice, therefore, it may prove difficult to use taxes to deliver a common price signal in the absence of political commitment to move towards a harmonised carbon tax across different countries. In contrast, to the extent that a tradable quota scheme embraces both different countries and sectors, it may be an effective way of delivering a consistent price signal across a wide area – though this, of course, requires agreement on the mechanics of the scheme. […]
>
> In summary, a tax-based approach will automatically generate public revenues, whereas a tradable-quota approach will only generate revenues if quotas are sold. Requiring firms to pay for the right to pollute is consistent with a move to raise revenue via the taxation of 'bads' rather than 'goods'. In the case of climate change, where understanding of the potential damage caused by emissions continues to improve, there is a strong argument for shifting the balance of taxation. In the case of tradable quotas, there are good economic reasons for moving towards greater use of auctioning over time, though the transition will need to be carefully managed – in particular, to ensure a robust revenue base.[33]

In December 2008 the government's independent advisory body, the Committee on Climate Change, speculated that a global carbon trading market was more likely to emerge as the way forward to establish a global carbon price, but said that environmental taxes may still have a part to play:

> In principle a global carbon price could be imposed by either a carbon tax or a global cap and trade scheme. Both have theoretical advantages and disadvantages. A global carbon tax could provide a less volatile carbon price (which helps investment decisions) and more certainty on abatement costs. On the other hand a global cap and trade scheme may be preferable if exceeding the absolute emission reduction target implies major risks.
>
> In practice a global carbon market is more likely to emerge as the way forward because of the difficulties associated with coordinating taxation across national borders and because the expected evolution of the climate change policy framework towards absolute emission targets lends itself to emission trading. Nonetheless taxes have a role to play in pricing carbon at a national level. In sectors where there are large numbers of small emitters the transactions costs associated with emission trading may be undesirably high and a tax may be preferable.[34]

Recently, the Committee also suggested a tax could be used to prevent a carbon price falling below a certain level in order to strengthen the carbon price signal in the EU Emissions Trading Scheme and to support investment in low-carbon electricity generation capacity.[35]

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33 HM Treasury, *Stern Review on the Economics of Climate Change*, 30 October 2006, p315, 319-320

34 Committee on Climate Change, First Report: *Building a low-carbon economy - the UK's contribution to tackling climate change,* 1 December 2008, p155

35 Committee on Climate Change, *Meeting Carbon Budgets – the need for a step change: Progress report to Parliament*, October 2009 p144

For further information about carbon trading schemes, see Library Standard notes: *EU ETS: Background and Phase I*, SN/SC/3408, 8 June 2009; and *EU ETS: Phase II and III*, SN/SC/5092, 8 June 2009.

5 Labour government and green tax

5.1 Statements of intent on environmental taxation

In collaboration with the first Budget following the Labour party's General Election victory in July 1997, the then Chancellor Gordon Brown published a "statement of intent on environmental taxation". It made clear that the government intended to reform the tax system, shifting the burden of taxation from 'goods' to 'bads':

> The Government's central economic objectives are the promotion of high and sustainable levels of growth and high levels of employment. By that we mean that growth must be both stable and environmentally sustainable. Quality of growth matters; not just quantity. Delivering sustainable growth is a task that falls across government. It will be a core feature of economic policy under this administration. The Treasury is committed to that goal.
>
> How and what governments tax sends clear signals about the economic activities they believe should be encouraged or discouraged, and the values they wish to entrench in society. Just as work should be encouraged through the tax system, environmental pollution should be discouraged.
>
> To that end, the Government will explore the scope for using the tax system to deliver environmental objectives - as one instrument, in combination with others like regulation and voluntary action. Over time, the Government will aim to reform the tax system to increase incentives to reduce environmental damage. That will shift the burden of tax from "goods" to "bads"; encourage innovation in meeting higher environmental standards; and deliver a more dynamic economy and a cleaner environment, to the benefit of everyone. But environmental taxation must meet the general tests of good taxation. It must be well designed, to meet objectives without undesirable side-effects; it must keep deadweight compliance costs to a minimum; distributional impact must be acceptable; and care must be had to implications for international competitiveness. Where environmental taxes meet these tests, the Government will use them.[36]

In 2002 HM Treasury published *Tax and the environment: using economic instruments*, which reaffirmed this approach:

> The Government has discussed its approach to environmental taxation and the key issues with a range of stakeholders over summer 2002. This paper draws upon these discussions and describes how the approach will continue to be developed in the light of experience. It also describes how taxation can be used as one of a range of measures, and the ways in which it can be linked with other approaches such as regulation, information, tradable permit schemes and voluntary agreements.
>
> 1.9 This paper does not set new environmental objectives for Government. Instead, it shows how the Government can meet existing and evolving objectives in the most efficient and effective way. The Government believes that these principles, and the lessons from the UK's experience with environmental economic instruments, should

[36] HM Treasury press notice, *Tax measures to help the environment*, 2 July 1997. The Chancellor had mentioned this statement in his Budget speech (HC Deb 2 July 1997 c 311).

> continue to be used at home, in the EU and internationally to help frame policy responses to the next key environmental challenges.[37]

The government further stated that economic instruments would continue have a "key role" to play in tackling climate change.[38]

In December 2005 the government set out its key criteria for its environmental tax strategy. It reaffirmed the commitment to shifting the burden of tax from goods to bads:

> Box 7.1: Principles of environmental policy making
>
> *The decision to take action must be evidence-based:* In order to determine the case for intervention, it is necessary to understand the nature of the environmental challenge and its causes, including market failures. If a market failure has been identified and understood, the Government can then consider what form of intervention is required to achieve a change in the relevant behaviour.
>
> *Any intervention to tackle environmental challenges must take place at the appropriate level:* Some environmental issues have localised causes and consequences and can be tackled on a domestic level unilaterally. Some environmental issues cross national borders and need to be tackled collectively and internationally if policy is to be effective.
>
> *Action to protect the environment must take account of wider economic and social objectives:* Failure to consider the full outcomes and consequences of any action before making the decision to go ahead could result in benefits to the environment but undermine efforts to pursue other important goals. In particular, environmental objectives need to be balanced against other objectives including sound public finances, increasing productivity, expanding economic and employment opportunities, and promoting a fair and efficient tax system.
>
> *Action on the environment must be as part of a long-term strategy:* Short-term action should support and not hinder our ability to deliver long-term objectives. Indeed, intervention needs to take account of the long-term nature of many environmental challenges, and of the potential for innovative solutions to be developed in the future.
>
> *The right instrument must be chosen to meet each particular objective:* The most efficient approach will be the one that provides the greatest overall economic benefit. Tax is one option but must be considered alongside an analysis of other approaches such as regulation, information, public spending, tradable permit schemes and voluntary agreements.
>
> *Where tax is used, it will aim to shift the burden of tax from 'goods' to 'bads':* Taxes represent a means to signal economic activities that should be encouraged or discouraged, and are a way to ensure that the polluter pays. The revenue from an environmental tax can be used to reinforce the effectiveness of the tax when it provides value for money and benefits to business.[39]

5.2 New green taxes

Following the 1997 Statement of Environmental Principles, two new instruments have been subsequently introduced as environmental taxes: the aggregates levy, and the climate change levy.

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37 HM Treasury, *Tax and the environment: using economic instruments*, November 2002, p2
38 HM Treasury, *Tax and the environment: using economic instruments*, November 2002, p2-3
39 HM Treasury, *Pre-Budget Report 2005*, 5 December 2005, p150

Aggregates levy

The proposal for a new levy to be charged on the extraction of aggregates was first broached by the then Chancellor, Gordon Brown, in the July 1997 Budget.[40] Following research into the environmental costs of aggregate extraction – and discussions with the industry about the use of voluntary measures to improve its environmental performance – Mr Brown confirmed in the 2000 Budget that a levy would be introduced in April 2002.[41] Details on the structure of the levy were published in the 2001 Budget:

> As announced in Budget 2000, **the aggregates levy will be introduced in April 2002 at £1.60 per tonne …** The levy will ensure that the environmental impact of aggregates extraction are more fully reflected in prices and encourage a shift in demand away from primary aggregate towards alternatives such as recycled construction and demolition waste and china clay waste. It will also encourage the more efficient use of all aggregates, greater resource efficiency in the construction industry, and the development of a range of other alternatives including the use of waste glass and tyres in aggregate mixes.[42]

It was anticipated that the new charge would raise about £200 million in first year – with its receipts being recycled through a cut in employers' National Insurance Contributions (NICs) and a new 'Sustainability Fund'.[43] The rate of the levy has been increased twice since its introduction, to take account of inflation: since 1 April 2009 the rate has been £2.00 per tonne. It is estimated the levy raised £334 million in financial year 2008/09.[44] In the government's view the levy has "has been a significant factor in reducing sales of virgin aggregates in England by around 18 million tonnes between 2001 and 2005, with an estimated increase in the use of recycled aggregate of nearly six million tonnes."[45]

Further information about this tax can be found in Library Standard note, *Aggregates Levy*, SN/BT/1196, 10 September 2009.

Climate change levy

In his 1999 Budget the then Chancellor announced a new climate change levy on the business use of energy, with offsetting cuts in employers' National Insurance contributions (NICs).[46] The proposal for this type of levy had been made in a report commissioned by the government from Lord Marshall, then chairman of British Airways, published the year before.

The levy came into force from 1 April 2001, charged on electricity, gas, liquefied petroleum gas and solid fuels, when supplied to business.[47] At this time, the rate of NICs paid by employers on employee earnings (known as secondary Class 1 NICs) was cut from 12.2% to 11.9%, although NIC rates for both employees and employers have risen since then. Energy used by the domestic sector and public transport is exempt from the levy. In addition, under a system of Climate Change Agreements (CCAs), energy intensive firms are allowed an 80 per cent reduction in the levy provided they agree to increase energy efficiency and reduce emissions.[48]

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40 HC Deb 2 July 1997 c311
41 HC Deb 21 March 2000 c869
42 *Budget 2001* HC 279 March 2001 pp 118-119
43 HC Deb 29 October 2002 c685
44 HM Revenue & Customs, *Aggregates Levy : Statistical Bulletin*, June 2009
45 Budget 2009 HC 407 April 2009 para 7.67
46 HC Deb 9 March 1999 c181
47 *Budget 2001* HC 279 March 2001 paras 6.19-22
48 Details on the scope of the levy are given in, HM Revenue & Customs, *A general guide to Climate Change Levy: Notice CCL1*, July 2009

In 2005 the government published an assessment of the levy which projected that by 2010 it would have reduced energy demand in the commerce and public sector by around 15%, saving around 12.8 million tonnes of carbon dioxide ($MtCO_2$) a year.[49] The government estimates that the levy, along with the system of CCAs, will be responsible for around a third of all the carbon savings achieved by UK policy by 2010: around 20 $MtCO_2$ a year. By comparison the EU's Emissions Trading Scheme is anticipated to be reducing the UK's emissions by around 29 $MtCO_2$ a year by this stage.[50]

In the 2006 Budget the government announced that from 1 April 2007 the rates of the levy would be increased in line with inflation each year;[51] as a result, duty rates have been increased three times since then. The levy raised £716m in 2008/09.[52]

Further information about the climate change levy can be found in Library Standard note, *Climate change levy,* SN/BT/235, 20 November 2009.

5.3 Other green taxes

The Labour government has also made changes to some of the taxes that it inherited from the previous Conservative government: landfill tax; fuel duty; vehicle excise duty; and air passenger duty. It has further emphasised the role that these taxes can play in helping to address environmental concerns.

Landfill tax

Landfill tax was introduced on 1 October 1996: this country's first tax with an explicit environmental purpose. It is administered by HM Revenue & Customs and collected from landfill site operators.[53] It is charged at a standard rate per tonne on 'active wastes' (such as household wastes that decay), and at a lower rate on inactive or inert wastes.

