

UK Climate Change Programme  
Annual Report to Parliament, July 2008

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Department for Environment  
Food and Rural Affairs



# UK Climate Change Programme: Annual Report to Parliament, July 2008

Laid before Parliament by  
the Secretary of State for Environment, Food and Rural Affairs  
in accordance with Section 2 of the Climate Change and  
Sustainable Energy Act 2006

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# Foreword



## By the Secretary of State for Environment, Food and Rural Affairs

Climate Change is one of the biggest challenges facing the world. Few now doubt that human beings are responsible for most of the recent planetary warming. We are emitting greenhouse gases (most significantly carbon dioxide) into the atmosphere much faster than plants and oceans can absorb it. If we continue emitting greenhouse gases at the current rate, we could see global temperatures rise by another 5°C in only a hundred years with all the catastrophic changes, economic, social and environmental, that this could result in for the world. Tackling climate change therefore requires a two-pronged effort: action to reduce greenhouse gas emissions, and action to deal with the impacts that we are already experiencing and will continue to experience over coming decades.

So what are we doing to make a difference? Firstly, we are seeking an international agreement for the period after the current Kyoto Protocol expires. We are doing this by playing a leading role internationally particularly through the European Union, G8 and UN Framework Convention on Climate Change (UNFCCC) processes. Climate change is now an issue right at the top of the agenda for international bodies such as the World Bank, International Monetary Fund (IMF) and Organisation for Economic Co-operation and Development (OECD). Last year, saw an historic breakthrough agreement at the UNFCCC meeting in Bali last December. Due to the efforts of all those involved, not least those present through hours of negotiations, a ground breaking Action Plan for achieving a global climate deal by the end of 2009 was agreed.

We are also working nationally to reduce emissions. The UK is still on course to almost double our 12.5% Kyoto Greenhouse Gas target. The initial estimates for 2007 showed UK greenhouse gas emissions at 639.4 million tonnes – 2% below the figures for 2006.

A key part of our strategy for reducing emissions has been to put in place the legislative framework to deliver a low carbon economy. In November 2007, we introduced the Climate Change Bill into Parliament. The Bill is the first of its kind in any country. It creates a clear and credible long-term legal framework to move the UK towards a low carbon economy, providing greater clarity and confidence for businesses and individuals to plan and invest in delivering the changes needed. It establishes a new independent Committee on Climate Change which will play a crucial role in the UK's efforts to tackle climate change by providing expert advice on how the UK can best achieve its climate change goals. The Bill also puts climate change adaptation on a statutory footing for the first time.

As the Prime Minister said at the Low Carbon Summit last month, moving to a low carbon economy is also a huge opportunity for environmental markets which are increasingly important to the economy. Published on 1st May 2008, 'Building a low carbon economy: unlocking innovation and skills', sets out how Government will work in partnership with business to encourage innovation and the necessary skills to make the UK one of the best places in the world to develop low carbon, resource efficient products and services.

We are working with business to tackle climate change. Around 47% of all companies surveyed by the Carbon Trust in 2007 had carried out an energy survey and audit compared with 27% the previous year. Since 2001, the Carbon Trust has helped its customers save 17m tonnes of CO<sub>2</sub> representing cost savings to business of over £1 billion.

Essential to success though is action by everyone. It has been one year since the launch of the Government's ACT ON CO<sub>2</sub> campaign to raise awareness of climate change issues and encourage behaviour change. Over one million people – including myself – have visited the ACT ON CO<sub>2</sub> calculator to work out their carbon footprint. We have talked to over 26,000 people, face to face, at the ACT ON CO<sub>2</sub> road shows around the country. We have also launched an ACT ON CO<sub>2</sub> advice line providing comprehensive advice on how to reduce our carbon footprints. The campaign has been a real success and research shows that over 60% of those who have seen the advertising, have or intend to take action to reduce their CO<sub>2</sub> emissions.

Energy efficiency continues to be a focus for activity. Between 2002 and 2008, we assisted over 5 million households to reduce their energy bills. Earlier this year we launched the Carbon Emission Reduction Target (CERT) which is expected to deliver annual net savings of 4.2 Million tonnes of CO<sub>2</sub> by 2010 – this is equivalent to removing 1.45 million cars from the road. Under CERT, we also expect to see some 3 million cavity walls and 3 million lofts insulated with some 120 million low energy light bulbs distributed and up to a further 3 million households benefiting from other discounted energy efficiency appliances and equipment. This will benefit consumers, in terms of reduced energy bills and increased comfort, by £11.4bn over the lifetime of these measures.

To deal with the impacts of climate change in the UK, we have also set up a cross-Government Adapting to Climate Change Programme which brings together activity already underway at the national level on adapting to climate change, and will lead on the development of the Government's work on adapting to climate change in the future. We are publishing an Adapting to Climate Change website and document summarising the Government's framework for action on adaptation.

This Report sets out in more detail what we have done and looks forward to what needs to be done over the coming year. The introduction of carbon budgets as a result of the Climate Change Bill will help tackle climate change and ensure that we are on the right track to meeting our long term 2050 target.

A handwritten signature in black ink, appearing to read 'H. Benn', written in a cursive style.

Hilary Benn, MP

# Introduction

1. This report is published in accordance with the Secretary of State's obligations under Section 2 of the Climate Change and Sustainable Energy Act 2006, and the commitment in the Climate Change Programme 2006 to publish an Annual Report to Parliament. It describes the final estimates for the UK's greenhouse gas emissions during 2006 and provisional estimates for 2007, and, for the period 1 June 2007 to 31 May 2008, the steps we have taken to reduce emissions.
2. Many of the means to reduce greenhouse gas emissions have been devolved to the Scottish Parliament, the National Assembly for Wales, and the Northern Ireland Assembly. This report includes action taken by the UK Government in Scotland, Wales and Northern Ireland where the matter is reserved but does not describe the action taken by the devolved administrations in devolved policy areas<sup>1</sup>.

<sup>1</sup> Scottish Ministers reported to the Scottish Parliament in March 2007: see [www.scotland.gov.uk/Publications/2008/05/20102350/0](http://www.scotland.gov.uk/Publications/2008/05/20102350/0)

# Overview

3. Final estimates for the 2006 emissions published in January 2008<sup>2</sup> show that emissions of the basket of greenhouse gases<sup>3</sup> covered by the Kyoto Protocol fell by around ½ % between 2005 and 2006, down from 655.5 to 652.3 million tonnes of carbon dioxide equivalent.
4. Provisional estimates show carbon dioxide emissions<sup>4</sup> during 2007 were around 543.7 million tonnes, 2% lower than the 2006 figure of 554.5 million tonnes. The decrease resulted from fuel switching from coal to natural gas for electricity generation, combined with lower fossil fuel consumption by households and industry.
5. These provisional estimates also show a 2% decrease in total UK greenhouse gas emissions for 2007 to 639.4 million tonnes carbon dioxide equivalent, down from 652.3 million tonnes in 2006<sup>5</sup>.
6. The final estimates for 2006 and provisional estimates for 2007 do not take into account the results from the EU Emissions Trading Scheme (EU ETS). UK installations surrendered allowances equivalent to 33.3 and 27.6 million tonnes of CO<sub>2</sub> more than their total allocations in 2006 and 2007 respectively. The EU ETS is a market system that incentivises abatement to occur at least cost wherever that might be in the EU, and these figures show that over these years UK installations paid for the equivalent of 60.9 Mt of CO<sub>2</sub> to be abated elsewhere in the EU.
7. Under the Kyoto Protocol, the UK is committed to reducing total greenhouse gas emissions to 12.5% below base year<sup>6</sup> levels by 2008-2012. Taking account of the EU ETS results, the 2006 final estimates show that emissions of the basket of gases covered by the Protocol fell by 20.6% between the base year and 2006, down from 779.9 to 619.0 million tonnes carbon dioxide equivalent.
8. Our domestic goal is to reduce carbon dioxide emissions by 20% below 1990 levels by 2010, including the effect of the EU ETS. The 2007 provisional estimates show that carbon dioxide emissions were around 13% below 1990 levels.
9. We have updated our carbon dioxide, methane and nitrous oxide projections. The new CO<sub>2</sub> projections, which include the impact of the EU ETS, including the European Commission's recent proposals on revising the Directive, are based on central fossil fuel price assumptions and a range reflecting low, central and high carbon savings from the policies in the 2007 Energy White Paper. CO<sub>2</sub> emissions are projected to be 494.2 – 500.7 million tonnes in 2010 and 428.4 – 441.2 million tonnes in 2020, which would equate to reductions below 1990 levels of about 15½% and 26% respectively.

The following information highlights some of the main developments since publication of the 2007 UK Climate Change Programme – Annual Report to Parliament.

10. In December 2007, all Parties of the United Nations Framework Convention on Climate Change (UNFCCC) agreed in Bali to a comprehensive action plan. This Bali Action Plan aims to achieve a global climate deal by the end of 2009 at the UNFCCC meeting in Copenhagen. This will bring together all the countries in the world to negotiate a framework of commitments for the period post 2012.
11. The UK and Netherlands, together with the World Bank, announced funding of up to £3 million (€4 million) for a new research study – The Cost of Adaptation that will support developing countries to prepare for climate change.
12. In October 2007, the Government published its response to pre-legislative scrutiny and public consultation on the draft Climate Change Bill<sup>7</sup>. A revised Bill was subsequently introduced into Parliament in November taking into account the recommendations made during pre-legislative scrutiny by the Joint Committee of Peers and MPs, the Environment, Food and Rural Affairs Committee and the Environmental Audit Committee and the nearly 17,000 responses to the public consultation. The Bill is expected to become law later this year. It will set in legislation the target of a reduction in carbon dioxide emissions of at least 60% by 2050 against a 1990 baseline. However, in light of developing science, the Prime Minister announced<sup>8</sup>

<sup>2</sup> [www.defra.gov.uk/environment/statistics/globalatmos/download/ghg\\_ns\\_20080131.pdf](http://www.defra.gov.uk/environment/statistics/globalatmos/download/ghg_ns_20080131.pdf)

<sup>3</sup> The basket of greenhouse gases is made up of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, weighted by global warming potential.

<sup>4</sup> Provisional estimates of carbon dioxide emissions for 2007 were produced by Defra and BERR in March from provisional inland energy consumption statistics. These provisional estimates will be subject to revision when final estimates are published in January next year, but they provide an indication of the emissions in the most recent calendar year. The majority of provisional estimates are within 1% of the final figures. Further details in footnote 25.

<sup>5</sup> For more information visit [www.defra.gov.uk/news/2008/080327b.htm](http://www.defra.gov.uk/news/2008/080327b.htm) and [www.defra.gov.uk/news/2008/080327a.htm](http://www.defra.gov.uk/news/2008/080327a.htm)

<sup>6</sup> The base year is 1990 for carbon dioxide, methane and nitrous oxide, and 1995 for fluorinated compounds.

<sup>7</sup> See [www.official-documents.gov.uk/document/cm72/7225/7225.pdf](http://www.official-documents.gov.uk/document/cm72/7225/7225.pdf) for a copy of the Government response to pre-legislative scrutiny and public consultation on the draft Climate Change Bill.

that the Government would ask the Committee on Climate Change to advise on whether the 2050 target should be tightened up to 80%. The Committee on Climate Change has been set up in shadow form and is preparing its advice for Government following Royal Assent. The Chair of the Committee on Climate Change<sup>9</sup> was appointed in January and the first five members in February.

13. The Energy Bill was introduced into Parliament in January. It will implement the measures in the Energy White Paper that require primary legislation and is expected to receive Royal Assent in the autumn. The Bill will strengthen the investment framework for investment in power stations, gas storage facilities and other energy infrastructure in order to help the UK ensure secure supplies of energy and tackle climate change. Measures in the Bill will help achieve a tripling of the amount of electricity we get from renewables by 2015 and pave the way for the demonstration of carbon capture and storage. The measures will also improve our gas supply infrastructure and market confidence to invest in ensuring the UK's security of supply.
14. In January, the European Commission published a package of ambitious proposals for tackling climate change and delivering a low carbon economy in Europe. These proposals together implement the decisions agreed by EU Heads of State and Government at the March 2007 Spring European Council. The French, who hold the Presidency during the second half of 2008, have made reaching agreement to this package by December 2008, one of their priorities.

## Energy Efficiency

15. Reducing our demand for energy by making improvements in energy efficiency is one of the most effective means by which both businesses and individuals can reduce their carbon footprint, and at a time when fuel prices are rising, improving our energy efficiency can also help us all save money on our energy bills. In June 2007 we published the UK Energy Efficiency Action Plan which sets out in detail the policy framework we have put in place for improving efficiency across all sectors of the economy in order to meet our national 9% energy saving target under the EU Energy End-Use Efficiency and Energy Services Directive. The policies and measures outlined in the Action Plan are projected to deliver energy savings of 18%, double our target.
16. Helping people take practical steps to make their homes more energy efficient is the aim of the Carbon Emissions Reduction Target (CERT) which came into effect from 1 April this year. To meet their obligations under this scheme, energy suppliers will invest around £2.8 billion over the next three years in improving the energy efficiency of our homes. This investment, it is estimated, will fund the distribution of around 100 million free or subsidised energy efficient light bulbs; improved insulation for five million households; and help two to three million households with other important measures to save energy, such as energy efficient appliances.
17. The ACT ON CO<sub>2</sub> calculator<sup>10</sup> was launched in June 2007 and has already attracted over 1,000,000 individual visitors. The calculator enables individuals or households to calculate the carbon footprint resulting from their home, appliance use and transport. It then generates a tailored action plan to help them reduce it. The ACT ON CO<sub>2</sub> advice line was launched on 2 April 2008. The advice line provides people with comprehensive advice on how to reduce their carbon footprint. It gives tailored, free, impartial advice from the Energy Saving Trust, covering energy efficiency, microgeneration and renewable energy, water efficiency and waste reduction. It also provides offers from energy companies who are now required to provide practical help to reduce energy use at home – including subsidies for energy saving measures<sup>11</sup>.

<sup>8</sup> Full PM speech text, of 19 November 2007, can be found at: [www.number-10.gov.uk/output/Page13791.asp](http://www.number-10.gov.uk/output/Page13791.asp)

<sup>9</sup> Members of the Shadow Committee on Climate Change are: Lord Jonathan Adair Turner (Chair), Sir Brian Hoskins, Lord Robert May, Professor Jim Skea, Dr Samuel Fankhauser and Professor Michael Grubb

<sup>10</sup> [www.direct.gov.uk/actonco2](http://www.direct.gov.uk/actonco2)

<sup>11</sup> Call 0800 512 012 to find out how energy suppliers are required to help you tackle climate change or go to [www.est.org.uk](http://www.est.org.uk)

## Buildings

18. In July 2007, the Government published its 'Building a Greener Future: a Policy Statement'<sup>12</sup> which confirmed our intention for all new homes to be zero carbon from 2016, with a progressive tightening of the energy efficiency standards in building regulations by 25% in 2010, and by 44% in 2013, up to the zero carbon standard in 2016. The Government is planning to consult on the detail of the zero carbon standard this summer. The Government has been working closely with the house building industry and other stakeholders through the 2016 task force, on developing a delivery programme and has agreed to provide some pump priming funding for a dedicated zero carbon programme delivery board.
19. The voluntary Code for Sustainable Homes, a six star rating for new homes which provides an incentive and framework for developers who want to market properties as having high environmental standards, was launched last year. The Code also provides buyers with the information to choose a home based on its environmental performance. Since the Code was launched in April 2007, 1269 developments incorporating over 45,000 homes have been registered against the Code. On 1 May 2008, the Government implemented mandatory ratings for all new homes against the Code.
20. In December 2007, the Government published the new Planning Policy Statement (PPS) on climate change – this PPS sets out how planning, in providing for the new homes, jobs and infrastructure needed by communities, should help shape places with lower carbon emissions and make them resilient to the climate change now accepted as inevitable.
21. Energy Performance Certificates (EPCs) were first introduced for the marketed sale of domestic homes, as part of Home Information Packs. The certificate provides energy efficiency A-G ratings and recommendations for improvement. The ratings – similar to those found on products such as fridges – are standard so the energy efficiency of one building can easily be compared with another building of a similar type. It is now law to have an EPC when selling a domestic property. From April 2008 this was extended to newly built homes and large commercial properties. By October 2008, all buildings whenever sold, built or rented will need an EPC.
22. In addition, from October 2008 Display Energy Certificates (DECs) will be required for larger public buildings enabling everyone to see how energy efficient our public buildings are.

## Transport

23. The Government has continued to take steps to tackle transport carbon emissions. In October 2007, it published the framework document, *Towards a Sustainable Transport System (TaSTS)*, which demonstrated that there is scope to make significant CO<sub>2</sub> reductions in the transport sector, while continuing to support economic growth and a better quality of life. TaSTS is the first stage of a consultative process to deliver a transport system that meets the twin objectives of supporting economic competitiveness and helping to stop climate change. Work is now underway on a consultation exercise and White Paper to be published in the Autumn 2008 and Spring 2009 respectively.
24. The *Renewable Transport Fuel Obligations (RTFO) Order 2007*, came into force in April 2008 requiring that 2.5% of transport fuel must come from renewable sources in 2008-2009. The Government also commissioned the Gallagher Review in light of concerns about biofuels, focusing particularly on the complex issue of the indirect or displacement effects of producing biofuel crops in developing countries. This review was published on 7 July 2008 and the Government will take its findings into account in UK and EU biofuel policies. In particular, the Government will consult later in the year on slowing down the proposed rate of increase in the RTFO.
25. The 2007 Pre Budget Report and Budget 2008 set out new tax policies to contribute to the Government's climate change goals. These include:
  - Significant reform of vehicle excise duty – introducing 6 new bands from 2009-2010 in order to provide a greater reward for consumers using the best car in their preferred class, and the introduction of first-year rates from 2010-2011 in order to influence the up-front purchasing choice. As a result of these reforms, from 2010 drivers of all cars under 130g/km will be charged nothing in the first year of purchase, while those driving the most polluting cars will pay £950; and

<sup>12</sup> Building a Greener Future: policy statement [www.communities.gov.uk/publications/planningandbuilding/building-a-greener](http://www.communities.gov.uk/publications/planningandbuilding/building-a-greener)

- the announcement that air passenger duty will be replaced with a duty payable per plane rather than per passenger, from 1 November 2009. The aim of this change will be to better reflect the environmental impact of flying, while ensuring that the sector continues to make a fair contribution to the public finances.
26. In May 2007, the Government published the Low Carbon Transport Innovation Strategy, supported by around £100 million of funding setting out our plans to encourage the development of new, lower carbon technologies for transport.
  27. In January 2008, the Government published *A Sustainable Future for Cycling*, which sets out our approach and aspirations for cycling including background to our £140 million investment to 2011.

