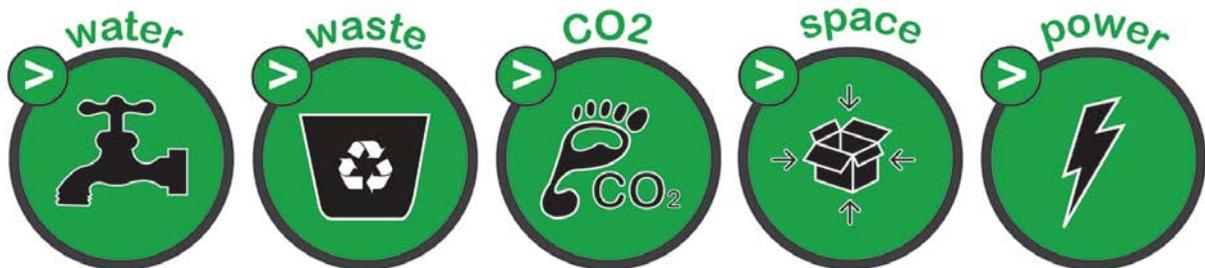




Carbon Management Implementation Plan (CMIP)

Effective from March 2011



Bucks New University - Carbon Management Implementation Plan

1. Introduction

Bucks New University's Carbon Management Implementation Plan (CMIP) will play a major part in its sustainability and environmental management in the coming years. The plan aims to measure the universities current 'carbon footprint' and reduce the carbon dioxide (CO₂) produced from its activities such as energy used in heating and lighting the buildings , transportation, water and waste disposal

This CMIP covers a five year period for the academic year 2010-11 until the end of the academic year 2015-16. This plan is designed to implement the Carbon Management Policy, drafted in May 2010, approved by the Senior Management Team (SMT) in June and ratified by the University Council in July 2010. This policy is included in full in appendix A.

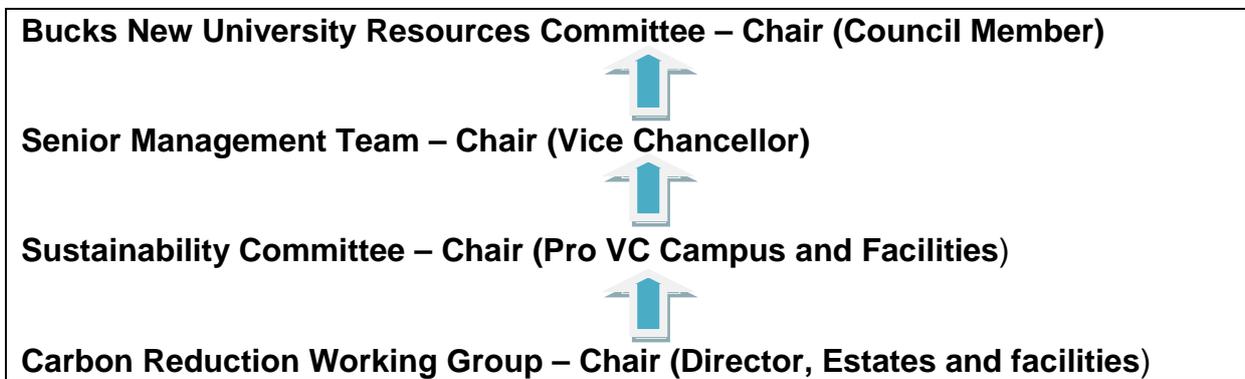
A revised and updated Sustainability Policy has been presented to the SMT and approved in March 2011. This will go to the March 2011 Council.

The main actions required in the Carbon Reduction Policy (CRP) are:

- a) Appoint a senior manager to undertake responsibility as 'energy champion' and deliver the carbon reduction targets agreed.
- b) Establish the total energy used in 2005-6 to establish a baseline, against which future energy reduction performance will be measured.
- c) Commit to achieve, as a minimum, the target carbon emission reductions set out in HEFCE Statement of Policy 2010-01 based on 1990 and 2005 baselines:
 - 34 per cent reduction by 2020
 - 80 per cent reduction by 2050.
- d) Set absolute carbon reduction targets and milestones for scope one, two and three types of carbon emissions.
- e) Set annual milestones to ensure carbon reduction target achievement is on track.
- f) Establish a Carbon Reduction Working Group (CRWG) with clear responsibilities to deliver the annual milestones required. This group will have both employee and student representation.
- g) Employee and student engagement will be actively sought to encourage energy-saving behaviours throughout the University.
- h) The CRWG will put forward to the University Senior Management Team (SMT) costed proposals to reduce carbon emissions in line with milestones.

- i) The CRG will devise, coordinate and publicise, via a communications strategy, information on University energy management and performance to all students and employees.
- j) The CRWG will monitor carbon emissions and produce bi annual reports to the University Council.
- k) The University will make available an annual carbon emissions report on the University extranet.
- l) Register with the EA for the CRC scheme by September 2010. Calculate the electrical energy used by Bucks New University (student residential and all non residential) in the calendar year 2008.

Progress and reporting against the Carbon Management Implementation Plan (CMIP) will be as follows:



1. Implementing carbon management

Key drivers

The key drivers for the Carbon Management Implementation Plan (CMIP) are:

- compliance with HEFCE strategies
- reputation and marketing
- cost reduction
- internal policy.

Compliance with HEFCE strategies:

- HEFCE have made their position very clear, with regards to carbon reduction, through the criteria they have adopted in the Capital Investment Framework (CIF) policy. The CIF II criteria (section three) demands action from Higher Education Institutions to reduce their carbon footprint in line with the HEFCE publication 2010-02. The HEFCE proposals are in direct response to government and international policy, for example the Climate Change Levy and the Kyoto Protocol.
- Bucks New University has made step change advancement over the last five years. A new Vice Chancellor, full university status, new academic and support structures and a £62m investment in the Bucks New University Estate has transformed the organisation.
- The reputation of Bucks New University has grown and its place in the education market has been significantly enhanced. This progress needs to be maintained and carbon reduction and sustainability in the Higher Education sector is receiving considerable attention from our government funders and is now also expected from our students, customers and employees.
- Sustainability league tables are being drafted and are publically available (for example, Green Planet) to assist in the selection of the appropriate university for study or employment.
- Carbon emitting activities are become increasingly costly. Wholesale gas and electricity costs almost doubled between 2000 and 2005. From 2005 to the present-day gas prices have increased to Bucks New University by fourfold and electricity prices have doubled.
- Petrol and diesel prices increased by over 70 per cent between 1996 and 2006 and the cost of sending waste to landfill is predicted to nearly double from its 2006 cost of £20 per tonne to £40 per tonne.
- In 2003-4 Bucks New University total energy costs were £477,061. This had risen in 2008-9 to £1,057,937 despite a reduction of 48 per cent in energy consumed (down from 23 million to 11.7 million kWh). Fuel costs now account for nearly two per cent of the total Bucks new University income. Campus Consolidation has enabled the University to sell a large proportion of its energy inefficient buildings and reinvest capital into highly energy efficient new and refurbished buildings.
- Bucks New University is now embedding into its culture sustainability and carbon reduction. This is primarily through the formation of a robust sustainability committee whose first task was to generate, obtain senior management endorsement and gain Council approval for a Carbon Reduction Policy. This group will make recommendations on new policies to the Senior Management team to drive forward sustainability within Bucks New University.

