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PROTECTING THE ENVIRONMENT

The Government is committed to delivering a strong economy based not just on high and stable levels of growth and employment but also on high standards of environmental care. This Budget sets out the next stage in the Government's strategy for tackling the global challenge of climate change including:

- encouraging energy efficiency in the business sector through **an increase in the climate change levy, in line with inflation, from 1 April 2007;**
- further measures to improve household energy efficiency, **including an extra 250,000 installations of subsidised insulation in British homes over the next two years, funding for local authority-led publicity and incentive schemes, trialling the use of 'smart' energy meters, and a new voluntary initiative with major retailers to reduce the energy use of consumer electronics;**
- the development of a **new National Institute of Energy Technologies, in partnership with the private sector,** to better leverage the substantial public sector funding of energy research;
- further support for the development of alternative energy sources, including an **additional £50 million to develop microgeneration technologies and the launch of a consultation document on the barriers to large-scale commercial deployment in the UK of carbon capture and storage;**
- **further detail on the Renewable Transport Fuel Obligation to increase the use of biofuels** – with the obligation set at 2.5 per cent in 2008-09 and 3.75 per cent in 2009-10, and the **biofuels duty incentive maintained at 20 pence per litre in 2008-09;**
- **reforms to vehicle excise duty (VED) to sharpen environmental incentives** including reducing the rate to zero for cars with the very lowest carbon emissions and introducing a new top band for the most polluting new cars. 50 per cent of cars will see their VED frozen or reduced; and
- **the deferral to 1 September 2006 of the inflation-only increase in main road fuel duties, reflecting continuing volatility in the oil market; and the same increase of 1.25 pence per litre, also from 1 September 2006, in duty for rebated fuels,** maintaining the differential with main fuel duty rates to support the Oils Strategy.

The Budget also reports on the Government's strategy for tackling other environmental challenges, including:

- **an increase in the value of the landfill tax credit scheme to £60 million in 2006-07** with a challenge to the private and voluntary sector partners in the scheme to provide additional opportunities for young people to volunteer on environmental projects; and
- **a freeze in the rate of the aggregates levy.**

Sustainable development **7.1** The Government is committed to delivering strong, stable and sustainable economic growth. To achieve this aim – for current and succeeding generations – it is crucial to take care of the natural environment and the resources on which economic activity depends. Economic growth need not be at the expense of the environment. Instead it must be based on the principles sustainable development: integrating economic prosperity with environmental protection and social equity.

7.2 Modern patterns of production and consumption are putting greater pressure on the environment and greater demand on the world's natural resources. Managing this increasing pressure has been identified in the Government's Comprehensive Spending Review (CSR 2007) as one of the principal long-term challenges facing the UK. Analysis being undertaken as part of the CSR work will provide valuable evidence to inform future action.

7.3 There are a number of environmental challenges facing the UK:

- *tackling climate change*, and reducing emissions of greenhouse gases to minimise their environmental costs;
- *improving air quality*, to ensure that air pollutants are maintained below levels that could pose a risk to human health;
- *improving waste management*, by increasing the efficiency of resource use and enabling waste to be reused or recycled to deliver economic value; and
- *protecting the countryside and natural resources*, to ensure they are sustainable economically, socially and physically.

7.4 Many environmental challenges are global and so can only be effectively tackled through co-ordinated international action. For example, the UK accounts for only 2 per cent of global carbon dioxide emissions, and this figure is expected to fall further to 1.5 per cent by 2020. Aspects of air and water quality are also an international problem, requiring multilateral intervention to ensure that the health and environmental impacts of pollution are minimised. The UK is therefore working with both developed and developing economies to reduce emissions of pollutants in a coordinated way and to encourage the development of sustainable technologies, and patterns of production to achieve this.

7.5 At the same time, however, domestic action is also needed to enable the UK to meet these environmental challenges. The Government believes that this can be done in a way that actively supports increased productivity and growth. Key to this is improving the flexibility of businesses and individuals to respond to changing circumstances. This can be achieved through both short-term policy measures and longer-term innovation and technological change. For example, improving energy efficiency is often an effective way for companies and households to reduce both emissions and energy costs, while the development of environmental technologies can not only help to enhance energy, waste and water efficiency but may also enable UK firms to gain competitive advantage.

Government intervention **7.6** Every section of society – business, individuals and government – has a role to play in helping to meet the UK's climate change and other environmental goals. For its part, the Government recognises that it is required to take action where market failure prevents long-term economic and environmental consequences from being taken into account in decision making. A key aim of government intervention is to encourage behavioural change across all sectors, particularly with regard to the use of energy, waste and water. Investment to increase efficiency in these areas is often a cost-effective option for businesses and households, but short-term cost considerations and market failures can create barriers to the take up of more

efficient alternatives. Intervention can correct these market failures, ensuring the implementation of the 'Polluter Pays' principle in which environmental costs are fully internalised in economic decisions.

Principled approach 7.7 The Government set out its framework for intervention to meet environmental objectives in its *Statement of Intent on Environmental Taxation* in 1997 and the Treasury paper, *Tax and the Environment*, published in 2002. In the 2005 Pre-Budget Report the Government reiterated the criteria that need to be considered when deciding whether government intervention is needed and, if so, what the action should be:

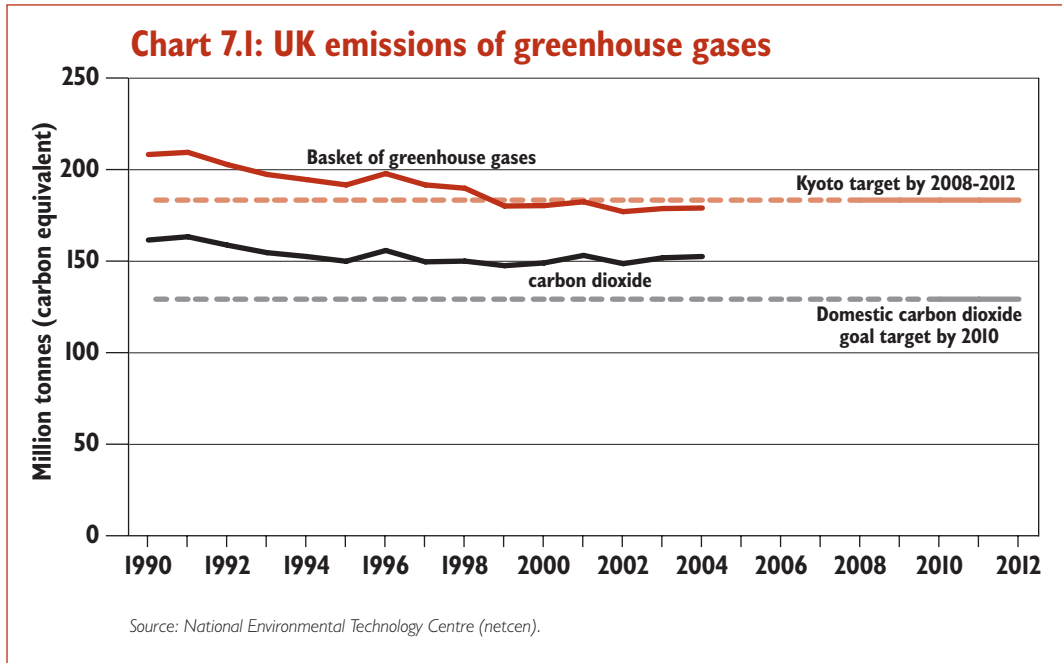
- the decision to take action must be evidence-based;
- any intervention to tackle environmental challenges must take place at the appropriate level;
- action to protect the environment must take account of wider economic and social objectives;
- action on the environment must be part of a long-term strategy;
- the right instrument must be chosen to meet each particular objective; and
- where tax is used, it will aim to shift the burden of tax from 'goods' to 'bads'.

7.8 Within this framework, the Government has taken significant action to address environmental challenges since 1997. A key feature of the Government's approach has been the use of a variety of different policy instruments to correct market failures and deliver behavioural change. These instruments include: information schemes, voluntary mechanisms, regulation, spending programmes, economic instruments and tradable permit schemes.

7.9 Within this range of measures, fiscal instruments have a role to play. In particular, tax can be an effective way to implement the 'Polluter Pays' principle. Fiscal instruments can also provide a strong signalling effect and be a way to correct specific market failures in particular sectors. Public spending can also have an important effect in catalysing behavioural change but in some cases risks subsidising activity that would happen anyway. Where these alternatives are not available, regulation can offer an effective means to improve environmental standards, especially where price signals by themselves are too weak to achieve the behavioural changes needed to safeguard natural resources efficiently. However, it is essential that such regulation offers businesses the clarity, scope and lead times needed to respond flexibly and innovate to meet new environmental standards.

Progress to date

7.10 Using this framework and these approaches, the Government has made significant progress in tackling climate change. UK greenhouse gas emissions fell by about 14.5 per cent between 1990 and 2004. The UK is therefore on track to meet its Kyoto commitment to reduce greenhouse gas emissions by an average of 12.5 per cent compared with 1990 levels over the years 2008 to 2012. Carbon dioxide emissions, which accounted for 85 per cent of UK greenhouse gas emissions in 2004, also fell between 1990 and 2002, while the economy grew by around 35 per cent – showing that reductions in emissions can be achieved alongside economic growth. Carbon dioxide emissions increased between 2002 and 2004, largely due to increases in emissions from power generation resulting from changes in the relative prices of gas and coal, but the downward trend is projected to resume in future years.