When the tax was first introduced, the standard rate of tax was £7, and the lower rate was £2. Following concerns about the limited environmental impact the new tax was having, the standard rate of tax has been increased consistently since 1999. In that year the government committed to increasing the rate of tax by at least £1 a tonne each year.[54] This 'duty escalator' was increased to £3 a tonne in 2005, and then to £8 a tonne in 2007. At present the standard rate is £40 per tonne, whereas the lower rate of tax is £2.50, having been increased just once, in April 2008. The tax raised £420 million in its first year of operation;[55] it is estimated it will raise £1 billion in financial year 2008/09.[56] Since the introduction of the tax, the proportion of waste sent to landfill has fallen by around a third, accompanied by a similar increase in recycling.

In the 2009 Budget the government stated that it would continue to increase the standard rate of tax by £8 a tonne each year at least until 2013.[57] For further information about landfill tax see Library Standard Notes:

- *Landfill tax: introduction & early history*, SN/BT/237, 6 October 2009; and

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49 *Budget 2005* HC 372 March 2005 p159

50 Environmental Audit Committee, *Reducing Carbon Emissions from UK Business: The role of the Climate Change Levy and Agreements*, 10 March 2008 HC 354 2007-08 pp7-8

51 HC 968 March 2006 para 7.33

52 HM Revenue & Customs, *Climate Change Levy Bulletin*, August 2009 (table 1)

53 Initially the tax was administered by HM Customs & Excise; the department was merged with the Inland Revenue in April 2005.

54 HM Treasury, *Budget 1999*, 9 March 1999, para 5.72

55 HC Deb 31 July 1998 c 667W

56 HM Treasury, *Budget 2009* HC 407 April 2009 p231

57 HC 407 April 2009 para 7.61

- *Landfill tax: recent developments*, SN/BT/1963, 6 October 2009

Fuel duty

Excise duty is charged on most hydrocarbon oils: leaded, unleaded, ultra-low and sulphur-free petrol; conventional, ultra-low sulphur and sulphur-free diesel; gas oil and fuel oil, aviation gasoline, biofuels and road fuel gas. Notably, aviation kerosene (AVTUR) which used in jet engines is exempt from duty under international agreement.

In his 2009 Budget speech the Chancellor announced an increase in excise duty on road fuel, Mr Darling said, "I will continue to monitor oil prices, but I expect that fuel duty will increase by 2p per litre in September, and then by 1p a litre above indexation each April for the next four years."[58] Over the period 1993-1999 Conservative and Labour governments operated an escalator[59] on road fuel duties; this proved unpopular, as prices rose strongly reflecting trends in world demand. In the 1999 Pre-Budget Report, the government announced that the escalator would stop, with duty levels being set on a Budget-by-Budget basis instead.[60] Following this Pre-Budget Report, the government has increased road fuel duties sporadically, often deferring or cancelling proposed changes when oil prices have been relatively high.

For example, pump prices for petrol and diesel were an average of 80.2p and 82.3p during the 'fuel crisis' of September 2000. The rising trend in pump prices led to a public campaign for drivers to boycott petrol stations. Panic buying and blockades of refineries caused widespread shortages across the country by mid September. In his Pre-Budget statement in November 2000, the then Chancellor, proposed that the main duty rates would be frozen up to April 2002, and the rates on ultra low sulphur petrol and ultra low sulphur diesel would be cut in the March 2001 Budget – by 2 pence and 3 pence a litre respectively – changes he confirmed in his 2001 Budget.[61] Although these low sulphur alternatives were relatively new to the market at this time, they are now the main categories of fuel used on the road.

From summer 2007 to summer 2008, the price of road fuels rose faster than at any time in recent history. Typical retail prices in July 2008 were 118.5p per litre for petrol and 132.1p per litre for diesel. The strong growth in road fuel prices led to many calls, particularly from the haulage sector, for the government to amend its policy toward taxing road fuel – and on 17 July 2008 the government postponed a 2p duty increase planned for 1 October 2008. Prices fell sharply in late 2008, but more recently have started to rise again: pump prices for petrol and diesel were 97.7p and 103.3p in May 2009.

In the Pre-Budget Report in November 2008, the government announced that duty rates would rise by 2p on 1 December 2008, and a further 1.84p on 1 April 2009.[62] Taken with the rate rises announced in Budget 2009, receipts from road fuels are projected to rise from £24.6 billion in 2008-09 to £26.6 billion in financial year 2009/10.[63] The Budget 2009 rise was announced as needed "to support the move towards a low-carbon and resource efficient economy".[64]

For further information on fuel duty, see Library Standard Note, *Taxation of road fuels*, SN/BT/824, 7 October 2009.

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58 HC Deb 22 April 2009 c244
59 An escalator is a commitment to increase duty rates annually in real terms by a given percentage
60 HM Treasury, *Pre-Budget Report 2009*, November 1999, para 6.61
61 HC Deb 7 March 2001 c 303.
62 HM Treasury, *Pre-Budget Report 2008*, p136
63 HM Treasury, *Budget 2009,* HC 407, April 2009, p231
64 HM Treasury, *Budget 2009,* HC 407, April 2009, p31

For further information about fuel prices, see Library Standard Note, *Petrol and Diesel Prices*, SN/SG/4712, 15 June 2009.

Vehicle Excise Duty (VED)

VED is a fixed annual tax and is charged on every "mechanically propelled vehicle" used or kept on a public road (defined as a road maintainable at public expense), as set out in the *Vehicle Excise and Registration Act 1994*. Any person who uses or keeps on a public road any vehicle (apart from one of an exempted class) for which an excise licence is not in force commits an offence under section 29 of the 1994 Act. VED was first introduced for four-wheeled motor vehicles on 1 January 1889 by the *Customs and Inland Revenue Act 1888*.[65] Historically the road fund tax was considered a hypothecated tax to pay for the building and maintenance of the road network, this has not been so since 1937 and it is now a general revenue raising tax. Changes to the rates and coverage of the duty are made in the *Finance Acts*.

The Labour government introduced a new system of VED, based primarily on carbon dioxide emissions, for cars registered on and after 1 March 2001.

Budget 1999 confirmed that new cars registered from autumn 2000 would be placed in one of four VED rate bands, according to their carbon dioxide emissions, the most accurate indicator of fuel efficiency.[66] *Budget 2000* provided more information about the changes and billed them as being “to encourage the use of more environmentally-friendly vehicles”.[67] On 1 March 2001 all cars registered for the first time were placed into one of four VED bands based on their rates of carbon dioxide emissions. A fifth band was announced in *Budget 2002*[68], a sixth in Budget 2003[69], and a seventh in *Budget 2006*[70]. Within each band, there is a discount rate for cars using cleaner fuels and technology and a small supplement for diesel cars.

In *Budget 2008* the Chancellor, Alistair Darling, announced further changes to VED.[71] The most significant change was that from April 2009 all cars would be placed in one of 13 new bands, reflecting more accurately their carbon emissions. Vehicles placed in the higher bands would see a significant increase in their VED rates.

For further information about VED, see Library Standard Note, *Vehicle Excise Duty (VED)*, SN/BT/1482, 30 July 2009.

Air Passenger Duty

Air passenger duty (APD) is charged on all passenger flights from UK airports. It was introduced in the November 1993 Budget and came into effect on 1 November 1994.[72] Initially APD was charged at the rate of £5 per passenger on flights within the UK and to other countries in the European Economic Area (EEA), and £10 on flights elsewhere. These rates were increased to £10 and £20 respectively from 1 November 1997.

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65 in the legislation, an applicable vehicle was described as: a carriage with "four or more wheels" and that shall be "drawn or adapted or fitted to be drawn by two or more mules, or shall be drawn or propelled by mechanical power"

66 HM Treasury, *Budget 1999*, Budget measures, 9 March 1999

67 HM Treasury, *Budget 2000*, 21 March 2000, chapter 1

68 HM Treasury, *Budget 2002*, April 2002, p12

69 HM Treasury, *Budget 2003*, April 2003, chapter 7

70 HM Treasury, *Budget 2006*, March 2006, p167

71 HM Treasury, *Budget 2008*, March 2008, p96

72 HC Deb 30 November 1993 c 932. The relevant legislation covering APD is set out in sections 28 - 44 of the *Finance Act 1994*.

The structure of the tax was reformed in April 2001, with a lower rate of duty for economy fares. Initially economy fares were charged duty at £5 for flights within the EEA and £20 to other countries. First class and club class flights were charged £10 for EEA flights and £40 for flights elsewhere. As part of this reform, all flights from airports in the Scottish Highlands and Islands were made duty-free, though the return leg of flights within the UK became liable to tax.[73] Duty rates remained frozen for over five years, despite concerns about the environmental impact of aviation. In December 2006, Chancellor, Gordon Brown, announced that all duty rates would be doubled from 1 February 2007:

> I turn to the framework for transport, which is responsible for 30 per cent. of all carbon emissions, the aviation sector accounting for a fifth of those. Currently, aircraft emissions are not part of the EU emissions trading scheme, and nor is aviation fuel taxed. While we continue to work internationally to seek a global agreement on reducing aircraft emissions, each country must take action domestically. From1 February, we will double air passenger duty. For most journeys—over 75 per cent. of them—duty will rise from £5 to £10, securing extra resources in the coming spending round for our priorities, such as public transport and the environment.[74]

In January 2008 the government launched a consultation on replacing APD with a per-plane duty in November 2009.[75] However, in his 2008 Pre-Budget Report the Chancellor Alistair Darling announced that the government would not proceed with this reform: instead, the tax would be restructured around four distance bands, set at intervals of 2,000 miles – so that travellers flying longer distances would pay a higher rate of duty:

> Last year, there was cross-party support for a reform of air passenger duty and converting it to a tax per plane. Much as I am in favour of a bipartisan approach, it seems in this case not to have reached the right conclusion. I believe that this proposal could harm the aviation industry at a time when it is facing huge problems. So instead, I have decided to reform air passenger duty into a four-band tax system, ensuring that those who travel further and have a larger environmental impact meet the cost. I believe that this will be a better and more effective way of reducing emissions from aviation.[76]

There is some debate about whether APD can be considered to be an environmental tax. The debate was summarised in a 2008 report from the Treasury Select Committee:

> The Minister said that APD would have some environmental impact, in that the doubling of APD in the 2006 Pre-Budget Report was forecast to reduce demand by "perhaps five million passengers out of 140 million a year … by 2010". He equated this reduction to an environmental gain from that of between 0.2 and 0.5 million tons of carbon a year by 2010. Sir Nicholas [Stern] agreed that some element of APD was an environmental tax, because it would have some impact on behaviours through increasing the price of flights. The Minister's statement that APD does have an environmental impact appears to be at odds with the Government's response to the Environmental Audit Committee's Report on *Pre-Budget 2005: Tax, Economic Analysis*

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73 HC Deb 21 March 2000 c 869; HM Customs & Excise Budget press notice C&E4, 21 March 2000. From 1 November 2002 the lower rates of duty were extended to Switzerland and to countries then applying for membership of the EU.