## Environmental markets

28. The environmental market place is huge, global and growing rapidly. Environmental services are a rapidly growing market, and the UK is emerging as a world leader in finance and business services (i.e. carbon markets). Globally, the Environmental Industries Sector was estimated to be worth £274 billion in 2005, and is expected to grow to £342 billion by 2010 and just under £400 billion by 2015. The Stern Review estimated that the current market for new low carbon energy technologies is around \$100 billion per year, but could be worth at least \$500 billion per year by 2050, with others suggesting as much as \$3 trillion per year considering the overall added value.
29. The UK environmental goods and services (EGS) sector is already a dynamic and growing industry. Data gathered in 2004 showed that companies identifying themselves as working in the environmental technology sector had a turnover of around £25 billion, and account for around 400,000 jobs in some 17,000 companies. Projections suggest that the UK EGS market will grow to £34 billion in 2010 and £46 billion by 2015. Employment will grow by at least 100,000 over the same period.
30. Published on 1 May 2008, the Government's response to the Commission on Environmental Markets and Economic Performance (CEMEP),

'Building a low carbon economy: unlocking innovation and skills'<sup>13</sup>, set out how Government will work with business to seize these new opportunities through new approaches to procurement, innovation and recognising and addressing the skills needs of a new, green economy.

## Technology and Innovation

31. On 19 November 2007, the Prime Minister launched a competition to develop the UK's first full scale commercial demonstration of carbon capture and storage<sup>14</sup> technology (CCS). Expected to be operational from 2014, this will make the UK a world leader in this globally important new technology. CCS offers the potential to reduce carbon dioxide emissions from fossil fuel burning power generation by up to 90%, and possibly 100% if co-firing with biomass is used.
32. In March 2008, the Department for Innovation, Universities and Skills (DIUS) published 'The Science and Innovation White Paper – Innovation Nation'. The White Paper argued that Innovation will be central to building a low carbon economy, and that Government can support innovation through the right regulatory design, through appropriate use of public procurement, and through specific policies for research, development and demonstration of new technologies.
33. DIUS science and innovation budget investments through the Research Councils, Technology Strategy Board and, more recently with the establishment of the Energy Technologies Institute, recognise Government's climate change goals as a key priority and:
  - Research Council investments on energy related basic, strategic and applied research and postgraduate training have more than doubled since 2003. Over the Comprehensive Spending Review (CSR) period, expenditure will approach £300m. The Research Councils have also recently launched a £1 billion Living with Environmental Change Programme.
  - The Technology Strategy Board is expanding its portfolio in areas relating to the low carbon agenda through a range of initiatives including Innovation Platforms, and

<sup>13</sup> [www.defra.gov.uk/environment/business/commission/index.htm](http://www.defra.gov.uk/environment/business/commission/index.htm)

<sup>14</sup> Carbon capture and storage technology has the potential to reduce carbon dioxide emissions by capturing the carbon dioxide emitted when burning fossil fuels, transporting it and storing it in secure spaces such as geological formations, including old oil and gas fields and aquifers under the seabed. For further details see: <http://www.berr.gov.uk/energy/sources/sustainable/carbon-abatement-tech/ccs/page42320>.

- The Energy Technologies Institute will invest up to £110 million per year in development of low carbon energy technologies and solutions for at least the next 10 years.

34. The UK Environmental Transformation Fund (ETF), a new initiative to bring forward the development of new low carbon energy and energy efficiency technologies, formally began operation in April 2008, and will be jointly administered by Defra and the Department for Business, Enterprise and Regulatory Reform (BERR)<sup>15</sup>. An International Window to the ETF will be administered jointly by Defra and the Department For International Development (DFID) from the same date.

## Energy Production

35. The Government has continued to develop policies which aim to reduce carbon emissions from energy production. In October 2007, it announced a feasibility project for a tidal power scheme in the Severn Estuary. Studies<sup>16</sup> indicate that up to 5% of the UK's electricity demand could be met by harnessing the tidal energy that exists within the estuary.
36. Following an extensive public consultation between May and October 2007, BERR published the Nuclear White Paper in January 2008. This announced that the Government was inviting energy companies to bring forward plans to build and operate new nuclear power stations as part of the UK's future low-carbon electricity generating mix. The White Paper sets out a timetable of facilitative actions which will deliver a framework that would enable energy companies to begin construction of the first new nuclear power station in 2013-2014 and start operation in 2017-2020. In addition to these actions, the Secretary of State for Business, Enterprise and Regulatory Reform held a conference on 12 June 2008, at which he announced further actions, including the formation of an Office of Nuclear Development to bring together Government resources focused on facilitating new nuclear investment in the UK, and a Nuclear Development Forum to provide regular high-level contact between Government and industry.

## Fuel Poverty

37. The Government continues to take steps to tackle fuel poverty. It is recognised that a range of measures are required to tackle fuel poverty and the UK Fuel Poverty Annual 5th Progress Report<sup>17</sup> provided an update on the range of programmes and measures that have been put in place. This includes:

- Programmes to improve energy efficiency
- Maintaining the downward pressure on fuel bills, ensuring fair treatment for the less well off, and supporting industry initiatives to combat fuel poverty.
- Continuing action to tackle poverty and increase incomes.

<sup>15</sup> For more information visit [www.defra.gov.uk/environment/climatechange/uk/energy/fund/index.htm](http://www.defra.gov.uk/environment/climatechange/uk/energy/fund/index.htm)

<sup>16</sup> Studies include the Sustainable Development Commission's "Turning the tide: tidal power in the UK"

<sup>17</sup> [www.berr.gov.uk/energy/fuel-poverty/index.html](http://www.berr.gov.uk/energy/fuel-poverty/index.html)

# International Action

38. The UK continues to play a leading role in tackling climate change at an International level because even with the UK taking action, we will find it difficult to manage the UK's carbon footprint without action in other economies. This was demonstrated by the consumption emissions estimates published 2 July 2008<sup>18</sup>. We are working through the European Union, G8, and United Nations Framework Convention on Climate Change (UNFCCC) processes, to find ways to reach global agreement on action to avoid dangerous climate change.
39. Our specific objectives are to:
- bring about a step change in global investment in low carbon technologies that will deliver a transition to a low carbon economy, including through an effective carbon market;
  - build resilience through managing impacts and encouraging adaptation to climate change
40. Crucial to achieving these objectives is securing international agreement to a realistic, robust, durable and fair framework of commitments for the post-2012 period. Greater urgency is needed to secure a global agreement which builds on the first Kyoto commitment period, which ends in 2012, and which ensures that there is no gap between commitment periods. The roadmap agreed in Bali sets a clear and comprehensive agenda for negotiations and a timetable ending in 2009.
41. We are working to build international consensus that an urgent response to climate change is a security and prosperity imperative, that achieving a low carbon economy is necessary for economic growth and early action is necessary and cost-effective. In the UK and through the Foreign and Commonwealth Office's overseas network, we are engaging beyond government to – government contact to build coalitions with business and civil society leaders, legislators and international institutions.
42. The UK has played a leading role in the European Union discussions, calling for ambitious and urgent action. In January 2008, the European Commission brought forward proposals to implement the 2007 Spring Council Agreement with a 30% reduction in EU greenhouse gas emissions by 2020 as part of an international agreement on climate change or a unilateral 20% reduction by 2020. The Commission's package includes revisions to the EU Emissions Trading System, sharing targets for emissions reductions outside the trading system amongst Member States, proposals to increase the share of energy coming from renewable sources and a regulatory framework to enable the development of carbon capture and storage (CCS).
43. In the G8 we have seen recent Presidencies and Summits build on our climate change objectives and continue to engage in dialogue with key countries such as Brazil, China, India, Mexico and South Africa. The Japanese 2008 G8 summit in Toyako in July maintained political momentum on action. They demonstrated strong leadership on climate change by urging the UNFCCC to consider and adopt a global long-term goal of at least a 50% reduction in emissions by 2050. For the first time, the G8 agreed on the need to implement ambitious mid-term goals and to implement the International Energy Agency's 25 energy efficiency recommendations. The G8 sent a clear message on the importance of clean energy. A new G8 Energy Forum will look at new standards and technologies that could support the transition to a low carbon economy. Linkages between the impact of climate change and development were set out and the G8 stated its support for urgent action to mainstream adaptation into broader development strategies. Over US\$100bn of investments identified under the Clean Energy Investment Framework will also help developing countries. G8 pledged US\$6bn to the UK initiated World Bank Climate Investment Funds, which will help bridge the financing gap until a post 2012 regime becomes effective. This further demonstrates G8 commitment to support developing countries transition to low-carbon and climate resilient economies.
44. The Gleneagles Dialogue, a wider informal forum for discussion between Energy and Environment ministers, with the objective of complementing and reinforcing formal negotiations within the UNFCCC, reported to G8 Heads of Government during Japan's G8 Presidency in 2008. The UK has been working with the G8 and developing countries through the Dialogue to accelerate the deployment of clean technologies and provide incentives for investment in low carbon technologies.
45. On **adaptation** internationally, we are funding projects in India, China and Bangladesh, which are looking at the impacts of climate change and supporting work on developing adaptation strategies. At the UNFCCC conference in Bali in December 2007, Parties agreed the governance of the Adaptation Fund and an ambitious work programme on how the global community can scale up efforts to improve access to climate data, improve and cooperate on research and ensure investment and transfer of technologies for adaptation in key sectors such as agriculture and health.

<sup>18</sup> [www.defra.gov.uk/environment/business/scp/research/theme1/scale0708](http://www.defra.gov.uk/environment/business/scp/research/theme1/scale0708)

# Adaptation

46. Tackling climate change requires a two-pronged effort: action to reduce greenhouse gas emissions in order to avoid future dangerous levels of climate change (Mitigation), and action to deal with the impacts that we are already experiencing and will continue to experience over coming decades (Adaptation).
47. Dealing with climate impacts is not new. There are already existing activities across Government dealing with a range of these issues, for example flooding and water scarcity. However recent events and the growing scientific evidence have placed a renewed focus on the need to take urgent action to adapt to lessen the risks of these impacts, but also to take advantage of any opportunities. Therefore, over the last year we have put in a place a range of new systems and mechanisms to raise awareness and promote action, across Government and beyond.
48. Adaptation is an integral part of the Comprehensive Spending Review 07 climate change Public Service Agreement (PSA) and has been designated as one of thirteen cross-cutting programmes in Defra. The cross-Whitehall Domestic Adaptation Programme Board has been set up to oversee our progress towards meeting the adaptation element of the climate change PSA and provide assurance on delivery to the Delivery and Strategy High Level Board on Climate Change and Energy. Adaptation is a cross-Government issue and Defra is leading work with other departments to ensure that adaptation is sufficiently embedded into all policies and corporate processes.
49. Adaptation reporting is being put on a statutory footing for the first time through its inclusion in the Climate Change Bill. The Government will have a duty to assess regularly the risks climate change poses to the UK and set out a programme of action to address these risks. There is also a new power for the Secretary of State to require organisations with public functions to assess their own risks and draw up action plans. The Government will consult on and publish a strategy for use of this power. These provisions in the Bill reflect the fact that the impacts of climate change will affect the delivery of a wide range of public services and critical infrastructure, and will ensure that there is a mechanism across the range of bodies performing public functions to pick up on poor performance or risk areas which are not being addressed.
50. Government responsibility for the majority of policy areas impacted by climate change adaptation is devolved. The Adapting to Climate Change Programme is therefore responsible for the co-ordination of the Government's work on adaptation in England, and on reserved matters<sup>19</sup> only. However, it is recognised that there is much to be gained from ensuring coherence across the Administrations, as well as from taking a UK-wide approach on cross-border issues. The UK Administrations will therefore be working closely together to ensure the sharing of best practice and cross-border cooperation. Mechanisms for taking a common approach will be developed where appropriate, for example in areas such as research and skills, and the national risk assessment.
51. The impacts of climate change will vary across the country so our responses will need to be tailored to reflect local situations. Local Authorities are therefore key players in our response to climate impacts, and this year the new Local Government Performance Framework includes for the first time a new indicator on adapting to climate change, which requires Local Authorities to assess and address the impacts of climate change. The indicator has been adopted as a local priority in around a third of all local area agreements.

## Building the evidence and sharing knowledge

52. Defra funds the UK Climate Impacts Programme to act as a linking organisation between researchers and decision makers on impacts and adaptation. UKCIP provides scenarios of climate change, coordinates research, and provides advice and guidance to stakeholders including a range of online tools to aid organisations with planning for adaptation.

<sup>19</sup> Reserved matters are areas over which power to legislate is retained by Westminster, as stated by the Scotland Act 1998, Northern Ireland Act 1998 or Government of Wales Act 1998.

## Establishing a framework for action

53. Over the last year there has been a much greater focus on the importance of adaptation. There are now adaptation clauses in the Climate Change Bill, we have the lessons learnt from the Pitt Review and the establishment of the cross-government Adaptation Programme. To help draw this activity together, and set out the way forward, we are launching an Adapting to Climate Change website<sup>20</sup>, which will:
- communicate the Government's overall approach – our guiding principles, what we are already doing and what more we need to do to develop the statutory programme required under the Climate Change Bill; and
  - provide a useful and user-friendly ongoing framework for developing the Adapting to Climate Change programme going forward.
- A short document summarising the activities of the cross-Government Adaptation Programme has been published in parallel.
54. Internationally, Defra and DfID work bilaterally with developing country partners to understand the challenges presented by climate change and to develop appropriate responses. Defra manages projects in India, Bangladesh and China looking at the impacts on key sectors and developing adaptation responses, while DfID has developed techniques for integrating climate risks into their development portfolio. The experiences gained through this work is guiding our approach to the international negotiations on how adaptation can be adequately addressed as part of a long-term framework to tackle climate change. Defra, DfID and FCO continue to work closely with international partners to ensure that adaptation will be appropriately tackled in any future international framework – adaptation is a key pillar of action under the Bali Action Plan. Progress also continues on the Nairobi Work Programme to provide information to facilitate adaptation practices and provide improved information on climate related risks and extreme events. The EU Commission published their Green Paper on adaptation last year and we are contributing to discussions on the development of the forthcoming White Paper.
55. The Research Councils' £1billion 'Living with Environmental Change Programme' will help to make better predictions and analysis of environmental change so that we can adapt and become more resilient. It will bring together researchers, the public sector and business over the next 10 years to tackle the problems and opportunities of climate change.

<sup>20</sup> [www.defra.gov.uk/adaptation](http://www.defra.gov.uk/adaptation)

# UK greenhouse gas emissions

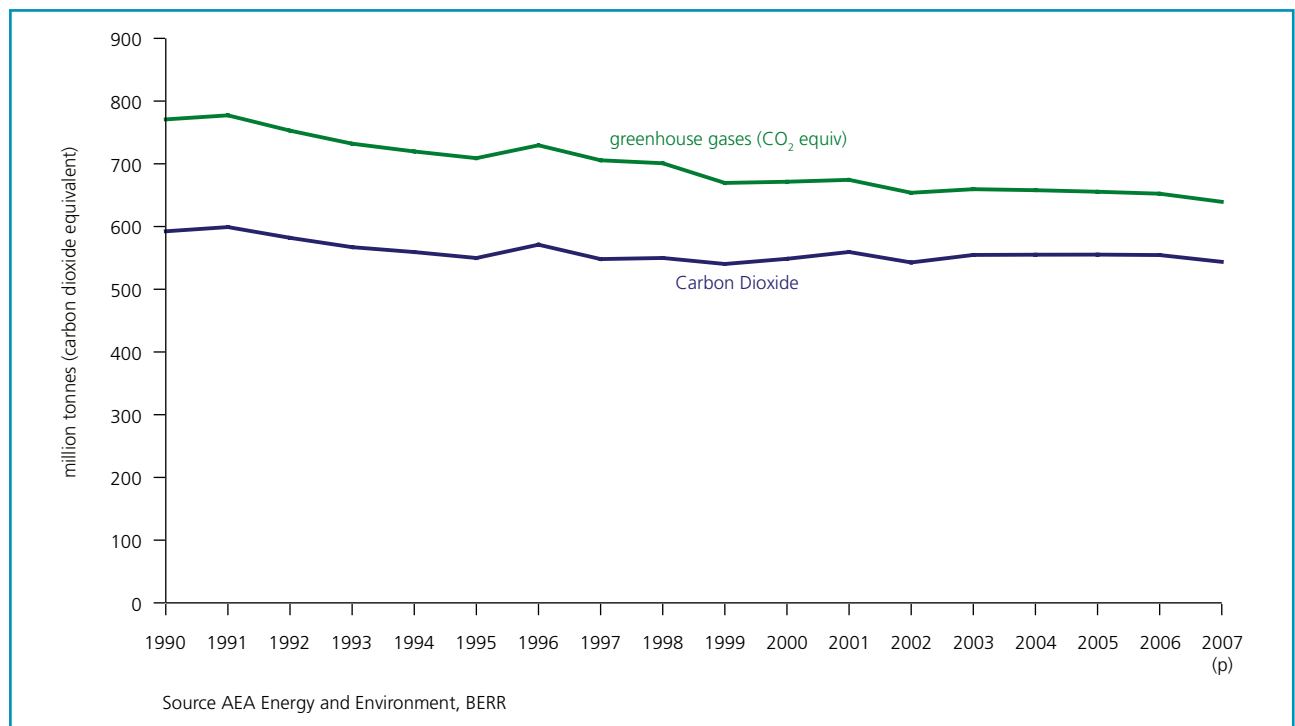
## Greenhouse gas emissions inventory and trends

56. Final estimates of 2006 emissions published in January 2008<sup>21</sup> show that emissions of the basket of greenhouse gases<sup>22</sup> covered by the Kyoto Protocol fell by around ½% between 2005 and 2006, down from 655.5 to 652.3 million tonnes carbon dioxide equivalent.
57. Provisional estimates show carbon dioxide emissions<sup>23</sup> during 2007 were around 543.7 million tonnes, 2% lower than the 2006 figure of 554.5 million tonnes. This decrease resulted from fuel switching from coal to natural gas for electricity generation, combined with lower fossil fuel consumption by households and industry. Table 1 shows the breakdown by fuel of this switching, which was largely explicable in terms of price relativities. The table also shows the effect of lower nuclear output, and higher contributions from renewable energy and imports of electricity relative to 2006.

