



**ROYAL AGRICULTURAL COLLEGE**

**CARBON MANAGEMENT PLAN  
SUMMARY (2011)**



## Principal's Introduction to the Carbon Management Plan



At the Royal Agricultural College we are committed to embedding sustainability into all that we do. Our approach to this is set out in our Environmental & Sustainability Policy and it is reflected in the way we conduct our operations as an organisation, as well as in our teaching, research and consultancy activities.

As part of our commitment to managing our operations in accordance with sound principles of sustainability, we have already taken a number of significant steps to reduce our carbon footprint. These include the incorporation of a range of energy efficiency measures into the new Sir Emrys Jones Centre, as well as the installation of a biomass district heating system which now heats almost all of our teaching facilities and a number of other buildings on our main campus.

However, we recognise that it is important that we aspire for continual improvement in our environmental performance and carbon management, and as such our Carbon Management Plan sets out an ambitious 2020 carbon reduction target for the College, together with a series of further steps that we intend to take in order to meet this target. These include a number of capital projects as well as a range of other measures.

In working towards our target we will also work together with staff and students and I am confident that by doing so, the whole College community will be able to make a positive contribution towards reducing our carbon footprint and delivering our wider sustainability objectives.

A handwritten signature in black ink, which appears to read 'Chris Gaskell'. The signature is written in a cursive, flowing style.

**Professor Chris Gaskell**  
**Principal**

## Executive Summary

### Introduction

Saving energy has long been regarded as important at the Royal Agricultural College, and a range of measures to reduce energy use have been taken (further details of which can be found on the [Energy & Carbon section of the College website](#)). However, whilst these measures have increased the efficiency of the existing buildings, the College has grown extensively in recent years and as a consequence overall energy use across the campus increased between 2005/6 and 2009/10.

The College is committed to embedding sustainability into its activities and considers that continuing to improve our energy efficiency, and reducing our greenhouse gas emissions, are core to this. We also recognise the role that the College has to play in meeting the higher education sector's greenhouse gas emissions reduction targets. These sit within the Government's overall target to reduce greenhouse gas emissions by 34% by 2020 against 1990 levels across the UK. As part of this, the Higher Education Funding Council for England (HEFCE) has tasked the higher education sector with achieving a target of a 43% reduction by 2020 against 2005 levels.

To enable HEFCE to measure progress against this target, higher education institutions have been asked to create, and show progress against, a Carbon Management Plan, based on a target of an absolute reduction in carbon emissions. In response to this, as well as to our wider sustainability objectives, the Royal Agricultural College has committed to a Carbon Management Plan which sets a realistic, yet challenging, target for reducing the College's carbon emissions. Our Carbon Management Plan also includes an implementation strategy for meeting this target, which takes into account current energy performance, future growth and planned energy saving projects.



*The College's biomass boiler, which was installed in 2011, heats, via a district heating system, almost all of our teaching rooms, the library, support services building and a number of our leisure and recreation facilities.*

