

DECC Carbon Management Plan



Carbon Management Plan (rev 2)

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Owner: Karen Dell

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DECC's Revised Carbon Management Plan

Introduction

As we approach the final year of DECC's Carbon Management Plan we are taking the opportunity to:

- review our progress over the past year, and since the baseline year of 2009/10;
- outline our projects and projected carbon savings for the coming year; and
- consider options for the future of carbon management in DECC beyond 2015.

DECC has made good progress against the targets set out in the Carbon Management Plan. Emissions are down 45% compared to the baseline year and down 7% on 2011/12 providing evidence that the Carbon Management Plan is working as intended and is a successful tool for achieving DECC's carbon reduction objectives as they apply to our own estate and operations.

However, emissions from buildings have increased 4% in 2012/13 compared to 2011/12. As a result, the focus of our efforts in 2013/14 will be twofold:

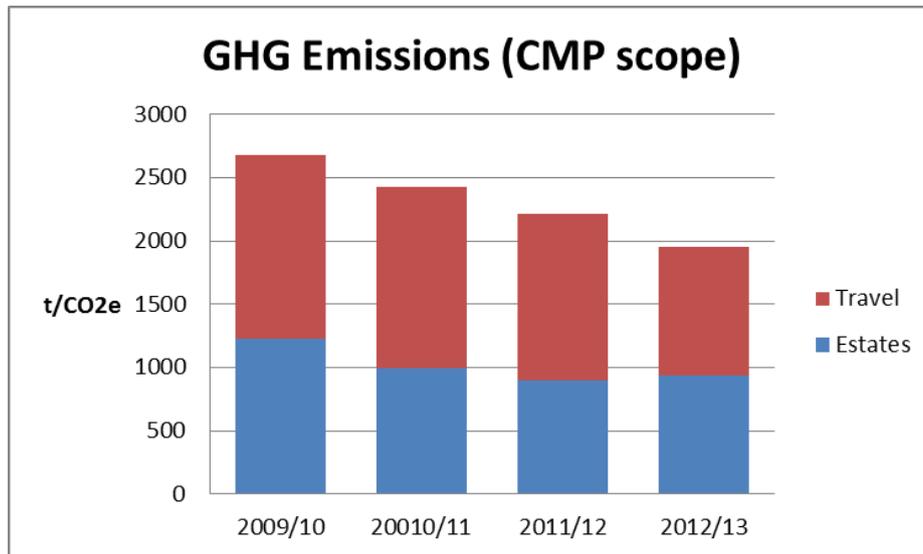
- Embedding existing savings systematically through the implementation of an Energy Management System (EnMS) certified to ISO 50001.
- Implementing several major carbon/energy saving measures.

This revision provides an update on our progress towards the targets set out in the Plan and on the implementation of carbon reduction projects over 2012/13. It also outlines our carbon reduction plans for the coming year and looks ahead, touching on carbon and energy management in DECC beyond 2015. We will report our progress and provide an update on carbon saving projects again in July 2015. In the interests of clarity and convenience, the original plan is retained, largely un-amended, and the key messages and changes are presented in these opening pages. We hope this will make our progress and future carbon reduction plans easier for the reader to follow without necessarily having to read the entire Plan from scratch.

PART A – PROGRESS

Performance to date

The Targets and Objectives section of the main Plan (at page 15) gives our overarching objective to reduce carbon emissions by 25% by 2014/15 as well as the more specific targets which support this. At the end of the 2011/12 reporting year DECC had reduced its greenhouse gas emissions covered by the scope of the Plan by 45% compared to the baseline year. This means we are exceeding our target to reduce greenhouse gas emissions by 25% by 2014/15 compared to 2009/10 baseline. Despite our good performance in previous years, we have still managed to reduce emissions by 7% in the past year (2012/13 compared to 2011/12). DECC's performance is summarised in the graph below.



Performance against the other targets in our Plan are:

Target	RAG Status	Comments
Reduce emissions from our offices by 11% for the period 14 May 2010 to 14 May 2011 compared with the same period the previous year.		This was the target we set ourselves in order to achieve the Prime Minister's target of a 10% carbon reduction across the government estate during that time period. We actually achieved a reduction of 21.3. % - comfortably exceeding the target.
Reduce emissions from our buildings by 20% by 2014/15 compared to 2010/11		Emissions from our offices have been cut by 6.6% compared to 2010/11. However, it will become increasingly difficult to make further savings because we have exhausted all of the quick and cheaper wins and as we have expanded our estate significantly since the baseline year. 55 Whitehall was added from April 2011 and Kings building from October 2013. This is one of the most challenging targets in the Plan.
Reduce emissions from business related travel by 20% by 2014/15 compared to 2009/10		Travel related emissions have been cut by 30% compared to 2009/10 and are exceeding the CMP target. Staff switching away from first or business class travel when flying as well as reducing the overall number of flights has been a big factor in this. However, it is difficult to predict the level of air travel going forward and maintaining this achievement is likely to be a challenge.
Maintain a D DEC rating for 3 Whitehall Place		We had a D rating with a score of 100 when the Carbon Management Plan was published. By April 2013 we had improved this to a C rating with a score of 75. However, this is only just within the C range and given the pressures of increased staff number is unlikely to be maintained beyond 2014, reverting to a D rating.

2012/13 Projects

Section 4 of the main Plan lists projects planned for 2011/12 through to 2014/15. Mostly these plans have been revised, following further feasibility studies and reflecting the changes in our estate, technology and prices since the plan was published. The projects originally scheduled for 2012/13 were estimated to save 31.2 tonnes of carbon per annum. The projects actually implemented are estimated to save 47.6 tonnes.

The table below shows the carbon projects completed in 2012/13. These projects were agreed by the Carbon Management Programme Team at its meeting on 17 May 2012. Good progress has been made with six out of eight planned carbon saving projects being completed in 2012/13 with estimated annual carbon savings of 47 tonnes and a payback of under 9 years. One of the projects, the printer re-fresh, was not primarily a carbon saving project but, because of sustainability criteria used in the purchase process, it is expected to yield significant carbon and waste savings. One project, LED lighting panels in office areas, was put on hold following advice from a lighting engineer which indicated that the cost of these panels remains prohibitive. However, this is being re-considered in 2013/14 – see below. A second uncompleted project, the domestic hot water boiler, was carried forward to 2013/14 and was completed in July 2013.

A total of £71,961 was invested with financial saving estimated at £8,271 per annum. This is more than the spend in 2011/12 (£62,267) and the payback has increased slightly from 8.5 to 8.7 years reflecting the fact that DECC has already made huge carbon savings on its estate and has exhausted all the quick and cheap wins. Only £23,500 was originally scheduled for 2012/13 when the Plan was published. The increased cost and comparatively long payback period is mainly because of the inclusion of the kitchen ventilation heat recovery project which recycles heat generated in the kitchen of our HQ building which would otherwise be wasted and uses it to raise the temperature in the adjoining canteen. This project is not intended primarily as a carbon saving project. It is a measure to improve staff comfort by increasing the temperature of the canteen in the most carbon efficient way.

Project	Cost	Savings	Savings *	Payback	Status
Kitchen heat recovery	31,206.00	300.00	3.00	NA	
Balancing of office air supplies & extracts	5,479.20	680.00	5.90	8.00	
Lighting controls	6,000.00	980.00	8.90	6.00	
Solar film (VS60)	20,146.00	4,274.00	9.80	4.70	
Led lighting panels	NK	NK	NK	NK	
Radiator insulation panels at 55	9,130.00	2,037.00	5.00	4.48	
Printer re-fresh	NA	NK	15.00	NK	
Dedicated HW system at 3WHP	63,312.00	5,313.00	29.70	11.90	
Total	135,273.20	13,584.00	77.30	9.96	
Total for projects completed 2012/13	71,961.20	8,271.00	47.60	8.70	

Projects Planned for 2013/14

Projects being considered for 2013/14 are estimated to cost £527,633 and save 135 tonnes of carbon. This is considerably more than envisaged when the Plan was published back in 2011 and reflects the need to counter rising emissions from our buildings, and particularly to offset increased emissions from our enlarged estate. The average payback period is expected to be around 11 years.

A number of projects will be investigated, and possibly implemented as part of the Mayor of London's RE:FIT Programme. This programme is the Mayor of London's initiative that provides a framework for the public sector to retrofit existing buildings with energy saving measures. It has been designed especially for the public sector which provides a faster, streamlined procurement process and support in managing this and a savings guarantee from contractors. Following a lighting review of 3 Whitehall Place, the use of LED lighting panels is being piloted in part of the building with a view to rolling out to all the office areas before the end of the financial year. This project could deliver significant carbon savings whilst also improving

working conditions for DECC staff. A number of initiatives aimed at behaviour change have already been implemented in DECC including the setting up of a Green Champions network in April 2013 and the inclusion of business related travel emissions by Group in the Monthly Finance Report which receives wide circulation throughout DECC and its Arm's Length Bodies. Monthly reporting of DECC's performance against the key Greening Government Commitments on our intranet is also being developed and more awareness raising measures are being planned.

DECC is also in the process of formalising and documenting its Energy Management System with a view to obtaining ISO 50000 certification later in 2013.. Whilst not a carbon saving project as such, it is a measure intended to embed existing energy practices and maintain carbon savings already made.