7.11 Against a backdrop of increasing economic activity, the Government's wider environmental policy has also delivered significant results:

- fuel duty and vehicle tax incentives have contributed to significant reductions in the key pollutants affecting air quality. Between 1997 and 2003, nitrous oxides emissions were reduced by 22 per cent, sulphur dioxide emissions were reduced by 41 per cent and particulates (PM10) were reduced by 30 per cent;
- increasing the standard rate of landfill tax has contributed to a sharp fall in the volume of waste disposed to landfill, down 28 per cent between 1997 and 2005;
- the introduction of the aggregates levy has resulted in an increase in the production of recycled aggregate in England by over 3 million tonnes between 2001 and 2003; and
- in 2004, 70 per cent of English rivers were of good biological quality and 62 per cent were of good chemical quality, compared to 60 per cent and 43 per cent respectively in 1990.

TACKLING THE GLOBAL CHALLENGE OF CLIMATE CHANGE

7.12 Climate change is the most pressing environmental issue the world faces. Global atmospheric temperatures have risen by about 0.7 degrees celsius over the last 100 years, with the majority of this rise occurring since the 1970s. Depending on the amount of greenhouse gases emitted and the sensitivity of the climate system, the Intergovernmental Panel on Climate Change (IPCC) predicts that global average temperatures could rise by between 1.4 and 5.8 degrees celsius by the end of the century. If climate change is not tackled, the consequences could be extremely damaging for the world economy. The IPCC estimates that the global economic costs of an increase in average global temperature of 2.5 degrees celsius could be between 1.5 and 2 per cent of global GDP per year.

Review of the economics of climate change

7.13 To tackle climate change effectively, the Government believes that the evidence base must continue to be improved. That is why the Government has set up a review to examine the global economics of climate change led by Sir Nicholas Stern, Head of the Government Economic Service and Adviser to the Government on the economics of climate change and development. The Review – which is due to report to the Prime Minister and Chancellor of the Exchequer in autumn 2006 – will enhance understanding of the consequences of climate change in both developed and developing countries. It will also assess how this analysis applies to the specific case of the UK, in the context of its existing climate change goals.

Box 7.1: Review of the economics of climate change

Sir Nicholas Stern outlined the conclusions of the review so far at a lecture to the Oxford Institute of Economic Policy, on 31 January 2006, including that:

- the problem is complex. Unlike other environmental problems, such as city smog or water pollution, climate change is global in both its cause and its effects. The long time horizons also mean that the effects are not immediately tangible;
- there is a serious risk of adverse consequences. Some risks, if they were to be realised, could be irreversible and accelerate the process of global warming – for example, the release of greenhouse gases from thawing permafrost. These impacts may justify more extensive action now to avoid the risk of such events occurring;
- the most severe impacts of climate change are likely to be felt in some of the poorest countries with the smallest margins for adjustment. Millions are at risk of being pushed back into poverty, of facing hunger and being forced to migrate;
- the current pathway of emissions is unsustainable in terms of its consequences for climate change. Urgent action is necessary to move economies onto low-carbon growth pathways, including the development and deployment of low-carbon technologies; and
- climate change requires an international response based on a shared understanding of the implications. Effective action requires both leadership from the world's richest nations, and the involvement of the fast-growing developing countries.

Tackling climate change through international action

7.14 Climate change and energy are global issues with global consequences. So national action to tackle climate change needs to take place as part of a concerted international effort. The UN Framework Convention on Climate Change and the Kyoto Protocol together provide a multilateral context for this action and ensure that progress towards reducing greenhouse gas emissions can be made in a cost-effective way without undermining national competitiveness.

Gleneagles agreement

7.15 To drive forward multilateral action, the Government championed climate change through its G8 and EU presidencies during 2005 and will continue to take the lead internationally on this issue. Significant steps were taken at the Gleneagles Summit in July 2005 where G8 leaders agreed to a range of actions and principles for tackling climate change, as set out in the Gleneagles Communiqué and Plan of Action. The G8 leaders formally recognised that climate change is a serious and long-term challenge, caused by human activity, which demands an urgent response. They also committed to work together on a range of global energy issues. In addition, the G8 acknowledged the importance of engaging with developing countries to ensure that they can also meet their energy needs in a sustainable way. Indeed, the leaders of a number of fast-growing economies – China, India, Brazil, South Africa and Mexico – also attended the G8 Summit and set out their own

statement on the importance of international cooperation to tackle climate change. They agreed to join G8 countries in taking forward a Dialogue on Climate Change, Clean Energy and Sustainable Development and the first meeting of the Dialogue took place on 1 November 2005. Mexico has offered to host the next meeting in 2006.

World Bank Energy Investment Framework 7.16 The World Bank is playing a key role in supporting both the Gleneagles Dialogue and the Plan of Action by working with the Regional Development Banks to develop a framework for energy investment in developing countries. **At the World Bank meeting in April, the UK will propose a \$20 billion target for leveraging public and private investment into alternative sources of energy, energy efficiency and adaption to climate change in developing countries.** The International Energy Agency is also developing its work on energy efficiency, power generation and alternative energy strategies. These international institutions will play a key role, alongside efforts by the UK and other donors, in helping the poorest and most vulnerable countries plan for the effects of climate change.

EU ETS 7.17 The UK Government set up the first national economy-wide emissions trading scheme, then helped lead implementation of the first international carbon-trading mechanism, the EU Emissions Trading Scheme (EU ETS). The EU ETS sets a limit on carbon emissions for 12,000 installations in major industrial sectors across the 25 EU Member States, including over 1,000 sites in the UK. Phase One of the EU ETS began in January 2005 and will deliver significant carbon savings in an effective way – helping Member States to move towards their Kyoto emissions reduction targets. These targets will have to be met during Phase Two of EU ETS (2008-2012).

7.18 Building on the experience so far of Phase One, a public consultation on Phase Two of the EU ETS was held during summer 2005 and the UK's draft National Allocation Plan will be published shortly. Given that the EU represents around a quarter of total global emissions, a well-designed trading scheme can be a cost-effective instrument to reduce emissions. That is why the UK is working with other EU Member States to secure agreement on a robust scheme that extends beyond 2012. **The Chancellor has written today to EU Finance Ministers to highlight the economic case for extending and strengthening the EU ETS beyond 2012 as the core of a global carbon market.**

Tackling climate change through domestic action

7.19 The UK has also led international efforts to tackle climate change through domestic action. Several important measures have been put in place since 1997 – including the climate change levy and climate change agreements, the Renewables Obligation, fuel duty differentials and reforms to vehicle excise duty and company car tax, as well as regulatory and spending programmes. These have helped to tackle climate change while enabling the UK economy to maintain strong levels of growth. Further domestic action to tackle climate change needs to continue to support economic growth, and take account of future energy market conditions which may be more difficult than in the recent past. This reinforces the importance of encouraging energy efficiency and exploring the potential of low-carbon technologies.

Climate Change Programme Review 7.20 The Government is shortly to publish the Climate Change Programme Review (CCPR). The CCPR will assess the performance of the Government's Climate Change Programme to date and set out how the UK can move towards a 20 per cent reduction in carbon emissions by 2010, as part of an effort to reduce carbon emissions by around 60 per cent by 2050. Alongside this, the Government is also reviewing its energy policy through the Energy Review (discussed in more detail in Chapter 3).

Reducing emissions in the energy supply sector

7.21 As set out in Chapter 3, the Government recognises the importance of energy policy in supporting sustainable growth. One of the energy policy goals of the 2003 Energy White Paper was to put the UK on a path to a reduction of 60 per cent in carbon emissions against their 1990 level by about 2050. The current Energy Review will assess progress towards that goal. How the UK's demand for energy changes, and the ways the UK will meet that demand, will profoundly influence the future profile of the country's carbon emissions. It is important to take steps now to encourage and incentivise UK energy users to adopt behaviours that help put the UK on the appropriate path.

Research and Development **7.22** The Government believes that the UK has the capacity to be a world leader in energy technologies. In January 2006, the Government launched the Energy Research Partnership, which is designed to give strategic direction to UK energy research, development, demonstration and deployment. **The Energy Research Partnership, under the joint chairmanship of Paul Golby, Chief Executive of E.On UK and Sir David King, the Government's Chief Scientific Adviser, is today committing itself to raising substantial sums of private investment to develop a new National Institute for Energy Technologies.** This will bring a new level of focus, ambition and industrial collaboration to the UK's work in the field of energy science and engineering, particularly in relation to energy sources and technologies that reduce carbon emissions and contribute to the security of energy supply. The objective of the institution will be to build on existing funding structures in order to better leverage the already substantial funding for energy research in the public research base.

7.23 The new National Institute will be a 50:50 public-private partnership. The Energy Research Partnership has committed to raising substantial sums of private investment, sufficient for the Institute to have critical mass, and BP, EDF Energy, E.On and Shell have already announced their intention to be involved. The intention is that the private sector investment would be matched (up to a pre-determined limit) by public science and technology investment, building on the Research Councils' growing energy programmes – a model that has proved to be extremely effective with other large-scale research and development projects. The intention is to establish a virtual institute with a 'design life' of a finite period, probably a decade, with clear objectives specified over that time, and a strong public-private governance structure. Funding would be allocated competitively, using existing facilities where possible, but also building strong national and international linkages.

7.24 As set out in more detail in Chapter 3, **the Budget announces that one of the first new Enterprise Capital Funds (venture capital funds run by the private sector using a mix of public and private funding) will provide early-stage funding for companies developing sustainable technologies.** The fund will be able to invest a total of up to £30 million and will help bring forward innovative technologies that reduce natural resource use, improve energy efficiency, waste or pollution management.