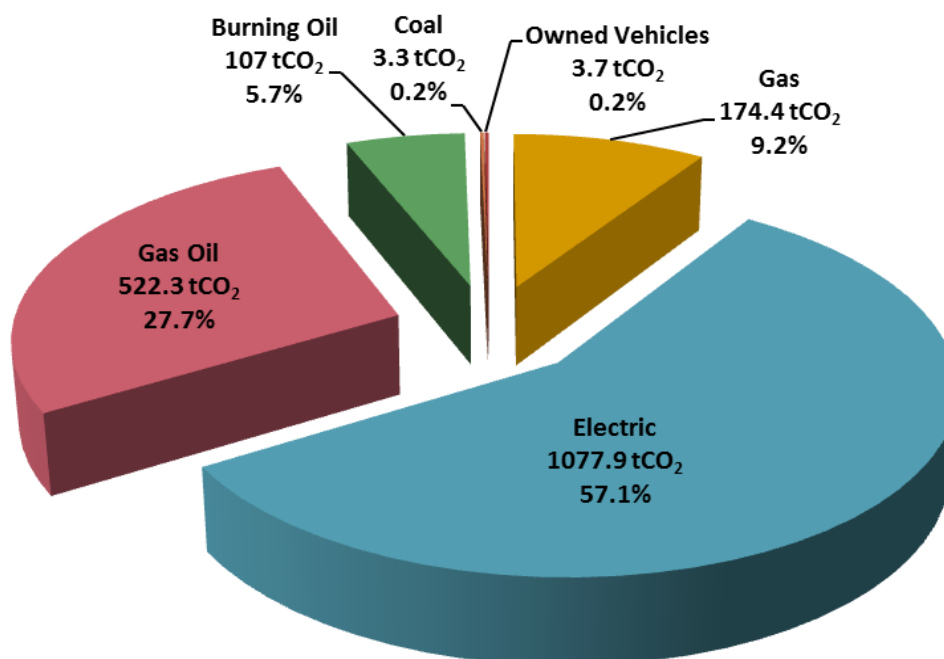
## Our Carbon Footprint

The College's Carbon Management Plan uses the widely adopted system of categorising carbon emissions into three 'scopes'.

Defra defines scope 1, 2, & 3 emissions as follows:

- scope 1 refers to direct emissions that occur from sources that are owned or controlled by the organisation, for example emissions from combustion in owned or controlled boilers, furnaces or vehicles;
- scope 2 accounts for emissions from the generation of purchased electricity consumed by the organisation;
- scope 3 is all other indirect emissions that are a consequence of the activities of the organisation but occur from sources not owned or controlled by them – for example, commuting.

For now, the College's Carbon Management Plan is limited to scope 1 and 2 emissions, which are more easily measured. Our current scope 1 and 2 emissions are shown in figure 1 below. Other aspects of the College's Environmental & Sustainability Policy (such as the elements relating to waste and water consumption) encompass scope 3 emissions; however, these have not yet been incorporated into the College's absolute emission reduction targets due to the practical difficulties in measuring and monitoring them.



**Figure 1: College Scope 1 and 2 Carbon Emissions by Source in 2009/10**

## Target

**The Royal Agricultural College aims to reduce scope 1 and 2 carbon emissions (from energy use and owned transport) by 34% by 2020 from a 2005/6 baseline.**

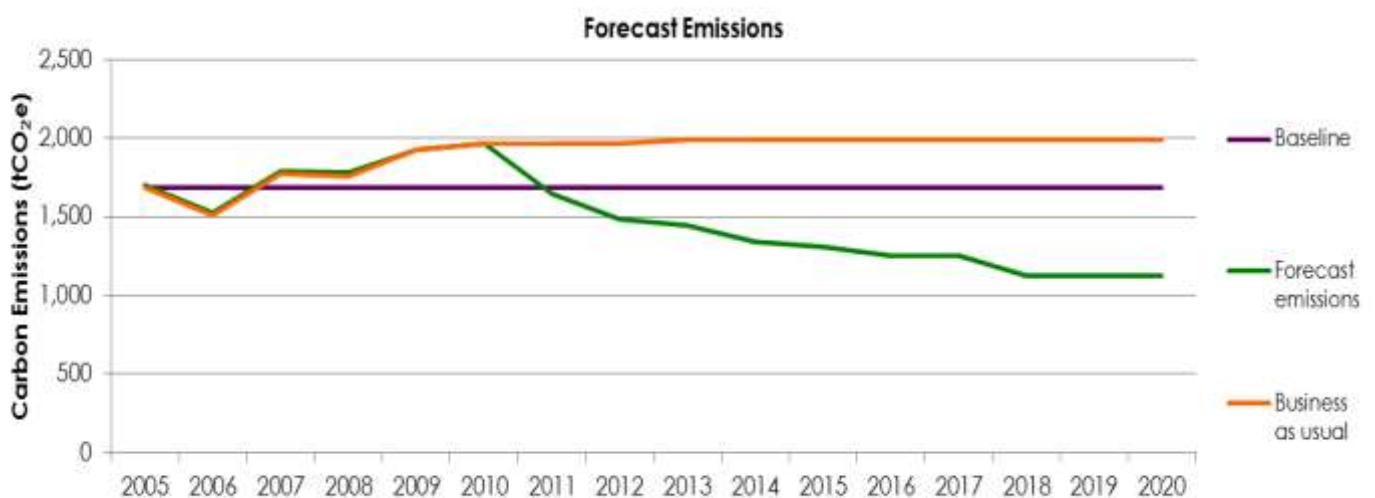
**This equates to a decrease of approximately 41% from the 2009/10 baseline.** This is because although the College has, for some time, been engaged in a programme of energy saving measures, these have been set against a background of significant expansion in student and staff numbers and building space which resulted in an overall increase in the College's carbon emissions between 2005/6 and 2009/10.