Project	Cost	Savings	Savings	Payback	Status
	£	£ p/a	CO2e p/a	Years	
Dedicated HW System at 3WP	63,312.00	5,313.00	29.70	11.90	
LED lighting in office areas at 3WP	252,000.00	18,792.00	53.00	13.40	
Pilot of LED lighting in touchdown zone	NA	NA	NA	NA	
Free cooling to server room 3WP	NK	NK	NK	NK	
Heat Recycling from main air handlers 3WP.	NK	NK	NK	NK	
Heat exchangers for hot water at 3WP	15,000.00	767.81	5.30	19.50	
Replace heat exchangers for heating at 55W	NK	NK	NK	NK	
RE:FIT Programme	200,000.00	20,676.00	41.30	9.70	
Reducing capacity of calorifier at 55	NK	NK	NK	NK	
Spring/autumn natural ventilation at 3WP	0.00	2,086.00	11.00	NA	
BMS controls (feasibility study/design)	2,500.00	NA	NA	NA	
Further automation of BMS controls	NK	NK	NK	NK	
Refinement to lighting controls at 3WP	0.00	NK	NK	NA	
Modifications to real time display widget	NK	NK	NK	NK	
LED lighting in loading bay	NK	NK	NK	NK	
Green champions	0.00	NK	NK	NA	
EnMS development (ISO 50001)	9,821.00	NA	NA	NA	
Total	542,633.00	47,634.81	140.30		
Total less abandoned projects	527,633.00	46,867.00	135.00		

PART B – KEY CHANGES

Scope

Section 2.1 (page 8) of the Plan outlines its scope as the Department of Energy and Climate Change site at 3 Whitehall Place London and the relevant floors of Atholl House in Aberdeen, and from April 2011 DECC extended its estate to include 55 Whitehall. From October 2013 DECC will be acquiring additional space in Kings Building in central London. As emissions from 55 Whitehall and Kings Building are not included in our 2009/10 baseline this has impacted, and will continue to impact, negatively on DECC's overall carbon performance. It is therefore a considerable achievement to have continued to reduce emissions whilst having increased the size of our estate. Carbon emissions per employee (measured per Full Time Equivalent – FTE) have more than halved since 2009/10 having been cut from 2.8 tonnes per FTE to 1.34 tonnes in 2012/13.

PART C – BEYOND 2015: THE FUTURE OF CARBON MANAGEMENT IN DECC

This Carbon Management Plan covers until 31 March 2015. We will be reviewing our approach to carbon management in DECC in the run up to this date to ensure that new carbon management arrangements are fit for purpose. Whilst our overall carbon vision (see section 1.1) is likely to remain ambitious, carbon

management in DECC needs to be more closely aligned with our new Energy Management System and any new GHG reduction targets for the Government estate targets beyond 2015. In particular, the new approach must reflect any changes to the DECC Estate and DECC's way of working and be consistent with wider Civil Service reform.

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Foreword from the Carbon Trust

Cutting carbon emissions as part of the fight against climate change should be a key priority for central government organisations. Carbon management is about realising efficiency savings, transparency, accountability and leading by example. The UK government has identified the public sector as key to delivering carbon reduction across the UK in line with its Climate Change Act commitments and the Central Government Carbon Management Service is designed in response to this. It helps organisations to save money on wasted energy and put it to better use in other areas, while making a positive contribution to the environment by lowering carbon emissions.

DECC partnered with the Carbon Trust on this pilot programme in 2010 to realise the substantial carbon and cost savings. This Carbon Management Plan commits DECC to a target of reducing CO₂ by 25% by 2014/15 and underpins potential financial savings and cost avoidance to the organisation of around £763,958 by that date.

Central government organisations can contribute significantly to reducing CO₂ emissions and improving efficiency. The Carbon Trust is therefore very proud to support DECC in their on-going implementation of carbon management.



Richard Rugg
Head of Public Sector
Carbon Trust

Executive Summary

We want the Department of Energy and Climate Change (DECC) to lead by example. We cannot tell organisations and businesses across society to do things that we are not doing ourselves. DECC must therefore be a leader in carbon management, pioneering new techniques and technologies wherever possible. We will share our experiences with other Government departments and more widely with business and the public sector, providing encouragement and advice. Compared with 2009/10, we aim to reduce our carbon footprint from our offices and travel by at least 25% by 2014/2015. Looking further ahead to 2050, DECC will be making full use of low carbon technology whilst smart and agile working methods will help us minimise the total carbon footprint from our office and travel. We shall aspire to a zero carbon footprint for our estate by 2050 in line with the challenge for the rest of the UK built environment.

This Plan covers the period from April 2010 to 31 March 2015. It will help DECC fulfil its carbon management leadership ambition and also ensure it meets more specific objectives of meeting Government wide sustainable operations targets and internal targets such as reducing the DEC rating for our headquarters building at 3 Whitehall Place whilst remaining flexible and responsive to the needs of the organisation.

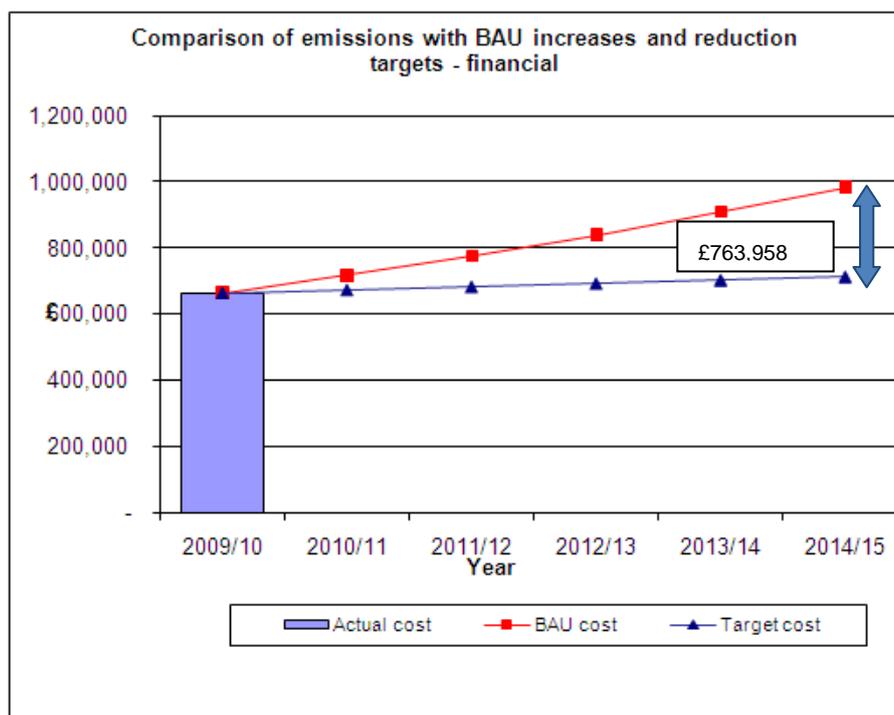
DECC has to meet a number of Government-wide commitments and carbon related targets over the coming years. The most immediate of these is the Prime Minister's 10% carbon reduction target which aims to reduce carbon emissions from the central Government estate by 10% from May 2010 to May 2011 compared to the same period the previous year. Beyond there will be a Government-wide target to achieve a reduction in carbon emissions from its estate and business travel by 2014/15 compared to 2009/10. DECC also has its own internal target to achieve a Display Energy Certificate (DEC) rating of D for 3 Whitehall Place, compared to the current E rating and the initial G rating when DECC moved into 3 Whitehall Place. This was achieved in April 2011.

Our overarching target in this Plan is to reduce carbon emissions from our estate and business travel by 25% by 2014/15 compared to 2009/10 baseline. This target is then broken down into the following strategic targets:

- We aim to reduce emissions from our offices by a further 20% by 31 March 2015 compared to 2010/11.
- We aim to reduce emissions from business travel by 20% by 31 March 2015 compared to the 2009/10 baseline.
- To maintain a D DEC rating for 3 Whitehall Place.

Taking a more long term look we aspire to a zero carbon footprint from our estate by 2050 in line with the challenge for the rest of the UK built environment. We consider these targets to be ambitious in the light of DECC's previous good performance on carbon reduction.

The financial cost (energy bills, air fares etc) of emissions in our baseline year was £662,803. The graph below shows how the cost of our emissions would rise under the business as usual (BAU) scenario (shown in red) compared to the slight increase in financial costs under the emissions reduction target. Under BAU costs would increase from £662,803 to £983,087. An increase of £320,284. This can be contrasted with the much smaller increase of just £49,239 which could be brought about by this Carbon Management Plan. Compared to the BAU scenario this Carbon Management Plan could make significant financial savings. This is referred to as the 'value at stake' and is illustrated in the graph below.



The Carbon Management Plan is estimated to achieve cumulative savings of £763,958, compared to Business as Usual (BAU), over the five year period 2010/11– 2014/15 for an investment of £426,050. The estimated financial investment costs are summarised in the table below alongside estimated operational savings compared to the BAU scenario.

IMPACTS	2010/11	2011/12	2012/13	2013/14	2014/15	TOTAL
Total annual capital cost	£172,900	£58,150	£125,000	£50,000	£20,000	£426,050
Total annual operational savings compared to BAU	£44,790	£93,884	£147,670	£206,570	£271,045	£763,958
Total net impacts	-£128,110	£35,734	£22,670	£156,570	£251,045	£337,908

The Plan outlines existing estates related projects which cost £172,900 initial capital investment and which should deliver annual savings of around £35,874 which gives a payback period of under 5 years. There are further planned projects that would require initial capital investment of around £253,150 and would deliver annual savings of around £46,523 i.e. a payback of 5 years. Should any of these projects prove unfeasible or, fail to deliver the estimated carbon savings, a number of potential future projects are also outlined. The single most significant of the existing projects is the installation of a dedicated server room chiller. This will enable us to switch off the cooling to the whole of the building outside of core office hours, including evenings and weekends. This is the most expensive project we have undertaken at a cost of £91,000 and yet, given the magnitude of energy savings, will pay back in under five years. The chiller went into operation in December 2010 and so far it looks to be on track to deliver a saving of 80 to 90 tonnes a year. Adjustments to the Building Management System will collectively bring about huge savings for a comparatively modest outlay. These include adjustments to heating time controls, air heating unit time controls and introducing a rigorous summer/winter regime.