In addition the following new working groups have been set up which all report to the sustainability committee:

- Strategic Estates Working Group
- Carbon Reduction Working Group
- Waste Management Working Group
- Space management Working Group
- Curriculum Greening Working Group
- Sustainable Procurement Working Group.

Membership of the sustainability committee and working groups is drawn from all sections of the University, including champions in each specialist areas, employees and students.

Past actions and achievements

Good practice in carbon management was fully integrated into the £62m Campus Consolidation Project completed in 2009-10. The Estates and Facilities Directorate, that project managed this major investment in the Bucks New University Estate ensured throughout the new build and extensive refurbishment projects that carbon reduction was considered in all aspects of the works. These include:

Replacement of all central boiler house equipment with:

- condensing boilers
- variable speed pumps and motors
- building management central computerised controls
- removal of Timberlake old boilers and connection to new boiler house.

Ventilation systems:

- heat recovery within ventilation systems
- building mass designed to absorb daytime heat gains
- individual room temperature control
- room CO₂ monitoring for fresh air control.

Lighting systems:

- presence and absence detection
- daylight dimming
- energy-efficient lamps.

Building insulation:

- new build insulation exceeding the statutory regulations
- refurbishment including increasing existing insulation to walls and roof areas
- double glazing and window internal cavity fenestration.

Energy management:

- full Building Management System (BMS) for all individual buildings
- check and sub metering for electricity and water
- heat meters for individual building heating systems
- leak detection systems.

Carbon Reduction Working Group (CRWG) and terms of reference

A Carbon Reduction Working Group has been set up and reports to the Sustainability Committee. The terms of reference are:

Terms of reference

The Carbon Reduction Working Group (CRWG) will report to the Sustainability Committee.

The Chair of the CRWG will be the Director of Estates and Facilities.

The CRWG will meet at least twice during each semester (for example, four times per year).

Membership will be drawn from at least one person from each of the following:

- Senior academic member from the Faculty of Design Media & Management.
- Senior academic member from the Faculty of Society & Health.

One representative from each of the Professional Support Directorates, Human Resources, Estates and Facilities, Technical Resources, Academic Quality, Strategic Marketing & Communications, Finance, Business Planning, Information Technology, Student experience and Customer Services .

Representation will also be sought from the Trade Unions and external outsourced service providers (for example, cleaners and security).

Two representatives will be invited from the student body, one from the Students' Union and one from the general student body.

The CRWG will attempt to ensure that a minimum of 50 per cent of members regularly attend meetings.

The main function of the CRWG will be to:

- set annual targets for fuel consumption reduction for the High Wycombe and Uxbridge campuses and the student residential campuses at Brook Street and Hughenden Park
- review consumption of all fuels including, gas, electricity, water and those associated with all forms of transport related to University activity
- receive reports that monitor performance against the targets set, agree a carbon management strategy and make recommendations to the sustainability committee of actions required
- develop energy saving initiatives and consider the cost benefits of energy reduction proposals
- consider any impact the energy consumption reduction will have on the student experience and make a balanced judgement of impact against student experience and make recommendation to the sustainability committee
- produce an annual report to submit to the sustainability committee for ratification by the full University Council setting out progress in reducing carbon emissions and benchmarking the University against the sector KPIs published via the annual Estates Management Statistics EMS produced by HESA in June 2011.

2. Emissions baseline and projections

Scope limitations and data collection

Currently the University only has data collected on:

- Scope one: direct emissions, boilers, fleet cars and vans.
- Scope two: emissions from generated electricity.
- Scope three: emissions from commuting, air travel, water and waste have not been collected to date. A baseline date of 2011-12 has been suggested by HEFCE to collect this data with all Institutions reporting via EMS in 2012-13.

Bucks New University can influence and manage all the scope one and two emissions and these have been included in the Carbon Management Implementation Plan. Some scope three emissions (via water consumption, business travel) are also influenced by the University and will be included in the plan once measured and quantified in 2011-12.

Other scope three emissions (commuter travel to the University) have not been included in the plan but the University is committed through its Travel Plan to influence appropriate behavioural change in this area.

The sites covered in the data collection are:

- High Wycombe Campus
- Uxbridge Campus
- Brook Street Student residences
- Missenden Abbey Management Centre.

Electricity data is collected by Half Hour (HH) meters from above sites apart from Missenden Abbey who do not have HH meters installed. Monthly invoices are checked against physical meter readings.

Gas meters are physically read monthly as are the water meters for each site.

Recently installed check meters for all utilities on the High Wycombe Campus are also recorded monthly via the Building Management System (BMS).

Fuel used in fleet cars and vans, predominantly maintenance, post and student union transport is recorded on purchase and summarised annually.

Baseline

HEFCE consultants SQW calculated in their August 2010 report a baseline CO₂ emission for Bucks New University for the year 2005 at 6,975 tonnes CO₂

In 2009 Bucks New University calculated our own baseline CO₂ emissions based on data collected in 2005 at 7,266 tonnes. This is within four per cent of the HEFCE estimate and it was agreed to accept the SQW estimate as the baseline for the University. Detail of the site by site breakdown is given in Appendix B.

The calculated CO₂ emissions for 2005-6 from Bucks New University and input into that years EMS report was 6,277 Tonnes CO₂. This lower value than that calculated in 2005 was due to the none inclusion of fleet car emissions and changes to the conversion factors used from Kwh to CO₂ between 2005 and 2010

Carbon reduction targets

Bucks New University reviewed the HEFCE targets set out in 1c and produced a target chart (see appendix C). From the two criteria given an intermediate target of 3,500 tonnes of CO₂ emissions for 2020 was established. This chart also reflects and shows the emissions calculate and data supplied to HEFCE via the Estates Management Statistics (EMS) returns from 2003. These EMS figures do not include any scope three emissions.

Bucks New University has made a commitment to HEFCE to achieve a carbon reduction target by 2020 of 50 per cent. This sets a planned emission target of 3,500 tonnes CO₂ for the academic year 2020-21

This long term target chart has been used to calculate a year on year target for reducing carbon emissions. The full spreadsheet giving all annual targets and progress to date towards these targets is also given in Appendix C.

An extract of this spreadsheet is given on page 10. Good progress has been made on achieving the target savings and as of 2009-10 Bucks New University has reduced its carbon emissions by over 2000 tonnes, a 29 per cent reduction from its 2005 baseline emissions.

However, caution needs to be used when looking at the reductions made to date. Many of these are the direct response to selling off inefficient sites and investing capital into more efficient new buildings and refurbishment programmes.

Savings now will need to come from changes in current poor practice and low energy awareness and the finessing of existing energy saving initiatives. Over the remaining period of this initiative (up to 2020) Bucks New University will need to save a further 1,470 tonnes of CO₂ in total and maintain this saving every year to reach its annual target of 3,500 tonnes per year.

This equates to a year on year saving of 134 tonnes CO ₂ per year every year for the next 10 years as a minimum.

CO₂ reduction targets 2005-10

	2005 Baseline					
Total CO₂ Target tonnes CO₂	6975	6748	6516	6284	6052	5820
Actual Carbon emissions tonnes (EMS return)	6277	5550	5108	4807	4970	
Difference tonnes	698	1198	1408	1477	1082	
Percentage below annual target	10%	18%	22%	24%	18%	
Saving against baseline to date tonnes CO₂		1425	1867	2168	2005	
Saving against baseline %		20%	27%	31%	29%	
Year	2005	2006	2007	2008	2009	2010

3. Carbon management opportunities

As previously indicated many of the 'easy wins' and opportunities made available through campus consolidation have been taken and the benefits are now showing in reduced costs and lower CO₂ emissions.

