University of Cumbria

CARBON MANAGEMENT PLAN 2011-2020

SCOPE 1 & 2 EMISSIONS

Contents

Foreword by the Vice Chancellor

Professor Peter Strike
Vice Chancellor
University of Cumbria

The University of Cumbria's Corporate Strategy (2012-2017) is driven by an overarching vision and set of values that support our overall mission to:

"Provide and promote excellent and accessible higher education which enhances the lives of individuals and fosters the development of the communities to which we belong"

One of the core values identified to achieve this mission is that of environmental sustainability. The strategic plan requires the university to focus and lead on the sustainable use of resources and investment to ensure we meet carbon reduction targets and promote an environmentally responsible approach to all of the university's activities.

This Carbon Management Plan underpins our aims and mission as we look to deliver substantial and measurable carbon emission reductions over the next 10 years and beyond. We are committed to making a 25% reduction in emissions by 2013-14, and a 45% reduction by 2020 (from a 2007-08 baseline). Significant investment will be required if we are to realise our aims, but I am confident that we will succeed in our ambitions and achieve our vision.

As Vice-Chancellor of the University of Cumbria, I give my full support to this plan and its publication, and see it as a key contributor to the future sustainable success of the institution.

SUPPORT FROM THE BOARD OF DIRECTORS

This plan and its associated reduction targets are supported and approved by the University Board of Directors.

Stephen Henwood
Chair of the
Board of Directors
University of Cumbria

SUPPORTING STATEMENT FROM UNIVERSITY OF CUMBRIA STUDENTS UNION (UCSU):

The adoption of a Carbon Management Plan by the University of Cumbria demonstrates a level of commitment from the university in not only reducing its carbon footprint but its environmental and ecological impact.

At UCSU, we have been working hard over the last year to assess what we, as a Union, can do better in terms of our environmental impact and are now seeing the benefits of this. We thoroughly support the university's investment in a carbon management scheme and feel the benefits range across all of our campuses to all of our students and indeed far beyond.

We look forward to working with the university further on this matter with shared resources on campaigns, awareness and implementation ensuring the benefits are broader and deeper.

Matt Tennant
Ethical and Environmental Exec Rep (2011–2012) UCSU

SUPPORTING STATEMENT FROM TRADE UNION REPRESENTATIVES – UNISON & UCU:

UCU and UNISON are both committed to supporting the University of Cumbria's environmental agenda. The actions contained in the Carbon Management Plan will help to improve the places in which we work and reduce the distances we have to travel. This will benefit our members, our university and our planet.

Trevor Curnow
UCU Health & Safety Representative

Robbie Taylor
UNISON Health & Safety Representative

Executive Summary

The University of Cumbria has developed a Carbon Management Plan (CMP) in order to support its long term aim of becoming a more sustainable institution. This plan also meets the requirements of the Higher Education Funding Council for England (HEFCE) carbon management strategies and plans guidance document, and represents the institutions commitment to achieving a 45% reduction in carbon emissions by 2020, taken from a 2007-08 baseline.

This plan includes:

- an overview of the university's strategy and the key drivers for carbon management and reduction.
- an outline of the recommended CMP contents as defined by HEFCE
- a baseline assessment of the university's scope 1 & 2 emissions from 2007-08 and subsequent carbon reduction targets
- an Implementation Plan that will deliver the required savings
- details of the management and governance processes in place to ensure our long term targets are met or exceeded.

Following HEFCE guidelines, the baseline assessment of scope 1* & 2** emissions from the academic year 2007-08 represents a total of 9978 tonnes of carbon. Allowing for growth as defined in the university's Tier 1 Plans, and in order to achieve our aim of reducing emissions by 45% by 2020, a total of 2769 tonnes of carbon needs to be saved from our annual total.

This document details an implementation plan that illustrates how and where the required savings will be made and where additional investigation is required.

It is the intention of the university to report annually on the progress and savings made through the implementation of the CMP, with principle responsibility for the plans success residing with the Director of Estates & IT.

Regular updates on progress will be detailed on the university's intranet and external website. The annual review process which will provide an opportunity to revise the CMP inline with the requirements of the university, HEFCE, or any changes to UK Government policy, will be subject to an SMT (university Senior Management team) progress update report

Overall while this plan is stretching, it is realistic, fundable and eminently achievable.

* Scope 1 emissions—direct emissions occurring from sources that are owned or controlled by the HEI e.g. direct fuel and energy use (heating oil/natural gas), fuel used by university fleet vehicles

** Scope 2 emissions—emissions from the generation of purchased electricity consumed by the HEI

"**SUSTAINABILITY**—OUR UNIVERSITY IS BUILDING A SUSTAINABLE FUTURE FOR CUMBRIA AND OUR COMMUNITIES LOCALLY, NATIONALLY AND INTERNATIONALLY"

University of Cumbria
Corporate Strategy 2012–2017

"IT'S HARD TO THINK OF A MORE URGENT CHALLENGE THAN CLIMATE CHANGE. IT FEELS REALLY POSITIVE TO BE PART OF AN INSTITUTION THAT'S BEGINNING TO SHOW REAL LEADERSHIP IN TACKLING IT. AND THERE'S A REAL SYNERGY BETWEEN THIS AND THE LAKE DISTRICT NATIONAL PARK'S 'LOW CARBON LAKE DISTRICT' WORK - THIS IS ABOUT OPPORTUNITIES AS WELL AS CHALLENGES."

Dr Kate Rawles
Senior Lecturer in Outdoor Studies

1. Introduction

1.1 UNIVERSITY OF CUMBRIA BACKGROUND

The University of Cumbria was formed on 1August 2007 from the amalgamation of St Martin's College, Cumbria Institute of the Arts, and the Cumbrian Campuses of the University of Central Lancashire. The university currently owns or manages over ten sites located in Carlisle, Penrith, Ambleside, Workington and Lancaster and has a specialist teacher-education centre in Tower Hamlets in London. There are approximately 12,000 students associated with the university, studying within three academic faculties across a wide range of subject areas.

With the university continuing to build on the significant steps taken in the past 18 months in consolidating its governance, leadership and financial foundations, the University Corporate Strategy 2012-17 highlights sustainability as one of our corporate themes. This document also commits the university to operating our estate to the highest standards of energy management whilst demonstrating sustainable business practice, transport and approaches to logistics. By recognising carbon management as a priority, the university is contributing towards building a sustainable future for Cumbria as well as communities at a local, national and international level.

1.2 HIGHER EDUCATION SECTOR EMISSIONS

Since the university's formation, the UK Government committed to the delivery of a long-term carbon reduction target of 80% by 2050 against baseline 1990 levels through the Climate Change Act (CCA) 2008. Interim targets designed to achieve a 34% reduction by 2020 have also been set. A further increase to 42% within this timescale has been recommended by the Committee on Climate Change (CCC).

In 2009-10, the Department for Business Innovation and Skills' (BIS) grant letter to the Higher Education Funding Council for England (HEFCE) set a requirement for the higher education (HE) sector in England to deliver a carbon reduction target of at least 80% by 2050 against baseline1990 levels, effectively matching the requirements of the Climate Change Act. To assist the sector, HEFCE published the following guidance document 'Carbon Management Strategies & Plans—a guide to good practice (HEFCE 2010/02)', and requested that institutions developed specific CMP's and report on progress and the results achieved.