**Table 1: Factors contributing to increase in CO<sub>2</sub> emissions between 2006 (final) and 2007 (provisional)**

Factor	MtCO <sub>2</sub>
Lower coal use	- 10.4
Lower oil use	- 3.3
Higher gas use	+ 2.8
Change in non-fuel related emissions	0.0
<b>Total</b>	<b>-10.9</b>
<i>Estimated contribution from primary electricity:</i>	
Lower nuclear output	+4.8 to +11.3
Higher renewable output	-1.2 to - 2.8
Lower electricity imports	+0.8 to +2.0

**Figure 1: UK greenhouse gas emissions 1990 – 2007 (Note: 2007 results are provisional)**



<sup>21</sup> [www.defra.gov.uk/environment/statistics/globalatmos/download/ghg\\_ns\\_20080131.pdf](http://www.defra.gov.uk/environment/statistics/globalatmos/download/ghg_ns_20080131.pdf)

<sup>22</sup> The basket of greenhouse gases is made up of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, weighted by global warming potential.

<sup>23</sup> Provisional estimates of carbon dioxide emissions for 2007 were produced by Defra and BERR in March from provisional inland energy consumption statistics. These provisional estimates will be subject to revision when final estimates are published in January next year, but they provide an indication of the emissions in the most recent calendar year. The majority of provisional estimates are within 1% of the final figures. Further details in footnote 29.

58. These data do not include emissions from international aviation and shipping, which are not included in the national total (and therefore neither the Kyoto Protocol target nor our domestic goal for reducing carbon dioxide emissions), as there is no international agreement yet on allocating them to national greenhouse gas inventories. Data on emissions from these sources are nevertheless reported in the UK Greenhouse Gas Inventory<sup>24</sup>, for information. This is in accordance with internationally agreed guidelines.
59. If emissions of carbon dioxide from international aviation and shipping bunker fuels sold in the UK were added to the national carbon dioxide emissions for the UK, for 2006 these sources would amount to about 7% of the national total.
60. The reduction in greenhouse gas emissions is mainly driven by structural changes in the world economy, energy efficiency; use of lower carbon fuels, pollution control measures in the industrial sector, and other policies that reduced emissions of greenhouse gases other than carbon dioxide. Without these changes, our preliminary estimate is that greenhouse gas emissions in 2006 could have been some 40% higher, rather than 16% lower, than emissions in 1990 – a reduction of some 440 MtCO<sub>2</sub> equivalent. However structural change in the UK economy has been associated with increased emissions in countries exporting goods to the UK,<sup>25</sup> and when this is taken into account the total annual reduction of UK greenhouse gas emissions since 1990 was around 240 MtCO<sub>2</sub> below business as usual, due in roughly equal measure to improved energy efficiency<sup>26</sup>, reduction in non-CO<sub>2</sub> greenhouse gas emissions, and switching to lower carbon fuels.

<sup>24</sup> [www.ghgi.org.uk](http://www.ghgi.org.uk)

<sup>25</sup> For further information on emissions associated with UK consumption of goods and services, see the research referred to at footnote 18.

<sup>26</sup> Including any structural changes within the UK that did not lead to increases in emissions in countries exporting to the UK

**Table 2: UK greenhouse gas emissions 1990-2006 (and progress against the Kyoto Protocol target and domestic CO<sub>2</sub> goal) (million tonnes carbon dioxide equivalent)**

	Baseline	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
<b>Emissions</b>														
Net CO <sub>2</sub> emissions (emissions minus removals)		592.4	549.8	571.0	548.1	549.9	540.3	548.6	559.4	542.7	554.7	555.1	555.2	554.5
Methane (CH <sub>4</sub> )		103.5	90.2	87.8	82.9	78.2	73.0	68.4	62.4	59.4	53.4	51.6	49.6	49.1
Nitrous Oxide (N <sub>2</sub> O)		63.8	53.0	53.4	54.8	54.5	44.2	43.6	41.5	40.1	39.8	40.6	39.8	38.3
Hydrofluorocarbons (HFC)		11.4	15.5	16.7	19.2	17.3	10.9	9.1	9.7	9.9	10.2	8.9	9.2	9.2
Perfluorocarbons (PFC)		1.4	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.3
Sulphur hexafluoride (SF <sub>6</sub> )		1.0	1.2	1.3	1.2	1.3	1.4	1.8	1.4	1.5	1.3	1.1	1.1	0.9
Kyoto greenhouse gas basket		770.8	709.0	729.5	705.6	700.9	669.5	671.4	674.4	653.8	659.5	657.9	655.5	652.3
<b>EU Emission Trading Scheme</b>														
Net UK purchases													27.1	33.3
<b>Kyoto Protocol target – allowing for EU ETS</b>														
Net greenhouse gas emissions	779.9	770.8	709.0	729.5	705.6	700.9	669.5	671.4	674.4	653.8	659.5	657.9	628.4	619.0
Percentage change from baseline		-1.2%	-9.1%	-6.5%	-9.5%	-10.1%	-14.2%	-13.9%	-13.5%	-16.2%	-15.4%	-15.6%	-19.4%	-20.6%
<b>Domestic CO<sub>2</sub> goal – allowing for EU ETS</b>														
Net CO <sub>2</sub> emissions	592.4	592.4	549.8	571.0	548.1	549.9	540.3	548.6	559.4	542.7	554.7	555.1	528.1	521.2
Percentage change from baseline		0.0%	-7.2%	-3.6%	-7.5%	-7.2%	-8.8%	-7.4%	-5.6%	-8.4%	-6.4%	-6.3%	-10.9%	-12.0%

**Notes:**

1. Kyoto basket total differs slightly from sum of individual pollutants above as the basket uses a narrower definition for the Land Use, Land-Use Change and Forestry sector (LULUCF), and includes emissions from UK Overseas Territories.
2. Kyoto base year is made up of emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O in 1990, and of HFCs, PFCs and SF<sub>6</sub> in 1995. Includes an allowance for net emissions from LULUCF in 1990.
3. The entire time series is revised each year to take account of methodological improvements in the UK emissions inventory.

## Effect of the EU emissions trading scheme

61. The Kyoto Protocol established three flexible mechanisms, known as joint implementation, the clean development mechanism, and international emissions trading. These help countries to reduce emissions at least cost. This is the principle behind the EU Emissions Trading Scheme. The inventory figures above do not take into account the net effect of the scheme on UK emissions.
62. Table 3 sets out, the results of the first phase of the trading scheme. It shows the total emissions of the UK installations covered by the scheme and the shortfall against their allocation of allowances.

**Table 3: EU Emissions Trading Scheme results**

		2005	2006	2007	Phase I total
<b>Allocation of allowances</b> (millions)	Total	215.2	217.7	228.8	661.7
	Power sector	135.7	135.6	136.0	407.3
	Other sector	79.5	82.3	92.9	254.7
<b>Verified emissions</b> (MtCO <sub>2</sub> )	<b>Total</b>	<b>242.3</b>	<b>251.1</b>	<b>256.4</b>	<b>749.8</b>
	Power sector	172.2	181.5	177.9	531.6
	Other sector	70.1	69.6	78.4	218.1
<b>Excess or (shortfall) of allowances</b> (millions)	<b>Total</b>	<b>(27.1)</b>	<b>(33.3)</b>	<b>(27.6)</b>	<b>(88.0)</b>
	Power sector	(36.5)	(45.9)	(41.9)	(124.3)
	Other sector	9.5	12.7	14.5	36.7

63. Table 4 and Figure 2 show the net effect of the EU ETS on the UK's total emissions figures across Phase I. By buying emissions allowances from elsewhere in the European Union, UK installations covered by the EU ETS are driving emissions reductions across the EU.

**Table 4: Impact of EU Emissions Trading Scheme on total UK emissions**

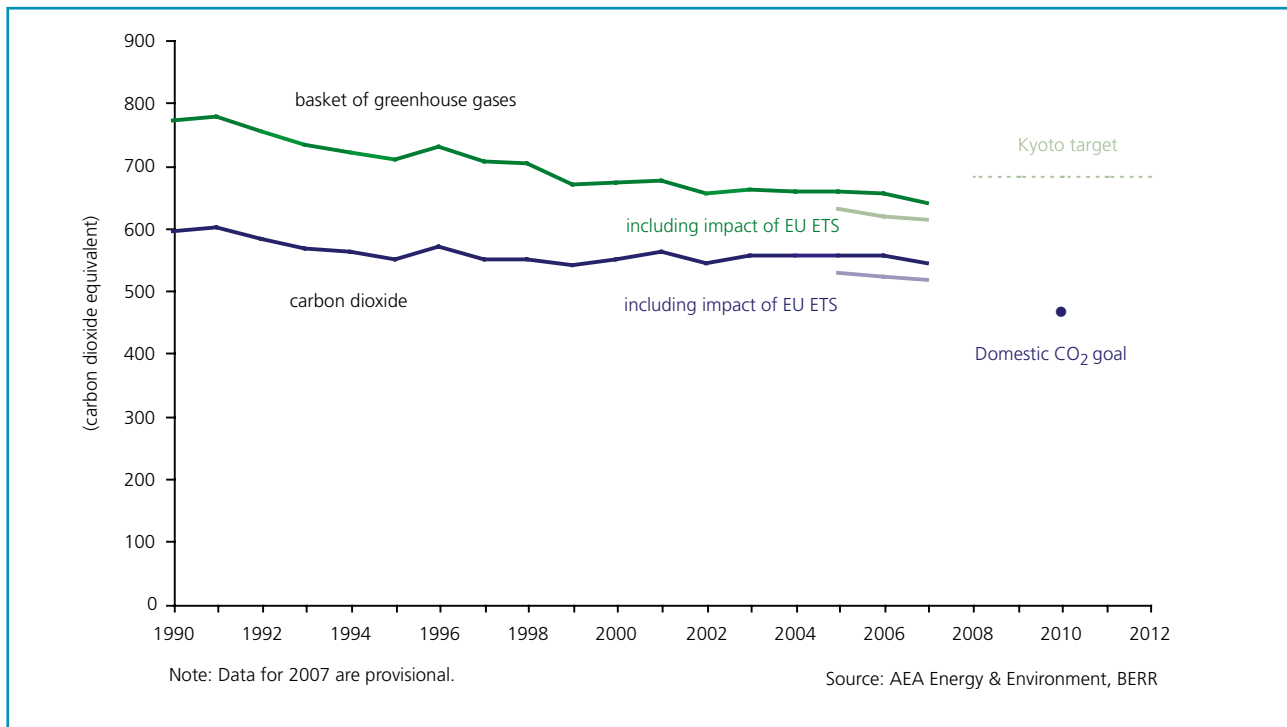
	Base year	2005		2006		2007	
	(MtCO <sub>2</sub> e)	(MtCO <sub>2</sub> e)	Relative to base year	(MtCO <sub>2</sub> e)	Relative to base year	(MtCO <sub>2</sub> e)	Relative to base year
<b>CO<sub>2</sub> excluding EU ETS</b>	592.4	555.2	-6.3%	554.5	-6.4%	543.7	-8.2%
<b>CO<sub>2</sub> including EU ETS</b>	592.4	528.1	-10.9%	521.2	-12.0%	516.1	-12.9%
<b>All greenhouse gases excluding EU ETS</b>	779.9	655.5	-16.0%	652.3	-16.4%	639.4	-18.0%
<b>All greenhouse gases including EU ETS</b>	779.9	628.4	-19.4%	619.0	-20.6%	611.8	-21.6%

### Progress towards targets and goals

64. From the final estimates for 2006 emissions and the EU ETS results for that year, the UK's emissions of the basket of greenhouse gases<sup>27</sup> covered by the Kyoto Protocol were 20.6% lower in 2006 than in the base year<sup>28</sup>, down from 779.9 to 619.0 million tonnes carbon dioxide equivalent. The UK's commitment under the Kyoto Protocol is to reduce total greenhouse gas emissions to 12.5% below base year levels over the period 2008-2012.

<sup>27</sup> The basket of greenhouse gases is made up of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, weighted by global warming potential.

<sup>28</sup> The base year is 1990 for carbon dioxide, methane and nitrous oxide, and 1995 for fluorinated compounds.

**Figure 2: UK greenhouse gas emissions: Progress towards targets and goals (2007 results are provisional)**

65. The 2007 provisional estimates show that carbon dioxide emissions in 2007 were around 13% below 1990 levels, down from 592.4 to 516.1 million tonnes carbon dioxide equivalent. This, again, takes account of the EU ETS results. Our domestic goal is to reduce carbon dioxide emissions to 20% below 1990 levels by 2010, including the effect of the EU ETS.
66. Combining the provisional estimates for carbon dioxide emissions with emissions trends for the other greenhouse gases<sup>29</sup> suggests that total UK greenhouse gas emissions in 2007 were around 22% below the base year level, again taking account of allowances surrendered under the EU ETS.

### Greenhouse gas emissions by sector

67. Tables 5 and 6 break down the UK's total emissions by sector. Table 5 and Figure 3 shows one way of looking at how greenhouse gas emissions are distributed across the UK economy. In this classification, the emissions from power stations, refineries and other energy supply industries are distributed pro-rata to the end users of the electricity, petroleum products and other fuels. There is therefore no separate line for the energy supply industry. This 'end user' classification gives the most complete account of relationship between emissions and the production and consumption of goods and services.
68. Table 6 and Figure 4 shows another way of looking at how emissions are distributed across the UK economy. In this classification, emissions from power stations, refineries and other energy supply industries are shown separately and not distributed to the end users.

<sup>29</sup> Carbon dioxide accounts for the majority of the basket of greenhouse gas emissions (85% in 2006). In order to give an indication of what the provisional carbon dioxide emission estimates imply for the basket total, a simple estimate is made by assuming that the trend for the remaining gases in the basket will be half way between 'no change' on 2006 and a repeat of the trend indicated by the last seven years' data (2000-2006). In order to establish an estimate of emissions from the total basket of gases for the year, a further adjustment is then made in respect of emissions from Overseas Territories and the narrower definition of carbon sinks used by the Kyoto Protocol.