The harder work has now commenced to change minds and behaviour regarding CO₂ emission reduction. Appendix D contains a schedule of carbon emission reduction opportunities but a shortlist of the main areas are itemised below.

These actions are split into three distinct areas:

Long term enablement

These put in place the management structures, committees and working groups to ensure Carbon reduction is achieved. Support will be given to these groups in the form of improved communications and campaigns to increase awareness.

Direct emission reduction requiring investment

These projects either as stand alone or part of a capital works development will enhance building insulation or provide replacement of inefficient equipment to reduce energy consumption.

Low cost direct emissions reduction action

Actions under this heading include matching heating more closely to operating hours and replacement of defective equipment with low energy use equipment.

A detailed programme outlining the timing of the first five projects is included in Appendix 5. This programme concentrates out setting up the timelines for committees and working groups, producing implementation plans and awareness campaigns.

Project	Project leader	Cost (£)	Operational Cost (£)	CO ₂ saving (tonnes/year)	Gross financial saving	Payback period (years)
Long term enablement actions						
1 Sustainability committee	Trevor Nicholls		£14k for 3 years (Eco Campus)			N/A
2 Carbon reduction WG	I Hunter	N/A		134 t/year CO ₂ target	£27,200/y	N/A
3 Waste and recycling WG	I Hunter		£5K for 5 years		£1k/ year to start	
4 Energy awareness campaigns	Diane Jamieson - Pond	£5k for start up	£3k/year for publication	Included in Project 2	Included in Project 2	
5 Review BMS and sub metering	Clive Snelling	BMS Software £5K Automated display £7.5K	£3k/ year for maintenance.	Included in Project 2	Included in Project 2	
Direct emission reduction requiring investment						
6 Increased roof insulation	I Hunter	£120,000		28.0 tonnes/y	£4,200/y	Max 30 y
7 Double glazing installation	I Hunter	£502,000		46.8 tonnes/y	£6.900	
8 Low energy lighting and control	I Hunter	TBA		TBA		
Low cost direct emissions reduction action						
9 Review BMS time schedules	C Snelling	£2000 for training		TBA		
10 Close down redundant buildings	I Hunter			62 tonnes CO ₂ year	£9,100/y	
11 Review working times of specialist plant	C Snelling			TBA		

4. Implementation plan for financing

The general areas of attention to further reduce carbon emissions are given in the above section. Each project will be considered in detail with full costings, predicted savings of CO₂ emissions and payback period.

Once the detail information is assembled the projects will be put before the University Project Management Board for approval to be included on the University Sustainable Infrastructure Register.

This Register contains all the projects put to the University from all areas (Faculty, Departmental, Statutory compliance etc) and is prioritised and then agreement reached with regards funding. The Chair of this board is the PVC Campus and Facilities and members include the Deputy VC, Finance Director, Director of Estates and Facilities and the Director of Business Planning.

External funding sources

These will be further explored in 2011-12 once projects are more fully established and clarity is unveiled with sector funding.

5. Stakeholder management and communications

Identification of key areas and stakeholders

In order for the carbon reduction plan to be effective it needs to cover all aspects of the University and its Estate, both residential and non residential. Stakeholders will be drawn from all areas, both academic, support and students and invited to actively participate in the six working groups that will cover the various specialist areas that make up the reports to the Sustainability Committee. This committee will be charged with setting and agreeing the terms of reference for the working groups, monitoring progress and the production of reports to the SMT and Council.

Corporate and local communication and action plans

Good internal and external communication is vital to the success of this Carbon Management Implementation Plan. Our internal marketing communications officer will assist in collection and dissemination of information regarding the Universities progress towards reducing carbon emissions and also liaise with the working groups to publicise relevant events i.e. green days being held to raise awareness. A stakeholder communication summary will be drafted to identify the stakeholder groups, named personnel, responsibilities and communication channels to be used as well as dates to achieve key targets.

Students' Union action plans

The Students' Union currently has no action plans for their specific area of the University Estate. However, they have committed to participate in the University's drive to reduce carbon emissions. Members of the student Union and individual members of the student body will be encouraged to join and participate in all the working groups and there is student membership on the Sustainability Committee.

6. Governance, ownership and management

Reporting of annual carbon reduction to Council

The sustainability Committee will receive bi annual reports from the Carbon Reduction Working Group. These will then be reviewed and passed up to the Senior Management Team who in turn will present the information to the University Resources committee. This committee then reports to the full University Council.

The responsibility for delivering carbon reduction lies with the PVC Campus and Estates. This is line managed to the Director of Estates and Facilities who is charged with production of the bi-annual report and chairs the Carbon reduction working group.

Content of annual report

The annual carbon reduction report will contain:

- overall carbon emissions for the year compared to baseline of 2005, target set for the year and progress towards the 2020 target
- carbon emissions by site and individual fuel. Reference to scope one, two and three emissions
- carbon reduction planned activities and actual progress
- outcomes of the individual work undertaken
- report on current statutory regulations (for example, display energy certification) and the University compliance
- report on Key Performance Indicators benchmarking Bucks New University against other Universities in the HE sector (for example, emissions per m2 floor space and per student FTE)
- proposed targets for carbon reduction next year, projects required to achieve targets and timescales.

March 2011

Approved by Council 21/3/2011

Appendix A
Carbon Reduction Policy
Sustainability Policy

Appendix B

Carbon Reduction Baseline by site for 2005-6

Appendix C

Chart showing HEFCE criteria for setting 2020 carbon reduction targets and Bucks New University 2020 target

Spreadsheet detailing annual carbon reduction targets to 2020 and progress to date

Appendix D

**Outline programme showing timescales for actions
1-5**

Detail of individual actions 1-11

Project/action five: review Building Management System (BMS) and sub metering

Description and notes	<p>As part of campus consolidation extensive sub metering was undertaken for power, heat and water. These are connected to the BMS but as yet the data these meters can provided has not been assembled in a usable format.</p> <p>This data should provided energy costs by campus and individual building which will enable targeted energy and water saving initiatives. Display energy use in real time networked screens throughout University.</p>
Quantified costs and benefits	<p>Costs Additional software for BMS £5,000. Automated energy display metering £7,500.</p> <p>Benefits A focused management tool to mitigate fuel costs and Co² emissions.</p>
Resources	Estates and Facilities Directorate
Ownership and accountability	<p>Delivery Clive Snelling – maintenance supervisor.</p> <p>Sign Off I Hunter Director Estates and Facilities</p> <p>In consultation M Reading - technician</p>
Ensuring success	<p>Known key success factors:</p> <ul style="list-style-type: none"> • energy consumption by building • targeted initiatives identified. <p>Principal risks:</p> <ul style="list-style-type: none"> • inadequate staff resource • lack of funding. <p>Risk Mitigation:</p> <ul style="list-style-type: none"> • support Sustainability Committee • support University Project board.
Performance/success measure	<p>Installation of system Display of real time energy information Bi-annual data reports to Sustainability Committee</p>
Timing	<p>March 2011: Install BMS software May 2011: Produce first data report August 2011: Real Time Energy Display</p>
Sources of additional information	General Information leaflet 065 ‘ Metering energy use in new domestic buildings’ EAUC