Carbon capture and storage **7.25** Carbon abatement technologies, which enable fossil fuels to be used with substantially reduced carbon emissions, could make an important contribution to meeting the Government's energy policy objectives both domestically and globally. In particular, carbon capture and storage (CCS) is an innovative process by which the carbon in fossil fuels is captured as carbon dioxide and committed to long-term storage in geological formations. It is likely to be a critical technology in global carbon reduction strategies, particularly for countries with fast-growing economies and rapidly growing fossil fuel consumption. **To advance the understanding of CCS, the Government is launching a consultation document on the barriers to wide-scale commercial deployment of CCS in the UK and the potential role of economic incentives in addressing those barriers.**

7.26 In the 2005 Pre-Budget Report, the Government also announced that it intended to work collaboratively with Norway on the issues surrounding the costs of, and barriers to, CCS. A memorandum of understanding was signed by the Energy Minister, Malcolm Wicks, and the Norwegian Energy Minister, Odd Roger Enoksen, in November 2005. As part of this initiative a North Sea Basin Task Force was established, made up of public and private organisations from the North Sea rim, with the aim of developing common principles on the regulation and management of carbon dioxide storage under the North Sea. The inaugural meeting of the Task Force was recently held in Oslo. **Since the Pre-Budget Report, discussions between the British and Norwegian Governments, and key industry players, have revealed that the UK and Norway are facing similar decisions about the commercial deployment of CCS. Further discussions will take place later this year to share information on the feasibility and costs of CCS.**

Renewable energy 7.27 In January 2000 the Government announced a target for renewable sources to supply 10 per cent of UK electricity by 2010, subject to the costs being acceptable to the consumer. The key policy mechanism to meet this target is the Renewables Obligation which requires all licensed electricity suppliers to supply a specific and growing proportion of their electricity from certified renewable sources. The amount of energy coming from renewable sources is growing quickly and in 2004 3.6 per cent of electricity was generated from renewable sources, enough to power around 2.5 million households. The Energy Review is examining the costs and benefits of all forms of power generation including the case for further support for renewable energy sources.

Biomass 7.28 The burning of biomass, excluding energy from waste, currently makes a small contribution to the UK's energy balance – about 1.5 per cent of electricity and 1 per cent of heat. The Biomass Taskforce, led by Sir Ben Gill, was established in October 2004 with the aim of assisting the Government and the biomass industry to optimise the contribution of biomass energy to renewable energy targets, to sustainable farming and forestry, and to rural economy objectives. The Taskforce reported at the end of October 2005 and the Government has committed to publishing its full response by the end of April 2006.

Microgeneration 7.29 Microgeneration technologies, such as solar heating and micro-wind, have the potential to contribute towards both improved energy security and lower carbon emissions. In order to stimulate demand for these new technologies, the Government has already committed £30 million over the next three years to fund microgeneration installations and introduced reduced rates of VAT to encourage their adoption by individuals. DTI will publish a Microgeneration Strategy next week which will set out how the Government intends to address the various barriers preventing widespread take-up of these technologies through measures such as ensuring microgenerators are rewarded for exports of electricity, and working with planning authorities and the construction industry to develop positive approaches. **Budget 2006 announces a further £50 million for DTI's Low Carbon Buildings Programme with the aim of encouraging manufacture at higher scale leading to lower costs. This will help fund the installation of microgeneration technologies in a range of buildings including schools, social and local authority housing, businesses and public buildings.**

Energy Services Summit 7.30 The development of an energy services market could improve energy efficiency across all sectors of the economy and optimise benefits to consumers in the long term. Supplying energy on an energy services basis helps shift the focus of producers and consumers from the supply of units of energy to the supply of the overall services for which energy is used. It therefore offers the potential for reducing demand and carbon emissions. HM Treasury hosted a seminar in January 2006 to explore how Government and the business community can encourage the development of energy services markets in the UK. Following the seminar, an independent industry group will develop proposals on energy services and demand reduction which will feed into the Energy Review.

Reducing emissions in the business sector

Climate change levy 7.31 The climate change levy (CCL), introduced in 2001, seeks to encourage businesses to improve the efficiency with which they use energy. Improving energy efficiency is an effective way to lower emissions of carbon dioxide, and can also help businesses reduce their energy costs. To support competitiveness, the introduction of the CCL was accompanied by a 0.3 percentage point cut in employer national insurance contributions (NICs), which has led to a net reduction in tax liability for business. The full impact of the CCL, and also the other measures introduced as part of the CCL package, is summarised in Box 7.2 and set out in more detail in a separate report published today.

7.32 The CCL has had a significant impact on business energy demand which, in turn, has helped improve energy efficiency and reduce emissions. An independent evaluation by Cambridge Econometrics published alongside Budget 2006 concluded that the levy would deliver cumulative savings to 2005 of 16.5 million tonnes of carbon (MtC). By 2010, it is estimated that the levy will be saving around 3.5 MtC a year – well above the estimates made at its introduction. It is also estimated that by 2010 CCL will reduce energy demand in the economy as a whole by 2.9 per cent a year – and in the commercial and public sector by nearly 15 per cent a year – compared with the levy package not being in place. The reduction in energy demand, along with the 0.3 percentage point cut in employer NICs, has reduced costs for business. Cambridge Econometrics estimated that the CCL/NICs package will reduce overall unit costs for business by 0.13 per cent by 2010 compared with the package not being in place.

7.33 The CCL is playing a crucial role in enabling the UK to meet its Kyoto targets. CCL rates have not been raised since its introduction. **Budget 2006 announces that, to ensure the UK continues to make progress in tackling climate change, CCL rates will increase in line with current inflation. The inflation increase will be introduced on 1 April 2007. The Government is committed to returning CCL revenue to business, discussing with business the most effective way of supporting investment in energy efficiency and the environment.**

CCL exemption for natural gas in Northern Ireland 7.34 The temporary CCL exemption for natural gas used in Northern Ireland was introduced in 2001 to encourage the development of the fledgling gas market in Northern Ireland and to encourage businesses to switch to natural gas from more polluting fuels such as coal and oil. **The exemption was due to expire on 31 March 2006 but, as the gas market in Northern Ireland remains small and the infrastructure still limited, it will be extended for a further five years until 31 March 2011,** which should encourage the market's further development.

Climate change agreements 7.35 Climate change agreements (CCAs), which allow energy-intensive firms an 80 per cent reduction on the CCL in return for the introduction of energy-saving measures, were introduced in 2001 alongside the levy. CCAs were originally forecast to save 2.5 MtC a year. Audited findings show that CCAs have already been successful – exceeding targets by an extra 1 MtC in the first target period to 2002, and 1.4 MtC in the second period to 2004. Indeed, CCAs have increased carbon savings above the level that would have been achieved if all firms paid the full CCL rate. By 2010, it is estimated that CCAs will deliver carbon savings of around 2.8 MtC per year. Regular reviews of existing CCAs by the Department for Environment, Food, and Rural Affairs (Defra) continue to ensure that the energy efficiency improvements and emissions reductions delivered by the agreements are maximised.

7.36 Building on the evidence provided by the initial round of CCAs, Budget 2004 announced that the number of energy-intensive sectors eligible to apply for them was to be extended. Following state aids approval for the extended scheme in autumn 2005, four sectors agreed CCAs with Defra in January 2006. These sectors are: British Calcium Carbonate

Federation, covering the production of calcium carbonate-based mineral products; Contract Heating Treatment Association, covering the heat treatment of metals; British Compressed Gases Association, covering the production of industrial gases; and Kaolin and Ball Clay Association, covering the production of kaolinitic clay.

7.37 State aids approval has now been received to enable the horticulture sector to sign a CCA and, consequently, the Government will remove the temporary 50 per cent CCL discount for the energy used in horticulture from 1 April 2006. A further five sectors are also expected to sign CCAs shortly covering: the production of industrial film from molten polymer; 'wet' processes such as fabric treatment and dyeing; the production of cristobalite from a silica sand source; the production of plastic sheets and meshes that are used in contact with soil to stabilise structures such as embankments or roads; and the production of potash.

Enhanced Capital Allowances & the Carbon Trust

7.38 Alongside the CCL and CCAs, the Government has also introduced further measures to help improve energy efficiency and reduce emissions in the business sector. Since 2001, the Government has offered 100 per cent first-year enhanced capital allowances (ECAs) which provide up-front tax relief for spending by business on designated energy-saving technologies, of which there are now more than 13,000 approved products. The Government has also increased funding for the Carbon Trust which provides businesses with advice and information on improving their energy efficiency. In 2004-05, the Carbon Trust worked with over 2,800 organisations, resulting in cost savings of £200 million for business.

7.39 As well as from the Carbon Trust, businesses can access information on energy efficiency from a number of other sources, including through Business Links, but evidence shows that many still do not know how to get the support they need. **The Financial Secretary and Richard Ellis (Chair of East of England Development Agency) will co-chair a group including Regional Development Agencies, the CBI, Engineering Employers Federation, British Chambers of Commerce, the Federation of Small Businesses, and the Carbon Trust to examine how best to provide information and support to business on energy efficiency.**

7.40 In February 2003, the Carbon Trust launched a scheme designed to increase the energy efficiency of small and medium-sized enterprises by offering them interest-free loans to fund capital energy-saving projects. Over 300 loans have been made to date, worth over £8 million. These have generated energy savings of about £3 million so far. The 2005 Pre-Budget Report announced an additional £35 million for the Carbon Trust to expand its loan and grant schemes.

Box 7.2 The climate change levy package

The climate change levy, climate change agreements, ECAs for energy-saving technologies and funding for the Carbon Trust have together cut carbon emissions by a total of over 28 million tonnes so far.

In each of the next five years, it is projected that the whole CCL package will deliver carbon savings of over 6 MtC a year – accounting by 2010 for 40 per cent of the UK's total carbon reductions.

Reducing emissions in the household sector

7.41 Households have an important role to play in tackling climate change as they account for over a quarter of UK energy consumption and carbon emissions. Many simple energy efficiency measures can reduce emissions and energy bills but are not taken up due to a variety of market failures. Government intervention can help to change behaviour by raising awareness of the benefits of energy efficiency measures, reducing short-term cost barriers and also sending effective signals to the marketplace.

