

The Government is committed to delivering sustainable growth and a better environment and to tackling the global challenge of climate change. It has used a range of economic and other instruments to achieve these aims, while taking into account social and economic factors. This Pre-Budget Report sets out the Government's strategy for delivering a strong economy built on a sound environmental basis, and reports on recent and forthcoming actions to achieve this goal. These include:

- **support for alternative sources of energy** including further consultation on carbon capture and storage, collaboration with Norway on this technology, and additional funding for Carbon Abatement Technology demonstration;
- **further measures to improve energy efficiency**, through the proposed Green Landlord Scheme and £35 million for the Carbon Trusts, to provide interest-free loans for the introduction of energy-saving measures in the business and public sectors;
- **continuation of the freeze in main fuel duty rates and the duty rates for road fuel gases**, due to continued oil market volatility; and a 1.22 pence per litre increase in duty on rebated fuels, which will support the strategy to tackle oils fraud;
- **a commitment to introduce a Renewable Transport Fuel Obligation and enhanced capital allowances for the cleanest biofuels plants**, to stimulate the development of alternative fuels;
- in support of the UK's continuing leadership in tackling the international challenge of climate change, **progress on taking forward the Gleneagles Plan of Action agreed by the G8 under the UK's Presidency and the Stern Review on the economics of climate change**; and
- **progress towards the inclusion of the aviation sector within the EU emissions trading scheme.**

Sustainable development

7.1 The Government believes that modern economies must be built on a platform of higher and stable levels of growth and employment and also of high levels of environmental care. For the UK economy to flourish – in this and in succeeding generations – it is essential to take care of the natural environment and resources on which economic activity depends. Economic growth must not be at the expense of the environment. Rather, economic growth needs to be based on the principles of sustainable development: that is, the integration of economic prosperity with environmental protection and social equity. The task is to meet the environmental challenge in a way that enables a high quality of life and economic growth in the short, medium and long term.

7.2 The way that individuals and families live, work and travel, and the patterns of production and distribution which underpin these choices, are putting greater pressure on the environment and greater demands on the world's resources. In particular, the key environmental challenges for the UK are:

- *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;

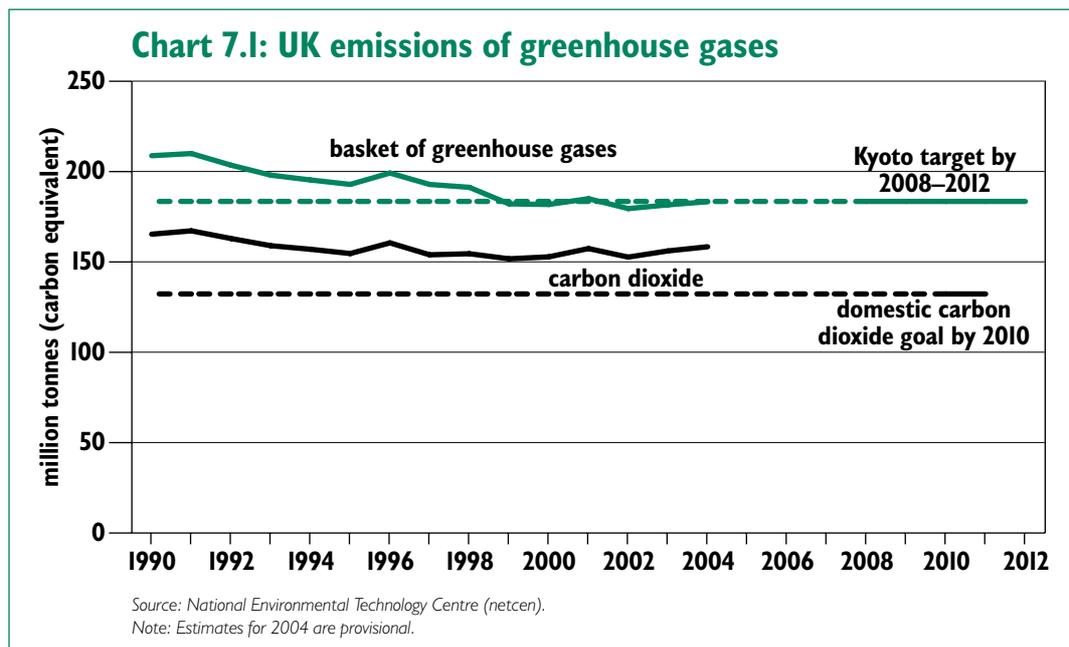
- *improving waste management*, by increasing the efficiency of resource use and enabling wastes to be reused or recycled to deliver economic value; and
- *protecting the countryside and natural resources*, to ensure they are sustainable economically, socially and physically.

7.3 Protecting the environment creates challenges for everyone – government, business and individuals. The Government recognises that meeting these challenges requires it to take action where market failure prevents long-term environmental consequences from being taken into account. The Government set out its framework for the use of economic instruments to meet its environmental objectives in the *Statement of Intent on Environmental Taxation* in 1997, which outlined the aim over time of reforming the tax system to increase incentives to reduce environmental damage. The Government developed the principles of this approach further in its paper, *Tax and the Environment*, published in 2002.

7.4 A key feature of the Government's approach has been the use of a variety of different policy instruments to tackle environmental challenges, including voluntary mechanisms, regulation, spending programmes, economic instruments and tradable permit systems. Using this framework, and these approaches, the Government has made significant progress in delivering environmental improvements.

Greenhouse gas emissions

7.5 UK greenhouse gas emissions are provisionally estimated to have fallen by 12.5 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 on 1990 levels over the years 2008 to 2012. Carbon dioxide emissions, which accounted for 86 per cent of UK greenhouse gas emissions in 2003, 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 owing to estimated increases in industrial and transport sector emissions, but the downward trend is projected to resume in future years. The UK's domestic goal of reducing carbon dioxide emissions by 20 per cent of 1990 levels by 2010 remains an important milestone in meeting the Government's long-term aspiration of reducing emissions by around 60 per cent by 2050.



Air quality 7.6 There have also been significant reductions in the key pollutants affecting air quality, such as emissions of particulates, nitrous oxide and lead. Between 1980 and 2003 emissions of nitrogen oxides were reduced by 41 per cent, particulates (PM10) by 58 per cent and sulphur dioxide by 74 per cent. This has been a result of tightening vehicle emission standards, control of pollution from fixed sources and local air quality management plans.

Natural resources 7.7 The Government has also made progress against other environmental challenges. The volume of waste disposed to landfill has been reduced significantly – falling by 20 per cent between 1997-98 and 2004-05. Production of recycled aggregate in England increased by over 3 million tonnes between 2001 and 2003, which reduced the amount of new aggregate that needed to be quarried. Also 70 per cent of English rivers were of good biological quality in 2004. All this has been achieved against a backdrop of increasing economic activity.

Environmental strategy – maintaining a principled approach

7.8 Looking forward, the task is to ensure progress continues to be made towards meeting long-term environmental challenges, while also maintaining economic growth and stability. In particular, the Government will continue to refine its approach towards the use of economic and other instruments to ensure environmental goals are achieved at least cost to business and the consumer. From the existing framework, a set of central principles can be distilled which highlight the criteria that need to be considered when deciding whether government intervention is needed and, if so, what the action should be. Box 7.1 sets this out.

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.

TACKLING THE GLOBAL CHALLENGE OF CLIMATE CHANGE

7.9 Climate change is one of the most serious risks facing the world and is a major challenge for all countries. Global atmospheric temperatures have risen by about 0.7°C over the last 100 years, with the majority of this warming 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°C and 5.8°C over the next 100 years. Annual average temperatures in the UK may rise by between 2°C and 3.5°C by the 2080s.

Cost of climate change 7.10 If climate change is not tackled, the consequences are projected to be extremely damaging for the environment and the economy. The IPCC estimate that the global economic costs of an increase in average global temperature of 2.5°C could be between 1.5 and 2 per cent of global GDP per year. Swiss Re, the world's second largest insurer, has said that the economic costs of global warming could double to \$150 billion per year in 10 years, hitting insurers with \$30-40 billion in claims annually. Indeed, climate change resulting from past and present emissions of greenhouse gases is already placing additional burdens on economies. The IPCC highlight that yearly global economic losses from catastrophic events increased from US\$4 billion in the 1950s to US\$40 billion a year in the 1990s.