Project/action six: increase roof Insulation

Description and notes	It is recommended that as part of the refurbishment to areas not already upgraded, in the campus consolidation project, that additional insulation is installed as part of the re-felting of flat roof areas.
Quantified costs and benefits	<p>Costs South Wing 565m² @ 100/m² = £56,500 East Wing (SSS) 235m² @ 100/m² = £23,500 East Wing (NSS) 400m² @ 100/m² = £40,000 Total £120,000</p> <p>Annual saving 10 per cent of heating cost £4,200 and 28 tonnes CO₂</p> <p>Payback minimum 30 years</p> <p>Benefits This would give 21 per cent of the saving towards the annual target reduction of 134 tonnes/year.</p>
Resources	Estates and Facilities Directorate
Ownership and accountability	<p>Delivery I Hunter Director of Estates and Facilities</p> <p>Sign Off University Project board (UPB)</p> <p>In consultation PVC Campus and Facilities</p>
Ensuring success	<p>Known key success factors Buy in from SMT to achieve CO₂ target reductions</p> <p>Principal risks Lack of funding</p> <p>Risk mitigation Include this work within total refurbishment of South Wing and Level 3 of East Wing (south of spiral staircase – SSS)</p>
Performance/success measure	Reduction of kWh against baseline
Timing	2013-14
Sources of additional information	

Project/action seven: installation of double glazing to East Wing

Description and notes	During the refurbishment of East Wing the installation of double glazing was value engineered out. Many complaints are received annually from occupants of these offices that the old critical single glazed window units are cold and drafty during the winter and too hot in the summer.
Quantified costs and benefits	<p>Costs £502,000 (includes full external scaffold and making good inside window reveals)</p> <p>Annual savings 25 per cent of heating costs £6,900/year and 46.8 tonnes CO₂</p> <p>Benefits This would give 35 per cent of the saving towards the annual target reduction of 134 tonnes/year. Office occupants would benefit from improved environment and reduced external noise</p>
Resources	Estates and Facilities Directorate
Ownership and accountability	<p>Delivery Ian Hunter Director Estates and Facilities</p> <p>Sign Off University Project Board</p> <p>In consultation T Nicholls PVC Campus and Facilities</p>
Ensuring success	<p>Known key success factors Buy in from SMT to achieve CO₂ Reduction targets.</p> <p>Principal risks Lack of funding</p> <p>Risk mitigation</p>
Performance/success measure	Reduction of kWh against baseline. Removal of complaints from employees in these offices.
Timing	2015-16
Sources of additional information	

Project/action eight: low energy lighting and control

Description and notes	All areas not covered by campus consolidation refurbishment have inefficient lighting controls, fittings and lamps. These should be replaced as soon as funding available.
Quantified costs and benefits	<p>Costs TBA</p> <p>Benefits Better quality lighting Reduced energy consumption and CO₂</p> <p>Payback TBA</p>
Resources	Estates and Facilities Directorate
Ownership and accountability	<p>Delivery I Hunter – Director Estates and Facilities</p> <p>Sign Off T Nicholls PVC Campus and Facilities</p> <p>In consultation C Snelling (maintenance supervisor) and K Drew (electrician)</p>
Ensuring success	<p>Known key success factors Adequate funding and employee resource</p> <p>Principal risks Lack of funding</p> <p>Risk mitigation</p>
Performance /success measure	Reduction in kWh against baseline Improved quality of lighting
Timing	2014-15
Sources of additional information	

Project/action nine: review Building Management System time schedules

Description and notes	The BMS system developed as part of campus consolidation covers all buildings on the QAR and Uxbridge Campus. The potential to use this system fully to reduce energy consumption has not yet been fully exploited.
Quantified costs and benefits	<p>Costs Use existing employees but further training required £2,000</p> <p>Benefits Reduced energy consumption and CO₂</p>
Resources	Estates and Facilities Directorate
Ownership and accountability	<p>Delivery C Snelling maintenance supervisor</p> <p>Sign Off I Hunter Director of Estates and Facilities</p> <p>In consultation DMS (consultant)</p>
Ensuring success	<p>Known key success factors Adequate funding and employee resource</p> <p>Principal risks Lack of funding</p> <p>Risk mitigation</p>
Performance/success measure	Reduction in kWh against baseline
Timing	2010-11
Sources of additional information	

Project/action ten: close down redundant buildings

Description and notes	<p>Post campus consolidation operations undertaken in the old D block side of the refurbished Red Shed have decanted into other buildings more suitable for purpose.</p> <p>The last phase of decant is spatial art in summer 2011. After this time only frost protection heating and fire and security systems required.</p>
Quantified costs and benefits	<p>Costs Decant covered from other budget areas</p> <p>Benefits Poor building taken out of operational use Reduced energy consumption and CO₂. Estimated 62 tonnes CO₂ and £9,100/year saving</p>
Resources	Estates and Facilities Directorate
Ownership and accountability	<p>Delivery I Hunter Director of Estates and Facilities</p> <p>Sign Off T Nicholls PVC Campus and Facilities</p> <p>In consultation C Snelling</p>
Ensuring success	<p>Known key success factors Improve EMS returns to reduce total usable space</p> <p>Principal risks Pressure for reopening for storage etc</p> <p>Risk Mitigation Managed access authorised by PVC only</p>
Performance/success measure	Reduction in kWh against baseline
Timing	Summer 2010-11
Sources of additional information	

Project/action eleven: review working times of specialist plant

Description and notes	<p>The university provides specialist workshops for many of its 'make' courses. In particular dust extraction from its machinery shop and compressed air for its upholstery shop. This equipment tends to be operated all day regardless of activity within the workshops.</p> <p>In addition glass making uses extensive volumes of gas in their furnaces and kilns and the ceramic departments electric kilns consume large quantities of electricity</p>
Quantified costs and benefits	<p>Costs Employee resource</p> <p>Benefits Reduced energy consumption and CO₂ - TBA</p>
Resources	Estates and Facilities Directorate
Ownership and accountability	<p>Delivery Faculty review of existing practices</p> <p>Sign Off T Nicholls PVC Campus and Facilities</p> <p>In consultation I Hunter Director of Estates and Facilities C Snelling (maintenance supervisor) and K Drew (electrician)</p>
Ensuring success	<p>Known key success factors Support from the faculty PVC</p> <p>Principal risks Non cooperation of department</p> <p>Risk mitigation Installation of check meters in the area</p>
Performance/success measure	Reduction in kWh against baseline
Timing	Summer 2011
Sources of additional information	

Carbon Reduction Policy

Effective from July 2010



Contents

1	Introduction	3
2	Key policy actions.....	3

Appendices

Appendix 1: Description of Scope 1, 2 and 3 Carbon emissions (from HEFCE 2010/01 policy)

Preamble

All University formal documents relate to the policies, strategies, procedures and regulations of the University having been approved by the appropriate formally recognised and constituted body. All University employees and students are required to adhere to the formal processes and regulations of the University.

This document should not be read in isolation as other University processes/formal documents could be relevant. A full listing of all formal documents is available on the University's website.

Any interpretation of the content of this formal document will be at the discretion of the Director of Estates and Facilities.

All previous versions of this document as approved by Council before July 2010 shall be rescinded.

The names of committees and titles of posts may change from time to time. This shall not invalidate the powers of the equivalent successor committees or post holders.

We will consider any requests for accessible formats eg Braille, tape, disc, email or a larger font size. Please let us know what you need by contacting the Estates & Facilities Directorate.

