

## **CARBON PLAN**

Report of the Chief Executive

### **1. SUMMARY**

The report outlines the proposals for Housing and Communities in the Government's Carbon Plan published in December 2011. Most of the proposals for social housing are linked to the future Green Deal and further specific guidance is to be issued by April 2012. A copy of the executive summary can be found at Appendix 1 to this report which can be found on Committee Management Information System (CMIS) along with a table of planned actions, Appendix 2.

### **2. RECOMMENDATION**

That the Board notes the contents of the report.

### **3. MATTER FOR CONSIDERATION**

3.1 In December 2011 the Government issued a revised Carbon Plan which set out the actions to be implemented within the energy policy which is intended to move the UK to a low carbon economy whilst still maintaining energy availability. The key areas the plan covers are:

- Buildings and Communities
- Transport
- Industry
- Low Carbon Electricity
- Agriculture, Forestry and Land Management
- Waste and resource efficiency
- Working with the European Union.

3.2 In the main, the Buildings and Communities section of the Carbon Plan has the most direct impact on Derby Homes' activities. The Government's proposals can be found in the executive summary, Appendix 1, which can be found on CMIS. They centre round improving the insulation and increasing the efficiency of heating in existing housing stock using the Green Deal as the route to finance work. This type of work is well established within Derby Homes and its partners in Efficiency East Midlands (EEM) as we have been carrying out identical works in our Community Energy Saving Project (CESP) and Carbon Emission Reduction Target (CERT) programmes. Scoping work has been carried out within EEM to enable early action on the Green Deal.

- 3.3 The main drive of the Green Deal is to tackle the private owner occupied and rented sector. The Carbon Plan acknowledges that the social sector has made considerable progress in energy efficiency measures but there is still a role for helping to drive forward large-scale retrofit of social housing, helping to stimulate the Green Deal and Energy Company Obligation markets. Within the table of actions, Appendix 2, which can be found on CMIS, there is to be specific permissive guidance issued to local authorities and social landlords by April 2012. We will incorporate this guidance into our Environmental Policy.
- 3.4 The other areas within the plan which have impacts on Derby Homes are the transport and business public sector emissions sections. There are measures to look at reduction in transport costs and reductions in resource use such as water consumption. Again we are incorporating these into our Environmental Policy backed by more effective monitoring of fleet use and energy and water consumption.

#### **4. COUNCIL IMPLICATIONS**

We will work with the Council's Climate team to help deliver joint actions under the Carbon Plan.

#### **6. ENVIRONMENTAL IMPLICATIONS**

Actions supported by the Carbon Plan will help reduce the environmental impact of Derby Homes.

#### **7. POLICY REVIEW IMPLICATIONS**

The proposals contained in the Carbon Plan will directly impact on our review of Derby Homes Environmental policy. Once the further guidance has been issued by the Government we will incorporate them into our policy.

The areas listed below have no implications directly arising from this report:

Consultation  
Financial and Business Plan  
Legal and Confidentiality  
Personnel  
Equalities Impact Assessment  
Health & Safety  
Risk

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Background Information: Insert details of any unpublished documents used to prepare your report

Supporting Information: Insert details of any previous reports to Board or Committee

# Executive summary

1. This plan sets out how the UK will achieve decarbonisation within the framework of our energy policy: to make the transition to a low carbon economy while maintaining energy security, and minimising costs to consumers, particularly those in poorer households.

2. Emissions are down by a quarter since 1990.<sup>1</sup> Current policies put the UK on track to cut emissions by over a third, on 1990 levels, by 2020.

In the next ten years, we will develop and deploy the technologies that will be needed to halve emissions in the 2020s. This will put the UK on a path towards an 80% reduction by 2050.

3. By moving to a more efficient, low carbon and sustainable economy, the UK will become less reliant on imported fossil fuels and less exposed to higher and more volatile energy prices in the future.

## Box 1: The Climate Change Act 2008 and the carbon budget framework

The Climate Change Act established a legally binding target to reduce the UK's greenhouse gas emissions by at least 80% below base year levels by 2050, to be achieved through action at home and abroad.<sup>2</sup> To drive progress and set the UK on a pathway towards this target, the Act introduced a system of carbon budgets which provide legally binding limits on the amount of emissions that may be produced in successive five-year periods, beginning in 2008. The first three carbon budgets were set in law in May 2009 and require emissions to be reduced by at least 34% below base year levels in 2020.

The fourth carbon budget, covering the period 2023–27, was set in law in June 2011 and requires emissions to be reduced by 50% below 1990 levels.<sup>3</sup>

This report sets out the proposals and policies for meeting the first four carbon budgets.

|   | First carbon budget<br>(2008–12) | Second carbon<br>budget (2013–17) | Third carbon<br>budget (2018–22) | Fourth carbon<br>budget (2023–27) |
|---|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
| Carbon budget<br>level (million tonnes<br>carbon dioxide<br>equivalent (MtCO <sub>2</sub> e)) | 3,018                            | 2,782                             | 2,544                            | 1,950                             |
| Percentage<br>reduction below<br>base year levels   | 23%                              | 29%                               | 35%                              | 50%                               |

<sup>1</sup> This figure includes the effect of emissions trading. UK territorial emissions have fallen by 28% over the same period.

<sup>2</sup> The base year is 1990 for carbon dioxide, nitrous oxide and methane, and 1995 for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

<sup>3</sup> To be reviewed in 2014 in light of EU Emissions Trading System cap.

## Progress so far

4. Our past record shows that progress is possible. Between 1990 and 2010 emissions from power stations fell by almost a quarter, as the 'dash for gas' in the 1990s saw large numbers of coal-fired power stations replaced. In the last decade wind and other renewables have grown to the point that they now provide nearly a tenth of UK generating capacity. With nuclear power generating 16% of total UK electricity, a quarter of electricity generation is now low carbon.

5. In buildings, emissions have fallen by 18%, despite the growth in population and housing. Regulation has required the introduction of new, more efficient condensing boilers, saving at least £800 million this year on energy bills. Eleven million homes, 60% of all homes with cavity walls, have been fitted with cavity wall insulation. This will reduce the amount the UK spends on heating in 2011 by £1.3 billion.

6. In transport, emissions are roughly the same as they were in 1990. Emissions rose before 2007 as the economy grew and transport demand increased, but have since fallen due to improvements in new car efficiency, an increased uptake of biofuels and, to a lesser extent, the recent economic downturn.

7. Since 1990 industrial output has grown at an average of 1% a year while emissions have fallen by 46%. Industry has become more energy efficient and the UK's industrial base has shifted towards higher value, more knowledge-intensive sectors.

8. Agricultural emissions have fallen by almost a third, due in part to more efficient farming practices, while the diversion of waste from landfill, as a result of the landfill tax, has cut waste emissions by more than two thirds.

9. Government policies are already helping consumers. Our analysis predicts that average energy bills for domestic consumers will be 7.1% lower in 2020 than they would have been without policy interventions in place.

## Vision

10. However, if we are to cut emissions by 80% by 2050, there will have to be major changes in how we use and generate energy. Energy efficiency will have to increase dramatically across all sectors. The oil and gas used to drive cars, heat buildings and power industry will, in large part, need to be replaced by electricity, sustainable bioenergy, or hydrogen. Electricity will need to be decarbonised through renewable and nuclear power, and the use of carbon capture and storage (CCS). The electricity grid will be larger and smarter at balancing demand and supply.

11. But there are some major uncertainties. How far can we reduce demand? Will sustainable biomass be scarce or abundant? To what extent will electrification occur across transport and heating? Will wind, CCS or nuclear be the cheapest method of generating large-scale low carbon electricity? How far can aviation, shipping, industry and agriculture be decarbonised?