7.42 Since 1997, the Government has introduced measures to encourage investment in energy efficiency across all parts of the household sector. In particular, the Government has taken targeted action to support households to make the most cost-effective energy efficiency improvements – such as insulation, central heating and energy-efficient lighting. These measures have also helped to reduce the number of households in fuel poverty.

Raising awareness **7.43** A lack of information can be a barrier to households investing in cost-effective energy efficiency measures. For instance, turning down a central heating thermostat by one degree celsius can save over £35 and 80 kilograms of carbon each year. Cavity wall insulation typically saves £85-110 and 200 kilograms of carbon a year, rapidly repaying the initial outlay. The Energy Saving Trust works to raise awareness of energy efficiency in households by providing advice, training and accreditation schemes.

Energy Efficiency Commitment **7.44** In 2002, the Government introduced the Energy Efficiency Commitment (EEC). The EEC requires energy suppliers to achieve targets for installing energy efficiency measures in the household sector, particularly among the most vulnerable. The current phase of the EEC, over 2005-08, roughly doubles the activity of the first phase; combined, these should deliver savings of nearly 1 MtC a year by 2010. A range of measures is supported under this programme including providing by 2008 over 40 million energy-efficient light bulbs, increasing the number in UK homes by over 50 per cent; and installing cavity wall insulation in 1.7 million homes. Offers under the scheme often reduce the cost to the householder of cavity wall insulation to less than £200, so it could pay for itself in two to three years.

7.45 Nevertheless the Government believes that more could be done, and more quickly. As a first step, **Budget 2006 announces that suppliers will be able to count extra work carried out in this EEC period towards their targets in the next period. As a result, British Gas, EDF, npower, PowerGen, and Scottish and Southern Energy have agreed with the Government that they will carry out between them an extra 250,000 subsidised installations of home insulation over the next two years. This will bring forward annual carbon savings of 35,000 tonnes and reduce annual household bills by around £20 million.**

Supporting local initiatives **7.46** To support this programme, the Government believes that more innovative, locally-led ways of promoting energy efficiency could unlock consumer demand and trigger a step change in take up. As existing successful partnerships such as those in Braintree and the “Hotspots” initiative in London and Kent show, local authorities are well placed to raise local awareness and help address householders’ concerns, leading to increased uptake of energy efficiency measures. **In this Budget the Government is therefore announcing £20 million over the next two years, to help local authorities and others work in partnership with energy companies to promote and incentivise energy efficiency measures to households.**

Piloting new technologies **7.47** Energy suppliers have an important role to play in reducing energy demand and new approaches could help in this. For example, modern technology can make it easier to inform householders of the real-time costs of their energy consumption so they can see immediate benefits from reducing unnecessary energy use. New ‘smart’ meters and feedback devices attached to existing meters which provide this information might therefore help encourage behaviour change to reduce carbon emissions, as well as facilitating other efficiency gains in energy markets. **Budget 2006 announces £5 million to help co-finance with energy companies a pilot study in the use of ‘smart’ meters and associated feedback devices.**

More efficient electrical goods 7.48 Labelling, standards and other requirements for large household appliances have raised the share of A-rated fridges and freezers from 1 per cent in 1997 to 65 per cent in 2005, saving 0.45MtC a year by 2010 compared with 1999 and enough electricity to power 750,000 homes. Smaller consumer electronics such as TVs, DVD players and digital set-top boxes emit up to 1MtC a year when on standby, costing each household around £25 a year in wasted electricity. The Government committed last July at Gleneagles to promote an international 1-Watt Initiative to reduce these emissions, and is concerned that progress in reducing them is too slow. **Budget 2006 therefore announces a new initiative, in partnership with major retailers and the Energy Saving Trust, to introduce voluntary schemes in the retail sector which encourage the purchase of more energy efficient alternatives in consumer electronics.**

Warm Front 7.49 The Government's Warm Front programme provides a package of energy efficiency measures to householders in receipt of certain benefits, in order to take properties to a level of energy efficiency where there will be minimal risk of fuel poverty in the future. The scheme has already assisted over one million households since its launch in June 2000, and in the 2005 Pre-Budget Report the Government announced additional funding of £300 million to help pensioners with the cost of installing central heating in their homes. In addition to the social benefits, the programme is expected to reduce carbon emissions by 0.32 MtC a year by 2010.

Reduced VAT rates 7.50 Since 1997, the Government has introduced reduced VAT rates on a range of professionally-installed energy-saving materials – including insulation, draught stripping and central heating controls – which are available to all households. Reduced VAT rates and grants are also available to encourage households to adopt microgeneration technologies such as solar panels and wind turbines.

Private rented sector 7.51 A particular market failure exists in the private rented sector because cost savings from investing in energy efficiency are difficult for landlords to recover in increased rent. In Budget 2004, the Government took action to correct this market failure by introducing the Landlords Energy Saving Allowance (LESA) which provides an allowance of up to £1,500 for landlords who invest in cavity wall and loft insulation. Budget 2005 extended LESA to solid wall insulation. **Budget 2006 announces the extension of LESA to draught proofing and the insulation of hot water systems. The Government will also seek to improve awareness of LESA among landlords and examine a possible extension of LESA to corporate landlords.**

7.52 In the 2005 Pre-Budget Report, the Government announced that it intended to implement a Green Landlord Scheme by reforming the existing Wear and Tear Allowance and making it conditional on the energy efficiency level of the property. **The Government continues to explore how the Wear and Tear Allowance should be reformed to incentivise landlords to invest in energy efficiency, with a view to introducing the new allowance structure alongside the forthcoming Energy Performance Certificates.**

Building regulations 7.53 The Government will continue to drive forward improvements in the sustainability of new housing through tougher building regulations. The new Part L building regulations, which come into force on 6 April 2006, will increase the energy efficiency of new buildings by 20 per cent – and by 40 per cent overall taking into account the previous update in 2002. For householders this will mean that the fuel bills for an average three-bed semi-detached home with gas central heating built to the new 2006 building regulations will be £120 a year less than its equivalent built in 1997. These new standards (including measures for boilers announced in April 2005) will deliver a saving of 0.98 MtC per year by 2010, equivalent to the amount of carbon emitted from nearly 1 million dwellings built to current building regulations.

Code for Sustainable Homes 7.54 Consultation recently closed on the Government's proposed new Code for Sustainable Homes, which will set five standards for new homes to encourage more sustainable building and give householders clear information about their running costs. Following consultation, the Government will strengthen the Code to support further improvements in environmental standards. The Government will consider making energy efficiency ratings mandatory for new and existing homes, setting minimum standards of energy and water efficiency for every level of the Code and raising the lowest levels of the Code above mandatory building regulations. In addition, from 1 April 2006 all new homes funded by English Partnerships and the Housing Corporation will meet standards broadly equivalent to level three of the Code. The Government will continue to work with the housebuilding industry and environmental organisations to encourage take up of the Code and to identify barriers to achieving a higher proportion of low-carbon and zero-carbon homes.

Reducing emissions in the public sector

7.55 The public sector has an important role to play in setting an example to encourage all individuals, households and firms to improve their energy efficiency and limit their environmental impact. In March 2005, the Government published *Securing the Future: delivering the UK sustainable development strategy* which committed all government departments to produce focused action plans to reduce carbon emissions and to renew them annually.

7.56 At the local authority level, a best value energy efficiency indicator is in place which requires local authorities to address their energy consumption. In addition, the sixth round of Beacon Councils focused on sustainable energy, with seven local authorities awarded Beacon Status. In particular, Woking Borough Council has been recognised as an example of best practice and innovation in sustainable energy – see Box 7.3. To help invigorate improved energy performance, the Government is making money available for energy efficiency projects in the public sector under the 2005-06 round of the Invest to Save Budget, with 22 projects already at full bid stage. The Carbon Trust is also piloting a revolving loan fund to support energy efficiency investment by local authorities. **A seminar to be held at HM Treasury later this year will bring together central and local government to encourage the further dissemination of best practice and innovation.**

Box 7.3 Woking Borough Council

Woking Borough Council is the only local authority to be awarded a Queen's Award for Enterprise in recognition of its work in energy services. Over the past 10 years, Woking has made £4.9 million of energy-efficiency savings in local authority properties, and is estimated to be saving all its Council Tax payers £700,000 per year – an average of £20 per household. This has been achieved by reducing their energy consumption by 40 per cent in a decade.

In 2003, the Council set a new target to reduce their environmental footprint by 80 per cent by 2090. By 2010 they aim to purchase 100 per cent of electricity and thermal energy needs from local sustainable sources, including 20 per cent of electricity from local renewable sources.