1 Introduction

- 1.1 There are many drivers to reduce carbon emissions, from improving the health of the planet to reducing business costs. Buckinghamshire New University is committed to play its part in reducing the overall emissions from its Estate and associated activities. HEFCE has set rigorous carbon reduction targets for 2020 and 2050 and it is the intention of the University to not only meet these targets but to improve on them.
- 1.2 In addition to the HEFCE initiative The Environmental Agency (EA) has now imposed a statutory requirement under the Carbon Reduction Commitment (CRC) scheme that all Universities register by September 2009 as participants on this scheme. The scheme requires carbon foot printing to be undertaken and monitoring of carbon emissions with high financial penalties if targets are not achieved or criminal penalty if organisations fail to comply with strict regulations set out by the EA.
- 1.3 A Carbon Reduction Strategy will be developed that meets the needs of this policy. It will be coordinated and form an integral part of other major strategies within the University.

2 Key policy actions

- 2.1 Buckinghamshire New University will undertake the following key actions to reduce carbon emissions:
 - a) Appoint a member of the Senior Management Team (SMT) to take responsibility for delivering the carbon reduction targets agreed.
 - b) Assign time from two members of the Estates & Facilities Directorate to calculate and report on carbon emissions.
 - c) Establish the total energy used in 2005-06 to establish a baseline, against which future energy reduction performance will be measured.
 - d) Commit to achieve, as a minimum, the target carbon emission reductions set out in HEFCE Statement of Policy 2010/01 based on 1990 and 2005 baselines:
 - 34% reduction by 2020
 - 80% reduction by 2050
 - e) Set absolute carbon reduction targets and milestones for scope 1, 2 and 3 types of carbon emissions (**see Appendix 1**).
 - f) Set annual milestones to ensure carbon reduction target achievement is on track.
 - g) Establish a Carbon Reduction Group (CRG) with clear responsibilities to deliver the annual milestones required. This group will have both employee and student representation.
 - h) Employee and student engagement will be actively sought to encourage energy-saving behaviours throughout the University.
 - i) The CRG will put forward to the University Senior Management Team costed proposals to reduce carbon emissions in line with milestones.
 - j) The CRG will devise, coordinate and publicise, via a communication strategy, information on University energy management and performance to all students and employees.
 - k) The CRG will monitor carbon emissions and produce bi-annual reports to the University Council.
 - l) The University will make available an annual carbon emissions report on the University website.

- m) Register with the EA for the CRC scheme by September 2010. Calculate the electrical energy used by Bucks New University (student residential and all non residential) in the calendar year 2008.

Prepared by:	Director of Estates & Facilities	Date:	May 2010
Final Approval by:	Recommended to Council by Resouces Committee (29 June 2010) Approved by University Council (12 July 2010)		
Review Date:	2015		
Updated on:			
Equality Impact Assessment completed:			

© Buckinghamshire New University

Description of Scope 1, 2 and 3 Carbon emissions (from HEFCE 2010/01 policy)

The World Resources Institute (WRI) developed a classification of emission sources around three 'scopes':

- **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, 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 company, but occur from sources not owned or controlled by the organisation – for example, commuting and procurement.

Sustainability Policy

Effective from March 2011



Contents

1	Introduction	3
2	Key Policy Actions	3

Appendices

Preamble

All University formal documents relate to the policies, strategies, procedures and regulations of the University and have been approved by the appropriate formally recognised and constituted body. All University employees and students are required to adhere to the formal processes and regulations of the University.

This document should not be read in isolation as other University processes/formal documents could be relevant. A full listing of all formal documents is available on the University's website.

Any interpretation of the content of this formal document will be at the discretion of the Senior Management Team.

All previous versions of this document as approved by Council before 21 March shall be rescinded.

The names of committees and titles of posts may change from time to time. This shall not invalidate the powers of the equivalent successor committees or post holders.

We will consider any requests for accessible formats eg Braille, tape, disc, email or a larger font size. Please let us know what you need by contacting the Estates & Facilities Directorate.

1 Introduction

- 1.1 This Sustainability Policy is an update from the last one produced in October 2009. It has been updated in the light of the completion of Campus Consolidation, a £62 million capital investment in the Buckinghamshire New University Estate between 2006 and 2009.
- 1.2 This development enabled Buckinghamshire New University to dispose of sites and accommodation that were beyond their economic life and reinvest the capital receipts into new, modern facilities. As part of this investment particular attention was paid to reducing carbon footprint and running costs of buildings.
- 1.3 A Sustainability Committee is now in place chaired by the PVC Campus & Facilities, providing this important committee with a chair who is also a member of the Senior Management Team (SMT) and reports directly to the University Council.

2 Key Policy Actions

- 2.1 Buckinghamshire New University is by its size in the sector a small university (some 6,500FTE). It is understood this predicated the ability to employ full-time experts to cover the many roles involved in the management of sustainability. Notwithstanding this Buckinghamshire New University will undertake the following key actions to advance its sustainability objectives:

a) Set Up Working Groups:

The Sustainability Committee has set up and will monitor the following working groups that will report at least three times a year to the Sustainability Committee and produce an annual report to be submitted to the SMT and ratified by Council:

- An Estates Strategy Group
- An Energy and Carbon Reduction Working Group
- A Waste Management Working Group
- A Space Management Working Group
- A Travel Management Working Group
- A Greening the Curriculum Working Group
- A Sustainable Procurement Working Group

b) Carbon Reduction:

Buckinghamshire New University has a carbon reduction policy in place that has set a target of 50% reduction by the year 2020 against a 2005-06 baseline of 6975 tonnes. To date, based on data to be submitted to HESA in the EMS returns for 2009-10, Buckinghamshire New University has achieved a 29% reduction and is well placed to meet its target. A Carbon Management Implementation Plan (CMIP) to take this saving even further is in final draft form which will detail year-on-year targets.

c) Waste Management:

Now that Buckinghamshire New University is based on only two sites, work has commenced to reduce general waste and improve recycling. Currently 22% of the 1127 tonnes of waste produced annually are recycled. The target for 2010-11 is to reduce the total waste produced to less than 1000 tonnes and increase the percentage of recycled waste to 30%. A Waste Management Implementation Plan (WMIP) will be constructed and monitored to ensure these savings are made.

d) Water Consumption Reduction:

Buckinghamshire New University has reduced its annual water consumption from 80,000m³ in 2006 to just 23,000m³ in 2009-10. This reduction is understood to place the University in the top 20 of the league table of universities in this category. The target for

2010-11 is to achieve a further 5% saving. This saving will be made through the Carbon Management Implementation Plan.

e) Space Management:

Currently the University has only 35% of its teaching space within centrally timetabled control. This is due to the significantly high proportion (71%) of specialist teaching space within its core teaching space which is mainly workshops and studios. This is currently under review and the working group will be set targets to increase the proportion of space under central control and improve the current poor space utilisation that stands at 16% mainly due to low occupancy of teaching rooms. The target for 2010-11 is to increase utilisation to over 20% and will be monitored through the University Space Management Group and TRAC. Campus Consolidation has enabled improved space utilisation of both academic and support employees' offices. All support offices are now open plan and academic offices have generally seven sharing a single office. The Faculty of Society & Health has an open plan office layout for their 96 professional service and academic employees.

f) Travel Management:

In 2008-09 Buckinghamshire New University introduced a travel planning group to manage the decant of employees and students from the closed sites. A 'permit to park' system was introduced and charging for employee car parking commenced as well as provision of some free and subsidised buses. Empty parking bays on both sites are now common and with the assistance of the local County Council the University is to be included in the next County Travel Audit (I - trace). Students are not permitted to park on campus and our adjacent halls of residence are within walking distance and have no student parking apart from disabled. The University is immediately adjacent to a national rail station and local bus terminals. A cycle to work scheme is in place and the University runs pool cars supplied by Common Wheels. Further work is planned by the Travel working group in 2010-11 to look into Scope 3 CO₂ emissions from commuting and business travel.

g) Biodiversity:

Buckinghamshire New University is actively seeking and implementing projects to support biodiversity. These include the construction of four sedum roof structures to our new residential accommodation in Hughenden Park. At the High Wycombe campus a large proportion of grassed landscape is being set aside for meadow grass, specifically to enhance the local environment for butterflies, insects and small wildlife in the town centre.

h) Construction and Refurbishment:

A minimum BREEAM standard of "very good" was set and achieved for our Campus Consolidation construction works. Our Gateway building also received an RIBA award for building excellence. Air-sourced heat pumps, energy recovery ventilation and water systemisers are beginning to show evidence of success in our carbon and water reduction consumption figures. This policy will remain for future construction works and as an example the replacement of the Timberlake Plant Room boilers used a green solution – utilising the existing main boilers in East wing.

i) Community Involvement:

Buckinghamshire New University will continue to work with local authorities and businesses to promote sustainability. Bucks County Council, Wycombe District Council (WDC) and the local NHS hospitals all wish to continue existing collaboration and the University is pleased to continue to host events such as a recent CO₂ Reduction Workshop chaired by WDC and the Community Liaison Group (Local residents associations and volunteering organisations, police, and local council members). The University is also working hard with the local Health Trust and WDC to explore sharing common services.

j) Greening the Curriculum:

Buckinghamshire New University will commit to "greening its curriculum" by promoting sustainable development in the curriculum through its Teaching and Learning Steering

Group. Additionally it will continue to develop its use of 'blended learning' enabling remote delivery of parts of course curriculum via Blackboard, WebEx, Tandberg and other VLE/Teleconferencing technology.

k) Sustainable Procurement:

Buckinghamshire New University has sustainable procurement embedded within Procurement processes through the University's terms and conditions of purchase, tendering documentation, the Procurement Strategy and the Sustainable Procurement policy. Procurement purchases green electricity through European tender, and reduces paperwork with online tendering, e-invoicing and reducing the invoicing frequency. Procurement already advocates recycled stationery items and this is to be further promoted. There is also scope for food purchase via SUPC/TUCO which would reduce air miles etc. Additionally we will develop awareness within employees and students of ethical and sustainable issues and promote these through policies and curriculum.

2.2 Buckinghamshire New University is committed to driving engagement with sustainability across all areas, which will be promoted by identifying student and employee Champions. In addition, all managers within the University will have key aspects of sustainability embedded in their role description which will be supported by awareness and training sessions, supported by both the SMT and University Council.

2.3 Targeted outcomes will be delivered by the Sustainability Committee through the working groups in 2010-11 and this policy will be reviewed and amended in 2012.

Prepared by:	Director of Estates & Facilities	Date:	Feb 2011 (version 7)
Final Approval by:	Council (21 March 2012)		
Review Date:	June 2012		
Updated on:			
Equality Impact Assessment completed:			

© Buckinghamshire New University

Bucks New University - summary of calculation of 2005 CO₂ emissions

Scope one emissions - fuel (gas and oil) used for heating and fleet van fuel

	Site	Oil	Gas	Total		To summary	
Non-residential	QAR	4	1260.8	1264.8			
	Wellesbourne	187.8	123.7	311.5			
	Chalfont	0	397.1	397.1			
	Total	191.8	1781.6	1973.4		1973.4	
<hr/>							
Residential	Site	Gas					
	Chalfont	933.8					
	Brook St.	232.4					
	John North	184.5					
	Missenden	199					
	Total	1549.7				1549.7	
<hr/>							
Fleet vans	Students' Union	Van fuel	5.4				
	Bucks	10.1					
	Total	15.5				15.5	
Grand total scope one CO₂ emissions						3538.6	tonnes

Scope two emissions - generated from purchased electricity consumed by University

	Site	Electricity		To summary	
Non-residential	QAR	1842			
	Wellesbourne	32			
	Chalfont	536			
	Total	2410			2410
<hr/>					
Residential	Site				
	Chalfont	663			
	Brook St.	336			
	John North	83			
	Missenden	236			
	Total	1318			1318
<hr/>					
Grand total scope two CO₂ emissions				3728	tonnes

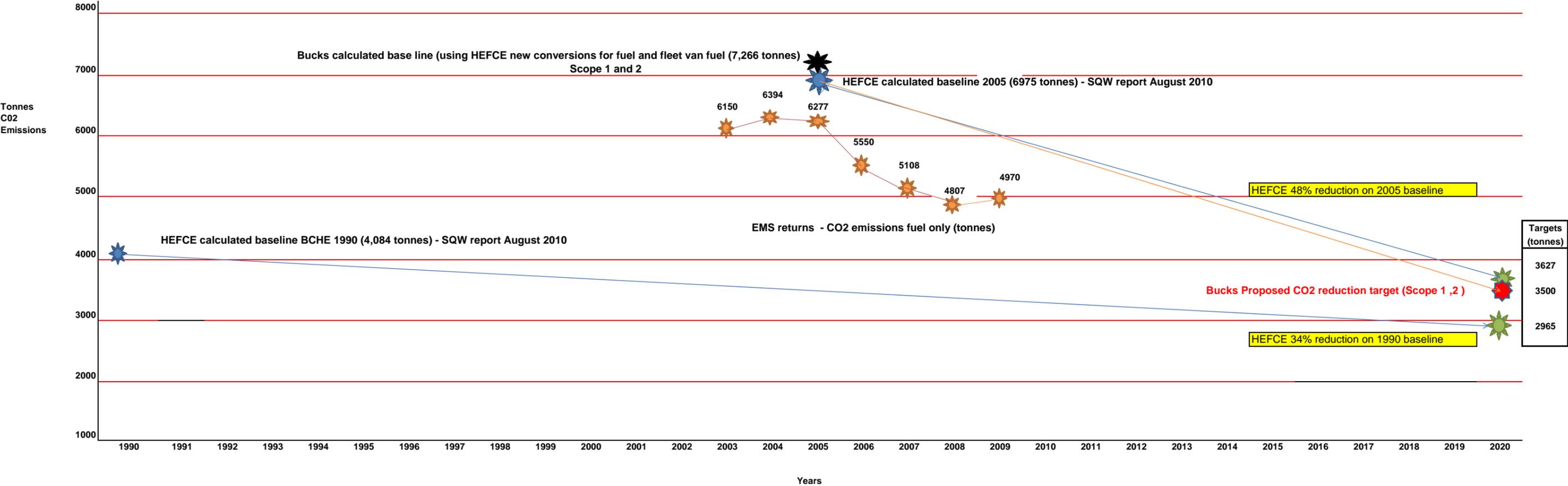
Total scope one and two baseline CO₂ emissions for 2005-6	7266.6 tonnes
---	----------------------