12. The sectoral plans in this document seek to steer a course through this uncertainty.

13. **In the next decade**, the UK will complete the installation of proven and cost effective technologies that are worth installing under all future scenarios. All cavity walls and lofts in homes, where practicable, are expected to be insulated by 2020. The fuel efficiency of internal combustion engine cars will improve dramatically, with CO<sub>2</sub> emissions from new cars set to fall by around a third. Many of our existing coal-fired power stations will close, replaced primarily by gas and renewables. More efficient buildings and cars will cut fuel costs. More diverse sources of electricity will improve energy security and reduce exposure to fossil fuel imports and price spikes.

14. The UK is not alone in taking action on energy efficiency. Japan has set a goal of improving its energy consumption efficiency from 2003 levels by at least 30% in 2030. The Swedish Government has proposed an energy efficiency target to reduce energy by 20% between 2008 and 2020.<sup>4</sup>

<sup>4</sup> International Energy Agency (2009) *Implementing Energy Efficiency Policies*.

15. Over the next decade the UK will also prepare for the future by demonstrating and deploying the key technologies needed to decarbonise power, buildings and road transport in the 2020s and beyond. Rather than picking a single winner, this plan sets out how the UK will develop a portfolio of technologies for each sector. This has two virtues. It will reduce the risk of depending on a single technology. And it will generate competition that will drive innovation and cost reduction.

16. In electricity, the three parts to our portfolio are renewable power, nuclear power, and coal- and gas-fired power stations fitted with carbon capture and storage. In transport, ultra-low emission vehicles including fully electric, plug-in hybrid, and fuel cell powered cars are being developed. In buildings, the technologies will include air- or ground-source heat pumps, and using heat from power stations. Both of these are solutions proven by their use in other countries.

17. **During the 2020s**, each of these technologies – low carbon electricity, low carbon cars and low carbon heating – will move towards mass roll-out. We estimate that between 40 and 70 gigawatts (GW) of new low carbon power will need to be deployed by the end of the decade. Emissions for the average new car will need to fall to between 50 and 70 gCO<sub>2</sub>/km, compared with 144 gCO<sub>2</sub>/km in 2010. Between 21% and 45% of heat supply to our buildings will need to be low carbon by 2030.

18. By developing options now, the UK will not only reduce the costs of deploying these technologies in the 2020s. It will also gain a long-term competitive advantage in sectors that play to our comparative strengths. These include offshore wind, carbon capture and storage, and information services to manage smart grids, heating controls and transport.

19. To 2030 and beyond, emissions from the hard-to-treat sectors – industry, aviation, shipping and agriculture – will need to be tackled. This will require a range of solutions to be tested by at the latest, the 2020s, including: greater energy efficiency; switching from oil and gas to bioenergy or low carbon electricity; and carbon capture and storage for industrial processes.

## Sectoral plans

### Low carbon buildings

20. In 2009, 37% of UK emissions were produced from heating and powering homes and buildings. By 2050, all buildings will need to have an emissions footprint close to zero. Buildings will need to become better insulated, use more energy-efficient products and obtain their heating from low carbon sources.

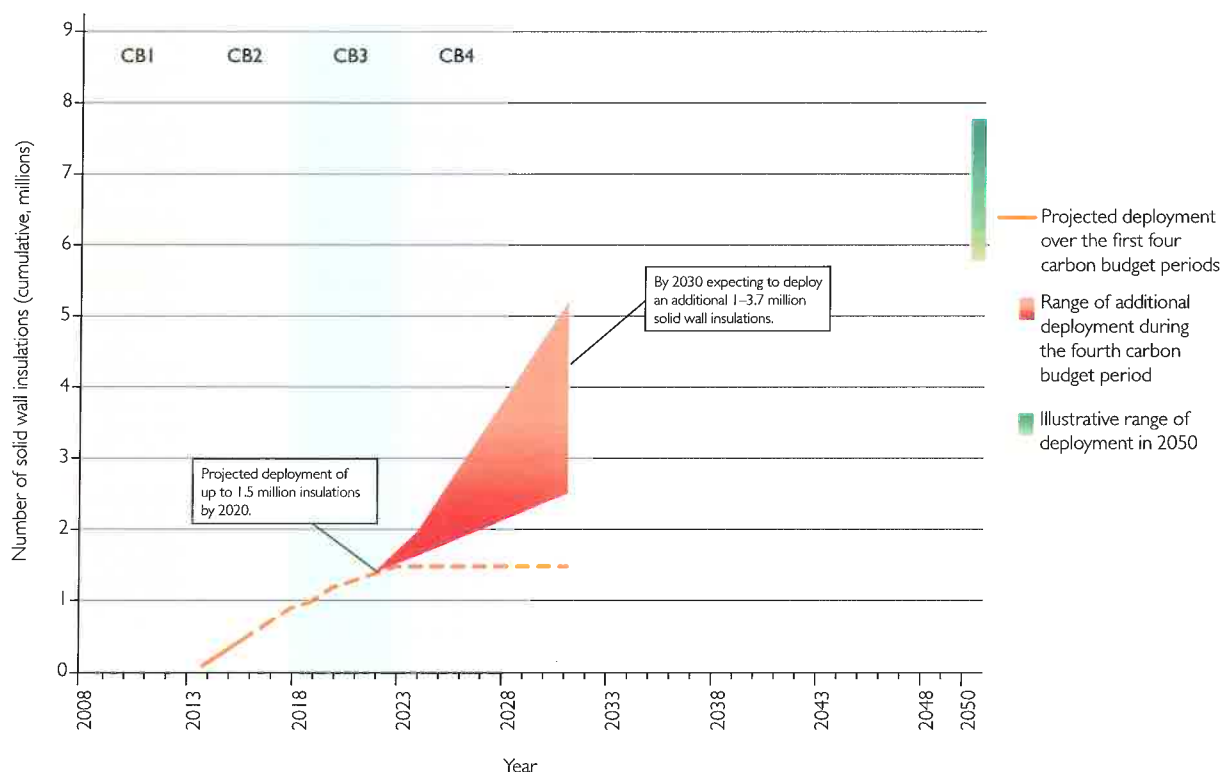
### Energy efficiency

21. **Over the next decade**, with trends in installation rates maintained at today's levels, all cavity walls and lofts, where practical, will be insulated. Alongside this, the Government will support up to 1.5 million solid wall insulations and other energy efficiency measures such as double glazing.

22. The Green Deal, launching in 2012, will remove the upfront costs to the consumer of energy efficiency, with the cost being recouped through savings on their energy bills. The Energy Company Obligation will support this effort. It will place a duty on energy companies both to reduce emissions through undertaking solid wall insulation and to tackle fuel poverty by installing central heating systems, replacing boilers, and subsidising cavity wall and loft insulation. In parallel, Smart Meters will be deployed to every home to support consumers in managing their energy and expenditure intelligently. The Government will introduce zero carbon homes standards to cut the energy demand of new homes still further, reducing emissions and fuel bills. Through European energy standards and labelling we will promote the sales of the most efficient electrical appliances and products on the market.

23. **During the 2020s**, deployment of solid wall insulation will increase and installation costs will fall as the supply chain and the skills base become established. Chart 1 shows different levels of ambition for the uptake of solid wall insulation, ranging from 1 million to 3.7 million additional homes insulated by 2030.

Chart 1: Projected deployment of solid wall insulation over the first three carbon budgets, and illustrative range of deployment over the fourth carbon budget period and in 2050



Source: Department of Energy and Climate Change

### Low carbon heating

24. Energy efficiency is the immediate priority. But **in this decade** we also need to support ways of heating buildings without emitting carbon. Through the Renewable Heat Incentive (RHI) and Renewable Heat Premium Payment, over 130,000 low carbon heat installations are expected to be carried out by 2020.<sup>5</sup> While we do not expect mass-market deployment of these technologies in this decade, there is an important opportunity to build the market, particularly in off-gas grid homes and in the commercial sector. At the same time the Government will work with local authorities, where appropriate, to lay the foundations for district heating networks, particularly in urban areas with more densely packed demand for heat. This should enable the long-term delivery of heat from low carbon sources.