The key sources of carbon emissions from the HE sector are detailed in table 1 below:

Table 1: HE carbon emission sources:

Source	Description	
Energy—fossil fuel combustion (gas, coal, oil) and electricity use	Building related: • non-residential buildings—teaching, research, catering, sports, other • residential buildings—student and staff accommodation	
	Non-building related: • Campus lighting, sports grounds	
Transport	Land transport: • car, rail, bus, other Air travel: • domestic flights, international flights	Includes: • Institutions' own vehicle fleet • Business travel—management, research, teaching • Commute—staff and students
Other	• Water, waste, procurement (assets, goods and services), land use	

Table taken from 'Carbon management strategies and plans—a guide to good practice' HEFCE guidance document January 2010/02

The UK Government has adopted the use of the World Resources Institute's (WRI) classification of carbon emission sources into three scopes and these are detailed in table 2 below.

Table 2: HE carbon emission sources according to 'scope' in 1990 and 2005:

Scope	Description	Examples	HE sector (Millions of Tonnes—Mt)
Scope 1: Direct emissions	Direct emissions occur from sources that are owned or controlled by the HEI	• Direct fuel and energy use • Transport fuel used in institutions' own vehicle fleets	**1990: total CO_2 equivalent—1.782 $MtCO_2$** Of which: 1.102 $MtCO_2$ from electricity (62%), 0.452 $MtCO_2$ from gas (25%), 0.173 $MtCO_2$ from burning oil (10%) and 0.037 $MtCO_2$ from coal (2%); and 0.018 $MtCO_2$ from direct transport emissions (1%) **2005: total CO_2 equivalent—2.046 $MtCO_2$** *(15% increase compared with 1990)*
Scope 2: Electricity indirect emissions	Emissions from the generation of purchased electricity consumed by the HEI	• Purchased electricity	
Scope 3: Other indirect emissions	Scope 3 emissions are a consequence of the activities of the HEI, but occur from sources not owned or controlled by the HEI	• Water • Waste • Land-based business travel • Commuting (both staff and students) • Air travel (international students; international student exchange; business	**1990: total CO2 equivalent—0.738 $MtCO_2$** **2005: total CO2 equivalent—1.293 $MtCO_2$** *(75% increase compared with 1990)*
		• Procurement	Not assessed at sector level

Table taken from 'Carbon management strategies and plans—a guide to good practice' HEFCE guidance document January 2010/02

1.3 HEFCE REQUIREMENTS

In light of the above, and in order to support the wider aims of the HE sector, the University of Cumbria CMP will follow the guidance provided by HEFCE. This will ensure that the university adopts a structured approach to carbon management which includes the following elements (these points are taken from Carbon Management Strategies and Plans—a guide to good practice (HEFCE guidance document January 2010/02)) (UoC comments in italics):

a) A carbon management policy or strategy—this could be part of a wider environmental/sustainability policy;

b) A carbon baseline for 2005 that covers all scope 1 and 2 emissions *(This plan uses a baseline of 2007-08 which was the university's first full year of operation)*. This year is being used as a baseline because it is used for reporting against UK targets. This will provide consistency across the sector against which progress can be monitored and reported. Institutions are encouraged to measure a baseline for scope 3 emissions and in the longer term we will expect these to be included;

c) Carbon reduction targets that:

- Cover scope 1 and 2 emissions, although institutions may choose to set additional targets for wider aspects *(the university has not included scope 3 emissions within this plan but is actively looking to improve data collection in this area*)
- Be set against a 2005 baseline *(the university is using a 2007-08 baseline as agreed with HEFCE)*. Institutions may choose to set their reductions in context by setting additional targets against an alternative baseline year
- Be projected through to 2020, because this is the timescale determined for interim government targets. This will provide consistency across the sector against which progress can be monitored and reported. Institutions may also set interim milestones
- be publicly available.

d) An Implementation Plan to achieve absolute and measurable carbon emission reductions across scopes 1, 2 and 3 including timescales and resources *(Scope 3 targets will be developed following publication of new HEFCE guidance – see section 4.6).* These may cover capital projects and actions to embed carbon management within the institution, for example, through corporate strategy, communication and training;

e) Clear responsibilities for carbon management;

f) A commitment to monitor progress towards targets regularly and to report publicly annually;

g) The carbon management plan and targets will be signed off by the University's governing body.

Therefore, this CMP has been developed as part of our aspiration to become a more sustainable institution, to support HEFCE and the HE sector in meeting carbon reduction targets, and to provide an effective framework for managing carbon whilst supporting the wider strategic direction and mission of the institution.

"UNIVERSITIES SHOULD BE A PLACE OF FORWARD THINKING AND INNOVATION. SHOWING NEW THINKING ABOUT CARBON MANAGEMENT NOT ONLY BETTERS OUR SELF BUT ALSO PROVIDES A MODEL FOR OTHERS TO FOLLOW."

Tom Underwood
Community Sabbatical 2011-2012

2. Overview of strategy and key drivers

The University of Cumbria's CMP has been developed not only to demonstrate our commitment to carbon reduction and compliance with HEFCE requirements, but also to minimise the risks and maximise any opportunities arising from carbon management now, and into the future. The university recognises that carbon management must become embedded across the whole organisation and form part of core business and decision making processes. By doing so, the university will then be in a position to successfully adapt to the low carbon economy of the future. In short, effective carbon management makes good business sense.

The underlying strategy has been to identify and implement energy efficiency projects based around a simple capital investment/payback calculation, taking into account the condition of existing equipment and infrastructure, the future use of the university estate, and our ability to meet current and future legislative requirements. This will form the basis for the identification of priority projects as we aim to achieve the required levels of carbon reduction.

The university also realises that the success of this CMP is inextricably linked to other university strategies and plans, in particular the Estates Implementation Programme (EIP—see section 2.2), and also the buy-in, awareness and active engagement of staff and students in relation to carbon reduction targets and initiatives.

2.1 CONTEXT AND DRIVERS FOR CARBON MANAGEMENT:

GLOBAL CLIMATE CHANGE

Climate change is the greatest environmental challenge facing the world today. The release of carbon dioxide and other greenhouse gases are seen to be the primary human influence on global climate. The university has a considerable interest in supporting the work carried out by the sector in reducing its emissions and in mitigating the potential effects of climate change. The floods of 2005 and 2010, which had a devastating effect on Cumbria and as a consequence our staff and students, demonstrated how a changing climate can have a significant and lasting impact on daily life at a local level. The university is already engaged with carbon reduction research through land management practices and wishes to practice what it preaches through reducing the environmental impact of its own dispersed estate.

The university has further demonstrated its commitment to carbon reduction as a signatory of the Cumbria Climate Change Agreement. This commits the university to reducing carbon emissions by 25% by 2014 (from a 2007 baseline) and being an active champion for carbon reduction in the community.

THE CLIMATE CHANGE ACT 2008

The Climate Change Act 2008 puts into statute the UK's targets to reduce carbon dioxide emissions through domestic and international action by at least 80% by 2050 and at least 34% by 2020, against a 1990 baseline. This is a key legislative driver.

THE CARBON REDUCTION COMMITMENT AND ENERGY EFFICIENCY SCHEME (CRCEES)

The university has qualified for and has registered as a participant in the Environment Agency regulated CRCEES. The university must prepare to purchase allowances of approximately £80,000 in value in May/June 2012 in order to cover annual carbon emissions. This is based on the purchase of anticipated allowances at £12.00 per tonne of carbon. By having a proactive CMP, this will bring about a timely reduction in carbon emissions and subsequent level of financial and reputational risk associated with the CRCEES.