The Stern Review 7.11 To tackle climate change effectively, the Government believes that the evidence base for decisions must continue to be improved. This is crucial if climate change is to be addressed in a way that also supports economic growth and wider social objectives. The Government has set up a review – led by Sir Nicholas Stern, head of the Government Economic Service and adviser to the Government on the Economics of Climate Change and Development – to examine the economics of climate change. The Review will enhance understanding of the consequences of climate change in both developed and developing countries. It will report by autumn 2006.

Box 7.2: Stern Review Terms of Reference

To examine the evidence on:

- the implications for energy demand and emissions of the prospects for economic growth over the coming decades, including the composition and energy intensity of growth in developed and developing countries;
- the economic, social and environmental consequences of climate change in both developed and developing countries, taking into account the risks of increased climate volatility and major irreversible impacts, and the climatic interaction with other air pollutants, as well as possible actions to adapt to the changing climate and the costs associated with them;
- the costs and benefits of actions to reduce the net global balance of greenhouse gas emissions from energy use and other sources, including the role of land-use changes and forestry, taking into account the potential impact of technological advances on future costs; and
- the impact and effectiveness of national and international policies and arrangements in reducing net emissions in a cost-effective way and promoting a dynamic, equitable and sustainable global economy, including distributional effects and impacts on incentives for investment in cleaner technologies.

To consult with key stakeholders, internationally and domestically, to understand views and inform analysis. Based on this evidence, to provide:

- 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.

To assess how this analysis applies to the specific case of the UK, in the context of its existing climate change goals.

To produce a report to the Prime Minister and Chancellor by autumn 2006.

Energy Review 7.12 Details of the Government's forthcoming Energy Review were announced on 29 November. Building on the 2003 Energy White Paper, the Review will look comprehensively at future UK energy policy and consider how the UK will meet the challenges of climate change, security of supply, fuel poverty and ensuring that its competitive, regulated energy markets function as effectively as possible. It will also assess the UK's progress against the 2003 Energy White Paper goals, including putting the UK on a path to a 60 per cent reduction in carbon dioxide emissions against the 1990 level by 2050. The Review will be informed by analysis and options drawn up by a Review team led by the Energy Minister Malcolm Wicks, and extensive public and stakeholder consultation will be undertaken. The Review is expected to report in summer 2006.

Tackling climate change through international action

7.13 No country can solve the problem of climate change on its own – indeed the UK is responsible for only 2 per cent of total global emissions. Action to tackle climate change must be taken at the right level and national action needs to take place as part of a concerted international effort. The UN Framework Convention on Climate Change, Kyoto Protocol, and the G8 and international partnership agreements 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 7.14 This is why the Government has championed climate change through its G8 and EU presidencies 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 Communique 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 to: improve energy efficiency; generate power with lower carbon emissions; mobilise investment in clean technologies; promote wider participation in research and development for clean energy; embed climate risk into development planning; and tackle illegal logging.

7.15 The G8 leaders acknowledged the importance of engaging with developing countries to ensure that they can also meet their energy needs in a sustainable way. Indeed, to enable international action to be developed as a fully global and long-term strategy, the leaders of fast-growing economies – China, India, Brazil, South Africa and Mexico – also attended the G8 Summit. Leaders of these countries set out their own statement on the importance of international cooperation to tackle climate change, and agreed to join G8 countries in taking forward a Dialogue on Climate Change, Clean Energy and Sustainable Development. The first meeting of the Dialogue took place in London on 1 November, attended by energy and environment ministers from 19 countries together with the European Commission and a number of relevant international organisations. At the first meeting, countries considered roadmaps for the transition to a low carbon economy, new approaches to international cooperation on technology, and ways to scale up investment in existing clean energy technologies. Participants also highlighted the importance of greater cooperation to address adaptation to the impacts of climate change. Mexico has offered to host the next meeting in 2006.

7.16 The World Bank and International Energy Agency (IEA) are playing a key role in supporting both the Gleneagles Dialogue and the Plan of Action. The World Bank is taking the lead in establishing a framework for energy investment in developing countries, bringing together existing concessional finance, revenue from the sale of credits for carbon emission reductions and private sector investment to provide support for low carbon energy development, energy efficiency and adaptation to climate change. The IEA is also developing its work on energy efficiency, power generation and alternative energy strategies.

EU ETS 7.17 The Government has also been active in helping to implement the first international carbon trading scheme, the EU Emissions Trading Scheme (EU ETS). The EU ETS, which came into force in January 2005, is a key component of the Government's carbon reduction policy and reflects the Government's commitment to securing multilateral action to tackle climate change while protecting economic competitiveness. The EU ETS sets a limit on carbon emissions for the 12,000 installations covered by the Scheme 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 a cost-effective way – helping

Member States to move towards their Kyoto emission reduction targets. These targets will have to be met during Phase Two of EU ETS (2008-2012). Building on the experience of Phase One, the Government is now taking forward work on the development of Phase Two. A public consultation was held during the summer and the aim is to publish a draft national allocation plan for consultation at the start of 2006.

Tackling climate change through domestic action

7.18 The Government has introduced a range of domestic initiatives to tackle climate change 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 more traditional regulatory and spending programmes. These have helped to tackle climate change while enabling the UK economy to maintain strong levels of growth.

Climate Change Programme Review

7.19 In September 2004, the Government launched a review of the UK's Climate Change Programme. This will further build the evidence base underpinning policies to tackle climate change by evaluating the efficiency and cost-effectiveness of existing policy measures, and assessing the best way to tackle climate change going forward. The Review is due to be published early in 2006.

7.20 Further domestic action to tackle climate change needs to support wider efforts to deliver strong economic growth. In particular, the recent rises in the price of oil have also led to increases in energy and fuel prices, which have raised costs for both businesses and consumers. This has strongly reinforced the importance of encouraging energy efficiency and the development of alternative (low-carbon) technologies which are not only effective ways of tackling climate change but can also help individuals and businesses adapt to higher prices.

Energy efficiency

7.21 Although energy-efficient products and processes are often cost-effective options for tackling climate change, failures in the market mean that demand for them is limited. Intervention by government is needed where it can effectively correct market failures and where it helps households and businesses to adapt to the current higher energy prices. The priority is to ensure that energy efficiency continues to be encouraged without undermining competitiveness and while making sure that heating and other energy use remains affordable.

Energy Efficiency Innovation Review

7.22 In the 2004 Pre-Budget Report, HM Treasury and the Department for Environment, Food and Rural Affairs (Defra) announced an Energy Efficiency Innovation Review (EEIR) to examine how a step change in energy efficiency in the domestic, business and public sectors in the UK could be delivered cost effectively and how energy efficiency improvement can be embedded into decision making across the economy. The evidence base for the review has been developed by the Carbon Trust and the Energy Saving Trust and they are today publishing independent reports to the Government. Work for the Review found that the current policy mix was delivering significant carbon savings by improving energy efficiency but that the uptake of energy efficiency could be enhanced by a number of measures, including raising awareness and support for innovative technologies. **The Government welcomes these reports and is publishing a summary for stakeholders of the output and conclusions.** A number of findings from the Review have already fed into the wider Review of the UK Climate Change Programme, and the Government will respond to the EEIR through the revised Climate Change Programme and later policy processes such as the Energy Review and Comprehensive Spending Review 2007.