Table 5: Greenhouse gas emissions by end user, MtCO<sub>2</sub>e

Sector	Base year	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Agriculture	63.4	63.4	60.6	60.9	61.3	60.1	59.2	57.0	54.4	54.7	53.9	53.7	52.7	51.5
Business	244.4	243.0	211.1	212.3	205.7	205.3	202.3	209.9	215.5	203.0	207.7	205.3	206.8	209.2
Exports	10.0	10.0	14.1	15.3	16.5	15.9	14.5	13.9	13.5	15.7	13.2	14.5	14.9	11.5
Industrial Process	59.3	57.7	47.5	48.5	50.0	46.7	29.8	26.7	23.6	19.7	20.4	19.7	18.8	18.4
Land Use Change	2.9	2.9	1.2	0.9	0.6	0.0	-0.3	-0.4	-0.5	-1.1	-1.1	-1.9	-2.1	-2.0
Public	31.1	31.1	28.1	28.9	26.4	25.1	24.2	23.3	24.0	21.5	21.4	22.3	22.2	22.1
Residential	168.5	168.1	153.0	165.1	150.2	156.3	151.0	155.2	162.1	156.5	158.7	159.9	156.3	155.5
Transport	144.5	144.5	147.7	153.2	154.2	153.1	153.7	152.9	153.0	156.9	161.7	161.7	163.5	164.1
Waste Management	52.9	52.9	46.9	45.5	41.8	39.1	35.6	33.5	29.4	27.0	23.9	22.4	22.0	22.0
<b>Total</b>	<b>776.9</b>	<b>773.5</b>	<b>710.2</b>	<b>730.7</b>	<b>706.7</b>	<b>701.6</b>	<b>670.1</b>	<b>671.9</b>	<b>674.9</b>	<b>653.9</b>	<b>659.8</b>	<b>657.6</b>	<b>655.2</b>	<b>652.3</b>

Figure 3: UK greenhouse gas emissions by end user, 1990 to 2006

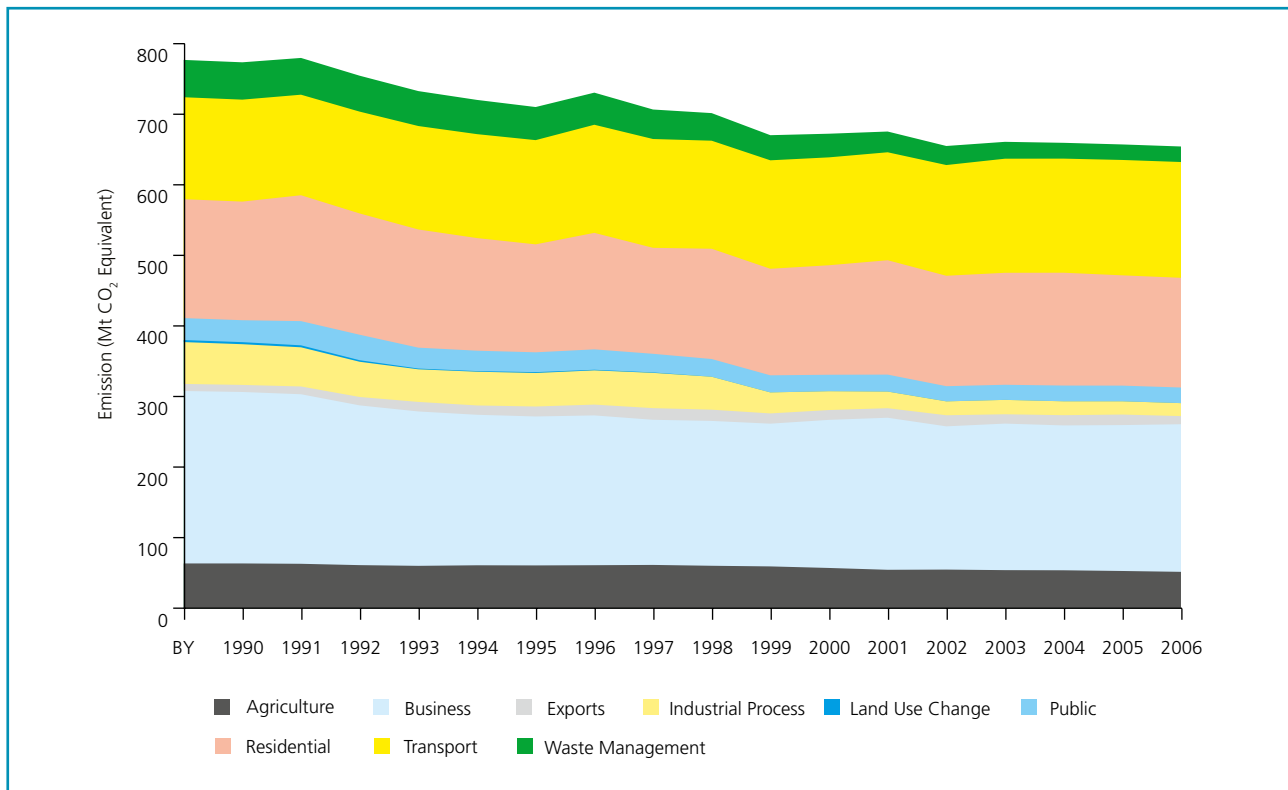


Figure 4: UK greenhouse gas emissions by source, 1990 to 2006

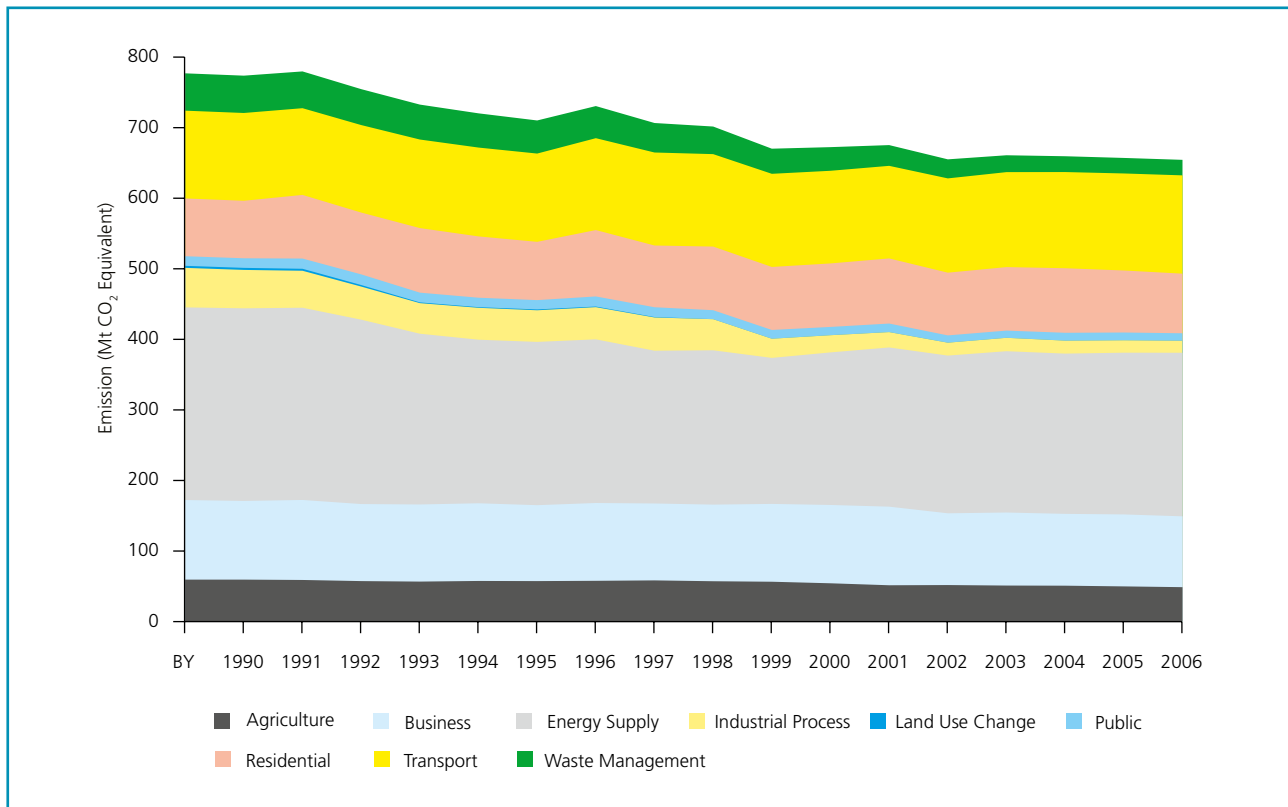


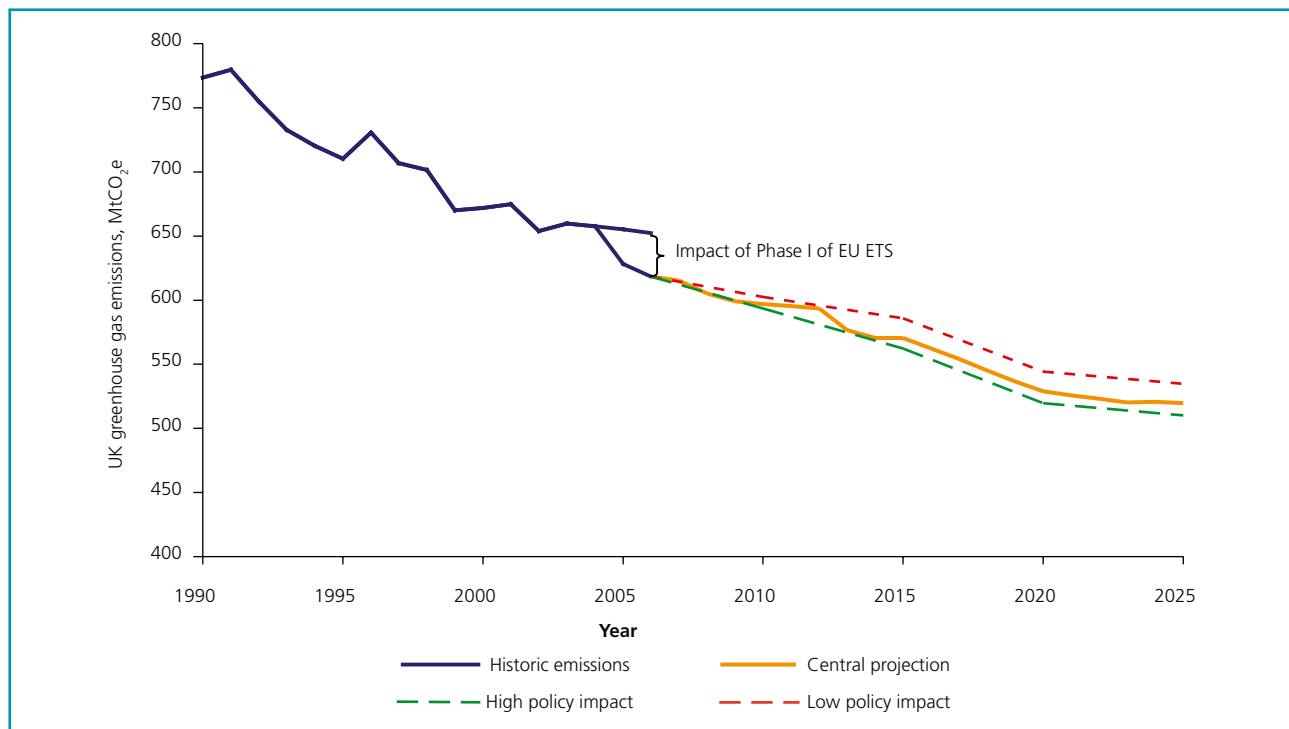
Table 6: Greenhouse gas emissions by source, MtCO<sub>2e</sub>

Sector	Base year	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Agriculture	59.5	59.5	57.4	57.8	58.4	57.2	56.5	54.3	51.5	51.8	51.1	50.9	49.9	48.8
Business	112.8	111.5	107.6	110.3	109.0	108.6	110.3	111.0	111.4	101.7	103.5	101.8	102.0	100.4
Energy Supply	273.0	273.0	231.4	231.9	216.5	218.7	206.9	216.2	225.6	223.5	228.6	227.1	229.2	231.8
Industrial Process	56.0	54.4	44.8	45.6	47.1	44.1	27.2	24.4	21.8	18.3	19.0	18.4	17.6	17.1
Land Use Change	2.9	2.9	1.2	0.9	0.6	0.0	-0.3	-0.4	-0.5	-1.1	-1.1	-1.9	-2.1	-2.0
Public	13.6	13.6	13.2	14.3	13.9	12.7	12.4	11.7	12.1	10.3	10.2	11.1	11.0	10.5
Residential	81.9	81.5	82.6	94.1	87.5	90.2	89.3	90.0	92.3	88.9	90.0	91.5	87.9	84.5
Transport	124.4	124.4	125.1	130.2	131.8	131.0	132.0	131.3	131.2	133.6	134.6	136.3	137.5	139.3
Waste Management	52.9	52.9	46.9	45.5	41.8	39.1	35.6	33.5	29.4	27.0	23.9	22.4	22.0	22.0
<b>Grand Total</b>	<b>776.9</b>	<b>773.5</b>	<b>710.2</b>	<b>730.7</b>	<b>706.7</b>	<b>701.6</b>	<b>670.1</b>	<b>671.9</b>	<b>674.9</b>	<b>653.9</b>	<b>659.8</b>	<b>657.6</b>	<b>655.2</b>	<b>652.3</b>

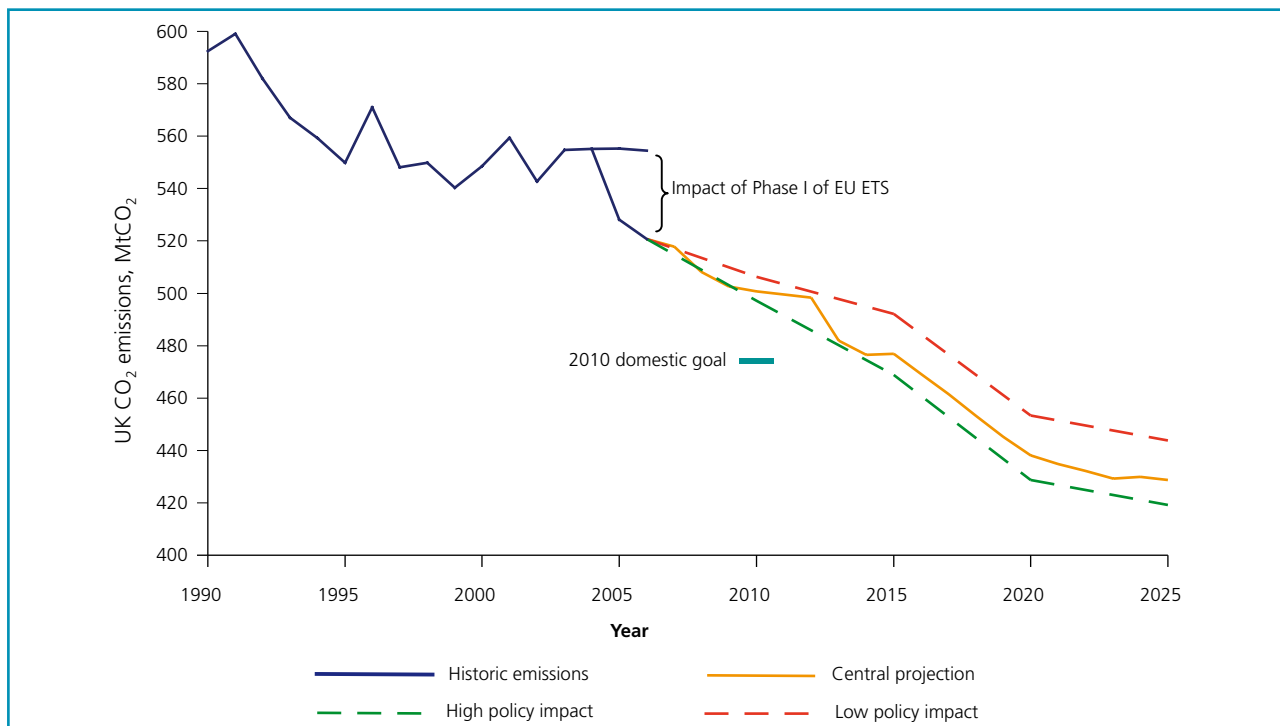
# Updated greenhouse gas emissions projections

69. Our latest greenhouse gas emissions projections, which supersede those published alongside the Energy White Paper (EWP) in May 2007, indicate that, taking into account the net impact of allowances and credits surrendered through the EU emissions trading scheme, emissions of the basket of six gases controlled under the Kyoto Protocol might be about 23% below base year levels in 2010. The updated projections therefore confirm that greenhouse gas emissions will remain significantly below the level required for the UK to meet its Kyoto Protocol target over the period 2008-2012.
70. By 2020, and taking into account the impact of the policies announced in the Energy White Paper 2007 and the estimated net impact of the European Commission's recent proposals on the EU emissions trading system, the UK's carbon dioxide emissions are projected to fall to about 26% below 1990
71. These new projections use updated UK economic growth forecasts, announced in the March 2008 Budget, including revised estimates of the UK population announced by the ONS in October 2007. They also take into account the European Commission's proposals to revise the EU emissions trading system, and specifically our estimate of the implications for the UK of the proposed EU-wide cap.
72. The projections shown in Figures 5 and 6 are based on a central fossil fuel price scenario; the range reflects uncertainties about the carbon savings that policies in the Energy White Paper will deliver. BERR will publish a full update of the projections, including scenarios for the low and high fossil fuel price scenarios, in the autumn.

**Figure 5: Historic and projected UK greenhouse gas emissions**



**Figure 6: Historic and projected UK CO<sub>2</sub> emissions**



73. The updated projections confirm that, although we expect significant reductions in carbon dioxide emissions by 2010, the projected fall to about 15½% below 1990 levels<sup>30</sup> would not be enough to achieve the domestic goal to reduce carbon dioxide emissions to 20% below 1990 levels by 2010. The domestic goal was always designed to be stretching and the Climate Change Bill requires the Committee on Climate Change to advise the Government on its consistency with their advice on the 2008-2012 budgetary period.

**Table 7: Updated Headline CO<sub>2</sub> projections MtCO<sub>2</sub>**

(Figures in brackets give estimated savings<sup>31</sup> due to purchase by installations participating in EU ETS of allowances or credits from emissions reductions overseas.)

	1990	2010	2015	2020
Including full impact of EU ETS and assuming low impact of 2007 Energy White Paper measures	592.4	500.7 (21.0)	478.0 (28.6)	441.2 (42.8)
Including full impact of EU ETS and assuming central impact of 2007 Energy White Paper measures	592.4	500.7 (20.4)	476.9 (27.2)	438.2 (40.9)
Including full impact of EU ETS and assuming high impact of 2007 Energy White Paper measures	592.4	494.2 (19.6)	468.7 (23.7)	428.4 (32.6)

<sup>30</sup> The updated projections reflect new data and revised key assumptions of future economic growth, population, fossil fuel prices and a number of other variables. Overall projected UK energy demand is similar to that which informed the Energy White Paper. While higher oil price assumptions (\$70 per barrel in 2010 for this central fossil fuel price scenarios, compared with the previously assumed \$57 per barrel) demand has dampened, other factors have acted to increase overall emissions in the near term.

<sup>31</sup> Estimated savings are subject to uncertainty related to the difficulty in projecting the future carbon price.