CO Reduction Targets 2005 - 2020

	2005 Baseline															2020 Target
Total CO2 target tonnes CO2	6975	6748	6516	6284	6052	5820	5588	5356	5124	4892	4660	4428	4196	3964	3732	3500
Actual Carbon emissions tonnes (EMS return)	6277	5550	5108	4807	4970											
Difference tonnes	698	1198	1408	1477	1082											
Percentage below annual target	10%	18%	22%	24%	18%											
Saving against baseline to date tonnes CO2		1425	1867	2168	2005											
Saving against baseline %		20%	27%	31%	29%											
Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020

Appendix C

Bucks New University - carbon emissions - target setting



Council approved
I Hunter
01/03/2011

Notes 1) Amended to take into account revised HEFCE/SQW baseline data - produced August 2010
2) Estates Management Statistics (EMS) emissions shown - these only cover heating and electricity

Project/action one: establish a Sustainability Committee

Description and notes	Establish a Sustainability Committee, consisting of senior representatives throughout the University. The Committee will be responsible for reviewing the carbon management objectives and developing Carbon Management Implementation Plan as well as reviewing the impact on the University by undertaking these plans.
Quantified costs and benefits	<p>Costs Existing staff time investment. Eco Campus membership for three years at £14,000 per year</p> <p>Benefits Long term project to support sustainability. In line with HEFCE guidelines and good practice.</p>
Resources	Committee members and Estates and Facilities Directorate
Ownership and accountability	<p>Delivery T Nicholls PVC Estates and Facilities</p> <p>Sign Off SMT</p> <p>In consultation I Hunter Director Estates and Facilities</p>
Ensuring success	<p>Known key success factors Annual Review of KPI for Co² reduction, and other KPI measures requested by Council</p> <p>Principal risks No buy in from Students and employees Lack of funding (ie Eco campus membership funding)</p> <p>Risk mitigation Strong leadership and support from VC and SMT marketing campaigns</p>
Performance/success measure	<ul style="list-style-type: none"> • Meet annual targets for Co² Reduction. • More green awareness within University community. • Eco Campus Membership. • Move up the Green League Table.
Timing	<p>October 2010: Establish a Sustainability Committee</p> <p>February 2011: Review and update Sustainability Policy</p> <p>March 2011: Establish Working groups</p> <p>May 2011: Agree a Carbon Reduction Implementation Plan</p> <p>June 2011: Report to Resources Committee</p> <p>June 2011: Report to Council</p>
Sources of additional information	Eco Campus Nottingham Trent

Project/action two: establish a Carbon Reduction Working Group

Description and notes	Establish a Carbon Reduction Working Group with appropriate terms of reference. Meet at least four times a year to review, monitor and action carbon reduction initiatives.
Quantified costs and benefits	Costs Existing staff time investment. Benefits Long term project to reduce University CO ² emissions. Reduce operating costs, enhance University green credentials
Resources	Working Group members and Estates and Facilities Directorate
Ownership and accountability	Delivery I Hunter Director of Estates and Facilities Sign Off T Nicholls In consultation Energy champions and Students Union
Ensuring success	Known key success factors Reduction in CO ² . Continuing CIFII funding. Minimising energy cost. Principal risks Limited buy in from Students and employees. Expansion of University facilities and opening times will increase fuel use. Risk Mitigation Enthusiastic energy champions. Impact on CO ² production considered in business planning.
Performance/success measure	<ul style="list-style-type: none"> Meet annual targets for Co² reduction. For 2010-11 save 134 tonnes CO₂ mainly on electricity 134 @ £203/tonne = £27,200. EMS benchmarking within HE sector.
Timing	March 2011: Establish Working Group March 2011: Produce a Carbon Reduction Implementation Plan April 2011: Produce a report for Sustainability Committee
Sources of additional information	HEFCE good practice guidance 2010: 01 and 02 The Carbon Trust

Project/action three: establish a Waste and Recycling Group

Description and notes	<p>Establish a Waste and Recycling Group with appropriate terms of reference. Meet at least four times a year to develop a Waste Management Implementation Plan. (WMIP) To review, monitor and action waste reduction and improve the percentage of waste recycled.</p> <p>The targets for 2010-11 are to reduce waste below 1000 tonnes and increase proportion of waste recycled to 30 per cent. Develop a waste and recycling policy.</p>
Quantified costs and benefits	<p>Costs Existing staff time investment. £5,000/year for five years for improved recycling bins.</p> <p>Savings Reduced waste to land fill (estimate 40 yd skip -2/year at £500) £1,000</p> <p>Benefits Reduced CO² (to be confirmed).</p>
Resources	Working Group members and Estates and Facilities Directorate.
Ownership and accountability	<p>Delivery I Hunter Director of Estates and Facilities</p> <p>Sign Off T Nicholls PVC Campus and Facilities</p> <p>In consultation D Edgington Facilities Manager, N Barber C Thompson Duty Managers, SGP outsource providers, Diane J Pond Communications, Employees and students</p>
Ensuring success	<p>Known key success factors:</p> <ul style="list-style-type: none"> • KPI Targets reported to SMT and Council • SMT commitment. <p>Principal risks:</p> <ul style="list-style-type: none"> • policy not considered high priority • not promoted and implemented • staff resource not available to monitor and action • lack of funding • contamination of recycling facilities. <p>Risk mitigation:</p> <ul style="list-style-type: none"> • awareness and communication planning • Students' Union buy in and promotion • funding through UPMB • SMT support via Sustainability Committee.
Performance/success measure	KPI evidence of reduced total waste and increase in recycling.
Timing	<p>March 2011: Waste champions sought working group established April 2011: Waste and recycling policy drafted June 2011: Policy sign off and publication September 2011: Produce a waste reduction Implementation Plan April 2012: Annual review and report to Council</p>
Sources of additional information	Eco Campus Waste Audit and recommendations (to be agreed).

Project/Action: Action 4 Energy Awareness Campaign

Description and notes	A five year awareness campaign to support the Carbon Management Implementation Plan (CMIP) and the Waste Reduction Implementation Plan (WRIP).
Quantified costs and benefits	<p>Costs 3 £5,000 start up for publications, and £3,000 per year after</p> <p>Annual Savings Targeting 5% reduction on 4970 tonnes (for 2010-11) gives saving of 250 tonnes/CO²</p> <p>Benefits In line with long term CO² reduction for CIFII compliance</p>
Resources	Strategic Marketing & Communications Directorate, Estates and Facilities Directorate, Students' Union
Ownership and accountability	<p>Delivery Diane Jamieson-Pond</p> <p>Sign Off Anne Whitehouse SMC</p> <p>In consultation Sustainability Committee, SMT,</p>
Ensuring success	<p>Known key success factors:</p> <ul style="list-style-type: none"> • eye-catching, conspicuous, positive and motivating campaign that is maintained throughout each academic year • key events at start of academic year, incentives and prizes • awareness questionnaires. <p>Principal risks:</p> <ul style="list-style-type: none"> • a lack of funding, lack of senior support to drive home message • a lack of energy champions. <p>Risk Mitigation</p> <ul style="list-style-type: none"> • training of energy champions • support from Eco Campus.
Performance /success measure	Response to energy awareness questionnaires on campaigns. Feedback from staff and students.
Timing	<p>March 2011: Launch Bucks Green</p> <p>April to Aug 2011: Planning for next academic year campaign</p> <p>September 2011: Launch major campaign</p>
Sources of additional information	Carbon Trust – 'Creating an awareness campaign' Eco Campus guidelines