HIGHER EDUCATION FUNDING COUNCIL FOR ENGLAND (HEFCE)

As discussed in the introductory section, HEFCE require all HEI Institutions in England to develop individual carbon reduction strategies, targets and associated carbon management plans.

RISING ENERGY PRICES

Volatility in the world's energy markets combined with continuing depletion of the world's fossil fuel stocks is likely to result in further increases in the unit costs of energy. Reducing energy usage and associated carbon emissions will therefore lessen exposure to market conditions and improve financial sustainability. It is worth noting that savings from proposed carbon reduction projects will increase as utility costs increase delivering improved and shortened return on investment (ROI) periods. This should allow for additional projects and new technologies, including some that are currently borderline viable to be investigated and implemented in the future.

CORPORATE SOCIAL RESPONSIBILITY (CSR)

The university has a Corporate Social Responsibility (CSR) to consider the interests of society by taking responsibility for the impact of its activities on students, suppliers, employees, communities and all other affected stakeholders, as well as the wider environment. By adopting a CMP the university will:

- enhance its institutional reputation
- demonstrate a culture of 'doing the right thing
- ensure compliance with regulatory requirements
- motivate staff and students to be more environmentally aware
- enhance relationships with Cumbria and Lancashire County Councils, neighbouring local authorities and other stakeholders
- engage staff and students on carbon management issues and initiatives
- enhance the marketability of the institution to prospective staff and students.

ESTATE MANAGEMENT STATISTICS (EMS) AND PEOPLE AND PLANET

The Estate Management Statistics (EMS) were established to provide the HE sector with standardised, reliable and useful property information in order to understand and monitor performance, promote sharing of best practices and drive improvements. The amount of EMS data required to be reported annually relating to sustainability and environmental impacts has increased significantly recently. Much of this information is also used by external environmental lobby groups such as People and Planet to publish their HEI Green League Table – with their specific focus on factors such as carbon emissions and waste to landfill per student\staff head count.

The Green League Table (GLT) is published in the Times Higher Education Supplement and is accessible to potential funding bodies, other institutions, and current and prospective students and staff where it is increasingly becoming recognised as a valuable marketing tool. If the university consistently ranks highly in the GLT this denotes a commitment to long term environmental sustainability with the potential positive impact on future student recruitment, retention and capital investment from funding bodies.

2.2 LINKS TO OTHER UNIVERSITY STRATEGIC PLANS AND PROGRAMMES

THE ESTATES STRATEGY AND IMPLEMENTATION PROGRAMME (EIP)

The vast majority of the university estate comprises building stock of a poor condition and functional suitability. As a consequence many buildings struggle with the issue of poor energy efficiency due to poor or in some cases a lack of appropriate insulation within the building fabric and outdated heating distribution networks and inefficient boilers. Much of the original estate which formerly operated as a hospital in Carlisle or an army barracks in Lancaster was never designed to operate as teaching space when originally constructed.

The EIP in its first phase and consequential following phases has the potential to deliver a stream of transformational projects across the university estate in terms of delivering modern, space and energy efficient teaching and administrative space, with the aim of achieving a minimal BREEAM* excellent status as standard on new-build and major refurbishment projects.

Due to the scale of the potential carbon reductions linked to the EIP, a separate table of projects and estimated savings has been included within the implementation section of this plan (detailed in section 4).

WIDER ENVIRONMENTAL MANAGEMENT INITIATIVES

The university has signed up to participate in the HEI targeted EcoCampus scheme from 2011 onwards. The scheme will assist the university in developing and implementing an Environmental Management System (EMS) which will provide the framework for managing the wider holistic sustainability agenda, carbon reduction and other related issues such as waste management.

The provision of an EMS will undoubtedly assist in raising awareness of environmental issues with staff and students across the institution and assist in promoting effective communication internally and externally. It will also allow for the development of a broad range of robust policies that support the wider environmental and biodiversity context within which the CMP operates.

The management review process associated with this EMS will be used to report on progress towards meeting carbon reduction targets to the university Senior Management Team, helping to provide effective governance of the CMP.

* BREEAM—Building Research Establishment Environmental Assessment Method

THE UNIVERSITY TRAVEL PLAN (FIRST PUBLISHED IN 2009)

The university is a geographically dispersed education institution. The delivery of the university's business plan relies on a significant amount of travel. The travel plan sets out how targeted action in this area can help to:

- reduce the university's environmental impact
- improve the operational effectiveness of the Institution
- increase the ability of students to access courses and staff to achieve their goals
- reduce corporate risks and financial costs by reducing the overall amount of travel and the use of cars.

The travel plan has identified the means and rationale behind current university travel requirements, allowing a targeted approach designed to minimise carbon emissions. This plan, which is a live document will therefore support our goals and the overall carbon reduction targets that have been set.

DISTRIBUTED LEARNING AND ICT

The university is a disperse organisation with campuses located in London, north Lancashire and throughout Cumbria. With this in mind, the use of ICT to avoid staff and student travel between sites is actively encouraged. The university also seeks to co-locate with other organisations, enhancing local access to services and further reducing associated carbon emissions.

Through ongoing behavioural campaigns, training and raising awareness, the long term aim is to ensure ICT solutions are readily utilised to reduce travel, and that such behaviour becomes the 'norm'.

Recent success and investment in the use of ICT include:

- provision of comprehensive video-conferencing (VC) facilities
- roll-out of Microsoft Office Communicator for web enabled meetings
- use of webinar and telephone conference facilities
- roll out of cloud based student email reducing power requirements.
- investment in more efficient computing hardware partnering with Lancaster University to provide communications space on University premises.

Further investment in ICT has been approved, with additional video-conferencing and web-enabled technology identified for use in staff meetings and learning and teaching provision. This need is supported through the university seeking to enhance its e-learning capability.

Future enhancements include:

- replacement of server infrastructure with newer more power efficient designs (2012-13)
- use of cloud technologies to further reduce server requirements (2012-15)
- use of more efficient thin client and remote working solutions (2012-15)
- more integration of desktop VC and business VC to reduce travel
- partnerships with other organisations to reduce travel for students.

The strategic improvements we plan to make to our ICT infrastructure will further support our carbon reduction goals and ensure the university and its staff and students can all benefit from the technology available to us today.

STAFF / STUDENT BEHAVIOUR

Key to meeting our long term carbon reduction targets will be the underlying behaviours, awareness and level of 'buy-in' of our staff and students. This is reflected by the fact that a strong environmental and sustainability ethic/ reputation is becoming increasingly important in terms of attracting potential students and staff in a hugely competitive marketplace.

Targeted and themed campaigns led by Facilities Management will assist greatly, as will a focus on environmental and sustainability issues within staff / student induction and the setting of personal sustainability targets within the Performance & Professional Development Review (PPDR) process for staff.

By ensuring that our staff and students understand and personally identify with positive sustainable behaviours, the university can make a step change towards carbon reduction and embed this theme within the institution.