# Reducing emissions

## Policy framework

74. As we set out in last year's Annual Report to Parliament, our strategy to reduce emissions is in line with the framework set out in the Stern Review. This framework is based on three elements: carbon pricing, technology policy, and removing the barriers to behavioural change on energy efficiency.
75. The first element of our approach to reducing greenhouse gas emissions is to put a price on carbon, so that the environmental externalities of emitting greenhouse gases can start to be included in decision making processes, e.g. by incentivising energy efficiency and low carbon investment. We are putting a price on carbon in three ways, explicitly through emissions trading and taxation, and implicitly through regulation.
76. In each case, we assess measures in terms of their cost effectiveness, their impact on the security of our energy supplies and other ancillary impacts, such as on local air quality.
77. Emissions trading, taxation and regulation will help to drive new technologies by creating demand for low carbon technology through the carbon price. Innovation will be central to building the low carbon economy and Government can support innovation through the right regulatory design, through appropriate use of public procurement, and through specific policies for research, development and demonstration of new technologies. We are also addressing other barriers to technological development such as legal barriers for carbon capture and storage and planning barriers for energy technologies.
78. The Research Council's Energy Programme, brings together within one framework all the Research Council activities on energy. It will continue to invest in a diverse portfolio of energy related research essential to underpin the development of future low carbon technologies.
79. The Energy Technologies Institute (ETI) is a 50:50 public-private partnership, established as a limited liability partnership in December 2007. It has a target to secure 11 private sector partners, each contributing £5 million per year for 10 years, with the UK Government matching these investments to create a potential £1.1 billion investment fund for low carbon energy technologies and solutions. The current industrial partners are BP, Caterpillar, EDF Energy, E.ON UK, Rolls-Royce and Shell. ETI's unique feature is its ability to fund projects directly with no requirement for further private sector support and secondly the opportunity for research and technology groups to access the skills, capabilities and market access routes of the private sector partners.
80. Over the next three years, the Technology Strategy Board will develop and lead a strategic programme worth £1 billion through a number of key UK technology and application areas, to stimulate innovation in those areas which offer the greatest scope for boosting UK growth and productivity. Its activities include Innovation Platform that creates the opportunity to bring together key partners (Government and business) to address a major societal challenge and to open up market opportunities to increase business investment in R&D and innovation. To date, it has launched five Innovation Platforms, of which two are directly relevant to low carbon technologies, 'Low Impact Buildings' (in partnership with DCLG and Defra), and 'Low Carbon Vehicles' (in partnership with DfT). The next stage of the Low Carbon Vehicles Innovation Platform will see the launch of a Low Carbon Vehicles Integrated Delivery Programme in autumn 2008.
81. Government investment in low-carbon technologies in the UK will total £400 million during the period 2008-2009 to 2010-2011, thanks to the announcement of an extra £170 million for the cross-Government UK Environmental Transformation Fund (ETF). The UK ETF<sup>32</sup> is a joint initiative, funded and administered by Defra and BERR. The UK ETF aims to accelerate the commercialisation of low carbon energy and energy efficient technologies. In doing so, it will help reduce the carbon intensity of energy production as well as reduce energy demand. It will work closely with other organisations funding earlier stage research and development including the Energy Technologies Institute, Technology Strategy Board, and the Research Councils Energy Programme.

<sup>32</sup> The programmes the UK ETF will help fund include: Hydrogen Fuel Cell and Carbon Abatement Demonstration Programme, Marine Renewable Deployment Fund, Low Carbon Buildings Programme, Offshore Wind Capital Grants Programme, Bioenergy Capital Grants, Bioenergy Infrastructure Scheme, Carbon Trust Innovation Programme, Carbon Trust funding for new low carbon technology enterprises, Carbon Trust investments in low carbon technology businesses, Carbon Trust Energy Efficiency Loan Scheme for SMEs, Salix Finance public sector invest-to-save loan scheme

82. The final element of our approach is to remove barriers to behavioural change. Even with the economic incentives that exist because of the cost of energy, individuals and businesses often fail to change their behaviour because they lack information and feedback on how their behaviour incurs energy costs and how simple changes can reduce them. Others are put off changing their behaviour because they do not believe that there is a shared willingness to act.
83. We are therefore working on ways of providing better information, such as the development of our ACT ON CO<sub>2</sub> calculator. The ACT ON CO<sub>2</sub> calculator launched in June 2007 has already attracted over 1,000,000 unique visitors. The calculator enables individuals or households to calculate the carbon footprint resulting from their home, appliance use and transport, and generates a tailored action plan to reduce it. We also want to create a shared willingness to act, and the public sector will lead by example in energy efficiency and reducing emissions. It will communicate the actions taken and share best practice between public sector bodies and to business and individuals.
84. Government will lead by example through driving forward delivery of its targets to reduce CO<sub>2</sub> emissions from its office estate by 12.5% by 2010-2011 and 30% by 2020. Departments also have a target to achieve a carbon neutral office estate by 2012. To this end, in March we set up the Centre of Expertise in Sustainable Procurement in the Office of Government Commerce, alongside the newly created post of Chief Sustainability Officer, who will take forward a culture of change across all departments in sustainable procurement and operations. Cabinet Secretary, Sir Gus O'Donnell, has also made sustainability of the Government estate one of his top four priorities for the Civil Service.
85. Leadership at a local level is very important in creating behavioural change. The local government performance framework includes two new indicators on mitigating climate change through reducing emissions from i) their own operations, including schools and their private sector service providers; and ii) their wider community involving individuals and businesses. The NHS is a major emitter in the public sector and the largest employer in Europe, they launched a consultation on a carbon reduction strategy for the NHS in May 2008.

## Climate Change Bill

86. The Climate Change Bill, currently before Parliament, will make the UK the first country to set a long-term legal framework for reducing emissions to 2050 and beyond. It will provide a clear, credible and long-term framework that will provide greater clarity and confidence for businesses and individuals to plan and invest in delivering the changes needed to move towards a low carbon economy. It will also demonstrate decisive leadership, showing the UK is committed to taking its responsibility for reducing global emissions, with the potential to help unlock progress towards a new global agreement.
87. In summary, the Bill:
- puts into statute the UK's targets to reduce carbon dioxide emissions through domestic and international action by at least 60% by 2050 and by at least 26% by 2020, against a 1990 baseline;
  - will introduce five year carbon budgets, which will set binding limits on carbon dioxide emissions and will be set three periods ahead<sup>33</sup> to help businesses plan and invest with increased confidence;
  - creates a new independent, expert body – the Committee on Climate Change – to advise the Government on the setting of carbon budgets and the pathway to the 2050 target, and to provide an annual report on the UK's progress towards meeting its targets and budgets to which the Government must respond;
  - contains enabling powers to introduce new trading schemes, through secondary legislation. This increases the policy options which Government could use to stay within budgets and meet emissions targets while maintaining the need for thorough analysis, consultation and scrutiny of proposals before a new scheme is introduced. The first use of these powers will be to introduce the Carbon Reduction Commitment, a mandatory "cap and trade" scheme for large, non-energy intensive organisations.

<sup>33</sup> The first three five year carbon budgets will cover the following periods: 2008-2012, 2013-2017 and 2018-2022.

- requires the Government to regularly assess the risks to the UK from the impact of Climate Change and report to Parliament. The Government will also be required to publish and regularly update a programme setting out how we will address these likely impacts, based on the principle of sustainable development to ensure that environmental, economic and social issues are all fully considered. In addition, the Bill provides the Government with powers to issue statutory guidance to public bodies and statutory undertakers on adaptation, and to direct specific bodies to prepare an assessment of the risks from climate change to their work and their proposals and policies for adaptation. An adaptation sub-committee of the Committee on Climate Change will also be established to advise on the risks from climate change to the UK and to scrutinise progress in delivery of the Government's adaptation programme

88. The Bill will also be used to:

- provide a power to pilot local authority incentive schemes for household waste minimisation and recycling;
- enhance the operation of the Renewable Transport Fuels Obligation (RTFO), which is expected to deliver significant carbon savings from the road transport sector by increasing the use of biofuels;
- provide enabling powers to require retailers to charge for single-use carrier bags, for use if retailers cannot achieve radical and swift reductions in the number of bags distributed through voluntary action alone, and
- issue guidance on how organisations, including companies, could report their greenhouse gas emissions and a commitment to review the contribution of reporting to achieving the UK's climate change objectives by 2011.

### Policies and measures

89. Annex B summarises progress since we published the UK Climate Change Programme – Annual Report to Parliament in July last year on the main policies and measures that we have introduced, or have announced that we will introduce, to reduce greenhouse gas emissions. It also sets out some of the key milestones over the coming months.

# Forward look

90. At home, the Climate Change Bill marks the beginning of a fundamentally new approach for the UK to tackling climate change, as well as demonstrating leadership in the international community.
91. The Bill requires the independent, expert Committee on Climate Change to provide its advice to the Government on its review of the 2050 target and on the level of the first three carbon budgets before 1 December 2008<sup>34</sup>. The Government is required to set the carbon budgets in secondary legislation by 1 June 2009, and has said that it will announce the carbon budgets alongside Budget 2009 together with plans for meeting them.
92. The Climate Change Bill includes a requirement for Government to report on the risks of climate change to the UK, covering both the impacts and our vulnerabilities, and to set out how we are integrating adaptation into our work. The aim is to ensure full parliamentary and public scrutiny. It will provide a transparent basis for action, with our priorities based on clear risk assessments. It will also help all parts of society better understand their risks and what they need to do to adapt.
93. Once the Climate Change Bill has completed its passage through Parliament, we will be taking forward the necessary actions to fulfil our statutory duties on adaptation, and help others to deliver theirs (including work on establishing the Adaptation Sub-Committee of the Committee on Climate Change). In anticipation of this we have already started to lay the groundwork, particularly on key aspects such as the Climate Change National Risk Assessment. We have launched an Adapting to Climate Change website<sup>35</sup> to communicate the Government's overall approach and provide an ongoing framework for developing the Adapting to Climate Change programme.
94. The UK will continue to work with the European Commission, other Member States and the European Parliament to get agreement to the Commission's Climate Change and Energy proposals. It is hoped that final agreement on the package of measures will be reached by December 2008.
95. In November 2008, UKCIP, Defra and the Met Office Hadley Centre are due to launch the UK 21st Century Climate Change Scenarios (UKCIP08). UKCIP08 will make available probabilistic scenarios, with information at a greater level of spatial and temporal detail than the previous scenarios (UKCIP02). Access to high quality climate scenarios of this nature will greatly assist in the assessment of climate risks and development of adaptation strategies. UKCIP will also continue to support local authorities in taking forward the new adapting to climate change performance indicator through regional events and further development of tools including the Nottingham Declaration Action Pack.
96. The Government will be working to ensure that the Energy Bill gains Royal Assent. A key part of the Bill aims to strengthen the Renewables Obligation in order to drive greater and more rapid deployment of renewables in the UK. This will help lower the carbon emissions of the electricity sector. The Bill will also allow the Secretary of State to modify electricity and gas distribution and licences to require the licence holder to install, or facilitate the installation of, smart meters to different customer segments.
97. The Government is firmly committed to a major expansion of renewables as part of the UK's diverse energy mix. On 26 June 2008, we published a consultation on our Renewables Energy Strategy. The consultation seeks views on how to drive up the use of renewable energy in the UK, to tackle climate change and meet our share of the EU target to source 20% of the EU's energy from renewable sources by 2020.
98. A feasibility study of Severn Tidal Power is being conducted jointly with BERR, the Welsh Assembly and the South West Regional Development Agency. The aim is to set out an initial position by autumn 2008 and then carry out a consultation, before a decision in 2011.
99. Following a wide-ranging review of energy efficiency policy, we will consult later this year on the potential for further energy efficiency measures, especially in the existing housing stock leading to the development of a Low Carbon Homes Strategy in 2009. Our intention is to ensure that every sector of the economy benefits from energy efficiency and that, where possible, all economic opportunities to save energy are realised.
100. We will be carrying out a full consultation around the draft regulations for the Carbon Reduction Commitment (CRC) in Autumn of 2008, with secondary legislation due to enter Parliament in early 2009. The CRC is the UK's new mandatory emissions trading scheme targeting emissions

<sup>34</sup> The Committee on Climate Change has been asked to provide advice on whether the 2050 target should be tightened up to 80%, and to consider the implications of including other greenhouse gases and international aviation and shipping emissions. The terms of references to the review are available from:

[www.defra.gov.uk/environment/climatechange/uk/legislation/pdf/govt-amendment-package.pdf](http://www.defra.gov.uk/environment/climatechange/uk/legislation/pdf/govt-amendment-package.pdf)

<sup>35</sup> [www.defra.gov.uk/adaptation](http://www.defra.gov.uk/adaptation)

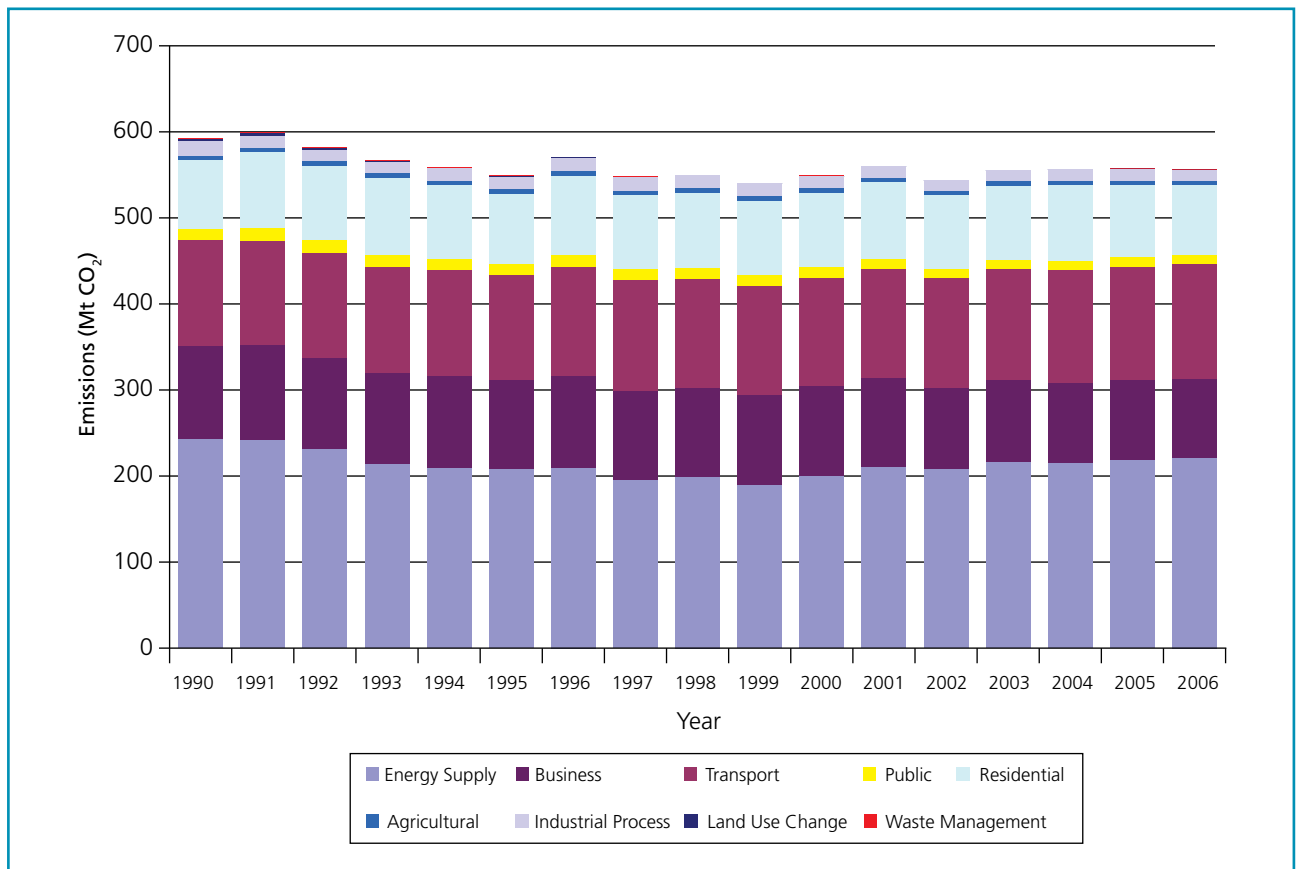
outside of the EU Emissions Trading Scheme and existing Climate Change Agreements (CCAs) from around 5,000 large intensive private and public organisations. The scheme is due to commence in 2010 and deliver emissions reductions of at least 4.0 MtCO<sub>2</sub> per annum by 2020. Identification of participants will commence in early 2009.

101. We will also be developing new CCA's, subject to State Aid approval, that build upon the existing scheme. The existing scheme has a final target period of 2010 and is currently estimated to deliver savings of 7.0 MtCO<sub>2</sub> annually by 2010, when measured against 'Business as Usual' projections. This estimate is subject to the results of a review of targets for 2010, which is currently being undertaken.
102. We will continue to work across Government and other key stakeholders including energy suppliers and managing agents of the fuel poverty schemes on action to help address fuel poverty, particularly in vulnerable households.
103. DIUS is developing proposals for a strategic skills solution for the environmental industries. A consultation meeting was held on 16/17 June involving Sector Skills Councils, lead employers and leading experts in the environmental field. These discussions concluded that a major collaborative effort is needed if we are to successfully tackle this cross cutting skills agenda. Expertise resides in many different places, and the task of Government is to find ways to unlock the talents of those experts to help others move forward. They also could see an important role for National Skills Academies and other specialist networks of training providers not only in providing skills and qualifications, but in transferring knowledge to businesses and driving innovation – something we have already signalled our commitment to in the Science and Innovation White Paper *Innovation Nation*, in response to the Sainsbury Review.
104. The DIUS sponsored Learning and Skills Council has announced that all new college buildings will be zero carbon by 2016. DIUS has also announced over £30m of capital funding for the Higher Education Funding Council for England (HEFCE) in the 2008 grant letter that will enable them to launch their Revolving Green Fund – supporting invest-to-save projects to make universities more energy efficient.