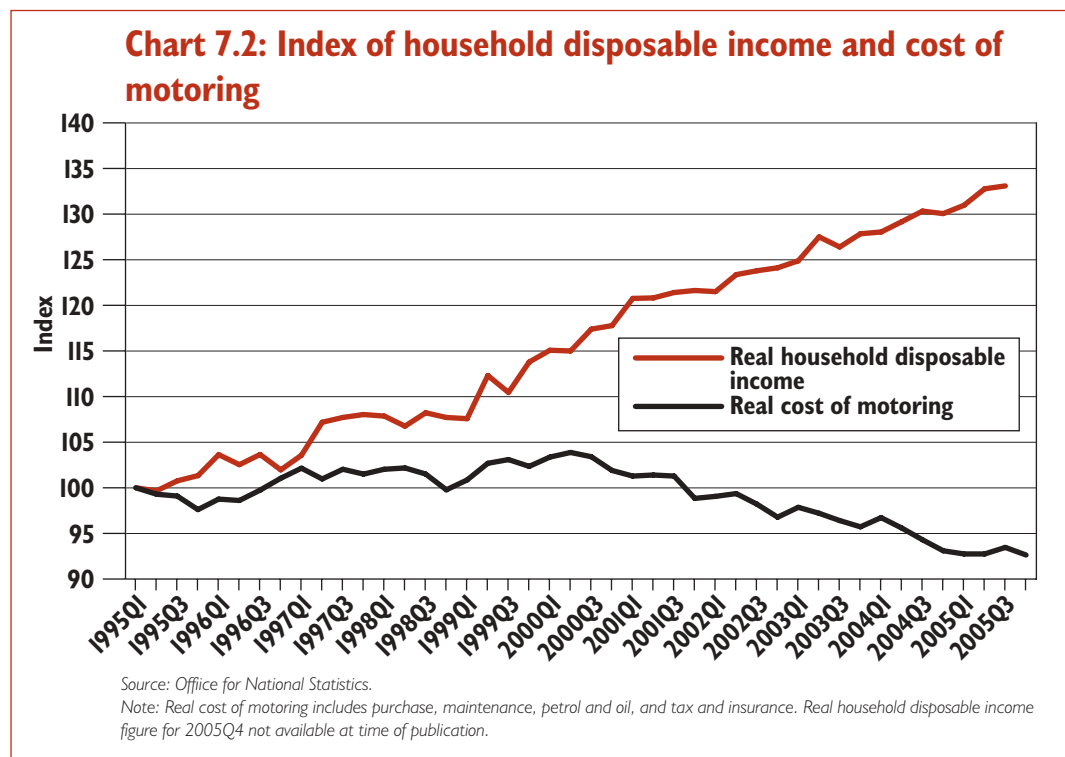
Among its energy saving initiatives, the Council has developed:

- the UK's first sustainable energy 200 Kilowatt-electric fuel cell;
- the first private wire electricity, district heating and cooling sustainable energy station in the country; and
- the use of photovoltaic cells, which use the sun's rays to collect heat, on council-owned properties to create sustainable electricity for central heating, hot water and light.

Reducing emissions in the transport sector

7.57 Transport is the second largest source of carbon dioxide emissions in the UK, and emissions are continuing to grow. In addition, the transport sector emits high levels of air pollutants. It is therefore important to tackle the emissions from this sector to address both climate change and local air quality issues. However, this objective must be progressed alongside the need to maintain a safe, clean and efficient transport system that underpins sustainable economic growth, boosts productivity, extends mobility and helps create a more inclusive society. The Government is helping to achieve this by adopting a long-term strategy of promoting lower carbon transport including alternative fuels, improving fuel efficiency and giving economic incentives to individuals to make more sustainable transport choices.

7.58 As shown in Chart 7.2, while volatile oil prices pushed up fuel costs in 2005-06, the cost of motoring has remained broadly constant in real terms over the last decade. Household disposable income has risen steadily over the same period due to sustained economic growth, and therefore motoring costs relative to household disposable income continues to decrease. This trend is expected to continue in coming years.



Fuel duty 7.59 It is the Government's policy that fuel duty rates should rise each year at least in line with inflation as the UK seeks to meet its targets of reducing polluting emissions and funding public services. At the 2005 Pre-Budget Report, with continuing market volatility, the Government announced a continuation of the freeze on main fuel duty rates. **Budget 2006 announces an inflation-based increase in main fuel duties but, because of continuing oil market volatility, the changes in rates will be deferred until 1 September 2006.**

- Rebated oils 7.60** Maintenance of the differential between main and rebated fuel duty rates supports the Oils Strategy to tackle fraud. **The Government today announces an increase in duty of 1.25 pence per litre for rebated oils, maintaining the differential between main and rebated fuel duty rates, to take effect from 1 September in line with main fuel duty rates. As part of the Government's continuing assessment of its strategy to tackle oils fraud, the Government will examine with those sectors that make heavy use of rebated oils the wider impact of the Oils Strategy.** Further detail on tackling fraud, and changes to the Excepted Vehicles Schedule, is in Chapter 5.
- EPD derogations 7.61** The UK has a number of derogations from the Energy Products Directive that enable oils for certain uses to be charged duty at a reduced rate. These derogations are due to expire at the end of 2006. While more information will be required to inform the case the UK makes to the European Commission, as indicated in the Pre-Budget Report the Government will apply for an extension of the derogations for fuel used in private air and pleasure craft navigation, and waste oils reused as fuel. **The Government publishes today an initial Regulatory Impact Assessment on the effects of ending the derogation for private pleasure craft which will be used to inform the case for extension.**
- Sulphur-free fuels 7.62** Sulphur-free fuels offer local air quality benefits, while helping the latest engine technologies work more efficiently. Following informal discussions with the oil industry, the Department for Transport expects to publish draft regulations shortly to ensure the widespread availability of sulphur-free diesel and sulphur-free 'super' grades of petrol. The Government is committed to allowing the industry the required lead time to bring forward the fuels, but, subject to agreement, would expect the fuel to be available on forecourts by the start of 2007. **The Government today announces that it will make deregulatory changes to the Hydrocarbon Oil Duties Act 1979 to encourage the delivery of sulphur-free fuels at lower cost. These changes, which will come in later this year, will simplify the specification applicable to ultra-low sulphur diesel, which will facilitate the switch to sulphur-free.**
- Alternative road fuels 7.63** Higher oil prices and the need to develop a diverse range of energy supply routes has emphasised the importance of developing alternative fuels. The Alternative Fuels Framework, published in the 2003 Pre-Budget Report, set out the Government's commitment to promoting the development of sustainable alternatives to fossil fuel, and affirmed the need for fiscal incentives to reflect environmental benefits. The framework committed the Government to a three-year rolling guarantee for biofuel and road fuel gas duty rates, offering certainty to support investment.
- Biofuels 7.64** Biofuels offer significant benefits over fossil-based fuels including lower life-cycle carbon emissions, air quality improvements, diversification and security of supply. To support the development of biofuels, the Government has introduced duty differentials for both biodiesel (in 2002) and bioethanol (in 2005) of 20 pence per litre. This level of duty incentive is already guaranteed until 2007-08. The biofuels market share in the UK has increased six-fold since 2003, having now grown to 118 million litres, or 0.25 per cent of road fuels.
- Renewable Transport Fuel Obligation 7.65** In November 2005 the Government announced it would introduce a Renewable Transport Fuel Obligation (RTFO) – a long term mechanism requiring transport fuel suppliers to ensure a set percentage of their sales are from a renewable source. The RTFO will be introduced in 2008-09, with the obligation level set at 5 per cent in 2010-11. This will deliver savings of 1 MtC by 2010.

7.66 Budget 2006 sets out further details on the RTFO. **The level of obligation will be 2.5 per cent in 2008-09 and 3.75 per cent in 2009-10.** This will ensure significant growth of biofuels prior to reaching the 5 per cent level in 2010-11, while recognising the time required to build production capacity and develop the necessary infrastructure to blend and supply the fuels. RTFO levels beyond 2010-11 will be set in due course, but **the Government intends that the target should rise beyond 5 per cent after 2010-11, so long as infrastructural requirements and fuel and vehicle technical standards allow, and subject to the costs being acceptable to the consumer.**

7.67 Budget 2006 also announces an extension of the 20 pence per litre (ppl) biofuels duty incentive until 2008-09, offering further certainty to the industry. In addition, the RTFO buy-out price – the price paid by fuel suppliers who fail to meet their obligation – for 2008-09 will be set at 15ppl. The combination of duty incentive and buy-out price is also guaranteed at 35ppl in 2009-10 but will reduce to 30ppl in 2010-11. This approach offers further certainty to encourage investment and also provides a kick start to the mechanism in the crucial first two years. **The Government also expects that the emphasis will move from the duty incentive towards the buy-out price as the principal support mechanism in future years.**

7.68 Further consultations on aspects of the design of the RTFO will be taken forward by Department for Transport over the next 12 months. The Government anticipates consulting on draft secondary legislation by the end of this year. **Work led by the Low Carbon Vehicle Partnership will also focus on the issue of carbon and sustainability assurance, which reflects the importance the Government attaches to ensuring that biofuels are delivered in a way which maximises life-cycle carbon savings, while ensuring biofuels are sourced sustainably.**

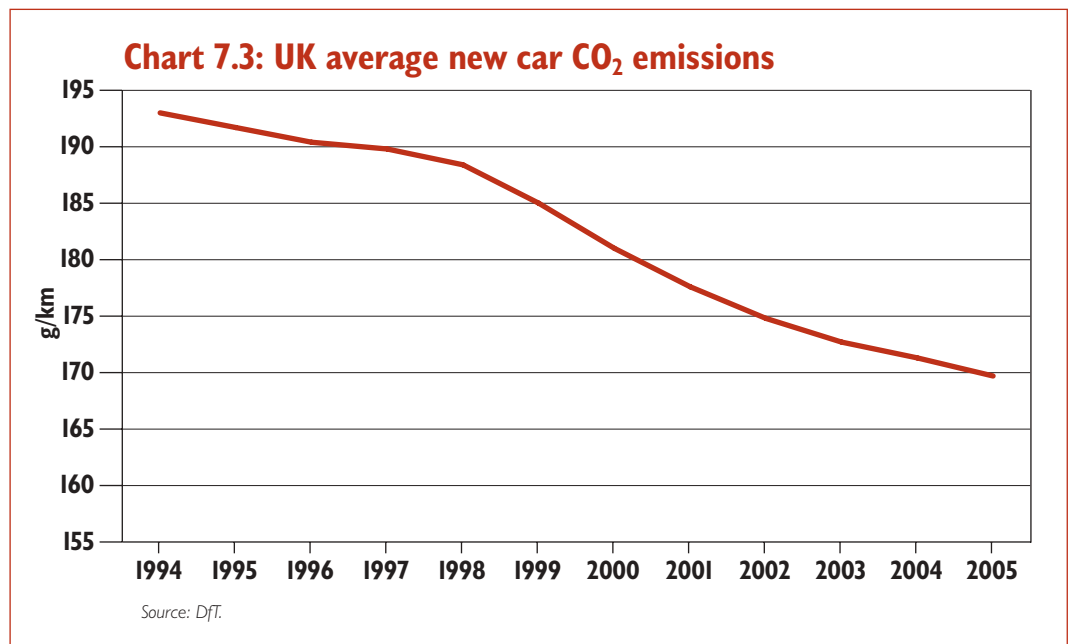
Enhanced capital allowance for biofuels

7.69 In October 2004, the Government published a stakeholder discussion document on a possible enhanced capital allowance (ECA) for the cleanest biofuels production plant, to support innovation and help develop the lowest-carbon biofuels production methods. In the 2005 Pre-Budget Report the Government announced that, subject to state aids approval, it would go ahead with a 100 per cent first-year allowance for biofuels plant that meet certain qualifying criteria and which make a good carbon balance inherent in the design. HM Revenue and Customs (HMRC) published a Partial Regulatory Impact Assessment alongside the Pre-Budget Report, setting out how the scheme would work.