74 HC Deb 6 December 2006 c 310

75 HM Treasury, *Aviation duty: a consultation*, January 2008

76 HC Deb 24 November 2008 c499

> *and Climate Change,* which stated that "APD does not incentivise improved environmental performance".[77]

For further information about APD, see Library Standard Notes:

- *Air passenger duty: introduction*, SN/BT/413, 16 June 2009; and
- *Air passenger duty: recent debates & reform*, SN/BT/5094, 13 October 2009

5.4 Other green fiscal incentives

A number of tax incentives are also used to support research and development in low carbon technologies. These were set out by the government in response to a PQ in February 2009:

> **Gregory Barker:** To ask the Chancellor of the Exchequer what fiscal incentives are available for the research and development of low-carbon technologies. [255082]
>
> **Angela Eagle:** The Government provide a range of tax incentives to encourage the adoption of new energy technologies:
>
> - Exemption from the climate change levy for supplies of electricity generated from certain renewable sources;
> - Enhanced capital allowances (ECAs) for energy efficient equipment provide 100 per cent. first year allowances for spending on designated energy-saving technologies and products;
> - Stamp duty exemption for new zero-carbon homes;
> - Reduced rate of VAT (5 per cent.) for the professional installation of microgeneration equipment in residential and charitable properties.
>
> And further tax incentives to support investment in innovative new technologies and higher risk ventures:
>
> - R and D tax credits provide enhanced tax relief for companies investing in scientific and technological R and D.[78]

In addition to those measures listed above, the Chartered Institute of Taxation's 2009 *Green Tax Report* also gives two further examples of where fiscal measures have been amended to reward green behaviour:

> **Company Car Tax and Fuel Benefit Charge**
>
> The company car tax and fuel benefit charge frameworks were revised in April 2002 to align the charges with environmental principles. These measures, which affect both the employee's taxable benefits and employer's National Insurance payments, are now calculated based on each vehicle's carbon emissions, with discounts for alternative fuel use.
>
> **Other road charges**

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77 House of Commons Treasury Committee, *Climate change and the Stern Review: the implications for Treasury policy*, Fourth Report of Session 2007–08, HC 231, 5 February 2008, para 110

78 HC Deb, 10 Feb 2009, c1847-8W

Other road charges, such as the London Low Emissions Zone have exemptions for alternative fuel vehicles or vehicles meeting certain emissions standards, encouraging businesses to consider greener fleet options.[79]

5.5 Government revenues from green taxes 2008

Under the ONS definition, seven current UK taxes are classified as environmental taxes. In total, these taxes raised £38.5 billion in 2008, equivalent to 7.2% of total taxes and social contributions or 2.7% of Gross Domestic Product (GDP).[80]

The table below shows government revenue from each of these taxes in 2008:

Government revenues from environmental taxes 2008
£ millions and % of total environmental tax revenue

	£ millions	% total
Energy		
Duty on hydrocarbon oils	24,788	64%
including petrol	*10,912*	*28%*
diesel	*12,352*	*32%*
VAT on duty	4,338	11%
Climate Change Levy	735	2%
Road vehicles		
Vehicle Excise Duty	5,524	14%
Other environmental taxes		
Air Passenger Duty	1,876	5%
Landfill Tax	916	2%
Aggregates Levy	335	1%
Total environmental taxes	38,512	100%

Source: Office for National Statistics, *UK Environmental Accounts 2009*

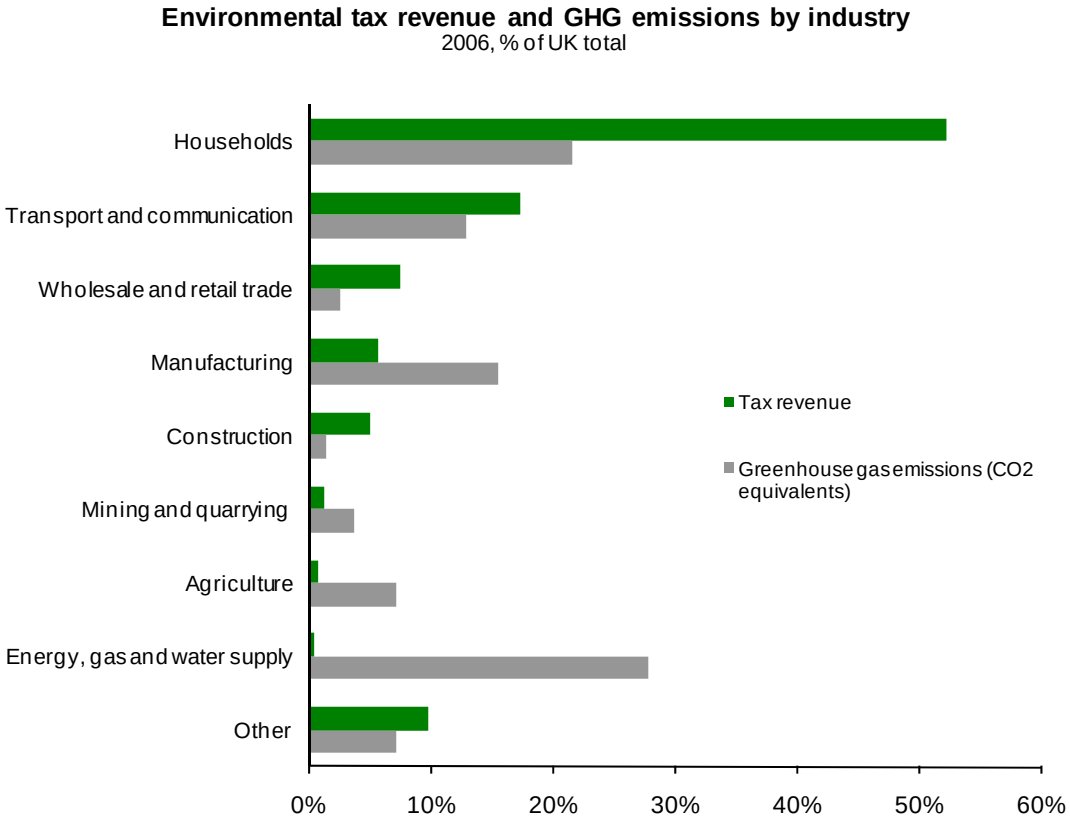
- Duty on hydrocarbon oils together with VAT on that duty accounted for over three-quarters of government revenue from environmental taxes in 2008.
- Combined, duty on petrol and diesel, VAT on that duty and Vehicle Excise Duty accounted for 85% of environmental tax revenue.

5.6 Green tax revenues by source

Statistics showing revenue from environmental taxes by industry are available up to 2006. Data in ONS *Environmental Accounts 2009* show that UK households contributed £18.5 billion, more than half of the £35.4 billion total. This reflects the dominance of duties on hydrocarbon oils and Vehicle Excise Duties in environmental tax revenues.

79 Chartered Institute of Taxation, *Green Tax Report*, May 2009, p16
80 Office for National Statistics, *UK Environmental Accounts 2009* table 3.1

The chart below compares percentage contributions to total environmental tax revenues and greenhouse gas and acid rain precursor emissions for selected industries in 2006:[81]



- Households accounted for 52.3% of environmental tax revenues in 2006 but just 21.6% of greenhouse gas emissions. Households have accounted for more than half of environmental tax revenues in each year since 1993.
- Transport and communication industries account for 17.3% of environmental tax revenues, again reflecting the relative importance of road transport-based taxes. These sectors account for 12.9% of emissions.
- The energy, gas and water supply industries accounted for 27.8% of greenhouse gas emissions in 2006 but just 0.5% of environmental tax revenues.
- The manufacturing, mining and quarrying and agriculture sectors also emitted a greater share of greenhouse gas emissions than they contributed in environmental taxes.

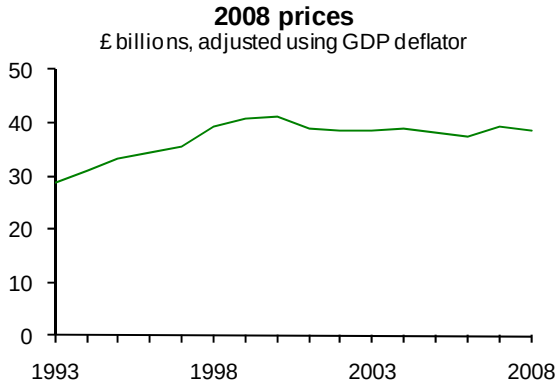
[81] Office for National Statistics, *UK Environmental Accounts 2009,* tables 2.4 and 3.2A

6 Trends in green tax revenues

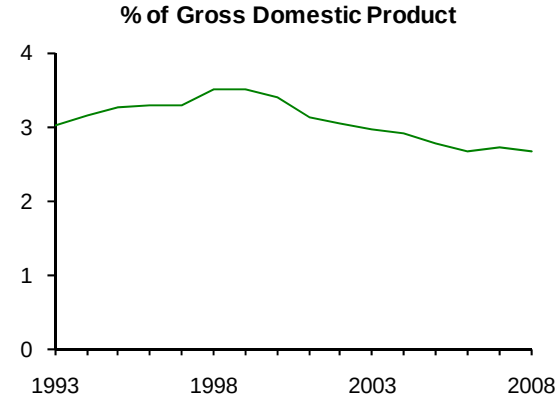
The charts below show trends in total UK government revenue from environmental taxes (as defined above) over the past 15 years by a variety of measures.[82]

Owing to the dominance of duty on hydrocarbon fuels (and VAT on such duty), in environmental tax revenue, trends are highly dependent on revenue from road fuel duty. The downward trends in revenue by the measures used below can partly be attributed to the ending of the fuel duty escalator in 2000.

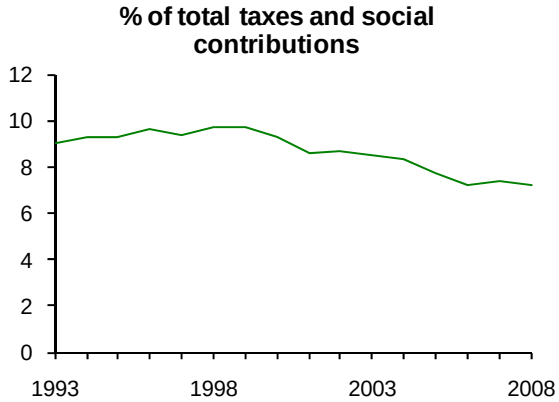
Revenue from environmental taxes 1993-2008



- Total revenue from environmental taxes was £38.5 billion in 2008. In 2008 prices, it has been very close to this level in each year since 2001.
- Revenue from environmental taxes rose in real terms in each year from 1993 to 2000, peaking at £41.0 billion in 2008 prices in 2000. Revenue in 2008 was 6.1% below that real terms peak.



- Total environmental tax revenues were equivalent to 2.7% of GDP in 2008, the lowest recorded over the 15 year period.
- Revenue rose by this measure in each year from 3.0% in 1993 to a peak of 3.5% in 1999. It then fell in each year from 2000 to 2.7% in 2006. It rose slightly in 2007 before falling again in 2008.



- Revenue from environmental taxes was 7.2% of total taxes and social contributions in 2008, the lowest level recorded over the past 15 years.
- Environmental taxes accounted for 9.7% of total revenues at their peak in 1998 and 1999.