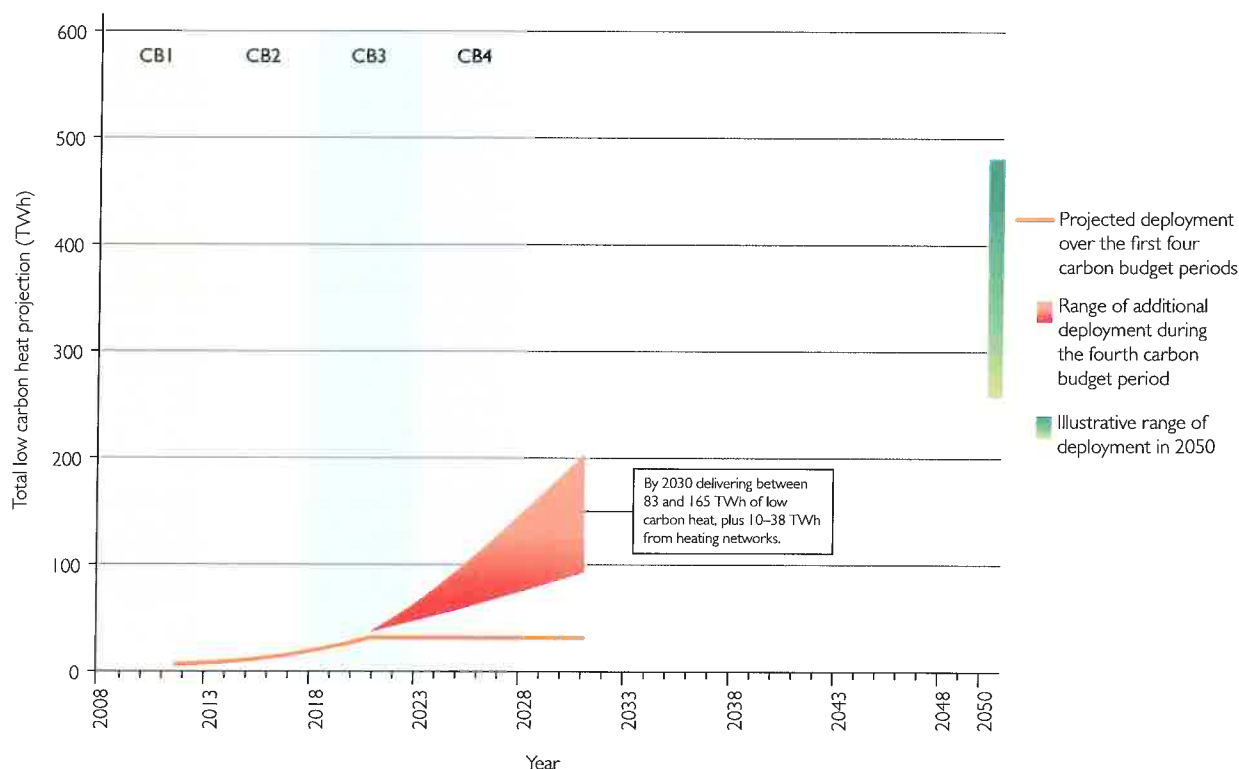
25. **During the 2020s**, we need to begin the mass deployment of low carbon heat. Technologies such as heat pumps will begin to expand at scale into residential areas, overcoming current barriers such as cost and unfamiliarity, and working with the supply chain to meet consumer demand. At the same time, the heating networks that started in urban areas during this decade will begin to expand to meet demand in surrounding areas, and to compete with low carbon heat technologies in individual buildings, helping to keep costs down.

26. By 2027, based on the scenarios set out in this plan, emissions from buildings should be between 24% and 39% lower than 2009 levels.

<sup>5</sup> This only includes installations as a result of RHI Phase 1.



Chart 2: Projected deployment of low carbon heat in buildings over the first three carbon budgets and illustrative ranges of deployment potential in the fourth carbon budget period and in 2050



Source: Department of Energy and Climate Change

## Low carbon transport

27. Domestic transport emissions make up nearly a quarter of UK emissions. By 2050, domestic transport will need to substantially reduce its emissions.

28. **Over the next decade**, average emissions of new cars are set to fall by around a third, primarily through more efficient combustion engines. Sustainable biofuels will also deliver substantial emissions reductions. As deeper cuts are required, vehicles will run on ultra-low emission technologies such as electric batteries, hydrogen fuel cells and plug-in hybrid technology. These vehicles could also help to deliver wider environmental benefits, including improved local air quality and reduced traffic noise.

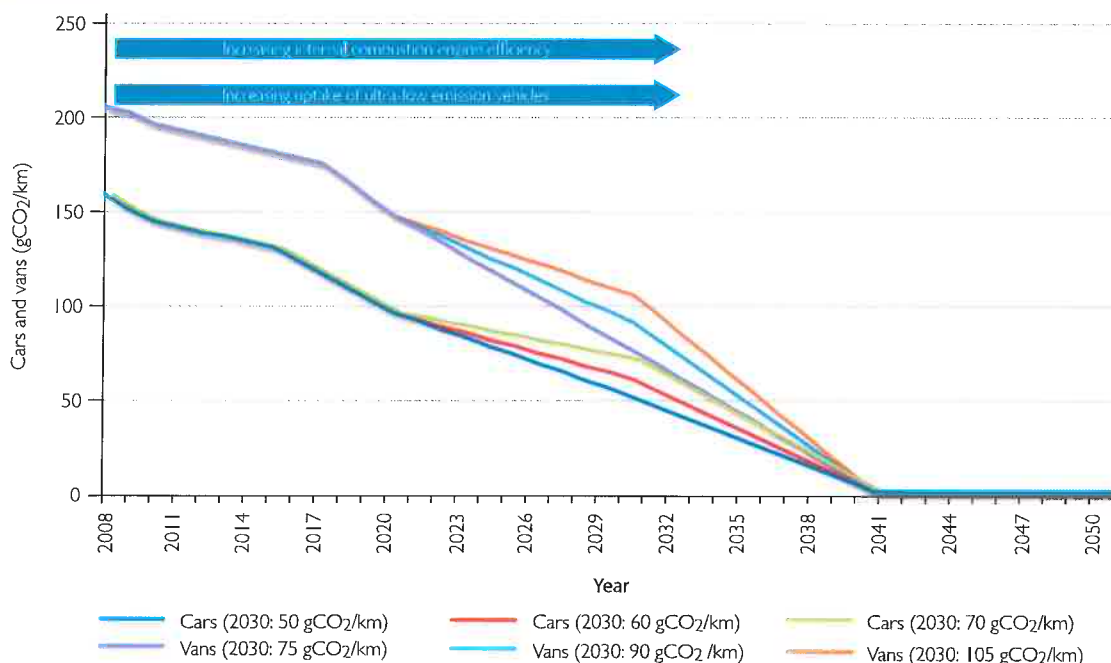
29. To ensure that these emissions savings are delivered, the Government will continue to work at European Union (EU) level to press for

strong EU vehicle emissions standards for 2020 and beyond in order to deliver improvements in conventional vehicle efficiency and give certainty about future markets for ultra-low emission vehicles.

30. To support the growth of the ultra-low emission vehicle market, the Government is providing around £300 million this Parliament for consumer incentives, worth up to £5,000 per car, and further support for the research, development and demonstration of new technologies.

31. **During the 2020s**, we will move towards the mass market roll-out of ultra-low emission vehicles, although further improvements in the efficiency of conventional vehicles and sustainable biofuels are also anticipated to play a key role. Based on current modelling the Government anticipates that average new car emissions could need to be 50–70 gCO<sub>2</sub>/km and new van emissions 75–105 gCO<sub>2</sub>/km by 2030.