Energy Services Seminar 7.23 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 would help 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. This includes heating, lighting and services such as monitoring and control of energy use, which are integral to achieving greater energy efficiency. **The Treasury is hosting a seminar in January 2006 to explore how Government and the business community can encourage the development of energy services markets in the UK.**

Business and public sector energy efficiency

Climate change levy 7.24 As described in Box 7.3, the climate change levy (CCL), seeks to encourage businesses to use energy more efficiently and to reduce emissions of carbon dioxide. Climate change agreements (CCAs), which allow energy intensive firms an 80 per cent reduction in the levy in return for the introduction of energy saving measures, are an integral part of that package. Building on the evidence provided by the initial round of CCAs, in Budget 2004 the Government announced that it was extending the number of energy-intensive sectors eligible to apply for them and Defra has negotiated agreements with a number of additional sectors. **The Government announces that state aids approval has now been received for agreements with four sectors: 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.**

CCL discount for energy used in horticulture 7.25 In Budget 2000 the Government announced a temporary 50 per cent CCL discount for the horticulture sector, covering the period 2001-06. This was because, although it is a relatively energy intensive sector with a large number of (often small) businesses exposed to international competition, the processes the sector undertakes were not covered by the Pollution Prevention and Control Regulations 2000 and it was therefore not eligible to apply for a CCA. However, following the extension of CCA eligibility criteria mentioned above, the sector has negotiated a draft agreement with Defra. **Final state aids clearance for the specific targets in the agreement is awaited but, once secured, horticultural businesses signing agreements will be able to claim an 80 per cent discount in CCL rates.** Consequently, the Government does not plan to extend the temporary 50 per cent discount for the energy used in horticulture beyond 31 March 2006.

Box 7.3: The climate change levy (CCL)

The Government introduced the climate change levy in 2001 following a review by Lord Marshall which concluded that there was a case for an tax to increase energy efficiency in the business sector and help meet the UK's emissions targets. Lord Marshall received evidence that there was considerable scope for cost effective carbon dioxide emissions reductions in all business sectors, reducing energy consumption by as much as 15 per cent in some industries.

The CCL provides an important signalling mechanism to business to encourage them to focus on cost-effective ways of reducing energy bills. An independent evaluation by Cambridge Econometrics published at Budget 2005 concluded that the levy is effective and should save over 3.5 million tonnes of carbon (MtC) per annum by 2010, well above the estimates made at its introduction. In particular, they concluded that the announcement of CCL in Budget 1999 will, in combination with the price effects, have reduced energy demand in the commerce and public sector by 14.6 per cent by 2010.

The levy was introduced as part of a package of measures after extensive consultation including:

- a 0.3 per cent cut in employers national insurance contributions, worth £1.2 billion in 2004-05, compared with £0.8 billion from the levy in the same year;
- Climate Change Agreements (CCAs), which allow energy intensive firms an 80 per cent reduction in the levy provided they agree to increase energy efficiency and reduce emissions, reinforcing their incentive to make cost-effective energy saving investments; and
- other measures to promote business energy efficiency, such as enhanced capital allowances to support business in acquiring the most energy efficient equipment and the funding of the Carbon Trust to provide further support and advice to business.

Audited findings show that industry beat their CCA targets by 1 MtC per annum in the first target period and 1.4 MtC per annum in the second target period.

SME loan scheme 7.26 In February 2003 the Carbon Trust launched a scheme designed to increase the energy efficiency of small and medium sized enterprises (SMEs) by offering them interest free loans to fund capital energy saving projects. Over 300 loans have been made to date generating energy savings of about £3 million and saving over 9000 tonnes of carbon.

7.27 Research conducted for the Energy Efficiency Innovation Review indicates that take up of energy efficient measures by most sectors of the business community is poor. **In the new year the Financial Secretary to the Treasury will initiate an ongoing discussion with business to further examine the steps required to improve energy efficiency investment.** This informal forum will provide an opportunity for the business community and Government to openly discuss barriers and what steps Government and business could take to improve take up.

Public Sector Energy Efficiency 7.28 Improving energy efficiency is a particular challenge for the public sector. The 2002 Framework for Sustainable Development set objectives for central government to reduce its overall carbon emissions, improve energy efficiency and increase energy from renewable sources and good quality combined heat and power. A best value energy efficiency indicator is in place for local authorities. To help invigorate improved energy performance, the Government will make money available for good energy efficiency projects in the public sector under the 2005-06 round of the Invest to Save Budget. 22 projects have gone forward to full bid stage. The Carbon Trust has also established a pilot revolving loan fund to support energy efficiency investment in local authorities.

7.29 To support future investment in energy efficiency in the SME and public sectors, the Government announces an additional £35 million for the Carbon Trust to expand its loan and grant schemes.

Household energy efficiency

7.30 Households also have an important role to play in tackling climate change as they account for nearly 30 per cent of energy consumption and around a quarter of total UK CO₂ emissions. However, when considering ways to improve household energy efficiency, it is again essential that wider economic and social objectives are taken into account, in particular fuel poverty. This is especially important given current high oil and energy prices.

7.31 To encourage domestic energy efficiency and reduce fuel poverty, the Government has introduced reduced VAT rates for professionally-installed energy saving materials. In addition, the Energy Efficiency Commitment (EEC), launched by the Government in 2002, requires energy suppliers to achieve targets for installing energy efficiency measures in the household sector, particularly amongst the most vulnerable. The Government has set a target for the next phase of the EEC, over 2005-08, roughly to double activity and deliver savings of around 0.7 million tonnes of carbon a year by 2010. Recent evidence suggests that energy suppliers have already achieved more than one third of this target.¹ In October 2004, the Government announced an additional £3 million for the Energy Saving Trust information campaign to support the EEC.

Private rented sector 7.32 As the Energy Efficiency Innovation Review points out, cost savings from investing in energy efficiency in private rented accommodation are difficult for landlords to recover in increased rent. In Budget 2004 the Government took initial steps to intervene in order to correct this market failure by introducing the Landlord's Energy Saving Allowance (LESA), which provided 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.

Green Landlord Scheme 7.33 Budget 2005 also confirmed that the Government was looking at providing further incentives for landlords to invest in the energy efficiency of their property, through a Green Landlord Scheme. **Building on consultation carried out with stakeholders over the summer, the Government intends to reform the existing Wear and Tear Allowance by making it conditional on the energy efficiency level of the property. The Government will look to extend the scheme to unfurnished properties and link qualification of a property for this allowance to the forthcoming Energy Performance Certificates (EPCs).** This package is designed to increase landlords' awareness of the importance of investing in energy efficiency and to provide an incentive for them to take action to improve the quality of their property. The exact form of the Green Landlord Scheme and its relationship with the renewals basis of relief will be discussed with stakeholders, with precise plans finalised alongside EPCs.

Warm front 7.34 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. **As set out in chapter 5, the Government has now set aside additional funding to assist pensioners with the cost of installing central heating in their homes.**

¹ Available at www.ofgem.gov.uk EEC update 14.

Developing alternative energy sources

UK research in alternative energy **7.35** Alternative sources of energy are a crucial component of the Government's strategy to reduce emissions and tackle climate change while supporting continued economic growth. To enable the UK to become a world leader in the development of innovative new technologies, Budget 2005 announced a new UK Energy Research Partnership (UKERP), bringing together the public and private sectors to develop a shared vision for energy research and innovation. Paul Golby, the Chief Executive Officer of E.On, has been named as the industry co-chair for the Partnership, together with the Government's Chief Scientific Adviser, Sir David King. UKERP will be officially launched in January, and will develop a coherent strategy to optimise the environment for energy research in the UK.

Micro-generation **7.36** Microgeneration offers potential long-term solutions both to reducing emissions and to tackling fuel poverty. The Department for Trade and Industry will publish its microgeneration strategy by April 2006. Since 2000, reduced VAT rates have been extended to microrenewable energy sources, such as air source and ground source heat pumps and micro-combined heat and power (micro-CHP). **The Government announces the further extension of reduced VAT rates to wood-fuelled boilers. Further work will also be undertaken to identify how microgeneration might be transferred to developing countries, as a way to support international efforts to tackle climate change.**

Renewable energy **7.37** Renewable energy sources also play an important part in reducing carbon emissions, while strengthening energy security. 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 each year. The Government recently embarked on a Review of the Renewables Obligation to ensure that the Obligation continues to stimulate the use of renewable electricity, while maximising value for money for consumers. The Department of Trade and Industry (DTI) recently published a statutory consultation document outlining the Government's proposed approach.