[82] Office for National Statistics, *UK Environmental Accounts 2009,* table 3.1

6.1 Comment on the trends

The Sustainable Development Commission's March 2009 report, *Prosperity without growth?*, criticised the government for "painfully slow" progress in a shift to green taxation. It recommended that government make an "order of magnitude step change" in taxation to shift the burden of taxation from incomes and onto resources. This would be necessary it explained, in order to prevent the depletion of key natural resources, to prevent placing unsustainable burdens on the planet's ecosystems and to establish clear resource and environmental limits by integrating these limits into economic and social functioning:

> The argument for an ecological tax reform – a shift in the burden of taxation from economic goods (e.g. incomes) to ecological bads (e.g. pollution) – has been broadly accepted for at least a decade and has been implemented in varying degrees across Europe. But progress towards this goal has been painfully slow. In the UK the proportion of taxation from green taxes is now lower than it was in 1997. There's an urgent need to achieve an order of magnitude step-change in the structure of taxation. A sustained effort by government is now required to design appropriate mechanisms for shifting the burden of taxation from incomes onto resources and emissions.[83]

The House of Commons Environmental Audit Committee publishes a report every year about the government's Pre-Budget Report and how it relates to environmental issues.[84] The latest report from the Committee on this, from March 2009, gives an overview of how the Committee views the government's progress on environmental taxation:

> The Treasury followed this [the 1997 statement of intent on environmental taxation] with a number of bold moves, increasing the fuel duty escalator and introducing a range of new instruments, including the Climate Change Levy package and the Aggregates Levy. From 1999, however, this momentum stalled: in 1999 the fuel duty escalator was abolished; the main rate of Air Passenger Duty was halved in 2002; and Climate Change Levy rates were frozen between 2001 and 2007. Through our work on successive Pre-Budgets Reports we have tracked progress against the statement of intent.
>
> 41. Since the 2006 Pre-Budget Report there has again been a slight, if faltering, shift forward in momentum for all key environmental taxes (see Table 1). The main rate of Air Passenger Duty doubled in February 2007; fuel duty has increased each year since 2006–07; Vehicle Excise Duty has increased for all but the most fuel efficient cars; the Climate Change Levy has been revalorised twice since 2007–08 (i.e. raised in line with inflation); the Aggregates Levy increased by 5 pence per tonne (22%) in 2008–09 to take account of inflation since its introduction; and Landfill Tax continued its annual rise, increasing by £8 per tonne (33%) in 2008–09.

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83 Sustainable Development Commission, *Prosperity without growth?* March 2009, p106

84 Online copies of these reports are available from the *Reports and Publications page* on the Environmental Audit Committee website.

Table 1: Changes to five key environmental taxes since 2000

Year[1]	Fuel duty	Vehicle Excise Duty	Climate Change Levy	Air Passenger Duty	Aggregates Levy	Landfill Tax
2000/01	Revalorise[2]	Freeze	Introduction	Freeze	N/A	Rise to £11/tonne
2001/02	Freeze	Reform (new bands), Cut for smaller cars, Freeze for other rates	Freeze	Reform (avg. rate cut)	N/A	Rise to £12/tonne
2002/03	Freeze	Freeze, plus Reform (new lower rate for lower emission cars)	Freeze	Freeze	Introduction	Rise to £13/tonne
2003/04	Revalorise	Revalorise, plus Reform (new lower rates for low emission cars)	Freeze	Freeze	Freeze	Rise to £14/tonne
2004/05	Freeze	Freeze	Freeze	Freeze	Freeze	Rise to £15/tonne
2005/06	Freeze	Freeze for lower emission bands, Revalorise for highest	Freeze	Freeze	Freeze	Rise to £18/tonne
2006/07	Revalorise	Cut for lower emission bands, Freeze for bands D & E, Rise for band F and a Rise / Reform : new band G for highest emitters	Freeze	Freeze until February 2007, then Rise (doubling all bands)	Freeze	Rise to £21/tonne
2007/08	Rise (2ppl in October 2007)	Freeze	Revalorise	Freeze	Freeze	Rise to £24/tonne
2008/09	Rise (2ppl in December 2008)	Freeze for bands A & B; £5 rise for bands C to F; £100 rise for band G	Revalorise	Freeze	Rise from £1.60/tonne to £1.95/tonne	Rise standard rate to £32/tonne Rise lower rate from £2.00/tonne to £2.50/tonne

Notes:

[1] Changes are listed in the year in which they take effect, rather than the year in which they are announced.

[2] 'Revalorise' means 'rise in line with inflation experienced since the previous year'.

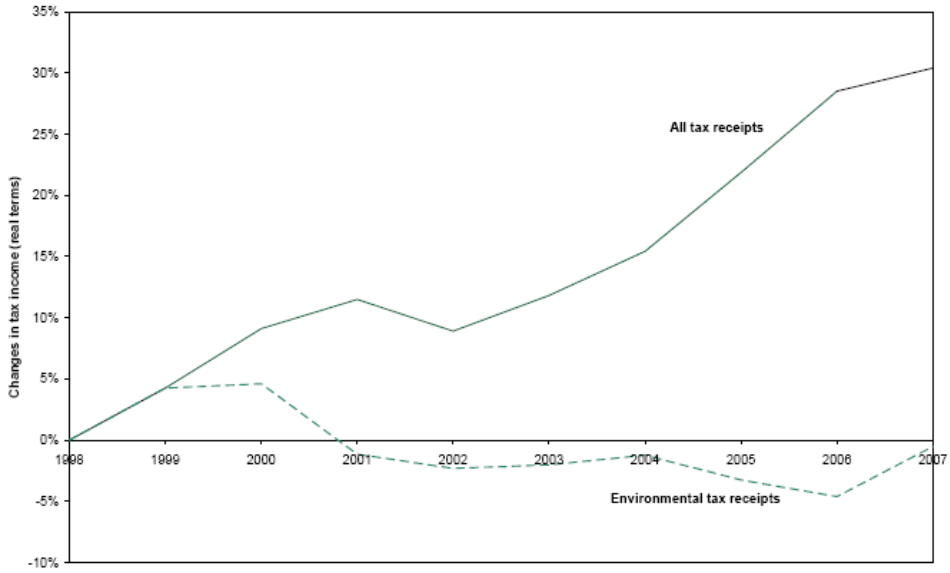
Source: EAC analysis of Budgets and Pre-Budget Reports 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008; and Supplementary Memorandum from HM Treasury to Environmental Audit Committee inquiry into Pre-Budget Report 2005[85]

[85] House of Commons Environmental Audit Committee, *Pre-Budget Report 2008: Green fiscal policy in a recession*, Third Report of Session 2008–09, HC 202, 16 March 2009, p19-20

The Committee commented on the fall in the level of "green taxes" in proportion to all taxation and as a proportion of GDP. It said that the government was failing in its pledge to shift the burden of taxation from goods to bads:[86]

> 42. While we welcome these renewed initiatives, it is clear that the Treasury is continuing to fail in its avowed aim to shift the overall tax burden from 'goods' to 'bads'. In 1998 and 1999 green taxes as a proportion of all taxation peaked at 9.7%; since when the proportion has fallen almost steadily, although the figure of 7.4% in 2007 was a slight increase from the 7.2% recorded the previous year. During the same period, environmental taxation as a proportion of Gross Domestic Product (GDP) fell from 3.5% (1998) to 2.7% (2007). In all years since 2001 real terms income from environmental taxation has been below that recorded in 1998 (see Chart 1).

Chart 1: Environmental tax receipts have gone down in real terms



Source: UK Environmental Accounts Autumn 2008, Office of National Statistics

Note: Income from environmental taxes has been revalorised into 2007–08 equivalents using the Treasury's GDP Deflators: http://www.hm-Treasury.gov.uk/Economic_Data_and_Tools/GDP_Deflators/data_gdp_index.cfm

> The Aldersgate Group believed that the Government was giving out a mixed message on the future direction of taxation. This view was echoed by Tim Jackson [sustainable development commissioner] who expressed concern about the effects of the cut in Value Added Tax and future rise in National Insurance Contributions. Paul Ekins criticised the VAT cut in the PBR as "an undifferentiated stimulus to consumption[87]."

The government responded to the Environmental Audit Committee's report saying that that it was important to view environmental taxes as just one instrument in a package of measures with environmental aims:

> Environment and transport taxes play an important role as part of the package of measures that has enabled the UK to make significant progress against its environmental aims, while also supporting wider Government objectives. Tax is only

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86 House of Commons Environmental Audit Committee, *Pre-Budget Report 2008: Green fiscal policy in a recession*, Third Report of Session 2008–09, HC 202, 16 March 2009, para 42

87 This refers to the Government's decision to reduce the standard rate of VAT – from 17.5% to 15% - from 1/12/2008 to 31/12/2009, and to increase the rates of National Insurance contributions for employees, employers and the self-employed from 2011

> one instrument among many being used to achieve environmental objectives. Rather than focus exclusively on tax measures, it is important to look at the Government's record across the board and the full range of measures that have been introduced. The UK has made significant progress against its environmental aims—including making more progress with respect to its Kyoto target than any other G7 nation.[88]

The Environmental Audit Committee has also repeatedly called for the government to establish an independent green tax commission in order to support long-term strategy on the issue:

> The Treasury should take forward the environmental tax agenda by establishing an independent body to build a consensus on the fiscal measures needed to achieve our national environmental objectives. As the controversy over the fuel duty escalator demonstrated, it is vitally important to achieve cross-party agreement so that governments are able to pursue long-term environmental objectives even when this might incur a degree of short-term political unpopularity. We would therefore urge the Treasury to examine once again the concept of a Green Tax Commission.[89]

The government has said that it does not believe that there is a good case for establishing such a body, explaining:

> The government has regular meetings a range of stakeholders including both environmental groups and business organisations, to discuss environmental taxation issues. Furthermore, when the government has considered introducing new environmental taxation it has always done so in an open and consultative way. This approach is designed to ensure that all views are taken into account and to establish consensus wherever possible on the need for action. The government therefore does not believe there is a good case for a establishing a Green Tax Commission.[90]

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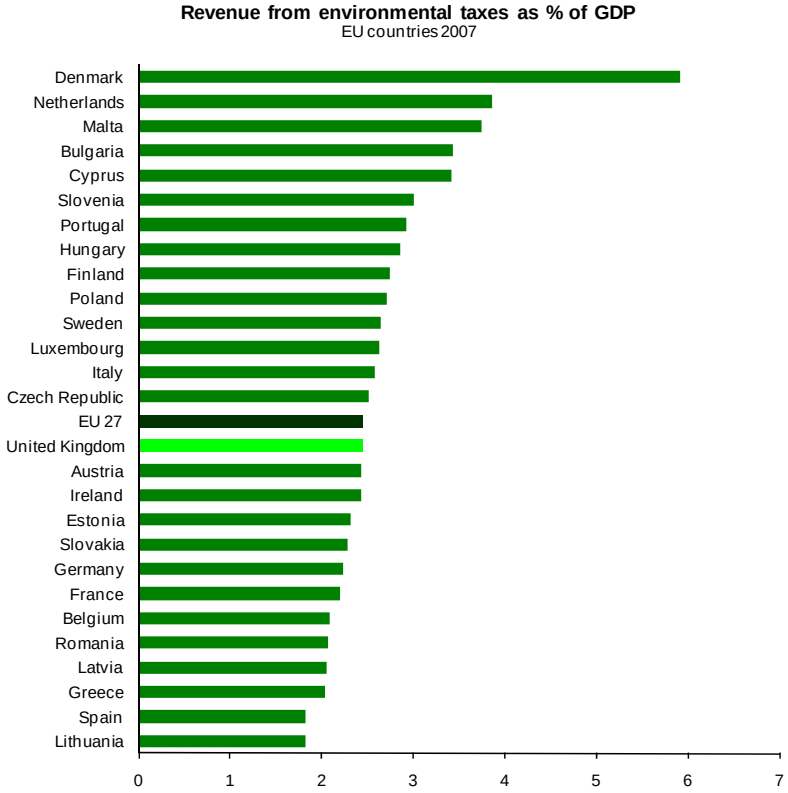
88 House of Commons Environmental Audit Committee, *Pre–Budget Report 2008: Green fiscal policy in a recession: Government Response to the Committee's Third Report of Session 2008–09*, Fourth Special Report of Session 2008–09, HC 563, 8 June 2009, p8

89 House of Commons Environmental Audit Committee, *Pre–Budget 2004 and Budget 2005: Tax, Appraisal, and the Environment,* Seventh Report of Session 2004–05, HC 261, p4

90 House of Commons Environmental Audit Committee, *Government Response to the Committee's Seventh Report of Session 2004-05 on Pre–Budget 2004 and Budget 2005: Tax, Appraisal and Environment*, Second Special Report of Session 2005–06, HC 528, p4

6.2 International comparisons of green tax revenues

Eurostat publishes comparisons of revenue from environmental taxes for EU Member States.[91] The chart below shows the latest comparisons of environmental tax revenues as a share of GDP:



- UK environmental tax revenues as a share of GDP are very similar to the EU average of 2.5% and above those in France and Germany.[92] As noted earlier, the majority of UK revenues are accounted for by road fuel duties, which are among the highest in the EU.[93]

- Environmental tax revenues have fallen as a share of GDP across the EU as a whole in recent years.