Going forward DECC is keen to demonstrate leadership in carbon saving measures and would like to invest in several innovative measures which may not in themselves yield sufficient financial savings to justify the investment. A possible example of this would be the project to install phase change ceiling tiles as shown in the table below. Phase change ceiling tiles is a pioneering product that is not yet available on the open market. They contain an innovative substance that absorbs heat from a room thus contributing to cooling without using energy. They also release the heat as the room cools down. They are currently being piloted by DECC on a small scale. If successful, these tiles could be installed more widely at our headquarters at 3 Whitehall Place. The business case for installing solar PV panels to the roof at Whitehall Place will be re-examined over the coming year to factor in the impact of feed-in tariffs. We will also be focussing more on behaviour change techniques using the learning from the CarbonCulture project. The CarbonCulture project is about finding out how to cut emissions through behaviour change in office environments and

then sharing that knowledge with other Government departments, the public sector, businesses and internationally. This will be especially important in achieving our aim of reducing business travel by 20% by 2015.

1. Introduction

The Department of Energy and Climate Change (DECC) was created in October 2008 to tackle the twin challenges of responding to climate change and ensuring the provision of safe and secure energy. Climate change is not only a massive threat to the global environment, it is also perhaps the greatest economic challenge facing us in the twenty-first century. It demands an urgent and radical response across the developed and developing world. DECC's four priority areas as stated in its Structural Reform Plan are:

- Saving energy with the Green Deal and supporting vulnerable consumers
- Delivering secure energy on the way to a low carbon energy future
- Driving ambitious action on climate change at home and abroad
- Managing our energy legacy responsibly and cost-effectively

As the lead UK Government department on climate change, we want to minimise our own environmental impact, running our estate and operations as sustainably as possible. Our Carbon Management Plan helps us do this and supports the priorities listed above.

The purpose of this plan is to outline our carbon management vision and, strategic carbon related objectives. It is designed to be a flexible tool which is capable of responding to the changing needs of the organisation over the coming years and adapting to changing circumstances in this time of uncertainty. It identifies and prioritises actions to reduce our carbon footprint and deliver our carbon management vision but these are not set in stone and a range of options for achieving our overall target are explored in the Plan. This plan focuses on objectives and actions to be taken over the five years of the plan i.e. from 2010 to 2015. However, we also take a longer term look, exploring what successful carbon management might look like in 2050.

1.1 Our low carbon vision

We want DECC to lead by example. We cannot tell organisations and businesses across society to do things that we are not doing ourselves. DECC must therefore be a leader in carbon management, pioneering new techniques and technologies wherever possible. We will share our experiences with other Government departments and more widely with business and the public sector, providing encouragement and advice. Compared with 2009/10, we aim to reduce our carbon footprint from our offices and business travel by at least 25% by 2014/2015. Looking further ahead, DECC 2050 will be making full use of low carbon technology whilst smart and agile working methods will help us minimise the total carbon footprint from our office and travel. We shall aspire to a zero carbon footprint for our estate by 2050 in line with the challenge for the rest of the UK built environment.

1.2 Context and drivers for carbon management

The Intergovernmental Panel on Climate Change (IPCC) has recommended that significant reductions of greenhouse gases, particularly CO₂, are needed immediately in order to prevent the onset of further climate change and that emissions of CO₂ must begin to reduce by 2015 if average global temperature rises are to be reversed. The urgency of dealing with the challenges presented by global warming means that it is imperative that individuals and organisations take action to reduce their emissions of CO₂ and limit further warming.

Through the Climate Change Act the UK has set a goal of a 34% reduction in carbon emissions by 2022 and a long term reduction goal of 80% by 2050. The Government has committed itself to being the 'greenest ever' and has placed an emphasis on the public sector setting a leading example on tackling climate change. On 14 May 2010, the Prime Minister, visiting DECC's London HQ, announced a commitment to a 10% reduction in emissions from central Government over the next 12 months. In November 2010 Defra published an action plan aimed at delivering the 'greenest Government ever' in terms of operations and procurement. This undertook to set stretching targets for the Government estate and procurement, including targets on carbon.

As the lead UK Department on climate change, DECC recognises that it must take a lead to develop a low carbon future and reduce its own contribution to the problem of global warming and demonstrate good practice.

The chief external influences that set the context for, and that will impact on, DECC's future carbon and energy management strategies are set out in the table below.

Table 1: Summary of drivers

CATEGORY	DRIVER	AREA OF IMPACT	NATURE OF IMPACT	CONSEQUENCES, OPPORTUNITIES AND ISSUES FOR CARBON MANAGEMENT
Legislative	Climate Change Act	Estate	Sets legally binding emissions reductions of 34% by 2022 and 80% by 2050 over a 1990 baseline	As the Government department with responsibility for mitigating climate change it is expected to show leadership in meeting the targets
Legislative	Energy Performance of Buildings Directive (2002/91/EC)	Estates	All public buildings of 1,000m ² or more must display a valid Display Energy Certificate (DEC) Cost of compliance	Clearly indicates a buildings energy use and performance. Advisory reports provide detail for use in planning carbon reduction projects.
Political	'Greenest Government ever' commitment	DECC	10% carbon reduction target May 2010 - May 2011 Sustainable operations and procurement targets be set by March 2011.	Greater commitment to carbon management from Ministers and senior management. Improved reputation.
Regulatory & Financial	CRC Energy Efficiency Scheme	DECC	A mandatory "cap & trade" emissions trading scheme for medium sized energy users Liable organisations must report and purchase allowances. for CO ₂ emissions.	Failure to address carbon emissions will increase costs.
Regulatory & financial	Feed in tariffs	DECC	This scheme was introduced in April 2010 and aims to incentivise small scale (less than 5 MW) low carbon energy generation through a guaranteed payment both for the electricity generated and exported.	Savings in energy bills by generating own energy and a further financial incentive from the tariff paid.
Regulatory and financial	Renewable heat incentive	DECC	Introduced from June 2011 this scheme supports a range of renewable heat technologies through payments to bridge	Savings in energy bills by generating own energy and a further financial incentive from the tariff paid.

			the financial gap between the cost of conventional and renewable heat systems at all scales.	
Regulatory	Building Regulations Part L	Estate Services	Buildings to be more energy efficient and have increased thermal performance	Additional cost to meet regulations. Stricter design controls for refurbishments and rebuilds of buildings subject to the regulations.
Economic	Increasing utilities costs	DECC	Increasing cost	Greater energy efficiency will help control operational costs. Money is freed up for other purposes
Leadership and Reputation	Staff and community expectations	DECC	Credibility of DECC policies and strategies. Reputation as an environmental leader. Staff recruitment and retention.	Create a better working environment. Create energy efficient building. Provision of comfortable teaching spaces, accommodation and communal areas.
Ethical	Corporate Social Responsibility	DECC	Duty to operate in a socially responsible manner	Improved reputation.

2. Emissions baseline and projections

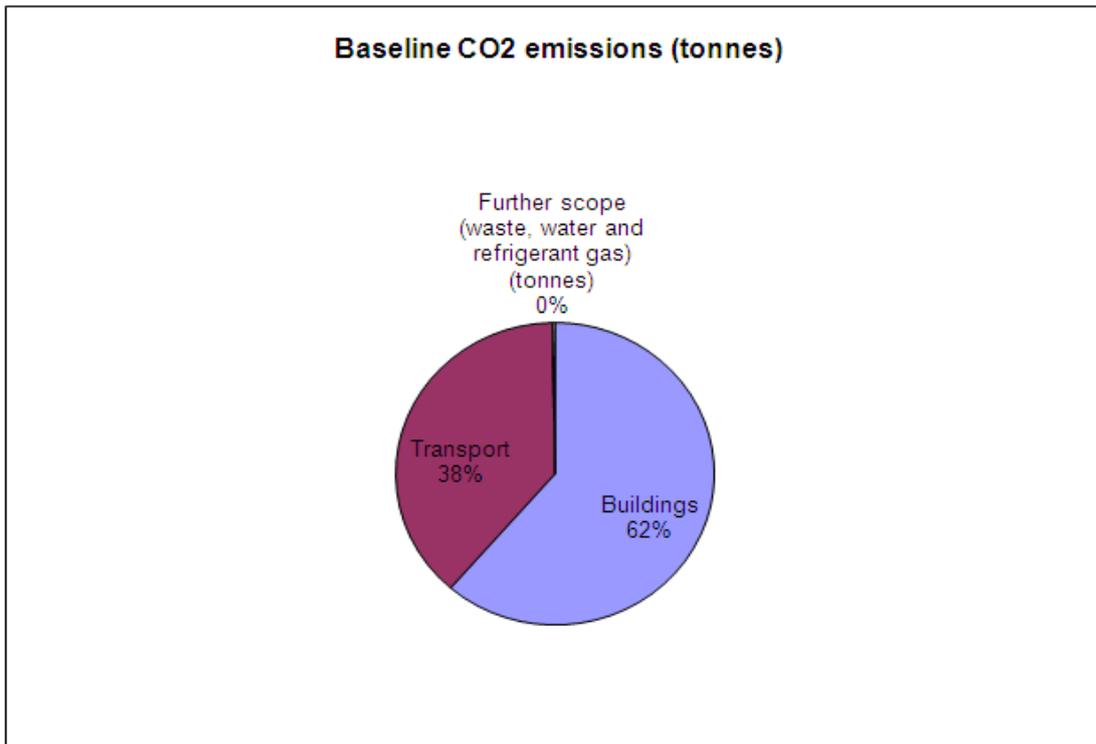
2.1 Scope

Our carbon footprint covers the Department of Energy and Climate Change site at 3 Whitehall Place London and the relevant floors of Atholl House in Aberdeen. The baseline covers direct emissions from electricity and gas which are used to power the two buildings as well as from water used and waste arising. It also includes indirect emissions from business travel by air and car. Travel by staff commuting to work is excluded for the purposes of the Carbon Management Plan.

Calculating the department's baseline helps us to better understand where our emissions arise and thereby helps us to focus on areas for improvement. For example 62% of our emissions are from our buildings, particularly from electricity. It also provides a starting point against which we can measure the effectiveness of our carbon reduction initiatives and measure our progress against this plan.

2.2 Baseline

The department is using emissions data from the 1 April 2009 to 31 March 2010 as its baseline. DECC's carbon footprint in its baseline year was 2,003 tonnes of CO₂. As can be seen from the chart below, most of this was direct energy emissions from our offices (1230 tonnes of CO₂), although travel related emissions have a significant impact (768 tonnes).