2.3 STRATEGIC THEMES FOR EFFECTIVE CARBON MANAGEMENT

The key strategic themes that will ensure that the university continues to increase energy efficiency and reduce carbon emissions are:

- Leadership and Management—this CMP has been approved by the Vice Chancellor and the chair of the Board of Directors and in doing so has committed the niversity to completing the proposed carbon saving projects
- improve the monitoring of actual energy usage in order to provide feedback, raise awareness and assess the performance of initiatives
- Improve the overall energy performance of the existing estate through a targeted investment programme to upgrade and re-furbish buildings and infrastructure
- Replacement of aging equipment with new energy efficient or passive environmental alternatives
- strategic investment—we will make appropriate resources available to meet the plan's objectives and targets relating to carbon management, and apply for external funding as appropriate e.g. Salix, Carbon Trust etc
- Policy review—we will continue to develop supporting policies to support the aims and reduction targets within this 'live' plan
- Raise awareness and change behaviours through the provision of improved energy usage information and targeted campaigns and utilise the induction and PPDR process to further embed the themes of environment and sustainability throughout the institution.
- Benchmarking Performance—We will continue to contribute to benchmarking activities in order to demonstrate progress and learn from the best practice within the Sector.
- ICT—significant investment will be made available to upgrade servers, hardware / software and web based communication tools
- Enhance co-location with other local services and organisations where possible

Overall, these strategic themes support the university's wider environmental aims and reflect our current and emergent knowledge and thinking. The strategy will have to be live, adaptable and reviewed annually to ensure that it continues to reflect the right course of action, continues to meet the university's strategic objectives, and is compliant with any future changes to government policy and legislation.

3. Emissions baseline and reduction targets

HEFCE require that a 2005 baseline be used for HE institutions when developing a carbon management plan. As the University of Cumbria was formed in 2007, it was agreed, following discussions with HEFCE, that the 2007–08 academic year would be used as an alternative baseline year.

3.1 BASELINE AND CARBON EMISSION DATA

The following table and chart reflects the university's carbon emissions performance from 2007–08, through to 2010–11 for scope 1 and 2 emissions:

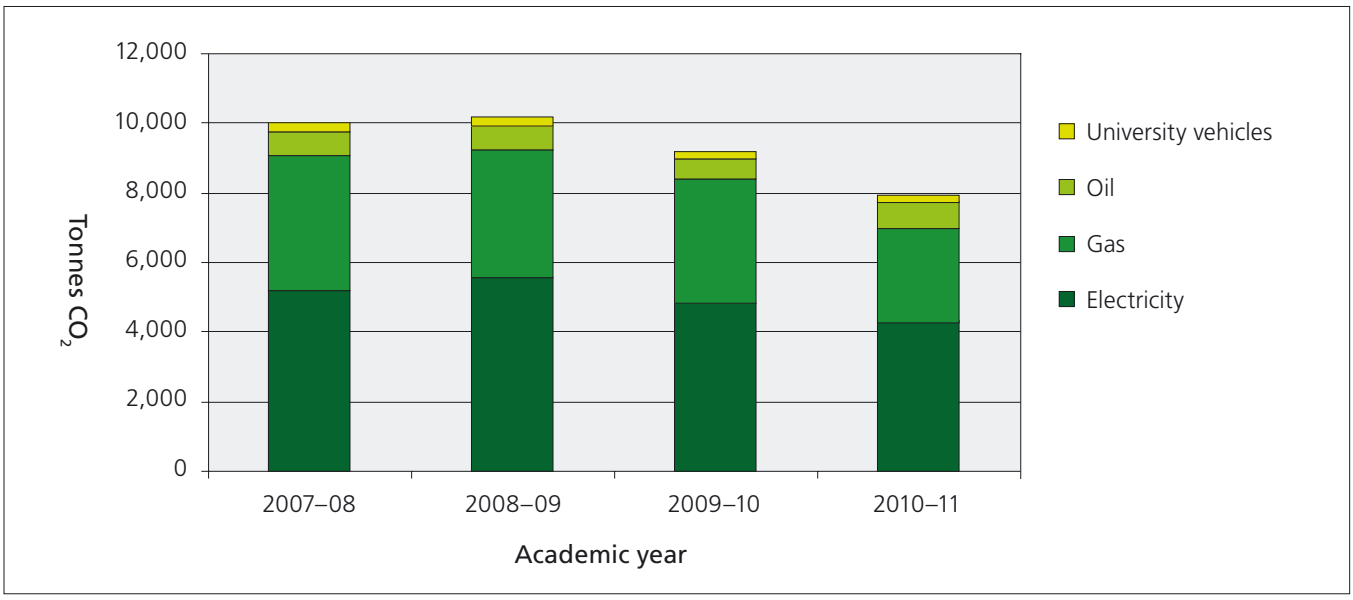
Table 3—Annual CO_2 Emissions (tonnes):

	2007–08	2008–09	2009–10	2010–11
Electricity	5,183.40	5,534.70	4,815.66	4,200.3
Gas	3,862.60	3,641.80	3,550.07	2,716.3
Oil	**678.00	**674.66	**543.33	**785.8
University vehicles	254	*246.28	*222.73	*192.6
Total	**9,978**	**10,097**	**9,132**	**7,895**

* Transport emissions have been estimated as an extra 2.5% of the total emissions from electricity, gas and oil

** Emissions factors applied to the utility data were taken from Estates Management Statistic guidelines using Defra figures from October 2010, and the CRC figure for gas oil published in January 2010

Chart 1—Tonnes of CO_2 emissions:



3.2 CARBON REDUCTION TARGETS AND PREDICTED EMISSIONS:

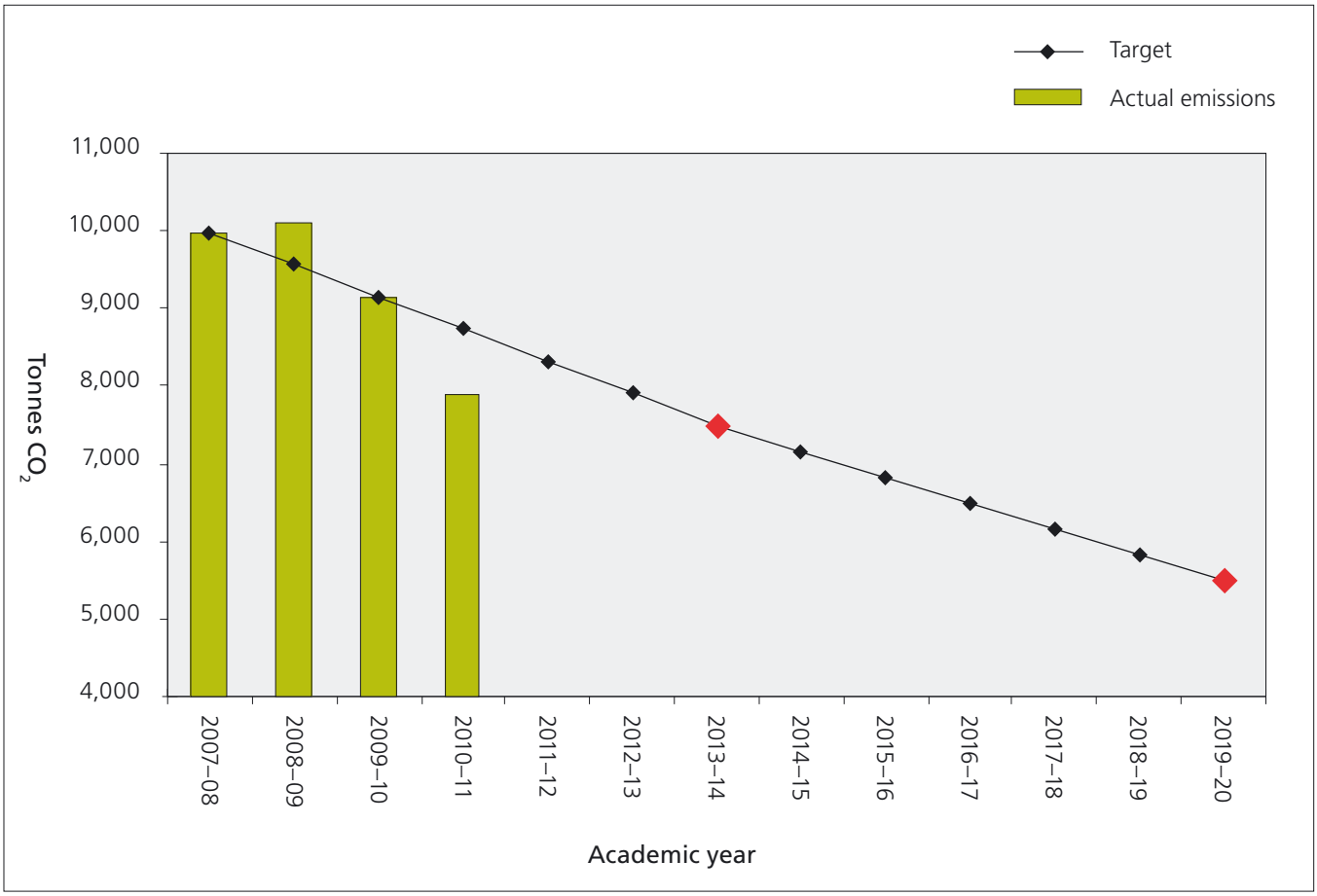
In support of HEFCE's target of achieving a 43% reduction in HE sector carbon emissions by 2020, the University of Cumbria is committed to the following:

- a 45% reduction in emissions by 2020 from a 2007–08 baseline
- an interim reduction target of 25% by 2014.

This 45% target equates to reducing our annual emissions by a total of 4,490 tonnes by 2020. Even though significant progress has been made so far (2010–11 emissions indicate a 20% reduction), much more work needs to be done if we are to meet our long term reduction target.

The following chart illustrates the progress made to date and the future reductions still required.

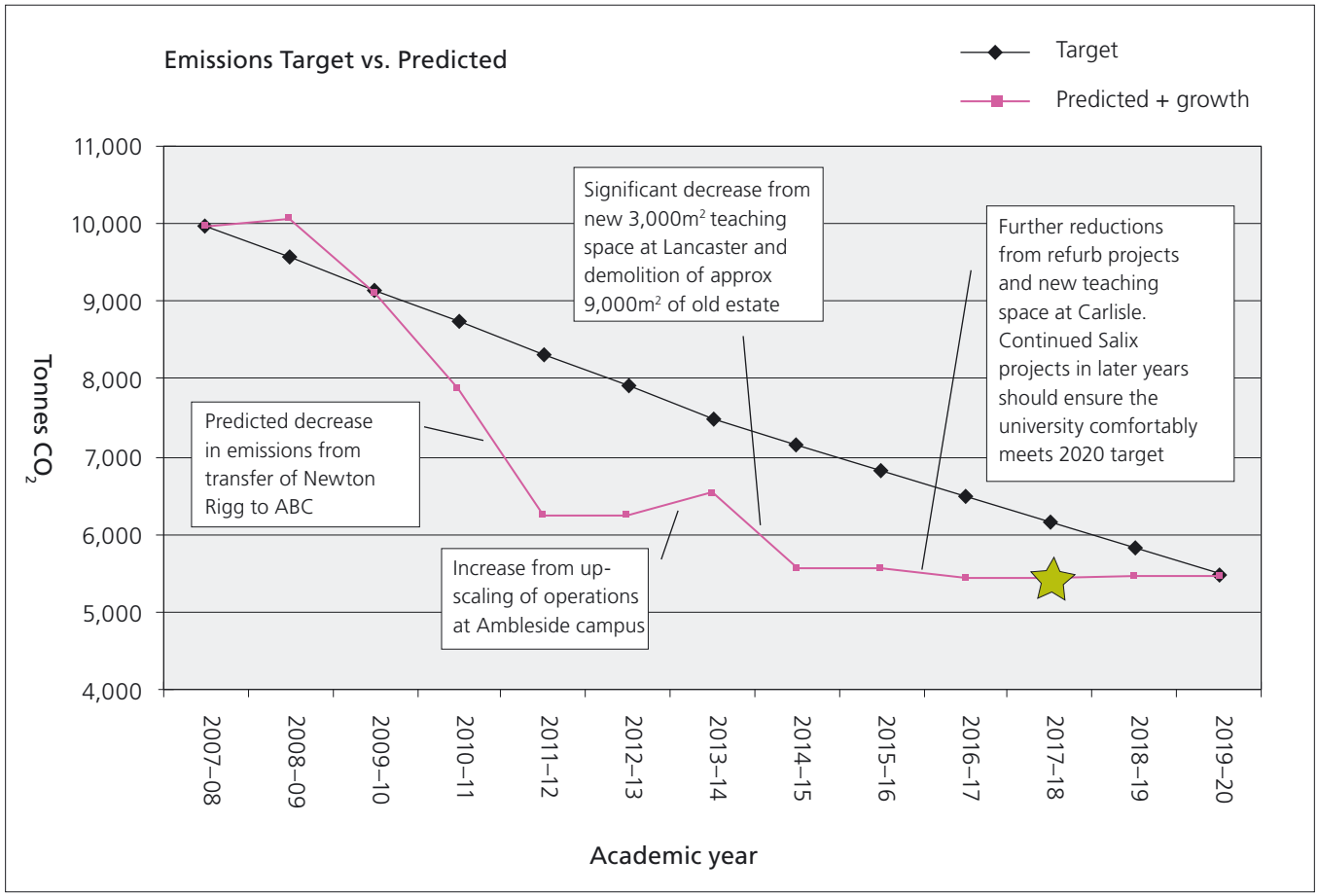
Chart 2—Emissions and future targets:



It is worth noting that the majority of the reductions achieved between 2007–08 and 2010–11 have been due to a major space allocation project and re-alignment of the institute as a whole through smaller site closures and the mothballing of the Ambleside campus. However, a number of energy savings projects have been commissioned during this time and a summary of these can be found in appendix 1 of this document.

A significant reduction is also expected to be achieved in 2011–12 following the transfer of Newton Rigg campus to Askham Bryan College on 31/07/2011. This reduction will be slightly off-set by the planned future up-scaling and partial re-occupation of the Ambleside site. A summary of our future predicted emissions is illustrated in the chart below and takes into account the major changes earmarked for the current university estate and projects listed in our implementation plan:

Chart 3—Predicted future emissions vs. targets:



The chart indicates that the university should achieve the 45% reduction target for 2020 by the end of 2017–18 academic year (indicated by the green star). Given that emissions reductions from the new build projects are estimated, a number of further projects will be investigated to ensure the final target is met. These project areas are detailed in section 4.5.

"WE WILL BE CONCERNED WITH SUSTAINABLE BUSINESS PRACTICE, TRANSPORT POLICY, AND APPROACHES TO LOGISTICS."