7.70 Further discussions with stakeholders have taken place on both the detailed qualifying criteria for the scheme and how the administration would work. **The Government has now applied for State aids clearance and, subject to that, envisages the scheme being in place early in 2007.**

7.71 Budget 2005 also announced the start of a tendering process for a pilot project to examine the potential for using fuel duty incentives to support the use of biomass in conventional fuel production. The Government is in discussion with interested parties on the scope for such a pilot. It will report on progress in the 2006 Pre-Budget Report. **The Government will also review the current definition of biodiesel in the Hydrocarbon Oil Duties Act 1979 to ensure it remains fit for purpose and enables environmentally-friendly fuels which meet fuel quality standards to receive recognition through the duty system. HMRC will take forward discussions with stakeholders in the coming months and report on progress at the Pre-Budget Report.**

Road fuel gases 7.72 The Government remains committed to offering support through duty incentives to liquefied petroleum gas (LPG) and natural gas (NG). In line with the established Alternative Fuels Framework, **the Government today announces that, from 1 September 2006, duty rates on LPG will increase by the equivalent of 2.25 pence per litre, to reduce the differential with main rates by 1 penny per litre which will reflect more accurately the environmental benefits of the fuel; and that, also from 1 September, duty rates on NG will increase by the equivalent of 1.25 pence per litre, maintaining the differential with main rates. Furthermore, the Government announces that the duty differential between LPG and main road fuels will be reduced by the equivalent of 1 penny per litre each year to 2008-09, and that the duty differential between NG rates and main duty rates will be maintained each year until 2008-09, to reflect the differing environmental benefits of the two fuel types.**



Lower-emission vehicles 7.73 Average carbon emissions from new cars have fallen every year for the last decade as Chart 7.3 shows. Innovation in car manufacturing has been vital to this, while progress is being supported both by a voluntary agreement between the European Commission and car manufacturers to reduce new car emissions, and by the measures the UK Government has taken to incentivise the purchase of less polluting vehicles. However, evidence suggests that improvement in the carbon emissions profile of private vehicles is less strong than that for company and business cars and that provision of clearer information and stronger signals to private motorists may be required.

Vehicle excise duty 7.74 Fiscal incentives are one of a number of instruments that can promote improvements to vehicle fuel efficiency. Vehicle excise duty (VED) for cars was reformed in 2001 and is now based on graduated carbon dioxide bands which give a clear signal to motorists to choose less polluting vehicles. New energy efficiency vehicle labels – matching the graduated VED structure – were introduced into car showrooms last year, raising consumer awareness of the potential fuel savings available from using lower emissions vehicles.

7.75 To strengthen environmental incentives, **the Government announces further reforms to VED:**

- a new higher band of graduated VED (band G), set at £210 for petrol cars, will be introduced for the most polluting new cars (those above 225g of carbon dioxide emissions per kilometre);

- the VED rate for the small number of cars with the very lowest carbon emissions (band A) will be reduced to £0 to encourage take-up and assist the development of the low carbon car market;
- VED rates will also be reduced for band B by £35 and C by £5, frozen for bands D and E, and increased by £25 for band F;
- rates for pre-2001 registered cars and light goods vehicles in the lower band will be frozen with the higher band increased by £5;
- the reduced rate of graduated VED for alternative fuel cars will be extended to include those cars manufactured to run on high blend bioethanol (E85); and
- In total, 50 per cent of cars will see their VED frozen or reduced. Three million cars will pay VED of £100 or less.

7.76 Motorbike VED rates and the standard rate for post-2001 light goods vehicles (LGVs) will be increased in line with inflation (with VED for LGVs rounded to the nearest £5), while Heavy Goods Vehicles (HGV) and bus VED will be frozen. All VED changes will take effect from 23 March 2006.

Vehicle emission standards

7.77 The European Commission is currently consulting on new 'Euro V' emissions standards for cars and small vans. The Government will consider the case for incentivising the early uptake of Euro V standards through company car tax and other instruments, ahead of the formal requirement to fit Euro V standard technology. **Euro IV emissions standards for vans will become mandatory for all vans registered after 31 December 2006. The reduced rate of VED for Euro IV vans will be removed for vans registered after that date, but remain for the lifetime of vans meeting the requirements registered before that date.**

7.78 As announced in the 2005 Pre-Budget Report, the Euro IV standard for HGVs and buses will become mandatory from October 2006, and from that date newly-registered HGVs and buses will no longer be eligible for a reduced pollution certificate (RPC). However, vehicles which obtain an RPC before that date will retain the benefit for the life of the vehicle, as long as they continue to meet the normal testing requirements. The scheme will also remain open to those who fit pre-October 2006 registered vehicles with the qualifying technology. The Government will continue to consider the scope for an incentive for early take-up of Euro V standards for HGVs and buses. In addition, the Government is currently reviewing the UK Air Quality Strategy and will publish a consultation shortly.

Company car tax

7.79 Company car tax (CCT) was reformed in 2002 and, like VED, is now based on carbon emissions, encouraging the take up of environmentally-friendlier cars. The CCT changes are making significant carbon savings, forecast to be between 0.4 and 0.9 MtC per year by 2020. **The Government is publishing today the report on the second stage of the company car tax evaluation** which shows that: as a result of the reforms, carbon dioxide emissions were 0.2 – 0.3 MtC lower in 2005; company cars are estimated to have carbon dioxide emissions around 15g per kilometre lower on average in 2004 than if the reform had not taken place; and around 90 per cent of company car drivers and employers providing company cars say they know about the new system. **To further promote environmentally friendly vehicles, Budget 2006 announces that the threshold for the minimum percentage charge rate for calculating benefit in kind from company cars will be reduced from 140g of carbon dioxide per kilometre to 135g of carbon dioxide per kilometre for 2008-09. The Government also announces a new lower 10 per cent band for company cars with carbon dioxide emissions of 120g per kilometre or less for 2008-09. In light of the findings from the company car tax evaluation that show a rise in the number of employee car ownership schemes (ECOS), HM Revenue and Customs will review the taxation of ECOS and benefits employees derive from them, with a view to possible changes.**

Capital allowances for cars 7.80 As set out in Chapter 5, the Government is giving further consideration to modernising the capital allowance regime for business cars and is publishing alongside the Budget a consultation document *Modernising tax relief for business expenditure on cars*. The proposed package contains options to incentivise the purchase of cleaner cars, including introducing a new car pool with a range of first-year allowances for cars depending on carbon dioxide emissions. This would build on the existing 100 per cent first-year allowance for cars with very low emissions, and reforms to VED and company car tax.

Company car fuel 7.81 **The VAT fuel scale charge, which is a simplified scheme for taxing road fuel when business cars are used for private motoring, is being adjusted with effect from 1 May 2006 to reflect changes in fuel prices.** As announced in the 2005 Pre-Budget Report, subject to obtaining a derogation from the European Commission, a new VAT fuel scale charge which will follow a carbon emissions basis is to be introduced with effect from 1 May 2007 as part of the Government's strategic approach to vehicle tax working alongside the reformed company car tax and fuel benefit charge. **The Budget 2006 announces that the company car fuel benefit charge calculation figure will be maintained at £14,400 in 2006-07.**

Aviation 7.82 Greenhouse gas emissions from aviation are making a significant and growing contribution to climate change. The Government recognises the importance of introducing a long-term, evidence-based strategy for tackling emissions from aviation, while noting that it is important to strike a balance between environmental, social and economic concerns. The Government believes that the best approach to tackling global aviation emissions is an international one, and that the most effective method for ensuring that aviation contributes to global climate stabilisation is to include aviation in the EU Emissions Trading Scheme (EU ETS).