The financial cost of these emissions (energy bills, air fares etc) was £237,328. In addition DECC spent £11,600 offsetting emissions from its official air travel through the Government Carbon Offsetting Facility. (http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/co2_offsetting/gov_offsetting/gov_data/gov_data.aspx)

The following table summarises the scope and sources of data used, the period the data covers and the emissions factors used in calculating the carbon footprint. The baseline footprint was calculated using the Carbon Trust's baseline tool. This tool is helpful in providing an indication of carbon footprint and the relevant significance of various sources of emissions. The tool does not allow for a very detailed breakdown of emissions within categories such as waste which clearly impacts on the accuracy of the overall footprint. However, waste forms a very small part of our emissions it is unlikely to impact on the accuracy of the footprint to a great extent.

The robustness of the data used in the carbon footprint does vary from category to category. We have sound data for our main source of emissions, gas and electricity. This data is from supplier invoices and is supplemented by data from our building management system (BMS) for Whitehall Place. Travel data is less robust but is improving. Since the introduction of a revised travel policy in October 2010 all staff are required to book through our central travel provider except in exceptional circumstances. This means that virtually all travel by air and rail is being captured. Some types of travel such as by tube and bus in London tend not to be recorded as many staff use their own season tickets to cover this. However, such emissions would be very small, and unlikely to affect our footprint to any great extent. We are working with our supplier to improve the degree of detail provided on travel data to allow us to fine tune our carbon footprint even further.

Table 2: Scope of carbon footprint, sources of data and emissions factors

	Supplied data	Period data covers	Emissions factor	Unit	Emissions factor source

Natural gas	From invoices and BMS monthly consumption data at 3 Whitehall Place, and from data supplied by BIS on Atholl House	2009/10 FY	0.18396	kg CO ₂ /kWh	2009 Guidelines to Defra / DECC's Greenhouse gas (GHG) Conversion Factors for Company Reporting
Grid electricity	From invoices and BMS monthly consumption data at 3 Whitehall Place, and from data supplied by BIS on Atholl House	2009/10 FY	0.54418	kg CO ₂ /kWh	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Small Diesel Car	From data provided by Amey, the public sector service provider, (on behalf of BIS) & Defra.	2009/10 FY	0.1528	kg CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Medium Diesel Car	From data provided by AMEY (on behalf of BIS) & Defra.	2009/10 FY	0.1894	kg CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Large Diesel Car	From data provided by AMEY (on behalf of BIS) & Defra.	2009/10 FY	0.2576	kg CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Small Petrol Car	From data provided by AMEY (on behalf of BIS) & Defra.	2009/10 FY	0.1820	kg CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Medium Petrol Car	From data provided by Amey (on behalf of BIS) & Defra.	2009/10 FY	0.2149	kg CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Large Petrol Car	From data provided by Amey(on behalf of BIS) & Defra.	2009/10 FY	0.2976	kg CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Medium Petrol Hybrid Car	From data provided by Amey (on behalf of BIS) & Defra.	2009/10 FY	0.1282	kg CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Large petrol hybrid	From data provided by Amey(on behalf of BIS) & Defra.	2009/10 FY	0.2260	tonnes CO ₂ /mile	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Aeroplane - Domestic	From data supplied by Carlson Wagonlit Travel	2009/10 FY	0.188352	tonnes CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Aeroplane - European	From data supplied by Carlson Wagonlit Travel	2009/10 FY	0.108128 (Plus a 1.9 uplift factor to account for radiative	tonnes CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting

			forcing)		
Aeroplane - Intercontinental	From data supplied by Carlson Wagonlit Travel	2009/10 FY	0.123497 (Plus a 1.9 uplift factor to account for radiative forcing)	tonnes CO2/km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Domestic Rail	From data supplied by Carlson Wagonlit Travel	2009/10 FY	0.0611	kgCO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
International Rail	From data supplied by Carlson Wagonlit Travel	2009/10 FY	0.0178	kg CO ₂ /km	2009 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
Water supply and waste water	Meter reading	2009/10 FY	0.404	kg CO ₂ /m ³	BRE Water Centre newsletter Issue 4
Waste to landfill	From Atholl House data supplied by EC Harris	2009/10 FY	442	kg CO ₂ e per tonne waste disposed of to landfill	Carbon Trust baseline tool

2.3 Projections and Value at Stake

- Business as usual
- Value at stake

Using the baseline emissions section 2.2 above it is possible to forecast the effect of costs and carbon emissions if no action is taken to limit consumption. However, it must be recognised that these forecasts are made against a background of uncertainty for DECC as the implications of the Government's Spending Review, announced in October 2010, have yet to be fully worked out. DECC's administrative spend is being reduced by somewhere in the region of 30% during the period covered by this Management Plan and it can be assumed that there will be some reduction in staff numbers which in turn, will impact on our carbon footprint. Budgetary pressures are likely to impact on the demand for business travel, although with a significant international aspect to DECC's work, and with an office in Aberdeen, it will continue to be a significant proportion of DECC's carbon emissions

DECC reception TV

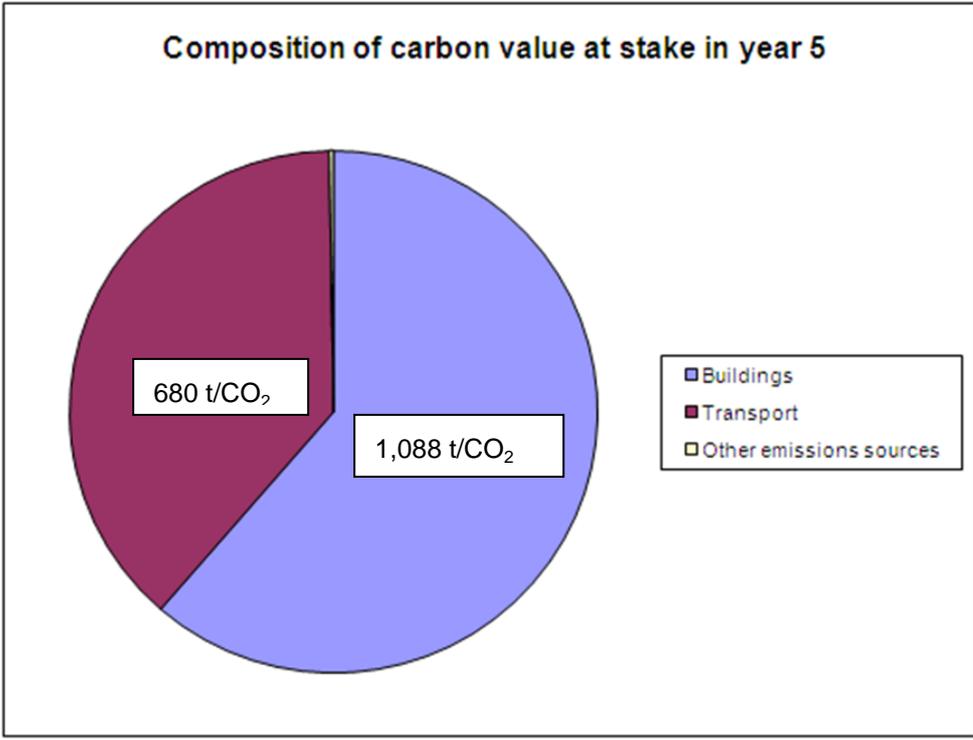
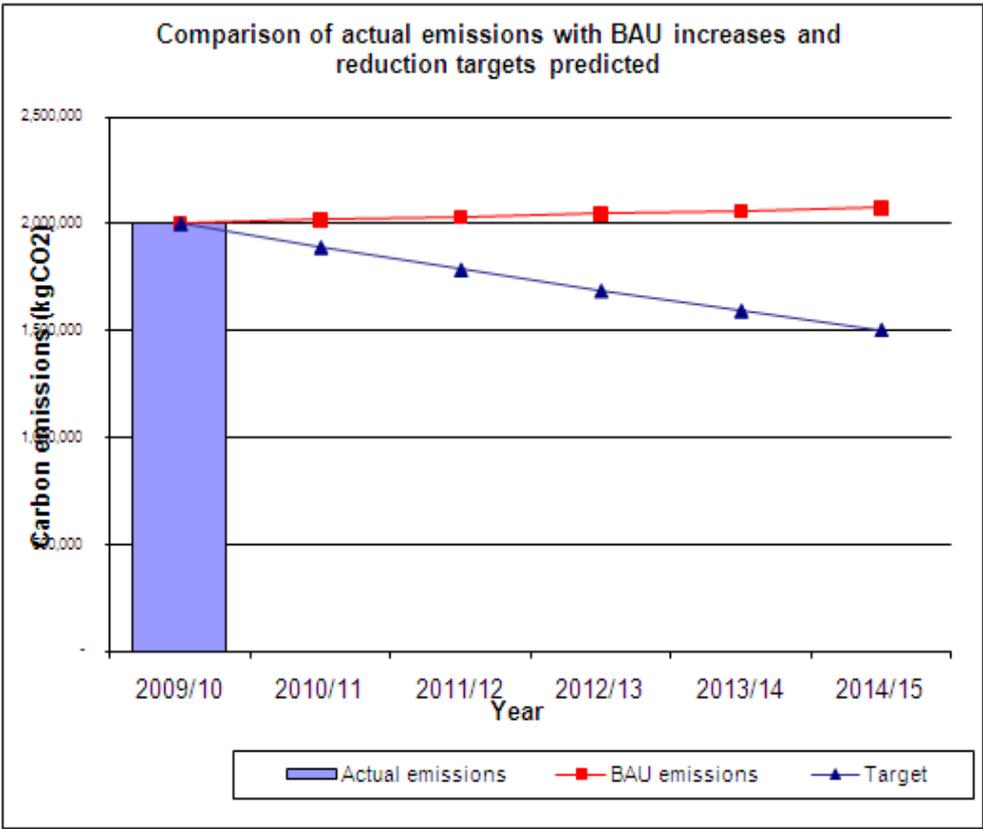


DECC's longer term estates strategy is at an early stage of development and so we do not yet know the likely impacts of this for carbon management. Our Estates strategy will be developed in line with the overall plan for rationalisation and consolidation across the Government Estate, it will also be developed with carbon efficiency as a key driver. Our estate is quite small, being limited to one modestly sized building in London and two floors of a shared building in Aberdeen.