# Annex A Greenhouse gas emissions inventory – by gas

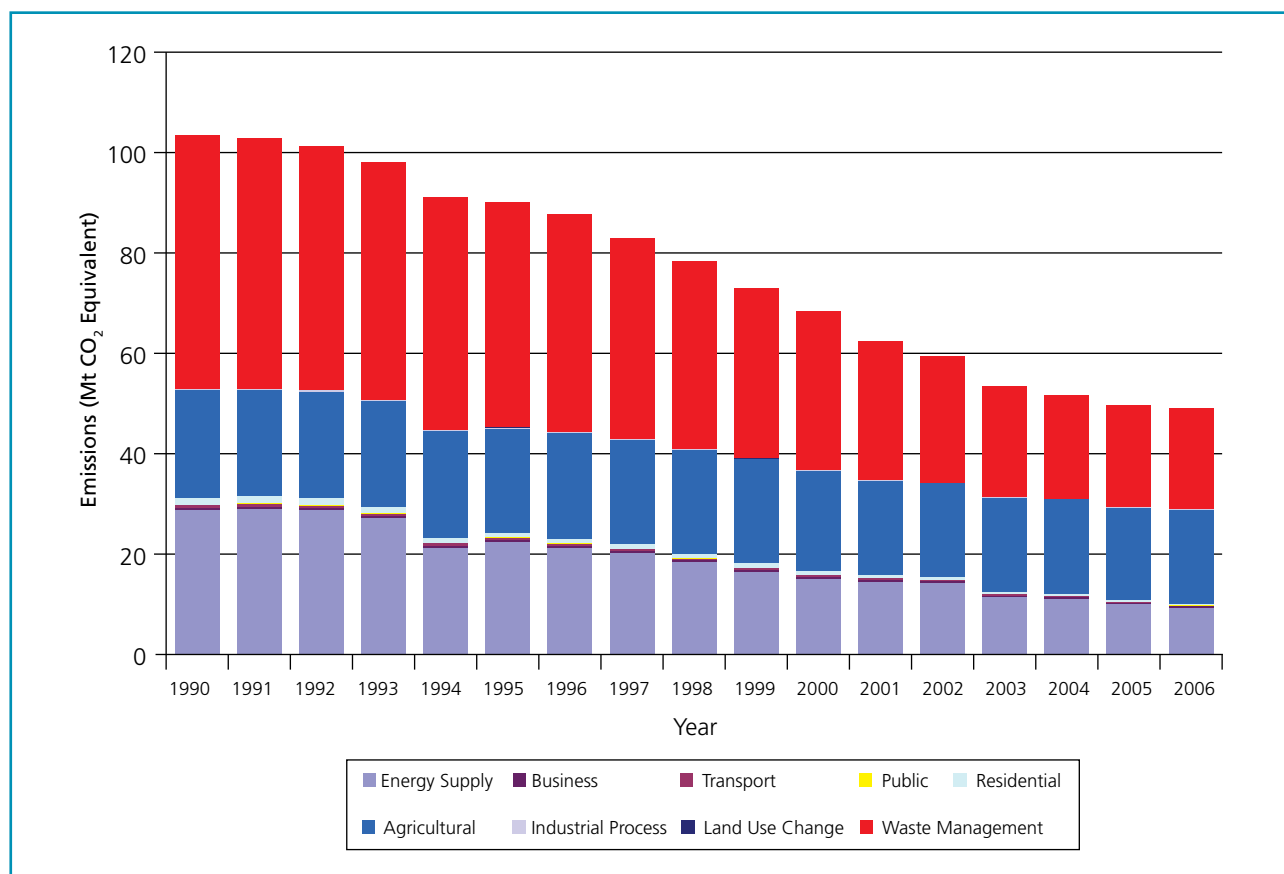
- A1. **Carbon dioxide** is the main greenhouse gas in the UK. Net emissions (all anthropogenic sources minus removals by sinks) in 1990 were estimated to be 592.4 million tonnes, or around 77% of the UK's total emissions of greenhouse gases. In 2006, the latest year for which final figures are available, carbon dioxide emissions had been reduced by 6.4% to 554.5 million tonnes, and accounted for around 85% of total greenhouse gas emissions. The main anthropogenic source of carbon dioxide is from the combustion of fossil fuels.

**Figure A1: UK Emissions of carbon dioxide by source sector, 1990 to 2006**



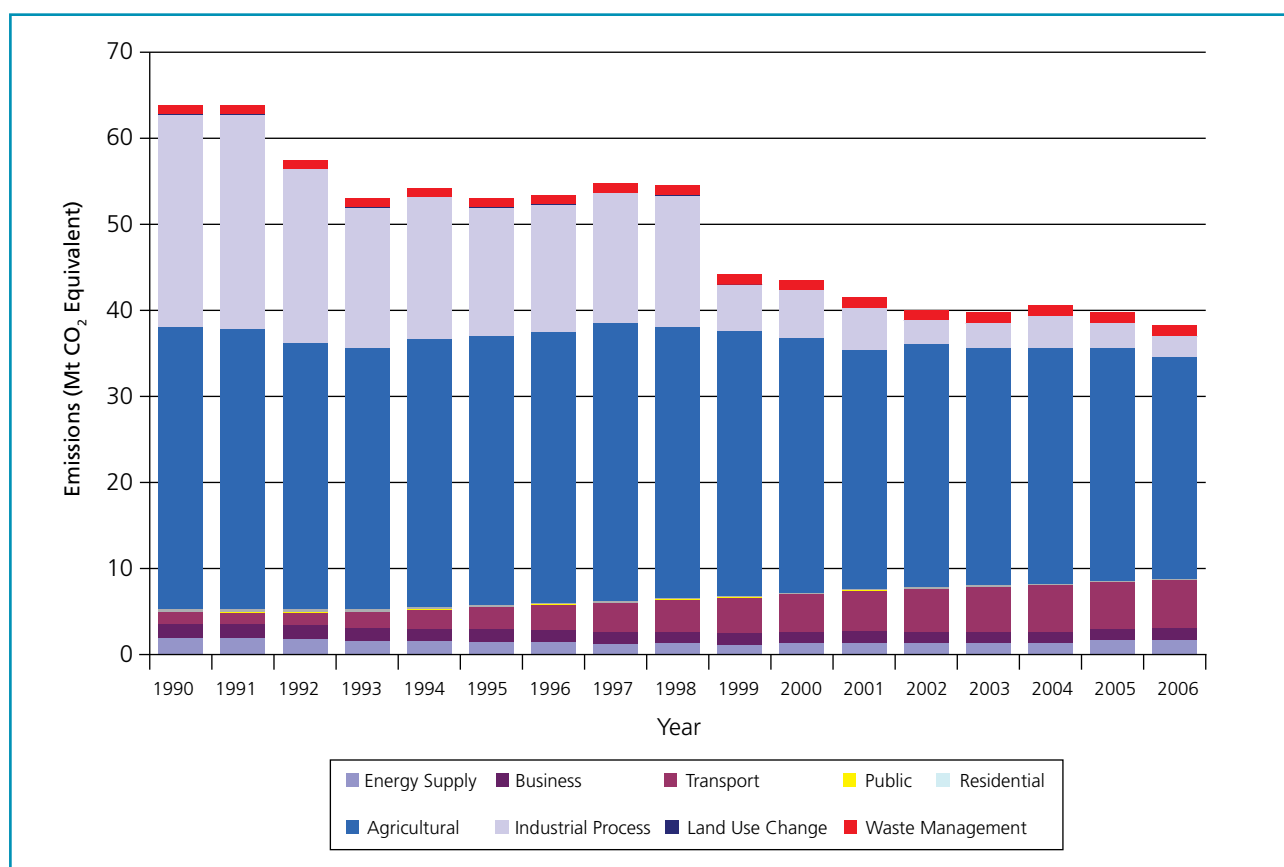
- A2. **Methane** emissions contributed 103.5 million tonnes of carbon dioxide equivalent or 13% of the UK's total greenhouse gas emissions in 1990. Emissions had been reduced by more than 50%, to 49.1 million tonnes carbon dioxide equivalent, contributing around 7% of UK greenhouse gas emissions in that year. Emissions from all the main sources of methane – landfill waste, agriculture, natural gas distribution and coal mining – have fallen since 1990.

Figure A2: UK emissions of methane by source sector, 1990 to 2006



A3. **Nitrous oxide** emissions contributed 63.8 million tonnes of carbon dioxide equivalent or 8% of the UK's total greenhouse gas emissions in 1990. Emissions had been reduced by about 40% to 38.3 million tonnes of carbon dioxide equivalent in 2006, contributing around 6% of greenhouse gas emissions in that year. The major sources were agriculture (e.g. use of inorganic fertiliser, and emissions from manures) and industrial processes. Emissions from industrial processes fell from an estimated 24.7 million tonnes of carbon dioxide equivalent in 1990 to 2.4 million tonnes in 2006, largely from the introduction of abatement technology in adipic acid manufacture in 1998. Emissions from road transport increased from 1.4 million tonnes of carbon dioxide equivalent in 1990 to 5.6 million tonnes in 2006, because of the rise in petrol-fuelled vehicles fitted with three-way catalytic converters to reduce emissions of local air pollutants, and because of the growth in traffic.

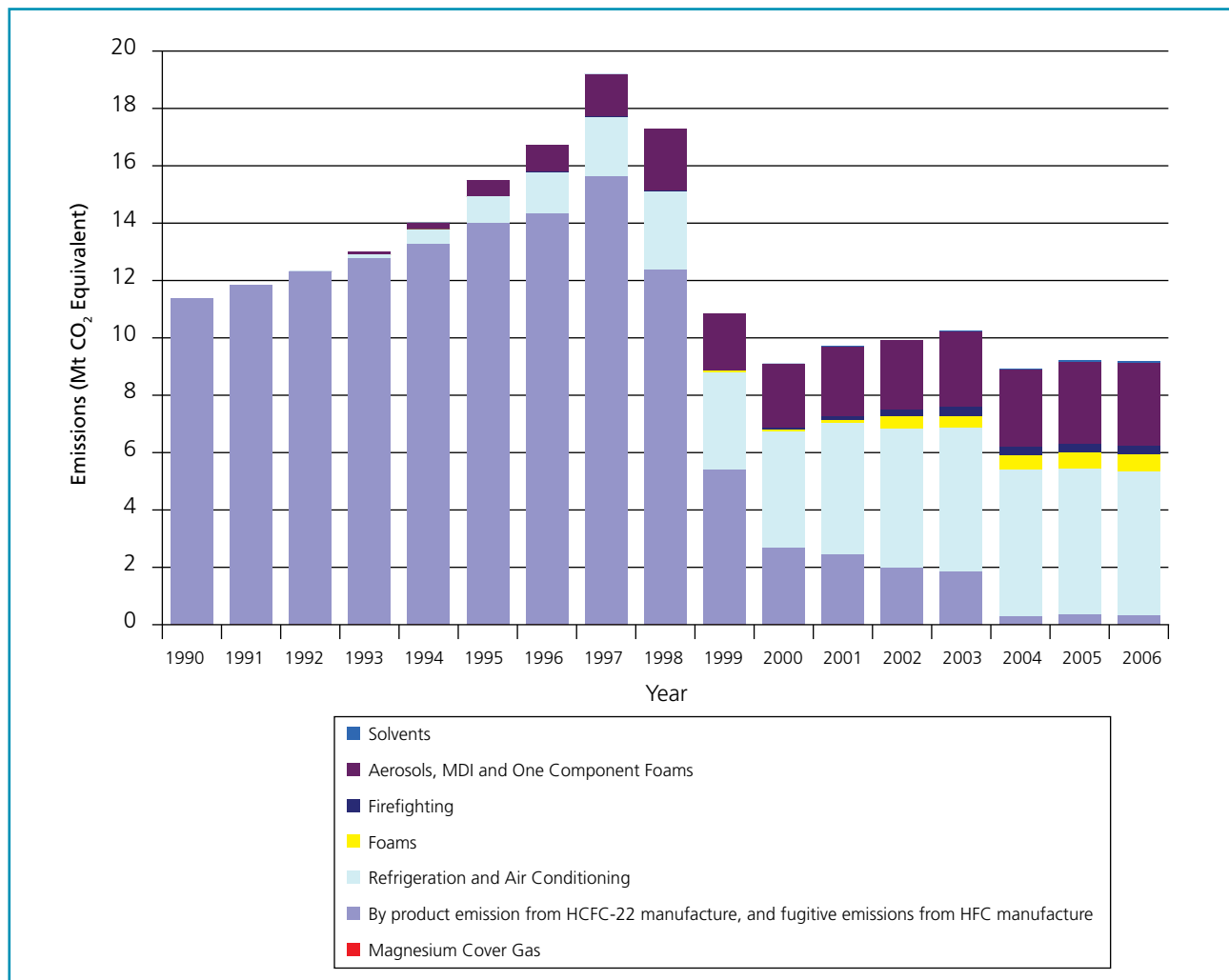
Figure A3: UK emissions of nitrous oxide by source sector, 1990 to 2006



- A4. Emissions of the **fluorinated gases** (HFCs, PFCs and SF<sub>6</sub>) are small in absolute terms but their significance is increased by their high global warming potential (GWP). For accounting under the Kyoto Protocol, the UK, in line with the approach that most other EU Member States are adopting, has chosen to use 1995 as the base year for emissions of these gases. In 1995, the UK's emissions of all fluorinated gases amounted to about 17.2 million tonnes of carbon dioxide equivalent or around 2½% of total UK greenhouse gas emissions; by 2006 emissions had fallen by about 40% to 10.4 million tonnes, contributing less than 2% of UK emissions in that year.

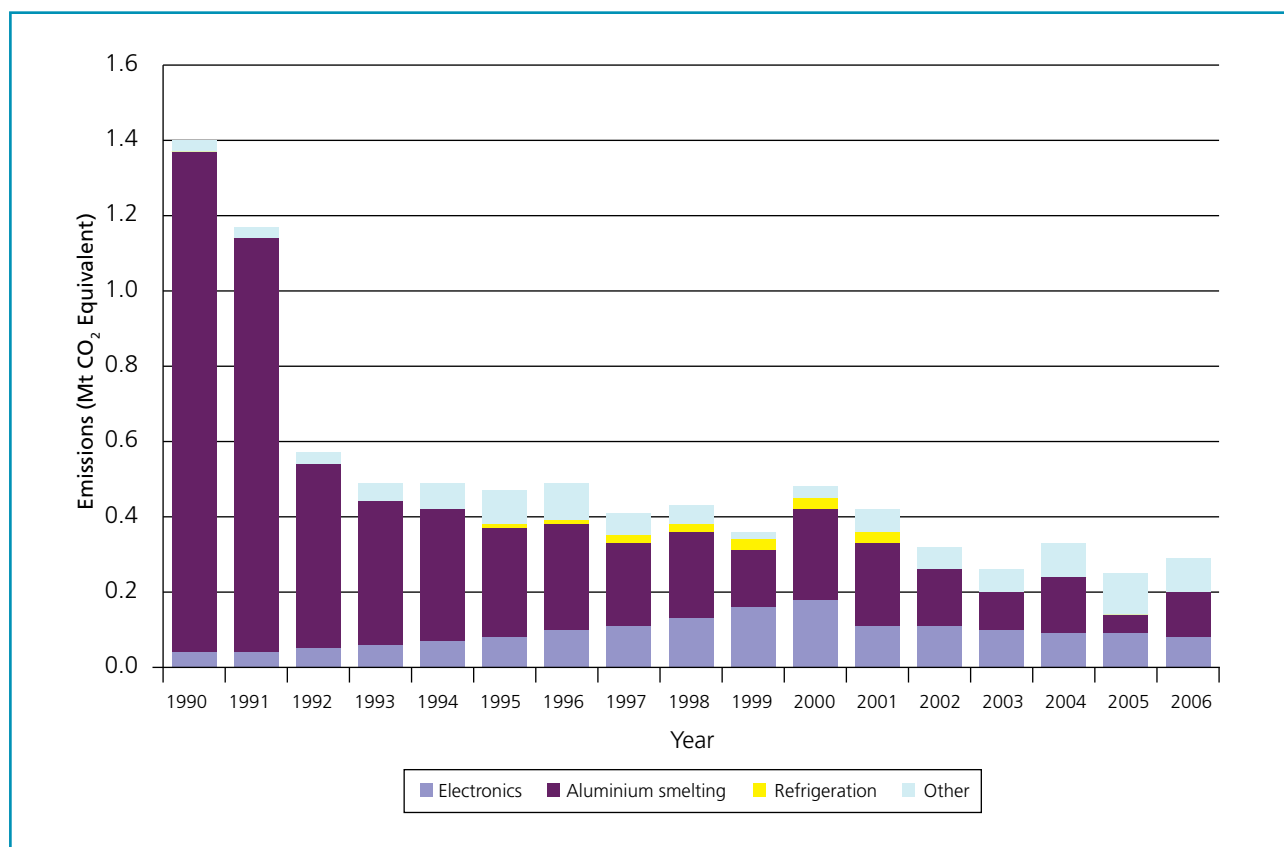
- A5. Emissions of **HFCs** have fallen by more than 40%, from 15.5 million tonnes carbon dioxide equivalent in 1995 to 9.2 million tonnes in 2006. This is mainly due to the introduction of thermal oxidiser pollution abatement equipment at the two UK plants where HCFC-22 is manufactured, which has dramatically reduced emissions in this sector, offsetting increases seen in emissions from refrigeration and aerosols. Other sources of HFC emissions include foam blowing, metered dose inhalers, solvent cleaning and fire fighting. HFCs were virtually unused in many of these sectors before 1990 but since then, consumption has risen in response to the phase out of CFCs and HCFCs under the Montreal Protocol.