7.38 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 launched in October 2004, with the aim of assisting Government and the biomass industry in optimising the contribution of biomass energy to renewable energy targets and 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.

Carbon capture and storage **7.39** Carbon abatement technologies – including carbon capture and storage (CCS) – could potentially make a significant contribution to reducing carbon emissions both domestically and globally while also promoting energy security and reliability. CCS, in particular, 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 has the potential to reduce significantly carbon emissions from a number of applications, including fossil fuel power generation. **The Government intends to work collaboratively with Norway on the issues surrounding the costs of CCS and will consult further on the barriers to wide-scale commercial deployment of CCS in the UK, and the potential role of economic incentives in addressing those barriers. The Government is also providing additional funding of £10 million for technology demonstrations under DTI's Carbon Abatement Technologies (CAT) Strategy.**

7.40 CCS could be a critical technology in global carbon reduction strategies, particularly for countries with fast-growing economies and rapidly growing fossil fuel consumption. The UK placed climate change on the agenda for the EU-China and EU-India Summits in September and October this year, and the EU-China Joint Declaration on climate change launched work to explore and demonstrate the potential of carbon capture and storage to deliver near-zero emissions generation from coal-fired power stations in China.

Box 7.4: Carbon abatement technologies and carbon capture and storage

Fossil fuel based carbon abatement technologies (CATs) allow fossil fuels to be used in a variety of applications resulting in substantially reduced carbon dioxide (CO₂) emissions. CATs cover a range of options for reducing the CO₂ emissions from fossil fuel combustion, including improving the efficiency of conversion processes, encouraging fuel switching to lower carbon alternatives and carbon capture and storage (CCS) whereby the carbon in fossil fuels is captured (as CO₂) either before or after combustion and committed to long-term storage in geological formations.

CCS involves the deployment of a chain of technologies for CO₂ capture, transportation and storage. CCS could be applied to separate and capture CO₂ from a power station or factory (via a CO₂ capture facility), before the CO₂ is transported and stored in an underground geological formation (such as a saline formation or a depleted oil or gas reservoir) or used to enhance the recovery of oil and/or methane.

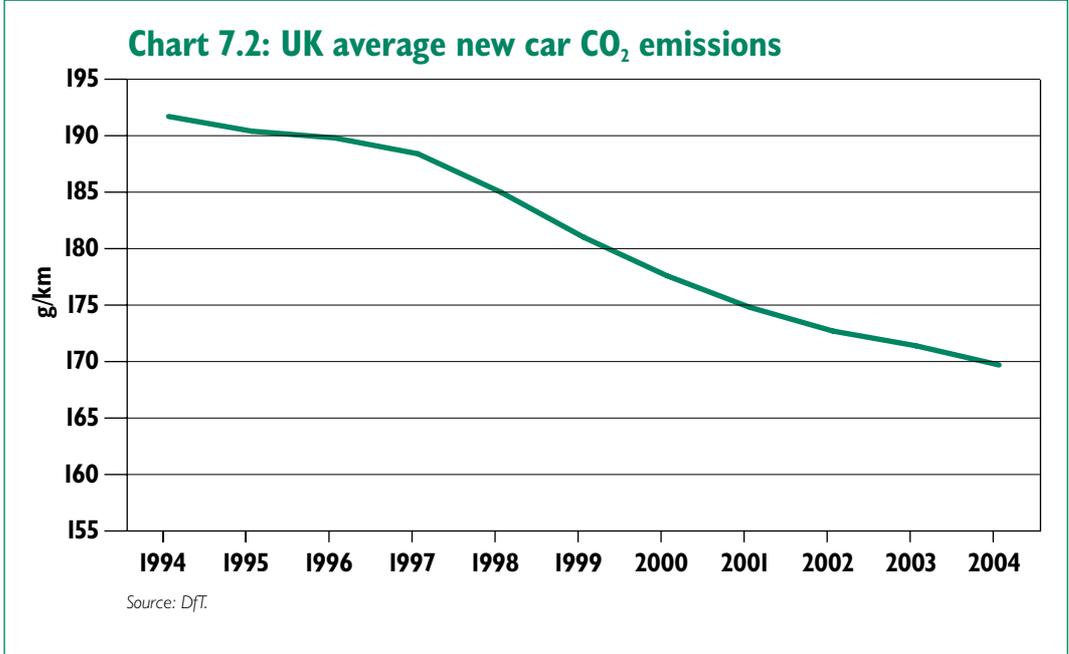
7.41 The Energy Review (described earlier in this chapter) will examine the costs and benefits of all forms of power generation including the case for further support for renewable energy sources like wind, wave, solar and tidal power, biomass for heat, microgeneration technologies and carbon capture and storage, alongside existing sources like gas, coal and nuclear and the role of energy efficiency.

PROVIDING A CLEAN AND EFFICIENT TRANSPORT SYSTEM

7.42 A safe, clean and efficient transport system underpins sustainable economic growth, boosts productivity, extends mobility and helps create a more inclusive society. However, transport continues to create significant levels of pollution. It is the second largest source of carbon dioxide emissions in the UK and a sector from which carbon dioxide emissions are still growing. In addition, transport makes a significant contribution to local air pollution and the associated impacts on health. Congestion can make the problem worse: slow-moving traffic emits more greenhouse gases and other pollutants, as well as resulting in an additional economic burden through loss of hours to industry and other economic activity.

7.43 The Government believes that the challenge is to deliver an efficient transport network that promotes UK economic strength and mobility, protects revenues and minimises fraud, while decoupling the growth in the sector from growth in emissions. It is also important to strike a balance between the need to protect our public services and the environment, and the need to keep transport costs affordable. The Government is assisting 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.

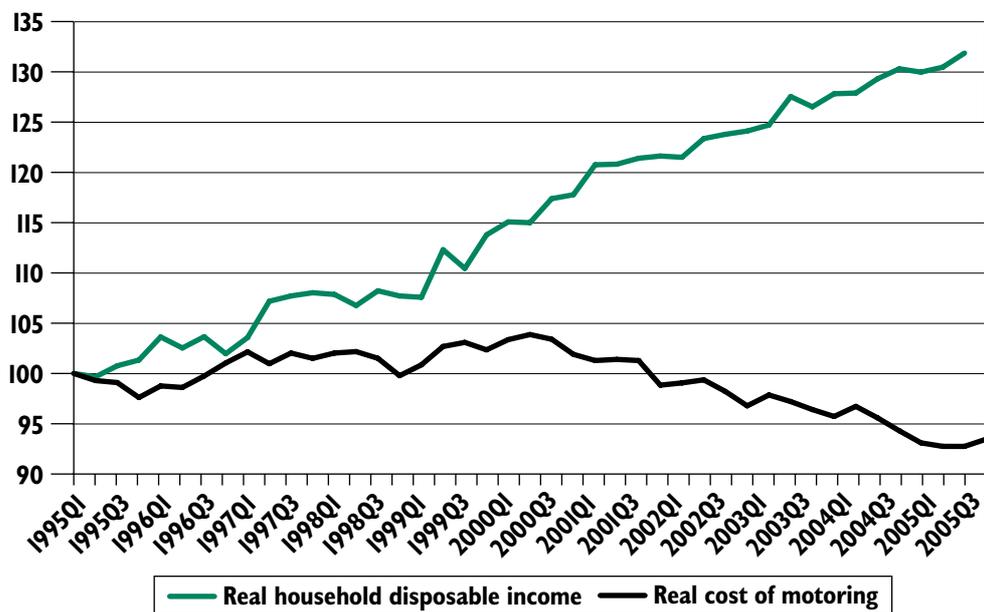
7.44 Average carbon emissions from new cars have fallen every year for the last decade as chart 7.2 shows. Innovation in car manufacturing has been vital to this, while progress is being supported both by a voluntary agreement between the European Commission and car manufacturers to reduce new car emissions, and by the measures the Government has taken to incentivise the purchase of less polluting vehicles.