**Chart 3: Projected average new car and van emissions over the first three carbon budgets and illustrative ranges of average new car and van emissions in the fourth carbon budget period and to 2050**



32. While cars and vans make up the largest share of emissions, other sectors will need to decarbonise over time.

33. To support people to make lower carbon travel choices, such as walking, cycling or public transport, the Government is providing a £560 million Local Sustainable Transport Fund over the lifetime of this Parliament.

34. Industry is leading the drive to reduce emissions from freight. The Logistics Carbon Reduction Scheme, for example, aims to reduce emissions by 8% by 2015, through improved efficiency and some modal shift to rail. For the longer term, to make deeper reductions in emissions, innovation will be needed in ultra-low emissions technologies such as sustainable biofuels and electric, hydrogen or hybrid technologies.

35. Emissions from aviation will be capped by being part of the EU Emissions Trading System (EU ETS) from 2012, ensuring that any increases in aviation emissions are offset by reductions elsewhere in the EU economy, or internationally.

36. By 2027, based on the scenarios set out in this plan, emissions from transport should be between 17% and 28% lower than 2009 levels.

### Low carbon industry

37. Industry makes up nearly a quarter of the UK's total emissions. Over 80% of these emissions originate from generating the heat that is needed for industrial processes such as manufacturing steel and ceramics, and the remainder from chemical reactions involved in processes such as cement production. By 2050, the Government expects industry to have delivered its fair share of emissions cuts, achieving reductions of up to 70% from 2009 levels.

38. The Government will work with industry to ensure that low carbon growth continues into the future. Industry must make significant reductions in the emissions intensity of production, while the Government assists in maintaining the competitiveness of strategically important sectors. Emissions reductions will come from three sources: first, driving further efficiencies in the use of energy and materials and the design of industrial processes; second, replacing fossil fuels with low carbon alternatives such as bioenergy



and electrification; and third, from carbon capture and storage (CCS) to address combustion and process emissions, for example in cement and steel.

39. **Over the next decade**, the main chances for industry to decarbonise will come from taking up the remaining opportunities for energy efficiency, and beginning the move to low carbon fuels, such as using sustainable biomass to generate heat for industrial processes. Through the EU ETS and domestic policies such as Climate Change Agreements and the CRC Energy Efficiency Scheme the Government is helping to ensure that these cost effective energy efficiency measures are being taken up. Innovation efforts during this period will also be important, bringing down the cost of decarbonising industrial processes and moving technology options such as electrification and CCS closer to commercial reality. CCS technology research projects are being strongly backed by UK and international sources of funding, with the aim of turning CCS into a viable option for the coming decades.

40. **During the 2020s**, in addition to energy efficiency measures, reductions will be driven by switching to low carbon fuels. As with buildings, the Government expects industry to take advantage of the Renewable Heat Incentive, replacing expensive fossil fuels with low carbon heat alternatives and thereby accelerating the decarbonisation of industry in the 2020s. CCS technology is also expected to start to be deployed during this decade.

41. Throughout this transition the Government will work closely with industry to address the principal risks, including the impact of anticipated increases in energy costs, to ensure that UK industry remains internationally competitive. The Government announced a package of measures to support sectors which are particularly exposed to these risks.

42. By 2027, emissions from industry should be between 20% and 24% lower than 2009 levels.

## Low carbon electricity

43. The power sector accounts for 27% of UK total emissions by source. By 2050, emissions from the power sector need to be close to zero.

44. With the potential electrification of heating, transport and industrial processes, average electricity demand may rise by between 30% and 60%. We may need as much as double today's electricity capacity to deal with peak demand. Electricity is likely to be produced from three main low carbon sources: renewable energy, particularly onshore and offshore wind farms; a new generation of nuclear power stations; and gas and coal-fired power stations fitted with CCS technology. Renewable energy accounted for approximately half of the estimated 194 GW of new electricity capacity added globally during 2010.<sup>6</sup> Fossil fuels without CCS will only be used as back-up electricity capacity at times of very high demand. The grid will need to be larger, stronger and smarter to reflect the quantity, geography and intermittency of power generation. We will also need a more flexible electricity system to cope with fluctuations in supply and demand.

45. While the overall direction is clear, major uncertainties remain over both the most cost effective mix of technologies and the pace of transition. The Government is committed to ensuring that the low carbon technologies with the lowest costs will win the largest market share.

46. **Over the next decade**, we need to continue reducing emissions from electricity generation through increasing the use of gas instead of coal, and more generation from renewable sources. Alongside this, we will prepare for the rapid decarbonisation required in the 2020s and 2030s by supporting the demonstration and deployment of the major low carbon technologies that we will need on the way to 2050. The reforms to the electricity market will be the most important step in making this happen. The introduction of Feed-in Tariffs with Contracts for Difference from 2014 will provide stable financial incentives for investment in all forms of low carbon generation.

<sup>6</sup> REN21 (2011) *Renewables 2011: Global Status Report*.

47. In addition, the Government is:

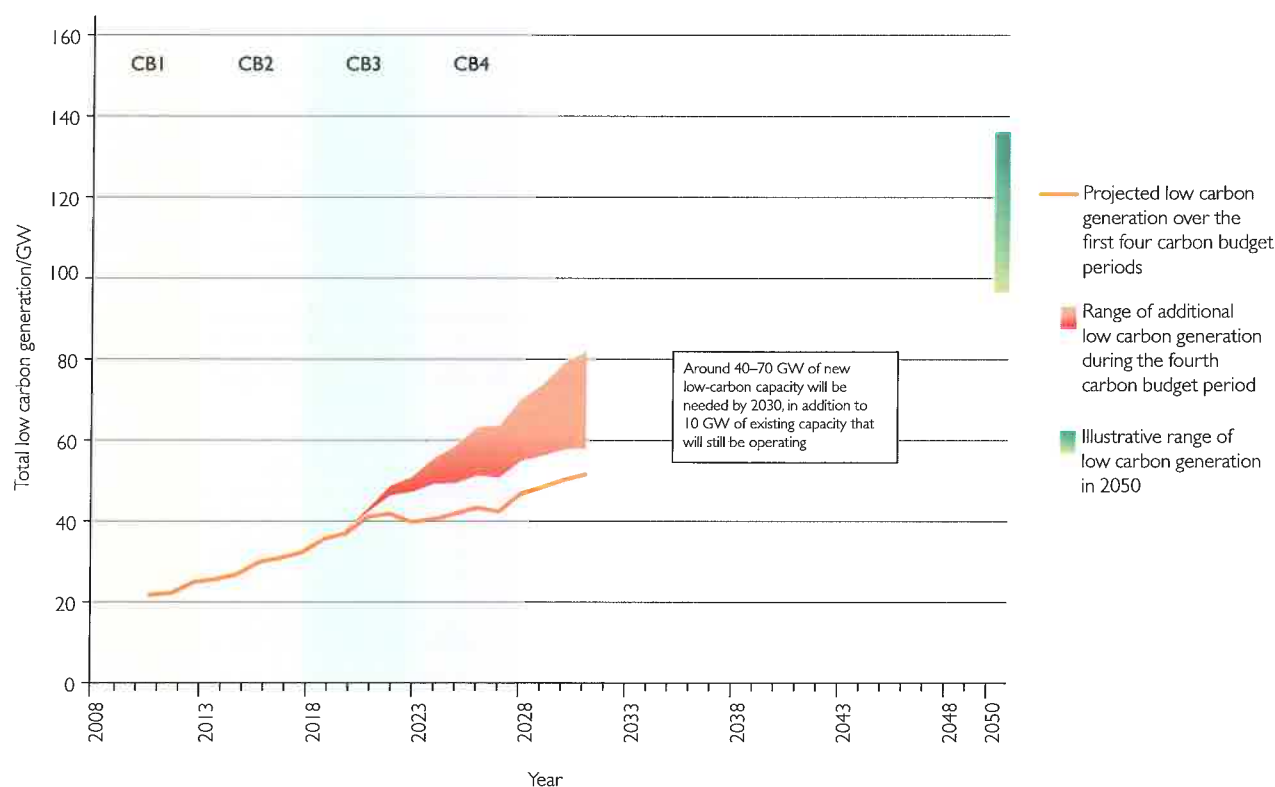
- helping industry to reduce the costs of offshore wind by setting up an Offshore Wind Cost Reduction Task Force with the aim of driving down the cost of offshore wind to £100 per megawatt hour (MWh) by 2020;
- supporting the development of CCS technology at scale in a commercial environment, to bring down costs and risks, with £1 billion set aside to support the programme;
- supporting the demonstration of less mature renewable technologies, and committing up to £50 million over the next four years to support innovation in marine and offshore technologies;
- enabling mature low carbon technologies such as nuclear to compete by addressing the barriers to deployment such as an under-developed UK supply chain; and

- working with Ofgem and the industry to deliver the investment required to ensure that the electricity transmission and distribution networks will be able to cope in the future.