University of Cumbria
Corporate Strategy 2012–2017

4. Implementation Plan

The following section details how the required carbon savings are to be achieved. This has been split into the following categories:

- enabling projects in support of the CMP
- savings through the transfer of Newton Rigg and re-alignment of operations at Ambleside
- savings as a result of the Estates Implementation Programme (EIP)
- savings through the continued use of the university's Salix Revolving Green Fund
- future projects to be investigated.

As a result of our emissions total in the academic year 2010–11 of 7,895 tonnes, further savings of 2,407 tonnes need to be made if we are to meet our 2020 45% reduction target. Potential future growth of the university must also be taken into account. After discussions with our Facilities Management team and review of other **HEI sector carbon plans to follow best practise, a multiplication factor of 0.7% has been applied to our predicted emissions to represent potential additional carbon emissions. This is estimated to add a further 362 tonnes, resulting in an overall reduction target of 2,769 tonnes of CO_2.

4.1 ENABLING PROJECTS

The following table details projects that will support the carbon management programme and current strategy:

Project	Aim	Timescale	Estimated Annual Saving
Electric sub-metering	To improve data provision, provide real-time information, raise awareness and assess performance of energy saving initiatives	Installation by April 2012	See below
Gas sub-metering	As above	2012–13	See below
EcoCampus	To support the wider environmental agenda and provide the framework for all aspects to be managed. Increase awareness throughout the organisation at all levels.	From late 2011 onwards	See below
Targeted campaigns	To raise awareness and challenge/change behaviours. Provide training and regular communications/updates on the subject.	Ongoing	276 tonnes*
			Total reduction 276 tonnes

* We believe that through a series of ongoing, targeted campaigns, plus the provision of improved data and the implementation of EcoCampus, that 10% of the required savings can be achieved.

** HEI plans referred to: University of York, University of Hull, University of Sunderland, Manchester University, Northumbria University, University of Bristol, Liverpool John Moores University, University of the West of Scotland.

4.2 SAVINGS FROM THE TRANSFER OF NEWTON RIGG / RE-ALIGNMENT OF AMBLESIDE CAMPUS

Using data from the last academic year (2010–11), and the projected up-scaling of Ambleside, predicted savings are as follows:

Project	Aim	Timescale	Estimated Annual Saving
Transfer of Newton Rigg to Askham Bryan College	Transfer of Further Education courses to new provider to support sole focus on HE provision	Completed 31/07/2011	Approx 1,500 tonnes
Up-scaling of Ambleside campus	To potentially provide base for HE environmental and outdoor studies courses	2013–14 academic year	Predicted to increase emissions by an estimated 300 tonnes
			Total reduction 1,200 tonnes

4.3 SAVINGS AS A RESULT OF THE EIP

The following table details projects that will support the carbon management programme through the EIP:

Project	Aim	Timescale	Estimated Annual Saving
Provision of new teaching space at Lancaster	To provide 3,000m^2 of BREEAM excellent rated teaching space with 'A' rated energy efficiency. This will allow for the demolition of approximately 9000m^2 of old estate	To be completed by end of 2014–15 academic year	Approx 1,000 tonnes
Provision of new teaching space at Fusehill Street	To provide 3,000m^2 of BREEAM excellent rated teaching space with 'A' rated energy efficiency. This will allow for the demolition of approximately 1,900m2 of old estate	By end of 2015–16 academic year	Approx 70 tonnes
Refurbishment of Harold Bridges Library	To refurbish and upgrade the existing Harold Bridges Library at Lancaster with the aim of achieving 'A' rated energy efficiency	To be completed by end of 2015–16 academic year	Approx 70 tonnes
			Total reduction 1,140 tonnes

4.4 SAVINGS THROUGH THE UNIVERSITY'S SALIX REVOLVING GREEN FUND

The university has a small Salix fund of £75,000 which will be used to identify and implement compliant energy savings projects to support the larger scale savings predicted to be achieved through the EIP.

The following table indicates projects that have been identified as compliant and that are aimed to be implemented over the next two years. This project list will be updated on an annual basis as further projects are identified.

Project	Aim	Timescale	Estimated Annual Saving
Carlisle boiler plant room insulation	To install specialist insulation jackets to pumps and flanges within all the boiler plant rooms at Carlisle	Installation by May 2012	70 tonnes
Dalton Building boiler replacement	To replace existing boilers with high efficiency condensing equivalents	Installation by July 2012	19 tonnes
To install loft insulation in the Skiddaw Building at Fusehill Street	To provide 270mm of insulation to the loft space	Installation by April 2013	18 tonnes
Lancaster boiler plant room insulation	To install specialist insulation jackets to pumps and flanges within all the boiler plant rooms at Lancaster	Installation by February 2012	45 tonnes
Installation of energy efficient lighting in the Sports Hall at Fusehill Street	To replace existing 400W bulbs with 200W LED or Induction lighting equivalents	Installation by February 2012	14 tonnes
Installation of energy efficient lighting in the Sports Hall at Lancaster	To replace existing 400W bulbs with 200W LED or Induction lighting equivalents	Installation by February 2013	10 tonnes
			Total reduction 176 tonnes

4.5 ADDITIONAL PROJECTS TO BE INVESTIGATED

From the savings predicted to be achieved through the above projects. The university should be within the 2020 45% reduction target by approximately 23 tonnes. Due to the estimation of savings from the proposed EIP the following are project areas that will be investigated for future implementation through the university's Salix fund and/or capital projects. This will ensure the university will comfortably meet the required reduction levels.

- replacement boiler projects at all campuses
- further LED /induction lighting schemes
- plant room insulation
- building loft space insulation
- boiler optimisation
- air conditioning controls
- building management system upgrades
- investment in renewable energy generation (e.g Solar PV)
- voltage optimisation at Lancaster and Ambleside
- ICT software, hardware and server room upgrades
- Heating, Ventilation and Air Conditioning (HVAC) replacements / upgrades.

All such projects will be investigated and added to the implementation plan summary table in appendix 2 following the annual review process.

It should also be recognised that the EIP identified above is a first phase three year programme running out to 2015. It is anticipated that there will be at least one possibly two further development phases initiated before 2020 that will in their own right offer significant opportunities for carbon reduction across the estate.

4.6 COMMITMENT TO SCOPE 3 EMISSIONS

Scope 3 emissions are indirect emissions organisations produce through their activities, but arise from sources that are not controlled or owned by the organisation. Examples include emissions from business travel, supply chain (procurement), waste, water and commuting.

In addition to scope 1 and 2 carbon emission reductions, and in light of recently published HEFCE guidance* on measuring scope 3 emissions, it is the intention of the University to develop systems to capture and measure its scope 3 emissions by December 2012 and produce a baseline figure.