7.83 The Government made advancing the inclusion of aviation in the EU ETS a priority for the UK's Presidency of the EU in 2005, with the aim of ensuring inclusion by 2008 or as soon as possible thereafter. Good progress has been made and a significant step was taken in September 2005 with the publication of the European Commission's Communication on Reducing the Climate Change Impact of Aviation¹. A legislative proposal on aviation and the EU ETS is expected by the end of 2006. **The Government will continue to work to secure further progress and recognises the need to build the evidence base further. The Government therefore announces today funding for an international scientific conference in the UK this summer that has a key focus on increasing understanding of the impact of aviation on climate change. In addition, the Government is undertaking talks with other Member States to consider how best to assist the Commission in taking forward work at European level to inform the legislative proposal.**

Air passenger duty 7.84 The Government recognises that its focus on including aviation in the EU ETS should not preclude further work on other policy instruments, including APD, to tackle emissions from aviation. But decisions on APD rates need to be considered in the context of wider social and economic factors, particularly the current volatile oil market. **The Government today announces a freeze in APD.** However, the Government is aware that economic instruments, including APD, may provide a route through which improved environmental performance in the aviation sector can be incentivised and so will continue to explore options for developing further such measures. **The Government also announces that, from 1 November, the scope of the European rate of APD will be widened to include Croatia, as an applicant country to the EU.**

¹ Reducing the Climate Change Impact of Aviation: Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee, and the Committee of the Regions, September 2005

IMPROVING WASTE MANAGEMENT

7.85 Efficient use of resources and the effective management of waste are essential features of an environmentally sustainable economy. Since 1997, the Government has introduced a number of measures to develop more sustainable waste management practices, reduce the UK's reliance on landfill and ensure that waste producers consider the full costs of the disposal of waste when making decisions. These measures aim to ensure that the UK will meet its international obligations, including the reduction in the quantity of biodegradable municipal waste disposed to landfill sites stipulated in the EU Landfill Directive. Minimisation of waste depends on building the right incentives to enable the production cycle to take account of changing patterns of consumption. As part of the Waste Strategy Review, Defra launched a consultation on 14 February 2006 on proposals for a revised strategy and the policies for implementing it.

Landfill tax 7.86 Landfill tax applies the 'Polluter Pays' principle to encourage waste producers to seek more sustainable waste management options. In 2003, the Government took a long-term strategic view and announced that, from 2005-06, the standard rate of landfill tax covering active wastes would increase by at least £3 per tonne each year, towards a medium to long-term rate of £35 per tonne. The increases in the standard rate of landfill tax are contributing to a move away from over-reliance on landfill and provisional figures show that between 1997 and 2005, the volume of active waste disposed at landfill sites fell by almost 16 per cent, with the biggest fall occurring in the last year. **The Government confirms that the standard rate of landfill tax will increase by £3 per tonne to £21 per tonne from 1 April 2006. The lower rate, covering inactive or inert waste, will remain unchanged.**

Improving local waste management 7.87 Municipal waste accounts for 10 per cent of all waste in England. In Budget 2003, £260 million was set aside for a three-year targeted waste performance and efficiency grant for local authorities in England. £3.5 million of that has already been allocated to over 50 different schemes designed by local authorities and their partners to trial positive incentives for household waste recycling and reduction. The Landfill Allowance Trading Scheme – the world's first trading scheme for municipal waste – has now been operating for almost a year, with 23 trades recorded so far, resulting in 455,000 allowances sold for the value of £9.6 million. The planning system has also been modified to provide a more effective framework for delivering the significant expansion in new waste management facilities that will be needed to meet EU obligations and national targets. In addition, the Kelly Review, detailed in Chapter 3, is examining the scope for smarter procurement of waste infrastructure.

Recycling landfill tax revenue 7.88 Budget 2003 announced that future increases in the standard rate of landfill tax would be introduced in a way that is revenue neutral to business as a whole and to local government. The Business Resource Efficiency and Waste (BREW) Programme was launched in March 2005 to return these additional landfill tax receipts to business in England. In 2006-07, BREW will allocate £95 million to eleven programmes. These include those offering direct advice and support to businesses on resource efficiency and waste minimisation, providing longer-term market transformation; and research and development projects.

Enhanced capital allowances for waste 7.89 The Government is exploring the potential to introduce an enhanced capital allowances scheme to support new waste management facilities. The 2005 Pre-Budget Report confirmed that this work is currently focused on developing options to encourage investment in developing markets for the outputs (for example, refuse derived fuel) of new waste treatment facilities and the Government will continue to engage with stakeholders to assess the potential of this proposal.

Landfill Tax Credit Scheme 7.90 The Landfill Tax Credit Scheme (LTCS) redresses some of the environmental costs of landfill by improving the environment in the vicinity of landfill sites. Projects benefiting from LTCS funding include the reclaiming of land, improvements to local community facilities and repairs to places of worship. 2006 marks the tenth anniversary of the scheme and the Government recognises the important contribution it has made. **This year, in 2006-07, the Government will increase the value of the scheme to £60 million, an increase of over £10 million. The Government also issues a challenge to the private and voluntary sector partners in the scheme to use this additional money to fund opportunities for young people to volunteer on environmental projects.**

PROTECTING THE UK'S COUNTRYSIDE AND NATURAL RESOURCES

7.91 The Government is committed to ensuring that the UK's natural resources are managed prudently. In particular it aims to improve river water quality, biodiversity and land use. The Government has sought to correct market failures where commercial activity has an impact on the wider environment, and to do so in a way that balances the need to maintain economic growth with the need to encourage a sustainable approach for the long term, particularly in sectors with a significant direct impact on the economy, such as agriculture and quarrying.

Aggregates levy 7.92 The aggregates levy was introduced in 2002 to ensure that the external costs associated with the exploitation of aggregates are reflected in the price of aggregate, and to encourage the use of recycled aggregate. There continues to be strong evidence that the levy is achieving its environmental objectives, with sales of primary aggregate down and production of recycled aggregate up. The Government expects that the rates of the levy will at least keep pace with inflation over time, although it accepts that the levy is still bedding in. **The Government announces today that in 2006-07 the rate of the levy will be frozen at £1.60 a tonne.**

Investment in water-efficient technologies 7.93 Enhanced capital allowances to support business investment in designated water-efficient technologies were introduced in 2003 and currently cover more than 700 approved products. **In 2006 the Government will add three further technology classes to the scheme.** Work to define the precise performance standards for these technologies is continuing. The addition of these groups will be worth £5 million during their first full year, 2007-08.

Water pollution from agriculture 7.94 Farming practices have a significant impact on water pollution through the use of fertilisers, feed and pesticides. The Government is currently assessing possible policy options to tackle diffuse water pollution from agriculture (DWPA), and remains committed to ensuring that the costs of such pollution do not fall on water customers. The Government plans to consult on the most cost-effective options for dealing with DWPA in the second half of 2006. The industry-led voluntary initiative on measures to reduce the environmental damage caused by the agricultural use of pesticides – which has resulted in some improvements in farming practices since its introduction – has been in place since April 2001 and is due to end on 31 March 2006. The Government will review the voluntary initiative in 2006 to assess its impact and identify further improvements, while continuing to keep options for a pesticide tax or other economic instrument under review.

Land use 7.95 The Government's commitment to achieving 60 per cent of all new development on brownfield sites, and more efficient use of land through higher densities where appropriate, will ensure that land usage and potentially adverse environmental impacts are minimised. This has resulted in 72 per cent of all development in England being on brownfield sites in 2004, up from 56 per cent in 1997. In addition, the average density of developments has increased from 25 dwellings per hectare in 1997 to 40 dwellings per hectare in 2005. At the same time, since 1997 some 19,000 hectares of land, an area approximately the size of Liverpool, have been added to green belt designated land, with a further 12,000 hectares awaiting approval in local plans.