48. Maintaining secure energy supplies remains a core government priority. New gas-fired generation will play a significant supporting role as 19 GW of existing generation capacity closes over the next decade.

49. Over the 2020s, large-scale deployment of low carbon generation will be needed, with, we estimate, 40–70 GW of new capacity required by 2030. This will drive a huge reduction in emissions from electricity supply. In the 2020s, the Government wants to see nuclear, renewables and CCS competing to deliver energy at the lowest possible cost. As we do not know how costs will change over time, we are not setting targets for each technology or a decarbonisation target at this point.

Chart 4: Projected deployment of low carbon generation over the first three carbon budgets and illustrative ranges of deployment potential in the fourth carbon budget period and in 2050



Source: Department of Energy and Climate Change, Redpoint modelling, 2050 Calculator

50. The scenarios modelled in this plan show that by 2030 new nuclear could contribute 10–15 GW, with up to 20 GW achievable if build rates are higher; fossil fuel generation with CCS could contribute as much as 10 GW; and renewable electricity could deliver anywhere between 35 and 50 GW – depending on assumptions about costs and build rates.

51. By the end of the fourth budget period, our analysis suggests that emissions from electricity generation could be between 75% and 84% lower than 2009 levels.

### Agriculture, land use, forestry and waste

52. As set out above, the majority of emissions reductions will come from action in buildings, transport, industry and electricity generation. However, efforts elsewhere will continue to contribute – in the next decade, during the fourth carbon budget period, and ultimately to meeting the 2050 target.

53. In 2009, agriculture, forestry and land management together accounted for around 9% of UK emissions. The Government is encouraging practical actions which lead to efficiencies such as improved crop nutrient management and better breeding and feeding practices, which save both money and emissions. The Government is also working to improve its evidence base to better understand what this sector can feasibly deliver in the future. The Government will undertake a review of progress towards reducing greenhouse gas emissions from agriculture in 2012 which will assess the impact of existing measures and highlight further policy options. Next spring an independent panel will provide advice on the future direction of forestry and woodland policy in England.

54. In 2009, emissions from waste management represented a little over 3% of the UK total. The Government is committed to working towards a zero waste economy, and by 2050 it is estimated that emissions of methane from

landfill (responsible for around 90% of the sector's emissions) will be substantially below current levels. The Government is working to improve our scientific understanding of these emissions so that they can be managed better. Our strategy over the next decade was set out in the Action Plan which accompanied the Review of Waste Policy in England, and includes increases to the landfill tax. By the end of 2013 the Government will develop a comprehensive Waste Prevention Programme, and work with businesses and other organisations on a range of measures to drive waste reduction and re-use.

### A plan that adds up

55. Part 3 of this report outlines some illustrative scenarios to demonstrate different ways in which the fourth carbon budget could be met through different combinations of the various ambitions in the different sectors. As the Government develops its policy framework further it will look to meet the fourth budget in the most cost effective and sustainable way and keep costs under review, developing clear impact assessments and consulting publicly on policies before it implements them. A full list of the Government's energy and climate change commitments for this Parliament is set out at Annex C.

56. We will also continue to work on the international stage to ensure that this is a genuinely collaborative global effort. Other countries are already taking actions to decarbonise their economies and we will continue to push for ambitious action both in the EU and globally. At the EU level, the UK is pushing for the EU to show more ambition by moving to a tighter 2020 emissions target, which in turn will drive a more stringent EU ETS cap. We will review our progress in 2014. If at that point our domestic commitments place us on a different emissions trajectory than the ETS trajectory agreed by the EU, we will, as appropriate, revise up our budget to align it with the actual EU trajectory.<sup>7</sup>

<sup>7</sup> Before seeking Parliamentary approval to amend the level of the fourth carbon budget, the Government will take into account the advice of the Committee on Climate Change, and any representations made by the other national authorities.

## Building a coalition for change

57. To make this transition, industry, the Government and the public need to be pulling in the same direction.

58. For industry, the global low carbon market is projected to reach £4 trillion by 2015 as economies around the world invest in low carbon technology. The innovation challenge for industry is in business models as well as technologies, with electric vehicles, renewable electricity and solid wall insulation requiring upfront investment, but delivering large savings in operating costs.

59. Industry must lead, but the Government can facilitate. This plan provides more clarity on the scale of the UK market opportunity and the pace of transition. In the next decade, the state will support innovation to ensure that key technologies can get off the ground. Rather than pick a winning technology, the Government will create markets that enable competing low carbon technologies to win the largest market share as the pace of change accelerates in the 2020s. New business models require new institutional frameworks that underpin long-term investment. That is the purpose behind both the Green Deal

and Electricity Market Reform. As we make the transition, the state will need to solve co-ordination problems and ensure that the system as a whole coheres – for example, to understand when infrastructure decisions are required relating to the electricity grid, the gas network and charging points for electric cars.

60. The plans for new electricity infrastructure and changes in the way in which we travel and heat our homes will require public support. While public opinion is in favour of tackling climate change, there is little agreement over how to go about it. This plan shows that the UK can move to a sustainable low carbon economy without sacrificing living standards, but by investing in new cars, power stations and buildings. However, it will require the public to accept new infrastructure and changes to the way in which we heat homes, and to be prepared to invest in energy efficiency that will save money over time. As part of this Carbon Plan, the Government is launching a new 2050 Calculator, to enable a more informed debate about UK energy choices and develop a national consensus on how we move to a low carbon economy. The Government will also use this plan to build more consensus globally on how moving to a low carbon transition is a practical and achievable goal.

## Annex C: Carbon Plan action summary

| Area                                  | Start date | End date | Description  | Department(s) responsible | Is action in Departmental Business Plan published Nov 2010? |
|---------------------------------------|------------|----------|--|---------------------------|---|
| Secure, sustainable low carbon energy | Started    | Dec-2011 | Publication of refreshed Electricity Networks Strategy Group (ENSG) analysis of potential transmission network requirements to meet 2020 renewable energy targets (2020 Vision)  | DECC                      | N   |
|                                       | Started    | Dec-2011 | Set arrangements for the independent assessment of the safety, security and environmental impact of new reactor designs  | DECC                      | Y(DECC)   |
|                                       | Started    | Dec-2011 | Finalise the framework that will ensure that new nuclear operators have arrangements in place to meet the full costs of decommissioning and their full share of waste management costs through publication of statutory Funded Decommissioning Guidance and a pricing methodology for government taking ownership of the operator's waste  | DECC                      | Y(DECC)   |
|                                       | Started    | Apr-2012 | Publish National Planning Policy Framework   | DCLG                      | Y(DCLG)   |
|                                       | Started    | Apr-2012 | Introduce as part of the national planning framework a strong presumption in favour of sustainable development   | DCLG                      | Y(DCLG)   |
|                                       | Started    | Apr-2012 | Undertake first major review of Feed-in Tariffs for small-scale renewable energy; consult and implement changes (fast-track consideration of some aspects to be completed in 2011)   | DECC                      | Y(DECC)   |
|                                       | Apr-2012   | Apr-2012 | Transfer relevant functions from the Infrastructure Planning Commission (IPC) into the Major Infrastructure Planning Unit  | DCLG                      | Y(DCLG)   |
|                                       | Started    | May-2012 | Deliver Electricity Market Reform (EMR) clauses for inclusion in an early second session Energy Bill, which will implement: a new Feed-in-Tariff with Contracts for Difference (FIT CfD) for all low carbon technologies; a Capacity Mechanism to ensure security of supply; an Emissions Performance Standard (EPS); and the institutional arrangements necessary to deliver them | DECC                      | N   |