The following assumptions have been made in calculating the business as usual (BAU) projections:

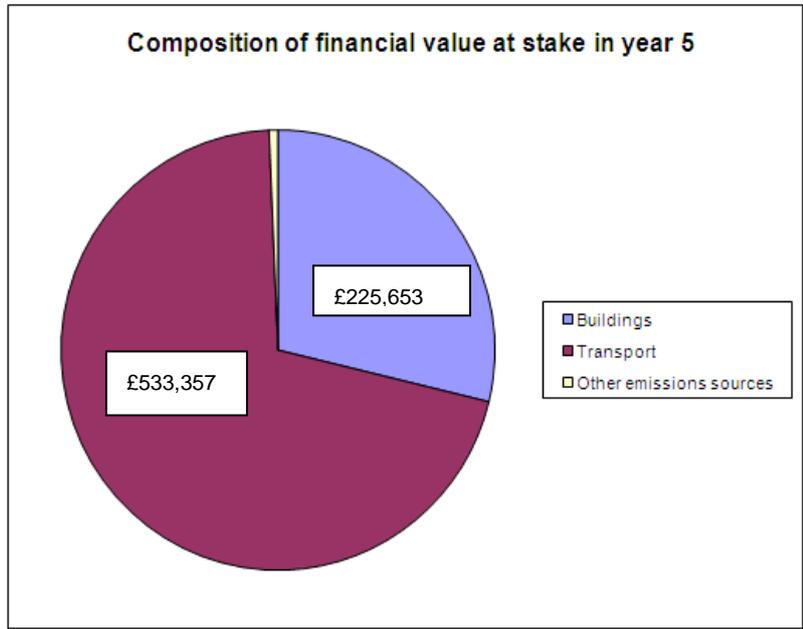
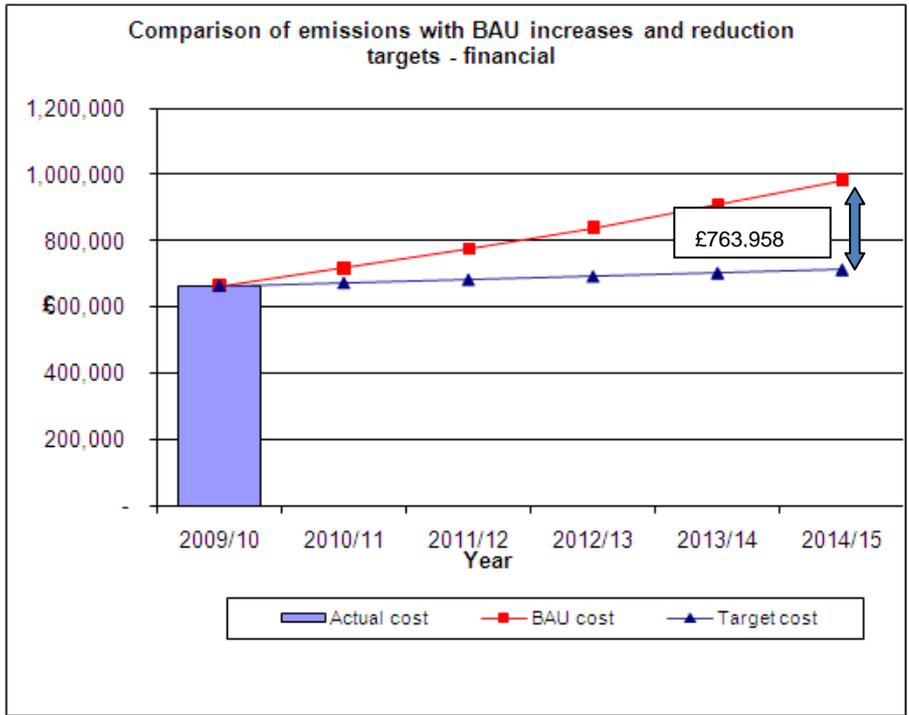
- Demand for energy (gas and electricity), business travel and water to increase by 0.7% per annum
- Waste to increase by 0.7% per annum
- Energy prices (gas and electricity) to increase by 5.3% per annum
- Business travel costs to increase by 8.4% per annum

The graph below shows how emissions would rise under the BAU scenario (shown in red) compared to the planned reductions scenario (shown in blue). Under BAU emissions would rise from 2,003 t/CO₂ in 2009/10 to 2,075 t/CO₂ by 2014/15 or an increase of 72 tonnes. The 25% target reduction scenario would see emissions fall to 1,503 t/CO₂. This represents a significant reduction of 572 tonnes compared to BAU. The cumulative carbon saving, or value at stake, would be 1,772 tonnes. Most of the carbon savings would arise from the management of our buildings as demonstrated in the pie chart below.



The graph below shows how the cost of our emissions would rise under the BAU scenario (shown in red) compared to the slight increase in financial costs under the emissions reduction target. Under BAU costs would increase from £662,803 to £983,087 which represents an increase of £320,284. This can be contrasted with the much smaller increase of just £49,239 which could be brought about by this Carbon Management Plan.

Compared to the BAU scenario this Carbon Management Plan could make significant cumulative financial savings of £763,958. This is referred to as the 'value at stake' and is illustrated in the graph below. It is interesting to note that unlike the carbon savings which arise mainly from how we run our buildings, most of the financial savings are estimated to come from reductions in travel.



2.4 Targets

and objectives

DECC aims to reduce its carbon emissions by 25% by 31 March 2015 compared to a 2009/10 baseline. This is in line with Government wide carbon reduction targets set as part of the 'greenest Government ever' agenda. This target covers direct emissions from our estate (energy, waste and water) and indirect emissions from business travel (air, rail, car). Most of these reductions will come from the efficient running of our estate, particularly from energy use. The overall target can be broken down as follows:

- We aim to reduce emissions from our offices by 11% for the period 14 May 2010 to 14 May 2011 compared with the same period the previous year. This would equate to 135 t/CO₂
- We aim to reduce emissions from our offices by a further 20% by 31 March 2015 compared to 2010/11. This would mean a further reduction of 219 t/CO₂.
- To maintain a D DEC rating for 3 Whitehall Place.
- We aim to reduce emissions from business travel by 20% by 31 March 2015 compared to the 2009/10 baseline. This equates to a reduction of 154 t/CO₂

Given the small overall percentage represented by emissions from water and waste, we have chosen not to set individual targets in these areas. However we will be taking measure to reduce both waste and water consumption in order to meet wider Government targets.

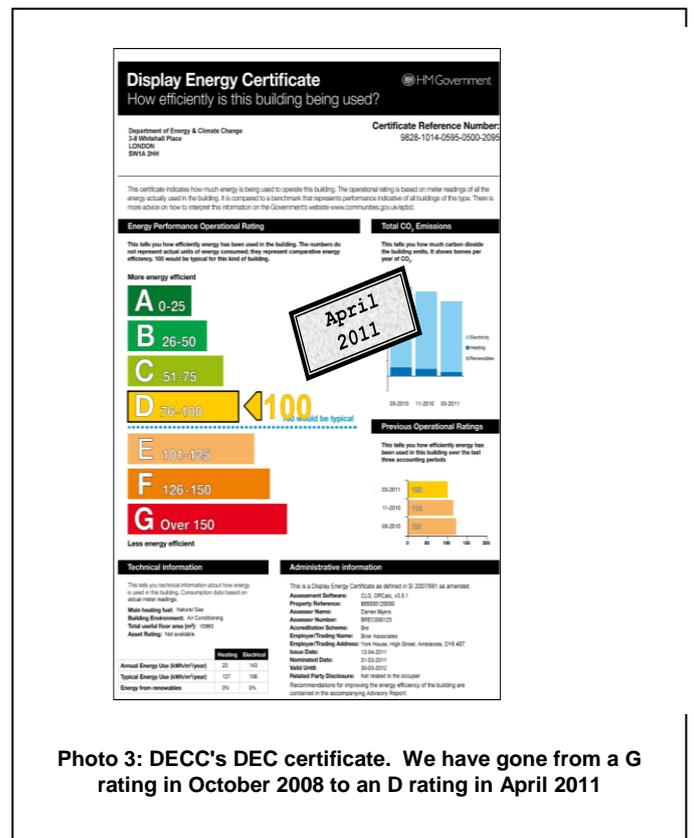
We will review the success of this plan in 2015 and set further targets covering the five year period until 31 March 2020. Although we are not setting specific targets for 2020 just yet we would expect to be looking for reductions in the region of a further 10% in order to meet our long term vision of having a zero carbon footprint from our estate by 2050.

3. Carbon management programme

DECC's Carbon Management Programme has been developed through the Carbon Trust's Central Government Carbon Management Service using their 5 step process. The objectives of DECC's Carbon Management Programme are:

- To fully develop, and have ratified by Senior Management, a Carbon Management Plan by end March 2011.
- In so doing:
 - Ensure that processes for collecting carbon foot printing are improved (e.g. for transport data);
 - Present a robust business case that secures senior management support for funding carbon management reduction projects in DECC.
 - Refresh the composition of the carbon reduction opportunities register.
 - Draft and complete an implementation plan that details clear and effective governance and resourcing of an ongoing carbon management programme.
- To support activity (e.g. through effective communications and engagement of staff) that leads to organisational culture change that enables exemplar carbon management practices.
- To prioritise and organise implementation of carbon reduction projects throughout FY 10/11, i.e. commensurate with participation in the Carbon Trust CGCM Service.