Table 7.1: The Government's policy objectives and Budget measures

Sustainable Development Indicator and recent trend data	Recent Government Measures
Tackling Climate Change	
<p>Targets Joint Defra/DfT/DfT PSA – reduce greenhouse gas emissions to 12.5 per cent below 1990 levels in line with Kyoto commitment and move towards a 20 per cent reduction in carbon dioxide emissions below 1990 levels by 2010.</p> <p>Progress UK greenhouse gas emissions were 14.6 per cent below 1990 levels in 2004¹. Carbon dioxide emissions fell by 5.6 per cent during this period.</p>	<ul style="list-style-type: none"> • Climate Change Programme, DETR, November 2000. • UK Emissions Trading Scheme, Defra, August 2001. • Energy Efficiency Commitment, Defra, April 2002 and April 2005. • Renewables Obligation, Defra, April 2002 and December 2003. • Energy White Paper, DTI 2003. • Energy Efficiency – the Government's plan for Action, Defra, April 2004. • EU ETS Phase I began January 2005, EU ETS Phase II consultation in July 2005. • Energy Efficiency Commitment 2 introduced April 2005 • Package of fiscal measures, including climate change levy (see Table 7.2).
Air Quality	
<p>Targets Joint Defra/DfT PSA – to improve air quality by meeting the Air Quality Strategy for seven key air pollutants between 2003 and 2010.</p> <p>Progress Provisional results for 2005 show average UK urban background levels of particulate pollution (PM10) decreased from 36 micrograms per cubic metre in 1993 to 22 micrograms in 2005. Urban ozone levels increased from 42 micrograms per cubic metre to 56 micrograms, due to the reduction in other urban pollutants which tend to suppress ozone. The average number of days with moderate or higher air pollution decreased from 50 to 21 in urban areas and from 44 to 39 in rural areas between 1995 and 2005² (provisional estimates).</p>	<ul style="list-style-type: none"> • Air Quality Strategy DETR January 2000 and Addendum, Defra February 2003, and Review, Defra 2004-06, Review of Air Quality Strategy due April 2006. • Implementation of Integrated Pollution, Prevention and Control regime, Defra 2002-2007. • Air Transport White Paper, DfT, December 2003. • Ten Year Plan for Transport, DETR July 2000, and Future of Transport White Paper, July 2004. • Continued support for local air quality management system. • Negotiation and implementation of EU air quality directives and international agreements 2004-06. • Review of the Transport Energy Grant Programmes, DfT 2004-06. • Fiscal measures including fuel differentials for less polluting fuels (see Table 7.2).
Improving Waste Management	
<p>Targets Defra PSA – enable at least 25 per cent of household waste to be composted or recycled in 2005-06. Landfill Directive target to reduce the volumes of biodegradable municipal waste disposed of at landfill to 75 per cent of 1995 levels by 2010, 50 per cent by 2013, and 35 per cent by 2020.</p> <p>Progress Around 23 per cent of household waste in England was recycled or composted in 2004-05. Active waste disposed to landfill has fallen from 50.4 million tonnes in 1997-98 to 47.3 million tonnes in 2003-04.</p>	<ul style="list-style-type: none"> • Waste Strategy 2000, DETR, May 2000. • Waste Implementation Programme, Defra, 2002. • Reform of the Waste Minimisation and recycling challenge fund. • Landfill allowance (trading) schemes enacted by the Waste and Emissions Trading (WET) Act 2003. • Business resource and efficiency waste programme (BREW) 2004. • Waste Strategy review consultation published by Defra in Feb 2006. • Landfill tax and related measures (see Table 7.2).
Regenerating the UK's towns and cities	
<p>Targets ODPM PSA 5: 60 per cent of housing development to be on previously developed land. ODPM PSA 1: Work with departments to help meet PSA floor targets to deliver neighbourhood renewal and tackle social inclusion. ODPM PSA 8: Deliver cleaner, safer and greener public spaces.</p> <p>Progress In 2004, 72 per cent of new housing was on previously developed land, including conversions, increasing from around 54 per cent in 1990.³ Latest data shows the gap between the most deprived areas and the rest of the country has narrowed on several key indicators, including health, crime and education. There are currently 22 Urban Regeneration Companies in the UK.</p>	<ul style="list-style-type: none"> • Sustainable Communities "building the future" launched in February 2003. • Feb 2005 Planning Policy Statement 1 placed sustainability for the first time as a core principle of the planning system. • SR04 made available £525m a year through the Neighbourhood Renewal Fund to tackle deprivation in the most deprived areas and maintained commitment to New Deal For Communities programmes. • SR04 announced Safer and Stronger Communities Fund providing single funding stream to improve liveability. • National Nuisance Vehicle Strategy launched in November 2004. • Feb 2005 English Partnerships launched pilot programme with 12 local authorities to tackle England's legacy of derelict and brownfield land, to bring 66,000 hectares of brownfield land into beneficial use. • Budget 2005 announced the Local Enterprise Growth Initiative to increase investment and enterprise in the most deprived areas. • Package of fiscal measures including contaminated land tax credit (see Table 7.2).
Protecting the UK's countryside and natural resources	
<p>Targets Defra PSA – positive trends in the Government's headline indicators of sustainable development (includes wildlife, river water quality, land use). Water Framework Directive – requires achievement of good chemical and ecological status in surface water by 2015.</p> <p>Progress</p> <ul style="list-style-type: none"> • Farmland birds almost halved between 1977 and 1993. However, declines have reduced in recent years and 2004 populations were virtually unchanged from 1993. • Woodland birds fell by about 24 per cent between 1975 and 1992. Since then, however, populations have remained broadly constant. • In 2004 about 62 per cent of rivers in England were rated as having good chemical quality and approximately 70 per cent of English rivers were of good biological quality. • In 2006, Sites of Special Scientific Interest land in target condition rose to 71 per cent in April 2003. 	<ul style="list-style-type: none"> • Rural White Paper, DETR, November 2000. • Strategy for Sustainable Farming and Food, Defra, December 2002. • Regulations transposing the Water Framework Directive came into force 2 January 2004. • Developing measures to promote catchment-sensitive farming (Defra-HMT consultation), June 2004. • Defra consulting on pesticides strategy. • England Rural Development Programme. • Environmental Stewardship, England's new agri-environment scheme, launched March 2005. • Aggregates levy and aggregates levy sustainability fund (see table 7.2).

¹ The six main greenhouse gases are: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

² Air quality indicator for sustainable development 2005 (provisional): statistical release, Defra, 2006.

³ Land use change in England. Residential Development to 2004 (January 2006).

Table 7.2: The environmental impacts of Budget measures

Budget measure	Environmental impact
Climate Change and Air Quality	
Climate change levy package	Climate change levy is estimated to deliver annual emissions savings of over 3.5 million tonnes of carbon (MtC) by 2010 ¹ . Climate change agreements are estimated to deliver annual emissions savings of 2.8 MtC by 2010. Total CCL package including Carbon Trust, is estimated to deliver annual emissions savings of over 7.5 MtC a year by 2010.
Fuel duty	By deferring fuel duty revalorisation to September 2006 a small increase in carbon emissions is expected compared to a revalorisation at Budget.
Fuel duty differentials including: – to facilitate a market switch: <ul style="list-style-type: none"> • From leaded to unleaded; • From low sulphur to ultra-low sulphur diesel (ULSD); • From low sulphur to ultra-low sulphur petrol (ULSP). – to encourage growth in the use of more environmentally-friendly fuels: <ul style="list-style-type: none"> • Road fuel gases; • biodiesel (20ppl differential); • bioethanol (20ppl differential). 	The shift to ULSP from ordinary unleaded is estimated to have reduced emissions of nitrogen oxide by 1 per cent, carbon monoxide by 4 per cent and volatile organic compounds by 1 per cent per year ² . The shift to ULSD from ordinary diesel is estimated to have reduced emissions of particulates by 8 per cent and nitrogen oxides by up to 1 per cent per year. The road fuel gas differential has reduced emissions of particulates and nitrogen oxides, which has helped to improve local air quality. The increased use of biodiesel and bioethanol will reduce CO ₂ emissions overall typically by around 50 per cent per litre of biofuel used.
Support for biofuels	The Renewable Transport Fuel Obligation (RTFO) introduced from 2008-09 is expected to save 1 MtC by 2010 ³ . The enhanced capital allowance for biofuel plant could save a further 0.06 MtC by 2010 ⁴ .
Rebated fuels	Maintaining the differential with main road fuels will reduce levels of fraud, and will deliver small CO ₂ and local air pollution benefits through increased use of less polluting fuels and less use of rebated fuels, which are more polluting.
Vehicle excise duty (VED)	The sharpening of environmental signals will help deliver reductions in CO ₂ emissions. Numbers of vehicles in 3 lowest CO ₂ emission graduated VED bands is forecast to grow significantly in the longer term in part due to VED reform.
Company car tax (CCT)	CO ₂ emissions savings of reformed CCT system estimated to be 0.2 to 0.3 MtC in 2005, forecast to rise to between 0.4 and 0.9 MtC per year in the long run ⁵ .
Company car fuel benefit charge	The number of company car drivers getting free fuel for private use has fallen by around 600,000 since 1997, partly as a result of changes to the company car tax system in April 2002 and changes to the fuel benefit rules in April 2003, helping to reduce levels of CO ₂ emissions, local air pollutants and congestion ⁶ .
VAT fuel scale charge	The reforms are expected to deliver small reduction in CO ₂ .
Air passenger duty (APD)	A freeze in APD will result in a small increase in carbon emissions and local air pollutants from aviation.
Landlords Energy Saving Allowance (LESA)	Small reduction of carbon emissions.
Reduced rate of VAT on professionally-installed energy saving materials and microgeneration (from 17.5% to 5%)	Small reduction of carbon emissions.
Reduced rate of VAT on domestic fuel and power (from 8% to 5%)	Estimated to increase carbon emissions by 0.2 million tonnes by 2010 ⁷ .

¹ Modeling the Initial Effects of the Climate Change Levy, Cambridge Econometrics, available at www.hmrc.gov.uk.

² Using NETCEN emissions models – further detail on methodology used is provided in NETCEN's January 2000 report 'UK Road Transport Emissions Projections'.

³ Department for Transport modeling.

⁴ HMRC modelling.

⁵ HMRC modelling.

⁶ HMRC modelling.

⁷ HMRC modelling.

Table 7.2: The environmental impacts of Budget measures (continued)

Budget measure	Environmental impact
Energy Efficiency Commitment (EEC)	Phase I (2002-2005) is estimated to have reduced emissions by 0.35 MtC per year by 2005. Phase 2 (2005-2008) is expected to bring in an additional 0.62 MtC annual saving by 2008. Budget announcement could bring forward 35,000 tonnes of annual carbon savings.
Warm front (previously called the Home Energy Efficiency Scheme)	Estimated annual carbon savings of 0.32 MtC a year by 2010.
Voluntary initiative on consumer electronics	Annual emissions from household goods are estimated to be 1 MtC. An early estimate suggests savings of up to 65 per cent can be achieved at low cost to manufacturers, retailers and consumers, with 0.1-0.2 MtC potentially saved in 2010. Actual savings will depend on final agreement.
Microgeneration – £50 million to enable the installation of microgeneration technologies in 30,000 buildings	Carbon savings by 2010 around 0.01 MtC per year.
'Smart' meter pilot	An estimated 0.2 MtC could be saved in 2010 from better metering and billing.
Improving Waste Management	
Landfill tax	Provisional figures show that, between 1997 and 2005, the total quantity of waste disposed to landfill sites registered for landfill tax fell by 28 per cent, while the amount of active waste disposed to landfill fell by 16 per cent ⁸ .
Landfill tax credit scheme (LTCS)	The LTCS has provided £630 million for projects since its introduction.
Regenerating the UK's towns and cities	
Contaminated land tax credit	Bringing forward remediation of contaminated land.
Capital allowances for flats over shops	Bringing empty space over shops back into the residential market, while reducing the pressure for new greenfield development.
Reforms to VAT on conversion and renovation	Reduced pressure on greenfield site development.
Protecting the UK's countryside and natural resources	
Aggregates levy and aggregates levy sustainability fund	An 8 per cent reduction in sales of aggregates between 2001 and 2003. Reductions in noise and vibration, dust and other emissions to air, visual intrusion, loss of amenity and damage to wildlife habitats.
Enhanced capital allowances for water efficiency technologies	More sustainable use of water by business.

⁸ Data at www.uktradeinfo.com, in calendar years.

¹ The six main greenhouse gases are: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

² Air quality indicator for sustainable development: Defra, 2006.