| Area   | Start date | End date | Description   | Department(s) responsible | Is action in Departmental Business Plan published Nov 2010? |
|--|------------|----------|---|---------------------------|---|
| <b>Secure, sustainable low carbon energy (continued)</b> | Dec-2012   | Dec-2012 | Publish, with the nine other nations in the North Seas Countries' Offshore Grid Initiative, North Sea grid configuration options and proposals for tackling regulatory, legal, planning and technical barriers  | DECC                      | Y(DECC)   |
|  | Started    | Apr-2013 | Work with the Department for Communities and Local Government to allow communities that host renewable energy projects to keep the additional business rates they generate – implement business rate retention for renewable energy development         | DECC                      | Y(DECC)   |
|  | Started    | Apr-2013 | Conduct four-yearly review of Renewables Obligation (RO) Banding (levels of financial support for different technologies) to ensure that the RO provides the correct level of support to maintain investment in large-scale renewable energy generation | DECC                      | Y(DECC)   |
|  | May-2012   | Apr-2013 | Legislation will be brought forward as soon as Parliamentary time allows for the establishment in statute of an independent Office for Nuclear Regulation   | DECC                      | N   |
|  | Apr-2013   | Apr-2013 | New RO Bands implemented (except for offshore wind)   | DECC                      | Y(DECC)   |
|  | Apr-2014   | Apr-2014 | New RO Bands implemented for offshore wind  | DECC                      | Y(DECC)   |
| <b>Saving energy in homes and communities</b>            | Started    | Dec-2011 | To set up a new Energy Efficiency Deployment Office (EEDO)  | DECC                      | N   |
|  | Started    | Jun-2012 | Review water efficiency advice to be given as part of broader sustainability information available under the Green Deal   | Defra                     | N   |
|  | Started    | Apr-2012 | Improve the content, format and quality of Energy Performance Certificates (EPCs) to support the Green Deal, and ensure requirements are complied with  | DCLG, DECC                | N   |
|  | Started    | Jul-2012 | Subject to consultation, work with industry to confirm technical specifications and begin roll-out of Smart Meters across Britain   | DECC                      | Y(DECC)   |
|  | Started    | Oct-2012 | Develop policies to increase demand for the Green Deal, alongside core finance offer  | DECC                      | Y(DECC)   |
|  | Started    | Oct-2012 | Support Green Deal implementation by providing access to EPC data   | DCLG, DECC                | N   |

| Area  | Start date | End date | Description  | Department(s) responsible | Is action in Departmental Business Plan published Nov 2010? |
|---|------------|----------|--|---------------------------|---|
| <b>Saving energy in homes and communities (continued)</b> | Started    | Oct-2012 | Drive Green Deal demand by introducing energy efficiency regulations for private rented sector housing and commercial rented property from 2018 (conditional on there being no net or upfront costs to landlords) and consider as part of the Part L 2013 Building Regulations review ways of generating take-up of greater levels of energy efficiency measures in existing buildings in order to help support demand for the Green Deal. | DCLG, DECC                | N   |
|   | Started    | Oct-2012 | Encourage local authorities to become involved in delivering energy efficiency in their areas and social landlords to take action to improve the energy performance of their social housing stock, which will also stimulate the Green Deal and provide greater certainty to suppliers, e.g. through Permissive Guidance to be published by April 2012   | DCLG, DECC                | N   |
|   | Started    | Jan-2012 | Consult on secondary legislation to enable the Green Deal, including the new obligation on energy companies  | DECC                      | Y(DECC)   |
|   | Dec-2011   | Mar-2012 | Consult on revisions to Part L 2013 conservation of fuel and power of the Building Regulations   | DCLG                      | Y(DCLG)   |
|   | Jan-2012   | Mar-2012 | Lay secondary legislation to enable the Green Deal before Parliament   | DECC                      | Y(DECC)   |
|   | 2016       | 2016     | Zero carbon standard comes into effect for new homes   | DCLG                      | N   |
| <b>Reducing emissions from business and industry</b>      | Started    | Dec-2011 | Put staff and back office systems in place for the Green Investment Bank, in preparation for the launch of the incubation phase  | BIS                       | Y(BIS)  |
|   | Started    | Dec-2011 | Publish report outlining abatement potential, barriers and opportunities for key energy intensive sectors  | BIS, DECC, HMT            | N   |
|   | Started    | Dec-2011 | Continue market testing for the role of the Green Investment Bank beyond the incubation phase  | BIS                       | Y(BIS)  |
|   | Started    | Jan-2012 | Consult on secondary legislation to enable the Green Deal, including the new obligation on energy companies  | DECC                      | Y(DECC)   |
|   | Jan-2012   | Jan-2012 | Lay secondary legislation to enable the Green Deal before Parliament   | DECC                      | Y(DECC)   |
|   | Dec-2011   | Mar-2012 | Consult on revisions to Part L 2013 conservation of fuel and power of the Building Regulations   | DCLG                      | Y(DCLG)   |

| Area  | Start date | End date | Description   | Department(s) responsible | Is action in Departmental Business Plan published Nov 2010? |
|---|------------|----------|---|---------------------------|---|
| Reducing emissions from business and industry (continued) | Started    | Jun-2012 | Review water efficiency advice to be given as part of broader sustainability information available under the Green Deal   | Defra                     | N   |
|   | Sep-2012   | Sep-2012 | Green Investment Bank operational   | BIS                       | Y(BIS)  |
|   | Started    | Mar-2013 | Encourage voluntary take-up of Display Energy Certificates to the commercial sector   | DCLG, DECC                | N   |
|   | Started    | Oct-2012 | Develop policies to enable application of the Green Deal to the commercial sector, alongside household offer  | DECC                      | N   |
|   | May-2013   | May-2013 | First annual data released on the funds in and size of investments made by the Green Investment Bank  | BIS                       | Y(BIS)  |
|   | 2019       | 2019     | Zero carbon standard comes into effect for new non-domestic buildings   | DCLG                      | N   |
| Towards low carbon transport                              | Dec-2011   | Dec-2011 | Complete transposition of transport elements of the Renewable Energy Directive  | DfT                       | N   |
|   | Dec-2011   | Dec-2011 | Complete transposition of greenhouse gas (GHG) savings requirements of the Fuel Quality Directive   | DfT                       | N   |
|   | Started    | Jan-2012 | Implement the inclusion of aviation within the EU Emissions Trading System  | DfT                       | Y(DfT)  |
|   | Started    | Mar-2012 | Review strategy to support transition from early ultra-low emission vehicle market to mass market   | DfT                       | Y(DfT)  |
|   | Started    | Mar-2012 | Push for early EU adoption of electric vehicle infrastructure standards   | DfT                       | Y(DfT)  |
|   | Dec-2011   | May-2012 | Establish (a) a National Chargepoint Registry that will allow chargepoint manufacturers and operators to make information on their infrastructure, including location, available in one place; and (b) a Central Whitelist that enables users of chargepoint networks to access chargepoints across the country | DfT                       | N   |
|   | May-2012   | May-2012 | Release details on the second tranche of projects to be supported by the Local Sustainable Transport Fund   | DfT                       | N   |
|   | Mar-2012   | Jul-2012 | Consult on sustainable aviation framework for UK  | DfT                       | Y(DfT)  |
|   | Mar-2012   | Aug-2012 | Launch of competition for low carbon trucks demonstration trial.  | DfT                       | N   |
|   | Jun-2012   | Jun-2012 | Release details on the large projects to be supported by the Local Sustainable Transport Fund   | DfT                       | N   |