Our Carbon Management Programme is sponsored by one of the department's key senior managers Phil Wynn Owen, Director General of National Climate Change and Consumer Support and is led by Karen Dell, Head of Sustainability. They are supported by a Programme Team drawn from across DECC. The main aim of the Programme is now to implement this Carbon Management Plan which runs until 31 March 2015.



From the 1 April 2011 the Programme Team will be revised in order to focus on the implementation of the Plan. The Carbon Trust's five step process (see diagram below) is designed to help organisations to reduce carbon emissions of their estates and operations. It aims to:

- build a carbon management programme team and governance structure;
- measure baseline costs for energy use, determine the organisational carbon footprint and review the various drivers for carbon management;
- identify, quantify and prioritise a list of projects for reducing the carbon footprint: and
- create an overall case for action to the executive, setting a 5 year target for emissions reductions and agreeing a robust plan for implementing a programme of work to meet these targets.

The Carbon Trust's 5 step process



4. Carbon management projects

4.1 Existing projects

Since taking up occupancy of 3 Whitehall Place DECC has set up a number of initiatives to address the energy performance of the buildings and the environmental impact of the organisation. DECC, working with the Carbon Trust and with Briar Associates, have developed a comprehensive range of estates related carbon reduction projects. Projects that have been started since 1 April 2010 are shown in the table below. Together these projects will achieve an annual reduction of 182 t/CO₂ which represents 36% of DECC's 25% carbon reduction target. Indeed several of these projects, including the installation of the IT chiller, fan coil unit occupancy controls and the behaviour change projects, are key measures for achieving the 10% reduction target by May 2011. In addition to these estates related projects, DECC has also revised its travel policy which is estimated to save around 10% of business travel related carbon emissions. Including the travel policy project, existing projects should save around 258 tonnes of carbon and deliver over 50% of our target.



Photo 4: Volunteers at a workshop sift through energy saving ideas trying to develop workable solutions. Part of the CarbonCulture project.

Priority has been given to those projects that can deliver the biggest savings both in terms of carbon and money in the first year of the CMP. This will enable the department to enjoy the savings, especially the financial savings, for the longest period. Projects with a payback period of less than a year i.e. a relatively quick win, have also been favoured early on.

The single most significant of the existing projects is the installation of a dedicated server room chiller. This will enable us to switch off the cooling to the whole of the building outside of core office hours, including evenings and weekends, and during cooler periods of the year. This is the most expensive project we have undertaken at a cost of £91,000 and yet, given the magnitude of energy savings, will pay back in under five years. The chiller went into operation in December 2010 and so far it looks to be saving around a quarter of a tonne of CO₂ a day and is on track to deliver a

saving of around 90 tonnes a year. Adjustments to the Building Management System will collectively bring about huge savings for a comparatively modest outlay. These include adjustments to heating time controls, air heating unit time controls and introducing a rigorous summer/winter regime.

There are three significant items for which funding has been agreed and which will be carried by July 2011 but are not listed in the table below. These are three surveys to be carried out at 3 Whitehall Place.

- A **general energy survey** of all energy using equipment and building services.
- A **cooling and heating load survey** to support and determine the strategies for free cooling and waste heat recovery which have been rendered possible by the installation of the IT chiller.
- A **Building Management System (BMS) controls and operational survey** to further fine-tune the BMS strategy

The combined cost of the three surveys is £11,000 and it is estimated that the implementation of the measures they suggest could lead to a further 10% reduction in energy use at Whitehall Place which would represent an annual saving of £18,000 per annum. They have not been included in the table as the surveys themselves will not achieve the energy reduction but rather the recommendations and projects flowing from them.

In addition to the listed projects DECC is piloting three innovative technologies from amongst the winners of the Energy Efficient Whitehall competition sponsored by the Technology Strategy Board. The competition aimed to demonstrate innovative retrofit solutions that reduce demand for energy and cut carbon dioxide emissions at existing Whitehall office buildings. The three projects are:

- replacing existing lighting in common areas with a range of LED lighting;
- installing phase change ceiling tiles which absorb heat from a room thus contributing to cooling without using energy; and
- installing wireless sockets which can switch off appliances remotely.

Table 3: Existing projects

PROJECT	COST		ANNUAL SAVING		PAY BACK (YEARS)	% OF TARGET
	Capital (£'s)	Revenue (£'s)	Financial (£'s)	CO ₂ (tonnes)		
Boiler operating temperature	500	-	600	2.0	0.8	0.4%
Weather compensate secondary heating circuit	500	-	1,100	4.1	0.5	0.8%
Automatic variable speed control of secondary heating pumps	1,000	-	750	2.3	1.3	0.2%
Install variable speed drives to primary heating pumps	11,500	-	1,050	5.0	11.0	1.0%
Transformer room A/C unit control	2,500	-	1,450	3.1	1.7	0.6%
Tungsten halogen to LED lighting	17,500	-	2,550	12.1	6.9	2.4%
Segregate Restaurant servery area lighting	300	-	50	0.2	6.0	0.0%
Basement - replace T8 light fittings	6,000	-	1,250	6	4.8	1.2%

with 18W LED lamps						
Switch off ground floor vending machine	100	-	350	1.7	0.3	0.3%
Set timeswitches on Zip boilers and chilled water dispensers	500	-	1,600	7.5	0.3	1.5%
Switch off LG drinks machines (timeswitches)	200	-	300	1.5	0.7	0.3%
IT chiller	91,000	-	17,279	94	5.3	18.8%
Establish occupancy controls to Fan Coil Units in all meeting rooms	41,300	-	7,545	42	5.5	8.4%
Amend travel policy	-	-	74,789	77	0.1	15.4%
TOTALS (estates only)	172,900	-	35,874	181.5	4.8	40.1%
TOTALS (inc travel)	172,900	-	110,573	258.5	1.56	51.3%

4.2 Planned projects

The table below shows projects we aim to carry out in the 2011/12 to 2014/15 financial years, subject to the outcome of more detailed feasibility studies in some cases, to refine what are at present only indicative costs and projected savings. More projects may be added to this list over time as and when new information comes to light. Funding has been agreed for the Carbon Management Plan. DECC is keen to demonstrate leadership in carbon saving measures and would like to invest in several innovative measures which may not in themselves yield sufficient financial savings to justify the investment. A possible example of this would be the project to install phase change ceiling tiles as shown in the table below. Phase change ceiling tiles are a pioneering product that is not yet available on the open market. They contain an innovative substance that absorbs heat from a room thus contributing to cooling without using energy. They can also release heat as a room cools down thus contributing to heating. They are currently being piloted by DECC on a small scale. If successful, these tiles could be installed more widely at our headquarters at 3 Whitehall Place

Funding has been sought for installing floor metering at Atholl House and this project is included in the table below although associated carbon savings cannot as yet be identified. DECC only occupy two floors of Atholl House but the building is metered and billed as one whole unit. The cost is then apportioned according to floor space. Separate metering for floors 3 and 4 is estimated to cost around £15,000 and will help to focus energy saving measures, including behaviour change initiatives, by determining which are the most effective in terms of actual energy usage. The feasibility of linking to the Whitehall District Heating Scheme will be investigated if this Scheme is opened to new participants over the period of the Plan. An estimated cost for joining the scheme has been included in the planned projects below but it is not currently possible to estimate what the likely costs or savings would be.

A key area not specifically mentioned in the list of planned projects is that of business travel. DECC is aiming to reduce emission from business travel by 20% by 2014/15 compared to 2009/10. This will be achieved through a revision of DECC's travel policy and sustainable travel guidance which came into effect in 2010/11 and the development of a travel application as part of the CarbonCulture programme may have a role to play if the pilot is successful. This application will be developed and piloted during 2011.

Table 4: Planned projects

PROJECT	COST £		ANNUAL SAVINGS (YR 1) €		% OF TARGET	PAY BACK (YRS)	POTENTIAL SCHEDULI NG
	CAPITAL	OPERATIO NAL					
Weather compensated	£500	-	£685	4.2 tCO2	0.97%	0.7	2011/12

boiler sequencing							
Replace control valves on Air Handling Units	£5,000	-	£13,370	82.tCO2*	18.98%	0.4	2011/12
Night purging	£2,500	-	£3,879	21.1 tCO2	4.89%	0.6	2011/12
Turn off chiller at night, with high internal temp re-start	£2,000	-	£4,908	26.7 tCO2	6.18%	0.4	2011/12
Reinstate BEMS time control to conf rooms LG05 & LG06	£500	-	£239	1.3 tCO2	0.30%	2.1	2011/12
Establish occupancy controls of fitness suite	£1,500	-	£588	3.2 tCO2	0.74%	2.6	2011/12
Establish occupancy controls of LG conference rooms	£1,500	-	£221	1.2 tCO2	0.28%	6.8	2011/12
Apex lighting project	£16,000	-	£1,691	9.2 tCO2	2.13%	9.5	2012/13
Occupancy sensing to G, LG and basement corridor lighting	£6,000	-	£1,471	8. tCO2	1.85%	4.1	2011/12
Enhancement to lighting controls for additional daylight saving	£5,000	-	£1,654	9. tCO2	2.08%	3.0	2012/13
Amend BMS to allow night time cooling to be temperature activated	£2,500	-	£2,390	13. tCO2	3.01%	1.0	2012/13
Atholl House Action Plan	£150	-	£292	1.7 tCO2	0.39%	0.5	2011/12
Atholl house enforced switch-off	£0	-	£202	1.1 tCO2	0.25%	0.0	2011/12
Install metering at Atholl House	£15,000	-	-	-	-	-	2011/12
Link to Whitehall District Heating Scheme	£50,000	-	To be confirmed	To be confirmed	To be confirmed	To be confirmed	2013/14
Exhaust air heat recovery	£20,000	-	£3,904	21.2 tCO2	4.92%	5.1	2013/14
Install phase change ceiling tiles	£125,000	-	£11,029	60. tCO2	13.89%	11.3	2014/15
TOTALS	238,150	-	£46,523	306	61%	5	

* Note this should read 8.2 t/CO2

4.3 Potential and Long Term Projects

The existing and planned projects shown in the tables above focus on reducing emissions from our estate and should be sufficient in themselves to meet our 25% reduction target. However, there are a number of uncertainties about these projects and feasibility studies have not yet been undertaken. The table below shows potential projects that may be used to supplement or substitute the above measures if they prove unfeasible or fail to make the estimated savings. For all these projects, more detailed studies will be undertaken to refine costs and projected savings before decisions are taken to proceed.