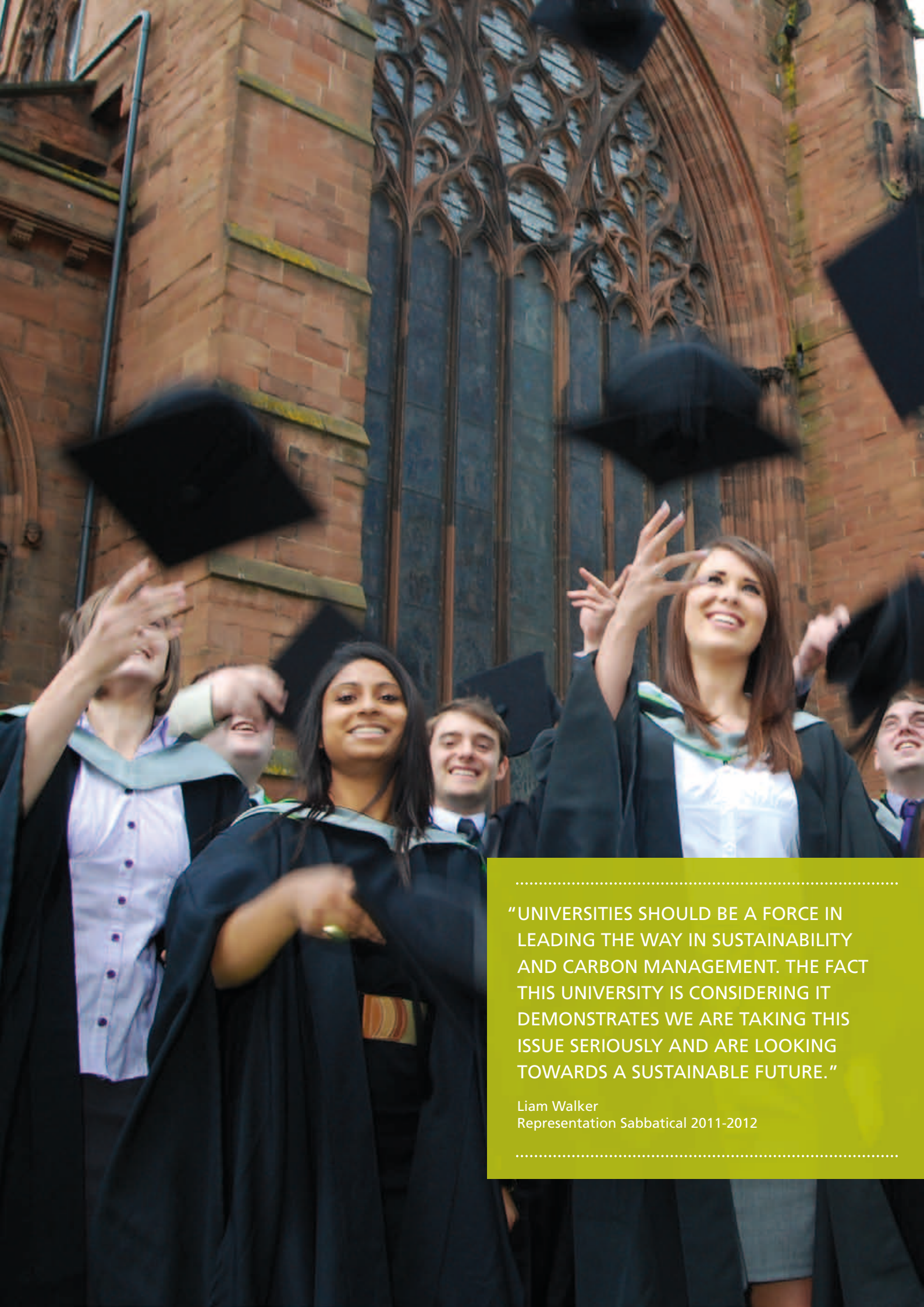
Subsequently, this document will be reviewed and re-published in March 2013 as a plan that covers scope 1, 2 and 3 emissions and associated reduction targets.

* HEFCE guidance documents:

Measuring scope 3 carbon emissions—water and waste: A guide to good practice (HEFCE 2012/01)

Measuring scope 3 carbon emissions—transport: A guide to good practice (HEFCE 2012/02)

Measuring scope 3 carbon emissions—procurement: relevant reports have been submitted to HEFCE by Arup, CENSA and De Montfort University—awaiting final recommendations and actions



"UNIVERSITIES SHOULD BE A FORCE IN LEADING THE WAY IN SUSTAINABILITY AND CARBON MANAGEMENT. THE FACT THIS UNIVERSITY IS CONSIDERING IT DEMONSTRATES WE ARE TAKING THIS ISSUE SERIOUSLY AND ARE LOOKING TOWARDS A SUSTAINABLE FUTURE."

Liam Walker
Representation Sabbatical 2011-2012

"OPERATING OUR OWN ESTATE TO THE VERY HIGHEST STANDARDS OF ENERGY MANAGEMENT."

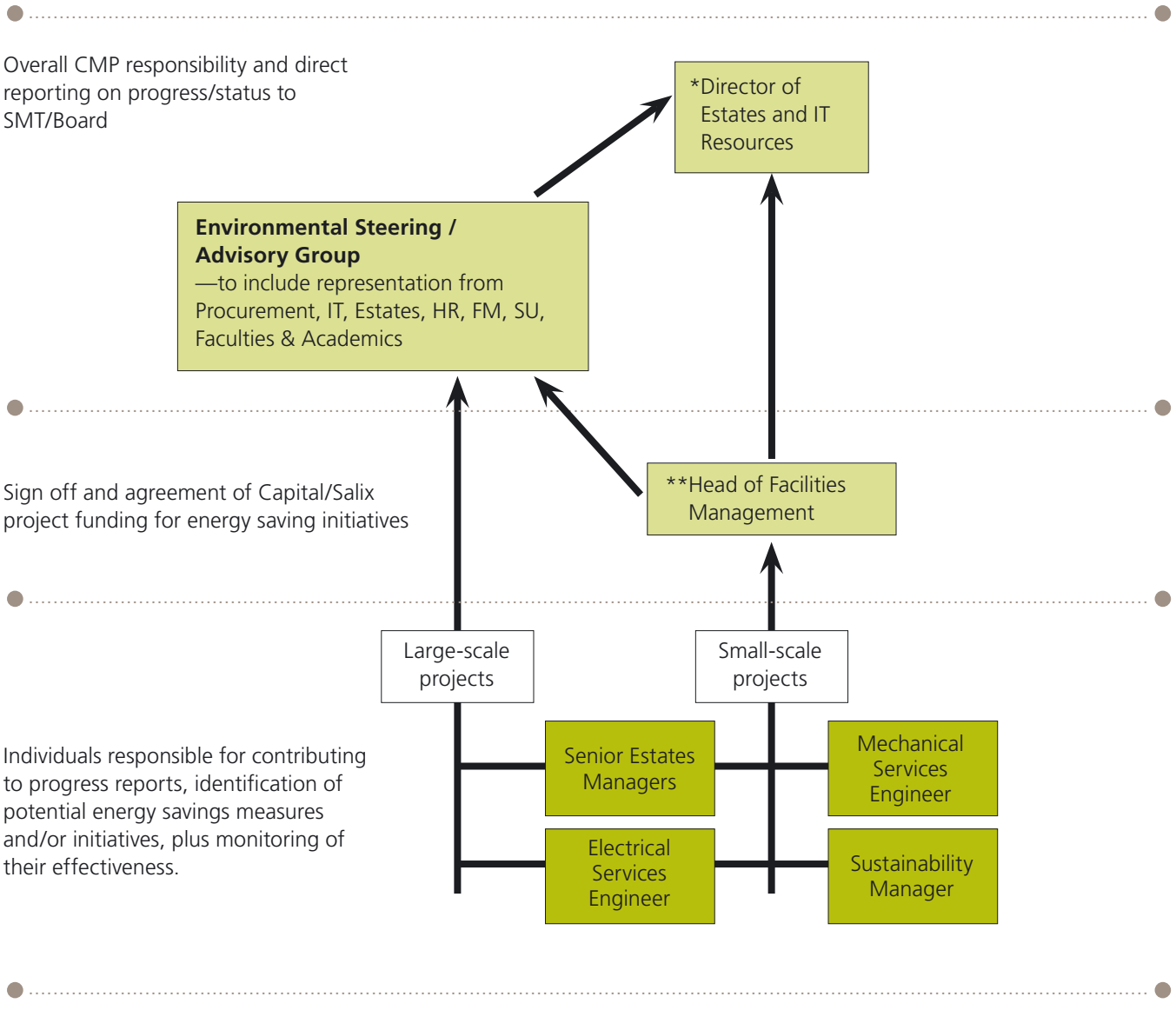
University of Cumbria
Corporate Strategy 2012–2017

5. Governance, monitoring and reporting

The university CMP is signed off at university board level by the Chair of the Board of Directors and the university Vice Chancellor.