Project /Action 5 : Review Building Management System (BMS) and sub metering

<i>Description and notes</i>	As part of Campus Consolidation extensive sub metering was undertaken for power, heat and water. These are connected to the BMS but as yet the data these meters can provided has not been assembled in a usable format. This data should provided energy costs by campus and individual building which will enable targeted energy and water saving initiatives. Display energy use in real time networked screens throughout University
<i>Quantified costs and benefits</i>	Costs Additional software for BMS £5,000. Automated energy display metering £7,500 Benefits A focused management tool to mitigate fuel costs and Co ² emissions
<i>Resources</i>	Estates and Facilities Directorate
<i>Ownership and accountability</i>	Delivery Clive Snelling – Maintenance supervisor. Sign Off I Hunter Director Estates and Facilities In consultation M Reading - technician
<i>Ensuring success</i>	Known key success factors <ul style="list-style-type: none"> • Energy consumption by building • Targeted initiatives identified Principal risks <ul style="list-style-type: none"> • Inadequate staff resource • Lack of funding Risk Mitigation <ul style="list-style-type: none"> • Support Sustainability Committee • Support University Project board
<i>Performance /success measure</i>	Installation of system Display of real time energy information Bi Annual data reports to Sustainability Committee
<i>Timing</i>	March 2011 : Install BMS software May 2011 : Produce first data report August 2011 : Real Time Energy Display
<i>Sources of additional information</i>	General Information leaflet 065 ' Metering energy use in new domestic buildings' EAUC

Project /Action 6: Increase roof Insulation

<i>Description and notes</i>	It is recommended that as part of the refurbishment to areas not already upgraded, in the Campus Consolidation project, that additional insulation is installed as part of the re felting of flat roof areas
<i>Quantified costs and benefits</i>	<p>Costs South wing 565m² @ 100/m² = £56,500 East Wing (SSS) 235m² @ 100/m² = £23,500 East wing (NSS) 400m² @ 100/m² = £40,000 Total £120,000</p> <p>Annual saving 10% of heating cost £4,200 and 28 tonnes CO₂</p> <p>Payback minimum 30 years</p> <p>Benefits This would give 21% of the saving towards the annual target reduction of 134 tonnes/year</p>
<i>Resources</i>	Estates and Facilities Directorate
<i>Ownership and accountability</i>	<p>Delivery I Hunter Director of Estates and Facilities</p> <p>Sign Off University Project board (UPB)</p> <p>In consultation PVC Campus and Facilities</p>
<i>Ensuring success</i>	<p>Known key success factors Buy in from SMT to achieve CO₂ target reductions</p> <p>Principal risks Lack of funding</p> <p>Risk Mitigation Include this work within total refurbishment of South Wing and level 3 of East Wing (south of spiral staircase – SSS)</p>
<i>Performance /success measure</i>	Reduction of kWh against baseline
<i>Timing</i>	2013 - 2014
<i>Sources of additional information</i>	

Project /Action 7 : Installation of Double Glazing to East Wing

<i>Description and notes</i>	During the refurbishment of East Wing the installation of double glazing was value engineered out. Many complaints are received annually from occupants of these offices that the old critical single glazed window units are cold and drafty during the winter and too hot in the summer
<i>Quantified costs and benefits</i>	<p>Costs £502,000 (includes full external scaffold and making good inside window reveals)</p> <p>Annual Savings 25% of heating costs £6,900/year and 46.8 tonnes CO₂</p> <p>Benefits This would give 35% of the saving towards the annual target reduction of 134 tonnes /year. Office occupants would benefit from improved environment and reduced external noise</p>
<i>Resources</i>	Estates and Facilities Directorate
<i>Ownership and accountability</i>	<p>Delivery Ian Hunter Director Estates and Facilities</p> <p>Sign Off University Project Board</p> <p>In consultation T Nicholls PVC Campus and Facilities</p>
<i>Ensuring success</i>	<p>Known key success factors Buy in from SMT to achieve CO₂ Reduction targets.</p> <p>Principal risks Lack of funding</p> <p>Risk Mitigation</p>
<i>Performance /success measure</i>	Reduction of kWh against baseline Removal of complaints from employees in these offices
<i>Timing</i>	2015 - 2016
<i>Sources of additional information</i>	

Project /Action : 8 Low Energy Lighting and Control

<i>Description and notes</i>	All areas <u>not</u> covered by campus consolidation refurbishment have inefficient lighting controls, fittings and lamps. These should be replaced as soon as funding available
<i>Quantified costs and benefits</i>	<p>Costs TBA</p> <p>Benefits Better quality lighting Reduced energy consumption and CO₂</p> <p>Payback TBA</p>
<i>Resources</i>	Estates and Facilities Directorate
<i>Ownership and accountability</i>	<p>Delivery I Hunter – Director Estates and Facilities</p> <p>Sign Off T Nicholls PVC Campus and Facilities</p> <p>In consultation C Snelling (maintenance Supervisor)and K Drew (electrician)</p>
<i>Ensuring success</i>	<p>Known key success factors Adequate funding and employee resource</p> <p>Principal risks Lack of funding</p> <p>Risk Mitigation</p>
<i>Performance /success measure</i>	Reduction in kWh against baseline Improved quality of lighting
<i>Timing</i>	2014-15
<i>Sources of additional information</i>	

Project /Action 9: Review Building Management System Time Schedules

<i>Description and notes</i>	The BMS system developed as part of campus consolidation covers all buildings on the QAR and Uxbridge campus. The potential to use this system fully to reduce energy consumption has not yet been fully exploited
<i>Quantified costs and benefits</i>	<p>Costs Use existing employees but further training required £2,000</p> <p>Benefits Reduced energy consumption and CO₂</p>
<i>Resources</i>	Estates and Facilities Directorate
<i>Ownership and accountability</i>	<p>Delivery C Snelling maintenance supervisor</p> <p>Sign Off I Hunter Director of Estates and Facilities</p> <p>In consultation DMS (consultant)</p>
<i>Ensuring success</i>	<p>Known key success factors Adequate funding and employee resource</p> <p>Principal risks Lack of funding</p> <p>Risk Mitigation</p>
<i>Performance /success measure</i>	Reduction in kWh against baseline
<i>Timing</i>	2010 - 11
<i>Sources of additional information</i>	

Project /Action : 10 Close Down Redundant Buildings

<i>Description and notes</i>	Post Campus Consolidation operations undertaken in the old D block side of the refurbished Red Shed have decanted into other buildings more suitable for purpose. The last phase of decant is spatial art in summer 2011. After this time only frost protection heating and fire and security systems required
<i>Quantified costs and benefits</i>	<p>Costs Decant covered from other budget areas</p> <p>Benefits Poor building taken out of operational use Reduced energy consumption and CO₂. Estimated 62 tonnes CO₂ and £9,100/year saving</p>
<i>Resources</i>	Estates and Facilities Directorate
<i>Ownership and accountability</i>	<p>Delivery I Hunter Director of Estates and Facilities</p> <p>Sign Off T Nicholls PVC Campus and Facilities</p> <p>In consultation C Snelling</p>
<i>Ensuring success</i>	<p>Known key success factors Improve EMS returns to reduce total usable space</p> <p>Principal risks Pressure for reopening for storage etc</p> <p>Risk Mitigation Managed access authorised by PVC only</p>
<i>Performance /success measure</i>	Reduction in kWh against baseline
<i>Timing</i>	Summer 2010-11
<i>Sources of additional information</i>	