7.45 Cleaner fuels and vehicles can also help to reduce local air pollution. Incentives for cleaner vehicles and fuels such as the duty differentials for ultra-low sulphur petrol and diesel have been significant factors in the reduction of polluting emissions. Further significant reductions in all air pollutants are projected, although, on the basis of current policy measures, it is unlikely that targets for nitrogen dioxide and particulates will be met in all parts of the country, particularly in some urban areas. The Government is currently reviewing the Air Quality Strategy and will publish a consultation in 2006.

Costs of motoring 7.46 While oil market volatility has pushed up the costs of fuel in recent months, real motoring costs have remained broadly constant over the last decade. Household disposable income has risen steadily over the same period due to sustained economic growth, and therefore motoring cost relative to household disposable income has decreased. This trend is likely to continue in coming years.

Chart 7.3: Index of household disposable income and cost of motoring



Source: Office for National Statistics

Note: Real cost of motoring includes purchase, maintenance, petrol and oil, and tax and insurance. Real household disposable income (2005 Q3 not available at time of publication).

Fuel duties

Main fuel duty rates 7.47 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 Budget 2005 the Government announced an inflation-based increase in fuel duty rates, to take effect from 1 September. In July, the Government announced that, because of the continuing volatility in the oil market, that increase would not go ahead and the position would be reviewed in the Pre-Budget Report. **In response to the continuing volatility in the oil market, the Government announces that the freeze on the main fuel duty rates will continue until Budget 2006.**

Rebated oils 7.48 To help reduce incentives for oils fraud, the Government announces that the duty on rebated gas oil will increase by 1.22 pence per litre. Further detail on the Oils Strategy, launched in 2002 to tackle fraud, and changes to the Excepted Vehicles Schedule, are given in Chapter 5. **Duty on heavy fuel oil will also increase by 1.22 pence per litre, reflecting the polluting nature of the fuel.**

7.49 A limited amount of hydrocarbon oils is used to generate electricity, although the vast majority of electricity is produced from other sources. Following discussions with the European Commission, the Government has accepted that charging duty on oil used for this purpose can result in double taxation since the electricity produced is subject to the climate change levy. **The Government announces the exemption from duty of rebated oils used for electricity generation from 1 January 2006.**

7.50 The UK has a number of exemptions from the Energy Products Directive that enable duty to be charged at a reduced rate on oils where they are put to certain uses. These exemptions 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, the Government is minded to apply for an extension of the derogations for fuel used in private air and pleasure craft navigation, liquified petroleum gas (LPG) and natural gas (NG) used as motor fuel, and waste oils reused as fuel. The Government will issue an initial regulatory impact assessment on the effects of ending the derogation for private pleasure craft early next year. This document will then be used as the basis for further information gathering and discussions.**

Sulphur-free fuels **7.51** The Government recognises that sulphur-free fuels offer additional local air quality benefits, while helping the latest engine technologies work more efficiently. **Following informal discussions with industry, the Department for Transport intends to consult on draft regulations to ensure the availability of sulphur-free diesel and sulphur-free 'super' grades of petrol, and will make an announcement shortly. HMRC will also consider at Budget 2006 whether there are deregulatory changes that could be made to the Hydrocarbon Oil Duties Act 1979 to encourage the delivery of sulphur-free fuels.**

Alternative road fuels

7.52 Higher oil prices have emphasised the importance of developing alternative fuels. As part of a long-term strategy to reduce the UK's reliance on fossil fuels, the Alternative Fuels Framework published in the 2003 Pre-Budget Report set out the Government's commitment to promote 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 **7.53** Biofuels offer significant benefits over fossil based fuels including lower life cycle carbon emissions, air quality improvements and diversification and security of supply. To support the development of biofuels, the Government introduced a 20 pence per litre duty differential for biodiesel in 2002, and for bioethanol at the start of this year. By October of this year, biofuels market share had grown to around 11 million litres per month, or 0.25 per cent of road fuels, an eight-fold increase since the start of this year alone. In line with the Alternative Fuels Framework, the current duty incentive is guaranteed until 2007-08.

Renewable Transport Fuel Obligation **7.54** At the 2004 Pre-Budget Report, the Government announced a feasibility study and consultative process on a possible Renewable Transport Fuel Obligation (RTFO). An RTFO would require transport fuel suppliers to ensure that a percentage of their sales was from a renewable source, and could deliver significant carbon reductions from road transport, while supporting the Government's air quality and diversity of supply objectives. The feasibility work suggested that an RTFO is the best instrument to deliver biofuels and support innovation in renewable fuels in the medium to longer-term. **The Government will now go ahead with an RTFO, expected to be launched from April 2008, with a target level of 5 per cent in 2010-11. The Government announces that discussions with stakeholders will be undertaken over the next three months to inform the decision on the target levels for the RTFO in 2008-09 and 2009-10, with these set out in Budget 2006, along with the duty incentive for 2008-09. Further consultations on the detail of the RTFO will be taken forward over the next 12 to 18 months, including the issue of carbon accreditation.** The RTFO will give the biofuels industry further certainty, and will deliver carbon savings of at least 1 million tonnes per year once the obligation reaches 5 per cent of road fuel sales.

Enhanced capital allowance for biofuels **7.55** In October 2004, the Government published a stakeholder discussion document on a possible enhanced capital allowance (ECA) for the cleanest biofuels production plant. Since then the Government has taken forward discussions with stakeholders on the economic case for the ECA and on how a definition for the ECA could best be framed. **The Government announces that, subject to state aids approval, it will introduce a 100 per cent first year allowance for biofuels plant that meet certain qualifying criteria which make a good carbon balance inherent in the design.** The ECA will work alongside the RTFO and create an additional incentive for the most environmentally beneficial biofuels and technologies to be developed. **HMRC are publishing a partial regulatory impact assessment setting out details of the proposed scheme. Subject to progress of the discussions with the European Commission on state aids, the Government anticipates that the scheme will be introduced in early 2007. The qualifying criteria will be kept under review and updated to take account of emerging technologies.**

7.56 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. **Two potential bidders have made firm expressions of interest, and are expected to submit detailed proposals by the end of the year. These bids will be assessed early next year and a decision will then be taken on which of the proposals will be supported.**

Road fuel gases **7.57** As a further example of how the Government is taking forward its strategic objective to promote alternative fuels, the Government remains committed to offering support through duty incentives to liquefied petroleum gas (LPG) and natural gas (NG). **The Government announces that the freeze on road fuel gas duty rates will continue until Budget 2006, as part of the wider freeze on road fuel duty rates.** It remains the Government's policy to narrow the differential between LPG and main duty rates over time to better reflect the environmental benefits the fuel offers. In line with the established alternative fuels framework, Budget 2006 will set out road fuel gas rates for 2008-09.

Biogas **7.58** Using biogas as a road fuel can offer significant greenhouse gas benefits. The Government is supporting a pilot project, taken forward under the Green Fuels Challenge, to support the capture and usage of landfill gas to power Local Authority vehicles in Albury, Surrey. The project is due to start in early 2006, and the gas will be relieved of duty for the duration of the project.

Lower emission vehicles

Vehicle excise duty **7.59** 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 six graduated carbon dioxide bands. This gives a clear signal to motorists to choose less polluting vehicles, and works alongside other aspects of the tax and regulatory framework, which promote the move to lower-carbon transport as part of a long-term strategy. The Government will continue to consider the case for improving VED incentives for fuel-efficient vehicles.

7.60 New energy efficiency vehicle labels were introduced into car showrooms in September. Vehicles are labelled A to F to match the graduated VED structure. This is an important step forward in improving information flows on vehicle emissions, and raising consumer awareness of the potential fuel savings available through using lower emissions vehicles. The Government will continue to monitor progress as the scheme develops, and would hope to see industry-wide take-up.