**Figure A4: UK emissions of HFCs by source sector, 1990 to 2006**

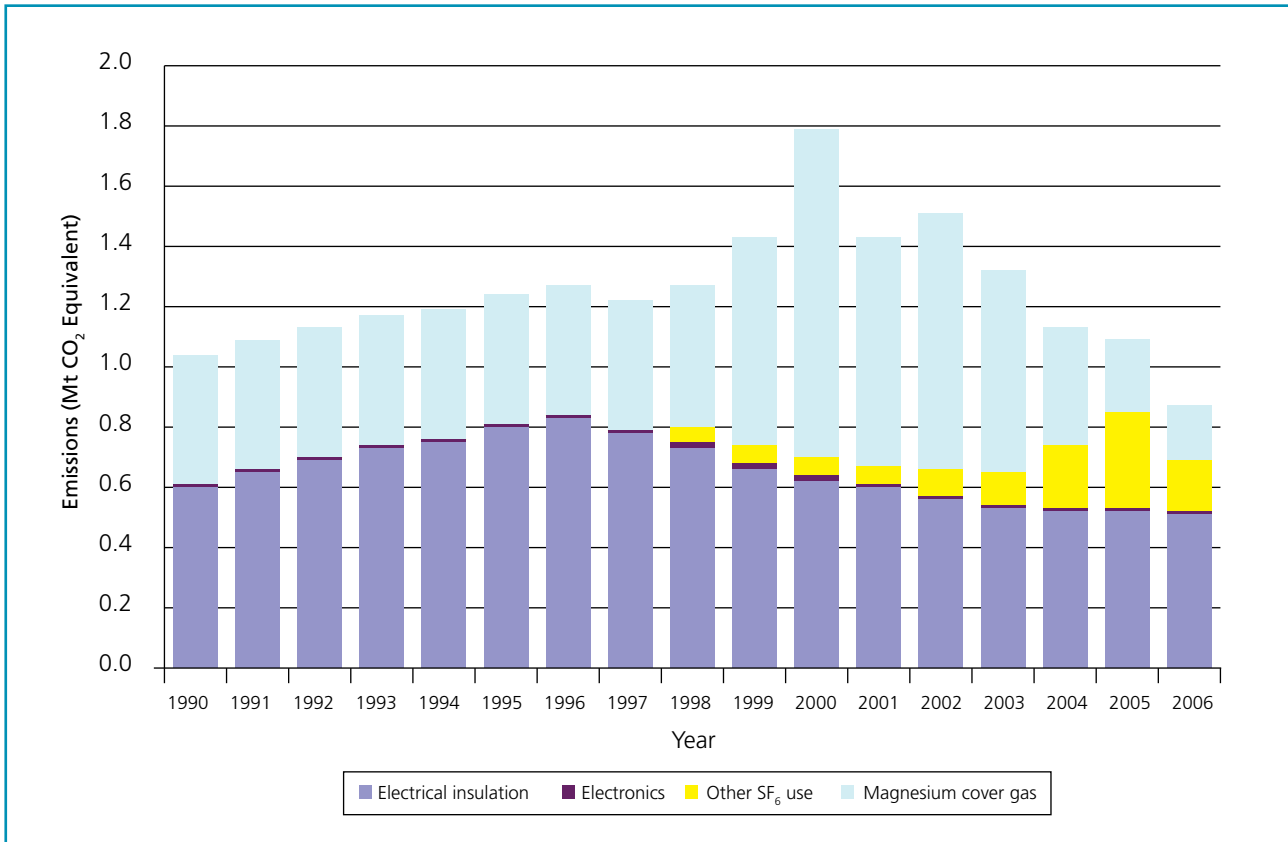


- A6. Emissions of **PFCs** have fallen by 40%, from 0.5 million tonnes carbon dioxide equivalent in 1995 to 0.3 million tonnes in 2006, mainly due to the introduction of improved technology in the aluminium production sector that has led to lower process emissions.

Figure A5: UK emissions of PFCs by source sector, 1990 to 2006



- A7. **Sulphur hexafluoride** ( $\text{SF}_6$ ) is used in four main markets: electrical insulation, magnesium smelting, electronics and training shoes. Total use of  $\text{SF}_6$  from these end use markets fell by around 30% between 1995 and 2006.  $\text{SF}_6$  is no longer used in new training shoes (emissions are from the disposal of existing shoes containing the gas). The use of HFCs is also being trialled as a replacement for  $\text{SF}_6$  in the magnesium industry. This will lead to a reduction in GWP weighted emissions because the HFC species used has a lower GWP than  $\text{SF}_6$  and because it is largely destroyed by the high temperatures in the process.

Figure A6: UK emissions of SF<sub>6</sub> by source sector, 1990 to 2006

# Annex B Policies and measures – progress and next steps

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>Climate Change Bill</b>  (Defra)	<b>March-August 2007</b>	The public consultation closed on 12 June 2007. Pre-legislative scrutiny: The ad hoc Joint Parliamentary Committee which carried out pre-legislative scrutiny of the draft Bill published its report on 3 August 2007 <sup>36</sup> . The Environment, Food and Rural Affairs Committee reported on its own scrutiny of the draft legislation on 4 July 2007 <sup>37</sup> . The Environmental Audit Committee also considered the draft Bill as part of its enquiry "Beyond Stern: From the Climate Change Programme Review to the Draft Climate Change Bill" and reported its findings on 30 July 2007 <sup>38</sup> .
	<b>October 2007</b>	Government response to the public consultation and pre-legislative scrutiny published in the Command Paper "Taking Forward the Climate Change Bill" <sup>39</sup> .
	<b>November 2007</b>	The Bill was introduced into Parliament (House of Lords) and completed Lords stages at the end of March 2008
	<b>Jan – February 2008</b>	Lord Adair Turner appointed Chair, along with the founding members of the Committee on Climate Change. The Committee will operate in shadow form until the Bill receives Royal Assent.
	<b>From June 2008</b>	Consideration of Bill by the House of Commons
	<b>Autumn 2008</b>	Aim to complete passage of the Bill through Parliament.
<b>EU Emissions Trading Scheme (ETS)</b>  (Defra)	<b>January 2008</b>	European Commission brings forward legislative proposal to amend the EU ETS Directive.
		Phase II of the EU ETS began, this coincided with the first commitment period under the Kyoto Protocol.
	<b>February 2008</b>	Final Allocation Decision for Phase II approved by Commission and uploaded onto Community Independent Transaction Log.
	<b>May 2008</b>	Results for third and final year of Phase I announced. Consultation on review of EU ETS Directive published.
	<b>By the end of 2008</b>	Government aims to hold first auction for Phase II.

<sup>36</sup> Joint Committee report published on 3 August 2007 can be found at: [www.publications.parliament.uk/pa/jt200607/jtselect/jtclimate/170/170i.pdf](http://www.publications.parliament.uk/pa/jt200607/jtselect/jtclimate/170/170i.pdf)

<sup>37</sup> EFRA's report published on 4 July 2007 can be found at: [www.publications.parliament.uk/pa/cm200607/cmselect/cmenvfru/534/534i.pdf](http://www.publications.parliament.uk/pa/cm200607/cmselect/cmenvfru/534/534i.pdf)

<sup>38</sup> The EAC's report published on 30 July 2007 can be found at: [www.publications.parliament.uk/pa/cm200607/cmselect/cmenvaud/460/460.pdf](http://www.publications.parliament.uk/pa/cm200607/cmselect/cmenvaud/460/460.pdf)

<sup>39</sup> The Government's response to the public consultation and pre-legislative scrutiny published on 29 October 2007 can be found at: [www.official-documents.gov.uk/document/cm72/7225/7225.pdf](http://www.official-documents.gov.uk/document/cm72/7225/7225.pdf)

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>Climate Change Agreements (CCAs)</b>  (Defra)	<b>February – March 2008</b>	Reconciliation (checking performance against targets) of target period 3.5 (2006-7). This only covered facilities that opted out of EU ETS Phase 1. The 19 sectors that reported passed.
	<b>May 2008</b>	Defra submitted response to the Environmental Audit Committee (EAC) report into the role of the Climate Change Levy and Climate Change Agreements in reducing carbon emissions from UK business.
	<b>July – October 2008</b>	The Pre Budget Report 2007 extended climate change agreements from 2013 to 2017. Consultation on the new CCA scheme is taking place during Summer 2008.
	<b>June – September 2008</b>	Negotiations to agree tighter targets for target period 5 (2010) for 53 sectors.
<b>Climate Change Levy (CCL)</b>  (HMRC)	<b>March 2008</b>	Budget 2008 announced that rates would increase in line with current inflation from 1 April 2009. CCL is on course to deliver additional carbon savings of around 12.8MtCO <sub>2</sub> per year by 2010, and reduce energy demand in the commercial and public sector by around 15% per year by 2010.
	<b>April 2008</b>	Rates increased, as announced in Budget 2007 and in line with inflation.
<b>Strengthening and modifying the Renewables Obligation (RO)</b>  (BERR)	<b>May 2007</b>	Energy White Paper announced that we would introduce 'banding' of the RO target – whereby emerging technologies would be awarded more Renewable Obligation Certificates (ROCs) per MWh of electricity generated than other technologies. We also announced extension of the RO to 20% on a 'headroom' basis and retaining the buy-out link to Retail Price Index (RPI)
	<b>September 2007</b>	Consultation on technical details of banding the RO closed.
	<b>January 2008</b>	Publication of Government Response to consultation and introduction of Energy Bill, which includes powers to reform the Renewables Obligation.
	<b>Summer 2008</b>	Statutory consultation on Renewables Obligation Order which contains the detailed legal provisions for a reformed RO.
	<b>April 2009</b>	Subject to parliamentary approval introduction of a reformed RO.
<b>Bio-energy Capital Grants Scheme</b>  (Defra)  (This scheme became part of the Environmental Transformation Fund from April 2008)	<b>June 2007 – May 2008</b>	45 projects proceeding under round 3 with grant funding of £8.3m to install biomass-fuelled heat, combined heat and power and anaerobic digestion plants.
	<b>April – May 2008</b>	Round 4 opened for applications.
	<b>May- July 2008</b>	Round 4 applications assessed and grant offer letters issued.
	<b>Autumn 2008</b>	Subject to funding, launch round 5.

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>Bio-energy Infrastructure Scheme</b>  (Defra)  (This scheme became part of the Environmental Transformation Fund from April 2008)	<b>Spring 2008</b>	Launch round 2.
	<b>June – September 2008</b>	Round 2 opened for applications.
<b>Environmental Transformation Fund (ETF)</b>  (BERR, Defra and DfID)	<b>April 2008</b>	Domestic fund, to invest in energy efficiency technologies and renewable energy, biofuels and other non-nuclear, low-carbon technologies, including carbon capture and storage, opens. Details of current programmes and calls for tender listed on Defra and BERR websites. International Window, to be administered jointly by Defra and DfID, put in place from April 2008.
<b>Combined Heat and Power (CHP)</b>  (Defra)	<b>January –March 2008</b>	“Call for Evidence” on Heat was a key step towards developing a heat strategy, which will include looking at the future treatment and incentives for CHP heat.
	<b>May 2008</b>	CHP Quality Assurance (CHPQA) programme Guidance Note published announcing the power and heat efficiency factors to be met for renewable CHP schemes to qualify for Renewable Energy Certificates.
	<b>June 2008</b>	Consultation on the Renewable Energy Strategy. The Strategy will set out the framework for delivering against the EU target of 20% of all energy to be generated from renewable sources by 2020, and the role to be played by CHP.  Launch of CHP Focus, a website and helpline service for developers, with a particular emphasis on developers with little or no experience of the technologies

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>Implementation of Microgeneration Strategy</b>  (BERR)	<b>October 2007</b>	Subject to state aid clearance, Government announces microgeneration investments will not be included in ad hoc re-assessments of business rates liability from 2008.
	<b>December 2007</b>	For the first time last year, small generators operating under the RO were allowed to use agents to represent them in all aspects of their participation. By December 2007 over 1000 small generators were accredited under the RO with around 700 of these using an agent. This compares to just 300 small generators accredited under the RO at the start of the year.
		DCLG publishes Planning Policy Statement on Climate Change.
	<b>January 2008</b>	DirectGov web pages on renewable energy launched <sup>40</sup> .
	<b>February 2008</b>	Product scheme of Microgeneration Certification Scheme (MCS) launched.
	<b>April 2008</b>	Householder phase of the Low Carbon Buildings Programme (LCBP) extended to 2010. Grant levels under phase 2 of LCBP raised to 50% across all technologies.
		Modifications to general permitted development order mean most microgeneration installations with little or no impact beyond the host property are "permitted development", removing the need for specific planning consent.
		Ofgem report into effectiveness of microgeneration export market published.
<b>Summer 2008</b>	Research into consumer behaviour, decision making and future potential of microgeneration to be launched.	
	Progress of the microgeneration strategy report to be published.	
<b>Summer 2008</b>	Microgeneration consideration alongside other renewable technologies in the Renewable Energy Strategy.  We will consult on a change to the RO legislation to simplify the annual process for claiming ROCs with a view to implementation from 1 April 2009.  We will also be consulting on a proposal to allow small generators to switch agent during an obligation period which will provide increased flexibility for small generators.	
<b>Carbon capture and storage (CCS) Demonstration Project</b>  (BERR)	<b>November 2007</b>	Competition for CCS demonstration launched.
	<b>January 2008</b>	Energy Bill includes provisions for offshore storage of CO <sub>2</sub> .
	<b>March 2008</b>	Deadline for prequalification submissions for competition.
	<b>Summer 2008</b>	Consultation on CCS Directive.

<sup>40</sup> [www.direct.gov.uk/en/Environmentandgreenerliving/Energyandwatersaving/Renewableandlowcarbonenergy/index.htm](http://www.direct.gov.uk/en/Environmentandgreenerliving/Energyandwatersaving/Renewableandlowcarbonenergy/index.htm)

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>Commission on Environmental Markets and Economic Performance</b>  (CEMEP)	<b>November 2007</b>	External commission – set up by Chancellor Gordon Brown in Nov 06 – set out scale of economic opportunities for UK in moving to a low carbon resource efficient economy, and 24 recommendations – on innovation, procurement and skills, to seize those opportunities.
	<b>May 2008</b>	Govt response to CEMEP, 'Building a low carbon economy: unlocking Innovation and Skills', sets out a range of measures to put in place a long-term framework, on innovation, skills and partnership working to make the UK one of the best places in the world for low carbon business.
<b>Renewable Energy Strategy</b>  (BERR, Defra)	<b>June 2008</b>	Issued consultation on Renewable Energy Strategy. Consultation closes on 26 September.
	<b>Spring 2009</b>	Publication of Renewable Energy Strategy
<b>Carbon Reduction Commitment (CRC)</b>  (Defra)	<b>May 2007</b>	Energy White Paper announced that we will take forward the CRC – a new, mandatory auction based cap-and-trade scheme to target energy use by large non-energy intensive businesses and public sector organisations not covered by the EU ETS. CRC will come into force in 2010 and deliver emissions savings of at least 4MtCO <sub>2</sub> by 2020.
	<b>June– October 2007</b>	Government consulted on proposals for the CRC and how the UK Government and Devolved Administrations should implement it. This consultation closed on 9 October.
	<b>March 2008</b>	Publication of Government response to the consultation – setting out Government's decisions and proposals for the CRC.
	<b>Autumn 2008</b>	Consultation on the detailed scheme design and regulations.
<b>Renewable Transport Fuel Obligation (RTFO)</b>  (DfT)	<b>June 2007</b>	Publication of response to consultation on detailed design of RTFO.
	<b>October 2007</b>	Order laid to introduce the RTFO from April 2008 and the Renewable Fuels Agency legally established.
	<b>February 2008</b>	Review of the emerging evidence on the wider impacts of biofuels announced.
	<b>April 2008</b>	RTFO, set at 2.5% in 2008-9, introduced.
	<b>July 2008</b>	Gallagher Review of the Indirect Effects of Biofuels published on 7 July 2008.
	<b>Autumn 2008</b>	Consultation on increasing level of RTFO.
<b>Successor to the EU voluntary agreements with car manufacturers</b>  (DfT)	<b>December 2007</b>	European Commission came forward with legislative proposals to reduce carbon emissions from passenger cars and vans on 19 December 2007. The proposals are still under discussion.
	<b>June 2008</b>	Government consults on Commission proposals.
	<b>December 2008</b>	Possible political agreement in Environment Council on regulation.

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>Low Carbon Transport Innovation Strategy</b>  (DfT)	<b>June- November 2007</b>	Stakeholder engagement and identification of technology and vehicle options for the new £20m procurement programme.
	<b>September 2007</b>	Launch of first call for R&D projects under the Innovation Platform (IP).
	<b>March 2008</b>	Appointment of Cenex, the UK Centre of Excellence for Low Carbon and Fuel Cell Technologies, as the DfT's delivery partner for the programme.
	<b>May 2008</b>	16 successful projects to be funded under 1st IP call were announced on 8 May.
	<b>July 2008</b>	Launch of tender for lower-carbon vans.
	<b>Autumn 2008</b>	Launch of second call for R&D projects under IP.
<b>Aviation in the EU ETS</b>  (DfT)	<b>March – June 2007</b>	Government consults on the Commission's proposal made at Environment Council in February 2007.
	<b>December 2007</b>	Member States agree to cap emissions from flights to, from and within the EU at the average of 2004-06 levels.
	<b>December 2008</b>	Council, European Parliament and European Commission are expected to agree directive on aviation and emissions trading.
<b>Surface transport in the EU ETS</b>  (DfT)	<b>February 2008</b>	European Commission's review proposals contained commitment to further consider surface transport in EU ETS.
<b>Energy Efficiency Commitment (EEC2) 2005-2008<sup>41</sup></b>  (Defra)	<b>March 2008</b>	EEC phase 2 concluded at the end of March 2008 – expected to have delivered annual savings of 1.8MtCO <sub>2</sub> .
	<b>Summer 2008</b>	A report on EEC2 will be published on the Defra website giving a detailed understanding of the carbon and energy savings delivered, and the innovative actions undertaken by energy suppliers in fulfilling their energy efficiency obligations.
<b>Carbon Emission Reduction Target (CERT), 2008-11 (successor to EEC2)</b>  (Defra)	<b>January 2008</b>	CERT Statutory Instrument entered into force requiring energy suppliers with over 50,000 customers, from 1 April 2008, to meet targets for promoting low carbon products to householders.
	<b>April 2008</b>	CERT commenced with an ambition level twice that of EEC2. Target is to deliver measures with lifetime CO <sub>2</sub> savings of 154 MtCO <sub>2</sub> , equivalent to annual net savings of 4.2 MtCO <sub>2</sub> by the end of the programme.
<b>Post-2011 Supplier Obligation (2011 – 2020)</b>  (Defra)	<b>September 2007</b>	A three month Call for Evidence on the main post 2011 supplier obligation policy framework options concluded with 28 responses.
	<b>December 2008</b>	Summary of Call for Evidence responses published. Strong steer from stakeholders for a separation of the environmental and social obligations and for further measures to drive consumer demand for low carbon products. Stakeholders remained largely split on the central question of whether to move away from a measures based obligation to one set in outcomes.
	<b>Autumn 2008</b>	Public consultation to be published giving a clear sense of direction on the post 2011 framework.