- Denmark stands out as having the highest environmental tax revenues as a share of GDP: 5.9% in 2007. This was equivalent to 12.1% of total tax and social contributions. The lowest share of GDP was 1.8%, in Lithuania.

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91 Eurostat, *Environmental Accounts Main Tables*

92 The small differences between Eurostat and ONS data for the UK are accounted for by the exclusion by Eurostat of VAT on duties on hydrocarbon oils.

93 See House of Commons Library Standard Note SN/SG/4712, *Petrol and Diesel Prices*

7 The new context for green taxes

7.1 The Stern Review

A review of the economics of climate change was announced by the Chancellor of the Exchequer in July 2005, to be conducted by Lord Stern, the then Head of the government Economic Service and former World Bank Chief Economist.[94] As part of the Review's terms of reference, Lord Stern was asked for:

- An assessment of the economics of moving to a low-carbon global economy, focusing on the medium to long-term perspective, and drawing implications for the timescales for action, and choice of policies and institutions; and
- An assessment of the potential of different approaches for adaptation to changes in the climate.[95]

The "Stern Review" was published on 30 October 2006; its headline conclusion was that climate change presented very serious global risks, which demanded an urgent global response.[96]

Stern set out that the 2005 levels or stock of greenhouse gases in the atmosphere were equivalent to around 430 parts per million (ppm) CO_2, compared with only 280ppm before the Industrial Revolution. The Review reported that this has already caused the world to warm by more than half a degree Celsius and would lead to at least a further half degree warming over the next few decades, because of the inertia in the climate system.[97] Accordingly, it stated that even if the annual flow of emissions did not increase beyond the current rate, the stock of greenhouse gases in the atmosphere would reach double pre-industrial levels by 2050 - that is 550ppm CO_2e. Stern said that the level of 550ppm CO_2e could be reached as early as 2035; that at this level there would be at least a 77% chance - and perhaps up to a 99% chance, depending on the climate model used - of a global average temperature rise exceeding 2°C.[98]

Stern reported that even a rise of 2°C would have a serious impact on the world, for example: melting glaciers would initially increase flood risk and then strongly reduce water supplies, eventually threatening one-sixth of the world's population; and ecosystems would be particularly vulnerable to climate change, with around 15 - 40% of species potentially facing extinction after only 2°C of warming.

The Earth would be committed to several degrees more warming if emissions continue to grow. Stern said that greenhouse gases could treble by the end of the century giving at least a 50% risk of exceeding 5°C global average temperature change during the following decades – possibly up to 5°C. At this level Stern said that the impacts and costs were likely to be even more severe and damaging: to illustrate, the report explained that we are now only around 5°C warmer than in the last ice age.[99]

Stern used modelling based on the economics of risk. Its central estimate was that stabilisation of greenhouse gases at levels of 500-550ppm CO_2e would cost, on average,

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94 Office of Climate Change website, *Stern team* [on 25 November 2009]
95 HM Treasury website, *Background to Stern Review on the Economics of Climate Change* [on 25 November 2009]
96 HM Treasury, *Stern Review on the Economics of Climate Change*, *full executive summary*, pi, 30 October 2006
97 Ibid, piii
98 Ibid, piii
99 Ibid, iv

around 1% of annual global GDP by 2050.[100] The review analysed the "social cost of carbon", estimating that each tonne of CO_2 would cause at least $85 of damage. It stated that ignoring climate change would eventually damage economic growth; that the earlier action is taken, the less costly it would eventually be:

> The evidence shows that ignoring climate change will eventually damage economic growth. Our actions over the coming few decades could create risks of major disruption to economic and social activity, later in this century and in the next, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20th century. And it will be difficult or impossible to reverse these changes. Tackling climate change is the pro-growth strategy for the longer term, and it can be done in a way that does not cap the aspirations for growth of rich or poor countries. The earlier effective action is taken, the less costly it will be.[101]

The Review stated that environmental taxes and carbon trading could be used to create an explicit price for carbon, which it described as "essential":

> Establishing a carbon price, through tax, trading or regulation, is an essential foundation for climate-change policy. […]
>
> Putting an appropriate price on carbon – explicitly through tax or trading, or implicitly through regulation – means that people are faced with the full social cost of their actions. This will lead individuals and businesses to switch away from high-carbon goods and services, and to invest in low-carbon alternatives. Economic efficiency points to the advantages of a common global carbon price: emissions reductions will then take place wherever they are cheapest.[102]

The Stern Review argued that future generations would be most affected by the present level of carbon emissions, because of the long-term impact emissions have on climate change. Carbon pricing would have to take this into account, if it was to account for all externalities:

> The first element of policy is carbon pricing. Greenhouse gases are, in economic terms, an externality: those who produce greenhouse-gas emissions are bringing about climate change, thereby imposing costs on the world and on future generations, but they do not face the full consequences of their actions themselves.[103]

It should be noted that there have been some criticisms of the Stern Review; it is not universally accepted. These criticisms have related to its independence, its use of discount rates to measure the value of future costs and benefits in today's terms, and whether it balanced correctly the costs between adaptation and mitigation. These arguments are discussed more fully in the Treasury Committee's report on the Economics of Climate Change.[104] The Stern Review was however, welcomed by the Government and has been a clear influence to it in developing its fiscal policy.[105] Arguments relating to the science of climate change are explored further in a Postnote by the Parliamentary Office of Science and Technology (POST), *Climate Change Science*, November 2007.

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100 Ibid, xiii

101 HM Treasury, *Stern Review on the Economics of Climate Change*, *full executive summary*, pii, 30 October 2006

102 HM Treasury, *Stern Review on the Economics of Climate Change*, *full executive summary*, pxviii, 30 October 2006

103 HM Treasury, *Stern Review on the Economics of Climate Change*, *full executive summary*, pxviii, 30 October 2006

104 House of Commons Treasury Committee, *Climate change and the Stern Review: the implications for Treasury policy, Fourth Report of Session 2007–08*, HC 231, 5 February 2008, pp12

105 See for example, HM Treasury, *Pre-Budget Report 2006*, CM 6984, December 2006

7.2 The Climate Change Act 2008

The *Climate Change Act 2008* became law on 26 November 2008. According to government, the two key aims underpinning the Act are:

> - to improve carbon management and help the transition towards a low carbon economy in the UK; and
>
> - to demonstrate strong UK leadership internationally, signalling that we are committed to taking our share of responsibility for reducing global emissions in the context of developing negotiations on a post-2012 global agreement at Copenhagen next year.[106]

The Act sets a legally binding target for greenhouse gas reductions of at least 80% by 2050, and an interim target of 34% by 2020, against a 1990 baseline. The Act also provides for a carbon budgeting system: a cap on the total quantity of greenhouse gas emissions emitted in the UK over a specified time. The first three carbon budgets run from 2008-12, 2013-17 and 2018-22.

The Committee on Climate Change (CCC), is an independent, expert body established by the *Climate Change Act* to advise the government on setting and meeting the carbon budgets. On 1 December 2008, the CCC published its first report to government.[107] In making its recommendations, the CCC balanced a range of economic, environmental and social matters as set out in the Act, including:

> fiscal circumstances, and in particular the likely impact of the decision on taxation, public spending and public borrowing.[108]

The CCC proposed two sets of carbon budgets for the UK, one to apply now before any global agreement on a follow-up to Kyoto is reached ('Interim' budgets), and a more challenging budget set to apply once a global agreement on climate change has been reached ('Intended' budgets). In *Budget 2009* and accompanying document, *Building a low-carbon economy: implementing the Climate Change Act 2008*, the government stated that it agreed with the CCC's proposals.[109] In May 2009, the levels of the first three carbon budgets were approved by Parliament and are now set in law by the *Carbon Budgets Order 2009* (SI 2009/1259) as follows:

	Budget 1 (2008-12)	**Budget 2 (2013–17)**	**Budget 3 (2018–22)**
Carbon budgets ($MtCO_2e$)	3,018	2,782	2,544
Percentage reduction below 1990 levels	22	28	34
Traded sector ($MtCO_2e$)	1,233	1,078	958
Non-traded sector ($MtCO_2e$)	1,785	1,704	1,559

106 Department of Energy and Climate Change website, *Climate Change Act 2008* [on 25 November 2009]
107 Committee on Climate Change, First Report: *Building a low-carbon economy - the UK's contribution to tackling climate change*, 1 December 2008
108 Section 10(d) *Climate Change Act 2008*
109 HM Treasury, *Building a low-carbon economy: implementing the Climate Change Act 2008*, April 2009, p5

The CCC examined the impact of the cost of meeting the carbon budgets on tax revenue. It suggested that at first, the fiscal impact may be negative:

> In summary, we have identified potentially positive impacts of carbon budgets on Government revenues through auction of EU ETS allowances, and potentially negative impacts through reduced fuel duty and VED [vehicle excise duty] receipts, increased spending to purchase offset credits and to provide support for fuel poor households and falling net revenues at lower GDP.
>
> The net of these impacts will depend on a range of factors, all of which are uncertain and some of which are highly uncertain: the level of auctioning in the EU ETS; the UK's auction rights; the carbon price; the pace of fuel efficiency improvement for road vehicles and the technologies upon which this is based; the level of support for fuel poor households; the mechanism chosen to support these households; and the relative impact of GDP changes on tax revenue versus spending.
>
> At a high level there are plausible scenarios where the net fiscal impact might be negative in the first and second budget periods, given low levels of auctioning in the EU ETS and possible spending to support the fuel poor. Further out in time, there are plausible scenarios where the net impact might become positive provided the EU ETS moves to 100% auctioning and given carbon prices in line with our forecasts.
>
> Given the uncertainties involved, we do not attempt to put a specific value on the net impact, either for individual years or groups of years under the same budget. The total scale of any negative impact, however, appears small enough to be manageable, given in particular the potential to divert from the assumption that rates of fuel duty and VED will remain unchanged.[110]

Some commentators have criticised the carbon budget in the accountancy press for not setting out more explicitly how taxation would be used into incentivise changes in behaviour to help the environment:

> Frank Sangster, head of environment and tax incentives at KPMG, said: 'One of the biggest things to come out of the first Carbon Budget is what is not in it.' What the Carbon Budget revealed was how the government plans to invest in renewable energy. What was missing was any idea of how improved environmentally friendly habits would be incentivised through taxation – something the experts believe is essential.[111]

In October 2009 the Green Fiscal Commission published results of a modelling exercise which aimed to generate insights into the economic and environmental implications of a large green fiscal reform (GFR) in the UK. It concluded that GFR would be the only single policy instrument capable of meeting the 2020 target at no extra cost to the economy:

> GFR emerges from this modelling exercise as a policy instrument that can reduce GHG [greenhouse gas] emissions enough to meet the stretching government targets for 2020, with practically no cost to the economy overall, and with an increase in employment. There is no other single policy that can achieve this.[112]

7.3 EU 2020 Targets

In December 2008, the European Parliament agreed a climate and energy package. One part of this was a commitment to reduce greenhouse gas emissions by 20% by 2020