Vehicle emission standards **7.61** The European Commission is currently consulting on new 'Euro V' emissions standards for cars and small vans to further reduce local air pollutants. **The Government will consider the case for incentivising the uptake of Euro V vehicle emissions standards, through company car tax and other instruments, ahead of the formal requirement to meet Euro V emissions standards.**

7.62 The Euro IV standard for heavy goods vehicles (HGVs) will become mandatory from October 2006, and **from that date newly registered HGVs will no longer be eligible for a reduced pollution certificate (RPC). However, vehicles which get an RPC before that date will retain the benefit for the life of the vehicle, consistent with meeting the normal testing requirements. The RPC will also remain open to those who fit pre-October 2006 registered vehicles with the qualifying technology.**

Company car tax 7.63 Company car tax was reformed in 2002 and is now based on vehicle carbon emissions. This framework encourages the take up of more environmentally friendly cars, and works with the grain of other vehicle tax reforms. The phase one evaluation of the company car tax reforms was published in April 2004 and showed that the changes are making significant carbon savings, forecast to be between 0.5MtC and 1.0 MtC per year in the long-run. The Government will announce the company car tax thresholds for 2008-09 at Budget 2006.

Capital allowances for cars 7.64 In response to recent consultations on corporation tax, the Government is giving further consideration to modernising the capital allowance regime for business cars. Options include introducing a new car pool with a range of first year allowances for cars depending on carbon dioxide emissions, building 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 7.65 The company car tax fuel benefit charge – paid by those who receive employer provided fuel for unlimited personal use – was reformed in 2003 to follow the company car tax carbon basis. The figure on which the charge is based is set at £14,400 and will continue to be reviewed as part of the normal Budget process. The Government announced at Budget 2005 that the VAT fuel scale charge would be reformed as part of a strategic approach to vehicle taxation, to follow a carbon emissions basis, working alongside the reformed company car tax and fuel benefit charge. **Following further discussions with industry in the autumn, the Government will now introduce the changes to the VAT fuel scale charge by secondary legislation. Following representations from industry, the new system will come into force on 1 May 2007.**

Haulage industry 7.66 One sector that has been particularly affected by the recent volatility in fuel prices is the haulage sector. In light of this, the leading industry associations commissioned the Burns Inquiry to examine the impact of fuel costs, foreign competition and freight taxes on the UK haulage industry, which reported at the end of November. The Government welcomes the inquiry, which has gathered valuable evidence on the industry's views of these issues. However, there are also a number of other important challenges facing the haulage sector. **The Government is therefore inviting key industry associations to participate in a joint task group, which will work to place the findings of the Burns Inquiry in that broader context** (see Box 7.5).

7.67 In the meantime, to ensure fairer enforcement of UK weight regulations on both domestic and foreign lorry operators, **the Government will invest £2 million to fund “Weigh-in-Motion” sensors at up to 20 locations around the UK, including key ports**, following successful trials of the technology. These sensors will allow better targeting of enforcement activity and help identify locations and times when offences are most common. Fairer enforcement for hauliers of all nationalities will be further strengthened by the enabling provisions contained in the Road Safety Bill (currently before Parliament). These provisions will allow enforcement agencies to take a cash deposit from overseas hauliers who commit offences. **Further, as part of engagement with industry the Government will shortly be undertaking a consultation on proposals to simplify the operator licence regime** to lower hauliers' transaction costs and give them more flexibility.

Box 7.5: The haulage industry

The Government welcomes the publication of the findings of the Burns Inquiry into fuel costs, foreign competition and freight taxes, and agrees that an efficient haulage industry is important for a productive economy. The task group will also assess how the pressures identified by the Burns Inquiry compare with those facing other sectors which are open to international competition or have experienced rising input costs. There are also a number of other important issues that affect the efficiency of the haulage industry and these will be examined by the proposed joint task group, including:

- *workforce pressures*: recruitment, retention, wage costs and skills are key drivers of competitiveness and productivity;
- *fair and effective enforcement*: consistent enforcement of road safety and other regulations, for hauliers of all nationalities operating in the UK, is critical in ensuring that a minority of operators do not gain an unfair competitive advantage by breaking the rules;
- *regulatory costs*: minimising the administrative costs of complying with regulations will further assist those who wish to invest in improving their service, while streamlining the regulations themselves where possible allows hauliers to be more flexible in responding to changing conditions; and
- *promotion and sharing of best practice through the industry*: it is apparent that some firms are better able to respond to competitive pressures than others. Identifying best practice, and trying to reduce barriers to sharing it more widely, could help to improve efficiency across the industry.

Alongside the findings of the Burns Inquiry, the evidence gathered by the joint task group will help to inform future decisions on how to ensure that the sector continues to fulfil its important role in the UK economy.

National road user charging 7.68 Congestion is a serious and growing problem in the UK, imposing significant costs on businesses and individuals and adding to air quality problems in congested areas. Alongside increased investment in transport, increasing the capacity of the strategic road network and improving the management of the UK's roads, the Government is exploring the potential in the long term of moving away from the current system of motoring taxes towards a national road pricing scheme.

7.69 The Road Pricing Feasibility Study concluded that a well-designed national scheme could deliver journey time savings worth some £10 billion a year, but is at least a decade away. In the meantime, the Government is making funding available from the Transport Innovation Fund to support forward-looking local authorities that are considering introducing innovative demand management schemes, including road pricing, as part of a package of transport measures in their areas.

Aviation 7.70 The UK Air Transport White Paper recognised that 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 any action to tackle the environmental impacts of aviation must take full account of the effects on the competitiveness of UK aviation, the impact on consumers and economic growth.

7.71 The Government believes that the global nature of aviation emissions necessitates action at an international level and that the best approach to ensuring aviation contributes to global climate stabilisation is to include aviation in the European emissions trading scheme (EU ETS). A trading scheme would ensure that emissions reductions would be made in the most cost-effective manner, and is therefore most consistent with the need to balance environmental objectives against wider social and economic objectives.

7.72 Progressing the inclusion of aviation in the EU ETS is a priority for the UK's Presidency of the EU, with the aim of ensuring inclusion by 2008 or as soon as possible thereafter, and good progress has been made. The Government has been active in building support in the EU for this objective, and a significant step was taken in late September, with the adoption of the European Commission's Communication: *Reducing the Climate Change Impact of Aviation*. The Communication recommends that aviation emissions should be included in the EU ETS. The Government welcomes the Communication and the agreement of the EU Environment Council on 2 December 2005 that the Commission should bring forward a legislative proposal in 2006.

7.73 The Government recognises that its focus on the inclusion of aviation in the EU ETS should not preclude work on other policy instruments. While continuing to prioritise development of the EU ETS as the most effective approach for tackling aviation emissions, the Government will continue to explore options for the use of other instruments as part of a long-term strategy to work with industry to promote innovation and sustainable environmental improvements.

IMPROVING WASTE MANAGEMENT

7.74 Efficient use of resources and the effective management of waste are essential features of an environmentally sustainable economy. Over recent years the Government has taken a number of steps 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. The Government's waste policies aim to ensure that action is taken at a local or national level to enable the UK to meet its international obligations, including the reduction in volumes of biodegradable municipal waste sent to landfill sites stipulated in the EU Landfill Directive. Minimisation of waste and use of waste as a resource depends on building the right incentives to enable the production cycle to take account of changing patterns of consumption. Defra is currently reviewing its Waste Strategy along these lines, building on an improved evidence base, and expect to publish its findings in late summer 2006.

Landfill tax 7.75 In line with the polluter pays principle, the Government has used the landfill tax, together with a range of other measures, to encourage waste producers to seek alternative management options. In 1999, the Government announced a series of £1 per tonne increases to the standard rate of tax, which is applied to active wastes. In 2003, the Government took a long-term strategic view and further strengthened this policy by announcing that, from 2005-06, the standard rate of landfill tax would increase by at least £3 per tonne each year, towards a medium to long-term rate of £35 per tonne.