<sup>41</sup> Further information about the EEC, CERT and post-2011 supplier obligation can be found at: [www.defra.gov.uk/environment/climatechange/uk/household/supplier](http://www.defra.gov.uk/environment/climatechange/uk/household/supplier)

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>Zero carbon homes</b> (DCLG)	<b>Summer 2008</b>	Government will be launching a consultation document on the definition of zero carbon homes.
<b>Energy Performance Certificates (EPC).</b> (DCLG)	<b>August 2007</b>	Introduction, via Home Information Packs, of the phased roll out of Energy Performance Certificates (EPC). The first roll out of EPCs began as part of the sale of homes with four or more bedrooms.
	<b>April 2008</b>	Introduction of EPCs for large commercial buildings.
	<b>Summer 2008</b>	Consultation on further steps on EPCs including giving Energy Savings Trust and the Carbon Trust access to EPC data.
	<b>October 2008</b>	Introduction of Performance Certificates for larger public buildings. Introduction of EPCs for domestic rental, and remaining commercial buildings and Display Energy Certificates for Public buildings.
<b>Code for Sustainable Homes</b> (DCLG)	<b>April 2008</b>	Housing Corporation adopted Code level 3 as a minimum standard for all new developments that it provides grant funding for.
	<b>May 2008</b>	The Government implemented mandatory ratings against the Code for all new homes, subject to a phasing in period.
<b>Planning Policy Statement (PPS) on Climate Change</b> (DCLG)	<b>December 2007</b>	Publication of final Planning Policy Statement: Planning and Climate Change which makes clear that tackling climate change is at the centre of what Government expects from the planning system. The PPS makes clear planning's role in helping to speed up the shift to renewable and low-carbon energy, supporting our ambitions on zero carbon development and helping shape places resilient to the impact of climate change.
	<b>Spring/Summer 2008</b>	Stakeholder engagement on developing practice guidance to support the new PPS.
<b>Energy end-use efficiency and energy services Directive</b> (Defra/DfT/BERR)	<b>June 2007</b>	1st Energy Efficiency Action Plan submitted to the European Commission, announcing that the UK expect to double the EU indicative energy saving target of 9% over nine years by 2017.
	<b>October 2007</b>	Consultations on energy efficiency obligations on energy suppliers/distributors closed. Final consultation on better billing/ metering closed.
	<b>March 2008</b>	Consultation on public sector role in setting an exemplary example in energy end use efficiency closed.
	<b>April 2008</b>	Formal contact with suppliers to target sector to enter into Voluntary Agreements (VA). Sector comprises small public sector bodies and SMEs within the UK whose gas and electricity supply does not fall within the scope of the EU ETS, CERT, CCA and CRC.
	<b>July 2008</b>	Target date for energy suppliers/distributors and public sector lead bodies in GB & NI to sign up to voluntary agreements to promote energy efficiency measures.
	<b>September 2008</b>	Establish monitoring arrangements to assess voluntary agreements.
	<b>December 2008</b>	End of first VA reporting period. Net-bound and non net-bound sector steering groups to have met.

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<b>Metering and billing improvements</b>  (BERR/Defra)	<b>October 2007</b>	Consultation on Energy White Paper proposals on metering and billing closed.
	<b>March 2008</b>	Budget 2008 confirms moving forward with advanced meter roll-out to larger businesses over next five years.
	<b>April 2008</b>	Publication of Government response to consultation and consultation impact assessment of smart metering. Government announces discussions with electricity suppliers to provide self-standing display devices on a voluntary basis.
		Amendments to Energy Bill to provide Government with powers to roll-out smart metering in event of decision to do so laid before Parliament.
	<b>May 2008</b>	New licence condition for historic consumption information on domestic gas and electricity bills is made via SI, to take effect from 1 January 2009.
<b>Act on CO<sub>2</sub> campaign</b>  (Defra/DfT)	<b>July 2007</b>	Act on CO <sub>2</sub> car purchasing campaign launched.
	<b>February 2008</b>	Improved version of Act On CO <sub>2</sub> calculator goes live, with update function
	<b>May – July 2008</b>	ACT ON CO <sub>2</sub> advertising campaign recommences including sponsorship of Greener Driving Pavillion at the British Motor Show. New phase of the existing TV advertising returns from 5 May 2008 to June 2008. Supported by online and press advertising.
	<b>August 2008</b>	Next phase of Smarter Driving campaign launched supporting inclusion of Smarter Driving techniques in the Driving Test from September 2008.
<b>Quality Assurance Scheme for Carbon Offsetting (formerly Code of Best Practice)</b>  (Defra)	<b>February 2008</b>	Announcement of Quality Assurance Scheme and further consultation on procedures and processes under the Scheme.
	<b>July 2008</b>	Final Quality Assurance Scheme to be published.
	<b>Summer 2008</b>	Quality Assurance Scheme to be launched to the general consumer.

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>Raising product standards</b>  (Defra)	<b>December 2007</b>	Publication of 11 consultation papers on indicative energy efficiency standards for energy using products covered by the Market Transformation Programme (e.g. cold appliances, motors).
	<b>September to December 2007</b>	Initial proposals for 3 implementing measures (Street Lighting, Office Lighting and stand-by) under Energy-using Products (EuP) discussed in EU Consultation Forums.
	<b>January 2008</b>	Voluntary phase out of inefficient domestic lighting products in the UK commences with bulbs above 100 Watts.
	<b>January 2008 onwards</b>	Initial proposals for 5 implementing measures (boilers and hot water heaters, external power supply units, simple set top boxes and domestic lighting) discussed in EU Consultation Forums.
		Initial discussions on proposals for revision of EU Energy Labelling Framework Directive.
	<b>April 2008 onwards</b>	Initial discussions on further implementing measures – likely to include, motors, fans, pumps, circulators and televisions.
		European Commission expected to bring forward formal proposals to revise and update the framework Directive for the energy labelling of household appliances.
		European Commission expected to bring forward formal proposals for 5 implementing measures on stand-by, office and street lighting, powers supplies and set top boxes. First meetings of regulatory committees for these implementing measures before summer.
		Publication of consultation responses on UK indicative performance standards for energy using products.
	<b>September 2008 onwards</b>	Agreement expected on revision of EU Energy Labelling Framework Directive and sight of initial proposals for new and revised energy labels to be discussed by Member States.
		Second consultation on indicative energy efficiency standards for energy using products in the UK launched.
	<b>October 2008 onwards</b>	Agreement expected between Member States on initial 5 implementing measures under EuP.
		Initial discussions expected on formal proposals for a further 5-10 implementing measures under EuP.
Work to revise and update EU energy labels for energy using products expected to commence with aim of completion by Q2 2009.		
<b>Biomass Strategy</b>  (Defra)	<b>September 2007</b>	Publication of the 1-year on report summarises the progress made on the implementation of the actions set out in the Government's response to the Biomass Task Force Report  Ongoing implementation of non-food crops action plan
	<b>Summer 2008</b>	Life Cycle Analysis <sup>42</sup> (LCA) tool for bioenergy due to be launched.
<b>Energy Crops Scheme</b>  (Defra)	<b>May 2008</b>	Announcement of second round Energy Crops Scheme, which provides 40% of establishment costs for perennial energy crops.

<sup>42</sup> A calculation of the Green house gas emissions arising from growing/extracting the raw material to the final disposal of finished product.

POLICY/MEASURE	PROGRESS AND NEXT STEPS	
<b>England Woodfuel Strategy</b> (Forestry Commission)		The Strategy has entered its implementation phase with delivery resources focussed in the Southeast, Southwest and East of England and integrated with Rural Development Programme for England (RDPE) measures, where possible. Installed woodfuel capacity has been selected as FC's Comprehensive Spending Review (CSR) climate change success measure.
<b>Strategy for England's Trees Woods and Forests (ETWF)</b> (Forestry Commission)	<b>July 2007 and Autumn 2008</b>	The Strategy was published in July 2007, including a forward look to 2020 and 2050 with trees and woodlands playing a full role in adaptation and mitigation. A Delivery Plan, covering the period 2008-2011 will be published in Autumn 2008.
<b>Forestry Grants and Regulations in England</b> (Forestry Commission)	<b>2008-2009</b>	The Forestry Commission in England has committed to reviewing forestry grants and regulations in the context of climate change in its 2008-9 Corporate Plan.
<b>UK Forestry Standard</b> (Forestry Commission)	<b>May 2008 – March 2009</b>	The UK Forestry Standard is currently undergoing revision and a decision has been taken to cover climate change (both mitigation and adaptation) through the drafting of underpinning 'Climate Change Guidelines'.
<b>Assurance scheme for UK-based carbon abatement forestry schemes</b> (Forestry Commission)	<b>April 2008 – March 2009</b>	As part of an initiative on forests and climate change, the Forestry Commission announced that it would, in partnership with stakeholders, develop carbon management standards and an assurance scheme to apply to domestic tree-planting carbon abatement projects.
<b>Forestry research</b> (Forestry Commission)	<b>April 2008</b>	The Forestry Commission already supports a climate change research programme in excess of £2 million and announced that it would investigate how to re-focus the work of its research agency, Forest Research, as a Centre for Forestry and Climate Change.
<b>Rural Climate Change Forum (RCCF)</b> (Defra)	<b>October 2007</b>	The Forum developed a four tiered approach for communications, comprising a goal (tier 1); three themes for communication – 'risks' responsibilities' and 'opportunities' (tier 2); priority topics to be communicated (tier 3); and specific advice on each topic (tier 4).
	<b>November 2007</b>	The Forum advised the Secretary of State on how best to translate research on agriculture and climate change into practical action by farmers including recommendations for future research priorities.
	<b>November 2007 onwards</b>	The Forum is now working with the Defra-funded 'Farming Futures' project to develop the fourth tier of its communications approach, communicating practical advice to farmers about climate change mitigation and what farmers can do to adapt to climate change.

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<b>Greenhouse gas emissions trading for agriculture, forestry and land management</b>  (Defra)	<b>September 2007</b>	Study completed by NERA Economic Consulting which looked at the feasibility of GHG emissions trading for agriculture, forestry and land management. The study indicated that a "cap-and-trade" scheme is unlikely to be a cost-effective option at this stage as the administrative and abatement costs could outweigh the emission reduction benefits, but that a project-based scheme could have greater potential. We are now considering the conclusions of this work and what further analysis might be needed to build a clearer picture of possible options for the potential development of a cost-effective emissions trading scheme for the sector.
<b>Anaerobic Digestion (AD)</b>  (Defra/BERR/Environment Agency)	<b>January 2008</b>	BERR announced that electricity from AD would receive additional support in the form of 2 ROCs/MWh (Renewable Obligation Certificates per mega watt hour), under the new banding of the Renewables Obligation.
	<b>February 2008</b>	In the new Water Strategy for England (Future Water), Defra Ministers committed to convening a high level meeting of stakeholders from all relevant sectors in early summer 2008. (Date now set for July 2008)
	<b>February 2008</b>	Hilary Benn announced that £10 million would be made available from the Environmental Transformation Fund to support the construction of a number of anaerobic digestion demonstration plants – to demonstrate how AD can work in practice, in a range of applications.
	<b>April 2008</b>	Environment Agency launched a consultation on a standard and protocol for anaerobic digestate. These will provide clarity about when the material has been "fully recovered" and is therefore a product which can be used without being subject to waste management controls. The consultation closed on 27 June 2008.
<b>Agriculture and Climate Change Research &amp; Development</b>  (Defra)	<b>Ongoing</b>	Around £5m is available in 2008/09 for research on agriculture and climate change. This includes work to develop an improved national greenhouse gas emission inventory in order to record emission reductions from – for example – changes to farm management practices.
<b>Environmental Stewardship – Review of progress</b>  (Defra)	<b>May 2008 – 2011</b>	ES Review of progress report published May 2008. Climate change to be made an overarching theme of the scheme. Research suggests that there are no actions to mitigate against climate change appropriate for immediate implementation as ES options; however small scheme changes can be made and research is on-going.

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<b>Sustainable Operations in Government (SOG)</b>  (Defra)	<b>March 2008</b>	Sustainable Development Commission publish the Sustainable Development in Government Report 2007 covering the reporting period April 2006 to March 2007.  Government publishes its response to the Sustainable Development in Government Report 2007. The response highlighted the changes that will now be put in place to address recommendations of the 6th SDIG report, including several new policy initiatives, and the creation of a sustainability organisation (Centre of Expertise for Sustainable Procurement) at the heart of government to accelerate and embed change.
	<b>Summer 2008</b>	Government to publish delivery plans and trajectories for delivery of the Sustainable Operations on the Government Estate (SOG E) targets.
	<b>Wider Public Sector action (Defra)</b>	<b>November 2007</b>
<b>March 2008</b>		The Chancellor announced in the budget an ambition for all new non-domestic buildings to be zero carbon by 2019, with the public sector leading by example and meeting this aim by 2018.
		Government announced an additional £30m for Salix Finance to provide interest free loans to public sector bodies to establish revolving loan funds to invest in energy efficiency.
<b>Summer 2008</b>	Government will publish its response to the consultation on the implementation of Article 5 of the Energy Services Directive and the measures it will put in place for the public sector to lead by example in energy efficiency.	
<b>Local Government action</b>  (Defra)	<b>March 2007</b>	Six local authorities were awarded Beacon Council status under the Tackling Climate Change theme. The Beacon Councils are now actively promoting their good practice among other local authorities.
	<b>September 2007</b>	HMG published the energy measures report a piece of statutory guidance setting out ways in which local government can effectively mitigate climate change and address fuel poverty.
	<b>October 2007</b>	Greater London Authority (GLA) Act came into force including a duty for the London Mayor and Assembly to address climate change.
	<b>December 2007</b>	Climate change planning policy statement (PPS) was published making it clear that tackling climate change is central to what is expected of good planning.
	<b>March 2008</b>	Local Government Performance Framework was announced, including two new indicators on mitigating climate change – i) CO <sub>2</sub> reduction from the local authority's own operations; and ii) CO <sub>2</sub> reduction from the community. In June 2008 local authorities agreed what indicators they will set targets for as part of the Local Area Agreement process.  Government announced a £4 million Best Practice Programme to help local authorities tackle climate change and deliver effectively against the new Local Government Performance Framework.

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<b>SOG – Education and Health</b>	<b>November 2007</b>	Department for Children, Schools and Families (DCSF) announced an ambition for all new schools to be zero carbon by 2016. A Task Force has been established to investigate how this can be achieved.
	<b>March 2008</b>	Government announced £2.3 billion over the next three years for the Building Colleges for the Future investment in a further education building works programme. It will ensure all new facilities are zero carbon by 2016 and invest in the skills and training needs of local people.
	<b>May 2008</b>	NHS published a consultation on a Carbon Reduction Strategy for the NHS in England. It quantifies the carbon footprint and a strategy for reducing it.

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<b>Waste Strategy</b>  (Defra)	<b>October 2007</b>	<p>The 2007 Comprehensive Spending Review (CSR) announced £2 billion of Private Finance Initiative (PFI) Credit funding for local authority waste infrastructure investment. This will help establish the scale of residual waste treatment infrastructure required to meet the Landfill Directive targets in 2010, 2013 and beyond.</p>
	<b>November 2007</b>	<p>Following public consultation and wide cross party support from councils, Government announced a power in the Climate Change Bill for up to 5 local authorities in England to pilot waste incentive schemes, to encourage household waste minimisation and recycling. This will enable local authorities to pilot schemes to both positively reward those who recycle and charge those who do not.</p>
	<b>November 2007</b>	<p>Publication of 2006/7 Municipal Waste Statistics shows the proportion of household waste recycled (including composting) has continued to increase, rising from 26.7% in 2005/06 to 30.9% in 2006/07. The proportion of municipal waste being disposed of in landfill has continued to decrease from 62% to 58% in the same period.</p>
	<b>March 2008</b>	<p>Budget announcement that the Government will bring forward legislation in the Climate Change Bill to enable the Government to require retailers to impose a minimum charge on single-use carrier bags, if sufficient progress is not made on a voluntary basis. These powers will come into force in 2009. Limiting the use of disposable bags is an important way in which the public can help take action.</p>
	<b>April 2008</b>	<p>The Landfill Tax rises to £32 per tonne and will now rise by £8 per tonne each year. The aim of the tax is to encourage the disposal of less waste; to recover more value from waste through recycling and composting, and to stimulate moves to more environmentally friendly waste management methods.</p>
	<b>May 2008</b>	<p>The Waste and Resources Action Programme (WRAP) launches 'The Food We Waste' Report. The results of a study into the amount of food UK households throw away and the causes of this. The research is the first of its kind anywhere in the world and will highlight the implications of the 6.7 million tonnes of food that UK consumers throw away each year, most of which could have been avoided.</p>
	<b>Summer 2008</b>	<p>Defra will publish an annual progress report on the Waste Strategy along side a progress report on Defra's work on sustainable consumption and production. To celebrate the successful achievement of the first Courtauld Commitment targets there will be an event in the summer. The Courtauld Commitment is an agreement between WRAP and major grocery organisations which will lead to new packaging solutions and technologies so that less rubbish ends up in the household bin.</p>
	<b>July 2008</b>	<p>Launch of Zero Waste Places, which aims to incentivise excellence in sustainable waste management through an initiative to develop innovative and exemplary practice.</p>