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|---|------------|----------|---|---------------------------------|---|
| <b>Towards low carbon transport (continued)</b> | Mar-2012   | Aug-2012 | Launch of competition for public gas refuelling infrastructure projects (for gas-fuelled trucks)  | Dft                             | N   |
|   | Jan-2012   | Sep-2012 | Review progress from industry-led schemes to reduce fuel consumption and emissions from the freight sector and reconsider the case for government intervention  | DfT                             | N   |
|   | Dec-2012   | Dec-2012 | Decide whether or not to include international aviation and shipping in UK carbon budgets and 2050 target   | DfT, DECC                       | N   |
|   | Started    | Jan-2013 | Provide input into the European Commission's ongoing review of the EU's new car and van CO <sub>2</sub> targets for 2020  | DfT                             | N   |
|   | Started    | Mar-2013 | Release second round funding to successful bidders for Plugged-in Places pilots programme to encourage the establishment of electric vehicle recharging infrastructure                                      | DfT                             | Y(DfT)  |
|   | Mar-2013   | Mar-2013 | Adopt sustainable aviation framework  | DfT                             | Y(DfT)  |
|   | Mar-2013   | Jun-2013 | Provide an update to the Plug-in Vehicle Infrastructure Strategy  | DfT                             | N   |
| <b>Cutting emissions from waste</b>             | Started    | May 2015 | Implement the set of actions outlined in the Review of Waste Policies in England  | Defra                           | N   |
| <b>Managing land sustainably</b>                | Started    | Jun-2012 | Conduct a pilot project to develop and trial methods for delivering integrated environmental advice for farmers (including on reducing GHG emissions)   | Defra                           | Y(Defra)  |
|   | Apr-2012   | Apr-2012 | The Independent Panel on Forestry makes recommendations on the future direction of forestry and woodland policy in England. The Government will respond in due course.                                      | Defra, Forestry Commission      | N   |
|   | Started    | Jun-2012 | Publication of Sustainable Growing Media Taskforce roadmap  | Defra                           | N   |
|   | Apr-2012   | Nov-2012 | Review of progress made towards reducing GHG emissions from agriculture   | Defra                           | Y(Defra)  |
|   | Jan-2015   | Dec-2015 | Horticultural Use of Peat policy progress review  | Defra                           | N   |
|   | Started    | 2016     | Invest £12.6 million to improve the GHG inventory for agriculture, thereby strengthening our understanding of on-farm emissions   | Defra, Devolved Administrations | Y(Defra)  |
|   | May-2012   | 2017     | Initiate a research programme on Sustainable Pathways for Low Carbon Energy to help understand what a sustainable energy mix would look like in 2050, taking account of cost, GHG savings and wider impacts | Defra                           | N   |

| Area  | Start date | End date | Description  | Department(s) responsible | Is action in Departmental Business Plan published Nov 2010? |
|---|------------|----------|--|---------------------------|---|
| Reducing emissions in the public sector         | Started    | Mar-2015 | Reduce GHG emissions, waste generated, water consumption and domestic business air travel and encourage sustainable procurement for the whole central government estate  | CO, All departments       | N   |
| Developing leadership within the European Union | Started    | Dec-2011 | Support the European Commission to publish an energy roadmap to 2050 which sets out scenarios for how the power industry can be decarbonised and maximise Member States' support   | DECC                      | Y(DECC)   |
|   | Started    | Dec-2011 | Encourage a strong EU position in the UN Framework Convention on Climate Change negotiations in Durban, South Africa   | FCO, DECC                 | Y(FCO)  |
|   | Started    | Dec-2011 | Agree EU legislation on transparency and integrity of wholesale energy markets   | DECC                      | N   |
|   | Started    | Jun-2012 | Agree EU legislation on energy infrastructure to support projects of European interest and facilitate commercial infrastructure investment needed for security of supply and low carbon transition   | DECC                      | Y(DECC)   |
|   | Started    | Oct-2012 | Support the European Commission in implementing the low carbon roadmap   | DECC                      | N   |
|   | Started    | Dec-2012 | Complete review of EU regulation on fluorinated greenhouse gases and conclude possible negotiations on any proposals   | Defra                     | N   |
|   | Started    | Dec-2012 | Work with the EU to agree energy efficiency and labelling standards for remaining energy using products in residential and tertiary sectors, and some industrial products  | Defra                     | Y   |
|   | Started    | Dec-2012 | Work with international partners to increase take-up of effective product policies and to move towards harmonised global product standards   | Defra                     | N   |
|   | Started    | Dec-2012 | Work with partners in Europe to establish standards for smart grids and Smart Meters by the end of 2012  | DECC                      | N   |
|   | Dec-2012   | Dec-2012 | Complete negotiations on next EU budget spending period (Multiannual Financial Framework (MFF)) – including agreeing an increase in the share of low carbon spending within an MFF settlement that increases by no more than inflation overall | HMT                       | N   |



| Area   | Start date | End date | Description   | Department(s) responsible | Is action in Departmental Business Plan published Nov 2010? |
|--|------------|----------|---|---------------------------|---|
| <b>Developing leadership within the European Union (continued)</b>                             | Dec-2012   | Dec-2012 | Publish proposals for tackling the regulatory, legal, planning and technical barriers to co-ordinated offshore grid development in the North and Irish Seas   | DECC                      | Y(DECC)   |
|  | Started    | Dec-2014 | Develop EU technical codes to improve functioning/integration of EU energy markets  | DECC                      | N   |
|  | Started    | May-2015 | Drive efforts within the EU to amend the Emissions Trading Scheme Directive to deliver full auctioning of allowances  | DECC                      | Y(DECC)   |
|  | Started    | May-2015 | Accelerate the global transition to a low carbon climate resilient economy, working with EU institutions and partners   | FCO                       | Y(FCO)  |
|  | Started    | May-2015 | Extend the internal market, energy security and liberalisation; promote global free trade with a special regard for global poverty alleviation and co-ordinated action to build a low carbon economy and avoid dangerous climate change; implement the Energy Third Package effectively | FCO                       | Y(FCO)  |
| <b>Building the case for global ambition with key countries and international institutions</b> | Started    | Dec-2011 | Subject to funding, UK Climate Security Envoy to have engaged with US, Canada, Japan, African Union and Australia on national and global security risks of climate change   | FCO, MOD, DECC            | N   |
|  | Started    | Dec-2011 | Agree action plan for co-operation with Norway on oil and gas, carbon capture and storage and renewables  | DECC                      | Y(DECC)   |
|  | Started    | Dec-2011 | Support the Government of India in its work to improve industrial energy efficiency, including through the PAT scheme and building of capacity to enable Indian industry to take full advantage of the scheme   | DECC, DFID                | N   |
|  | Started    | Feb-2012 | Monitor the carbon impacts of UK consumption of goods and services by obtaining updated annual estimates of 'embedded' carbon emissions   | Defra                     | N   |
|  | Apr-2012   | Apr-2012 | UK hosts Clean Energy Ministerial meeting, securing further progress on practical collaborations on key low carbon technologies   | DECC                      | N   |
|  | May-2012   | May-2012 | Secure continued commitment to ambitious action on international climate change via the G8 summit   | DECC, FCO                 | N   |
|  | Jun-2012   | Jun-2012 | Take part in UN Conference on Sustainable Development (Rio+20) discussions on Green Economy in the context of sustainable development and poverty eradication and institutional frameworks  | Defra                     | Y(Defra)  |