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[110] Committee on Climate Change, First Report: *Building a low-carbon economy - the UK's contribution to tackling climate change*, 1 December 2008, p392

[111] Accountancy Age, *Carbon Budget does not go far enough*, 30 April 2009

[112] Green Fiscal Commission, *The Case for Green Fiscal Reform*, October 2009, p49

compared to 1990 emissions levels.[113] The package also contains an offer to go further and commit to a 30% cut in the event of a satisfactory international agreement being reached on what will happen after the expiration of the first commitment period of the Kyoto Protocol in 2012. One of the mechanisms agreed for meeting this 20% commitment was a revision of the EU Emissions Trading Scheme's cap to drive further emission cuts: government explains:

> 10. The next Phase of the EU ETS from 2013, builds on the lessons of Phases I and II, and contains a number of major improvements. Most importantly, the EU has put in place the measures to deliver a unilateral 20% reduction in greenhouse gas emissions by 2020 from 1990 levels, with the potential to rise to 30% as part of an international climate agreement.
>
> 11. The revised EU ETS Directive provides for a fundamentally different and more rigorous approach to setting the cap on emissions. A central EU cap will guarantee that the EU ETS will deliver its share of emission reductions. The cap is set at a more ambitious level. For the first time, there is an annually declining trajectory for the cap to 2020 and beyond which will deliver emissions 21% below 2005 levels by 2020.[114]

The EU agreement also set a target of 20% of energy in EU states to come from renewable sources by 2020. Each Member State has been given a national target to meet as part of this commitment. The UK's national target is for 15% of all energy to come from renewable sources by 2020. The government's July 2009 UK Renewable Energy Strategy (RES) sets out the measures needed for the UK to meet this target. It states to meet the target will mean "almost a seven-fold increase in the share of renewables in scarcely more than a decade."[115] The RES summarises some of the tax measures which currently support renewable energy projects:

- New zero-carbon homes benefit from stamp duty relief;
- Investment in certain energy-saving plant and machinery benefits from enhanced capital allowances;
- A reduced rate of VAT applies to professional residential installation of certain microgeneration technologies; and
- Revenue from sales of electricity and ROCs [Renewables Obligation Certificates] from household microgeneration are exempt from income tax.[116]

One commentator writing in the *Tax Journal* argued that the government's green taxes were generally punitive and said that they would not provide incentive to develop the renewable energy industry:

> The UK renewables industry has not yet benefited from tax-driven legislative encouragement…Most of the current UK environmental tax initiatives (transport and fuel taxes, vehicle excise duties, landfill taxes, aggregate levies, congestion charges and the auctions of EU Emissions Trading Scheme permits) are punitive rather than incentive in their approach. In general these initiatives focus on discouraging, via excess duties, activities regarded as wasteful or carbon-generative, rather than directly encouraging investment in 'clean' or renewable technologies through tax incentives. It

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113 European Parliament, *Texts Adopted, Shared Effort to Reduce Greenhouse Gasses*, 17 December 2008

114 Department of Energy and Climate Change, *Memorandum submitted by the Department of Energy and Climate Change (ET41)* to the Environmental Audit Committee inquiry into "The role of carbon markets in preventing dangerous climate charge", February 2009

115 HM Government, *The UK Renewable Energy Strategy*, July 2009, p8

116 HM Government, *The UK Renewable Energy Strategy*, July 2009, p62

> is unclear what appetite there is for further increases in such duties at a time when the Treasury is keen to be seen as assisting UK businesses through the current economic upheaval. Accordingly, it is unclear if and how the Treasury will be able to drive significant uptake of renewables in the UK whist adhering to the current environmental tax strategy.[117]

7.4 Kyoto and Copenhagen

The Kyoto Protocol is an international agreement which was established to limit the growth in the emissions of greenhouse gases. Those countries who signed it agreed collectively to reduce greenhouse gas emissions by 5% from 1990 levels.[118] Under the Kyoto Protocol, the United Kingdom has a legally binding obligation to reduce greenhouse gas emissions by 12.5 percent below 1990 levels by 2008-2012. The UK is on course to more than meet this target. In June 2009 the Department of Energy and Climate Change said that UK greenhouse gas emissions are expected to be about 23% below 1990 levels by 2010.[119]

It has been argued by some that the predicted success in meeting the 2012 Kyoto target can be attributed largely to the shift away from coal-fired power towards gas; the government disagrees. This is seen for example, in an exchange between Martin Horwood MP and the Minister for Climate Change and the Environment, in an adjournment debate on the Carbon Dioxide Reduction Target in June 2007:

> **Martin Horwood:** I was saying that it was clear that we met the Kyoto target because of the dash for gas. That caused the steep reduction in overall greenhouse gas emissions, which brought us below the target as long ago as 1999. Emissions have been going up since then, although they are perhaps not as high as they would have been without other measures.
>
> **Ian Pearson:** We have not met the Kyoto target yet because it is over the period of 2008 to 2012. The effect of the dash for gas might account for at most a third of our reductions in greenhouse gas emissions overall. Our other reductions in greenhouse emissions are a direct result of the Government's actions on encouraging energy efficiency measures that have been taken by industry and the increase in the deployment of nuclear power during the 1990s. I am afraid that the hon. Gentleman cannot have it all ways. It simply is not true that all our performance on the Kyoto targets is down to the dash for gas. Nuclear has had a role to play, as has the Government's climate change programme.[120]

This first commitment period under the Kyoto protocol expires in 2012 and work is under way to agree what will happen next. In December 2009, Denmark will host a major United Nations conference in Copenhagen. At this conference, it is hoped that a meaningful global agreement can be reached to tackle climate change for when the current Kyoto Protocol period expires.[121] In June 2009 the government published a document, *The Road to Copenhagen: The UK Government's case for an ambitious international agreement on climate change*. It explains the government's case for proposing a global 50% cut on emissions by 1990 levels by 2050:

> If climate change continues unchecked, our prosperity, our environment and our security will be put at risk. The UK faces a higher risk of flooding, severe impacts on

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117 "Resurgent Renewables?" *The Tax Journal*, 9 March 2009
118 UNFCC website, *Kyoto Protocol* [on 24 November 2009]
119 Department of Energy and Climate Change press release, *UK on track to double Kyoto target*, 5 June 2009
120 HC Deb 12 June 2007 c735
121 Department of Energy and Climate Change website, *Road to Copenhagen: December 2009* [on 24 November 2009]

> our agriculture and more extremely hot summers, putting our health services and transport networks under pressure and weakening our economy. In developing countries climate change threatens human and ecological catastrophe, with food and water shortages, more widespread disease and an increasing number of climate refugees. The resulting political instability could have major consequences for our own national security. Climate change poses systematic risk to our economy. […]
>
> Only an international agreement can take on the challenge of tackling climate change. No one country on its own can do it: this is a global problem which requires a global solution. All countries must be confident that they do not act alone, and poorer countries need support from others. […]
>
> The UK believes that the overriding goal of the Copenhagen agreement is to limit climate change to an increase in global average temperature of 2°C. This means the deal needs to establish a credible trajectory for reducing global emissions by at least 50% on 1990 levels by 2050 and to put in place the measures now to ensure that emissions start to fall within the next decade.[122]

The *Road to Copenhagen* makes it clear that both private and public finance will be needed for mitigation and adaptation policies:

> So a high priority for Copenhagen will be to put in place the finance needed to support action by developing countries on both mitigation and adaptation. Much of the funding for reducing emissions – and some for adaptation – is likely to come from the private sector, and it will be essential for the global deal to put in place measures that encourage this investment. But a significant amount of public funding will be required - particularly in the short term to ensure action happens fast enough and emissions peak in the next decade, and to help countries adapt.[123]

The current Kyoto Protocol operates using carbon trading mechanisms. A briefing paper by the independent environment lobby group E3G, speculates that the Copenhagen 2009 negotiations could involve a debate about whether carbon trading or carbon tax should be used next as a policy tool:

> An increasing number of influential academic, business and political voices, especially in the US, are beginning to argue that a carbon tax would be a simpler, more predictable and more transparent policy tool. In practise, both approaches are over-reliant on a difficult to adjust carbon price to drive the high capital, long-life technology investments needed to drive down emissions in time to avoid dangerous climate change. There is a risk both that such a debate could further congest an already difficult negotiation and obscure the increasingly clear perception that a carbon price alone, at any politically deliverable level, will not be enough to drive the transition to a low carbon economy and will thus need much greater support from both regulatory measures and public expenditure.[124]

Further information on the 2009 Copenhagen conference will be available in the forthcoming Library research paper: *Climate Change: The Copenhagen Conference*.[125]

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[122] Department of Energy and Climate Change, *The Road to Copenhagen: The UK Government's case for an ambitious international agreement on climate change*, June 2009, p10-11

[123] Department of Energy and Climate Change, *The Road to Copenhagen*, June 2009, p13

[124] E3G, *Copenhagen 2009: Political Risks Briefing*, February 2009

[125] This paper will be available from the House of *Commons Library Research Papers* section of the Parliament website

8 The future for green taxes

8.1 Carbon tax

A carbon tax can take many forms, but is a term often used to describe a tax on users of carbon intensive energy, such as oil, gas and coal. The Climate Change Levy in the UK can be seen as a form of carbon tax, in that is a tax on the use of energy in industry, commerce and the public sector. In 2002 the UK government ruled out such a tax for domestic users of energy:

> In some cases, the Government may decide not to use a tax because of other constraints, such as those set out in the Statement of Intent. An example is domestic energy use: the Government has reduced VAT on domestic fuel and power to 5 per cent and has no plans to introduce a tax on domestic energy given the number of households which remain in fuel poverty.[126]

In 2008 the Environmental Audit Committee examined whether the climate change levy could be reformed as a pure carbon tax. That is, reformed so that it is based on the carbon content of fuels rather than the energy content, and so that it applied to all users in the economy. It recommended that the government should do more work to assess how feasible this would be, but concluded that in practice such a reform may make little difference to the CCL's environmental value:

> We have sympathy with the Royal Society's argument that the Climate Change Levy should have been set up as an economy wide carbon tax (so long as other measures would have ensured it did not exacerbate domestic fuel poverty). Once the Government decided to implement the Levy as a downstream tax, however, the practical scope for basing it on carbon emissions rather than energy efficiency was greatly reduced. Professor Grubb [chief economist, Carbon Trust] summed it up well: "in a sense, the whole debate about whether the CCL should really be a carbon tax is probably yes in principle, but actually in practice it makes very little difference." We still recommend that the Government should look into the practicalities and potential benefits of basing Levy rates on carbon content, and in particular the potential to vary rates on electricity depending on the carbon profiles of different suppliers and tariffs. However, the overall environmental value of the CCL does not depend on its being based on the carbon content of different fuels, and this should not be an overriding priority.[127]

In 2006 in the journal, *Fiscal Studies,* Simon Dresner and Paul Ekins of the Policy Studies Institute used data from the UK Family Expenditure Survey to examine how the introduction of a carbon tax would impact on UK household income distribution.[128] It showed that the introduction of a domestic carbon tax is likely to be regressive, costing poorer households proportionately more than richer households. The paper also examined the possibility of introducing a carbon tax alongside adjustments in other domestic taxes in order to compensate low-income households. It concluded that although it could become a

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[126] HM Treasury, *Tax and the environment: using economic instruments*, November 2002, para 6.17

[127] House of Commons Environmental Audit Committee, *Reducing Carbon Emissions from UK Business: The role of the Climate Change Levy and Agreements*, Second Report of Session 2007–08, HC 354, 10 March 2008, para 111

[128] Dresner, S. and Ekins, P., Fiscal Studies, *Economic Instruments to Improve UK Home Energy Efficiency without Negative Social Impacts,* vol. 27, no. 1, pp. 47–74 (2006)

progressive tax if introduced in this way, that it may also worsen the affects of fuel poverty,[129] for some people:

> In conclusion, the research has shown that although redistributing the revenues from a carbon tax through means-tested benefits would certainly be progressive overall, and would bring some households out of fuel poverty, it does not seem to be possible to devise a means of doing it that would not also worsen fuel poverty for those who are already most badly affected by it. This makes it politically problematic at best, and probably politically infeasible.[130]

Sweden introduced a carbon tax in 1991 which is now at the level of approximately €108 per tonne of CO_2.[131] It has been reported that during the Swedish presidency of the EU, from July – December 2009, that Sweden will push for an EU tax on carbon dioxide in sectors that do not participate in the EU ETS:

> Anette Persson, energy counsellor at the Swedish Permanent Representation to the EU, confirmed that Sweden is hoping to rally support for its proposal by highlighting how well a carbon tax has worked at national level. She conceded nevertheless that taxation is "extremely difficult as a community competence," adding that harmonising taxes would be the easiest option.
>
> Carlgren [Swedish Environment Minister] said he was unhappy with the way the Commission had been delaying debate on the issue, taking the economic crisis as a pretext. He added that the tax would in any case only be implemented in 2013, long after Europe has emerged from the recession. [132]

As taxation is a national preserve any EU proposal will need unanimous support from the 27 Member States. European affairs monitor *Euractiv* reports that this may be difficult to achieve:

> Apart from Sweden, other EU countries levying taxes on carbon emissions from fuel, light industry and agriculture include Finland, Denmark and Slovenia.
>
> These would be the obvious candidates to support Sweden on the tax. But the issue could be more complicated in countries like Denmark, which has a big Eurosceptic constituency, said Christian Egenhofer, head of the energy and climate programme at the Centre for European Policy Studies (CEPS).
>
> Egenhofer said the problem had always been that EU states did not want to accept any EU-wide CO2 taxes for fear of signalling that they would allow the EU to interfere with their fiscal autonomy. He said they were unlikely to budge from this position, although the financial crisis could potentially trigger a rethink.
>
> "In the past there has been no chance of having a coordinated approach to any EU taxes. That is probably still the general line of thinking, but because of huge budget deficits and accumulated government debts, governments might bite the bullet and look into areas to fill the gap," Egenhofer said.

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[129] The *Warm Homes and Energy Conservation Act 2000* initiated and led to the development of fuel poverty policy. Under these measures, a household is defined as in fuel poverty if it needs to spend more than 10% of its income on fuel to maintain a satisfactory heating regime. This is considered to be 21°C for the main living area, and 18°C for other occupied rooms during daytime hours.

[130] Dresner, S. and Ekins, P., Fiscal Studies, *Economic Instruments to Improve UK Home Energy Efficiency without Negative Social Impacts,* vol. 27, no. 1, pp. 47–74 (2006), p61

[131] "Taming the carbonivores", *The Economist*, 17 September 2009

[132] "Swedes to push for CO2 tax at EU helm", *Euractiv.com*, 12 May 2009

> Nevertheless, he argued that many Central and Eastern European member states would be likely to resist the plans as they have lighter taxation. Moreover, an additional tax on limited disposable income might not be politically acceptable, he noted.[133]

A Euractiv report from 4 November 2009 suggested that work by the EU Commission to revise EU energy taxation to include an obligation for Member States to levy a tax on heating and motor fuels would begin "in the new year".[134]

It has been reported that Department of Energy and Climate Change Minister, Joan Ruddock has said that the UK would not support an EU-wide carbon tax:

> Indeed, in an interview with French newspaper Les Echos, UK Energy and Climate Change Minister Joan Ruddock said if the tax were proposed at Community level, the UK would not support it. […]
>
> In the Les Echos interview, Ruddock said the tax would be inappropriate for the UK given its different "philosophy" to France, likening the higher rates already paid by consumers for renewable energy to a tax provision.
>
> The UK Department of Energy and Climate Change reiterated its position on a carbon tax: "Carbon rationing is not part of government's plans to tackle climate change. Our priority is to help people play their part in the fight against climate change and save money on energy bills through a range of measures including rolling out smart meters to every home in the UK and offering advice through the ACT ON CO2 website," it said.[135]

French President Nicholas Sarkozy however, has recently announced plans for a carbon tax to be introduced in France next year.[136] It would apply to households and businesses, but not to industries included in the EU ETS. The tax will be set at €17 per tonne of emitted carbon dioxide. The *Times* estimates that this will mean an increase of approximately 4 euro cents on a litre of petrol and a 5% rise in the price of domestic gas.[137] It will not apply to most electricity however, as a majority of electricity is produced by nuclear power in France.

The *Economist* reports that the French tax has been designed to be fiscally neutral. Individuals will be compensated through an income tax deduction and companies will be compensated by the reform of municipal corporate tax.[138] The article speculates however, that the tax may be set too low to change behaviour:

> As an incentive to change behaviour, the tax rate also looks too low. Who will keep the car in the garage just because of an extra four cents a litre on petrol? Sweden's carbon tax is levied at fully €108 per tonne of CO2, over six times the French rate. Earlier this year, an official carbon-tax commission, headed by Michel Rocard, a Socialist former prime minister, proposed a rate of €32, arguing that anything less would not change habits.
>
> Mr Sarkozy says that he will increase the tax rate in time. Indeed, this is what Sweden did, having started in 1991 with a lower carbon-tax rate of €26. "The truth is that if you

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133 "Swedes to push for CO2 tax at EU helm", *Euractiv.com*, 12 May 2009
134 Euractiv, *EU carbon tax on new Commission's agenda early next year*, 4 November 2009
135 Green Momentum, *Europe to propose carbon tax across all member states*, 25 September 2009
136 BBC news website, *France set to impose carbon tax*, 10 September 2009
137 "President Sarkozy braves opposition to introduce personal carbon tax levy" *The Times*, 11 September 2009
138 "Taming the carbonivores", *The Economist*, 17 September 2009

> start too high, you'll never get it through," says Dieter Helm, an environmental economist at Oxford University in Britain. "You can always raise it later."[139]

It has also been reported that China is studying proposals for a carbon tax:

> Several government ministries, including the Tax Administration, the Finance Ministry and the Environmental Protection Ministry, were studying the plan, the report said, citing unnamed government officials.
>
> It would take at least 4-5 years for China to formally launch the emissions tax, Jiang Kejun, a researcher at the ERI, told the paper.
>
> He suggested a tax rate of 10-20 yuan ($1.5-3) per metric ton of carbon dioxide at the initial stage, then a gradual rise to 300-400 yuan per metric ton.[140]

8.2 Other tax proposals

A 2006 Institute of Fiscal Studies report examined proposals for an alternative to a carbon tax; these included a tax on high energy products and surcharges on council tax and stamp duty:

> If a carbon tax on domestic energy is unlikely, at least in the foreseeable future, then there may be other ways to incentivise households to reduce emissions. A report by Dresner, Ekins and Willis (2006) at the Policy Studies Institute for the Green Alliance called for a 'green living initiative' to include taxes on high-energy use products such as standard light bulbs, disposable batteries and disposable cameras. It also called for incentives to be incorporated into the council tax system that would offer rebates for households that install energy-saving measures such as insulation. Similar ideas are developed by Dresner and Ekins (2006), who suggest surcharges on council tax and stamp duty for households that do not carry out energy-saving investments in the home. They argue that such incentives would make it easier to identify households where energy-saving measures are not cost effective to implement. Such households may be particularly at risk of fuel poverty and would be most likely to lose heavily from any carbon tax, but if they are identifiable after a period of time during which incentives for energy-efficient investments have been in place, it may make it easier to compensate such households if a carbon tax were introduced later.[141]

A 2008 paper written for the *Mirrlees Review* of taxation, speculates that advancing technology could develop new opportunities to quantify emissions and develop environmental taxation:

> … technology is developing rapidly, and is a key issue in determining the types of environmental taxes that are practicable. For example, technological advances that make it easier and cheaper to measure emissions directly may open up new possibilities for direct, targeted emissions taxes, based on measured emissions. Also, as viable technologies are developed for large-scale carbon capture and storage, it may be necessary to replace straightforward taxes on energy use with more complex and targeted taxes that provide appropriate incentives for the use of carbon capture.[142]

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139 "Taming the carbonivores", *The Economist*, 17 September 2009

140 Reuters, *China studying tax on greenhouse gas emissions: report*, 23 September 2009

141 Institute for Fiscal Studies, *The UK Tax System and the Environment*, October 2006, p74

142 Fullerton, D. et al, *Environmental Taxes: Paper written for the Mirrlees Review "Reforming the tax System for the 21st Century"*, published by the Institute for Fiscal Studies, March 2008, p6

EU carbon dioxide border tax

In September 2009 the French President proposed an EU carbon dioxide border tax as a means to prevent EU firms from relocating to outside the EU in an attempt to avoid environmental protection laws and tariffs (also known as "carbon leakage"). He suggested that goods, from countries outside the EU which have not signed climate change agreements, could be taxed to ensure that added environmental costs do not put European manufacturers at a competitive disadvantage.[143]

The World Trade Organisation (WTO) published a report, *Trade and Climate Change,* in June 2009 which explained some of the difficulties in implementing a carbon border tax:

> There are two main challenges in implementing border measures: providing a clear rationale for border measures (i.e. accurately assessing carbon leakage and competitiveness losses); and determining a "fair" price to be imposed on imported products to bring their prices into line with the domestic cost of compliance with an emission trading scheme. Discussions of such measures so far have highlighted the difficulty in implementing a border adjustment mechanism that responds to the concerns of domestic industries while still contributing to the wider goal of global climate change mitigation.[144]

The WTO's report indicated that a border tax with an environmental policy objective could be permitted under the rules on world trade agreements:

> Detailed rules on border tax adjustments (BTAs) exist in the General Agreement on Tariffs and Trade (GATT) and the WTO Agreement on Subsidies and Countervailing Measures (SCM). These rules permit, under certain conditions, the use of BTAs on imported and exported products. Although border adjustments in connection with emission trading schemes are a new form of regulation, and as such are not explicitly foreseen in the text of the WTO agreements, core trade disciplines such as the non-discrimination principle may come into play as their scope of application is fairly broad.
>
> The general approach under WTO rules has been to acknowledge that some degree of trade restriction may be necessary to achieve certain policy objectives as long as a number of carefully crafted conditions are respected. WTO case law has confirmed that WTO rules do not trump environmental requirements. If, for instance, a border measure related to climate change was found to be inconsistent with one of the core provisions of the GATT, its justification might nonetheless be sought under the general exceptions to the GATT (i.e. Article XX), provided that several conditions are met.[145]

In October 2009, the *Financial Times* reported that the EU Environment Commissioner had played down the possibility of a border tax:

> Stavros Dimas, the environment commissioner, has poured cold water on an initiative gaining ground in some member states and moving to the centre of negotiations ahead of December's climate change conference in Copenhagen.
>
> Mr Dimas told the Financial Times a carbon border tax should not be used to force developing countries to sign up to a climate deal.