The College's 2020 target has been set after very careful consideration of the opportunities available to reduce our carbon emissions. A significant number of our buildings are listed which places some limitations on what we are able to do to lower emissions. Consequently our target is slightly lower than HEFCE's 'sector-wide' one; however, by aiming to decrease our emissions by approximately 41% from our 2009/10 baseline, we believe we have set a target which is realistic but still represents a real challenge for the College.

## Achieving Our Target

Our Carbon Management Plan includes an implementation strategy which sets out a programme of energy saving projects which are designed to enable us to achieve our carbon reduction target and which take into account further planned construction at the College and the limitations that we face due to the historic nature of many of our buildings. These projects include installing voltage optimisation equipment, using biomass heating for our forthcoming new accommodation facilities, upgrading to more energy efficient lighting and replacing some of our domestic hot water systems with more efficient alternatives.

Completing the projects set out in the Carbon Management Plan will result in a reduction in carbon emissions as shown in figure 2 below.



**Figure 2: Planned Reductions in Carbon Emissions**

## **Financial Implications**

The average project payback for the measures included in our implementation strategy is 5.0 years, based on an average price of 10p/kWh for electric and 4p/kWh for gas. As energy costs are expected to increase towards 2020, the payback on the later projects is likely to be further reduced. By 2020 it is estimated that the College will be saving nearly £125,000 on annual energy costs due to energy savings, even assuming no increase in unit energy prices, for a total estimated project cost of £622,500.

## **Reporting**

Progress against the plan will be reported publicly every year. Details of how the performance of the projects will be measured and communicated can be found within the Carbon Management Plan document. The estates team will review the performance of projects, and the findings will be presented to the College's Environmental Sustainability Strategy Group, in order for action to be taken in the case of actual savings falling below estimate. To help measure the progress against our overall target, milestone targets of a 12% reduction in the 2012/13 academic year and a 26% reduction by 2017/18, against a 2005 baseline, have been set.

## **Policy**

The Carbon Management Plan sits beneath the College's Environmental and Sustainability Policy and fits within the overall strategic priorities of the College. The Director of Estates will be accountable to the Board of Governors for performing to the plan and ultimately delivering the absolute 34% (2005 baseline) reduction target.

The Royal Agricultural College places sustainability at the centre of its operations. Although there are limitations when it comes to carbon reduction, due to the historical and landscape significance of the buildings and surrounding area, the College recognises that there are significant opportunities to reduce emissions, and is fully committed to doing so. We have already taken a number of steps to improve energy efficiency, and, through our Carbon Management Plan, have set ourselves a real challenge to deliver continued reductions in our carbon emissions over the next decade.



*The Sir Emrys Jones Centre*

*The building is heated by the College's biomass district heating system, and incorporates a range of energy efficiency measures including movement sensitive low energy lighting.*