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|--|------------|----------|---|---------------------------|---|
| <b>Building the case for global ambition with key countries and international institutions (continued)</b> | Started    | Dec-2012 | Continued in principle support for phase-down of hydrofluorocarbon production and use, using the Montreal Protocol  | Defra                     | Y(Defra)  |
|  | Started    | Dec-2012 | Work with the Convention on Biological Diversity to improve synergies between climate change and biodiversity policy, including on biodiversity safeguards in REDD+ strategies to reduce emissions from deforestation           | Defra                     | N   |
|  | Started    | May-2015 | Low carbon campaign in priority markets of India, China, Brazil and US West Coast, in addition to support for low carbon exporters in other markets   | UKTI                      | N   |
| <b>Supporting the development of low carbon, climate resilient economies</b>                               | Started    | Dec-2011 | Agree action plan for co-operation with Norway on oil and gas, carbon capture and storage (CCS) and renewables  | DECC                      | Y(DECC)   |
|  | Started    | Nov-2012 | Continuing to engage bilaterally with key countries and international fora involved in CCS such as the Carbon Sequestration Leadership Forum, the International Energy Agency, the Global CCS Institute and European CCS bodies | DECC                      | N   |
|  | Nov-2012   | Nov-2012 | Publish final EU report on fast-start funding   | DECC, DFID, HMT           | N   |
|  | Started    | Dec-2012 | Encourage governments, through a range of initiatives, to design and deliver low carbon development   | DECC                      | N   |
|  | Started    | Dec-2012 | Establish the Capital Markets Climate Initiative to use private sector expertise to test new and innovative instruments for leveraging private finance to tackle climate change in developing countries                         | DECC, DFID                | Y(DECC)   |
|  | Started    | Dec-2012 | Deliver £300 million of UK fast start finance to reduce emissions from deforestation  | DECC, DFID, Defra         | Y(DECC)   |
|  | Started    | Dec-2013 | Roll out Strategic Climate Programme Reviews in all programme countries to ensure that climate issues are addressed in DFID country business plans  | DFID                      | Y(DFID)   |
|  | Started    | Dec-2014 | Support, together with commitments from other donors, the Global Environment Facility (GEF)   | DFID                      | N   |

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|---|------------|----------|---|---------------------------|---|
| Supporting the development of low carbon, climate resilient economies (continued) | Started    | Apr-2015 | Support for a range of programmes at country level through DFID's bilateral programme to support poor countries to adapt to climate change, protect forests and support low carbon development  | DFID                      | N   |
|   | Started    | Apr-2015 | Support the Climate and Development Knowledge Network (CDKN) to enable developing countries to access the best climate change knowledge, research and data to enable them to build resilience to climate change, adopt low carbon growth and tackle poverty | DFID                      | N   |
|   | Started    | Apr-2015 | Complete the disbursement of £2.9 billion of climate finance  | DECC, DFID, HMT, Defra    | N   |
| Ensuring progress within international climate negotiations                       | Started    | Dec-2011 | Design a new international Green Fund with international partners   | DECC                      | Y(DECC)   |
|   | Started    | Dec-2011 | Work for a comprehensive global agreement on climate, including securing significant progress at the UN Framework Convention on Climate Change (UNFCCC) negotiations in Durban, South Africa  | FCO, DECC                 | Y(FCO)  |
|   | Dec-2012   | Dec-2012 | Work through the UNFCCC negotiations to make progress towards a global deal on reducing emissions and the provision of climate finance  | DECC                      | N   |
|   | Sep-2012   | Mar-2013 | Monitor and evaluate the impact and value for money of the Advocacy Fund to help the poorest countries take part in international negotiations  | DFID                      | Y(DFID)   |
|   | Dec-2013   | Dec-2013 | Negotiations under the International Civil Aviation Organization and the International Maritime Organization to encourage reduction in emissions from the aviation and maritime sectors   | DfT                       | N   |
|   | 2013       | 2015     | Support work through the UNFCCC to review progress towards the 2 degree target and its adequacy in the light of the latest science  | DECC                      | N   |

| Area   | Start date | End date | Description   | Department(s) responsible                                       | Is action in Departmental Business Plan published Nov 2010? |
|--|------------|----------|---|---|---|
| Action in Northern Ireland, Scotland and Wales | Started    | Dec-2011 | Achieve emissions reductions from new buildings through a progressive tightening of thermal standards required under Building Regulations. Department of Finance and Personnel (DFP) to take this forward in two stages – 2011 and 2013 | DFP   | n/a   |
|  | Started    | Mar-2012 | Consider Planning Policy Statement 1 (Sustainability) which is being undertaken to take account of, and give support to, planning reform implementation   | DOE   | n/a   |
|  | Started    | Dec-2012 | Achieve renewable electricity target of 12% as part of the Department of Enterprise, Trade and Investment (DETI) Strategic Energy Framework (SEF)   | DETI  | n/a   |
|  | Jan-2013   | Mar-2013 | Achieve emissions reductions from new buildings through a progressive tightening of thermal standards required under Building Regulations. DFP to take this forward in two stages – 2011 and 2013                                       | DFP   | n/a   |
|  | Started    | Mar-2014 | Deliver Sustainable Development Plan  | Office of the First Minister and deputy First Minister (OFMDFM) | n/a   |
|  | Started    | Mar-2015 | Refine agricultural greenhouse gas inventories  | DARD  | n/a   |
|  | Jan-2011   | 2020     | Achieve renewable electricity target of 40% as part of the DETI SEF   | DETI  | n/a   |
|  | Jan-2011   | 2020     | Achieve heat from renewable sources target of 10% as part of the DETI SEF   | DETI  | n/a   |
|  | Dec-2011   | Dec-2011 | Limit on use of carbon units to be set for 2013–17 (with successive batches at five-year intervals thereafter)  | Scottish Government   | n/a   |
|  | Dec-2011   | Dec-2011 | Target to generate 31% of final electricity demand from renewables  | Scottish Government   | n/a   |
|  | Jan-2012   | Jan-2012 | Report on progress requested from the Committee on Climate Change (and annually thereafter)   | Scottish Government   | n/a   |
|  | Mar-2012   | Mar-2012 | Scottish Government response to Committee on Climate Change progress report (and annually thereafter)   | Scottish Government   | n/a   |

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|--|------------|----------|--|---------------------------|---|
| Action in Northern Ireland, Scotland and Wales (continued) | Jun-2012   | Jun-2012 | Report on Proposals and Policies for 2023–27   | Scottish Government       | n/a   |
|  | Oct-2012   | Oct-2012 | Scottish Government report on whether annual target met (and annually thereafter)  | Scottish Government       | n/a   |
|  | Jan-2013   | Jan-2013 | Implementation of outcomes of review of new-build domestic energy standards for 2013 – intention of further improvement to achieve a 60% reduction in emissions compared with 2007 | Scottish Government       | n/a   |
|  | Dec-2013   | Dec-2013 | 50% of waste collected from households to be recycled, composted and prepared for re-use   | Scottish Government       | n/a   |
|  | Oct-2011   | Oct-2011 | UK Climate Change Committee advice to Welsh Government on delivery of Climate Change Strategy and review of actions (and annually thereafter)                                      | Welsh Government          | n/a   |
|  | Dec-2011   | Dec-2011 | Climate Change Commission for Wales report on Welsh Government delivery of Climate Change Strategy (and annually thereafter)   | Welsh Government          | n/a   |
|  | Jan-2012   | Mar-2012 | Welsh Government report to National Assembly for Wales on delivery of Climate Change Strategy and refresh of Delivery Plans (and annually thereafter)                              | Welsh Government          | n/a   |
|  | Sep-2012   | Sep-2012 | Final greenhouse gas emissions inventory figures for 2010, enabling confirmation of 2006–10 average emissions baseline (against which the 3% target is measured)                   | Welsh Government          | n/a   |
|  | Sep-2013   | Sep-2013 | Greenhouse gas emissions inventory figures for 2011, enabling accurate reporting of progress for first year of 3% target (and annually thereafter)                                 | Welsh Government          | n/a   |