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143 "Sarkozy renews pressure for CO2 border tax" *Euractiv*, 14 September 2009
144 World Trade Organisation, *Trade and Climate Change*, 26 June 2009, p3
145 World Trade Organisation, *Trade and Climate Change*, 26 June 2009, p3-4

> "I don't think it should be used as a means of pressure," Mr Dimas said, arguing that instead poor countries should be offered finance to help them to tackle climate change.[146]

Road pricing

In its October 2009 report to Parliament, the Committee on Climate Change (CCC) suggests that road pricing could be a useful component of a strategy for transport emissions reduction, and that it should be "seriously considered" by the government.[147] The CCC suggests that road pricing could have economic benefits as well as being able to result in emissions reductions:

> In the absence of road pricing across almost all the UK road network, high levels of transport demand have resulted in congestion, which is forecast to worsen significantly in future. Road users consider only the private cost of travel, and not the impact that they will have on other road users in terms of exacerbating congestion. In not accounting for the costs that they impose on others, road users therefore overuse roads. This is a market failure which standard microeconomic theory would suggest should be addressed through introduction of prices that reflect congestion costs.
>
> The economic benefit of road pricing would mainly ensue through lower levels of congestion resulting in travel time savings. In addition, however, road pricing could result in emissions reductions both through reducing demand for car travel and through increasing car speed to levels where fuel consumption is more efficient.[148]

The CCC suggests that road pricing would only be effective at reducing emissions if it was introduced as a complement to fuel duty, rather than as a substitute for it:

> In political debates, it is sometimes argued that if road pricing were to be introduced this would have to be offset by a reduction in fuel duty. From a carbon perspective, however, this would result in increased emissions (i.e. fuel consumption and emissions are potentially more responsive to fuel duty than to road pricing). From an emissions perspective, therefore, road pricing should be introduced as a complement to fuel duty rather than a substitute. This conclusion is buttressed by the fact that fuel duty plays a crucial role in providing incentives for purchase of electric cars, increasing electric car cost savings relative to conventional cars and offsetting upfront cost premiums.
>
> Where road pricing is additional to fuel duty, evidence suggests that this could result in significant emissions reductions:
>
> - Modelling by the Department for Transport for the Committee on Climate Change suggests that a national road pricing system could reduce annual CO2 emissions by around 5% in 2020.
>
> - Analysis by the RAC Foundation on the effects of road pricing on carbon emissions in 2040 suggests that an efficient national road pricing system would reduce annual CO2 emissions by around 15% in that year.
>
> It is beyond the scope of the Committee to recommend that road pricing should be introduced given the political judgements involved. The analysis suggests, however, that road pricing could be a useful component of a strategy for transport emissions

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146 "EU attacks carbon border tax initiative" *Financial Times*, 14 October 2009

147 Committee on Climate Change, *Meeting Carbon Budgets – the need for a step change: Progress report to Parliament*, October 2009 p222-224

148 Committee on Climate Change, *Meeting Carbon Budgets – the need for a step change: Progress report to Parliament*, October 2009 p222

> reduction, and the Committee recommends that this should be seriously considered by the Government.
>
> Recognising this, we include an additional 5.6 MtCO2 reduction in 2020 corresponding to roll-out of a national road pricing scheme in our Stretch Ambition scenario.[149]

For further information about road pricing, its background and views of the political parties see House of Commons Library Standard Note, *National Road Pricing*, SN/BT/3732, 5 August 2009.

Windfall tax on fossil fuels

The independent think-tank the New Economics Foundation's (NEF) 2008 report, *A Green New Deal*, proposed that a windfall tax could be levied on oil and gas companies, the revenue from which to be used specifically to help poorer people increase energy efficiency in their homes:

> Government funding for the Green New Deal could come in part from the increase in the Treasury's coffers from rapidly rising carbon taxes and carbon trading. Also now that energy prices are high, and before North Sea oil is exhausted, introducing a windfall tax on oil and gas companies would be a huge funding source. Fossil fuels are an unrepeatable windfall from nature, yet the UK Government has so far failed adequately to take advantage of its income from oil to prepare for a low carbon future. Norway, by contrast, has used its oil surpluses to help create a safety net for future generations that is today worth around e260 billion (£198 billion). This amounts to e75,000 (£57,000) for every man, woman and child in the country. The UK could follow Norway's lead and set up an Oil Legacy Fund, paid for primarily by a windfall tax on oil and gas company profits.
>
> Part of these increased revenues would need to be used to raise benefits for the poorest people in our society, who would otherwise be too adversely affected by such price rises during the transition to a low-carbon future. Grants would be required to cover 100 per cent of the cost of changes needed to the dwellings of the most disadvantaged, to increase energy efficiency and fit renewables.[150]

Carrier bag charge

In its *Waste Strategy for England 2007* the government said that it wanted to phase out the use of free single-use carrier bags at point of sale in order to reduce their "environmental impact".[151] In the *Climate Change Act 2008* powers are now provided for government to require that retailers make a minimum charge for the single-use carrier bags they provide.[152] At committee stage the Minister emphasised the intention to use these powers if retailers could not achieve reductions in the bags they distribute through voluntary means.[153]

In December 2008, seven leading high street supermarkets signed a voluntary agreement with the government to achieve a 50 per cent cut in the number of bags they give out compared with 2006 figures.[154] In July 2009 Defra announced that this target had largely been met: by May 2009 a reduction of 48 per cent had been achieved over May 2006 levels. Defra said that it and the Waste & Resources Action Programme would continue to work

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149 Committee on Climate Change, *Meeting Carbon Budgets – the need for a step change: Progress report to Parliament*, October 2009 p222-3

150 New Economics Foundation, *A Green New Deal,* 21 July 2008*,* p37

151 Department for Environment, Food and Rural Affairs, *Waste Strategy for England 2007*, May 2007, p98

152 By virtue of section 77 and schedule 6

153 Public Bill Committee, 8 July, c420

154 Department for Environment, Food and Rural Affairs press release, *Millions fewer carrier bags on England's high streets*, 17 July 2009

closely with the British Retail Consortium and retailers on further reductions over the next year, with progress to be reviewed in summer 2010 "before deciding on next steps."[155]

In June 2009 the Welsh Assembly government consulted on proposals to introduce a charge on single use carrier bags.[156] The objectives to be achieved from the charge are environmental and funds raised by the charge would be distributed by a third party body to fund environmental projects within Wales. The charge would be introduced through regulations made under the *Climate Change Act 2008* and is proposed to be between five to 15 pence per bag. [157] The Welsh government announced on 3 November 2009 that the scheme would proceed.[158]

9 Opposition proposals on green taxes

9.1 Conservative Party

In September 2008, the Conservative Party published a document, *Reconstruction - our plan for a strong economy*.[159] It stated that the Party would "over time raise the proportion of total tax revenues that come from environmental taxes."[160] It also explained that any new environmental taxes would be replacement taxes and that any additional revenue from them would go into a dedicated fund:

> any new environmental taxes that we propose at the next election will be replacement taxes not additional stealth taxes. Any additional revenues will go into an independently audited Families Fund that can only be used to reduce other taxes on families.[161]

The new taxes proposed are: a new carbon levy to replace the climate change levy (which would continue to exclude the domestic sector); a new per-aircraft airline pollution duty to replace air passenger duty; and a "fair fuel stabiliser" to replace the current fuel tax regime.[162]

These three new proposed taxes have been the subject of Conservative Party consultation documents:

- *An effective Carbon Levy for the UK: A Consultation*, November 2006
- *Greener skies: a consultation on the environmental taxation of aviation*, March 2007
- *A Fair Fuel Stabiliser: a consultation on the future of fuel taxation*, July 2008

In the November 2006 consultation on the Carbon Levy, the Party examined the need for environmental taxes in the context of emissions trading schemes. It concluded that environmental taxes still had an important role to play for four main reasons:

> First, only a minority of permits issued under existing emissions trading schemes are auctioned. As the Stern Report argues, "increasing the use of auctioning is likely to have strong benefits for efficiency, for distribution and for the public finances." In

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155 Ibid
156 Welsh Assembly Government, *Proposals for a charge on single use carrier bags*, June 2009
157 Welsh Assembly Government, *How would a proposed charge on single use carrier bags work in Wales?* June 2009
158 Welsh Assembly Government press release, *Charge on single-use carrier bags to come into force by 2011*, 3 November 2009
159 Conservatives, *Reconstruction - our plan for a strong economy,* September 2008
160 Ibid, p30
161 Ibid, p30
162 Conservatives, *Reconstruction - our plan for a strong economy,* September 2008, p32

> contrast, the so-called 'grandfathering'[163] of permits violates the Polluter Pays Principle, which states that the social cost of pollution should be borne by polluters. This is an important principle, and taxation can play a role in correcting for the excessive use of grandfathering.
>
> Second, taxes can help to reduce uncertainty over the future price of carbon. As emphasised by Stern, "in order to influence behaviour and investment decisions, investors and consumers must believe that the carbon price will be maintained into the future." Emissions trading schemes have been vulnerable to large fluctuations in the price of carbon, so taxation can help to provide a floor beneath which the price of carbon will not fall.
>
> Third, taxes can be used to cover areas of the economy where the regulation and inspection burden required by emissions trading would be too high. In the business context this applies particularly to small and medium sized businesses which are generally not covered by trading schemes.
>
> Finally, revenue from environmental taxes can be used to reduce other harmful taxes. This can potentially result in a 'double dividend' of lower carbon emissions and faster economic growth. This is why we have said that we want to rebalance the tax system away from jobs and families and towards pollution and carbon emissions.[164]

In a November 2009 speech on a "sustainable economy", the Shadow Chancellor, George Osborne reaffirmed that green taxes would have an important role to play alongside carbon trading schemes in order to "put a predictable floor on the price of carbon."[165] He also said that the Conservative Party would guarantee not to let landfill tax fall in real terms for the next ten years.[166]

9.2 Liberal Democrats

The Liberal Democrats published a policy paper, *Fairer, Simpler, Greener*, in September 2006 about proposals to reform the focus of the tax system in a revenue neutral way.

The paper argued that tax was an important tool to combat climate change:

> 1.2.7 Environmental Sustainability: One of the strongest tools available to government to help to change behaviour is the tax system. Liberal Democrats believe that climate change is the greatest threat facing the planet and tax is a policy instrument which we cannot afford to neglect as part of a package of measures to cut greenhouse gas emissions. Taxes have the advantage that they can be used to incentivise environmentally sensitive behaviour in an economically efficient way that goes with the grain of markets. We also support the principle of using taxes on resource usage and depletion to help us cut taxes on wealth creation.[167]

The paper also set out a number of proposals for a "green tax switch":

- Replacing the existing Airport Passenger Duty with an Aircraft Tax based on the emissions of each aircraft.
- More steeply graduating vehicle excise duty for new vehicles based on carbon emissions, with a higher level for the highest emissions band.

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163 Grandfathering is the free allocation of permits to a business based on its historical emissions.
164 Conservatives, *An effective Carbon Levy for the UK: A Consultation*, November 2006, p8-9
165 Conservatives, *George Osborne: A sustainable Government; a sustainable economy*, 24 November 2009
166 Ibid
167 Liberal Democrats, *Fairer, Simpler, Greener*, September 2006

- Reforming the existing climate change levy, indexing it annually and eventually changing it into a simpler carbon tax.
- Indexing fuel duty to inflation except in periods of oil price spikes.
- Phasing in reform of the basis on which business rates are charged in England to Site Value Rating.[168]

On 30 November 2009 Liberal Democrat Leader Nick Clegg reaffirmed this approach to green taxation in an update on the party's tax plans.[169] The plans also revealed a proposal to introduce a levy on domestic flights. The aim of the levy would be to discourage travellers from choosing air travel over land travel.[170]

[168] Liberal Democrats, *Fairer, Simpler, Greener*, September 2006, p5-6
[169] Liberal Democrats, *Fair taxes at the heart of Liberal Democrat message*, 30 November 2009
[170] Liberal Democrats, *Liberal Democrat Tax Plans*, 30 November 2009, p3

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- *Air passenger duty: recent debates & reform*, SN/BT/5094, 13 October 2009
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For further and future publications see the *Climate Change* and *Taxation* topical pages on the Parliament website at www.parliament.uk/topics/topical-issues.htm

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