7.76 The increase in the standard rate of landfill tax is contributing to a move away from the over-reliance on landfill in the UK. Between 2002-03 and 2004-05, the volume of active waste disposed at landfill fell by almost 7 per cent. Initial figures for the volume of active waste disposed at landfill since April 2005 suggest an even larger in-year drop since the £3 per tonne increase came into force. **The Government confirms that the standard rate of landfill tax will increase by £3 per tonne to £21 per tonne in 2006-07.**

7.77 In 2003-04 England recycled or composted nearly 18 per cent of its household waste, slightly exceeding its national target (17 per cent) for that year. The unaudited performance data on recycling for 2004-05 recently confirmed a continuing increase in the recycling level, to 23 per cent. This puts the tough 2005-06 target to recycle or compost 25 per cent of household waste firmly within reach. The Government is consulting on proposals for further local authority household waste recycling targets for 2007-08.

Landfill allowance trading schemes **7.78** On 1 April 2005, the landfill allowance trading scheme – the world’s first trading scheme for municipal waste – was launched. The scheme offers opportunities for waste disposal authorities to trade flexibly, banking or borrowing landfill allowances and enables them to make their contribution to achievement of UK obligations under the EU Landfill Directive in the most cost effective way. In the first six months of the scheme in excess of 286,000 allowances were traded.

Improving local waste management **7.79** Municipal waste accounts for 16 per cent of all waste in England. £260 million has been allocated for a three-year targeted waste performance and efficiency grant for local authorities in England, including £5 million for Defra’s household incentive pilot-schemes. Around 50 different approaches to positive incentives for household waste recycling and reduction are being tested by local authorities and their partners between October 2005 and March 2006. The planning system has also been modified to provide a more effective framework for delivering the significant expansion in new waste management facilities, which will be needed to meet EU obligations and national objectives. The Kelly Review, detailed in Chapter 3, will examine the scope for smarter procurement of waste infrastructure.

Recycling landfill tax revenue **7.80** 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, reflecting the need to consider the social and economic effects of the increase. 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 a way that supports them in improving their resource efficiency. Worth £284 million over 3 years, BREW has allocated £43 million to nine programmes in its first year. These programmes range from services offering direct advice and support to business on resource efficiency and waste minimisation to longer-term market transformation and research and development projects. Planning is under way for 2006-07 when BREW will allocate a further £95 million.

Enhanced capital allowances for waste **7.81** As reported at Budget 2005, there has been stakeholder support for measures to support innovative waste management options and, in particular, for the proposal of an enhanced capital allowance scheme to support the introduction of new waste technologies, such as mechanical and biological treatment. One of the barriers to the take up of these types of technology is the lack of markets for the outputs of the process. **The Government therefore proposes to develop options for an enhanced capital allowance scheme to encourage investment in developing markets for the outputs (e.g. refuse derived fuel) of new treatment facilities.**

Landfill tax credit scheme **7.82** 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, repairs to places of worship and improvements to wildlife habitats to support biodiversity. The Government recognises the important contribution made by the LTCS and will announce the value of the scheme for the coming year in Budget 2006.

PROTECTING THE UK'S COUNTRYSIDE AND NATURAL RESOURCES

7.83 The Government is committed to ensuring that the UK's natural resources are managed prudently. It aims to improve river water quality, biodiversity and land use. The UK also has a number of international objectives for conservation and water quality including the Water Framework Directive, which requires good chemical and ecological status in the UK surface waters by 2015.

7.84 To protect the UK's countryside and natural resources, the Government has sought to correct market failures where commercial activity has an impact on the wider environment. It aims to do so in a way that balances the need to maintain economic growth and consider wider economic and social objectives with the need to encourage a sustainable approach for the long term, particularly in sectors with a significant direct impact on the environment, such as agriculture and aggregate extraction.

Aggregates levy **7.85** The aggregates levy was introduced in 2002 and applies the polluter pays principle. The levy ensures that the external costs associated with the exploitation of aggregates are considered and encourages the use of recycled aggregate. As reported in Budget 2005, there is strong evidence that the levy is achieving its environmental objectives, with sales of primary aggregate down and production of recycled aggregate up. However, the Government continues to examine aggregate industry claims, and to press for substantiated evidence, that the levy has resulted in increased tipping of lower grade aggregate as waste, with consequent negative environmental impacts.

Diffuse water pollution from agriculture **7.86** Over 75 per cent of land in the UK is used for agriculture and so farming practices have a significant impact on the UK's environment, including on diffuse water pollution through the use of fertilisers. Defra and the Devolved Administrations continue to work with stakeholders to develop local and national policies to help achieve the necessary changes in farm practices, including supportive and awareness-raising measures. In addition, the Government will continue to establish a robust evidence base to identify the right approach to tackle diffuse water pollution effectively and meet its obligations under the Water Framework Directive. It is also committed to ensuring that the costs of tackling diffuse water pollution do not fall on water consumers.

Pesticides **7.87** An industry-led voluntary initiative (VI) on measures to reduce the environmental damage caused by the agricultural and amenity use of pesticides has been in place since April 2001. This has helped produce some improvements in farming practices since its introduction, but to cover the possibility that the VI might fail to deliver the required environmental benefits within a reasonable time, the Government continues to keep options for a pesticides tax or other economic instruments under review.

Tackling the challenge of chemical risk management **7.88** Synthetic chemicals bring many benefits to society and the UK chemical industry makes a significant contribution to the economy. However it is important that the environmental impact of these chemicals and associated technologies is understood and managed, and that the UK complies with its international obligations. For this reason the Government prioritised the development of the new European Chemicals Legislation, REACH (Registration, Evaluation and Authorisation of Chemicals) during the UK Presidency of the EU. Implementation of REACH will remain a priority. However, in order to bridge the gap before the new regulations take full effect, the UK has introduced a Coordinated Chemical Risk Management Programme, a voluntary initiative, which will consider 60 to 70 chemicals by 2010, including any risk management action that may arise from the assessments.

Sustainable new housing **7.89** The Government recognises that the social and economic benefits of meeting people's housing needs and aspirations must go hand in hand with enhancing the environment and has put sustainable development at the heart of the planning system through an updated Planning Policy Statement 1: (PPS1). The Government has responded to Kate Barker's independent Review of housing supply, outlined in Chapter 3.

7.90 The Government is publishing its draft Code for Sustainable Homes for consultation. The central objective of the Code is to improve the resource efficiency of new buildings, saving water and energy. The Code is designed to be a simple way to inform homebuyers about the sustainability of their new homes and their running costs. A new home meeting the minimum standards of the Code will use around 20 per cent less energy and water per occupant than a home built to 2002 standards. From next year when the Code is introduced, all new homes supported by English Partnerships or the Housing Corporation will meet the proposed Level Three of the Code.

Using land more efficiently **7.91** The Government's commitment to achieving 60 per cent of new development on brownfield land, and more efficient use of land through higher densities where appropriate (as described in the draft PPS3), will ensure that land take and potentially adverse environmental impacts are minimised. This has resulted in 70 per cent of new development in England being on brownfield land 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 2004.

Protecting green spaces **7.92** These efforts sit alongside the Government's aim to maintain and enhance the Green Belt. 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. Green Belt now accounts for 13 per cent of all land in England. **The Office of the Deputy Prime Minister (ODPM) is issuing a Green Belt Direction, requiring certain planning applications on Green Belt sites to be referred to the Deputy Prime Minister. This will ensure that the most significant and potentially most harmful development proposals in the Green Belt are subject to additional scrutiny before they can be approved.**

Effective flood risk management **7.93** The Government has a robust planning policy (PPG25) in place to minimise flood risks to new developments. It takes a sequential approach to building in areas of flood risk, ensuring that lower risk sites are developed first and requires that strategic flood risk assessments are carried out for new developments. While this is already working well and the number of developments being approved in areas of flood risk is declining, **Government wants to improve the position further by strengthening and clarifying the policy in a new Planning Policy Statement 25: Flooding (PPS25), which it is now issuing for consultation.**