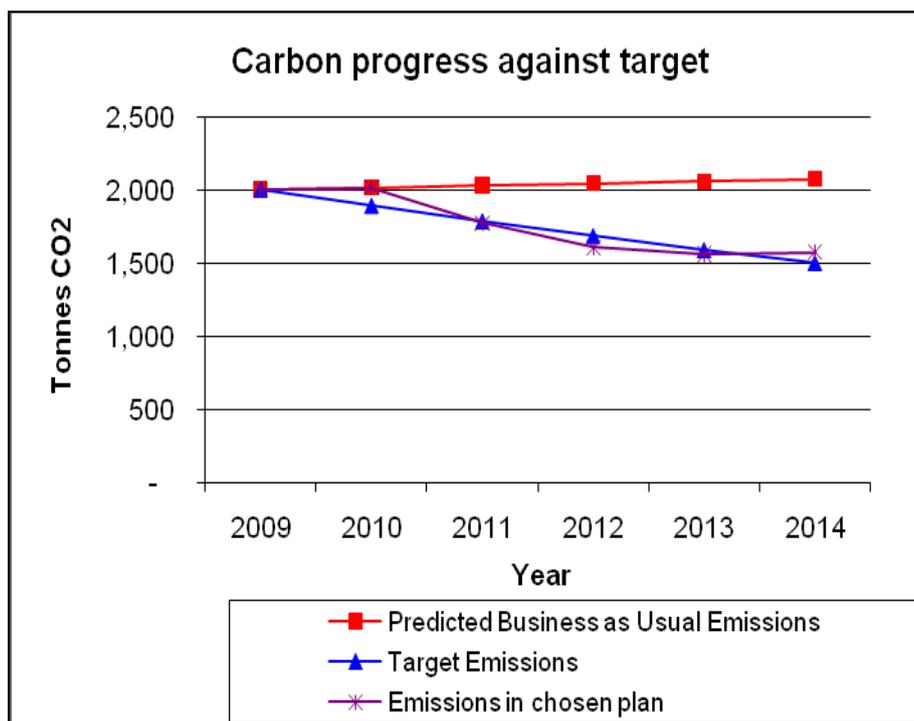
DECC faces a considerable challenge in that it has already achieved significant carbon savings, 20% reduction in 2009/10 compared to 2008/9 at its headquarters building. In particular, we have exhausted most of the no or low cost options for reducing emissions from our estate. Further savings can only be achieved with higher levels of investment than previously and this is reflected in the long pay back periods in the table below. However, it is expected that energy saving technology will continue to improve over the coming years and we anticipate that more cost effective options will be added to this Plan as they become available, reducing payback periods significantly and making investment more attractive financially.

Table 5: Potential projects

PROJECT	COST		ANNUAL SAVINGS (YR 1)		% OF TARGET	PAY BACK (YRS)
	£		£	tCO2		
Solar PV panels to roof	£25,000	-	£1,654	9. tCO2	2.08%	Need to assess the impact of FITs to determine
Replace office lighting on 2nd and 3rd floors	£40,000	-	£3,309	18. tCO2	4.17%	12.1
Further enhancements to occupancy controls including major work on ground floor	£9,500	-	£2,376	13.7 tCO2	3.17%	4.0
Additional LED lighting in corridors and communal areas	£15,000	-	£1,654	9. tCO2	2.08%	9.1
Replace office lighting on the 4th and 5th floor	£40,000	-	£3,309	18. tCO2	4.17%	12.1
Replace half of lifts with battery regenerative lifts	£125,000	-	£2,574	14. tCO2	3.24%	does not payback
Replace office lighting on the 6th and 7th floors	£40,000	-	£3,309	18. tCO2	4.17%	12.1
Replace other half of lifts with battery regenerative lifts	£125,000	-	£2,574	14. tCO2	3.24%	does not payback
Totals	£419,500	-	£20,759	113.7	26.32%	20.21

4.4 Projected achievement towards target

The figure below shows the projected emissions from DECC's Carbon Management Plan (the purple line) and how they compare to the BAU scenario in red, and the target emissions in blue. The buildings related projects listed in tables 1 and 2 and the revision of the travel policy are almost sufficient to meet DECC's 25% reduction target. However, we will be developing and implementing other measures to reduce business travel at the same time which should enable us to exceed the target set.



5. Carbon Management Plan financing

The Carbon Management Plan is estimated to achieve cumulative savings of £763,958 compared to BAU over the five year period 2010/11– 2014/15 for an investment of £426,050. The BAU and value at stake concepts are explained in more detail in section 2.3. Funds have already been agreed for the Carbon Management Plan. The costs, benefits and net impact of the Carbon Management Plan, compared to BAU, are summarised in the table below.

Table 6: Net impacts

IMPACTS	2010/11	2011/12	2012/13	2013/14	2014/15	TOTAL
Total annual capital cost	£172,900	£58,150	£125,000	£50,000	£20,000	£426,050
Total annual operational savings compared to BAU	£44,790	£93,884	£147,670	£206,570	£271,045	£763,958
Net impact	-£128,110	£35,734	£22,670	£156,570	£251,045	£337,908

5.1 Assumptions

The following assumptions have been made with regards to planned projects:

- Electricity cost 9.76 p/kWh, gas 4.82p/kWh (including CCL, excluding VAT)
- Energy price increase 5.6% per annum as set out in Section 3.1
- Additional cost of the CRC Energy Efficiency Scheme has not been included as for DECC this is not significant in financial terms (see below).
- Additional cost of offsetting air travel under the Government Offsetting Facility has not been included as again this is not financially significant for DECC.
- Climate Change Levy is included in the price per unit for gas and electricity at present levels.
- Rate of inflation 10%

5.2 Benefits / savings – quantified and un-quantified

The estimated quantified benefits to DECC in terms of both carbon and financial savings are summarised in the table below. These are direct financial savings, measured by a reduction in energy bills and transport costs, but do not take

into account increases in consumption and costs that would occur under a BAU scenario unlike the figures in table 6. In addition, the estimated annual cost of the CRC Energy Efficiency Scheme to DECC is around £11,736. A 25% reduction in emissions will save around £2,934 per year. The cost of carbon offsetting in the baseline year was £11,600. A 20% reduction in air travel emissions will save around £2,320 per year.

Table 7: Quantified benefits to DECC

	2011/12	2012/13	2013/14	2014/15
Annual cost saving	£32,766	£64,355	£75,384	£75,384
Annual CO ₂ saving in tonnes	257	439	499	499
% of target achieved	51%	88%	100%	100%

The estimated quantified benefits to the economy as a whole are shown in the table below. This takes into account the full economic cost of carbon which is based on the cost of mitigating emissions. The value of carbon saved has been calculated in accordance with DECC's Toolkit for guidance on valuation of energy use and greenhouse gas emissions for appraisal and evaluation.

Table 7a: Quantified benefits to the economy

	2011/12	2012/13	2013/14	2014/15
Annual saving in energy bills (using wholesale energy costs)	£22,300	£43,875	£51,375	£56,302
Value of carbon savings from gas use	£936	£4,611	£0	£2,420
Total economic benefit	£23,236	£48,486	£51,375	£58,722
Annual CO ₂ saving in tonnes	257	439	499	543

Unquantified benefits:

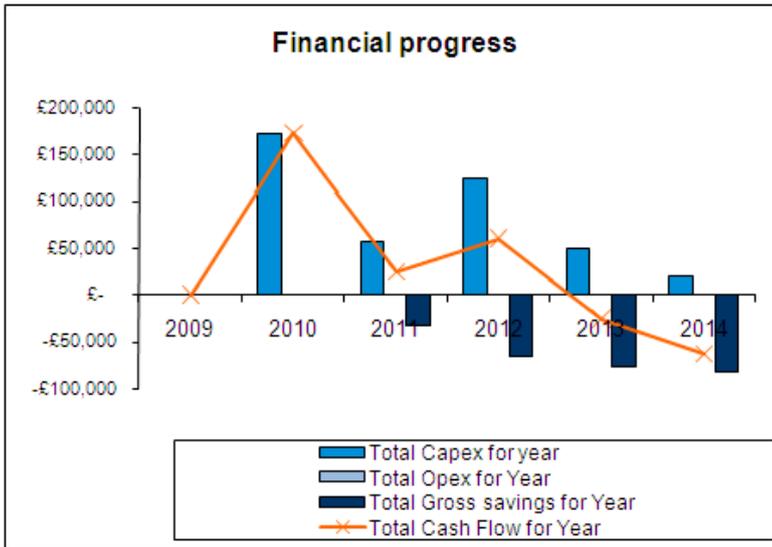
Additional non-financial benefits include:

- Demonstration of low carbon leadership
- Enhanced reputation for DECC
- Demonstration of embedding low carbon within an organisation
- Demonstration of the application of low carbon technologies.

5.3 Financial Costs

The estimated financial investment costs are summarised in the table below alongside estimated operational savings compared to the BAU scenario. The cumulative operational savings are known as the value at stake.

The graph below summarises investment, estimated operational savings and cash flow over the period of the CMP.



The table below shows the present value of the investments planned over the five year period.

Table 8: Discounted Cost

DISCOUNTED COST	2010/11	2011/12	2012/13	2013/14	2014/15	TOTAL
Total annual capital cost	£172,900	£58,150	£125,000	£50,000	£20,000	£426,050
Total discounted cost	£172,000	£56,184	£116,689	£45,097	£17,429	£408,298

6. Actions to embed carbon management in DECC

6.1 Corporate Strategy and business plans

The 25% carbon reduction target of 25% contained within this Carbon Management Plan has been endorsed at the highest level in DECC. This Plan and its target has been agreed by the Management Board and signed off by our Permanent Secretary. Furthermore, the 25% target is part of a wider, high profile Government commitment to reduce Government carbon emissions which is likely to be announced on later in 2011. The carbon reduction target is included in the Corporate and Professional Services Group's business plan and risk register.