Annual updates on the CMP will be presented to the University Senior Management Team, alongside the annual report on sustainability, based around the implementation of the EcoCampus EMS system. A comprehensive review of performance against all interim targets will be made in August 2015. A new set of interim targets will be identified, in accordance with any new government targets or our initial target of a 45% (over 2007-08 baseline) by 2020 at this point.

The following diagram illustrates how the carbon management programme will be governed and reported upon:



* Indicates member of the University Senior Management Team (SMT)
** Indicates member of the University Management Team (UMT)

APPENDIX 1—SUMMARY OF COMMISSIONED PROJECTS

Table of energy efficiency projects already completed:

Project Detail	Energy Source and projected annual monetary savings	Campus/site	Completion date	Estimated CO_2 annual savings
Variable speed drive installation to District Heating pumps	Electricity—£4,500	Lancaster	October 2009	32 tonnes
Discrete lighting controls for the Alexandra Building	Electricity—£590	Lancaster	October 2009	3 tonnes
Energy efficient lighting for the Waddell Student Halls	Electricity—£1,300	Lancaster	January 2010	7 tonnes
Energy efficient lighting at Brampton Road	Electricity—£1,300	Brampton Road, Carlisle	January 2010	5 tonnes
Biomass boiler install at Newton Rigg Campus (now transferred to ABC)	Alternative for original heating oil system—£45,000	Newton Rigg, Penrith	April 2010	268 tones
Energy efficient lighting for the graphic design department	Electricity—£1,900	Brampton Road, Carlisle	June 2010	10 tonnes
Main boiler upgrades at Brampton Road	Gas—£10,000	Brampton Road, Carlisle	July 2010	60 tonnes

APPENDIX 2—IMPLEMENTATION PLAN SUMMARY

Table to be updated as part of the annual review process:

Project and responsibility	Original timescale	Progress	Install/ completion date	Saving achieved
Enabling projects				
Electric sub-metering—sustainability manager/electrical services engineer	Installation over summer 2012	Install of sub-meters complete in August 2012. Final commissioning due to be complete by end of September 2012		
Gas sub-metering—sustainability manager/mechanical services engineer	Proposed for 2012-13 academic year			
EcoCampus—sustainability manager/ estates managers/facilities management administration team	From late 2011 onwards	Bronze stage workshops attended – target award by end of October 2012		
Targeted campaigns—sustainability manager with support from facilities management administration team and the Students' Union	Ongoing	Link 'switch off' campaign to Electric sub-metering energy displays		

APPENDIX 2—IMPLEMENTATION PLAN SUMMARY CONTINUED

Table to be updated as part of the annual review process:

Newton Rigg transfer/up-scaling of Ambleside				
Transfer of Newton Rigg to Askham Bryan College	July 2011	Complete	31 July 2011	Approx 1,500 tonnes/ year
EIP projects				
Fusehill Street library refurbishment—Capital Projects/facilities management team	2013–14 academic year			
Ambleside campus redevelopment—Capital Projects/facilities management team	2013–14 academic year			
Provision of new teaching space at Lancaster—Capital Projects/facilities management team	End of 2014–15 academic year			
Provision of new teaching space at Fusehill Street—Capital Projects/facilities management team	End of 2015–16 academic year			
Refurbishment of Harold Bridges library—Capital Projects/facilities management team	End of 2015–16 academic year			
Salix Projects				
Dalton Building boiler replacement—sustainability manager/mechanical services engineer	Installation by October 2012	Tender exercise complete and install due to begin in Sept 2012		Approx 20 tonnes / year
Installation of energy efficient lighting in the sports hall at Fusehill Street—sustainability manager/mechanical services engineer	Installation by February 2012	Installation due in early April 2012	Completed on 2–4 April 2012	Approx 12 tonnes / year
Lancaster boiler plant room insulation—sustainability manager/mechanical services engineer/estates manager	Installation by February 2012	Site survey and projected savings received, order raised	21 to 23 February 2012	Approx 41 tonnes / year
Carlisle boiler plant room insulation—sustainability manager/mechanical services engineer/estates manager	Installation by May 2012	Site surveys arranged for 26 January 2012	Completed in March 2012	
To install loft insulation in the Skiddaw Building at Fusehill Street—estates manager Carlisle/sustainability manager	Installation during 2012-13 academic year	To be incorporated into Fusehill Street library refurbishment project		
Installation of energy efficient lighting in the sports hall at Lancaster—sustainability manager/electrical services engineer	Installation by end of 2012-13 academic year			

APPENDIX 2—IMPLEMENTATION PLAN SUMMARY CONTINUED

Table to be updated as part of the annual review process:

Installation of replacement high efficiency boilers in the student hall accommodation at Brampton Road—mechanical Services engineer / estates manager / sustainability manager (additional project for 2012-13)	Installation by mid-September 2012	Completed as part of kitchen refurbishment project	September 2012	Approx 27 tonnes / year
Additional Capital/Salix projects				
PC power down software —IT services	To be investigated and implemented during 2012–13			
IT server room cooling/refurbishment —IT Services	To be investigated and implemented by 2013–14			
Installation of high efficiency boilers in Gressingham Halls – Mechanical Services Engineer (additional project for 2012-13)	To be investigated and implemented in summer 2012	Completed	August 2012	Approx 13 tonnes / year
Installation of frequency drives on the air handling units serving Hugh Pollard Lecture Theatre – Mechanical Services Engineer (additional project for 2012-13)	To be investigated and implemented in summer 2012	Completed	August 2012	Approx 2.5 tonnes / year
Scope 3 emissions:				
Supply chain (procurement)—sustainability manager/procurement team/estates managers	Monitor recommendations from HEFCE reports and develop data capture where necessary during 2012-13			
Transport—travel plan manager/ sustainability manager	Develop data capture and reporting tools for review in December 2012—link to revised Travel Plan			
Waste—facilities management team/ estates managers/sustainability manager	Develop waste data capture and reporting for review in February 2013 – supported by new waste tender and services contract from December 2012			
Water—estates managers/ sustainability manager	Develop data capture and reporting for review and identify priority savings projects during 2012-13			

This document may be viewed in electronic format on our website (www.cumbria.ac.uk) and can be made available in alternative formats (for example Braille). Contact the Vice Chancellor's Office on 01228 616056.

www.cumbria.ac.uk

University of Cumbria