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

Sustainable Development Indicator ¹ and recent trend data	Recent Government Measures
Tackling Climate Change	
<p><i>Targets</i> Joint Defra/DTI/DfT PSA target – 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><i>Progress</i> UK greenhouse gas emissions were 12.6 per cent below 1990 levels in 2004.² Carbon dioxide emissions fell by 4.2 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 2004. • 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 2005. • Package of fiscal measures, including climate change levy (see Table 7.2).
Air Quality	
<p><i>Targets</i> Air Quality Strategy for England, Scotland, Wales and Northern Ireland set health-based air quality standards for nine key air pollutants and target dates for their achievement across the UK between 2003 and 2010.</p> <p><i>Progress</i> Average UK urban background levels of particulate pollution (PM10) decreased from 36 micrograms per cubic metre in 1993 to 22 micrograms in 2004. Urban zone levels increased from 42 micrograms per cubic metre to 57 micrograms per cubic metre, due to the reduction in other urban pollutants which tend to suppress ozone. The number of days with moderate or higher air pollution decreased from 50 to 22 in urban areas and from 61 to 42 in rural areas between 2003 and 2004³.</p>	<ul style="list-style-type: none"> • Air Quality Strategy DETR January 2000 and Addendum, Defra February 2003, and Review, Defra 2004-05. • Implementation of Integrated Pollution, Prevention Control regime, Defra 2002-2007. • Continued support for local air quality management system. • Negotiation and implementation of EU air quality directives and international agreements 2004-05. • Ten Year Plan for Transport, DETR July 2000, and Future of Transport White Paper, July 2004. • Review of the Transport Energy Grant Programmes, DfT 2004. • Air Transport White Paper, DfT, December 2003. • Fiscal measures including fuel differentials for less polluting fuels (see Table 7.2).
Improving Waste Management	
<p><i>Targets</i> Defra PSA target – 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><i>Progress</i> Composting / recycling rate of 17.7 per cent for England in 2003-04. Active waste disposed to landfill has fallen from 50.4 million tones in 1997-98 to 47.3 million tones 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. • Defra are reviewing their Waste Strategy in 2005. • Waste Implementation Programme Defra 2002. • Business resource and efficiency waste programme (BREW) 2004. • Landfill tax and related measures (see Table 7.2).
Regenerating the UK’s towns and cities	
<p><i>Targets</i> ODPM PSA 5: 60 per cent of housing development to be on previously developed land. ODPM PSA 1: Promote better policy integration and work with departments to help meet PSA floor targets for neighbourhood renewal and social inclusion.</p> <p><i>Progress</i> In 2004, 67 per cent of new housing was on previously developed land, increasing from around 54 per cent in 1990. Latest data shows the gap between the most deprived areas and the rest of the country on several key indicators, including education at GCSE, burglary and unemployment has narrowed. There are currently 22 Urban Regeneration Companies in the UK.</p>	<ul style="list-style-type: none"> • Sustainable Communities: “building for the future” launched in February 2003. • National Nuisance Vehicle Strategy launched in November 2004. • Feb 2005, Planning Policy Statement 1 launched, placing sustainability for the first time as a core principle of the planning system. • Feb 2005 English Partnerships launch 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. • SR04 rolled forward £525 million Neighbourhood Renewal Fund for neighbourhood renewal in 88 most deprived areas and maintained commitment to New Deal For Communities programmes. • Package of fiscal measures including contaminated land tax credit (see Table 7.2).
Protecting the UK’s countryside and natural resources	
<p><i>Targets</i> Defra PSA target – 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><i>Progress</i></p> <ul style="list-style-type: none"> • Farmland birds almost halved between 1977 and 1993. However, declines have reduced in recent years and 2003 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. 	<p>However, declines have reduced in recent years and 2003 populations were virtually unchanged from 1993.</p> <ul style="list-style-type: none"> • Woodland birds fell by about 30 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 percent of English rivers were of good biological quality. • Regulations transposing the Water Framework Directive came into force 2 January 2004. • Rural White Paper, DETR, November 2000. • Strategy for Sustainable Farming and Food, Defra, December 2002. • Developing measures to promote catchment-sensitive farming (Defra-HMT consultation), June 2004. • Defra consulting on pesticides strategy. • Aggregates levy and aggregates levy sustainability fund (see table 7.2).

¹Achieving a better quality of life – Review of progress towards sustainable development, Defra, March 2004 – latest data from www.sustainable-development.gov.uk

²The six main greenhouse gases are: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride (provisional figure).

³Air quality headline indicator for sustainable development: Defra, 2004.

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 CO ₂ savings of over 3.5 million tonnes of carbon (MtC) by 2010 ² . Business beat their Climate Change Agreement targets by 1mtC per annum in the first target period and by 1.4 MtC per annum in the second target period.
Landlord's Energy Saving Allowance (LESA)	Small reduction of CO ₂ emissions.
Reduced rate of VAT on energy saving materials and microgeneration	Small reduction of CO ₂ emissions.
Reduced rate of VAT on domestic fuel and power	Estimated to increase CO ₂ by 0.2 million tonnes by 2010.
Fuel duty	The fuel duty escalator in place between 1997 and 1999 is forecast to have reduced emissions between 0.1 MtC and 0.2 MtC per year by 2010. Freezing fuel duties is expected to increase carbon emissions by around 0.07 MtC over a full year, compared to revalorisation. Higher fuel prices than expected in 2005–06 will more than offset this increase.
Fuel duty differentials ³ 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"> • For road fuel gases; • 20ppl differential for biodiesel; • 20ppl differential for bioethanol. 	The shift to ULSP from ordinary unleaded is estimated to have reduced emissions of nitrogen oxide by 1 per cent, carbon monoxide by 4 per cent and volatile organic compounds by 1 per cent per year between 2001 and 2004. The shift to ULSD from ordinary diesel is estimated to have reduced emissions of particulates by 8 per cent and nitrogen oxides by up to 1 per cent per year between 2001 and 2004. The 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 by up to 54 per cent per litre of biofuel used. It is estimated that the biodiesel differential could save up to 0.2 MtC per year by 2010 ⁴ . The Renewal Transport Fuel obligation (RTFO) is expected to save 1 MtC by 2010. The enhanced capital allowance for biofuel plant could save a further 0.06 MtC by 2010.
Rebated fuels	Narrowing the differential with main road fuels will reduce levels of fraud, which will deliver small CO ₂ and local air pollution benefits through increased use of less polluting fuels and less use of rebated fuels, which are more polluting.
Vehicle excise duty (VED)	Small reductions in CO ₂ emissions and local air pollutants. Numbers of vehicles in 3 lowest CO ₂ emission graduated VED bands forecasted to grow significantly by 2006-07, in part due to reforms to VED bands.
Company car tax (CCT)	CO ₂ emissions savings of reformed CCT system estimated to be 0.15 to 0.25 MtC in 2004, forecast to rise to between 0.5 and 1 MtC in the long run.
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 increases in the fuel scale charges, helping to reduce levels of CO ₂ emissions, local air pollutants and congestion.
VAT fuel scale charge	Changes expected to deliver small reduction in CO ₂ .
Haulage modernisation fund	1 per cent reduction in particulate emissions per year by 2004, reductions in carbon emissions of around 0.1 MtC per year by 2004, and reductions in nitrogen oxides.
Air passenger duty (APD)	Levying APD has resulted in a reduction in emissions of CO ₂ and local air pollutants from aviation.

¹ Estimates of the environmental impacts of measures are difficult as they depend on the behavioural impact and savings from new technologies so are often subject to a wide margin of error.

² Modeling the initial effects of the climate change levy, Cambridge Econometrics, available at www.hmrc.gov.uk

³ Using NETCEN emissions models – further detail on the methodology used is provided in NETCEN's January 2000 report. UK Road Transport Emissions Projections.

⁴ Department for Transport modeling.

⁵ HMRC modelling

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

Budget measure	Environmental impact
Improving Waste Management	
Landfill tax	The volume of waste disposed to landfill sites registered for landfill tax has fallen by 20% between 1997-98 and 2004-05.
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	Reductions in noise and vibration, dust and other emissions to air, visual intrusion, loss of amenity and damage to wildlife habitats. An 8 per cent reduction in sales of aggregates between 2001 and 2003.
Enhanced capital allowances for water efficiency technologies	Reductions in energy and water use by business.