6.2 Responsibility for carbon management

Responsibility for delivering the Carbon Management Plan lies with the Programme Leader, Karen Dell, the Head of Sustainability and Estates, Paul van Heyningen and the Deputy Programme leader, James Lee, all in the Sustainability and Estates team. The Deputy Programme Leader would take over from the Programme Leader, at least temporarily, in the event of her leaving. Sustainability and carbon management are included in the job descriptions/work objectives of other key post holders in DECC including those of the Permanent Secretary, Sustainable Operations manager, estates and procurement staff. The implementation of the CMP and championing of carbon reduction in DECC will be taken forward by the Carbon Management Programme Team with representation from across the department. The Team will agree any amendments to the Plan, including approval of any new project expenditure. It will report to the Management Board at least twice a year.

6.3. Monitoring and reporting

Government Reporting Requirements

Reporting progress against carbon reduction targets form part of a Government-wide requirement under the 'Greenest Government Ever' commitment. Reducing carbon emissions by 2014/15 compared to 2009/10 is a Government wide target and DECC will be working with the Cabinet Office to report on this headline target. It is expected that energy use and carbon emissions will continue to be reported on a monthly basis to Cabinet Office. This will form a part of pan-Government reporting on sustainability issues, the detail of which has yet to be finalised. In addition progress, including financial savings, will be reported as part of the department's annual report from the 2011/12 financial year.

Internal Reporting Requirements

The 10% carbon reduction target by May 2011 is monitored on a monthly basis, both across Government and within DECC. Within DECC this reporting takes the form of a monthly score card which is scrutinised by the Management Board. Progress towards the 25% target, the DEC rating and business travel targets will be reported to the Management Board via the monthly scorecard from April 2011. In addition, the Carbon Trust will be conducting an annual follow up in quarter 4 to look at whether we have implemented the projects in this Plan.

6.4 Communication and engagement

We have developed a communications and engagement strategy which aims to support the development and implementation of the CMP. This Strategy mainly focuses on internal communication within DECC and engagement with a few external stakeholders who are key to developing and delivering the CMP. Wherever possible the communication and engagement will position emission cuts as a positive, interactive and enjoyable programme of activity. Established channels of communication have been included but there is also an effort to bring creativity to the centre of this campaign and move beyond our traditional communication techniques. The Strategy is shown at Annex I.

6.5 Learning and Development

The Sustainability Team will work with the DECC Learning team to identify, seek approval for, and advertise courses on sustainability and carbon management provided by external providers to DECC staff on the Sustainability intranet page. Carbon management has been included in DECC's induction courses and also forms a separate DECC school seminar. We will also continue to look for opportunities to include carbon management elements into a range of DECC school courses.

7. Carbon Management Programme Team

In addition to the pan-Government and internal monitoring and reporting arrangements set out above, delivery of the Plan will be regularly monitored by the Carbon Management Programme Team. The Carbon Management Programme Team was set up in 2010 to develop and implement DECC's CMP. It has the following terms of reference:

- To champion and provide leadership on carbon management in DECC and across Whitehall through contacts with colleagues;
- To review the strategic direction of the DECC programme and established targets
- To own the scope of the carbon management programme and to help prioritise carbon reduction projects
- To monitor progress towards objectives and targets
- To help remove obstacles to successful completion of carbon management projects
- To review and champion plans for the financial provision of carbon management projects
- To act as a driver of change, not just a committee

The Team is made up of representatives from across the whole department, including our office in Aberdeen and including representation at the highest level in DECC. The Team meets every two or three months to discuss progress of the implementation of this Plan. The secretariat is provided by the Sustainability and Estates Team. Agendas, papers and minutes of meetings are published on the DECC intranet to maximise transparency and increase staff awareness.



Photo 6: It may not look much but DECC's IT chiller, installed in December 2010, is expected to yield significant carbon savings.

Annex I

Carbon Trust Central Government Carbon Management Programme

COMMUNICATIONS STRATEGY

Version 0.2

INTRODUCTION

Background

The core objectives for the Central Government Carbon Management Programme (CGCM) in DECC are as follows:

- a. To fully develop, and have ratified by Senior Management, a Carbon Trust carbon management implementation plan by end March 2011.
- b. In so doing:
 - i. ensure that processes for collecting carbon foot printing are improved (e.g. for transport data);
 - ii. present a robust business case that secures senior management support for funding carbon management reduction projects in DECC;
 - iii. refresh the composition of the carbon reduction opportunities register;
 - iv. draft and complete an implementation plan that details clear and effective Governance and resourcing of an ongoing carbon management programme.
- c. To support activity (e.g. through effective communications and engagement of staff) that leads to organisational culture change that enables exemplar carbon management practices.
- d. To prioritise and organise implementation of carbon reduction projects throughout FY 10/11, i.e. commensurate with participation in the Carbon Trust CGCM Service.

On 14 May 2010 the Prime Minister stated his ambition for this to be the '*Greenest government in history*'. He reinforced this by:

- committing the Government to reducing carbon emissions by 10% within 12 months
- committing that the public will be able to see real time energy consumption on every department's website.

While the primary objective of the CGCM is to have a comprehensive Carbon Management Plan in place by end March 2011, the process will also be used to help ensure we hit our 10% target for this financial year. It is likely that the Government will continue to set

ambitious targets for departments in future years, so the plan will be crucial to ensuring we can continue to cut emissions after 13 May 2011.

Purpose and Scope of the Communications Strategy

This document outlines a programme of staff engagement that has a dual purpose:

- Support the development of the CGCM in DECC
- Help achieve a 10% cut in emissions by May 2011
- Contributing to the Government's goal of being the 'Greenest Government Ever', and longer term carbon management objectives.

This Strategy mainly focuses on internal communication within DECC and engagement with a few external stakeholders who are key to developing and delivering the CMP. Wider external engagement with OGDs and other stakeholders, which is crucial to DECC's commitment to demonstrate leadership on carbon management, is not covered within this document.

Objectives

- Convince key stakeholders of the importance of carbon management.
- Ensure we fully utilise influential and supportive senior staff and ministers to provide the work with leadership and momentum.
- Promote better understanding of carbon management and its importance in delivering departmental and Government objectives.
- Prepare staff for the changes brought about by our carbon management policy by communicate effectively with all staff to inform them of significant events or progress.
- Effecting positive behaviour change and promoting low carbon behaviours amongst staff.
- Encourage and collect ideas on energy saving from staff.
- Obtain feedback from staff on existing and proposed initiatives to gauge their effectiveness and help ensure that sustainability work does not generate resentment unnecessarily.
- Lay the foundations for longer term carbon management work by developing a genuine understanding of, and support for, carbon management amongst staff.

APPROACH TO STAKEHOLDER COMMUNICATION

Wherever possible the campaign will position emission cuts as a positive, interactive and enjoyable programme of activity. In light of the impact of the Comprehensive Spending Review, it is particularly important that a new strand of engagement activity is delivered in a way that staff want to be a part of. We also need to emphasise the reputational risks and

potential benefits for the Department. The financial benefit to the Department of energy efficiency should also be emphasised.

Established channels of communication have been included but there is also an effort to bring creativity to the centre of this campaign and move beyond our traditional communication techniques.

Though this document focuses on activity that concludes in May 2011, a high level of staff engagement will be maintained over a much longer period of time in order to fully embed a new set of staff behaviours.

- The Programme will use existing channels where possible, but will establish new, specific channels if necessary.
- Communications with Ministers, the Permanent Secretary and other SCS staff will be face-to-face where possible.
- Communications to the wider Department will be done through a variety of channels:
 - The website and intranet will be kept up to date as far as possible
 - Significant news stories will be communicated via the weekly DECC newsletter and News stories on the intranet.
 - When the direct involvement of the whole department is needed we will use group or Divisional assemblies to speak directly to staff. There may also be a need to cascade information down to team meetings.
- Real-Time Display data will be used to highlight the effect of measures and help engage staff.
- Feedback mechanisms will be incorporated into all communication to enable the programme to evaluate the success of the communication and understand the audience response.

CARBON CULTURE PROJECT

This engagement and communication strategy sits alongside and complements DECC's Carbon Culture project. This was launched in September 2010 to explore how to reduce energy use through behaviour change. This involves looking for ideas, and for staff volunteers to be part of a bottom-up design process. Ideas will be developed and implemented and carefully measured and evaluated for their impact using meters and sensors. The aim of the programme is to save energy and resource use within DECC and to develop scaleable and proven ideas for engaging staff and saving wasted energy that can be deployed right across the public sector and beyond. Because staff engagement is at the heart of this project, it is important that its communications elements are effectively co-ordinated with the broader communications activity set out in this strategy.

CHALLENGES

- In the current economic and political climate, changes to funding and organisational structure are more likely, and it would be important for the comms plan to keep people focused on the carbon management work.
- However, the outcome of the Spending review will lead to uncertainty and possible staff motivational issues. Comms work will need to be sensitive to this bigger picture to avoid alienating staff and losing support.
- Where possible the financial cost of the activities suggested will be delivered at zero cost.
- We will need to ensure that a balance is achieved between keeping staff fully informed and over-burdening them with information overload.
- Staffing resource will primarily be required from the department's senior leadership, facilities, internal communication (IC) and HR teams. In addition, a 10% cuts working group will be established that will also require staff resource.
- Keeping interest and momentum beyond May 2011 and the period covered by short term Government targets and initiatives.

RESPONSIBILITY

DECC's Internal Communications Team will be responsible for staff communication around specific energy saving measures, including those that are being implemented in order to reach the 10% reduction target. They are also leading on shifting attitudes of key stakeholders and DECC staff more generally, including management of the Carbon Culture project. The Sustainability and Estates Team are responsible for communications relating specifically to the CGCMP. The two teams will work closely together at every stage.